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52-33-01		
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602	AUG 10/90	03
603	AUG 10/90	03
604	AUG 10/90	03
605	AUG 10/90	03
606	AUG 10/90	03
607	AUG 10/90	03
608	APR 10/98	03
52-33-02		
401	AUG 10/90	02
402	AUG 22/07	03
403	MAY 10/96	03
404	APR 22/07	03
405	MAY 10/96	03
406	BLANK	
52-33-03		
401	AUG 10/90	03
402	AUG 22/07	02
403	MAY 10/96	03
404	MAY 10/96	03
405	MAY 10/96	03
406	MAY 10/96	03
52-33-04		
401	DEC 22/03	05
402	AUG 22/07	06
403	DEC 22/03	05
404	APR 22/07	08
405	AUG 22/00	05
406	AUG 22/00	03
52-33-05		
401	AUG 10/95	03
402	MAY 10/96	03
403	AUG 22/07	02
404	MAY 10/96	02
52-33-05		CONT.
405	MAY 10/96	03
406	AUG 22/07	04
407	MAY 10/96	03
408	MAY 10/96	03
409	MAY 10/96	02
410	MAY 10/96	03
411	MAY 10/96	03
412	MAY 10/96	03
413	MAY 10/96	03
414	MAY 10/96	03
52-33-05		
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803	DEC 22/99	01
804	BLANK	
52-33-06		
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402	AUG 22/07	02
403	AUG 22/07	02
404	AUG 22/07	03
405	MAY 10/96	03
406	MAY 10/96	03
407	MAY 10/96	03
408	BLANK	
52-33-06		
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502	BLANK	
52-33-07		
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402	MAY 10/96	03
403	AUG 22/07	02
404	MAY 10/96	03
405	MAY 10/96	03
406	MAY 10/96	03
407	AUG 10/96	03
408	AUG 22/99	03
52-33-08		
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402	MAY 10/97	03
403	AUG 22/07	02
404	MAY 10/97	03
405	AUG 22/07	02
406	DEC 22/07	03
52-33-09		
201	AUG 22/00	05
202	AUG 22/00	05
203	AUG 22/00	04
204	AUG 22/00	05
205	AUG 22/00	04
206	AUG 22/00	05
207	MAY 10/96	01
208	AUG 22/00	06

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PAGE	DATE	CODE
52-33-09		
401	AUG 10/90	03
402	AUG 22/01	03
403	AUG 22/08	02
404	AUG 22/08	03
405	AUG 22/00	06
406	FEB 10/97	03
407	FEB 10/96	03
408	FEB 10/96	03
409	AUG 10/96	05
410	FEB 10/97	03
52-33-10		
401	AUG 10/90	03
402	AUG 22/08	02
403	MAY 10/96	03
404	MAY 10/96	03
405	MAY 10/96	03
406	BLANK	
52-33-11		
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402	DEC 10/98	03
403	APR 22/08	04
404	APR 22/08	04
405	MAY 10/96	03
406	MAY 10/96	03
407	MAY 10/96	03
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3	NOV 10/92	01
R 4	AUG 22/09	02.101
R 5	AUG 22/09	02.101
6	AUG 01/82	02
7	NOV 01/86	01
R 8	AUG 22/09	02.101
9	DEC 22/99	02
10	NOV 10/96	02
R 11	AUG 22/09	14.1
12	NOV 10/87	01
R 13	AUG 22/09	05.101
R 14	AUG 22/09	05.101
R 15	AUG 22/09	02.101
R 16	BLANK	
52-35-00		
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102	NOV 10/95	01
103	NOV 10/90	01
104	NOV 10/90	01
105	NOV 10/96	02
106	NOV 10/90	01
107	NOV 10/90	02
108	BLANK	

PAGE	DATE	CODE
52-35-00		
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202	DEC 22/03	01
203	DEC 22/03	01
204	DEC 22/03	01
205	DEC 22/03	01
206	DEC 22/03	01
207	APR 22/00	01
208	APR 22/00	01
209	DEC 22/03	01
210	NOV 10/90	01
211	APR 22/05	01
212	APR 22/05	01
213	APR 22/05	01
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52-35-00		
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R 503	AUG 22/09	02.101
R 504	AUG 22/09	02.101
505	AUG 22/06	02
506	AUG 22/06	02
507	AUG 22/06	02
508	AUG 22/00	01
509	AUG 22/00	01
510	AUG 22/00	01
511	AUG 10/94	01
512	AUG 10/94	01
513	AUG 22/00	01
514	AUG 10/94	01
515	AUG 22/04	01
516	AUG 10/94	01
517	AUG 22/00	02
518	DEC 22/03	03
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520	MAY 10/96	03
521	APR 22/99	03
522	MAY 10/96	01
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525	MAY 10/96	03
526	APR 22/99	03
527	MAY 10/96	01
528	APR 22/99	03
529	MAY 10/96	01
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531	APR 22/99	03
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533	APR 22/99	03
534	MAY 10/96	01
535	MAY 10/96	03
536	APR 22/99	03
537	MAY 10/96	03
538	MAY 10/96	03
539	MAY 10/96	02
540	MAY 10/96	03
541	MAY 10/96	01
542	MAY 10/96	02

PAGE	DATE	CODE
52-35-00		CONT.
543	MAY 10/96	03
544	MAY 10/96	03
545	AUG 22/02	03
546	APR 22/99	05
547	AUG 10/94	02
548	AUG 22/00	04
549	AUG 22/00	05
550	AUG 22/00	06
551	AUG 22/00	03
552	AUG 10/97	03
553	AUG 10/94	01
554	AUG 22/00	05
555	AUG 10/94	04
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558	FEB 10/93	04
559	MAY 10/92	03
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564	MAY 10/92	03
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570	MAY 10/92	02
571	MAY 10/93	02
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573	DEC 22/07	09
574	DEC 22/07	05
575	DEC 22/07	02
576	DEC 22/07	01
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604	FEB 10/90	01
605	FEB 10/90	01
606	FEB 10/90	01
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614	AUG 10/90	03
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52-35-00		
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802	MAY 10/96	15
803	MAY 10/96	01
804	APR 22/01	01

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PAGE	DATE	CODE
52-35-00		CONT.
805	MAY 10/96	02
806	APR 22/01	03
807	APR 22/01	02
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52-35-01		
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R 406	AUG 22/09	02.101
R 407	APR 22/01	03.101
R 408	DEC 22/01	03.101
R 409	APR 22/01	03.101
R 410	DEC 22/01	03.101
R 411	APR 22/01	03.101
R 412	APR 22/01	04.101
52-35-01		
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604	AUG 10/90	01
605	AUG 10/90	01
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R 403	AUG 22/09	04.1
R 404	AUG 22/09	04.101
R 405	AUG 22/09	02.101
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407	NOV 10/96	01
408	NOV 10/96	01
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R 405	APR 22/07	09.101
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407	DEC 10/98	01
R 408	AUG 22/09	03.1
R 409	AUG 22/09	03.101
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411	AUG 22/01	01
412	MAY 10/97	02
413	MAY 10/97	02
414	MAY 10/97	02
415	MAY 10/97	02
416	MAY 10/97	02

PAGE	DATE	CODE
52-35-03		CONT.
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52-35-04		
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52-35-10		
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405	APR 22/06	01
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52-35-42		
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52-35-43		
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503	MAY 10/96	02
504	MAY 10/96	06
505	NOV 10/96	11
506	AUG 22/00	06
507	AUG 22/00	06
508	APR 22/04	08
509	MAY 10/96	07
510	MAY 10/96	07
52-36-00		
1	FEB 01/86	01
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3	AUG 22/00	04
4	MAY 10/96	01
5	MAY 10/96	01
6	MAY 10/96	02

PAGE	DATE	CODE
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102	AUG 10/94	04
52-36-01		
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403	AUG 22/00	03
404	AUG 22/01	03
405	DEC 22/04	12
406	AUG 22/01	08
407	AUG 22/01	11
408	AUG 22/00	01
409	APR 22/01	01
410	AUG 22/01	02
411	AUG 22/01	03
412	AUG 22/01	03
413	AUG 22/01	03
414	AUG 22/01	02
415	MAY 10/96	01
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52-36-02		
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402	AUG 22/00	01
403	MAY 10/96	01
404	AUG 22/05	01
405	AUG 22/00	01
406	AUG 22/00	02
407	APR 22/01	01
408	AUG 22/05	02
409	AUG 22/05	01
410	AUG 22/00	02
411	AUG 22/05	02
412	AUG 22/00	01
52-36-02		
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502	AUG 22/04	01
503	AUG 22/05	01
504	AUG 22/05	01
505	AUG 22/05	01
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52-36-02		
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602	AUG 22/00	01
603	MAY 10/96	04
604	AUG 22/00	02
605	MAY 10/96	02
606	MAY 10/96	01

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PAGE	DATE	CODE
52-36-03		
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403	MAY 10/96	01
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52-36-03		
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504	DEC 22/01	03
505	DEC 22/01	01
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507	DEC 22/01	01
508	MAY 10/96	01
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602	FEB 10/90	01
603	MAY 10/88	01
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52-36-04		
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402	DEC 22/00	01
403	DEC 22/00	01
404	MAY 10/96	01
52-36-05		
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403	AUG 22/05	03
404	DEC 22/04	03
405	MAY 10/96	01
406	AUG 22/05	01
52-36-07		
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203	AUG 22/07	02
204	AUG 22/07	02
R 205	AUG 22/09	02.1
206	AUG 22/07	02
207	AUG 10/96	01
208	APR 22/01	01
209	AUG 22/07	01
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52-36-10		
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402	NOV 10/93	05
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405	MAY 10/96	02
406	MAY 10/96	02
407	MAY 10/96	02
408	BLANK	

PAGE	DATE	CODE
52-48-00		
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2	MAY 10/94	01
3	MAY 10/94	07
4	APR 22/01	01
5	MAY 10/94	01
6	MAY 10/94	01
7	NOV 10/96	01
8	MAY 10/94	01
9	MAY 10/94	01
10	AUG 10/95	03
11	DEC 22/02	04
12	MAY 10/94	02
13	MAY 10/94	02
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52-48-01		
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202	APR 22/05	01
203	APR 22/05	01
204	APR 22/05	01
52-48-01		
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402	AUG 22/07	02
403	DEC 22/00	01
404	DEC 22/00	01
405	DEC 22/00	01
406	DEC 22/00	01
407	DEC 22/00	01
408	DEC 22/00	01
409	DEC 22/00	01
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52-48-04		
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202	APR 22/05	01
203	APR 22/05	01
204	APR 22/05	01
205	APR 22/05	01
206	APR 22/05	01
52-48-04		
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402	AUG 22/07	02
403	AUG 22/00	03
404	AUG 22/00	02
405	AUG 22/00	02
406	AUG 22/01	02
407	DEC 22/02	02
408	AUG 22/00	03
409	AUG 22/00	01
410	AUG 22/00	18
411	DEC 22/06	01
412	AUG 22/00	01

PAGE	DATE	CODE
52-48-05		
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402	APR 22/01	01
403	MAY 10/94	01
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52-48-07		
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52-48-09		
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402	AUG 10/97	01
403	AUG 22/00	01
404	AUG 10/94	01
52-48-11		
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402	FEB 10/97	03
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52-48-13		
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402	AUG 22/07	04
403	AUG 22/03	02
404	AUG 22/03	01
405	DEC 22/02	02
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407	FEB 10/96	01
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52-48-14		
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404	AUG 10/94	01
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52-48-15		
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403	MAY 10/94	04
404	MAY 10/94	01
52-49-00		
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2	APR 22/01	01
3	MAY 10/94	01
4	MAY 10/94	01

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PAGE	DATE	CODE
52-49-01		
401	FEB 10/91	01
402	MAY 10/94	01
403	MAY 10/94	01
404	AUG 10/94	01
52-49-03		
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402	APR 22/01	01
403	APR 22/01	01
404	APR 22/01	01
405	APR 22/01	01
406	APR 22/01	01
407	APR 22/01	01
408	APR 22/01	01
409	APR 22/01	01
410	APR 22/01	01
411	APR 22/01	01
412	APR 22/01	01
52-49-04		
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405	APR 22/01	01
406	MAY 10/94	01
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52-49-07		
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404	AUG 10/95	01
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402	MAY 10/94	01
403	MAY 10/94	01
404	APR 22/01	01
52-49-17		
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402	AUG 22/07	02
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404	APR 22/01	01
405	MAY 10/94	01
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52-49-20		
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403	MAY 10/94	01
404	APR 22/01	01

PAGE	DATE	CODE
52-51-00 CONFIG 1		
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3	DEC 22/05	24F
4	DEC 22/05	24F
52-51-00 CONFIG 2		
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3	DEC 22/05	20F
4	DEC 22/05	20F
R 5	AUG 22/09	18F.101
R 6	AUG 22/09	18F.101
R 7	AUG 22/09	20F.101
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3	DEC 22/05	27F
4	DEC 22/05	27F
R 5	AUG 22/09	19F.101
R 6	AUG 22/09	19F.101
R 7	AUG 22/09	27F.101
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52-51-00 CONFIG 1		
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103	DEC 22/05	24F
104	DEC 22/05	24F
52-51-00 CONFIG 2		
101	DEC 22/05	19F
102	DEC 22/05	19F
103	DEC 22/05	19F
104	DEC 22/05	19F
105	DEC 22/05	19F
106	BLANK	
52-51-00 CONFIG 4		
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102	DEC 22/05	27F
103	DEC 22/05	27F
104	DEC 22/05	27F
105	DEC 22/05	27F
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52-51-00 CONFIG 1		
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202	DEC 22/05	25F
203	DEC 22/05	25F
204	DEC 22/05	24F
R 205	AUG 22/09	20F.1
206	DEC 22/05	25F
207	DEC 22/05	25F
208	DEC 22/05	27F
209	DEC 22/05	25F
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PAGE	DATE	CODE
52-51-00 CONFIG 2		
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203	DEC 22/05	19F
204	DEC 22/05	19F
205	DEC 22/05	19F
206	DEC 22/05	19F
207	DEC 22/05	19F
208	DEC 22/05	19F
52-51-00 CONFIG 4		
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205	DEC 22/05	27F
206	DEC 22/05	27F
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52-51-00 CONFIG 1		
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503	DEC 22/05	19F
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52-51-00 CONFIG 3		
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R 510	AUG 22/09	19F.1
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403	DEC 22/05	16F
404	DEC 22/05	15F
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PAGE	DATE	CODE
52-51-05	CONFIG 1	
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402	DEC 22/05	23F
403	AUG 22/07	18F
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52-51-05	CONFIG 1	
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602	DEC 22/05	23F
603	AUG 22/07	18F
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403	DEC 22/05	23F
404	DEC 22/05	23F
405	DEC 22/05	23F
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52-51-07	CONFIG 1	
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FLIGHT COMPARTMENT DOOR Removal/Installation	52-51-05	401	CONFIG 1 [*]
[*] SAS 150-153, 155, 157, 275-278, 280; 050, 051, 156, 162-167 POST-SB 25-325; 154 POST-SB 25-332			
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DOORS - DESCRIPTION AND OPERATION

1. General
   - A. The airplane doors included in this chapter are entry/service doors, emergency egress doors, the flight compartment door, cargo doors, and access doors (Fig. 1 and 2).
   - B. All of the external doors have seals to prevent the leakage of air.
   - C. The door warning system gives a visual indication if a door to the pressurized compartment is open or not latched (Ref 52-71-00).
   - D. Entry/Service Doors
     - (1) There are four entry/service doors, two on each side of the airplane. The left doors are entry doors and the right doors are service doors.
     - (2) The forward entry door can be operated electrically or manually. All of the other entry/service doors are operated manually only.
     - (3) Each entry/service door has an escape slide-raft installed on the door.
   - E. Emergency Egress Doors
     - (1) AIRPLANES WITH ONE OVERWING EMERGENCY EXIT HATCH; There is one overwing emergency exit hatch on each side of the airplane.
     - (2) AIRPLANES WITH TWO OVERWING EMERGENCY EXIT HATCHES; There are two overwing emergency exit hatches on each side of the airplane.
     - (3) The overwing hatches give access to the off-wing escape slides.
   - F. Cargo Doors
     - (1) The forward and aft cargo doors are on the right side of the airplane, forward and aft of the wing.
     - (2) The large forward cargo door is two times as large as the aft cargo door.
     - (3) The forward and aft cargo doors open outboard and can be operated electrically or manually.
     - (4) The bulk cargo door is on the left side of the airplane, aft of the wing.
     - (5) The bulk cargo door opens inboard and is operated manually.
   - G. Access Doors
     - (1) The access doors give access to repair or service parts of the airplane's systems.

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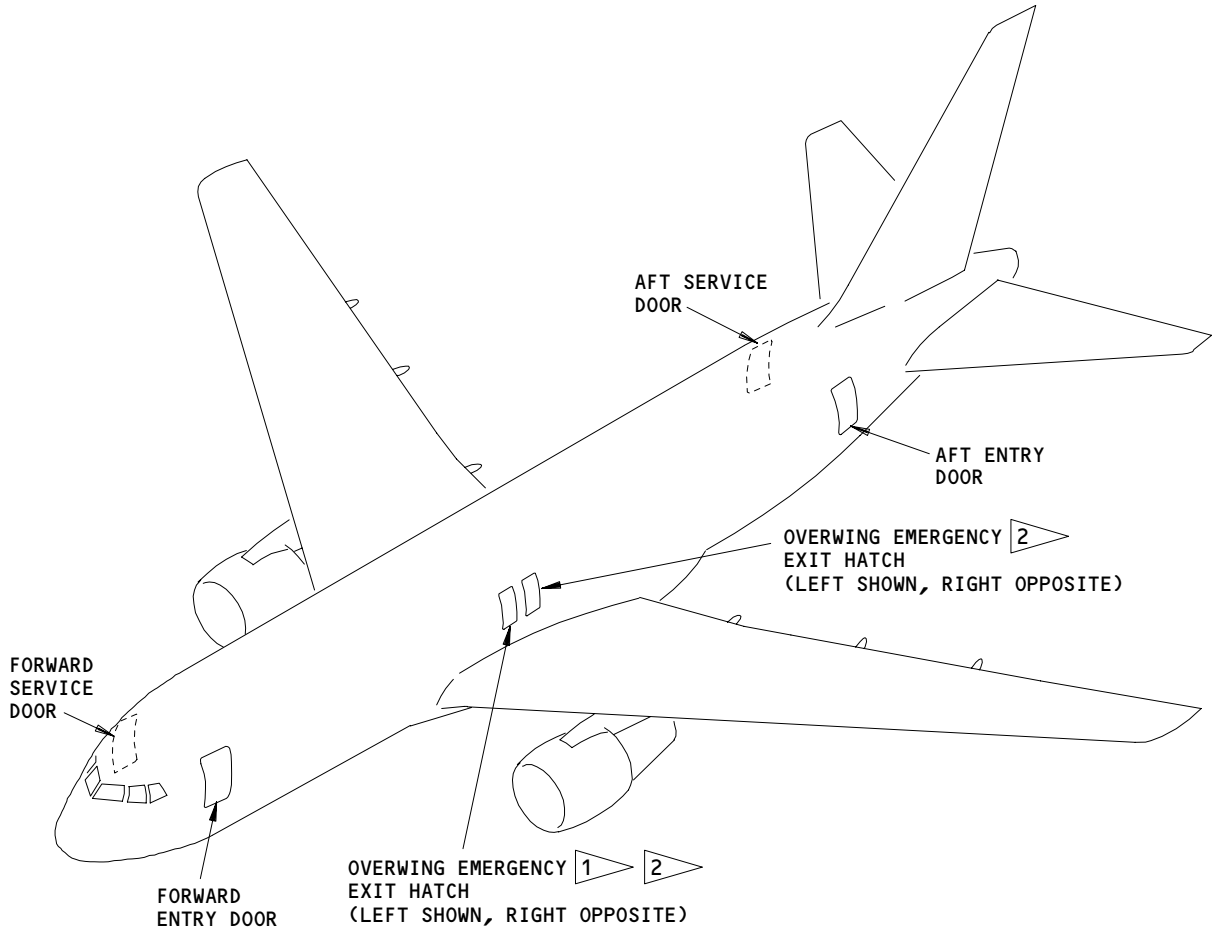

1 AIRPLANES WITH ONE HATCH OVER EACH WING.
2 AIRPLANES WITH TWO HATCHES OVER EACH WING.

Entry/Service Doors and Overwing Emergency Exit Hatches
Figure 1

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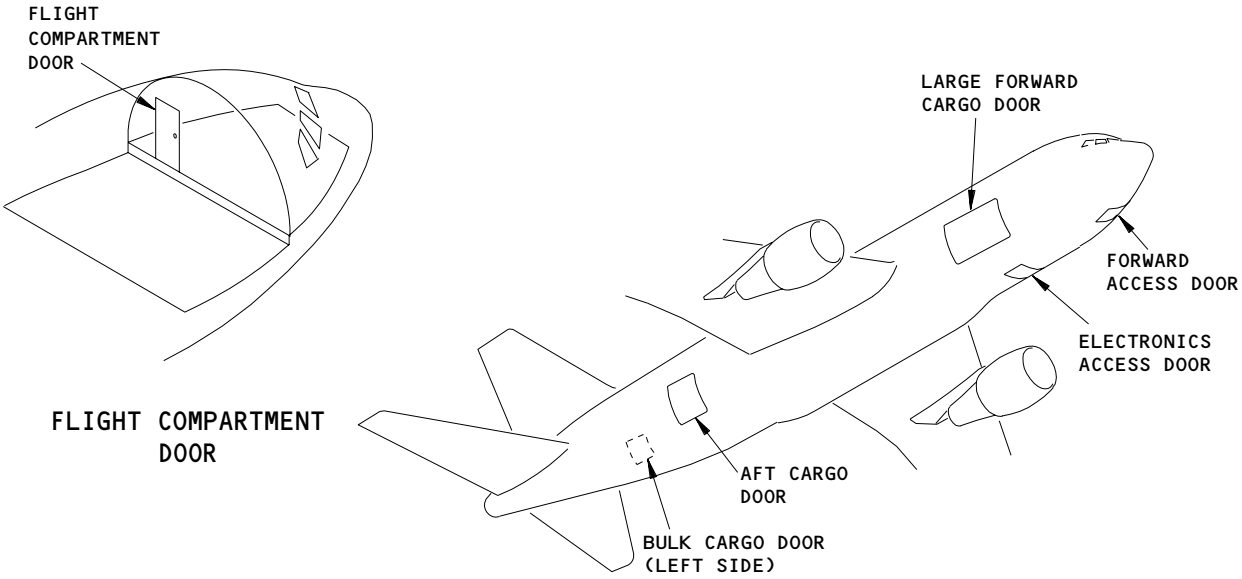

Flight Compartment Door, Cargo Doors, and Access Doors
Figure 2

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DOORS - DDG MAINTENANCE PROCEDURES

1. General
   A. This procedure contains the maintenance tasks that are necessary for the operation of the airplane as shown in the Dispatch Deviations Guide (DDG). The procedure also contains the maintenance tasks to put the airplane back to its usual condition. These tasks are:
      (1) DDG 52-11-1 Preparation - Main Entry/Service Door EMERGENCY ONLY Armed Indicators - Inoperative
      (2) DDG 52-11-1 Restoration - Main Entry/Service Door EMERGENCY ONLY Armed Indicators - Inoperative
      (3) DDG 52-11-4 Preparation - Main Entry Doors/Slides - Inoperative
      (4) DDG 52-11-4 Restoration - Main Entry Doors/Slides - Inoperative
      (5) DDG 52-30-1-1 Preparation - Lower Cargo Doors Lift/Latch Mechanism - Inoperative
      (6) DDG 52-30-1-1 Restoration - Lower Cargo Doors Lift/Latch Mechanism - Inoperative
      (7) DDG 52-30-1-3 Preparation - Lower Cargo Doors Hook/Latch Electrical System - Inoperative
      (8) DDG 52-30-1-3 Restoration - Lower Cargo Doors Hook/Latch Electrical System - Inoperative
      (9) DDG 52-30-1-4 Preparation - Lower Cargo Doors Lift System - Inoperative
      (10) DDG 52-30-1-4 Restoration - Lower Cargo Doors Lift System - Inoperative
      (11) DDG 52-30-3-1 Preparation - Cargo Door Control Panel Indicating Systems Door Open Light - Inoperative
      (12) DDG 52-30-3-1 Restoration - Cargo Door Control Panel Indicating Systems Door Open Light - Inoperative
      (13) DDG 52-30-3-2 Preparation - Cargo Door Control Panel Indicating Systems Door Open and Door Close Lights - Inoperative
      (14) DDG 52-30-3-2 Restoration - Cargo Door Control Panel Indicating Systems Door Open and Door Close Lights - Inoperative
      (15) DDG 52-35-1 Preparation - Bulk Cargo Door Balance Mechanism - Inoperative
      (16) DDG 52-35-1 Restoration - Bulk Cargo Door Balance Mechanism - Inoperative
      (17) DDG 52-51-1 Preparation - Flight Deck Door Lock System - Inoperative
      (18) DDG 52-51-1 Restoration - Flight Deck Door Lock System - Inoperative

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(19) DDG 52-51-3 Preparation - Boeing Enhanced Flight Deck Security Door Automatic Locking System - Inoperative.
(20) DDG 52-51-3 Restoration - Boeing Enhanced Flight Deck Security Door Automatic Locking System - Inoperative.
(21) DDG 52-71-1 Preparation - Door Indicating System - Inoperative
(22) DDG 52-71-1 Restoration - Door Indicating System - Inoperative

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TASK 52-00-00-049-207

2. DDG 52-11-1 Preparation - Main Entry/Service Door EMERGENCY ONLY Armed Indicators - Inoperative

A. General

(1) This task contains the maintenance instructions to prepare the airplane for operation under DDG requirement 52-11-1, Main Entry/Service Door EMERGENCY ONLY Indicators Inoperative.

B. References

(1) AMM 52-11-00/501, Entry/Service Doors

C. Access

(1) Location Zone

831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

D. Door Operational Test (Fig. 901)

S 719-208

(1) Do the operational test for the electrical operation of the entry/service door (AMM 52-11-00/501).

S 719-209

(2) Do the operational test for the internal and external manual operation of the entry/service door (AMM 52-11-00/501).

S 719-210

(3) Make sure the arm/disarm system operates correctly.

(a) Push the external disarm lever fully to the disarm position.
(b) Make sure the arm/disarm lever moves to the inboard position.
(c) Make sure the yellow indicator flags for the girt bar do not show in the windows at the bottom of the door.
(d) Release the external disarm lever.
(e) Push the release button and move the arm/disarm lever to the outboard position.
(f) Make sure the yellow indicator flags for the girt bar show in the windows at the bottom of the door.
(g) Make sure the external disarm lever returns to the fully faired position.

E. Put the Airplane Back to Its Usual Condition.

S 869-211

(1) Move the arm/disarm lever to the inboard position to disarm the door.

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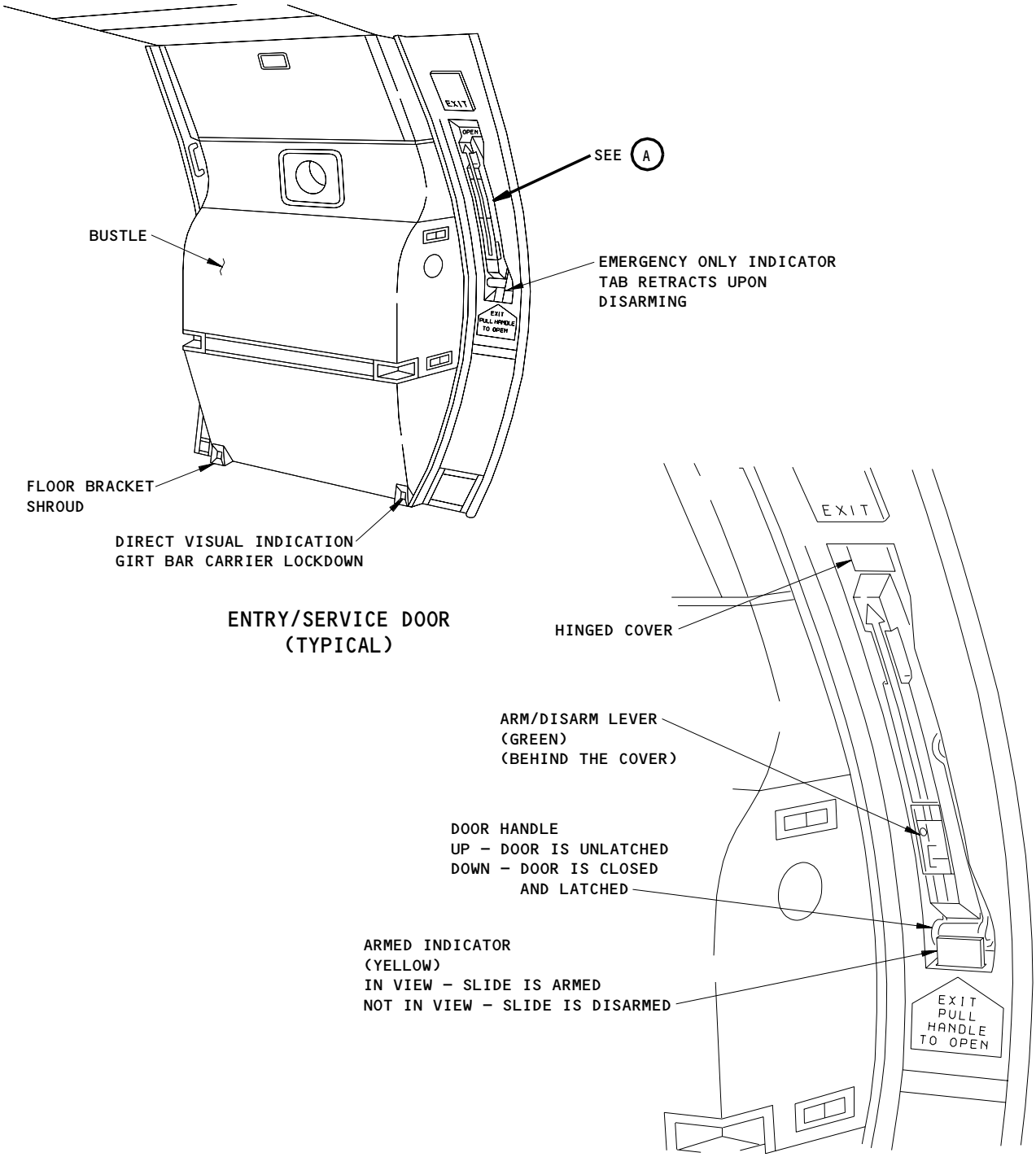

NOTE: SLIDE IS DISARMED AUTOMATICALLY
WHEN DOOR IS OPENED FROM THE
AIRPLANE EXTERIOR.

Entry/Service Door Emergency Only Armed Indicators
Figure 901

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S 939-212
(2) Put a placard on the indicator - "INOP".

S 979-222
(3) Make sure the applicable persons know a visual check of the slide arm/disarmed condition is necessary for the door.

TASK 52-00-00-449-214

3. DDG 52-11-1 Restoration - Main Entry/Service Door EMERGENCY ONLY Armed Indicators - Inoperative

A. General
(1) This task contains the steps to put the airplane back to its usual condition after operation under DDG requirement 52-11-1, Main Entry/Service Door EMERGENCY ONLY Armed Indicators - Inoperative

B. References
(1) AMM 52-11-00/501, Entry/Service Doors

C. Access
(1) Location Zone
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

D. EMERGENCY ONLY Indicator Repair

S 829-215
(1) Adjust the EMERGENCY ONLY indicator (AMM 52-11-00/501).

E. Door Operational Test (Fig. 901)

S 719-216
(1) Do the operational test for the electrical operation of the entry/service door (AMM 52-11-00/501).

S 719-217
(2) Do the operational test for the internal and external manual operation of the entry/service door (AMM 52-11-00/501).

S 719-218
(3) Make sure the arm/disarm system operates correctly.
(a) Push the release button and move the arm/disarm lever to the outboard position.
(b) Make sure the EMERGENCY ONLY indicator is fully extended inboard of the interior handle grip.
(c) Make sure the yellow indicator flags for the girt bar show in the windows at the bottom of the door.

S 029-223
(4) Remove the armed indicator "INOP" placard.

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TASK 52-00-00-049-028

4. DDG 52-11-4 Preparation - Main Entry Doors/Slides Inoperative

A. General

(1) This task contains the maintenance instructions to prepare the airplane for operation under DDG requirement 52-11-4, Main Entry Doors/Slides - Inoperative.

B. Access

(1) Location Zone

831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

C. Cabin Preparation

S 939-220

(1) Put this placard at the the main entry door or the escape slide:

INOPERATIVE

S 049-030

(2) Put a cover on each sign or light and the escape path arrows on the floor.

NOTE: This will identify the route that cannot be used to remove passengers from the airplane.

S 939-221

(3) Use the color tape (or rope) to make a blockage to the door that does not operate.

NOTE: Use the color tape (or rope) that you can see easily.

S 979-032

(4) Make sure the applicable persons know about the condition of the door.

TASK 52-00-00-449-033

5. DDG 52-11-4 Restoration - Main Entry Doors/Slides Inoperative

A. General

(1) This task contains the steps to put the airplane back to its usual condition after operation under DDG requirement 52-11-4, Main Entry Doors/Slides - Inoperative.

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B. References
(1) 25-66-01/401, Entry/Service Door Escape Slide Pack
(2) 52-11-00/501, Entry/Service Doors

C. Access
(1) Location Zone
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

D. Procedure

S 969-034
(1) Replace the escape slide (AMM 25-66-01/401) or adjust the main entry door that does not operate (AMM 52-11-00/501).

S 029-224
(2) Remove the INOPERATIVE placard from the main entry door or the escape slide.

S 029-225
(3) Remove all the tape from the door or escape slide and the covers from the signs or lights.

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TASK 52-00-00-049-226

6. DDG 52-30-1 Preparation - Lower Cargo Doors Lift/Latch Mechanism Electrical And Manual Modes - Inoperative

A. General

(1) This task contains the maintenance instructions to prepare the airplane for operation under DDG requirement 52-30-1, Lower Cargo Doors Lift/Latch Mechanism Electrical and Manual Modes - Inoperative.

(2) Manual and electrical modes can be inoperative if you make sure the door is closed and locked before each departure.

(3) This task applies to the aft cargo door.

(4) EICAS Status Messages

(a) AFT CARGO DOOR

B. Access

(1) Location Zone

822 Aft Cargo Door

C. Cargo Door Closed and Latched Check

S 219-228

(1) Make sure you do not see AFT CARGO DOOR on the EICAS display.

S 219-229

(2) Make sure the amber CARGO DOORS light on the flight deck overhead panel is not on.

S 219-230

(3) Make sure the door is faired with the fuselage.

S 219-231

(4) Make sure the vent doors are fully closed.

S 729-232

(5) Push in on the vent doors approximately three inches and release the doors quickly.

S 729-233

(6) Make sure each vent door moves back to the fully closed position.

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TASK 52-00-00-449-051

7. DDG 52-30-1 Restoration - Lower Cargo Doors Lift/Latch Mechanism Electrical And Manual Modes - Inoperative

A. General

(1) This task contains the steps to put the airplane back to its usual condition after operation under DDG requirement 52-30-1, Lower Cargo Doors Lift/Latch Mechanism Electrical and Manual Modes - Inoperative

(2) This task applies to the aft cargo door.

B. Access

(1) Location Zone

822 Aft Cargo Door

C. Lift/Latch Mechanism Repair

S 819-234

(1) Do these steps to correct the fault:

(a) Go to the fault code diagram in chapter 52 of the FIM and find the fault code.

(b) Go to the fault code index and find the fault code.

(c) Find the fault isolation reference for that fault code.

(d) Go to the fault isolation reference task in the FIM, and do the steps in the task.

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TASK 52-00-00-049-235

8. DDG 52-30-1 Preparation - Lower Cargo Doors Hook/Latch Electrical System - Inoperative

A. General

(1) This task contains the maintenance instructions to prepare the airplane for operation under DDG requirement 52-30-1, Lower Cargo Doors Hook/Latch Electrical System - Inoperative.

(2) This task applies to the forward cargo doors only.

(3) EICAS Status Messages

(a) FWD CARGO DOOR

B. Access

(1) Location Zone

821 Forward Cargo Door

C. Mechanism Visual Check

S 219-236

(1) Do a visual check of the hook-latch mechanism to make sure there is no structural damage.

S 219-144

(2) Do a visual check of the latch lock mechanism to make sure there is no structural damage.

D. Door Operation (Fig. 902)

S 989-237

(1) Do these steps to open the door:

(a) Push the latch lock handle release button.

(b) Make sure the latch lock handle moves to the fully down position.

(c) Manually unlatch and unhook the door:

1) Remove the cover from the manual drive of the latch actuator.

CAUTION: DO NOT LET THE LATCH/HOOK ACTUATOR OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE LATCH/HOOK ACTUATOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 70 POUND-INCHES. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE LATCH/HOOK ACTUATOR.

2) Put a 3/8-inch square drive speed wrench in the manual drive socket of the latch/hook actuator.

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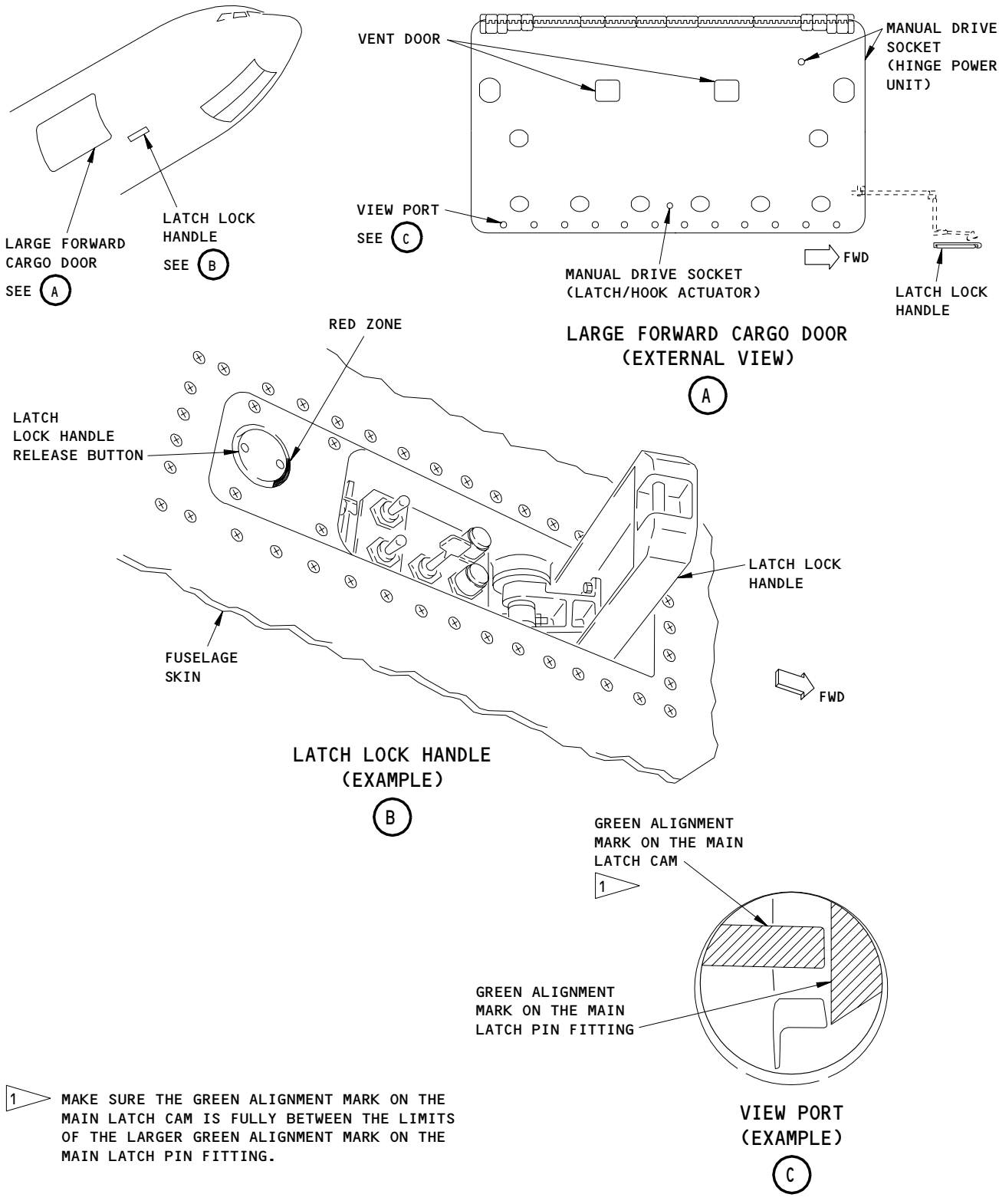

1 MAKE SURE THE GREEN ALIGNMENT MARK ON THE MAIN LATCH CAM IS FULLY BETWEEN THE LIMITS OF THE LARGER GREEN ALIGNMENT MARK ON THE MAIN LATCH PIN FITTING.

Lower Cargo Door Hook/Latch Electrical System
Figure 902

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3) Rotate the speed wrench clockwise approximately 115 turns to the fully not latched and not hooked position of the cargo door.

NOTE: The stops that prevent travel are touched when you feel or hear clutch slippage. The cargo door moves outboard approximately 2.6 inches when the stops are touched.

(d) Continue to open the door electrcally.

S 989-238

(2) Do these steps to close the door:

(a) Operate the door electrically until the latch/hook actuator does not operate.

(b) Manually latch the door:

1) Remove the cover from the manual drive of the latch actuator.

CAUTION: DO NOT LET THE LATCH/HOOK ACTUATOR OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE LATCH/ HOOK ACTUATOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 70 POUND-INCHES. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE LATCH/HOOK ACTUATOR.

2) Put a 3/8-inch square drive speed wrench in the manual drive socket of the latch/hook actuator.

3) Turn the speed wrench counterclockwise approximately 115 turns until you can feel or hear the clutch slippage of the latch/hook actuator.

(c) Lock the door:

1) See that the pressure relief doors are open.

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CAUTION: MAKE SURE YOU CANNOT SEE THE RED ZONE THAT IS FORWARD OF THE LOCK HANDLE RELEASE BUTTON. IF YOU CAN SEE THE RED ZONE, THE LATCH LOCK HANDLE MECHANISM CAN UNLOCK.

2) Close the latch lock handle to the locked position.

NOTE: The pressure relief doors move to the closed position when you move the latch lock handle.

3) Make sure the pressure relief doors are fully closed or open no more than 0.28 inch at the lower edge.

NOTE: The seals on the pressure relief doors can cause the doors to not fully close until the airplane is pressurized.

4) Look at the latch alignment stripes (through the viewports along the bottom edge of the door) to see that the door is latched.

(d) Make sure the FWD CARGO DOOR message does not show on EICAS.

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TASK 52-00-00-449-146

9. DDG 52-30-1 Restoration - Lower Cargo Doors Hook/Latch Electrical System - Inoperative

A. General

(1) This task contains the steps to put the airplane back to its usual condition after operation under DDG requirement 52-30-1, Lower Cargo Doors Hook/Latch Electrical System - Inoperative.

(2) This task applies to the forward cargo doors only.

B. Access

(1) Location Zone

821 Forward Cargo Door

C. Hook/Latch Mechanism Repair

S 819-239

(1) Do these steps to correct the fault:

(a) Go to the fault code diagram in chapter 52 of the FIM and find the fault code.

(b) Go to the fault code index and find the fault code.

(c) Find the fault isolation reference task for that fault code.

(d) Go to the fault isolation reference task in the FIM, and do the steps in the task.

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TASK 52-00-00-049-240

10. DDG 52-30-1 Preparation - Lower Cargo Doors Lift System - Inoperative

A. General

(1) This task contains the maintenance instructions to prepare the airplane for operation under DDG requirement 52-30-1, Lower Cargo Doors Lift System - Inoperative.

(2) Manual and electrical modes can be inoperative if you make sure the door is closed and locked before each departure.

(3) This task applies to the forward cargo doors only.

(4) EICAS Status Messages

(a) FWD CARGO DOOR

B. Access

(1) Location Zone

821 Forward Cargo Door

C. Cargo Door Closed and Latched Check

S 219-241

(1) Make sure you do not see FWD CARGO DOOR on the EICAS display.

S 219-242

(2) Make sure the amber CARGO DOORS light on the flight deck overhead panel is not on.

S 219-243

(3) Make sure the door is faired with the fuselage.

S 219-244

(4) Make sure the vent doors are fully closed or open no more than 0.50 inch at the lower edge.

NOTE: The seals on the vent doors can cause the doors to not fully close until the airplane is pressurized.

S 729-245

(5) Push in on the vent doors approximately three inches and release the doors quickly.

S 729-246

(6) Make sure each vent door moves back to the fully closed position.

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TASK 52-00-00-449-041

11. DDG 52-30-1 Restoration - Lower Cargo Doors Lift System - Inoperative

A. General

(1) This task contains the steps to put the airplane back to its usual condition after operation under DDG requirement 52-30-1, Lower Cargo Doors Lift System - Inoperative.

(2) This task applies to the forward cargo doors only.

B. Access

(1) Location Zone

821 Forward Cargo Door

C. Lift System Repair

S 819-247

(1) Do these steps to correct the fault:

(a) Go to the fault code diagram in chapter 52 of the FIM and find the fault code.

(b) Go to the fault code index and find the fault code.

(c) Find the fault isolation reference for that fault code.

(d) Go to the fault isolation reference task in the FIM, and do the steps in the task.

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TASK 52-00-00-049-248

12. DDG 52-30-3 Preparation - Cargo Door Control Panel Indicating System Door Open Light - Inoperative

A. General

(1) This task contains the maintenance instructions to prepare the airplane for operation under DDG requirement 52-30-3, Cargo Door Control Panel Indicating System Door Open Light - Inoperative.

(2) This task applies to the aft cargo door.

B. Access

(1) Location Zone

822 Aft Cargo Door

C. DOOR CLOSED Light Check (Fig. 903)

S 869-249

(1) If the cargo door is open, close the door.

S 219-250

(2) Make sure the door closed light is on.

TASK 52-00-00-449-105

13. DDG 52-30-3 Restoration - Cargo Door Control Panel Indicating Systems Door Open Light - Inoperative

A. General

(1) This task contains the steps to put the airplane back to its usual condition after operation under DDG requirement 52-30-3, Cargo Door Control Panel Indicating Sysytem Door Open Light - Inoperative.

(2) This task applies to the aft cargo door only.

B. References

(1) AMM 52-35-42/401, Standard Aft Cargo Door Control Switches

C. Access

(1) Location Zone

822 Aft Cargo Door

D. DOOR OPEN Light Repair

S 969-251

(1) Replace the DOOR OPEN light that does not operate (AMM 52-35-42/401).

S 719-252

(2) Open the cargo door and make sure the DOOR OPEN light comes on.

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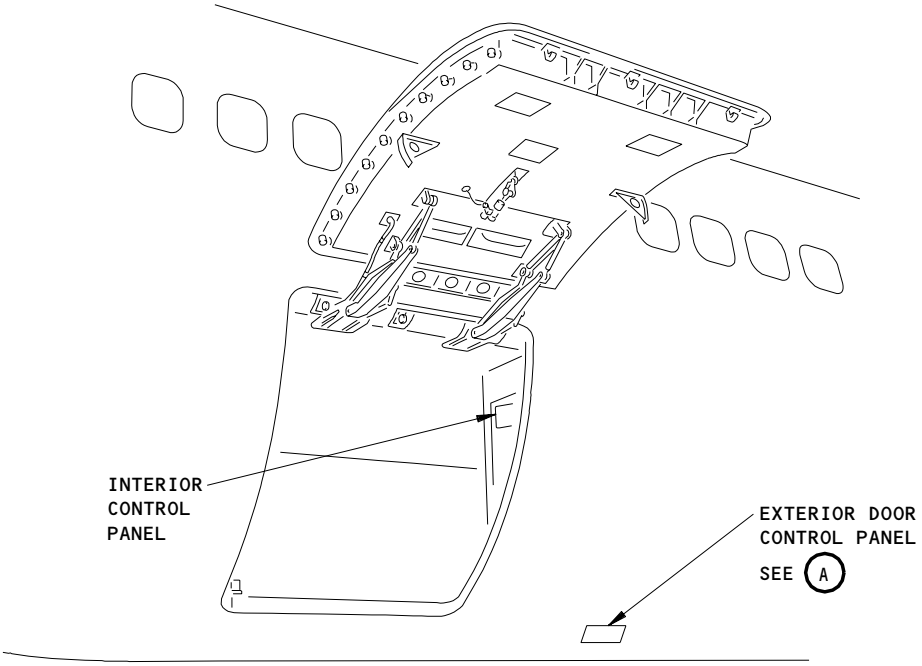
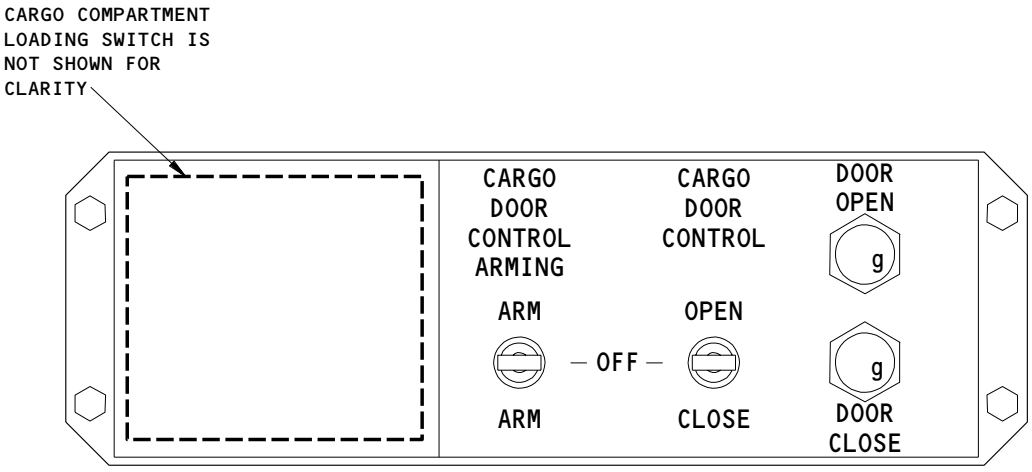


STANDARD CARGO DOOR



EXTERIOR DOOR CONTROL PANEL

A

Standard Cargo Door - Door Open Light
Figure 903

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TASK 52-00-00-049-078

14. DDG 52-30-3 Preparation - Cargo Door Control Panel Indicating Systems Door Open and Door Closed Lights - Inoperative

A. General

(1) This task contains the maintenance instructions to prepare the airplane for operation under DDG requirement 52-30-3, Cargo Door Control Panel Indicating System Door Open and Door Closed Lights - Inoperative.

(2) The DOOR OPEN and DOOR CLOSED lights can be inoperative if you visually make sure the door is closed, latched and locked before each departure.

(3) This task applies to the forward cargo doors only.

B. Access

(1) Location Zone

821 Forward Cargo Door

C. Door Closed Check

S 219-253

(1) Make sure you do not see FWD CARGO DOOR on the EICAS display.

S 219-254

(2) Make sure the amber CARGO DOORS light on the flight deck overhead panel is not on.

S 219-255

(3) Make sure the door is faired with the fuselage.

S 219-334

(4) Use the viewports in the door to make sure that the latch cam is correctly engaged with the latch pin:

(a) Make sure that the indicator stripe on the latch cam aligns with the stripe on the latch pin fitting.

S 219-256

(5) Make sure the vent doors are fully closed or open no more than 0.50 inch at the lower edge.

NOTE: The seals on the vent doors can cause the doors to not fully close until the airplane is pressurized.

S 729-257

(6) Push in on the vent doors approximately three inches and release the doors quickly.

S 729-258

(7) Make sure each vent door moves back to the fully closed position.

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TASK 52-00-00-449-098

15. DDG 52-30-3 Restoration - Cargo Doors Control Panel Indicating System Door Open and Door Closed Lights - Inoperative

A. General

(1) This task contains the steps to put the airplane back to its usual condition after operation under DDG requirement 52-30-3, Cargo Door Control Panel Indicating System Door Open and Door Closed Lights - Inoperative.

(2) This task applies to the forward cargo doors only.

B. Access

(1) Location Zone

821 Forward Cargo Door

C. DOOR OPEN and DOOR CLOSED Lights Repair

S 969-099

(1) Replace the DOOR OPEN and DOOR CLOSED lights that does not operate (AMM 52-33-11/401).

S 719-260

(2) Operate the door electrically and make sure the DOOR OPEN and DOOR CLOSED lights come on.

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TASK 52-00-00-049-278

16. DDG 52-35-1 Preparation - Bulk Cargo Door Balance Mechanism - Inoperative

A. General

(1) This task contains the maintenance instructions to prepare the airplane for operation under DDG requirement 52-35-1, Bulk Cargo Door Balance Mechanism - Inoperative.

B. References

(1) 52-36-02/401, Bulk Cargo Door Balance Mechanism

C. Access

(1) Location Zone

811 Bulk Cargo Door

D. Put the Bulk Cargo Door in the Open Position (Fig. 904)

S 939-279

(1) Put a placard adjacent to the bulk cargo compartment door to tell the applicable persons that the balance mechanism does not operate.

S 019-280

(2) Open the bulk cargo door to the fully open position.

NOTE: The door weighs approximately 130 pounds (60 kg).

S 989-281

(3) Loop the uplock strap over the lower stop of the aft door frame.

NOTE: The uplock strap is on the cargo compartment ceiling.

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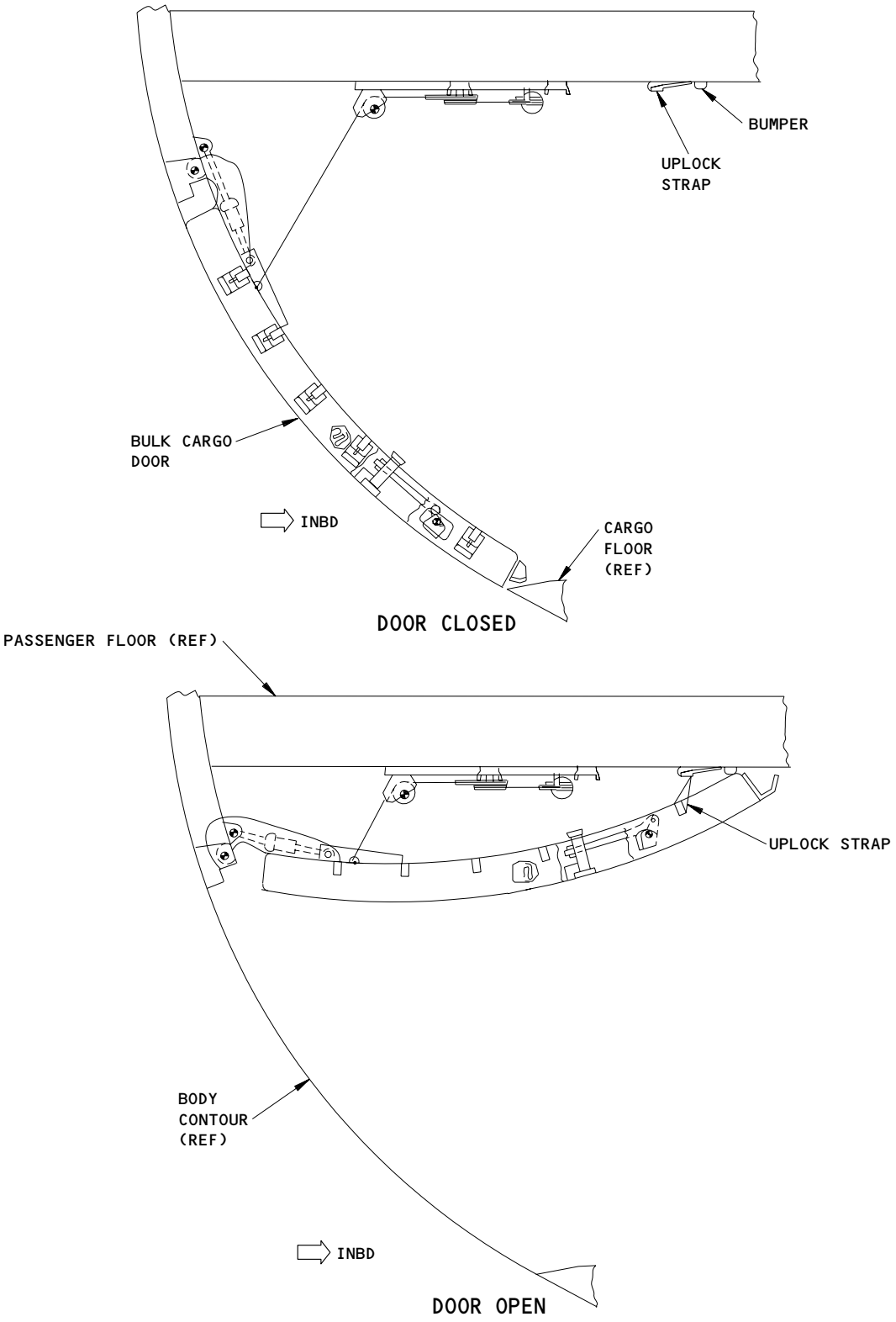

Bulk Cargo Door Counterbalance Mechanism
Figure 904

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TASK 52-00-00-449-151

17. DDG 52-35-1 Restoration - Bulk Cargo Door Balance Mechanism - Inoperative

A. General

(1) This task contains the maintenance instructions to put the airplane back to its ususal condition after operation under DDG requirement 52-35-1, Bulk Cargo Door Balance Mechanism - Inoperative.

B. References

(1) AMM 52-36-02/401, Bulk Cargo Door Counterbalance Mechanism

C. Access

(1) Location Zone

811 Bulk Cargo Door

D. Bulk Cargo Door Counterbalance Replacement

S 969-282

(1) Replace the balance machanism on the bulk cargo door (AMM 52-36-02/401).

S 029-283

(2) Remove the placard that is adjacent to the bulk cargo door.

TASK 52-00-00-049-001

18. DDG 52-51-1 Preparation - Flight Deck Door Lock System - Inoperative

A. General

(1) This task contains the maintenance instructions to prepare the airplane for operation under DDG requirement 52-51-1, Flight Deck Door Lock System - Inoperative.

B. References

(1) AMM 52-51-01/201, Flight Compartment Door

C. Standard Tools and Equipment

(1) Collar - Circuit Breaker, Locking; Paco Plastics P/N S-4933959; Paco Plastics, Santa Fe Springs, CA.

D. Access

(1) Location Zone

211 Control Cabin - Section 41 (Left)

221 Passenger Cabin - Section 40 (Left)

E. Electric Strike Deactivation (Fig. 905)

S 019-284

(1) Open the flight compartment door.

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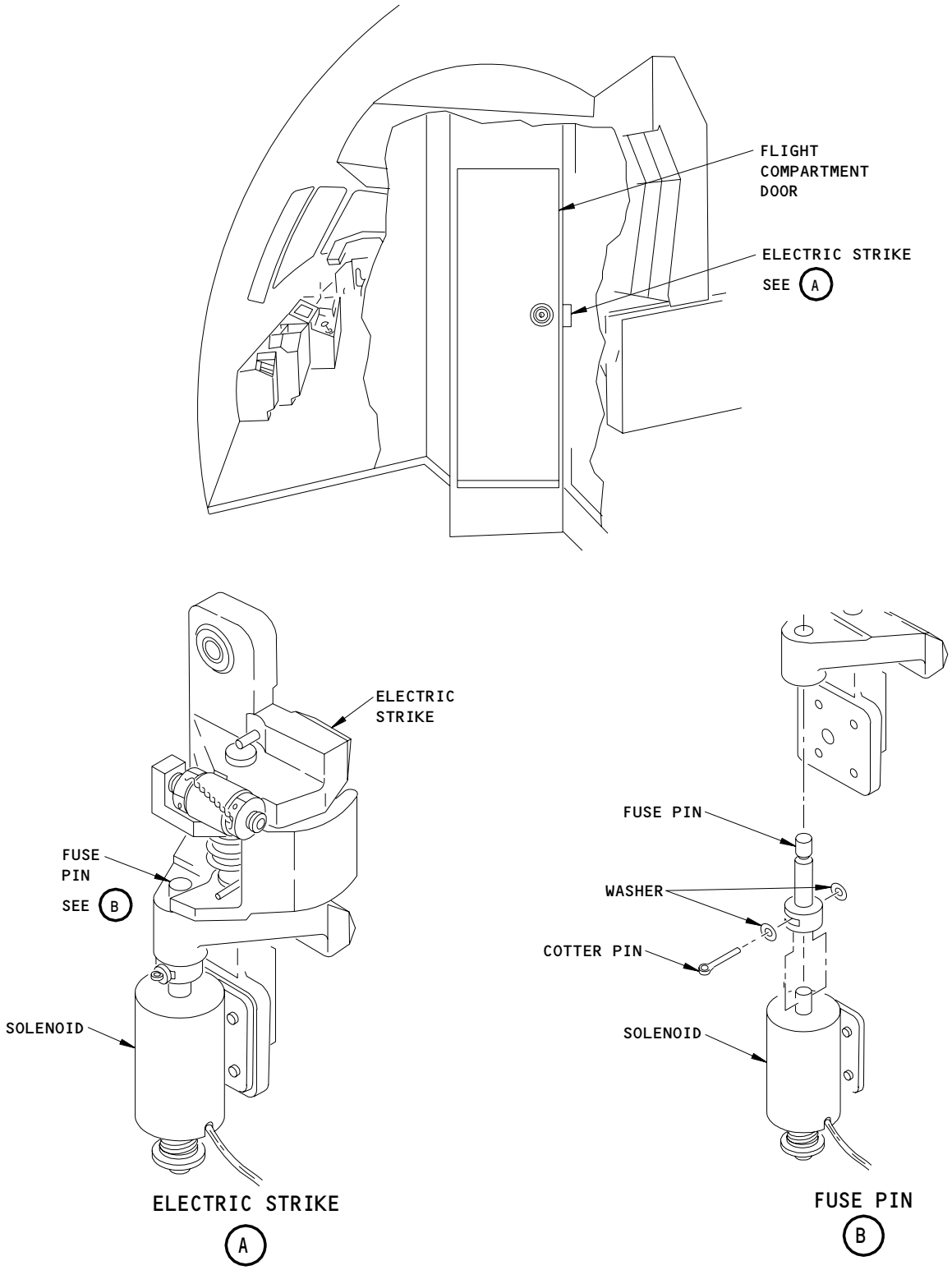

Flight Compartment Door Lock System
Figure 905

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S 869-002
(2) Open this circuit breaker and attach a collar:
(a) P11 Pilots' Overhead Circuit Breaker Panel
1) 11T5 DDORS FLT DK LOCK

S 019-003
(3) Remove the flight compartment door electric strike (AMM 52-51-01/201).

S 019-285
(4) Remove the cotter pin that attaches the fuse pin to the solenoid shaft.

S 019-004
(5) Push the fuse pin up as far as possible.

S 429-286
(6) Install the cotter pin in the cotter pin hole in the solenoid shaft.

NOTE: Cotter pin does not go through the cotter pin hole in the fuse pin.

S 759-287
(7) Make sure the stike will not turn.

S 419-007
(8) Install the flight compartment door electric strike (AMM 52-51-01/201). Do not close the circuit breaker.

S 419-288
(9) Close the flight compartment door from the cockpit.

S 759-289
(10) Pull, but do not turn the door handle, to make sure the door is locked. Do not pull the door handle too hard because the fuse pin can break.

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S 939-321

CAUTION: BEFORE YOU CLOSE THE FLIGHT COMPARTMENT DOOR WITH THE FUSE PIN IN THIS POSITION, MAKE SURE YOU HAVE A KEY FOR THE DOOR LOCK OR A PERSON IS IN THE FLIGHT COMPARTMENT.

(11) Install a placard on the door strike unit to show that it does not operate.

TASK 52-00-00-449-011

19. DDG 52-51-1 Restoration - Flight Deck Door Lock System - Inoperative

A. General

(1) This task contains the steps to put the airplane back to its usual condition after operation under DDG requirement 52-51-1, Flight Deck Door Lock System - Inoperative.

B. References

(1) AMM 52-51-01/201, Flight Compartment Door

C. Access

(1) Location Zone

211 Control Cabin - Section 41 (Left)
221 Passenger Cabin - Section 41 (Left)

D. Electrical Strike Repair (Fig. 905)

S 969-012

(1) Replace the solenoid that does not operate (Ref 52-51-02/401).

S 869-013

(2) Remove the collar and close this circuit breaker:

(a) P11 Pilots' Overhead Circuit Breaker Panel

1) 11T5 DOORS FLT DK LOCK

TASK 52-00-00-049-324

20. DDG 52-51-3 Preparation - Boeing Enhanced Flight Deck Security Door Automatic Locking System (FAR 25.795 Compliant) - Inoperative.

A. General

(1) This task contains the maintenance instructions to prepare the airplane for operation under DDG requirement 52-51-3, Boeing Enhanced Flight Deck Security Door Automatic Locking System - Inoperative.

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B. References
(1) AMM 24-22-00/201, Electrical Power - Control
C. Standard Tools and Equipment
(1) Collar - Circuit Breaker, Locking; Paco Plastics P/N S-4933959; Paco Plastics, Santa Fe Springs, CA.
D. Access
(1) Location Zone
211 Control Cabin - Section 41 (Left)
221 Passenger Cabin - Section 40 (Left)

E. Procedure

S 049-325
(1) Do these steps to deactivate the automatic locking system:
(a) Put the Flight Deck Access System switch on the Chime Module to the OFF position (guard extended).

NOTE: The LOCK FAIL light will stay on when the Flight Deck Access System switch is in the OFF position (guard extended).

(b) Install the placard on the FLT DK DOOR switch - INOP.

S 049-326
(2) Do these steps to deactivate the keypad:
(a) Open this circuit breaker on the P11 panel and install safety tag:
1) 11T5, FLT DECK DR LOCK
(b) Remove the screw covers at the top and bottom of the keypad.
(c) Remove the screws that attach the keypad to the doorpost.
(d) Disconnect the electrical connector from the keypad and stow the electrical connector.
(e) Put the keypad in its position.
(f) Install the screws that attach the keypad to the doorpost.
(g) Install the screw covers.
(h) Remove safety tag and close this circuit breaker:
1) 11T5, FLT DECK DR LOCK

NOTE: Make sure the Flight Deck Access System switch is in the OFF position (guard extended) when the flight deck door is closed and the flight deck is not occupied.

S 719-327
(3) Do these steps to make sure the automatic lock controls operate normally:
(a) Open the flight deck door.
(b) Supply electrical power. To supply electrical power, do this task: Supply Electrical Power, (AMM 24-22-00/201).

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(c) Make sure the Flight Deck Access System switch on the chime module is in the NORM (guard closed) position.
(d) Make sure the FLT DK DOOR rotary switch on the Cockpit Control panel Switch/Light Module is in the AUTO position.
(e) Make sure the electric strike is in the locked position.

NOTE: The solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

(f) Enter the access code in the keypad and press the ENT key.
(g) Make sure the chime module sounds.
(h) Put and momentarily hold the FLT DK DOOR switch in the DENY position.
(i) Do these steps before the DENY Time Delay has expired:
1) Enter the access code in the keypad and press the ENT key.
2) Make sure the chime module does not sound.
(j) Put and hold the FLT DK DOOR switch to the UNLKD position.
(k) Make sure the electric strike is in the unlocked position.

NOTE: The solenoid pin in the electric strike will retract down such that you can rotate the strike.

(l) Put the FLT DK DOOR switch back to the AUTO position.
(m) Make sure the electric strike is in the locked position.

NOTE: The solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

S 719-328
(4) Do these steps to make sure the automatic lock operates normally:
(a) Open the flight deck door.
(b) Supply electrical power. To supply electrical power, do this task: Supply Electrical Power, (AMM 24-22-00/201).
(c) Make sure the Flight Deck Access System switch on the chime module is in the NORM (guard closed) position.
(d) Make sure the electric strike is in the locked position.

NOTE: The solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

(e) Put the Flight Deck Access System switch on the Chime Module to the OFF position (guard extended).
(f) Make sure the electric strike is in the unlocked position.

NOTE: The solenoid pin in the electric strike will retract down such that you can rotate the strike.

(g) Put the Flight Deck Access System switch on the chime module in the NORM (guard closed) position.

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(h) Make sure the electric strike is in the locked position.

NOTE: The solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

S 049-332

(5) Do these steps to deactivate the pressure sensing module (pressure sensor).
(a) Open this circuit breaker on the P11 panel and install safety tag:
1) 11T5, FLT DECK DR LOCK
(b) Remove the screws that attach the pressure sensor to the P61 panel.
(c) Remove the pressure sensor.
(d) Disconnect the electrical connector from the pressure sensor.

NOTE: A closed circuit from the pressure sensor is required## to keep the automatic locking system operating.
1) Make a shorting plug using part number M83513/4-A01N.
2) Trim the excess wire to a 2 to 3 inch (50.8 to 76.2 mm) length.
3) Splice wires 4 and 6 together.
4) Insulate splice and wire pigtails.
5) Connect the shorting plug to the electrical connector and put aside.
(e) Put the pressure sensor in its position.
1) Install the screws that attach the pressure sensor to the P61 panel.
(f) Remove the safety tag and close this circuit breaker:
1) 115T, FLT DECK DR LOCK

TASK 52-00-00-449-329

21. DDG 52-51-3 Restoration - Boeing Enhanced Flight Deck Security Door Automatic Locking System (FAR 25.795 Compliant) - Inoperative.

A. General
(1) This task puts the airplane back to its usual condition after flight with the flight deck security door automatic locking system inoperative.

B. References
(1) AMM 52-51-00/501, Flight Compartment Door
(2) Location Zone
211 Control Cabin - Section 41 (Left)
221 Passenger Cabin - Section 40 (Left)

C. Procedure

S 449-330

(1) Do these steps to activate the automatic locking system:
(a) Put the Flight Deck Access System switch on the Chime Module to the NORM position (guard closed).

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(b) Remove the placard on the FLT DK DOOR switch - INOP.

S 449-331

(2) Do these steps to activate the keypad:
(a) Open this circuit breaker on the P11 panel and install safety tag:
1) 11T5, FLT DECK DR LOCK
(b) Remove the screw covers at the top and bottom of the keypad.
(c) Remove the screws that attach the keypad to the doorpost.
(d) Connect the electrical connector to the keypad.
(e) Put the keypad in its position.
(f) Install the screws that attach the keypad to the doorpost.
(g) Install the screw covers.
(h) Remove safety tag and close this circuit breaker:
1) 11T5, FLT DECK DR LOCK

S 449-333

(3) Do these steps to activate the pressure sensing module (pressure sensor).
(a) Open this circuit breaker on the P11 panel and install safety tag:
1) 11T5, FLT DECK DR LOCK
(b) Remove the screws that attach the pressure sensor to the P61 panel.
(c) Remove the pressure sensor.
(d) Disconnect the electrical connector from the pressure sensor.
(e) Remove the shorting plug from the electrical connector.
(f) Connect the electrical connector to the pressure sensor.
(g) Put the pressure sensor in its position.

NOTE: The vent holes in the pressure sensor should be on the bottom.

1) Install the screws that attach the pressure sensor to the P61 panel.

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(h) Remove the safety tag and close this circuit breaker:
1) 11T5, FLT DECK DR LOCK

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TASK 52-00-00-049-295

22. DDG 52-71-1 Preparation - Door Indication System - Inoperative

A. General

(1) This task contains the maintenance instructions to prepare the airplane for operation under DDG requirement 52-71-1, Door Indication System - Inoperative.

(2) The indicator system is inoperative if one of these conditions occurs:

(a) An indicator light stays on when the doors are closed.

(b) An indicator light stays off when the doors are open.

B. References

(1) 25-65-00/201, Off-Wing Escape System

C. Equipment

(1) Wrench, Off-Wing Escape System Integrator - A25011-2 (Recommended), 1/4 inch square drive socket wrench (Optional)

D. Access

(1) Location Zone

113	Area Forward of Nose Landing Gear Wheel Well (Left)
119	Main Equipment Center (Left)
195	Wing to Body - Aft Upper Half (Left)
196	Wing to Body - Aft Upper Halt (Right)
811	Bulk Cargo Door
821	Forward Cargo Door
822	Aft Cargo Door
831	Forward Entry Door
833	Aft Entry Door
841	Forward Service Door
843	Aft Service Door

(2) Access Panel

113AL	Forward Access Door
119AL	Electronics Access Door
195EL	Off-Wing Slide Compartment Door (Left)
195ER	Off-Wing Slide Compartment Door (Right)
195ML	Integrator Access Door (Left)
195MR	Integrator Access Door (Right)

E. Entry/Service Door Check

S 719-296

(1) Do a check of the exterior door handles.

(a) Use the arm/disarm handle to disarm the slide.

(b) Open the door.

(c) Push the external red disarm lever to the full inboard position.

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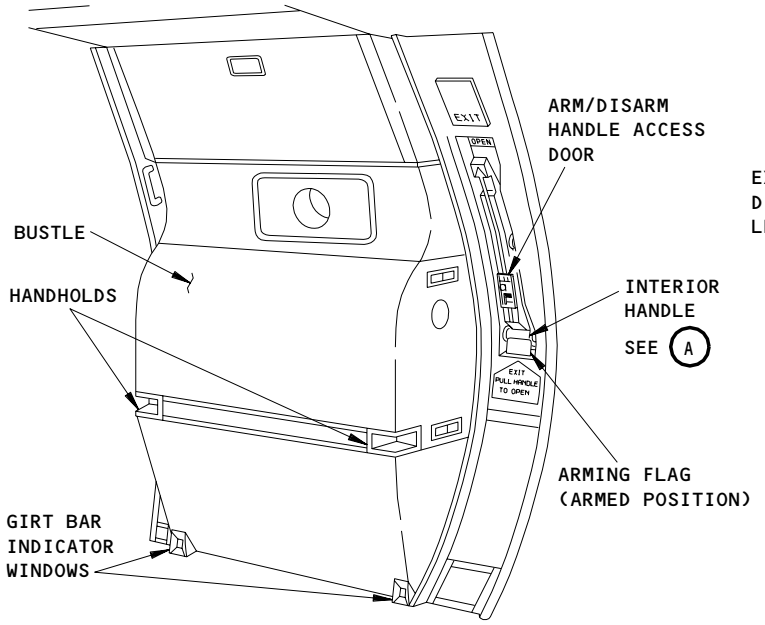
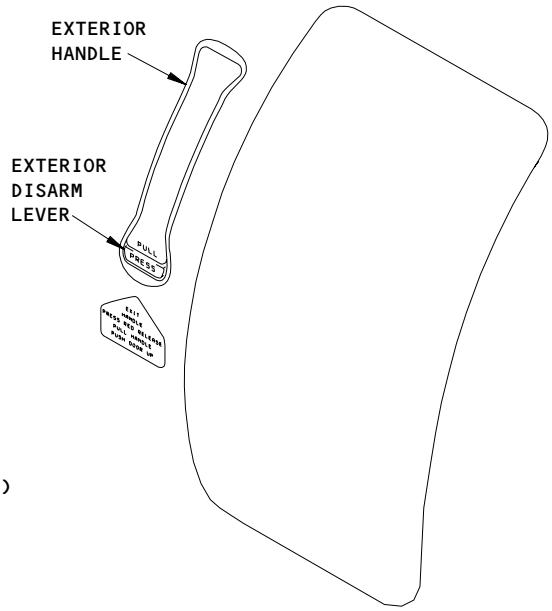
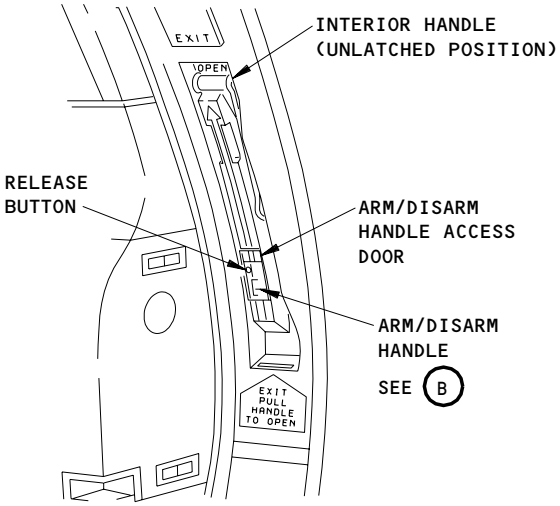


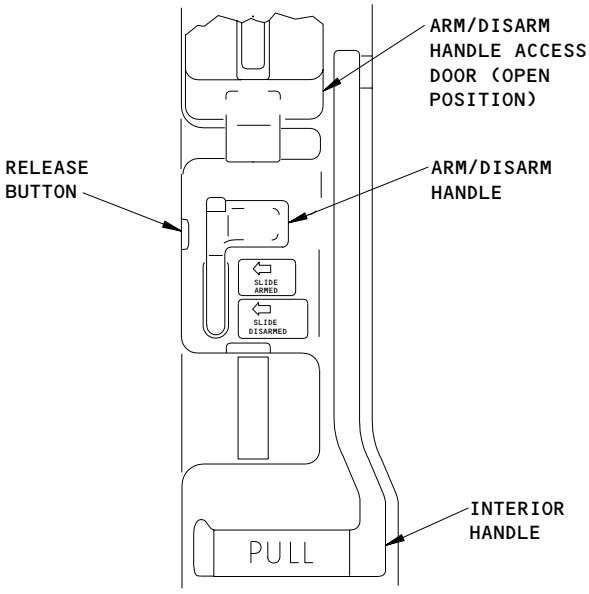
ENTRY/SERVICE DOOR INTERIOR
(EXAMPLE)



ENTRY/SERVICE DOOR EXTERIOR
(EXAMPLE)



INTERIOR HANDLE
A



ARM/DISARM HANDLE
B

Internal Entry/Service Door Operation
Figure 906

H83947

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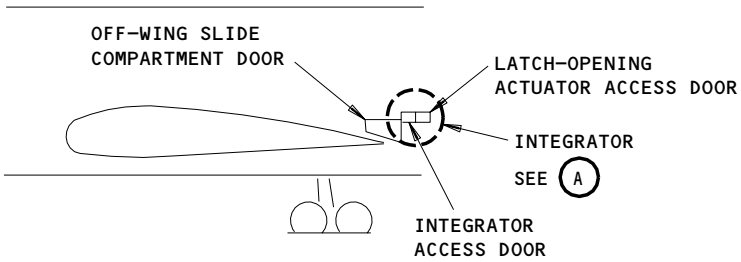
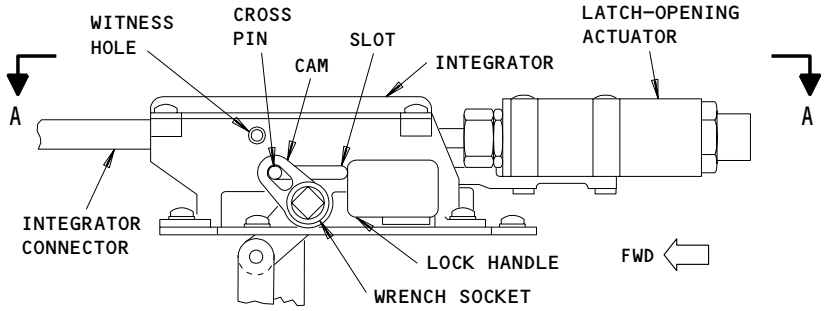
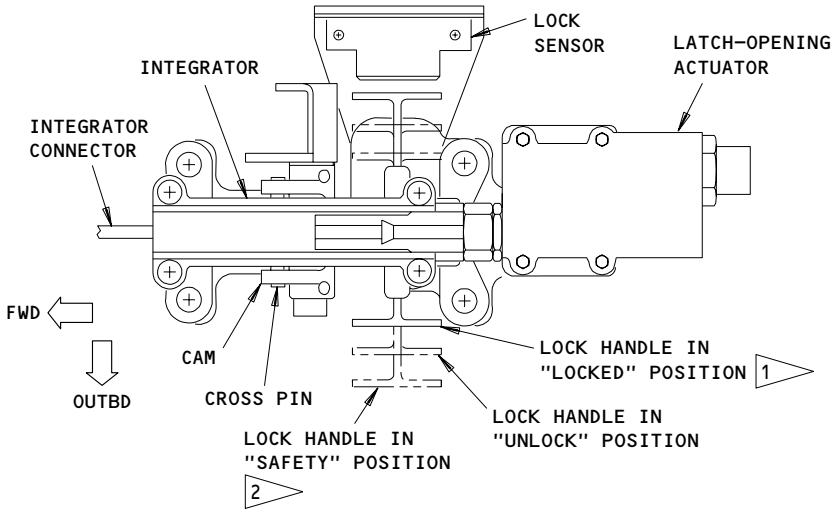




INTEGRATOR IN LATCHED POSITION
(CAM IN FORWARD POSITION)
(LOCK HANDLE IN "LOCKED" POSITION)

A



A-A

1 MOVE THE LOCK HANDLE TO THE "LOCKED" POSITION ONLY WHEN THE CAM IS IN THE FORWARD POSITION

2 MOVE THE LOCK HANDLE TO THE "SAFETY" POSITION ONLY WHEN THE CAM IS IN THE AFT POSITION

Integrator
Figure 907

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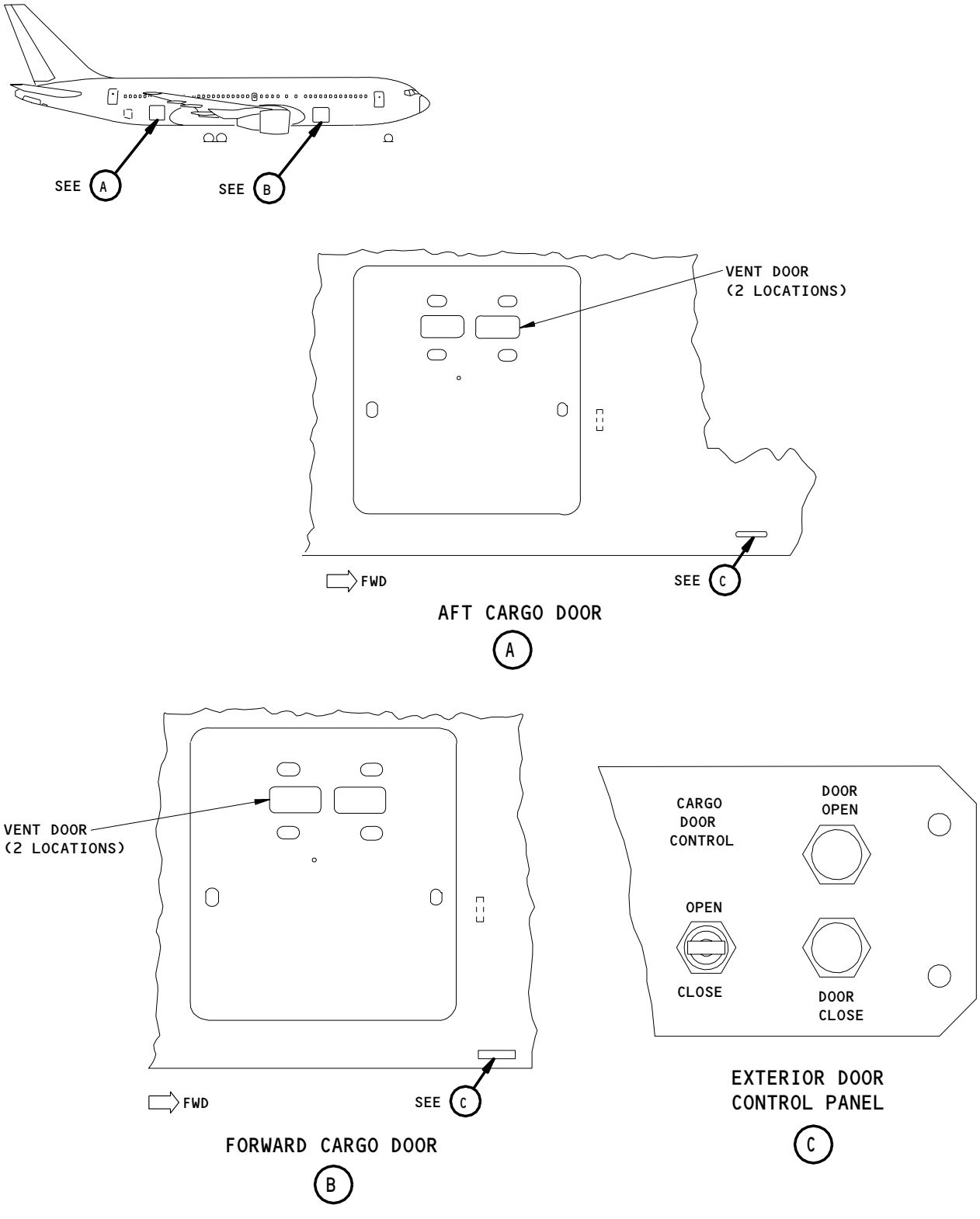

Door Indication System
Figure 908

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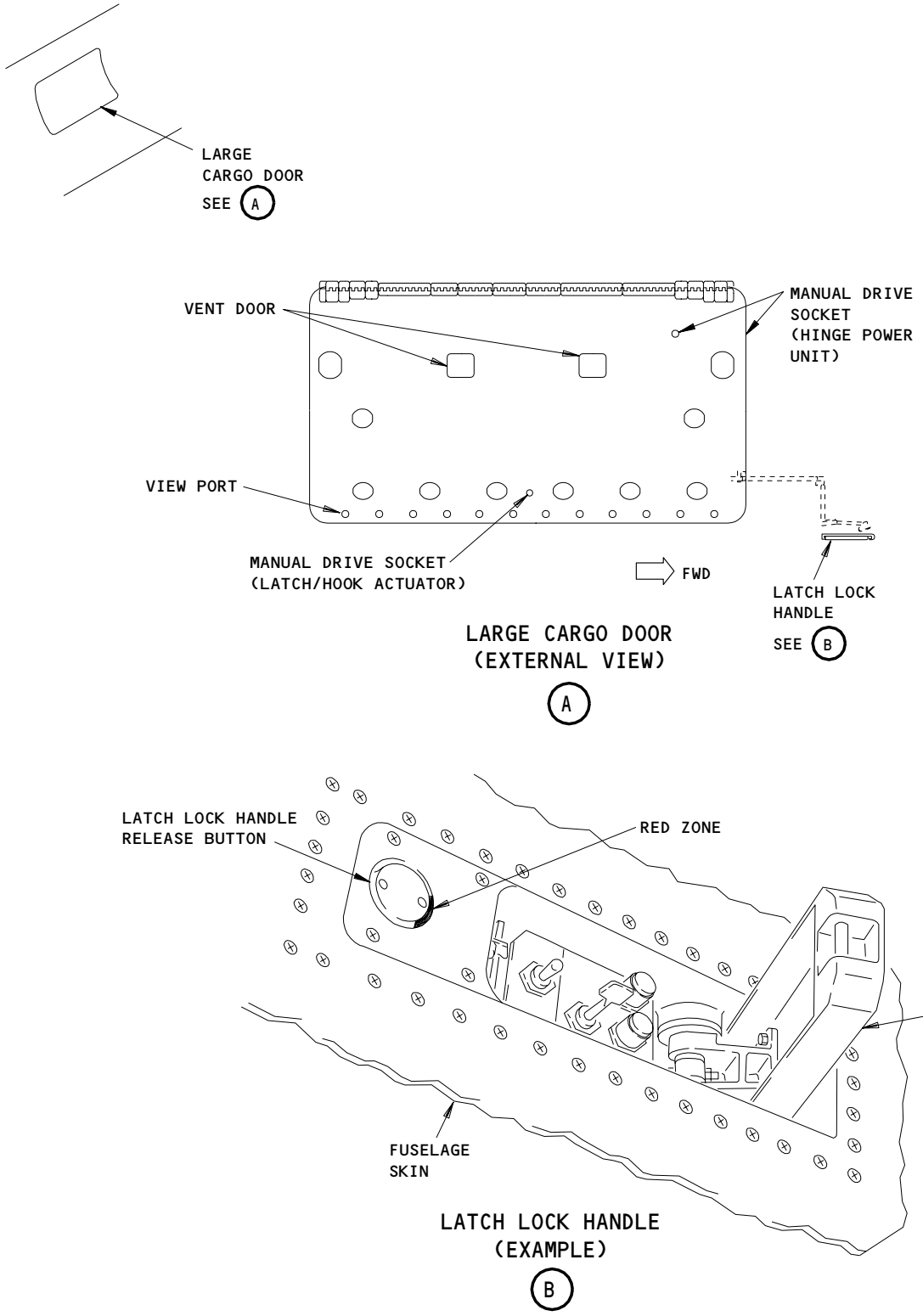

External Cargo Door Control Switch
Figure 909

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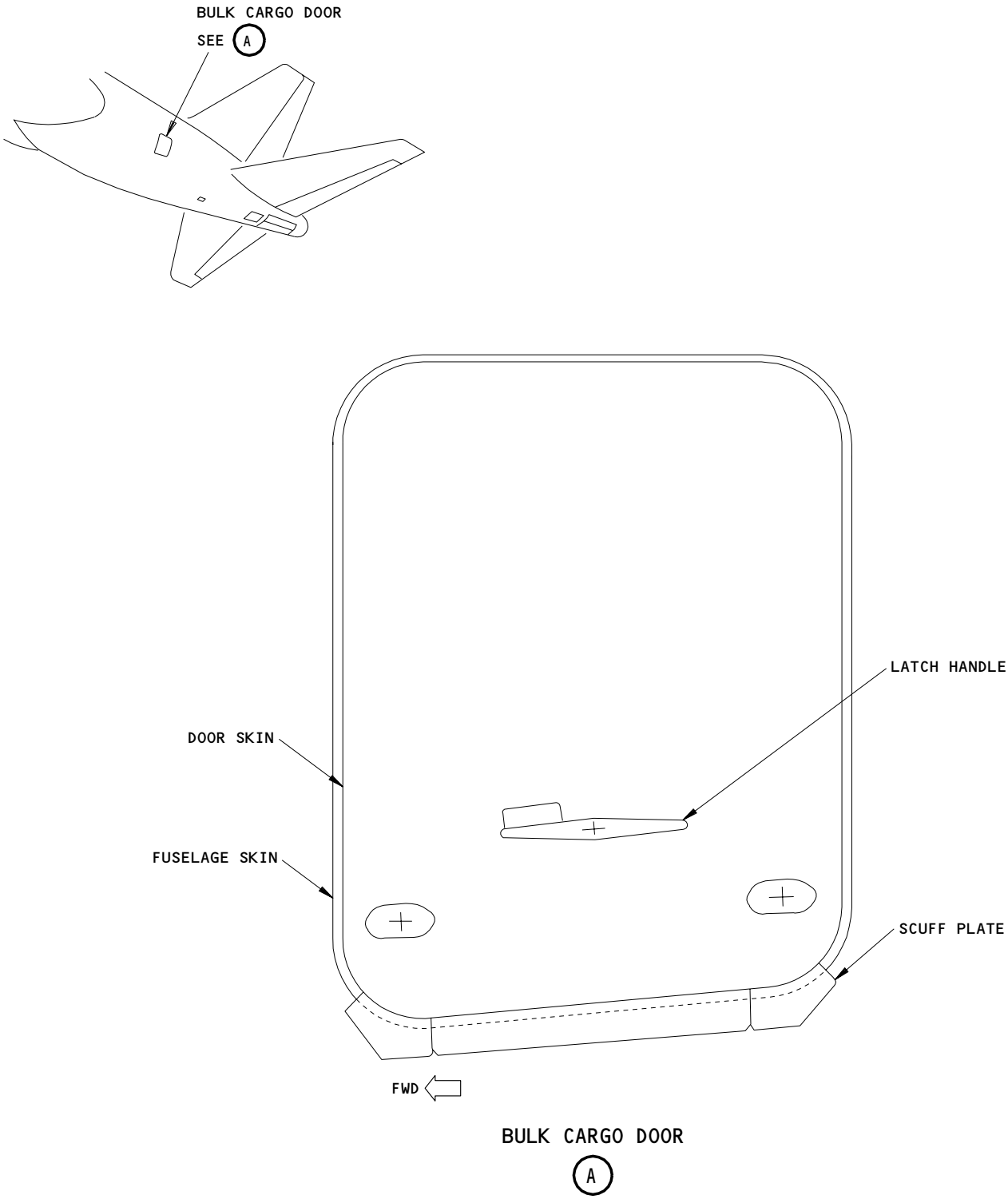

Bulk Cargo Door
Figure 910

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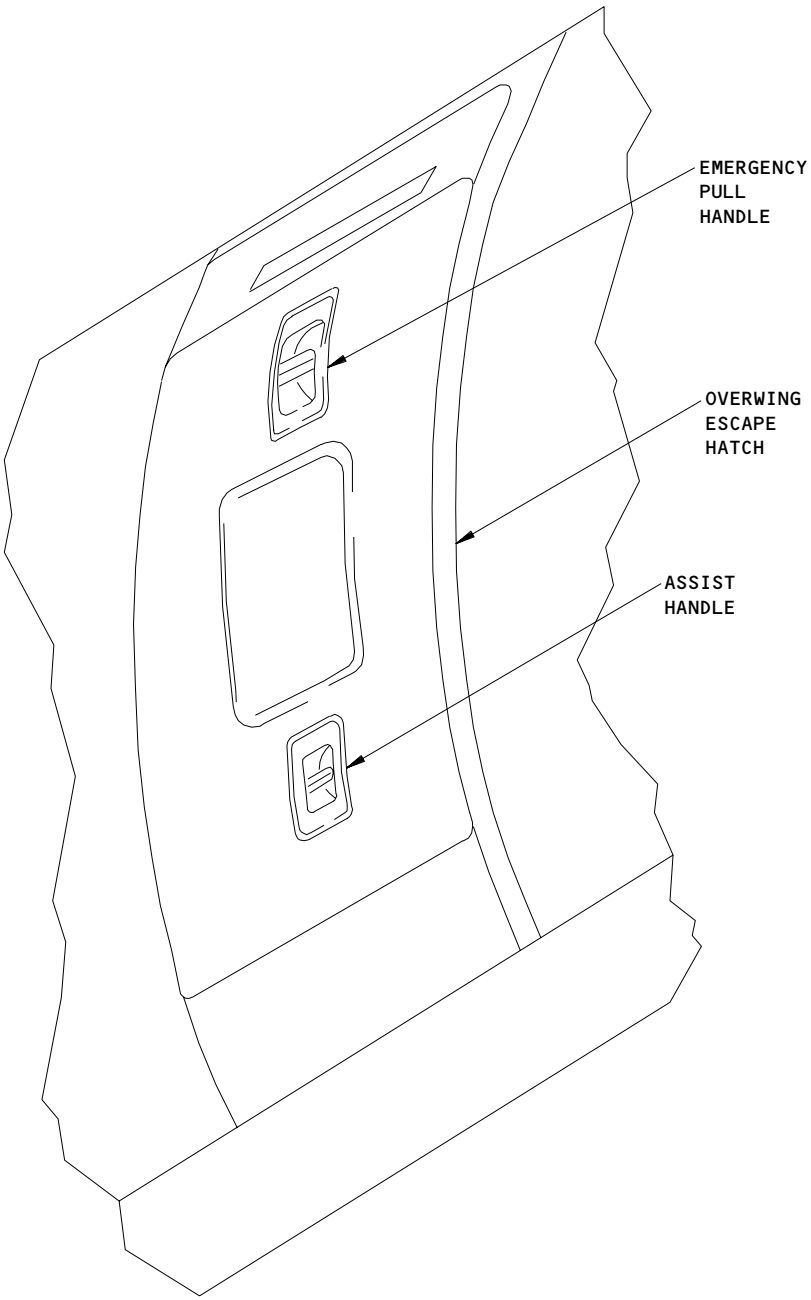

OVERWING ESCAPE HATCH
(INTERNAL VIEW)

Overwing Escape Hatch
Figure 911

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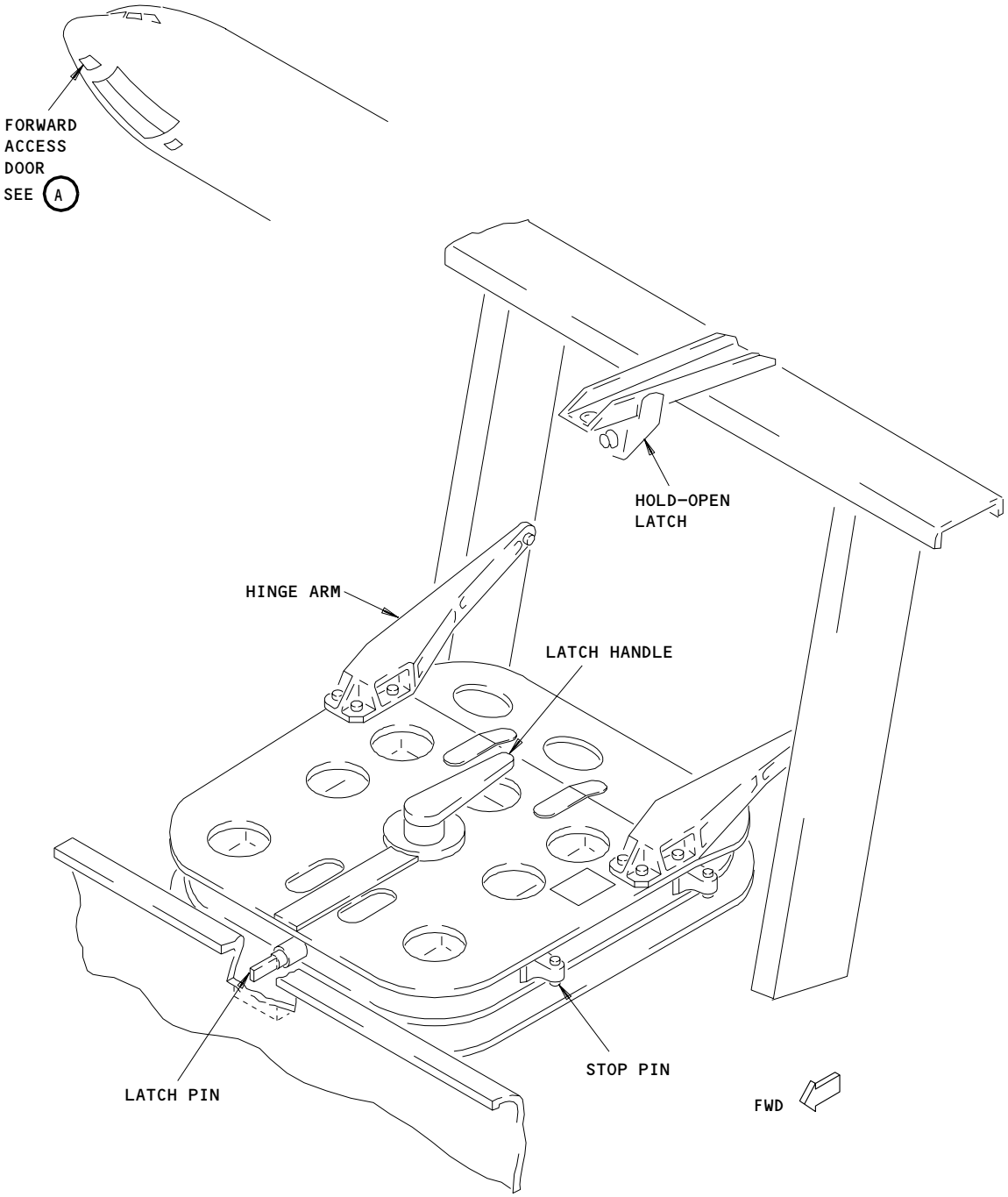

FORWARD ACCESS DOOR

(A)

Forward Access Door
Figure 912

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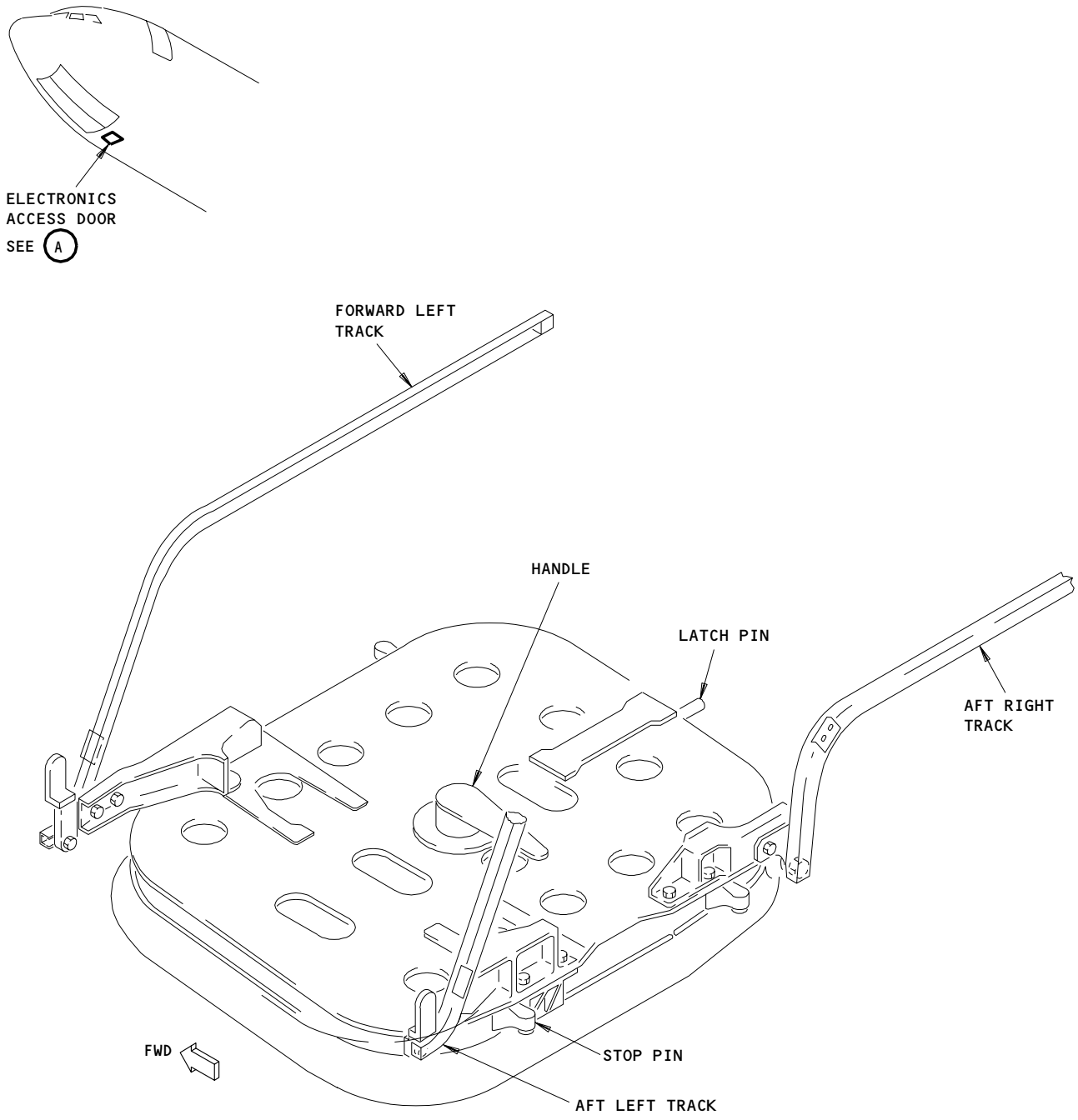

ELECTRONICS ACCESS DOOR

A

Electronics Access Door
Figure 913

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(d) Move the inner door handle to the closed position.
1) Make sure the external door handle is flush with the skin.
2) Make sure the external red disarm lever stays inboard.
(e) Move the inner arm/disarm handle from DISARM to ARM to DISARM.
(f) Make sure the external door handle and the red disarm lever are flush with the external skin.

S 719-297
(2) Door Latched and Armed Check
(a) Move the inner door handle to the open position.
(b) Use the inner door handle to close and latch the door.
(c) Use the inner arm/disarm lever to arm the door.
(d) Look through the inner view port in the upper door liner.
(e) Make sure the latch pin is across the guide fitting clevis.
(f) Look through the girt bar lock down windows at the floor level.
(g) Make sure the yellow flags fully fill the windows.

S 849-298
(3) Prepare the Airplane for Flight
(a) The external door handle check must be satisfactory.
(b) The door closed and latched check must be satisfactory.
(c) Disarm the door.
(d) Put a placard on the ENTRY DOOR light - "LIGHT INOP".
(e) Put a placard near EICAS - "ENTRY DOOR INDICATION INOP".

F. Off-Wing Compartment Door Check

S 849-299
(1) Prepare to do the Door Latched Check

WARNING: REFER TO AMM 25-65-00/201 FOR THE PROCEDURE TO DISARM THE OFF-WING ESCAPE SYSTEM. IF YOU INCORRECTLY DISARM THE OFF-WING ESCAPE SYSTEM, THE ESCAPE SLIDE CAN ACCIDENTALLY INFLATE AND CAUSE INJURY OR DAMAGE.

(a) Disarm the off-wing escape system (AMM 25-65-00/201).
(b) Put a proctective cover on the work area of the wing surface.
(c) Open the integrator access door.

S 729-303
(2) Door Latched Check

WARNING: MAKE SURE YOU MOVE THE INTEGRATOR LOCK HANDLE THE FULL 0.4 INCH. MAKE SURE YOU CAN FEEL THE DETENT WHICH IS IN THE MIDDLE OF THE 0.4 INCH TRAVEL. IF THE INTEGRATOR LOCK HANDLE IS IN AN INCORRECT POSITION, THE ESCAPE SLIDE CAN INFLATE AND CAUSE INJURY OR DAMAGE.

(a) Pull the integrator lock handle outboard approximately 0.4 inch to the UNLOCK position.
(b) Put the integrator wrench into the wrench socket of the latch/unlatch cam.

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(c) Turn the cam fully aft to open the slide compartment door latches.

NOTE: The cross pin is moved aft by the cam.

(d) Pull the intergrator lock handle outboard to the SAFETY position.

CAUTION: DO NOT PERMIT THE SLIDE COMPARTMENT DOOR TO OPEN WITHOUT A SUPPORT. DAMAGE TO THE DOOR CAN OCCUR.

(e) Open the slide compartment door.
(f) Close the slide compartment door and hold it in the closed position.
(g) Push the intergrator lock handle inboard to the UNLOCK position.
(h) Put the integrator wrench into the wrench socket of the cam.
(i) Turn the cam fully forward to close the slide compartment door latches.

NOTE: The cross pin is moved forward by the cam.

(j) Make sure the slide compartment door is pulled flush with the skin.

WARNING: MAKE SURE YOU MOVE THE INTEGRATOR LOCK HANDLE THE FULL 0.4 INCH. MAKE SURE YOU CAN FEEL THE DETENT WHICH IS IN THE MIDDLE OF THE 0.4 INCH TRAVEL. IF THE INTEGRATOR LOCK HANDLE IS IN AN INCORRECT POSITION, THE ESCAPE SLIDE CAN INFLATE AND CAUSE INJURY OR DAMAGE.

(k) Push the integrator lock handle inboard to the LOCKED position.
(l) Make sure the cross pin is fully forward in the slot.
(m) Make sure the lcok handle is pushed fully forward to the LOCKED position.

S 849-304

(3) Prepare the Airplane for Flight
(a) Close the integrator access door.
(b) Remove the protective cover from the work area of the wing surface.
(c) Arm the off-wing escape system (AMM 25-65-00/201).
(d) Put a placard next to the EMER DOORS light - "LIGHT INOP".
(e) Put a placard near EICAS - "EMER DOOR INDICATION INOP".

G. Standard Cargo Door Check

S 219-306

(1) Do a check of the aft cargo door.
(a) Make sure the door is smooth with the fuselage.
(b) Make sure the vent doors are fully closed.

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(c) Make sure the DOOR CLOSE light on the external door control panel is on.

S 849-307

(2) Prepare the airplane for flight.
(a) Put a placard next to the CARGO DOORS light - "LIGHT INOP".
(b) Put a placard near EICAS - "CARGO DOOR INDICATION INOP".

H. Large Cargo Door Check

S 219-308

(1) Do a check of the large forward cargo door.
(a) Make sure the door is smooth with the skin.
(b) Make sure the vent doors are fully closed.
(c) Make sure the latch lock handle and the release button are smooth with the external skin.

S 849-309

(2) Prepare the airplane for flight.
(a) Put a placard next to the CARGO DOORS light - "LIGHT INOP".
(b) Put a placard near EICAS - "CARGO DOOR INDICATION INOP".

I. Bulk Cargo Door Check

S 219-310

(1) Do a check of the bulk cargo door.
(a) Make sure the bulk cargo door is smooth with the fuselage.
(b) Make sure the latch handle is smooth with the door skin.
(c) Make sure the door does not open in when you push on it.

S 849-311

(2) Prepare the airplane for flight.
(a) Put a placard next to the CARGO DOORS light - "LIGHT INOP".
(b) Put a placard near EICAS - "CARGO DOOR INDICATION INOP".

J. Over-Wing Escape Hatch Check

S 219-312

(1) Do a check of the over-wing escape hatch.
(a) Make sure the emergency pull handle is in the normal hatch closed position.
(b) Make sure the hatch lining is smooth with the cabin lining from the top of the door to the bottom of the door.
(c) Push out at the top of the inner side of the door and make sure the door does not move outboard.

S 849-313

(2) Prepare the airplane for flight.
(a) Put a placard next to the EMER DOORS light - "LIGHT INOP".
(b) Put a placard near EICAS - "EMER DOOR INDICATION INOP".

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K. Forward Access Door Check

S 219-314

(1) Do a check of the forward access door.
  (a) Make sure the door is smooth with the fuselage.
  (b) Make sure the door latch handle is smooth with the door skin.
  (c) Make sure the latch pin is engaged.
    1) Push on the door.
    2) Make sure the door does not move up or in.

S 849-315

(2) Prepare the airplane for flight.
  (a) Put a placard next to the ACCESS DOORS light - "LIGHT INOP".
  (b) Put a placard near EICAS - "ACCESS DOOR INDICATION INOP".

L. Electronics Access Door Check

S 219-316

(1) Do a check of the eletronics access door.
  (a) Make sure the door is smooth with the fuselage.
  (b) Make sure the door latch handle is smooth with the door skin.
  (c) Make sure the latch pin is engaged.
    1) Push on the door.
    2) Make sure the door does not move up or in.

S 849-317

(2) Prepare the airplane for flight.
  (a) Put a placard next to the ACCESS DOORS light - "LIGHT INOP".
  (b) Put a placard near EICAS - "ACCESS DOOR INDICATION INOP".

TASK 52-00-00-449-162

23. DDG 52-71-1 Restoration - Door Indication System - Inoperative

A. General

(1) This task contains a step to put the airplane back to its usual condition after operation under DDG requirement 52-71-1, Door Indication System - Inoperative.

B. Access

(1) Location Zone

113	Area Forward of Nose Landing Gear Wheel Well (Left)
119	Main Equipment Center (Left)
195	Wing to Body - Aft Upper Half (Left)
196	Wing to Body - Aft Upper Half (Right)
811	Bulk Cargo Door
821	Forward Cargo Door
822	Aft Cargo Door
831	Forward Entry Door
833	Aft Entry Door
841	Forward Service Door
843	Aft Service Door

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(2) Access Panel

113AL	Forward Access Door
119AL	Electronics Access Door
195EL	Off-Wing Slide Compartment Door
195ER	Off-Wing Slide Compartment Door
195ML	Integrator Access Door
195MR	Integrator Access Door

C. Door Indication System Repair

S 819-318

(1) Do these steps to correct the fault:
   (a) Go to the fault code diagram in chapter 52 of the FIM and find the fault code.
   (b) Go to the fault code index and find the fault code.
   (c) Find the fault isolation reference for that fault code.
   (d) Go to the fault isolation reference task in the FIM and do the steps in the task.

D. Return the airplane to its usual condition.

S 029-319

(1) Remove the placard from the door indication light.

S 029-320

(2) Remove the placard near EICAS.

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BULK CARGO COMPARTMENT INSPECTION - MAINTENANCE PRACTICES

TASK 52-05-03-212-801

1. Bulk Cargo Compartment Doorstops
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Inspection

      S 212-001
      (1) Do the inspection.

TASK 52-05-03-212-802

2. Bulk Cargo Compartment Door
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Inspection

      S 212-002
      (1) Do the inspection.

TASK 52-05-03-212-803

3. Forward Cargo Compartment Door
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Inspection

      S 212-003
      (1) Do the inspection.

TASK 52-05-03-212-804

4. Cargo Doorstops
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Inspection

      S 212-004
      (1) Do the inspection.

TASK 52-05-03-212-805

5. Aft Cargo Door
   A. General
      (1) This procedure is a scheduled maintenance task.

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B. Inspection

S 212-005
(1) Do the inspection.

TASK 52-05-03-212-806

6. Entry and Galley Service Doors
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Inspection

S 212-006
(1) Do the inspection.

TASK 52-05-03-212-807

7. Entry and Galley Service Doors
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Inspection

S 212-007
(1) Do the inspection.

TASK 52-05-03-212-808

8. Entry and Galley Service Doors
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Inspection

S 212-008
(1) Do the inspection.

TASK 52-05-03-212-809

9. Overwing Emergency Exit Hatch
   A. General
      (1) This procedure is a scheduled maintenance task.
   B. Inspection

S 212-009
(1) Do the inspection.

TASK 52-05-03-212-816

10. Standard Cargo Door - Forward and Aft
    A. General
       (1) This procedure is a scheduled maintenance task.

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B. Inspection

S 212-016
(1) Do the inspection.

TASK 52-05-03-212-817
11. Forward Large Cargo Door
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-017
(1) Do the inspection.

TASK 52-05-03-212-818
12. Forward Large Cargo Door
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-018
(1) Do the inspection.

TASK 52-05-03-212-819
13. Forward Large Cargo Door
A. General
(1) This procedure is a scheduled maintenance task.
B. Inspection

S 212-019
(1) Do the inspection.

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DOOR SEALS - APPROVED REPAIRS

1. General
   A. This procedure contains one task. The task is the repairs of the door seals.
   B. This procedure can be used to repair the seals on all pressure doors.
   C. The pressure seals used in these areas are subject three different types of failure or damage as follows:
      (1) Delamination of joints occurs where the mechanical bulb seal section joins the diaphragm seal section on the door seals (Figure 801 for this type of joint). The fabric-reinforced rubber which forms the joint peels loose from the mechanical or diaphragm seal. Primary cause of this failure is poor bonding.
      (2) Cuts, nicks, splits or tears can occur in the pressure seal.
      (3) Splice failure occurs on those continuous seals formed by splicing the ends of the extruded bulb section. The splices are reinforced with fabric. On emergency exit hatch seals, the ends of the seal are joined by a thick layer of vulcanized rubber. Flexing of the seal causes separation of the bond between this material and the ends of the extruded section.
   D. Seal repair procedures for the silicone rubber door and hatch seals may be divided into three general methods:
      (1) Method A is a procedure for repairs in which the cut, delaminated, or otherwise separated surfaces are rejoined by adhesive only.
      (2) Method B consists of repairs with an adhesive reinforced with open mesh fabric. The fabric is embedded in the adhesive on theseal surface.
      (3) Method C repair procedure comprises the replacement of a section of seal using adhesive, and when required, fabric cemented into place.
   E. Adhesives used for repairs are in three category types as follows:
      (1) Type I is a two-part, air-cured adhesive.
         (a) Use type I adhesive only on those parts of the blade seal where it is not necessary to have a flexible bond. Do not use on the diaphragm seals or on the seal lip of the blade seals.
      (2) Type II is a one-part, air-cured adhesive. It is flexible at low temperatures.
         (a) Use type II adhesive for repairs to the seal lip on the blade seals where it is necessary that the adhesive is flexible to make an air-tight seal.
      (3) Type III is a quick repair air-cured adhesive (two-part kit) . It is very flexible.
         (a) Use type III adhesive for fast repairs. You can use it in all locations on the seal.

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F. Make all of the repairs to the pressure seals with the seal in a position for easy access and when the load on the seal is as small as possible. For seals that are installed, it can be necessary to remove one or more parts of the retaining flange to do work on the damaged area.

TASK 52-09-00-108-047

2. Seal Repair Procedure Surface Preparation

A. General

(1) Make all of the seal repairs with the seal in a position for easy access and when the load on the seal is as small as possible. For seals that are installed, it may be necessary to remove parts of the seal retainer to do work on the damaged area.

(2) Replace the seal if the damage is extensive.

B. Consumable Materials

(1) B00068 Alcohol - Ethyl (Denatured) - AMS 3002F

(2) B00130 Alcohol - Isopropyl

(3) B00137 Abrasive - Garnet Coated Paper

(4) B00148 Solvent - Methyl Ethyl Ketone (MEK)

(5) G00034 Cotton Wiper - Process Cleaning Absorbent Wiper - BMS 15-5

C. Procedure

S 018-048

(1) Make sure there is access to the seal.

(a) If it is necessary, remove one or more sections of seal retainer to get access to a damaged section of seal.

S 108-049

(2) Clean the area of the pressure seals with the seal in a position for easy access, do the steps that follow:

(a) Rub the area and approximately 2 inches (51 mm) or more on all sides of the area with a clean cotton wiper that is wet with one of the solvents that follow:

1) Methyl Ethyl Ketone.

2) Ethyl Alcohol (Denatured).

3) Isopropyl Alcohol.

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(b) Lightly rub the surface to be repaired with the abrasive (180 grit minimum).
(c) Wipe dry with a cotton wiper before solvent evaporates.
1) If necessary repeat steps to completely remove dirt, oil, paint, and other soils.

NOTE: Clean surfaces are necessary to make a good bond.

TASK 52-09-00-398-001

3. Seal Repair Procedures For Specified Types of Seal Damage

A. Consumable Materials

(1) A00336 Adhesive - Silicone Pressure Sensitive, Momentive Performance Materials Silgrip PSA529 Base (Formerly GE Silicones)
(2) A50112 Catalyst - Silgrip Silicone Pressure Sensitive Adhesive Catalyst, Momentive Performance Materials SRC-18 Catalyst A00281 Adhesive - Silicone Rubber DC3145
(3) A50025 Adhesive - Condensation Cure, Mouldmaking Rubber, Momentive Performance Materials RTV430 Base (Formerly GE Silicones)
(4) A50234 Catalyst - Momentive Performance Materials Beta 5 Catalyst
(5) A50235 Catalyst - Momentive Performance Materials Beta 11 Catalyst
(6) A50026 Adhesive - One-Component, Flurosilicone, Momentive Performance Materials FRV1106 (Formally GE Silicones)
(7) A50031 Sealant - Dow Corning 732 Multi-Purpose Sealant
(8) A50067 Adhesive - Momentive Performance Materials RTV 102
(9) A00635 Adhesive - Momentive Performance Materials RTV 108
(10) A00281 Adhesive - Dow Corning 3145 RTV
(11) A50094 Sealant - Kit, Two-Part Thixotropic Silicone Elastomer, Dow Corning 93-076-1/2 Aerospace Sealant and Catalyst
(12) A50233 Sealant - Kit, Two-Part Thixotropic Silicone Elastomer, Dow Corning 93-076-2 Aerospace Sealant and Catalyst

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B. Access

(1) Location Zones

811 Bulk Cargo Door
821 Forward Cargo door
822 Aft Cargo Door
831 Forward Entry Door
832 Overwing Emergency Exit Hatch (Left) *[1]
832 Overwing Emergency Exit Hatch (Forward/Left) *[2]
833 Aft Entry Door
834 Overwing Emergency Exit Hatch (Aft/Left) *[2]
841 Forward Service Door
842 Overwing Emergency Exit Hatch (Right) *[1]
842 Overwing Emergency Exit Hatch (Forward/Right) *[2]
843 Aft Service Door
844 Overwing Emergency Exit Hatch (Aft/Right) *[2]

*[1] AIRPLANES WITH ONE HATCH OVER EACH WING.
*[2] AIRPLANES WITH TWO HATCHES OVER EACH WING.

C. Prepare for the Door Seal Repair

S 918-055

(1) List of Type I Adhesives:

NOTE: Type I adhesives are recommended for areas of the blade seal where it is not necessary for the seal to be highly flexible. Do not use Type I adhesives on diaphragm seals or on the sealing lip of blade seals.

NOTE: Refer to manufacturer's instructions for specific cure times based on local conditions of where the product is used.

(a) Silgrip PSA 529 adhesive base and SRC-18 Catalyst.
1) Mixing ratio is 100 parts PSA 529 base to 3.3 parts SRC-18 catalyst.

(b) RTV430 rubber base with Beta 5 or Beta 11 catalysts.
1) Mixing ratio is 10 parts RTV430 base to 1 part Beta 5 catalyst.
2) Mixing ratio is 10 parts RTV430 base to 1 part Beta 11 catalyst.

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S 918-057
(2) List of Type II Adhesives:

NOTE: Type II adhesives are recommended for areas of the seal lip on the blade seals where it is necessary that the adhesive is flexible to make an air-tight seal.

NOTE: Refer to manufacturer's instructions for specific cure times based on local conditions of where the product is used.

(a) FRV1106 adhesive.
(b) Dow Corning 732 multi-purpose sealant.
(c) Dow Corning 3145 RTV adhesive.
(d) RTV 102 adhesive.
(e) RTV 108 adhesive.

S 918-058
(3) List of Type III Adhesives:

NOTE: Type III adhesives are recommended for fast repairs. You can use it in all locations on the seal.

NOTE: Refer to manufacturer's instructions for specific cure times based on local conditions of where the product is used.

(a) Dow Corning 93-076-1/2 aerospace sealant and catalyst kit.
1) Dow Corning 1204 primer if used, enhances bonding but is not manditory for the sealant to fully cure.
(b) Dow Corning 93-076-2 aerospace sealant and catalyst kit.
1) Dow Corning 1204 primer if used, enhances bonding but is not manditory for the sealant to fully cure.

D. Repair Procedures for Specified Types of Seal Damage

S 308-059
(1) Repair a delaminated seal as follows:
(a) When the delamination is minor (0.50 inch square (322.58 mm square) maximum), repair the seal as follows:
1) Use Method A with Type I adhesives to bond the delaminated seal.

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(b) When the delamination is only in the edge of the splice and sealing capability is not decreased, repair the seal as follows:
1) Cut off the delaminated flap with a sharp knife.
2) Apply a thin layer of Type II or Type III adhesive.
(c) When the delamination is on the sealing edge, repair the seal as follows:
1) Use Method A or Method B with Type II adhesive to bond the delaminated seal.

S 398-027
(2) Repair cuts or splits ihe seal in the joint area with the steps that follow:
(a) Use Method B with Type II or Type III adhesives to bond the damaged seal.
(b) Push the surfaces together tightly to make sure the seal fully touches the adhesive.
(c) Make sure you let the adhesive cure the minimum time necessary.

S 308-060
(3) Repair Cuts or Splits in Blade Section of Seal with the steps that follow:
(a) Repair small splits or cuts (0.2 inch (5.1 mm) maximum length).
1) Use Method A with Type I, Type II or Type III adhesives to bond the damaged seal.
2) Push the surfaces together tightly to make sure the seal fully touches the adhesive.
3) Make sure you let the adhesive cure the minimum time necessary.
(b) Repair large splits up to 1.0 inch (25.40 mm) maximum length.
1) Pull the seal blade to open the cut.
2) Carefully drill a hole in the end of the cut.

NOTE: You can use a sharpened metal tube as a drill bit to cut the hole.

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3) Smooth out the hole and miter the edges.
4) Use Method A with Type II or Type III adhesives to bond the damaged seal.
5) Push the surfaces together tightly to make sure the seal fully touches the adhesive.
6) Make sure you let the adhesive cure the minimum time necessary.

(c) Repair large splits up to 2.0 inches (51 mm) maximum length.
1) Pull the seal blade to open the cut.
2) Carefully drill a hole in the end of the cut.

NOTE: You can use a sharpened metal tube as a drill bit to cut the hole.

3) Smooth out the hole and miter the edges.
4) Cut a piece of Dacron fabric to overlay the sides and the ends of the split by 0.5 inch (12.7 mm).
5) Use Method B with Type I, Type II or Type III adhesives to bond the damaged seal.
6) Push the surfaces together tightly to make sure the seal fully touches the adhesive.
7) Make sure you let the adhesive cure the minimum time necessary.

S 308-061

(4) Repair damaged sealing lip on seal blade up to 3.0 inches maximum length with the steps that follow:

NOTE: Repair damage when it is not necessary to replace the seal blade section.

(a) Cut a piece of Dacron fabric to overlap the sides and the ends of the damaged areas by 0.5 inch (12.7 mm).
(b) Use Method B with Type II or Type III adhesives to bond the damaged seal.
1) Make sure the Dacron patch covers the lip of the seal and ends within 0.25 inch (6.35 mm) of the seal retainer on the two sides of the seal.
2) The patch cannot end on the flat sealing area of the blade.
(c) Push the surfaces together tightly to make sure the seal fully touches the adhesive.
(d) Make sure you let the adhesive cure the minimum time necessary.

S 308-062

(5) Repair damage when a part of the seal is not there with the steps that follow:
(a) Trim all ragged edges of the seal.
(b) Cut a similar section of a surplus seal to patch the seal.
(c) Cut the Dacron fabric to overlap the sides and the ends ofthe splice areas by 0.5 inch (12.7 mm).

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(d) Use Method C with Dacron fabric and Type II or Type III adhesives to bond the piece of replacement seal to the seal.
1) Make sure the patch covers the lip of the seal and ends within 0.25 inch (6.35 mm) of the seal retainer on the two sides of the seal.
2) The patch cannot end on the flat sealing area of the blade.
(e) Push the surfaces together tightly to make sure the seal fully touches the adhesive.
(f) Make sure you let the adhesive cure the minimum time necessary.

S 308-063
(6) Repair the damaged splices with the steps that follow:
(a) Repair splice damage on entry door and galley service door seals as follows:
1) Repair the splice with Method A or Method B with one of the Type II or Type III adhesives.
2) Push the surfaces tightly together to make sure the adhesive fully touches the repair area.
3) Make sure the adhesive cures the minimum time necessary.
(b) Repair separation of splice bonds on cargo door and escape exit seals as follows:
1) Repair the splice with Method B with one of the Type II or Type III adhesives.
2) Cut the fabric 2 inches (51 mm) in width, and sufficiently long to put fully around the seal.
3) Push the surfaces tightly together to make sure the adhesive fully touches the repair area.
4) Make sure the adhesive cures the minimum time necessary.
5) Apply more light layers of adhesive with the brush.
6) Make the edges of the patch smooth to make sure the seal lip is flat.
7) To prevent a rigid area on the seal lip, do not apply too much adhesive.

S 308-064
(7) Repair a damaged seal flange (3 inches (76.20 mm) maximum patch length) as follows:
(a) If it is not necessary to replace the flange, do these steps:
1) Repair the seal using Method B with a Type II or Type III adhesive.
2) Cut the fabric to make an overlap of 0.50 inches (12.70 mm) on the sides and ends of the split.
3) Push the surfaces tightly together to make sure the adhesive fully touches the repair area.
4) Make sure the adhesive cures the minimum time necessary.
(b) If a part of the flange is missing, do these steps:
1) Trim the seal edge adjacent to the missing part of the flange.
2) Cut a piece of replacement flange that is a correct fit for the missing part.

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3) Use Method C with a Type II or Type III adhesive, and bond the replacement seal patch to the seal with a Type II adhesive or a Type III adhesive.
4) Cut the fabric to make an overlap of 0.50 inches (12.70 mm) on the sides and ends of the split.
5) Push the surfaces tightly together to make sure the adhesive fully touches the repair area.
6) Make sure the adhesive cures the minimum time necessary.

S 308-065

(8) Repair large damage to seal parts as follows:
(a) Find the seal splices in the straight parts of the seal.
(b) Remove the full damaged area or section.
(c) Replace the damaged area with a piece of replacement seal that has the same dimensions.
(d) Make mitered cuts on the seal surfaces that touch.
(e) Fill them with a Type II or Type III adhesive.
(f) Do Method B and Method C to bond the seal splices.
(g) Push the surfaces tightly together to make sure the adhesive fully touches the repair area.

TASK 52-09-00-358-050

4. Seal Repair Procedure (Method A)

A. General
(1) This procedure is for repairs that only use adhesive.

B. Procedure

S 308-051

(1) Do the steps that follow repair the seal with adhesive only:
(a) Apply the adhesive to all of the areas to be bonded.
(b) Put a load on the seal to make sure the seal fully touches the adhesive.
(c) Let the adhesive cure the minimum time necessary before you put a load on it.

TASK 52-09-00-358-056

5. Seal Repair Procedure (Method B)

A. General
(1) This procedure is for repairs with an adhesive reinforced with open mesh fabric. The fabric is embedded in the adhesive on theseal surface.

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B. Consumable Materials
(1) G00028 Fabric - Dacron, 70/34 Mesh
(Mohawk Dacron Fabrics - D117 Fabric)
(2) G00029 Fabric - Polyester, 30/17 Mesh
(Mohawk Polyester Fabrics - P118 Fabric,
Formerly Mohawk Dacron D118 Fabric)

C. Procedure

S 308-052
(1) Do the steps that follow repair the seal with adhesive and open-meshed fabric:
(a) Cut the fabric to have the correct fit for the patch area. Use one of the fabrics that follow:
1) D117 Dacron Fabric.
2) P118 polyester fabric.
(b) Apply the adhesive to the repair area on the seal.
(c) Push the fabric patch into the wet adhesive and apply more adhesive on top of the patch.
(d) Make the surface smooth of unwanted adhesive and put a load on to make sure the seal fully touches the adhesive.
(e) Apply pressure to make sure the parts are fully bonded.
(f) Let the adhesive cure the minimum time necessary before you put a load on it.

TASK 52-09-00-358-053

6. Seal Repair Procedure (Method C)

A. General
(1) This procedure replaces the damaged seal part with an equivalent piece of replacement seal.

B. Consumable Materials
(1) G00028 Fabric - Dacron, 70/34 Mesh
(Mohawk Dacron Fabrics - D117 Fabric)
(2) G00029 Fabric - Polyester, 30/17 Mesh
(Mohawk Polyester Fabrics - P118 Fabric,
Formerly Mohawk Dacron D118 Fabric)

C. Procedure

S 308-054
(1) Do the steps that follow repair the seal with equivalent piece of replacement seal:
(a) Cut a piece of replacement seal that will have the correct fit for the repair area.
(b) Miter the seal and the replacement piece of seal to the correct fit.

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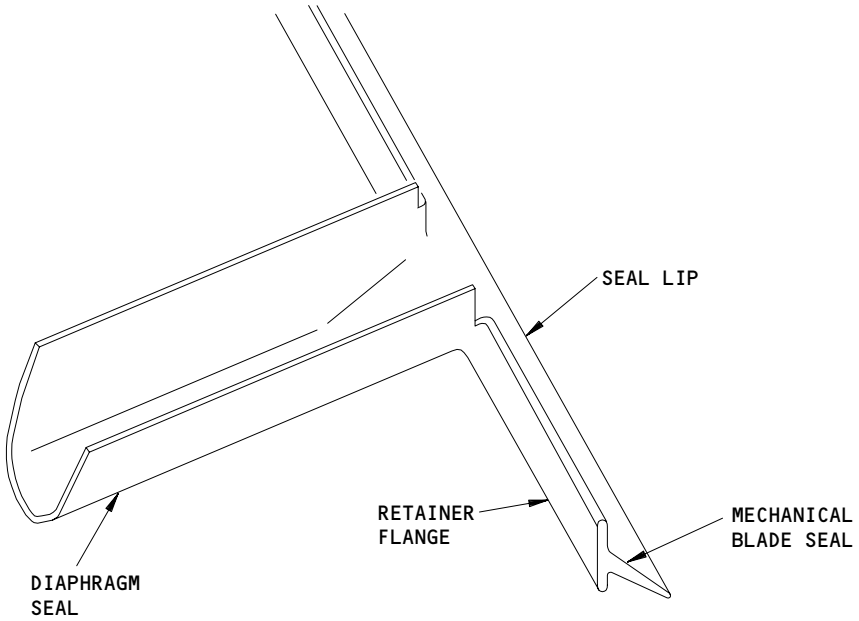
(c) Do one of the procedures that follow:
1) To repair the seal with adhesive only:
a) Apply the adhesive to all of the areas to be bonded.
b) Put a load on the seal to make sure the seal fully touches the adhesive.
c) Let the adhesive cure the minimum time necessary before you put a load on it.
2) To repair the seal with adhesive and open-meshed fabric:
a) Cut the fabric to have the correct fit for the patch area. Use D117 dacron fabric or P118 polyester fabric.
b) Apply the adhesive to the repair area on the seal.
c) Push the fabric patch into the wet adhesive and apply more adhesive on top of the patch.
d) Make the surface smooth of unwanted adhesive and put a load on to make sure the seal fully touches the adhesive.
e) Apply pressure to make sure the parts are fully bonded.
f) Let the adhesive cure the minimum time necessary before you put a load on it.



Pressure Seals
Figure 801

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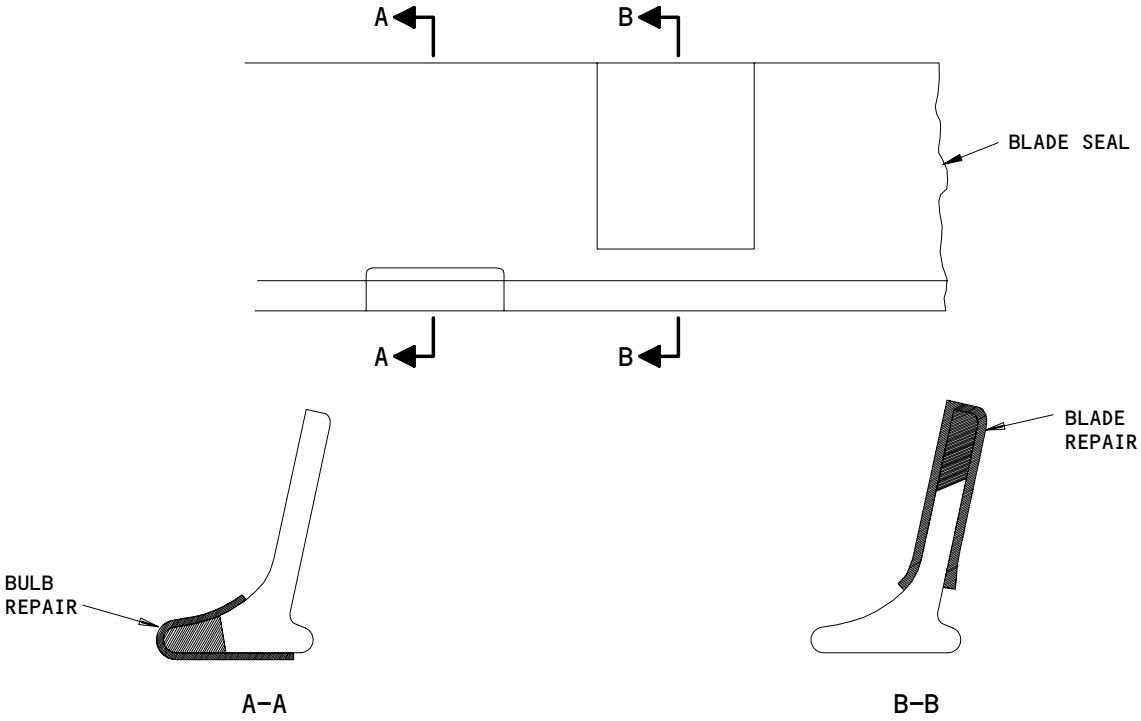

Blade Seal Repairs
Figure 802

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ENTRY/SERVICE/CREW DOOR SEALS - REMOVAL/INSTALLATION

1. General
   A. This procedure has these tasks:
      (1) A removal of the door seal.
      (2) An installation of the door seal.

TASK 52-09-01-004-001

2. Remove the Entry/Service Door Seal (Fig. 401)
   A. References
      (1) 52-11-01/401, Entry/Service Doors
   B. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door
   C. Procedure

      S 014-002
      (1) Remove the door if necessary (AMM 52-11-01/401).

      S 024-003
      (2) Pull the seal from the seal retainer around the edge of the door until the seal is removed (View A-A, Fig. 401).

TASK 52-09-01-404-004

3. Install the Entry/Service Door Seal (Fig. 401)
   A. Equipment
      (1) Door Seal Installation Tool - B52004-1
   B. Consumable Materials
      (1) B00052 Soap - Liquid Turco 1526
   C. References
      (1) 52-11-01/401, Entry/Service Doors
   D. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

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E. Procedure

S 424-005
(1) Put the seal into the correct position around the edge of the door.

S 224-006
(2) Make sure the location indicators on the seal align with the corner location indicators on the seal retainer +/- 0.50 inch (View A, Fig. 401).

S 424-007
(3) Install the seal into the seal retainer at each corner of the door for a distance of 1 to 2 inches (View A-A, Fig. 401).
  (a) Install the inboard edge of the seal into the inboard side of the seal retainer.
  (b) Use the door seal installation tool to push the outboard edge of the seal into the outboard edge of the seal retainer.

    NOTE: Use the liquid soap to lubricate the seal during the installation.

S 424-008
(4) Install the seal into the seal retainer at the center of each edge of the door.

S 424-009
(5) Install the remaining parts of the seal.

S 424-010
(6) Make the seal smooth. Remove the wrinkles and the waviness in the lip of the seal.

S 414-013
(7) Install the door (Ref 52-11-01).

S 864-011
(8) Close and lock the door.

S 214-012
(9) Visually make sure the lip of the seal is smooth and flat against the skin at the edge of the door cutout. Make sure the seal touches the skin at the edge of the door cutout in all locations.

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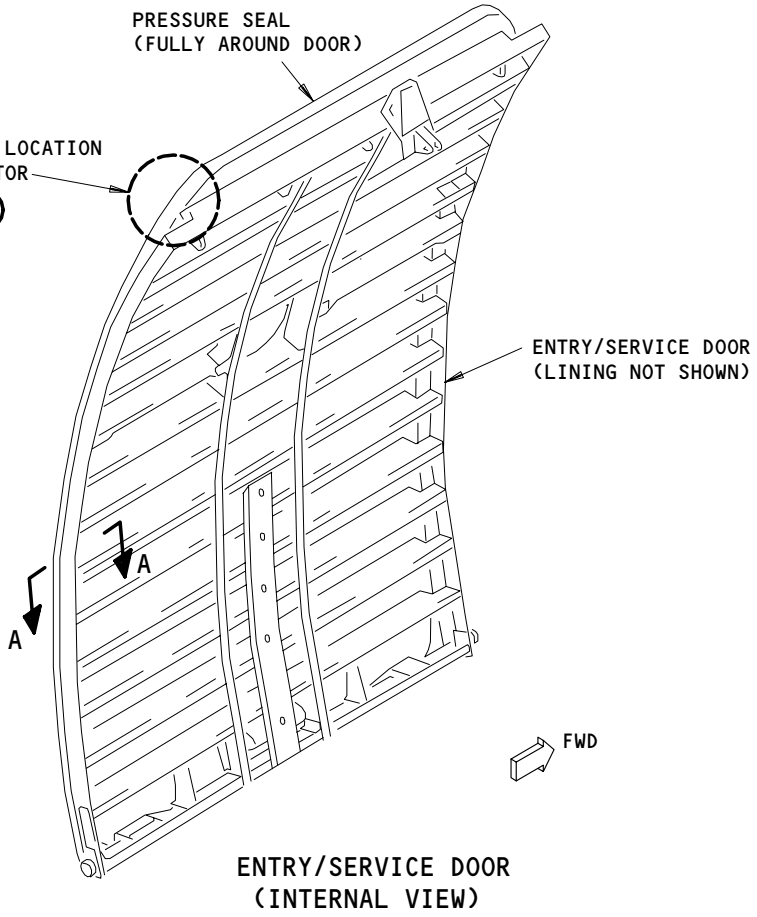
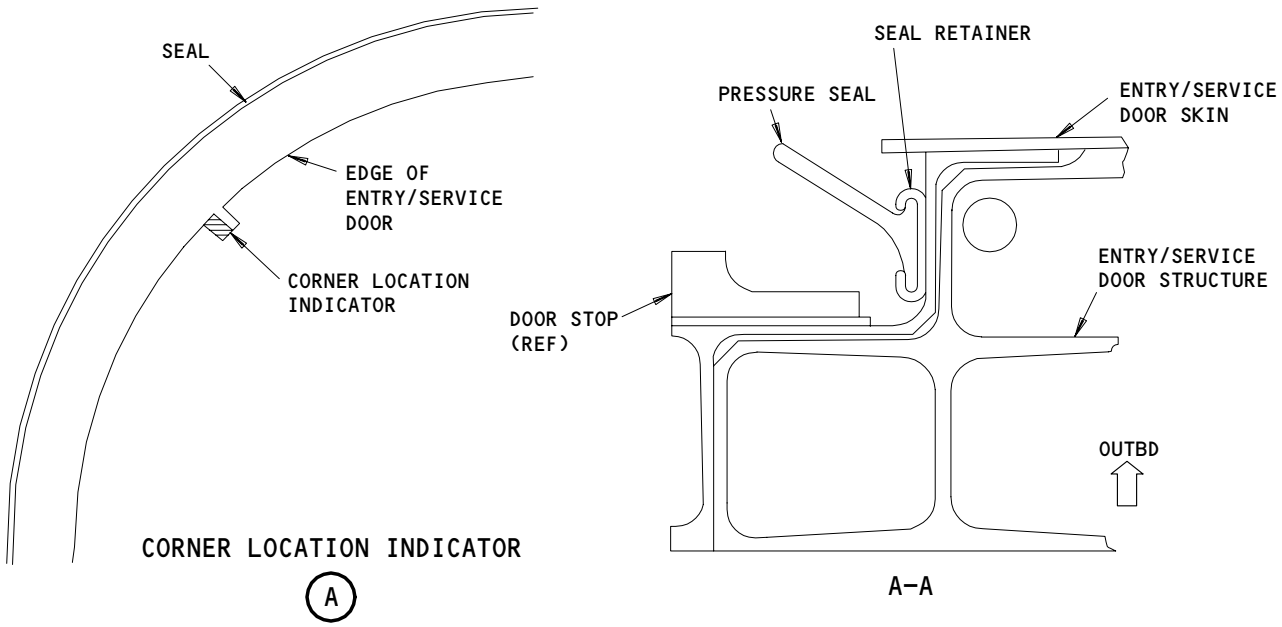


ENTRY/SERVICE DOOR
(INTERNAL VIEW)



CORNER LOCATION INDICATOR
(A)

A-A

Entry/Service Door Seal
Figure 401

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30435

CARGO DOOR SEALS - MAINTENANCE PRACTICES

1. General
   A. This procedure contains the tasks that follow:
      (1) The cleaning of the cargo door seals.
      (2) The repair of the cargo door seals.

TASK 52-09-02-102-004

2. Cargo Door Seal Cleaning
   A. Consumable Materials
      (1) G00034, Cotton Wiper-Process Cleaning Absorbent Wiper, BMS 15-5
   B. Access
      (1) Location Zones
          811 Bulk Cargo Door
          822 Aft Cargo Door

   C. Procedure

      S 102-005
      (1) Clean the cargo door seal as follows:
          (a) Wipe around the cargo door seal with a clean dry cloth.
          (b) Remove all dirt and unwanted material.

TASK 52-09-02-352-001

3. Repair the Standard Cargo Door Seals
   A. Consumable Materials
      (1) A00281 Sealant - Dow Corning RTV 3145
      (2) B00148 Methyl Ethyl Ketone - ASTM D740
      (3) G00034 Cotton Wiper - Process Cleaning Absorbent Wiper, BMS 15-5
      (4) B00062 Solvent - Acetone - ASTM D329
      (5) B00130 Alcohol - Isopropyl - TT-I-735
      (6) B00068 Alcohol - Ethyl(Denatured) - MIL-E-51454, Type II
   B. Access
      (1) Location Zone
          822 Aft Cargo Door

   C. Procedure

      S 352-002
      (1) If there are small clearances between the seal and the seal depressor in the splice area, do the steps that follow:

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(a) Clean the seal with Acetone, isopropyl alcohol, or ethyl alcohol and the cotton wiper.
(b) Apply the sealant to the area of the seal blade that you repair. Make sure the sealant makes a smooth surface with the seal depressor.
(c) Let the sealant cure.

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CARGO DOOR SEALS - REMOVAL/INSTALLATION

1. General
   A. This procedure contains the tasks that follow:
      (1) The removal of the bulk cargo door seal.
      (2) The installation of the bulk cargo seal.
      (3) The check of the bulk cargo door seal.
      (4) The adjustment of the bulk cargo door seal.
      (5) The removal of the standard cargo door seals.
      (6) The installation of the standard cargo door seals.
      (7) The check of the standard cargo door seals.
      (8) The removal of the large cargo door seal.
      (9) The installation of the large cargo door seal.
      (10) The removal of the seal from the vent doors in the large cargo door.
      (11) The installation of the seal on the vent doors in the large cargo door.
   B. The standard aft cargo door seal has two pieces of the seal attached at the top and the bottom. The pieces of the seal have areas of overlap along the edges of the door. The seal is held in position by channel-type extrusions along the door and frame edges and is attached at the end points.
   C. The large forward cargo door seal has a one-piece seal attached to the door. The one-piece seal is held by channel-type extrusions along the edge of the cargo door.

TASK 52-09-02-004-131

2. Bulk Cargo Door Seal Removal
   A. Access
      (1) Location Zones
         (a) 811 Bulk Cargo Door
   B. Procedure

      S 014-132
      (1) Open the bulk cargo door sufficiently to get access to the seal for the removal.

      S 024-133
      (2) Pull and push the seal to disengage it from the seal retainer.

      S 024-134
      (3) Remove the seal.

TASK 52-09-02-404-124

3. Bulk Cargo Door Seal Installation (Fig. 401)
   A. Equipment
      (1) B52004-1 Tool - Installation, Door Seal

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B. Consumable Materials
(1) B00052 Soap, Liquid - Turco 1526 (optional)
(2) B50093 Cleaner, Alkaline - Kelite Spraywhite E (optional)
(3) B00003 Cleaner, Emulsion - GMC528-B (optional)
C. Access
(1) Location Zones
(a) 811 Bulk cargo door
D. Procedure

S 424-125
(1) Install the seal as follows:
(a) Put the seal in its correct position on the door.

NOTE: The flap of the seal goes in the outboard direction.

(b) Move the seal onto the door over the seal retainer. keep it aligned correctly.

CAUTION: BE CAREFUL WHEN YOU INSTALL THE SEAL. BE CAREFUL NOT TO CUT, MAKE TEARS, OR MAKE HOLES IN THE SEAL. DAMAGE TO THE SEAL CAN EASILY OCCUR.

(c) At each corner, put 1-2 inches of the inboard edge of the seal into the seal retainer.
(d) Use the tool, B52004-1 to push the outboard edge of the seal into the seal retainer.

NOTE: You can use liquid soap to lubricate the seal and make it easier to install.

(e) At the center of each side, install 2-3 inches of the seal into the seal retainer.
(f) From the center of each side to the corner, install the remaining parts of the seal.
(g) Re-install the seal at the corners if it is necessary.
(h) Pull and push the seal in the seal retainer to make it equal around the door.

NOTE: Wrinkles in the seal are not permitted.

S 214-168
(2) Do a check of the bulk cargo door seal.

TASK 52-09-02-204-126
4. Bulk Cargo Door Seal Check (Fig. 402)
A. General
(1) Do this procedure after the installation of a seal on the cargo door.

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B. Access
(1) Location Zones
(a) 811 Bulk Cargo Door
C. Procedure

S 214-128
(1) Do a check of the seal as follows:
(a) Open and close the door and do these checks.
1) Make sure the seal is clear of the edge of all surrounding structure when the door opens and closes.
2) Make sure the blade of the seal touches the seal land around the edge of the door when the door is closed.

NOTE: To do this check you can close the door and look for light around the edge of the door.

3) Make sure the seal does not twist when the door opens and closes.
4) Make sure there are no cuts, delamination, or damage to the seal.
5) Make sure the waviness in the straight sections of the seal is as shown (Fig. 402).

TASK 52-09-02-824-129

5. Bulk Cargo Door Seal Adjustment
A. Consumable Materials
(1) A01024 Compound, Fairing - 3M EC-3587
B. Access
(1) Location Zones
(a) 811 Bulk Cargo Door
C. Procedure

S 824-130
(1) Adjust the seal as follows:
(a) Pull and push the seal in the seal retainer to get a good seal around the edge of the door.

NOTE: Wrinkles in the seal are not permitted.

(b) If the seal does not touch the seal land around the edge of the door, do a check on the seal for irregular bumps, depressions, or waviness. If it is necessary, adjust as follows:
1) If the bumps or waviness are found, remove the bumps and straighten the waviness.
2) If depressions or clearances are found, fill the depressions with the compound, 3M EC-3587.
3) If the clearances stay, apply the compound, 3M EC-3587 to increase the seal land and get the seal to touch the seal land.

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TASK 52-09-02-004-001

6. Standard Cargo Door Seals Removal (Fig. 403)

A. Access

(1) Location Zone

822 Aft Cargo Door

B. Procedure

S 014-005

(1) Open the cargo door sufficiently to get access to the seal for the removal.

S 034-006

(2) Remove the screws to disconnect the seal from the top splice plate (View E-E).

S 024-007

(3) Pull and push the top seal piece to disengage it from the seal retainer (View G-G). Move along the total length of the seal until the top seal piece is removed.

S 034-008

(4) Remove the screws to disconnect the fuselage seal from the lower splice plate (View D-D).

S 024-009

(5) Pull and push the bottom seal piece to disengage it from the seal retainer (View H-H). Move along the total length of the seal until the bottom seal piece is removed.

TASK 52-09-02-404-010

7. Standard Cargo Door Seals Installation (Fig. 403)

A. Equipment

(1) Door Seal Installation Tool - B52004-1

B. Consumable Materials

(1) B50093 Cleaner, Alkaline - Kelite Spraywhite E (optional)

(2) B00052 Soap, Liquid - Turco 1526 (optional)

(3) B00003 Cleaner, Emulsion - GMC528-B (optional)

C. Access

(1) Location Zone

822 Aft Cargo Door

D. Procedure

S 424-014

(1) Put the two ends of the top seal piece into the lower seal depressor to put the seal in the correct position (View A).

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S 424-015

(2) Put the seal joggle against the end of the seal depressor. Make sure there is no clearance between the seal joggle and the seal depressor (View A-A).

S 424-016

(3) Attach the seal to the seal depressor.

S 424-017

CAUTION: BE CAREFUL WHEN YOU INSTALL THE SEAL. BE CAREFUL NOT TO CUT, MAKE TEARS, OR MAKE HOLES IN THE SEAL. DAMAGE TO THE SEAL CAN EASILY OCCUR.

(4) Install approximately 6 inches of the top seal piece into the seal retainer above the splice area on the two sides. Do the steps that follow:
   (a) Install one edge of the seal into the seal retainer.
   (b) Use the door seal installation tool or a smooth, rounded tool to push the other edge of the seal into the seal retainer.

       NOTE: Use liquid soap or water to lubricate the seal during the installation, if it is necessary.

       1) Make sure that you do not extend the seal (stretch).

S 434-018

(5) Install the fasteners through the lower splice plate, fuselage seal and the seal depressor at the two ends (View D-D).

S 224-019

(6) Make sure the seal waviness is in the correct limits (Fig. 402).

S 424-020

(7) Put the two ends of the bottom seal piece into the top seal depressor to put the seal in the correct position (View B, Fig. 401).

S 424-021

(8) Put the seal joggle against the end of the seal depressor. Make sure there is no clearance between the seal joggle and the seal depressor (View C-C).

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S 424-022
(9) Attach the seal to the seal depressor.

S 424-023

CAUTION: BE CAREFUL WHEN YOU INSTALL THE SEAL. BE CAREFUL NOT TO CUT, MAKE TEARS, OR MAKE HOLES IN THE SEAL. DAMAGE TO THE SEAL CAN EASILY OCCUR.

(10) Install approximately 6 inches of the bottom seal piece into the seal retainer above the splice area on the two sides. Do the steps that follow:
(a) Install one edge of the seal into the seal retainer.
(b) Use the door seal installation tool or a smooth, rounded tool to push the other edge of the seal into the seal retainer.

NOTE: Use liquid soap or water to lubricate the seal during the installation, if it is necessary.

1) Make sure that you do not extend the seal (stretch).

S 434-024
(11) Install the fasteners through the top splice plate, fuselage seal and the seal depressor at the two ends (View E-E).

S 424-025
(12) Put the lower straight part of the bottom seal piece in position at the centerline of the cargo door with use of the index marks on the seal and the seal retainer (View B).

S 424-026
(13) Install the lower straight part of the seal from the center to the two lower index marks. Align the index marks to 0.50 inch.

NOTE: It is permitted to extend the seal (stretch) to align the index marks in the correct tolerance.

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S 424-027

CAUTION: DO NOT EXTEND THE SEAL (STRETCH) OR COMPRESS THE SEAL IN THE CORNERS. DAMAGE TO THE SEAL CAN EASILY OCCUR.

(14) Install the corner parts of the bottom seal piece from the bottom to the top.

S 824-028

(15) Align the side index marks to 0.50 inch. Do not extend the seal (stretch) or compress the seal in the corners.

S 224-029

(16) Make sure the seal tip flushness is 0.10 inch maximum in the skin contour (View B-B).

S 424-030

(17) Install the side straight parts of the seal from the side index marks to the ends of the seal.

S 224-031

(18) Make sure the seal waviness of the side straight parts is in the correct limits (Fig. 402).

TASK 52-09-02-204-032

8. Do a Check on the Standard Cargo Door Seals

A. General

(1) Do this procedure after the installation of a seal on the cargo door.

B. References

(1) AMM 52-09-02/201, Cargo Door Seals - Maintenance Practices

C. Access

(1) Location Zone

822 Aft Cargo Door

D. Procedure

S 714-036

(1) Open and close the cargo door. Do the checks that follow:

(a) Make sure the seal does not rub too much on the cargo door or the fuselage structure.

(b) Make sure there is no seal collapse.

(c) Make sure the seal does not catch on the cargo door or the fuselage structure.

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S 864-037
(2) Close and latch the cargo door.

S 224-038
(3) On the top seal piece, make sure the clearance between the seal blade and the seal depressor is not too much (Views B-B, D-D, F-F and H-H, Fig. 403).

S 224-039
(4) On the lower seal piece, make sure there is no clearance from the seal splice areas to the side index marks (Views F-F and G-G, Fig. 403).

S 224-040
(5) Do a check on the bottom seal piece from the side index marks along the lower corner part to the lower index marks. Clearances of 0.05 inch for a length of 3.00 inches are permitted in this area.

S 214-041
(6) If the installation of the seal does not have the correct clearances, do a check on the seal depressor for unusual bumps, dents or waviness.

S 354-042
(7) If it is necessary, repair the standard cargo door seals, (Ref 52-09-02/201).

TASK 52-09-02-004-135

9. Remove the Large Cargo Door Seal (Fig. 404)

A. Access

(1) Location Zone
821 Forward Cargo Door

B. Procedure

S 014-138
(1) Open the cargo door sufficiently to get access to the seal for the removal.

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S 024-139

(2) Pull and push the seal to disengage it from the seal retainer (Views A-A and B-B). Move along the total length of the seal until the seal is removed.

TASK 52-09-02-404-140

10. Install the Large Cargo Door Seal (Fig. 404)

A. Equipment

(1) Door Seal Installation Tool - B52004-1

B. Consumable Materials

(1) B00052 Soap, Liquid - Turco 1526 (optional)
(2) B50093 Cleaner, Alkaline - Kelite Spraywhite E (optional)
(3) B00003 Cleaner, Emulsion - GMC528-B (optional)

C. Access

(1) Location Zone
821 Forward Cargo Door

D. Procedure

S 424-143

(1) Put each corner of the seal into the seal retainer corner in the correct position for the installation.

NOTE: There are no index marks on the seal. There are marks on the seal, TOP, FWD, and AFT, for the correct seal installation.

S 424-144

CAUTION: BE CAREFUL WHEN YOU INSTALL THE SEAL. BE CAREFUL NOT TO CUT, MAKE TEARS, OR MAKE HOLES IN THE SEAL. DAMAGE TO THE SEAL CAN EASILY OCCUR.

(2) Put the inner edge of the seal in the internal lip of the seal retainer for a distance of one to two inches on one of the sides of the corner midpoint.

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S 424-145
(3) Use the door seal installation tool or a smooth, rounded tool to push the outer edge of the seal into the seal retainer (Views A-A and B-B).

NOTE: Use liquid soap or water to lubricate the seal during the installation, if it is necessary.

S 424-146
(4) Install the remaining parts of the seal from the centerline of the four sides to the corners.

S 824-147
(5) Move the seal, if it is necessary, to make sure the seal is not extended (stretched) or compressed.

S 224-148
(6) After the pressure seal has been installed, and all adjustments to it are complete, the seal location indicators must match the retainer location indicators within 1.50 inches.

S 224-149
(7) Make sure the seal waviness for the straight parts is in the correct limits (Fig. 402).

S 714-150
(8) Open and close the cargo door. Check the pressure seal 3 times to make sure the seal lays down correctly when the door is closed. Do the checks that follow:
(a) Make sure the seal does not rub too much on the cargo door or the fuselage structure.
(b) Make sure there is no seal collapse.
(c) Make sure the seal does not catch on the cargo door or the fuselage structure.

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S 864-151
(9) Close and lock the cargo door.

S 214-152
(10) Make sure the seal touches the fuselage structure around the edges of the door.

TASK 52-09-02-004-153

11. Vent Door Seal - Removal (Fig. 405)
A. General
(1) This task is for the seal on the vent doors of the large forward cargo door only.
B. Access
(1) Location Zone
821 Forward Cargo Door

C. Procedure

S 014-154
(1) Get access to the vent doors.

S 024-155
(2) Pull the seal from the retainer.

TASK 52-09-02-404-156

12. Vent Door Seal - Installation (Fig. 405)
A. General
(1) This task is for the seal on the vent doors of the large forward cargo door only.
B. Equipment
(1) Door Seal Installation Tool - B52004-1 (Recommended) or Smooth Rounded Tool
C. Consumable Materials
(1) A00027 Adhesive, BAC 5010, Type 60
(2) B00148 Solvent, Methyl Ethyl Ketone

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(3) B00130 Alcohol - Isopropyl - TT-I-735
(4) B00068 Alcohol - Ethyl(Denatured) - MIL-E-51454, Type II

D. Access
(1) Location Zone
821 Forward Cargo Door

E. Procedure

S 114-157

WARNING: DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

(1) Clean the mating surfaces with MEK, isopropyl alcohol, or ethyl alcohol.

S 214-158
(2) Make sure all mating surfaces are clean before you apply the adhesive.

S 394-159
(3) Apply the adhesive intermittently between the seal and the retainer.

S 424-160
(4) Locate each corner of seal at corner of retainer for a distance of 1-2 inches.

S 424-161
(5) Install inboard edge of the seal into the inner side of the retainer.

S 424-162
(6) Use the door seal installation tool or a smooth, rounded tool to push the outboard edge of the seal into the retainer. Push at a 90 degree angle to the seal edge to avoid bunching.

S 424-163
(7) Then install the seal at the centerline of the four sides and work towards the corners.

S 824-164
(8) Refit at the corners to remove any stretch that may have occured.

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S 214-165

(9) Examine the seal. Operate the door 6-8 times for a satisfactory laydown when the door is closed.

NOTE: The seal cannot turn or tuck under. A slight waviness in the lip of the seal not more than 0.10-inch in each direction from the peak point is permitted provided the seal is flat when the door is closed.

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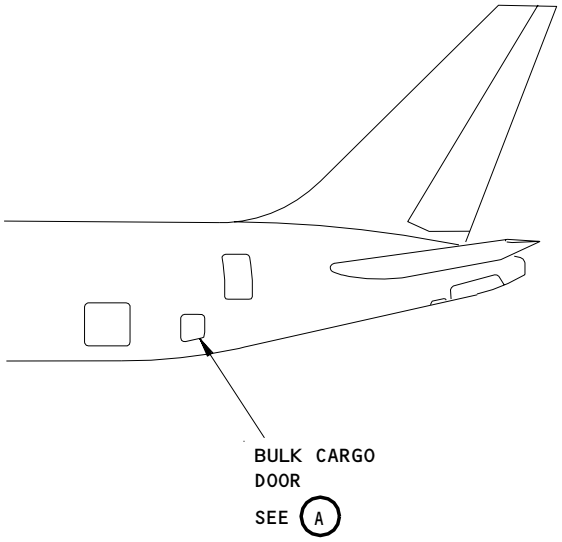
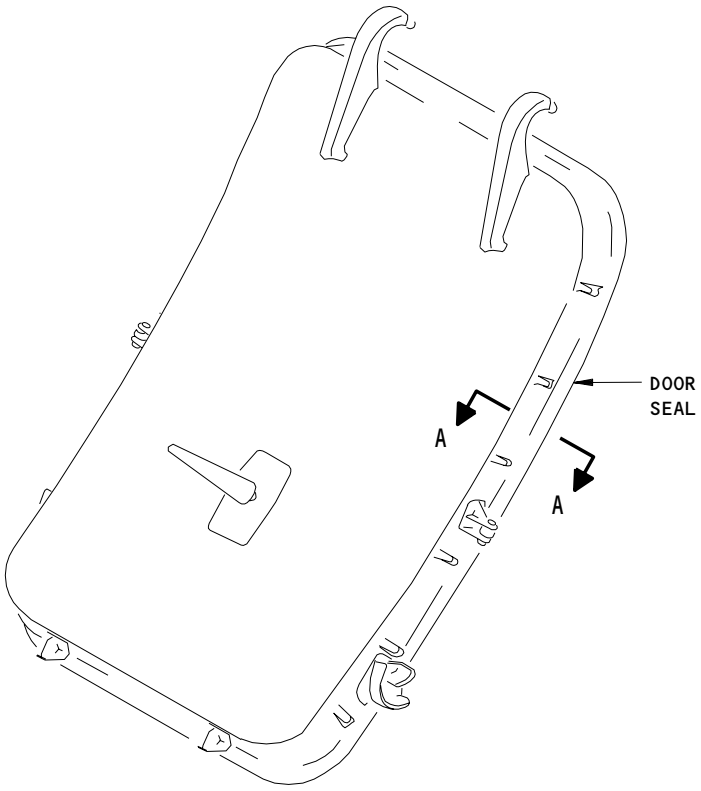
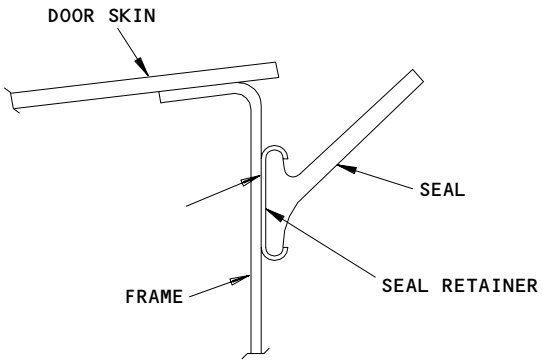




BULK CARGO DOOR
A



SEAL AND SEAL RETAINER
A-A

Bulk Cargo Door Seal Check
Figure 401

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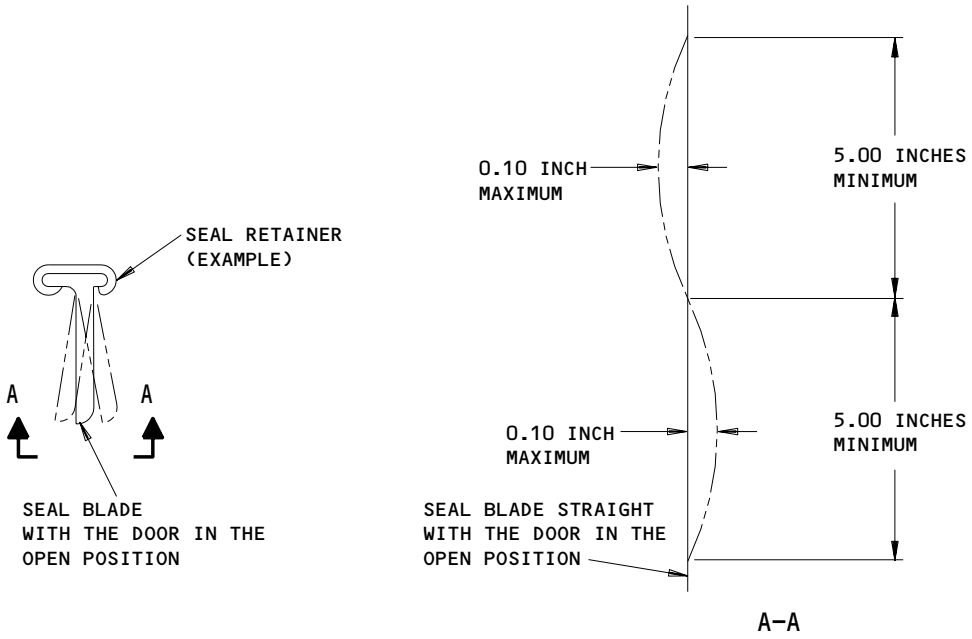

Cargo Door Seal Waviness
Figure 402

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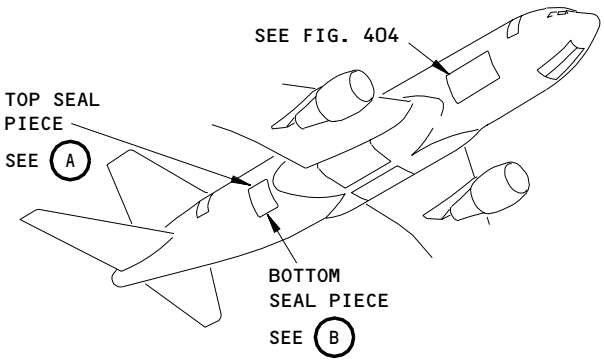
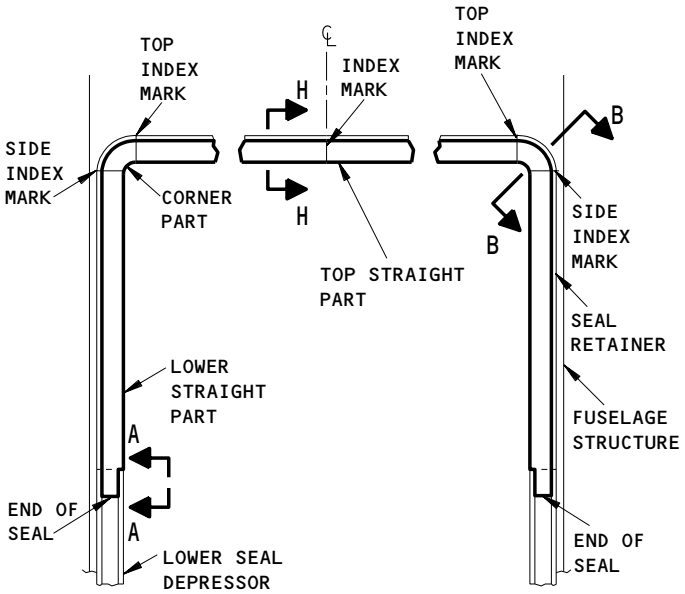
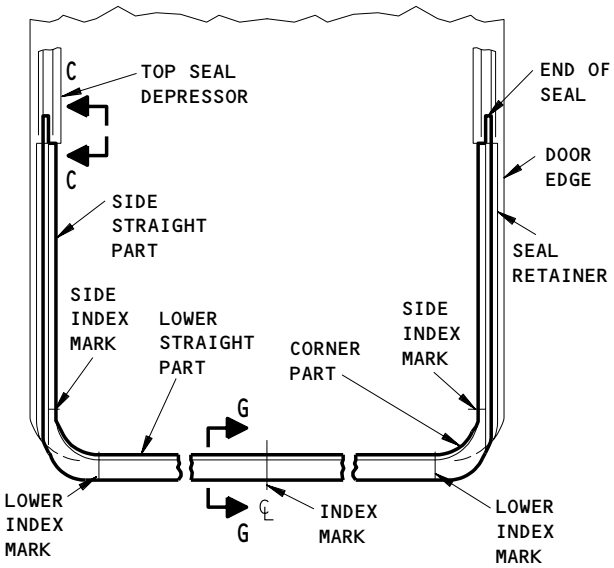




TOP SEAL PIECE
(OUTBOARD VIEW)
A



BOTTOM SEAL PIECE
(OUTBOARD VIEW)
B

Standard Cargo Door Seal
Figure 403 (Sheet 1)

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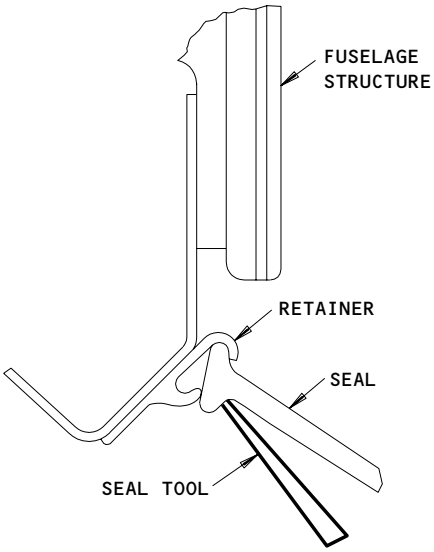
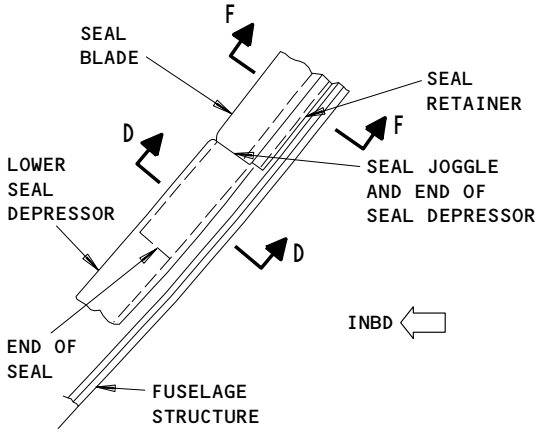
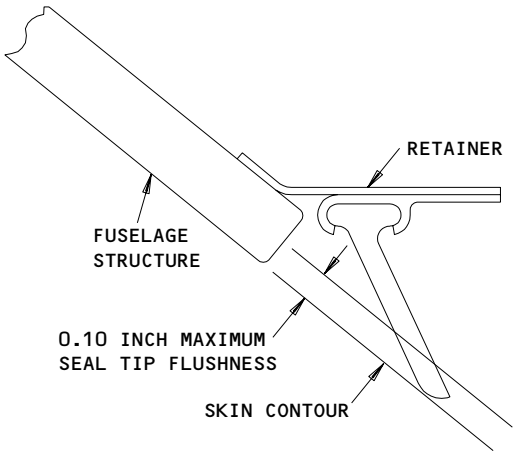


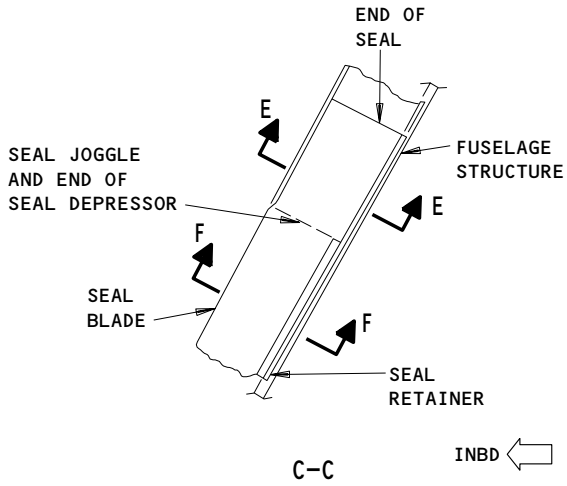
SEAL TOOL



A-A



B-B



C-C

Standard Cargo Door Seal
Figure 403 (Sheet 2)

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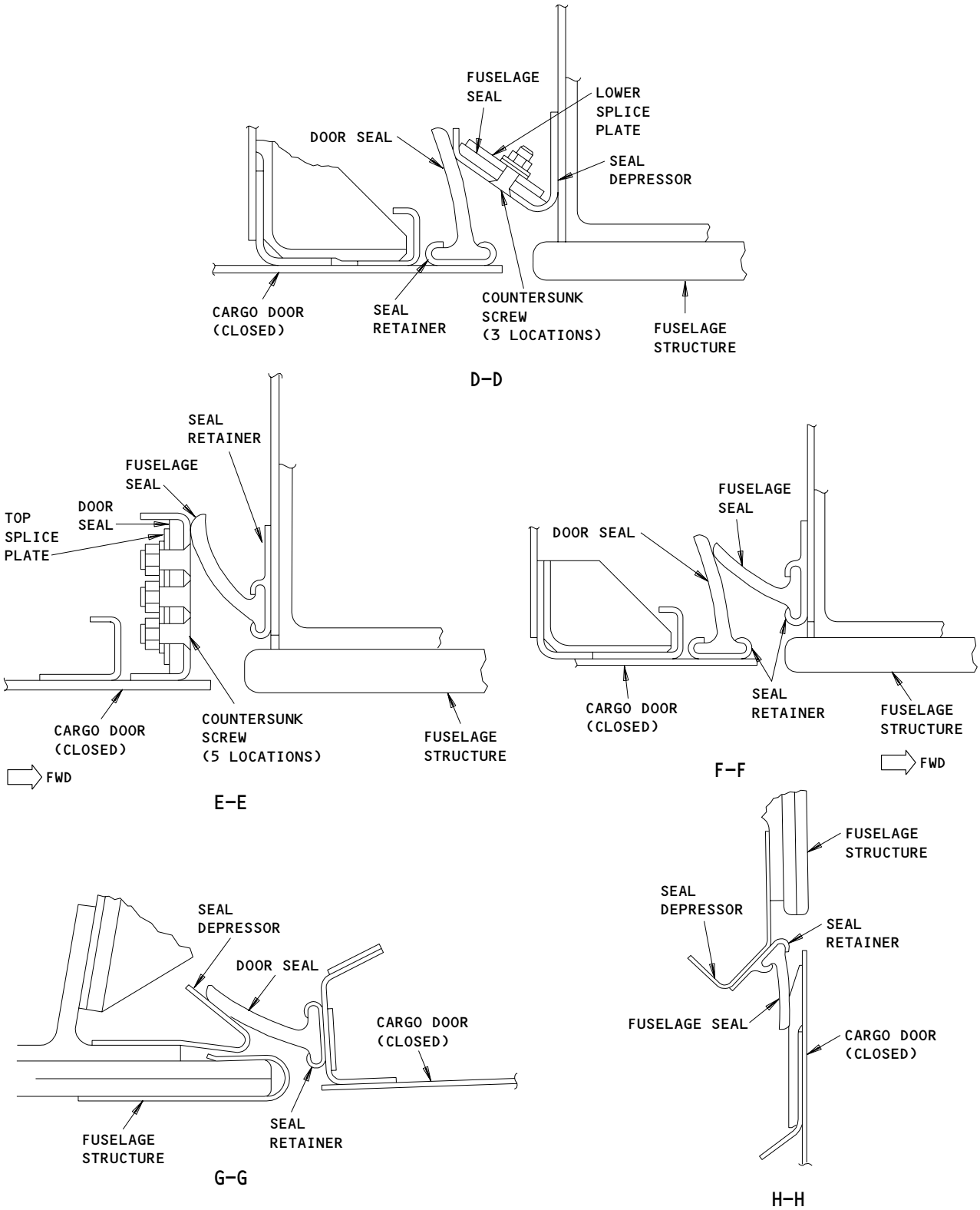

Standard Cargo Door Seal
Figure 403 (Sheet 3)

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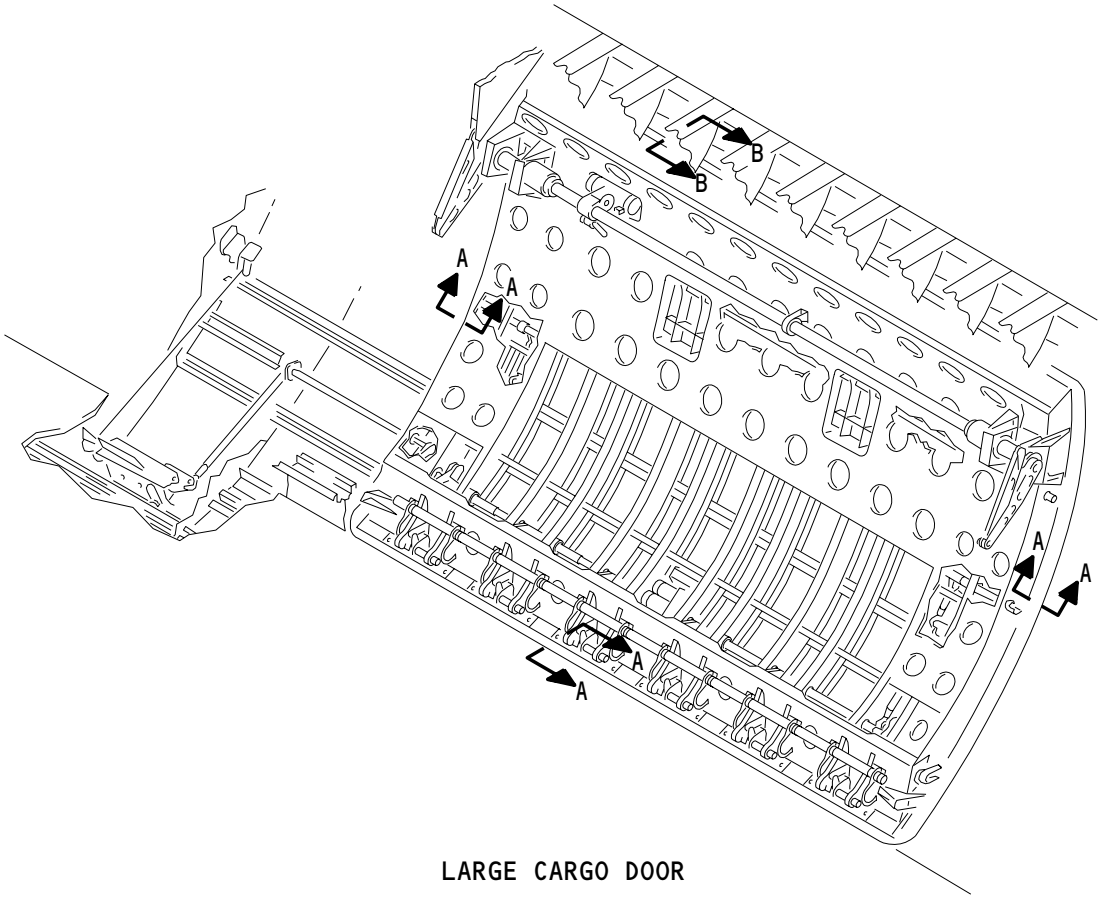
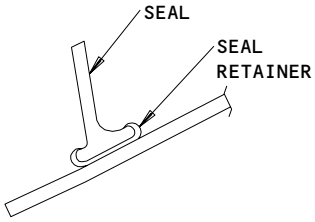
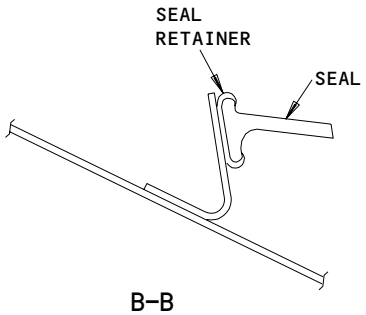


LARGE CARGO DOOR



A–A



B–B

Large Cargo Door Seal
Figure 404

L38287

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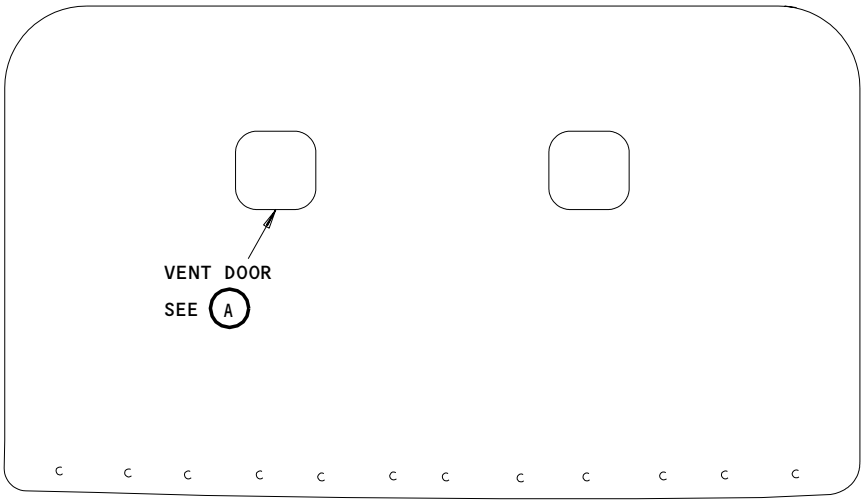
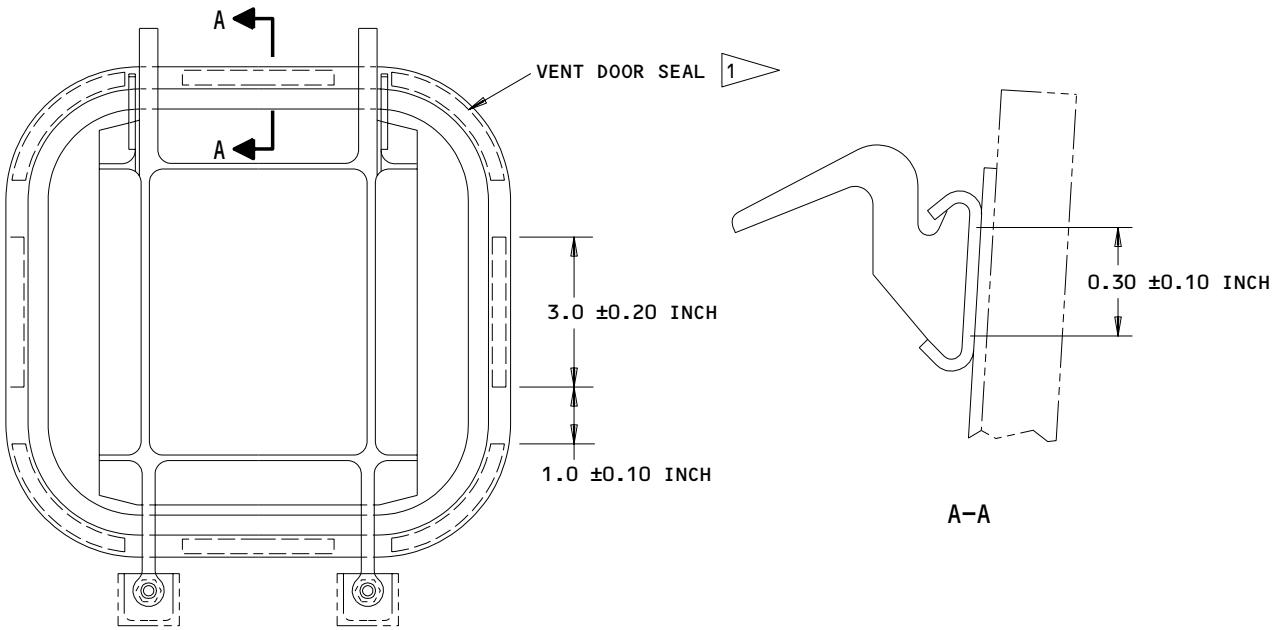


LARGE CARGO DOOR



VENT DOOR
A

1 BAC5010, TYPE 60 ADHESIVE IS APPLIED INTERMITTENTLY BETWEEN THE SEAL AND RETAINER (8 LOCATIONS).

Large Cargo Door - Vent Door Seal
Figure 405

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OVERWING EMERGENCY EXIT HATCH SEALS - REMOVAL/INSTALLATION

1. General
   A. This procedure has these tasks:
      (1) A removal of the overwing emergency exit hatch seals.
      (2) An installation of the emergency exit hatch seals.

TASK 52-09-03-004-001

2. Overwing Emergency Exit Hatch Seal Removal (Fig. 401)
   A. References
      (1) AMM 52-21-01/201, Overwing Emergency Exit Hatch
   B. Access
      (1) Locaiton Zones
          241/242 Passenger Cabin - Section 44 (Left/Right)

   C. Procedure

      S 014-002
      (1) Remove the overwing emergency exit hatch (AMM 52-21-01/201).

      S 844-003
      (2) Put the hatch in position to permit easy removal of the seals.

      S 024-004
      (3) Remove the seal from the seal retainer.

TASK 52-09-03-404-005

3. Overwing Emergency Exit Hatch Seal Installation (Fig. 401)
   A. Equipment
      (1) Door Seal Installation Tool - B52004-1
   B. Consumable Materials
      (1) B00052 Soap - Liquid Turco 1526
   C. References
      (1) AMM 52-21-01/201, Overwing Emergency Exit Hatch
   D. Access
      (1) Location Zones
          241/242 Passenger Cabin - Section 44 (Left/Right)

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E. Procedure

S 434-006
(1) Put the seal in position around the edges of the hatch.

S 214-014
(2) Make sure the rubber stamped words TOP and BOTTOM are in the correct position (outboard side of the seal blade).

S 214-020
(3) Align the seal. Make sure the black marks are in the four corners.

S 424-007
(4) Install the seal in the seal retainer at each corner of the hatch.

S 424-017
(5) Permit 1 to 2 inches between the seal retainer and the corner of the hatch.

S 424-018
(6) Install the inboard edge of the seal into the inboard side of the seal retainer.

S 424-019
(7) Use the door seal installation tool to push the outboard edge of the seal into the outboard edge of the seal retainer.

NOTE: Use liquid soap to lubricate the seal during the installation.

S 424-008
(8) Install the seal into the seal retainer at points between the corners of the hatch.

S 424-009
(9) Install the remaining parts of the seal into the seal retainer.

S 424-010
(10) Make the seal smooth.

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S 414-011
(11) Install the overwing emergency exit hatch (AMM 52-21-01/201).

S 214-012
(12) Make sure the seal lip is smooth against the edge of the hatch cutout.

S 214-013
(13) Make sure the seal touches the skin along the full length of the seal.

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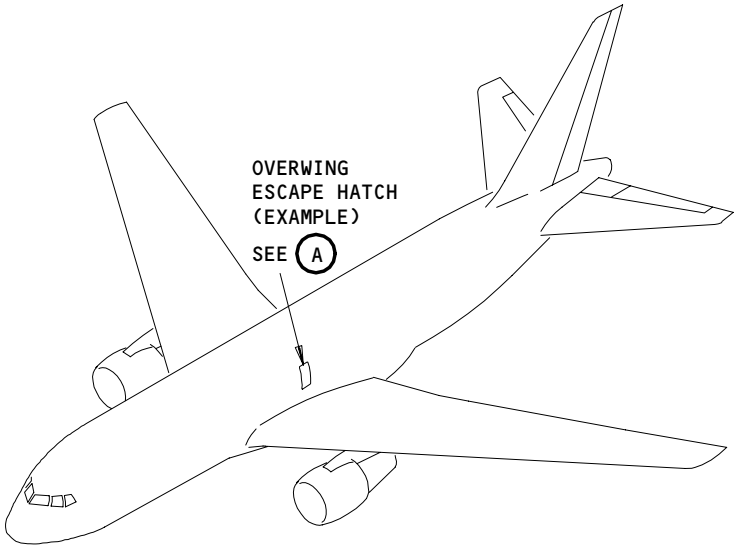
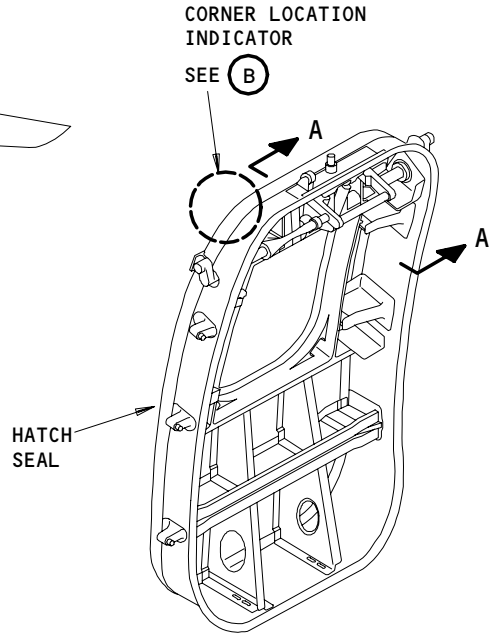
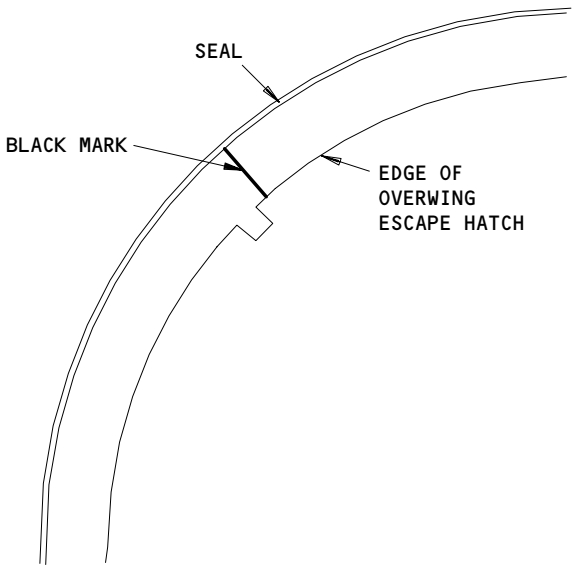
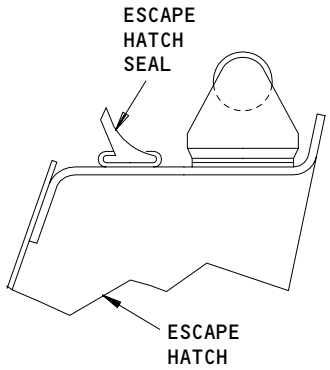




OVERWING ESCAPE HATCH
(HATCH LINING NOT SHOWN)
A



CORNER LOCATION INDICATOR
B



A-A

Overwing Escape Hatch Seal
Figure 401

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ELECTRONICS ACCESS DOOR SEAL - REMOVAL/INSTALLATION

1. General
   A. This procedure contains three tasks:
      (1) The first task is the removal of the seal.
      (2) The second task is the installation of the seal.
      (3) The third task is a check of the seal.
   B. The electronics access door has a one piece seal. The seal is attached around the door and is held in its position by a channel extrusion.

TASK 52-09-04-004-003

2. Remove the Electronics Access Door Seal (Fig. 401)
   A. References
      (1) 52-48-04/401, Electronics Access Door - Removal/Installation
   B. Access
      (1) Location Zone
          119 Main Equipment Center

      (2) Access Panel
          119AL Electronics Access Door

   C. Procedure

      S 014-001
      (1) If it is necessary, remove the door (Ref 52-48-04).

      NOTE: You can remove the seal with the door installed.

      S 024-002
      (2) Pull and push the seal to disengage it from the seal retainer.

      S 024-012
      (3) Remove the seal.

TASK 52-09-04-404-004

3. Install the Electronics Access Door Seal (Fig. 401)
   A. Consumable Materials
      (1) Liquid Soaps (optional)
          (a) B50093 Cleaner, Alkaline - Kelite Spraywhite E
          (b) B00052 Soap, Liquid - Turco 1526
          (c) B00003 Cleaner, Emulsion - GMC528-B
   B. References
      (1) 52-48-04/401, Electronics Access Door - Removal/Installation

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C. Access

(1) Location Zone

119 Main Equipment Center

(2) Access Panel

119AL Electronics Access Door

D. Procedure

S 424-005

(1) Do the steps that follow to attach the seal to the retainer:

NOTE: You can install the seal with the door installed or removed from the airplane (Ref 52-48-04/401).

(a) Make sure the lip of the seal is on the outboard side of the door (View A-A, Fig. 401).

(b) Make sure the word FWD, shown on the seal, is on the forward side of the door (View B, Fig. 401).

CAUTION: BE CAREFUL WHEN YOU INSTALL THE SEAL. BE CAREFUL NOT TO CUT, MAKE TEARS, OR MAKE HOLES IN THE SEAL. DAMAGE TO THE SEAL CAN EASILY OCCUR.

(c) Put the seal on the retainer.

(d) Make sure to position the seal equally.

(e) Push the lower and top flange of the seal into the retainer.

NOTE: Use liquid soap to lubricate the seal during the installation, if it is necessary.

S 824-006

(2) Make sure the seal waviness is in the correct limits (up to 0.10 wave height).

NOTE: This dimension is at the surface of the seal lip.

S 824-007

(3) Pull the seal, as necessary, to make sure the seal is constant uniform in the retainer.

NOTE: Wrinkles in the seal are not permitted.

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S 414-013
(4) Install the door if it is necessary (Ref 52-48-04/401).

TASK 52-09-04-214-008
4. Do a Check of the Electronics Access Door Seal
A. General
(1) Do this procedure after you install door.
B. References
(1) 52-48-04/401, Electronics Access Door - Removal/Installation
C. Access
(1) Location Zone
119 Main Equipment Center

(2) Access Panel
119AL Electronics Access Door

D. Procedure

S 424-009
(1) Install the door if it is neccessary (Ref 52-48-04).

S 214-010
(2) Do the checks that follow:
(a) Open and close the door.
(b) Make sure the seal is clear of the edge of the fuselage when you close the door.
(c) Make sure the seal lip is even and touches the fuselage structure when the door is closed.
(d) Make sure the seal lip is flat against the fuselage structure when the door is closed.
(e) Make sure the seal lip does not fold when the door is closed.

S 824-011
(3) If the seal is not installed correctly, pull or push the seal to make sure the seal is sysmmetrically equal in the retainer.

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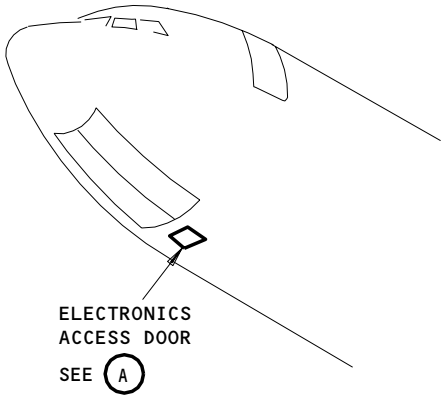
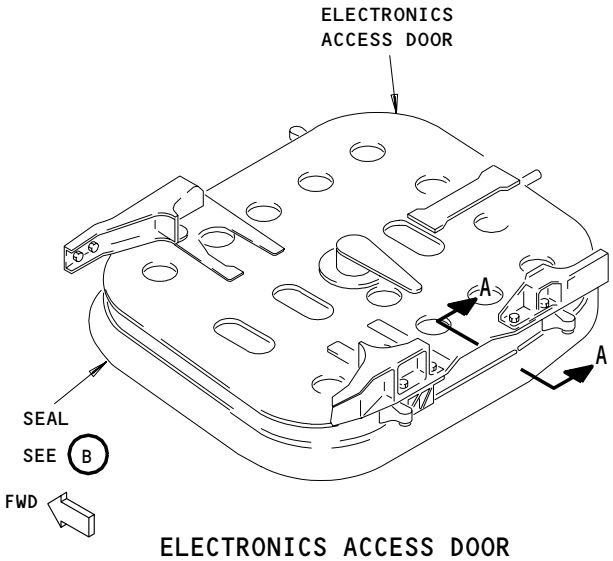
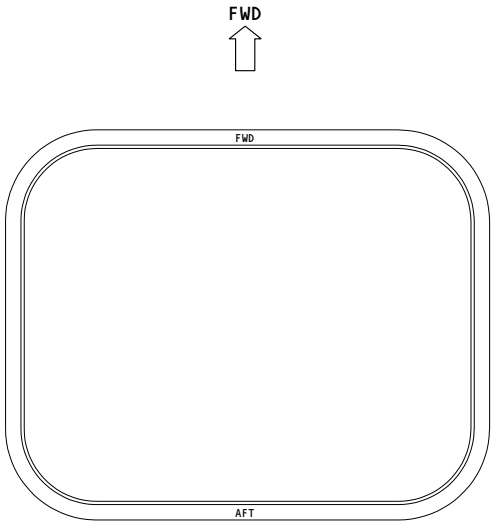
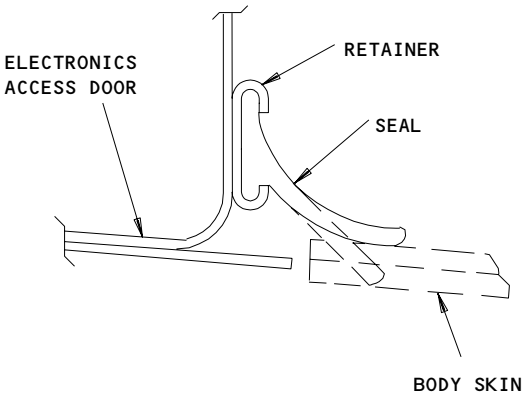




ELECTRONICS ACCESS DOOR
A



SEAL
B



A-A

Electronics Access Door Seal
Figure 401

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ENTRY/SERVICE DOORS - DESCRIPTION AND OPERATION

1. General
   A. Left side doors are entry doors. Right side doors are service doors. All four doors operate manually from inside or outside. The forward entry door has an electric power assist for ease in opening.
   B. For more details on the Entry/Service Doors system, refer to these wiring diagrams and functional schematics:
      WDM 52-11-11: FORWARD ENTRY DOOR - POWER
      WDM 52-11-12: FORWARD ENTRY DOOR - CONTROL
      WDM 52-11-13: FORWARD ENTRY DOOR - SENSORS
      SSM 52-11-01: ENTRY/SERVICE DOORS
   C. Entry/Service Doors (Fig. 1)
      (1) The doors open inward and upward to a position inside the fuselage. Each door is guided by rollers inside the upper and side tracks. Each door has an emergency escape slide-raft that deploys automatically. A counterbalance above the ceiling provides the force to allow the door to be lifted to the open position.
   D. Entry/Service Door Mechanism (Fig. 2)
      (1) The entry/service door mechanism includes: operating handle, pushrods, overhead link, ceiling panel torque tube, latch torque tubes, and a lockpin cable. The operating handle works the pushrods which connect to the latch torque tubes and ceiling panel torque tubes in overhead linkage. The ceiling panel torque tubes displace the ceiling panels to allow the door to roll up to the open position. The lockpin flex cable actuates the lockpin to lock the door closed.
   E. Interior Handle Mechanism (Fig. 3)
      (1) The interior handle mechanism includes the operating handle, handle support casing, and arm/disarm lever. The handle rotates upward to unlock and unlatch the door.
      (2) There are two interior handle mechanisms.
         (a) SAS 050-155,162-165,275,276 WITHOUT SB 52-58; the interior handle does not have a clutch mechanism where the handle attaches to the interior handle shaft. This will be called the INTERIOR HANDLE WITHOUT CLUTCH MECHANISM.
         (b) SAS 050-155,162-165,275,276 WITH SB 52-58, AND SAS 156-161,166-274,277-999; the interior handle has a clutch mechanism where the handle attaches to the interior handle shaft. The clutch mechanism lets the interior handle stay in the latched position when the exterior handle is lifted. This will be called the INTERIOR HANDLE WITH CLUTCH MECHANISM.
   F. Mode Select Mechanism (Fig. 3)
      (1) The mode select mechanism connects to the handle support casing. The arm/disarm lever rotates inboard to disarm the girt bar and prevent inadvertent operation of the escape slide-raft. An overcenter holds the lever either in the armed (outboard) or disarmed (inboard) position.
   G. Exterior Handle Mechanism (Fig. 4)

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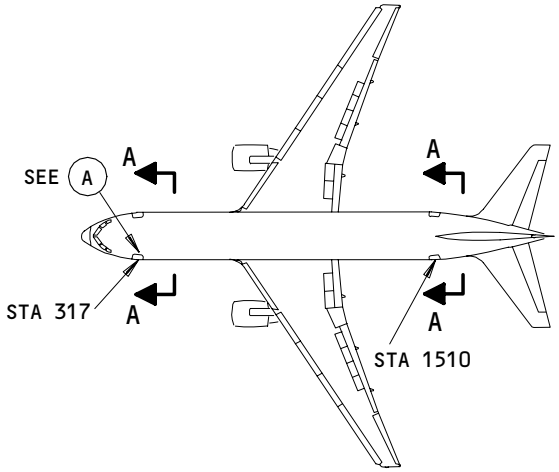
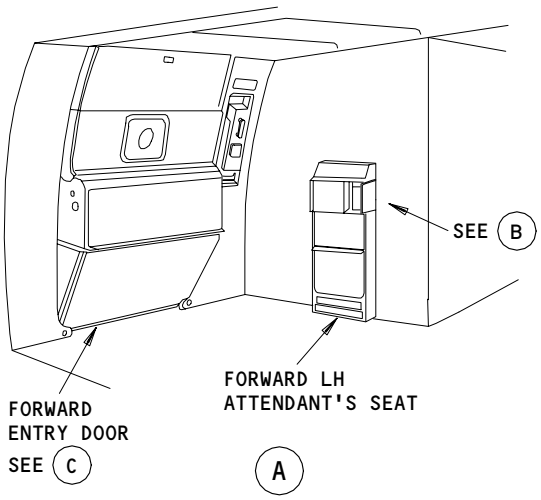
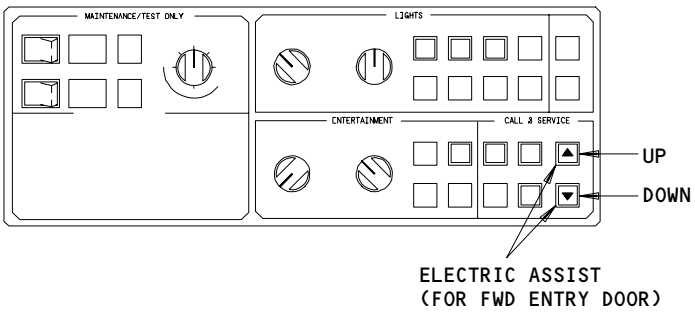


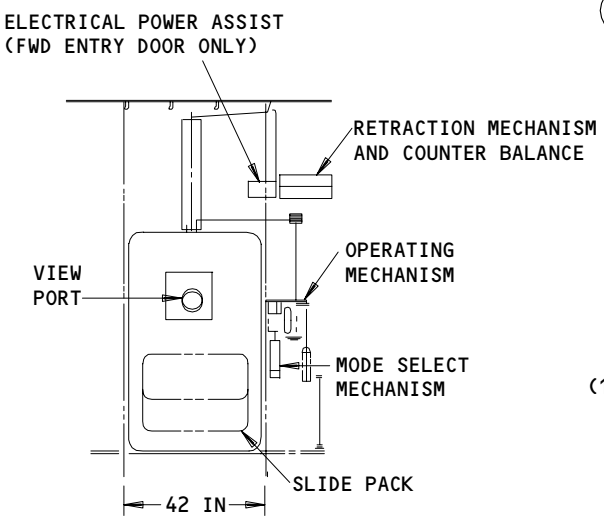


A

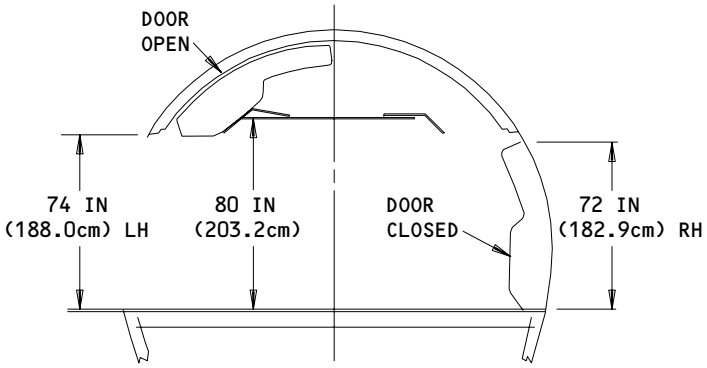


FORWARD CABIN ATTENDANTS' PANEL

B



C



A-A

Entry/Service Doors
Figure 1

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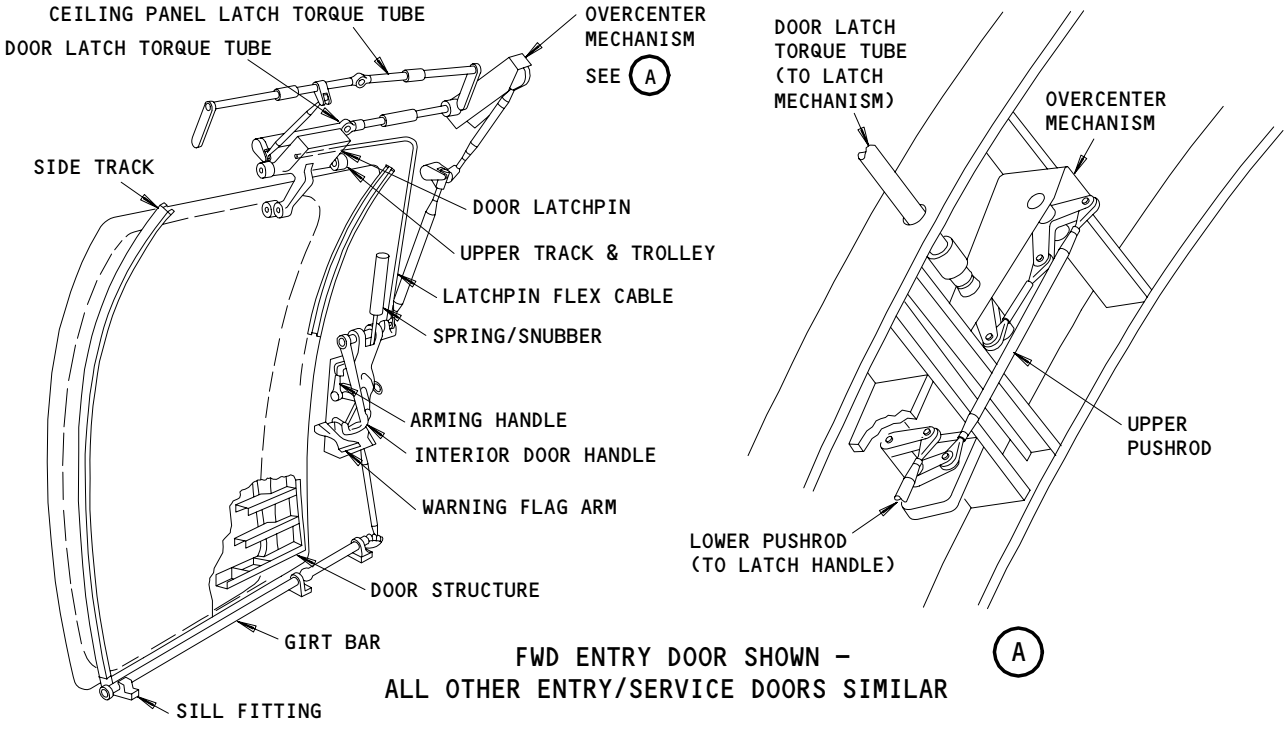
(1) The exterior handle connects to the interior handle through the handle support. Pushing in the exterior disarm lever, so that the external handle may be grasped, disarms the escape slide-raft. The exterior handle, is lifted to unlock and unlatch the door.

H. Latchpin Mechanism (Fig. 5)
(1) The latchpin assembly includes the latchpin and flex cable. The flex cable connects the latchpin to the operating handle. The latchpin blocks the guide roller to prevent the door latching mechanism from back-driving in the event of negative cabin pressure. The latchpin also serves as a target to activate the door locked sensor when the entry/service door is latched closed.

I. Latch Torque Tube (Fig. 6)
(1) The latch torque tube transmits torque from the pushrods to the latch cam. The latch cam rotates against the cam rollers on the trolley to latch the door closed.

J. Trolley (Fig. 6)
(1) The trolley is attached to the door, and connected to the counterbalance cable. Four rollers, on the trolley, roll on the upper tracks to guide the door up into the fuselage. Latch cams engage the cam rollers to force the door into the cutout when the interior or exterior door handle is moved to the closed position.

K. Pulleys (Fig. 7)
(1) Two pulleys carry the cable from the counterbalance to the door trolley. A shock absorber is attached to one of the pulleys.



FWD ENTRY DOOR SHOWN -
ALL OTHER ENTRY/SERVICE DOORS SIMILAR

Entry/Service Door Mechanism
Figure 2

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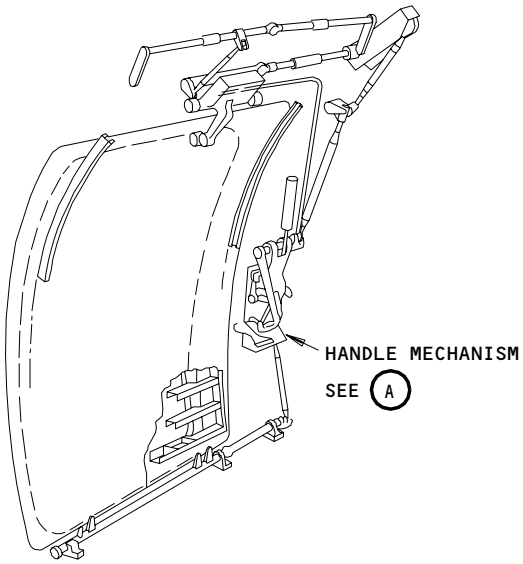
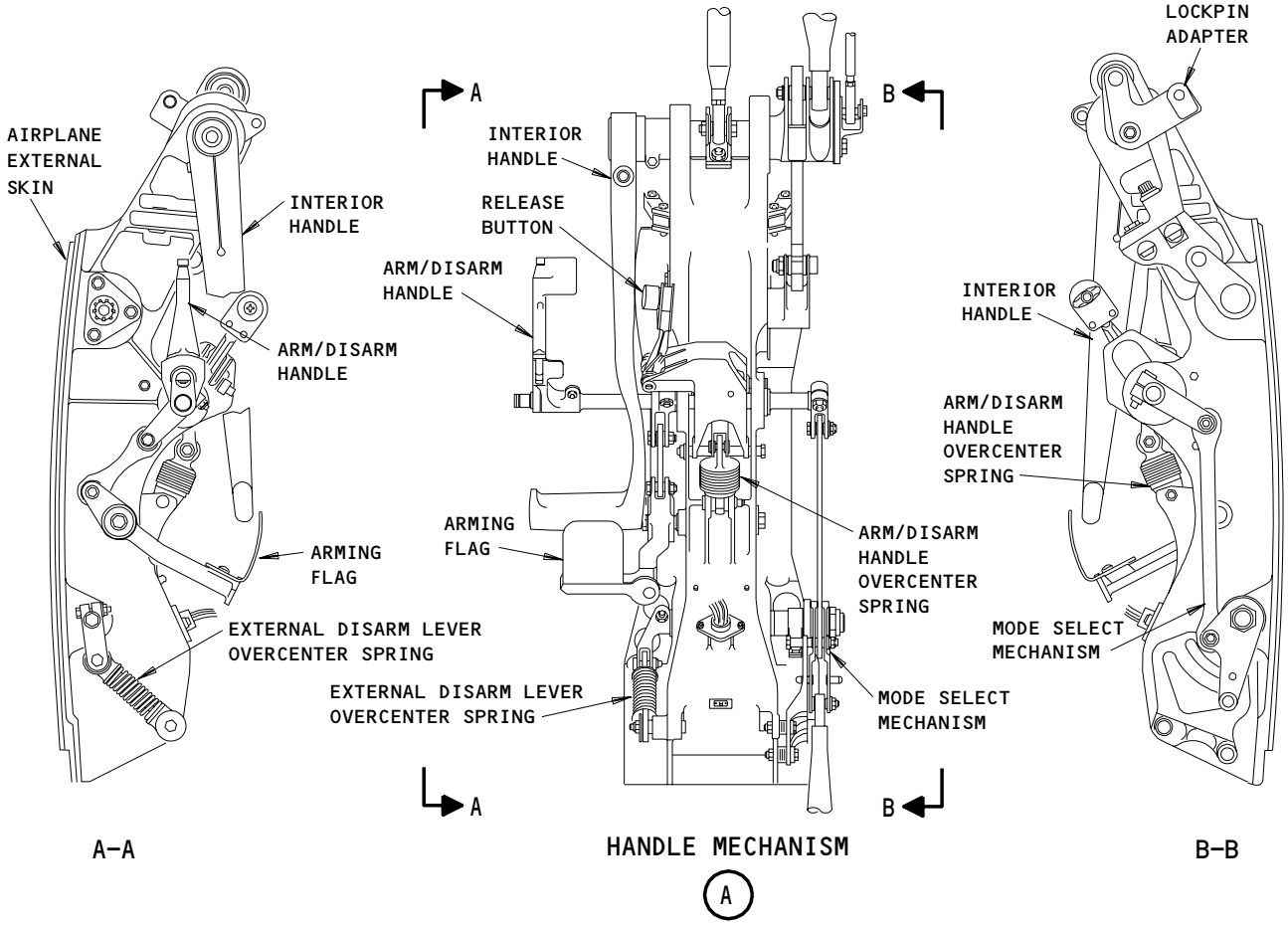


ENTRY/SERVICE DOOR
(EXAMPLE)



A–A

HANDLE MECHANISM
A

B–B

Forward or Aft Entry/Service Door Interior Handle Mechanism
Figure 3

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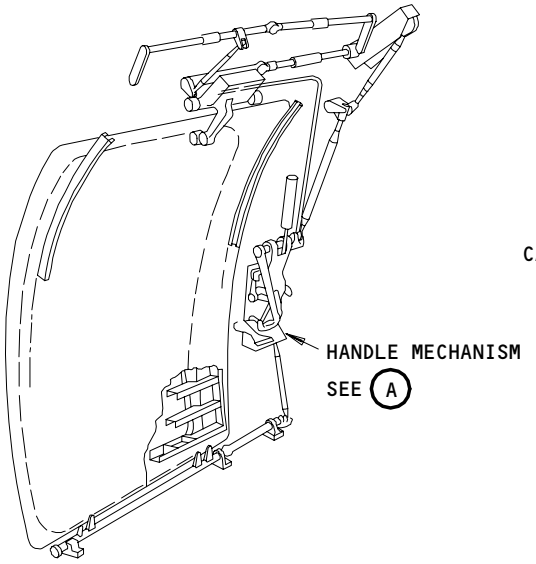
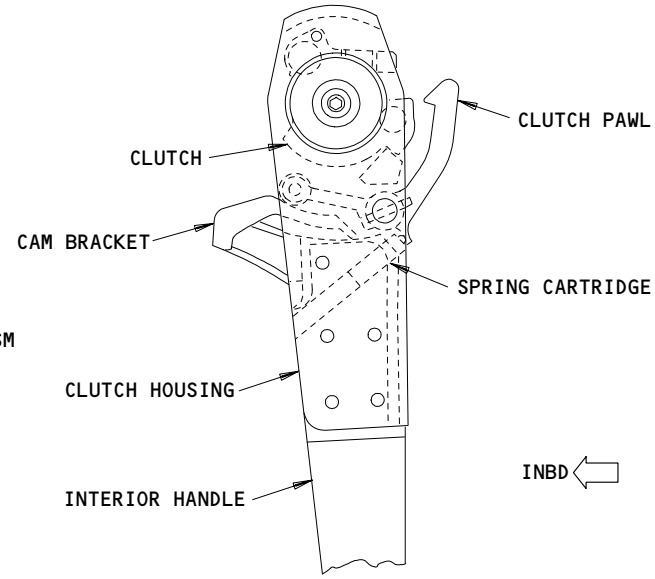
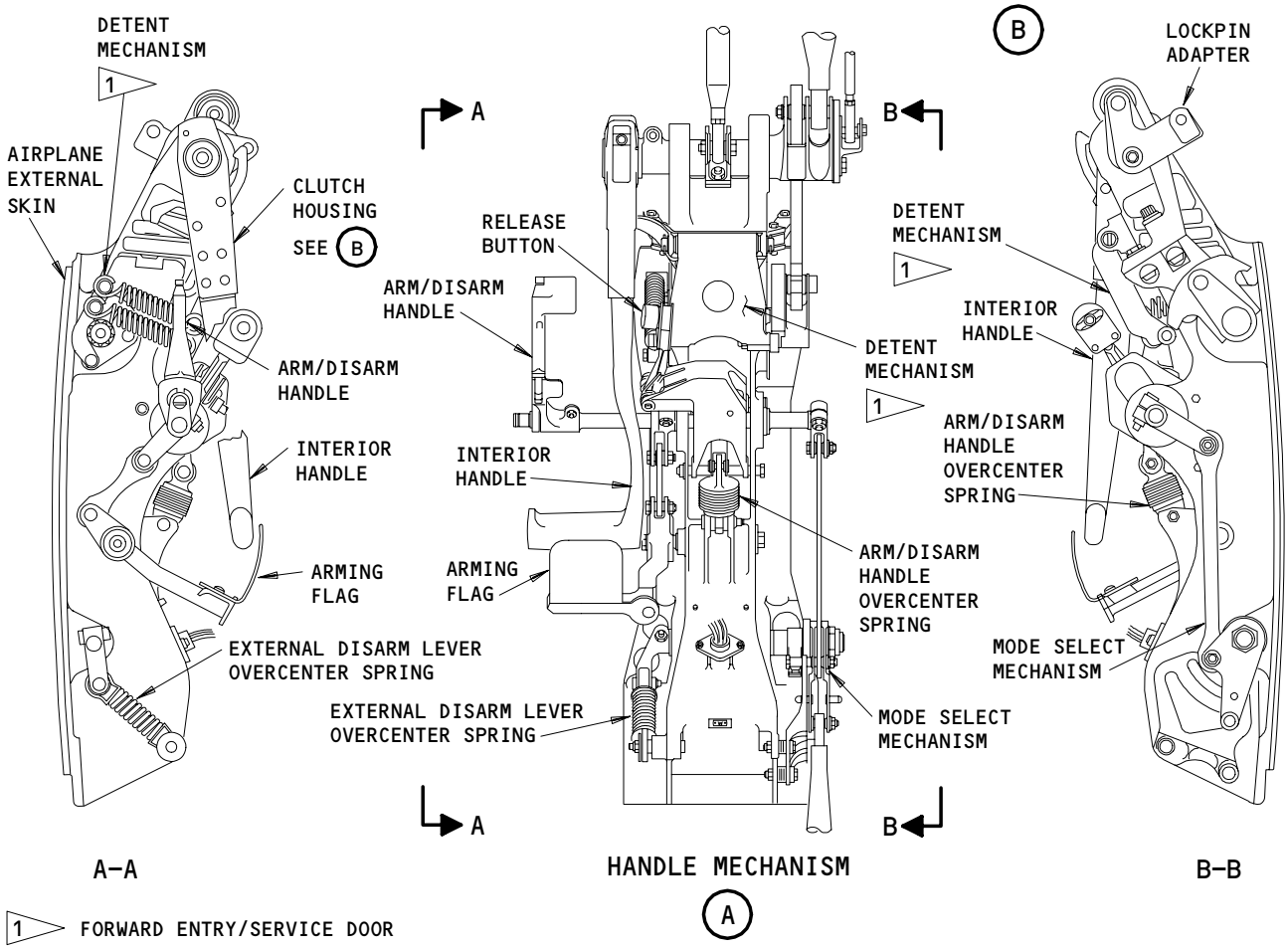


FORWARD OR AFT ENTRY/SERVICE DOOR
(EXAMPLE)



CLUTCH HOUSING
B



A–A

HANDLE MECHANISM
A

B–B

1 FORWARD ENTRY/SERVICE DOOR

Forward or Aft Entry/Service Door Interior Handle Mechanism
Figure 3A

EFFECTIVITY
INTERIOR HANDLE WITH CLUTCH MECHANISM.

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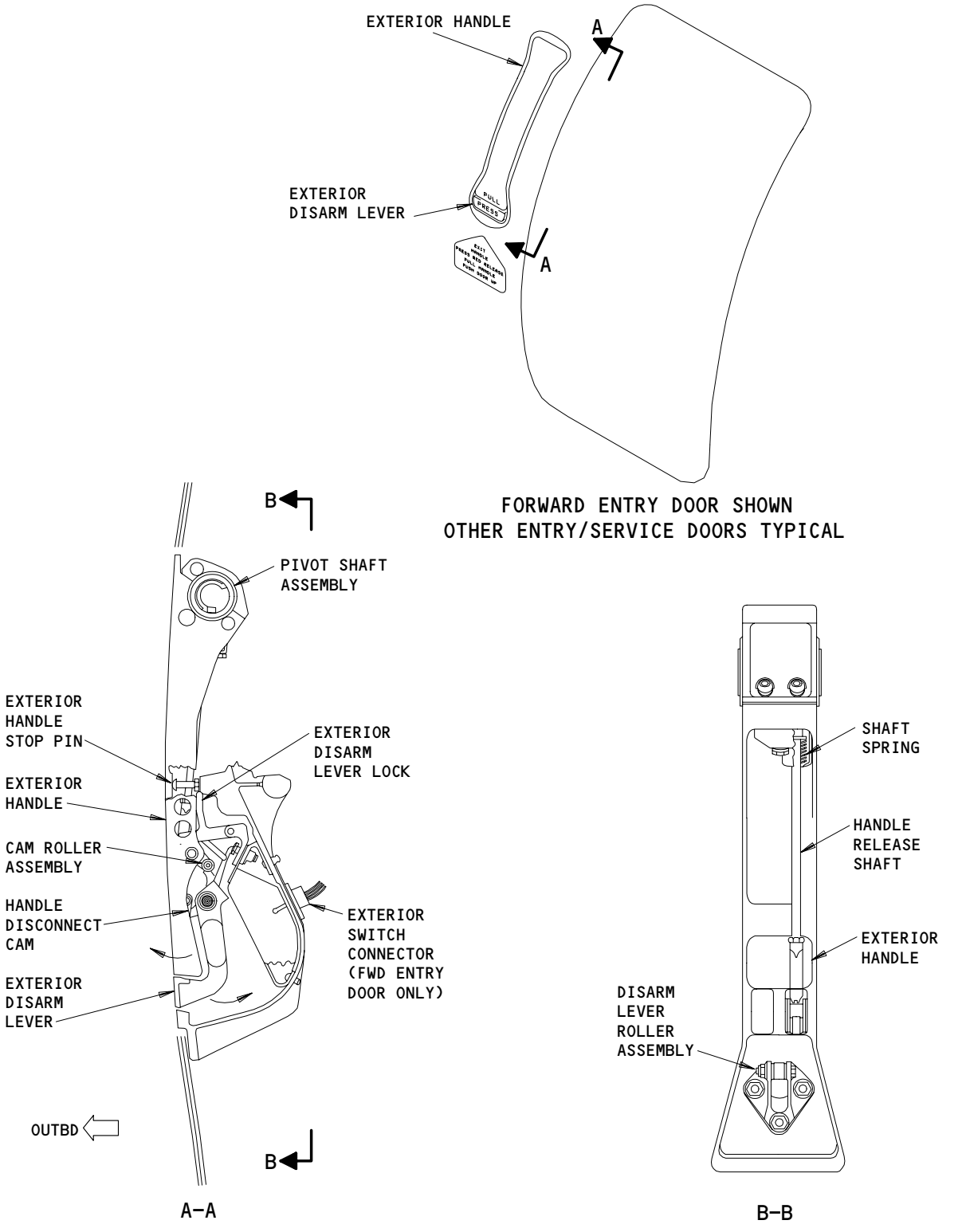

Exterior Handle Mechanism
Figure 4

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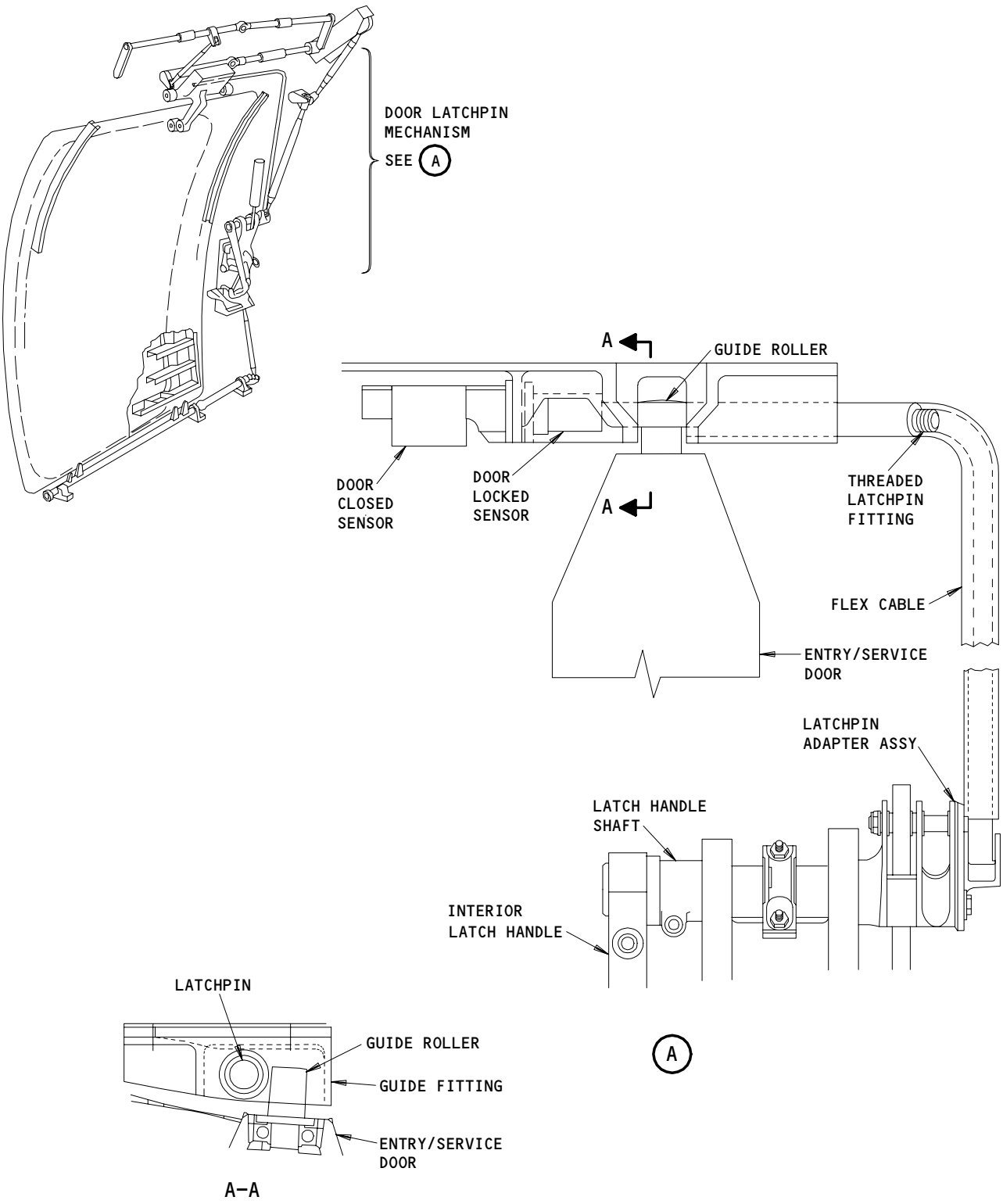

Door Latchpin Mechanism
Figure 5

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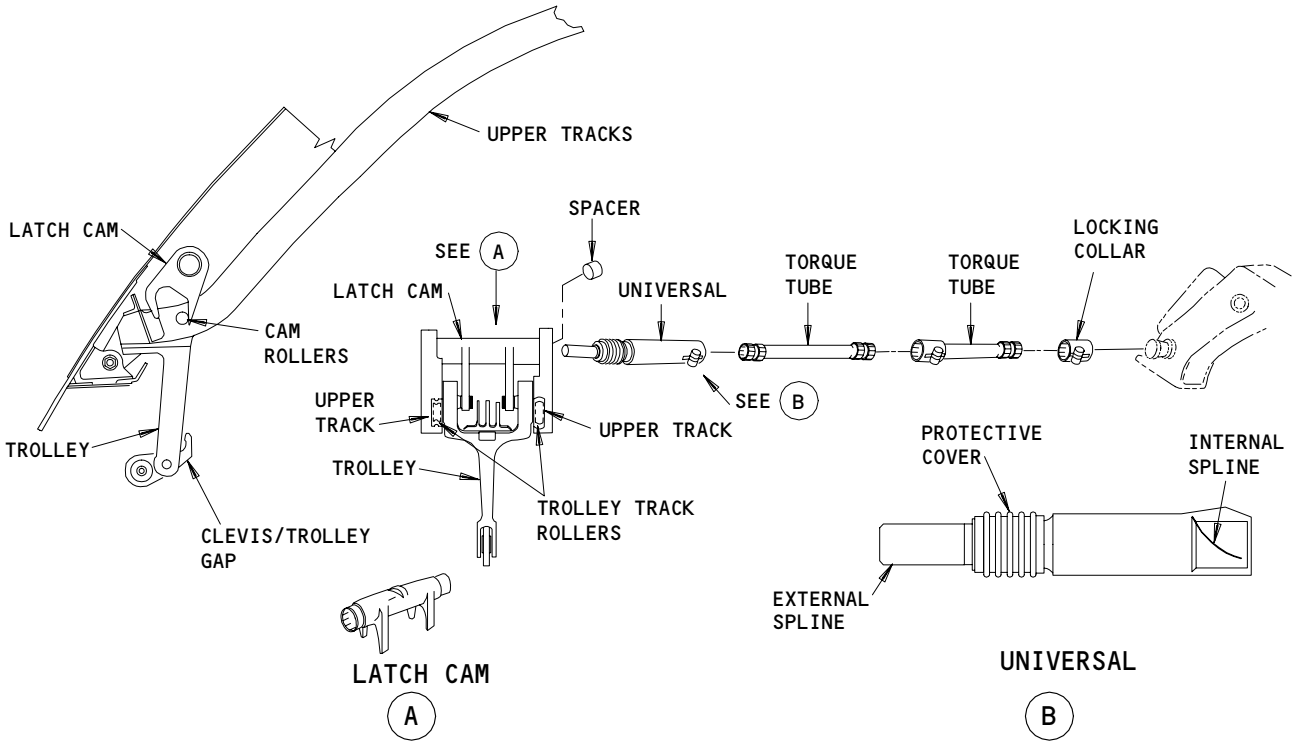
L. Upstop Snubber (Fig. 7)
   (1) The upstop snubbers at the top of the side tracks absorb the shock of the door opening motion and stops the door in the overhead position.

M. Counterbalance Assembly (Fig. 8)
   (1) The counterbalance provides a force to assist in lifting the door overhead. A cable from the counterbalance to the trolley wraps around the counterbalance cable drum to lift the door. The torsion springs provide the force to rotate the cable drum. The rigging handwheel adjusts the spring torsion. The centrifugal brake limits the opening speed of the door during slide deployment, or the closing speed of the door in case of torsion spring failure.



Door Latch Mechanism
Figure 6

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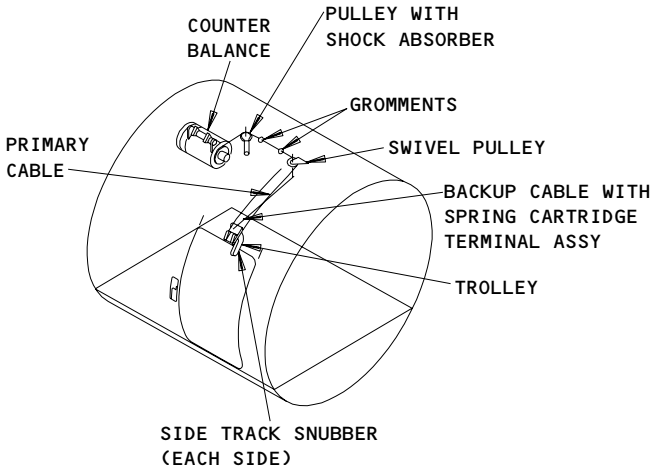
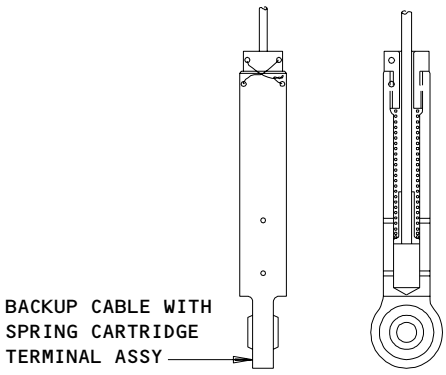
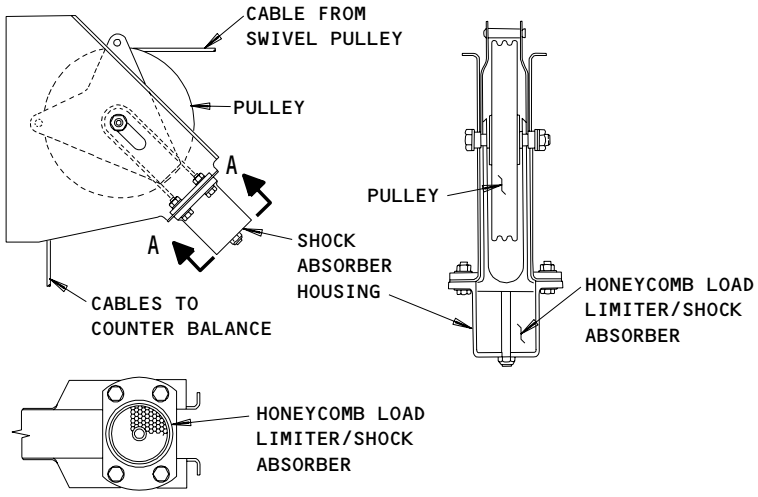
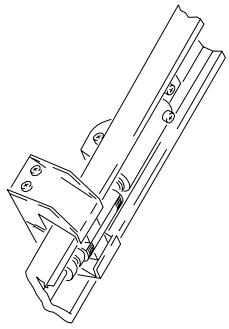




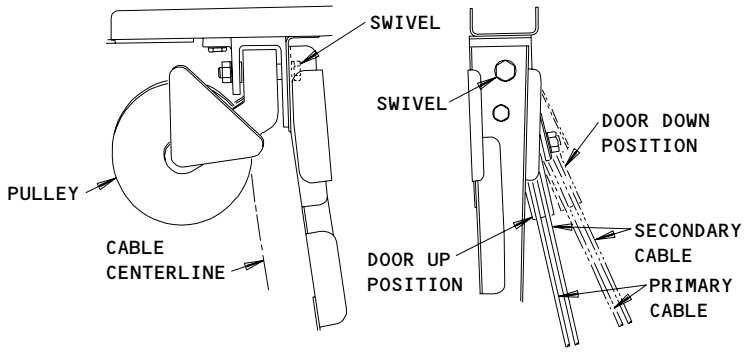
BACKUP CABLE TERMINAL ASSY



A-A



SIDE TRACK SNUBBER



SWIVEL PULLEY

Door Lift System
Figure 7

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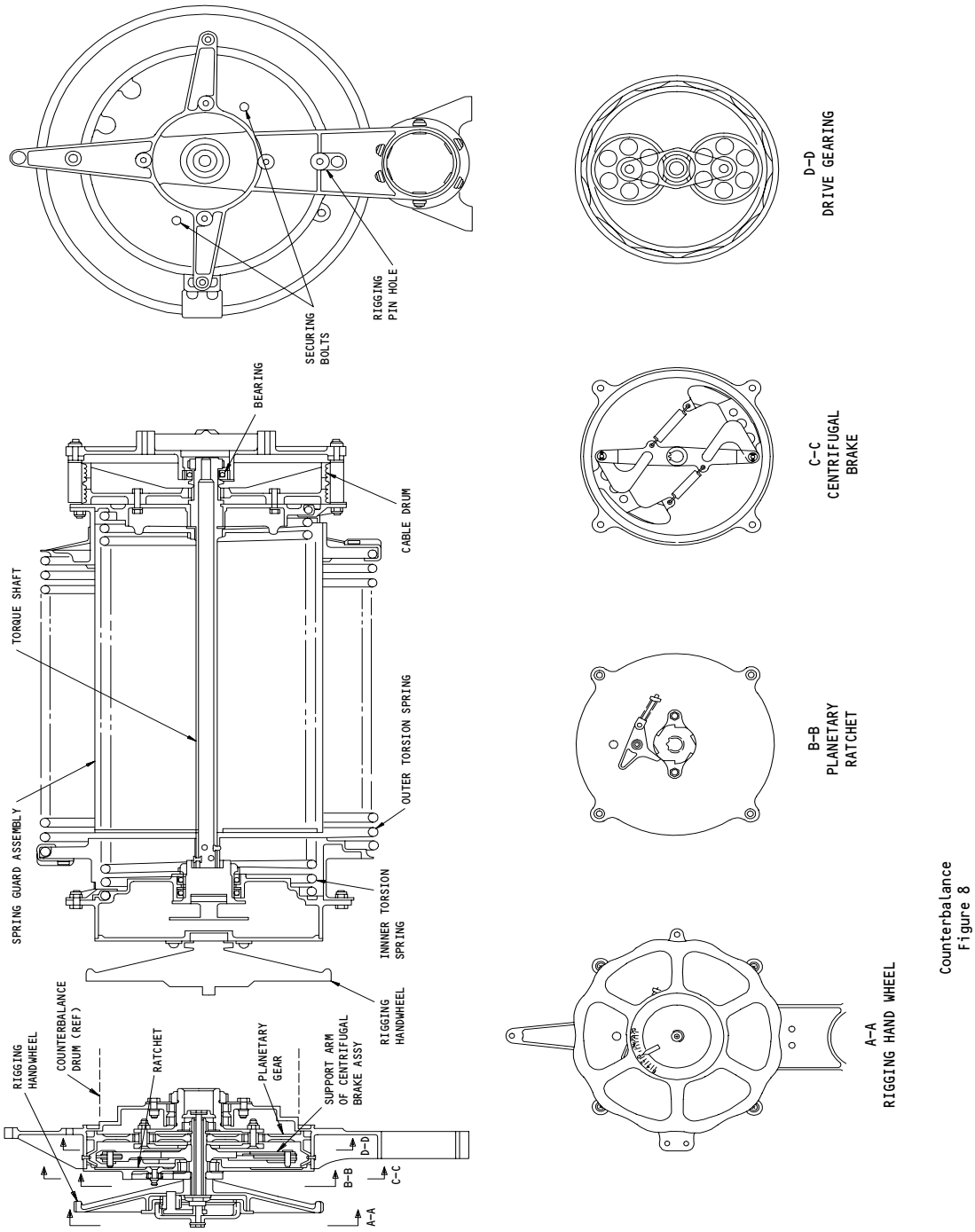

Counterbalance
Figure 8

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N. Lower Rollers (Fig. 9)
(1) The lower rollers at the bottom sides of the door are captive in the side tracks. The right side (looking inboard from outside) roller axle floats to allow for misalignment or irregularities in the side tracks.

O. Continuous Door Stop (Fig. 9)
(1) The continuous door stops are along the forward and aft edges of the door. The stops are made of torlon. The stops carry the pressure load from the door against the body stops on the fuselage.

P. Door Uplatch and Solenoid (Fig. 10)
(1) The uplatch protrudes through the side track to hold the door open. Lifting the door, then pushing and holding the uplatch release until the lower rollers pass below the uplatch, releases the door for closing. Doors with an electrical power assist have a solenoid attached to the uplatch as an alternative to manual operation.

Q. Girt Bar Carrier (Fig. 11)
(1) The girt bar carrier locks the girt bar to the floor when the escape slide is armed. When the slide is armed, direct visual indication of girt bar lockdown is given through a viewing window at the bottom of the door lining.

R. Electrical Assist
(1) The forward entry door has an electrical assist for opening and closing the door. A rotary actuator on the counterbalance operates to open or close the door. The MAIN DOOR UP and MAIN DOOR DOWN switches on the forward cabin attendants' panel, and the exterior switch located in the exterior handle cavity, control the rotary actuator.

2. Operation

A. Functional Description (All Entry/Service Doors)
(1) The arm/disarm lever operates to arm/disarm the door-mounted escape system. When the arm/disarm lever is placed to ARMED, the girt bar carrier rotates and locks the girt bar to the floor. When the arm/disarm lever is placed to DISARMED, the girt bar carrier rotates to allow the girt bar to raise up with the door.
(2) The interior handle operates a pushrod linkage to the door latch torque tube. The door latch torque tube rotates to latch/unlatch the door. Two pushrods to the movable ceiling panels connect to the door latch torque tube. The movable ceiling pushrods latch/unlatch the movable ceiling panels to allow the door to move up into the ceiling.

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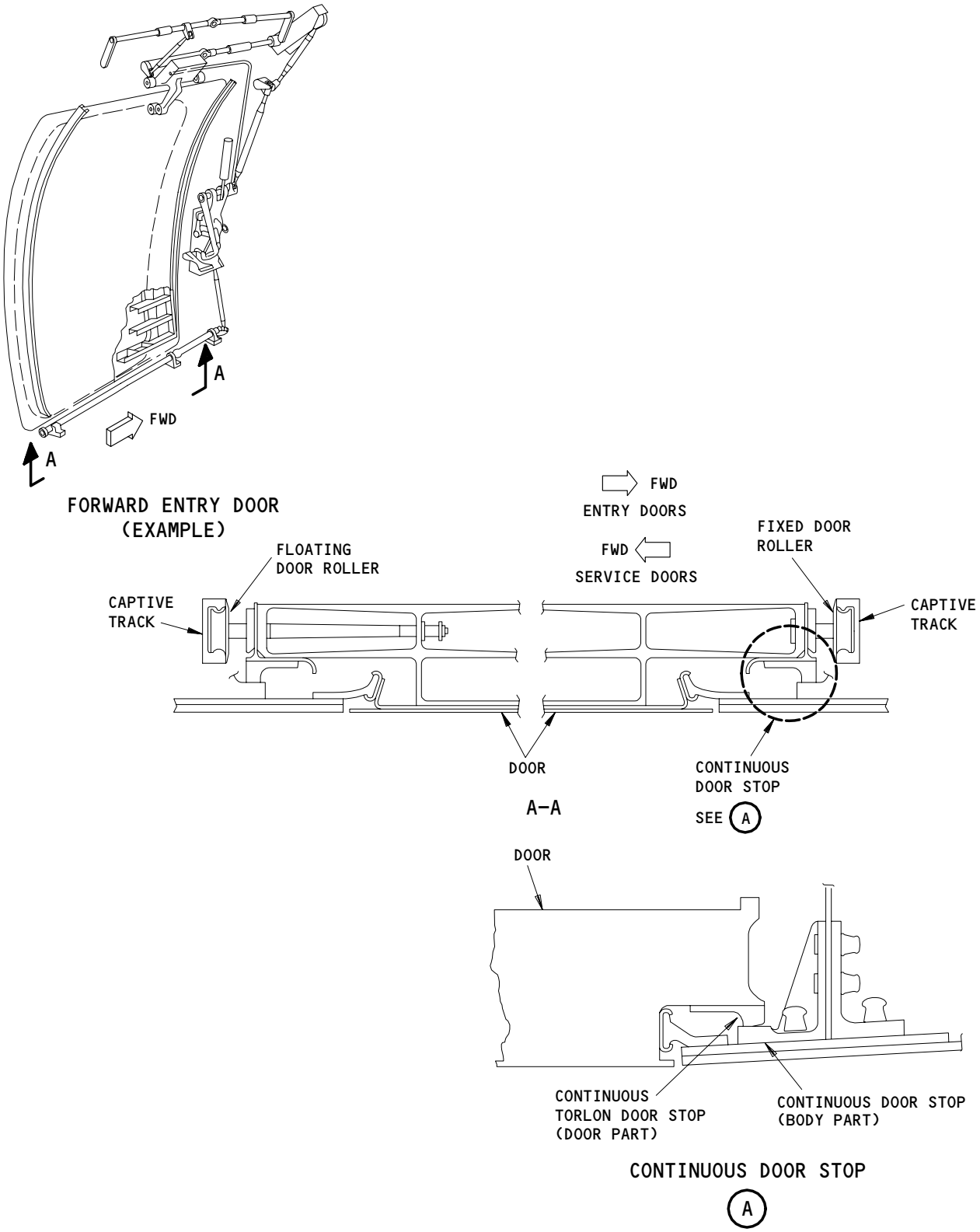

Side Rollers and Stop
Figure 9

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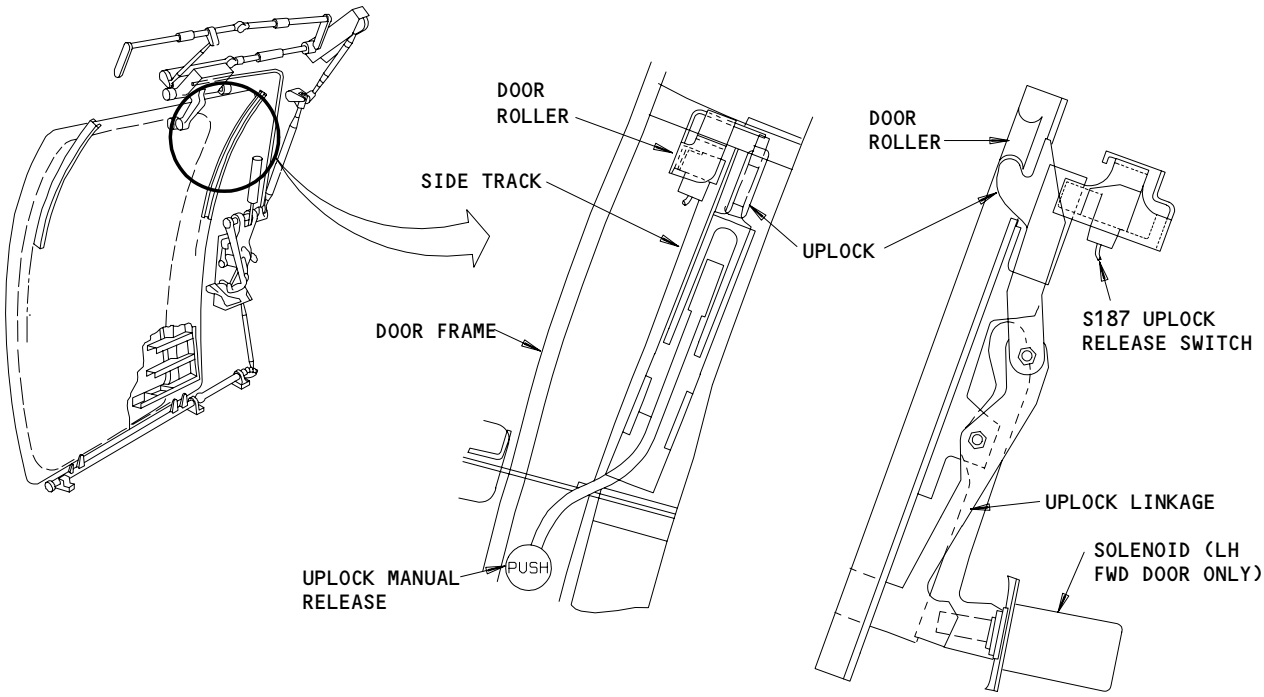

Door Uplatch and Solenoid
Figure 10

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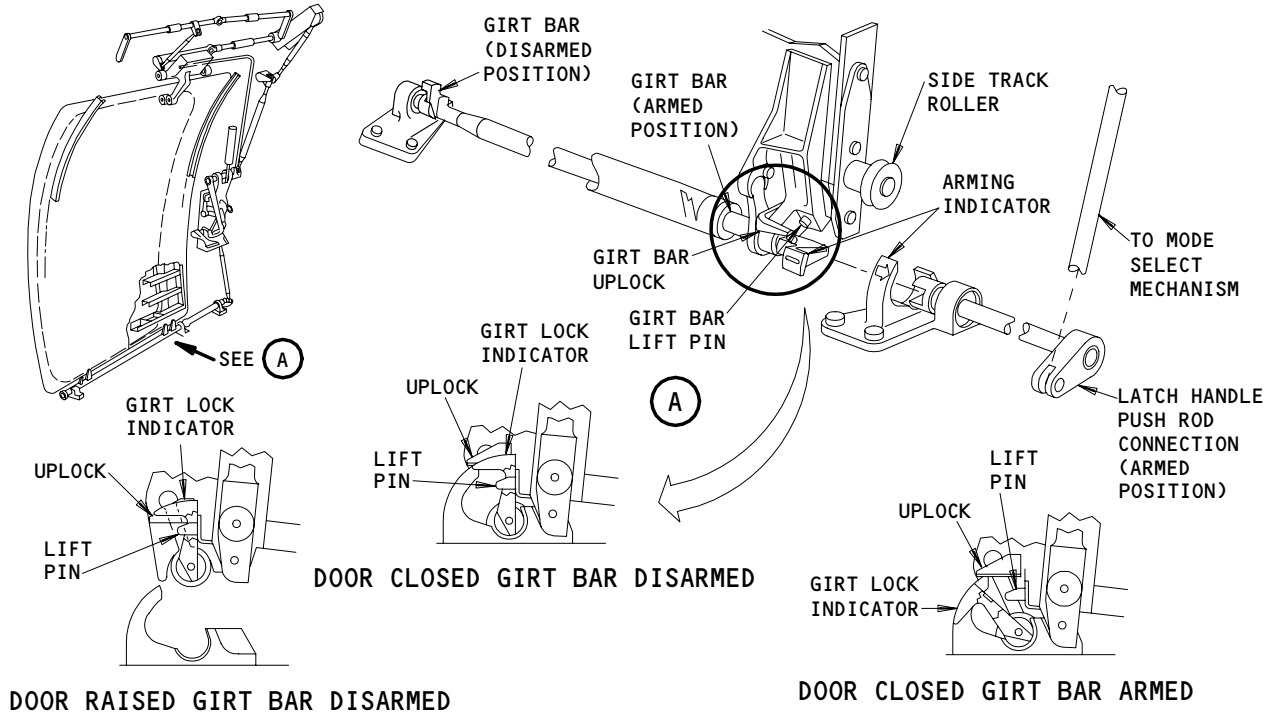
B. Functional Description (Forward Entry Door)

(1) The MAIN DOOR UP switch on the forward cabin attendant panel or the external control DOOR UP switch (under the exterior handle) controls the rotary actuator which opens the door. 28 V dc control power is available to the UP ENABLE relay, K767, and the FWD ENTRY DR UP NO. 2 relay, K380, on the P19 forward lighting distribution panel. The control power will look for a ground through the proximity switch electronics unit (PSEU). The PSEU will give a ground if the FWD ENTRY DR HANDLE UP sensor gets input that the interior handle is up and the FWD ENTRY DOOR UP sensor gets input that the door is not up.

(2) When the MAIN DOOR UP switch is pressed, or the exterior switch is moved to the UP position, 28 Vdc control power is applied to FWD ENTRY DR UP NO. 1 relay, K417, on P19. When K417 is energized, 115 Vac power is applied to the rotary actuator to raise the door.

(3) The MAIN DOOR DOWN switch on the forward cabin attendants' panel, or the exterior switch DN position, controls the door rotary actuator to close the door. When the MAIN DOOR DOWN switch is pressed, or the exterior switch is moved to the DN position, 28 Vdc control power is applied to FWD ENTRY DR DN relay, K418, on P19, and to the uplatch solenoid. The control power seeks a ground through the PSEU. The PSEU will provide a ground if the FWD ENTRY DOOR DN sensor senses that the door is not down, if the FWD ENTRY DR HANDLE UP sensor senses that the interior handle is up, and if the UPLATCH RELEASE sensor senses that the uplatch is released.



Girt Bar Carrier
Figure 11

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(4) When K418 is energized, 115 Vac power is applied to the rotary actuator to lower the door.
(5) If the UPLATCH RELEASE sensor senses that the uplatch is not released, K418 will not be energized. After a 0.25 second delay, the 28 Vdc power will be applied to FWD ENTRY DR UP NO. 1 relay, K417. This will power the rotary actuator to raise the door to allow the uplatch to release. As soon as the uplatch is released, K418 will be energized and the rotary actuator will lower the door.

C. Control
(1) Open the Entry/Service Door Externally

WARNING: MAKE SURE THE RED EXTERNAL DISARM LEVER IS FULLY IN THE DISARM POSITION BEFORE YOU LIFT THE EXTERIOR HANDLE. IF THE DISARM LEVER IS NOT FULLY IN THE DISARM POSITION, THE ESCAPE SYSTEM CAN DEPLOY WHEN THE DOOR IS OPENED. THIS CAN CAUSE INJURY OR DAMAGE.

(a) Push the external disarm lever fully to the disarm position.

WARNING: MAKE SURE THE AREA INBOARD OF THE INTERIOR HANDLE IS CLEAR. AN INTERIOR HANDLE WITHOUT CLUTCH MECHANISM MOVES WHEN THE EXTERIOR HANDLE IS LIFTED OR LOWERED. THE MOVEMENT OF THE INTERIOR HANDLE CAN CAUSE INJURY TO PERSONS IN THE AIRPLANE.

(b) Make sure the area inboard of the interior handle is clear.

WARNING: DO NOT LIFT THE EXTERIOR HANDLE MORE THAN 60 DEGREES IF THE GIRT BAR CARRIER DOES NOT LIFT WITH THE DOOR. THE ESCAPE SYSTEM CAN DEPLOY AND CAUSE INJURY OR DAMAGE.

(c) Slowly lift the exterior handle approximately 60 degrees (door lifted approximately one inch).
(d) Make sure the girt bar carrier is lifted by the door. If the girt bar carrier is not lifted, then put the exterior handle back to the faired position. Do not open the door.

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(e) Slowly move the exterior handle to the unlatched position.
(f) To open the entry/service door manually, lift the door up until the uplatch is engaged.
(g) To open the forward entry door electrically, do these steps:
1) Hold the external control switch in the DOOR UP position.
2) Release the switch when the door is fully up and the rotary actuator stops.
(h) Turn the release roller, under the exterior handle, in the direction shown and lower the handle to the faired position.

NOTE: The external disarm lever stays in the disarmed (inboard) position.

(2) Close the Entry/Service Door Externally
(a) Make sure the interior handle is in the open (unlatched) position. Move the handle to the open position, if it is necessary.

NOTE: If the interior handle is not in the open position, you cannot close the door fully.

(b) Make sure the red external disarm lever is fully in the disarm position.

NOTE: If the disarm lever is not in the disarm position, you cannot fully close the door.

(c) Make sure the exterior handle is in the unlatched position.

WARNING: MAKE SURE THE AREA OF THE MOVEMENT FOR THE INTERIOR HANDLE IS CLEAR. THE INTERIOR HANDLE WILL MOVE DOWN WHEN THE DOOR IS CLOSED. THE SUDDEN MOVEMENT OF THE INTERIOR HANDLE CAN CAUSE INJURY TO PERSONS IN THE AIRPLANE.

(d) Make sure no persons are in the area of movement of the interior handle.

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(e) To lower the entry/service door manually, do these steps:
1) Lift the door to remove the load from the uplatch.
2) Push the uplatch button and pull the door down approximately three inches.
3) Release the uplatch button.
4) Pull the door down to the floor.

(f) To lower the forward entry door electrically, do these steps:
1) Push and hold the external control switch in the DOOR DN position.
2) Release the switch when the door is fully down and the rotary actuator stops.

(g) Make sure the yellow indicator flags for the girt bar do not show in the windows at the bottom of the door.

NOTE: If the flags show, the system is armed.

WARNING: MAKE SURE THE AREA INBOARD OF THE INTERIOR HANDLE IS CLEAR. AN INTERIOR HANDLE WITHOUT CLUTCH MECHANISM MOVES WHEN THE EXTERIOR HANDLE IS LIFTED OR LOWERED. THE MOVEMENT OF THE INTERIOR HANDLE CAN CAUSE INJURY TO PERSONS IN THE AIRPLANE.

(h) Make sure the area inboard of the interior handle is clear.

WARNING: USE THE PALM OF YOUR HAND TO MOVE THE EXTERIOR HANDLE DOWN AND DO NOT PUT YOUR FINGERS AROUND THE HANDLE. IF THE HANDLE MOVES DOWN SUDDENLY, INJURY TO YOUR HAND CAN OCCUR.

(i) Slowly move the exterior handle down to the faired position.

NOTE: The red external disarm lever is pulled into the fully faired position when the arm/disarm handle is moved to the ARMED position.

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(3) Open the Entry/Service Door Internally

WARNING: PULL THE ARM/DISARM HANDLE FULLY INBOARD TO DISARM THE ESCAPE SYSTEM BEFORE YOU OPEN THE DOOR INTERNALLY. IF THE ESCAPE SYSTEM DEPLOYS SUDDENLY, INJURY OR DAMAGE CAN OCCUR.

(a) Pull the arm/disarm handle to the DISARM (inboard) position.
(b) Make sure the arming flag is fully retracted into the slot in the doorway lining.
(c) Move the interior handle to the open position.
(d) To open the entry/service door manually, use the handholds on the bustle and lift the door up until the uplatch is engaged.
(e) To open the forward entry door electrically, do these steps:
    1) Push and hold the MAIN DOOR UP switch.
    2) Release the switch when the door is fully up and the rotary actuator stops.

(4) Close the Entry/Service Door Internally

WARNING: MAKE SURE THE RED EXTERNAL DISARM LEVER IS IN THE CORRECT POSITION WHEN YOU CLOSE THE DOOR INTERNALLY. IF THE DISARM LEVER IS NOT IN THE CORRECT POSITION, THE ESCAPE SYSTEM CAN ACCIDENTALLY DEPLOY AND CAUSE INJURY OR DAMAGE.

(a) Make sure the exterior handle and the red external disarm lever are in one of these positions:
    1) The exterior handle and the external disarm lever are in the faired position.
    2) The exterior handle is up and the external disarm lever is in the disarmed position.

NOTE: If the exterior handle is up and the external disarm lever is in the armed position, it is possible that the exterior handle will not latch.

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(b) To lower the entry/service door manually, do these steps:
    1) Lift the door to remove the load from the uplatch.
    2) Push the uplatch button and pull the door down approximately three inches.
    3) Release the uplatch button.
    4) Pull the door down to the floor.
    5) Move the interior handle down to the latched position.
(c) To lower the forward entry door electrically, do these steps:
    1) Push and hold the MAIN DOOR DOWN switch.
    2) Release the switch when the door is fully down and the rotary actuator stops.
    3) Move the interior handle down to the latched position.
(d) To arm the door, do these steps:
    1) Push the release button and move the arm/disarm handle to the ARMED position.
    2) Make sure the arming flag is fully extended inboard of the interior handle grip.
    3) Make sure the yellow indicator flags for the girt bar show in the windows at the bottom of the door.

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ENTRY/SERVICE DOORS

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
ACTUATOR – ENTRY DOOR ROTARY, M627	1	1	FORWARD ENTRY DOOR COUNTERBALANCE	52-11-45
BUSTLE		4	ENTRY/SERVICE DOORS	
CABLE – COUNTERBALANCE	1	8	ABOVE DOORWAY LOWERED CEILINGS	52-11-16
CARRIER – GIRT BAR	1	4	BEHIND BUSTLE	
CIRCUIT BREAKERS			FLIGHT COMPARTMENT, P11	
FWD ENTRY DR CONT, C1402		1	11T6	*
CIRCUIT BREAKERS			119AL, MAIN EQUIP CTR, P33	
FWD ENTRY DOOR, C363		1	33F6	*
CIRCUIT BREAKERS			119AL, MAIN EQUIP CTR, P33	
FWD ENTRY DOOR CONT, C1408		1	34J5	*
COUNTERBALANCE	1	4	ABOVE DOORWAY LOWERED CEILINGS	52-11-16
DOORS – ENTRY/SERVICE	1			52-11-01
FORWARD ENTRY		1	831	
FORWARD SERVICE		1	841	
AFT ENTRY		1	833	
AFT SERVICE		1	843	
LATCH CAM	2	4	DOOR UPPER TRACKS	
LINING – DOORWAY		4	ENTRY/SERVICE DOORS	52-11-02
MECHANISM – CEILING PANEL LATCH	1	4	ABOVE MOVABLE CEILING PANELS	52-11-34
MECHANISM – DOOR HANDLE	1	4	BEHIND DOORWAY LINING	52-11-25
MECHANISM – DOOR LATCH OVERCENTER	1	4	BEHIND DOORWAY LINING	52-11-32
MECHANISM – MODE SELECT	1	4	BEHIND DOORWAY LINING	
PULLEY – COUNTERBALANCE CABLE	1	8	ABOVE MOVABLE CEILING PANELS	52-11-16
RELAY – (REF 31-01-19, FIG. 101)				
FWD ENTRY DR DN, K418				
FWD ENTRY DR UP NO. 1, K417				
FWD ENTRY DR UP NO. 2, K380				
UP ENABLE, K767				
RELAY – (REF 31-01-36, FIG. 101)				
FWD ENTRY DR PWR TRANS, K43				
SEAL – DOOR		4	ENTRY/SERVICE DOORS	52-09-01
SENSORS – DOOR CONTROL PROXIMITY				52-11-47
FWD ENTRY DOOR DOWN, S186		1	DOOR UPPER TRACKS	*
FWD ENTRY DOOR HANDLE UP, S184		1	OVERCENTER MECHANISM	*
FWD ENTRY DOOR UP, S185		1	DOOR UPPER TRACKS	*
UPLATCH RELEASE, S187		1	UPLATCH	*
SOLENOID – UPLATCH, M778	2	1	BEHIND FORWARD ENTRY DOORWAY LINING	52-11-12
SWITCH – DOOR CONTROL, S410		1	FORWARD ENTRY DOOR EXTERIOR HANDLE	52-11-46
TIME DELAY – (REF 31-01-19, FIG. 101)				
DR DN, M1152				
TRACKS – DOOR SIDE	1	8	DOORWAYS	
TRACKS – DOOR UPPER	1	4	ABOVE MOVABLE CEILING PANELS	52-11-06
TROLLEY – DOOR	1	4	DOOR UPPER TRACKS	52-11-08
UPLATCH	1	4	BEHIND DOORWAY LINING	52-11-12

* SEE THE WDM EQUIPMENT LIST

Entry/Service Doors – Component Index
Figure 101

29763
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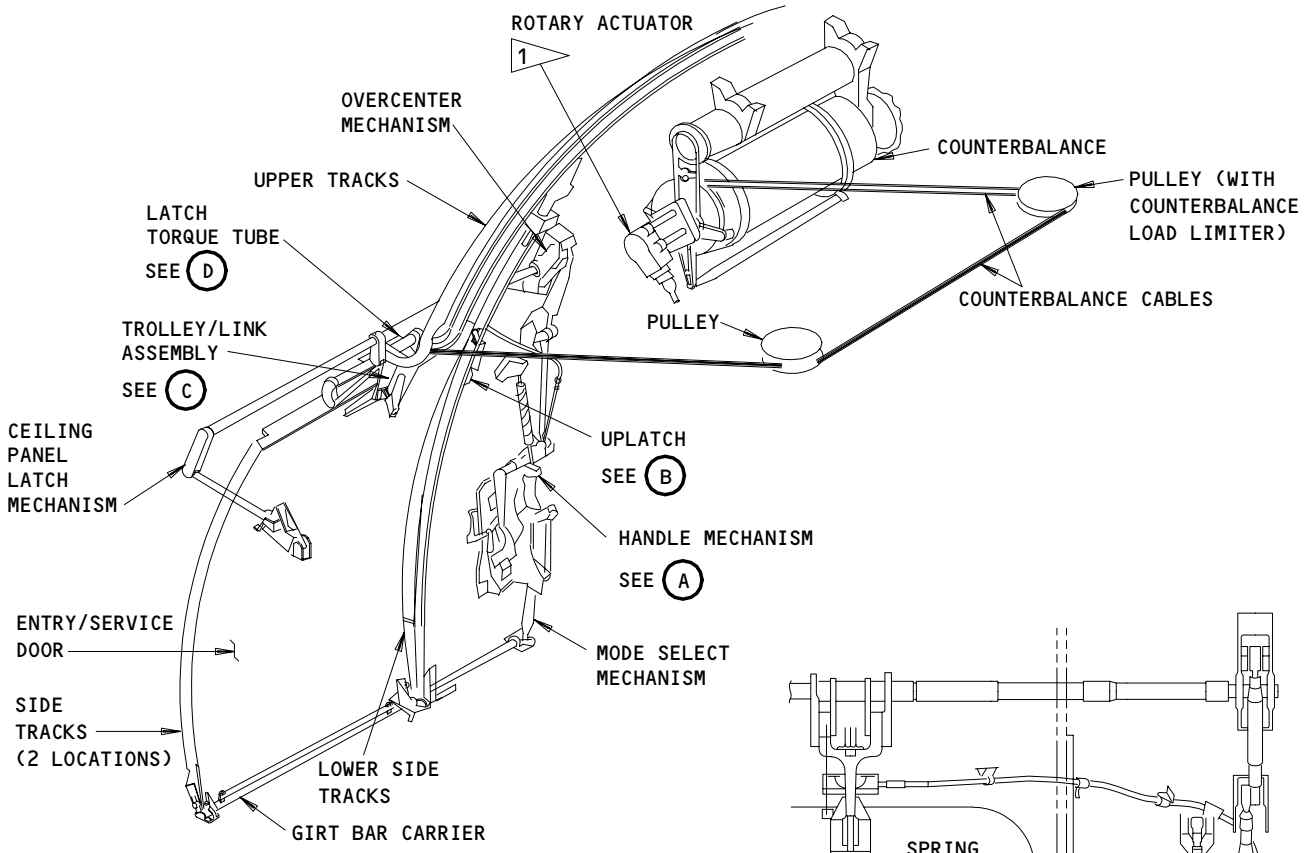
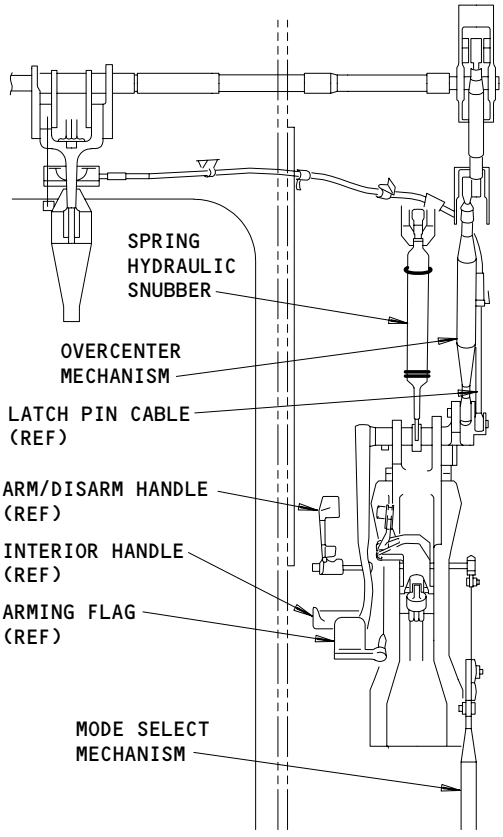


ENTRY/SERVICE DOOR
(EXAMPLE)



HANDLE MECHANISM
(EXAMPLE)
A

1 FORWARD ENTRY DOOR ONLY

Entry/Service Doors - Component Location
Figure 102 (Sheet 1)

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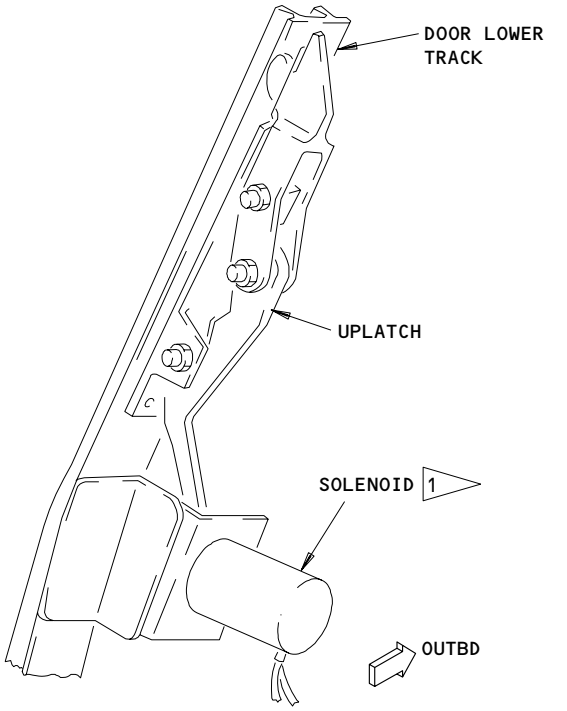
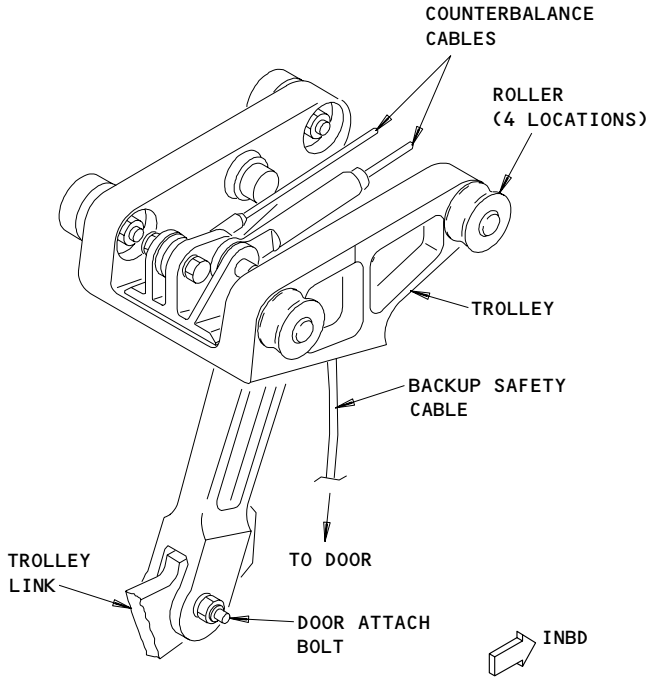


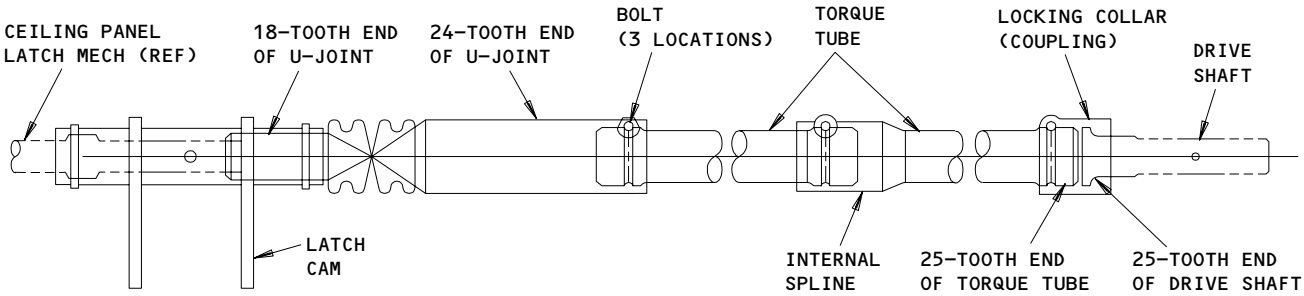
UPLATCH

B



TROLLEY/LINK ASSEMBLY

C



LATCH TORQUE TUBE

D

Entry/Service Doors - Component Location
Figure 102 (Sheet 2)

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ENTRY/SERVICE DOORS - MAINTENANCE PRACTICES

1. General
   A. This procedure contains five tasks.
      (1) The first task is to open the entry/service door externally.
      (2) The second task is to close the entry/service door externally.
      (3) The third task is to open the entry/service door internally.
      (4) The fourth task is to close the entry/service door internally.
      (5) The fifth task is to apply corrosion prevention treatment.
   B. You can lift or lower the forward entry door electrically.
   C. There are two interior handle mechanisms.
      (1) SAS 050-155, 162-165, 275, 276 PRE-SB 52-58;
      the interior handle does not have a clutch mechanism and can move when the exterior handle is moved.
      (2) SAS 050-155, 162-165, 275, 276 POST-SB 52-58;
      SAS 156-161, 166-274, 277-999;
      the interior handle has a clutch mechanism and does not move when the exterior handle is moved.

TASK 52-11-00-862-001

2. Open the Entry/Service Door Externally
   A. Access

      CAUTION: DO NOT OPERATE THE DOOR IN WINDS MORE THAN 40 KNOTS. DO NOT LET THE DOOR STAY OPEN IN WINDS MORE THAN 65 KNOTS. STRONG WINDS CAN CAUSE DAMAGE TO THE STRUCTURE OF THE AIRPLANE.

      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   B. Procedure

      S 862-005

      WARNING: MAKE SURE THE RED EXTERNAL DISARM LEVER IS FULLY IN THE DISARM POSITION BEFORE YOU LIFT THE EXTERIOR HANDLE. IF THE DISARM LEVER IS NOT FULLY IN THE DISARM POSITION, THE ESCAPE SYSTEM CAN DEPLOY WHEN THE DOOR IS OPENED. THIS CAN CAUSE INJURY OR DAMAGE.

      (1) Push the external disarm lever fully to the disarm position (View A, Fig. 201).

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S 862-084

WARNING: MAKE SURE THE AREA INBOARD OF THE INTERIOR HANDLE IS CLEAR. AN INTERIOR HANDLE WITHOUT CLUTCH MECHANISM MOVES WHEN THE EXTERIOR HANDLE IS LIFTED OR LOWERED. THE MOVEMENT OF THE INTERIOR HANDLE CAN CAUSE INJURY TO PERSONS IN THE AIRPLANE.

(2) Make sure the area inboard of the interior handle is clear.

S 862-021

WARNING: DO NOT LIFT THE EXTERIOR HANDLE MORE THAN 60 DEGREES IF THE GIRT BAR CARRIER DOES NOT LIFT WITH THE DOOR. THE ESCAPE SYSTEM CAN DEPLOY AND CAUSE INJURY OR DAMAGE.

(3) Slowly lift the exterior handle approximately 60 degrees (door lifted approximately one inch).

S 862-024

(4) Make sure the girt bar carrier is lifted by the door. If the girt bar carrier is not lifted, then put the exterior handle back to the faired position. Do not open the door.

S 862-025

(5) Slowly move the exterior handle to the unlatched position (Views A and A-A, Fig. 201).

S 862-027

(6) To open the entry/service door manually, lift the door up until the uplatch is engaged.

S 862-028

(7) To open the forward entry door electrically, do these steps:
   (a) Hold the external control switch in the DOOR UP position (View B, Fig. 201).
   (b) Release the switch when the door is fully up and the rotary actuator stops.

S 862-032

(8) Turn the release roller, under the exterior handle, in the direction shown (View A-A, Fig. 201) and lower the handle to the faired position.

   NOTE: The external disarm lever stays in the disarmed (inboard) position.

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S 482-095

WARNING: DO NOT USE THE WARNING STRAP TO SUPPORT THE WEIGHT OF A PERSON. THE WARNING STRAP INSTALLED ACROSS THE DOOR IS ONLY A VISUAL INDICATION THAT THE DOOR IS OPEN AND WILL NOT SUPPORT A PERSON. IF YOU USE THE STRAP TO SUPPORT YOUR WEIGHT, YOU CAN FALL THROUGH THE DOOR AND CAUSE INJURY.

(9) Make sure you attach the warning strap after you open the door.

TASK 52-11-00-862-002

3. Close the Entry/Service Door Externally

A. Access

(1) Location Zones

831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

B. Procedure

S 862-106

CAUTION: DO NOT OPERATE THE DOOR IN WINDS MORE THAN 40 KNOTS. DO NOT LET THE DOOR STAY OPEN IN WINDS MORE THAN 65 KNOTS. STRONG WINDS CAN CAUSE DAMAGE TO THE STRUCTURE OF THE AIRPLANE.

(1) Make sure the interior handle is in the open (unlatched) position (View A, Fig. 202). Move the handle to the open position, if it is necessary.

NOTE: If the interior handle is not in the open position, you cannot close the door fully.

S 862-098

WARNING: MAKE SURE THE RED EXTERNAL DISARM LEVER IS IN THE DISARM POSITION BEFORE YOU LIFT THE EXTERIOR HANDLE. IF THE DISARM LEVER IS NOT FULLY IN THE DISARM POSITION, THE ESCAPE SYSTEM CAN INFLATE WHEN THE DOOR IS OPENED. THIS CAN CAUSE INJURY OR DAMAGE.

(2) Make sure the red external disarm lever is fully in the disarm position (View A, Fig. 201).

NOTE: If the disarm lever is not in the disarm position, you cannot fully close the door.

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S 862-037

(3) Make sure the exterior handle is in the unlatched position (View A, Fig. 201).

S 862-038

WARNING: MAKE SURE THE AREA OF THE MOVEMENT FOR THE INTERIOR HANDLE IS CLEAR. THE INTERIOR HANDLE WILL MOVE DOWN WHEN THE DOOR IS CLOSED. THE SUDDEN MOVEMENT OF THE INTERIOR HANDLE CAN CAUSE INJURY TO PERSONS IN THE AIRPLANE.

(4) Make sure no persons are in the area of movement of the interior handle (View A, Fig. 202).

S 082-091

(5) Make sure you remove the warning strap before you close the entry/service door.

S 862-040

(6) To lower the entry/service door manually, do these steps:
   (a) Lift the door to remove the load from the uplatch.
   (b) Push the uplatch button and pull the door down approximately three inches.
   (c) Release the uplatch button.
   (d) Pull the door down to the floor.

S 862-041

(7) To lower the forward entry door electrically, do these steps:
   (a) Push and hold the external control switch in the DOOR DN position (View B, Fig. 201).
   (b) Release the switch when the door is fully down and the rotary actuator stops.

S 862-083

(8) Make sure the yellow indicator flags for the girt bar do not show in the windows at the bottom of the door (Fig. 202).

NOTE: If the flags show, the system is armed.

S 862-085

WARNING: MAKE SURE THE AREA INBOARD OF THE INTERIOR HANDLE IS CLEAR. AN INTERIOR HANDLE WITHOUT CLUTCH MECHANISM MOVES WHEN THE EXTERIOR HANDLE IS LIFTED OR LOWERED. THE MOVEMENT OF THE INTERIOR HANDLE CAN CAUSE INJURY TO PERSONS IN THE AIRPLANE.

(9) Make sure the area inboard of the interior handle is clear.

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S 862-088

WARNING: USE THE PALM OF YOUR HAND TO MOVE THE EXTERIOR HANDLE DOWN AND DO NOT PUT YOUR FINGERS AROUND THE HANDLE. IF THE HANDLE MOVES DOWN SUDDENLY, INJURY TO YOUR HAND CAN OCCUR.

(10) Slowly move the exterior handle down to the faired position (View A, Fig. 201).

NOTE: The red external disarm lever is pulled into the fully faired position when the arm/disarm handle is moved to the ARMED position.

TASK 52-11-00-862-003

4. Open the Entry/Service Door Internally

A. Access

(1) Location Zones

831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

B. Procedure

S 862-060

WARNING: PULL THE ARM/DISARM HANDLE FULLY INBOARD TO DISARM THE ESCAPE SYSTEM BEFORE YOU OPEN THE DOOR INTERNALLY. IF THE ESCAPE SYSTEM DEPLOYS SUDDENLY, INJURY OR DAMAGE CAN OCCUR.

CAUTION: DO NOT OPERATE THE DOOR IN WINDS MORE THAN 40 KNOTS. DO NOT LET THE DOOR STAY OPEN IN WINDS MORE THAN 65 KNOTS. STRONG WINDS CAN CAUSE DAMAGE TO THE STRUCTURE OF THE AIRPLANE.

(1) Pull the arm/disarm handle to the DISARM (inboard) position (View B, Fig. 202).

S 862-063

(2) Make sure the arming flag is fully retracted into the slot in the doorway lining (Fig. 202).

S 862-064

(3) Move the interior handle to the open (unlatched) position.

S 862-066

(4) To open the entry/service door manually, use the handholds on the bustle and lift the door up until the uplatch is engaged (Fig. 202).

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S 862-067

(5) To open the forward entry door electrically, do these steps:
(a) Push and hold the MAIN DOOR UP switch (Fig. 202).
(b) Release the switch when the door is fully up and the rotary actuator stops.

S 482-096

WARNING: DO NOT USE THE WARNING STRAP TO SUPPORT THE WEIGHT OF A PERSON. THE WARNING STRAP INSTALLED ACROSS THE DOOR IS ONLY A VISUAL INDICATION THAT THE DOOR IS OPEN AND WILL NOT SUPPORT A PERSON. IF YOU USE THE STRAP TO SUPPORT YOUR WEIGHT, YOU CAN FALL THROUGH THE DOOR AND CAUSE INJURY.

(6) Make sure you attach the warning strap after you open the entry/service door.

TASK 52-11-00-862-004

5. Close the Entry/Service Door Internally

A. Access

(1) Location Zones

831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

B. Procedure

S 862-071

WARNING: MAKE SURE THE RED EXTERNAL DISARM LEVER IS IN THE CORRECT POSITION WHEN YOU CLOSE THE DOOR INTERNALLY. IF THE DISARM LEVER IS NOT IN THE CORRECT POSITION, THE ESCAPE SYSTEM CAN ACCIDENTALLY DEPLOY AND CAUSE INJURY OR DAMAGE.

CAUTION: DO NOT OPERATE THE DOOR IN WINDS MORE THAN 40 KNOTS. DO NOT LET THE DOOR STAY OPEN IN WINDS MORE THAN 65 KNOTS. STRONG WINDS CAN CAUSE DAMAGE TO THE STRUCTURE OF THE AIRPLANE.

(1) Make sure the exterior handle and the red external disarm lever are in one of these positions:
(a) The exterior handle and the external disarm lever are in the faired position (Fig. 203).

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(b) The exterior handle is up and the external disarm lever is in the disarmed position (View A, Fig. 201).

NOTE: If the exterior handle is up and the external disarm lever is in the armed position, it is possible that the exterior handle will not latch.

S 862-100

WARNING: MAKE SURE THE AREA OF THE MOVEMENT FOR THE INTERIOR HANDLE IS CLEAR. THE INTERIOR HANDLE WILL MOVE IN THE DIRECTION OF THE LATCHED POSITION WHEN THE DOOR GOES NEAR TO THE END OF ITS TRAVEL DOWN. THE SUDDEN MOVEMENT OF THE INTERIOR HANDLE CAN CAUSE INJURY TO PERSONS IN THE AIRPLANE.

(2) Make sure no persons are in the area of movement of the interior handle.

S 082-092

(3) Make sure you remove the warning strap before you close the entry/service door.

S 862-077

(4) To lower the entry/service door manually, do these steps:
(a) Lift the door to remove the load from the uplatch.
(b) Push the uplatch button and pull the door down approximately three inches.
(c) Release the uplatch button.
(d) Pull the door down to the floor.
(e) Move the interior handle down to the latched position.

S 862-078

(5) To lower the forward entry door electrically, do these steps:
(a) Push and hold the MAIN DOOR DOWN switch (Fig. 202).
(b) Release the switch when the door is fully down and the rotary actuator stops.
(c) Move the interior handle down to the latched position.

S 862-082

(6) To arm the door, do these steps:
(a) Push the release button and move the arm/disarm handle to the ARMED position (View B, Fig. 202).
(b) Make sure the arming flag is fully extended inboard of the interior handle grip (Fig. 202).
(c) Make sure the yellow indicator flags for the girt bar show in the windows at the bottom of the door (Fig. 202).

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TASK 52-11-00-622-107

6. Corrosion Prevention Treatment

A. General

(1) At first opportunity consistent with scheduled maintenance activity, corrosion prevention treatment should be accomplished on the internal and external structure of the doors, connection points and mechanisms. Door openings should be treated at the same time as the doors.

(2) Following cleaning of suspected areas (Ref AMM 51-21-03/701), a full inspection is effective to make sure that protective finishes provided during manufacture stay intact. For details on the application of corrosion preventive compound, refer to AMM 51-24-09/701.

(3) Corrosion may show as noticeable bulges of the skin or white deposits of corrosion products at fastener heads or joint edges.

(4) Corrosion can occur in the bearings of the door latching and arming systems if the bearings are not lubricated.

(5) For minor corrosion, to keep the downtime of the airplane to a minimum, the corrosion products should be cleaned off, followed by the application of a corrosion preventive compound into the affected area to decrease the corrosion process (Ref. AMM 51-24-09/701). The finish system should be restored at the first opportunity consistent with the maintenance schedule.

(6) Frequency of Application

(a) Periodic inspection is required in areas that can get corrosion and should be consistent to the schedules specified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.

(b) Periodic application of BMS3-23 compounds is necessary on areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

(7) Obey the precautions that follow when applying the corrosion preventive compound:

(a) Do not apply corrosion preventive compounds on grease joints or sealed bearings. These compounds dissolve grease and other lubricants. They are penetrating compounds and can get around the seals and into the bearings.

(b) Do not apply corrosion preventive compounds on interior materials such as liners. The compounds change the flammable quality of these materials.

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B. References
(1) AMM 12-21-18/301, Entry/Crew/Service Door
(2) AMM 52-11-02/401, Doorway Lining
C. Consumable Materials
(1) G00009 Compound, Organic Corrosion Preventive - BMS3-23, Type II
D. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

E. Procedure

S 622-109
(1) Apply the corrosion prevention treatment, do these steps:
(a) Remove liner (Ref AMM 52-11-00/401) and gain access to interior structure of door.
(b) Clean out drains and drain paths.
(c) Apply corrosion preventive compound BMS 3-23, Type II to the interior door structure, giving special attention to the lower corners (Ref Fig. 204, View A-A).
(d) Lubricate the door fittings, as necessary (Ref AMM 12-21-18/301).
(e) Install the liner (Ref AMM 52-11-02/401) and put the door back to its usual condition.

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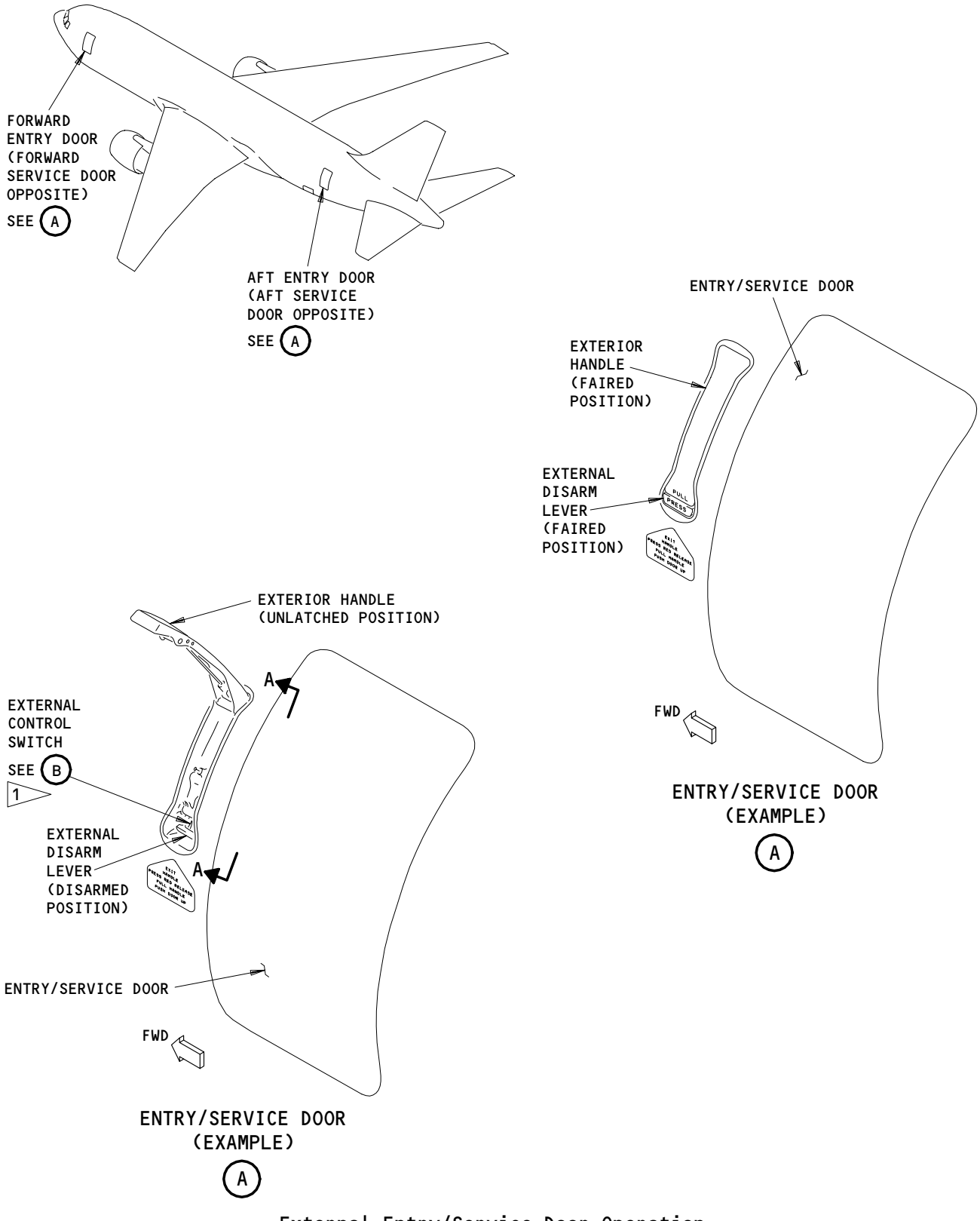

External Entry/Service Door Operation
Figure 201 (Sheet 1)

63801
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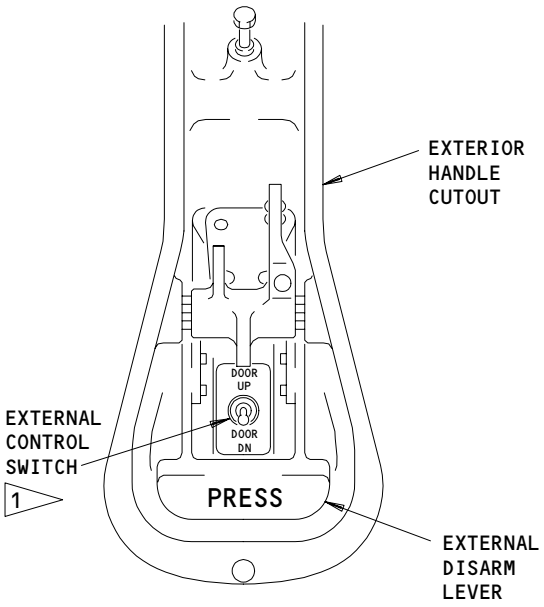
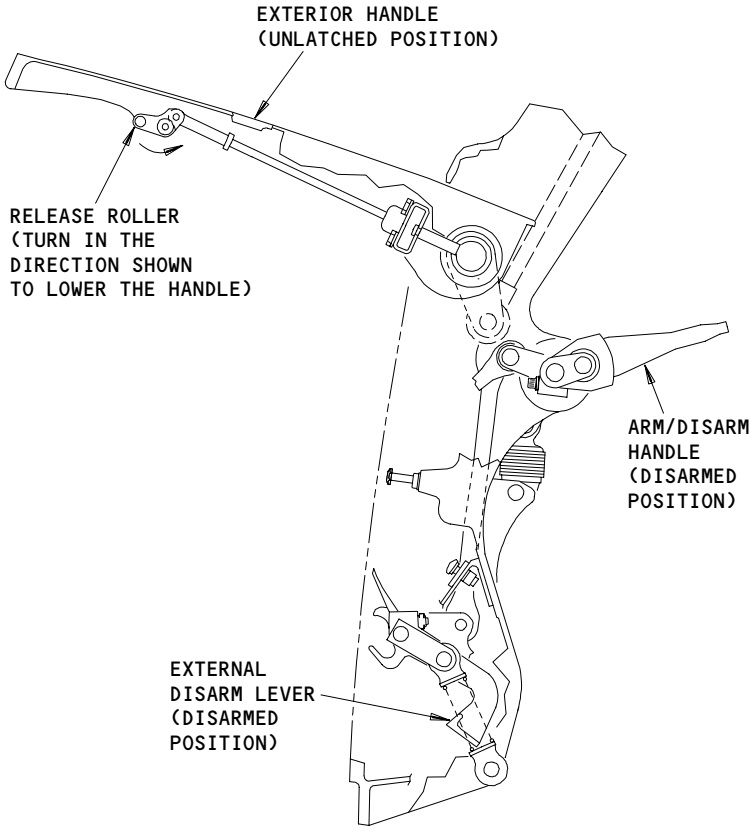


EXTERNAL CONTROL SWITCH

B 1



A-A

1 FORWARD ENTRY DOOR ONLY

External Entry/Service Door Operation
Figure 201 (Sheet 2)

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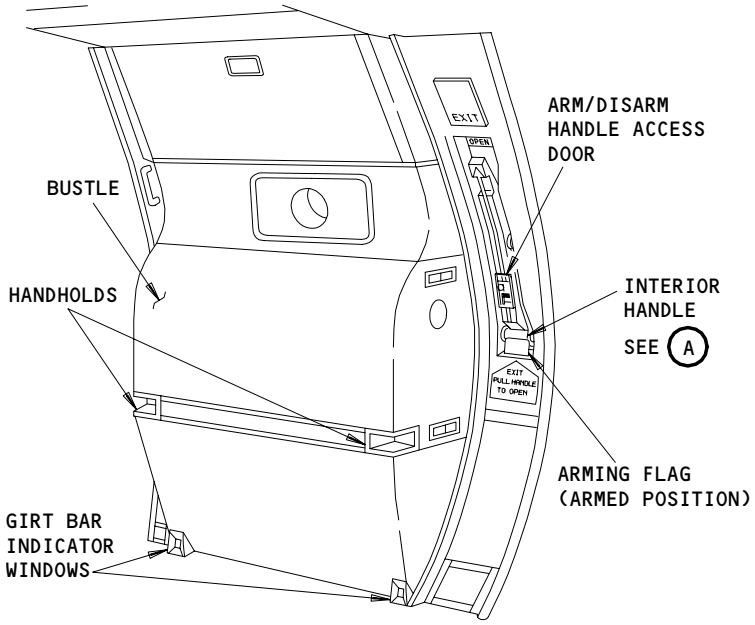
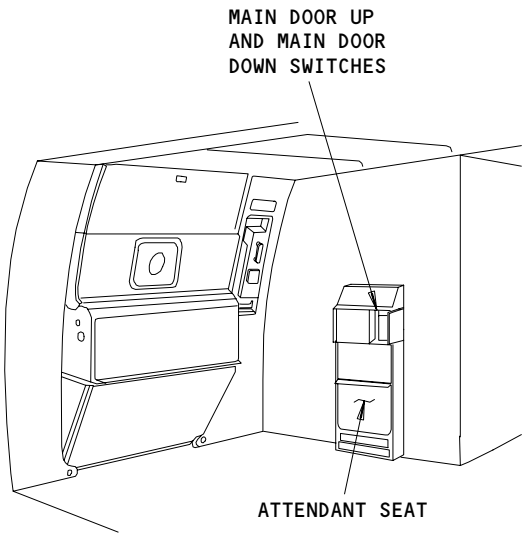
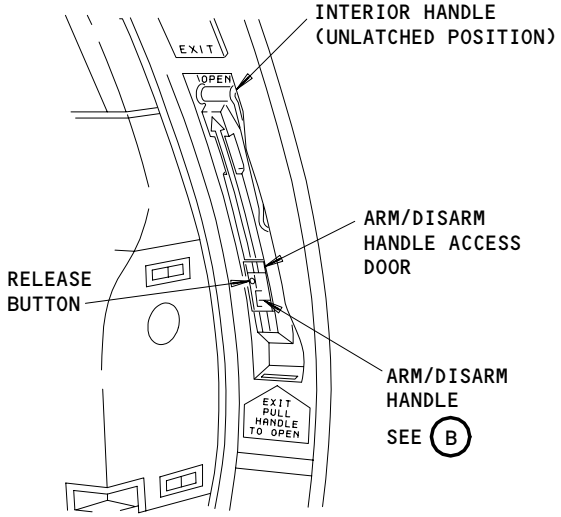


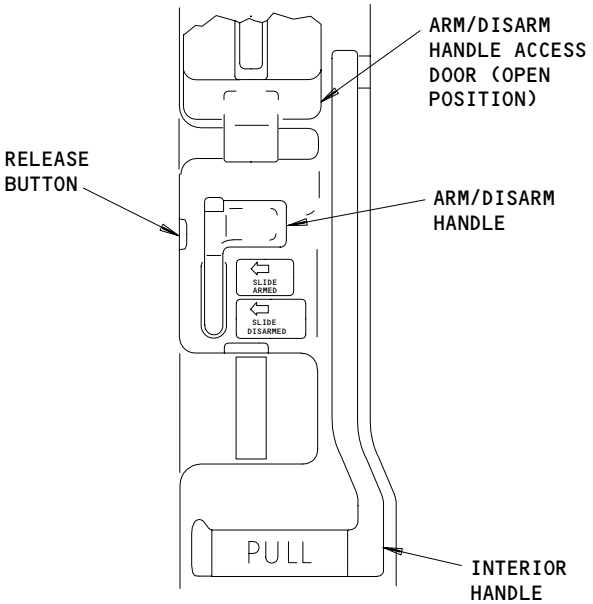
ENTRY/SERVICE DOOR
(EXAMPLE)



FORWARD ENTRY DOOR



INTERIOR HANDLE
(A)



ARM/DISARM HANDLE
(B)

Internal Entry/Service Door Operation
Figure 202

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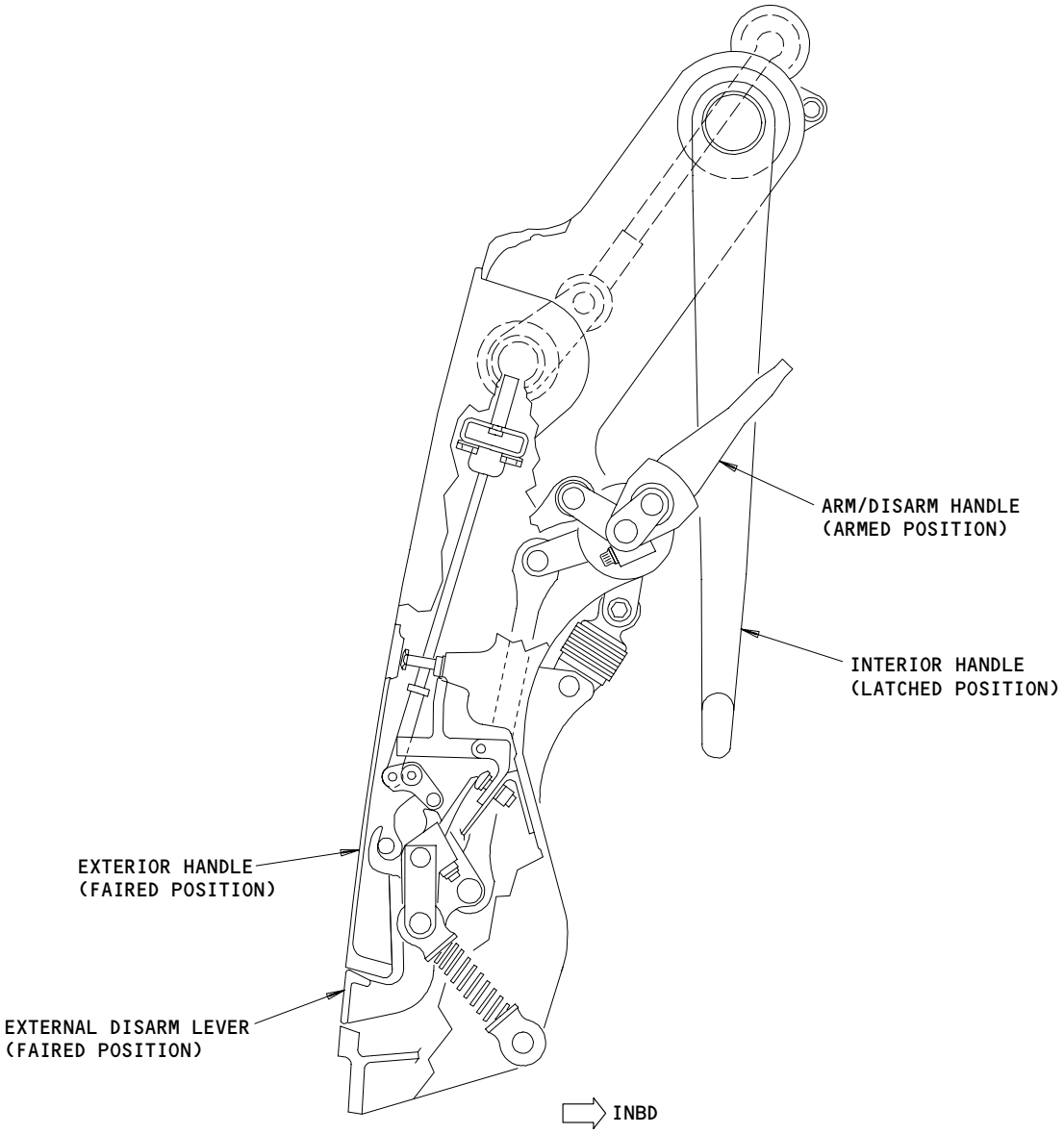

CROSS-SECTION OF HANDLE MECHANISM WITH
DOOR CLOSED AND LATCHED AND ESCAPE SYSTEM ARMED

Entry/Service Door Handle Mechanism
Figure 203

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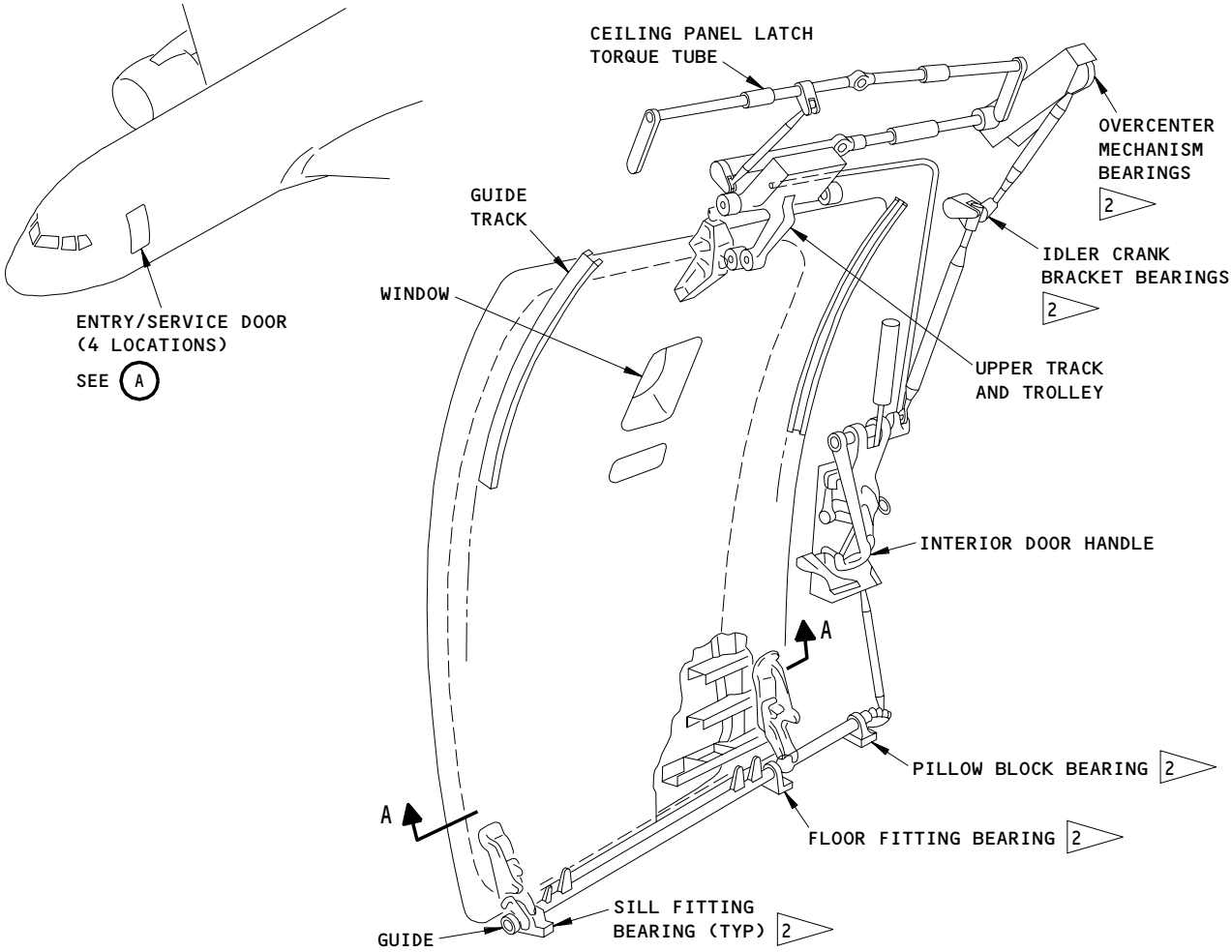

1 APPLY BMS 3-23, TYPE II CORROSION INHIBITING COMPOUND TO STRUCTURAL SURFACES. MASK ALL OPERATIONAL MECHANISMS AND VISIBLE AREAS.

2 POSSIBLE LOCATION OF CORROSION.

Entry/Service Door
Figure 204

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ENTRY/SERVICE DOORS - ADJUSTMENT/TEST

1. General
   A. This procedure contains these tasks:
      (1) The operational test for the electrical operation of the entry/service door.
      (2) The operational test for the internal and external manual operation of the entry/service door.

          NOTE: To do the full operational test for the entry/service door, do task one and task two.
      (3) The adjustments for the entry/service door.
      (4) The adjustment of the free play of the exterior handle.
      (5) The system tests for the entry/service door.
      (6) Interior-Exterior Handle Interconnect.
   B. Refer to 52-71-00/501 for the adjustment and the system test of the proximity sensors for the door warning system.

TASK 52-11-00-705-001

2. Operational Test - Electrical Operation of the Entry/Service Door
   A. General
      (1) This task gives the instructions for these operational tests:
          (a) The internal electrical operation of an entry door with electrical control.
          (b) The external electrical operation of an entry door with electrical control.
   B. References
      (1) 24-22-00/201, Electrical/Power - Control
   C. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   D. Procedure

      S 715-003
      (1) Do a test of the internal electrical operation of an entry door with electrical power.
          (a) Supply electrical power (Ref 24-22-00).
          (b) Make sure the door is closed and latched.
          (c) Make sure the internal arm/disarm lever is in the DISARM position.
          (d) Lift the interior handle to the unlatched position.
          (e) Push and hold the MAIN DOOR UP switch on the attendants panel.
          (f) Make sure the door starts to move up.
          (g) Make sure the light in the MAIN DOOR UP switch is on while you push the switch.
          (h) When the door is half open, pull the interior handle down approximately 10 degrees.

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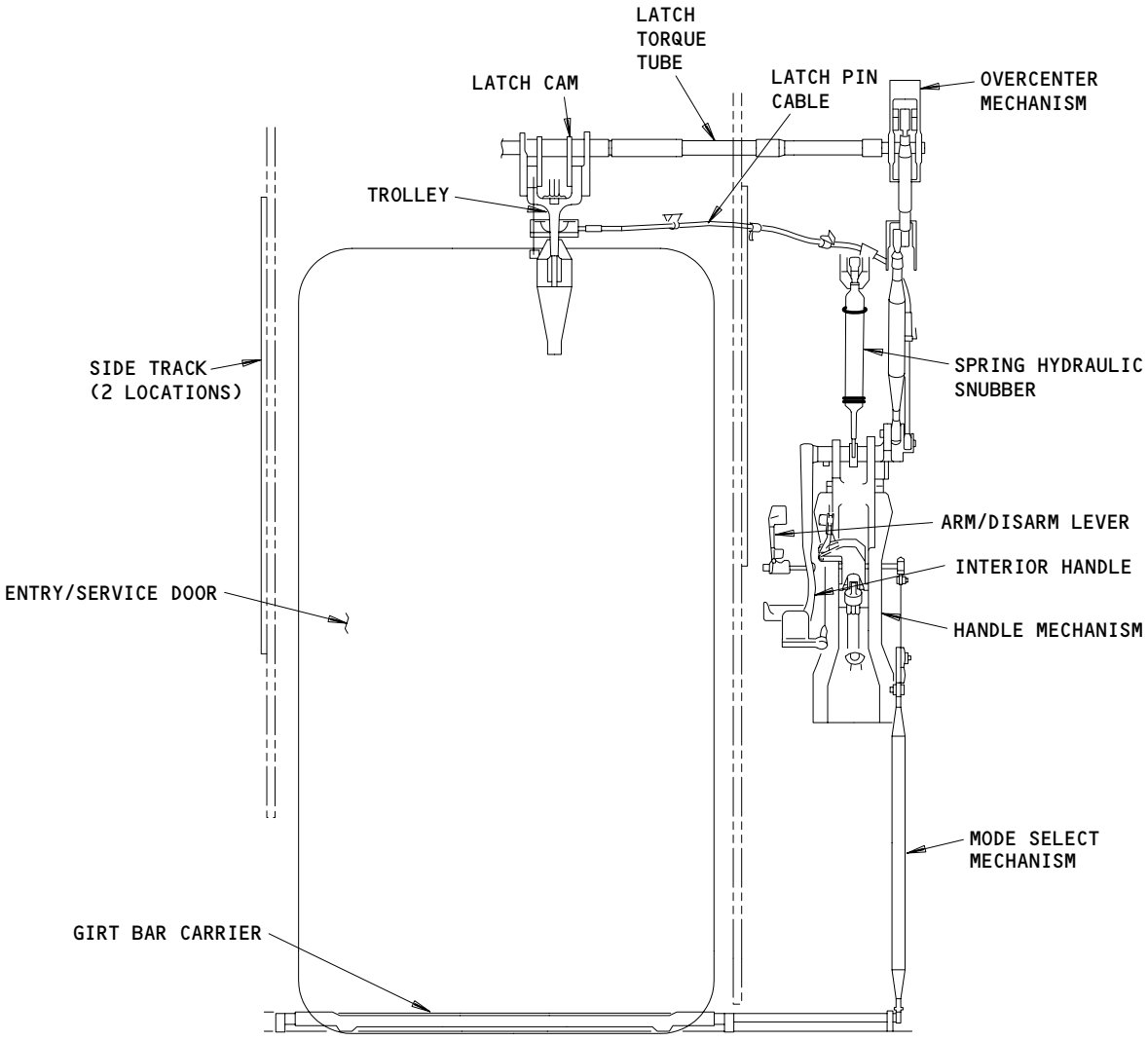

ENTRY/SERVICE DOOR
(EXAMPLE)

Entry/Service Door Adjustment
Figure 501

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(i) Make sure the door stops and stays in this position.
(j) Release the MAIN DOOR UP switch.
(k) Lift the interior handle back to the unlatched position.
(l) Push and hold the MAIN DOOR UP switch.
(m) Make sure the door moves fully up.
(n) Release the MAIN DOOR UP switch.
(o) Make sure the light on the MAIN DOOR UP switch is off.
(p) Make sure the uplatch is engaged and the roller is above the uplatch.
(q) Manually pull the door down until the roller touches the uplatch.
(r) Push and hold the MAIN DOOR DOWN switch on the attendants panel.
(s) Make sure the door moves up two seconds or less after you push the MAIN DOOR DOWN switch.
(t) Make sure the uplatch retracts when the door moves up.
(u) Make sure the door moves down after the uplatch retracts.
(v) Make sure the light in the MAIN DOOR DOWN switch is on while you push the switch.
(w) While the door moves down, push the MAIN DOOR UP switch. Continue to push the MAIN DOOR DOWN switch.
(x) Make sure the door continues to move down and the light in the MAIN DOOR UP switch does not come on.
(y) Release the MAIN DOOR UP switch.
(z) Make sure the door moves fully down.
(aa) Release the MAIN DOOR DOWN switch.
(ab) Make sure the light in the MAIN DOOR DOWN switch is off.

S 715-005

(2) Do a test of the external electrical operation of an entry door with electrical power.
(a) Make sure the entry door is closed and latched.
(b) Push in the external disarm lever.
(c) Lift the exterior handle to the unlatched position.
(d) Hold the external control switch in the DOOR UP position.
(e) Make sure the door moves fully up.
(f) Make sure the uplatch engages.
(g) Hold the external control switch in the DOOR DN position.
(h) Make sure the uplatch retracts and the door moves fully down.
(i) Push and hold the MAIN DOOR DOWN switch on the attendants panel and hold the external control switch in the DOOR UP position.
(j) Make sure the door does not move.
(k) Release the MAIN DOOR DOWN switch and the external control switch.
(l) Lower the exterior handle to the latched position.
(m) Open this circuit breaker on the forward miscellaneous equipment panel, P33, and attach a DO-NOT-CLOSE tag:
1) 33F6, FWD ENTRY DOOR
(n) Lift the exterior handle to the unlatched position.
(o) Hold the external control switch in the DOOR UP position.
(p) Make sure the door does not move.

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(q) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P33 panel:
1) 33F6, FWD ENTRY DOOR
(r) Remove electrical power if it is not necessary (Ref 24-22-00).

S 715-124
(3) Do the "Operational Test - Internal and External Manual Operation of the Entry/Service Door" procedure that follows.

TASK 52-11-00-715-128

3. Operational Test - Internal and External Manual Operation of the Entry/Service Door

A. References
(1) 24-22-00/201, Electrical/Power - Control

B. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

C. Procedure

S 715-006
(1) Do a test of the internal manual operation of the entry/service door.
(a) Supply electrical power (Ref 24-22-00).
(b) Make sure the entry/service door is closed and latched.
(c) Make sure the internal arm/disarm lever is in the DISARM position.
(d) Lift the interior handle to the unlatched position.
(e) Make sure the top of the door moves inboard approximately four inches.
(f) Make sure the ENTRY DOORS light on the P5 annunciator panel is on (View B, Fig. 502).
(g) Make sure the applicable EICAS message shows on the top display (Table 501).

TABLE 501

DOOR	EICAS MESSAGE
Forward Entry Aft Entry	L FWD ENT DOOR L AFT ENT DOOR
Forward Service Aft Service	R FWD ENT DOOR R AFT ENT DOOR

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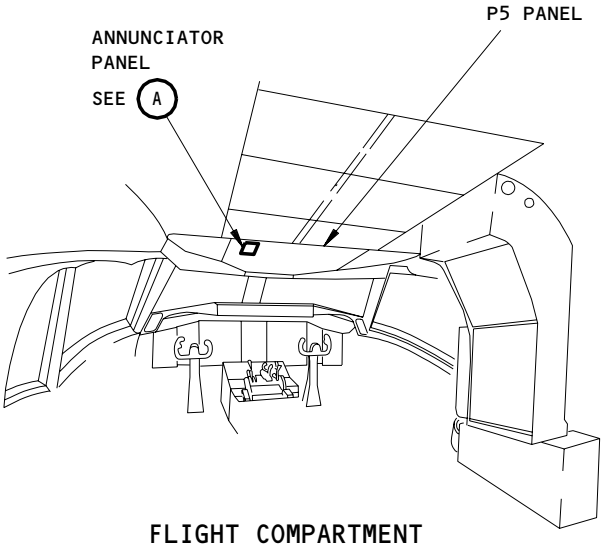
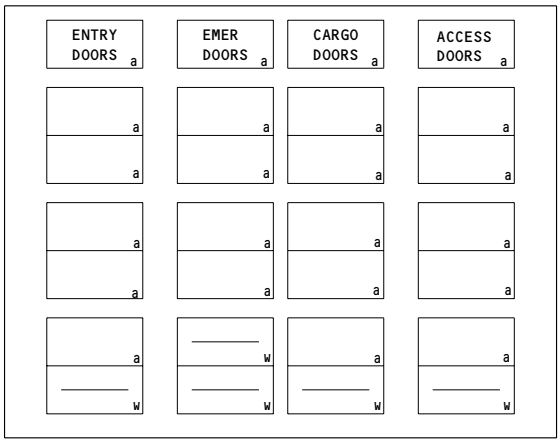


FLIGHT COMPARTMENT



ANNUNCIATOR PANEL

A

Door Warning Indicators
Figure 502

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(h) Make sure you can immediately latch the door with only the interior handle.
(i) Lift the interior handle to the unlatched position.
(j) Manually lift the door fully up. Make sure the movable ceiling panels and all of the mechanisms move freely as you lift the door.
(k) Make sure the uplatch engages and keeps the door up.
(l) Lift the door a small distance, push in the uplatch, and lower the door fully down. Make sure the movable ceiling panels and all of the mechanisms move freely as the door is lowered.
(m) Make sure the interior handle moves a small distance to show that the door is fully down.
(n) Move the interior handle to the latched position.
(o) Make sure the door is correctly latched.
(p) Make sure the EICAS message for the door does not show on the top display (Table 501).
(q) Make sure the ENTRY DOORS light on the P5 annunciator panel is off.
(r) Remove electrical power if it is not necessary (Ref 24-22-00).

S 715-007
(2) Do a test of the external manual operation of the entry/service door.
(a) Supply electrical power (Ref 24-22-00).
(b) Make sure the entry/service door is closed and latched.
(c) Push in the external disarm lever.
(d) Lift the exterior handle to the unlatched position.
(e) Make sure the ENTRY DOORS light on the P5 annunciator panel is on (View B, Fig. 502).
(f) Make sure the applicable EICAS message shows on the top display (Table 501).
(g) Lift the door fully up.
(h) Make sure the uplatch engages and keeps the door up.
(i) Lift the door a small distance, push in the uplatch, and lower the door fully down.
(j) Lower the exterior handle to the latched position.
(k) Make sure the door is correctly latched.
(l) Make sure the EICAS message for the door does not show on the top display (Table 501).
(m) Make sure the ENTRY DOORS light on the P5 annunciator panel is off.
(n) Remove electrical power if it is not necessary (Ref 24-22-00).

TASK 52-11-00-825-008
4. Adjustment - Entry/Service Doors
A. General
(1) This task gives the instructions for these adjustments:
(a) Adjust the position of the door in the door opening.
(b) Adjust the door in the latched position.
(c) Do the initial adjustment of the handle mechanism.
(d) Adjust the spring hydraulic snubber.

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(e) Adjust the latch pin and the latch pin cable.
(f) Do the initial adjustment of the overcenter mechanism pushrods.
(g) Do the initial adjustment of the latch cam and the latch torque tube.
(h) Adjust the mode select mechanism.
(i) Adjust the upstop snubber.
(j) Do the last adjustment of the latch cam.
(k) Do the last adjustment of the latch torque tube.
(l) Adjust the door in the unlatched position.
(m) Do the last adjustments of the interior handle and the arm/disarm lever.
(n) Adjust the upper door liner.
(o) Adjust the release button for the internal arm/disarm lever.
(p) Adjust the EMERGENCY ONLY arming flag.

(2) Refer to 52-11-16/501, Entry/Service Door Counterbalance Assembly for the adjustments for the counterbalance.
(3) Refer to 25-22-07/401, Upper Door Liner Track for the adjustments to the upper door liner tracks.
(4) There are two interior handle mechanisms.
(a) SAS 050-155,162-165,275,276 WITHOUT SB 52-58;
the interior handle does not have a clutch mechanism and can move when the exterior handle is moved. This will be called the INTERIOR HANDLE WITHOUT CLUTCH MECHANISM.
(b) SAS 050-155,162-165,275,276 WITH SB 52-58, AND SAS 156-161,166-274,277-999;
the interior handle has a clutch mechanism and does not move when the exterior handle is moved. This will be called the INTERIOR HANDLE WITH CLUTCH MECHANISM.

B. Equipment
(1) Counterbalance Lock - A52003-1
(2) A52013-31 Rigging Simulator-Escape Slide, Entry/Service doors
Fwd doors = 97 lbs.
Aft doors = 110 lbs.
(3) Girt Bar Carrier Drive Jaw Angle Gage - A52029-1
(4) Rig Pins from kit A20004-XX:
(a) Rig Pin D1 - A20004-16
(b) Rig Pin D2 - A20004-16
(c) Rig Pin D3 - A20004-27

C. References
(1) 20-10-24/201, Rig Pins
(2) 52-11-00/201, Entry/Service Doors
(3) 52-11-01/401, Entry/Service Doors
(4) 52-11-02/401, Doorway Lining
(5) 52-11-16/401, Entry/Service Door Counterbalance Assembly
(6) 52-11-25/201, Entry/Service Door Handle Mechanism
(7) 52-71-01/401, Door Warning System Proximity Sensors

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D. Access

(1) Location Zones

831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

E. Prepare for the Adjustments

S 015-009

(1) Remove the doorway lining (Ref 52-11-02).

NOTE: If the escape slide pack is removed, install the escape slide rigging simulator.

S 015-010

(2) Open the movable ceiling panels as follows:

(a) Close the entry/service door. Do not latch the door.

(b) Open the access door in the upper door liner to get access to the hinge pin release buttons.

(c) Pull the buttons together to release the hinge pins.

(d) Do these steps:

1) Open this circuit breaker on the overhead panel, P11, and attach a DO-NOT-CLOSE tag:
a) 11U32, DOOR WINDOW HEATER

2) Let the liner move down as far as the lanyard will permit.

3) Disconnect the electrical connector adjacent to the lanyard.

4) Pull the liner up sufficiently to make the lanyard loose.

5) Release the ball-lock pin on the lanyard to disconnect the lanyard from the bracket on the liner.

(e) Let the upper door liner move down into the door bustle. Do not let the liner fall freely.

(f) Fold the movable ceiling panels up and inboard into the area above the lowered ceiling.

F. Procedure

S 825-011

(1) Adjust the position of the door in the door opening.

NOTE: This adjustment is to get the correct clearances between the door skin and the body skin all around the door. It is also to get the correct alignment between the door stops and the body stops.

(a) Close and latch the entry/service door.

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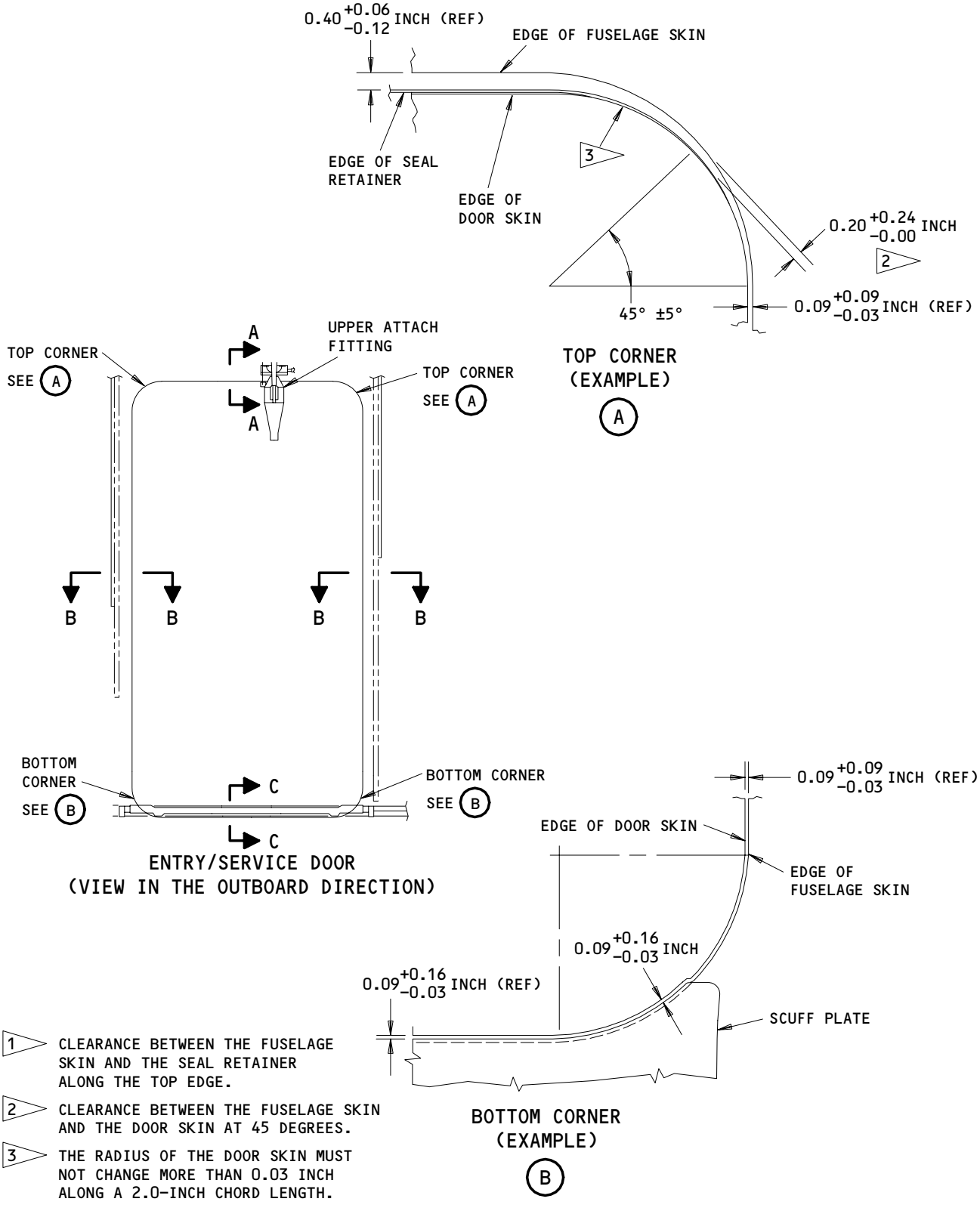

Entry/Service Door Skin Clearance
Figure 503 (Sheet 1)

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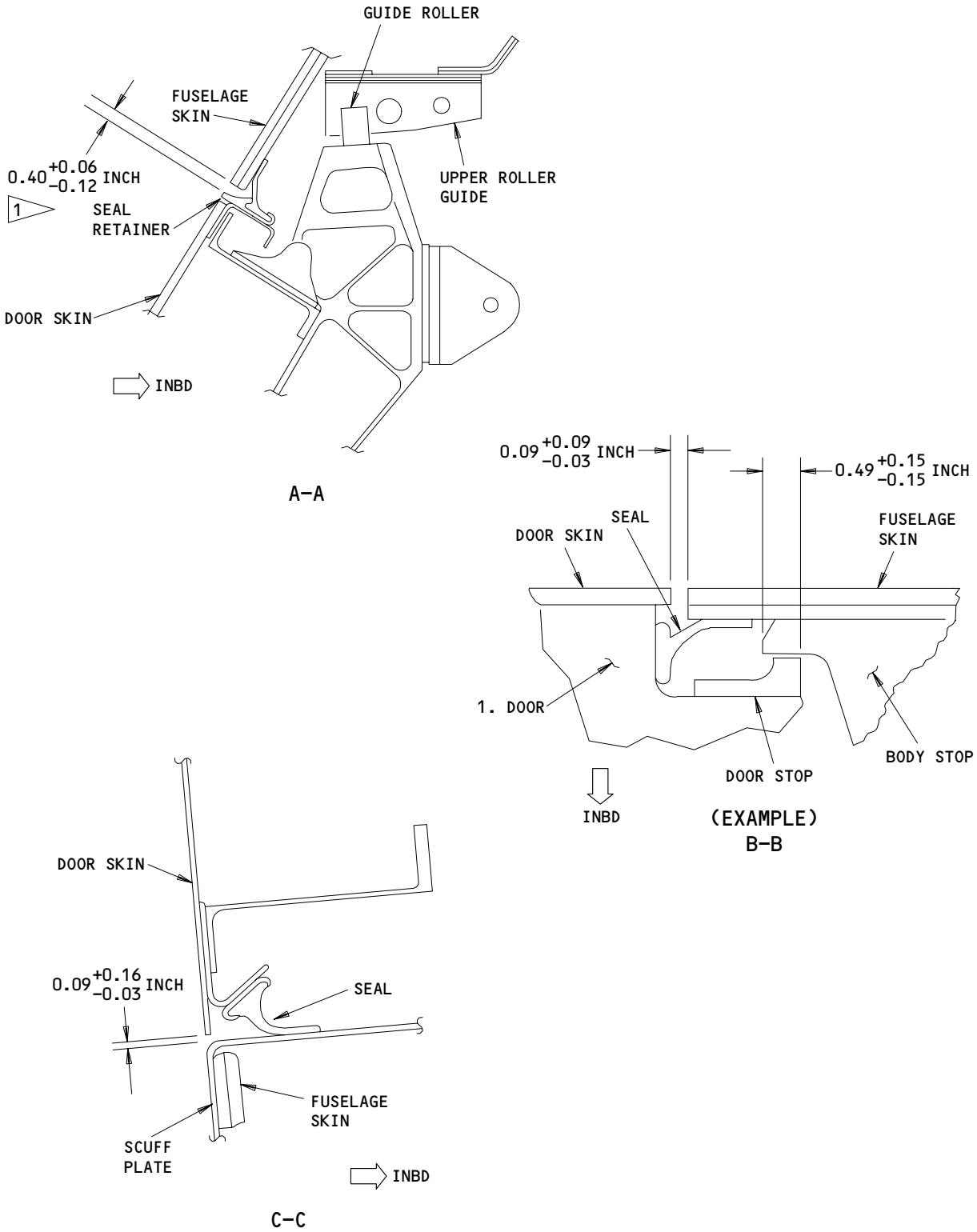

Entry/Service Door Skin Clearance
Figure 503 (Sheet 2)

A36237

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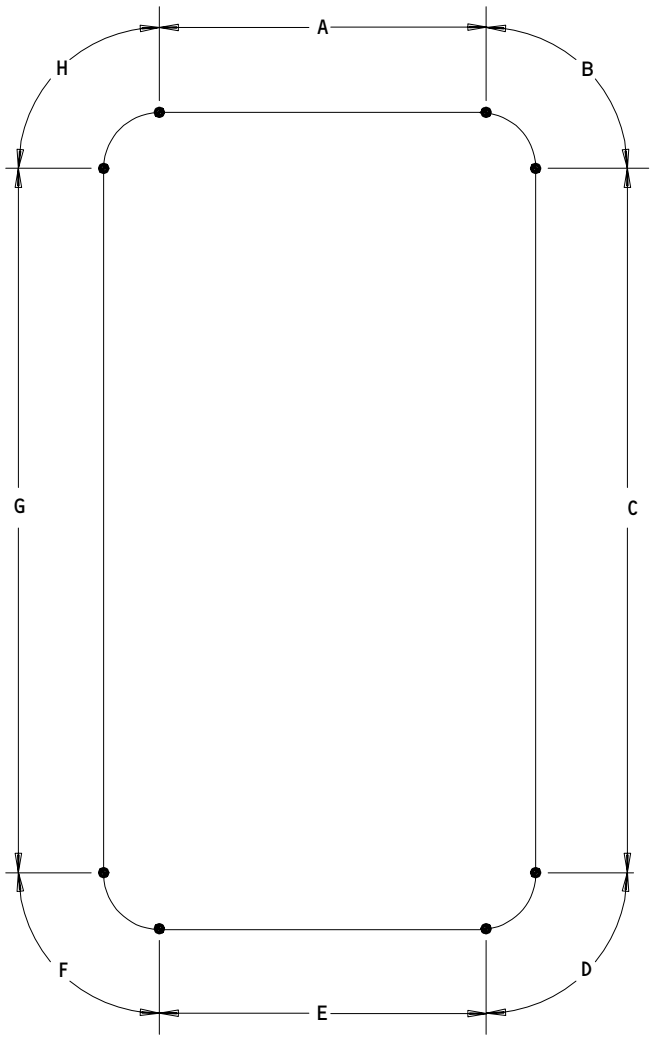

ENTRY/SERVICE DOOR
DEVIATION ZONES

NOTE: REFER TO TABLE 502 FOR THE SKIN CLEARANCE DEVIATIONS.

Entry/Service Door Skin Clearance
Figure 503 (Sheet 3)

A31865

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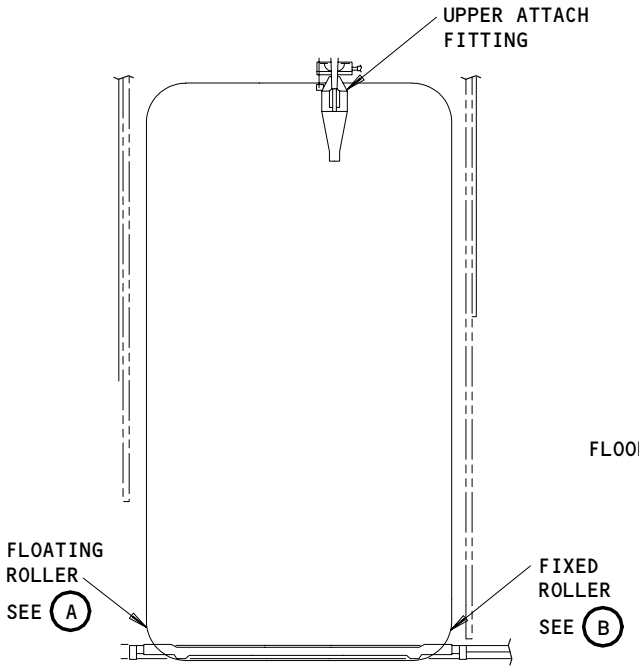
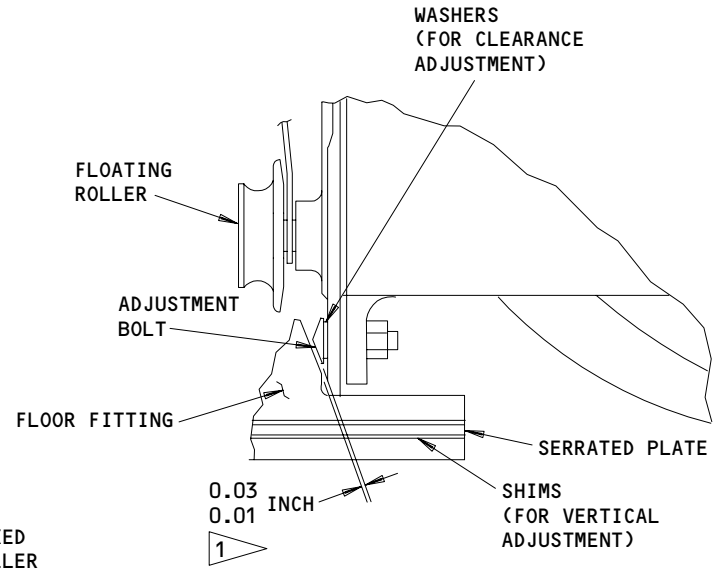
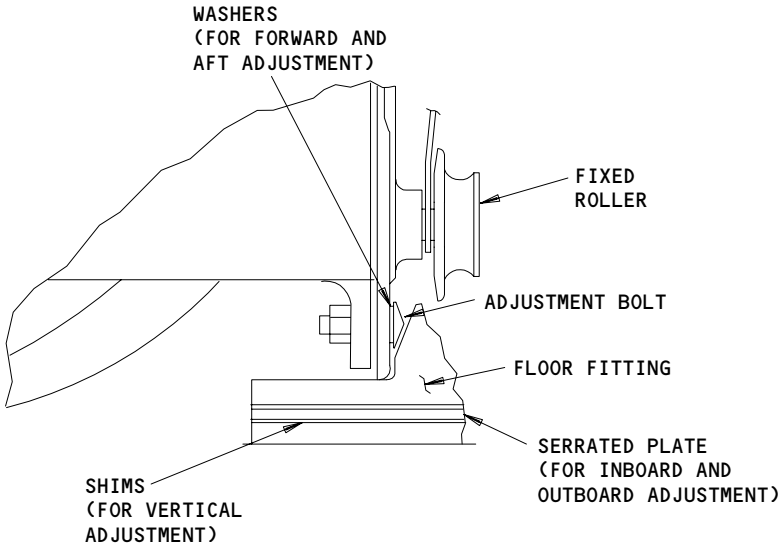


ENTRY/SERVICE DOOR
(VIEW IN THE OUTBOARD DIRECTION)



FLOATING ROLLER
A



FIXED ROLLER
B

1 THIS IS THE TOTAL CLEARANCE BETWEEN THE LEFT AND RIGHT ADJUSTMENT BOLTS AND THE FLOOR FITTINGS.

Skin Clearance Adjustment
Figure 504

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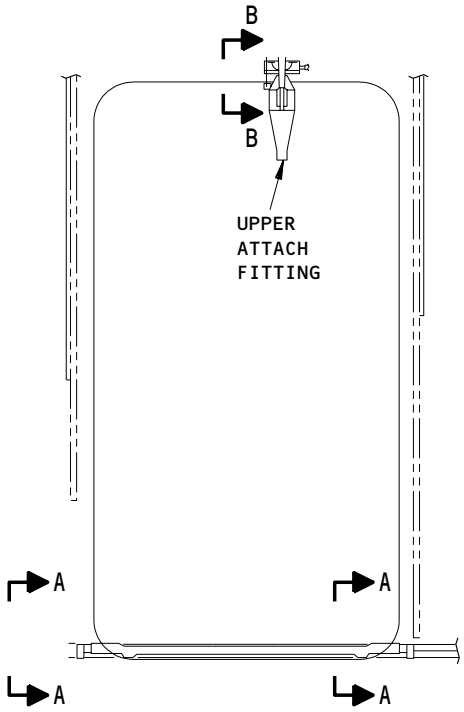
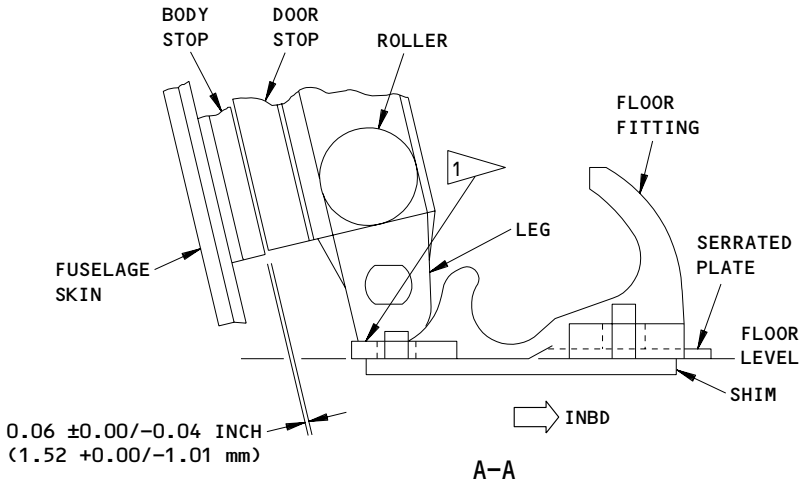


ENTRY/SERVICE DOOR
(VIEW IN THE OUTBOARD DIRECTION)



1 FOR CORRECT ADJUSTMENT, MAKE SURE THE TWO LEGS ARE TIGHTLY AGAINST THIS HORIZONTAL SURFACE OF THE FLOOR FITTING.

Door Stop Clearance Adjustment
Figure 505 (Sheet 1)

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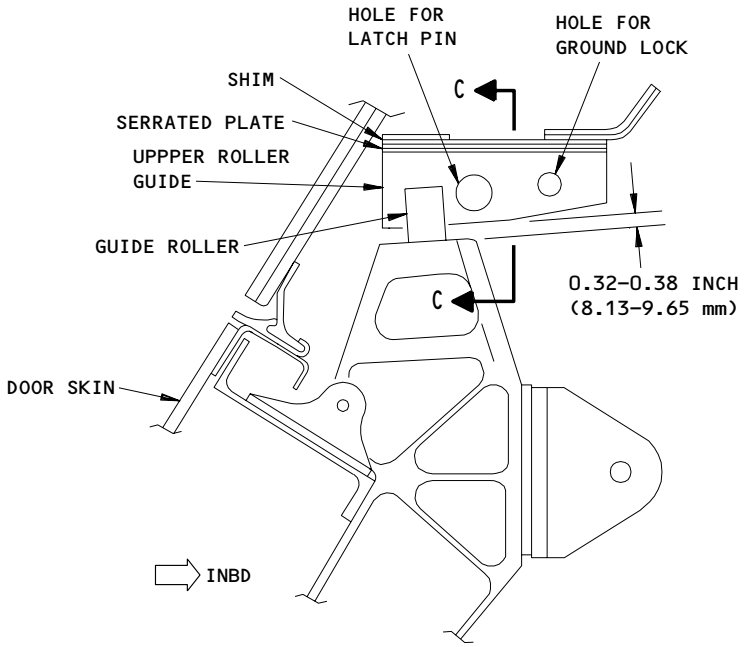
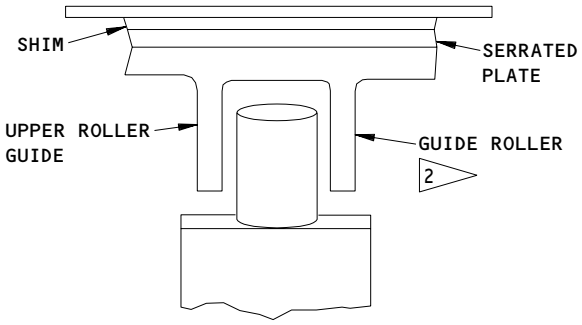


B-B



C-C

2 MAKE SURE THE CLEARANCE ON EACH SIDE OF THE GUIDE ROLLER IS NOT LESS THAN 0.01 INCH (0.25 mm)

3 INITIAL ADJUSTMENT

Door Stop Clearance Adjustment
Figure 505 (Sheet 2)

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(b) Measure the skin clearances at the top, bottom, and sides of the door.

(c) If it is necessary, adjust the vertical position of the door as follows:

1) Add or remove shims below the floor fittings (Fig. 504) to get the correct clearance at the top edge of the door (Fig. 503).

CAUTION: BEFORE YOU REMOVE THE UNWANTED SKIN FROM THE BOTTOM EDGE OF THE DOOR, ADJUST THE FORWARD AND AFT POSITION OF THE DOOR. THIS WILL ALIGN THE DOOR STOPS WITH THE BODY STOPS AND PREVENT AN ERROR IN THE REMOVAL OF THE DOOR SKIN.

2) Remove the unwanted skin from the bottom edge of the door to get the correct skin clearance (Fig. 503).

(d) If it is necessary, adjust the inboard and outboard position of the bottom of the door as follows:

1) Move the floor fittings inboard or outboard on the serrated plates (Fig. 504) to get the correct clearance at the bottom of the door stop (View A-A, Fig. 505). Do this for the two sides of the door.

NOTE: During this adjustment, the clearance at the top of the door stops must not be more than 0.02 inch (5.1 mm) on each side.

(e) If it is necessary, adjust the forward and aft position of the door as follows:

1) Make sure the door stops and the body stops are correctly aligned all along their lengths (View B-B, Fig. 503). You must keep this alignment while you adjust the skin clearances.

2) Add or remove the washers (0.016 inch per washer) behind the left or right adjustment bolt to get the correct total clearance between the left and right adjustment bolts and the floor fittings (Views A and B, Fig. 504).

NOTE: Only one adjustment bolt (left or right) is permitted to touch the floor fitting.

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TABLE 502
ENTRY/SERVICE DOOR SKIN CLEARANCE DEVIATIONS

EFFECTIVITY	ZONE	DOOR	SKIN CLEARANCE DEVIATION
SAS 167	B	AFT ENTRY	0.20 TO 0.48 INCH
	H	AFT ENTRY	0.20 TO 0.48 INCH
SAS 279	B	AFT ENTRY	0.20 TO 0.47 INCH
	H	AFT ENTRY	0.20 TO 0.47 INCH

(f) If it is necessary, adjust the upper roller guide on the upper door sill as follows:
1) Hold the right adjustment bolt against the floor fitting.
2) Make sure the door legs are tight against the horizontal surfaces of the floor fittings (View A-A, Fig. 505).
3) Make sure the door stops and the body stops are correctly aligned all along their lengths (View B-B, Fig. 503).
4) Adjust the upper roller guide forward or aft on the serrated plate to put the guide roller in the middle of the opening on the upper roller guide (View C-C, Fig. 505).
5) With the door closed and latched, try to turn the guide roller with your finger.

NOTE: The guide roller is in the middle of the upper roller guide when you can turn the guide roller with the door closed and latched.

6) Add or remove shims below the upper roller guide to get the correct clearance between the upper attach fitting and the upper roller guide (View B-B, Fig. 505).

S 825-012
(2) Adjust the door in the latched position.

NOTE: This adjustment is to get the correct clearances between the door stops and the body stops, and between the trolley and the trolley link.
It may be necessary to repeatedly adjust the position of the latch cam, the trolley and trolley link clearance, the body stop and door stop clearance until they are all correct.

(a) Close and latch the entry/service door.

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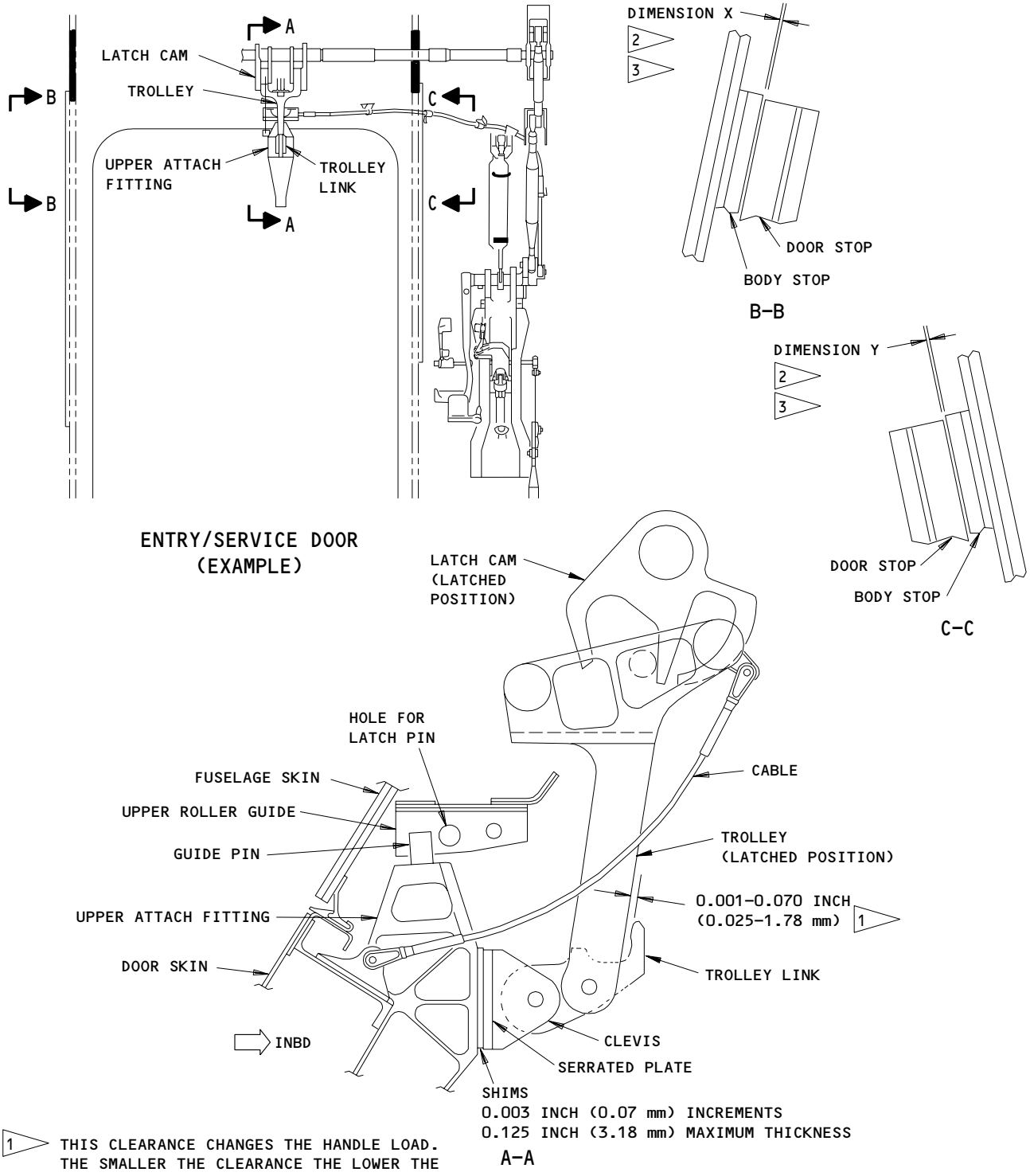

1 THIS CLEARANCE CHANGES THE HANDLE LOAD. THE SMALLER THE CLEARANCE THE LOWER THE HANDLE LOAD.

2 DIMENSION X + DIMENSION Y = 0.20 TO 0.37 INCH (5.08 TO 9.30 mm)

3 FINAL ADJUSTMENT

Door Latched Position Adjustment
Figure 506

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WARNING: BE CAREFUL WHEN YOU OPERATE THE COUNTERBALANCE. THE COUNTERBALANCE CONTAINS TIGHTLY-WOUND SPRINGS WHICH CAN CAUSE INJURY OR DAMAGE.

(b) Make sure the counterbalance lock is not installed on the counterbalance.

NOTE: When the counterbalance lock is not installed, the force from the counterbalance spring is applied to the trolley through the counterbalance cables.

(c) If the counterbalance lock is installed, then remove it as follows:

CAUTION: MAKE SURE YOU HOLD THE HANDWHEEL WHEN YOU REMOVE THE LOCK. IF YOU DO NOT HOLD THE HANDWHEEL, THE COUNTERBALANCE SPRINGS WILL RELEASE QUICKLY, WHICK CAN CAUSE DAMAGE TO THE COUNTERBALANCE.

1) Hold the handwheel on the counterbalance, and remove the counterbalance lock.
2) Let the handwheel turn slowly in the clockwise direction until you feel no spring force on the handwheel.

(d) Measure the clearance between the trolley and the trolley link (View A-A, Fig. 506).

(e) Measure the clearances between the door stops and the body stops at the top of the door (View B-B and C-C, Fig. 506).

NOTE: This is the final adjustment of the door and body stops.

(f) Install the counterbalance lock on the counterbalance as follows:

CAUTION: DO NOT TURN THE HANDWHEEL FARTHER THAN IT IS NECESSARY TO REMOVE THE TENSION IN THE COUNTERBALANCE CABLES. YOU CAN CAUSE DAMAGE TO THE COUNTERBALANCE OR TO THE COUNTERBALANCE CABLES IF YOU TURN THE HANDWHEEL TOO FAR.

1) Turn the handwheel counterclockwise until there is no tension in the counterbalance cables.
2) Align the hole in the counterbalance drum with the hole in the support arm.
3) Install the counterbalance lock.
4) Make sure there is no tension in the counterbalance cables.

(g) Loosen the bolts that attach the clevis to the upper attach fitting.

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(h) Adjust the clevis as follows:

NOTE: You will move the clevis to the approximate position necessary to get the correct clearances. You will then tighten the clevis bolts, and remove the counterbalance lock to measure the clearances.

1) Move the clevis inboard or outboard (change the shim thickness) to get the clearances between the door stops and the body stops (View B-B and C-C, Fig. 506).
2) Move the clevis up or down on the serrated plate to adjust the clearance between the trolley and the trolley link (View A-A, Fig. 506).

(i) Tighten the bolts that attach the clevis to the upper attach fitting on the door.

NOTE: The bolts normally touch the right side of the slots in the clevis. This minimizes any misalignment of the guide fitting and centering pin.

WARNING: BE CAREFUL WHEN YOU OPERATE THE COUNTERBALANCE. THE COUNTERBALANCE CONTAINS TIGHTLY-WOUND SPRINGS WHICH CAN CAUSE INJURY OR DAMAGE.

(j) Remove the counterbalance lock as follows:

CAUTION: MAKE SURE YOU HOLD THE HANDWHEEL WHEN YOU REMOVE THE LOCK. IF YOU DO NOT HOLD THE HANDWHEEL, THE COUNTERBALANCE SPRINGS WILL RELEASE QUICKLY, WHICK CAN CAUSE DAMAGE TO THE COUNTERBALANCE.

1) Hold the handwheel, and remove the counterbalance lock.
2) Let the handwheel turn slowly in the clockwise direction until you feel no spring force on the handwheel.

(k) Measure the clearance between the trolley and the trolley link (View A-A, Fig. 506).
(l) Measure the clearances between the door stops and the body stops at the top of the door (View B-B and C-C, Fig. 506).
(m) Do the above steps again if the clearances are not correct.
(n) If you cannot get the correct clearance when you adjust the clevis, do the step below that is called "Do the special adjustment of the latch cam".

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S 825-014

(3) Do the initial adjustment of the handle mechanism.

NOTE: This adjustment is to get the initial position of the interior handle. You will do the last adjustment of the interior handle with the doorway lining installed.

(a) Make sure the handle mechanism is disconnected from these components (Ref 52-11-25):
1) The spring hydraulic snubber.
2) The latch pin cable.
3) The overcenter mechanism.
4) The mode select mechanism.

(b) Make sure the exterior handle and the external disarm lever are in the fully faired position (Ref 52-11-00).

(c) Remove the doorway lining (Ref 52-11-02).

(d) Remove the door locked proximity sensor (Ref 52-71-01).

(e) Turn the interior handle shaft in the direction shown to remove the free play (View A-A, Fig. 507). You must keep the interior handle shaft in this position during all of the adjustments for the handle mechanism.

(f) INTERIOR HANDLE WIHOUT CLUTCH MECHANISM;
do these steps to adjust the interior handle (Fig. 507):
1) Loosen the adapter bolt (View A-A).
2) Loosen the bolt on the clamp sleeve (View B).
3) Move the interior handle away from the clamp sleeve to disengage the 23-tooth spline.
4) Loosen the bolt at the top of the interior handle (View B).
5) Move the adapter away from the interior handle to disengage the 22-tooth spline.
6) Engage the splines of the adapter in different locations to adjust the position of the interior handle. Adjust the position of the interior handle to get the correct clearance between the interior handle grip and the inner surface of the fuselage skin (View A-A). Make sure there is no free play in the interior handle shaft.

NOTE: The difference in position between one set of spline teeth and the other causes a 0.186-inch adjustment at the interior handle grip.

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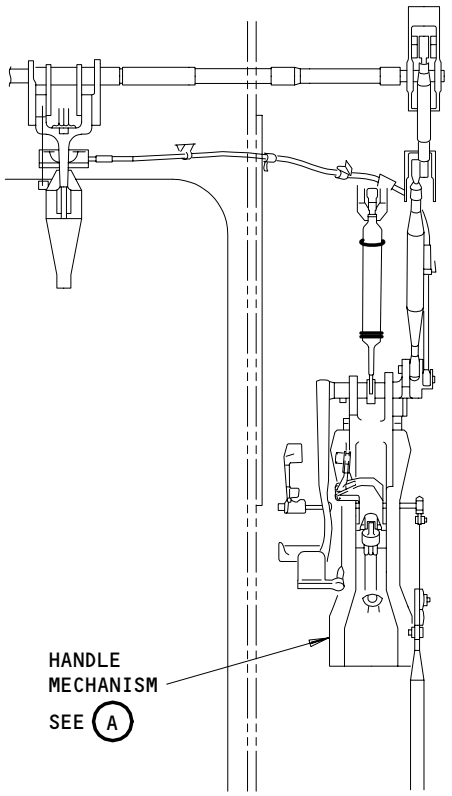
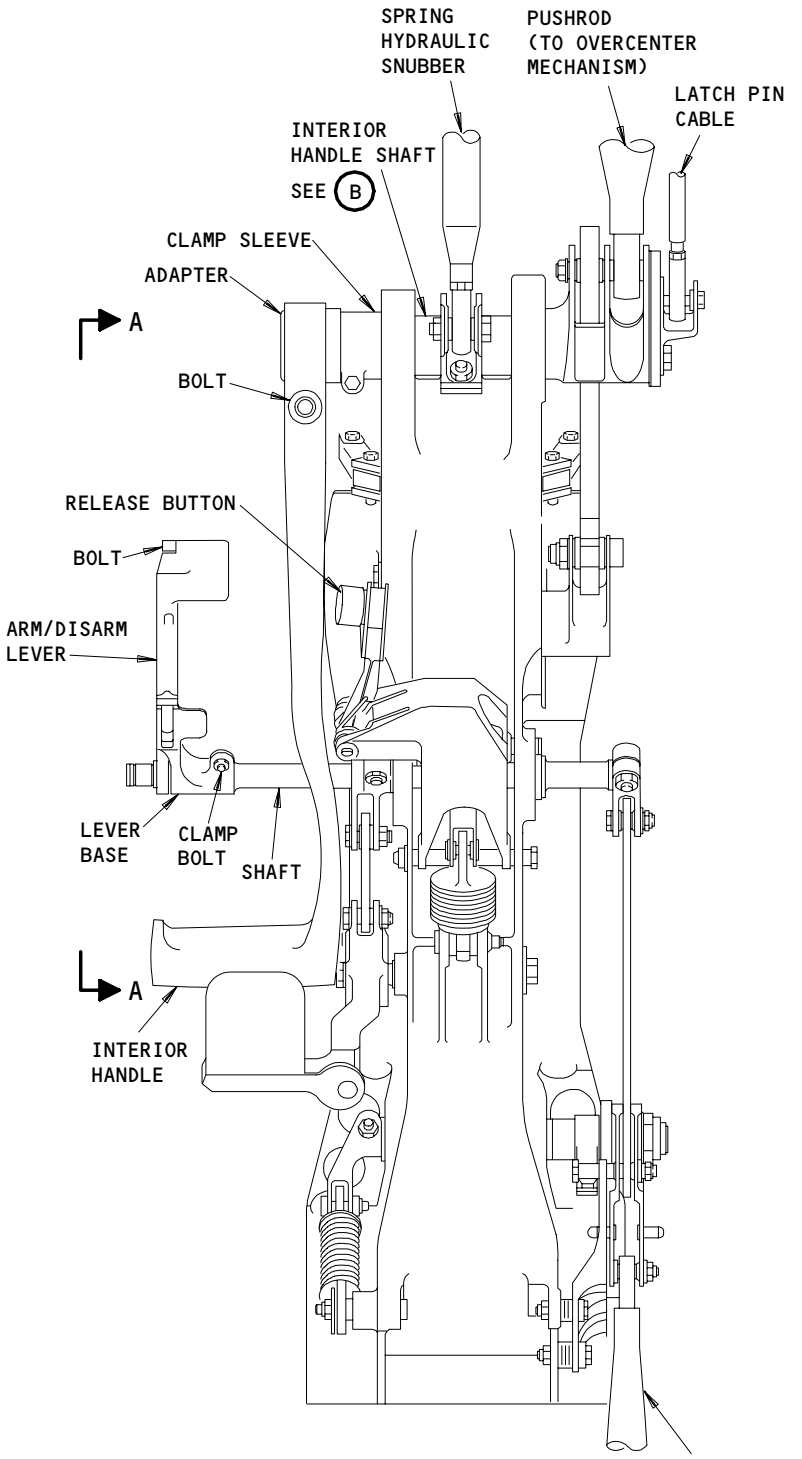


ENTRY/SERVICE DOOR
(EXAMPLE)



HANDLE MECHANISM
(EXAMPLE)
A

Entry/Service Door Handle Mechanism
Figure 507 (Sheet 1)

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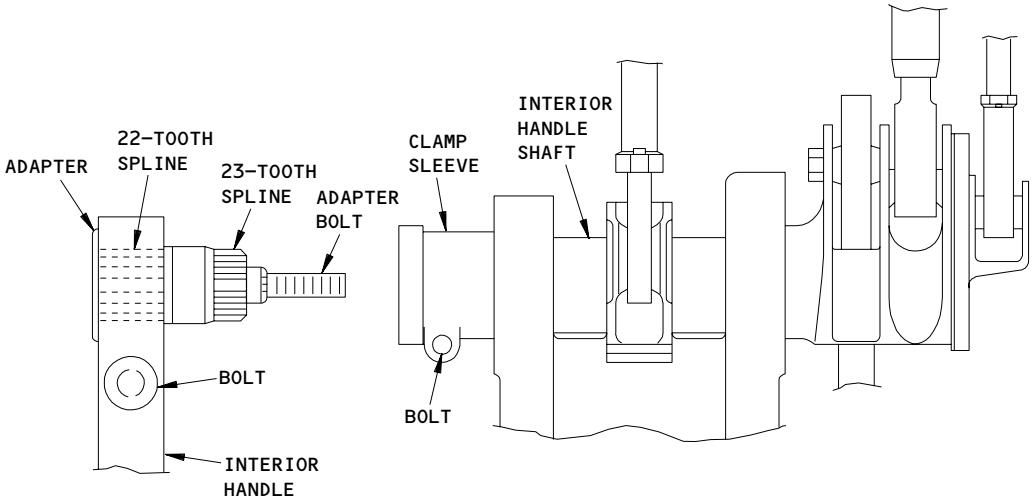
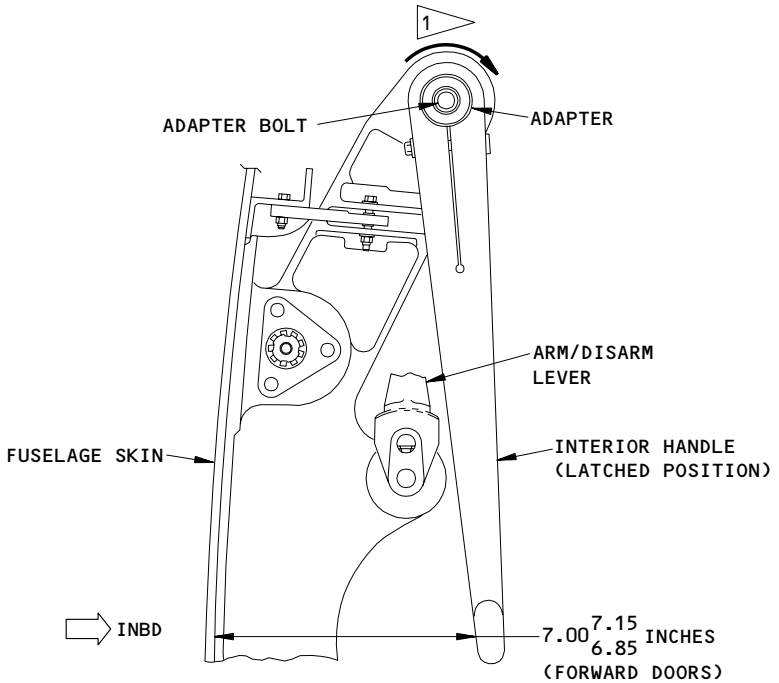


INTERIOR HANDLE SHAFT
(EXAMPLE)

B



A–A

1 TURN THE INTERIOR HANDLE SHAFT IN THIS DIRECTION TO REMOVE THE FREE PLAY.

2 INITIAL ADJUSTMENT POSITION OF THE INTERIOR HANDLE BEFORE THE INSTALLATION OF THE DOORWAY LINING.

Entry/Service Door Handle Mechanism
Figure 507 (Sheet 2)

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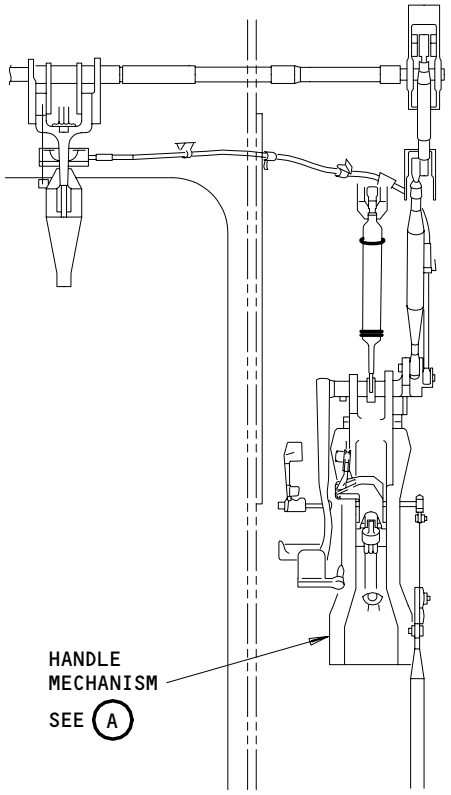
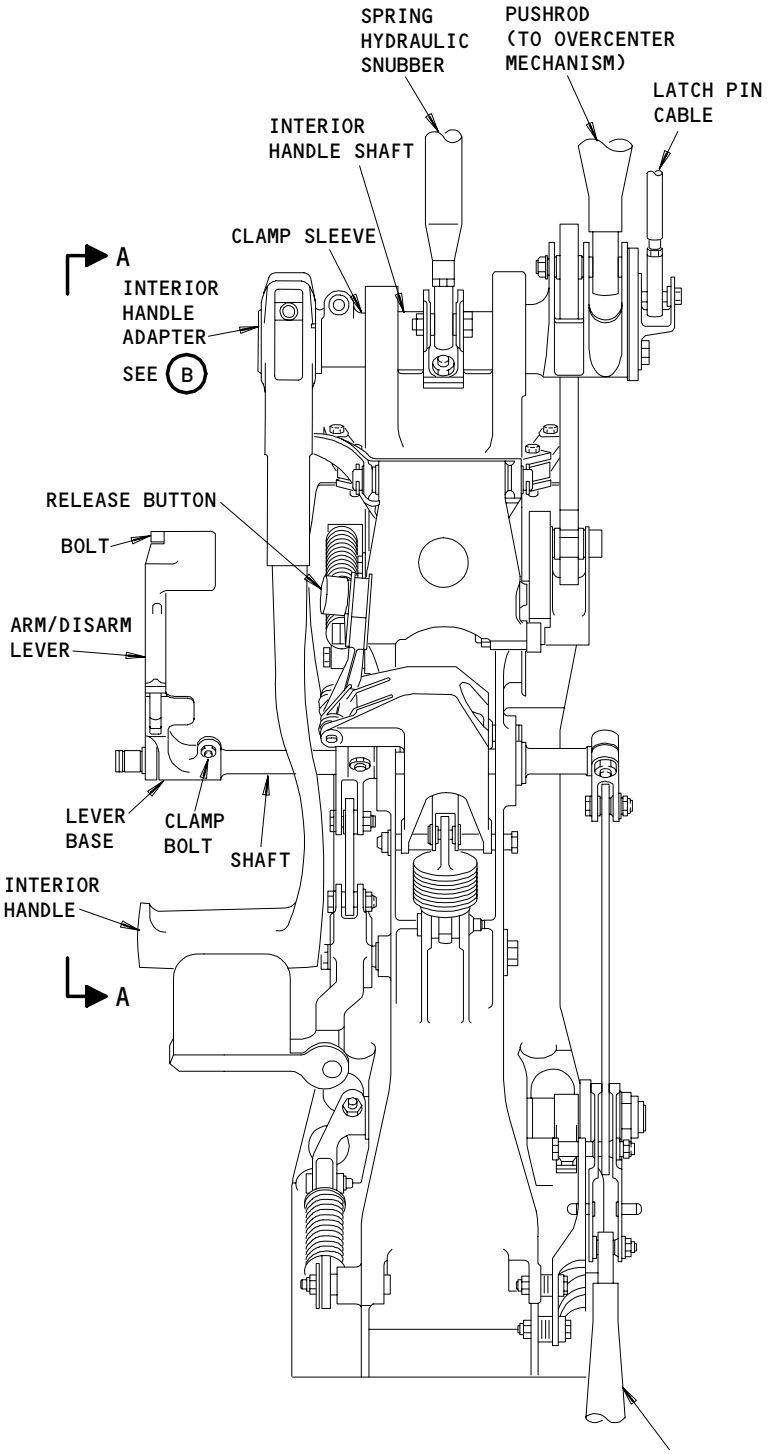


ENTRY/SERVICE DOOR
(EXAMPLE)



HANDLE MECHANISM
(EXAMPLE)
A

Entry/Service Door Handle Mechanism
Figure 507A (Sheet 1)

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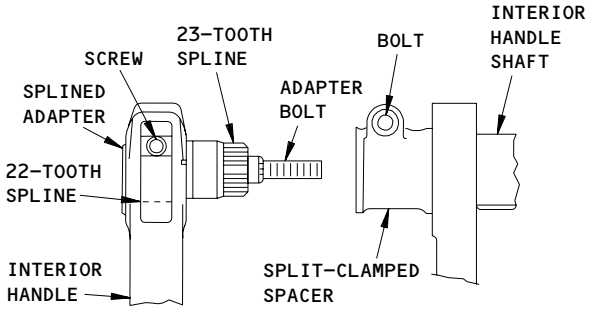
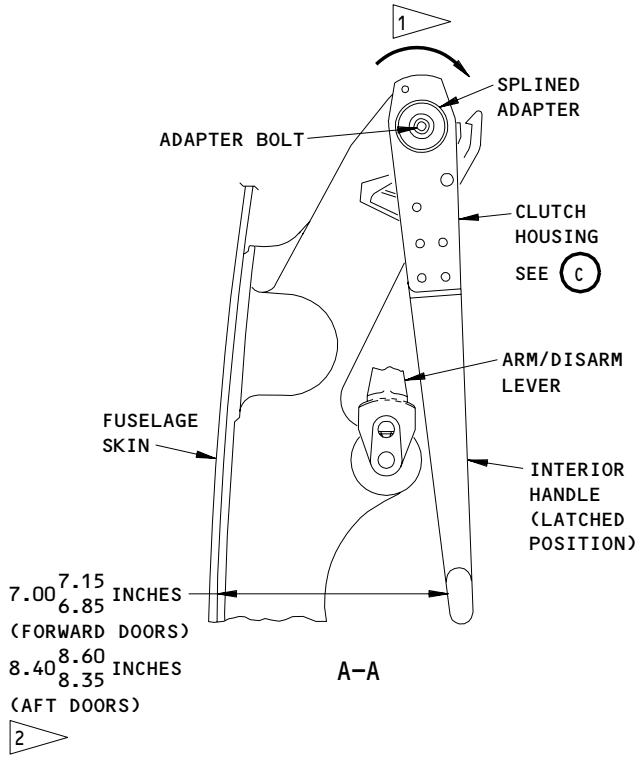
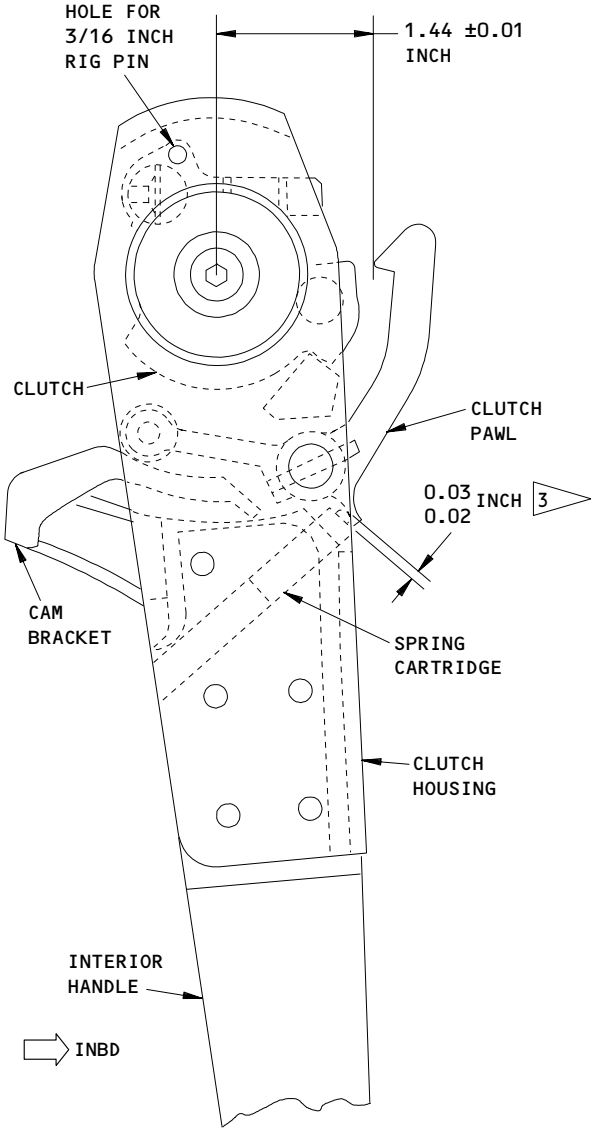


INTERIOR HANDLE ADAPTER

B



A-A



CLUTCH HOUSING

C

1 TURN THE INTERIOR HANDLE SHAFT IN THIS DIRECTION TO REMOVE THE FREE PLAY.

2 INITIAL ADJUSTMENT POSITION OF THE INTERIOR HANDLE BEFORE THE INSTALLATION OF THE DOORWAY LINING.

3 MEASURE DIMENSION BETWEEN TOP OF THE THREADED SURFACE ON THE SPRING CARTRIDGE AND THE CLUTCH PAWL.

Entry/Service Door Handle Mechanism
Figure 507A (Sheet 2)

804952

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(g) INTERIOR HANDLE WITH CLUTCH MECHANISM;
do these steps to adjust the interior handle (Fig. 507):

1) Install a 3/16-inch rig pin into the hole at the top of the clutch housing.

NOTE: This rig pin will keep the clutch correctly aligned with the clutch housing.

2) Loosen the adapter bolt.
3) Loosen the bolt on the split-clamped spacer.
4) Move the interior handle away from the split-clamped spacer to disengage the 23-tooth spline.
5) Loosen the screw in the clutch housing at the top of the interior handle.
6) Move the adapter away from the interior handle to disengage the 22-tooth spline.
7) Engage the splines of the adapter in different locations to adjust the position of the interior handle. Adjust the position of the interior handle to get the correct dimension between the interior handle grip and the inner surface of the fuselage skin. Make sure there is no free play in the interior handle shaft.

NOTE: The difference in position between one set of spline teeth and the other causes a 0.186-inch adjustment at the interior handle grip.

CAUTION: MAKE SURE YOU REMOVE THE RIG PIN FROM THE CLUTCH HOUSING BEFORE YOU INSTALL THE DOORWAY LINING. THE RIG PIN CAN CAUSE DAMAGE TO THE LINING.

8) Remove the rig pin from the hole at the top of the clutch housing.

9) Adjust the clutch pawl as follows:

a) Make sure the clutch pawl roller touches the cam bracket (View C, Fig. 507).
b) Make sure the clearance between the clutch pawl and the spring cartridge is as shown (View C, Fig. 507).
c) Adjust the spring cartridge if it is necessary.

S 825-015

(4) Adjust the spring hydraulic snubber.

NOTE: This adjustment is to get the correct angle of movement for the interior handle.

(a) If it is necessary, disconnect the lower end of the spring hydraulic snubber from the lower lever.

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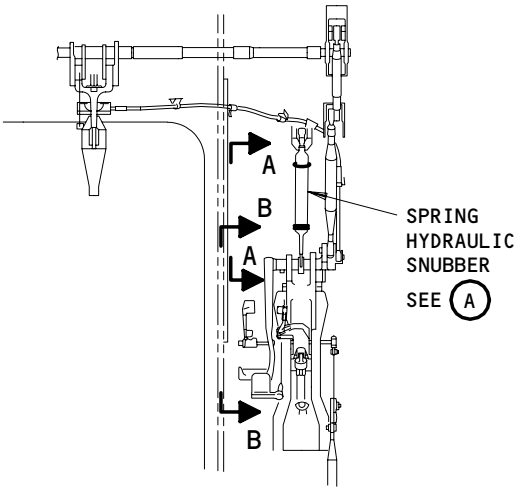
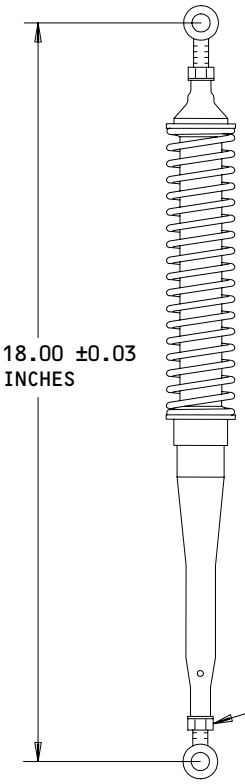
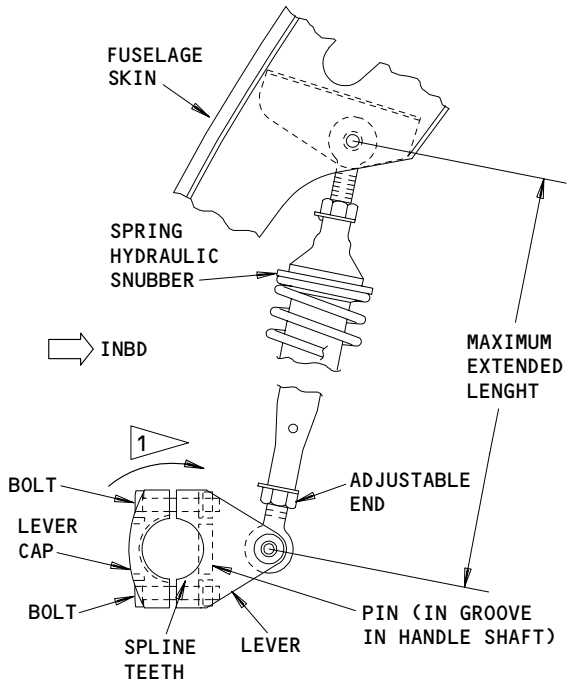


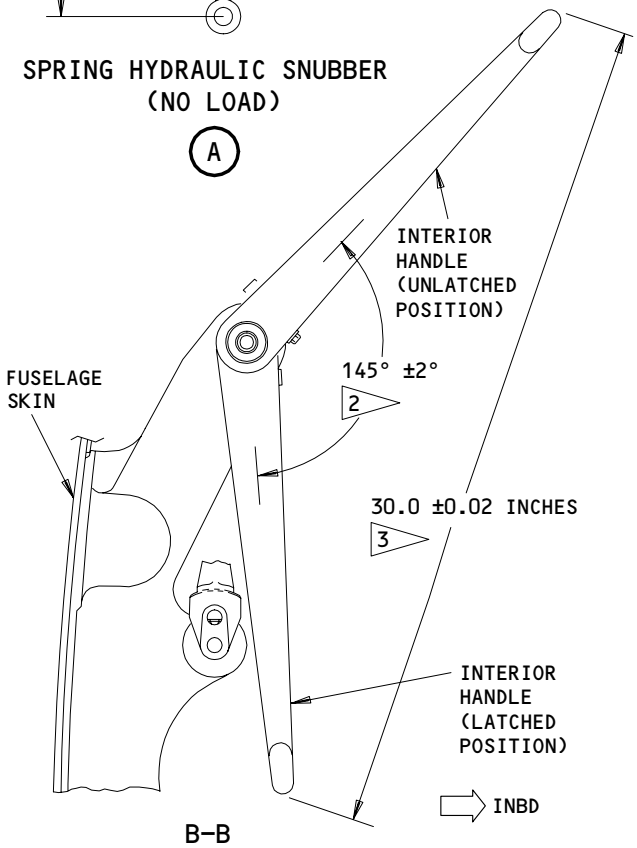
ENTRY/SERVICE DOOR
(EXAMPLE)



SPRING HYDRAULIC SNUBBER
(NO LOAD)
(A)



A–A



B–B

1 TURN THE INTERIOR HANDLE SHAFT IN THIS DIRECTION TO REMOVE THE FREE PLAY.

2 RECOMMENDED INITIAL ADJUSTMENT FOR THE INTERIOR HANDLE

3 OPTIONAL INITIAL ADJUSTMENT FOR THE INTERIOR HANDLE

Spring Hydraulic Snubber Adjustment
Figure 508

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(b) Adjust the spring hydraulic snubber to the maximum extended length (View A, Fig. 508).
(c) Loosen the bolts that hold the lower lever and the lever cap to the interior handle shaft.
(d) Make sure there is no free play in the interior handle shaft.
(e) Hold the spring hydraulic snubber at its maximum extended length. Adjust the lower lever and the lever cap on the splines to align the holes for the lower end of the snubber.
(f) If a finer adjustment is necessary (less than one spline), then adjust the bolts for the lower lever. Tighten one bolt, and loosen the other to change the position of the lower lever.

NOTE: Only the lever cap engages the splines on the interior handle shaft. The lower lever does not have splines.

(g) Make sure the pin in the lower lever is in the groove on the interior handle shaft.
(h) Install the bolt, washer, and nut to connect the snubber to the lower lever.
(i) Slowly turn the interior handle from the latched to the unlatched position. Measure the angle of movement of the interior handle.
(j) If the angle of movement of the interior handle is not correct, then do these steps:
    1) Lower the interior handle to the latched position.
    2) Disconnect the spring hydraulic snubber from the lower lever.
    3) Adjust the lower end of the snubber to increase or decrease its length. Increase the length of the snubber if the angle of movement of the interior handle is too small. Decrease the length of the snubber if the angle of movement is too large.

        NOTE: One-half turn of the lower end of the snubber will change the angle of movement of the interior handle approximately one degree.

    4) Loosen the bolts that hold the lower lever and the lever cap to the interior handle shaft.
    5) Make sure there is no free play in the interior handle shaft.
    6) Hold the spring hydraulic snubber at its maximum extended length. Adjust the lower lever and the lever cap on the splines to align the holes for the lower end of the snubber.
    7) Make sure the pin in the lower lever is in the groove on the interior handle shaft.
    8) Install the bolt, washer, and nut to connect the snubber to the lower lever.
    9) Measure the angle of movement of the interior handle.

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10) Do the adjustments to the snubber length and the lower lever until the angle of movement is correct.

(k) Lift the interior handle to the unlatched position.

(l) Push the external disarm lever to the fully inboard position.

(m) Lift the exterior handle to the unlatched position.

(n) Continue to lift the exterior handle until all free play is removed. Look for interference between the exterior handle and the handle box.

(o) If there is interference between the exterior handle and the handle box, then do the steps to decrease the angle of movement of the interior handle.

NOTE: To eliminate the exterior handle interference, you can decrease the angle of movement of the interior handle below the minimum angle shown.

(p) Install a lockwire on the jamnut at the lower end of the snubber.

S 825-018

(5) Adjust the latch pin and the latch pin cable.

NOTE: This adjustment is to make sure the latch pin engages the guide fitting correctly and the clearance is correct for the door locked sensor.

(a) Make sure the exterior handle is in the fully faired position.

(b) Connect the latch pin cable to the handle mechanism.

(c) Lower the interior handle to the latched position.

(d) To adjust the latch pin cable with the doorway lining removed, do these steps:

1) Make sure the dimension to the latch pin (in the door latched position) is correct (View A-A, Fig. 509). If it is necessary, turn the rod end at the lower end of the latch pin cable.

NOTE: One-half turn of the rod end causes a 0.021-inch adjustment of the latch pin.

2) If a finer adjustment is necessary, use the two nuts at the bottom end of the cable conduit.

3) Lock the tabs on the lockwasher and install lockwires on all of the jamnuts.

(e) To adjust the latch pin cable with the doorway lining installed, do these steps:

1) To increase the clearance, turn the terminal fitting out of the cable at the top end of the cable (View A-A, Fig. 509).

NOTE: One-half turn of the terminal fitting will increase the clearance 0.028 inch.

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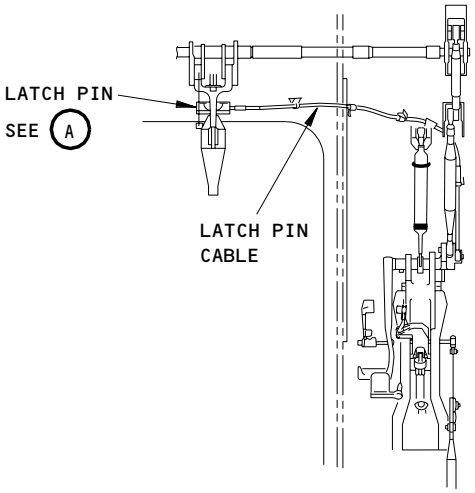
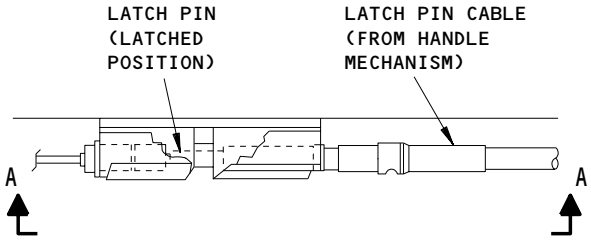


ENTRY/SERVICE DOOR
(EXAMPLE)



LATCH PIN
A

Latch Pin Cable Adjustment
Figure 509 (Sheet 1)

H14332

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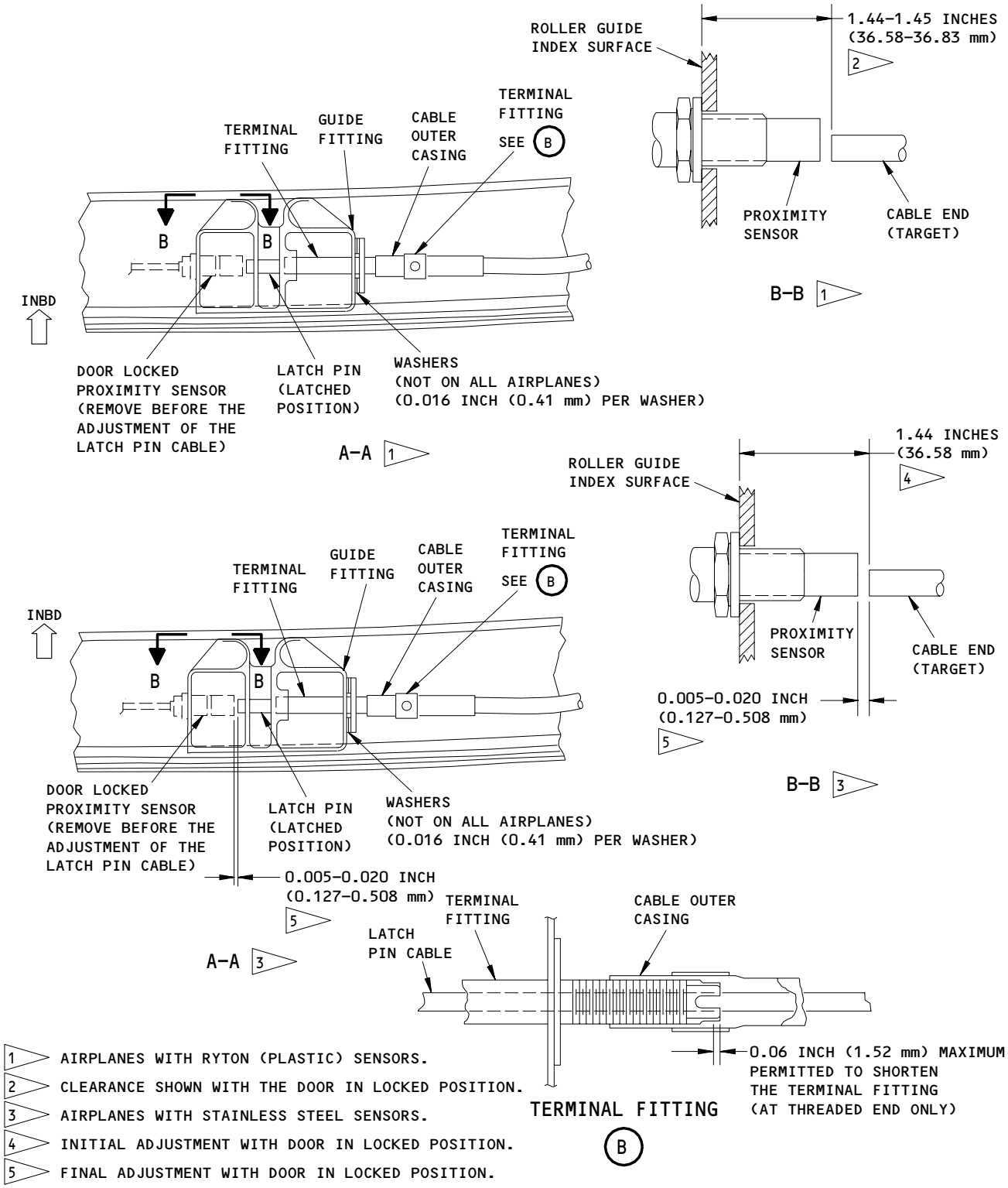

Latch Pin Cable Adjustment
Figure 509 (Sheet 2)

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2) If the terminal fitting adjustment is too coarse, add washers to increase the clearance (View A-A, Fig. 509).
3) To decrease the clearance, turn the terminal fitting into the cable at the top end of the cable (View B, Fig. 509).

NOTE: Decrease the length of the terminal fitting at the threaded end only.

S 825-019

(6) Do the initial adjustment of the overcenter mechanism pushrods.

NOTE: This is the initial adjustment to get the correct lengths of the pushrods from the handle mechanism to the overcenter mechanism.

(a) Make sure the door is in the open position.

NOTE: The door must be open to install the overcenter mechanism rig pin D2.

(b) Connect the lower pushrod of the overcenter mechanism to the handle mechanism.
(c) With the door open, lower the interior handle to the latched position.
(d) Do a check for tension in the pushrods as follows:
1) Try to install rig pin D2.
2) Make sure the overcenter crank support touches the overcenter mechanism housing.
3) If you can install the rig pin, then do the check for compression in the pushrods.
4) If you cannot install rig pin D2, then do the steps that follow:
a) Disconnect the two pushrods from the idler crank.
b) Install the rig pin D2 into the overcenter mechanism housing.
c) Adjust the stop bolt until it is flush against the stop on the overcenter housing.

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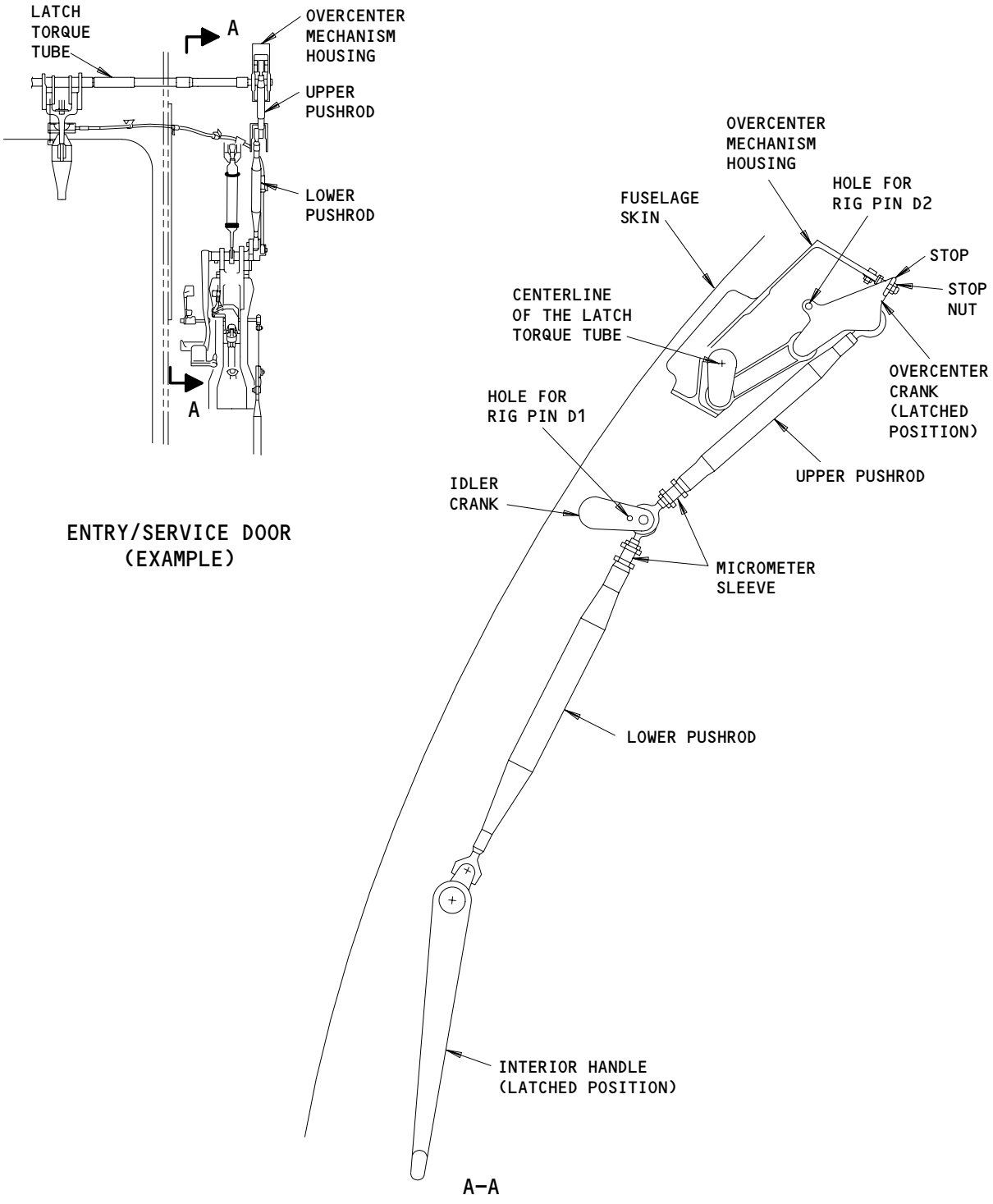

Overcenter Mechanism Adjustment
Figure 510

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d) Torque the nut against the overcenter crank and install the lockwire.
e) Install the rig pin D1 into the idler crank.
f) Adjust the micrometer sleeves on the upper pushrod and the lower pushrod. Adjust the sleeves until you can connect the pushrods to the idler crank while the rig pins are installed.
g) Install lockwire on the micrometer adjustment nuts on the upper pushrod and the lower pushrod.
h) Remove the rig pins D1 and D2.
i) Connect the pushrods to the idler crank.

(e) Do a check for compression in the pushrods as follows:
1) Make sure the door is closed and latched.
2) Remove the bolt that connects the two pushrods to the idler crank.
3) Try to install the same bolt.
4) If you can easily install the bolt, then continue.
5) If you can not easily install the bolt, do these steps:

NOTE: It is not necessary for the bolt to easily install with the door in the up position.

a) Adjust the micrometer sleeves on the upper and the lower pushrods until you can easily install the bolt.

NOTE: Ignore the hole for rig pin D1 after pushrod adjustment.

b) Install lockwire on the micrometer adjustment nuts on the upper and the lower pushrods.
c) Connect the pushrods to the idler crank.
d) Close and latch the door.
e) Make sure the overcenter crank stopbolt touches the overcenter mechanism housing.

S 825-020

(7) Do the initial adjustment of the latch cam and the latch torque tube.

NOTE: This adjustment is to get the correct position of the latch cam to hold the door correctly in the latched position.

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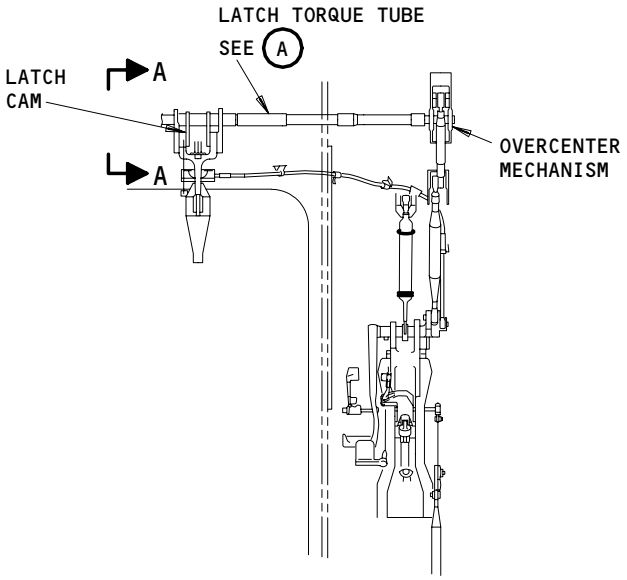
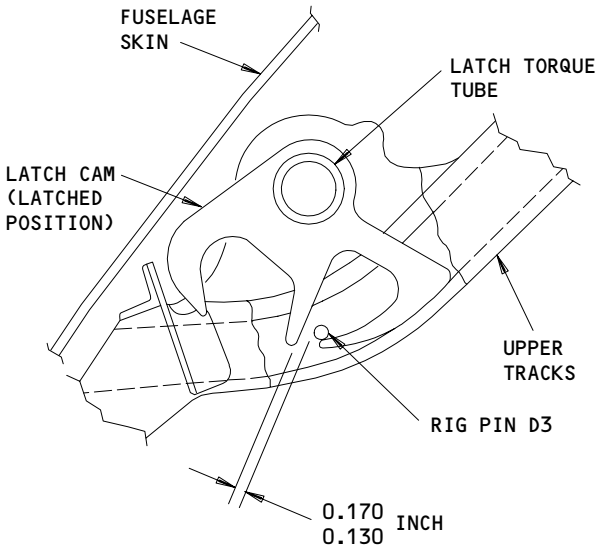
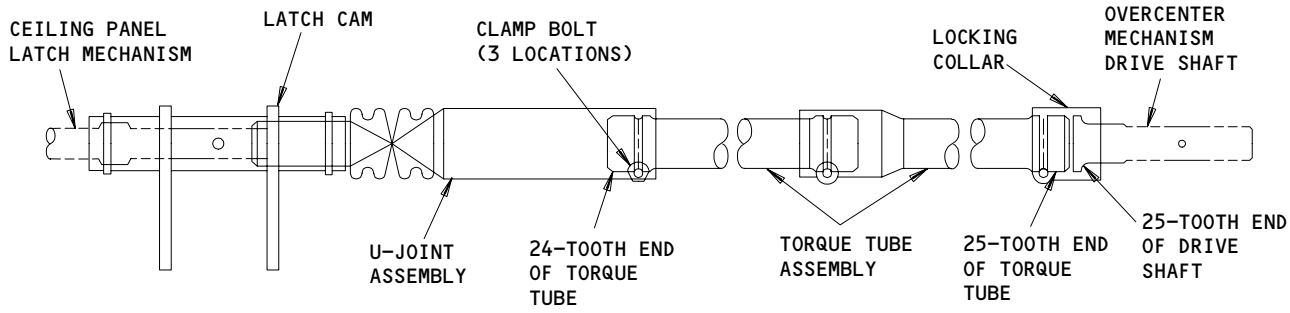


ENTRY/SERVICE DOOR
(EXAMPLE)



A–A



LATCH TORQUE TUBE
A

Latch Cam and Latch Torque Tube Initial Adjustment
Figure 511

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(a) Lower the interior handle to the latched position.
(b) Install the rig pin D3 in the upper tracks.
(c) Measure the clearance between the rig pin D3 and the latch cam (View A-A, Fig. 511).
(d) If the clearance is correct, then go to the adjustment of the mode select mechanism.
(e) If the clearance is not correct, then do the steps that follow:

NOTE: There are two spline joints included in this adjustment. There is 24-tooth spline joint between the U-joint assembly and the torque tube. There is a 25-tooth spline joint between the torque tube and the drive shaft from the overcenter mechanism.

1) Remove the clamp bolts from the torque tube assembly.
2) For all of the doors except the forward service door, retract the torque tube into the U-joint assembly.

NOTE: This disengages the splines on the two ends of the torque tube.

3) For the forward service door, disengage the splines of the torque tube as follows:
   a) Pull the U-joint away from the latch cam until the U-joint is 1.50 inches from the upper tracks. Do not disengage the splines between the U-joint and the latch cam.

      NOTE: This disengages the 24-tooth spline joint, and

      keeps the U-joint engaged 0.40 inch on the latch cam.

   b) Retract the locking collar to disengage the 25-tooth spline joint.

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4) Install the rig pin D2 into the overcenter mechanism housing.
5) Engage the splines of the torque tube assembly to get the correct clearance between the rig pin D3 and the latch cam.

NOTE: A one-tooth adjustment between the spline joints causes a 0.032-inch change in the clearance between the latch cam and the rig pin.

6) Tighten the clamp bolts to 50-60 pound-inches.

NOTE: Keep the clamp bolts as close to the bottom of each torque tube as possible (in the latched position).

7) Remove the rig pins D2 and D3.
8) Move the interior handle slowly from the latched position to the unlatched position several times. Make sure the mechanism operates smoothly and does not touch the adjacent structure.

S 825-021

(8) Adjust the mode select mechanism.

NOTE: This adjustment is to get the correct angle at the jaw end of the mode select shaft.

(a) Move the internal arm/disarm lever to the DISARM position.
(b) Adjust the length of the pushrod to the mode select mechanism to get the correct angle of the jaw (View C-C, Fig. 512). Use the girt bar carrier drive jaw angle gage to measure the angle.

NOTE: Adjust the lower end of the pushrod.

(c) Tighten the jamnut at the lower end of the pushrod to 30-50 pound-inches.

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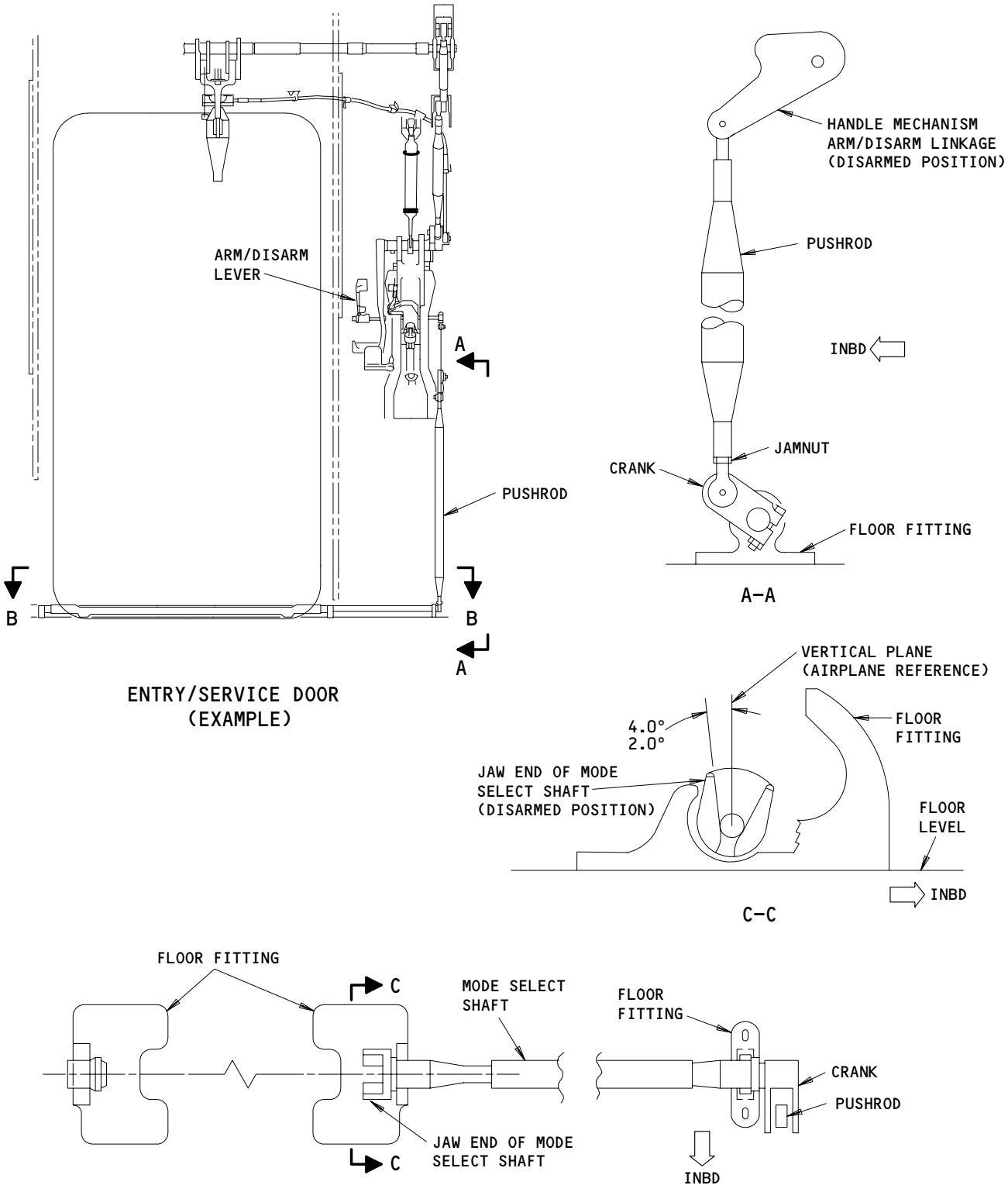

Mode Select Mechanism Adjustment
Figure 512

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(d) Install a lockwire on the jamnut.

S 825-022

(9) Adjust the upstop snubber.

NOTE: This adjustment is to get the correct positions of the upstop snubbers in the side tracks. When the snubbers are in the correct positions, the two sides of the door will touch the snubbers at the same time.

(a) Open the entry/service door until you get the dimension A (View A-A, Fig. 513). This is the rig position for the upstop snubber.

NOTE: The dimension A for the rig position is measured on the right (when you look outboard) side track only.

(b) With the door in the rig position, adjust the positions of the two snubbers until snubber contact and bumber contact are made (View A-A, Fig. 513).
(c) Hold the fastener in the side track to keep the bumper in the correct position in the track (View A, Fig. 513).
(d) Turn the snubber 1/4 turn from the attach block.
(e) Tighten the bolts in the attach block and in the clamp.

S 825-023

(10) Do the special adjustment of the latch cam.

NOTE: This adjustment is necessary only if you cannot get the correct clearances between the door stops and the body stops, or between the trolley and the trolley link.

(a) Close and latch the entry/service door.

CAUTION: DO NOT TURN THE HANDWHEEL MORE THAN IT IS NECESSARY TO ALIGN THE HOLE IN THE CABLE DRUM WITH THE HOLE IN THE SUPPORT ARM. THE INCORRECT MOVEMENT OF THE CABLE DRUM CAN CAUSE DAMAGE TO THE COUNTERBALANCE.

(b) Install the lock on the counterbalance (AMM 52-11-16/401).

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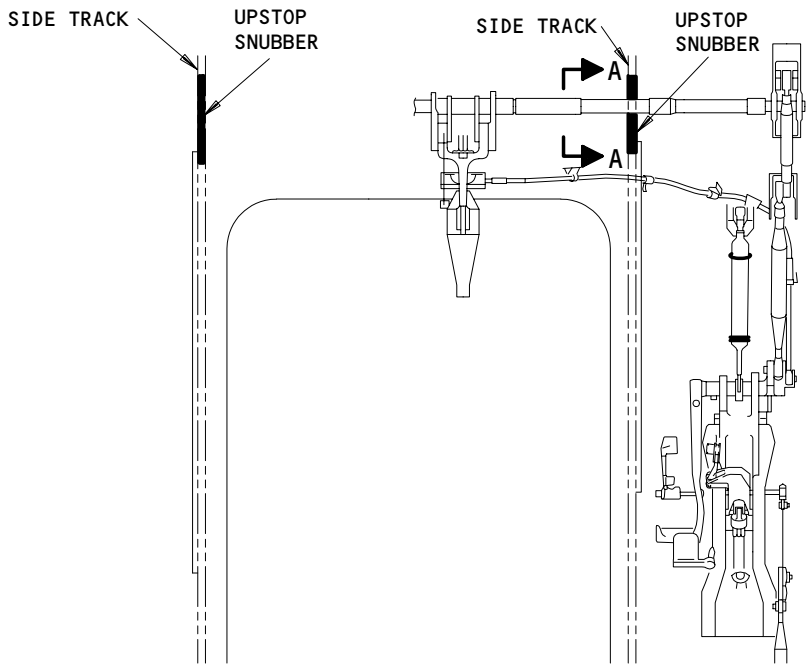
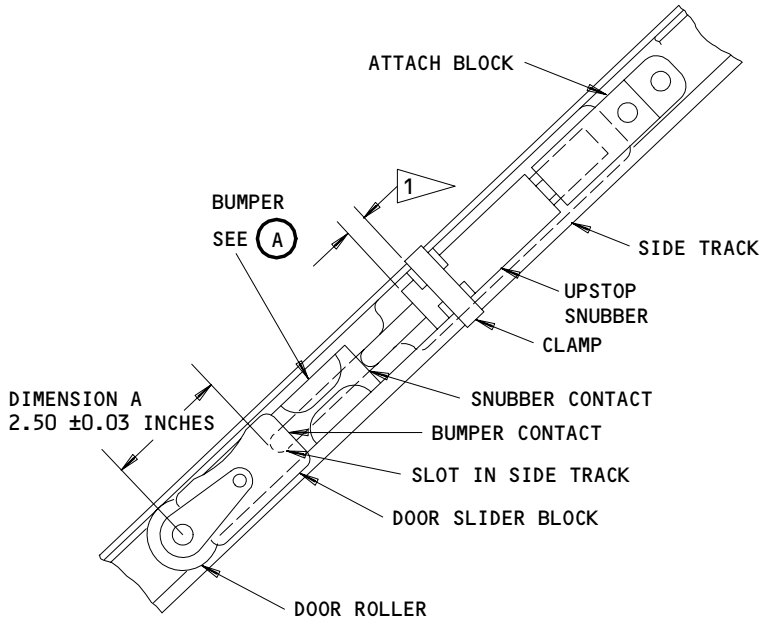
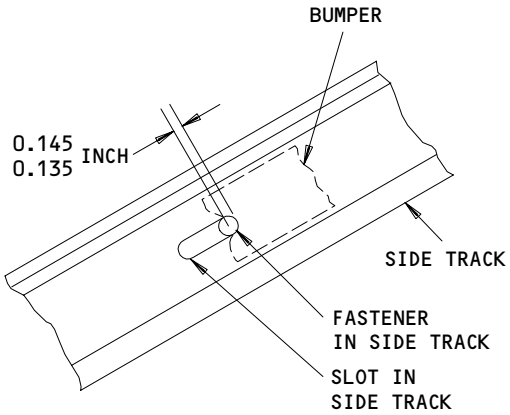


ENTRY/SERVICE DOOR
(EXAMPLE)



A–A



BUMPER
(DOOR ROLLER AND
SLIDER BLOCK NOT SHOWN)

A

1 0.80–0.90 INCH FOR FORWARD SERVICE DOOR AFT TRACK
0.30–0.50 INCH FOR ALL OTHER DOOR TRACKS

Upstop Snubber Adjustment
Figure 513

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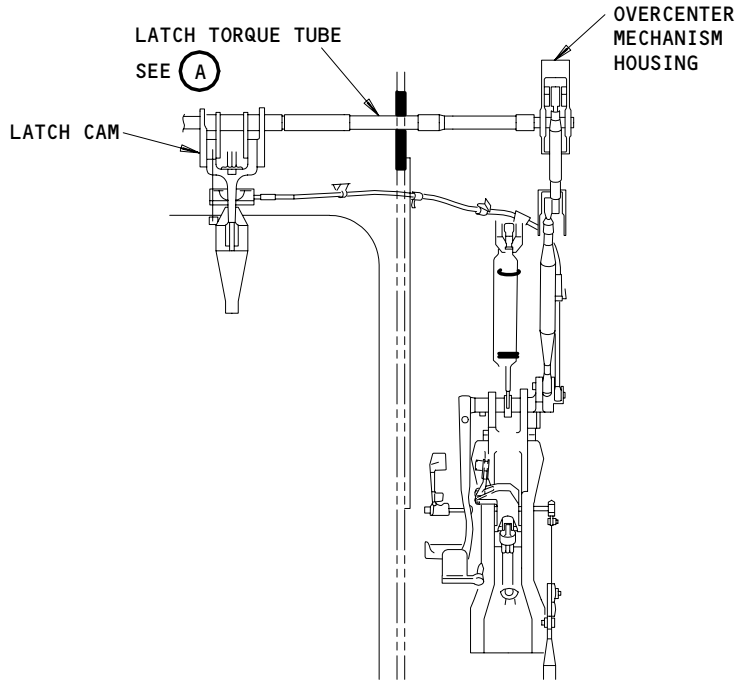
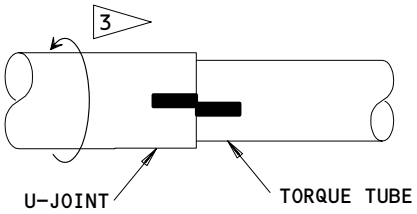
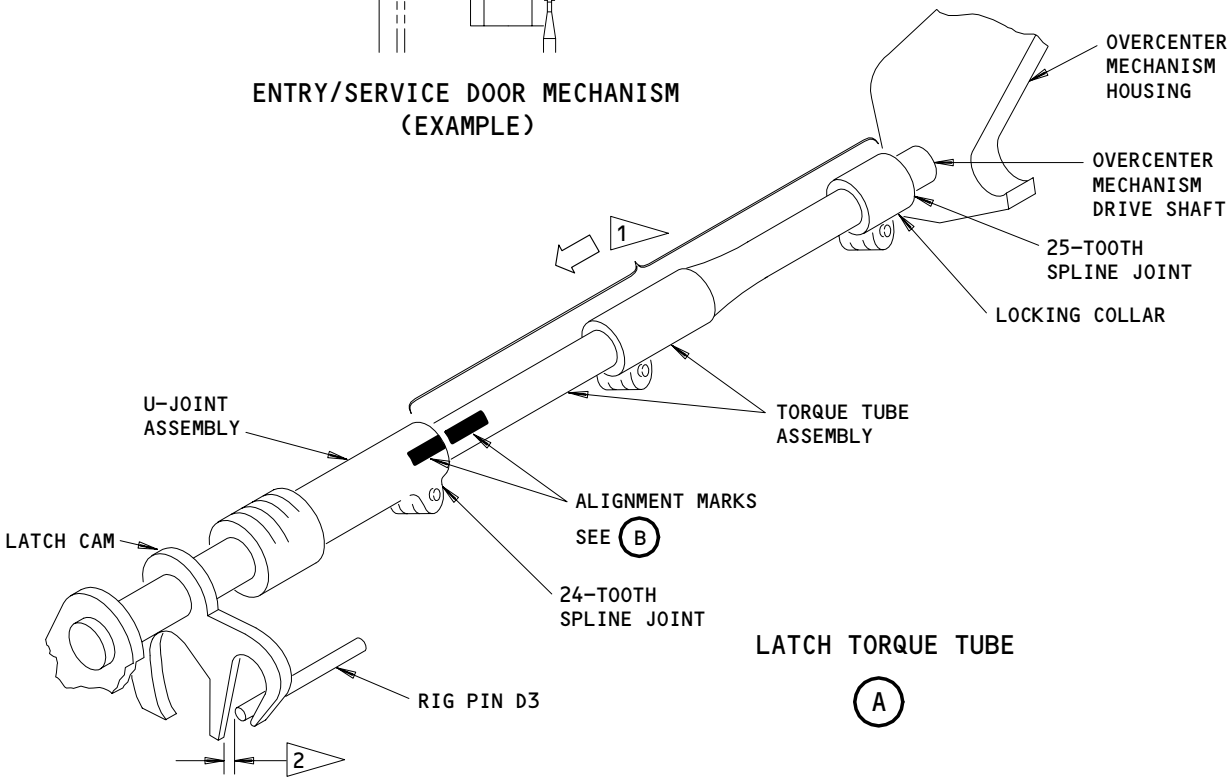


ENTRY/SERVICE DOOR MECHANISM
(EXAMPLE)



ALIGNMENT MARKS

B



LATCH TORQUE TUBE

A

1 THIS PART OF THE TORQUE TUBE IS RETRACTED INTO THE U-JOINT ASSEMBLY SUFFICIENTLY TO DISENGAGE THE 24-TOOTH AND THE 25-TOOTH SPLINE JOINTS

2 USE 0.032 (1/32) INCH SHIMS TO MEASURE THIS CLEARANCE. THE NOMINAL ADJUSTMENT IS 0.130-0.170 INCH

3 WITH THE ALIGNMENT MARKS IN THE POSITION SHOWN, THE U-JOINT WAS TURNED ONE SPLINE TOOTH FROM THE INITIAL POSITION

Last Adjustment for the Latch Cam
Figure 514

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CAUTION: DO NOT UNLATCH THE DOOR WITH THE TROLLEY DISCONNECTED FROM THE DOOR. IF THE DOOR IS UNLATCHED WITH THE TROLLEY DISCONNECTED, THE DOOR WILL FALL INBOARD, WHICH CAN CAUSE INJURY OR DAMAGE.

(c) Disconnect the trolley from the door (Ref 52-11-01).
(d) Move the trolley up away from the door.
(e) Install the rig pin D3.
(f) Make marks on the U-joint and torque tube (View A, Fig. 514). Make sure the centerlines of the marks align.
(g) Put a stack of 0.032 (1/32) inch shims between rig pin D3 and latch cam as shown (View A, Fig. 514). Record the number of shims needed to fit gap. Remove shims and save for later adjustments.
(h) Retract the torque tube assembly into the U-joint assembly to disengage the 24-tooth and 25-tooth spline joints.
(i) Turn the U-joint assembly one spline tooth in the direction necessary to increase or decrease the clearance between the latch cam and the rig pin (View A, Fig. 514).
(j) Engage the 24-tooth spline joint. Do not engage the locking collar around the spline joint.
(k) Add or remove one shim (0.032 inch thick) from the stack of shims to achieve the adjustment direction that is necessary.
(l) Put the shim stack between the rig pin and the latch cam. Hold the latch cam leg tightly against the shim stack and the rig pin.
(m) Engage the locking collar on the 25-tooth spline joint.
(n) Do the latch cam adjustments until the clearance between the trolley and the trolley-link and the clearance between the body stop and the door stop is satisfactory.
(o) Tighten the clamp bolts to 50-60 pound-inches.
(p) Remove the rig pin D3.
(q) Connect the trolley to the door (Ref 52-11-01).
(r) Remove the counterbalance lock (AMM 52-11-16/401).
(s) Do the step above called "Adjust the door in the latched position".

NOTE: It may be necessary to repeatedly adjust the position of the latch cam, the trolley and trolley link clearance, the body stop and door stop clearance until they are all correct.

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S 705-126

(11) Do a check for compression in the pushrods as follows:
  (a) Make sure the door is closed and latched.
  (b) Remove the bolt that connects the two pushrods to the idler crank.
  (c) Try to install the same bolt.
  (d) If you can easily install the bolt, then continue.
  (e) If you can not easily install the bolt, do these steps:

NOTE: It is not necessary for the bolt to easily install with the door in the up position.

1) Adjust the micrometer sleeves on the upper and the lower pushrods until you can easily install the bolt.

NOTE: Ignore the hole for rig pin D1 after pushrod adjustment.

2) Install lockwire on the micrometer adjustment nuts on the upper and the lower pushrods.
3) Connect the pushrods to the idler crank.
4) Close and latch the door.
5) Make sure the overcenter crank stopbolt touches the overcenter mechanism housing.

S 825-024

(12) Do the last adjustment of the latch torque tube.
  (a) Lift the interior handle to the unlatched position.
  (b) Move the torque tube assembly tightly against the upper track.

NOTE: Ensure proper engagement of all clamp bolts in torque tube locking grooves.

  (c) Measure the clearance between the overcenter mechanism and the locking collar (View A, Fig. 515).
  (d) If the clearance is not correct, then install washers between the latch cam and the U-joint. Install the minimum number of washers to get the correct clearance between the overcenter mechanism and the locking collar.

S 825-025

(13) Adjust the door in the unlatched position.

NOTE: This adjustment is to get the correct clearance between the latch cam and the trolley cam follower when the door is opened or closed. The lengths of the overcenter mechanism pushrods do not change the latched position of the latch cam.

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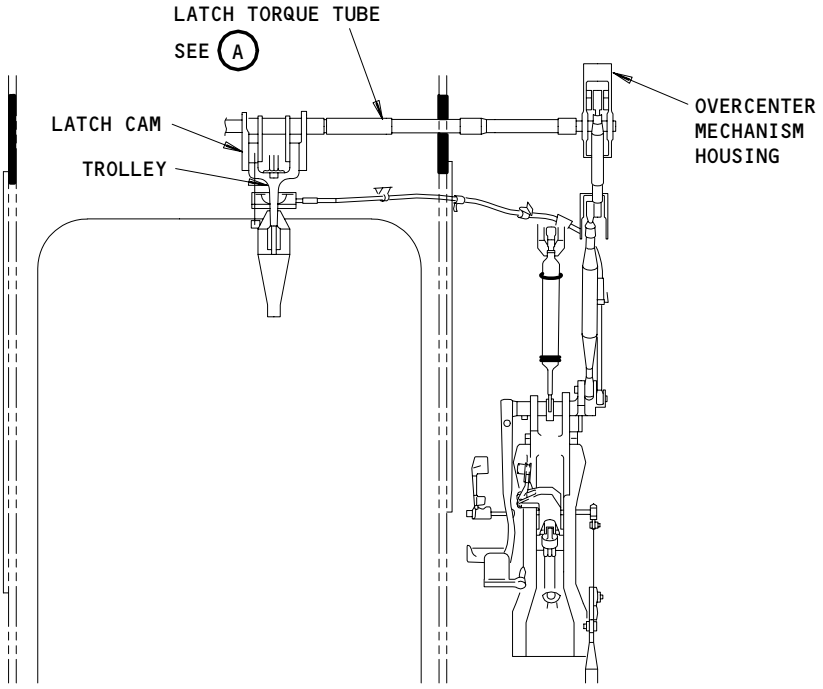
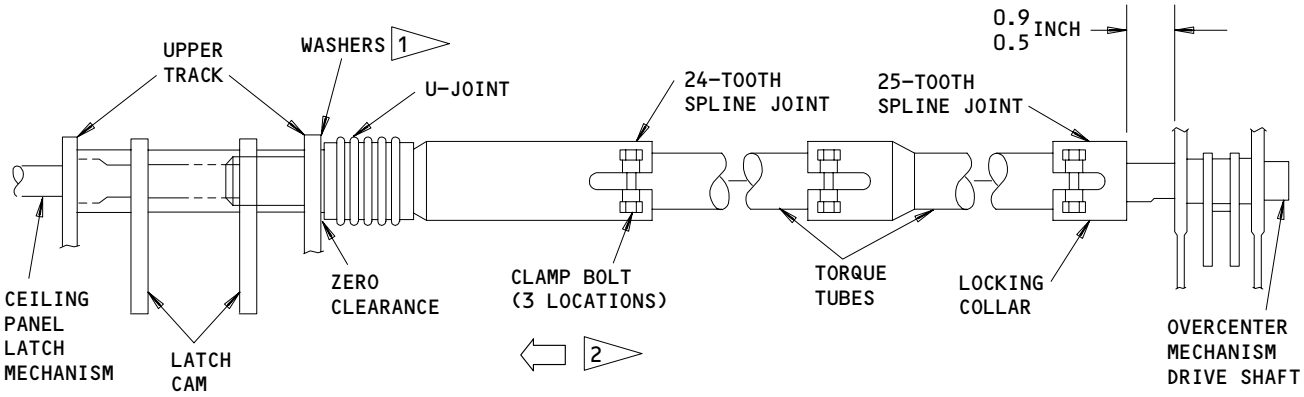


ENTRY/SERVICE DOOR
(EXAMPLE)



LATCH TORQUE TUBE
A

1 USE THE MINIMUM NUMBER OF WASHERS NECESSARY TO GET THE 0.5-0.9 INCH DIMENSION

2 PUSH THE LATCH TORQUE TUBE TIGHTLY IN THIS DIRECTION TO GET THE ZERO CLEARANCE

Last Adjustment for the Latch Torque Tube
Figure 515

121764

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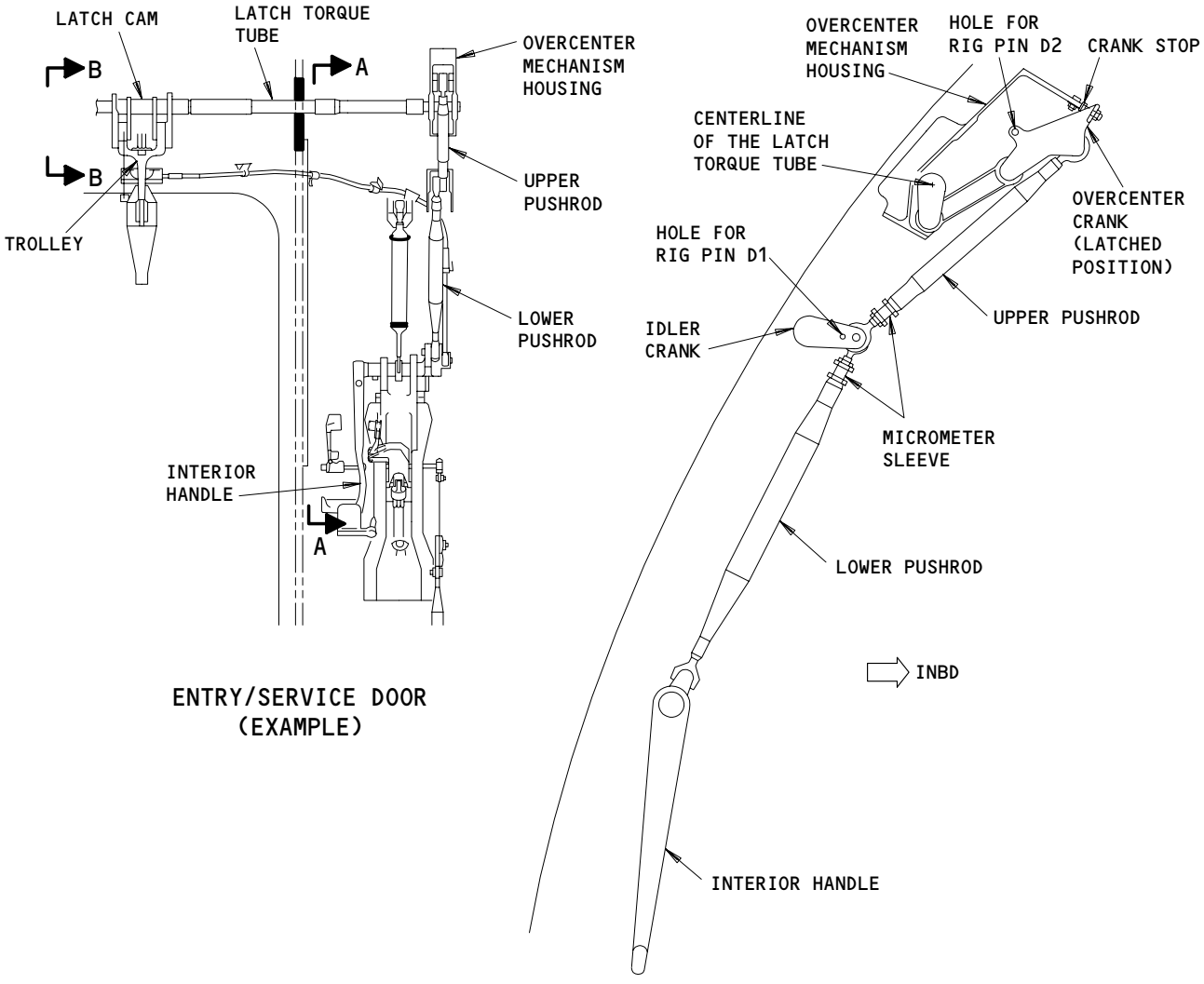

Door Unlatched Position Adjustment
Figure 516

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(a) Lift the interior handle to the unlatched position.
(b) Measure the minimum clearance between the latch cam and the trolley cam follower.
(c) If the clearance is too small, you must decrease the length of the lower pushrod. If the clearance is too large, you must increase the length of the lower pushrod. Do these steps to adjust the clearance between the latch cam and the cam follower:
1) Lower the interior handle to the latched position.
2) Install the rig pin D2 in the overcenter mechanism housing.
3) Disconnect the upper pushrod and the lower pushrod of the overcenter mechanism from the idler crank.
4) Adjust the length of the lower pushrod.

NOTE: One turn of the micrometer sleeve on the top end of the lower pushrod will change the clearance between the latch cam and the cam follower approximately 0.025 inch.

5) Connect the lower pushrod to the idler crank.
6) Adjust the length of the upper pushrod to connect it to the idler crank.
7) Connect the upper pushrod to the idler crank.
8) Remove the rig pin D2.
9) Unlatch the door.
10) Measure the clearance between the latch cam and the cam follower. Adjust the clearance again if it is necessary.

S 705-127
(14) Do a check for compression in the pushrods as follows:
(a) Make sure the door is closed and latched.
(b) Remove the bolt that connects the two pushrods to the idler crank.
(c) Try to install the same bolt.
(d) If you can easily install the bolt, then continue.
(e) If you can not easily install the bolt, do these steps:

NOTE: It is not necessary for the bolt to easily install with the door in the up position.

1) Adjust the micrometer sleeves on the upper and the lower pushrods until you can easily install the bolt.

NOTE: Ignore the hole for rig pin D1 after pushrod adjustment.

2) Install lockwire on the micrometer adjustment nuts on the upper and the lower pushrods.
3) Connect the pushrods to the idler crank.

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4) Close and latch the door.
5) Make sure the overcenter crank stopbolt touches the overcenter mechanism housing.

S 825-026

(15) Do the last adjustments of the interior handle and the arm/disarm lever.

NOTE: The last adjustments of the interior handle and the arm/disarm lever are given in the procedure to install the doorway lining.

(a) Install the doorway lining (Ref 52-11-02).

S 825-028

(16) Adjust the upper door liner.
(a) With the door unlatched, push the upper door liner forward as far as possible.
(b) Make sure the sum of dimensions A and B is 0.25 inch or more.
(c) With the door unlatched, push the upper door liner aft as far as possible.
(d) Make sure the sum of dimensions C and D is 0.25 inch or more.
(e) Adjust the movable ceiling panels forward or aft at the inboard hinge attachments to the support structure.
(f) Open the door.
(g) Close the door.
(h) Measure the clearance from the roller to the horizontal track.
(i) Measure the clearance from the roller to the vertical face of the cam.
(j) Adjust the shims at the horizontal track and cam support fitting attachments to the support structure.

S 825-027

(17) Adjust the release button for the internal arm/disarm lever.
(a) Make sure the arm/disarm handle is in the DISARM position.
(b) INTERIOR HANDLE WITHOUT CLUTCH MECHANISM;
measure the clearance between the release button and the interior handle (View A-A, Fig. 517).
(c) INTERIOR HANDLE WITH CLUTCH MECHANISM;
push the grip end of the interior handle toward the release button with your fingers (approximately one pound of force) and measure the clearance between the release button and the interior handle (View A-A, Fig. 517).

NOTE: Interior handles with the clutch mechanism will have some forward-aft movement. When you push the handle toward the button and make sure the clearance is correct, there will be no interference.

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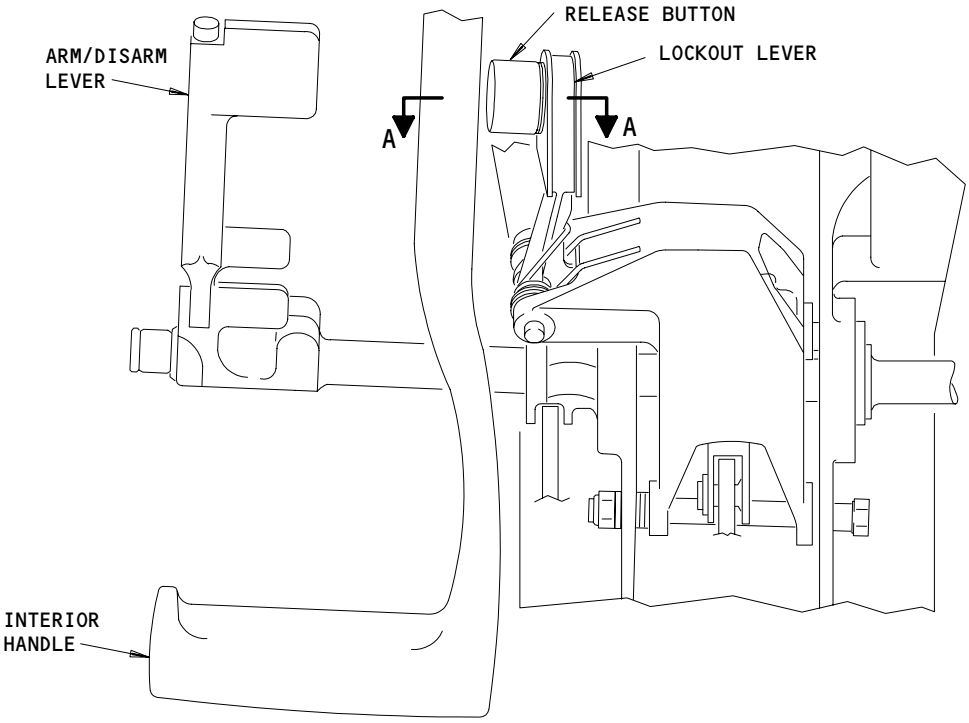
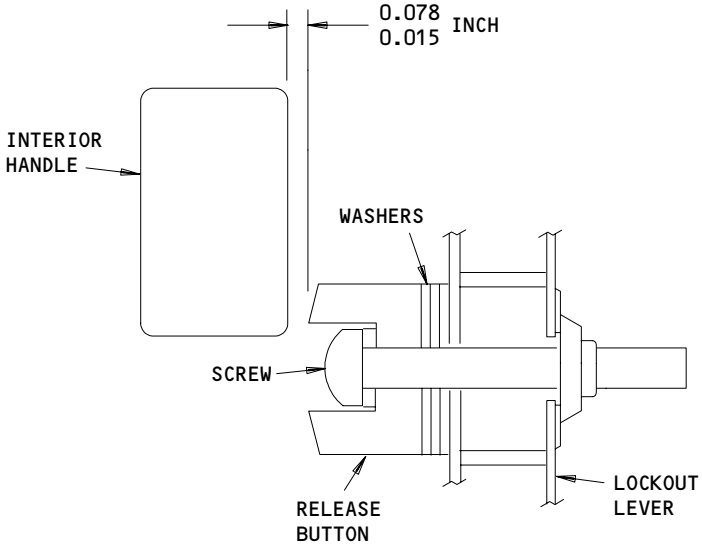


ARM/DISARM LEVER RELEASE BUTTON
(EXAMPLE)



A-A

Release Button Adjustment
Figure 517

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(d) If the clearance for the release button is not correct, then do these steps:
1) Loosen the screw that attaches the release button to the lockout lever.
2) Remove the release button, the screw, and the washers. Make sure the washers do not fall from the end of the screw.
3) Remove or install washers to get the correct clearance (View A-A, Fig. 517).
4) Tighten the screw to attach the release button to the lockout lever.

S 825-030

(18) Adjust the EMERGENCY ONLY arming flag (Fig. 517A).

WARNING: PULL THE ARM/DISARM LEVER FULLY INBOARD TO DISARM THE ESCAPE SYSTEM BEFORE YOU OPEN THE DOOR. FAILURE TO FULLY DISARM THE ESCAPE SYSTEM WILL CAUSE THE ESCAPE SLIDE TO DEPLOY. IF THE ESCAPE SLIDE DEPLOYS SUDDENLY, INJURY OR DAMAGE MAY OCCURE.

(a) Pull the arm/disarm lever to the disarmed position.
(b) Make sure the arming flag is fully retracted.
(c) Open the door.
(d) Place the interior and exterior handles in the closed (down) position.
(e) INTERIOR HANDLE WITH CLUTCH MECHANISM;
make sure the clearance is 0.01 inch minimum between the interior handle and the door lining rubber bumper.
(f) Slowly move arm/disarm lever to the armed position.
(g) Make sure the arming flag does not get caught in the door lining.
(h) Make sure the exterior handle and disarm lever are flush.
(i) With the interior handle in the latched position, move the arm/disarm lever to the disarmed position and back to the armed position.
(j) Make sure the arming flag does not get caught behind or below the interior handle during the movement of the arm/disarm lever.
(k) Make sure the clearance between the interior handle and the arming flag is 0.02-0.25 inch.

NOTE: The arming flag can touch the interior handle when the arm/disarm lever is in the ARMED position.

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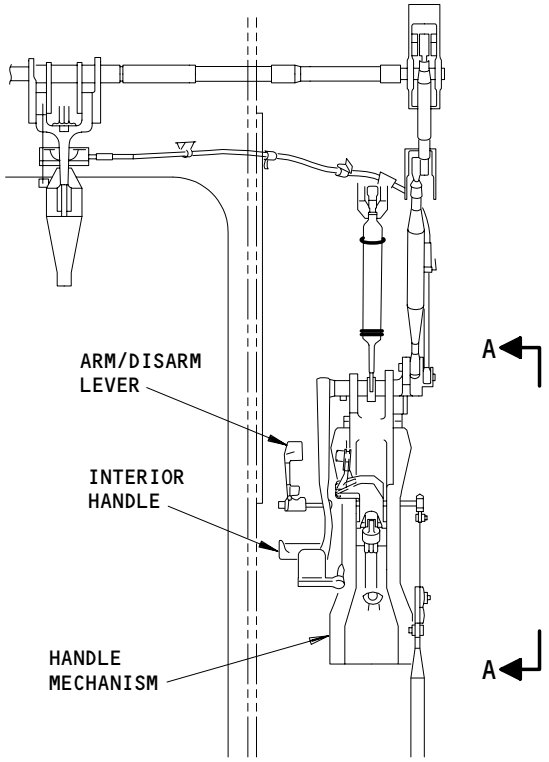
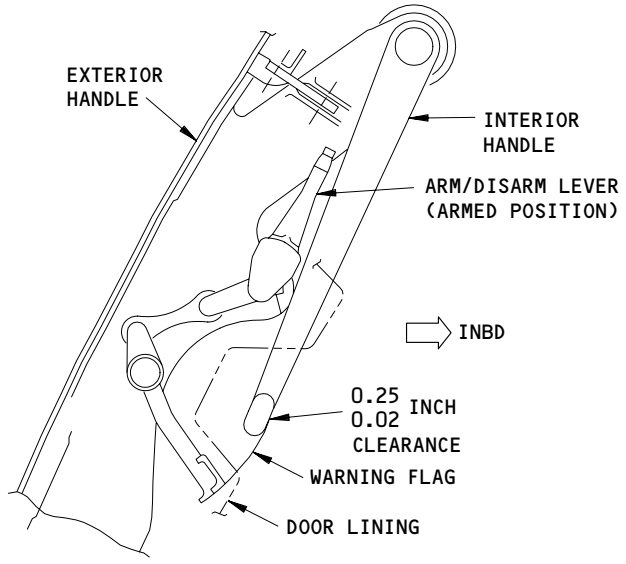


ENTRY/SERVICE DOOR HANDLE MECHANISM
(EXAMPLE)



1 WARNING FLAG ADJUSTMENT

Warning Flag Adjustment
Figure 517A

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(l) AIRPLANES WITH SILICONE RUBBER SLIDE ARMED WARNING FLAGS INSTALLED;
Make sure that the clearance between the arming flag and the door liner is 0.00-0.12 inch (0.00-3.05 mm).

(m) If the EMERGENCY ONLY arming flag requires adjustment, do the steps that follow:

WARNING: MAKE SURE THE DOOR IS IN THE OPEN POSITION TO ADJUST THE EMERGENCY ONLY ARMING FLAG. iF THE DOOR IS NOT IN THE OPEN POSITION AND THE ESCAPE SLIDE DEPLOYS SUDDENLY, INJURY OR DAMAGE CAN OCCUR.

1) Remove the access cover for the arming flag.
2) Move the interior handle to the latched position.
3) Move the arm/disarm lever to the ARMED position.
4) Adjust the position of the arming flag to get the 0.02-0.25 inch clearance between the flag and the interior handle.
5) Move the arm/disarm lever to the DISARMED position.
6) Install the access cover for the arming flag.

S 825-125

(19) Adjust the bustle.

NOTE: The purpose of this check is to make sure no interference exists between the upper and the lower bustle which prevent the slide from deploying.

(a) Make sure the clearance between the lower and the upper bustle is 0.10-0.15 inch.

(b) Make sure the operation of the lower bustle is smooth as follows:
1) Lift the lower bustle at the center of the bottom edge only.
2) Make sure no binding or interference with the upper bustle.

G. Put the Airplane Back to Its Initial Condition

S 415-031

(1) Close the movable ceiling panels.
(a) Unlatch the door.
(b) Move the movable ceiling panels down and outboard to the closed position.
(c) Pull the door liner up and out of the door to meet the movable ceiling panel.
(d) Do these steps:
1) Let the liner move down sufficiently to attach the ball-lock pin to the bracket on the liner.
2) Attach the ball-lock pin to the bracket.
3) Let the liner move down as far as the lanyard will permit.
4) Connect the electrical connector on the electrical wiring between the liner and the movable ceiling panel.

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5) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
a) 11U32, DOOR WINDOW HEATER
6) Pull the liner up to meet the movable ceiling panel.
(e) Pull the buttons together and engage the hinge pins. Release the buttons.
(f) Close the access door.

S 415-032
(2) Install the doorway lining (Ref 52-11-02).

TASK 52-11-00-825-033

5. Adjustment - Exterior Handle Free Play

A. General
(1) The free play of the exterior handle is the up and down play of the handle while it is in the lifted position. This free play is the result of the relation between the fixed pin and the moving pin, which extend into slots in the handle shaft.
(2) To adjust the free play of the exterior handle, you will change the fit of the moving pin in its hole. The adjustable bushing and the adjustment retainer are used to change the fit of the moving pin in its hole.
(3) Although it is possible to adjust the moving pin until there is no free play in the exterior handle, this condition is not recommended. There must be a small free play to make sure the moving pin is always pushed into its slot in the handle shaft.

B. Equipment
(1) Ball Lock Quick Release Pin - 3/8 inch diameter, commercially available

C. Consumable Materials
(1) D00633 Grease - BMS 3-33 (Preferred)
(2) D00015 Grease - BMS 3-24 (Alternate)
(3) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

D. References
(1) 52-11-00/201, Entry/Service Door

E. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

F. Procedure

S 865-034
(1) Move the external disarm lever to the disarm (inboard) position.

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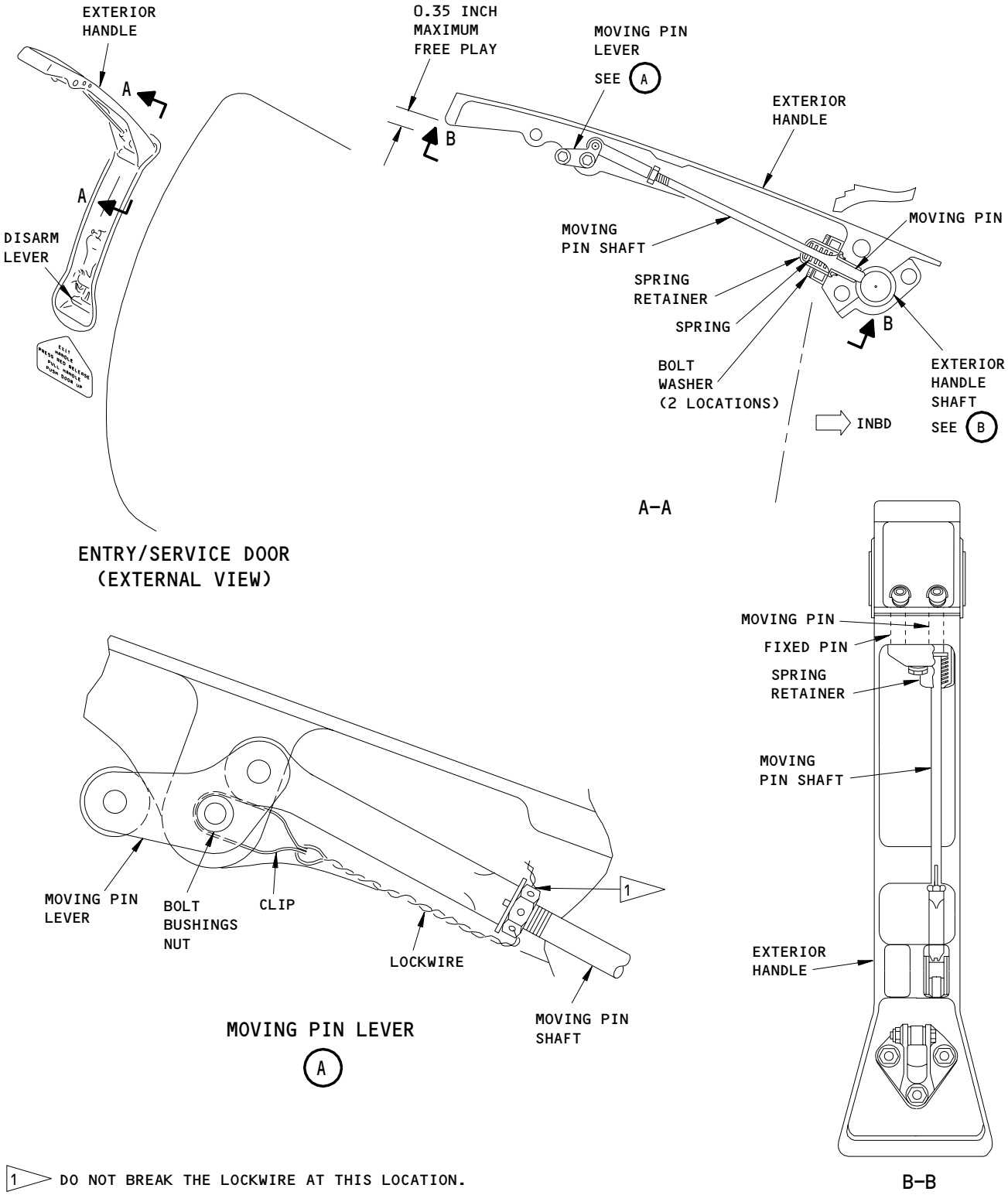

1 DO NOT BREAK THE LOCKWIRE AT THIS LOCATION.

Exterior Handle Free Play Adjustment
Figure 518 (Sheet 1)

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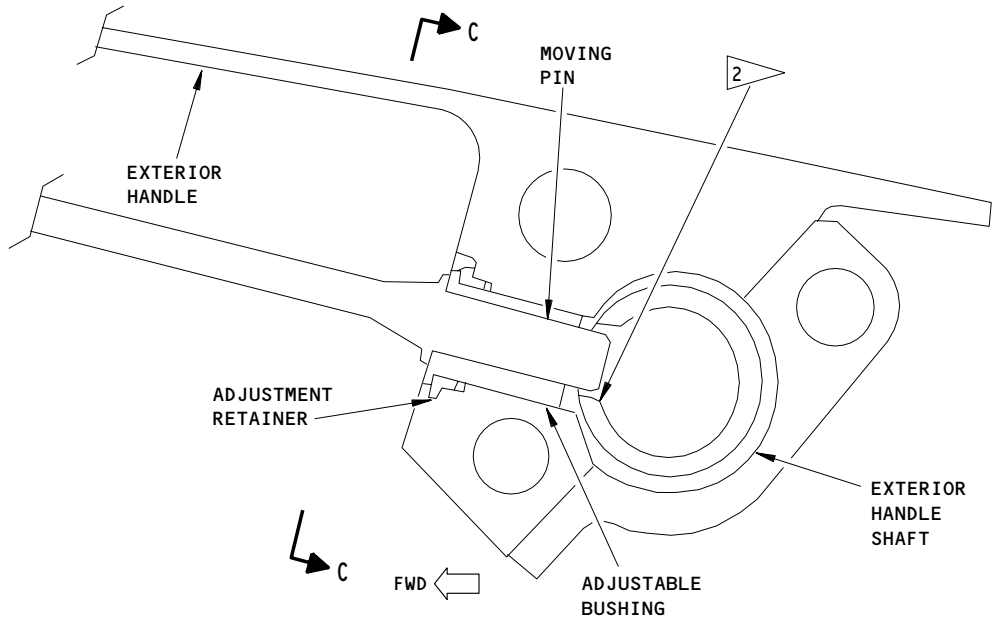
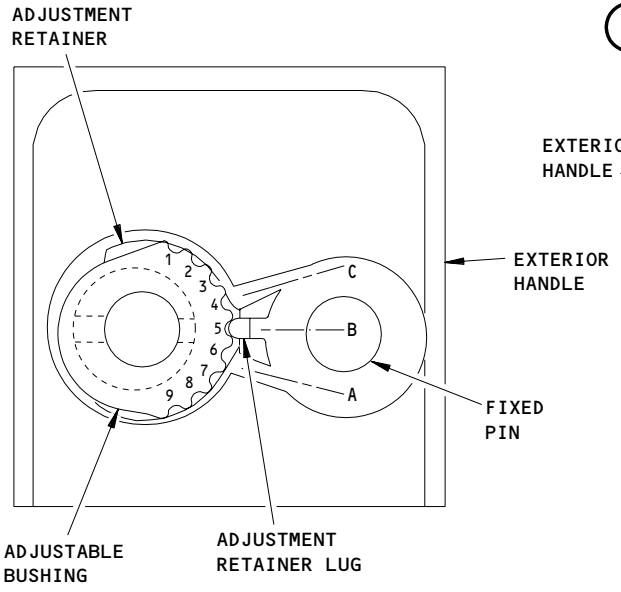
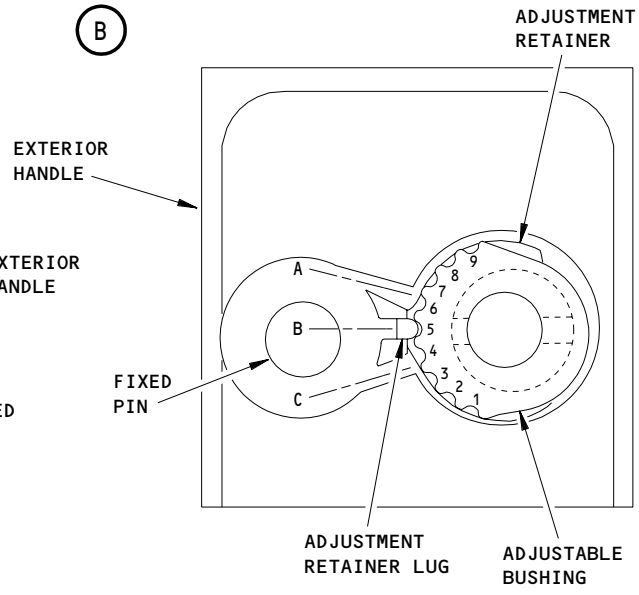


EXTERIOR HANDLE SHAFT
(SPRING RETAINER AND SPRING NOT SHOWN)



FORWARD ENTRY DOOR, AFT ENTRY DOOR
C-C



FORWARD SERVICE DOOR, AFT SERVICE DOOR
C-C

NOTE: THE SLOT LETTERS AND THE GROOVE NUMBERS ARE FOR REFERENCE ONLY. THEY ARE NOT WRITTEN ON THE AIRPLANE PARTS.

2 THE FREE PLAY ADJUSTMENT CHANGES THE POSITION OF THE MOVING PIN TO GET THE MINIMUM CLEARANCE AT THIS LOCATION. THE EXTERIOR HANDLE MUST BE FULLY UP TO MAKE SURE THE FIXED PIN IS AGAINST THE TOP EDGE OF ITS SLOT.

Exterior Handle Free Play Adjustment
Figure 518 (Sheet 2)

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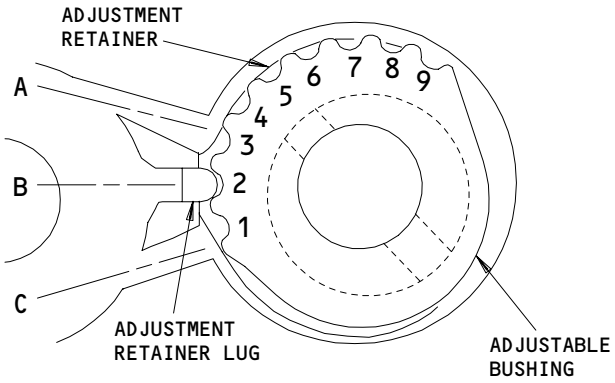
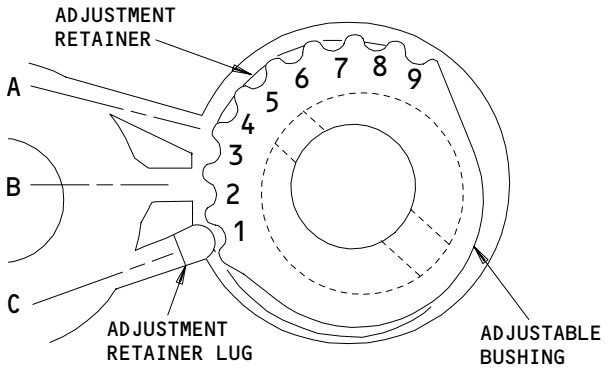
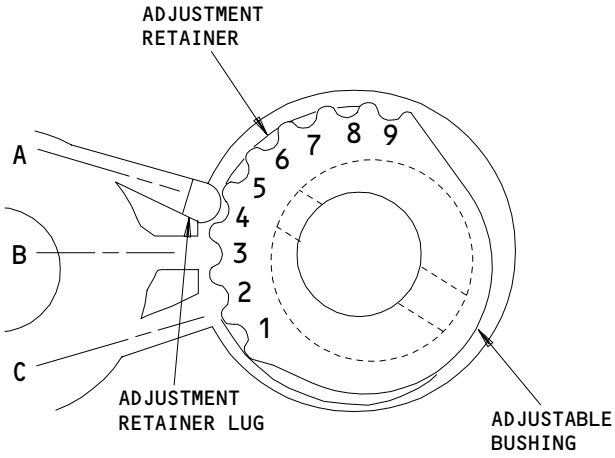


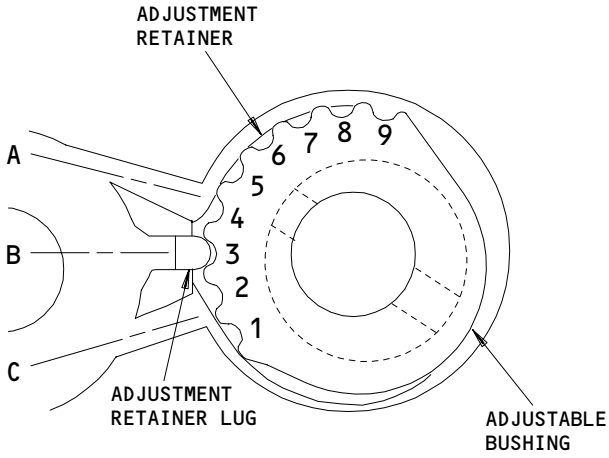
1. SLOT B, GROOVE 2
(EXAMPLE START POSITION)



2. SLOT C, GROOVE 1



3. SLOT A, GROOVE 4



4. SLOT B, GROOVE 3

ADJUSTMENT SEQUENCE
(EXAMPLE)

	DIRECTION OF THE ADJUSTMENT SEQUENCE TO DECREASE THE FREE PLAY ⟶																				
SLOT	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
GROOVE	3	2	1	4	3	2	5	4	3	6	5	4	7	6	5	8	7	6	9	8	7

EXAMPLE SEQUENCE
SHOWN ABOVE

NOTE: THE SLOT LETTERS AND THE GROOVE NUMBERS ARE FOR REFERENCE ONLY. THEY ARE NOT WRITTEN ON THE AIRPLANE PARTS.

Adjustable Bushing and Adjustment Retainer
Figure 519

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S 215-035

CAUTION: MAKE SURE THE AREA INBOARD OF THE INTERIOR HANDLE IS CLEAR BEFORE YOU LIFT THE EXTERIOR HANDLE. THE MOVEMENT OF THE INTERIOR HANDLE CAN CAUSE INJURY OR DAMAGE.

(2) Make sure the area inboard of the interior handle is clear.

S 865-036

(3) Lift the exterior handle to the open position.

S 035-037

(4) Remove the bolts that attach the spring retainer to the exterior handle (View A-A, Fig. 518).

S 035-038

(5) Remove the bolt that attaches the moving pin lever to the exterior handle (View A-A, Fig. 518).

S 035-039

(6) Carefully remove the moving pin assembly (the fixed pin, the moving pin, the moving pin shaft, the moving pin lever, the spring retainer, and the spring). Do not move the adjustable bushing or the adjustment retainer.

S 495-040

(7) Use tape to hold the exterior handle in the fully lifted position.

S 975-041

(8) Make a written record of the position of the adjustable bushing and the adjustment retainer. You can use this position as the initial position for the adjustment procedure that follows.

S 035-042

(9) Remove the adjustable bushing and the adjustment retainer from the exterior handle.

NOTE: If the adjustable bushing will not come out easily, then use the Ball Lock Quick Release Pin to remove the adjustable bushing.

S 115-043

(10) Clean the faying surfaces of the adjustable bushing, the adjustment retainer, and the exterior handle.

S 645-044

(11) Apply BMS 3-24 grease to the faying surfaces of the adjustable bushing and the adjustment retainer.

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S 435-045
(12) Install the adjustment retainer on the exterior handle. Put the lug of the adjustment retainer in the initial position.

NOTE: The initial position is the position before the removal of the adjustable bushing and the adjustment retainer. If the initial position is not known, then use the middle slot for the initial position (View C-C, Fig. 518).

S 435-046
(13) Install the adjustable bushing on the adjustment retainer. Put the groove of the adjustable bushing in the initial position, or the middle groove.

S 645-047
(14) Apply a thin layer of grease to the surface of the moving pin that touches the adjustable bushing.

S 495-048
(15) Attach a lockwire to the fixed pin to make it easier to install and remove.

S 435-049
(16) Install the fixed pin into its hole.

S 435-050
(17) Hold the exterior handle in the fully up position and try to install the moving pin. Make sure the moving pin shaft is turned to the correct position (View A, Fig. 518).

S 825-051
(18) If you can push the moving pin fully into its hole, then do these steps until you cannot fully install the moving pin:
(a) Remove the moving pin.
(b) Turn the adjustable bushing clockwise to the next groove.

S 825-052
(19) Use the adjustment sequence shown (Fig. 519) to find the first slot and groove position where you can fully install the moving pin. Make sure you hold the exterior handle in the fully up position each time you try to install the moving pin.

NOTE: You will move the adjustable bushing and the adjustment retainer counterclockwise one slot or groove at a time.

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S 435-053
(20) Install the moving pin assembly.

NOTE: You can use a 3/16-inch diameter rig pin where the moving pin lever attaches to the exterior handle.

S 225-054
(21) Measure the free play at the end of the exterior handle.

S 825-055
(22) If the free play is more than the dimension shown (View A-A, Fig. 518), then do the adjustment procedure again.

S 035-056
(23) Remove the moving pin and the fixed pin.

S 095-057
(24) Remove the lockwire from the fixed pin, if a lockwire was attached.

S 435-058
(25) Install the moving pin into the adjustable bushing and the fixed pin into the adjacent hole. Make sure the spring retainer engages the groove in the fixed pin.

S 435-059

CAUTION: MAKE SURE YOU INSTALL THE MOVING PIN LEVER IN THE CORRECT POSITION (VIEW A-A, FIG. 518). IF THE MOVING PIN LEVER IS INSTALLED INCORRECTLY, THE DOOR WILL NOT OPEN WITH THE INTERIOR HANDLE AFTER THE DOOR IS CLOSED AND ARMED.

(26) Install the bolt, bushings, and nut that attach the moving pin lever to the exterior handle.

S 435-060
(27) Install the bolts and washers that attach the spring retainer to the exterior handle.

S 435-061
(28) Install lockwires on the bolts at the spring retainer.

S 095-062
(29) Remove the tape that was used to hold the exterior handle in the open position.

S 225-063
(30) Make sure the free play of the exterior handle is correct and the moving pin engages freely.

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S 865-064
(31) With the door closed, arm and then disarm the door with the internal arm/disarm lever.

S 865-065
(32) Open and close the door to make sure the moving pin lever was installed correctly (Ref 52-11-00).

TASK 52-11-00-705-066

6. System Test - Entry/Service Door

A. General
(1) This task gives the tests for an entry/service door. The tests include the handle mechanism, movable ceiling panels, counterbalance, and door warning sensors.

B. Equipment
(1) Rig Pin D2 - P/N A20004-16, part of kit A20004-XX
(2) Spring Scale - Handheld tension force measuring - range 0 to 100 pounds - commercially available
(3) Spring Scale - Handheld compression force measuring - range 0-100 pounds - commercially available

C. References
(1) 24-22-00/201, Electrical Power - Control
(2) 52-11-16/501, Entry/Service Door Counterbalance Assembly

D. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

E. Prepare for the Test

S 865-067
(1) Close the entry/service door. Do not latch the door.

S 015-068
(2) Open the movable ceiling panels.
(a) Open the access door in the upper door liner to get access to the hinge pin release buttons.
(b) Pull the buttons together to release the hinge pins.
(c) Do these steps:
1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:
a) 11U32, DOOR WINDOW HEATER
2) Let the liner move down as far as the lanyard will permit.
3) Disconnect the electrial connector adjacent to the lanyard.
4) Pull the liner up sufficiently to make the lanyard loose.

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5) Release the ball-lock pin on the lanyard to disconnect the lanyard from the bracket on the liner.

(d) Let the upper door liner move down into the door bustle.

NOTE: Do not let the liner fall freely.

(e) Fold the movable ceiling panels up and inboard into the area above the lowered ceiling.

S 015-069

(3) Remove the bustle.

S 865-070

(4) Supply electrical power (Ref 24-22-00).

F. Procedure

S 865-071

(1) Make sure the internal arm/disarm lever is in the DISARM position.

S 865-072

(2) Lift the door until the trolley roller is free of the latch cam.

S 865-141

(3) Do not close the door while you close the interior handle.

S 825-073

(4) Move the interior handle to the latched position.

S 495-074

(5) Install the rig pin D2.

(a) Make sure the overcenter crank stopbolt touches the overcenter mechanism housing.

(b) Make sure the rig pin D2 does not bind in the rig pin hole.

S 095-076

(6) Remove the rig pin D2.

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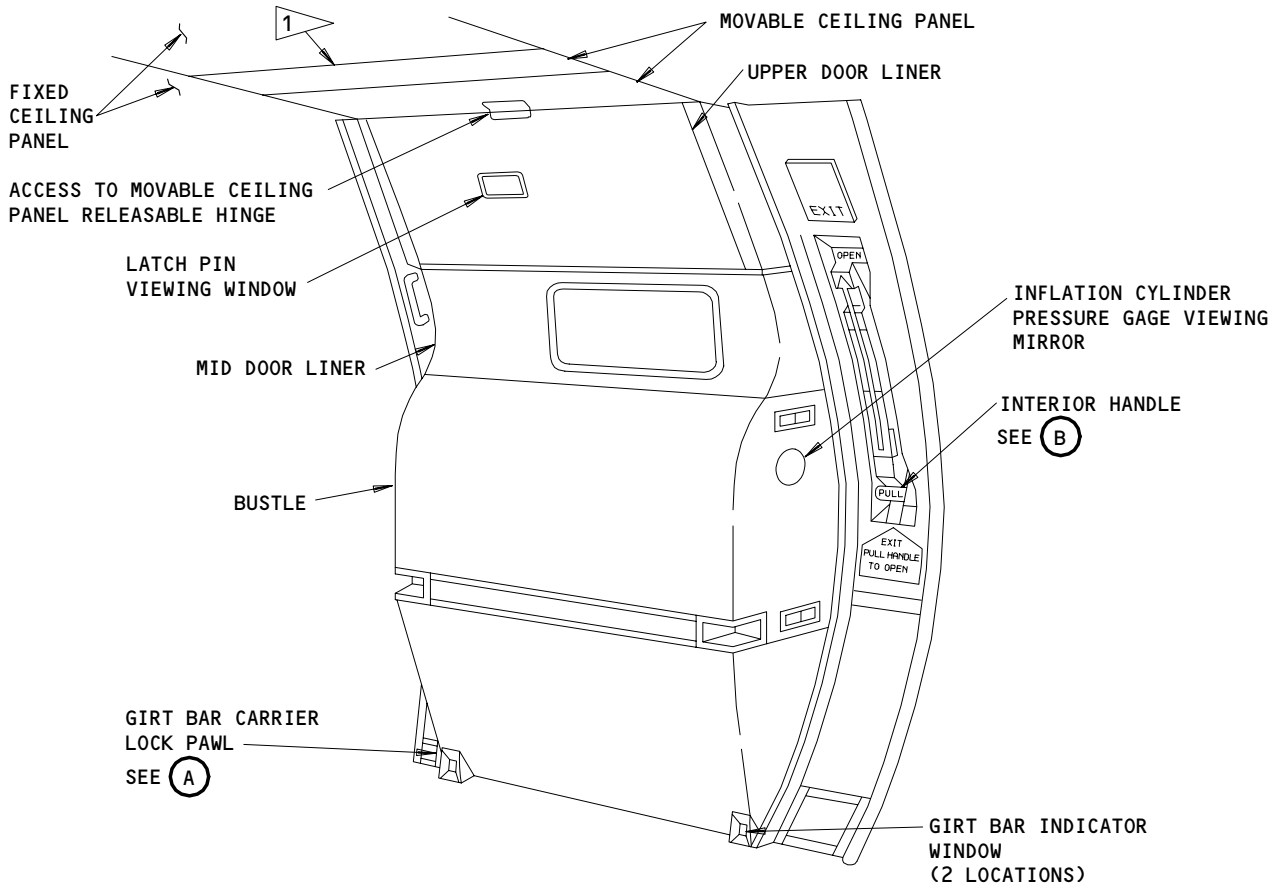
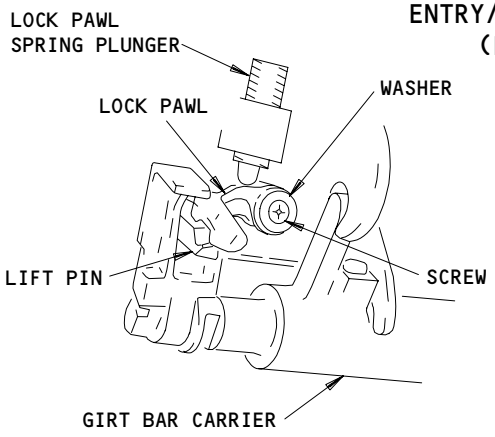
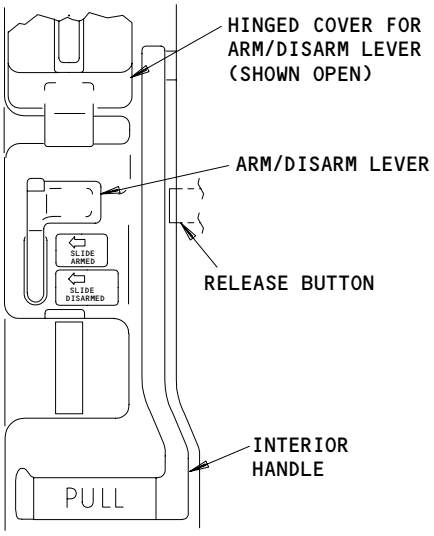


ENTRY/SERVICE DOOR
(EXAMPLE)



GIRT BAR CARRIER LOCK PAWL
A



INTERIOR HANDLE
B

1 THE PERMITTED CLEARANCE BETWEEN THE FIXED CEILING PANELS AND THE MOVABLE CEILING PANELS IS 0.38–0.62 INCH ALL AROUND.

Entry/Service Door System Test
Figure 520

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S 825-077
(7) Move the latch torque tube as far as it will go toward the overhead track assembly.
(a) Make sure the clearance between the locking collar and the overcenter mechanism is correct (Fig. 515).

S 865-079
(8) Close and latch the door.

S 225-080
(9) Make sure the clearance between the trolley and the trolley link is correct (Fig. 506).

S 215-081
(10) Make sure the guide roller does not touch the sides of the guide fitting and is free to turn (Fig. 505).

S 225-088
(11) Make sure the clearance between the latch pin and the door locked sensor is correct (Fig. 509).

NOTE: If this clearance is less than 0.005 inch (0.127 mm), you must make sure the latch pin is correctly adjusted. If the latch pin is correctly adjusted, you must replace the door closed sensor.

S 225-142
(12) Make sure the clearance between the door closed sensor and the target is 0.07 - 0.13 inch (1.78 - 3.30 mm).

S 865-082
(13) Lift the interior handle to the unlatched position.

S 865-083
(14) Open the door.

S 865-084
(15) Lower the interior handle approximately half way to the unlatched position, and hold it in this position.

S 865-143
(16) Move the exterior handle until its moving pin engages the exterior handle shaft.
(a) Make sure the free play of the exterior handle is 0.35 inch (8.9 mm) or less.

S 865-086
(17) Lower the interior handle to the latched position.

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S 215-087
(18) Make sure the exterior handle is in the fully faired position.

S 715-151
(19) INTERIOR HANDLE WITHOUT CLUTCH MECHANISM;
do a check of the handle interconnect as follows:
(a) Slowly lift the exterior handle.
1) Make sure the bottom edge of the exterior handle moves 0.20 inch (5.1 mm) or less before the interior handle starts to move.
(b) Lower the exterior handle to the fully faired position.

S 715-148
(20) INTERIOR HANDLE WITH CLUTCH MECHANISM;
do a check of the handle interconnect as follows:
(a) Slowly open the exterior handle until you can see movement of the clutch.

NOTE: You can see the clutch through a cutout in the side of the handle housing at the top end of the handle assembly.

1) Make sure the bottom edge of the exterior handle moves 0.20 inch (5.1 mm) or less before the clutch starts to move.
(b) Lift the exterior handle to the open position.
(c) Lift the interior handle to engage the clutch mechanism.
1) Make sure the interior handle does not hit the lining when you lift it.
(d) Close and latch the door with the interior handle.
(e) Make sure the exterior handle is in the closed and latched position.
1) Make sure the interior handle has a clearance of 0 .01 inch (0.2 mm) or more to the rubber bumper on the lining.

S 865-152
(21) DOORS WITH RYTON (PLASTIC) SENSORS;
slowly lift the exterior handle.
(a) Make sure the bottom edge of the exterior handle moves 0.45 inch (11.4 mm) or less before the ENTRY DOORS light on the P5 annunciator panel comes on.

S 865-153
(22) DOORS WITH STAINLESS STEEL SENSORS;
slowly lift the exterior handle.
(a) Make sure that the ENTRY DOORS light on the P5 annunciator panel does not come on during 0.0 to 0.2 inch (0.0 to 5.1 mm) of handle movement.
(b) Make sure that the ENTRY DOORS light on the P5 annunciator panel comes on during 0.21 to 0.69 inch (5.3 to 17.5 mm) of handle movement.

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(c) Make sure that the ENTRY DOORS light on the P5 annunciator panel stays on when the handle movement is 0.7 inch (17.8 mm) or more.

S 865-155
(23) Lower the exterior handle to the closed position.

S 865-092
(24) Lower the interior handle to the latched position.

S 825-093
(25) Push outboard on the interior handle with five pounds of force to make sure the handle mechanism is fully latched.

S 865-156
(26) Pull the interior handle inboard approximately one inch (25 mm) and then release the handle.
(a) Make sure the handle goes back to the fully latched position within 0.1 inch (2.5 mm).
(b) Make sure the ENTRY DOORS light on the P5 annunciator panel is not on.

S 715-095
(27) Make sure that the washer under the head of the screw on the lock pawl cannot be turned by hand (View A, Fig. 520).

S 715-157
(28) Make sure that the lock pawl turns easily, and the screw does not turn when the lock pawl is turned.

S 215-098
(29) Make sure the jaw end of the girt bar carrier is in the correct position (View C-C, Fig. 512).

S 485-100
(30) Attach the compression spring scale to the internal arm/disarm lever approximately 0.5 inch below the top of the lever.

S 225-101
(31) Push the release button and make sure the force that is necessary to move the lever to the ARM position is nine pounds or more.
(a) Make sure that the warning indicator does not get caught on the liner during movement.

S 215-102
(32) Make sure the EMERGENCY ONLY arming flag does not get caught behind or below the interior handle during the movement of the flag.

NOTE: The arming flag can touch the interior handle when the flag is in the armed position.

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S 215-158
(33) Make sure that the warning indicator has a clearance to the liner when the door is armed.

S 215-103
(34) Make sure the release button for the arm/disarm lever is tight, and the button does not touch the doorway lining.

S 865-104
(35) Move the internal arm/disarm lever to the DISARM position.

S 865-159
(36) Slowly push inboard on the exterior disarm lever until the lever goes overcenter into the DISARM position.
(a) Make sure tht the lever moves to the fully inboard position after you push the lever through half of its travel.

NOTE: You will hear that the lever hit the stop at the end of the lever travel.

S 865-160
(37) Move the internal arm/disarm lever to the ARMED position.

S 865-161
(38) Slowly push inboard on the exterior disarm lever unitl the internal arm/disarm lever goes overcenter to the DISARM position.

NOTE: The arm/disarm lever release button will extend out of the lining when the arm/disarm lever is in the DISARM position.

(a) Make sure the exterior door handle remains locked CLOSED until the internal arm/disarm lever moves to the DISARM position.

S 865-105
(39) Lift the interior handle to the unlatched position.

S 865-106
(40) Close and latch the door.

S 865-109
(41) Move the internal arm/disarm lever to the ARM position, then back to the DISARM position.

S 215-107
(42) Lift the door sufficiently to make sure the girt bar carrier is lifted with the door, and is in the correct position on the supports (View A, Fig. 520).

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S 865-110
(43) Close and latch the door.

S 715-111
(44) Manually move the body of the girt bar carrier to make sure the girt bar carrier is not loaded by the door.

S 415-163
(45) Install the bustle.

S 715-114
(46) Do a check of the movable ceiling panel and the upper door liner as follows (Fig. 521):
(a) Make sure the upper door liner is disconnected from the movable ceiling panel.
(b) Close the door.
(c) Move the interior handle to halfway between the latched and the unlatched positions.
(d) Fold the movable ceiling panels down to engage the rollers on the ceiling panels with the latch cams.

NOTE: Do not connect the releasable hinge.

(e) Latch the door.
(f) Make sure the movable ceiling panels are latched in the horizontal direction.
(g) Make sure the cam roller support extension just touches the top surface of the adjacent fixed ceiling panel panels.
(h) Make sure there is no free play in the movable ceiling panels.
(i) Make sure the latch cam touches the rubber pad on the fixed ceiling panel, but does not cause visible distortion of the fixed ceiling panel.
(j) Unlatch the door.
(k) Pull the door liner up and out of the door to meet the movable ceiling panel.
(l) Do these steps:
1) Let the liner move down sufficiently to attach the ball-lock pin to the bracket on the liner.
2) Attach the ball-lock pin to the bracket.
3) Let the liner move down as far as the lanyard will permit.
4) Connect the electrical connector on the electrical wiring between the liner and the movable ceiling panel.
5) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
a) 11U32, DOOR WINDOW HEATER

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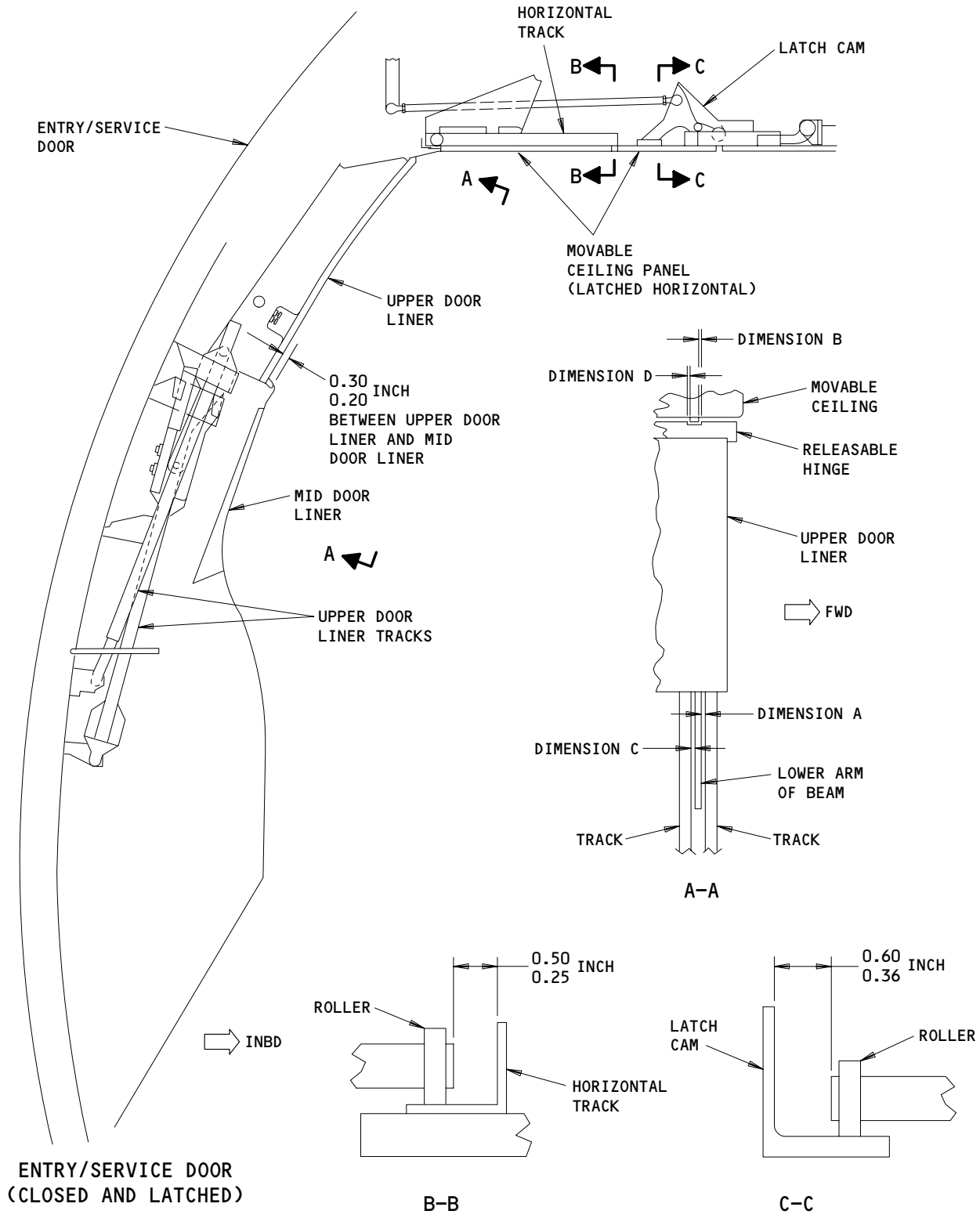

Movable Ceiling Panels and Door Liners
Figure 521 (Sheet 1)

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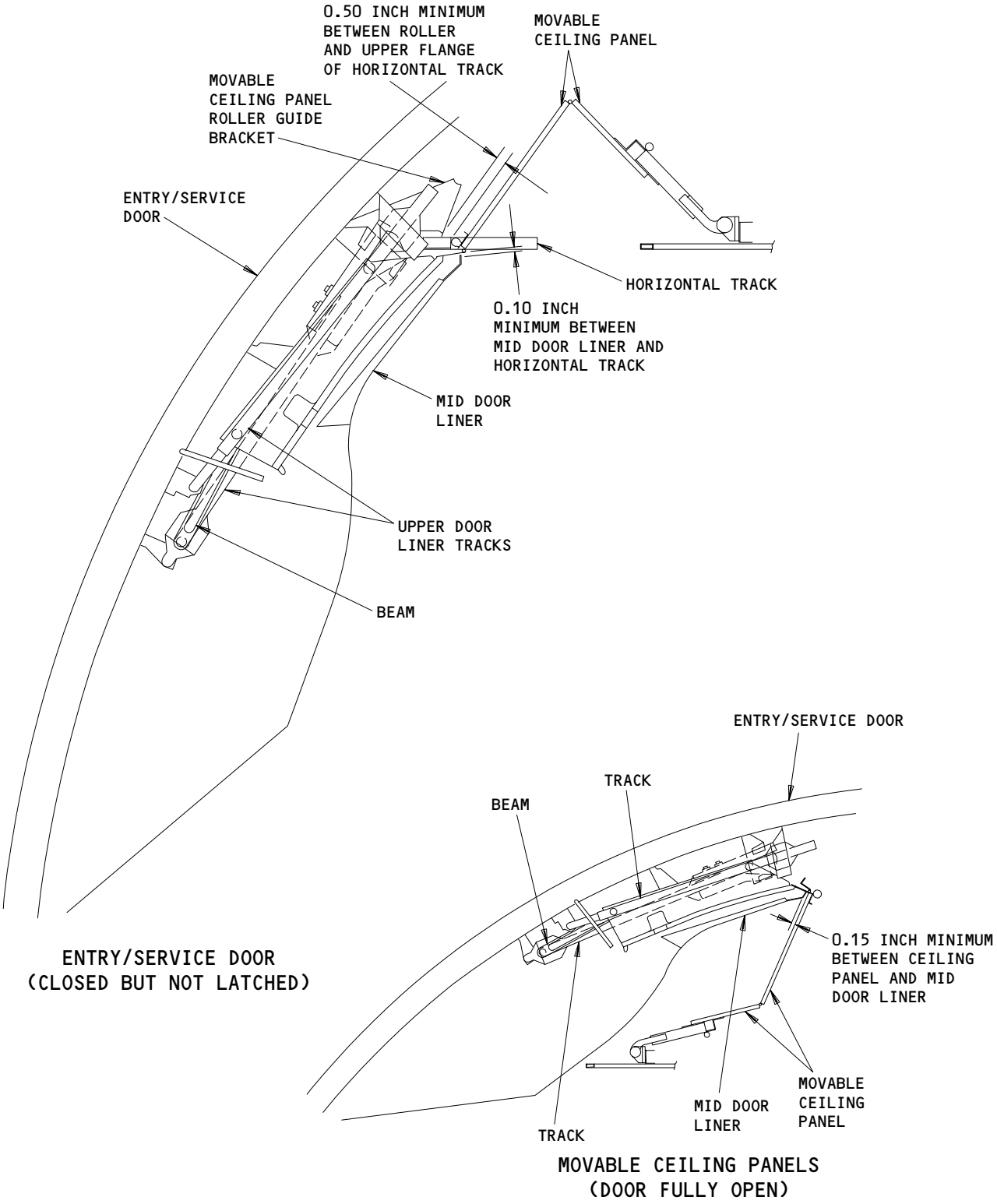

Movable Ceiling Panels and Door Liners
Figure 521 (Sheet 2)

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6) Pull the liner up to meet the movable ceiling panel.

(m) If it is not open, then open the access door in the upper door liner to get access to the hinge pin release buttons.

(n) Pull the buttons together and engage the hinge pins. Release the buttons.

(o) Close the access door.

(p) Latch the door.

(q) Open and close the door.
1) Make sure all of the parts of the mechanism do not bind or rub.

(r) Unlatch and latch the door.
1) Make sure the upper roller track moves smoothly through its travel during the movement of the door handle.
2) Make sure the top roller on the beam clears the ramp on the inboard side of the track as it enters.

(s) Make sure the clearance between the upper door liner and the mid door liner with the door closed is correct.

(t) Unlatch the door until just before the rollers move clear of the latching cams.
1) Make sure the distance from the roller to the horizontal track is correct.
2) Make sure the distance from the roller to the vertical face of the cam is correct.

(u) Close and latch the door.

(v) While you push up on the movable ceiling panels near the hinge line between the inboard and outboard panels, slowly unlatch the door.

(w) Continue to push up on the movable ceiling panels and slowly move the interior handle toward the latched position.
1) Make sure the door movement toward the latched position is controlled only by the interior handle.
2) Make sure you cannot push the cam rollers above or inboard of the upper arm of the latch cam.

(x) With the door unlatched, push the upper door liner forward as far as it is possible.
1) Make sure the sum of the dimensions A and B is 0.25 inch or more.

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(y) With the door unlatched, push the upper door liner aft as far as it is possible.
1) Make sure the sum of the dimensions C and D is 0.25 inch or more.
(z) Open the door until the rollers just lift from the horizontal track.
(aa) Make sure the clearance between the mid door liner and the horizontal track is correct.
(ab) Make sure the clearance between the roller and the top flange of the horizontal track is correct.
(ac) Make sure the clearance between the mid door liner and the movable ceiling panel with the door open is correct.

S 865-116
(47) Manually open and close the door.
(a) Make sure there are no obvious indications of malfunctions or unusual noise.

S 865-117
(48) For an entry door with electrical operation, open and close the door electrically.
(a) Make sure there are no obvious indications of malfunctions or unusual noise.

S 225-118
(49) Measure the forces necessary to manually operate the door as follows:
(a) Open the door until the girt bar carrier is 50 inches above the floor.
(b) Attach the compression spring scale near the middle of the girt bar carrier.
(c) Slowly push up on the spring scale. Make a written record of the force necessary to start to move the door.
(d) Move the door back to 50 inches above the floor.
(e) Attach the tension spring scale to the girt bar carrier near the middle of the door.

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(f) Slowly pull down on the spring scale. Make a written record of the force necessary to start to move the door.
(g) Make sure the upward force is 10 to 20 pounds more than the downward force. If the difference is out of this range, then adjust the counterbalance (AMM 52-11-16/501).
(h) Make sure the sum of the upward and downward forces is not more than 60 pounds. If the sum of the upward and downward forces is more than 60 pounds, then do a check of the door for the correct adjustment (Refer to the Adjustment - Entry/Service Doors paragraph). If the door is correctly adjusted, then adjust the counterbalance (AMM 52-11-16/501).

S 865-119
(50) Close and latch the door.

S 215-120
(51) Look for damage to the indicator nut on the load limiter (Fig. 522). The indicator nut must not extend more than 0.125 inch from the housing.

S 715-121
(52) Lift the door to the full up position to get access to the uplatch release button. Push the uplatch release button. Make sure the uplatch release button operates without binding or interference, and returns freely to the original position (Ref 52-11-12).

S 715-122
(53) Do a check of the forces necessary to operate the interior handle as follows:
(a) Close and latch the door.
(b) With the spring scale attached to the interior handle grip, measure the maximum force necessary to unlatch the door (measured in the direction perpendicular to the interior handle through the entire unlatching motion). The maximum unlatching force must not be more than 26 pounds.
(c) Measure the maximum latching force in the same way. The maximum latching force must not be more than 45 pounds.

S 715-123
(54) Do a check of the forces necessary to operate the internal arm/disarm lever as follows:
(a) Close and latch the door.
(b) Operate the arm/disarm lever through several cycles between the ARM and DISARM positions. Make sure the yellow girt bar indicator flags completely fill (from top to bottom) the girt bar carrier viewing windows at the bottom of the door in the ARM position, and are not visible in the DISARM position.

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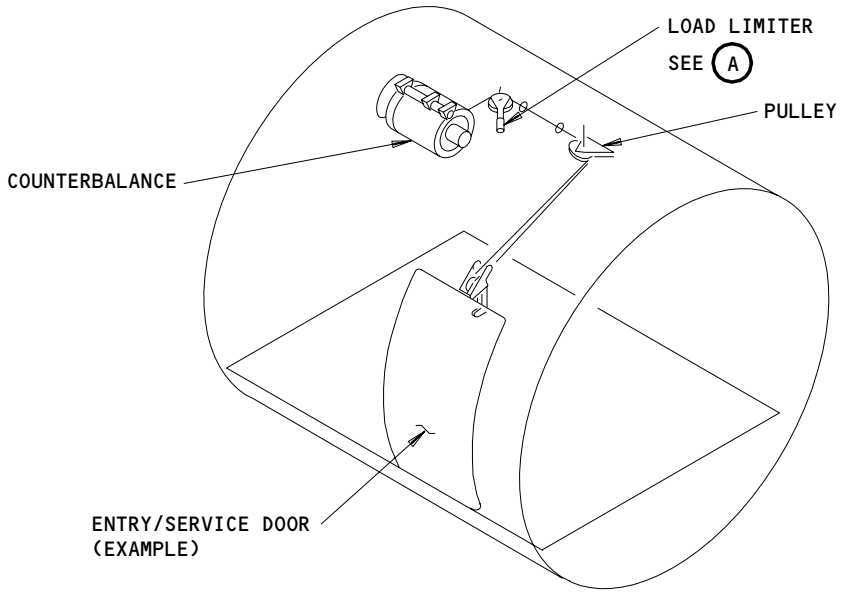
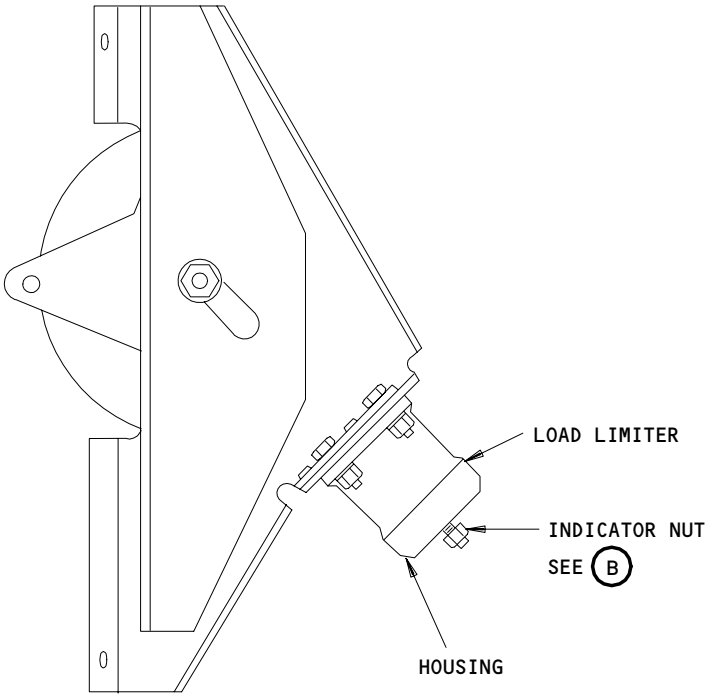
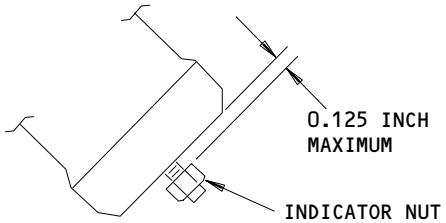




LOAD LIMITER
A



INDICATOR NUT
B

Load Limiter
Figure 522

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(c) With the spring scale attached to the arm/disarm lever 0.5 inch below the top of the lever, measure the force necessary to operate the lever. The maximum force, applied normal to the lever, must not be more than 25 pounds to arm, and 22 pounds to disarm.

S 845-164

(55) Remove electrical power if it is not necessary (Ref 24-22-00).

G. Interior-Exterior Handle Interconnect (Fig. 523).

S 215-134

(1) Keep the exterior handle in a closed position.

S 825-135

(2) Turn the exterior handle shaft (4) to its maximum outboard position.

S 825-136

(3) Turn the interior handle shaft (1) to get the dimension shown on Fig. 523 (View C-C).

S 425-137

(4) Install the interconnect link upper (2) and lower (3) lugs. Do not torque the nut in the interior handle shaft (1).

S 825-138

(5) Make sure that the serrated joint aligns between the interconnect link upper (2) and lower (3) lugs.

S 915-139

(6) Torque the connecting bolts.

S 225-140

(7) After the adjustment, make sure that a minimium gap of 0.02 inch (0.508 mm) exists between the upper lug (2) and interior handle shaft (1) when a 2 to 4 pound force is applied to the crank as shown in Fig. 523 (View A-A).

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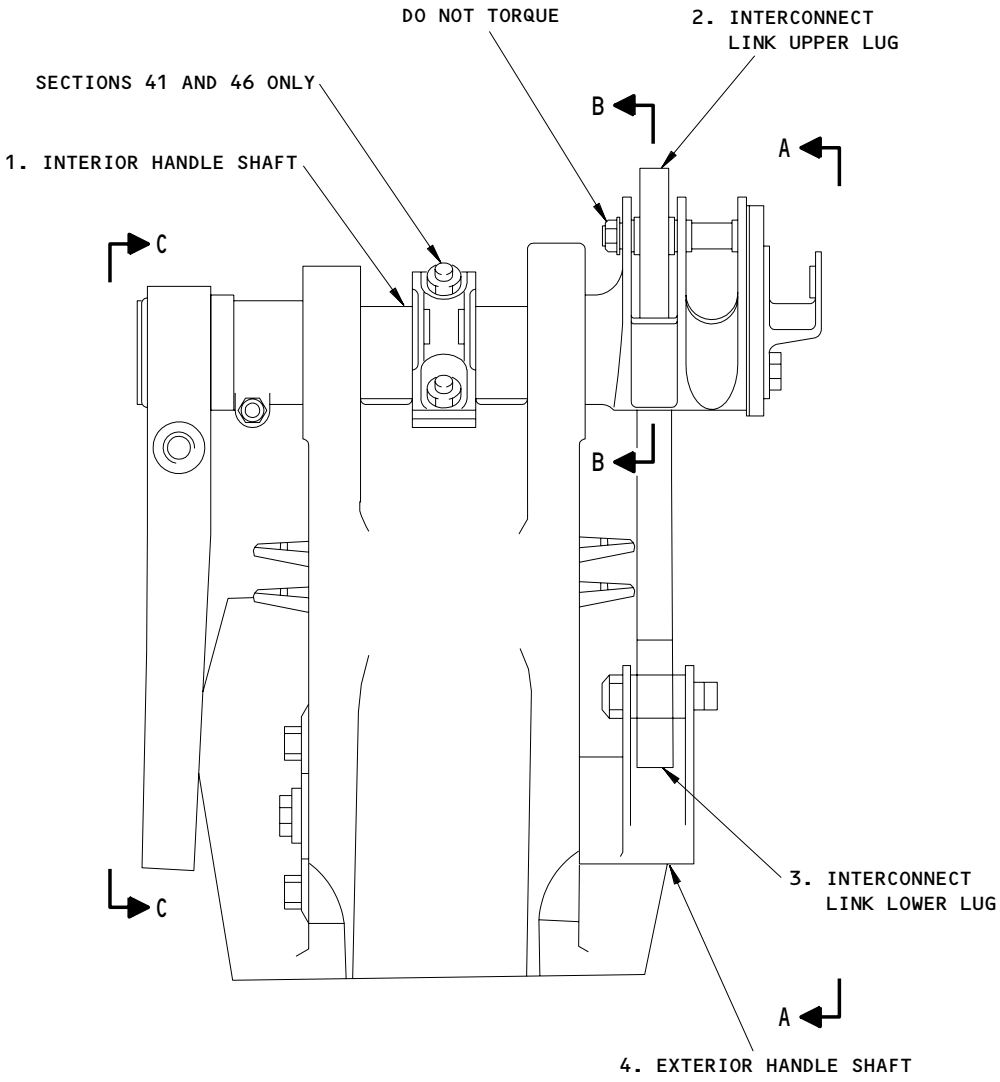

VIEW IN THE OUTBOARD DIRECTION

Interior - Exterior Handle Interconnect
Figure 523 (Sheet 1)

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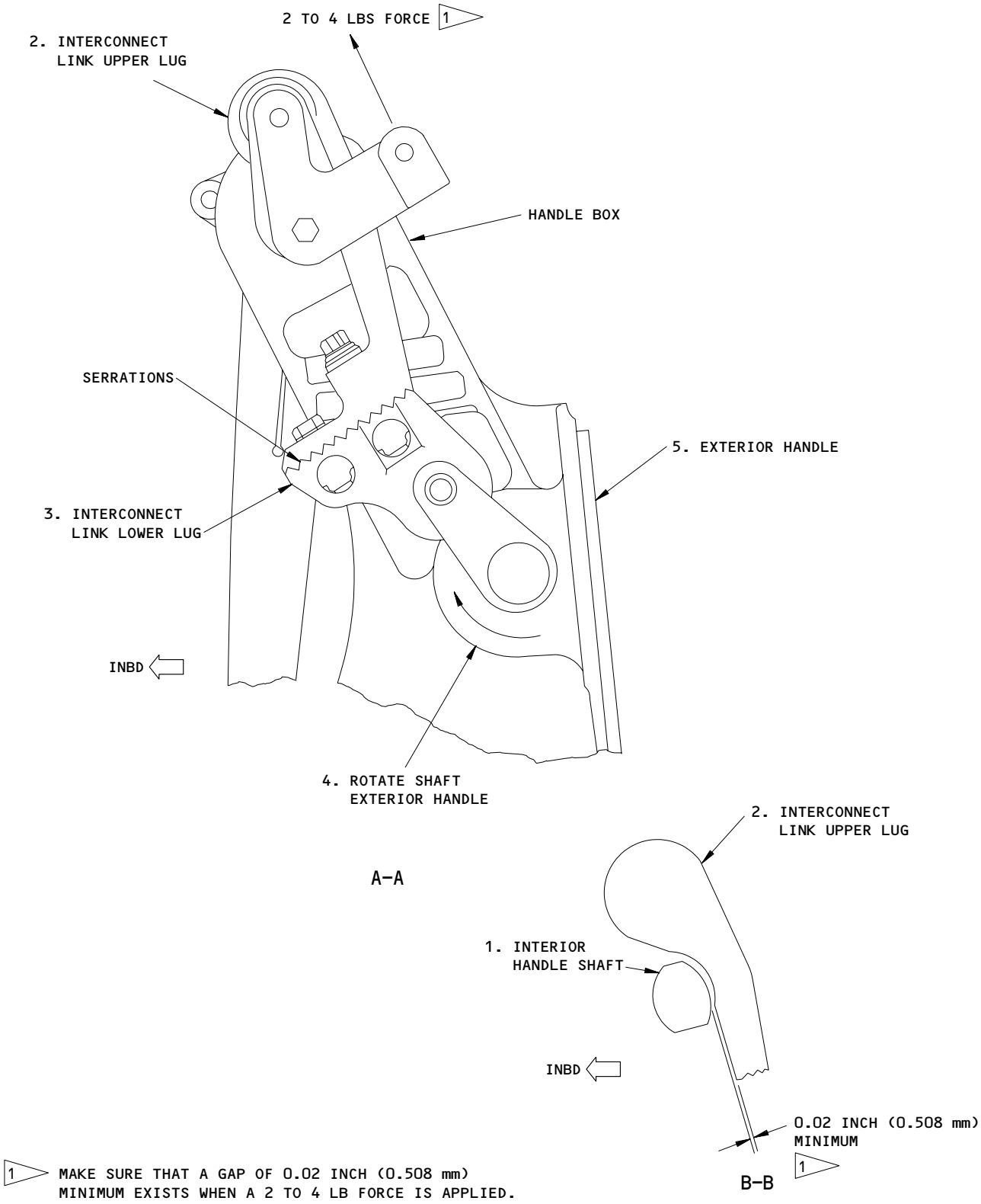

Interior - Exterior Handle Interconnect
Figure 523 (Sheet 2)

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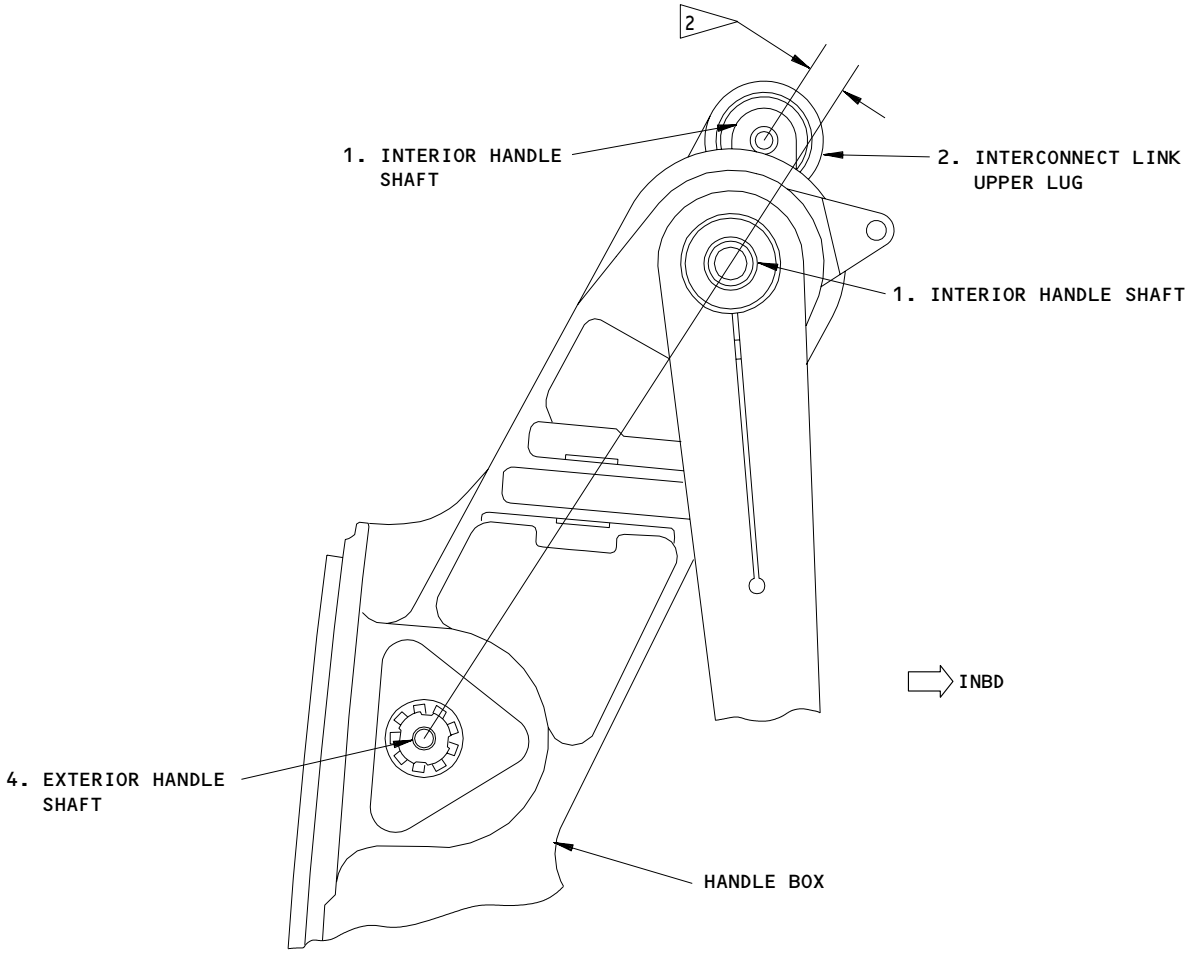

C-C

2 SECTION 41: 0.51 INCH (12.95 mm)
0.47 INCH (LEFT) (11.94 mm)
0.54 INCH (13.72 mm)
0.50 INCH (RIGHT) (12.70 mm)
SECTION 43: 0.50 INCH (12.70 mm)
0.46 INCH (LEFT AND RIGHT) (11.68 mm)
SECTION 46: HANDLE LOCATED FORWARD OF DOORWAY
0.51 INCH (LEFT AND RIGHT) (12.95 mm)
0.47 INCH (11.94 mm)
HANDLE LOCATED AFT OF DOORWAY (PREFERRED)
1.04 INCHES (LEFT) (26.42 mm)
1.00 INCH (PREFERRED) (25.4 mm)
1.07 INCHES (RIGHT) (27.18 mm)
1.03 INCHES (PREFERRED) (26.16 mm)
HANDLE LOCATED AFT OF DOORWAY (ACCEPTABLE)
1.04 INCHES (LEFT) (26.42 mm)
0.92 INCH (ACCEPTABLE) (23.37 mm)
1.07 INCHES (RIGHT) (27.18mm)
0.95 INCH (ACCEPTABLE) (24.13 mm)

Interior - Exterior Handle Interconnect
Figure 523 (Sheet 3)

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ENTRY/SERVICE DOORS - INSPECTION/CHECK

1. General
   A. This procedure gives the instructions to examine the entry/service doors, the counterbalance cables, and the latching mechanisms on the entry/service doors.

   TASK 52-11-00-206-001

2. Entry/Service Door Check
   A. References
      (1) AMM 20-20-02/601, Control Cables
      (2) AMM 25-22-02/401, Lower Ceiling Panels
      (3) AMM 52-11-02/401, Doorway Lining
   B. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   C. Procedure

      S 016-002
      (1) Open the movable ceiling panels as follows:
          (a) Close the entry/service door. Do not latch the door.
          (b) Open the access door in the upper door liner to get access to the hinge pin release buttons.
          (c) Pull the buttons together to release the hinge pins.
          (d) Do these steps:
              1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:
                 a) 11U32, DOOR WINDOW HEATER
              2) Let the liner move down as far as the lanyard will permit.
              3) Disconnect the electrical connector adjacent to the lanyard.
              4) Pull the liner up sufficiently to make the lanyard loose.
              5) Release the ball-lock pin on the lanyard to disconnect the lanyard from the bracket on the liner.
          (e) Let the upper door liner move down into the door bustle. Do not let the liner fall freely.
          (f) Fold the movable ceiling panels up and inboard into the area above the lowered ceiling.

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S 016-012
(2) Remove the ceiling panels as necessary to do the checks (AMM 25-22-02/401).

S 016-003
(3) Remove the doorway lining as necessary to do the checks (AMM 52-11-02/401).

S 216-004
(4) Examine the door latch pin for damage, corrosion, and worn surfaces.

S 216-013
(5) Examine the counterbalance cables and pulleys for damage, corrosion, and worn surfaces (AMM 20-20-02/601).

S 216-005
(6) Examine these items for damage, corrosion, loose fasteners, and worn surfaces:
(a) Door latch torque tube and latch cam
(b) Ceiling panel latch mechanism
(c) Overcenter mechanism
(d) Door handle mechanism
(e) Girt bar mechanism

S 216-006
(7) Examine the door seals for damage, hardness or brittleness, and too many repair splices.

S 216-007
(8) Look for these signs of air leaks:
(a) Tobacco smoke stains on the seals and the adjacent areas
(b) Damage to the seal retainers

S 216-008
(9) Look for water and other unwanted material in and around the floor fittings for the girt bar carrier.

S 416-009
(10) Install the doorway lining (AMM 52-11-02/401).

S 416-014
(11) Install the ceiling panels (AMM 25-22-02/401).

S 416-010
(12) Close the movable ceiling panels as follows:
(a) Close the entry/service door. Do not latch the door.
(b) Open the movable ceiling panels down and outboard to the closed position.
(c) Pull the door liner up and out of the door to meet movable ceiling panel.

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(d) Do these steps:
    1) Let the liner move down sufficiently to attach the lanyard ball-lock pin to the bracket on the liner, and attach the ball-lock pin to the bracket.
    2) Let the liner move down as far as the lanyard will permit.
    3) Connect the electrical connector on the electrical wiring between the liner and the movable ceiling panel.
    4) Remove the DO-NOT-CLOSE tag close this circuit breaker on the P11 panel:
        a) 11U32, DOOR WINDOW HEATER
    5) Pull the liner up to meet the movable ceiling panel.
(e) If it is not open, then open the access door in the upper door liner to get access to the hinge pin release buttons.
(f) Pull the buttons together and engage the hinge pins.
(g) Release the buttons.
(h) Close the access door.

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ENTRY/SERVICE DOORS - REMOVAL/INSTALLATION

1. General
   A. This procedure has these tasks:
      (1) A removal of the entry/service door.
      (2) An installation of the original entry/service door in the doorway.
      (3) An installation of a new entry/service door in the doorway.

   TASK 52-11-01-004-001

2. Entry/Service Door Removal (Fig. 401)

   A. Equipment
      (1) A52003-1 Counterbalance Lock
      (2) A52002-1 or -13 Safety Barrier - Entry/Service Door
      (3) Protective Blocks
   B. References
      (1) AMM 25-66-01/401, Entry/Service Door Escape Slide Pack
      (2) AMM 52-11-13/201, Entry/Service Door Ground Lock
   C. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   D. Procedure

      S 014-087
      (1) Open the movable ceiling panels as follows:
          (a) Close the door. Do not latch the door.
          (b) Open the access door in the upper door liner to get access to the hinge pin release buttons.
          (c) Pull the buttons together to release the hinge pins.
          (d) Do these steps:
              1) Open this circuit breaker on the overhead panel, P11, and attach a DO-NOT-CLOSE tag:
                 a) 11U32, DOOR WINDOW HEATER

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2) Let the liner move down as far as the lanyard will permit.
3) Disconnect the electrical connector adjacent to the lanyard.
4) Pull the liner up sufficiently to make the lanyard loose.
5) Release the ball-lock pin on the lanyard to disconnect the lanyard from the bracket on the liner.
6) Let the upper door liner move down into the door bustle. Do not let the liner fall freely.
7) Fold the movable ceiling panels up and inboard into the area above the lowered ceiling.

S 414-088

(2) Close and latch the door.

S 014-089

(3) Remove the applicable ceiling panels to get access to the counterbalance.

S 494-090

(4) Engage the counterbalance pawl.

S 494-000

WARNING: MAKE SURE YOU INSTALL THE GROUND LOCK FOR THE ENTRY/SERVICE DOOR. WITHOUT THE GROUND LOCK INSTALLED, THE DOOR CAN LIFT ACCIDENTALLY AND CAUSE INJURY OR DAMAGE.

(5) Install the ground lock for the entry/service door (AMM 52-11-13/201).

S 024-002

(6) Remove the escape slide pack (AMM 25-66-01/401).

S 094-005

(7) Remove the ground lock for the entry/service door (AMM 52-11-13/201).

S 864-085

WARNING: MAKE SURE THE PAWL ON THE COUNTERBALANCE IS ENGAGED BEFORE YOU UNLATCH THE DOOR. THE FAST MOVEMENT OF THE DOOR WHEN IT IS OPENED WITHOUT THE ESCAPE SLIDE PACK CAN CAUSE INJURY OR DAMAGE.

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(8) Unlatch the door with the interior handle.

S 094-082

WARNING: MAKE SURE YOU HOLD THE HANDWHEEL WHEN YOU DISENGAGE THE PAWL. IF YOU DO NOT HOLD THE HANDWHEEL, THE COUNTERBALANCE SPRINGS WILL RELEASE QUICKLY, WHICH CAN CAUSE INJURY OR DAMAGE.

(9) Hold the handwheel and disengage the pawl.

S 824-007

(10) Let the handwheel turn clockwise to lift the door. Lift the door sufficiently to get access to the removable lower side track segments.

S 494-008

(11) Engage the counterbalance pawl.

S 034-009

(12) Remove the bolts (4, 6) to remove the lower track segments (3, 5).

S 484-048

(13) Put the protective blocks on the floor so that you do not cause damage to the floor and carpet.

S 824-086

WARNING: HOLD THE DOOR AND CONTROL THE MOTION OF THE DOOR AS IT MOVES INBOARD. WHEN THE ROLLERS COME OUT OF THE SIDE TRACKS THE DOOR WILL MOVE INBOARD AND COULD CAUSE INJURY OR DAMAGE.

(14) Turn the handwheel counterclockwise to lower the door. As you lower the door, hold the door while the rollers come out of the side tracks and the door moves inboard.

S 404-004

(15) Put the lower edge of the door on protective blocks on the floor.

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S 824-077

CAUTION: DO NOT TURN THE HANDWHEEL CLOCKWISE TO INSTALL THE COUNTERBALANCE LOCK. DO NOT TURN THE HANDWHEEL COUNTERCLOCKWISE MORE THAN NECESSARY TO ALIGN THE HOLE IN THE CABLE DRUM WITH THE HOLE IN THE SUPPORT ARM. DO NOT USE MORE THAN 35 POUNDS OF FORCE TO TURN THE HANDWHEEL. INCORRECT MOVEMENT OR TOO MUCH FORCE USED TO TURN THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE.

(16) Turn the handwheel counterclockwise until the hole in the cable drum aligns with the hole in the support arm.

S 494-012

(17) Install the counterbalance lock in the hole.

S 034-013

(18) Remove the straight pin (13), cotter pin (16) and washers (14, 15) to disconnect the cable (7) from the door (1).

S 824-014

(19) Support the top of the door to disconnect the trolley link from the clevis.

S 024-015

(20) Remove the bolt (8), washers (9, 11), bushing (10), and nut (12) to disconnect the trolley link from the clevis.

S 024-016

(21) Let the top of the door move inboard and remove the door (1).

S 494-017

(22) Install the safety barrier across the door opening.

TASK 52-11-01-404-018

3. Original Entry/Service Door Installation (Fig. 401)

NOTE: Use this procedure to install the original entry/service door in the same door opening.

A. Equipment
(1) A52003-1 Counterbalance Lock

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(2) A52002-1 OR -13 Safety Barrier - Entry/Service Door
(3) Protective Blocks

B. Parts
(1) FORWARD ENTRY/SERVICE DOOR;
Refer to the table that follows:

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Door (Entry)	52-11-01	01	95
		Door (Service)			100
	16	Cotter Pin			48

(2) AFT ENTRY/SERVICE DOOR;
Refer to the table that follows:

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Door (Entry)	52-11-01	01	98
		Door (Service)			102
	16	Cotter Pin			48

C. References
(1) AMM 25-66-01/401, Entry/Service Door Escape Slide Pack
(2) AMM 52-11-00/501, Entry/Service Door
(3) AMM 52-11-13/201, Entry/Service Door Ground Lock

D. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

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E. Procedure

S 494-087
(1) Make sure the counterbalance pawl is engaged and the counterbalance lock is installed.

S 094-019
(2) Remove the safety barrier from the door opening.

S 484-049
(3) Put the protective blocks on the floor in front of the door opening so that you do not cause damage to the floor and carpet.

S 824-020
(4) Put the door on the protective blocks and move the door into position to connect the clevis to the trolley link.

S 424-021
(5) Install the bolt (8), washers (9, 11), bushing (10), and nut (12) to connect the clevis to the trolley link.

S 434-022
(6) Install the straight pin (13), washers (14, 15), and cotter pin (16) to connect the cable (7) to the door (1).

S 824-078

CAUTION: DO NOT USE MORE THAN 35 POUNDS OF FORCE TO TURN THE HANDWHEEL. TOO MUCH FORCE USED TO TURN THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE.

(7) Turn the handwheel counterclockwise to remove the side load on the counterbalance lock.

S 024-047
(8) Remove the counterbalance lock.

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S 094-079

WARNING: MAKE SURE YOU HOLD THE HANDWHEEL WHEN YOU DISENGAGE THE PAWL. IF YOU DO NOT HOLD THE HANDWHEEL, THE COUNTERBALANCE SPRINGS WILL RELEASE QUICKLY WHICH CAN CAUSE INJURY OR DAMAGE.

(9) Turn the handwheel in the counterclockwise direction and disengage the pawl.

S 824-025

(10) Let the handwheel turn clockwise to slowly lift the door and fit the side rollers up into the side tracks (with sliders above the rollers in the tracks).

S 494-026

(11) Engage the pawl on the counterbalance.

S 434-027

(12) Install the bolts (4, 6) to install the lower track segments (3, 5).

S 824-028

(13) Turn the handwheel counterclockwise to lower the door until it is on the floor fittings.

S 864-029

(14) Latch the door with the interior handle.

S 494-030

(15) Install the ground lock for the entry/service door (AMM 52-11-13/201).

S 434-032

(16) Install the escape slide pack (AMM 25-66-01/401).

S 094-089

(17) Remove the ground lock for the entry/service door (AMM 52-11-13/201).

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S 094-034
(18) Disengage the counterbalance pawl.

S 414-035
(19) Install the ceiling panels that were removed to get access to the counterbalance.

S 414-091
(20) Close the movable ceiling panels as follows:
(a) Unlatch the door.
(b) Move the movable ceiling panels down and outboard to the closed position.
(c) Pull the door liner up and out of the door to meet the movable ceiling panel.

(d) Do these steps:
1) Let the liner move down sufficiently to attach the ball-lock pin to the bracket on the liner.
2) Attach the ball-lock pin to the bracket.
3) Let the liner move down as far as the lanyard will permit.
4) Connect the electrical connector on the electrical wiring between the liner and the movable ceiling panel.
5) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
a) 11U32, DOOR WINDOW HEATER
6) Pull the liner up to meet the movable ceiling panel.
(e) Pull the buttons together and engage the hinge pins. Release the buttons.
(f) Close the access door.

S 734-090
(21) Do this task: Entry/Service Door System Test (AMM 52-11-00/501).

TASK 52-11-01-404-083
4. New Entry/Service Door Installation (Figs. 401-404)

NOTE: Use this procedure to install a new entry/service door.

A. General
(1) Refer to AMM 52-11-00/501 for the correct skin clearances around the door.

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B. Equipment
(1) A52003-1 Counterbalance Lock
(2) A52002-1 OR -13 Safety Barrier - Entry/Service Door

C. Parts
(1) FORWARD ENTRY/SERVICE DOOR;
Refer to the table that follows:

AMM			AIPC		
FIG	ITEM	NOMENCLATURE	SUBJECT	FIG	ITEM
401	1	Door (Entry)	52-11-01	01	95
		Door (Service)			100
	16	Cotter Pin			48

(2) AFT ENTRY/SERVICE DOOR;
Refer to the table that follows:

AMM			AIPC		
FIG	ITEM	NOMENCLATURE	SUBJECT	FIG	ITEM
401	1	Door (Entry)	52-11-01	01	98
		Door (Service)			102
	16	Cotter Pin			48

D. References
(1) AMM 25-66-01/401, Entry/Service Door Escape Slide pack
(2) AMM 51-21-10/701, Decorative Exterior Finishes
(3) AMM 52-11-00/501, Entry/Service Door
(4) AMM 52-11-13/201, Entry/Service Door Ground Lock

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E. Access

(1) Location Zones

831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

F. Procedure

S 424-092

(1) Make sure the door will fit into the cutout as follows:

(a) If the door is too large to fit in the door cutout, trim the minimum amount of door skin to make the door fit in the cutout when it is installed.

NOTE: Do not overtrim.

S 824-039

(2) Move the floor fittings fully inboard (View A-A, Fig. 402).

S 424-093

(3) Do this task: Original Entry/Service Door Installation Procedure.

S 414-040

(4) Close and latch the door.

S 824-041

(5) Remove or install the shims below the floor fittings as necessary to adjust the skin clearance at the top of the door (Views A and B, Fig. 403).

S 824-042

(6) Move the door forward or aft as necessary to correctly align the door stops with the body stops (View C-C, Fig. 402).

(a) Remove or install washers (0.016 inch per washer) behind the left or right adjustment bolt to get the correct total clearance between the left and right adjustment bolts and the floor fittings (Views A and B, Fig. 403).

NOTE: Only one adjustment bolt (left or right) is permitted to touch the floor fitting.

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S 824-050
(7) Cut the forward, aft or bottom edge of the door skin as necessary to get the correct skin clearance (AMM 52-11-00/501).

NOTE: Do not cut the fuselage skin to get the correct skin clearance.

S 334-042
(8) If you cut the door skin, apply coating, primer, and decorative paint to the bare edges of the door (AMM 51-21-10/701).

S 824-043
(9) Move the floor fittings outboard on their serrated plates as necessary to adjust the clearance between the door stops and the body stops at the bottom of the door (View A-A, Fig. 402).

S 824-046
(10) Make sure that upper stop clearances are as shown in (Views B-B and C-C, Fig. 404) during this adjustment.

NOTE: If the upper stop clearances are not shown in (Views B-B and C-C, Fig. 404), check the door adjustment in the latched position (AMM 52-11-00/501).

S 824-044
(11) Set the upper roller guide on its serrated plate to center on the guide roller (View D-D, Fig. 402).

S 824-049
(12) Remove or install shims as necessary to adjust the clearance between the door and the upper roller guide (View B-B, Fig. 402).

S 734-045
(13) Do this task: Entry/Service Door System Test (AMM 52-11-00/501).

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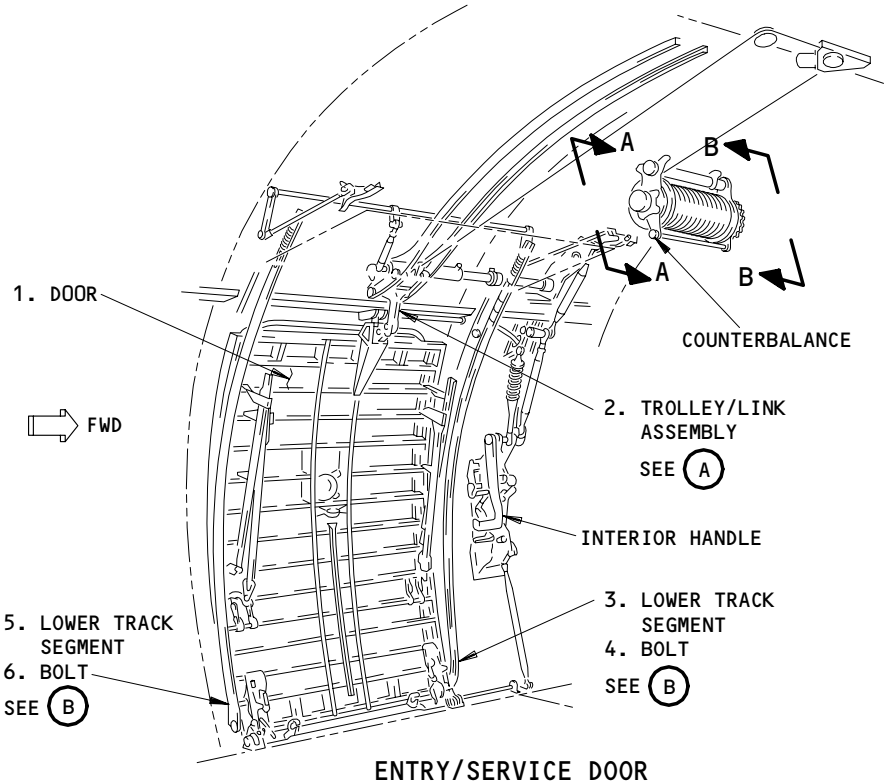
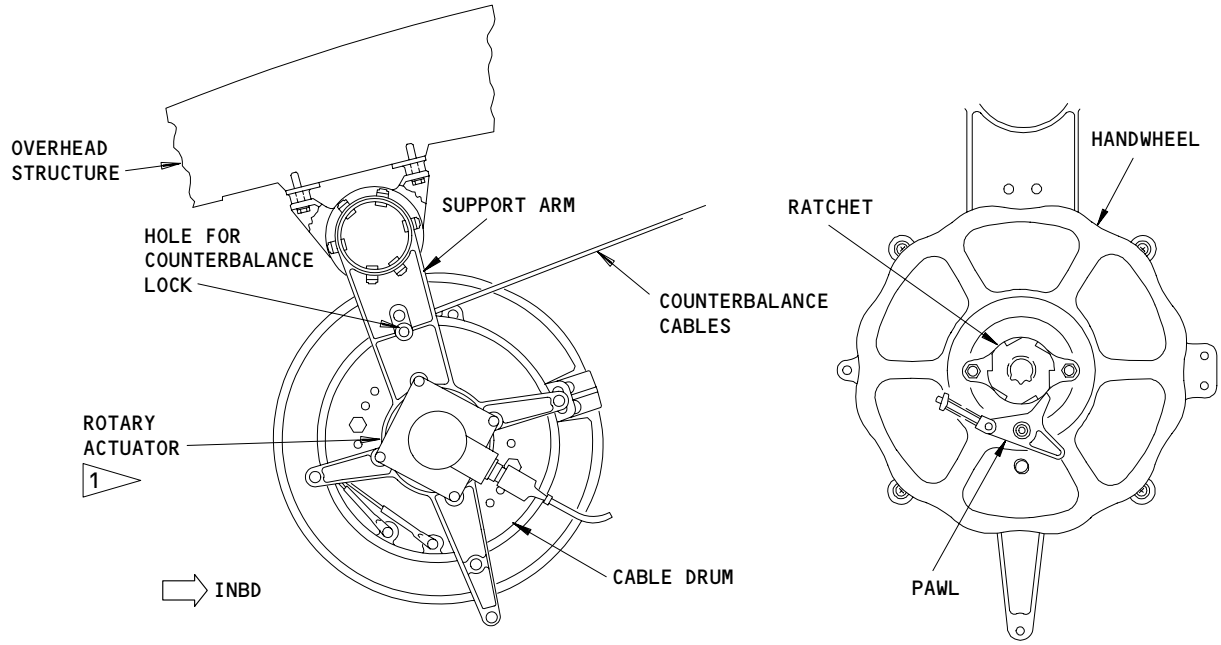


ENTRY/SERVICE DOOR
(DOOR AND DOORWAY LININGS NOT SHOWN)



COUNTERBALANCE
A–A

COUNTERBALANCE
B–B

1 ENTRY DOOR WITH ELECTRICAL OPERATION

Entry/Service Door
Figure 401 (Sheet 1)

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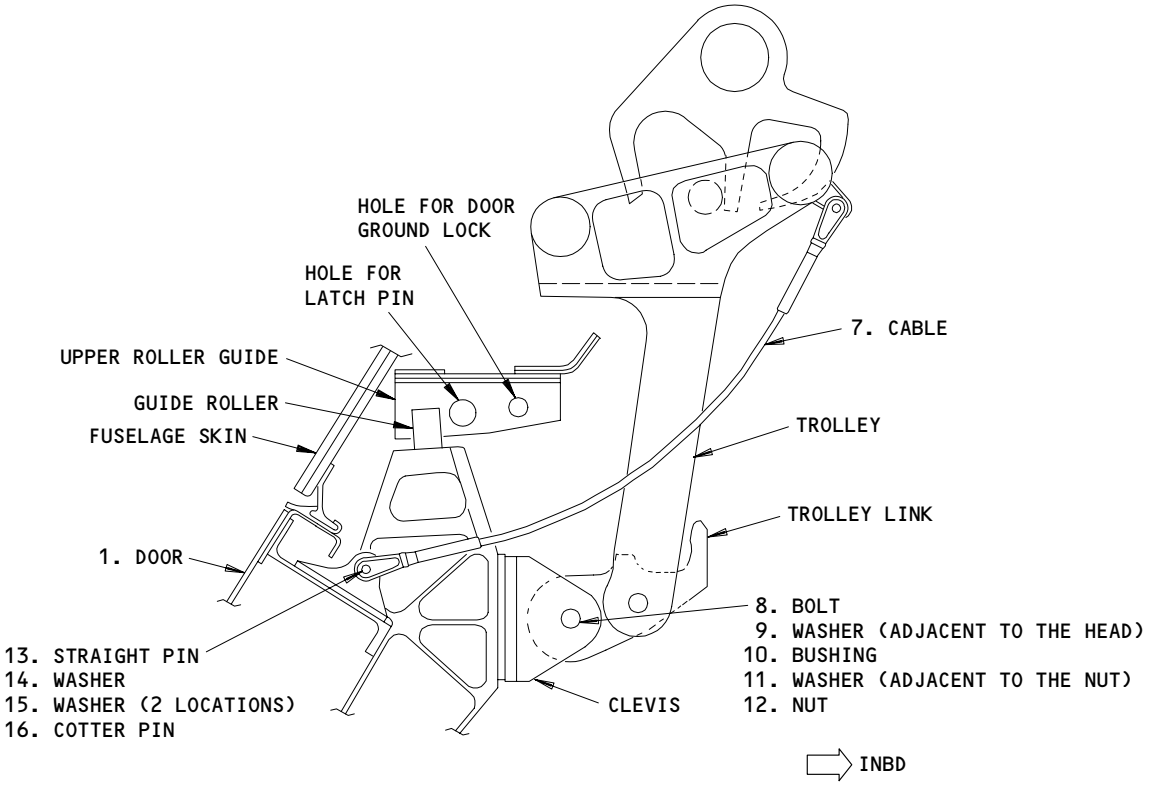
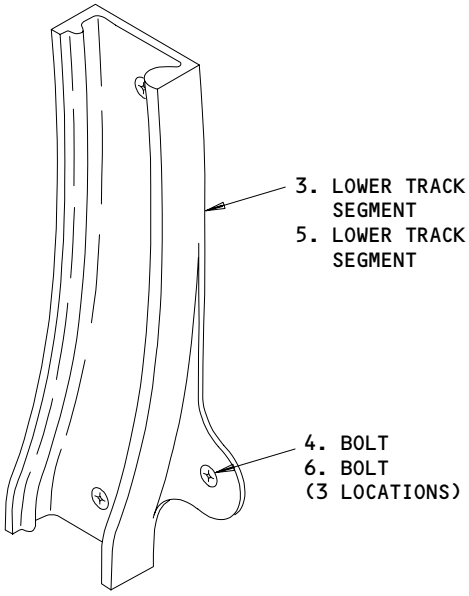


TROLLEY/LINK ASSEMBLY

A



LOWER TRACK SEGMENT (EXAMPLE)

B

Entry/Service Door
Figure 401 (Sheet 2)

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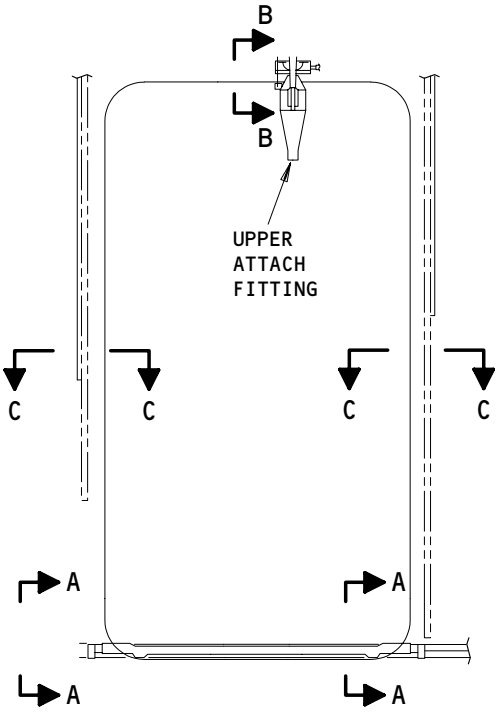
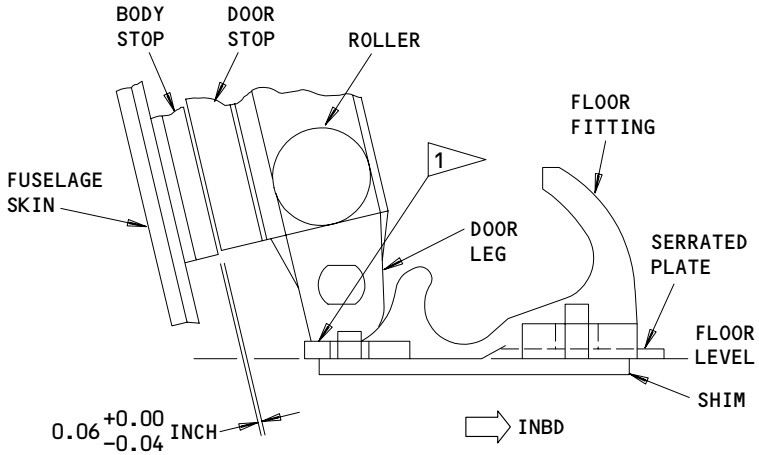


ENTRY/SERVICE DOOR
(VIEW IN THE OUTBOARD DIRECTION)



A-A

1 FOR CORRECT ADJUSTMENT, MAKE SURE THE TWO LEGS ARE TIGHTLY AGAINST THIS HORIZONTAL SURFACE OF THE FLOOR FITTING.

Door Stop Clearance Adjustment
Figure 402 (Sheet 1)

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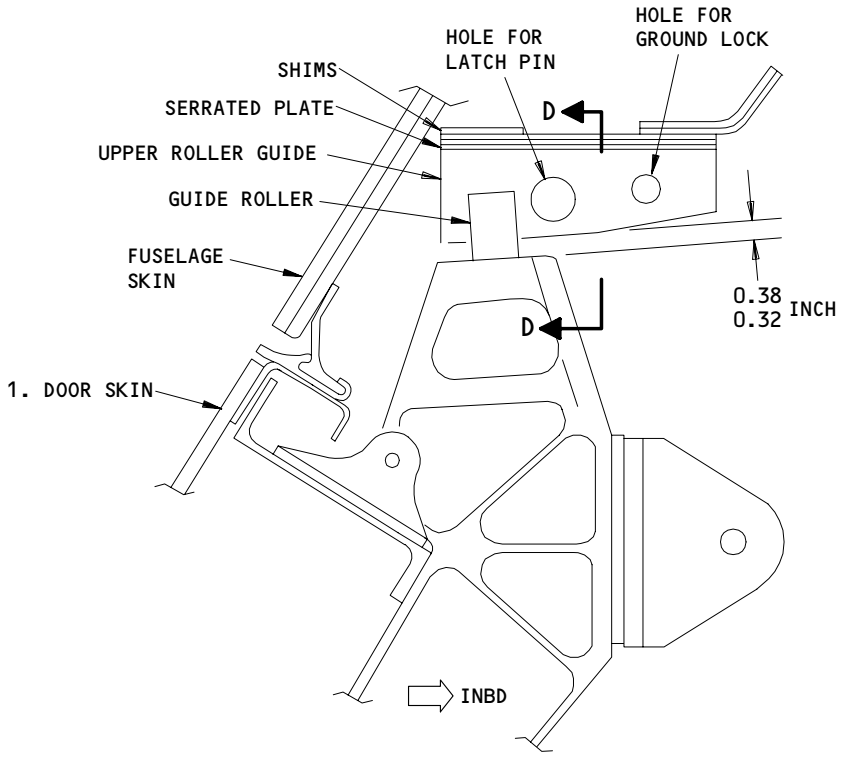
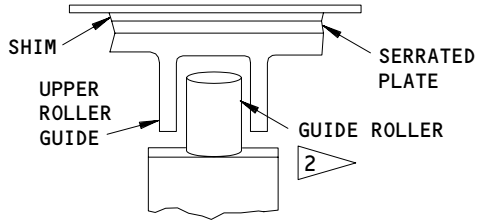
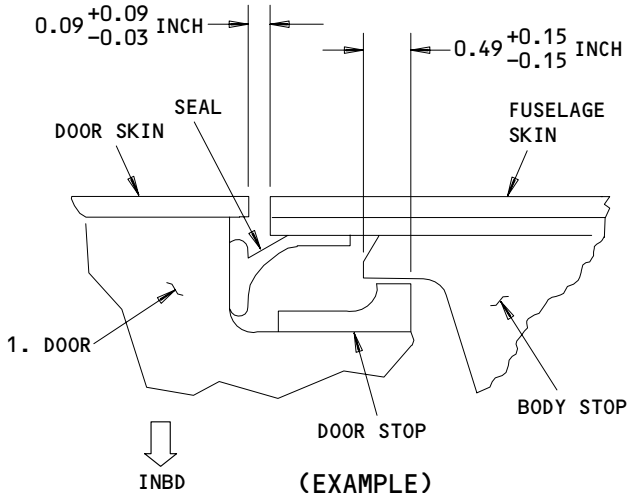


B–B



D–D



(EXAMPLE)
C–C

2 MAKE SURE THE CLEARANCE ON EACH SIDE OF THE GUIDE ROLLER IS NOT LESS THAN 0.01 INCH.

Door Stop Clearance Adjustment
Figure 402 (Sheet 2)

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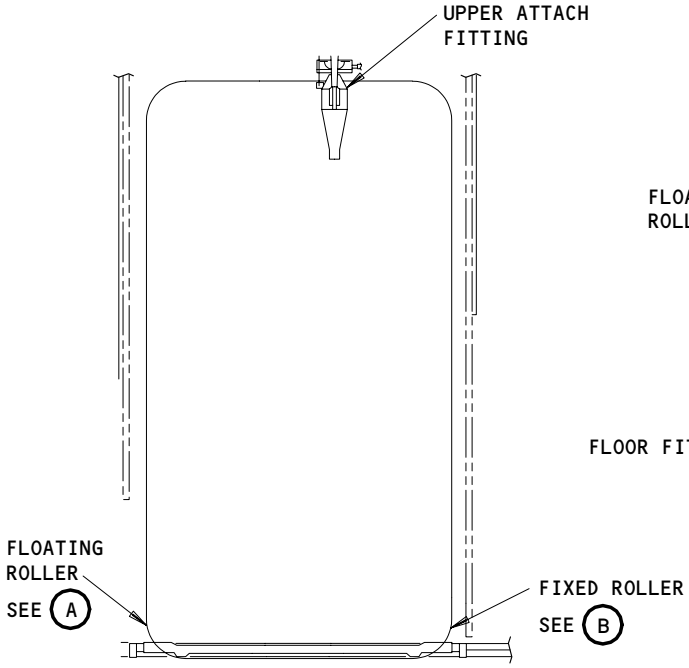
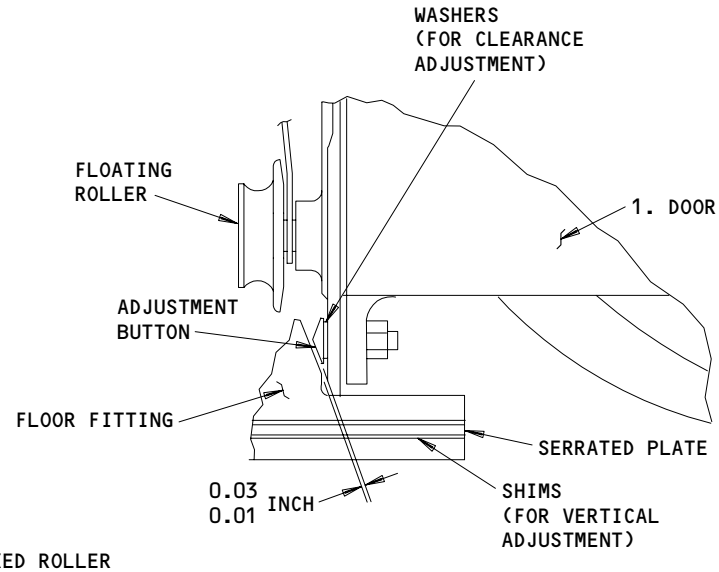
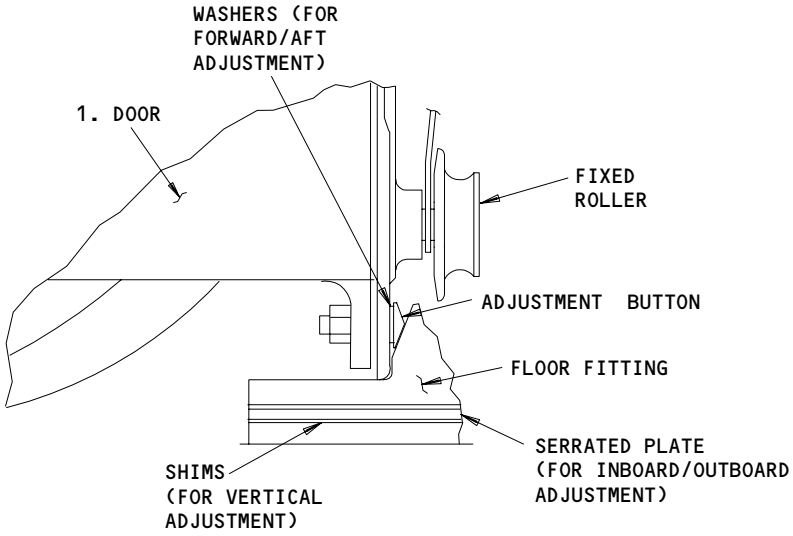


ENTRY/SERVICE DOOR
(VIEW IN THE OUTBOARD DIRECTION)



FLOATING ROLLER
A



FIXED ROLLER
B

Skin Clearance Adjustment
Figure 403

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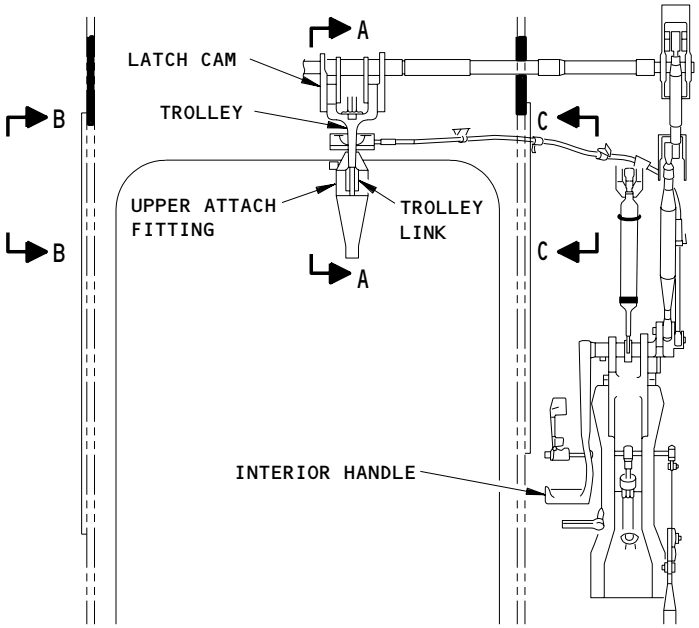
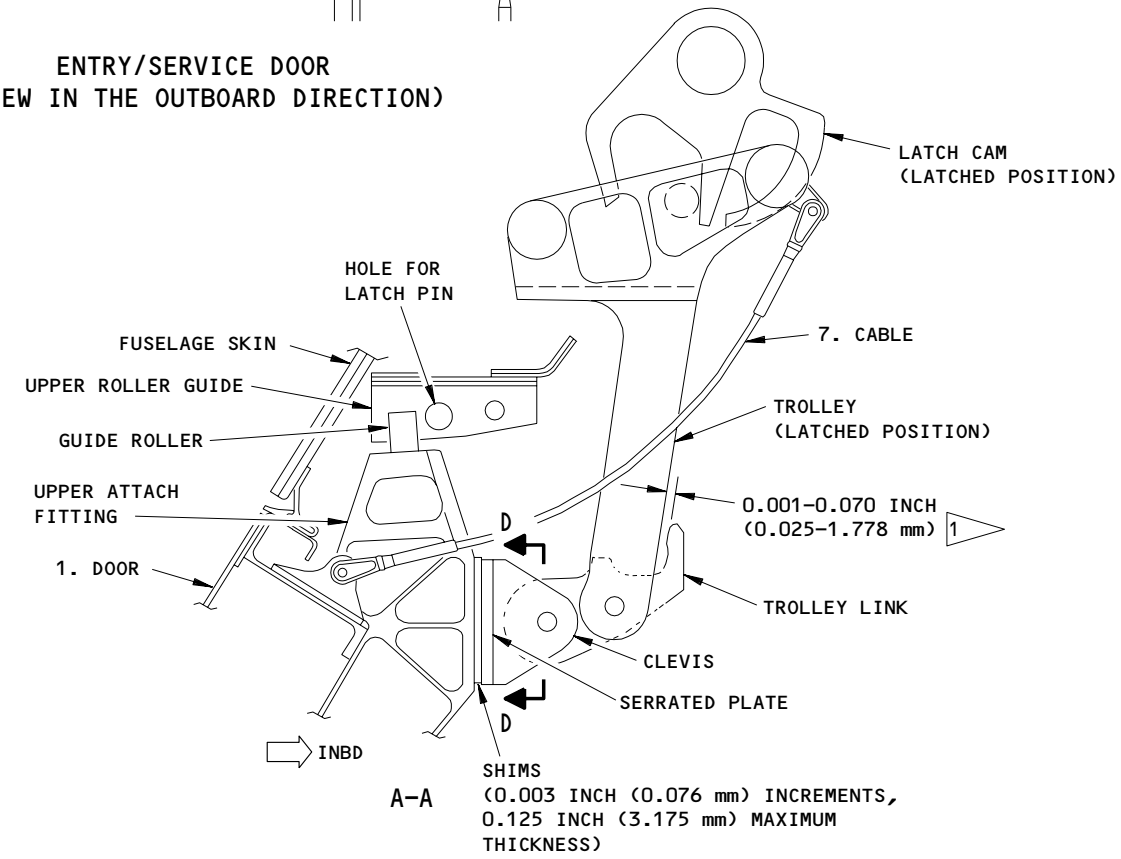


ENTRY/SERVICE DOOR
(VIEW IN THE OUTBOARD DIRECTION)



1 THIS CLEARANCE CHANGES THE HANDLE LOAD.
THE SMALLER THE CLEARANCE, THE SMALLER THE HANDLE LOAD.

Clevis Adjustment
Figure 404 (Sheet 1)

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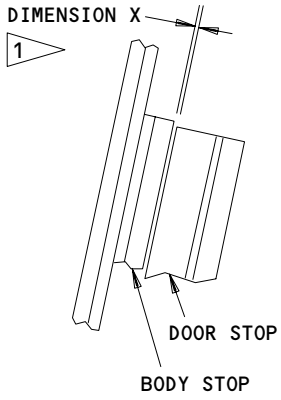
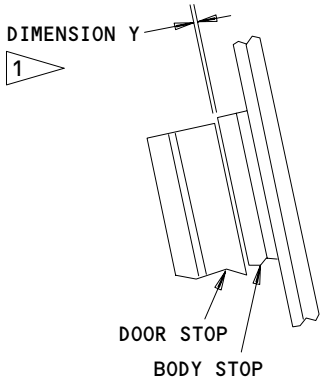
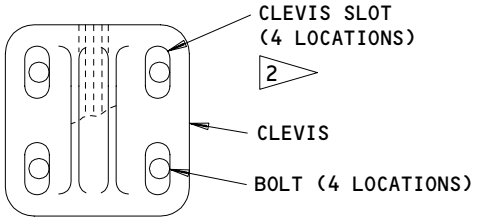


B–B



C–C



D–D

1 DIMENSION X + DIMENSION Y = 0.20–0.37 INCH

2 THE BOLTS USUALLY TOUCH THE RIGHT SIDE OF THE SLOTS.

Clevis Adjustment
Figure 404 (Sheet 2)

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DOORWAY LINING - REMOVAL/INSTALLATION

1. General
   A. This procedure gives the instructions to remove and install the doorway lining on the handle mechanism at each entry/service door.
   B. There are two interior handle mechanisms.
      (1) SAS 050-155,162-165,275,276 WITHOUT SB 52-58;
      the interior handle does not have a clutch mechanism and can move when the exterior handle is moved. This will be called the INTERIOR HANDLE WITHOUT CLUTCH MECHANISM.
      (2) SAS 050-155,162-165,275,276 WITH SB 52-58, AND SAS 156-161,166-274,277-999;
      the interior handle has a clutch mechanism and does not move when the exterior handle is moved. This will be called the INTERIOR HANDLE WITH CLUTCH MECHANISM.

TASK 52-11-02-004-001

2. Remove the Doorway Lining (Fig. 401)
   A. References
      (1) 33-51-01/201, Electrically Illuminated Exit Signs
      (2) 52-11-13/201, Entry/Service Door Ground Lock
   B. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   C. Procedure

      S 864-003
      (1) For an entry door with electrical operation, do these steps:
          (a) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:
              1) 11T6, DOORS FWD ENTRY CONT
          (b) Open this circuit breaker on the APU/EXT power panel, P34, and attach a DO-NOT-CLOSE tag:
              1) 34J5, FWD ENTRY DOOR CONT
          (c) Open this circuit breaker on the forward miscellaneous equipment panel, P33, and attach a DO-NOT-CLOSE tag:
              1) 33F6, FWD ENTRY DOOR

      S 214-005
      (2) Make sure the arm/disarm lever (21) is in the DISARM (inboard) position.

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S 864-007
(3) Close and latch the entry/service door.

S 034-006
(4) For the forward service door, do these steps:
(a) Install the ground lock (Ref 52-11-13).

NOTE: The movable ceiling panels are opened to install the ground lock. This will also give you access to the cover (12) for the overcenter mechanism.

(b) Remove the screws (13) and the washers (14) for the cover (12).
(c) Remove the cover (12) for the overcenter mechanism.
(d) Remove the ground lock from the guide fitting.

S 034-054
(5) For the forward entry/service door, remove the top screw (7) and the washer (8) from between the side track and the seal.

S 034-055
(6) For the aft entry/service door, do these steps:
(a) Remove the top of the seal (9) from the seal retainer (10).
(b) Remove the top screw (7).

S 864-009
(7) Open the entry/service door.

S 034-010
(8) Remove the screw (28) and the spacer (27) from the top of the arm/disarm lever (21).

S 034-064
(9) Remove the arm/disarm lever (21) from the lever base assembly (24).

S 034-012
(10) Remove the EXIT sign (Ref 33-51-01).

S 034-013
(11) Remove the nuts (4) and the washers (5) for the cover (3) on the handle side of the doorway.

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S 034-065
(12) Remove the cover (3).

S 034-014
(13) Remove the screws (11) from the middle of the upper lining panel (1).

S 034-066
(14) Remove the trim spline (42).

S 034-067
(15) Remove the screws (41).

S 034-068
(16) Remove the trim base (40).

S 034-069
(17) For the forward entry/service door, remove the remaining screws (7) and the washers (8).

S 034-070
(18) For the aft entry/service door, remove the remaining screws (7).

S 824-019
(19) Lower the interior handle (20) approximately 1/2 toward the latched position.

S 824-020

CAUTION: BE CAREFUL WHEN YOU REMOVE THE DOORWAY LINING. DAMAGE TO THE YELLOW EMERGENCY ONLY FLAG BELOW THE INTERIOR HANDLE CAN EASILY OCCUR.

(20) Move the upper lining panel (1) inboard and towards the door.

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S 034-089
(21) INTERIOR HANDLE WITHOUT CLUTCH MECHANISM;
remove the interior handle as follows (Fig. 402):
(a) Loosen the adapter bolt (19) (View A-A).
(b) Loosen the bolt (32) on the clamp sleeve.
(c) Move the interior handle (20) away from the clamp sleeve.
(d) Remove the interior handle (20).

S 034-090
(22) INTERIOR HANDLE WITH CLUTCH MECHANISM;
remove the interior handle as follows (Fig. 402A):
(a) Loosen the screw (17) at the top of the interior handle (20).
(b) Loosen the bolt (16) on the split-clamped spacer (15).
(c) Loosen the adapter bolt (19) (View A-A).
(d) Move the interior handle (20) away from the split-clamped spacer (15).
(e) Remove the interior handle (20).

S 024-118
(23) Remove the upper lining panel (1).

S 024-025
(24) Remove the lower lining panel (2).

TASK 52-11-02-404-026

3. Install the Doorway Lining (Fig. 401)

NOTE: If the handle mechanism was removed or installed, then do the Handle Mechanism Adjustment procedure of the Entry/Service Door Handle Mechanism Maintenance Practices (Ref 52-11-25) before the final adjustments of the interior handle and the interior arm/disarm lever.

A. Equipment
(1) Wood Block - 4.0-5.0 inches square X 6.0 inches long
B. Consumable Materials
(1) A00027 Adhesive - BAC 5010, Type 60

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C. Parts

(1) FORWARD ENTRY DOOR;
Refer to the table that follows:

AMM			AIPC		
FIG	ITEM	NOMENCLATURE	SUBJECT	FIG	ITEM
401	1	Upper Lining Panel	52-11-02	10	235
	2	Lower Lining Panel			235
	6	Seal and Trim Assembly	52-11-02	10	20
	40	Trim Base	52-11-02	10	80
	42	Trim Spline			79

(2) FORWARD SERVICE DOOR;
Refer to the table that follows:

AMM			AIPC		
FIG	ITEM	NOMENCLATURE	SUBJECT	FIG	ITEM
401	1	Upper Lining Panel	52-11-02	10	240
	2	Lower Lining Panel			40
	6	Seal and Trim Assembly	52-11-02	10	25
	40	Trim Base	52-11-02	10	69,70
					71
	42	Trim Spline			66,67
					68

(3) AFT ENTRY DOOR;
Refer to the table that follows:

AMM			AIPC		
FIG	ITEM	NOMENCLATURE	SUBJECT	FIG	ITEM
401	1	Upper Lining Panel	52-11-02	03	135
	2	Lower Lining Panel			140
	40	Trim Base	52-11-02	03	340
	42	Trim Spline			350

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(4) AFT SERVICE DOOR;
Refer to the table that follows:

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Upper Lining Panel	52-11-02	03	140
	2	Lower Lining Panel			140
	40	Trim Base	52-11-02	03	345
	42	Trim Spline			355

D. References
(1) 33-51-01/201, Electrically Illuminated Exit Signs
(2) 52-11-00/501, Entry/Service Door
(3) 52-11-13/201, Entry/Service Door Ground Lock
(4) 52-11-25/201, Entry/Service Door Handle Mechanism

E. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

F. Procedure

S 824-028
(1) Hold the lower lining panel (2) in position.

S 434-029
(2) Before you install the upper lining panel (1), do these steps to make sure the handle mechanism will stay in the correct adjustment:
(a) Make sure the exterior handle and the exterior disarm lever are faired with the fuselage skin.

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(b) Make sure the interior handle shaft is turned as far as possible toward the latched position.

(c) Install the interior handle (20) on the interior handle shaft to the dimension shown between the handle grip and the inner surface of the fuselage skin (View A-A).

NOTE: If you cannot get the correct dimension between the handle grip and the inner surface of the fuselage skin, then change the position of the interior handle (20) on the adapter (18) (Ref 52-11-25).

(d) Open the exterior handle sufficiently to install the wood block between the exterior handle and the handle box (Fig. 403).

NOTE: The wood block will stay in this position until the interior handle is installed with the doorway lining. The wood block prevents inboard rotation of outside handle and is used to make sure of the correct spline relation between the interior handle, adapter, and handle shaft during installation of the interior handle. If not, the interior handle could hit the EMERGENCY ONLY indicator flag or the doorway lining.

(e) Attach a piece of tape on the adjacent galley or lavatory wall to mark the position of the interior handle (20) (Fig. 403).

(f) Remove the interior handle (20).

S 434-030

(3) Insert the interior handle (20) through the cutout in the upper lining panel (1).

S 424-031

(4) Install the interior handle (20) with the upper lining panel (1). Use the tape on the adjacent wall to align the interior handle (20) to the correct position.

NOTE: Make sure you do not cause damage to the EMERGENCY ONLY indicator flag during lining installation. Make sure the indicator flag is installed in the slot in the doorway lining.

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S 434-032
(5) Tighten the adapter bolt (19) and the bolt (32).

S 434-033
(6) Remove the tape and the wood block after you install the interior handle (20).

S 214-034
(7) Make sure the horizontal trim strip is in position on the upper lining panel (1) or the lower lining panel (2).

S 434-038
(8) Install the screws (11) in the middle of the upper lining panel (1).

S 434-074
(9) Install the trim base (40) with the screws (41).

S 434-075
(10) Install the trim spline (42).

S 434-041
(11) Install the cover (3) on the handle side of the doorway with the nuts (4) and the washers (5).

S 434-042
(12) Install the EXIT sign (Ref 33-51-01).

S 434-080
(13) Install the arm/disarm lever (21) with the screw (28) and the spacer (27). Adjust the position of the arm/disarm lever (21) to the dimension shown as follows (Fig. 403):
   (a) Loosen the screw (28) on top of the arm/disarm lever (21), and move the lever (21) on the lever base assembly (24).
   (b) If you cannot get the correct dimension (Fig. 403), then do these steps:
      1) Refer to the procedure to Remove the Doorway Lining to remove the upper lining panel (1).

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2) Loosen the bolt (26), and remove the retainer ring (25).
3) Remove the lever base assembly (24) and the adapter (23) from the shaft (22).
4) Move the lever base assembly (24) on the splines of the shaft (22) to get the correct dimension.
5) Install the adapter (23) and the retainer ring (25), and tighten the bolt (26).
6) Install the upper lining panel (1).

S 864-045

(14) Operate the interior handle (20) and the arm/disarm lever (21). Make sure they operate smoothly and do not hit the upper lining panel (1).

S 214-046

(15) Make sure the EMERGENCY ONLY indicator flag does not hang up or catch behind or below the interior door handle grip during movement of the indicator flag.

NOTE: It is permitted for the indicator flag to touch the interior door handle with the indicator flag in the armed position.

S 824-047

(16) If the indicator flag hits the interior handle, adjust the EMERGENCY ONLY indicator flag (Ref 52-11-00).

S 864-048

(17) Close and latch the entry/service door.

S 434-049

(18) For the forward service doorway lining, do these steps:
(a) Install the ground lock into the guide fitting.
(b) Install the screws (13), washers (14), and cover (12) for the overcenter mechanism.

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(c) Remove the ground lock for the service door (Ref 52-11-13).
(d) Latch the forward service door.

S 434-050
(19) For the forward entry/service door, install the top screw (7) and the washer (8).

S 434-062
(20) For the aft entry/service door, do these steps:
(a) Install the top screw (7).
(b) Use the adhesive to bond the top and bottom six inches of the seal (9) to the seal retainer (10).

S 864-053
(21) For an entry door with electrical operation, do these steps:
(a) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
1) 11T6, DOORS FWD ENTRY CONT

S 864-119
(22) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P34 panel:
(a) 34J5, FWD ENTRY DOOR CONT

S 864-120
(23) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P33 panel:
(a) 33F6, FWD ENTRY DOOR

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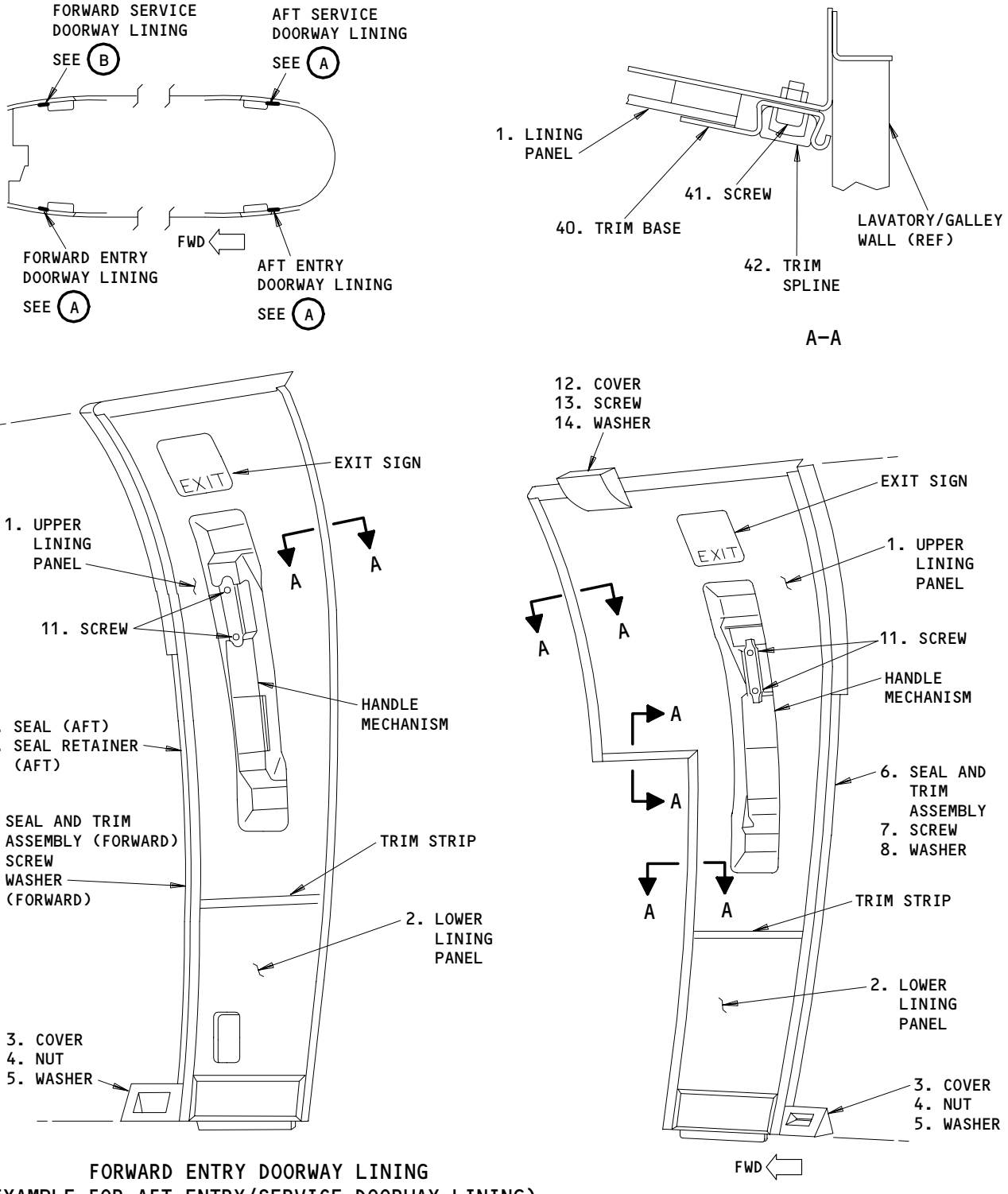

FORWARD ENTRY DOORWAY LINING
(EXAMPLE FOR AFT ENTRY/SERVICE DOORWAY LINING)
A

FORWARD SERVICE DOORWAY LINING
B

Entry/Service Doorway Lining
Figure 401

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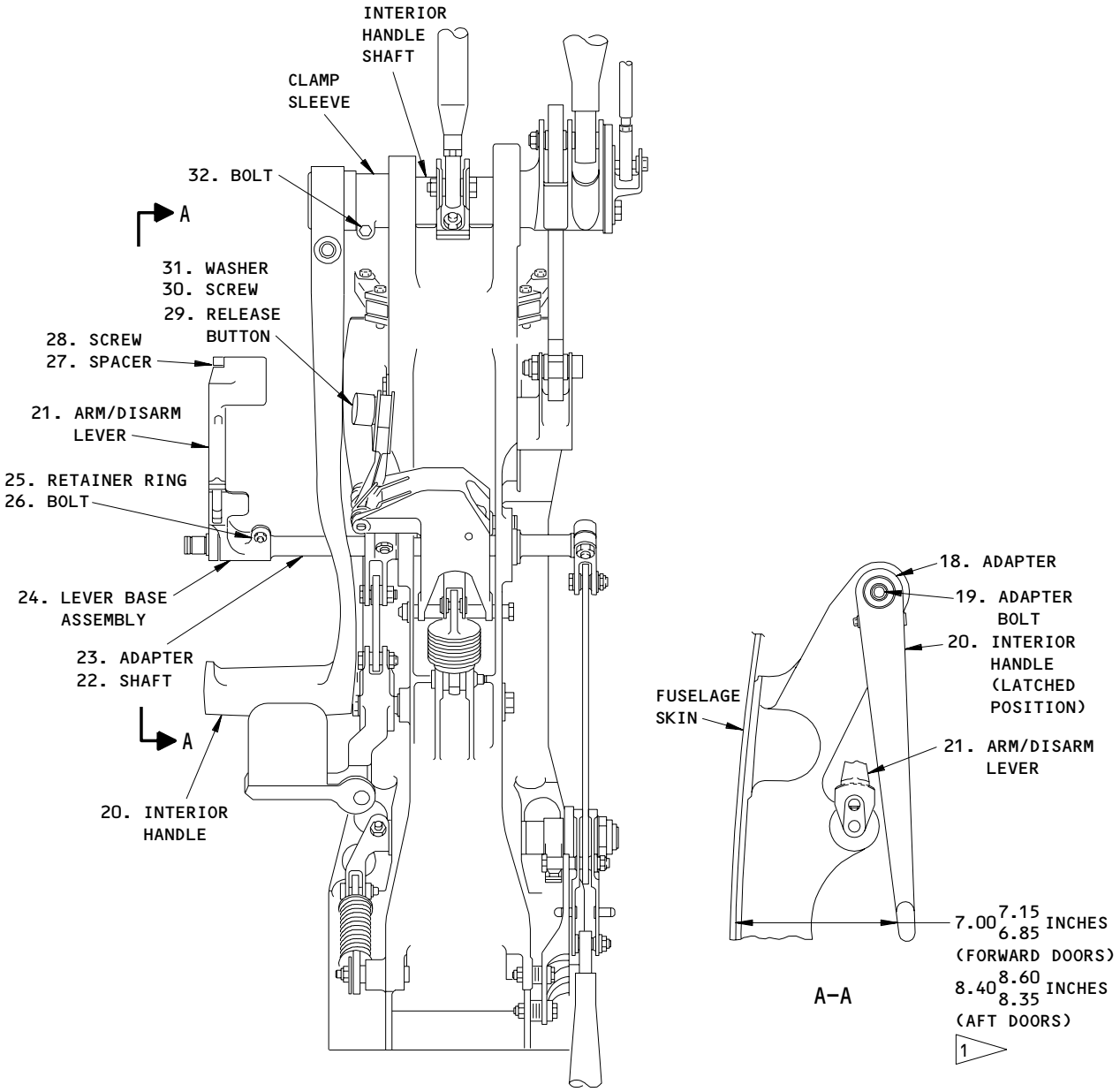

HANDLE MECHANISM
(EXAMPLE)

1 INITIAL ADJUSTMENT POSITION OF THE INTERIOR HANDLE BEFORE THE INSTALLATION OF THE DOORWAY LINING

Handle Mechanism
Figure 402

756538

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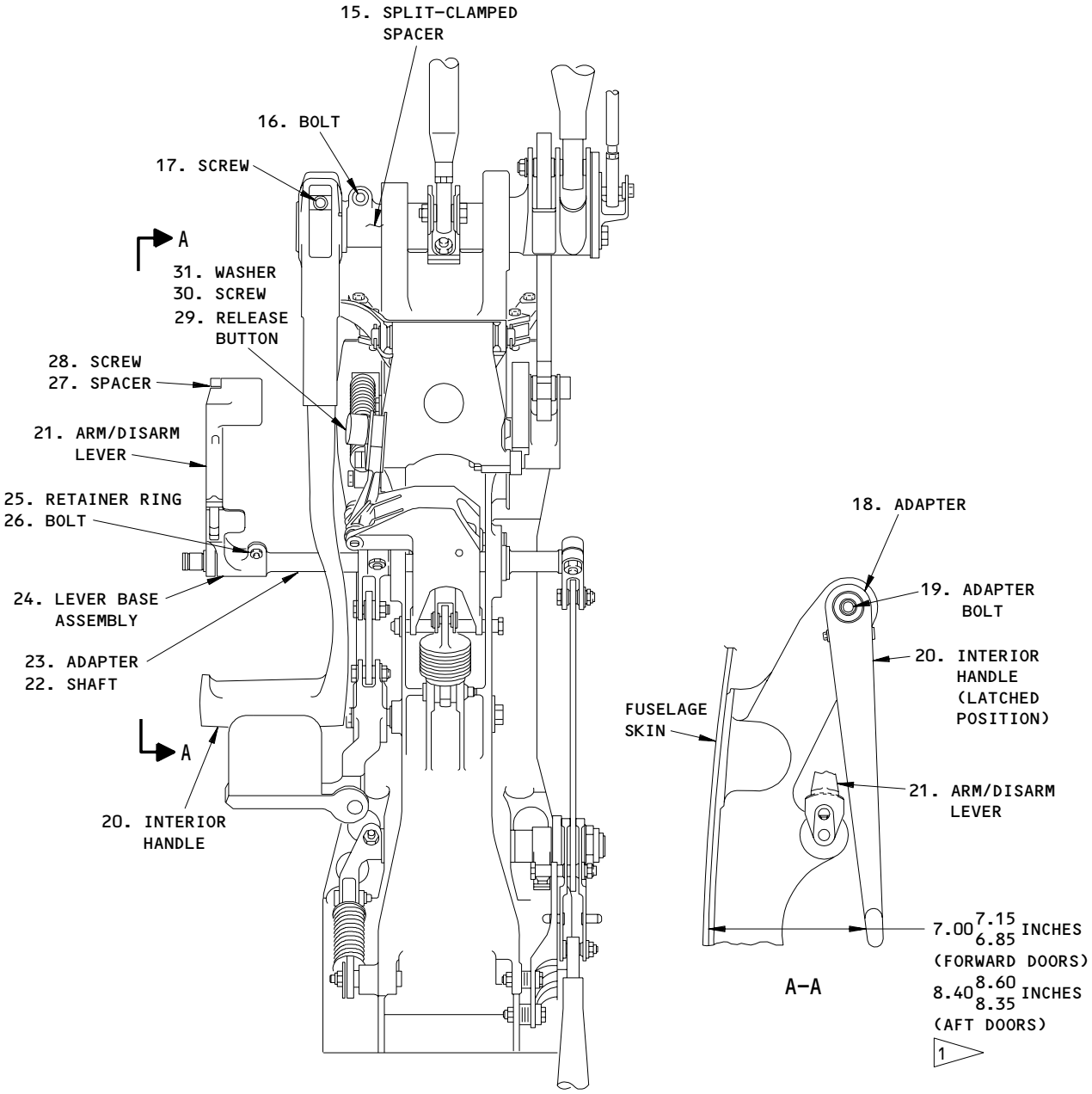

HANDLE MECHANISM
(EXAMPLE)

1 INITIAL ADJUSTMENT POSITION OF THE INTERIOR HANDLE BEFORE THE INSTALLATION OF THE DOORWAY LINING

Handle Mechanism
Figure 402A

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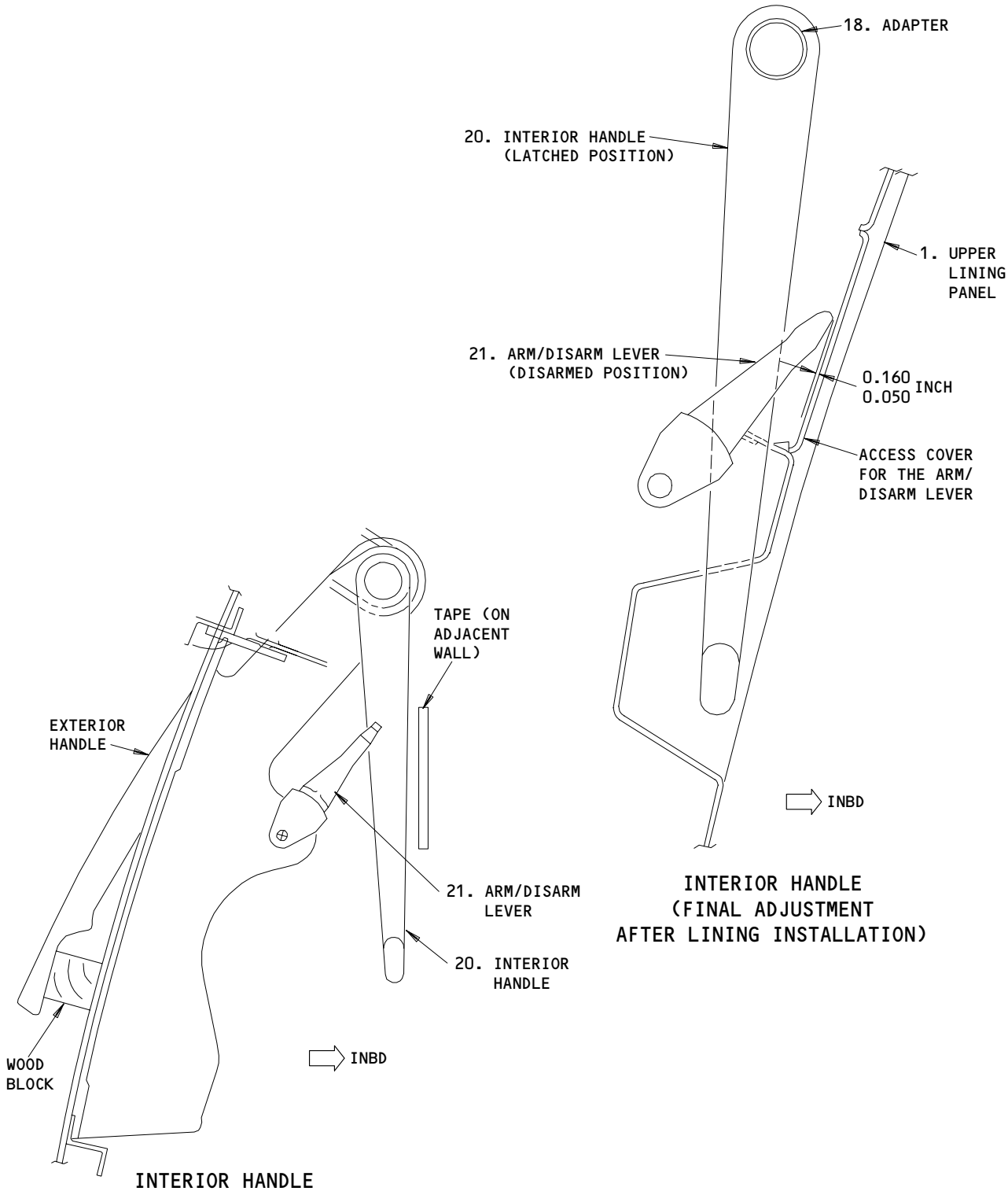

Interior Handle Adjustment
Figure 403

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ENTRY/SERVICE DOOR ROLLERS - REMOVAL/INSTALLATION

1. General
   A. This procedure contains four tasks.
      (1) The first task is the removal of the side rollers on the entry/service doors.
      (2) The second task is the installation of the side rollers on the entry/service doors.
      (3) The third task is the removal of the trolley rollers on the trolley.
      (4) The fourth task is the installation of the trolley rollers on the trolley.

TASK 52-11-03-004-001

2. Remove the Side Rollers (Fig. 401)
   A. References
      (1) 25-66-01/401, Escape Slide-Raft
   B. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   C. Prepare to Remove the Side Rollers

      S 864-002
      (1) Make sure the entry/service door is closed and latched.

      S 864-003
      (2) Make sure the arm/disarm lever is in the DISARMED position.

      S 864-004
      (3) Make sure you cannot see the armed indicators in the windows at the bottom of the bustle.

      S 864-005
      (4) For the forward entry door, do these steps:
          (a) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:
              1) 11T6, DOORS FWD ENTRY CONT
          (b) Open this circuit breaker on the forward miscellaneous equipment panel, P33, and attach a DO-NOT-CLOSE tag:
              1) 33F6, FWD ENTRY DOOR
          (c) Open this circuit breaker on the APU external power panel, P34, and attach a DO-NOT-CLOSE tag:
              1) 34J5, FWD ENTRY DOOR CONT

      S 014-013
      (5) Remove the door bustle.

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S 494-015

WARNING: MAKE SURE YOU INSTALL THE SAFETY PIN INTO THE INFLATION CYLINDER REGULATOR. THE ACCIDENTAL INFLATION OF THE ESCAPE SLIDE-RAFT CAN CAUSE INJURY OR DAMAGE.

(6) Install the safety pin into the inflation cylinder regulator (Ref 25-66-01).

NOTE: The safety pin is found in the stowage pouch on the pack.

S 864-017

(7) Lift the door to the fully open position.

S 014-018

(8) Remove the screws (3 locations) from the lower track segment.

S 014-019

(9) Remove the lower track piece on each side of the doorway.

S 864-020

WARNING: HOLD THE BOTTOM OF THE DOOR WHILE YOU LOWER THE DOOR. THE DOOR WILL TRY TO TURN INBOARD AND IN THE DIRECTION OF THE FIXED ROLLER. THE MOVEMENT OF THE DOOR CAN CAUSE INJURY OR DAMAGE.

(10) Slowly lower the door until the rollers and links disengage from the tracks and permit the bottom edge of the door to turn inboard approximately 8 inches. Make sure to prevent damage to the interior panels if the door moves to touch the panels.

NOTE: When the rollers disengage from the track the door will try to turn inboard and in the direction of the fixed roller.

S 864-021

(11) Put the bottom edge of the door on a work platform.

S 014-022

(12) Lift the lining on the bottom of the door to get access to the rollers.

D. Remove the Fixed Roller

S 034-023

(1) Remove the nut and washer from the end of the roller bolt (View D, Fig. 401).

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S 024-024
(2) Remove the roller, link, and roller bolt from the door (Views B and D, Fig. 401).

S 034-025
(3) Remove the roller and link from the roller bolt (View B, Fig. 401).

E. Remove the Floating Roller

S 034-026
(1) Remove the retaining ring from the end of the sliding pin (View C, Fig. 401).

S 024-027
(2) Remove the roller, link, and sliding pin from the door (Views A and C, Fig. 401).

S 034-028
(3) Remove the link from the sliding pin (Views A and C, Fig. 401).

S 034-029
(4) Drill out the rivet in the sliding pin (View C, Fig. 401). Make sure you do not cause damage to the countersinks in the sliding pin.

S 034-030
(5) Attach a clamp to the sliding pin in the clamp area shown (View A, Fig. 401).

S 034-031
(6) Remove the roller bolt and roller from the sliding pin (View A, Fig. 401).

TASK 52-11-03-404-032

3. Install the Side Rollers (Fig. 401)

A. Consumable Materials
(1) D00015 Grease - Anti Corrosive, BMS 3-24
Aeroshell Grease 16

B. References
(1) 12-21-18/301, Entry/Service Door
(2) 25-66-01/401, Escape Slide-Raft

C. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

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D. Install the Floating Roller

S 424-034

(1) Do these steps:
   (a) Install the roller on the roller bolt with the flange side of the roller away from the bolt head (View C, Fig. 401).
   (b) Install the two washers on the roller bolt (View C, Fig. 401).
   (c) Apply the grease to the roller bolt.
   (d) Install the roller bolt in the sliding pin (View C, Fig. 401).
   (e) Attach a clamp to the sliding pin in the clamp area shown (View A, Fig. 401).
   (f) Tighten the roller bolt to a run-on torque of 20-30 pound-inches (View C, Fig. 401).
   (g) Turn back the roller bolt until the hole in the bolt aligns with the holes in the sliding pin (View C, Fig. 401).
   (h) Install the rivet in the holes through the roller bolt and the sliding pin (View C, Fig. 401).
   (i) Remove the unwanted material to make the flushness of the two heads of the rivet as shown (View C, Fig. 401).
   (j) Install the link on the sliding pin with the joggle in the direction of the bolt head (View A, Fig. 401).
   (k) Apply the grease to the full length of the sliding pin.
   (l) Install the sliding pin into the door (View A, Fig. 401).
   (m) Install the retaining ring on the end of the sliding pin (Views A and C, Fig. 401).

E. Install the Fixed Roller

S 424-037

(1) Do these steps:
   (a) Install the roller on the roller bolt with the flange side of the roller away from the bolt head (View D, Fig. 401).
   (b) Install the two washers on the roller bolt (View D, Fig. 401).
   (c) Install the link on the roller bolt with the joggle in the direction of the bolt head (View B, Fig. 401).
   (d) Fill the holes between the washers and the link with the grease (View D, Fig. 401).
   (e) Apply the grease to the roller bolt.
   (f) Install the roller bolt in the door (Views B and D, Fig. 401).
   (g) Install the washer and nut (View D, Fig. 401).
   (h) Tighten the roller bolt to a run-on torque of 20-30 pound-inches (View B, Fig. 401).

F. Put the Airplane Back to its Usual Condition

S 864-039

(1) Turn the door outboard and engage the rollers and links with the side tracks in the correct position.

S 864-040

(2) Lift the door to the fully open position.

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S 864-041
(3) Put the bottom track piece in the correct position and install the screws (3 locations).

S 644-042
(4) Lubricate the rollers (Ref 12-21-18).

S 094-044

WARNING: MAKE SURE YOU REMOVE THE SAFETY PIN FROM THE INFLATION CYLINDER REGULATOR. THE ESCAPE SLIDE-RAFT WILL NOT INFLATE IN AN EMERGENCY IF THE SAFETY PIN IS INSTALLED.

(5) Remove the safety pin from the inflation cylinder regulator (Ref 25-66-01).

S 414-046
(6) Install the bustle.

S 714-047
(7) Open and close the door. Make sure the door operates smoothly.

S 864-048
(8) For the forward entry door, do these steps:
(a) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
1) 11T6, DOORS FWD ENTRY CONT
(b) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P33 panel:
1) 33F6, FWD ENTRY DOOR
(c) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P34 panel:
1) 34J5, FWD ENTRY DOOR CONT

TASK 52-11-03-004-056

4. Remove the Trolley Rollers (Fig. 402)

A. References
(1) 52-11-08/401, Door Trolley

B. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

C. Prepare to Remove the Trolley Rollers

S 864-057
(1) Remove the trolley (Ref 52-11-08).

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D. Remove the Grooved Roller

S 034-058
(1) Remove the nut and washer from the roller bolt (View B-B, Fig. 402).

S 034-059
(2) On the inboard roller, remove the safety cable lug from the roller bolt (View B-B, Fig. 402).

S 024-060
(3) Remove the roller and roller bolt from the trolley.

S 034-061
(4) Remove the roller and washers, if installed, from the roller bolt (View B-B, Fig. 402).

E. Remove the Flat Roller

S 034-062
(1) Remove the nut and washer from the roller bolt (View A-A, Fig. 402).

S 024-063
(2) Remove the roller and roller bolt from the trolley (View A-A, Fig. 402).

S 034-064
(3) Remove the roller and washers, if installed, from the roller bolt (View A-A, Fig. 402).

TASK 52-11-03-404-065

5. Install the Trolley Rollers (Fig. 402)
A. Consumable Materials
(1) A00247 Sealant - Chromate Type, BMS 5-95, Type 1, PR1436GB-1/2
B. References
(1) 52-11-08/401, Door Trolley

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C. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

D. Install the Grooved Roller

S 424-067
(1) Do these steps:
(a) Install the two thin washers on the roller bolt (View B-B, Fig. 402).
(b) Install the roller on the roller bolt with the bearing retainer ring near the bolt head (View B-B, Fig. 402).
(c) Install the two thick washers on the roller bolt (View B-B, Fig. 402).

NOTE: You can decrease the washer thickness to permit smooth operation of the trolley in the tracks.

(d) Install the roller and the roller bolt into the trolley with the wet sealant.
(e) On the inboard roller, install the safety cable lug on the roller bolt (View B-B, Fig. 402).
(f) Install the washer and nut on the roller bolt (View B-B, Fig. 402).
(g) Tighten the nut to a run-on torque of 35-45 pound-inches (View B-B, Fig. 402).

E. Install the Flat Roller

S 424-070
(1) Do these steps:
(a) Install the two thin washers on the roller bolt (View A-A, Fig. 402).
(b) Install the roller on the roller bolt with the bearing retainer ring near the bolt head (View A-A, Fig. 402).
(c) Install the two thick washers on the roller bolt (View A-A, Fig. 402).

NOTE: You can decrease the washer thickness to permit smooth operation of the trolley in the tracks.

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(d) Install the roller and roller bolt into the trolley with the wet sealant.
(e) Install the washer and nut on the roller bolt (View A-A, Fig. 402).
(f) Tighten the nut to a run-on torque of 35-45 pound-inches (View A-A, Fig. 402).

F. Put the Airplane Back to its Usual Condition

S 714-072

(1) Do a check for the smooth operation of the trolley in the tracks.
(a) Put the trolley rollers in the top end of the trolley tracks and move the trolley down to the bottom of the tracks.
(b) Do a check for smooth operation of the trolley.
(c) If the operation of the trolley is not smooth, do the steps that follow:
1) Remove the trolley from the trolley tracks.
2) Replace one of the two thick washers between the roller and the trolley on the roller bolt with a thin washer.
3) Do a check again on the trolley for smooth operation in the trolley tracks.
4) Continue to replace the thick washers with the thin washers until the trolley operates smoothly. Make sure two washers (thick or thin, or one of each) are installed between the roller and the trolley on the roller bolt.

S 864-074

(2) Install the trolley (Ref 52-11-08).

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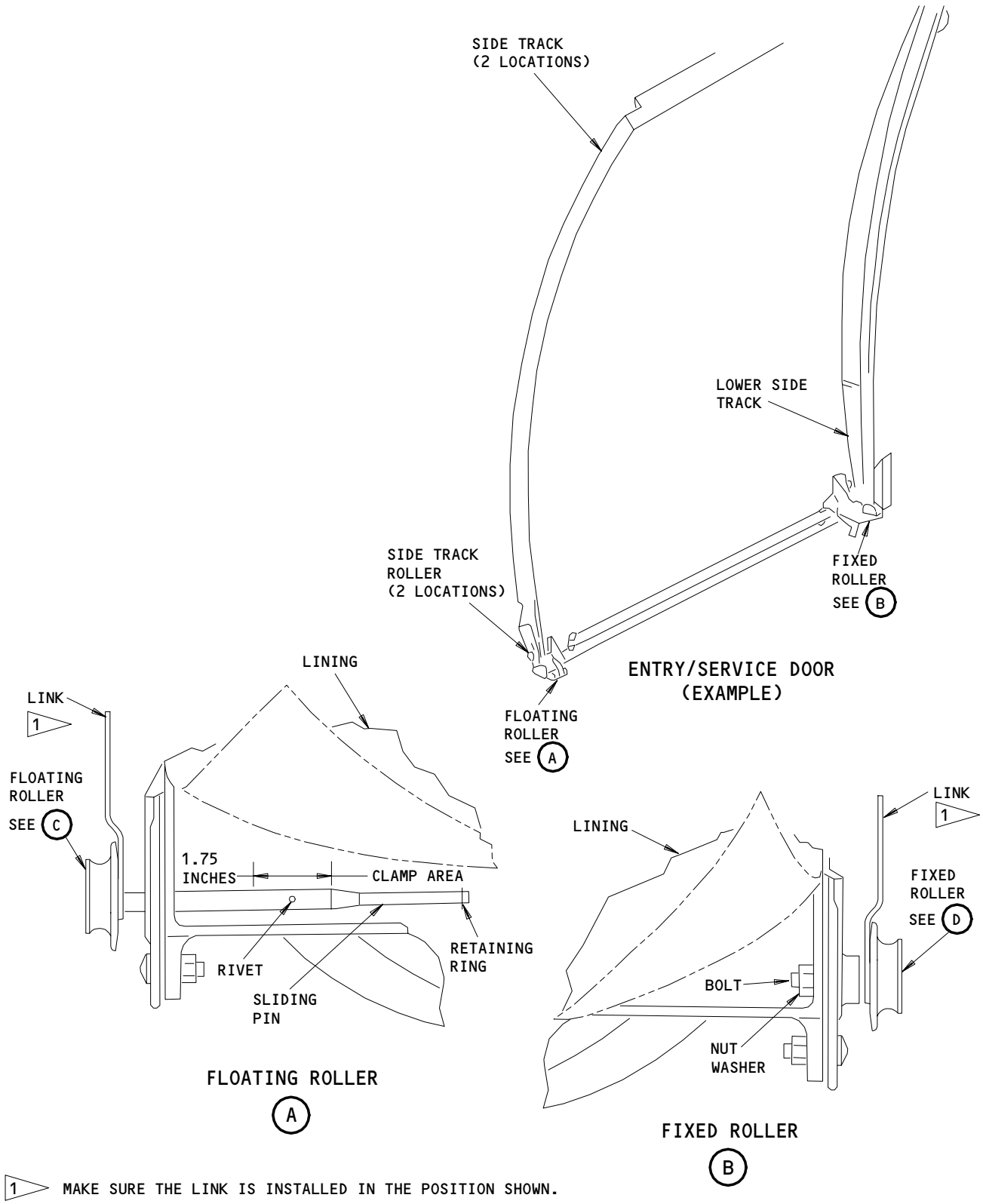

1 MAKE SURE THE LINK IS INSTALLED IN THE POSITION SHOWN.

Entry/Service Door Side Rollers
Figure 401 (Sheet 1)

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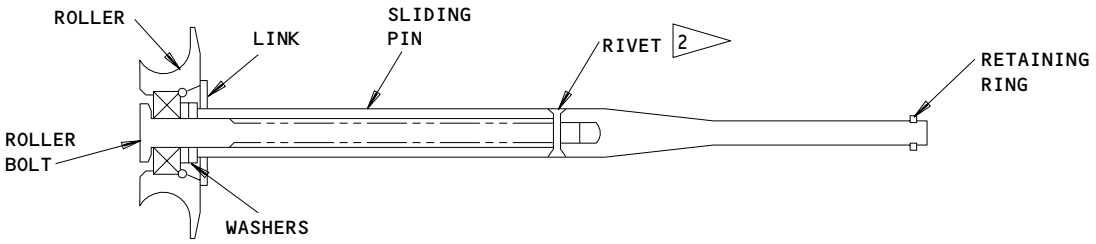
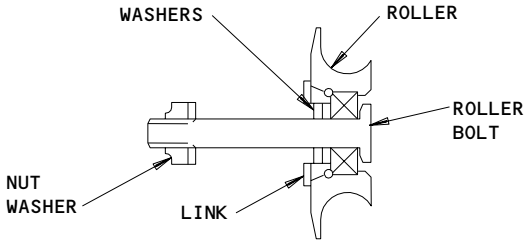


FLOATING ROLLER

C



FIXED ROLLER

D

2 MAKE THE FLUSHNESS OF THE TWO HEADS 0.00/−0.01 WITH THE SLIDING PIN SURFACE.

Entry/Service Door Side Rollers
Figure 401 (Sheet 2)

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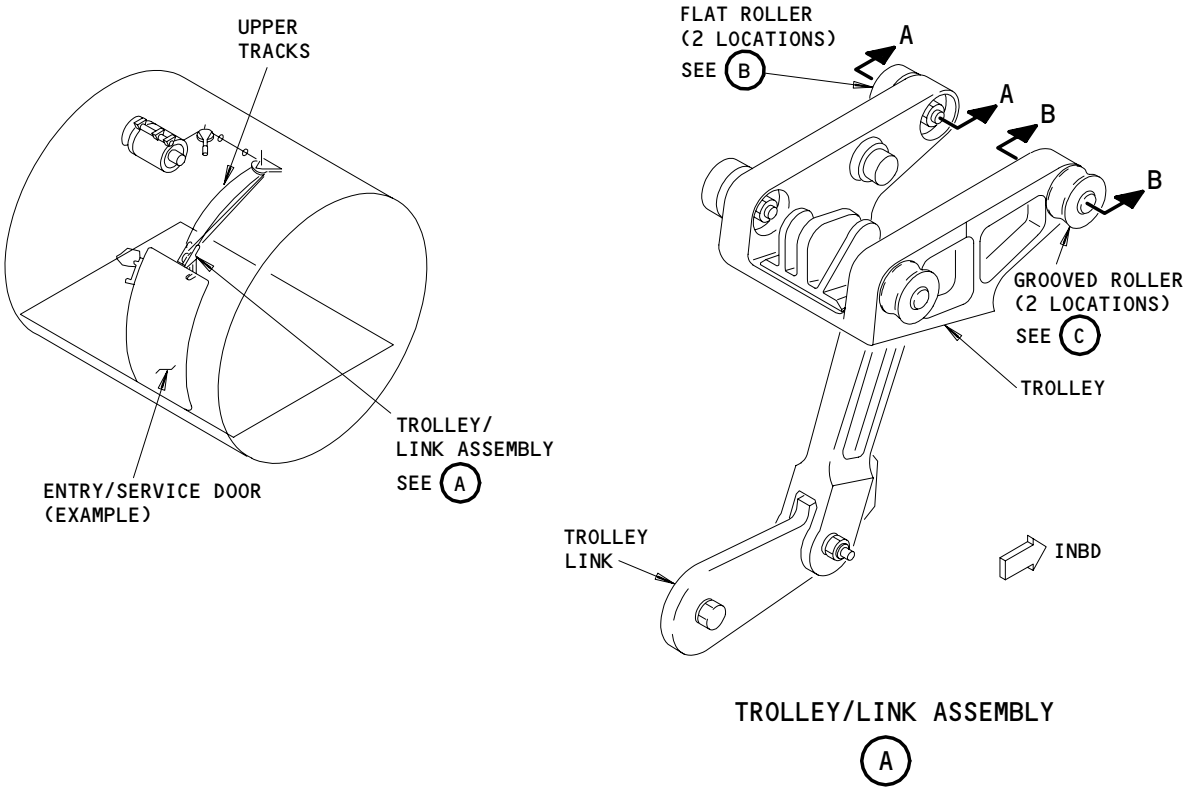
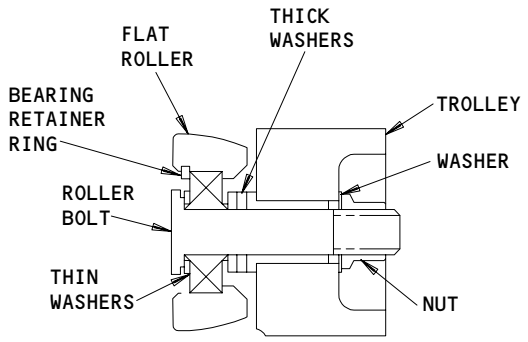
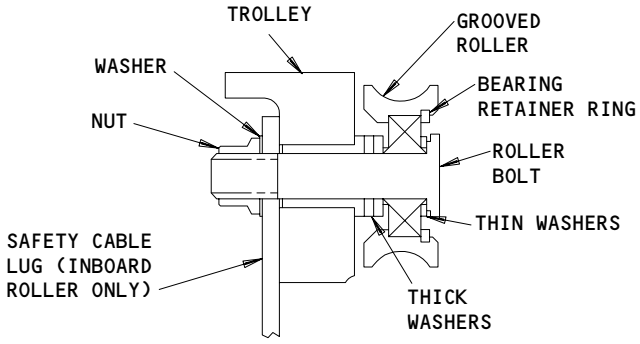


TROLLEY/LINK ASSEMBLY
A



A–A



B–B

Entry/Service Door Trolley Rollers
Figure 402

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ENTRY/SERVICE DOOR UPPER TRACKS - REMOVAL/INSTALLATION

1. General
   A. This procedure gives the instructions to remove and install the upper tracks for the entry/service doors.

   TASK 52-11-06-004-001

2. Remove the Upper Tracks (Fig. 401)
   A. Equipment
      (1) Rig Pin D3 - P/N A20004-27, part of Set A20004-XX
   B. References
      (1) 52-11-08/401, Entry/Service Door Trolley
      (2) 52-11-47/401, Entry Door Control Proximity Sensors
   C. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   D. Procedure

      S 034-002
      (1) Remove the trolley for the entry/service door (Ref 52-11-08). Do not disconnect the counterbalance cables from the trolley.

      S 494-003

      WARNING: DO NOT MOVE THE INTERIOR OR THE EXTERIOR HANDLE OUT OF THE LATCHED POSITION. THE DOOR WILL FALL INBOARD WHICH CAN CAUSE INJURY OR DAMAGE.

      (2) Attach DO-NOT-OPERATE tags to the interior and exterior handles.

      S 034-004
      (3) For an entry door with electrical operation, do these steps:
          (a) Remove the down motor stop sensor for the entry door (Ref 52-11-47).
          (b) Remove the up motor stop sensor for the entry door (Ref 52-11-47).

      S 034-005
      (4) Remove the bolt (1) to disconnect the pushrod from the shaft crank (View A).

      S 034-006
      (5) Remove the bolt (4) to disconnect the stub shaft from the latch cam (View A).

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S 034-007
(6) Remove the stub shaft and shaft crank.

S 934-008
(7) Make marks between the latch cam torque tube and the middle torque tube (View B).

NOTE: You will use the marks to align the latch cam torque tube when it is installed into the latch cam.

S 494-009
(8) Install the rig pin D3 through the holes in the outboard end of the upper tracks (View D).

S 224-010
(9) Hold the interior handle in the fully latched position with no free play. Use 1/32-inch shims to measure the distance between the rig pin and the middle leg of the latch cam (View B).

S 034-011
(10) Remove the bolt (7) that attaches the latch cam torque tube to the middle torque tube (View A).

S 034-012
(11) Move the latch cam torque tube away from the latch cam.

S 024-013
(12) Remove the bolts (13) at the outboard end of the upper tracks (View D).

S 024-014
(13) Remove the bolt (10) from the pin at the inboard end of the upper tracks (View C).

S 024-015
(14) Remove the pin at the inboard end of the upper tracks (View C).

S 024-016
(15) Remove the upper tracks.

TASK 52-11-06-404-017

3. Install the Upper Tracks (Fig. 401)
   A. Equipment
      (1) Rig Pin D3 - P/N A20004-27, part of Set A20004-XX

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B. Consumable Materials
   (1) D00015 Grease - Anticorrosive, BMS 3-24, Aeroshell 16
C. References
   (1) 52-11-00/501, Entry/Service Door
   (2) 52-11-08/401, Entry/Service Door Trolley
   (3) 52-11-47/401, Entry Door Control Proximity Sensors
D. Access
   (1) Location Zones
       831 Forward Entry Door
       833 Aft Entry Door
       841 Forward Service Door
       843 Aft Service Door

E. Procedure

S 424-018
(1) Hold the upper tracks in position and install the pin at the inboard end of the upper tracks (View C).

S 424-019
(2) Install the bolt (10), washer (11), and nut (12) to lock the pin at the inboard end of the upper tracks (View C).

S 424-020
(3) Install the bolts (13), washers (14), and nuts (15) at the outboard end of the upper tracks (View D).

S 644-021
(4) Apply grease to the splines of the latch cam torque tube (View A).

S 494-022
(5) Insert the shims, from the removal procedure, between the rig pin and the middle leg of the latch cam (View B). Hold the latch cam tightly against the shims.

S 434-023
(6) Hold the interior handle in the fully latched position with no free play. Use the marks made in the removal procedure to move the latch cam torque tube into the correct position (View B).

S 094-024
(7) Remove the shims.

S 824-025
(8) Align the hole for the bolt (7) in the latch cam torque tube with the groove in the splines of the middle torque tube (View A).

S 644-026
(9) Apply grease to the threads of the bolt (7).

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S 434-027
(10) Install the bolt (7), washer (8), and nut (9) to attach the latch cam torque tube to the middle torque tube (View A). Do not tighten the bolt (7).

S 824-028
(11) Make sure you cannot move the latch cam torque tube forward or aft. If you can move the latch cam torque tube, then the bolt (7) is incorrectly installed.

S 434-029
(12) Tighten the bolt (7) to 50-60 pound-inches.

S 094-030
(13) Remove the rig pin D3.

S 644-031
(14) Apply grease to the splines on the stub shaft.

S 434-032
(15) Install the stub shaft and shaft crank into the latch cam.

S 434-033
(16) Install the bolt (4), washer (5), and nut (6) to connect the stub shaft to the latch cam (View A).

S 434-034
(17) Install the bolt (1), washer (2), and nut (3) to connect the pushrod to the shaft crank (View A).

S 434-035
(18) For an entry door with electrical operation, do these steps:
(a) Install the down motor stop sensor for the entry door (Ref 52-11-47).
(b) Install the up motor stop sensor for the entry door (Ref 52-11-47).

S 434-036
(19) Install the trolley for the entry/service door (Ref 52-11-08).

S 714-037
(20) Do a test for the correct operation of the entry/service door (Ref 52-11-00).

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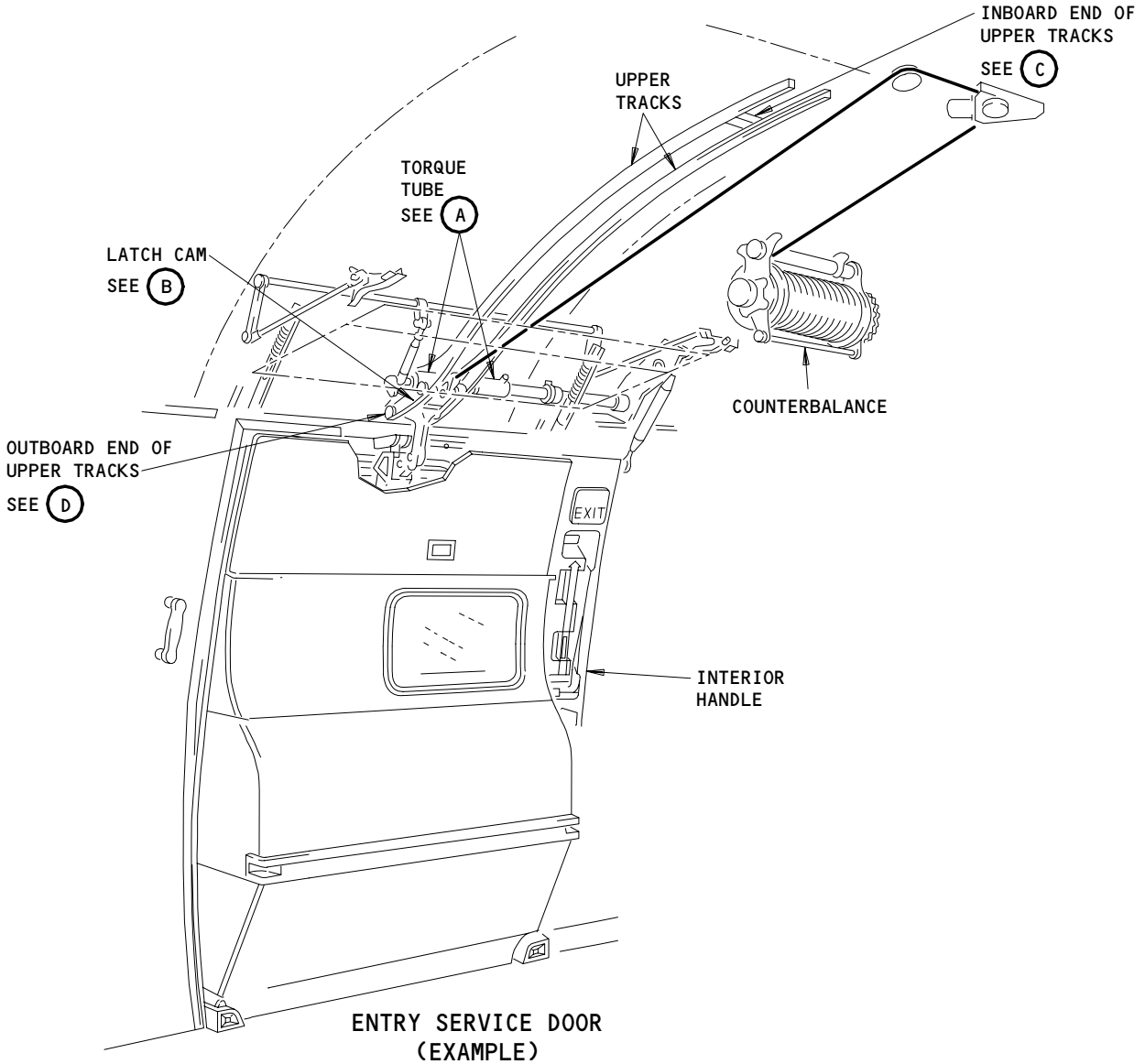
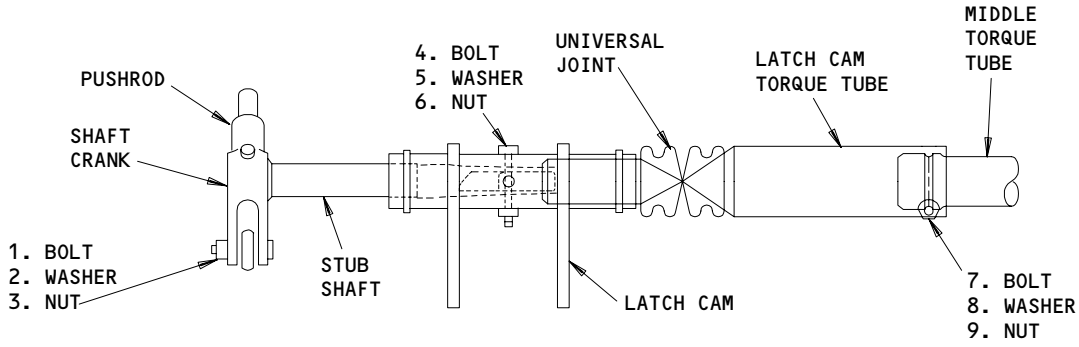


ENTRY SERVICE DOOR
(EXAMPLE)



TORQUE TUBE
A

Entry/Service Door Upper Tracks
Figure 401 (Sheet 1)

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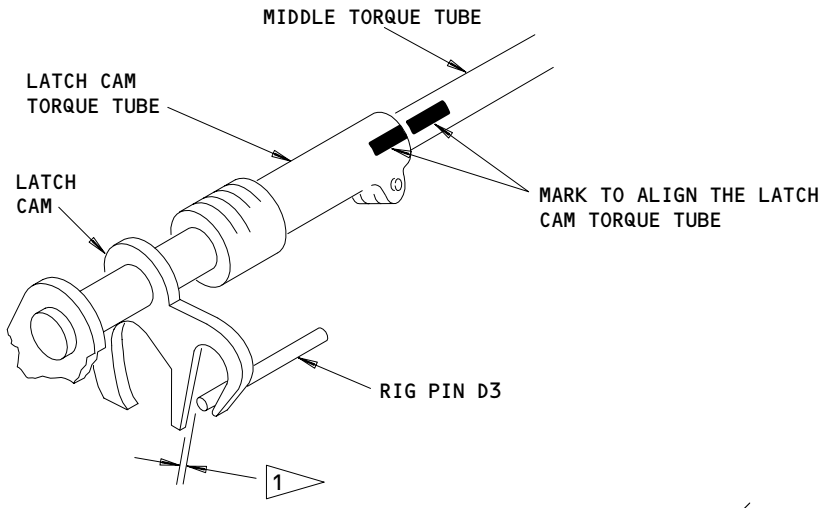
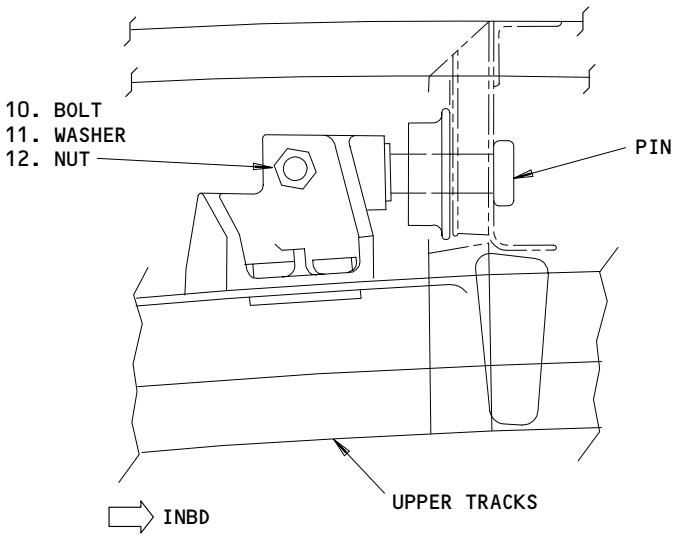


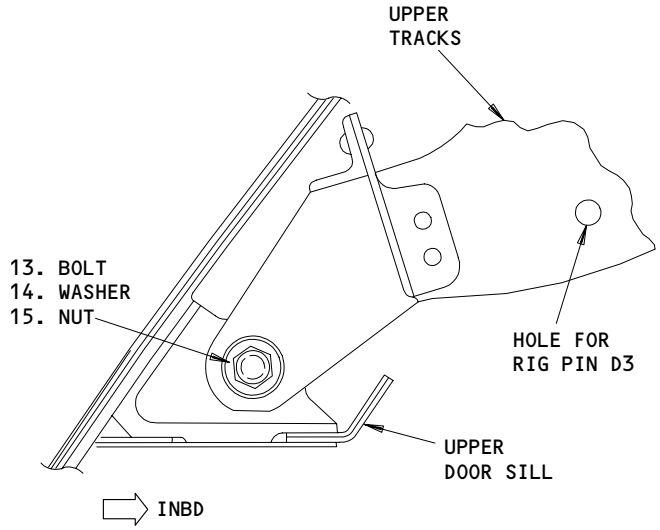
LATCH CAM

(B)



INBOARD END OF UPPER TRACKS

(C)



OUTBOARD END OF UPPER TRACKS

(D)

1 USE 1/32-INCH SHIMS TO MEASURE THIS DISTANCE

Entry/Service Door Upper Tracks
Figure 401 (Sheet 2)

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ENTRY/SERVICE DOOR TROLLEY - REMOVAL/INSTALLATION

1. General
   A. This procedure gives the instructions to remove and install the trolley for the entry/service doors.

TASK 52-11-08-004-001

2. Remove the Door Trolley (Fig. 401)
   A. Equipment
      (1) Counterbalance Lock - A52003-1
   B. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   C. Procedure

      S 494-002
      (1) Attach a DO-NOT-OPERATE tag to the exterior handle on the entry/service door.

      S 864-003
      (2) For an entry door with electrical operation, do these steps:
          (a) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:
              1) 11T6, DOORS FWD ENTRY CONT
          (b) Open this circuit breaker on the APU/EXT power panel, P34, and attach a DO-NOT-CLOSE tag:
              1) 34J5, FWD ENTRY DOOR CONT
          (c) Open this circuit breaker on the forward miscellaneous equipment panel, P33, and attach a DO-NOT-CLOSE tag:
              1) 33F6, FWD ENTRY DOOR

      S 014-004
      (3) Open the movable ceiling panels as follows:
          (a) Close the entry/service door. Do not latch the door.

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(b) Open the access door in the upper door liner to get access to the hinge pin release buttons.
(c) Pull the buttons together to release the hinge pins.
(d) Do these steps:
1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:
a) 11U32, DOOR WINDOW HEATER
2) Let the liner move down as far as the lanyard will permit.
3) Disconnect the electrical connector adjacent to the lanyard.
4) Pull the liner up sufficiently to make the lanyard loose.
5) Release the ball-lock pin on the lanyard to disconnect the lanyard from the bracket on the liner.
(e) Let the upper door liner move into the door bustle.

NOTE: Do not let the liner fall freely.

(f) Fold the movable ceiling panels up and inboard into the area above the lowered ceiling.

S 864-005
(4) Latch the entry/service door.

S 014-006
(5) Remove the ceiling panels as necessary to get access to the door counterbalance.

S 434-007
(6) Engage the counterbalance pawl.

S 494-008
(7) Attach a DO-NOT-OPERATE tag to the pawl.

S 824-044

WARNING: MAKE SURE THE COUNTERBALANCE LOCK IS INSTALLED BEFORE YOU REMOVE THE LOAD ON THE COUNTERBALANCE. THE COUNTERBALANCE CONTAINS TIGHTLY-WOUND SPRINGS. THE COUNTERBALANCE CAN CAUSE INJURY OR DAMAGE IF THE SPRINGS RELEASE QUICKLY.

CAUTION: DO NOT TURN THE HANDWHEEL CLOCKWISE TO INSTALL THE COUNTERBALANCE LOCK. DO NOT TURN THE HANDWHEEL COUNTERCLOCKWISE MORE THAN NECESSARY TO ALIGN THE HOLE IN THE CABLE DRUM WITH THE HOLE IN THE SUPPORT ARM. DO NOT USE MORE THAN 35 POUNDS OF FORCE TO TURN THE HANDWHEEL. INCORRECT MOVEMENT OR TOO MUCH FORCE USED TO TURN THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE.

(8) Turn the handwheel on the counterbalance counterclockwise until the hole in the drum aligns with the hole in the support arm.

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S 494-009
(9) Install the counterbalance lock into the hole in the drum and the hole in the support arm.

S 024-010
(10) Remove the cotter pin (17), washers (15, 16), and straight pin (14) to disconnect the safety cable (18) from the trolley (1).

S 824-011
(11) Slowly turn the interior handle to the unlatched position until the door is unlocked (approximately a 90 degree turn).

NOTE: This step removes the load from the trolley link so you can easily disconnect the trolley link from the door.

S 824-012

WARNING: MAKE SURE YOU PUSH OUTBOARD ON THE DOOR WHEN YOU DISCONNECT THE TROLLEY LINK. WHEN THE TROLLEY LINK IS DISCONNECTED, THE DOOR CAN FALL INBOARD AND CAUSE INJURY OR DAMAGE.

(12) Have one person hold the door so it does not fall inboard.

S 024-013
(13) Remove the bolt (2), bushing (4), and washers (3, 5) and nut (6) to disconnect the trolley link from the door.

S 864-014
(14) Fully unlatch the door.

S 024-015
(15) Move the trolley (1) up and out of the upper tracks to remove it.

NOTE: Be careful not to twist or kink the counterbalance cables. For an entry door with electrical operation, be careful not cause damage to the door open proximity sensor.

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S 864-016
(16) Latch the door.

NOTE: The latching pin will hold the door so it does not fall inboard.

S 494-017
(17) Attach a DO-NOT-OPERATE tag to the interior handle.

S 024-018
(18) Remove the bolt (10), washer (11), bushing (12), and nut (13), to disconnect the primary cable from the trolley (1).

S 024-019
(19) Remove the bolt (7), bushing (8), and nut (9), to disconnect the secondary cable from the trolley (1).

TASK 52-11-08-404-020

3. Install the Door Trolley (Fig. 401)
   A. Equipment
      (1) Counterbalance Lock - A52003-1
   B. Parts
      (1) FORWARD ENTRY/SERVICE DOOR;
      Refer to the table that follows:

AMM			AIPC		
FIG	ITEM	NOMENCLATURE	SUBJECT	FIG	ITEM
401	1	Trolley (Entry)	52-11-05	05	120
		Trolley (Service)			125
	17	Cotter Pin			48

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(2) AFT ENTRY/SERVICE DOORS;
Refer to the table that follows:

AMM			AIPC		
FIG	ITEM	NOMENCLATURE	SUBJECT	FIG	ITEM
401	1	Trolley (Entry)	52-11-05	01	60
		Trolley (Service)			62
	17	Cotter Pin			48

C. References
(1) 12-21-18/301, Entry/Service Door
(2) 52-11-03/401, Entry/Service Door Rollers

D. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

E. Procedure

S 214-021
(1) Make sure the track rollers are correctly installed (Ref 52-11-03).

S 424-022
(2) Connect the primary cable to the trolley (1) with the bolt (10), washer (11), bushing (12), and nut (13).

NOTE: Make sure the primary cable is installed in the right side groove of the trolley (when you look outboard).

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S 424-023
(3) Connect the secondary cable to the trolley (1) with the bolt (7), bushing (8), and nut (9).

S 644-024
(4) Lubricate the upper tracks (Ref 12-21-18).

S 824-025

WARNING: MAKE SURE YOU PUSH OUTBOARD ON THE DOOR WHEN YOU DISCONNECT THE TROLLEY LINK. WHEN THE TROLLEY LINK IS DISCONNECTED, THE DOOR CAN FALL INBOARD AND CAUSE INJURY OR DAMAGE.

(5) Have one person hold the door so it does not fall inboard.

S 094-026
(6) Remove the DO-NOT-OPERATE tag from the interior handle.

S 864-027
(7) Unlatch the door.

S 424-028
(8) Hold the track rollers at the top of the upper tracks, and move the trolley (1) down to the bottom of the tracks.

NOTE: Be careful not to twist or kink the counterbalance cables. For an entry door with electrical operation, be careful not to cause damage to the door open proximity sensor.

S 714-031
(9) Make sure the trolley (1) operates smoothly in the tracks. If the operation is not smooth, then adjust the track rollers (Ref 52-11-03).

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S 824-032

(10) Turn the interior handle to the latched position until the latch cam engages the latch rollers to close the door (approximately 90 degree turn).

NOTE: This step lets you easily connect the trolley link to the door.

S 424-033

(11) Connect the trolley (1) to the door with the bolt (2), washers (3, 5), bushing (4), and nut (6). Tighten the nut (6) to 165-225 pound-inches.

NOTE: When the trolley (1) is connected to the door, the door will not fall inboard.

S 864-034

(12) Latch the door.

S 424-035

(13) Install the straight pin (14), washers (15, 16), and cotter pin (17) to connect the safety cable (18) to the trolley (1).

S 824-046

CAUTION: DO NOT USE MORE THAN 35 POUNDS OF FORCE TO TURN THE HANDWHEEL. TOO MUCH FORCE USED TO TURN THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE.

(14) Turn the handwheel counterclockwise as necessary to remove the side load from the counterbalance lock.

S 094-037

(15) Remove the counterbalance lock.

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S 094-038
(16) Remove the DO-NOT-OPERATE tag from the pawl.

S 034-039
(17) Disengage the pawl.

S 714-040
(18) Open and close the door several times. Make sure the door opens and closes smoothly.

S 414-041
(19) Install the ceiling panels that were removed to get access to the counterbalance.

S 414-042
(20) Close the movable ceiling panels as follows:
(a) Close the entry/service door. Do not latch the door.
(b) Open the movable ceiling panels down and outboard to the closed position.
(c) Pull the door liner up and out of the door to meet the movable ceiling panel.
(d) Do these steps:
1) Let the liner move down sufficiently to attach the ball-lock pin to the bracket on the liner, and attach the ball-lock pin to the bracket.
2) Let the liner move down as far as the lanyard will permit.
3) Connect the electrical connector on the electrical wiring between the liner and the movable ceiling panel.
4) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
a) 11U32, DOOR WINDOW HEATER
5) Pull the liner up to meet the movable ceiling panel.
(e) If necessary, open the access door in the upper door liner to get access to the hinge pin release buttons.
(f) Pull the buttons together and engage the hinge pins. Release the buttons.
(g) Close the access door.

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S 864-043

(21) For an entry door with electrical operation, do these steps:

(a) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:

(b) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P34 panel:

1) 34J5, FWD ENTRY DOOR CONT

(c) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P33 panel:

1) 33F6, FWD ENTRY DOOR

S 864-045

(22) Remove the DO-NOT-OPERATE tag from the exterior handle.

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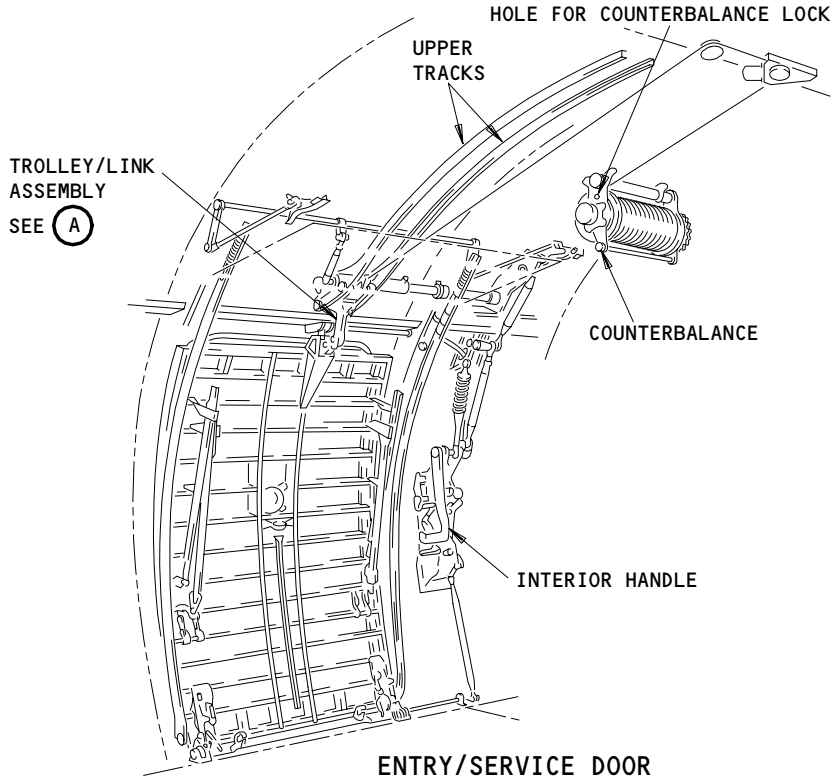
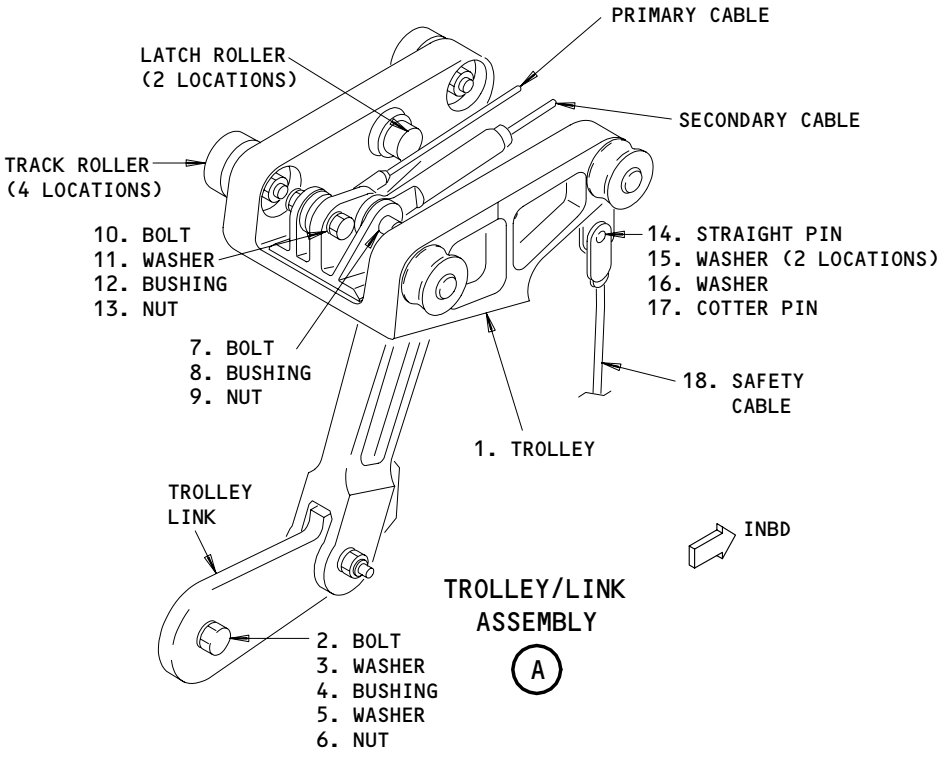


ENTRY/SERVICE DOOR
(DOOR AND DOORWAY LININGS NOT SHOWN)



Entry/Service Door Trolley
Figure 401

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ENTRY/SERVICE DOOR UPSTOP SNUBBER - REMOVAL/INSTALLATION

1. General
   A. This procedure gives the instructions to remove and install the upstop snubbers for the entry/service doors. There is one upstop snubber at the upper end of each lower track.

TASK 52-11-10-004-001

2. Remove the Upstop Snubber (Fig. 401)
   A. References
      (1) 52-11-13/201, Entry/Service Door Ground Lock
   B. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   C. Procedure

      S 864-002
      (1) Close the entry/service door.

      S 494-003
      (2) Install the ground lock for the entry/service door (Ref 52-11-13).

      S 034-004
      (3) Remove the hose clamp.

      S 034-005
      (4) Loosen the clamp bolt and nut for the attach block.

      S 034-006
      (5) Remove the bolts that hold the attach block to the track.

      S 024-007
      (6) Pull the upstop snubber out of the stabilizer.

      S 024-008
      (7) Remove the upstop snubber from the attach block.

TASK 52-11-10-404-009

3. Install the Upstop Snubber (Fig. 401)
   A. References
      (1) 52-11-13/201, Entry/Service Door Ground Lock
   B. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

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C. Procedure

S 824-010
(1) Move the bumper down as far as possible.

S 824-011
(2) Move the stabilizer down as far as possible.

S 434-012
(3) Turn the threaded end of the upstop snubber into the attach block as far as possible.

S 424-013
(4) Push the upstop snubber through the stabilizer block and move the attach block into position on the track.

S 434-014
(5) Install the bolts, washers, and nuts on the attach block.

S 824-015
(6) Turn the upstop snubber out of the attach block until the plunger touches the bumper.

S 434-016
(7) Tighten the clamp bolt and nut for the attach block.

S 824-017
(8) Move the stabilizer into the correct position (View A-A).

S 434-018
(9) Install the hose clamp around the stabilizer and the track.

S 434-019
(10) Tighten the hose clamp.

S 434-021
(11) Install a lockwire for the hose clamp.

S 094-020
(12) Remove the ground lock for the entry/service door (Ref 52-11-13).

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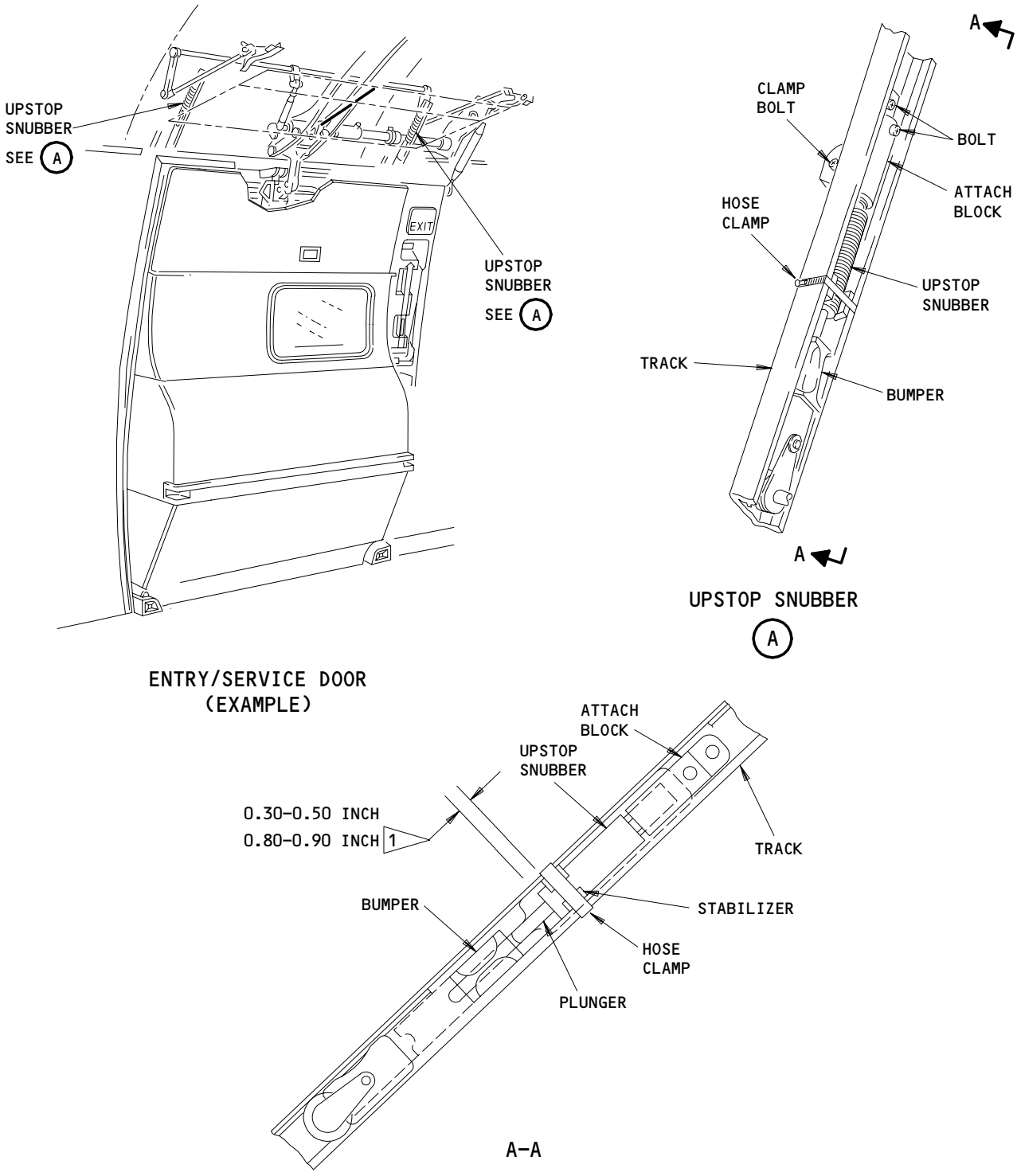

1 AFT TRACK OF THE FORWARD SERVICE DOOR

Entry/Service Door Upstop Snubber
Figure 401

73136
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ENTRY/SERVICE DOOR UPLATCH - REMOVAL/INSTALLATION

1. General
   A. This procedure gives the instructions to remove and install the uplatch for the entry/service doors.

   TASK 52-11-12-004-001

2. Remove the Uplatch (Fig. 401)
   A. References
      (1) 52-11-02/401, Doorway Lining
      (2) 52-11-13/201, Entry/Service Door Ground Lock
      (3) 52-11-47/401, Entry Door Control Proximity Sensors
   B. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   C. Procedure

      S 014-005
      (1) Remove the doorway lining (Ref 52-11-02).

      S 864-004
      (2) Close and latch the door.

      S 494-003
      (3) Install the ground lock for the entry/service door (Ref 52-11-13).

      S 034-002
      (4) For an entry door with electrical operation, do these steps:
          (a) Remove the uplatch sensor (Ref 52-11-47).
          (b) Remove the bolt that connects the solenoid to the uplatch plunger.
          (c) Remove the bolts that attach the solenoid to the solenoid mounting bracket.

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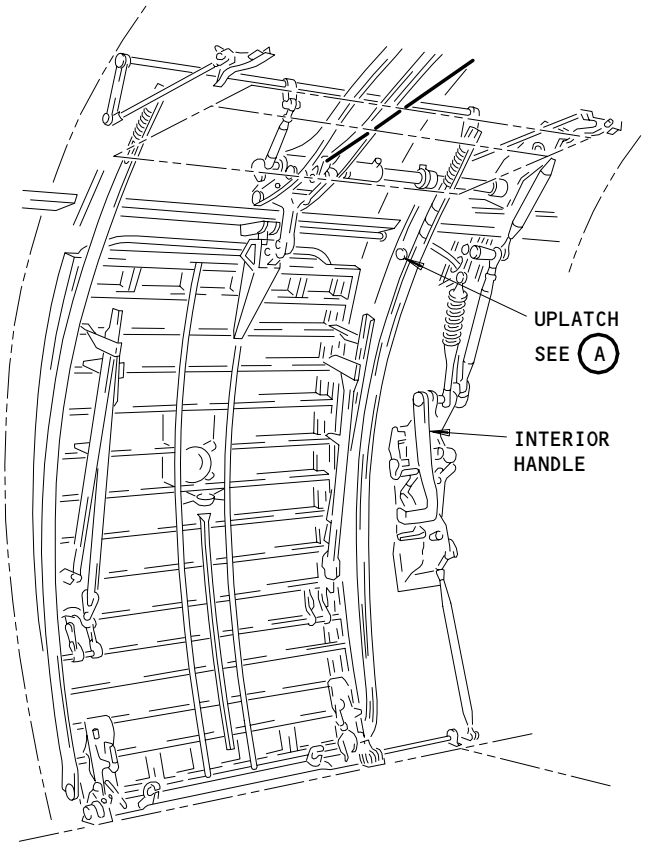
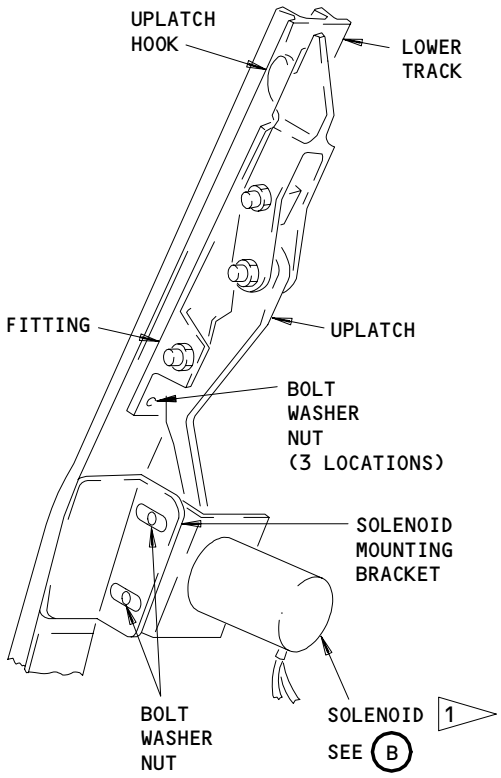
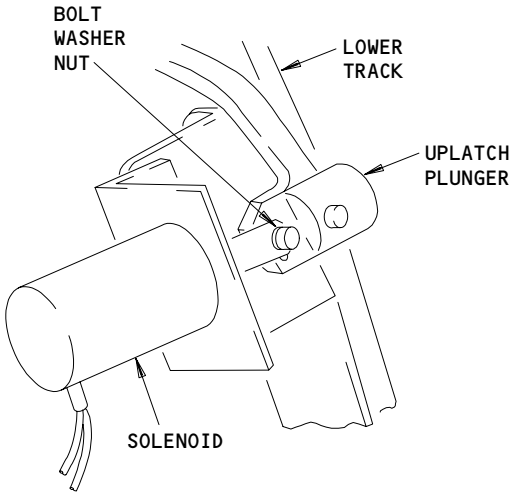


ENTRY/SERVICE DOOR
(DOOR AND DOORWAY LININGS NOT SHOWN)



UPLATCH
A



SOLENOID 1
B

1 ENTRY DOOR WITH ELECTRICAL OPERATION

Entry/Service Door Uplatch
Figure 401

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(d) Remove the solenoid.

S 024-008

(5) Remove the bolts that connect the fitting to the lower track.

S 024-012

(6) Remove the uplatch.

TASK 52-11-12-404-007

3. Install the Uplatch (Fig. 401)

A. References

(1) 24-22-00/201, Electrical Power - Control
(2) 52-11-02/401, Doorway Lining
(3) 52-11-13/201, Entry/Service Door Ground Lock
(4) 52-11-47/401, Entry Door Control Proximity Sensors

B. Access

(1) Location Zones

831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

C. Procedure

S 424-006

(1) Hold the uplatch on the lower track, and install the bolts, washers, and nuts.

S 434-009

(2) For an entry door with electrical operation, do these steps:
(a) Install the bolts, washers, and nuts to attach the solenoid to the solenoid mounting bracket. Do not tighten the bolts.
(b) Install the bolt, washer, and nut to connect the solenoid to the uplatch plunger.
(c) Supply electrical power (Ref 24-22-00).
(d) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
1) 11T6, DOORS FWD ENTRY CONT
(e) Push and hold the MAIN DOOR DOWN switch on attendant panel.
(f) Move the solenoid so the uplatch hook is flush with the face of the track within 0.01 inch.
(g) Tighten the bolts that attach the solenoid to the solenoid mounting bracket.
(h) Release the MAIN DOOR DOWN switch.
(i) Open this circuit breaker on the overhead panel P11, and attach a DO-NOT-CLOSE tag:
1) 11T6, DOORS FWD ENTRY CONT
(j) Install the uplatch sensor (Ref 52-11-47).

S 094-011

(3) Remove the ground lock for the entry/service door (Ref 52-11-13).

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S 414-010

(4) Install the doorway lining (Ref 52-11-02).

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ENTRY/SERVICE DOOR GROUND LOCK - MAINTENANCE PRACTICES

1. General
   A. This procedure gives the instructions to install and remove the ground lock for the entry/service doors. The ground lock is used to lock the entry/service door closed during maintenance. This prevents injury to personnel or damage to equipment in the areas above the entry/service door. The ground lock keeps the entry/service door closed only if the door is connected to the trolley.

TASK 52-11-13-402-001

2. Install the Entry/Service Door Ground Lock (Fig. 201)
   A. General

      WARNING: ONLY USE THE GROUND LOCK FOR THE ENTRY/SERVICE DOOR IF THE DOOR IS CONNECTED TO THE TROLLEY. IF THE GROUND LOCK IS INSTALLED, BUT THE DOOR IS DISCONNECTED FROM THE TROLLEY AND THE DOOR HANDLE IS IN THE UNLATCHED POSITION, THE DOOR CAN FALL INBOARD AND CAUSE INJURY OR DAMAGE.

      (1) The ground lock is used to lock the entry/service door closed during maintenance. This prevents injury to personnel or damage to equipment in the areas above the entry/service door. The ground lock keeps the entry/service door closed only if the door is connected to the trolley.

   B. Equipment
      (1) Ground Lock, Entry/Service Door - A52008-14

   C. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   D. Procedure

      S 862-017
      (1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:
          (a) 11U32, DOOR WINDOW HEATER

      S 862-003
      (2) If you will install the ground lock for an entry door with electrical operation, do these steps:
          (a) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:
              1) 11T6, DOORS FWD ENTRY CONT
          (b) Open this circuit breaker on the APU/EXT power panel, P34, and attach a DO-NOT-CLOSE tag:
              1) 34J5, FWD ENTRY DOOR CONT

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(c) Open this circuit breaker on the forward miscellaneous equipment panel, P33, and attach a DO-NOT-CLOSE tag:
1) 33F6, FWD ENTRY DOOR

S 862-005
(3) Attach a DO-NOT-OPERATE tag to the exterior handle for the entry/service door.

S 012-006
(4) Open the movable ceiling panels as follows:
(a) Close the entry/service door. Do not latch the door.
(b) Open the access door in the upper door liner to get access to the hinge pin release buttons.
(c) Pull the buttons together to release the hinge pins.
(d) Do these steps:
1) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:
a) 11U32, DOOR WINDOW HEATER
2) Let the liner move down as far as the lanyard will permit.
3) Disconnect the electrical connector adjacent to the lanyard.
4) Pull the liner up sufficiently to make the lanyard loose.
5) Release the ball-lock pin on the lanyard to disconnect the lanyard from the bracket on the liner.
(e) Let the upper door liner move down into the door bustle. Do not let the liner fall freely.
(f) Fold the movable ceiling panels up and inboard into the area above the lowered ceiling.

S 862-007
(5) Latch the entry/service door.

S 862-008
(6) Attach a DO-NOT-OPERATE tag to the interior handle for the entry/service door.

S 422-009
(7) Install the ground lock in the upper roller guide.

TASK 52-11-13-002-010
3. Remove the Entry/Service Door Ground Lock (Fig. 201)
A. General

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WARNING: ONLY USE THE GROUND LOCK FOR THE ENTRY/SERVICE DOOR IF THE DOOR IS CONNECTED TO THE TROLLEY. IF THE GROUND LOCK IS INSTALLED, BUT THE DOOR IS DISCONNECTED FROM THE TROLLEY AND THE DOOR HANDLE IS IN THE UNLATCHED POSITION, THE DOOR CAN FALL INBOARD AND CAUSE INJURY OR DAMAGE.

(1) The ground lock is used to lock the entry/service door closed during maintenance. This prevents injury to personnel or damage to equipment in the areas above the entry/service door. The ground lock keeps the entry/service door closed only if the door is connected to the trolley.

B. Access

(1) Location Zones

831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

C. Procedure

S 022-011

(1) Remove the ground lock from the upper roller guide.

S 862-012

(2) Remove the DO-NOT-OPERATE tag from the interior handle for the entry/service door.

S 412-013

(3) Close the movable ceiling panels as follows:
   (a) Unlatch the entry/service door. Do not open the door.
   (b) Open the movable ceiling panels down and outboard to the closed position.
   (c) Pull the door liner up and out of the door to meet the movable ceiling panel.
   (d) Do these steps:
      1) Let the liner move down sufficiently to attach the lanyard ball-lock pin to the bracket on the liner, and attach the ball-lock pin to the bracket.
      2) Let the liner move down as far as lanyard will permit.
      3) Connect the electrical connector on the electrical wiring between the liner and the movable ceiling panel.
      4) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
         a) 11U32, DOOR WINDOW HEATER
      5) Pull the liner up to meet the movable ceiling panel.
   (e) If necessary, open the access door in the upper door liner to get access to the hinge pin release buttons.
   (f) Pull the buttons together and engage the hinge pins. Release the buttons.
   (g) Close the access door.

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S 862-015

(4) Remove the DO-NOT-OPERATE tag from the exterior handle for the entry/service door.

S 862-016

(5) If you removed the ground lock for an entry door with electrical operation, do these steps:
   (a) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
      1) 11T6, DOORS FWD ENTRY CONT
   (b) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P34 panel:
      1) 34J5, FWD ENTRY DOOR CONT
   (c) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P33 panel:
      1) 33F6, FWD ENTRY DOOR

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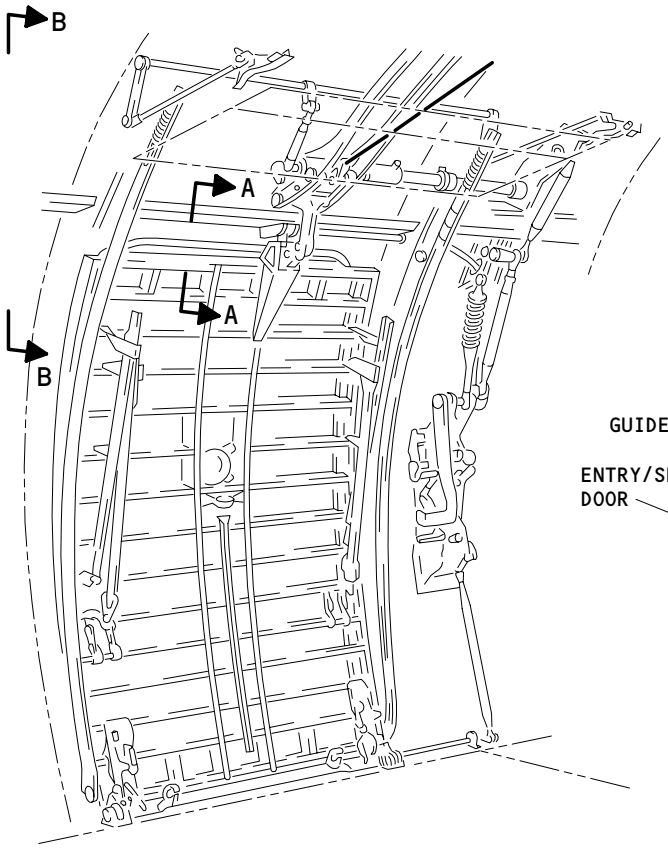
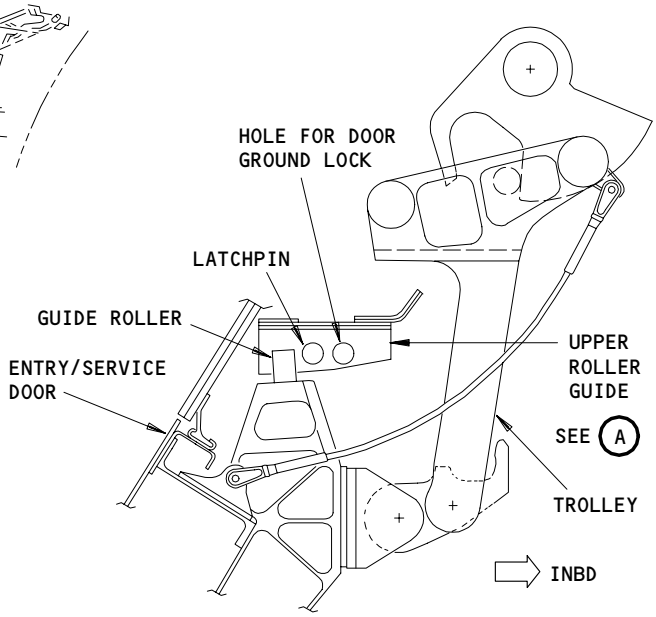
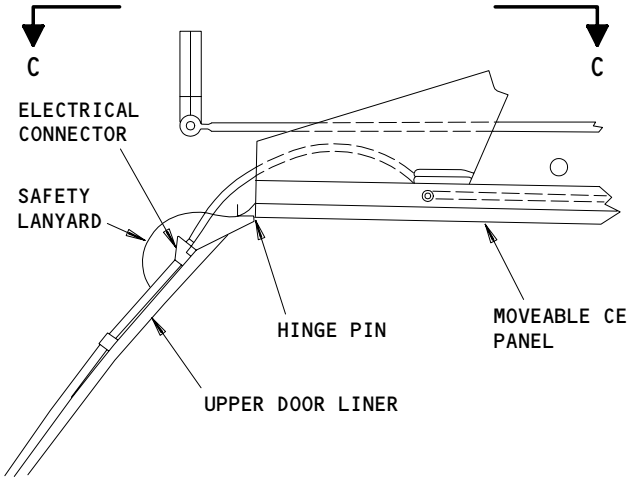


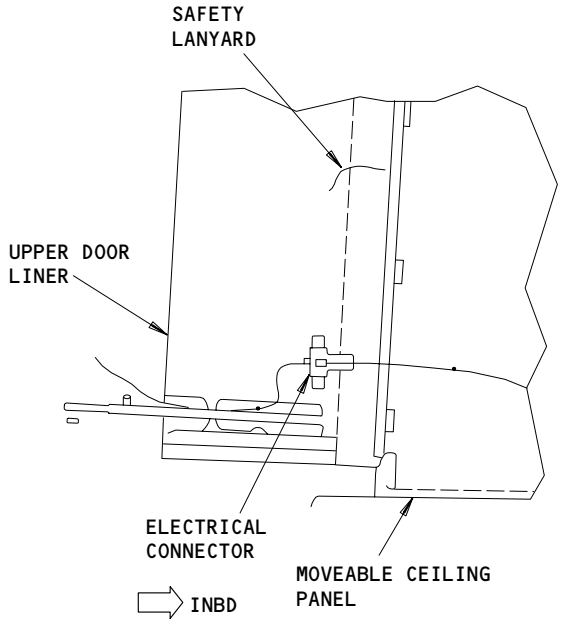
ENTRY/SERVICE DOOR
(DOOR AND DOORWAY LININGS NOT SHOWN)



A–A



B–B



C–C

Entry/Service Door Ground Lock
Figure 201 (Sheet 1)

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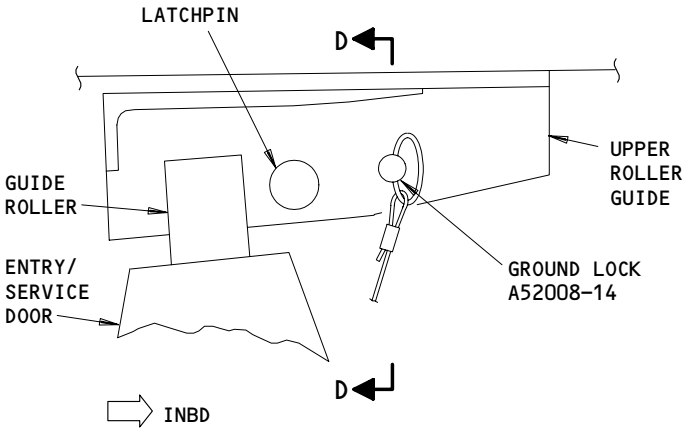
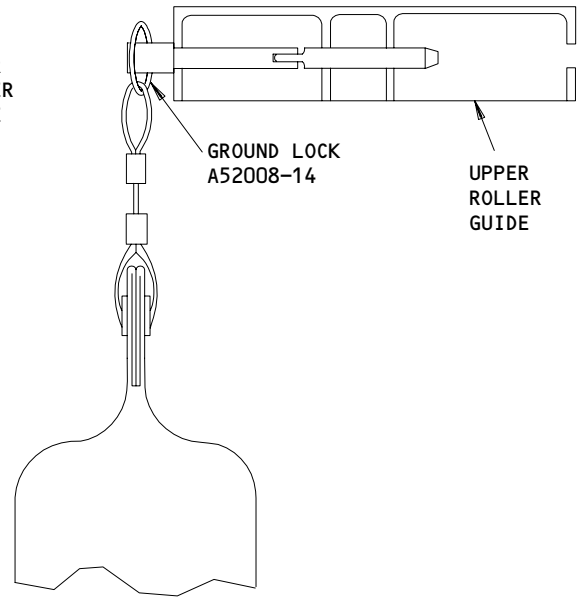
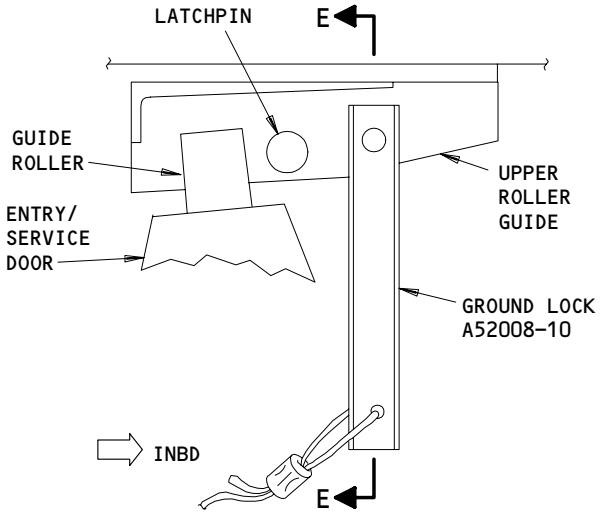


GUIDE FITTING
(GROUND LOCK A52008-14 INSTALLED)

A

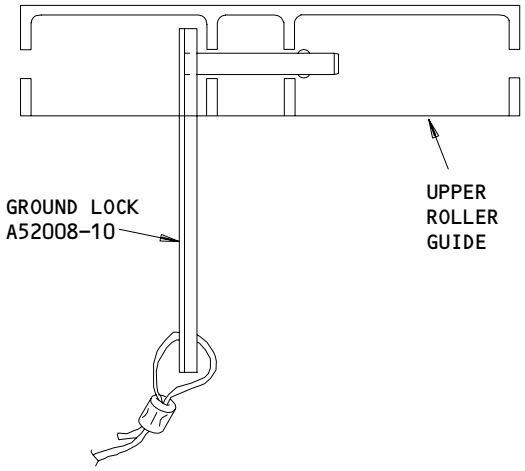


D-D



GUIDE FITTING
(GROUND LOCK A52008-10 INSTALLED)

A



E-E

Entry/Service Door Ground Lock
Figure 201 (Sheet 2)

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ENTRY/SERVICE DOOR LATCH PIN CABLE - REMOVAL/INSTALLATION

1. General
   A. This procedure gives the instructions to remove and install the latch pin cable. The latch pin cable operates the latch pin on each entry/service door.

   TASK 52-11-15-004-001

2. Remove Latch Pin Cable (Fig. 401)
   A. Consumable Materials
      (1) D00128 Petrolatum (Vaseline) - Federal Specification VV-P-236
   B. References
      (1) 52-11-02/401, Doorway Lining
      (2) 52-11-25/201, Entry/Service Door Handle Mechanism
   C. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   D. Procedure

      S 014-002
      (1) Remove the doorway lining (Ref 52-11-02).

      S 014-003
      (2) Remove the insulation blankets necessary to get access to the latch pin cable.

      S 014-004
      (3) For access to the lower end of the cable conduit, remove the upper bolt from the lower pushrod of the overcenter mechanism (View A-A) (Ref 52-11-25).

      S 024-035
      (4) Remove the bolts, washers and nuts that hold the latch pin terminal fitting in the guide fitting (View B-B).

      S 024-006
      (5) Loosen the nuts and bolts at each cable clamp.

      S 024-007
      (6) Remove the bolt and nut that hold the rod-end bearing assembly (View C).

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S 024-008
(7) Remove the lockwire from the jamnuts at the lower end of the cable conduit.

S 024-009
(8) Turn the jamnuts at the lower end of the cable conduit until they are free of the cable threads (View A).

S 644-010
(9) Lubricate the cable conduit with vaseline.

S 024-011

CAUTION: DO NOT LET THE UPPER JAMNUT RUB AGAINST THE CABLE COVER OR GET CAUGHT ON THE COVER. WATER THAT GETS INTO THE CABLE CAN CAUSE CORROSION, OR FREEZE, AND PREVENT THE CORRECT OPERATION OF THE CABLE.

(10) Hold the cable rod at the lower end and pull the cable down approximately six inches through the structural mount at the lower end of the cable conduit (View A).

S 024-012
(11) Turn the latch pin terminal fitting to remove it from the upper end of the cable.

S 024-013
(12) Continue to pull the cable down through the structural mount until it is fully out.

TASK 52-11-15-404-014

3. Install the Latch Pin Cable (Fig. 401)
   A. Consumable Materials
      (1) D00128 Petrolatum (Vaseline) - Federal Specification VV-P-236
   B. References
      (1) 52-11-00/501, Entry/Service Door
      (2) 52-11-02/401, Doorway Lining
      (3) 52-11-25/201, Entry/Service Door Handle Mechanism
      (4) 52-71-01/401, Door Warning System Proximity Sensors
   C. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   D. Procedure

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S 034-015

CAUTION: REMOVE THE DOOR LOCKED SENSOR BEFORE YOU INSTALL THE LATCH PIN CABLE. THIS WILL PREVENT DAMAGE TO THE SENSOR DURING THE INSTALLATION OF THE CABLE.

(1) Remove the door locked sensor (Ref 52-71-01).

S 024-016

(2) If necessary, remove the upper jamnut at the lower end of the cable conduit.

S 024-017

(3) If necessary, remove the latch pin terminal fitting at the upper end of the cable.

S 424-018

(4) Put the upper jamnut from the lower end of the cable conduit over the hole on top of the structural mount (View A).

S 644-019

(5) Lubricate the cable conduit with vaseline.

S 424-020

CAUTION: DO NOT LET THE UPPER JAMNUT RUB AGAINST THE CABLE COVER OR GET CAUGHT ON THE COVER. WATER THAT GETS INTO THE CABLE CAN CAUSE CORROSION, OR FREEZE, AND PREVENT THE CORRECT OPERATION OF THE CABLE.

(6) Push the lubricated cable, latch pin end first, up through the structural mount and the upper jamnut, into the plastic (Tygon) sleeve, through the cable clamp, along the upper undersill of the door, and through the second cable clamp. Stop the cable when the latch pin end is approximately six inches from the guide fitting.

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S 024-022
(7) Turn the latch pin terminal fitting onto the upper cable terminal.

S 024-021
(8) Install the terminal into the guide fitting (View B-B).

S 024-023
(9) Install the bolts, nuts, and washers that hold the latch pin terminal fitting.

S 824-024
(10) Keep the drain holes in the upper end of the cable assembly vertically aligned.

S 824-025
(11) Turn the cable length so it does not get twisted.

S 424-026
(12) Pull the cable so it is tight, and tighten the bolts at each cable clamp.

S 424-027
(13) Install the bolt into the rod-end bearing assembly, and tighten the nut (View C).

S 824-028
(14) Use the jam nuts at the lower end of the cable conduit for very small adjustments to get the correct clearance between the latch pin and the sensor guide fitting (Ref 52-11-00).

S 424-029
(15) Tighten the jamnuts at the lower end of the cable conduit.

S 434-030
(16) Install lockwire on the jamnuts at the lower end of the cable conduit.

S 434-031
(17) Install the door locked sensor (Ref 52-71-01).

S 414-033
(18) Install the upper bolt for the lower pushrod of the overcenter mechanism (View A-A) (Ref 52-11-25).

S 414-034
(19) Install the insulation blankets over the cable as necessary.

S 414-028
(20) Install the doorway lining (Ref 52-11-02).

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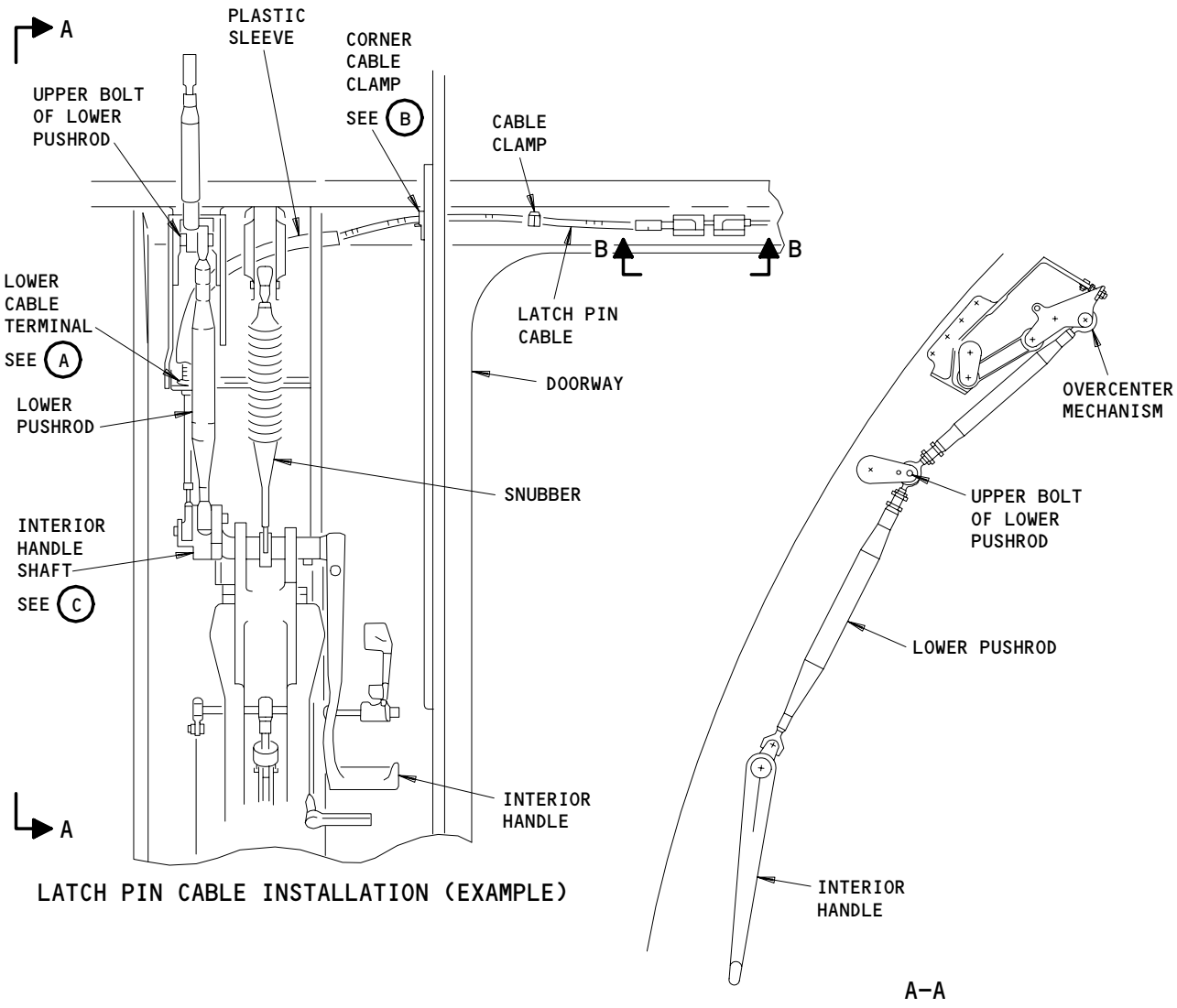
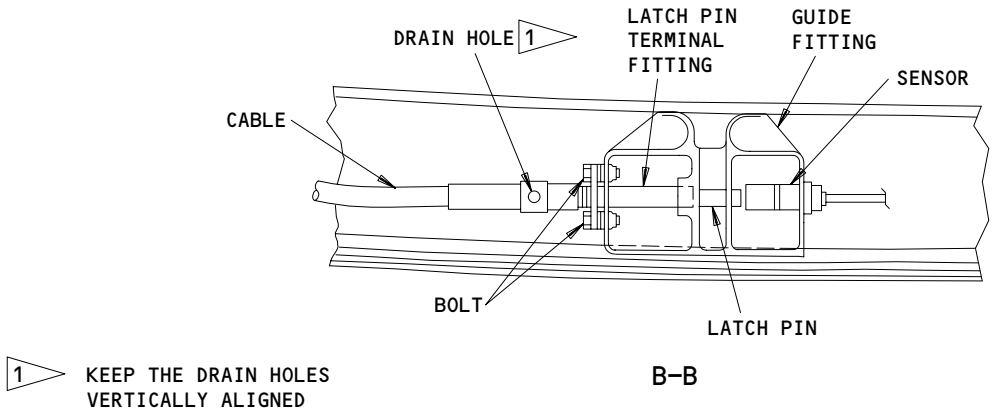


LATCH PIN CABLE INSTALLATION (EXAMPLE)



Entry/Service Door Latch Pin Cable
Figure 401 (Sheet 1)

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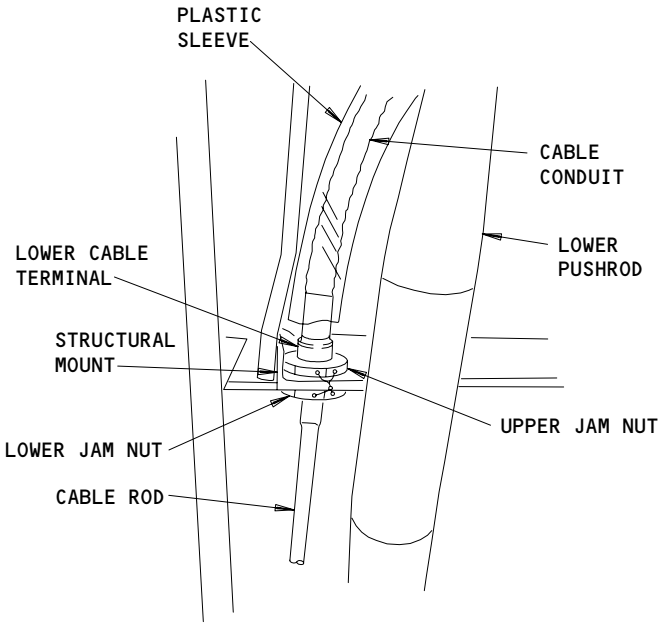
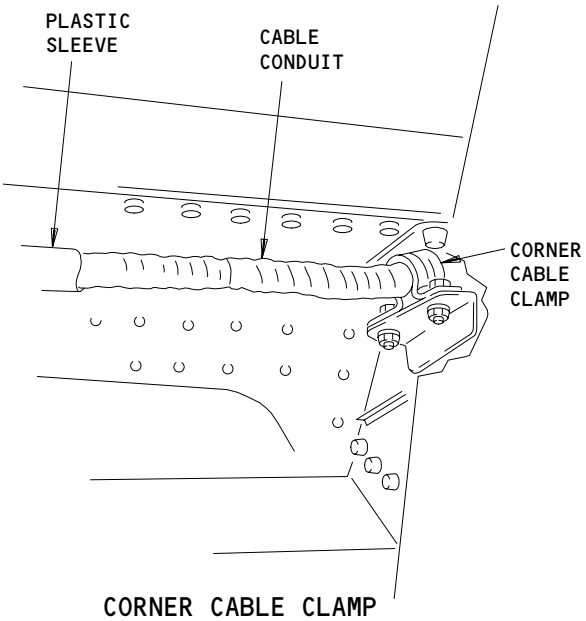


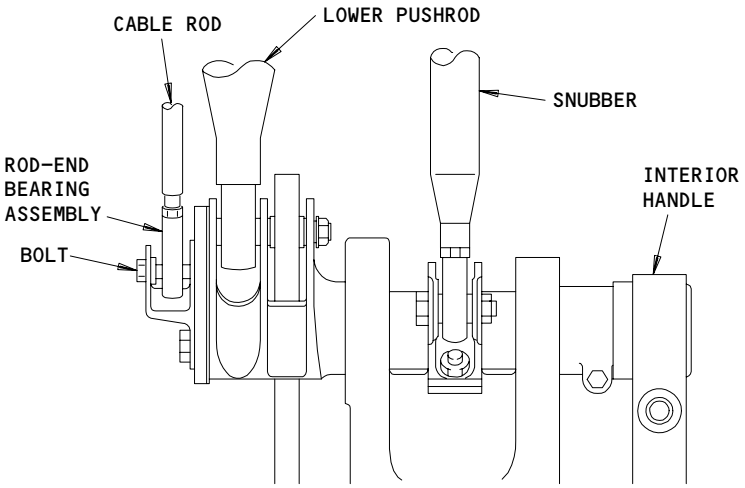
LOWER CABLE TERMINAL

A



CORNER CABLE CLAMP

B



INTERIOR HANDLE SHAFT

C

Entry/Service Door Latch Pin Cable
Figure 401 (Sheet 2)

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ENTRY/SERVICE DOOR COUNTERBALANCE SYSTEM - REMOVAL/INSTALLATION

1. General
   A. This procedure has these tasks for the counterbalance system:
      (1) The removal of the counterbalance assembly
      (2) The installation of the counterbalance assembly
      (3) The removal of the counterbalance cables
      (4) The installation of the counterbalance cables.
   B. The counterbalance system consists of the counterbalance assembly and the cables. The counterbalance assembly for the entry/service door is connected to the door by the cables. The cables go through pulleys to the door.

TASK 52-11-16-004-001

2. Counterbalance Assembly Removal (Fig. 401)
   A. References
      (1) AMM 25-22-02/401 Lowered Ceiling Panels
      (2) AMM 52-11-13/201, Entry/Service Door Ground Lock
   B. Equipment
      (1) Counterbalance Lock - A52003-1
      (2) Door Ground Lock - A52008-14
   C. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   D. Procedure

      S 014-002
      (1) Get access to the counterbalance assembly (1) and the cables (4,5).
          (a) Remove the ceiling panels as necessary (AMM 25-22-02/401).

      S 864-003
      (2) Latch the door.

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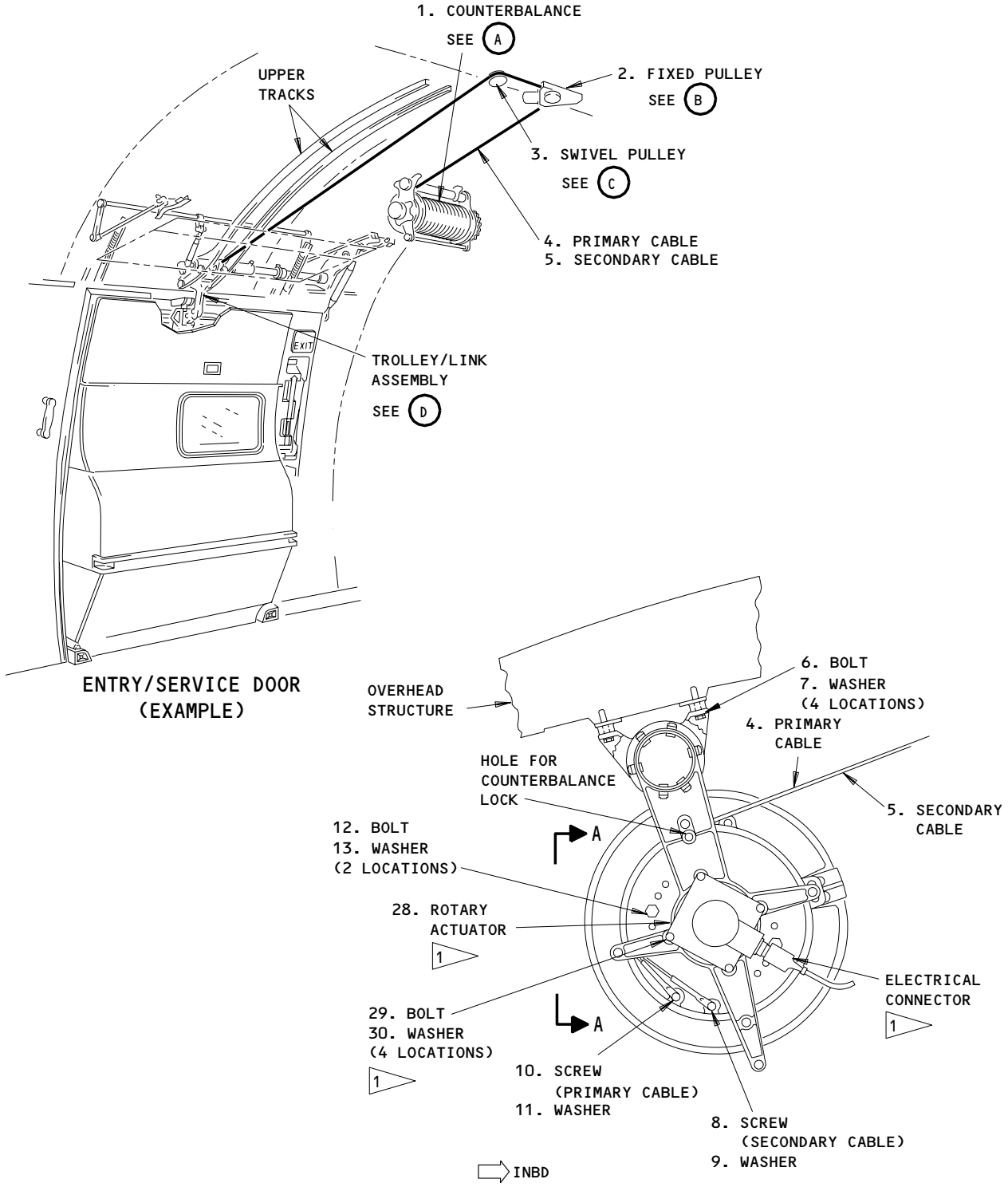

Entry/Service Door Counterbalance System
Figure 401 (Sheet 1)

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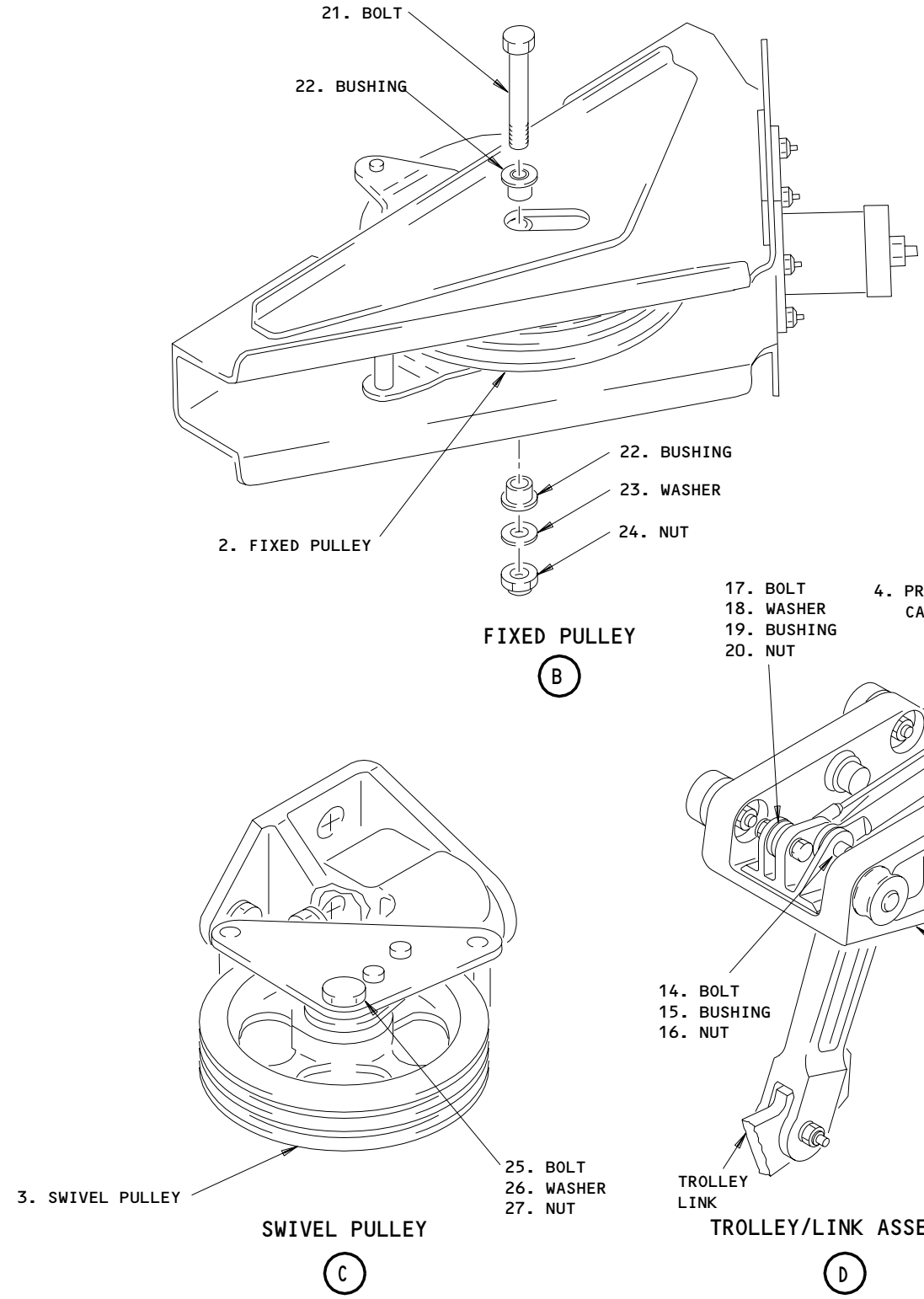

Entry/Service Door Counterbalance System
Figure 401 (Sheet 2)

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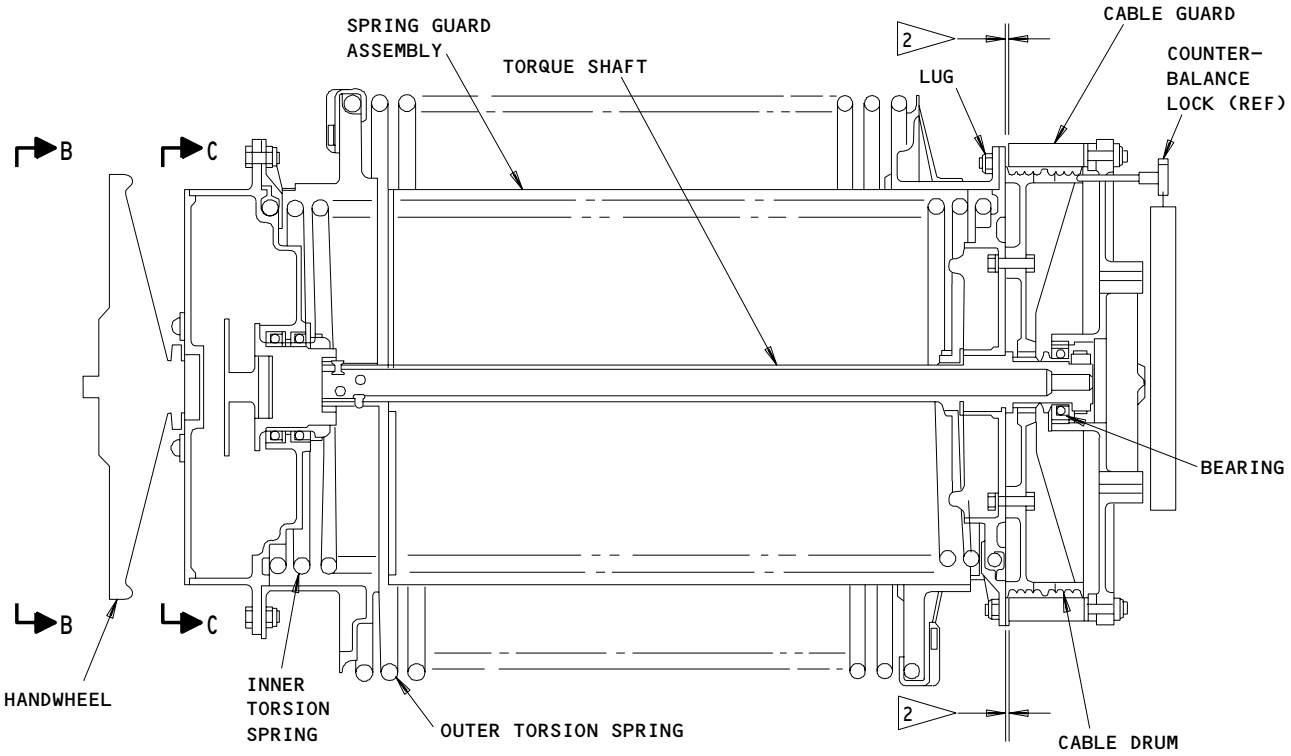
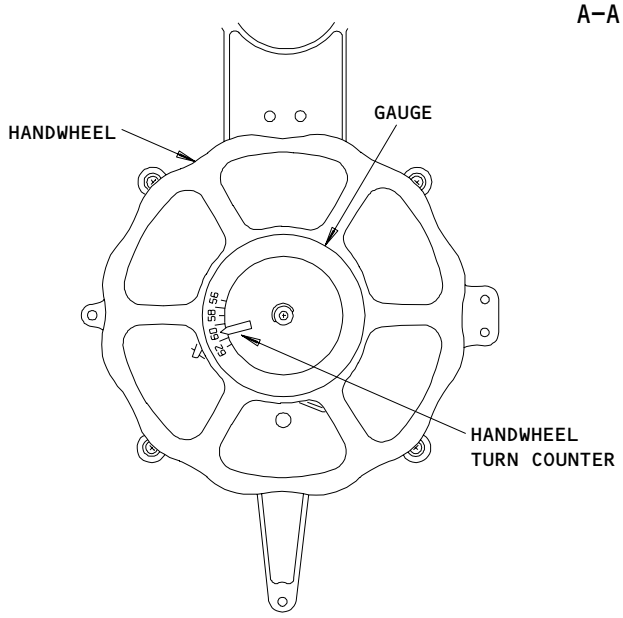
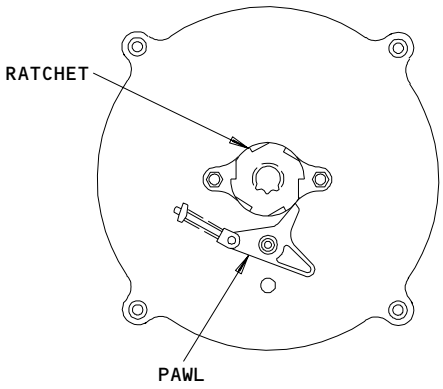


COUNTERBALANCE
A-A



B-B



C-C

2 DO A CHECK FOR CLEARANCE HERE

Entry/Service Door Counterbalance System
Figure 401 (Sheet 3)

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S 014-174

CAUTION: DO NOT TURN THE HANDWHEEL CLOCKWISE TO REMOVE THE CABLE GUARDS. DO NOT TURN THE HANDWHEEL COUNTERCLOCKWISE MORE THAN NECESSARY TO REMOVE THE CABLE GUARDS. DO NOT USE MORE THAN 35 POUNDS OF FORCE TO TURN THE HANDWHEEL. INCORRECT MOVEMENT OR TOO MUCH FORCE USED TO TURN THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE ASSEMBLY.

(3) If necessary, remove the cable guards.

NOTE: To remove the cable guards, the counterbalance cable guard must not be aligned with the counterbalance lug. Turn the handwheel counterclockwise as necessary to remove the cable guard.

S 484-172

WARNING: MAKE SURE YOU INSTALL THE GROUND LOCK FOR THE ENTRY/SERVICE DOOR. WITHOUT THE GROUND LOCK INSTALLED, THE DOOR CAN LIFT ACCIDENTALLY AND CAN CAUSE INJURY OR DAMAGE.

(4) Install the ground lock for the entry/service door (AMM 52-11-13/201).

S 434-005

(5) Engage the pawl on the counterbalance assembly (1).

S 944-173

(6) Attach a DO-NOT-OPERATE tag to the pawl.

S 824-007

WARNING: MAKE SURE THE COUNTERBALANCE LOCK IS INSTALLED BEFORE YOU REMOVE THE LOAD ON THE COUNTERBALANCE ASSEMBLY. THE COUNTERBALANCE ASSEMBLY CONTAINS TIGHTLY WOUND SPRINGS. THE COUNTERBALANCE ASSEMBLY CAN CAUSE INJURY OR DAMAGE IF THE SPRINGS RELEASE QUICKLY.

CAUTION: DO NOT TURN THE HANDWHEEL CLOCKWISE TO INSTALL THE COUNTERBALANCE LOCK. DO NOT TURN THE HANDWHEEL COUNTERCLOCKWISE MORE THAN NECESSARY TO ALIGN THE HOLE IN THE CABLE DRUM WITH THE HOLE IN THE SUPPORT ARM. DO NOT USE MORE THAN 35 POUNDS OF FORCE TO TURN THE HANDWHEEL. INCORRECT MOVEMENT OR TOO MUCH FORCE USED TO TURN THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE ASSEMBLY.

(7) Turn the handwheel counterclockwise until the hole in the drum aligns with the hole in the support arm.

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S 484-168
(8) Install the counterbalance lock into the hole in the drum and the hole in the support arm.

S 214-009
(9) Make sure the primary cable (4) is loose.

S 034-011
(10) Remove the screw (8) and washer (9) to disconnect the secondary cable (5) at the drum.

S 034-012
(11) Remove the screw (10) and the washer (11) to disconnect the primary cable (4) at the drum.

S 034-013
(12) For an entry door with electrical operation, disconnect the electrical connector from the rotary actuator (28).

S 494-014

WARNING: MAKE SURE THE PAWL ON THE COUNTERBALANCE ASSEMBLY IS ENGAGED AND THE COUNTERBALANCE LOCK IS INSTALLED BEFORE YOU MOVE THE COUNTERBALANCE ASSEMBLY. THE COUNTERBALANCE ASSEMBLY CONTAINS TIGHTLY WOUND SPRINGS. THE COUNTERBALANCE ASSEMBLY CAN CAUSE INJURY OR DAMAGE IF THE SPRINGS RELEASE QUICKLY.

(13) Install lockwire to hold the counterbalance lock in position.

S 494-015
(14) Attach a DO-NOT-REMOVE tag to the counterbalance lock to make sure the lock is not removed when the counterbalance assembly (1) is moved.

S 214-016
(15) Make sure the pawl is engaged.

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S 024-017

CAUTION: DO NOT THE USE THE HANDWHEEL TO LIFT THE COUNTERBALANCE ASSEMBLY. THE FULL WEIGHT OF THE COUNTERBALANCE ASSEMBLY ON THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE ASSEMBLY.

(16) Remove the bolts (6) and washers (7), and remove the counterbalance assembly (1).

NOTE: The weight of the counterbalance assembly (1) is approximately 65 pounds.

(a) Do not lift the counterbalance assembly (1) by the handwheel only.

S 034-018

(17) For an entry door with electrical operation, remove the bolts (29) and the rotary actuator (28) from the counterbalance assembly that you removed.

TASK 52-11-16-424-019

3. Counterbalance Assembly Installation (Fig. 401)

A. References
(1) AIPC 52-11-16, Fig. 1
(2) AIPC 52-16-11, Fig. 2
(3) AMM 25-22-02/401 Lowered Ceiling Panels
(4) AMM 52-11-13/201, Entry/Service Door Ground Lock
(5) AMM 52-11-16/501, Entry/Service Door Counterbalance System

B. Equipment
(1) Door Ground Lock - A52008-14
(2) Milliohmmeter - 0-10 milliohm range, commercially available

C. Consumable Materials
(1) A00250 Compound - Sealing, BMS 5-26, Class B-1/2
(2) B00192 Solvent, BMS 3-2, Type 1

D. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

E. Procedure

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S 214-020

WARNING: MAKE SURE YOU INSTALL THE GROUND LOCK FOR THE ENTRY/SERVICE DOOR. WITHOUT THE GROUND LOCK INSTALLED, THE DOOR CAN LIFT ACCIDENTALLY AND CAN CAUSE INJURY OR DAMAGE.

(1) Make sure the ground lock for the entry/service door is installed (AMM 52-11-13/201).

S 214-021

(2) Make sure the pawl on the counterbalance assembly (1) is engaged.

S 214-022

(3) Make sure the counterbalance lock is installed and held in position by lockwire.

S 214-023

(4) Make sure the handwheel turn counter on the counterbalance assembly shows 59 or 60 turns.

S 424-024

(5) For an entry door with electrical operation, do these steps:
   (a) Install the rotary actuator (28) on the counterbalance assembly (1).
      1) Clean the faying surfaces between the rotary actuator (28) and the counterbalance assembly (1) with solvent.
      2) Apply sealing compound to the faying surfaces between the rotary actuator (28) and the counterbalance assembly (1).
      3) Install the rotary actuator (28) on the counterbalance assembly (1) with bolts (29) and washers (30).
         a) Make sure the electrical connector points inboard and down.
      4) Make sure the sealing compound was pushed out all around the faying surfaces.
      5) Remove the unwanted sealing compound.
      6) Make sure the electrical resistance between the rotary actuator (28) and the counterbalance assembly (1) is 10 milliohms maximum.
   (b) Clean the faying surfaces between the counterbalance (1) and the airplane structure with solvent.
   (c) Apply sealing compound to the faying surfaces between the counterbalance assembly (1) and the airplane structure.

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S 424-025

CAUTION: DO NOT USE THE HANDWHEEL TO LIFT THE COUNTERBALANCE ASSEMBLY, THE FULL WEIGHT OF THE COUNTERBALANCE ASSEMBLY ON THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE ASSEMBLY.

(6) Lift the counterbalance assembly (1) into position and install the bolts (6) and washers (7).

NOTE: The weight of the counterbalance assembly is approximately 65 pounds.

(a) Do not lift the counterbalance assembly (1) by the handwheel only.

S 214-026

(7) If sealing compound was applied to faying surfaces, make sure the sealing compound gets pushed out all around the faying surfaces when the bolts (6) are tightened.

S 764-027

(8) For an entry door with electrical operation, make sure the electrical resistance between the airplane frame and the counterbalance assembly (1) is 10 milliohms maximum.

S 824-028

(9) If the cable guards were removed, make sure the cables (4, 5) are correctly routed over the drum before you install the cable guards.

(a) Install the primary cable (4) in the groove adjacent to the centerline of the drum, on the side of the drum adjacent to the main body of the counterbalance assembly (1).

S 214-030

(10) Make sure the tube end of each cable guard clears the lugs on the main body of the mechanism (Fig. 401).

NOTE: You can remove a part of the tube end to get the necessary clearance.

S 434-031

(11) Install the screw (10) and washer (11) to connect the primary cable (4) to the drum.

S 434-032

(12) Install the screw (8) and washer (9) to connect the secondary cable (5) to the drum.

S 434-033

(13) For an entry door with electrical operation, connect the electrical connector to the rotary actuator (28).

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S 214-034

(14) Make sure the pawl is engaged.

S 094-035

(15) Remove the DO-NOT-REMOVE tag and the lockwire from the counterbalance lock.

S 824-036

CAUTION: DO NOT USE MORE THAN 35 POUNDS OF FORCE TO TURN THE HANDWHEEL. TOO MUCH FORCE USED TO TURN THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE ASSEMBLY.

(16) Turn the counterbalance handwheel counterclockwise as necessary to remove the side load from the counterbalance lock.

S 094-037

(17) Remove the counterbalance lock.

S 094-038

(18) Remove the DO-NOT-OPERATE tag from the pawl.

S 034-039

CAUTION: MAKE SURE YOU HOLD THE HANDWHEEL WHEN YOU DISENGAGE THE PAWL. IF YOU DO NOT HOLD THE HANDWHEEL, THE COUNTERBALANCE SPRINGS WILL RELEASE QUICKLY, WHICH CAN CAUSE DAMAGE TO THE COUNTERBALANCE ASSEMBLY.

(19) Hold the handwheel and disengage the pawl.

S 824-040

(20) Let the handwheel turn slowly clockwise until you can feel no spring force on the handwheel.

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S 424-175

CAUTION: DO NOT TURN THE HANDWHEEL CLOCKWISE TO INSTALL THE CABLE GUARDS. DO NOT TURN THE HANDWHEEL COUNTERCLOCKWISE MORE THAN NECESSARY TO INSTALL THE CABLE GUARDS. DO NOT USE MORE THAN 35 POUNDS OF FORCE TO TURN THE HANDWHEEL. INCORRECT MOVEMENT OR TOO MUCH FORCE USED TO TURN THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE ASSEMBLY.

(21) If necessary, install the cable guards.

NOTE: To install the cable guards, the counterbalance cable guard must not be aligned with the counterbalance lug. Turn the handwheel counterclockwise as necessary to install the cable guard.

S 414-167

(22) If necessary, install the ceiling panels removed to get access to the counterbalance system (AMM 25-22-02/401).

S 094-041

(23) Remove the ground lock for the entry/service door (AMM 52-11-13/201).

S 734-042

(24) Do the counterbalance system test (AMM 52-11-16/501).

S 824-043

(25) If it is necessary, adjust the counterbalance system (AMM 52-11-16/501).

TASK 52-11-16-004-044

4. Counterbalance Cables Removal (Fig. 401)

A. References

(1) AMM 25-22-02/401, Lowered Ceiling Panels
(2) AMM 52-11-13/201, Entry/Service Door Ground Lock

B. Equipment

(1) Counterbalance Lock - A52003-1
(2) Door Ground Lock - A52008-14

C. Access

(1) Location Zones

831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

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D. Procedure

S 014-045
(1) Get access to the counterbalance assembly (1) and cables (4,5).
(a) Remove the ceiling panels as necessary (AMM 25-22-02/401).

S 864-046
(2) Latch the door.

S 024-177

CAUTION: DO NOT TURN THE HANDWHEEL CLOCKWISE TO REMOVE THE CABLE GUARDS. DO NOT TURN THE HANDWHEEL COUNTERCLOCKWISE MORE THAN NECESSARY TO REMOVE THE CABLE GUARDS. DO NOT USE MORE THAN 35 POUNDS OF FORCE TO TURN THE HANDWHEEL. INCORRECT MOVEMENT OR TOO MUCH FORCE USED TO TURN THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE ASSEMBLY.

(3) If necessary, remove the cable guards.

NOTE: To remove the cable guards, the counterbalance cable guard must not be aligned with the counterbalance lug. Turn the handwheel counterclockwise as necessary to remove the cable guard.

S 484-170

WARNING: MAKE SURE YOU INSTALL THE GROUND LOCK FOR THE ENTRY/SERVICE DOOR. WITHOUT THE GROUND LOCK INSTALLED, THE DOOR CAN LIFT ACCIDENTALLY, AND CAN CAUSE INJURY OR DAMAGE.

(4) Install the ground lock for the entry/service door (AMM 52-11-13/201).

S 434-048
(5) Engage the pawl on the counterbalance assembly (1).

S 944-171
(6) Attach a DO-NOT-OPERATE tag to the pawl.

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S 824-050

WARNING: MAKE SURE THE COUNTERBALANCE LOCK IS INSTALLED BEFORE YOU REMOVE THE LOAD ON THE COUNTERBALANCE ASSEMBLY. THE COUNTERBALANCE ASSEMBLY CONTAINS TIGHTLY WOUND SPRINGS. THE COUNTERBALANCE ASSEMBLY CAN CAUSE INJURY OR DAMAGE IF THE SPRINGS RELEASE QUICKLY.

CAUTION: DO NOT TURN THE HANDWHEEL CLOCKWISE TO INSTALL THE COUNTERBALANCE LOCK. DO NOT TURN THE HANDWHEEL COUNTERCLOCKWISE MORE THAN NECESSARY TO ALIGN THE HOLE IN THE CABLE DRUM WITH THE HOLE IN THE SUPPORT ARM. DO NOT USE MORE THAN 35 POUNDS OF FORCE TO TURN THE HANDWHEEL. INCORRECT MOVEMENT OR TOO MUCH FORCE USED TO TURN THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE ASSEMBLY.

(7) Turn the handwheel counterclockwise until the hole in the cable drum aligns with the hole in the support arm.

S 484-169

(8) Install the counterbalance lock into the hole in the cable drum and the hole in the support arm.

S 214-052

(9) Make sure the primary cable (4) is loose.

S 024-053

(10) Remove the bolt (17) to disconnect the primary cable (4) from the trolley.

S 024-054

(11) Remove the bolt (14) to disconnect the secondary cable (5) from the trolley.

S 024-056

(12) Remove the screw (8) to disconnect the secondary cable (5) at the drum.

S 024-057

(13) Remove the screw (10) to disconnect the primary cable (4) at the drum.

S 034-058

(14) Remove the bolt (21) and remove the pulley (2).

S 034-059

(15) Remove the bolt (25) and remove the pulley (3).

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S 024-060
(16) Remove the cables (4, 5).

TASK 52-11-16-404-061

5. Counterbalance Cables Installation (Fig. 401)

A. References
(1) AIPC 52-11-16, Fig. 1
(2) AIPC 52-11-16, Fig. 2
(3) AMM 25-22-02/401, Lowered Ceiling Panels
(4) AMM 52-11-13/201, Entry/Service Door Ground Lock
(5) AMM 52-11-16/501, Entry/Service Door Counterbalance System

B. Equipment
(1) Door Ground Lock - A52008-14

C. Consumable Materials
(1) D00015 Grease - Anticorrosive, BMS 3-24, Aeroshell Grease 16

D. Procedure

S 214-062

WARNING: MAKE SURE YOU INSTALL THE GROUND LOCK FOR THE ENTRY/SERVICE DOOR. WITHOUT THE GROUND LOCK INSTALLED, THE DOOR CAN LIFT ACCIDENTALLY, AND CAN CAUSE INJURY OR DAMAGE.

(1) Make sure the ground lock for the entry/service door is installed (AMM 52-11-13/201).

S 214-063
(2) Make sure the pawl on the counterbalance assembly (1) is engaged.

S 494-165
(3) Attach a DO-NOT-OPERATE tag to the pawl.

S 424-064
(4) Install the screw (10) and the washer (11) to connect the primary cable (4) to the drum.

S 824-166
(5) Route the primary cable (6) in the groove adjacent to the centerline of the drum, on the side of drum adjacent to the main body of the counterbalance assembly.

S 424-065
(6) Install the screw (8) and the washer (9) to connect the secondary cable (5) to the drum.

S 824-066
(7) Put the primary cable (4) in the upper groove, and the secondary cable (5) in the lower groove of the fixed pulley (2).

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S 644-067
(8) Apply grease to the bolt (21).

S 434-068
(9) Install the fixed pulley (2) with the bolt (21) (head up), bushings (22), washer (23), and nut (24).

S 824-069
(10) Put the primary cable (4) in the upper groove, and the secondary cable (5) in the lower groove of the swivel pulley (3).

S 644-070
(11) Apply grease to the bolt (25).

S 434-071
(12) Install the swivel pulley (3) with the bolt (25) (head up), washer (26), and nut (27).

S 644-072
(13) Apply grease to the bolt (14).

S 424-073
(14) Connect the secondary cable (5) to the trolley with the bolt (14), bushing (15), and nut (16).

S 644-074
(15) Apply grease to the bolt (17).

S 424-075
(16) Connect the primary cable (4) to the trolley with the bolt (17), bushing (19), washer (18), and nut (20).

S 824-076

CAUTION: DO NOT USE MORE THAN 35 POUNDS OF FORCE TO TURN THE HANDWHEEL. TOO MUCH FORCE USED TO TURN THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE ASSEMBLY.

(17) Turn the counterbalance handwheel counterclockwise as necessary to remove the side load from the counterbalance lock.

S 094-077
(18) Remove the counterbalance lock.

S 094-078
(19) Remove the DO-NOT-OPERATE tag from the pawl.

S 034-079
(20) Disengage the pawl.

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S 424-176

CAUTION: DO NOT TURN THE HANDWHEEL CLOCKWISE TO INSTALL THE CABLE GUARDS. DO NOT TURN THE HANDWHEEL COUNTERCLOCKWISE MORE THAN NECESSARY TO INSTALL THE CABLE GUARDS. DO NOT USE MORE THAN 35 POUNDS OF FORCE TO TURN THE HANDWHEEL. INCORRECT MOVEMENT OR TOO MUCH FORCE USED TO TURN THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE ASSEMBLY.

(21) If necessary, install the cable guards.

NOTE: To install the cable guards, the counterbalance cable guard must not be aligned with the counterbalance lug. Turn the handwheel counterclockwise as necessary to install the cable guard.

S 414-080

(22) If necessary, install the ceiling panels removed to get access to the counterbalance (1) (AMM 25-22-02/401).

S 094-081

(23) Remove the ground lock for the entry/service door (AMM 52-11-13/201).

S 824-082

(24) Do a system test of the counterbalance system (AMM 52-11-16/501).

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ENTRY/SERVICE DOOR COUNTERBALANCE SYSTEM - ADJUSTMENT/TEST

1. General
   A. This procedure has these tasks for the counterbalance system:
      (1) An Adjustment
      (2) A System Test.
   B. The counterbalance system consists of the counterbalance assembly and the counterbalance cables. The counterbalance assembly for the entry/service door is connected to the door by the cables. The cables go through pulleys to the door.

TASK 52-11-16-825-001

2. Counterbalance System - Adjustment (Fig. 501)
   A. General
      (1) The adjustment of the counterbalance system is necessary if the system test finds these conditions:
         (a) The force necessary to start the door's upward movement is not 10-20 pounds more than the force necessary to start the door's downward movement.
         (b) The sum of the forces necessary to start the door's upward movement and the downward movement is more than 60 pounds, and the door is correctly adjusted (AMM 52-11-00/501).
   B. References
      (1) AIPC 52-11-16, Fig. 3
      (2) AMM 25-22-02/401, Lowered Ceiling Panels
      (3) AMM 52-11-00/501, Entry/Service Doors
      (4) AMM 52-11-13/201, Entry/Service Door Ground Lock
      (5) AMM 52-11-16/401, Entry/Service Door Counterbalance System
   C. Equipment
      (1) Spring Scale - Tension (range 0-100 pounds) - commercially available
      (2) Spring Scale - Compression (range 0-100 pounds) - commercially available
      (3) Door Ground Lock - A52008-14
      (4) Counterbalance Lock - A52003-1
   D. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door
   E. Procedure

      S 715-002
      (1) Do the Counterbalance System - System Test.

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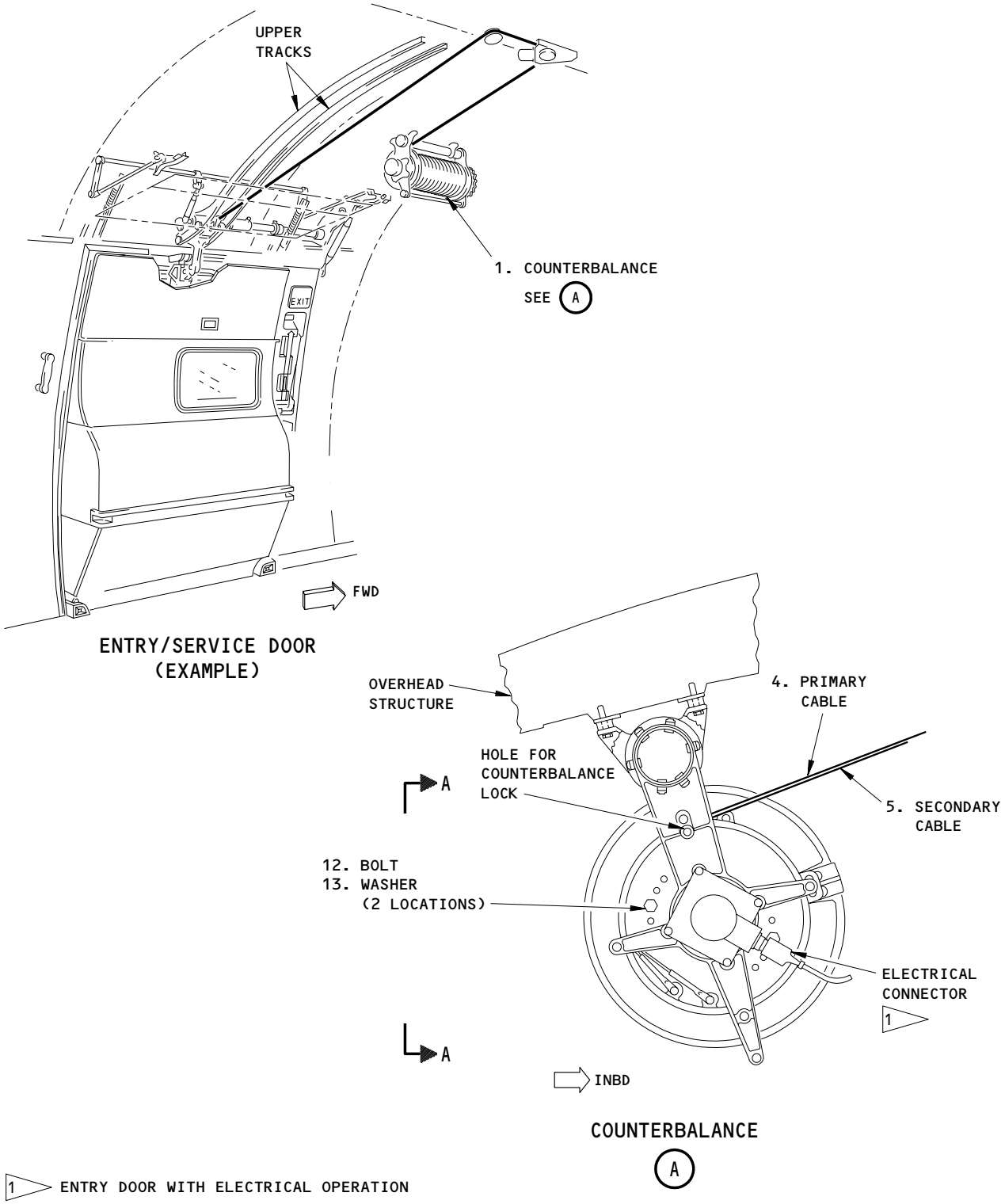

Entry/Service Door Counterbalance System
Figure 501 (Sheet 1)

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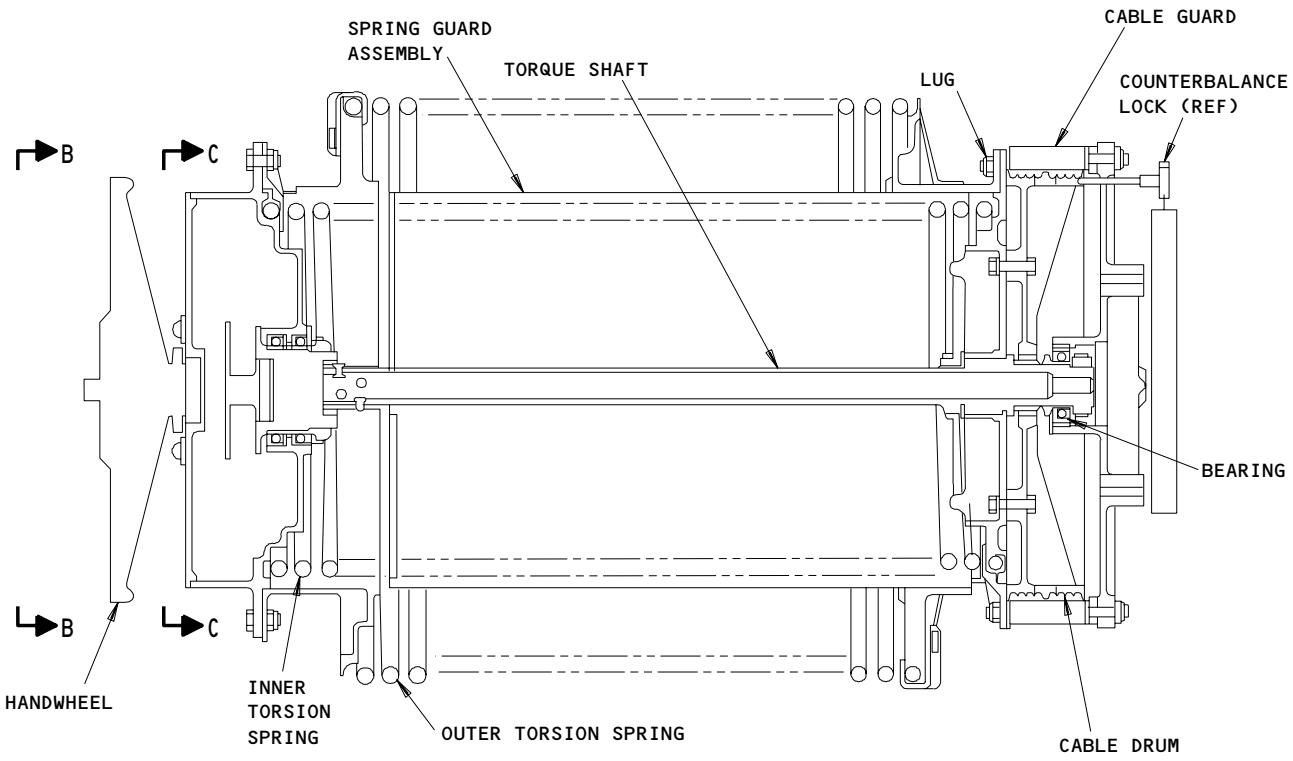
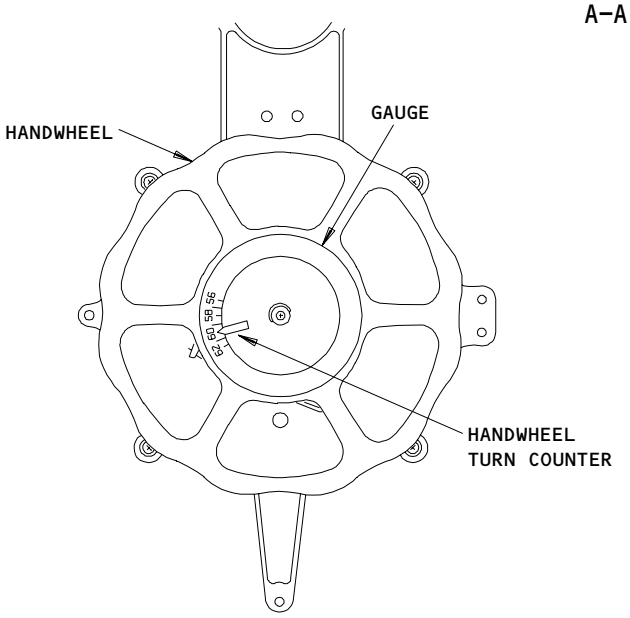
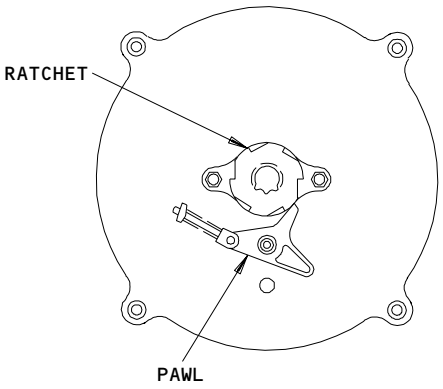


COUNTERBALANCE
A–A



B–B



C–C

Entry/Service Door Counterbalance System
Figure 501 (Sheet 2)

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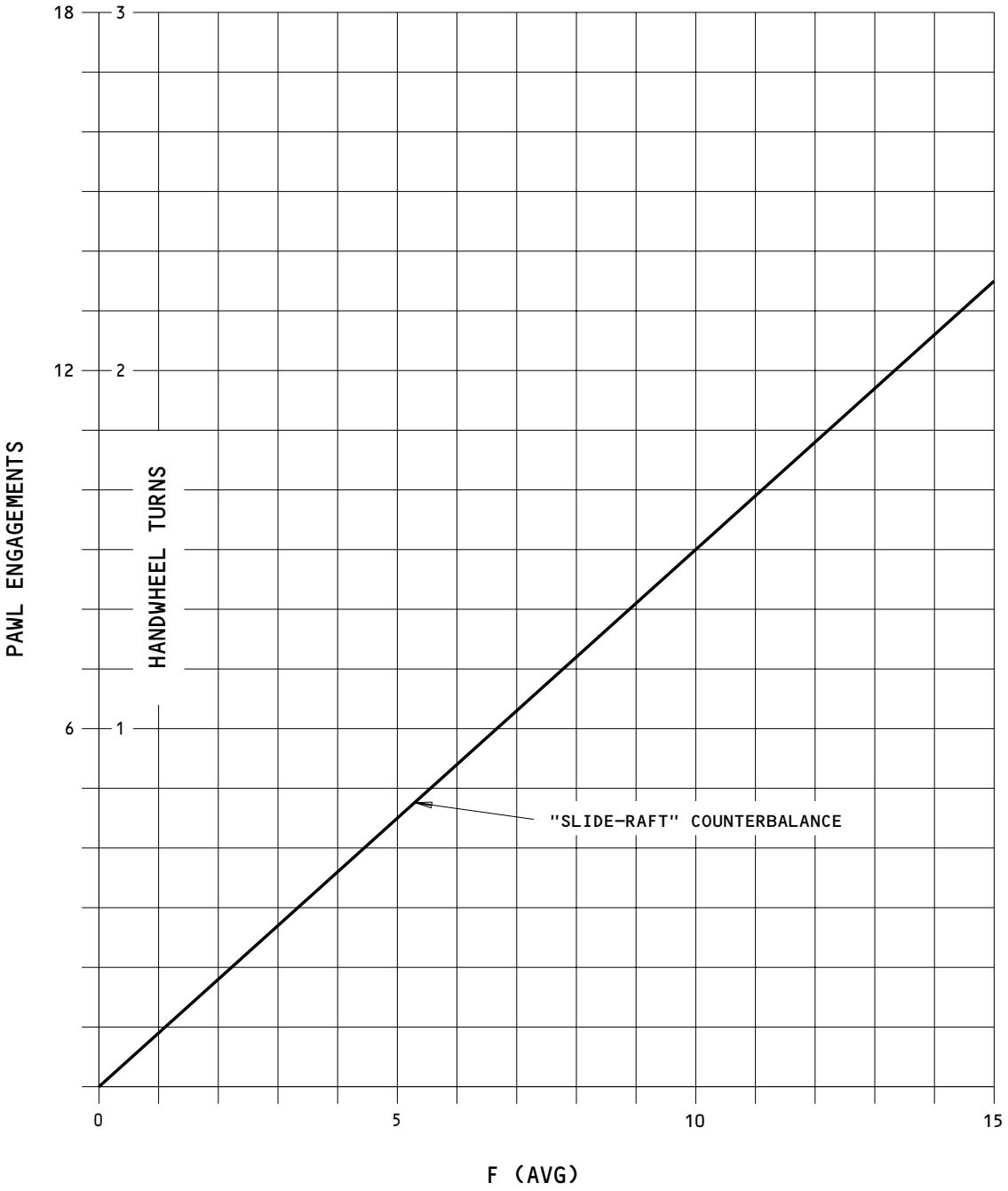

Counterbalance Adjustment
Figure 502

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S 975-003

(2) Use F(up) and F(down) from the system test procedure to calculate F(avg) as follows:

$$F(avg) = \frac{F(up) - F(down)}{2} - 7.5 \text{ pounds}$$

S 495-004

WARNING: MAKE SURE YOU INSTALL THE GROUND LOCK FOR THE ENTRY/SERVICE DOOR. WITHOUT THE GROUND LOCK INSTALLED, THE DOOR CAN LIFT ACCIDENTALLY, AND CAN CAUSE INJURY OR DAMAGE.

(3) Install the ground lock for the entry/service door (AMM 52-11-13/201).

S 015-005

(4) Get access to the counterbalance assembly (1).
   (a) Remove the ceiling panels as necessary (AMM 25-22-02/401).

S 975-006

(5) Do a check of the value shown on the handwheel turn counter.
   (a) If the pointer shows more than 67 handwheel turns, replace the counterbalance assembly (AMM 52-11-16/401).

      NOTE: Do not adjust the counterbalance system.

   (b) If the pointer shows not more than 67 handwheel turns, continue with the steps that follow.

S 435-007

(6) Engage the pawl on the counterbalance assembly.

S 495-008

(7) Attach a DO-NOT-OPERATE tag to the pawl.

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S 825-009

CAUTION: DO NOT TURN THE HANDWHEEL CLOCKWISE TO INSTALL THE COUNTERBALANCE LOCK. DO NOT TURN THE HANDWHEEL COUNTERCLOCKWISE MORE THAN NECESSARY TO ALIGN THE HOLE IN THE CABLE DRUM WITH THE HOLE IN THE SUPPORT ARM. DO NOT USE MORE THAN 35 POUNDS OF FORCE TO TURN THE HANDWHEEL. INCORRECT MOVEMENT OR TOO MUCH FORCE USED TO TURN THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE ASSEMBLY.

(8) Turn the handwheel counterclockwise until the hole in the cable drum aligns with the hole in the support arm.

S 495-010

(9) Install the counterbalance lock into the hole in the cable drum and the hole in the support arm.

S 975-011

(10) Do these steps to use Fig. 502 to find the number of pawl engagements to turn the handwheel:

NOTE: If F(avg) is larger than zero, you will increase the spring force. If F(avg) is less than zero, you will decrease the spring force.

(a) Read F(avg) in pounds along the horizontal axis.
(b) Draw a vertical line from F(avg) to intersect with the line for the "slide-raft" counterbalance.
(c) Draw a horizontal line from the intersection to the vertical axis.
(d) Read the number of pawl engagements (or handwheel turns) at the vertical axis.

S 035-012

(11) Remove the bolts (12) and the washers (13).

NOTE: Turn the handwheel counterclockwise until you balance the spring force. This will make it easier to remove the bolts (12).

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S 825-013

(12) To increase the spring force, do these steps:

(a) Do a check of the number of turns shown on the handwheel turn counter.

1) If the pointer will show more than 67 handwheel turns after you add the number of handwheel turns that you found from Fig. 502, replace the counterbalance assembly (AMM 52-11-16/401).

2) If the pointer shows that the number of turns will not be more 67 after adjustment, continue with the steps that follow.

CAUTION: DO NOT USE MORE THAN 35 POUNDS OF FORCE TO TURN THE HANDWHEEL. INCORRRECT MOVEMENT OR TOO MUCH FORCE USED TO TURN THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE ASSEMBLY.

(b) Turn the handwheel counterclockwise the number of pawl engagements or handwheel turns that you found from Fig. 502.

(c) Make sure the number shown by the handwheel turn counter is not more than 67.

S 825-014

(13) To decrease the spring force, do these steps:

(a) Make sure the number shown by the handwheel turn counter is not more than 67.

CAUTION: MAKE SURE YOU HOLD THE HANDWHEEL WHEN YOU DISENGAGE THE PAWL. IF YOU DO NOT HOLD THE HANDWHEEL, THE COUNTERBALANCE SPRINGS WILL RELEASE QUICKLY, WHICH CAN CAUSE DAMAGE TO THE COUNTERBALANCE ASSEMBLY.

(b) Hold the handwheel and disengage the pawl.

(c) Let the handwheel turn clockwise the number of turns that you found from Fig. 502.

(d) Engage the pawl.

S 435-015

CAUTION: DO NOT USE MORE THAN 35 POUNDS OF FORCE TO TURN THE HANDWHEEL. TOO MUCH FORCE USED TO TURN THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE ASSEMBLY.

(14) Turn the handwheel counterclockwise the minimum travel necessary to install the bolts (12).

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S 435-016
(15) Install the bolts (12) and washers (13).

S 825-017
(16) Turn the handwheel counterclockwise as necessary to remove the side load from the counterbalance lock.

S 095-018
(17) Remove the counterbalance lock.

S 035-019

CAUTION: MAKE SURE YOU HOLD THE HANDWHEEL WHEN YOU DISENGAGE THE PAWL. IF YOU DO NOT HOLD THE HANDWHEEL, THE COUNTERBALANCE SPRINGS WILL RELEASE QUICKLY, WHICH CAN CAUSE DAMAGE TO THE COUNTERBALANCE.

(18) Hold the handwheel and disengage the pawl.

S 095-020
(19) Remove the DO-NOT-OPERATE tag from the pawl.

S 825-021
(20) Let the handwheel turn slowly clockwise until the counterbalance cables are tight.

S 415-022
(21) If necessary, install the ceiling panels removed to get access to the counterbalance system (AMM 25-22-02/401).

S 095-023
(22) Remove the ground lock for the entry/service door (AMM 52-11-13/201).

TASK 52-11-16-735-024

3. System Test - Counterbalance

A. References
(1) AMM 52-11-00/501, Entry/Service Doors
(2) AMM 52-11-13/201, Entry/Service Door Ground Lock
(3) AMM 52-11-16/401, Entry/Service Door Counterbalance System

B. Equipment
(1) Spring Scale - Tension (range 0-100 pounds) - commercially available
(2) Spring Scale - Compression (range 0-100 pounds) - commercially available

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(3) Door Ground Lock - A52008-14
(4) Counterbalance Lock - A52003-1

C. Access

(1) Location Zones

831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

D. Procedure

S 215-025
(1) Make sure the escape slide-raft is installed on the entry/service door.

S 865-027
(2) Open the door to the position where the girt bar carrier is 50 inches above the floor.

S 485-028
(3) Attach the compression spring scale to the door near the center of the girt bar carrier.

S 975-029
(4) Slowly push up on the spring scale until the door starts to move up.

S 975-037
(5) Write the force necessary to start to move the door up.

NOTE: This is F(up). This data is used in the adjustment procedure for the counterbalance system.

S 865-030
(6) Move the door back to 50 inches above the floor.

S 485-031
(7) Attach the tension spring scale to the door near the center of the girt bar carrier.

S 975-032
(8) Slowly pull down on the spring scale until the door starts to move down.

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S 975-038
(9) Write the force necessary to start to move the door down.

NOTE: This is F(down). This data is used in the adjustment procedure for the counterbalance system.

S 975-033
(10) If F(up) minus F(down) is not between 10 and 20 pounds, then do the Counterbalance System - Adjustment.

S 975-034
(11) If F(up) plus F(down) is greater than 60 pounds, do these steps:
(a) Make sure the door is correctly adjusted (AMM 52-11-00/501).
(b) Do the Counterbalance System - Adjustement task.

S 975-035
(12) If F(up) minus F(down) is between 10 and 20 pounds and F(up) plus F(down) is not greater than 60 pounds, do the steps that follow:
(a) Install the ground lock for the entry/service door (AMM 52-11-13/201).
(b) Get access to the counterbalance assembly (1).
(c) Check the total number of handwheel turns shown by the pointer on the handwheel turn counter.
1) If the pointer shows more than 67 handwheel turns, replace the counterbalance assembly (AMM 52-11-16/401).
2) If the pointer shows not more than 67 handwheel turns, remove the door ground lock (AMM 52-11-13/201).

NOTE: It is not necessary to adjust the counterbalance.

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ENTRY/SERVICE DOOR LOAD LIMITER - MAINTENANCE PRACTICES

1. General
   A. This procedure gives the instructions to remove and install the load limiter for the entry/service doors. This procedure also gives the instructions to examine the load limiter.

   TASK 52-11-21-002-005

2. Remove the Load Limiter (Fig. 201)
   A. Equipment
      (1) Counterbalance Lock - A52003-1
   B. References
      (1) 52-11-13/201, Entry/Service Door Ground Lock
   C. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   D. Procedure

      S 492-001

      WARNING: MAKE SURE YOU INSTALL THE GROUND LOCK FOR THE ENTRY/SERVICE DOOR. WITHOUT THE GROUND LOCK INSTALLED THE DOOR CAN LIFT ACCIDENTALLY, AND CAN CAUSE INJURY OR DAMAGE.

      (1) Install the ground lock for the entry/service door (Ref 52-11-13). If you do work in the area near the adjacent entry/service door, install the ground lock for that door also.

      S 012-026
      (2) Remove the applicable ceiling panels to get access to the counterbalance.

      S 432-006
      (3) Engage the pawl on the counterbalance (View B).

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S 492-007
(4) Attach a DO-NOT-OPERATE tag to the pawl.

S 822-002

WARNING: MAKE SURE THE PAWL ON THE COUNTERBALANCE IS ENGAGED AND THE COUNTERBALANCE LOCK IS INSTALLED BEFORE YOU REMOVE THE LOAD ON THE COUNTERBALANCE. THE COUNTERBALANCE CONTAINS TIGHTLY-WOUND SPRINGS. THE COUNTERBALANCE CAN CAUSE INJURY OR DAMAGE IF THE SPRINGS RELEASE QUICKLY.

CAUTION: DO NOT TURN THE HANDWHEEL CLOCKWISE TO INSTALL THE COUNTERBALANCE LOCK. DO NOT TURN THE HANDWHEEL COUNTERCLOCKWISE MORE THAN NECESSARY TO ALIGN THE HOLE IN THE CABLE DRUM WITH THE HOLE IN THE SUPPORT ARM. DO NOT USE MORE THAN 35 POUNDS OF FORCE TO TURN THE HANDWHEEL. INCORRECT MOVEMENT OR TOO MUCH FORCE USED TO TURN THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE.

(5) Turn the handwheel counterclockwise until the hole in cable drum aligns with the hole in the support arm.

S 492-008
(6) Install the counterbalance lock into the hole in the cable drum and the hole in the support arm.

S 032-009
(7) Remove the indicator nut (View A).

S 022-010
(8) Remove the bolts for the load limiter.

S 022-025
(9) Remove the load limiter.

TASK 52-11-21-402-003

3. Install the Load Limiter (Fig. 201)
   A. Equipment
      (1) Counterbalance Lock - A52003-1
   B. References
      (1) 52-11-13/201, Entry/Service Door Ground Lock
   C. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

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D. Procedure

S 422-011
(1) Hold the load limiter on the pulley bracket and install the bolts.

S 432-012
(2) Install the indicator nut until the nut touches the load limiter housing.

S 822-004

CAUTION: DO NOT USE MORE THAN 35 POUNDS OF FORCE TO TURN THE HANDWHEEL. TOO MUCH FORCE USED TO TURN THE HANDWHEEL CAN CAUSE DAMAGE TO THE COUNTERBALANCE.

(3) Turn the handwheel counterclockwise until the side load is removed from the counterbalance lock.

S 092-013
(4) Remove the counterbalance lock (View C).

S 092-027
(5) Remove the DO-NOT-OPERATE tag from the pawl.

S 032-023

CAUTION: MAKE SURE YOU HOLD THE HANDWHEEL WHEN YOU DISENGAGE THE PAWL. IF YOU DO NOT HOLD THE HANDWHEEL, THE COUNTERBALANCE SPRINGS WILL RELEASE QUICKLY, WHICH CAN CAUSE DAMAGE TO THE COUNTERBALANCE.

(6) Hold the handwheel and disengage the pawl.

S 822-015
(7) Let the handwheel turn slowly clockwise until the counterbalance cables are tight.

S 092-016
(8) Remove the ground lock for the entry/service door (Ref 52-11-13).

S 412-017
(9) Close the ceiling panels that were opened for access.

TASK 52-11-21-702-018
4. Load Limiter Check (Fig. 201)
A. Procedure

S 012-019
(1) Remove the applicable ceiling panels to get access to the counterbalance.

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S 212-020
(2) Examine the indicator nut for signs that the load limiter absorbed a large shock.

S 212-022
(3) If the indicator nut extends more than 1/8 inch from the housing, then replace the load limiter (refer to the Load Limiter Removal and Installation procedures).

S 412-021
(4) Close the ceiling panels that were opened for access.

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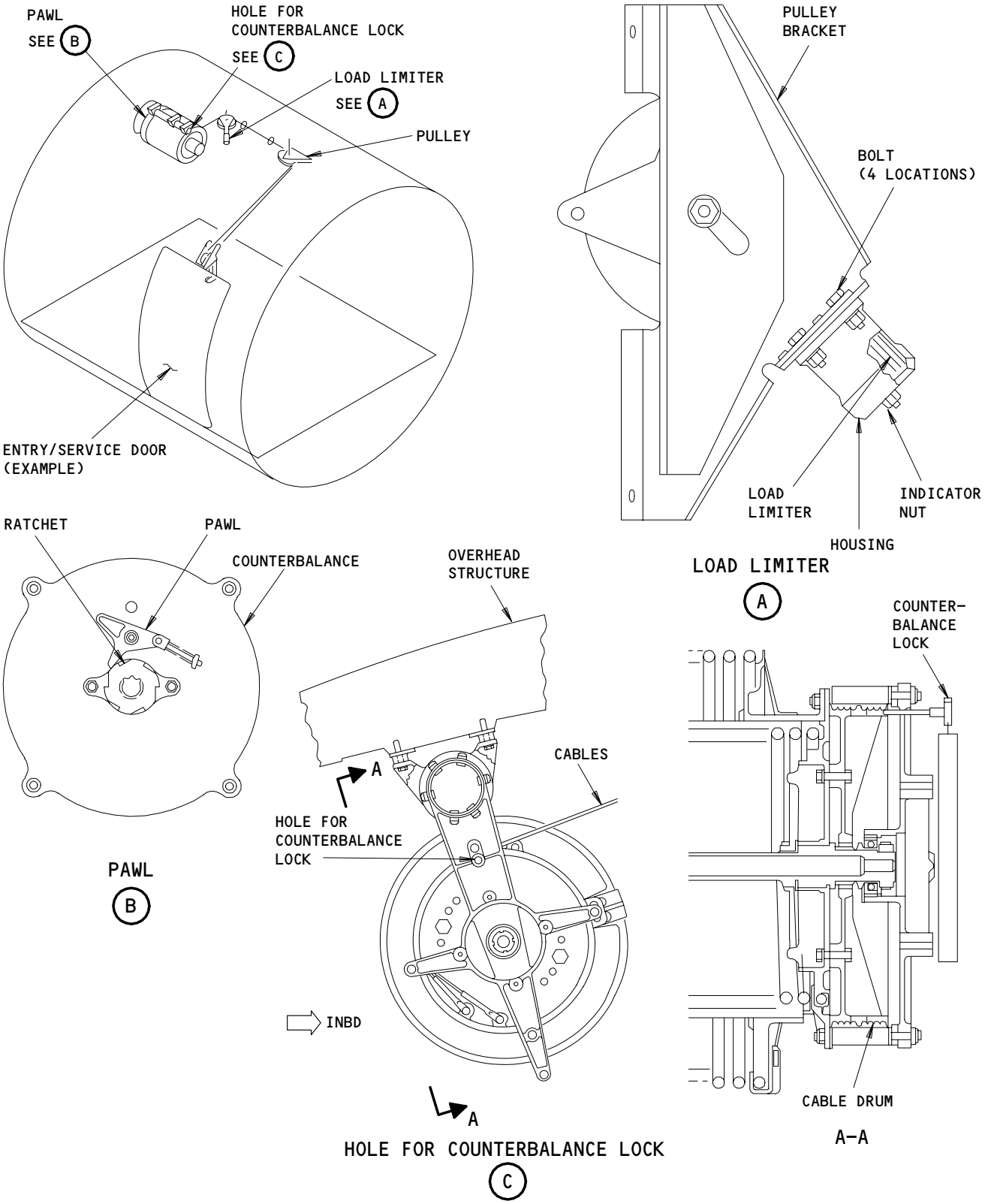

Entry/Service Door Load Limiter
Figure 201

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ENTRY/SERVICE DOOR HANDLE MECHANISM - MAINTENANCE PRACTICES

1. General
   A. This procedure has these tasks:
      (1) Instructions to remove, install, and adjust the handle mechanism for the entry/service doors.
      (2) Entry door system handle mechanism rigging quick check.
      (3) Door warning system proximity sensor adjustment and replacement.
      (4) Door warning system proximity sensor operational test.
   B. There are two interior handle mechanisms.
      (1) SAS 050-155,162-165,275,276 WITHOUT SB 52-58;
      the interior handle does not have a clutch mechanism and can move when the exterior handle is moved. This will be called the INTERIOR HANDLE WITHOUT CLUTCH MECHANISM.
      (2) SAS 050-155,162-165,275,276 WITH SB 52-58, AND SAS 156-161,166-274,277-999;
      the interior handle has a clutch mechanism and does not move when the exterior handle is moved. This will be called the INTERIOR HANDLE WITH CLUTCH MECHANISM.

TASK 52-11-25-002-001

2. Remove the Handle Mechanism (Fig. 201)
   A. References
      (1) 52-11-02/401, Doorway Lining
   B. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   C. Procedure

      S 012-002
      (1) Remove the doorway lining (Ref 52-11-02).

      S 012-003
      (2) Remove the galleys and the lavatories necessary to get access to the handle mechanism (Ref 25-31, 25-41).

      S 032-004
      (3) For an entry door with electrical operation, disconnect the electrical connector from the external switch.

      S 022-005
      (4) Remove the bolt (21), washer (22), bushings (23), and nut (24), to disconnect the lower end of the spring hydraulic snubber (25) from the lever (20) (View A, Fig. 201).

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S 022-006
(5) Remove the bolts (26), washers (27), and nuts (28) to disconnect the handle mechanism (1) from the stringer link at the top of the skin cutout (View B-B, Fig. 201).

S 022-007
(6) Remove the bolt (7), washer (8), and nut (9) to disconnect the pushrod (2) from the pivot shaft (View A, Fig. 201).

S 022-008
(7) Remove the bolt (10), washers (11, 13), bushings (12, 14), and nut (15) to disconnect the pushrod (16) from the carrier drive lever (View A, Fig. 201).

S 022-009
(8) Remove the bolt (4), washer (5), and nut (6) to disconnect the latch pin cable (3) from the handle mechanism (1) (View A, Fig. 201).

S 022-010
(9) Remove the bolts (17, 18, 19) to disconnect the handle mechanism (1) from the fuselage skin.

S 022-011
(10) Remove the handle mechanism (1).

TASK 52-11-25-402-012

3. Install the Handle Mechanism (Fig. 201)
   A. Consumable Materials
      (1) A00247 Sealant - BMS 5-95, Type 1
      (2) D00633 Grease - BMS 3-33 (Preferred)
      (3) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)
   B. Parts
      (1) FORWARD ENTRY/SERVICE DOORS;
      Refer to the table that follows:

AMM			AIPC		
FIG	ITEM	NOMENCLATURE	SUBJECT	FIG	ITEM
201	1	Handle Mechanism (Entry) Handle Mechanism (Service)	52-11-25	05	225 230

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(2) AFT ENTRY/SERVICE DOOR;
Refer to the table that follows:

AMM			AIPC		
FIG	ITEM	NOMENCLATURE	SUBJECT	FIG	ITEM
201	1	Handle Mechanism (Entry)	52-11-25	05	225
		Handle Mechanism (Service)			230
	3	Latch Pin Cable (Entry)	52-11-25	05	75
		Latch Pin cable (Service)			80

C. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

D. Procedure

S 642-013
(1) Apply a thin layer of grease to all mating surfaces of the bolts (17, 18, 19). Remove unwanted grease with a dry cloth.

S 392-014
(2) Apply a parting agent to the mating surface of the handle mechanism (1).

S 392-015
(3) Apply the chromate type sealant to the mating surface of the handle mechanism (1).

S 422-016
(4) Hold the handle mechanism (1) in position, and install the bolts (17, 18, 19) as follows:
(a) Install the bolts (19) in the top 6 locations.

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(b) Install the bolts (17) in the bottom 8 locations.
(c) Install the bolts (18) in the remaining 22 locations.

S 212-017
(5) Make sure the sealant was pushed out all around the edges of the handle mechanism (1).

S 212-018
(6) Make the pushed out sealant into a continuous fillet around the edges of the handle mechanism (1).

S 392-019
(7) Apply the chromate type sealant to the parts of the bolts (17, 18, 19) that extend through the nutplates.

S 642-020
(8) Apply a thin layer of grease to the bolts (25).

S 422-021
(9) Install the bolts (26), washers (27), and nuts (28) to connect the handle mechanism (1) to the stringer link at the top of the skin cutout (View B-B, Fig. 201).

S 432-022
(10) For an entry door with electrical operation, connect the electrical connector to the external switch.

S 822-023
(11) Refer to Handle Mechanism Adjustment to adjust the handle mechanism (1).

TASK 52-11-25-822-024

4. Handle Mechanism Adjustment

A. Equipment

(1) Rig Pin D2 - P/N A20004-16, part of Set A20004-XX

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B. Consumable Materials
(1) Surface Protractor - commercially available
(2) D00633 Grease - BMS 3-33 (Preferred)
(3) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

C. References
(1) 52-11-00/201, Entry/Service Doors
(2) 52-11-02/401, Doorway Lining

D. Parts
(1) FORWARD ENTRY/SERVICE DOOR;
Refer to the table that follows:

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
201	2	Pushrod	52-11-32	01	30
	3	Latch Pin Cable (Entry)	52-11-25	05	77
		Latch Pin Cable (Service)			82

(2) AFT ENTRY/SERVICE DOOR;
Refer to the table that follows:

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
201	2	Pushrod	52-11-13	01	70
	3	Latch Pin Cable (Entry)	52-11-25	05	75
		Latch Pin Cable (Service)			80

E. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

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F. Procedure

S 212-025

(1) Make sure the spring hydraulic snubber (25), the latch pin cable (3), the pushrod (2), and the pushrod (16) are not connected to the handle mechanism (1) (View A, Fig. 201).

S 822-027

(2) Put the exterior handle and the exterior disarm lever into the fully faired position (Ref 52-11-00).

S 822-028

(3) Turn the interior handle shaft in the direction shown in View B-B, Fig. 201 to remove the free play. You must keep the handle shaft in this position (with no free play) when you adjust the interior handle and all of the components of the handle shaft.

NOTE: These steps are used to get the initial position for the handle mechanism adjustment. You will do the last adjustment of the interior handle with the doorway lining installed.

S 822-061

(4) INTERIOR HANDLE WITHOUT CLUTCH MECHANISM;
adjust the interior handle as follows (Fig. 201):
(a) Loosen the adapter bolt (View B).
(b) Loosen the bolt (30) on the clamp sleeve (View B).
(c) Move the interior handle away from the clamp sleeve to disengage the 23-tooth spline (View B).
(d) Loosen the bolt (29) on the interior handle.
(e) Move the adapter away from the interior handle to disengage the 22-tooth spline (View B).
(f) Engage the splines of the adapter in different locations to adjust the position of the interior handle. Adjust the position of the interior handle to get the correct clearance between the interior handle grip and the inner surface of the fuselage skin (View B-B). Make sure there is no free play in the interior handle shaft.

NOTE: The difference in position between one set of spline teeth and the other causes a 0.186-inch adjustment at the interior handle grip.

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S 822-062

(5) INTERIOR HANDLE WITH CLUTCH MECHANISM;
Adjust the interior handle as follows (Fig. 201A):

(a) Remove the cam bracket to permit the easy removal of the interior handle (View C).

(b) Install a 3/16-inch rig pin into the hole at the top of the clutch housing (View C).

NOTE: This rig pin will keep the clutch correctly aligned with the clutch housing.

(c) Loosen the adapter bolt (View B).

(d) Loosen the bolt (31) on the split-clamped spacer (View B).

(e) Move the interior handle away from the split-clamped spacer to disengage the 23-tooth spline.

(f) Loosen the screw (32) on the interior handle (View B).

(g) Move the adapter away from the interior handle to disengage the 22-tooth spline.

(h) Engage the splines of the adapter in different locations to adjust the position of the interior handle. Adjust the position of the interior handle to get the correct clearance between the interior handle grip and the inner surface of the fuselage skin (View B-B). Make sure there is no free play in the interior handle shaft.

NOTE: The difference in position between one set of spline teeth and the other causes a 0.186-inch adjustment at the interior handle grip.

CAUTION: MAKE SURE YOU REMOVE THE RIG PIN FROM THE CLUTCH HOUSING BEFORE YOU INSTALL THE DOORWAY LINING. THE RIG PIN CAN CAUSE DAMAGE TO THE LINING.

(i) Remove the rig pin from the hole at the top of the clutch housing.

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(j) Install the cam bracket.

S 212-141

(6) INTERIOR HANDLE WITH CLUTCH MECHANISM;
Check the clearance of the interior handle as follows:
(a) Move the outside handle to the open (up) position.
(b) Make sure that the interior handle is free to move up to engage the handle clutch mechanism and does not touch the internal lining protective shield.
(c) Adjust the interior handle, if necessary.
(d) Adjust the shock absorber, if necessary.
(e) Adjust the throw angle of the internal handle, if necessary.
(f) Put the internal and external door handles to the closed (down) position.
(g) Adjust the clutch pawl as follows:
1) Make sure the clutch pawl is in the position shown (View C, Fig. 201).
2) Make sure the clearance between the clutch pawl and the spring cartridge is as shown (View C, Fig. 201).
3) Adjust the spring cartridge if it is necessary.

S 822-092

(7) Adjust the EMERGENCY ONLY arming flag:
(a) Move the interior arm/disarm lever to the outboard position.
(b) Move the EMERGENCY ONLY arming flag to get a 0.02-0.25 inch clearance between the flag and the interior handle.
(c) Move the interior arm/disarm lever to the inboard position.

S 422-033

(8) Connect the spring hydraulic snubber (25) to the lever (20) as follows:
(a) Make sure there is no free play in the handle shaft (View B-B, Fig. 201).
(b) Make sure the spring hydraulic snubber (25) is at its maximum extended length.
(c) Try to install the bolt (21) through the lever (20) and the lower end of the spring hydraulic snubber (25). If you cannot easily install the bolt (21), then do these steps:
1) Loosen the bolts that hold the lever cap to the lever (20) at the lower end of the spring hydraulic snubber (25) (View A-A, Fig. 202).
2) Move the lever (20) forward or aft on the interior handle shaft to disengage the splines.
3) Turn the lever (20) and the lever cap as necessary to easily install the bolt (21) through the lever (20) and the lower end of the spring hydraulic snubber (25).
4) Tighten the bolts that hold the lever cap to the lever (20). Make sure the splines on the lever cap are engaged, and the lever (20) is in the groove on the handle shaft.

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(d) If an adjustment less than one spline tooth is necessary to easily install the bolt (21), then adjust the bolts that hold the lever cap to the lever (20). Loosen one of the bolts and tighten the other.

(e) Install the bolt (21), washer (22), bushing (23), and nut (24) to connect the spring hydraulic snubber (25) to the lever (20).

(f) Slowly open the exterior handle until the first movement of interior handle. If the movement of the exterior handle is more than 0.20 inch at the lower edge of the handle, then do the connection procedure again.

NOTE: This adjustment is very important for the correct operation of the door warning system.

S 222-035

(9) Use the surface protractor to measure the throw angle of the interior handle (View B-B, Fig. 202).

S 822-036

(10) If the throw angle is not correct, then adjust the interior handle as follows:

NOTE: These steps are used to get the correct movement of the interior and the exterior handles.

(a) If the throw angle of the interior handle is too large, you will decrease the length of the spring hydraulic snubber. If the throw angle of the interior handle is too small, you will increase the length of the spring hydraulic snubber. Do these steps to adjust the throw angle:

1) Move the interior handle to the latched position.
2) Remove the bolt (21), washer (22), bushings (23), and nut (24) to disconnect the spring hydraulic snubber (25) from the lever (20) (View A, Fig. 201).

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3) Adjust the length of the spring hydraulic snubber. The lower end of the snubber is the adjustable end (Fig. 202).

NOTE: One-half turn of the adjustable end equals approximately one degree of throw angle.

4) Loosen the bolts that hold the lever cap to the lever (20).
5) Make sure there is no free play in the interior handle shaft.
6) Hold the spring hydraulic snubber at its maximum extended length, adjust the lever (20) on the spline teeth and, if necessary, adjust the clamp bolts.
7) Connect the spring hydraulic snubber (25) to the lever (20) with the bolt (21), washer (22), bushings (23), and nut (24) (View A, Fig. 201).
8) Measure the throw angle of the interior handle.
9) Do the adjustments for the snubber length until you get the correct throw angle.

(b) Move the interior handle to the unlatched position.
(c) Push the exterior disarm lever to the fully inboard position.
(d) Lift the exterior handle up until the handle locks in position (approximately 105 degrees).
(e) Continue to lift the exterior handle until all free play is removed.
(f) If there is interference between the exterior handle and the top edge of the handle box, you must decrease the throw angle of the interior handle until there is no interference.

NOTE: For this adjustment, you can decrease the throw angle of the interior handle below the minimum angle shown.

(g) When you get the correct throw angle, install the lockwire on the jamnut on the lower end of the snubber.

S 422-037

(11) Connect the latch pin cable (3) to the handle mechanism (1) with the bolt (4), washer (5), and nut (6) (View A, Fig. 201).

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S 822-038
(12) Move the interior handle to the latched position.

S 722-039
(13) Measure the clearance between the latch pin and the guide fitting (View A-A, Fig. 203).

S 822-040
(14) If necessary, adjust the latch pin control cable (Fig. 203) as follows:

NOTE: These steps are used to get the correct engagement of the latch pin into the guide fitting on the upper door sill.

(a) Make sure the exterior handle is in the latched position (Fig. 202).
(b) Make sure there is no free play in the interior handle (View B-B, Fig. 201).
(c) Measure the clearance between the latch pin and the guide fitting (View A-A, Fig. 203).
(d) If necessary, rotate the rod end at the lower end of the latch pin control cable to adjust the clearance.

NOTE: Each 1/2 turn of the rod end causes a 0.021 inch adjustment of the latch pin.

(e) Use the two nuts at the lower end of the cable conduit for small adjustments.
(f) Lock the tabs on the lockwasher.
(g) Install lockwire on all the jamnuts.

S 422-041
(15) Connect the pushrod (2) to the handle mechanism (1) with the bolt (7), washer (8), bushings (9), and nut (10) (View A, Fig. 201).

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S 822-042

(16) Move the interior handle to the unlatched position (View B-B, Fig. 202).

S 222-043

(17) Measure the clearance between the latch cam and the trolley latch cam rollers as shown in View B-B, Fig. 204.

S 822-044

(18) If the clearance is not in the tolerance range, than do these steps:
   (a) Calculate the adjustment necessary to get the clearance into the tolerance range.
   (b) Turn the interior handle to the latched position with no free play.
   (c) Disconnect the upper pushrod from the idler crank.
   (d) Install the rig pin D2 into the overcenter mechanism housing.
   (e) Adjust the clearance as follows:
      1) To increase the clearance, adjust the micrometer sleeve to decrease the length of the lower pushrod.

         NOTE: One turn of the micrometer sleeve to decrease the length of the pushrod will increase the clearance approximately 0.025 inch.

      2) To decrease the clearance, adjust the micrometer sleeve to increase the length of the lower pushrod.

         NOTE: One turn of the micrometer sleeve to increase the length of the pushrod will decrease the clearance approximately 0.025 inch.

   (f) Adjust the micrometer sleeve on the upper pushrod until you can easily install the bolt that connects the upper and lower pushrods to the idler crank.

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(g) Refer to the thread exposure placards on the pushrods to make sure the bolts are sufficiently engaged.
(h) Install the lockwire on the micrometer adjustment nuts on the upper and lower pushrods.
(i) Remove the rig pin D2.
(j) Install the bolt, washer, and nut to connect the pushrods to the idler crank. Tighten the nut to 150-200 pound-inches. The run-on torque of the nut must be 18-80 pound-inches.

S 422-045
(19) Connect the pushrod (16) to the carrier drive lever with bolt (10), washers (11,13), bushings (12,14), and nut (15) (Fig. 201).

S 222-046
(20) Measure the angle of the jaw end of the mode select mechanism (View C-C, Fig. 205).

S 822-047
(21) If necessary, adjust the mode select mechanism as follows:

NOTE: These steps are used to get the correct angle at the jaw end of the mode select shaft. This will make sure the escape system arms and disarms correctly.

(a) Turn the interior arm/disarm lever to the disarm (inboard) position.
(b) Adjust the length of the pushrod (16) to get the correct angle of the jaw as shown. Adjust the lower end of the pushrod (16).
(c) Tighten the jamnut at the lower end of the pushrod (16) to 30-50 pound-inches.
(d) Install lockwire on the jamnut.

S 412-048
(22) Install the galleys and the lavatories that were removed (Ref 25-31, 25-41).

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S 822-049

(23) Do the Install the Doorway Lining procedure of Doorway Lining Removal/Installation (Ref 52-11-02) to complete the adjustment of the handle mechanism.

S 412-050

(24) Install the doorway lining (Ref 52-11-02).

NOTE: The last adjustments of the interior handle and the arm/disarm lever are made during the installation of the doorway lining.

TASK 52-11-25-202-125

5. Entry Door System Handle Mechanism Rigging Quick Check

A. General

(1) Do the handle mechanism quick rigging check at each entry door to make sure that the handle rigging is in permitted limits.

B. References

(1) 25-22-03, Moveable Ceiling Panels

(2) AMM 52-11-25, Entry/Service Door Handle Mechanism

C. Access

(1) Location Zones

831	Forward Entry Door
833	Aft Entry Door
841	Forward Service Door
843	Aft Service Door

D. Procedure

S 712-128

WARNING: DO NOT OPERATE ONE OF THE TWO INTERIOR OR EXTERIOR DOOR WHEN THE SLIDE PACK IS NOT INSTALLED. THE DOOR IS COUNTERBALANCED. OPERATION OF THE DOOR HANDLES IN THIS CONDITION WILL CAUSE THE DOOR TO OPEN QUICKLY. MAKE SURE THAT THE ARM/DISARM MODE SELECT HANDLE IS IN THE DISARMED MANUAL POSITION DURING OPERATION OF THE DOOR.

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(1) Operate the door a minimum of one full cycle to make sure that the door can operate and has no known sign of a malfunction.

S 012-129
(2) Fold the movable ceiling panels inboard for access to the ceiling opening (AMM 25-22-03).

S 012-130
(3) Open the door and put the external and internal handles in the closed position.

S 712-131
(4) Cycle the ARM/DISARM handle from the Disarm (manual) position to armed (automatic) position and back to Disarm (manual) position.

S 012-132
(5) Turn then hold the internal handle grip 4 to 6 inches inboard of the lining surface.

S 012-133
(6) Push in the external disarm lever. Turn the external handle until its movable pin engages the external handle shaft.

S 222-134
(7) With the movable pin engaged, make sure that free play of the external handle is less than 0.35 inches at the handle grip.

S 712-135
(8) Release the internal and external handles. Make sure that the two handles move back to the full closed position.

S 012-136
(9) Slowly open the external handle just until movement of the clutch or movement of the internal handle is detected.

NOTE: The clutch will not let the internal handle open when the external handle operates. Minimum movement of the internal handle shows when the external handle operates. The clutch shows at the top end of the internal handle assembly through a cutout. This cutout can be found at the side of the handle housing. All airplanes do not have the clutch installed.

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S 222-137
(10) Make sure that the external handle extends 0.20 inches or less from the handle cutout when movement of the clutch internal handle is monitored.

S 752-106
(11) For doors with the internal handle clutch installed, lift the external handle to the open position.
(a) Make sure that the internal handle can move and engage the handle clutch mechanism.
(b) Make sure that the internal handle does not touch the internal lining.

S 752-107
(12) Close then latch the door with the internal handle.

S 752-108
(13) For doors with the internal handle clutch.
(a) Make sure that the clearance between the internal handle and the lining rubber bumper is 0.01 inches minimum. With the internal and external handles in the closed and latched position.

S 862-109
(14) Unlatch and open the door then install again the movable ceiling panel (AMM 25-22-03).

S 712-110
(15) Operate the door with two full cycles to make sure that the door operates and has no sign of problems.

NOTE: If the procedure for quick check of the door handle finds that the handle rigging is not in permitted limits. Refer to (AMM 52-11-25) for the handle adjustment procedure.

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TASK 52-11-25-832-126

6. Door Warning System Proximity Sensor Adjustment and Replacement

A. General

(1) Do these steps on all entry doors.

B. References

(1) AMM 52-71-00/501, Door Warning System Proximity Sensors

(2) AMM 52-71-01, Door Warning System Proximity Sensors

C. Access

(1) Location Zones

831	Forward Entry Door
833	Aft Entry Door
841	Forward Service Door
843	Aft Service Door

D. Procedure

S 712-138

(1) Make sure of the door/closed/sensor/adjustment (AMM 52-71-00-501).

(a) If necessary, adjust the door/closed/sensor/clearance to the lower end of the permitted range (0.070-0.130 inches).

S 022-139

(2) Replace the installed Ryton (plastic) sensor (P/N S283T006-8) with the new stainless steel proximity sensor (P/N S283T006-28) for the door latched installation refer to (AMM 52-71-01).

S 222-140

(3) For the door latch sensor, adjust the sensor/target/air/ clearance to (0.005-0.020)inches.

(a) You can measure the clearance between the proximity sensor face and the latch/pin/cable/end/target.

(b) You can adjust the sensor clearance by the turn of the terminal fitting (FIGURE 206). This will make a change of 0.028 inches each one half turn.

(c) If a smaller change is necessary, you can add P/N NAS1149D0416J washers at two (2) areas. The change of 0.016 inches will be the result of each washer.

(d) There is a maximum of 0.06 inches that you can removed from the end of the terminal fitting.

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(e) If it bottoms-out in the cable outer casing see (FIGURE 206 A-A).

TASK 52-11-25-202-127

7. Door Warning System Proximity Sensor Operational Test

A. Access

(1) Location Zones

831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

B. Procedure

S 712-115

(1) Close and latch the entry door.

S 712-116

(2) Make sure that the EICAS message that is related to the door that applies does not show.

S 712-117

(3) Slowly pull the external handle out of its recess position. Make sure that the EICAS message shows as recorded in the subsequent steps that follow.

(a) There are no indications that occur from (0.0-0.2) inches of the handle movement.

(b) The indications always occur at (0.2-0.7) inches of the handle movement.

NOTE: Use a six inch scale or equivalent to make a measurement. Make the measurement from the bottom end of the external handle to the external surface of the handle box casing.

S 712-118

(4) Release the external handle. Make sure that the external handle moves back to flush with its cutout.

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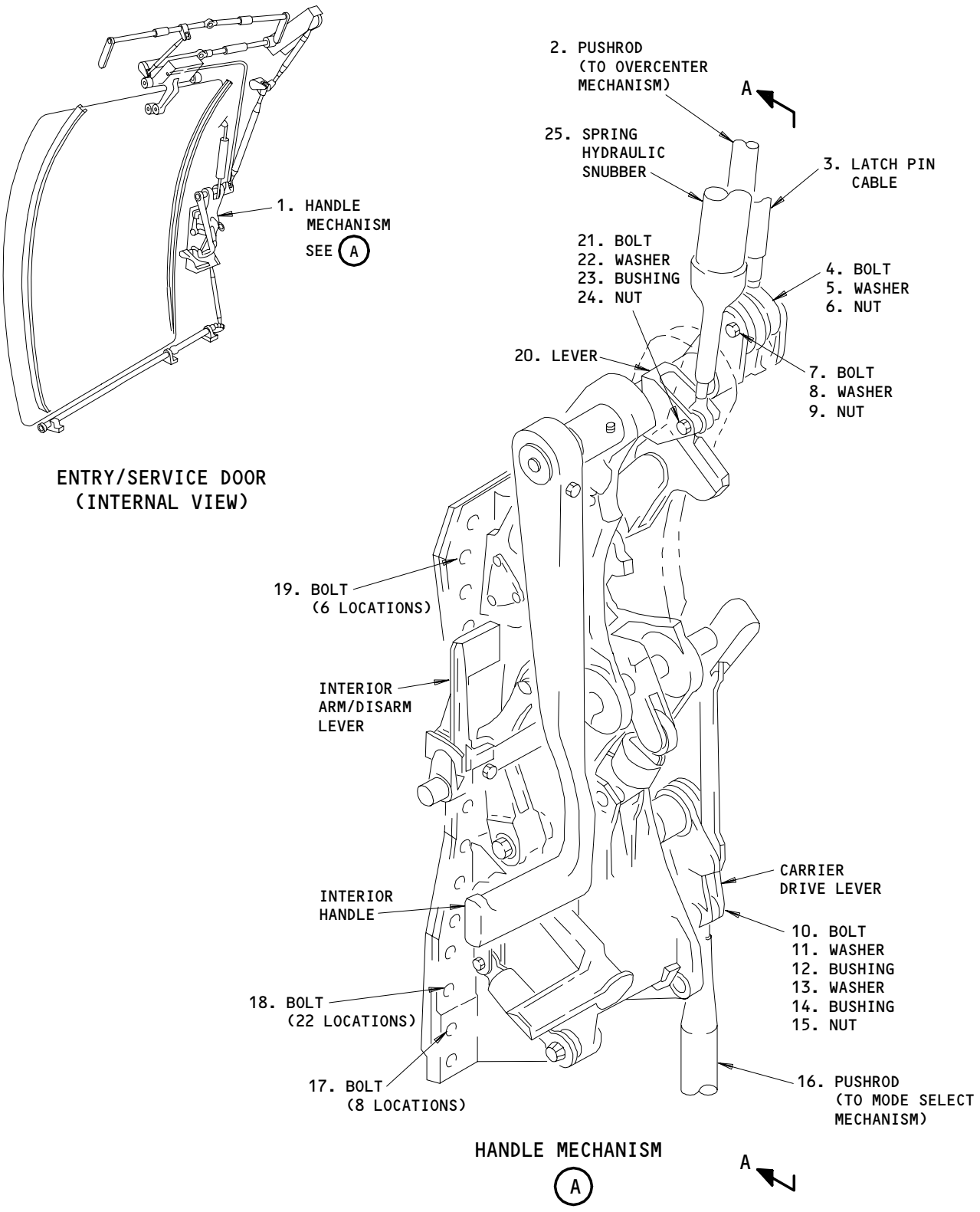

Forward or Aft Entry/Service Door Handle Mechanism
Figure 201 (Sheet 1)

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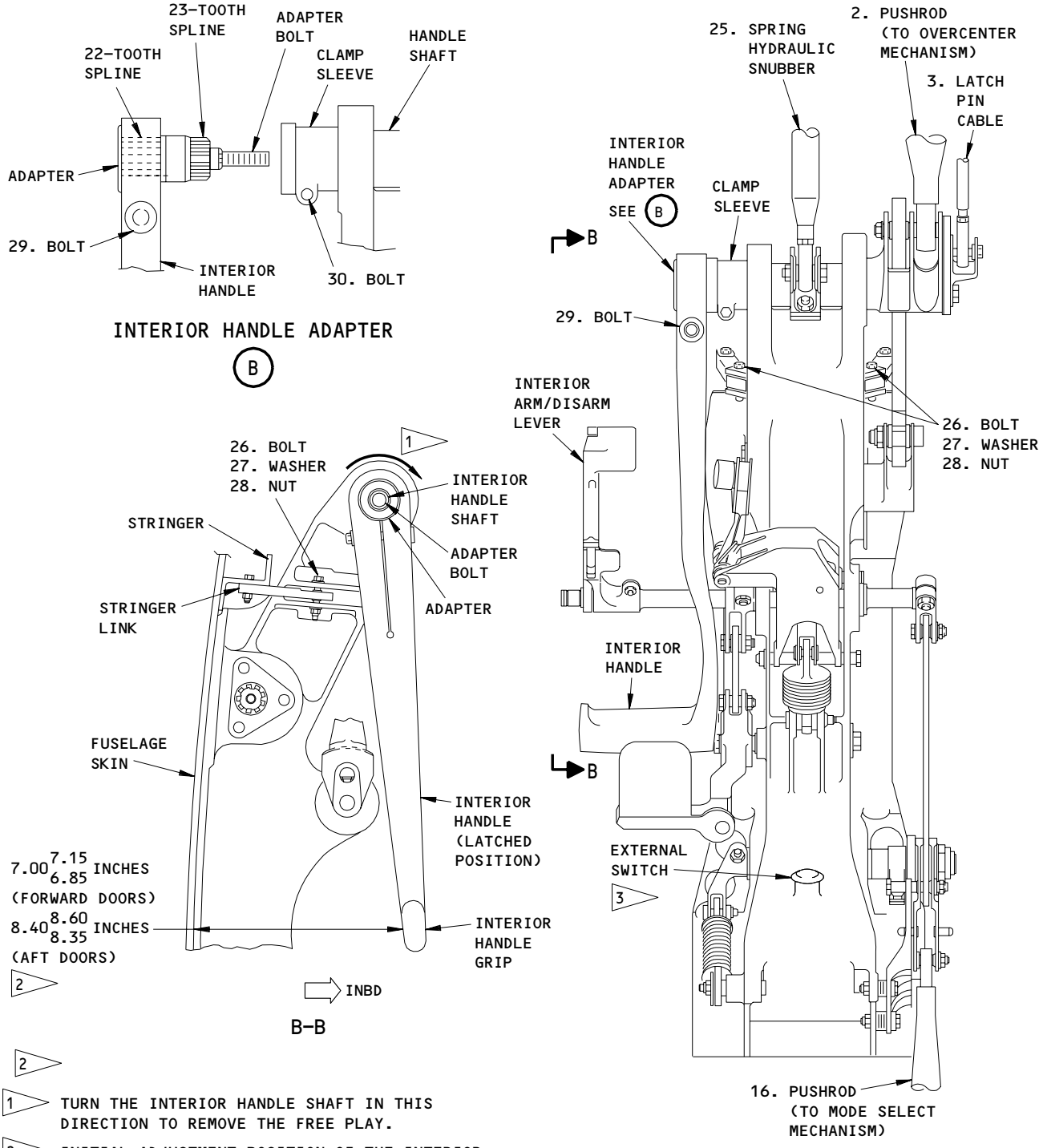

2

1 TURN THE INTERIOR HANDLE SHAFT IN THIS DIRECTION TO REMOVE THE FREE PLAY.

2 INITIAL ADJUSTMENT POSITION OF THE INTERIOR HANDLE BEFORE THE INSTALLATION OF THE DOORWAY LINING

3 ENTRY DOOR WITH ELECTRICAL OPERATION

Forward or Aft Entry/Service Door Handle Mechanism
Figure 201 (Sheet 2)

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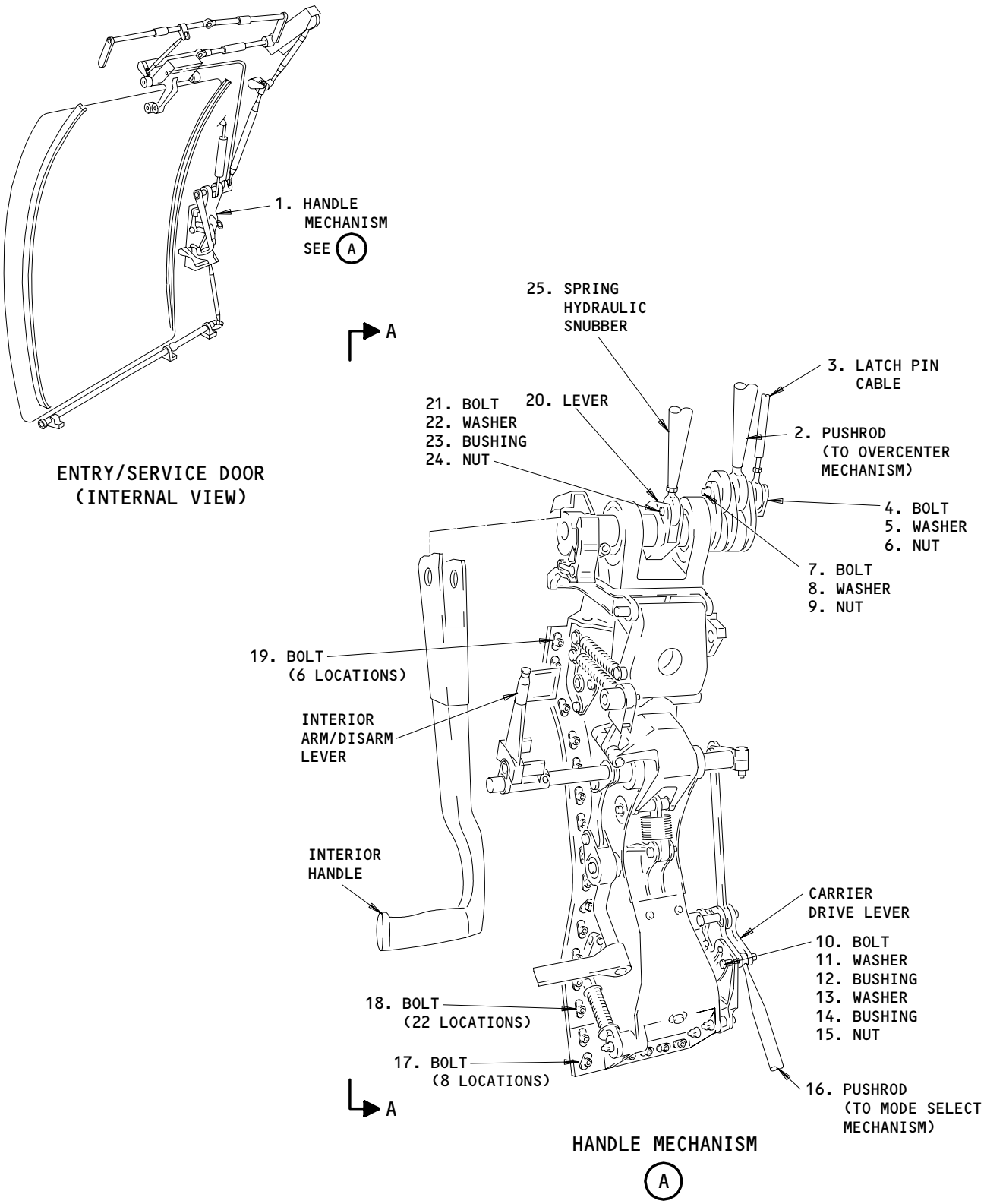

Forward or Aft Entry/Service Door Handle Mechanism
Figure 201A (Sheet 1)

EFFECTIVITY
INTERIOR HANDLE WITH CLUTCH MECHANISM

955273

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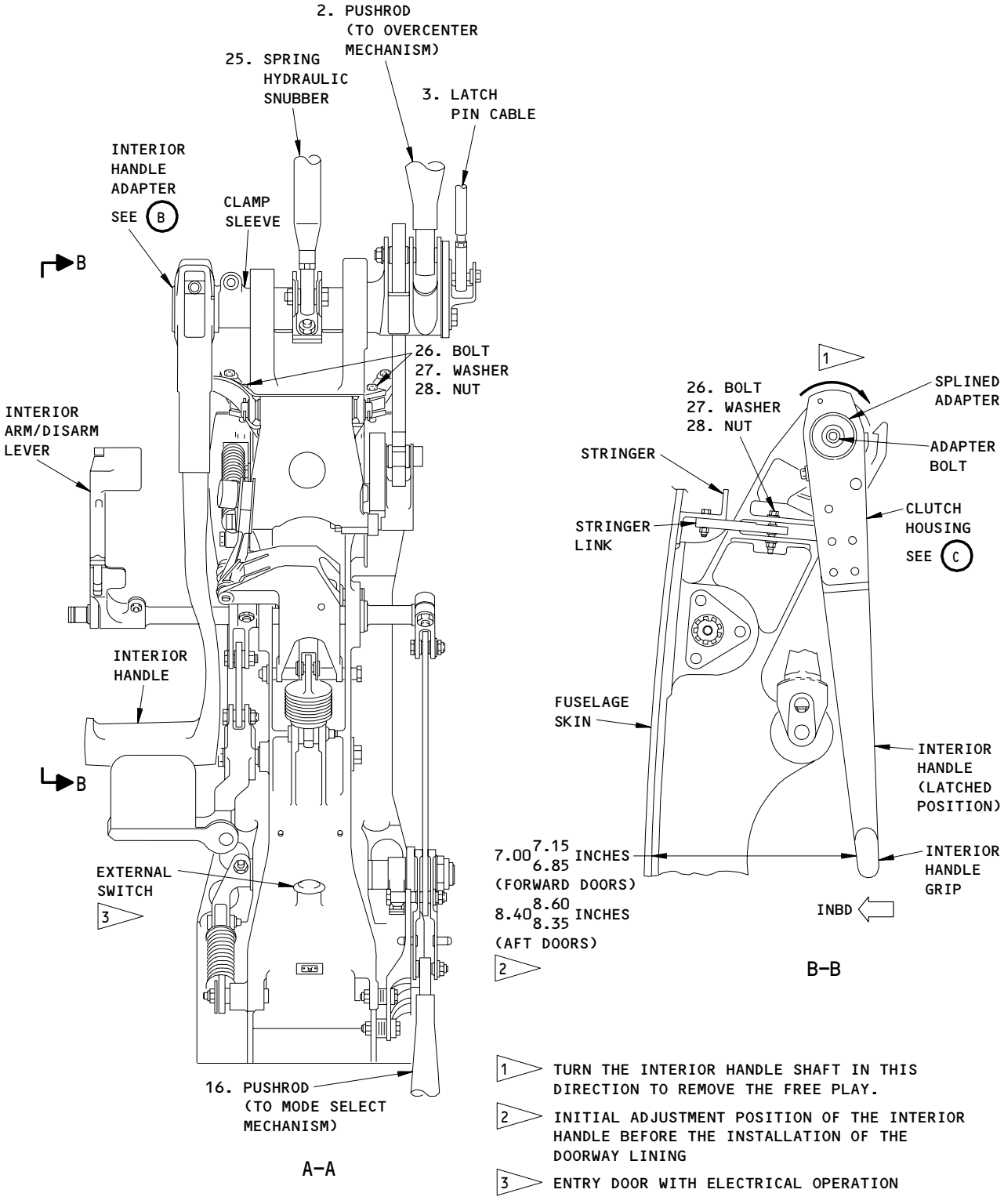

Forward or Aft Entry/Service Door Handle Mechanism
Figure 201A (Sheet 2)

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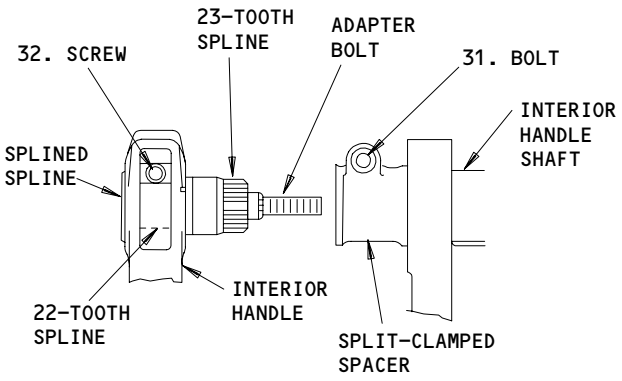
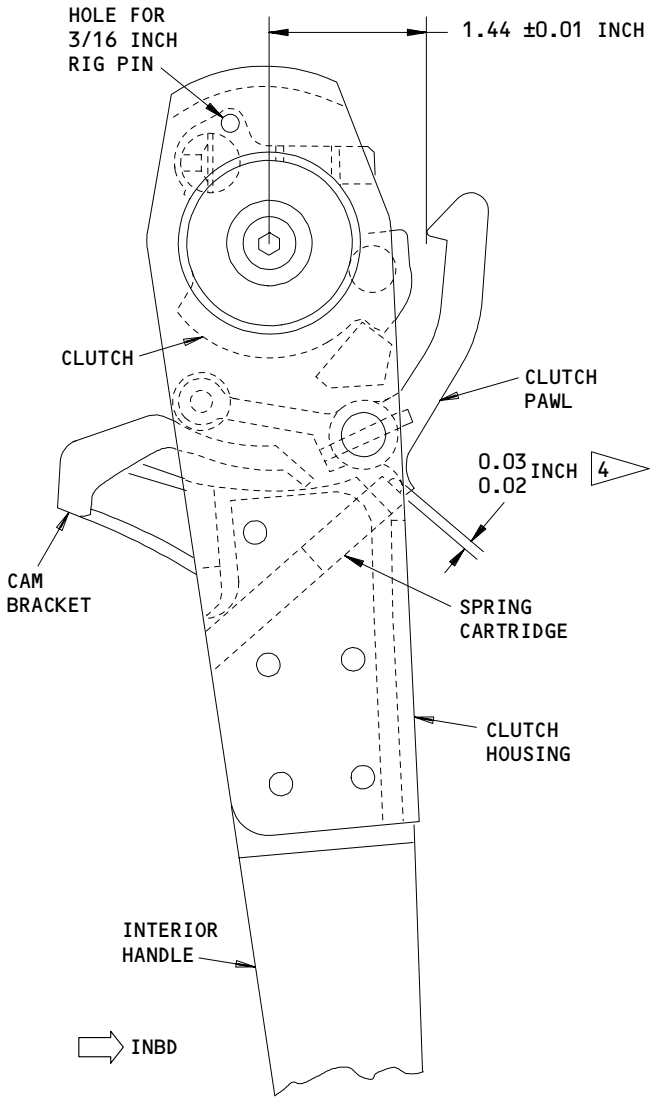


INTERIOR HANDLE ADAPTER

(B)



CLUTCH HOUSING

(C)

4 MEASURE DIMENSION BETWEEN TOP OF THE THREADED SURFACE ON THE SPRING CARTRIDGE AND THE CLUTCH PAWL.

Forward or Aft Entry/Service Door Handle Mechanism
Figure 201A (Sheet 3)

EFFECTIVITY
INTERIOR HANDLE WITH CLUTCH MECHANISM

821279

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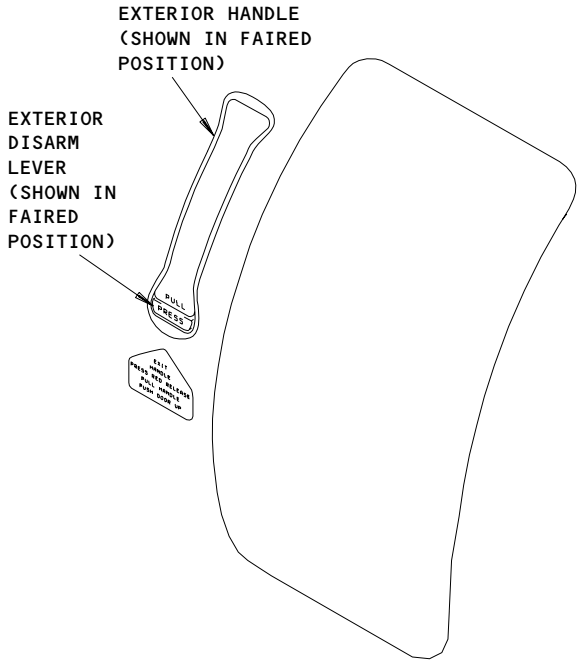
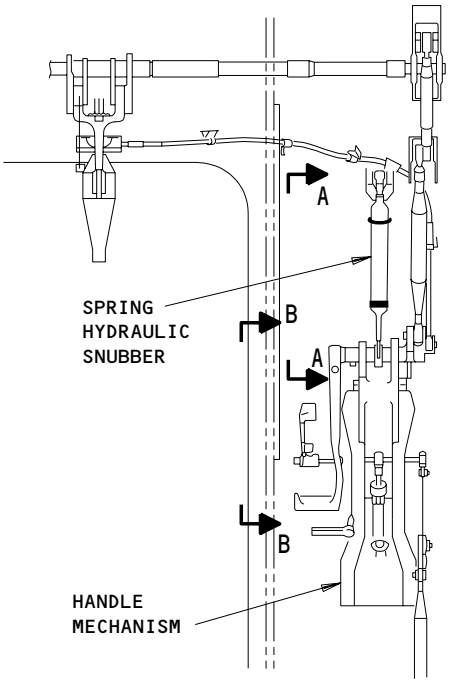
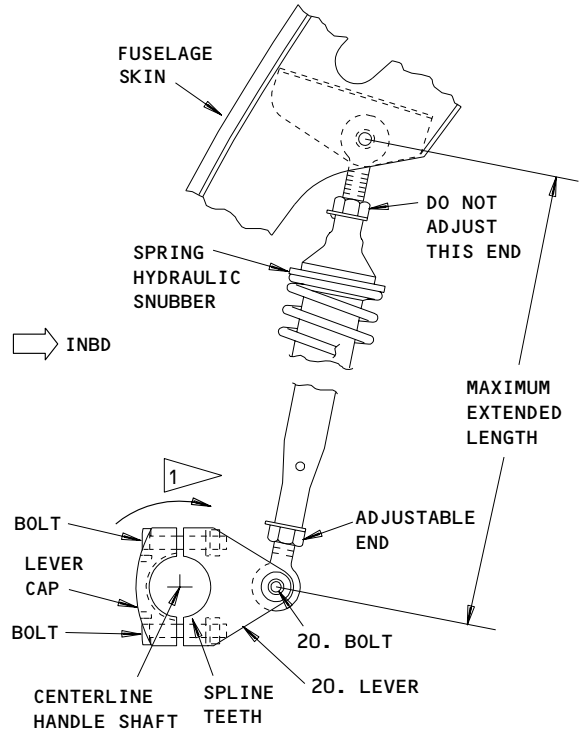


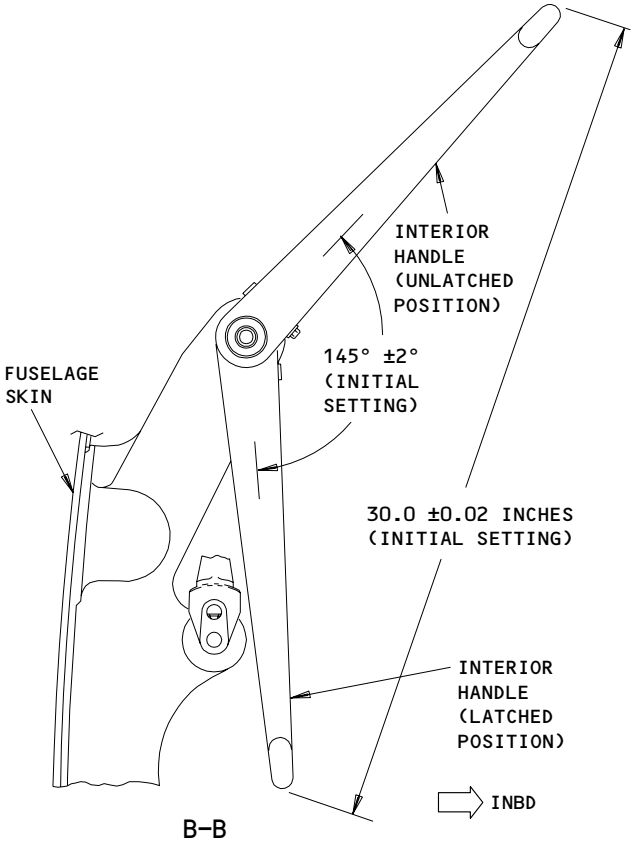
ENTRY/SERVICE DOOR
(EXTERNAL VIEW)



ENTRY/SERVICE DOOR HANDLE MECHANISM



A-A



B-B

1 TURN THE INTERIOR HANDLE SHAFT IN THIS DIRECTION TO REMOVE THE FREE PLAY

Interior Handle Throw Angle
Figure 202

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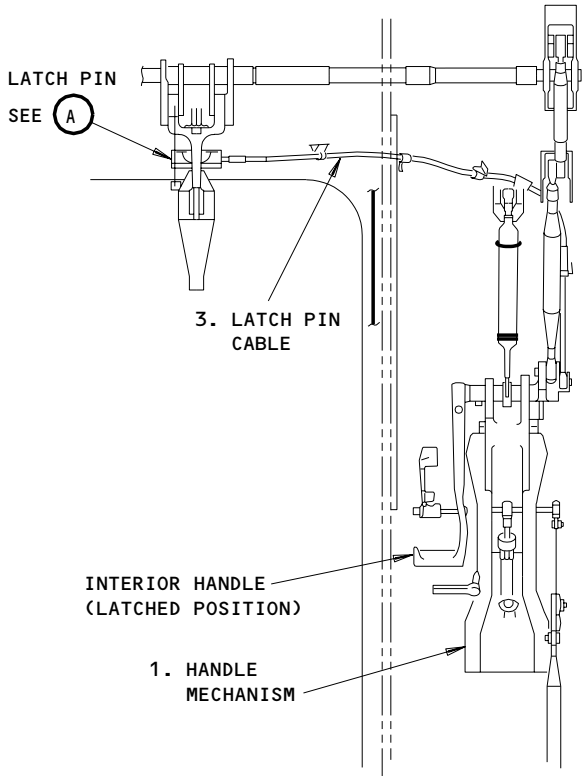
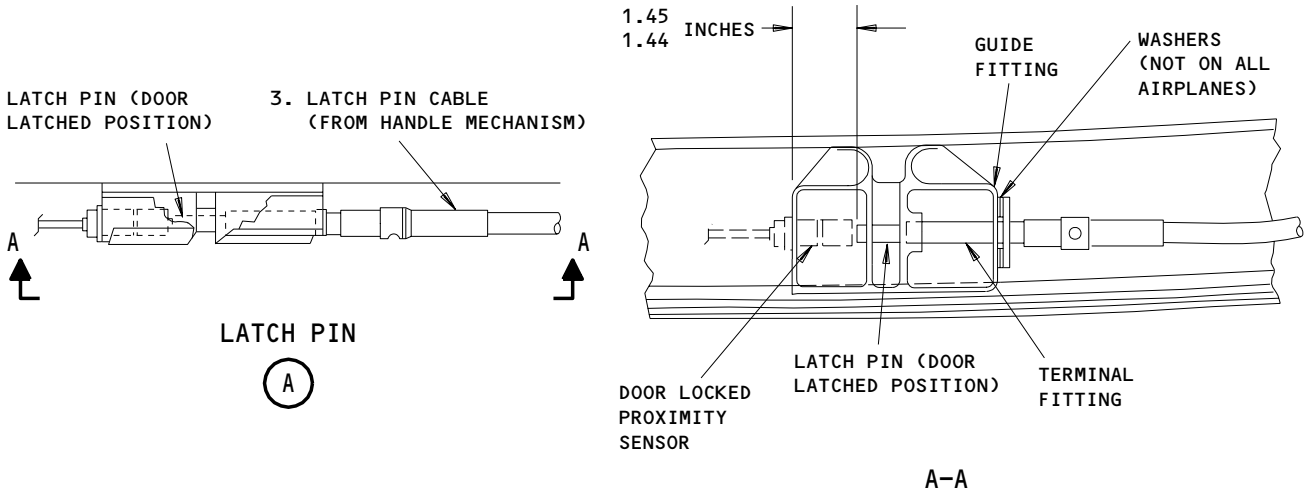


ENTRY/SERVICE DOOR HANDLE MECHANISM



Latch Pin Cable
Figure 203

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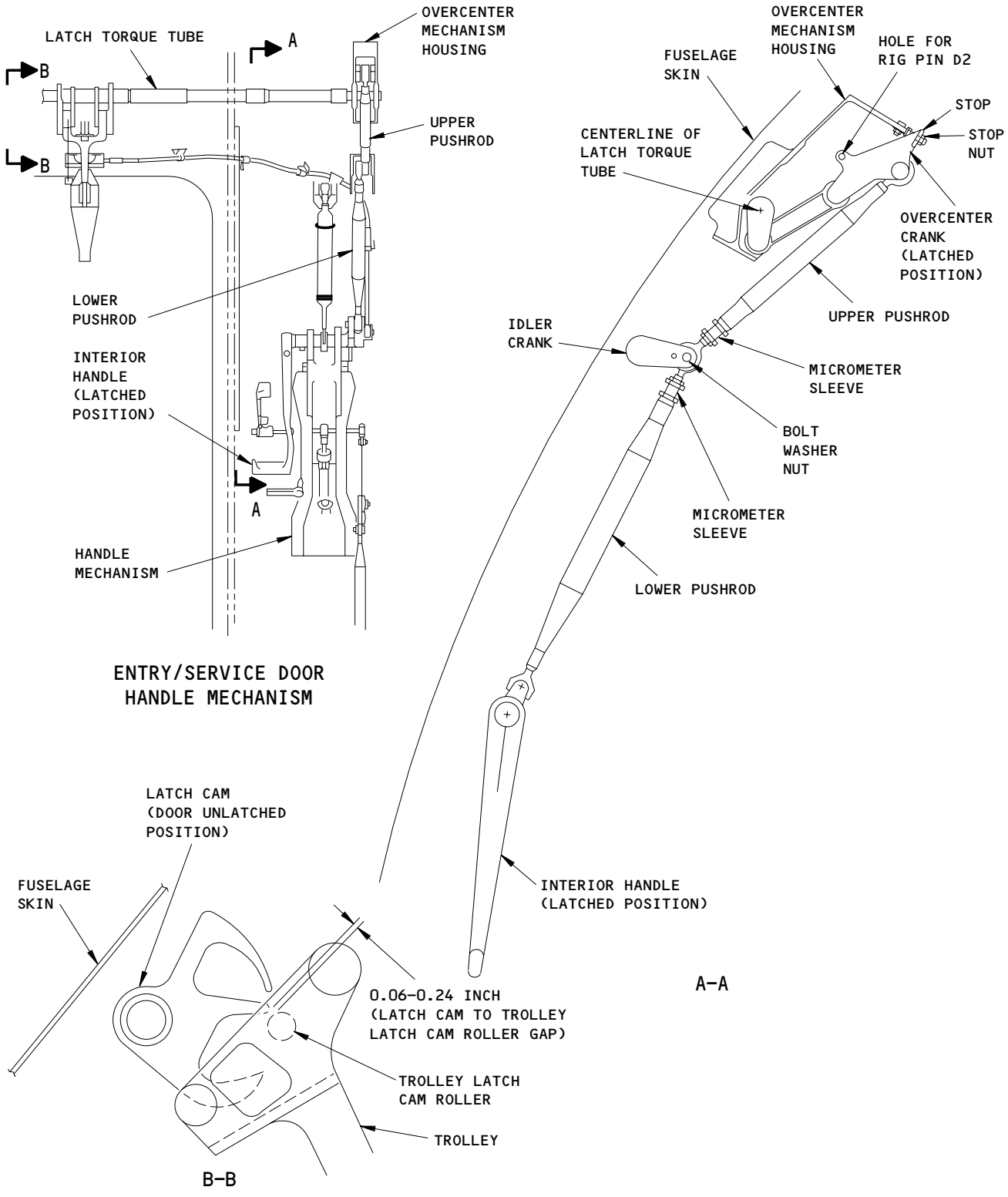

Overcenter Mechanism Pushrods
Figure 204

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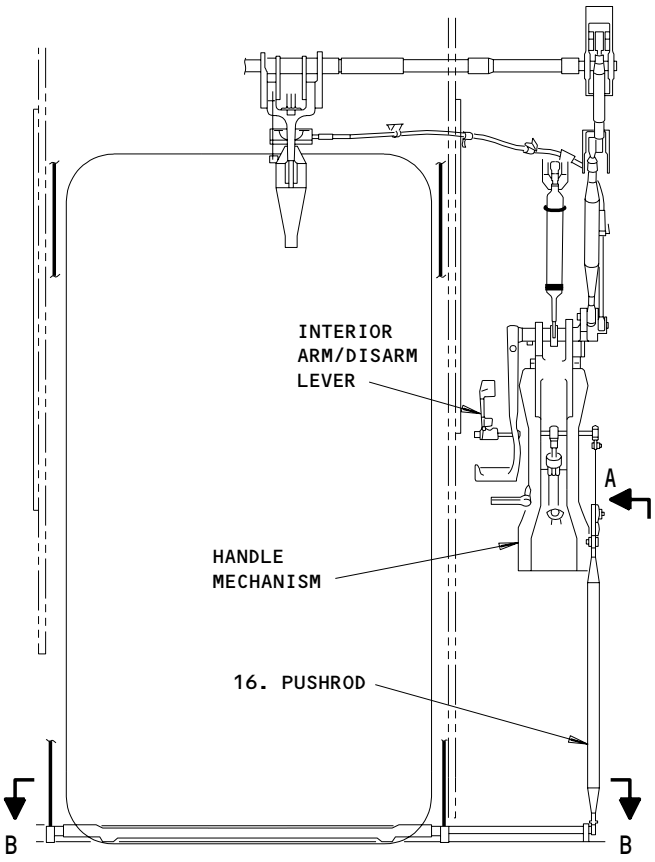
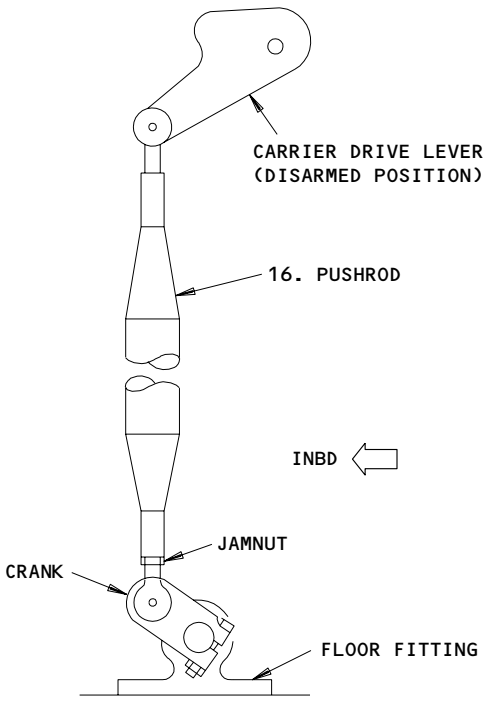
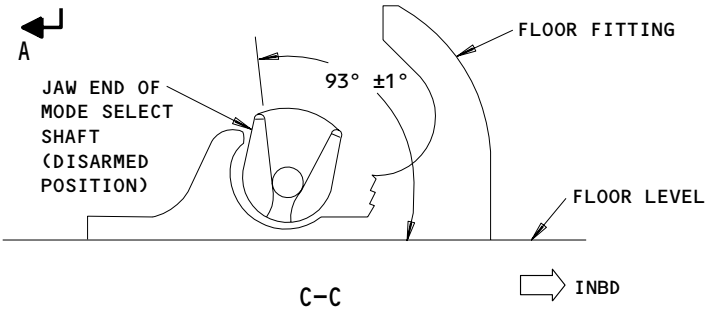


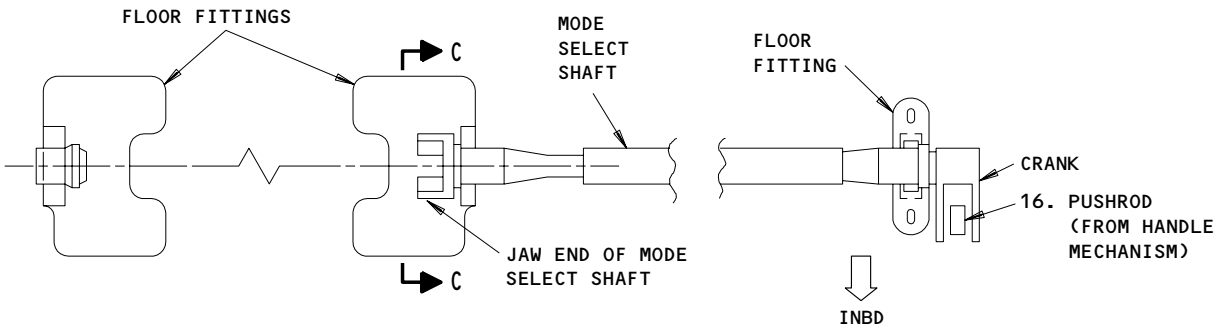
ENTRY/SERVICE DOOR
(INTERNAL VIEW)



A–A



C–C



B–B

Mode Select Mechanism
Figure 205

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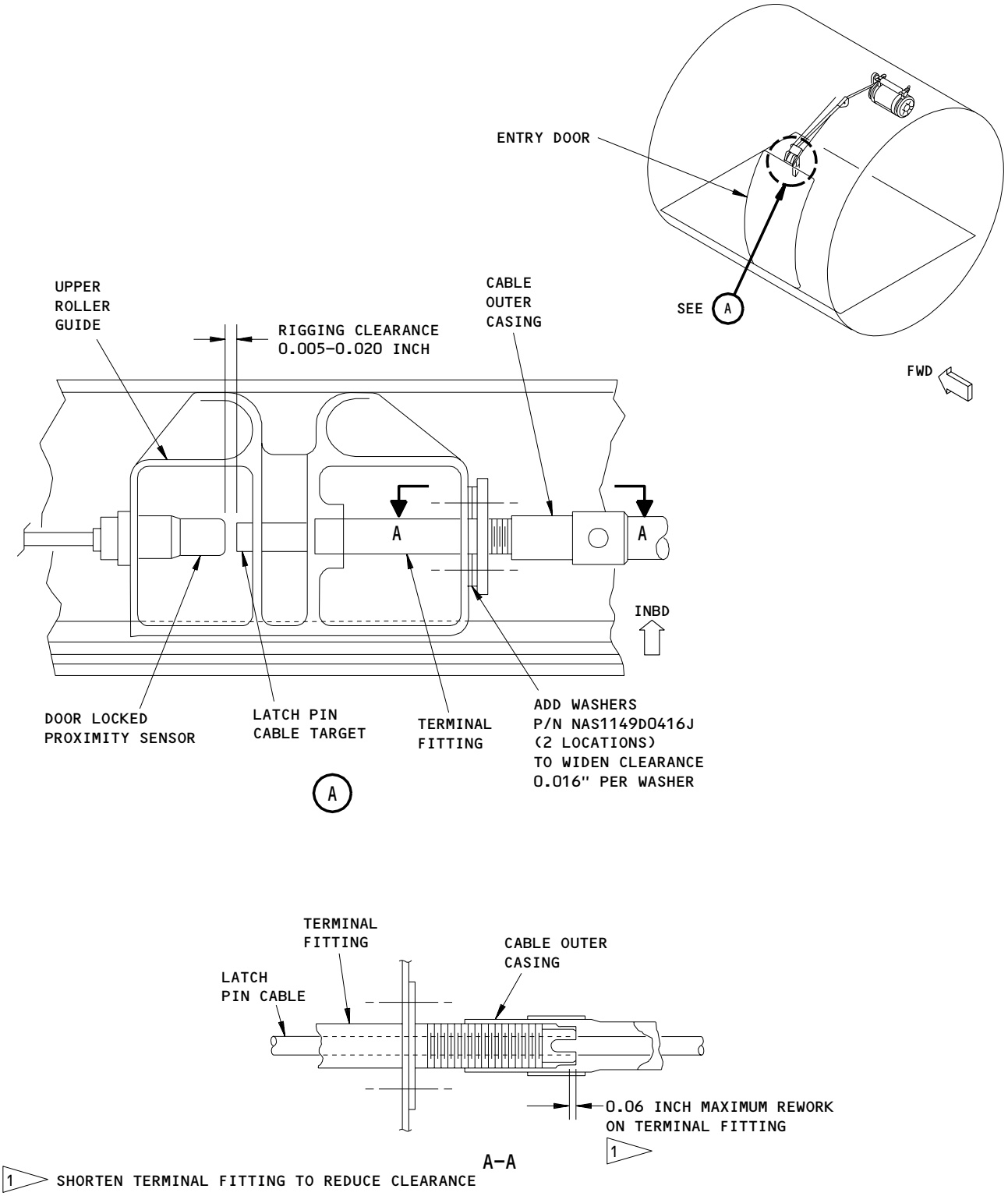

Rigging Procedure And Sensor Replacement
Figure 206

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ENTRY/SERVICE DOOR HANDLE MECHANISM - INSPECTION/CHECK

1. General
   A. This procedure has a task to do a wear limits check on the entry/service door handle mechanism.

   TASK 52-11-25-206-002-001

2. Entry/Service Door Handle Mechanism Wear Limits (Fig. 601)

   NOTE: The wear limits for the other components that are connected to the handle mechanism are given in the Maintenance Manual procedures for those components.

   A. General
      (1) This task only has illustrations and a wear limits table which show the data for wear limits. There are no instructions for access, removal, or installation of the parts. For this data, refer to Entry/Service Door Handle Mechanism - Maintenance Practices (AMM 52-11-25/201).

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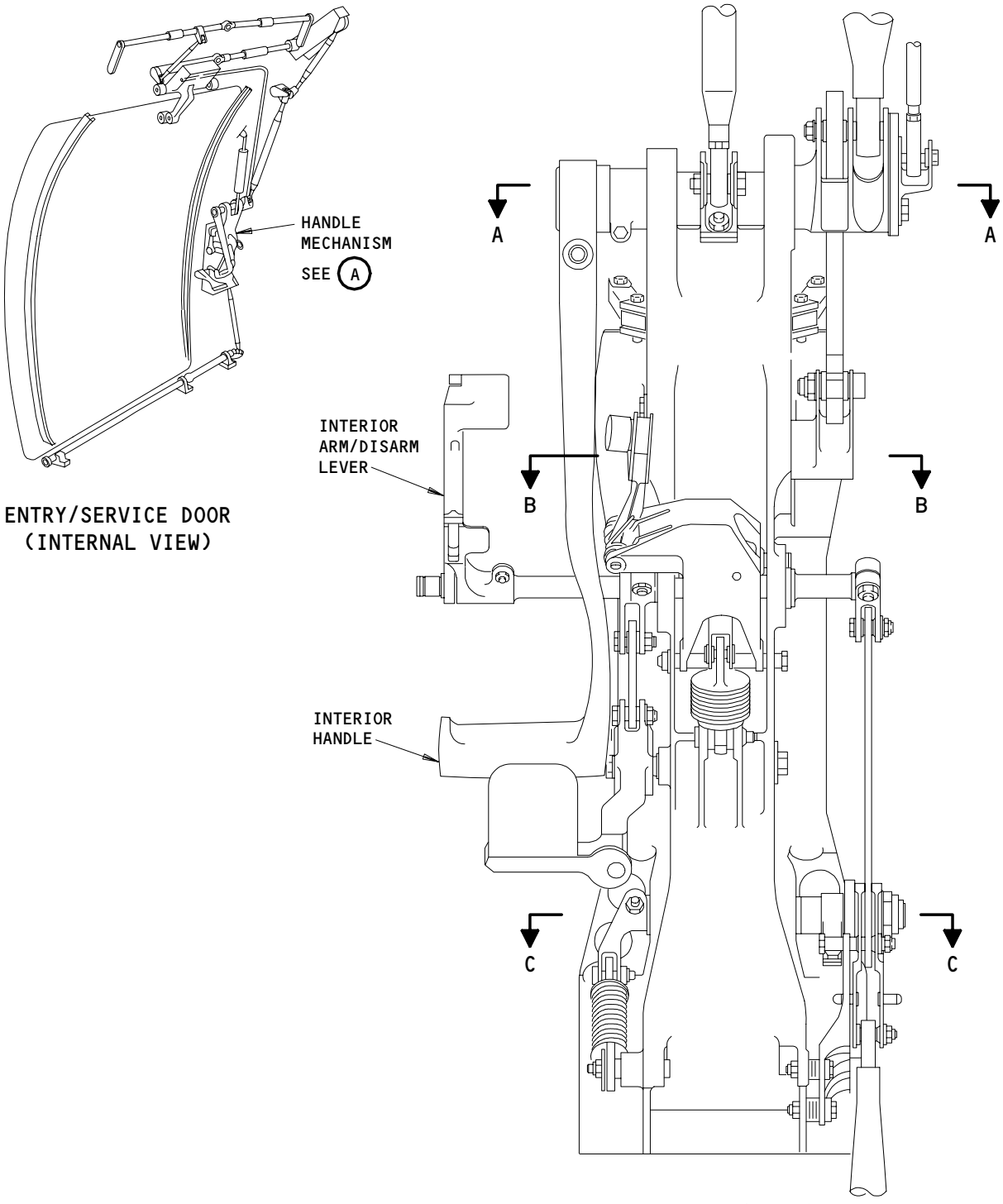

Entry/Service Door Handle Mechanism Wear Limits
Figure 601 (Sheet 1)

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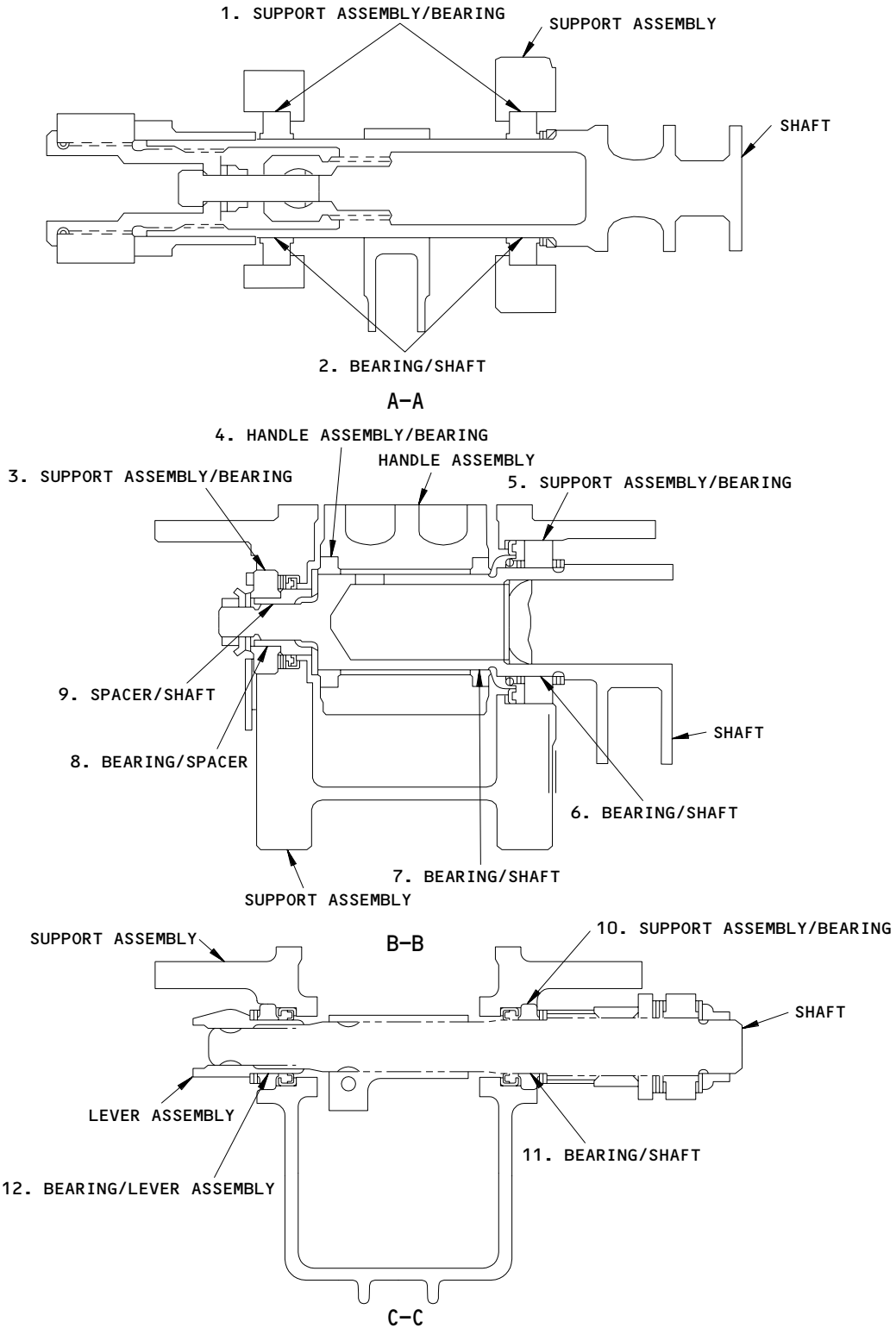

Entry/Service Door Handle Mechanism Wear Limits
Figure 601 (Sheet 2)

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INDEX NO.	PART NAME	DIM.	DESIGN LIMITS		WEAR LIMITS		REPLACE WORN PART	REPAIR WORN PART	REPAIR INSTR
			DIAMETER		PERMITTED WEAR DIMENSION INCHES (mm)	MAXIMUM DIAMETER CLEARANCE INCHES (mm)			
			MINIMUM INCHES (mm)	MAXIMUM INCHES (mm)					
1	SUPPORT ASSEMBLY	ID	2.0625 (52.388)	2.0635 (52.413)	2.0685 (52.540)	0.0060 (0.152)		X	1
	BEARING	OD	2.0615 (52.362)	2.0625 (52.388)	2.0575 (52.261)		X		
2	BEARING	ID	1.3120 (33.325)	1.3130 (33.350)	1.3140 (33.376)	0.0030 (0.076)	X		
	SHAFT	OD	1.3100 (33.274)	1.3110 (33.299)	1.3100 (33.274)			X	1
3	SUPPORT ASSEMBLY	ID	1.3750 (34.925)	1.3760 (34.950)	1.3780 (35.001)	0.0030 (0.076)		X	1
	BEARING	OD	1.3745 (34.912)	1.3750 (34.925)	1.3730 (34.874)		X		
4	HANDLE ASSEMBLY	ID	1.7500 (44.450)	1.7510 (44.475)	1.7530 (44.526)	0.0030 (0.076)		X	1
	BEARING	OD	1.7490 (44.425)	1.7500 (44.450)	1.7480 (44.399)		X		
5	SUPPORT ASSEMBLY	ID	2.1885 (55.588)	2.1895 (55.613)	2.1915 (55.664)	0.0040 (0.102)		X	1
	BEARING	OD	2.1865 (55.537)	2.1875 (55.563)	2.1855 (55.512)		X		
6	BEARING	ID	1.4370 (36.500)	1.4380 (36.525)	1.4400 (36.576)	0.0025 (0.064)	X		
	SHAFT	OD	1.4365 (36.487)	1.4375 (36.513)	1.4355 (36.462)			X	1
7	BEARING	ID	1.3118 (33.320)	1.3132 (33.355)	1.3150 (33.401)	0.0040 (0.102)	X		
	SHAFT	OD	1.3100 (33.274)	1.3110 (33.299)	1.3092 (33.254)			X	1
8	BEARING	ID	0.6245 (15.862)	0.6250 (15.875)	0.6270 (15.926)	0.0045 (0.114)	X		
	SPACER	OD	0.6215 (15.786)	0.6225 (15.812)	0.6205 (15.761)		X		
9	SPACER	ID	0.5010 (12.725)	0.5040 (12.802)	0.6000 (15.240)	0.0100 (0.254)	X		
	SHAFT	OD	0.4950 (12.573)	0.5000 (12.700)	0.4940 (12.548)			X	1
10	SUPPORT ASSEMBLY	ID	1.1875 (30.163)	1.1885 (30.188)	1.1915 (30.264)	0.0040 (0.102)		X	1
	BEARING	OD	1.1865 (30.137)	1.1875 (30.163)	1.1845 (30.086)		X		

1 YOU CAN REPAIR THIS PART; REFER TO THE COMPONENT MAINTENANCE MANUAL FOR THE INSTRUCTIONS

Entry/Service Door Handle Mechanism Wear Limits
Figure 601 (Sheet 3)

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INDEX NO.	PART NAME	DIM.	DESIGN LIMITS		WEAR LIMITS		REPLACE WORN PART	REPAIR WORN PART	REPAIR INSTR
			DIAMETER		PERMITTED WEAR DIMENSION INCHES (mm)	MAXIMUM DIAMETER CLEARANCE INCHES (mm)			
			MINIMUM INCHES (mm)	MAXIMUM INCHES (mm)					
11	BEARING	ID	0.7493 (19.032)	0.7507 (19.068)	0.7537 (19.144)	0.0057 (0.145)	X		
	SHAFT	OD	0.7470 (18.974)	0.7480 (18.999)	0.7450 (18.923)			X	1
12	BEARING	ID	0.7493 (19.032)	0.7507 (19.068)	0.7537 (19.144)	0.0057 (0.145)	X		
	LEVER ASSEMBLY	OD	0.7470 (18.974)	0.7480 (18.999)	0.7450 (18.923)			X	1

Entry/Service Door Handle Mechanism Wear Limits
Figure 601 (Sheet 4)

M13292

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ENTRY/SERVICE DOOR HANDLE MECHANISM - INSPECTION/CHECK

1. General
   A. This procedure has a task to do a wear limits check on the entry/service door handle mechanism.

   TASK 52-11-25-206-002-002

2. Entry/Service Door Handle Mechanism Wear Limits (Fig. 601)

   NOTE: The wear limits for the other components that are connected to the handle mechanism are given in the Maintenance Manual procedures for those components.

   A. General
      (1) This task only has illustrations and a wear limits table which show the data for wear limits. There are no instructions for access, removal, or installation of the parts. For this data, refer to Entry/Service Door Handle Mechanism - Maintenance Practices (AMM 52-11-25/201).

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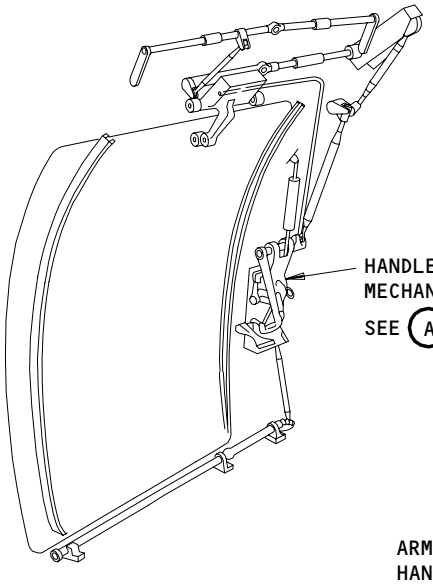
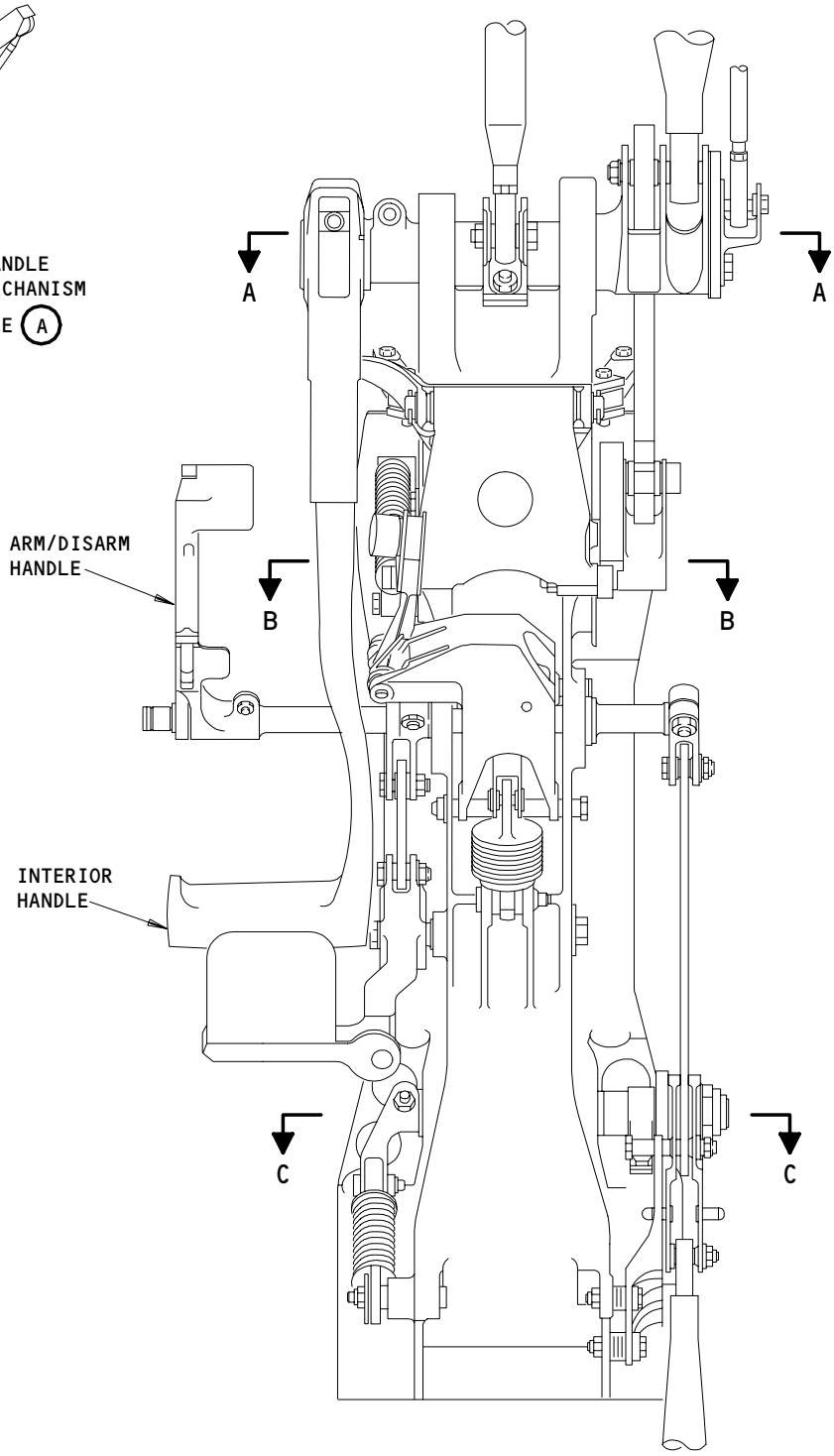


ENTRY/SERVICE DOOR
(EXAMPLE)



HANDLE MECHANISM
(EXAMPLE FOR FORWARD OR AFT ENTRY/SERVICE DOOR)
(A)

Entry/Service Door Handle Mechanism Wear Limits
Figure 601 (Sheet 1)

821298

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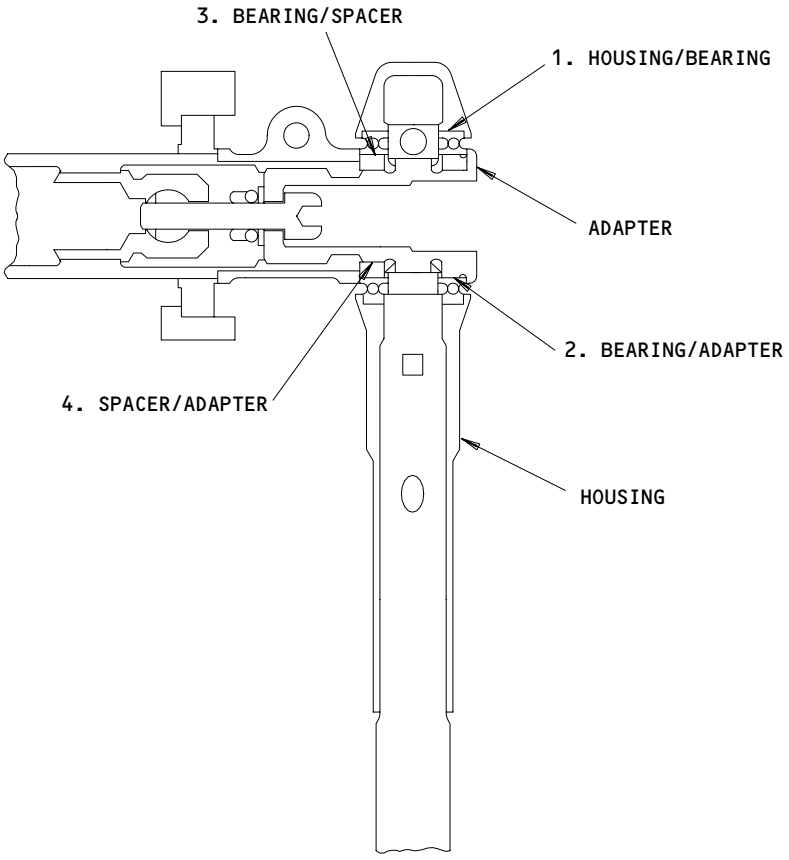

A-A

Entry/Service Door Handle Mechanism Wear Limits
Figure 601 (Sheet 2)

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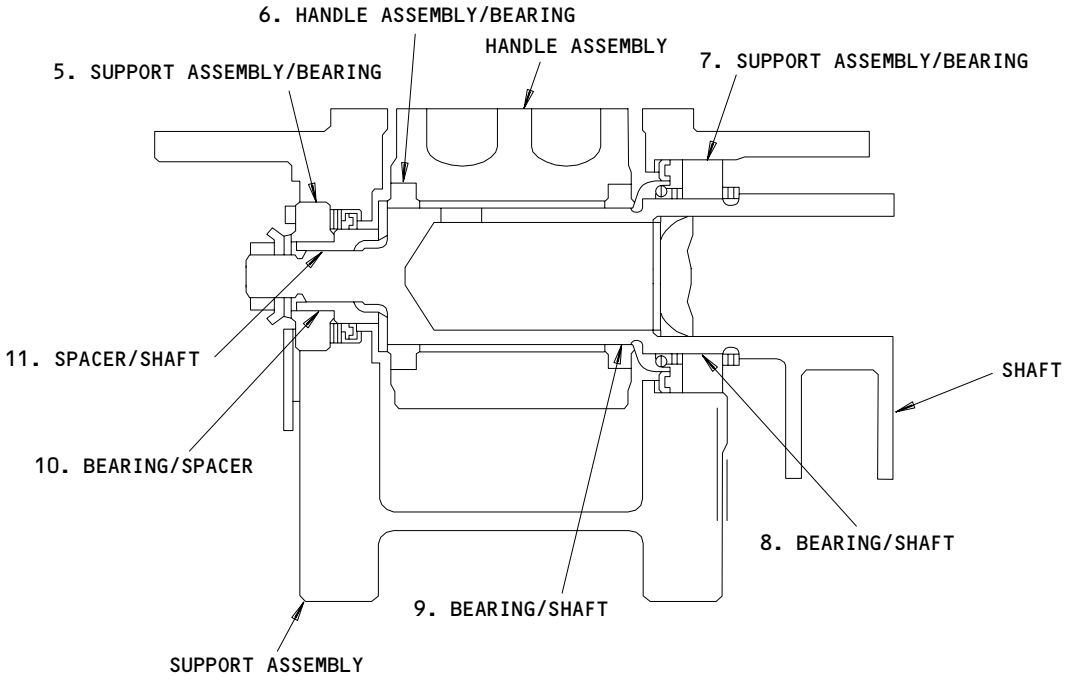
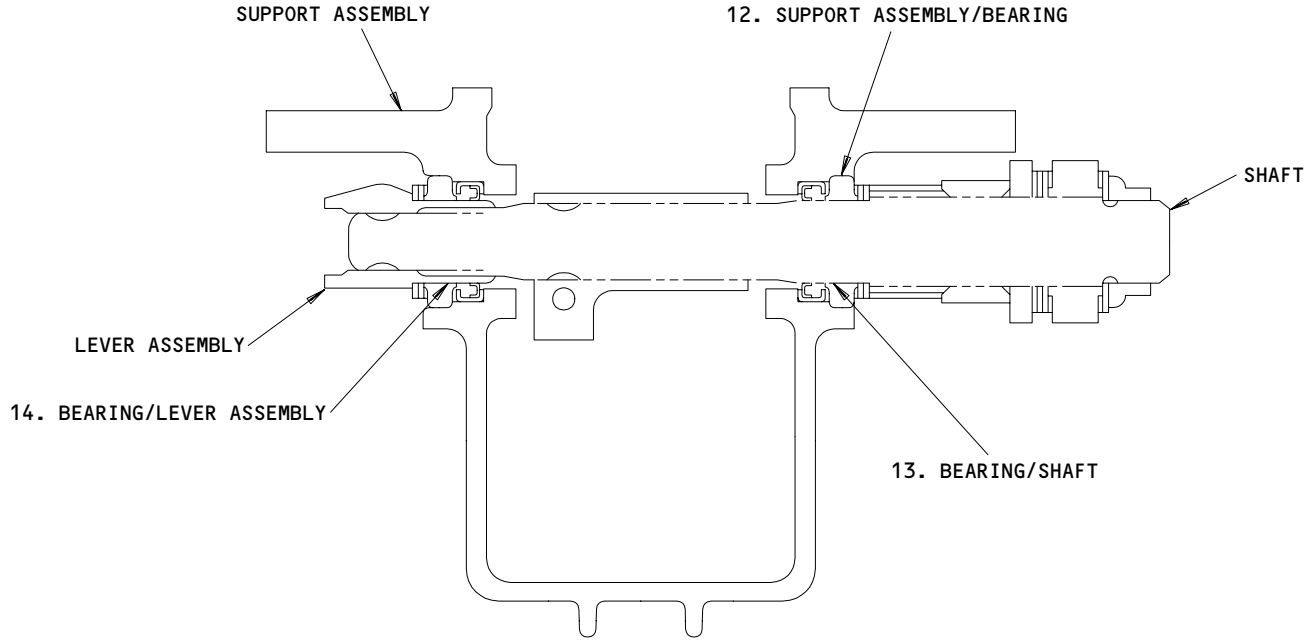


B–B



C–C

Entry/Service Door Handle Mechanism Wear Limits
Figure 601 (Sheet 3)

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INDEX NO.	PART NAME	DIM.	DESIGN LIMITS		WEAR LIMITS		REPLACE WORN PART	REPAIR WORN PART	REPAIR INSTR
			DIAMETER		PERMITTED WEAR DIMENSION INCHES (mm)	MAXIMUM DIAMETER CLEARANCE INCHES (mm)			
			MINIMUM INCHES (mm)	MAXIMUM INCHES (mm)					
1	HOUSING	ID	1.7500 (44.450)	1.7510 (44.475)	1.7515 (44.488)	0.0030 (0.076)		X	1
	BEARING	OD	1.7490 (44.425)	1.7500 (44.450)	1.7480 (44.399)		X		
2	BEARING	ID	1.3118 (33.320)	1.3132 (33.355)	1.3142 (33.381)	0.0030 (0.076)	X		
	ADAPTER	OD	1.3112 (33.304)	1.3117 (33.317)	1.3107 (33.292)			X	1
3	BEARING	ID	1.3118 (33.320)	1.3132 (33.355)	1.3142 (33.381)	0.0030 (0.076)	X		
	SPACER	OD	1.3112 (33.304)	1.3117 (33.317)	1.3107 (33.292)		X		
4	SPACER	ID	1.0306 (26.177)	1.0311 (26.190)	1.0316 (26.203)	0.0017 (0.043)	X		
	ADAPTER	OD	1.0300 (26.162)	1.0305 (26.175)	1.0295 (26.149)			X	1
5	SUPPORT ASSEMBLY	ID	1.3750 (34.925)	1.3760 (34.950)	1.3780 (35.001)	0.0030 (0.076)		X	1
	BEARING	OD	1.3745 (34.912)	1.3750 (34.925)	1.3730 (34.874)		X		
6	HANDLE ASSEMBLY	ID	1.7500 (44.450)	1.7510 (44.475)	1.7530 (44.526)	0.0030 (0.076)		X	1
	BEARING	OD	1.7490 (44.425)	1.7500 (44.450)	1.7480 (44.399)		X		
7	SUPPORT ASSEMBLY	ID	2.1885 (55.588)	2.1895 (55.613)	2.1915 (55.664)	0.0040 (0.102)		X	1
	BEARING	OD	2.1865 (55.537)	2.1875 (55.563)	2.1855 (55.512)		X		
8	BEARING	ID	1.4370 (36.500)	1.4380 (36.525)	1.4400 (36.576)	0.0025 (0.064)	X		
	SHAFT	OD	1.4365 (36.487)	1.4375 (36.513)	1.4355 (36.462)			X	1
9	BEARING	ID	1.3118 (33.320)	1.3132 (33.355)	1.3150 (33.401)	0.0040 (0.102)	X		
	SHAFT	OD	1.3100 (33.274)	1.3110 (33.299)	1.3092 (33.254)			X	1
10	BEARING	ID	0.6245 (15.862)	0.6250 (15.875)	0.6270 (15.926)	0.0045 (0.114)	X		
	SPACER	OD	0.6215 (15.786)	0.6225 (15.812)	0.6205 (15.761)		X		

1 YOU CAN REPAIR THIS PART; REFER TO THE COMPONENT MAINTENANCE MANUAL FOR THE INSTRUCTIONS

Entry/Service Door Handle Mechanism Wear Limits
Figure 601 (Sheet 4)

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INDEX NO.	PART NAME	DIM.	DESIGN LIMITS		WEAR LIMITS		REPLACE WORN PART	REPAIR WORN PART	REPAIR INSTR
			DIAMETER		PERMITTED WEAR DIMENSION INCHES (mm)	MAXIMUM DIAMETER CLEARANCE INCHES (mm)			
			MINIMUM INCHES (mm)	MAXIMUM INCHES (mm)					
11	SPACER	ID	0.5010 (12.725)	0.5040 (12.802)	0.6000 (15.240)	0.0100 (0.254)	X		
	SHAFT	OD	0.4950 (12.573)	0.5000 (12.700)	0.4940 (12.548)			X	1
12	SUPPORT ASSEMBLY	ID	1.1875 (30.163)	1.1885 (30.188)	1.1915 (30.264)	0.0040 (0.102)		X	1
	BEARING	OD	1.1865 (30.137)	1.1875 (30.163)	1.1845 (30.086)		X		
13	BEARING	ID	0.7493 (19.032)	0.7507 (19.068)	0.7537 (19.144)	0.0057 (0.145)	X		
	SHAFT	OD	0.7470 (18.974)	0.7480 (18.999)	0.7450 (18.923)			X	1
14	BEARING	ID	0.7493 (19.032)	0.7507 (19.068)	0.7537 (19.144)	0.0057 (0.145)	X		
	LEVER ASSEMBLY	OD	0.7470 (18.974)	0.7480 (18.999)	0.7450 (18.923)			X	1

Entry/Service Door Handle Mechanism Wear Limits
Figure 601 (Sheet 5)

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ENTRY/SERVICE DOOR INTERLOCK PAWL - REMOVAL/INSTALLATION

1. General
   A. This procedure has these tasks:
      (1) Interlock Pawl Removal
      (2) Interlock Pawl Installation.
   B. There are two interior handle mechanisms.
      (1) SAS 050-155, 162-165, 275, 276 WITHOUT SB 52-58;
      (2) The interior handle does not have a clutch mechanism and can move when the exterior handle is moved. This will be called the INTERIOR HANDLE WITHOUT CLUTCH MECHANISM.
      (3) SAS 050-155, 162-165, 275, 276 WITH SB 52-58, AND SAS 156-161, 166-274, 277-999;
      (4) The interior handle has a clutch mechanism and does not move when the exterior handle is moved. This will be called the INTERIOR HANDLE WITH CLUTCH MECHANISM.

TASK 52-11-26-004-001

2. Entry/Service Door Interlock Pawl Removal
   A. References
      (1) AMM 52-11-00/001, Entry/Service Doors
   B. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   C. Entry/Service Door Interlock Pawl Removal

      S 024-002
      (1) Remove the interlock pawl:
          (a) Open the entry/service door from outside the airplane (AMM 52-11-00/001).
          (b) Measure and record the stop bolt height.
          (c) Make a record of the positions of the washers under the stop bolt head.
          (d) Remove the stop bolt and washers.
          (e) Remove the bolt and washers that hold the base to the handle support assembly.
          (f) Remove the pin from the base to remove the spring and interlock pawl.

TASK 52-11-26-404-003

3. Entry/Service Door Interlock Pawl Installation
   A. References
      (1) AMM 52-11-00/001, Entry/Service Doors

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B. Consumable Materials
(1) D00633 Grease - BMS 3-33 (Preferred)
(2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

C. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

D. Entry/Service Door Interlock Pawl Installation

S 424-004
(1) Install the interlock pawl:
(a) Apply grease to the pin and adjacent surfaces.
(b) Assemble the base, the pawl, and the spring with the pin.
(c) Install the base assembly on the handle support assembly with the bolt and washer.
(d) Install the stop bolt to the measured height using the washers.
(e) Tighten the stop bolt to 35-40 pound-inches (4-4.5 Nm).

S 714-005
(2) Do the operational check of the interlock pawl:
(a) Make sure that the door is fully open.
(b) Make sure that the exterior disarm lever is fully in the disarm position.

WARNING: MAKE SURE THAT THE AREA INBOARD OF THE INTERIOR HANDLE IS CLEAR. THE INTERIOR HANDLE WILL MOVE DOWN WHEN THE EXTERIOR HANDLE IS LOWERED. SUDDEN MOVEMENT OF THE INTERIOR HANDLE CAN CAUSE INJURY TO PERSONS INSIDE THE AIRPLANE.

(c) Make sure that no persons are in the area of movement of the interior handle.
(d) Slowly move the exterior door handle to the door latched position.
(e) Make sure that the interlock pawl allows the door handle to be flush with the body skin.
(f) Push the interior arm/disarm lever release button.
(g) Move the interior arm/disarm lever to the armed (outboard) position.
(h) Make sure that the red exterior disarm lever moves outboard to the armed position.
(i) Make sure that the exterior disarm lever is faired with the body skin and the exterior door handle.

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(j) Push the red exterior disarm lever fully inboard to the disarm position.

WARNING: MAKE SURE THAT THE AREA INBOARD OF THE INTERIOR HANDLE IS CLEAR. AN INTERIOR HANDLE WITHOUT A CLUTCH MECHANISM MOVES WHEN THE EXTERIOR HANDLE IS LIFTED. THE MOVEMENT OF THE INTERIOR HANDLE CAN CUASE INJURY TO PERSONS IN THE AIRPLANE.

(k) Make sure that the area inboard of the interior handle is clear.
(l) Slowly lift the exterior door handle to the unlatched position.
(m) Push the interior arm/disarm lever release button.
(n) Try to move the interior arm/disarm lever to the armed (outboard) position.
(o) Make sure that the cam assembly on the red exterior disarm lever moves 0.05 inch (1.3 mm) to touch the interlock pawl.
1) If necessary, remove material from the end of the interlock pawl to get the clearance.
(p) Make sure that the interlock pawl prevents the movement of the arm/disarm lever outboard to the armed position.

S 414-006
(3) Close the entry/service door (AMM 52-11-00/001).

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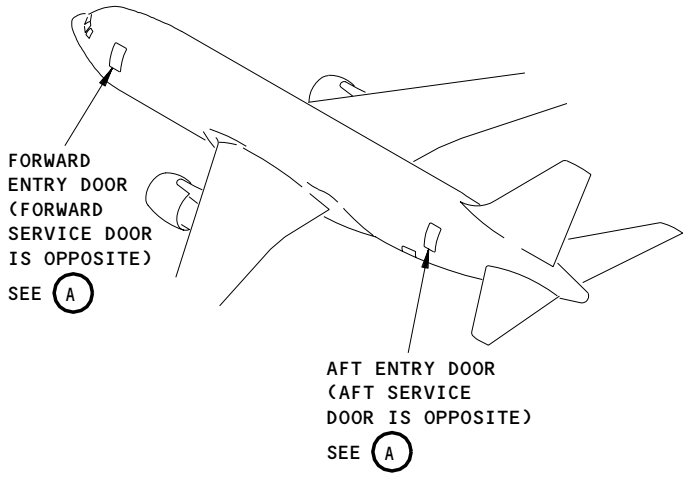
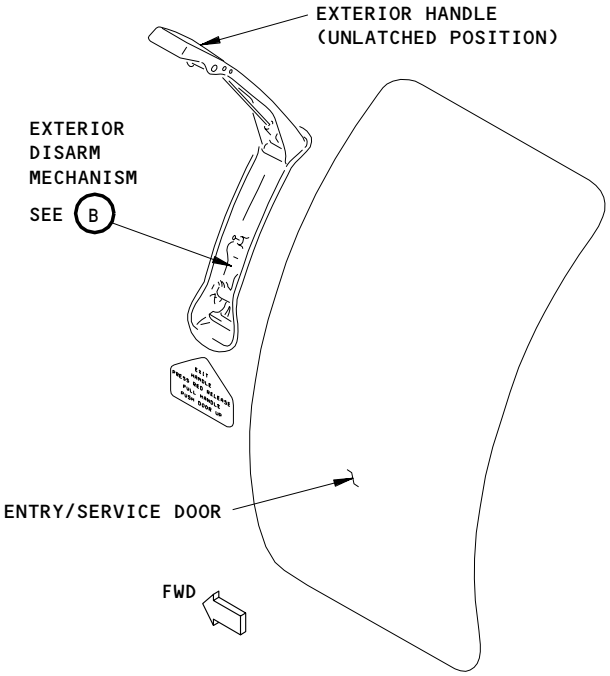
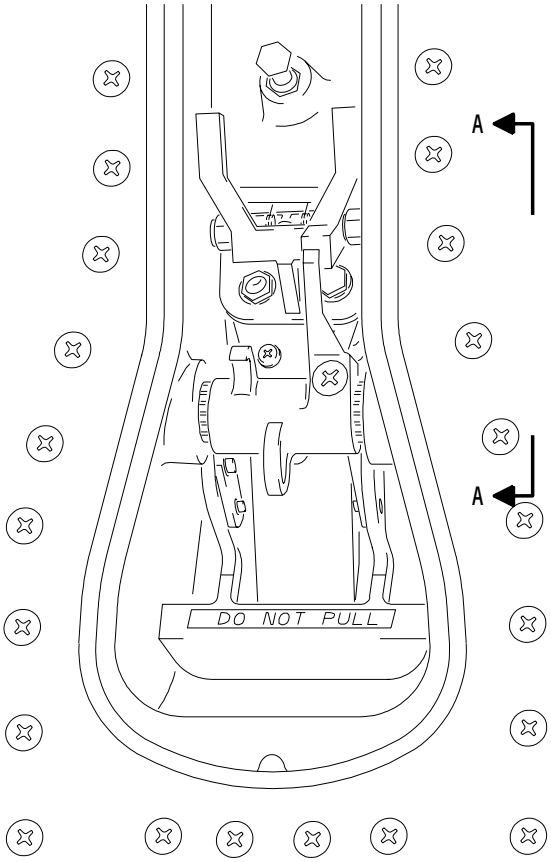




ENTRY/SERVICE DOOR
(EXAMPLE)
A



EXTERIOR DISARM MECHANISM
B

Entry/Service Door Interlock Pawl Installation
Figure 401 (Sheet 1)

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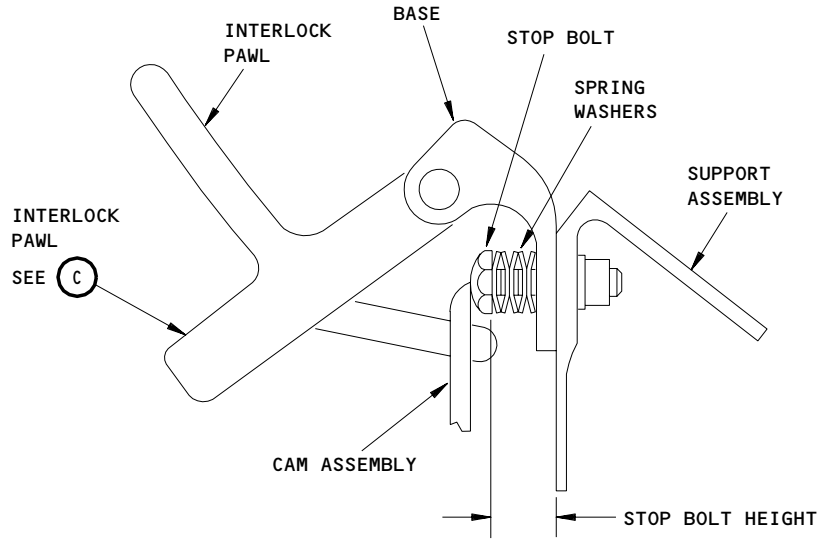
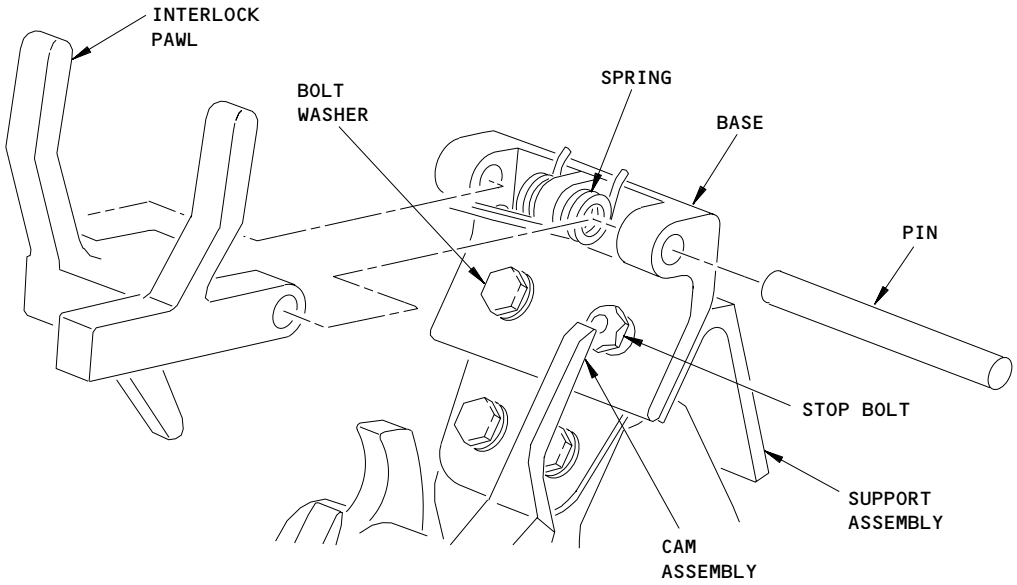


A-A



INTERLOCK PAWL

C

Entry/Service Door Interlock Pawl Installation
Figure 401 (Sheet 2)

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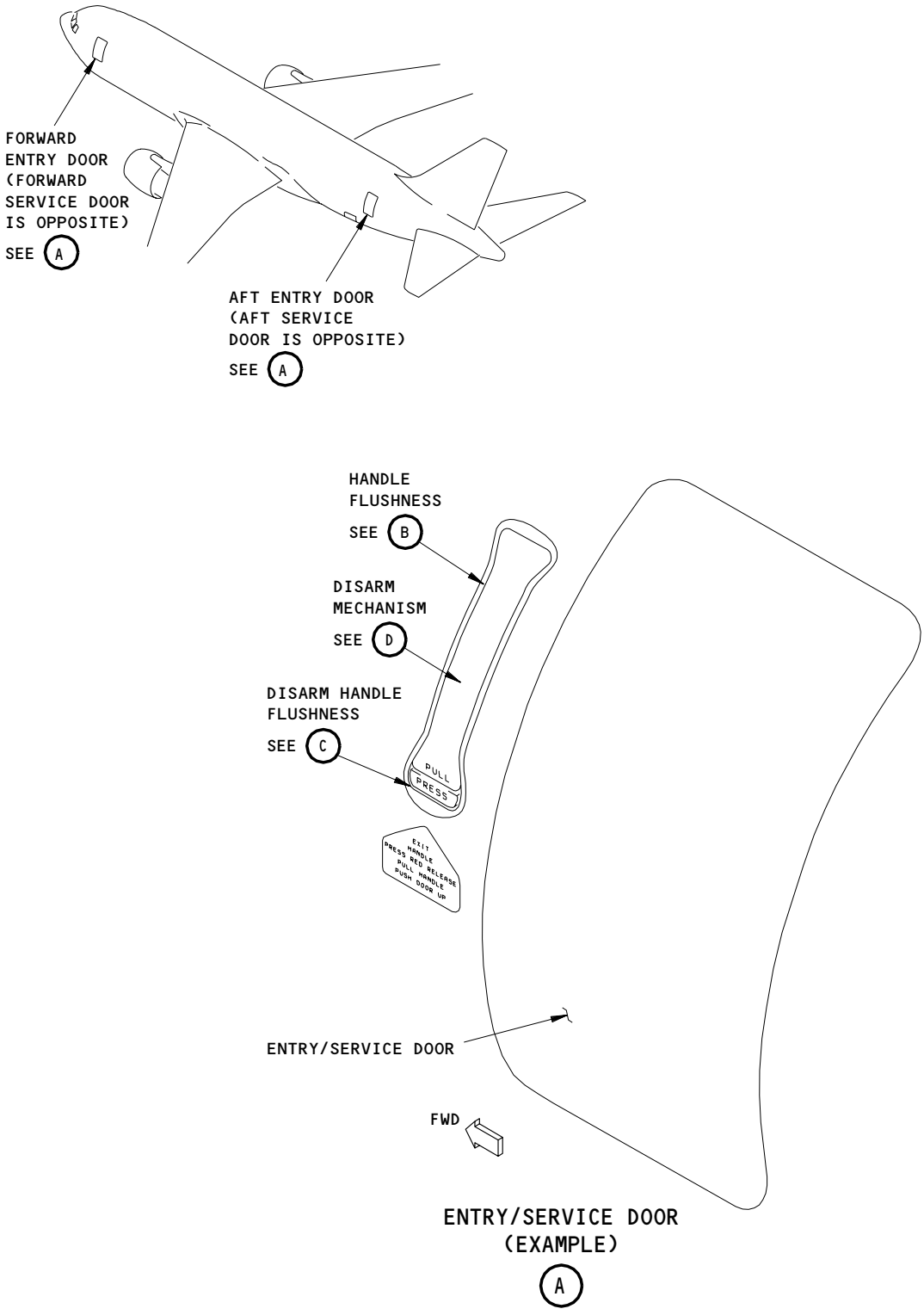

ENTRY/SERVICE DOOR
(EXAMPLE)
A

Entry/Service Door Interlock Pawl Installation Check
Figure 402 (Sheet 1)

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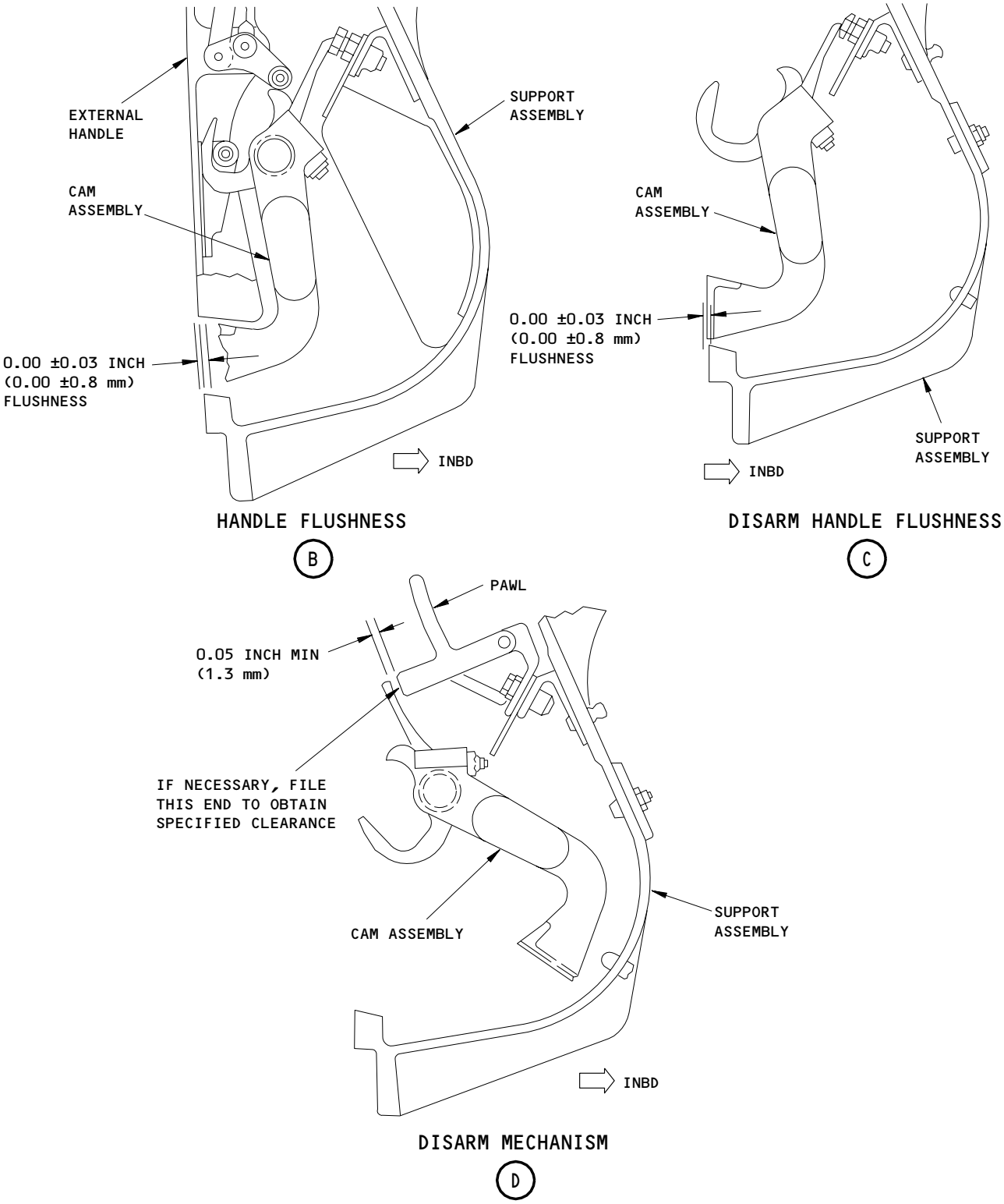

Entry/Service Door Interlock Pawl Installation Check
Figure 402 (Sheet 2)

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SPRING HYDRAULIC SNUBBER - REMOVAL/INSTALLATION

1. General
   A. This procedure gives the instructions to remove and install the spring hydraulic snubber for the entry/service doors.

TASK 52-11-31-004-001

2. Remove the Spring Hydraulic Snubber (Fig. 401)
   A. References
      (1) 52-11-02/401, Doorway Lining
   B. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   C. Procedure

      S 014-002
      (1) Remove the doorway lining (Ref 52-11-02).

      S 024-003
      (2) Remove the bolt to disconnect the spring hydraulic snubber from the lower lever.

      S 024-004
      (3) Remove the bolt to disconnect the spring hydraulic snubber from the upper fitting.

      S 024-028
      (4) Remove the spring hydraulic snubber.

TASK 52-11-31-404-005

3. Install the Spring Hydraulic Snubber (Without Adjustment) (Fig. 401)
   A. General
      (1) Use this procedure to install the same spring hydraulic snubber that was removed and only for all of these conditions:
          (a) The maximum extended length of the spring hydraulic snubber was not changed.
          (b) The lever at the lower end of the spring hydraulic snubber was not moved.
          (c) The spring hydraulic snubber operated correctly before it was removed.

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B. References
(1) 52-11-00/201, Entry/Service Door
(2) 52-11-02/401, Doorway Lining
(3) 52-71-00/501, Door Warning System Proximity Sensors

C. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

D. Procedure

S 214-006
(1) Make sure the exterior handle and the exterior disarm lever are in the fully faired position (Ref 52-11-00).

S 424-007
(2) Hold the spring hydraulic snubber in position, and install the bolt, washer, and nut at the upper fitting.

S 824-008
(3) Turn the interior handle shaft in the direction shown in View A-A to remove the free play. Hold the spring hydraulic snubber at its maximum extended length. Make sure you can easily install the lower bolt.

S 214-009
(4) If you cannot easily install the lower bolt, then refer to the Install Spring Hydraulic Snubber (With Adjustment) procedure to install the spring hydraulic snubber.

S 424-010
(5) Install the bolt, the washer, and nut at the lower lever.

S 724-032
(6) Close and latch the door.

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S 724-033
(7) Make sure the door warning light in the flight deck for the applicable door goes out.

S 724-030
(8) Do this task: Adjust the Sensor for the Forward or Aft Entry/Service Door (AMM 52-71-00/501).

S 414-011
(9) Install the doorway lining (Ref 52-11-02).

TASK 52-11-31-404-012

4. Install the Spring Hydraulic Snubber (With Adjustment) (Fig. 401)

A. General
(1) Use this procedure to install a new spring hydraulic snubber or a spring hydraulic snubber with one or more of these conditions:
(a) The maximum extended length of the spring hydraulic snubber was changed.
(b) The lever at the lower end of the spring hydraulic snubber was moved.
(c) The spring hydraulic snubber did not operate correctly before it was removed.
(d) If you cannot easily install the bolt at the lower lever when there is no free play in the interior handle shaft and the spring hydraulic snubber is at its maximum extended length.

B. Equipment
(1) Protractor-surface - commercially available

C. References
(1) 52-11-00/201, Entry/Service Door
(2) 52-11-02/401, Doorway Lining
(3) 52-71-00/501, Door Warning System Proximity Sensors

D. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

E. Procedure

S 214-013
(1) Make sure the exterior handle and the exterior disarm lever are in the fully faired position (Ref 52-11-00).

S 824-014
(2) Adjust the maximum extended length of the spring hydraulic snubber to the dimension shown in View A-A.

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S 424-015

(3) Hold the spring hydraulic snubber in position, and install the bolt, washer, and nut at the upper fitting.

S 824-016

(4) Turn the interior handle shaft in the direction shown in View A-A to remove the free play. Hold the spring hydraulic snubber at its maximum extended length. Adjust the lower lever until you can easily install the bolt that connects the spring hydraulic snubber to the lower lever.
   (a) Loosen the bolts that hold the lower lever and the lever cap to the interior handle shaft.
   (b) Move the lower lever and the lever cap forward or aft on the handle shaft to disengage the splines.
   (c) Turn the lower lever and the lever cap as necessary and move them forward or aft to engage the splines.

       NOTE: When you engage the splines, make sure the pin in the lower lever is in the groove on the handle shaft.

   (d) If finer adjustment is necessary (less than one spline tooth), adjust the bolts in the lower lever. Tighten one bolt, and loosen the other to change the adjustment of the lower lever.

       NOTE: Only the lever cap engages the spline teeth on the handle shaft. The lower lever does not have spline teeth.

S 424-017

(5) Turn the interior handle shaft in the direction shown in View A-A to remove the free play. Hold the spring hydraulic snubber at its maximum extended length. Install the bolt, washer, and nut to connect the spring hydraulic snubber to the lower lever.

S 224-018

(6) Do a check for free play between the interior and exterior handles.
   (a) Slowly open the exterior handle until the first movement of the interior handle.
   (b) If the movement of the exterior handle is more than 0.20 inch at the lower edge, then do the snubber connection procedure again.

S 224-019

(7) Adjust the throw angle of the interior handle (View B-B).
   (a) Use a surface protractor to measure the angle as you slowly turn the interior handle from the latched to the unlatched position.

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(b) If the throw angle is too large, then do these steps:
1) Disconnect the spring hydraulic snubber from the lower lever.
2) Adjust the lower end of the spring hydraulic snubber to decrease the length of the snubber.

NOTE: If you turn the adjustable (lower) end of the snubber one-half turn to decrease the snubber length, you will decrease the throw angle approximately 1 degree.

3) Loosen the bolts in the lower lever.
4) Adjust the lower lever on the spline teeth (and/or the lower lever bolts) to connect the snubber. Make sure you can easily install the bolt at the lower lever while there is no free play in the interior handle shaft and the spring hydraulic snubber is at its maximum extended length.
5) Install the bolt, washer, and nut to connect the spring hydraulic snubber to the lower lever.

(c) If the throw angle is too small, then do these steps:
1) Disconnect the spring hydraulic snubber from the lower lever.
2) Adjust the lower end of the spring hydraulic snubber to increase the length of the snubber.

NOTE: If you turn the adjustable (lower) end of the snubber one-half turn to increase the snubber length, you will increase the throw angle approximately 1 degree.

3) Loosen the bolts in the lower lever.
4) Adjust the lower lever on the spline teeth (and/or the lower lever bolts) to connect the snubber. Make sure you can easily install the bolt at the lower lever while there is no free play in the interior handle shaft and the spring hydraulic snubber is at its maximum entended length.
5) Install the bolt, washer, and nut to connect the spring hydraulic snubber to the lower lever.

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S 224-020
(8) Measure the throw angle of the interior handle again. Do the adjustments for the snubber length and the lower lever until the throw angle is correct.

S 824-021
(9) Turn the interior handle to the unlatched position.

S 824-022
(10) Push the exterior disarm lever to the fully inboard position.

S 824-023
(11) Lift the exterior handle up until the handle locks in place (approximately 105 degrees).

S 824-024
(12) Continue to lift the exterior handle until all free play is removed.

S 824-025
(13) If there is interference between the exterior handle and the top edge of the handle box, then do the procedure above to decrease the throw angle of the interior handle.

NOTE: To eliminate the exterior handle interference, you can decrease the throw angle of the interior handle below the minimum angle shown in View B-B.

S 434-026
(14) When the throw angle is correct, then tighten the jam nut on the lower end of the snubber and install lockwire.

S 724-034
(15) Close and latch the door.

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S 724-035

(16) Make sure the door warning light in the flight deck for the applicable door goes out.

S 724-031

(17) Do this task: Adjust the Sensor for the Forward or Aft Entry/Service Door (AMM 52-71-00/501).

S 414-027

(18) Install the doorway lining (Ref 52-11-02).

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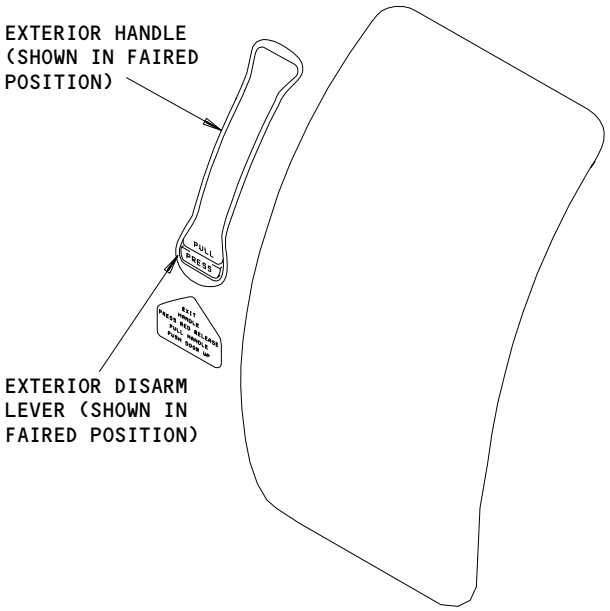
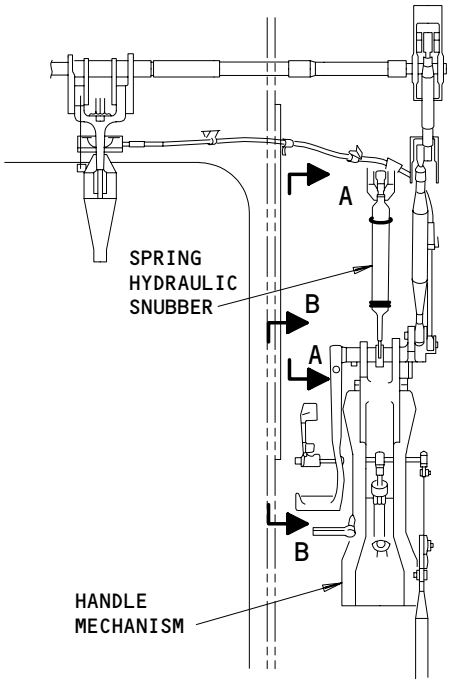
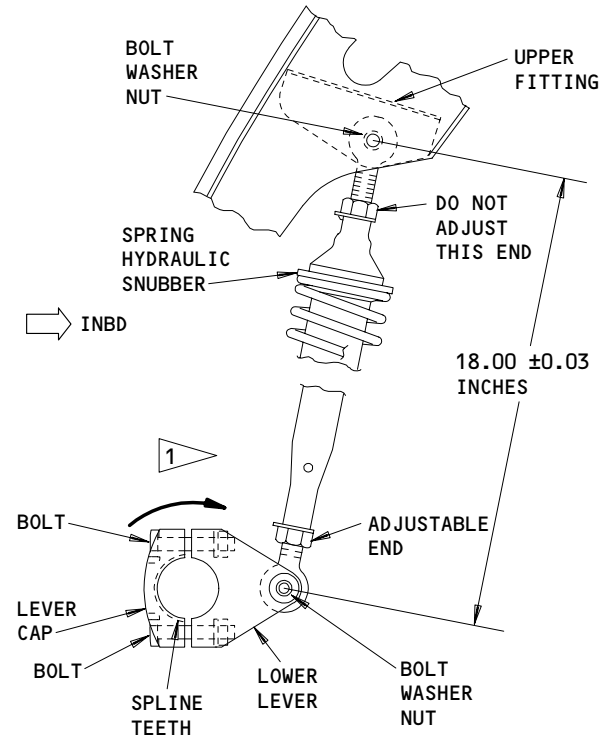


ENTRY/SERVICE DOOR
(EXTERNAL VIEW)

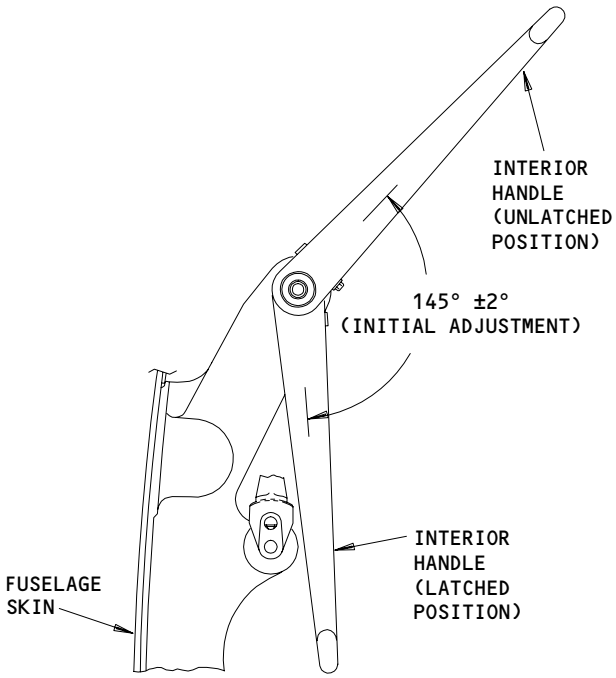


ENTRY/SERVICE
DOOR HANDLE MECHANISM
(LINING REMOVED)



A–A

1 TURN THE INTERIOR HANDLE SHAFT IN THIS DIRECTION TO REMOVE THE FREE PLAY



B–B

Entry/Service Door Spring Hydraulic Snubber
Figure 401

134443

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ENTRY/SERVICE DOOR OVERCENTER MECHANISM - REMOVAL/INSTALLATION

1. General
   A. This procedure gives the instructions to remove and install the overcenter mechanism for each entry/serive door.

   TASK 52-11-32-004-001

2. Remove the Overcenter Mechanism (Fig. 401)
   A. Equipment
      (1) Rig Pins from Set A20004-XX
          (a) D2 - P/N A20004-16
          (b) D3 - P/N A20004-27
   B. References
      (1) 52-11-02/401, Doorway Lining
      (2) 52-11-47/401, Entry Door Control Proximity Sensors
   C. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   D. Procedure

      S 014-002
      (1) Open the movable ceiling panels as follows:
          (a) Close the entry/service door. Do not latch the door.
          (b) Open the access door in the upper door liner to get access to the hinge pin release buttons.
          (c) Pull the buttons together to release the hinge pins.
          (d) Do these steps:
              1) Open this circuit breaker on the overhead panel P11, and attach a DO-NOT-CLOSE tag:
                 a) 11U32, DOOR WINDOW HEATER
              2) Let the liner move down as far as the lanyard will permit.
              3) Disconnect the electrical connector adjacent to the lanyard.
              4) Pull the liner up sufficiently to make the lanyard loose.
              5) Release the ball-lock pin on the lanyard to disconnect the lanyard from the bracket on the liner.
          (e) Let the upper door liner move down into the door bustle. Do not let the liner fall freely.

          (f) Fold the movable ceiling panels up and inboard into the area above the lowered ceiling.

      S 014-027
      (2) Remove the doorway lining (Ref 52-11-02).

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S 034-003
(3) For an entry door with electrical operation, remove the door handle up sensor from the overcenter mechanism housing (Ref 52-11-47).

S 864-004
(4) Turn the interior handle shaft to the fully latched position (View A).

S 494-009
(5) Install the rig pin D2 in the overcenter mechanism (View B).

S 494-008
(6) Install the rig pin D3 through the hole in the outboard end of the upper tracks (View C).

S 224-030
(7) Use 0.032 inch shims to measure the clearance between the rig pin D3 and the middle leg of the latch cam (View C).

S 094-006
(8) Remove the rig pin D2 from the overcenter mechanism.

S 024-005
(9) Remove the bolt and move the latch torque tube coupling away from the overcenter mechanism until the coupling disengages from the overcenter mechanism drive shaft.

S 024-018
(10) Remove the bolt to disconnect the upper end of the upper pushrod from the overcenter crank (View A).

S 024-017
(11) Remove the bolts that attach the overcenter mechanism housing to the intercostals and the bracket.

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S 024-028
(12) Remove the overcenter mechanism.

TASK 52-11-32-404-016

3. Install the Overcenter Mechanism (Fig. 401)

A. Equipment
(1) Rig Pins from Set A20004-XX
(a) D2 - P/N A20004-16

(b) D3 - P/N A20004-27

B. Consumable Materials
(1) D00015 Grease - Anticorrosive, BMS 3-24, Aeroshell Grease 16

C. References
(1) 52-11-00/201, Entry/Service Door
(2) 52-11-02/401, Doorway Lining
(3) 52-11-31/401, Spring Hydraulic Snubber
(4) 52-11-47/401, Entry Door Control Proximity Sensors

D. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

E. Procedure

S 424-015
(1) Hold the overcenter mechanism in position between the intercostals (View A).

S 494-014
(2) Install the shim in position between the overcenter mechanism housing and the lower intercostal.

S 424-013
(3) Install the bolts and washers to attach the overcenter mechanism housing to the intercostals and the bracket.

S 434-012
(4) For an entry door with electrical operation, install the door handle up sensor on the overcenter mechanism housing (Ref 52-11-47).

S 494-011
(5) Install the rig pin D2 (View B).

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S 824-010
(6) Adjust the stop bolt to just touch the stop.

NOTE: Make sure the rig pin D2 moves freely in its hole. If the rig pin D2 does not move freely, then adjust the stop bolt again.

S 434-022
(7) Tighten the locking nuts for the stop bolt.

S 434-021
(8) Install lockwire on the locking nuts for the stop bolt.

S 824-020
(9) Make sure the spring hydraulic snubber is installed and correctly adjusted (Ref 52-11-31).

S 864-019
(10) Move the exterior handle and the exterior disarm lever to the fully faired position (Ref 52-11-00).

S 824-018
(11) Turn the interior handle shaft to the fully latched position with no free play (View A).

S 494-017
(12) Install the shims, from the removal procedure, between the rig pin D3 and the middle leg of the latch cam. Hold the latch cam tightly against the shims (View C).

S 644-016
(13) Apply grease to the spline surfaces on the overcenter mechanism drive shaft.

S 424-029
(14) Engage the locking collar with the overcenter mechanism drive shaft. Put the clamp bolt holes as near to the bottom of the torque tube as possible.

S 824-014
(15) Align the hole for the bolt in the torque tube coupling with the groove in the latch torque tube.

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S 644-013
(16) Apply grease to the bolt for the torque tube coupling.

S 424-012
(17) Install the bolt, washer, and nut into the locking collar. Tighten the nut to 50-60 pound-inches.

S 094-011
(18) Remove the shims and the rig pin D3.

S 424-010
(19) Install the bolt, washer, and nut to connect the upper end of the upper pushrod to the overcenter crank (View A). Make sure the run-on torque of the nut is 18-80 pound-inches. Tighten the nut to 150-200 pound-inches.

S 094-009
(20) Remove the rig pin D2.

S 864-008
(21) Turn the interior handle to the unlatched position.

S 224-031
(22) Measure the clearance between the latch cam and the latch cam roller as shown in View D.

S 824-006
(23) If the clearance is not in the tolerance range, then do these steps:
(a) Calculate the adjustment necessary to put the clearance into the tolerance range.
(b) Turn the interior handle to the latched position with no free play (View A).
(c) Disconnect the upper pushrod from the idler crank.
(d) Adjust the clearance as follows:
1) To increase the clearance, adjust the micrometer sleeve to decrease the length of the lower pushrod.

NOTE: One turn of the micrometer sleeve to decrease the length of the lower pushrod will increase the clearance approximately 0.025 inch.

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2) To decrease the clearance, adjust the micrometer sleeve to increase the length of the lower pushrod.

NOTE: One turn of the micrometer sleeve to increase the length of the lower pushrod will decrease the clearance approximately 0.025 inch.

(e) Install the rig pin D2 (View B).
(f) Adjust the micrometer sleeve on the upper pushrod until you can easily install the bolt that connects the upper and lower pushrods to the idler crank.
(g) Make sure the threads on the pushrods are sufficiently engaged as shown on the placards on the pushrods.
(h) Tighten the micrometer adjustment nuts on the upper and lower pushrods.
(i) Install lockwire on the micrometer adjustment nuts.
(j) Install the bolt, washer, and nut that connect the pushrods to the idler crank. Make sure the run-on torque of the nut is 18-80 pound-inches. Tighten the nut to 150-200 pound-inches.
(k) Remove the rig pin D2.

S 434-023
(24) For an entry door with electrical operation, measure the clearance between the door handle up sensor and the target (Ref 52-11-47). Adjust the clearance if necessary.

S 414-026
(25) Install the doorway lining (Ref 52-11-02).

S 414-025
(26) Close the movable ceiling panels as follows:
(a) Close the entry/service door. Do not latch the door.
(b) Open the movable ceiling panels down and outboard to the closed position.
(c) Pull the door liner up and out of the door to meet the movable ceiling panel.
(d) Do these steps:
1) Let the liner move down sufficiently to attach the ball-lock pin to the bracket on the liner, and attach the ball-lock pin to the bracket.
2) Let the liner move down as far as the lanyard will permit.
3) Connect the electrical connector on the electrical wiring between the liner and the movable ceiling panel.
4) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
a) 11U32, DOOR WINDOW HEATER
5) Pull the liner up to meet the movable ceiling panel.
(e) If necessary, open the access door in the upper door liner to get access to the hinge pin release buttons.
(f) Pull the buttons together and engage the hinge pins. Release the buttons.

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(g) Close the access door.

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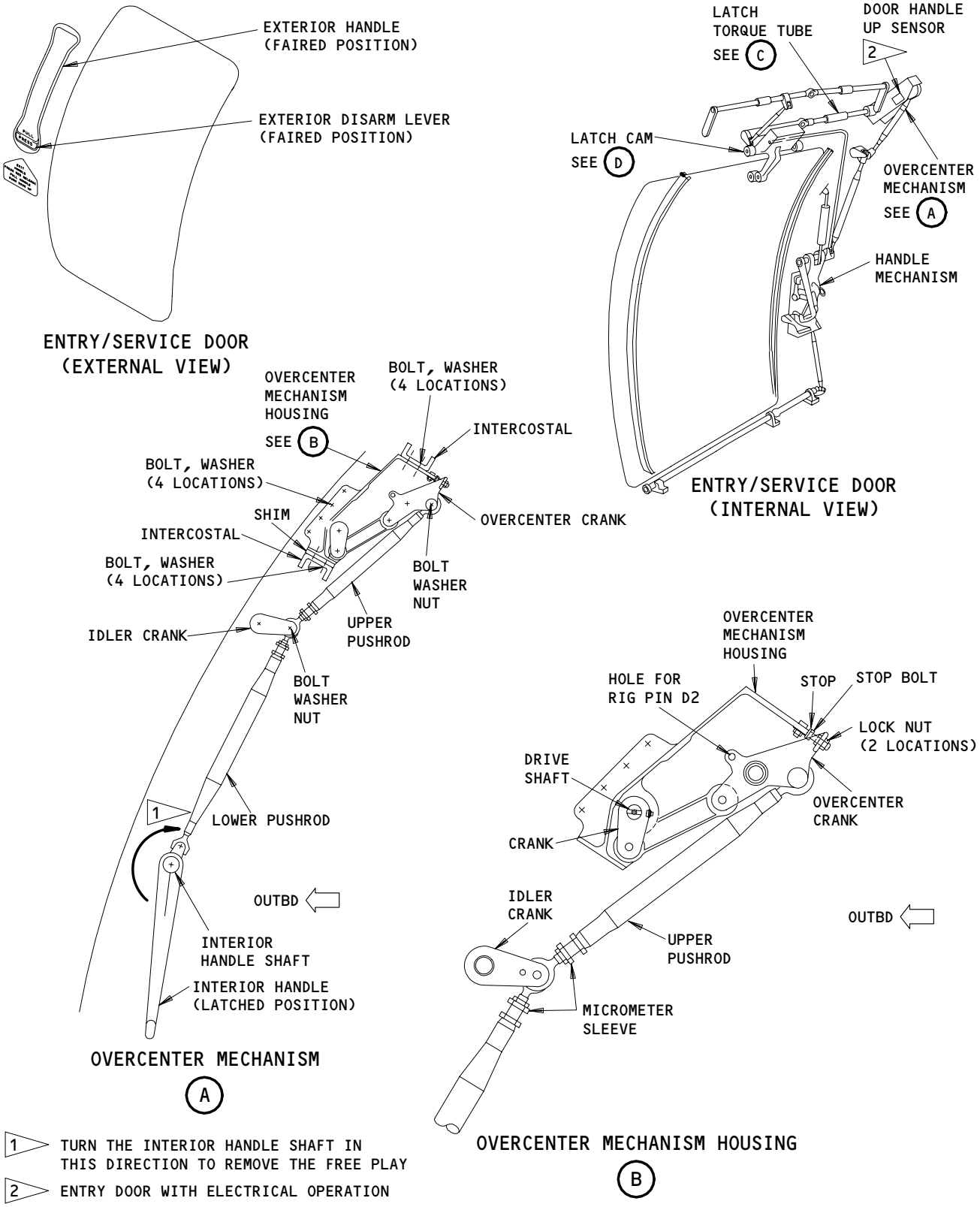

Overcenter Mechanism
Figure 401 (Sheet 1)

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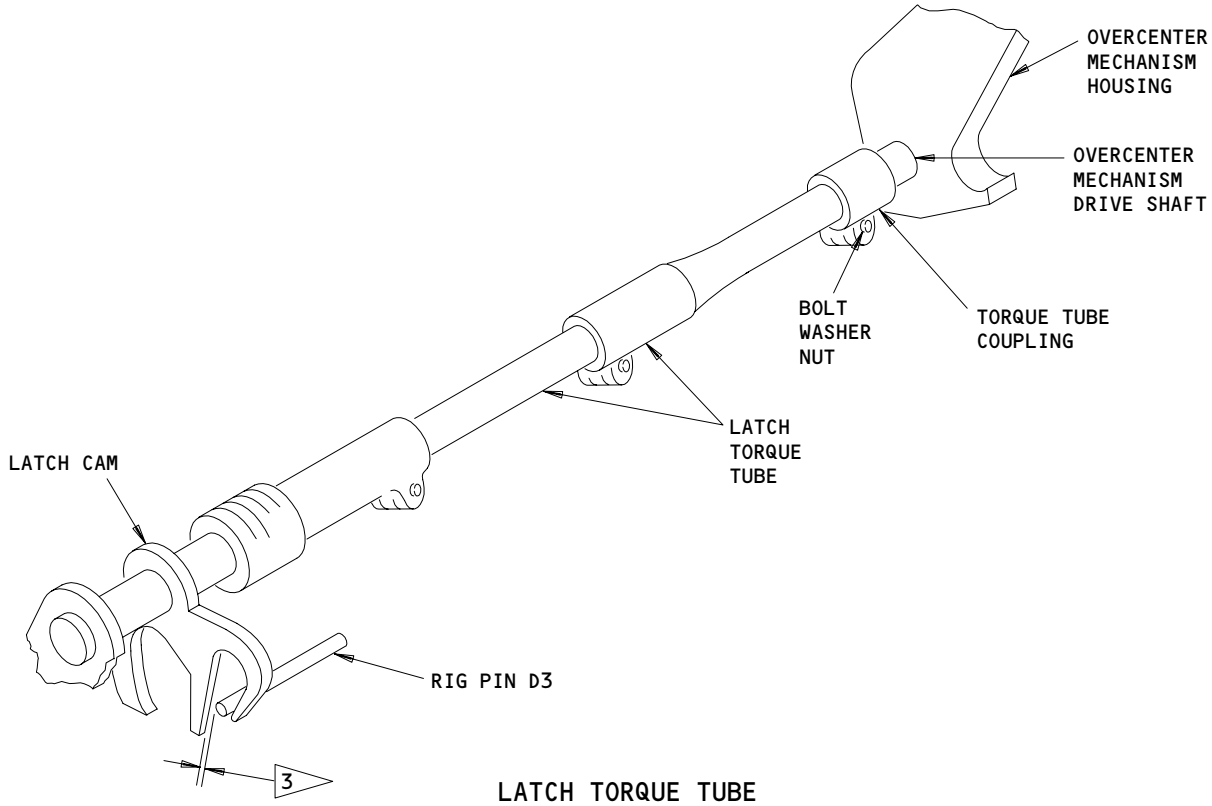
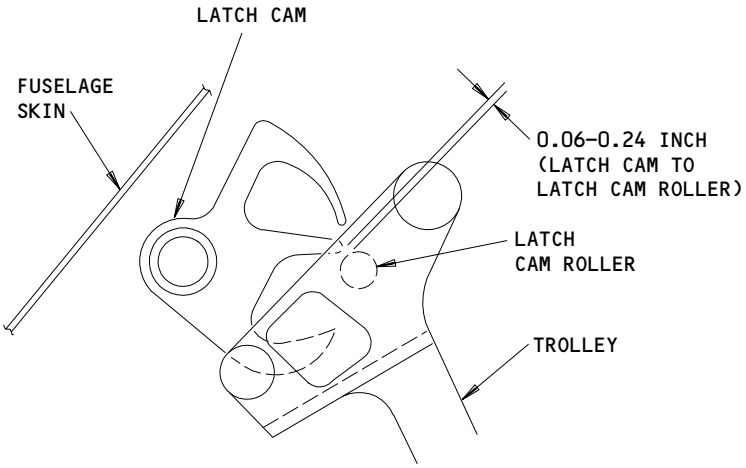


LATCH TORQUE TUBE

C



LATCH CAM
(DOOR UNLATCHED POSITION)

D

3 USE 0.032 INCH SHIMS TO MEASURE THIS CLEARANCE

Overcenter Mechanism
Figure 401 (Sheet 2)

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ENTRY/SERVICE DOOR LATCH TORQUE TUBE - REMOVAL/INSTALLATION

1. General
   A. This procedure gives the instructions to remove and install the latch torque tubes for the entry/service doors.

TASK 52-11-33-004-001

2. Remove the Latch Torque Tube (Fig. 401)
   A. Equipment
      (1) Rig Pin D3 - P/N A20004-27, part of Set A20004-XX
   B. References
      (1) 52-11-02/401, Doorway Lining
      (2) 52-11-08/401, Entry/Service Door Trolley
   C. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   D. Procedure

S 014-005
(1) Remove the doorway lining (Ref 52-11-02).

S 034-004
(2) Remove the door trolley (Ref 52-11-08). Do not disconnect the counterbalance cables from the trolley.

S 494-003

WARNING: DO NOT MOVE THE INTERIOR OR THE EXTERIOR HANDLE OUT OF THE LATCHED POSITION. THE DOOR WILL FALL INBOARD WHICH CAN CAUSE INJURY OR DAMAGE TO EQUIPMENT.

(3) Make sure there are DO-NOT-OPERATE tags attached to the interior and the exterior handles.

S 494-002
(4) Install the rig pin D3 through the holes in the outboard end of the upper tracks (View A).

S 824-016
(5) Turn the interior handle to the fully latched position with no free play.

NOTE: You must hold the handle in this position when you measure the clearance.

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S 224-015
(6) Use shims to measure the clearance between the rig pin and the middle leg of the latch cam (View A).

S 024-014
(7) Remove the clamping bolts (View A-A).

S 824-013
(8) Retract the torque tube sections as far as possible in the direction of the latch cam.

S 024-012
(9) Remove the overcenter mechanism torque tube section and the locking collar. Do not remove the washers, if installed, from the overcenter mechanism drive shaft.

S 024-011
(10) Remove the middle torque tube section.

S 024-010
(11) Remove the universal joint torque tube section.

TASK 52-11-33-404-009

3. Install the Latch Torque Tube (Fig. 401)
   A. Equipment
      (1) Rig Pin D3 - P/N A20004-27, part of Set A20004-XX
   B. Consumable Materials
      (1) D00015 Grease - Anticorrosive, BMS 3-24, Aeroshell Grease 16
   C. References
      (1) 52-11-00/501, Entry/Service Door
      (2) 52-11-02/401, Doorway Lining
      (3) 52-11-08/401, Entry/Service Door Trolley
   D. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

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E. Procedure

S 644-008
(1) Apply grease to the internal and spline surfaces of the torque tube sections.

S 494-007
(2) Install the shims, from the removal procedure, between the rig pin D3 and the middle leg of the latch cam. Hold the latch cam tightly against the shims (View A).

NOTE: You must hold the latch cam in this position during the torque tube installation procedure.

S 424-006
(3) Install the universal joint torque tube section into the latch cam. Put the clamp bolt holes as near to the bottom of the tube as possible (View A-A).

S 424-029
(4) Install the middle torque tube section into the universal joint section as far as possible in the direction of the latch cam.

S 644-028
(5) Apply grease to the threads of the clamping bolt.

S 424-027
(6) Hold the overcenter mechanism torque tube section and the locking collar in position. Put the clamp bolt holes as near to the bottom of the tube as possible.

S 424-026
(7) Install the clamping bolt, washer, and nut into the locking collar. Make sure the bolt is installed in the groove in the middle torque tube section.

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S 824-025
(8) Engage the middle torque tube section with the overcenter mechanism section.

S 644-024
(9) Apply grease to the threads of the clamping bolt.

S 424-023
(10) Install the clamping bolt, washer, and nut into the overcenter mechanism torque tube section. Make sure the bolt is installed in the groove in the middle torque tube section.

S 824-022
(11) Hold the interior handle shaft at the fully latched position with no free play.

S 824-021
(12) For the forward service door, move the universal joint torque tube section 1.5 inches in the direction of the overcenter mechanism.

S 824-020
(13) Move the middle and overcenter mechanism torque tube sections in the direction of the overcenter mechanism.

S 824-019
(14) Turn the middle and overcenter mechanism torque tube sections until the locking collar will engage the overcenter mechanism drive shaft. Keep the clamping bolt holes as near to the bottom of torque tube as possible.

S 824-018
(15) Move the middle and overcenter mechanism torque tube sections in the direction of the overcenter mechanism until universal joint torque tube section clamping bolt hole aligns with the groove in the middle torque tube section.

S 824-017
(16) For the forward service door, move the universal joint torque tube section as far as possible in the direction of the latch cam.

S 644-036
(17) Apply grease to the threads of the clamping bolt.

S 424-035
(18) Install the clamping bolt, washer, and nut into the universal joint torque tube section.

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S 094-034
(19) Remove the shims and the rig pin D3 (View A).

S 434-033
(20) Tighten all of the clamping bolts to 50-60 pound-inches (View A-A).

S 714-032
(21) Do a test of the door operation (Ref 52-11-00).

S 434-031
(22) Install the trolley (Ref 52-11-08).

S 414-030
(23) Install the doorway lining (Ref 52-11-02).

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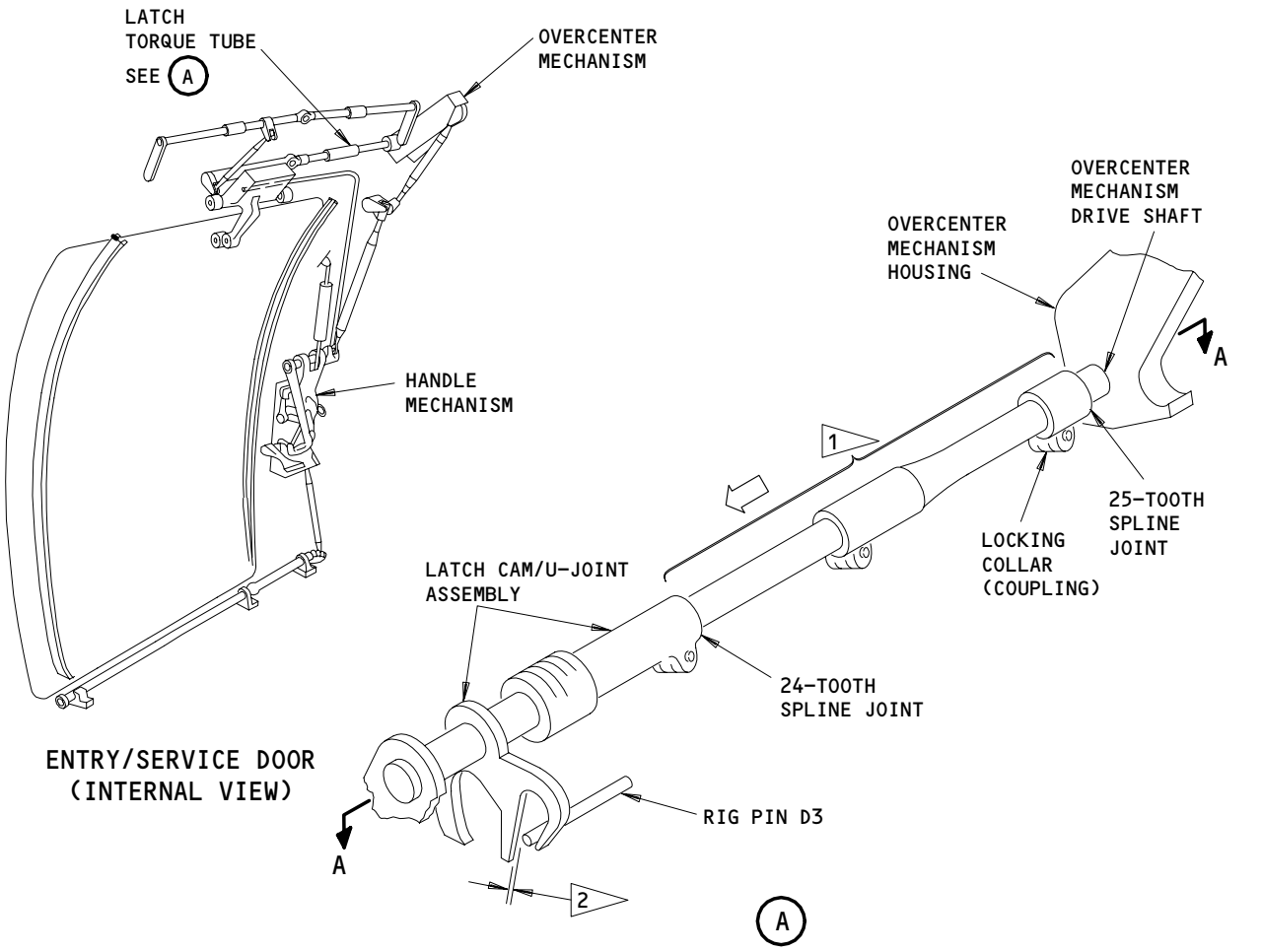

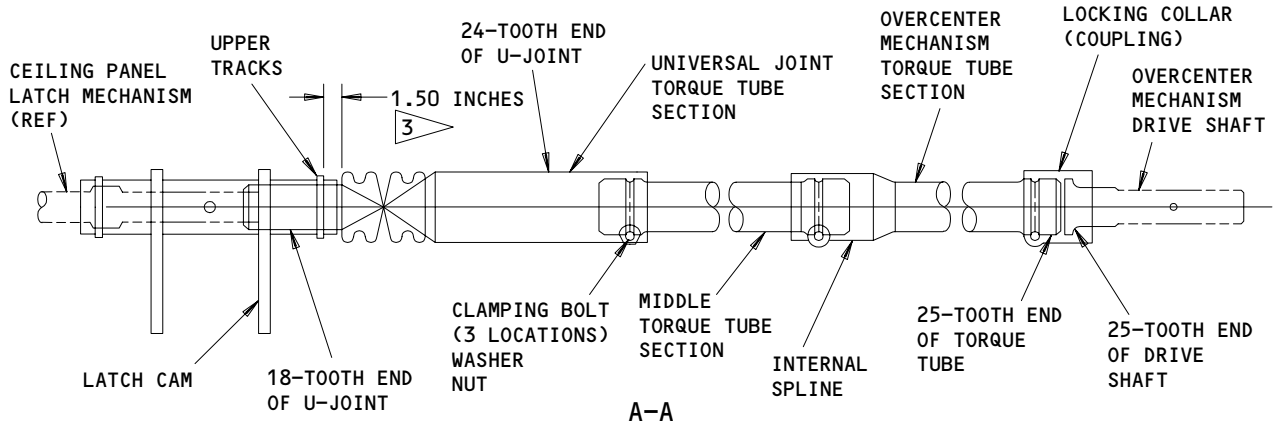

1 THIS PART OF THE TORQUE TUBE IS RETRACTED INTO THE LATCH CAM/U-JOINT ASSEMBLY SUFFICIENTLY TO DISENGAGE THE 24-TOOTH AND THE 25-TOOTH SPLINE JOINTS

2 INSTALL 0.032 (1/32) INCH SHIMS TO MEASURE THIS CLEARANCE

3 FORWARD SERVICE DOOR ONLY

Entry/Service Door Latch Torque Tube
Figure 401

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ENTRY/SERVICE DOOR MOVABLE CEILING PANEL LATCH MECHANISM - REMOVAL/INSTALLATION

1. General
   A. This procedure gives the instructions to remove and install the latch mechanism for the movable ceiling panel for the entry/service door.

TASK 52-11-34-004-001

2. Remove the Movable Ceiling Panel Latch Mechanism (Fig. 401)
   A. References
      (1) 52-11-13/201, Entry/Service Door Ground Lock
   B. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   C. Procedure

      S 864-002
      (1) Close and latch the entry/service door.

      S 494-003
      (2) Attach DO-NOT-OPERATE tags to the interior and the exterior handles.

      S 494-004
      (3) Install the ground lock for the entry/service door (Ref 52-11-13).

      S 024-005
      (4) Remove the bolts to disconnect the movable ceiling pushrods from the cranks at each end of the torque tube.

      S 024-006
      (5) Remove the bolts to remove the cranks from each end of the torque tube.

      S 024-007
      (6) Remove the bolts to disconnect the torque tube sections from the couplings.

      S 024-008
      (7) For the forward doors, remove the bolts to disconnect the torque tube sections from the universal joint.

      S 024-009
      (8) Remove the bolts and the clamps to disconnect the torque tube sections.

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S 024-010
(9) Remove the bolt to disconnect the pushrod from the shaft crank and the input crank.

S 024-011
(10) Remove the bolt to disconnect the input crank from the torque tube section.

S 024-012
(11) Remove the bolt to disconnect the shaft crank from the stub shaft.

S 024-013
(12) Remove the bolt to disconnect the stub shaft from the latch cam.

TASK 52-11-34-404-030

3. Install the Movable Ceiling Panel Latch Mechanism (Fig. 401)

A. Consumable Materials
(1) D00015 Grease - BMS 3-24

B. References
(1) 25-22-04/401, Movable Ceiling Mechanism
(2) 52-11-00/501, Entry/Service Door
(3) 52-11-13/201, Entry/Service Door Ground Lock

C. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

D. Procedure

S 644-014
(1) Apply grease to the splines on the stub shaft.

S 424-015
(2) Install the bolt, washer, and nut to connect the stub shaft to the latch cam.

S 424-016
(3) Install the bolt, washer, and nut to connect the shaft crank to the stub shaft. Tighten the bolt the minimum torque necessary to lock the nut and clamp the tubes tightly.

S 424-017
(4) Install the bolt, washer, and nut to connect the input crank to the torque tube section. Tighten the bolt the minimum torque necessary to lock the nut and clamp the tubes tightly.

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S 424-018
(5) Install the bolts, washers, and nuts to connect the pushrod to the shaft crank and the input crank. Install the bolts with the heads adjacent to the body frame.

S 644-019
(6) Apply grease to the splines of the torque tube sections.

S 824-020
(7) Hold the torque tube sections, couplings, and universal joints in position.

NOTE: The universal joint is on the forward doors only.

S 424-021
(8) Install the clamps to connect the torque tube sections.

S 424-022
(9) Install the bolts, washers and nuts to connect the torque tube sections to the couplings and to the universal joint. Tighten the bolts the minimum torque necessary to lock the nuts and clamp the tubes tightly.

NOTE: The universal joint is on the forward doors only.

S 424-023
(10) Install the bolts, washers and nuts to connect the cranks to each end of the torque tube. Tighten the bolts the minimum torque necessary to lock the nuts and clamp the tubes tightly.

S 824-024
(11) Adjust the length of the movable ceiling mechanism pushrods (Ref 25-22-04).

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S 424-025
(12) Install bolts, washers, and nuts to connect the pushrods to the cranks at each end of the torque tube.

S 734-026
(13) Do the system test for the entry/service door (Ref 52-11-00).

S 094-027
(14) Remove the ground lock for the entry/service door (Ref 52-11-13).

S 094-028
(15) Remove the DO-NOT-OPERATE tags from the interior and the exterior handles.

S 864-029
(16) Move the interior handle to the OPEN position. Do not open the door.

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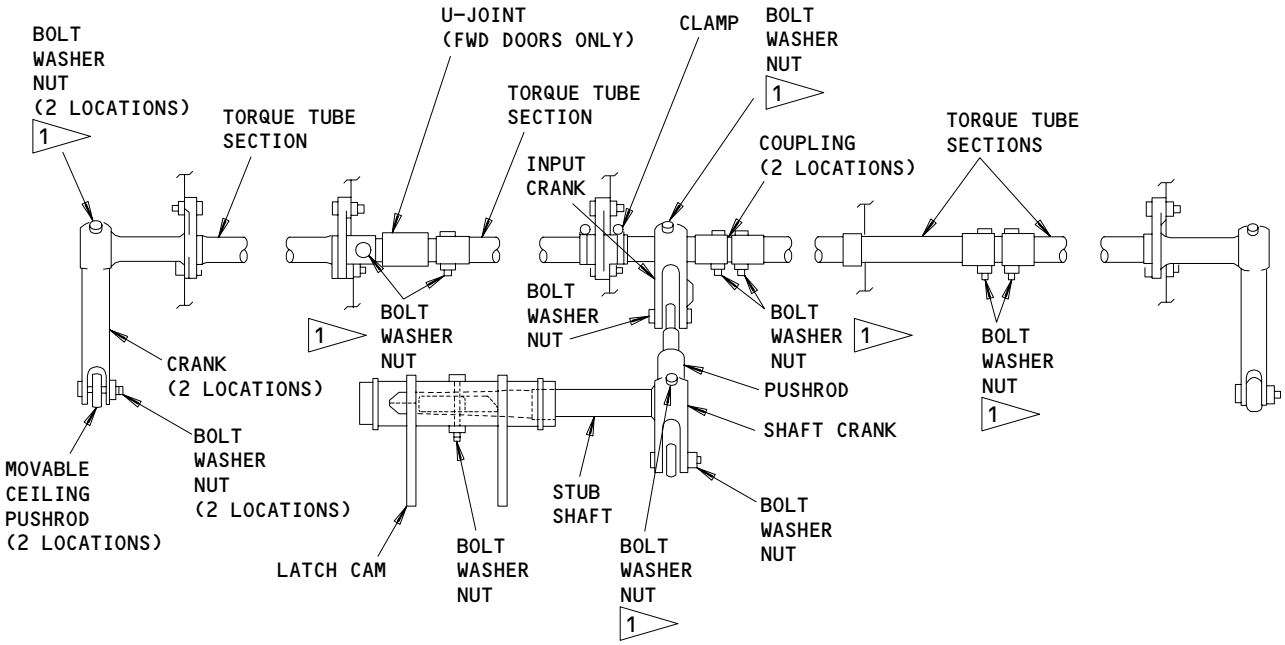

1 TIGHTEN THE BOLT THE MINIMUM TORQUE NECESSARY TO LOCK THE NUT AND CLAMP THE TUBES TIGHTLY

Entry/Service Door Movable Ceiling Panel Latch Mechanism
Figure 401

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ENTRY DOOR ROTARY ACTUATOR - REMOVAL/INSTALLATION

1. General
   A. This procedure gives the instructions to remove and install the rotary actuator for an entry door with electrical operation.

TASK 52-11-45-004-001

2. Remove the Rotary Actuator (Fig. 401)
   A. References
      (1) 52-11-13/201, Entry/Service Door Ground Lock
   B. Access
      (1) Location Zone
          831 Forward Entry Door
   C. Procedure

S 014-002
(1) Get access to the counterbalance and the counterbalance cables.

S 864-003
(2) Latch the entry door.

S 494-004

WARNING: MAKE SURE YOU INSTALL THE GROUND LOCK FOR THE ENTRY DOOR. ACCIDENTAL OPERATION OF THE ENTRY DOOR CAN CAUSE INJURY OR DAMAGE.

(3) Install the ground lock for the entry door (Ref 52-11-13).

S 024-005
(4) Disconnect the electrical connector from the rotary actuator.

S 024-006
(5) Remove the bolts that attach the rotary actuator to the counterbalance.

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S 024-025
(6) Remove the rotary actuator.

TASK 52-11-45-404-007

3. Install the Rotary Actuator (Fig. 401)

A. Equipment
(1) Ohmmeter - milliohm range, commercially available

B. Consumable Materials
(1) A00250 Compound - Sealing, BMS 5-26, Class B-1/2
(2) B00799 Solvent, BMS 3-2, Type 1

C. References
(1) 24-22-00/201, Electrical Power - Control
(2) 52-11-00/501, Entry/Service Door
(3) 52-11-13/201, Entry/Service Door Ground Lock

D. Access
(1) Location Zone
831 Forward Entry Door

E. Procedure

S 214-008
(1) Make sure the ground lock on the entry door is installed (Ref 52-11-13).

S 114-009
(2) Use solvent to clean the mating surfaces between the rotary actuator and the counterbalance.

S 394-010
(3) Apply the sealing compound to the mating surfaces between the rotary actuator and the counterbalance.

S 424-011
(4) Install the rotary actuator on the counterbalance with the bolts and washers. Make sure the electrical connector points inboard and down.

S 214-026
(5) Make sure the sealing compound is pushed out all around the mating surfaces between the rotary actuator and the counterbalance.

S 164-027
(6) Remove the unwanted sealing compound.

S 764-012
(7) Make sure the electrical resistance between the rotary actuator and the counterbalance is 10 milliohms maximum.

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S 424-013
(8) Connect the electrical connector to the rotary actuator.

S 094-014
(9) Remove the ground lock from the entry door (Ref 52-11-13).

S 864-015
(10) Supply electrical power (Ref 24-22-00).

S 864-016
(11) Manually close the entry door.

S 864-017
(12) Unlatch the door with the interior handle.

S 864-018
(13) Push and hold the MAIN DOOR UP switch on the attendants panel.

S 214-019
(14) Make sure the door moves to the fully up position.

S 864-020
(15) Release the MAIN DOOR UP switch.

S 864-021
(16) Push and hold the MAIN DOOR DOWN switch on the attendants panel.

S 214-022
(17) Make sure the door moves to the fully down position.

S 864-023
(18) Release the MAIN DOOR DOWN switch.

S 864-024
(19) Remove electrical power if it is not necessary (Ref 24-22-00).

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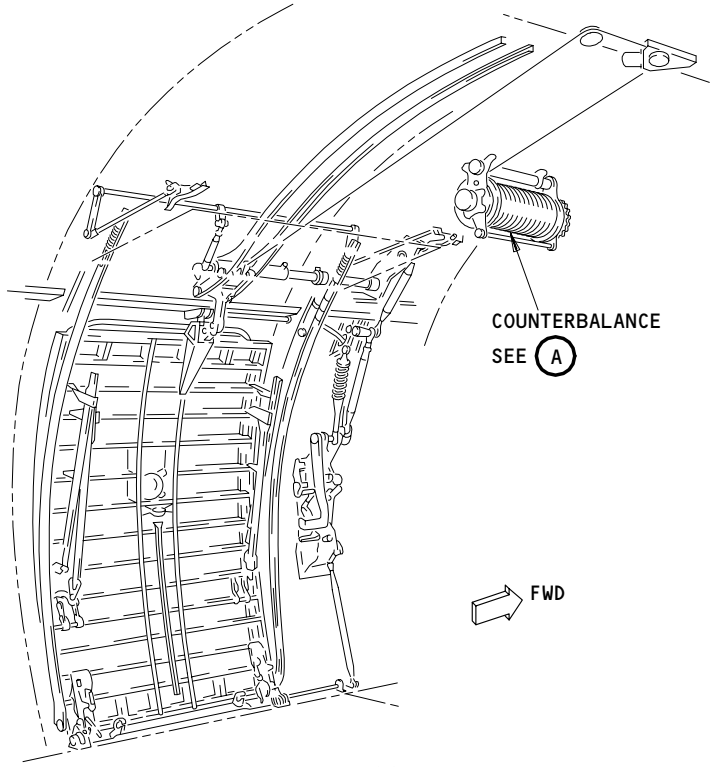
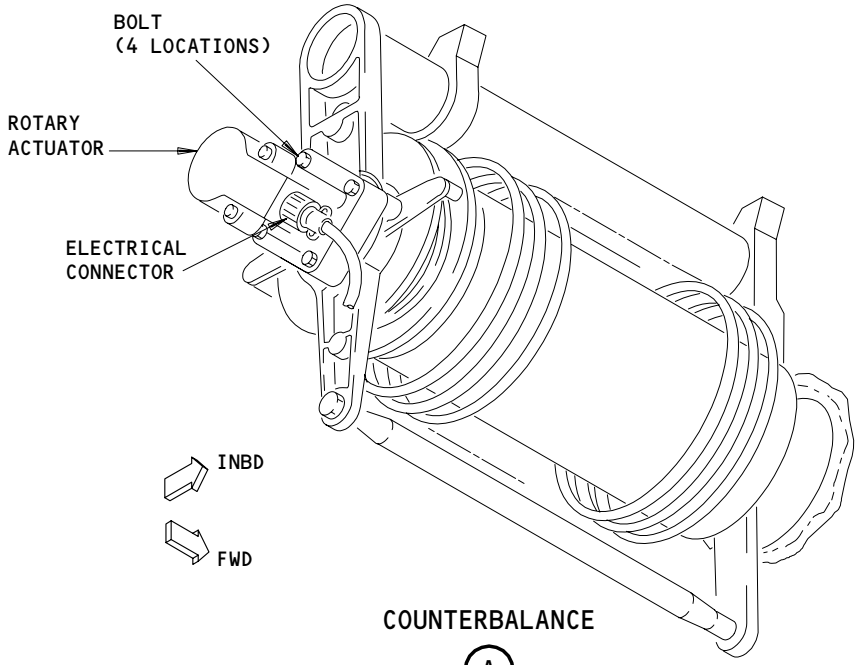


ENTRY DOOR
(INTERNAL VIEW)



COUNTERBALANCE
A

Entry Door Rotary Actuator
Figure 401

15320

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ENTRY DOOR EXTERNAL SWITCH - REMOVAL/INSTALLATION

1. General
   A. This procedure gives the instructions to remove and install the external door control switch for an entry door with electrical operation.

   TASK 52-11-46-004-001

2. Remove the External Switch (Fig. 401)
   A. Access
      (1) Location Zone
          831 Forward Entry Door

   B. Procedure

      S 864-002
      (1) Open this circuit breaker on the overhead panel, P11, and attach a DO-NOT-CLOSE tag:
          (a) 11T6, DOORS FWD ENTRY CONT

      S 864-003
      (2) Open this circuit breaker on the APU/EXT power panel, P34, and attach a DO-NOT-CLOSE tag:
          (a) 34J5, FWD ENTRY DOOR CONT

      S 864-009
      (3) Lift the exterior handle to the unlatched position.

      S 034-008
      (4) Remove the screws that attach the support plate to the handle support.

      S 034-007
      (5) Pull the switch and the support plate away from the handle support.

      S 034-017
      (6) Disconnect the electrical leads from the switch.

      S 024-006
      (7) Remove the retaining nut.

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S 024-018
(8) Remove the switch from the support plate. Keep the support plate.

TASK 52-11-46-404-005

3. Install the External Switch (Fig. 401)

A. References
(1) 24-22-00/201, Electrical Power - Control

B. Access
(1) Location Zone
831 Forward Entry Door

C. Procedure

S 424-004
(1) Install the switch on the support plate with the retaining nut.

S 434-012
(2) Connect the electrical leads to the switch.

S 434-011
(3) Install the screws to attach the support plate to the handle support.

S 864-010
(4) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
(a) 11T6, DOORS FWD ENTRY CONT

S 864-013
(5) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P34 panel:
(a) 34J5, FWD ENTRY DOOR CONT

S 864-015
(6) Supply electrical power (Ref 24-22-00).

S 714-014
(7) Do a test of the external switch as follows:
(a) Manually close the door. Do not latch the door.
(b) Push and hold the external switch in the UP position.
(c) Make sure the door moves to the fully up position.
(d) Release the switch.
(e) Push and hold the external switch in the DN position.

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(f) Make sure the door moves to the fully down position.
(g) Release the switch.

S 864-016
(8) Remove electrical power if it is not necessary (Ref 24-22-00).

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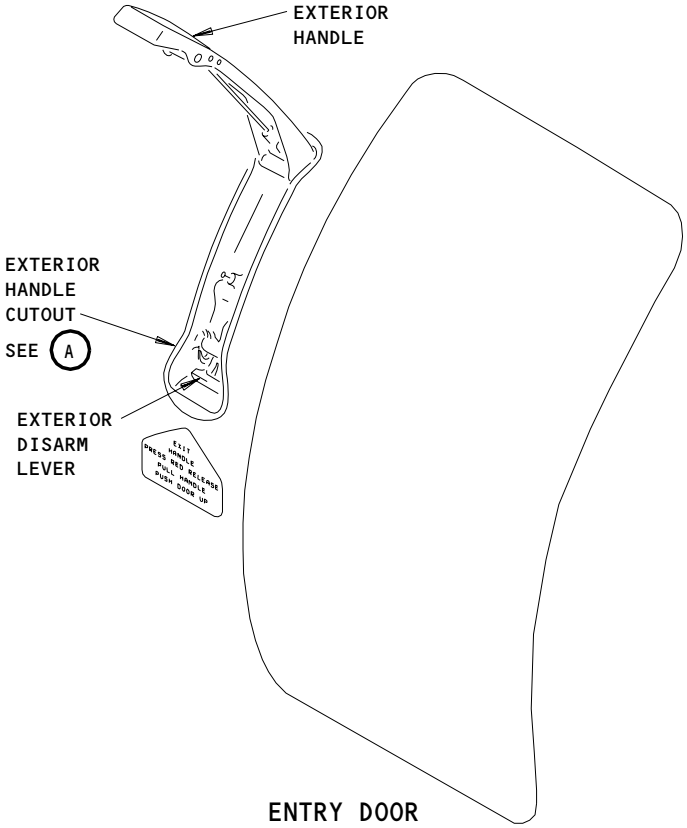
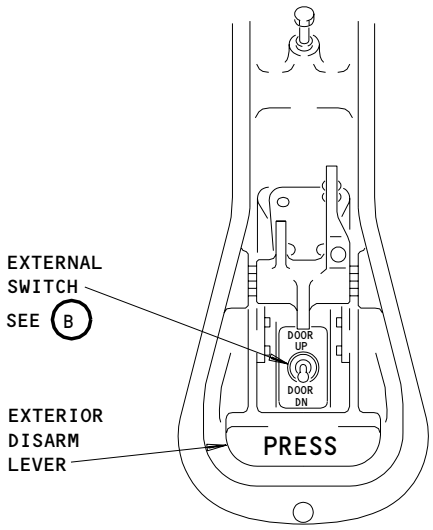
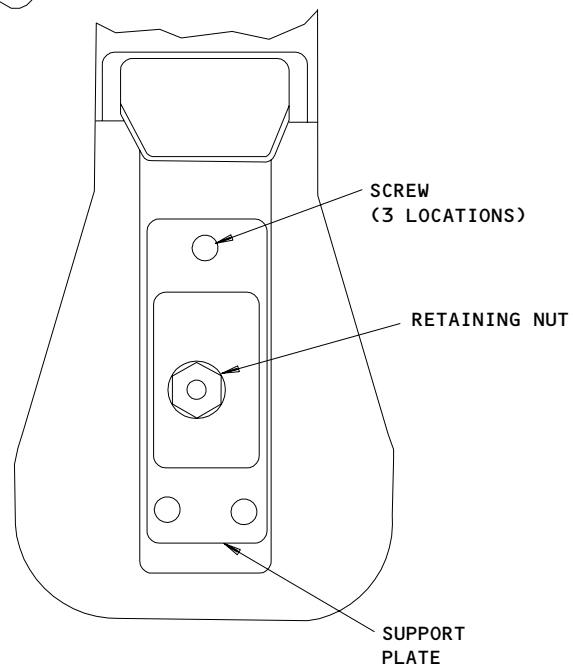


ENTRY DOOR
(EXTERNAL VIEW)



EXTERIOR HANDLE CUTOUT
A



EXTERNAL SWITCH
B

Entry Door External Switch
Figure 401

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ENTRY DOOR CONTROL PROXIMITY SENSORS - REMOVAL/INSTALLATION

1. General
   A. This procedure gives the instructions to remove and install the control proximity sensors for an entry door with electrical operation.

      NOTE: Do not remove the shims during the removal of the sensors. If the shims are not removed, then no adjustments are necessary to get the correct clearance between the sensor and the target. If the shims are removed, then you must measure and adjust the clearance.

   B. These are the control proximity sensors for the entry door:
      (1) Door Down Motor Stop Sensor
      (2) Door Up Motor Stop Sensor
      (3) Door Handle Up Sensor
      (4) Uplatch Release Sensor

   TASK 52-11-47-004-005

2. Remove the Door Down Motor Stop Sensor (S186) (Fig. 401)
   A. References
      (1) 52-11-13/201, Entry/Service Door Ground Lock
   B. Access
      (1) Location Zone
          831 Forward Entry Door

   C. Procedure

      S 494-006
      (1) Install the ground lock for the entry door (Ref 52-11-13).

      S 024-007
      (2) Disconnect the electrical leads from the sensor.

      S 024-008
      (3) Remove the screws that attach the sensor to the bracket on the door upper track, and remove the sensor.

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TASK 52-11-47-404-001

3. Install the Door Down Motor Stop Sensor (S186) (Fig. 401)

A. Equipment

(1) Ammeter - Clip-on, 0-10 ampere range - commercially available

B. References

(1) 24-22-00/201, Electrical Power - Control

(2) 52-11-13/201, Entry/Service Door Ground Lock

C. Access

(1) Location Zone

831 Forward Entry Door

D. Procedure

S 424-009

(1) Hold the sensor on the bracket in the door upper track, and install the screws.

S 224-010

(2) Measure the clearance between the sensor and the target. The correct clearance is 0.07-0.13 inch.

S 824-105

(3) If the clearance is too small, then do these steps:

(a) Calculate the number of shim laminations to remove to get the correct clearance.

(b) Remove the necessary number of shim laminations.

NOTE: Each shim lamination removed will increase the clearance 0.002 inch.

S 824-084

(4) If the clearance is too large, then do these steps:

(a) Remove the sensor.

(b) Remove all of the shims.

(c) Install the sensor with a new shim between the adjacent structure and the sensor.

(d) Measure the clearance between the sensor and the target.

(e) Make sure the clearance is too small.

(f) Remove the sensor and the shim.

(g) Calculate the number of shim laminations to remove to get the correct clearance.

(h) Remove the necessary number of shim laminations.

NOTE: Each shim lamination removed will increase the clearance 0.002 inch.

(i) Apply adhesive between the adjacent structure and the new shim.

(j) Install the sensor.

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S 424-011
(5) Connect the electrical leads to the sensor.

S 094-012
(6) Remove the ground lock for the entry door (Ref 52-11-13).

NOTE: Do not close the movable ceiling panels.

S 864-013
(7) Supply electrical power (Ref 24-22-00).

S 864-014
(8) Open the entry door. Make sure the interior handle is in the fully up position.

S 484-015
(9) Attach the ammeter around one of the green wires that goes to the electrical connector on the rotary actuator on the counterbalance.

S 864-016
(10) Push and hold the MAIN DOOR DOWN switch on the attendants panel.

S 764-017
(11) Make sure the ammeter shows no less than 0.3 amperes.

S 764-018
(12) When the door stops at the fully down position, make sure the ammeter shows zero ampere.

S 864-019
(13) Release the MAIN DOOR DOWN switch.

S 084-020
(14) Disconnect the ammeter.

S 864-021
(15) Remove electrical power if it is not necessary (Ref 24-22-00).

S 414-022
(16) Close the movable ceiling panels as follows:
  (a) Unlatch the door.
  (b) Open the movable ceiling panels down and outboard to the closed position.
  (c) Pull the door liner up and out of the door to touch the movable ceiling panel.
  (d) Do these steps:
    1) Let the liner move down sufficiently to attach the ball-lock pin to the bracket on the liner, and attach the ball-lock pin to the bracket.

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2) Let the liner move down as far as the lanyard will permit.
3) Connect the electrical connector on the electrical wiring between the liner and the movable ceiling panel.
4) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
a) 11U32, DOOR WINDOW HEATER
5) Pull the liner up to meet the movable ceiling panel.

(e) If necessary, open the access door in the upper door liner to get access to the hinge pin release buttons.
(f) Pull the buttons together and engage the hinge pins. Release the buttons.
(g) Close the access door.

TASK 52-11-47-004-023

4. Remove the Door Up Motor Stop Sensor (S185) (Fig. 401)

A. References
(1) 25-22-02/401, Lowered Ceiling Panels
(2) 52-11-13/201, Entry/Service Door Ground Lock

B. Access
(1) Location Zone
831 Forward Entry Door

C. Procedure

S 494-104
(1) Install the ground lock for the two entry doors (Ref 52-11-13).

S 014-024
(2) Remove the ceiling panels as necessary to get access to the sensor (Ref 25-22-02).

S 024-025
(3) Disconnect the electrical leads from the sensor.

S 024-026
(4) Remove the screws that attach the sensor to the bracket.

S 024-091
(5) Remove the sensor.

TASK 52-11-47-404-002

5. Install the Door Up Motor Stop Sensor (S185) (Fig. 401)

A. Equipment
(1) Ammeter - Clip-on, 0-10 ampere range - commercially available

B. References
(1) 24-22-00/201, Electrical Power - Control
(2) 25-22-02/401, Lowered Ceiling Panels
(3) 52-11-13/201, Entry/Service Door Ground Lock

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C. Access
(1) Location Zone
831 Forward Entry Door

D. Procedure

S 424-027
(1) Hold the sensor in the bracket, and install the screws.

S 224-028
(2) Measure the clearance between the sensor and the target. The correct clearance is 0.07-0.13 inch.

S 824-029
(3) If the clearance is too small, then do these steps:
(a) Calculate the number of shim laminations to remove to get the correct clearance.
(b) Remove the necessary number of shim laminations.

NOTE: Each shim lamination removed will increase the clearance 0.002 inch.

S 824-030
(4) If the clearance is too large, then do these steps:
(a) Remove the sensor.
(b) Remove all of the shims.
(c) Install the sensor with a new shim between the adjacent structure and the sensor.
(d) Measure the clearance between the sensor and the target.
(e) Make sure the clearance is too small.
(f) Remove the sensor and the shim.
(g) Calculate the number of shim laminations to remove to get the correct clearance.
(h) Remove the necessary number of shim laminations.

NOTE: Each shim lamination removed will increase the clearance 0.002 inch.

(i) Apply adhesive between the adjacent structure and the new shim.
(j) Install the sensor.

S 824-031
(5) Adjust the position of the sensor inboard or outboard as shown in View A.

S 424-032
(6) Connect the electrical leads to the sensor.

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S 094-033
(7) Remove the ground lock for the entry doors (Ref 52-11-13).

NOTE: Do not close the movable ceiling panels.

S 864-034
(8) Supply electrical power (Ref 24-22-00).

S 864-035
(9) Move the interior handle to the fully up position.

S 484-036
(10) Attach the ammeter around one of the green wires that goes to the electrical connector on the rotary actuator on the counterbalance.

S 864-037
(11) Push and hold the MAIN DOOR UP switch on the attendants panel.

S 764-038
(12) Make sure the ammeter shows no less than 0.3 amperes.

S 764-039
(13) When the door stops at the fully up position, make sure the ammeter shows zero amperes.

S 864-040
(14) Release the MAIN DOOR UP switch.

S 214-041
(15) Make sure the door clears the uplatch and that the uplatch is extended.

S 824-042
(16) Pull the door down to contact the uplatch.

S 864-043
(17) Push and hold the MAIN DOOR DOWN switch on the attendants panel.

S 214-044
(18) Make sure the door moves up, the uplatch retracts, and then the door moves down.

S 864-045
(19) When the door stops at the fully down position, release the MAIN DOOR DOWN switch.

S 084-046
(20) Disconnect the ammeter.

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S 864-047
(21) Remove electrical power if it is not necessary (Ref 24-22-00).

S 414-048
(22) Install the ceiling panels if they were removed (Ref 25-22-02).

S 414-049
(23) Close the movable ceiling panels as follows:
(a) Unlatch the door.
(b) Open the movable ceiling panels down and outboard to the closed position.
(c) Pull the door liner up and out of the door to touch the movable ceiling panel.
(d) Do these steps:
1) Let the liner move down sufficiently to attach the ball-lock pin to the bracket on the liner. Attach the ball-lock pin to the bracket.
2) Let the liner move down as far as the lanyard will permit.
3) Connect the electrical connector on the electrical wiring between the liner and the movable ceiling panel.
4) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
a) 11U32, DOOR WINDOW HEATER
5) Pull the liner up to meet the movable ceiling panel.
(e) If necessary, open the access door in the upper door liner to get access to the hinge pin release buttons.
(f) Pull the buttons together and engage the hinge pins. Release the buttons.
(g) Close the access door.

TASK 52-11-47-004-050
6. Remove the Door Handle Up Sensor (S184) (Fig. 401)
A. References
(1) 52-11-02/401, Doorway Lining
B. Access
(1) Location Zone
831 Forward Entry Door

C. Procedure

S 014-051
(1) Remove the doorway lining (Ref 52-11-02).

S 024-052
(2) Disconnect the electrical leads from the sensor.

S 024-053
(3) Remove the screws that attach the sensor to the bracket on the overcenter mechanism.

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S 024-096
(4) Remove the sensor.

TASK 52-11-47-404-003
7. Install the Door Handle Up Sensor (S184) (Fig. 401)
A. References
(1) 24-22-00/201, Electrical Power - Control
(2) 52-11-02/401, Doorway Lining
B. Access
(1) Location Zone
831 Forward Entry Door

C. Procedure

S 424-054
(1) Hold the sensor on the bracket on the overcenter mechanism, and install the screws.

S 224-055
(2) Measure the clearance between the sensor and the target. The correct clearance is 0.07-0.13 inch.

S 824-106
(3) If the clearance is too small, then do these steps:
(a) Calculate the number of shim laminations to remove to get the correct clearance.
(b) Remove the necessary number of shim laminations.

NOTE: Each shim lamination removed will increase the clearance 0.002 inch.

S 824-056
(4) If the clearance is too large, then do these steps:
(a) Remove the sensor.
(b) Remove all of the shims.
(c) Install the sensor with a new shim between the adjacent structure and the sensor.
(d) Measure the clearance between the sensor and the target.
(e) Make sure the clearance is too small.
(f) Remove the sensor and the shim.
(g) Calculate the number of shim laminations to remove to get the correct clearance.
(h) Remove the necessary number of shim laminations.

NOTE: Each shim lamination removed will increase the clearance 0.002 inch.

(i) Apply adhesive between the adjacent structure and the new shim.
(j) Install the sensor.

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S 424-057
(5) Connect the electrical leads to the sensor.

S 414-058
(6) Install the doorway lining (Ref 52-11-02).

S 864-059
(7) Supply electrical power (Ref 24-22-00).

S 864-060
(8) Move the interior handle to the fully up position.

S 864-061
(9) Push and hold the MAIN DOOR UP switch on the attendants panel.

S 214-062
(10) Make sure the door moves up.

S 824-063
(11) When the door is approximately half open, pull the interior handle down approximately 10 degrees.

S 214-064
(12) Make sure the door stops.

S 864-065
(13) Release the MAIN DOOR UP switch.

S 864-066
(14) Remove electrical power if it is not necessary (Ref 24-22-00).

TASK 52-11-47-004-067

8. Remove the Uplatch Release Sensor (S187) (Fig. 401)
   A. References
      (1) 52-11-02/401, Doorway Lining
   B. Access
      (1) Location Zone
          831 Forward Entry Door

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C. Procedure

S 014-068
(1) Remove the doorway lining (Ref 52-11-02).

S 024-069
(2) Disconnect the electrical leads from the sensor.

S 024-070
(3) Remove the screws that attach the sensor to the bracket on the door side track.

S 024-101
(4) Remove the sensor.

TASK 52-11-47-404-004

9. Install the Uplatch Release Sensor (S187) (Fig. 401)

A. References
(1) 24-22-00/201, Electrical Power - Control
(2) 52-11-02/401, Doorway Lining

B. Access
(1) Location Zone
831 Forward Entry Door

C. Procedure

S 424-071
(1) Hold the sensor on the bracket on the door side track, and install the screws.

S 224-072
(2) Measure the clearance between the sensor and the target. The correct clearance is shown in View C.

S 824-073
(3) If the clearance is too small, then do these steps:
(a) Calculate the number of shim laminations to remove to get the correct clearance.
(b) Remove the necessary number of shim laminations.

NOTE: Each shim lamination removed will increase the clearance 0.002 inch.

S 824-074
(4) If the clearance is too large, then do these steps:
(a) Remove the sensor.
(b) Remove all of the shims.
(c) Install the sensor with a new shim between the adjacent structure and the sensor.

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(d) Measure the clearance between the sensor and the target.
(e) Make sure the clearance is too small.
(f) Remove the sensor and the shim.
(g) Calculate the number of shim laminations to remove to get the correct clearance.
(h) Remove the necessary number of shim laminations.

NOTE: Each shim lamination removed will increase the clearance 0.002 inch.

(i) Apply adhesive between the adjacent structure and the new shim.
(j) Install the sensor.

S 424-075
(5) Connect the electrical leads to the sensor.

S 414-076
(6) Install the doorway lining (Ref 52-11-02).

S 864-077
(7) Open the entry door. Make sure the interior handle is in the fully up position.

S 824-078
(8) Pull the door down to contact the uplatch.

S 864-079
(9) Push and hold the MAIN DOOR DOWN switch on the attendants panel.

S 214-080
(10) Make sure the door moves up, the uplatch retracts, and then the door moves down.

S 864-081
(11) When the door stops at the fully down position, release the MAIN DOOR DOWN switch.

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S 214-082
(12) Make sure the uplatch is extended.

S 864-083
(13) Remove electrical power if it is not necessary (Ref 24-22-00).

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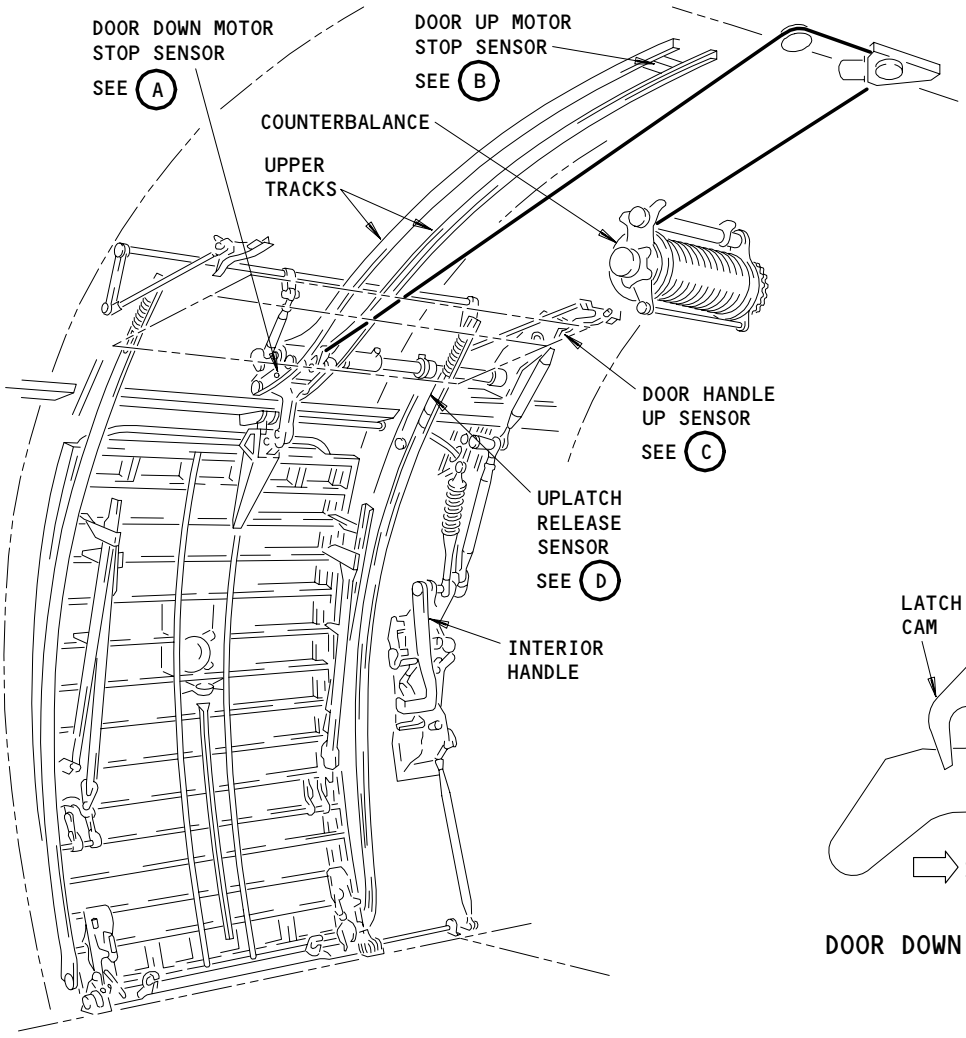
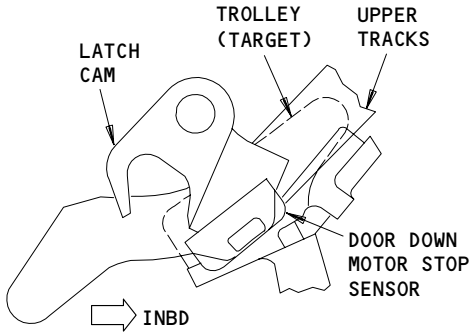
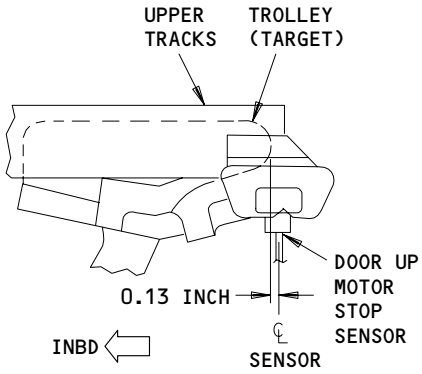


ENTRY DOOR
(INTERNAL VIEW)



DOOR DOWN MOTOR STOP SENSOR
A



DOOR UP MOTOR STOP SENSOR
B

Entry Door Control Proximity Sensors
Figure 401 (Sheet 1)

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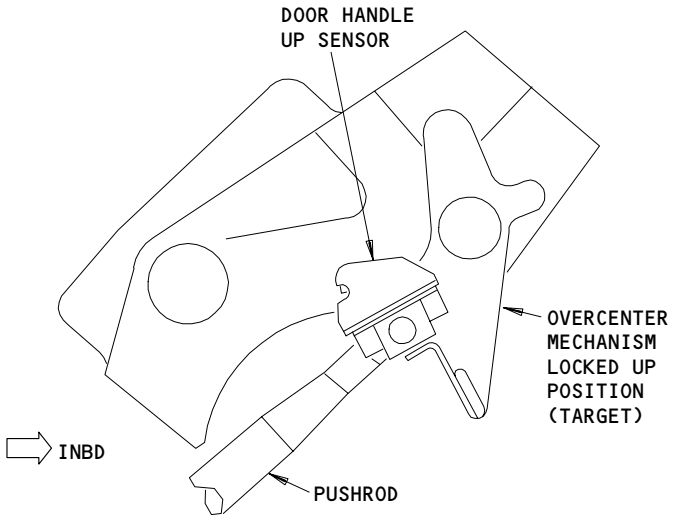
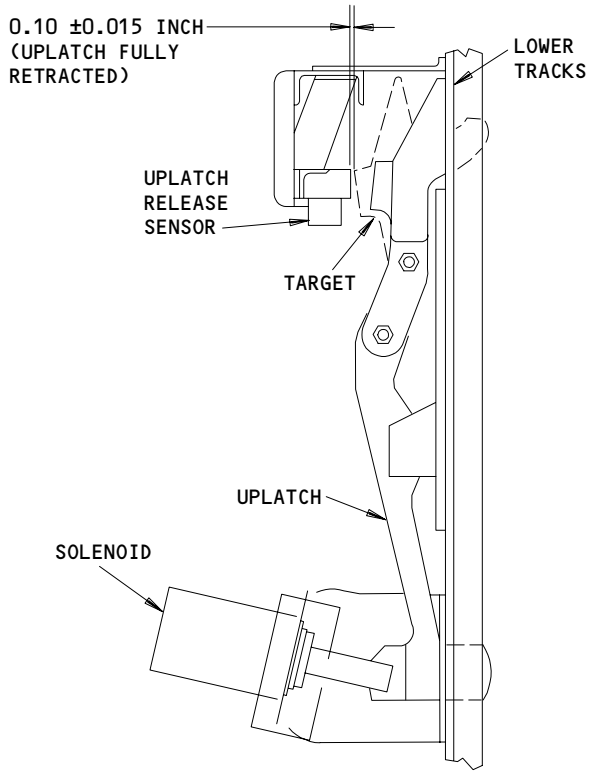


DOOR HANDLE UP SENSOR

C



UPLATCH RELEASE SENSOR

D

Entry Door Control Proximity Sensors
Figure 401 (Sheet 2)

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OVERWING ESCAPE HATCH - DESCRIPTION AND OPERATION

1. General (Fig. 1)
   A. AIRPLANES WITH ONE OVERWING EMERGENCY EXIT HATCH;
      there is one overwing escape hatch above each wing.
   B. AIRPLANES WITH TWO OVERWING EMERGENCY EXIT HATCHES;
      there are two escape hatches over each wing. The aft escape hatch has a step below the hatch to ease passenger exit from the airplane. The step automatically deploys to a usable position when the aft escape hatch is removed.
   C. The overwing escape hatches are plug type doors that pivot inward and remove completely to allow passenger and crew to exit the airplane through the hatch. The pivot fittings are on the lower edge of the hatches.
   D. AIRPLANES PRE-SB 25-0394;
      a hatch heater blanket is installed in the overwing escape hatch to prevent passenger discomfort because of cold air from the hatch.
   E. AIRPLANES POST-SB 25-0394;
      The Type III overwing escape hatch heating system is deactivated and not operational.
   F. Opening the hatch from inside the airplane initiates the off-wing slide deployment.
   G. Opening the hatch from outside the airplane will not initiate the off-wing slide deployment.
2. Operation
   A. Functional Description (Fig. 2)
      (1) The escape hatch is opened and closed using the emergency PULL handle.
      (2) Pulling the handle out and down will rotate the latch rollers in latch cams on the body frame to unlatch the hatch.
      (3) Pushing the handle up and outboard will rotate the torque tube, causing the latch rollers to engage latch cams. The hatch is closed and latched when the rollers are fully engaged in the cams.
      (4) Using the emergency PULL handle will not retract the striker pin on top of the hatch. The system is disarmed by moving the disable handle to the SAFE (down) position. When the disable handle is in the SAFE position, the auto actuator is rotated up, out of the striker pin's path.
      (5) The external handle automatically disarms the escape slide. The top of the external handle must be pushed inward to grasp and operate the external handle. Pushing the external handle up and inboard pulls the striker pin down, disarming the escape system.
   B. Control (Fig. 1)
      (1) AIRPLANES WITH ONE OVERWING EMERGENCY EXIT HATCH;
          control
          (a) To disable the off-wing escape system, pull the disable handle (above the escape hatch) down to the SAFE position (Detail A).

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(b) To arm the off-wing escape system, place the disable handle up to the ARMED position.

(2) AIRPLANES WITH TWO OVERWING EMERGENCY EXIT HATCHES; control

(a) To disable the off-wing escape system, pull either disable handle (above forward and aft escape hatches) down to the SAFE position (Detail A).

(b) To arm the off-wing escape system, place both disable handles up to the ARMED position.

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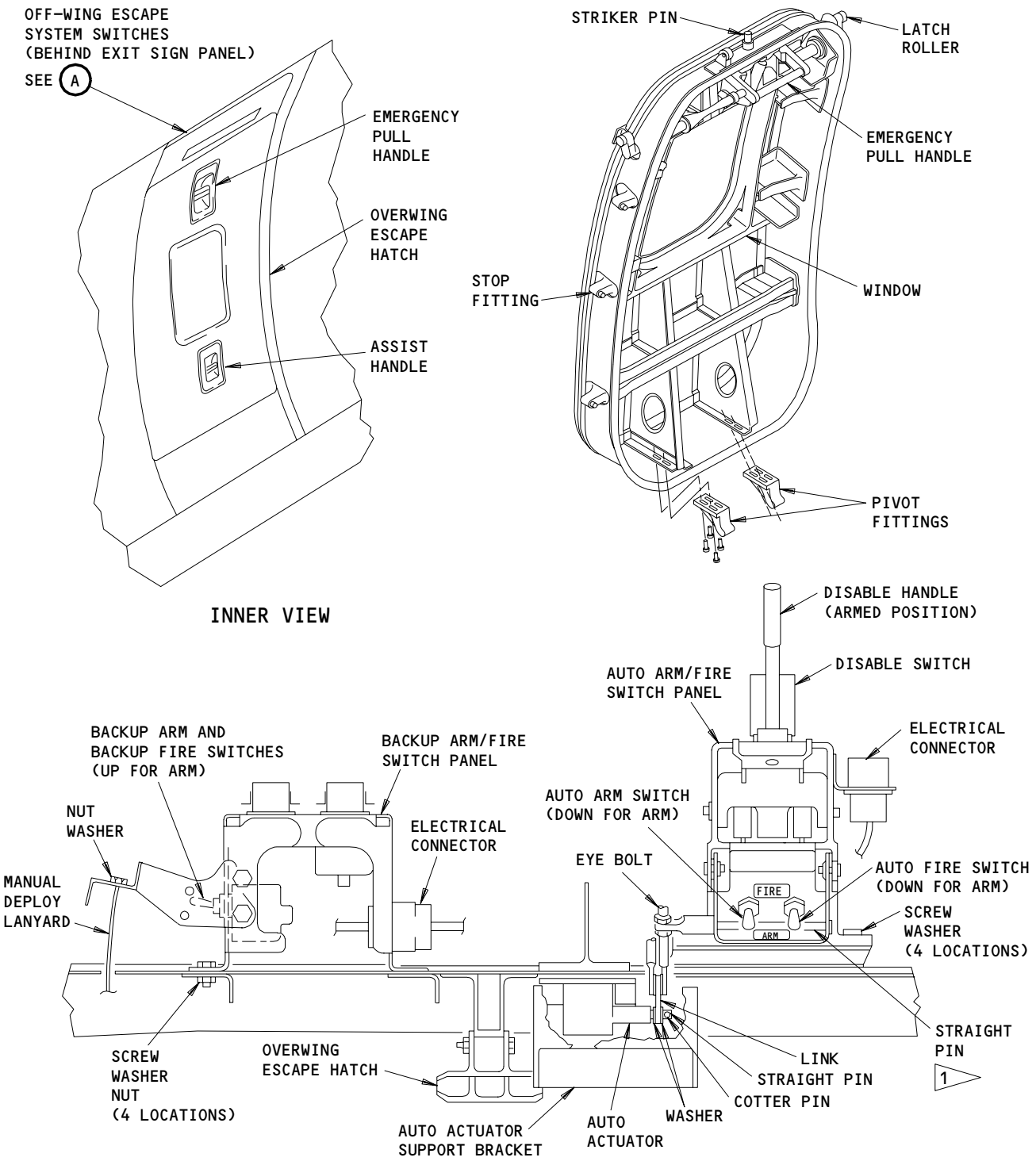

OFF-WING ESCAPE SYSTEM SWITCHES (EXAMPLE)
(BEHIND EXIT SIGN PANEL)

(A)

1 STRAIGHT PIN MUST BE BELOW THE AUTO ARM SWITCH AND THE AUTO FIRE SWITCH AT ALL TIMES

Overwing Escape Hatch (Example)
Figure 1

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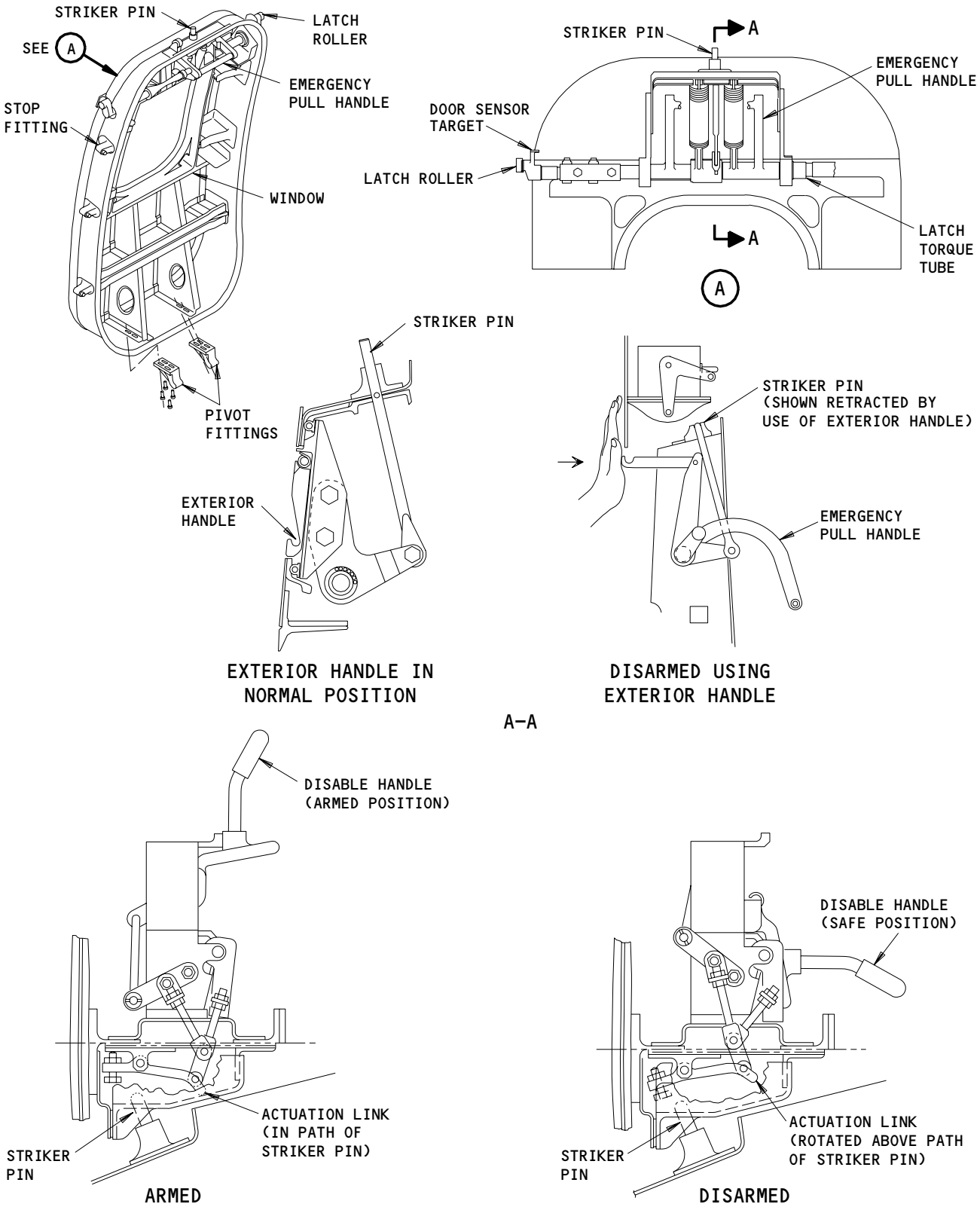

Overwing Escape Hatch Operation
Figure 2

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OVERWING ESCAPE HATCH

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
FITTINGS – PIVOT	1	8	LOWER EDGE OF EMER ESCAPE HATCH	52-21-00
HANDLES				52-21-00
EMERGENCY PULL	1,2	4	INTERIOR OF EMER ESCAPE HATCH	
EXTERIOR	1	4	EXTERIOR OF EMER ESCAPE HATCH	
INTERIOR ASSIST	2	4	INTERIOR OF EMER ESCAPE HATCH	
HATCH – OVERWING ESCAPE FORWARD/LEFT 1 2	1	1	832	52-21-01
HATCH – OVERWING ESCAPE AFT/LEFT 2	1	1	834	52-21-01
HATCH – OVERWING ESCAPE FORWARD/RIGHT 1 2	1	1	842	52-21-01
HATCH – OVERWING ESCAPE AFT/RIGHT 2	1	1	844	52-21-01
LINING – OVERWING ESCAPE HATCH	2	4	INTERIOR OF EMER ESCAPE HATCH	52-21-02
PIN – STRIKER	1,2	4	LATCH TORQUE TUBE	52-21-00
PLATE – COVER	2	4	INTERIOR OF EMER ESCAPE HATCH	52-21-00
ROLLER – LATCH	1,2	8	ENDS OF LATCH TORQUE TUBE	52-21-00
SPRING – OVERCENTER	2	8	LATCH TORQUE TUBE	52-21-00
STOP – DOOR	1	24	FORWARD AND AFT EDGES OF EMER ESCAPE HATCH	52-21-00
TORQUE TUBE – LATCH	2	4	UPPER PART OF EMER ESCAPE HATCH	52-21-00

1 AIRPLANES WITH ONE HATCH OVER EACH WING

2 AIRPLANES WITH TWO HATCHES OVER EACH WING

Overwing Escape Hatch – Component Index
Figure 101

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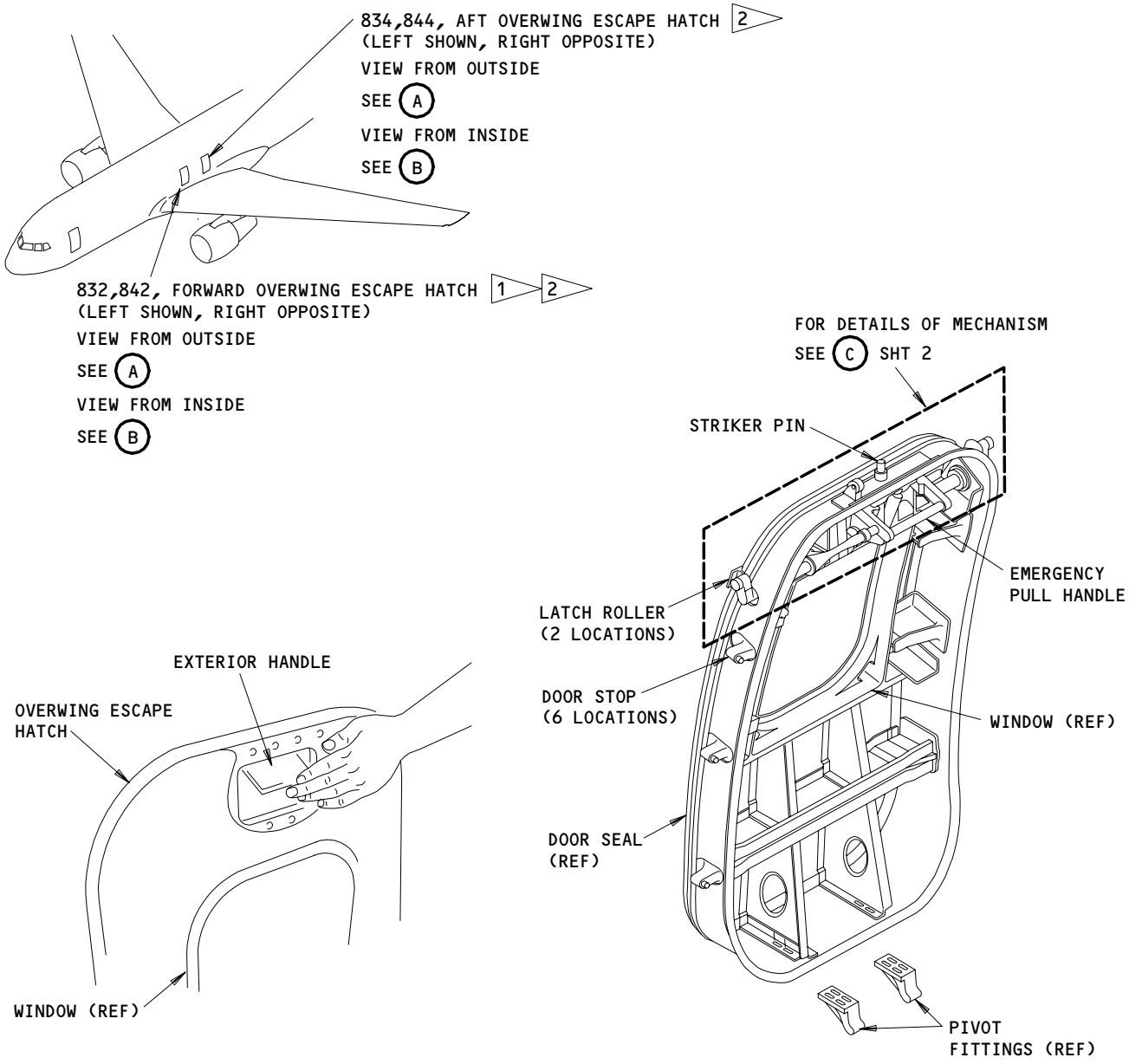

OVERWING EXCAPE HATCH
A

OVERWING EXCAPE HATCH
(LINING NOT SHOWN)
B

1 AIRPLANES WITH ONE HATCH OVER EACH WING
2 AIRPLANES WITH TWO HATCHES OVER EACH WING

Overwing Escape Hatch - Component Location
Figure 102 (Sheet 1)

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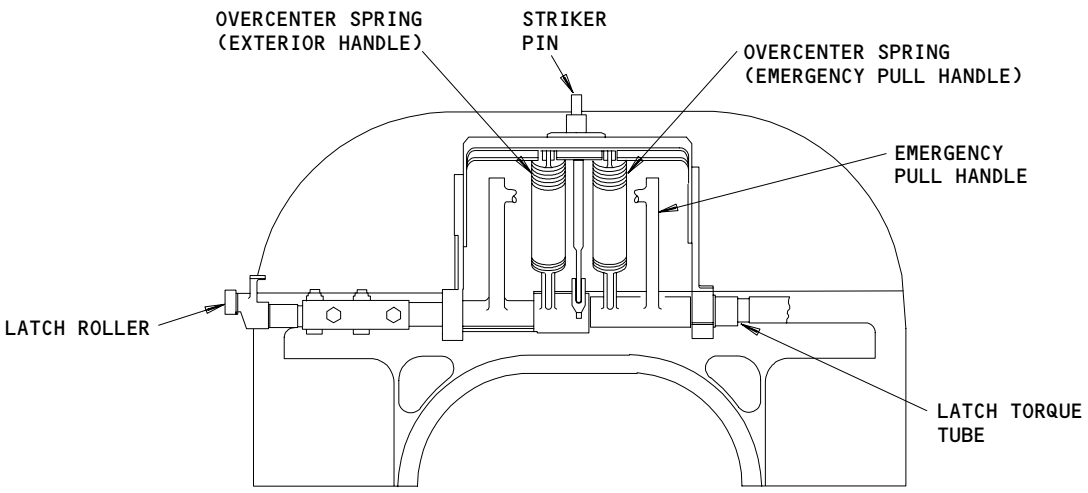
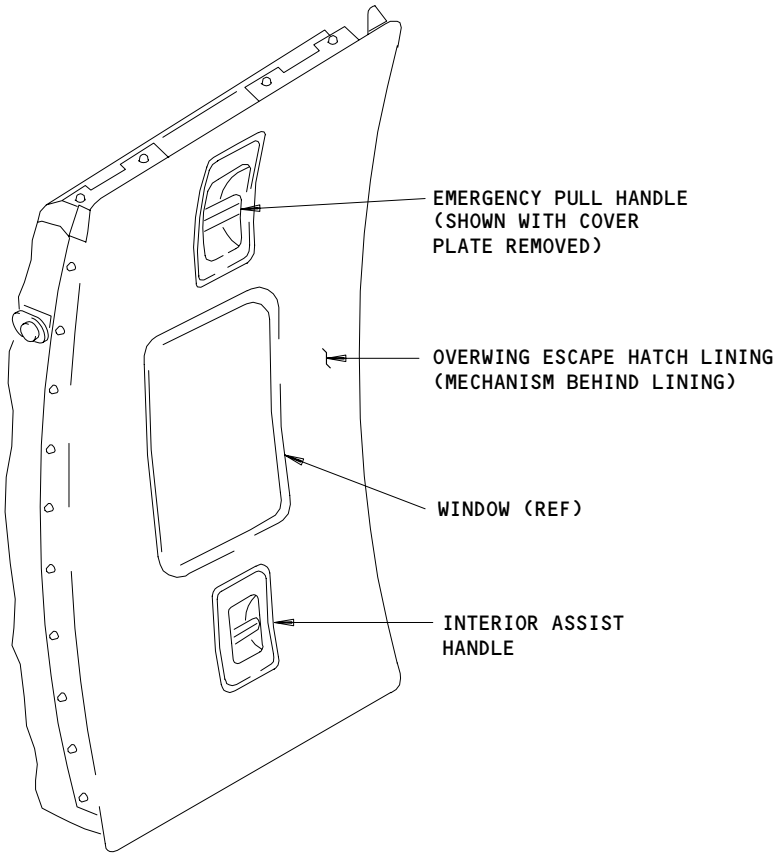


C



VIEW FROM INSIDE
(LINING INSTALLED)

Overwing Escape Hatch - Component Location
Figure 102 (Sheet 2)

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OVERWING ESCAPE HATCH - MAINTENANCE PRACTICES

1. General
   A. This procedure has these tasks:
      (1) The removal of the overwing escape hatch:
          (a) When you are in the airplane
          (b) When you are out of the airplane
      (2) Installation of the overwing escape hatch when you are in the airplane
      (3) Adjustment of the overwing escape hatch
      (4) A check of the external handle on the overwing escape hatch
      (5) A check of the emergency pull handle on the overwing escape hatch
      (6) A test of the indication circuits.
      (7) Application of corrosion prevention treatment.
   B. These tasks are for the left and right overwing escape hatches.
   C. Refer to AMM 52-71-00/501 for the adjustment and the system test of the proximity sensors for the door warning system.

TASK 52-21-01-002-001

2. Overwing Escape Hatch Removal
   A. References
      (1) AMM 24-22-00/201, Control (Supply Power)
      (2) AMM 25-65-00/201, Off-Wing Escape System
      (3) AMM 52-21-02/201, Overwing Escape Hatch Lining
   B. Access
      (1) Location Zones

832	Overwing Emergency Exit Hatch (Left) *[1]
832	Overwing Emergency Exit Hatch (Forward/Left) *[2]
834	Overwing Emergency Exit Hatch (Aft/Left) *[2]
842	Overwing Emergency Exit Hatch (Right) *[1]
842	Overwing Emergency Exit Hatch (Forward/Right) *[2]
844	Overwing Emergency Exit Hatch (Aft/Right) *[2]

*[1] AIRPLANES WITH ONE HATCH OVER EACH WING.
*[2] AIRPLANES WITH TWO HATCHES OVER EACH WING.

   C. Procedure - Remove the Overwing Escape Hatch when you are in the Airplane (Fig. 201)

S 862-171
      (1) AIRPLANES PRE-SB 25-0394;
          open this circuit breaker on the left miscellaneous equipment panel, P36, and attach a DO-NOT-CLOSE tag:
          (a) 36H3 or 36D5, ESC HTCH HTR BLKT

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S 862-197
(2) AIRPLANES POST-SB 25-0394;
The Type III overwing escape hatch heating system is deactivated and not operational.

S 042-017

WARNING: MAKE SURE THAT YOU CORRECTLY DISARM THE OFF-WING ESCAPE SYSTEM. IF YOU INCORRECTLY DISARM THE SYSTEM, THE ESCAPE SLIDE CAN INFLATE AND CAUSE INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

(3) Do the Disarm the Off-Wing Escape System procedure (AMM 25-65-00/201).

S 032-018

WARNING: BE CAREFUL WITH THE SELF-ILLUMINATING SIGNS IN THE EMERGENCY HANDLE OR THE COVERPLATE OVER THE EMERGENCY HANDLE. THE SELF-ILLUMINATING SIGNS CONTAIN RADIOACTIVE GAS WHICH CAN CAUSE INJURY TO PERSONS. DO NOT STAY IN THE AREA IF THE SELF-ILLUMINATING SIGNS ARE BROKEN OR HAVE A CRACK. KEEP THE AIR DISTRIBUTION SYSTEM ON. AFTER 20 MINUTES, YOU CAN GO BACK TO THE AREA.

(4) Pull the bottom of the cover plate in the inboard direction to remove the cover plate from the emergency PULL handle.

S 212-180
(5) If the self-illuminating signs are broke or have a crack, replace the signs (AMM 52-21-02/201).

S 022-021
(6) Do these steps to open the overwing escape hatch:
(a) Pull the emergency PULL handle in the inboard direction.

NOTE: If the system is disarmed, you will not inflate the escape slide when you pull the emergency PULL handle.

(b) Disconnect the electrical connector (View B, Fig. 206).
(c) Lift the overwing escape hatch out of the opening.

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D. Procedure - Remove the Overwing Escape Hatch when you are out of the Airplane (Fig. 203)

S 862-163

(1) AIRPLANES PRE-SB 25-0394;
open this circuit breaker on the left miscellaneous equipment panel, P36, and attach a DO-NOT-CLOSE tag:
(a) 36H3 or 36D5, ESC HTCH HTR BLKT

S 862-198

(2) AIRPLANES POST-SB 25-0394;
The Type III overwing escape hatch heating system is deactivated and not operational.

S 042-173

WARNING: MAKE SURE THAT YOU CORRECTLY DISARM THE OFF-WING ESCAPE SYSTEM. IF YOU INCORRECTLY DISARM THE SYSTEM, THE ESCAPE SLIDE CAN INFLATE AND CAUSE INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

(3) Do the Disarm the Off-Wing Escape System procedure (AMM 25-65-00/201).

S 022-022

(4) Push in on the top edge of the red external handle, and hold the bottom edge of the handle.

S 022-189

CAUTION: HOLD ON TO EXTERNAL HANDLE WHEN YOU OPEN THE OVERWING ESCAPE HATCH WHEN YOU ARE OUT OF THE AIRPLANE. IF YOU DO NOT HOLD ONTO THE EXTERNAL HANDLE, THE HATCH WILL FALL INTO THE AIRPLANE WHEN IT IS OPENED.

(5) Push the lower edge of the handle in the inboard direction to release the overwing escape hatch.

NOTE: The external handle disarms the off-wing escape system. If the system is disarmed, you will not inflate the escape slide when you open the overwing escape hatch.

TASK 52-21-01-402-002

3. Overwing Escape Hatch Installation
A. Consumable Materials
(1) B00052 Soap - Liquid Turco 1526
B. References
(1) AMM 52-21-02/201, Overwing Escape Hatch Lining
C. Access
(1) Location Zones

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832 Overwing Emergency Exit Hatch (Left) *[1]
832 Overwing Emergency Exit Hatch (Forward/Left) *[2]
834 Overwing Emergency Exit Hatch (Aft/Left) *[2]
842 Overwing Emergency Exit Hatch (Right) *[1]
842 Overwing Emergency Exit Hatch (Forward/Right) *[2]
844 Overwing Emergency Exit Hatch (Aft/Right) *[2]
*[1] AIRPLANES WITH ONE HATCH OVER EACH WING.
*[2] AIRPLANES WITH TWO HATCHES OVER EACH WING.

D. Procedure - Install the Overwing Escape Hatch when you are in the Airplane

S 862-052
(1) AIRPLANES PRE-SB 25-0394;
open this circuit breaker on the left miscellaneous equipment panel, P36, and attach a DO-NOT-CLOSE tag:
(a) 36H3 or 36D5, ESC HTCH HTR BLKT

S 862-199
(2) AIRPLANES POST-SB 25-0394;
The Type III overwing escape hatch heating system is deactivated and not operational.

S 212-166
(3) Make sure the seal on the hatch is in satisfactory condition and in the correct position. Replace the seal on the hatch, if it is necessary.

S 212-054
(4) Make sure the switch guard bracket is not bent (View A, Fig. 206). Replace the switch guard bracket, if it is necessary.

S 212-055
(5) Make sure the cover for the manual deploy handle is fully closed (View C, Fig. 201).

S 642-167
(6) If it is necessary, apply liquid soap or water to the seal on the hatch.

NOTE: This will help keep the seal in its correct position when you install the hatch.

S 412-059
(7) Do these steps to close the overwing escape hatch:
(a) Pull the emergency PULL handle out and down to the fully open position.

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(b) AIRPLANES WITH TWO HATCHES OVER EACH WING;
for the aft overwing escape hatch, make sure the external step and hinge are clean and operate correctly.
1) Make sure that the step hinge pin did not migrate.
2) If the step hinge pin did migrate, then do these steps:
a) Set the hinge pin.
b) Stake the hinge pin.
c) Make sure that the overwing escape hatch step hinge moves freely.

(c) AIRPLANES WITH TWO HATCHES OVER EACH WING;
for the aft overwing escape hatch, push the external step closed when you are out of the airplane.

NOTE: You must hold the external step in the closed position until the overwing escape hatch is in the closed position.

1) Carefully feed the step support cables into the storage tubes.
2) Make sure that there are no kinks in the step support cables.

(d) Put the pivot fittings in position on the lower sill of the opening.

(e) Do these steps to connect the electrical connector for the heater blanket:
1) Move the overwing escape hatch up and outboard until it is approximately 5 inches from the closed position.
2) Connect the electrical connector at the bottom aft of the top sill of the hatch opening.

(f) Turn the overwing escape hatch up and outboard to the closed position.

WARNING: DO NOT TOUCH THE EXTERNAL HANDLE WHILE THE OVERWING ESCAPE HATCH IS LATCHED WITH THE PULL HANDLE. THE PULL HANDLE WILL MOVE THE EXTERNAL HANDLE TO THE CLOSED POSITION. IF YOUR FINGERS ARE UNDER THE EXTERNAL HANDLE, INJURY WILL OCCUR.

(g) Push up and outboard on the emergency PULL handle to latch the overwing escape hatch in the closed position.

S 212-060

(8) Make sure the seal does not come out of the external surface of the airplane.

NOTE: You must be out of the airplane when you examine the seal.

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S 412-061

WARNING: BE CAREFUL WITH THE SELF-ILLUMINATING SIGNS IN THE EMERGENCY HANDLE AND THE COVERPLATE OVER THE EMERGENCY HANDLE. THE SELF-ILLUMINATING SIGNS CONTAIN RADIOACTIVE GAS. BROKEN OR CRACKED SIGNS CAN CAUSE INJURY TO PERSONS.

(9) Put the cover plate in position on the emergency PULL handle. Push the cover plate outboard.

S 862-090

(10) AIRPLANES PRE-SB 25-0394;
remove the DO-NOT-CLOSE tag and close this circuit breaker on the P36 panel:
(a) 36H3 or 36D5, ESC HTCH HTR BLKT

S 862-200

(11) AIRPLANES POST-SB 25-0394;
The Type III overwing escape hatch heating system is deactivated and not operational.

S 442-092

WARNING: MAKE SURE THAT YOU CORRECTLY ARM THE OFF-WING ESCAPE SYSTEM. IF YOU INCORRECTLY ARM THE ESCAPE SYSTEM, THE ESCAPE SLIDE CAN INFLATE AND CAUSE INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

(12) Do the Arm the Off-Wing Escape System procedure (AMM 25-65-00/201).

TASK 52-21-01-802-003

4. Overwing Escape Hatch Adjustment (Fig. 204)
   A. General
      (1) Do the overwing escape hatch adjustment with the airplane on its landing gear.
   B. Consumable Materials
      (1) D00014 Grease - MIL-G-21164
   C. References
      (1) AMM 24-22-00/201, Control (Supply Power)
      (2) AMM 25-65-00/201, Off-Wing Escape System
      (3) AMM 52-21-02/201, Overwing Escape Hatch Lining
   D. Access
      (1) Location Zones
          832 Overwing Emergency Exit Hatch (Left) *[1]
          832 Overwing Emergency Exit Hatch (Forward/Left) *[2]
          834 Overwing Emergency Exit Hatch (Aft/Left) *[2]
          842 Overwing Emergency Exit Hatch (Right) *[1]
          842 Overwing Emergency Exit Hatch (Forward/Right) *[2]
          844 Overwing Emergency Exit Hatch (Aft/Right) *[2]

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*[1] AIRPLANES WITH ONE HATCH OVER EACH WING.
*[2] AIRPLANES WITH TWO HATCHES OVER EACH WING.

E. Prepare for the Adjustments

S 842-206
(1) Make sure that the airplane is on its landing gear.

S 042-162

WARNING: MAKE SURE THAT YOU CORRECTLY DISARM THE OFF-WING ESCAPE SYSTEM. IF YOU INCORRECTLY DISARM THE ESCAPE SYSTEM, THE ESCAPE SLIDE CAN INFLATE AND CAUSE INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

(2) Do the task to disarm the off-wing escape system (AMM 25-65-00/201).

F. Procedure

S 822-153
(1) To adjust the overwing escape hatch, do these steps:
(a) Do the task to remove the overwing escape hatch when you are in the airplane.
(b) Remove the lining from the overwing escape hatch (AMM 52-21-02/201).
(c) Apply a thin layer of the primer to the door stop pins.
(d) Install the overwing escape hatch.
(e) Make sure the stop pin touches the center of the stop pad as shown (View B-B, Fig. 204).
1) If it is necessary, add or remove shims to or from below the pivot fittings (View D, Fig. 204).
(f) Make sure the clearance between the overwing escape hatch and the airplane skin is as shown (View A, Fig. 205).

NOTE: Refer to Figure 205 for the skin clearance and flushness tolerances.

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Overwing Emergency Exit Hatch Deviations
Table 201

AIRPLANE EFFECTIVITY	ZONE	HATCH *[1]	SKIN CLEARANCE	FLUSHNESS
SAS 165	F	LF	0.06 TO 0.20 INCH	

*[1] RF = Right Forward Hatch LF = Left Forward Hatch
RA = Right Aft Hatch LA = Left Aft Hatch

(g) HATCHES WITHOUT EXTERNAL STEP UNDER THE HATCH;
do this check:
1) Make sure the flushness between the hatch and the airplane skin is +0.030 to -0.060 inch.

(h) HATCHES WITH EXTERNAL STEP UNDER THE HATCH;
do these checks:
1) Make sure the flushness between the top and sides of the hatch and the airplane skin is +0.030 to -0.060 inch.
2) Make sure the flushness between the bottom of the hatch and the airplane skin is +0.000 to -0.060 inch.
3) Make sure the flushness between the lower corners of the hatch and the airplane skin is +0.030 to -0.100 inch.

(i) If it is necessary, adjust the pivot fittings and the latch cams on the serrated plates (Views B and D, Fig./204).

NOTE: Flushness is positive when the overwing escape hatch is outboard of the airplane skin.

(j) Remove the overwing escape hatch.

(k) Apply a small quantity of clay on the latch cams.

NOTE: Apply clay in the area where the cam follower will be when overwing escape hatch is closed (View B, Fig. 204).

(l) Install the overwing escape hatch.

(m) Remove the overwing escape hatch.

(n) Make sure the cam follower touches the latch cam at the point shown (View B, Fig. 204), and engages the latch cam as shown (View A-A, Fig. 204).
1) If it is necessary, add the shims below the latch cam or move the latch cam on the serrated plate.

(o) Install the the overwing escape hatch.

(p) Make sure the roller at the top of the hatch is clear of the guide ramp as shown (View C, Fig. 204). If it is necessary, adjust the latch cam on the serrated plates.

(q) Remove the overwing escape hatch.

(r) Remove the stop pin retainers from the stop pins.

(s) Adjust the stop pins until they touch the stop pads.

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(t) Turn the stop pins back one half of a turn and to align the stop pin to the closest slot in the bushing.
(u) Install the stop pin retainers.
(v) Apply a thin layer of the grease to the stop pin and the stop pad (View E, Fig. 204).
(w) Do the task to install the overwing escape hatch when you are in the airplane.
(x) Do these tasks for the overwing escape hatch:

1) A task to do a check of the external handle
2) A task to do a check of the emergency PULL handle
3) A task to do a test of the indication circuit.

TASK 52-21-01-702-168

5. Overwing Escape Hatch External Handle Check (Fig. 204)

A. References

(1) AMM 25-65-00/201, Off-Wing Escape System

B. Access

(1) Location Zones

832 Overwing Emergency Exit Hatch (Left) *[1]
832 Overwing Emergency Exit Hatch (Forward/Left) *[2]
834 Overwing Emergency Exit Hatch (Aft/Left) *[2]
842 Overwing Emergency Exit Hatch (Right) *[1]
842 Overwing Emergency Exit Hatch (Forward/Right) *[2]
844 Overwing Emergency Exit Hatch (Aft/Right) *[2]
*[1] AIRPLANES WITH ONE HATCH OVER EACH WING.
*[2] AIRPLANES WITH TWO HATCHES OVER EACH WING.

C. Procedure

S 042-122

WARNING: MAKE SURE THAT YOU CORRECTLY DISARM THE OFF-WING ESCAPE SYSTEM. IF YOU INCORRECTLY DISARM THE OFF-WING ESCAPE SYSTEM, THE ESCAPE SLIDE CAN INFLATE AND CAUSE INJURY OR DAMAGE.

(1) Do the Disarm the Off-Wing Escape System procedure (AMM 25-65-00/201).

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S 012-123

WARNING: BE CAREFUL WITH THE SELF-ILLUMINATING SIGNS IN THE EMERGENCY HANDLE AND THE COVERPLATE OVER THE EMERGENCY HANDLE. THE SELF-ILLUMINATING SIGNS CONTAIN RADIOACTIVE GAS. BROKEN OR CRACKED SIGNS CAN CAUSE INJURY TO PERSONS.

(2) Pull the bottom of the cover plate in the inboard direction to remove the cover plate from the emergency PULL handle.

S 712-124

(3) To do a check of the external handle, do these steps:
(a) Move the disable handle to the ARM (up) position (Fig. 202).
(b) Push the top edge of the red external handle in the inboard direction, and hold the bottom edge of the handle (Fig. 203).

CAUTION: HOLD ONTO THE EXTERNAL HANDLE WHEN YOU OPEN THE OVERWING ESCAPE HATCH FROM OUT OF THE AIRPLANE. IF YOU DO NOT HOLD ONTO THE EXTERNAL HANDLE, THE HATCH WILL FALL INTO THE AIRPLANE WHEN IT IS OPENED.

(c) Lift and push in on the lower edge of the handle to unlatch and open the hatch.

NOTE: Hold the handle to make sure the hatch does not fall in in the airplane when it is opened.

(d) Make sure the mechanism operates freely and without binding.
(e) Make sure the auto arm and auto fire switches stay in the ARM (down) position (Fig. 202).
(f) Put the disable handle in the SAFE (down) position.

WARNING: DO NOT TOUCH THE EXTERNAL HANDLE WHILE THE OVERWING ESCAPE HATCH IS LATCHED WITH THE PULL HANDLE. THE PULL HANDLE WILL MOVE THE EXTERNAL HANDLE TO THE CLOSED POSITION. IF YOUR FINGERS ARE UNDER THE EXTERNAL HANDLE, INJURY WILL OCCUR.

(g) Close and latch the overwing escape hatch from in the airplane.

NOTE: Do not arm the off-wing escape system.

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TASK 52-21-01-702-169

6. Overwing Escape Hatch Emergency Pull Handle Check (Fig. 204)

A. References

(1) AMM 25-65-00/201, Off-Wing Escape System

B. Access

(1) Location Zones

832 Overwing Emergency Exit Hatch (Left) *[1]
832 Overwing Emergency Exit Hatch (Forward/Left) *[2]
834 Overwing Emergency Exit Hatch (Aft/Left) *[2]
842 Overwing Emergency Exit Hatch (Right) *[1]
842 Overwing Emergency Exit Hatch (Forward/Right) *[2]
844 Overwing Emergency Exit Hatch (Aft/Right) *[2]

*[1] AIRPLANES WITH ONE HATCH OVER EACH WING.
*[2] AIRPLANES WITH TWO HATCHES OVER EACH WING.

C. Procedure

S 042-161

WARNING: MAKE SURE THAT YOU CORRECTLY DISARM THE OFF-WING ESCAPE SYSTEM. IF YOU INCORRECTLY DISARM THE OFF-WING ESCAPE SYSTEM, THE ESCAPE SLIDE CAN INFLATE AND CAUSE INJURY OR DAMAGE.

(1) Do the task to disarm the off-wing escape system (AMM 25-65-00/201).

S 712-126

(2) To do a check of the emergency PULL handle, do these steps:
(a) Move the disable handle to the ARM (up) position.
(b) Open the hatch with the emergency PULL handle.
(c) Make sure the auto arm and auto fire switches move to the FIRE (up) position.
(d) Put the disable handle in the SAFE (down) position.

WARNING: DO NOT TOUCH THE EXTERNAL HANDLE WHILE THE OVERWING ESCAPE HATCH IS LATCHED WITH THE PULL HANDLE. THE PULL HANDLE WILL MOVE THE EXTERNAL HANDLE TO THE CLOSED POSITION. IF YOUR FINGERS ARE UNDER THE EXTERNAL HANDLE, INJURY WILL OCCUR.

(e) Close and latch the overwing escape hatch from in the airplane.

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S 442-127

WARNING: MAKE SURE THAT YOU CORRECTLY ARM THE OFF-WING ESCAPE SYSTEM. IF YOU INCORRECTLY ARM THE ESCAPE SYSTEM, THE SLIDE CAN INFLATE AND CAUSE INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

(3) Do the Arm the Off-Wing Escape System procedure (AMM 25-65-00/201).

S 712-160

(4) Do the task Overwing Escape Hatch Indication Circuit Check.

TASK 52-21-01-702-170

7. Overwing Escape Hatch Indication Circuit Check

A. References

(1) AMM 24-22-00/201, Control (Supply Power)

(2) AMM 25-65-00/201, Off-Wing Escape System

B. Procedure

S 042-131

WARNING: MAKE SURE THAT YOU CORRECTLY DISARM THE OFF-WING ESCAPE SYTEM. IF YOU INCORRECTLY DISARM THE ESCAPE SYSTEM, THE ESCAPE SLIDE CAN INFLATE AND CAUSE INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

(1) Do the Disarm the Off-Wing Escape System procedure (AMM 25-65-00/201).

S 862-132

(2) Supply electrical power (AMM 24-22-00/210).

S 762-152

(3) To do the indication circuit test, do these steps:

(a) Make sure the overwing escape hatches are closed and latched.

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(b) Make sure that there is no message shown on the EICAS.
(c) Make sure that no annunciator lights are on.
(d) Do this check on each hatch.
    1) Remove the escape hatch.
    2) Make sure the correct annunciator light comes on and the correct alert message on the EICAS is shown (TABLE 1).
(e) Install the overwing escape hatch.
(f) Make sure that there are no EICAS messages shown and that no annunciator lights are on.

TABLE 1

Door	Light	EICAS Message
767-200 AIRPLANES; Left Overwing Escape Hatch	EMER DOORS	L EMER DOOR
767-200 AIRPLANES; Right Overwing Escape Hatch	EMER DOORS	R EMER DOOR
767-300 AIRPLANES; Left Fwd Overwing Escape Hatch	EMER DOORS	L FWD EMER DOOR
767-300 AIRPLANES; Left Aft Overwing Escape Hatch		L AFT EMER DOOR
767-300 AIRPLANES; Right Fwd Overwing Escape Hatch	EMER DOORS	R FWD EMER DOOR
767-300 AIRPLANES; Right Aft Overwing Escape Hatch		R AFT EMER DOOR

(g) Remove all the overwing escape hatches and make sure the EICAS message EMER DOORS is shown.
(h) Install all the overwing escape hatches and make sure no messages are shown on the EICAS.

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S 862-142

(4) Remove the electrical power, if it is not necesssary (AMM 24-22-00/201).

S 442-143

WARNING: MAKE SURE THAT YOU CORRECTLY ARM THE OFF-WING ESCAPE SYSTEM. IF YOU INCORRECTLY ARM THE ESCAPE SYSTEM, THE SLIDE CAN INFLATE AND CAUSE INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

(5) Do the Arm the Off-Wing Escape System procedure (AMM 25-65-00/201).

TASK 52-21-01-622-190

8. Corrosion Prevention Treatment

A. General

(1) Areas of possible corrosion are the hatch internal structure, lower corners and connection points and mechanisms.

(2) The hatch should be treated at the same time as the hatch opening.

(3) Make periodic inspections of the hatch structure to make sure that the protective finishes provided during manufacture stay intact. BMS 3-23, Type II corrosion preventive compound has been applied to the hatch interior during manufacture. Refer to Fig. 207 for corrosion preventive compound location. For details on the application of corrosion preventive compound, refer to AMM 51-24-09/701.

(4) Frequency of Application

(a) Do periodic inspection of the structure and condition of the corrosion preventive. Apply corrosion preventive compound as required. Local areas where gouges and scratches have occurred should be treated at the first opportunity consistent with the maintenance schedule.

(5) Obey the precautions that follow when applying the corrosion preventive compound:

(a) Do not apply corrosion preventive compounds on grease joints or sealed bearings. These compounds dissolve grease and other lubricants. They are penetrating compounds and can get around the seals and into the bearings.

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(b) Do not apply corrosion preventive compounds on interior materials such as liners. The compounds change the flammable quality of these materials.

B. References
(1) AMM 12-21-20/301, Overwing Escape Hatch
(2) AMM 25-65-00/201, Off-Wing Escape System
(3) AMM 52-21-02/201, Overwing Escape Hatch Lining

C. Consumable Materials
(1) G00009 Compound, Organic Corrosion Preventive - BMS3-23, Type II

D. Access
(1) Location Zones

832 Overwing Emergency Exit Hatch (Left) *[1]
832 Overwing Emergency Exit Hatch (Forward/Left) *[2]
834 Overwing Emergency Exit Hatch (Aft/Left) *[2]
842 Overwing Emergency Exit Hatch (Right) *[1]
842 Overwing Emergency Exit Hatch (Forward/Right) *[2]
844 Overwing Emergency Exit Hatch (Aft/Right) *[2]
*[1] AIRPLANES WITH ONE HATCH OVER EACH WING.
*[2] AIRPLANES WITH TWO HATCHES OVER EACH WING.

E. Prepare for the Corrosion Prevention Treatment

S 042-193

WARNING: MAKE SURE THAT YOU CORRECTLY DISARM THE OFF-WING ESCAPE SYSTEM. IF YOU INCORRECTLY DISARM THE OFF-WING ESCAPE SYSTEM, THE ESCAPE SLIDE CAN INFLATE AND CAUSE INJURY OR DAMAGE.

(1) Do the task to disarm the off-wing escape system (AMM 25-65-00/201).

S 012-195
(2) Remove liner (Ref AMM 52-21-02/201) and gain access to the interior of the door.

S 162-196
(3) Clean out drains and drain paths.

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F. Procedure

S 622-191

(1) Apply the corrosion prevention treatment, do these steps:
  (a) Apply corrosion preventive compound BMS 3-23, Type II to the interior of the hatch, giving special attention to the lower corners (Ref Fig. 207).
  (b) Lubricate the interior hatch fittings, as necessary (Ref AMM 12-21-20/301).
  (c) Install liner (Ref AMM 52-21-02/201) and put the hatch back to its usual condition.

S 442-194

WARNING: MAKE SURE THAT YOU CORRECTLY ARM THE OFF-WING ESCAPE SYSTEM. IF YOU INCORRECTLY ARM THE ESCAPE SYSTEM, THE SLIDE CAN INFLATE AND CAUSE INJURY TO PERSONS AND DAMAGE TO THE EQUIPMENT.

(2) Do the Arm the Off-Wing Escape System procedure (AMM 25-65-00/201).

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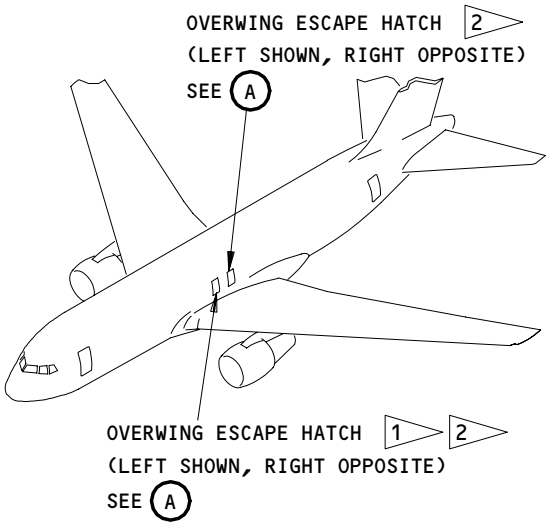
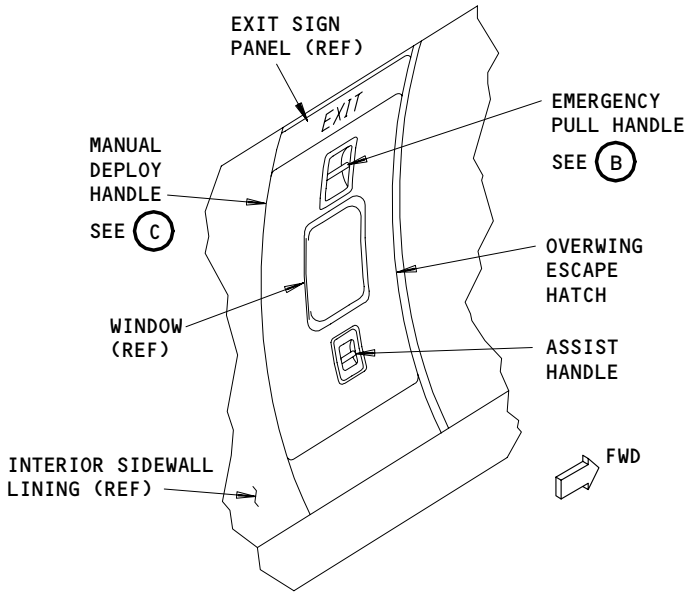
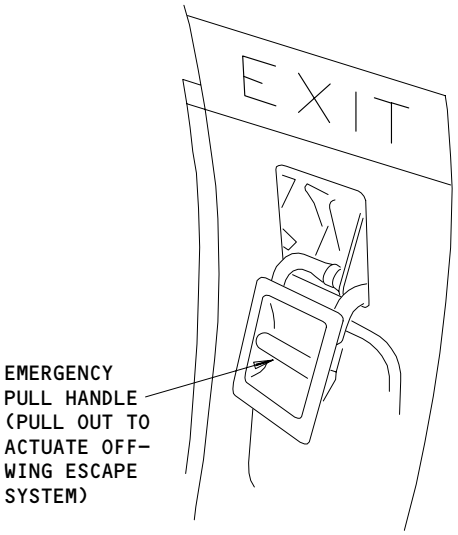
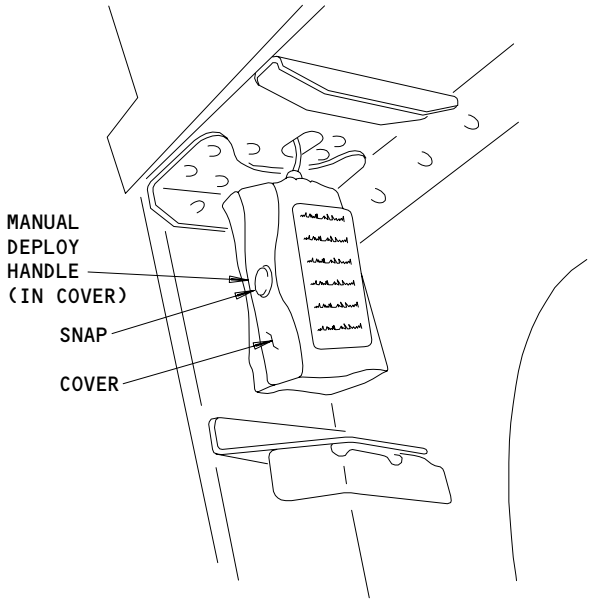




OVERWING ESCAPE HATCH
(LEFT SHOWN, RIGHT OPPOSITE)
A 1



EMERGENCY PULL HANDLE
C



MANUAL DEPLOY HANDLE
C

1 AIRPLANES WITH ONE HATCH OVER EACH WING
2 AIRPLANES WITH TWO HATCHES OVER EACH WING

Overwing Escape Hatch
Figure 201

E13126

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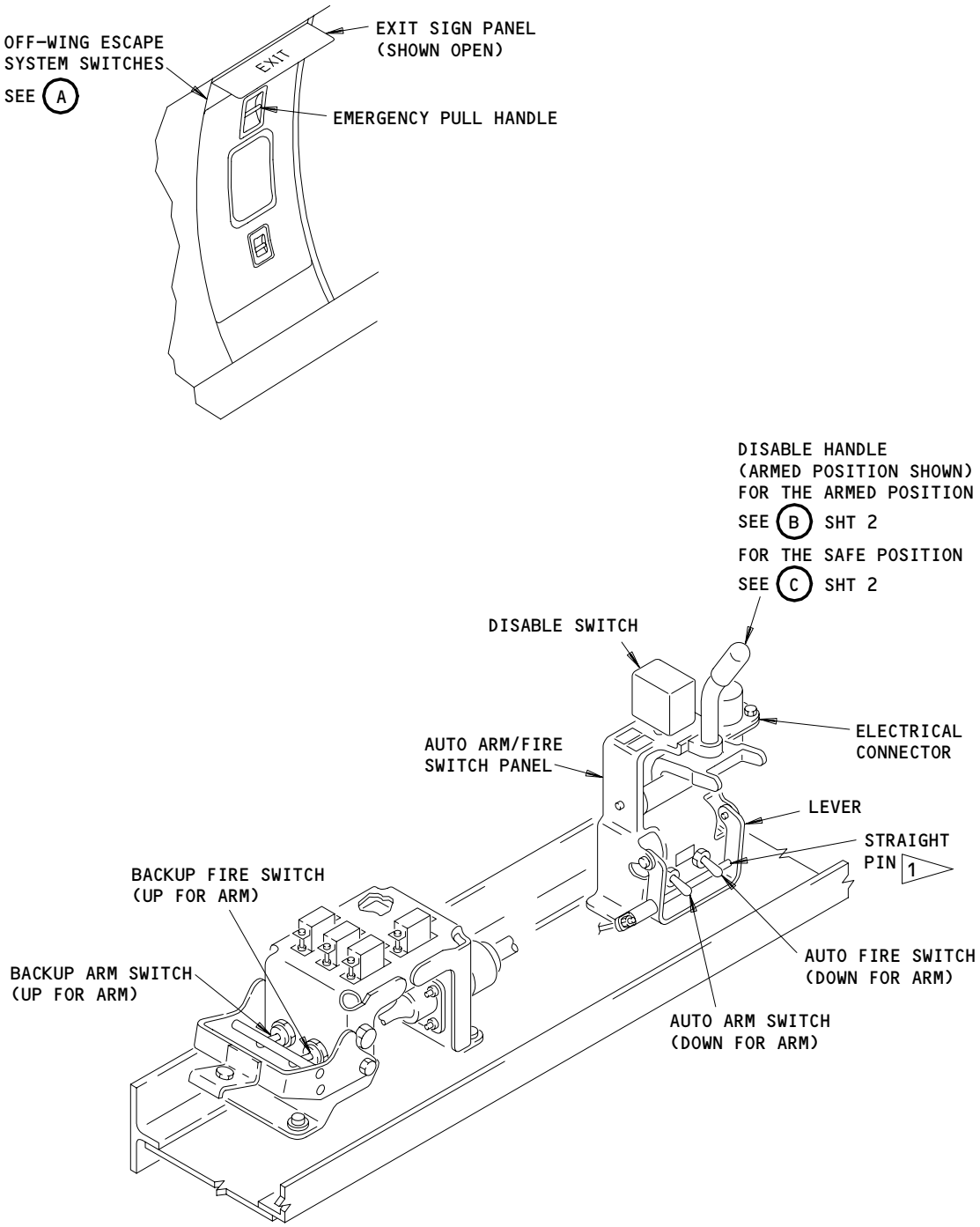

OFF-WING ESCAPE SYSTEM SWITCHES

A

1 MAKE SURE THE STRAIGHT PIN IS ALWAYS BELOW THE AUTO ARM SWITCH AND THE AUTO FIRE SWITCH

Off-Wing Escape System Switches
Figure 202 (Sheet 1)

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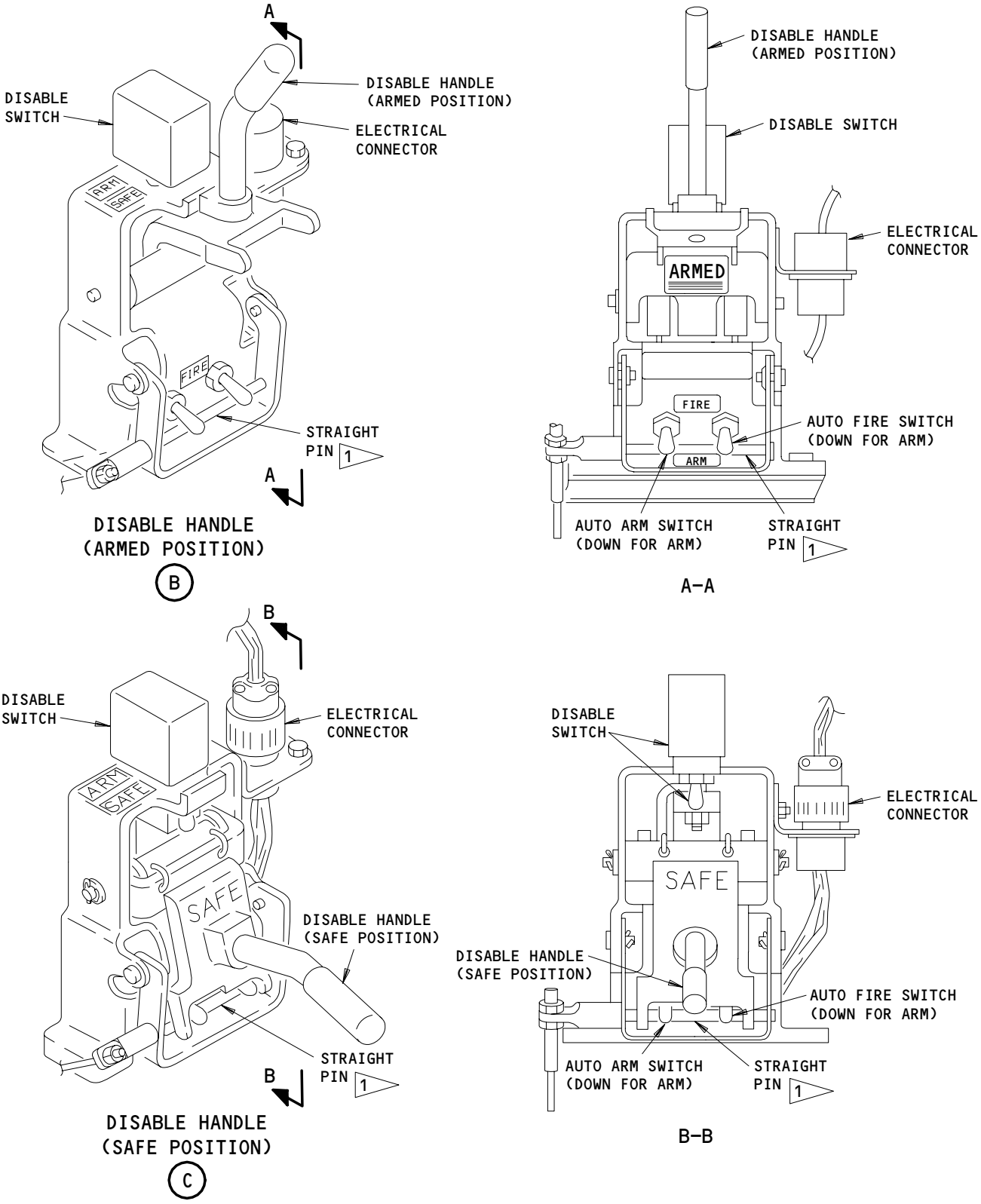

Off-Wing Escape System Switches
Figure 202 (Sheet 2)

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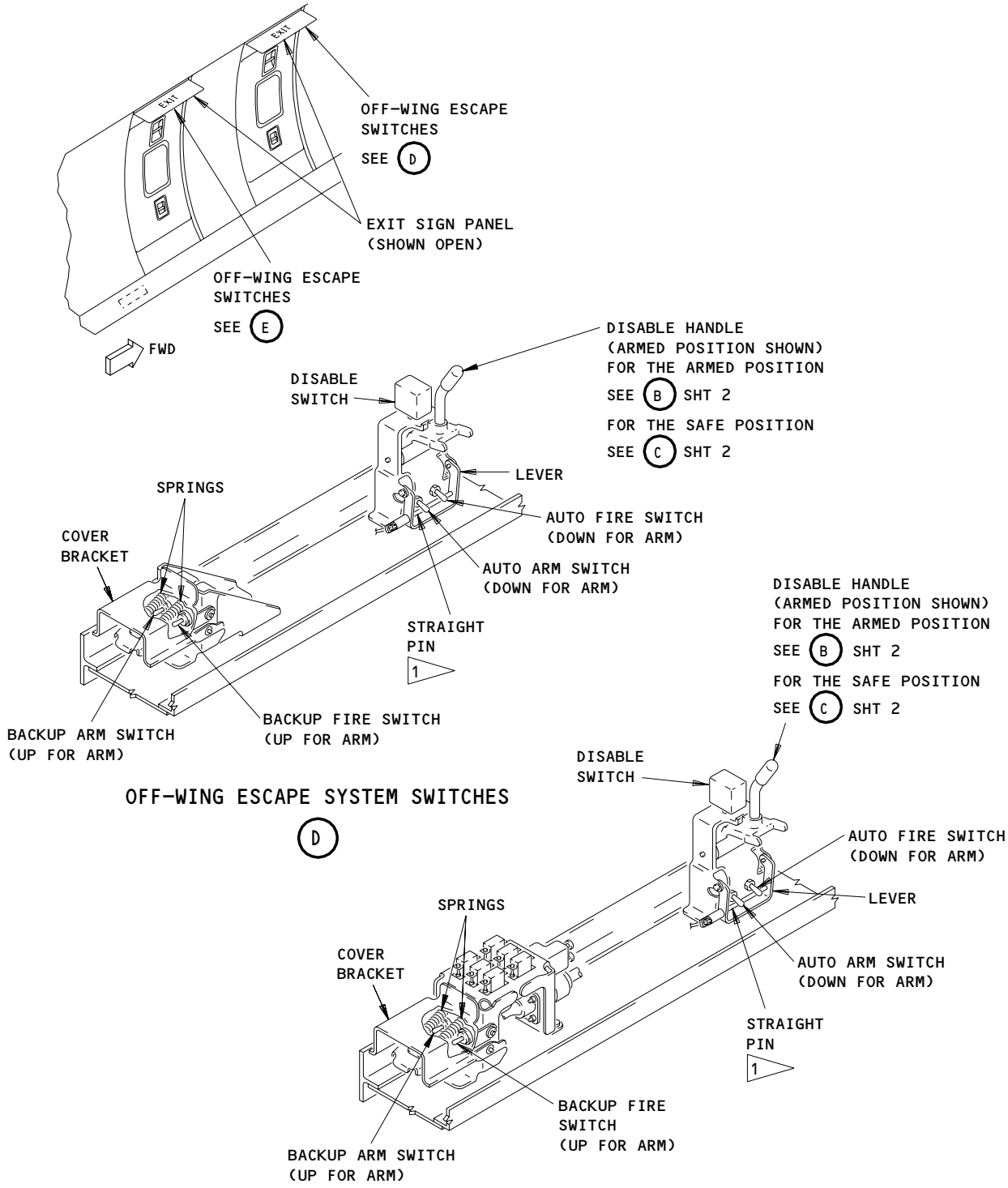

Off-Wing Escape System Switches
Figure 202 (Sheet 3)

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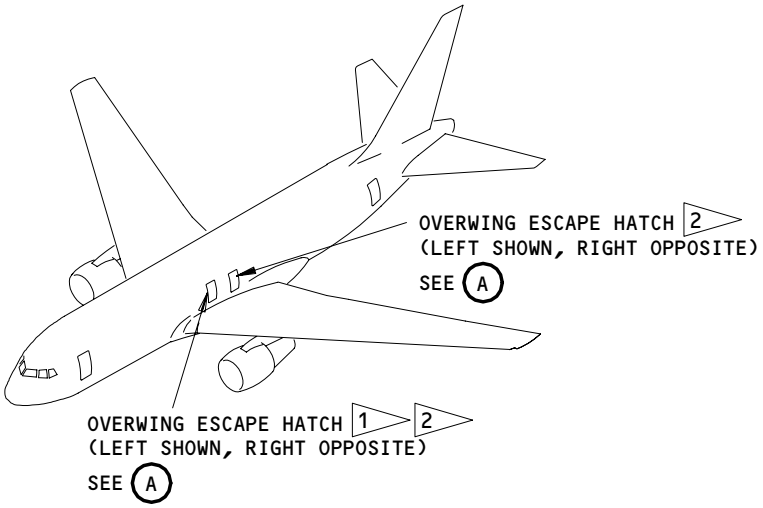

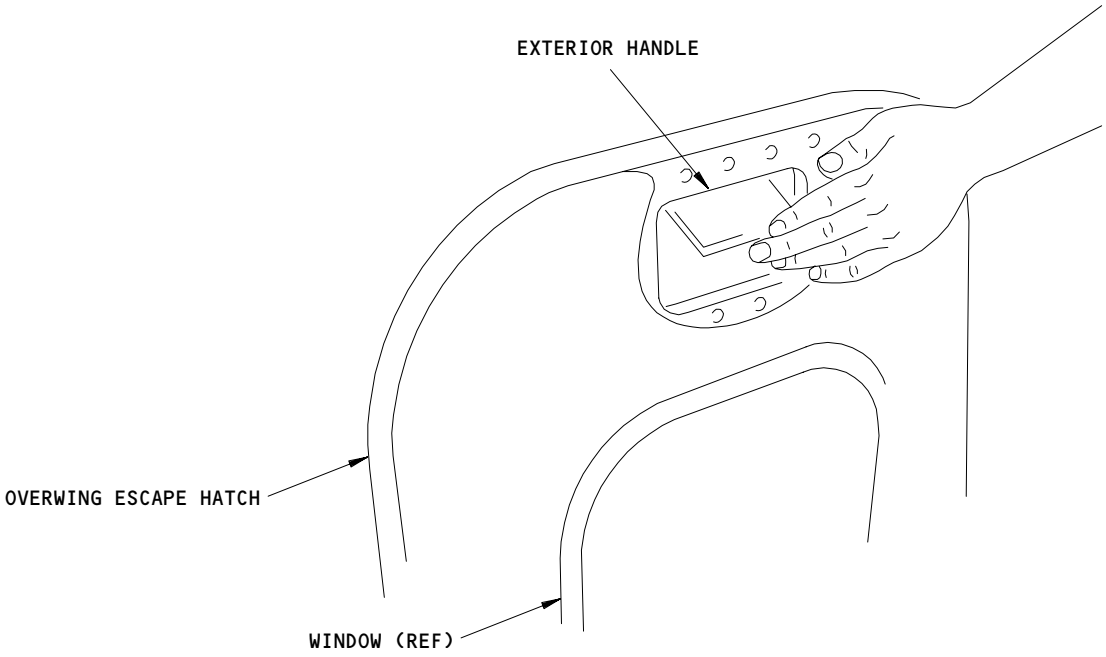

OVERWING ESCAPE HATCHES

A

1 AIRPLANES WITH ONE HATCH OVER EACH WING

2 AIRPLANES WITH TWO HATCHES OVER EACH WING

Overwing Escape Hatch Exterior Handle
Figure 203

E13164

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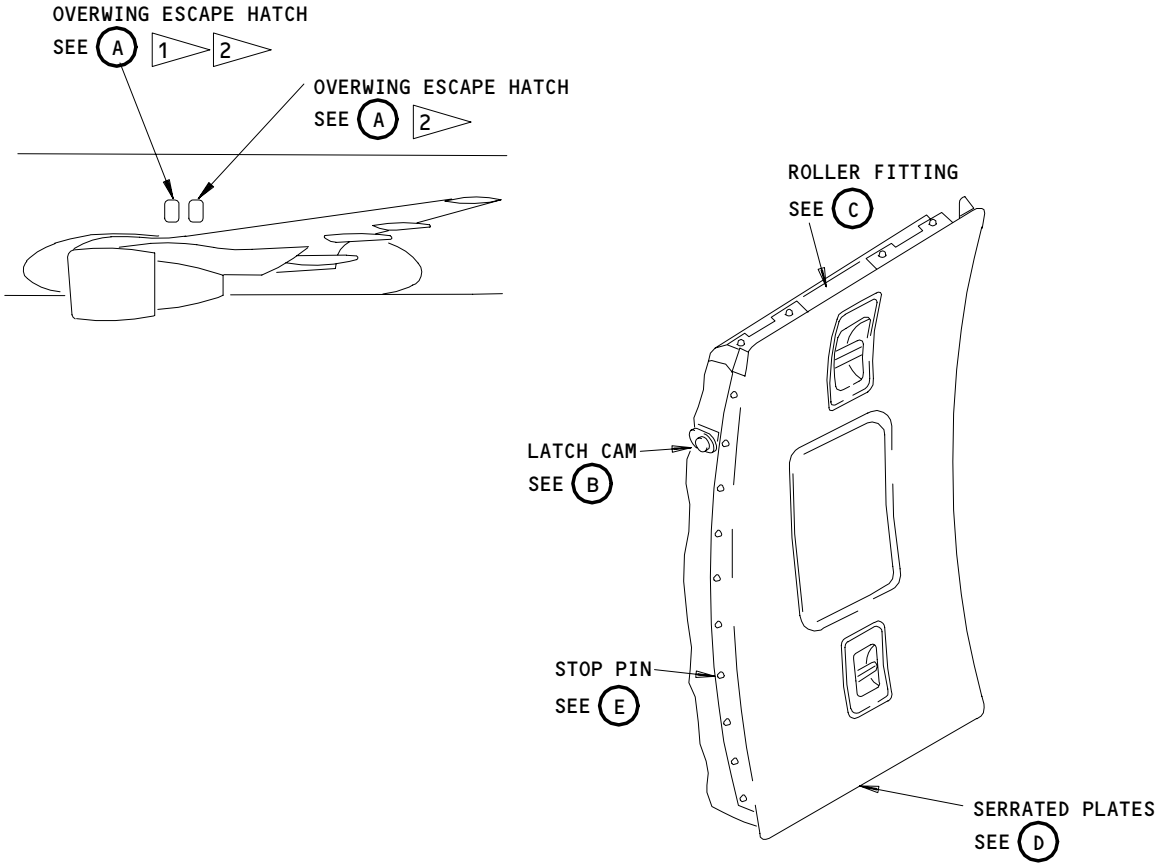
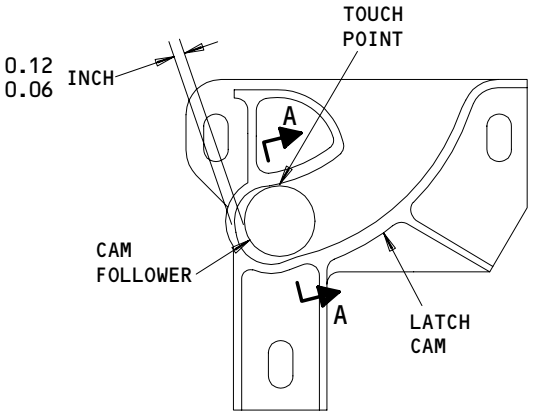


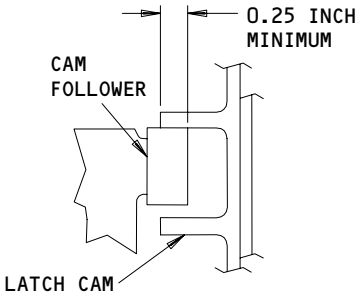
OVERWING ESCAPE HATCH

A



LATCH CAM

B



A–A

1 AIRPLANES WITH ONE HATCH OVER EACH WING

2 AIRPLANES WITH TWO HATCHES OVER EACH WING

Overwing Escape Hatch Adjustment
Figure 204 (Sheet 1)

E13167

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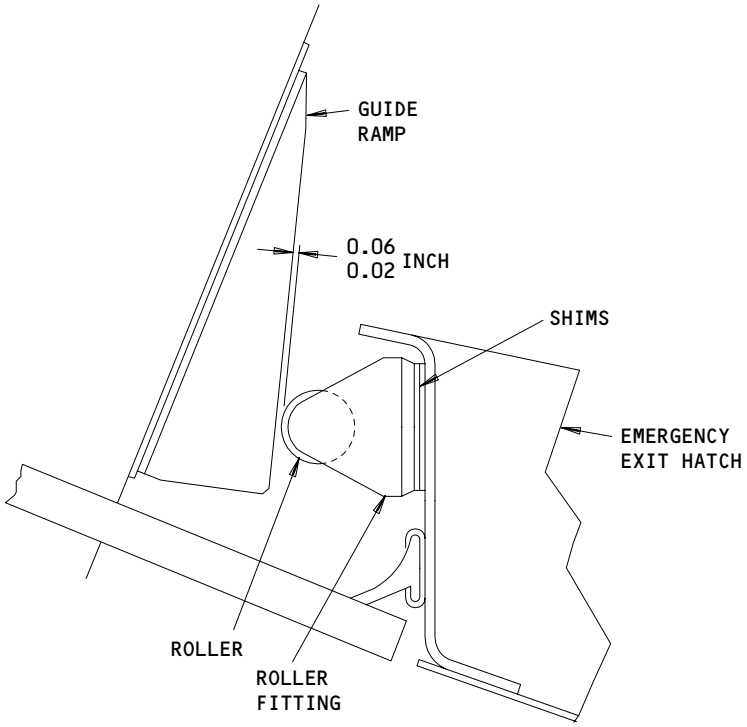
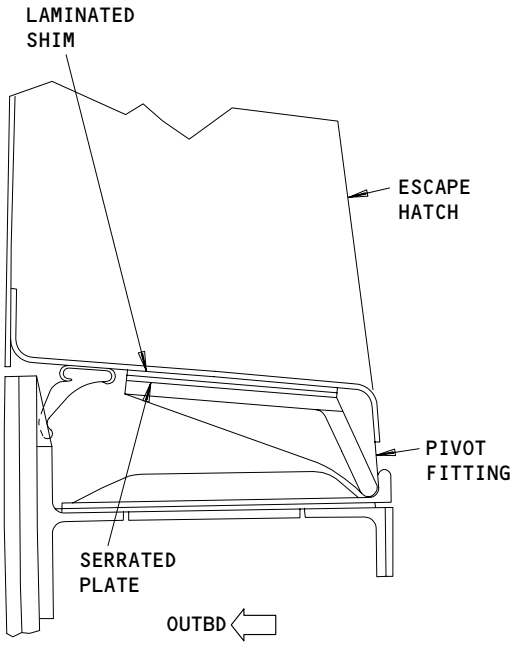


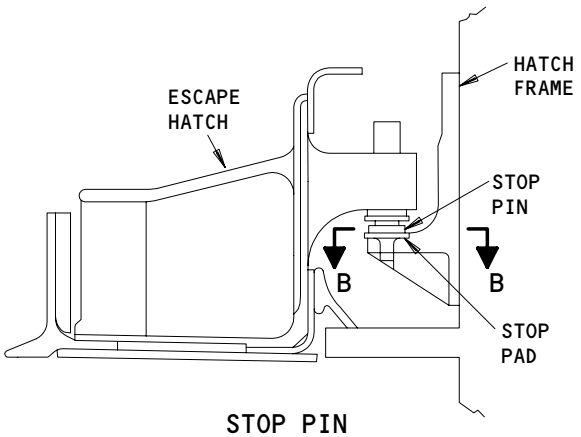
ROLLER FITTING

C



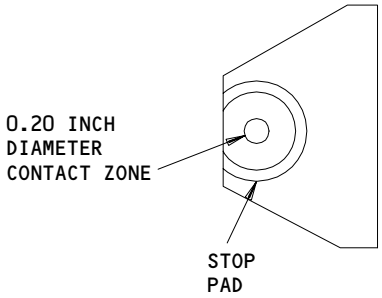
SERRATED PLATE

D



STOP PIN
(EXAMPLE)

E



B–B

Overwing Escape Hatch Adjustment
Figure 204 (Sheet 2)

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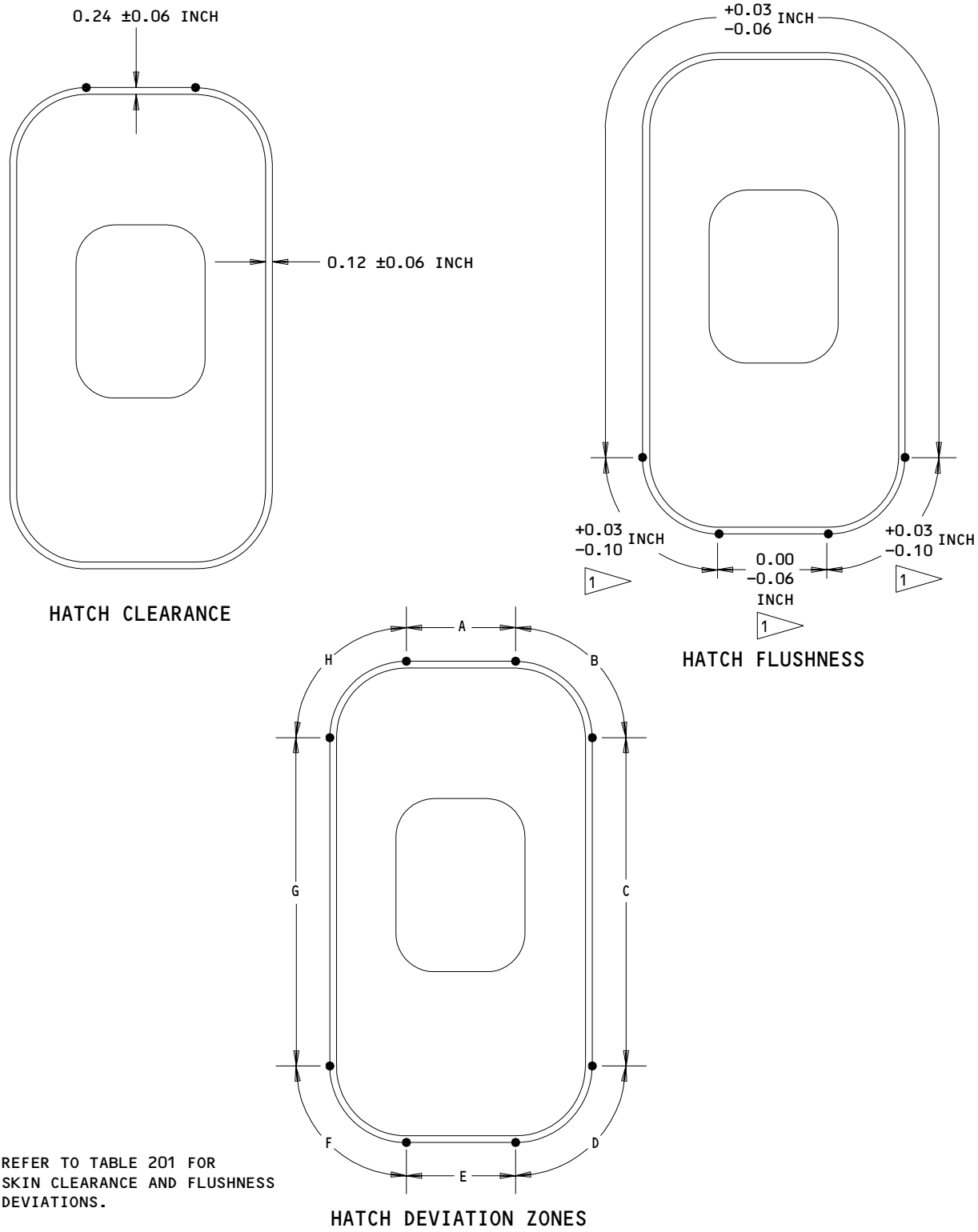

NOTE: REFER TO TABLE 201 FOR SKIN CLEARANCE AND FLUSHNESS DEVIATIONS.

1 HATCHES WITH AN EXTERNAL STEP

Overwing Escape Hatch Skin Clearance and Flushness
Figure 205

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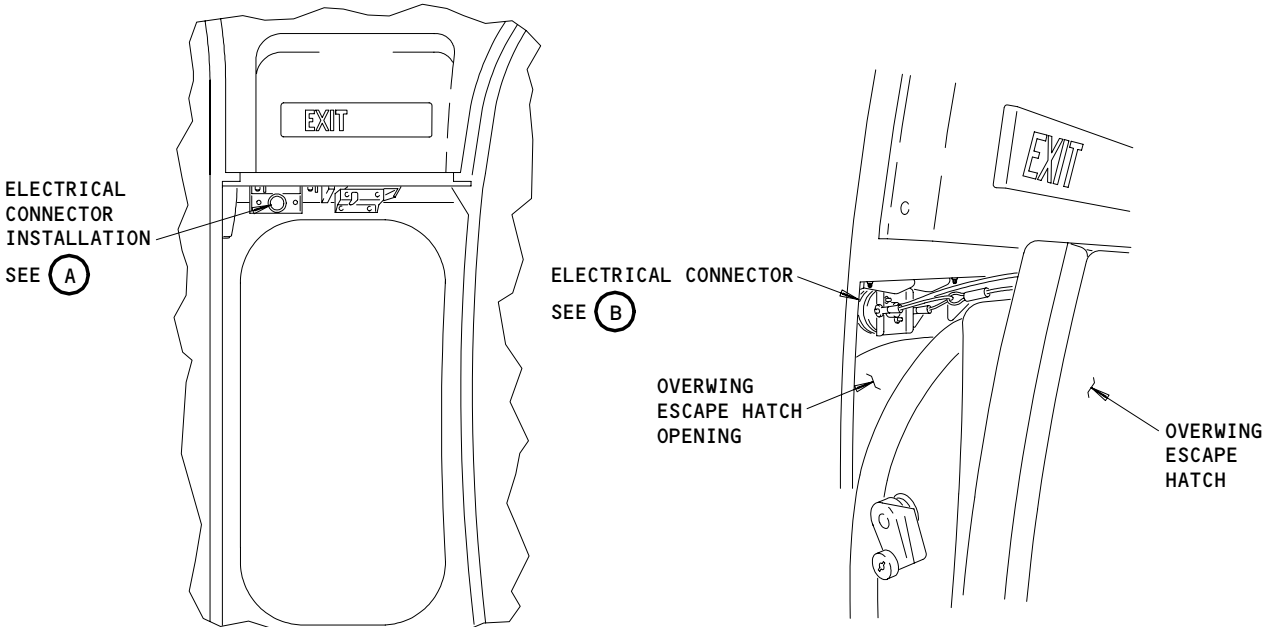
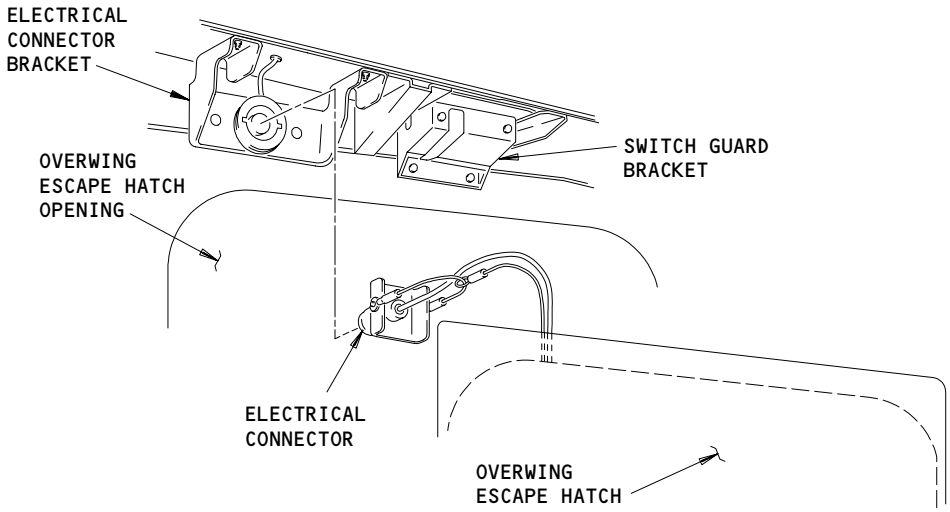


ELECTRICAL CONNECTOR INSTALLATION
(OVERWING ESCAPE HATCH INSTALLED
APPROXIMATELY 5 INCHES FROM THE
CLOSED POSITION)

A



ELECTRICAL CONNECTOR INSTALLATION
(OVERWING ESCAPE HATCH REMOVED)

B

Overwing Escape Hatch
Figure 206

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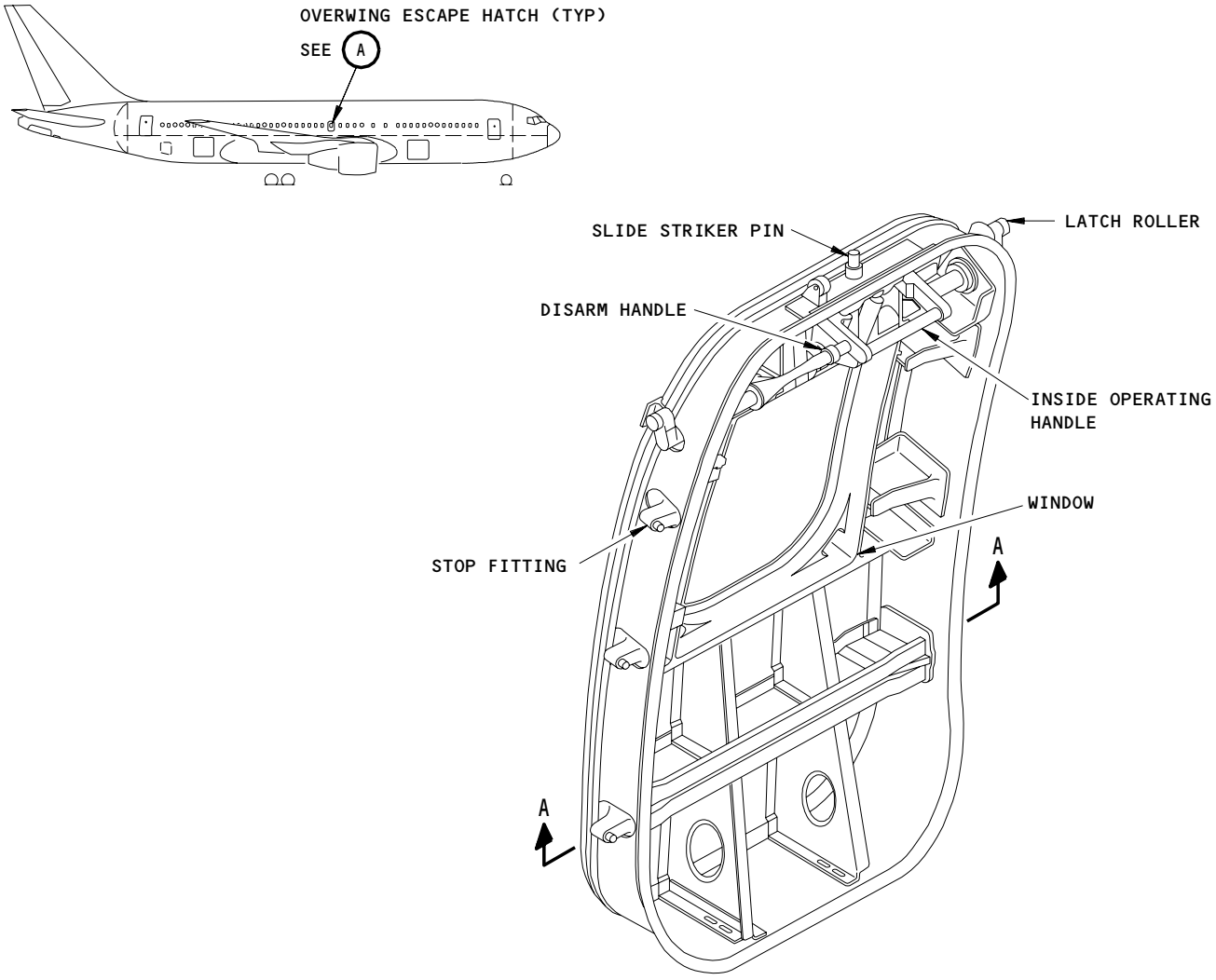

Overwing Escape Hatch
Figure 207

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OVERWING ESCAPE HATCH LINING - MAINTENANCE PRACTICES

1. General
   A. This procedure has these tasks:
      (1) Remove the lining for the overwing escape hatch
      (2) Install the lining for the overwing escape hatch
      (3) Remove the overwing emergency pull handle or the cover plate
      (4) Install the overwing emergency pull handle or the cover plate
      (5) Do a test of the self-illuminating signs
      (6) Remove the self-illuminating signs
      (7) Install the self-illuminating signs.
   B. Self-illuminating signs contain capsules filled with radioactive tritium gas. The capsules are in a durable plastic rectangle that makes up the sign. The signs are installed on each overwing escape hatch emergency PULL handle, and on the cover plate over each emergency PULL handle.
   C. The radioactive tritium gas is not dangerous to persons when the signs are not damaged. But, if the signs have cracks or are broken the radioactive gas can escape. The radioactive gas is dangerous to persons if it is breathed or absorbed. Small scratches on the sign do not cause a dangerous condition.
   D. Obey these precautions when you work with the self-illuminating signs.
      (1) Operate the airplane air distribution system or a portable air distribution system before you touch or move the self-illuminating signs. If a sign breaks, the air flow will decrease the concentration of the radioactive gas.
      (2) Radiation protection persons must obey government regulations when they discard self-illuninating signs.
      (3) Keep the signs in a protective container. Keep the containers in an area that has a good flow of air.
      (4) The manufacturer is the only company that is approved to change the initial configuration of these signs.

TASK 52-21-02-002-066

2. Remove the Overwing Escape Hatch Lining (Fig. 201)
   A. References
      (1) AMM 25-65-00/201, Off-Wing Escape System

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(2) AMM 52-21-01/201, Overwing Escape Hatch

B. Access

(1) Location Zones

241/242 Passenger Cabin - Section 44

C. Procedure - Remove the Overwing Escape Hatch Lining

S 042-067

WARNING: MAKE SURE THAT YOU CORRECTLY DISARM THE OFF-WING ESCAPE SYSTEM. IF YOU INCORRECTLY DISARM THE OFF-WING ESCAPE SYSTEM, THE ESCAPE SLIDE CAN ACCIDENTALLY INFLATE AND CAUSE INJURY OR DAMAGE.

(1) Disarm the off-wing escape system (AMM 25-65-00/201).

S 032-007

(2) Remove the overwing escape hatch (AMM 52-21-01/201).

S 032-009

(3) Remove the emergency PULL handle (refer to the Overwing Emergency Pull Handle or Cover Plate Removal task).

S 032-010

(4) Remove the escutcheon.

S 032-011

(5) Remove the screws that attach the lining panel to the escape hatch.

S 022-089

(6) Do these steps to remove the hatch lining:

(a) Make sure you do not damage the heater blanket wiring.

NOTE: The heater blanket wiring is permanently wired to the hatch. The heater blanket wiring goes through the lining panel and is attached the hatch so that you can not fully remove the lining panel from the hatch.

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(b) Move the hatch lining away from the hatch.

NOTE: There is approximately 3 feet of excess wiring connecting the heater blanket and the hatch lining to the hatch. The excess wire is secured to the inside of the hatch structure. When you allow the excess wire to fall loose there will be enough movement to move the hatch lining away from the hatch.

(c) If you want to fully remove the hatch lining from the hatch, install a detachable splice in the heater blanket wiring.

S 022-012

(7) Remove the lining panel.

TASK 52-21-02-402-001

3. Install the Overwing Escape Hatch Lining

A. References

(1) AMM 25-65-00/201, Off-Wing Escape System

(2) AMM 52-21-01/201, Overwing Escape Hatch

B. Access

(1) Location Zones

241/242 Passenger Cabin - Section 44

C. Procedure - Install the Overwing Escape Hatch Lining

S 422-090

(1) Connect the detachable splice if it is installed on the heater blanket wiring.

S 422-013

(2) Put the lining panel in position on the escape hatch.

S 422-068

(3) Install the screws.

S 432-014

(4) Install the escutcheon.

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S 432-015

(5) Install the emergency PULL handle (refer to the Overwing Emergency Pull Handle or Cover Plate Installation task).

S 432-017

(6) Install the overwing escape hatch (AMM 52-21-01/201).

S 712-018

(7) Make sure the overwing escape hatch operates correctly (AMM 52-21-01/201).

S 442-069

WARNING: MAKE SURE THAT YOU CORRECTLY ARM THE OFF-WING ESCAPE SYSTEM. IF YOU INCORRECTLY ARM THE OFF-WING ESCAPE SYSTEM, THE ESCAPE SLIDE CAN ACCIDENTALLY INFLATE AND CAUSE INJURY OR DAMAGE.

(8) Arm the off-wing escape system (AMM 25-65-00/201).

TASK 52-21-02-002-031

4. Overwing Emergency PULL Handle or Cover Plate Removal (Fig. 201)

A. References

(1) AMM 20-10-18/201, Radioluminous Materials
(2) AMM 21-00-00/201, Air Conditioning
(3) AMM 25-65-00/201, Off-Wing Escape System
(4) AMM 52-21-01/201, Overwing Escape Hatch

B. Access

(1) Location Zones
241/242 Passenger Cabin - Section 44

C. Procedure - Remove the Emergency PULL Handle.

S 842-032

(1) Supply a good flow air to the airplane (AMM 21-00-00/201).

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S 042-075

WARNING: MAKE SURE THAT YOU CORRECTLY DISARM THE OFF-WING ESCAPE SYSTEM. IF YOU INCORRECTLY DISARM THE OFF-WING ESCAPE SYSTEM, THE ESCAPE SLIDE CAN ACCIDENTALLY INFLATE AND CAUSE INJURY OR DAMAGE.

(2) Disarm the off-wing escape system (AMM 25-65-00/201).

S 032-034

(3) Remove the overwing escape hatch (AMM 52-21-01/201).

S 032-076

WARNING: DO NOT STAY IN THE AREA IF THE PULL SIGN OR THE COVER PLATE OVER THE EMERGENCY HANDLE HAS A CRACK OR IS BROKEN. THE SIGN CONTAINS RADIOACTIVE GAS THAT CAN BE A HEALTH HAZARD. KEEP THE AIR DISTRIBUTION SYSTEM ON. AFTER 20 MINUTES, YOU CAN GO BACK TO THE AREA.

(4) Remove the cover plate, if installed, from the emergency PULL handle.

NOTE: Pull the bottom of the plate inboard.

S 032-036

(5) Pull the emergency PULL handle away from the lining to get access to the mounts.

S 032-077

WARNING: DO NOT STAY IN THE AREA IF THE PULL SIGN OR THE COVER PLATE OVER THE EMERGENCY HANDLE HAS A CRACK OR IS BROKEN. THE SIGN CONTAINS RADIOACTIVE GAS THAT CAN BE A HEALTH HAZARD. KEEP THE AIR DISTRIBUTION SYSTEM ON. AFTER 20 MINUTES, YOU CAN GO BACK TO THE AREA.

(6) Remove the nut, the spacers, and the bolt.

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S 022-038
(7) Remove the handle

TASK 52-21-02-402-003

5. Install the Emergency PULL Handle

A. Access

(1) Location Zones
241/242 Passenger Cabin - Section 44

B. Procedure - Install the Emergency PULL Handle

S 422-078

WARNING: DO NOT STAY IN THE AREA IF THE PULL SIGN OR THE COVER PLATE OVER THE EMERGENCY HANDLE HAS A CRACK OR IS BROKEN. THE SIGN CONTAINS RADIOACTIVE GAS THAT CAN BE A HEALTH HAZARD. KEEP THE AIR DISTRIBUTION SYSTEM ON. AFTER 20 MINUTES, YOU CAN GO BACK TO THE AREA.

(1) Put the handle in position on the brackets.

S 432-040
(2) Install the bolts with the spacers and the nut.

S 432-082
(3) Install the overwing escape hatch (AMM 52-21-01/201).

S 442-079

WARNING: MAKE SURE THAT YOU CORRECTLY ARM THE OFF-WING ESCAPE SYSTEM. IF YOU INCORRECTLY ARM THE OFF-WING ESCAPE SYSTEM, THE ESCAPE SLIDE CAN ACCIDENTALLY INFLATE AND CAUSE INJURY OR DAMAGE.

(4) Arm the off-wing escape system (AMM 25-65-00/201).

S 842-043
(5) Stop the flow of air from the airplane (AMM 21-00-00/201).

TASK 52-21-02-202-044

6. Self-Illuminating Signs Test

A. General

(1) The sign luminescence test works best without external light on the signs.

NOTE: If the area cannot be totally without lights, then put a shield around the area of the test.

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B. Equipment
(1) Illumination Comparator - P/N DB-45-B1, Self-Powered Lighting Inc., Berwyn, PA 19312.

NOTE: Reference source must be at least 100 microlamberts to accurately compare. Replace the reference source if it is below 100 microlamberts.

C. Access
(1) Location Zones
241/242 Passenger Cabin - Section 44

D. Procedure - Test the Signs

S 212-080

WARNING: DO NOT STAY IN THE AREA IF THE PULL SIGN OR THE COVER PLATE OVER THE EMERGENCY HANDLE HAS A CRACK OR IS BROKEN. THE SIGN CONTAINS RADIOACTIVE GAS THAT CAN BE A HEALTH HAZARD. KEEP THE AIR DISTRIBUTION SYSTEM ON. AFTER 20 MINUTES, YOU CAN GO BACK TO THE AREA.

(1) Examine the sign for damage. If the sign has damage, replace the sign.

S 432-046
(2) Put the comparator on the front of the sign.

S 712-004
(3) Put the comparator into focus on the illuminated surface of the sign.

S 212-047
(4) Compare the amount of light from the sign to the amount of light on the comparator source.

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S 962-048
(5) If the amount of light from the sign is less than the comparator source, replace the sign.

TASK 52-21-02-002-049
7. Remove the Self-Illuminating Signs
A. Equipment
(1) Gloves - Rubber, elbow length (dispose of as per the procedure)
B. Consumable Materials
(1) G00624 - bag, plastic, general purpose, PPP-B-26
(2) Metal container that does not have air leaks.
(3) G00991 - Packing material
C. References
(1) AMM 20-10-18/201, Radioluminous Materials
(2) AMM 21-00-00/201, Air Conditioning
D. Access
(1) Location Zones
241/242 Passenger Cabin - Section 44

E. Procedure - Remove the self-illuminating signs

S 842-050
(1) Supply a good flow of air to the airplane (AMM 21-00-00/201).

S 022-081

WARNING: DO NOT STAY IN THE AREA IF THE PULL SIGN OR THE COVER PLATE OVER THE EMERGENCY HANDLE HAS A CRACK OR IS BROKEN. THE SIGN CONTAINS RADIOACTIVE GAS THAT CAN BE A HEALTH HAZARD. KEEP THE AIR DISTRIBUTION SYSTEM ON. AFTER 20 MINUTES, YOU CAN GO BACK TO THE AREA.

(2) Put on rubber gloves when you remove a broken sign.

S 032-052
(3) Put the broken sign in the plastic bag.

NOTE: Do not close the bag.

S 552-053
(4) Immediately put the sign, the plastic bag, and the rubber gloves in an external area or in an area that has a good flow of air.

NOTE: Keep these materials away from other persons.

S 942-054
(5) After 2 hours, seal the sign in a plastic bag.

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S 942-055
(6) Seal the plastic bag and the rubber gloves in the metal container with packing material.

S 942-056
(7) Refer to the disposal regulations and procedures for radioluminous material (AMM 20-10-18/201).

S 552-057
(8) Keep the container in an area that has a good flow of air.

NOTE: Keep the container away from other persons.

S 842-058
(9) Stop the flow of air in the airplane as it is necessary.

TASK 52-21-02-402-059

8. Install the Self-Illuminating Sign

A. Consumable Materials
(1) G00034 Cheesecloth
(2) B00083 Solvent - Aliphatic Naphtha TT-N-95, Type 2
(3) A50184 Adhesive- BMS 5-105, Type VI (Preferred)
(4) A00188 Adhesive - BMS 5-105, Type V (Alternate)

B. Access
(1) Location Zones
241/242 Passenger Cabin - Section 44

C. Procedure

S 142-091

WARNING: DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIRMENTS FOR PROPER HANDLING PROCEDURES.

(1) Clean the mating surfaces with aliphatic naphtha on a clean cheesecloth.

S 142-061
(2) Refer to the manufacturer's instructions to mix the adhesive.

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S 142-062

(3) After you mix the adhesive, immediately apply the adhesive to the clean, mating surfaces.

S 422-063

(4) Use a light pressure to install the sign in the escape hatch handle.

S 142-092

WARNING: DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIRMENTS FOR PROPER HANDLING PROCEDURES.

(5) Rub off the unwanted adhesive with a cheesecloth that is moist aliphatic naphtha.

S 942-065

(6) Let the adhesive dry for 6 hours at room temperature. Higher temperatures will increase the speed of the curing process.

NOTE: The adhesive will dry faster at a higher temperature.

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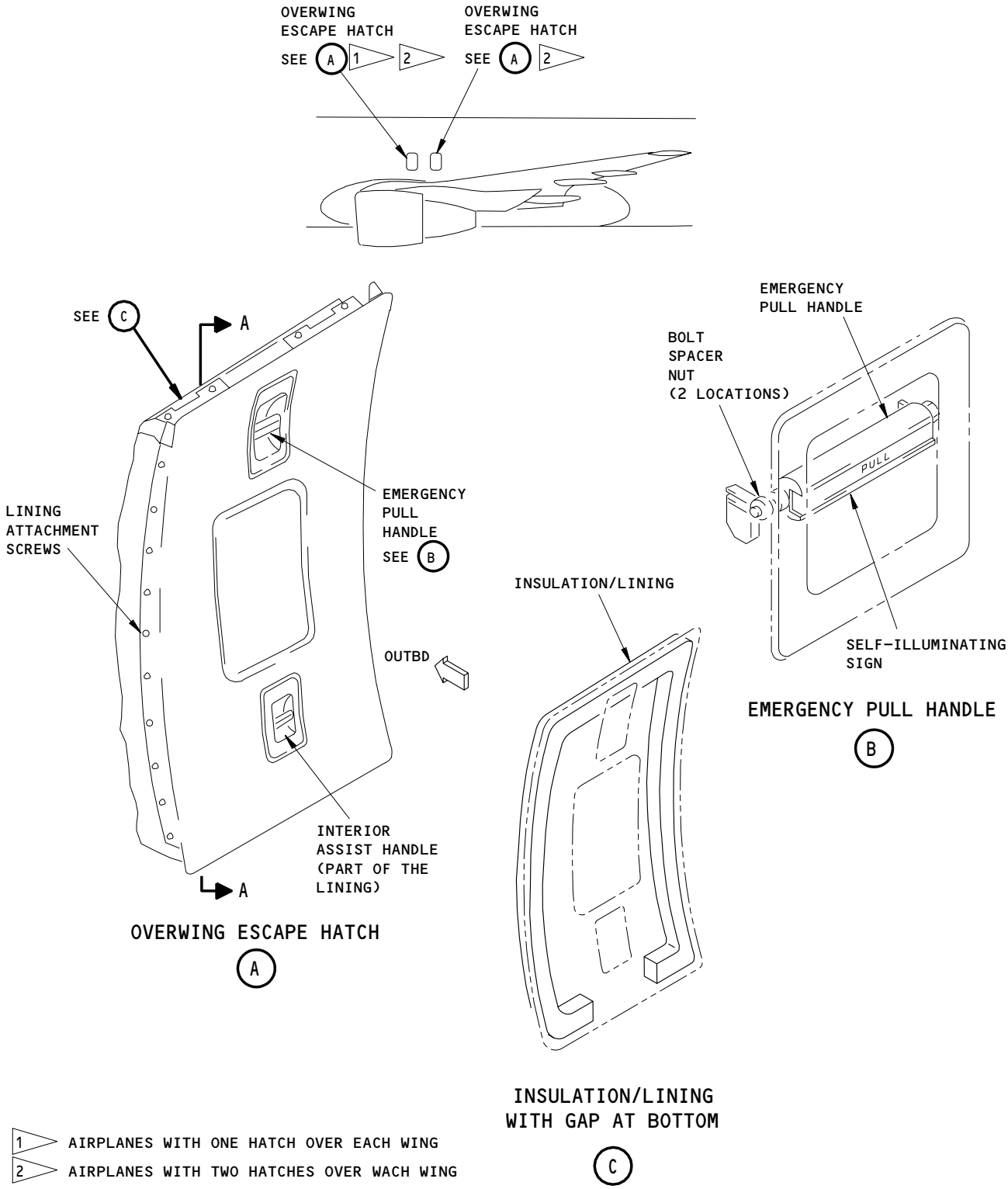

Overwing Escape Hatch Lining
Figure 201 (Sheet 1)

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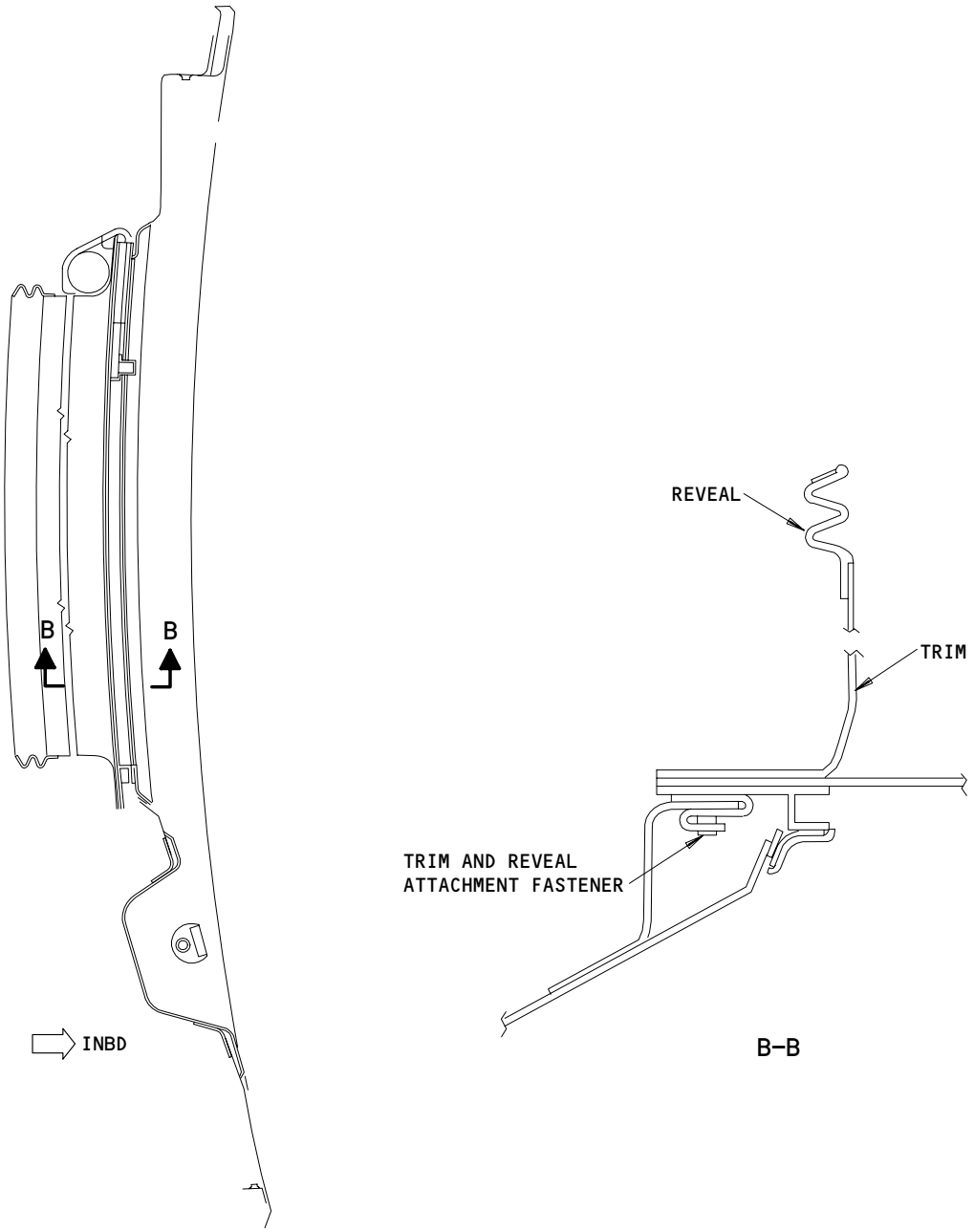

HATCH LINING
A-A

B-B

Overwing Escape Hatch Lining
Figure 201 (Sheet 2)

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LARGE FORWARD CARGO DOOR - DESCRIPTION AND OPERATION

1. General
   A. The large forward cargo door, found forward of the wing fairing on the lower right side of the fuselage, operates electrically and opens outboard. The door opening is approximately 134 inches in width by 69 inches in height. The structural framework of the door has beams, frames, intercostals, and skins made from aluminum alloy sheet and extrusions. The pressurization loads on the door are transmitted to the fuselage by twelve main latches at the lower edge, two mid-span latches, and a piano-type hinge at the top edge. Two pull-in hooks pull the door to the fully closed position before the latches turn. A pressure seal and rain seal are installed on the cargo door. The pressure seal, attached around the edges, prevents pressure losses and internal rain leakage when the door is closed. The rain seal, which extends across the hinge line, prevents rain leakage through the hinge line when the door is open. Twelve view ports are installed along the lower edge of the door adjacent to each of the twelve main latch cams. The main latch cams can be seen through the view ports to make sure the cargo door is in the fully latched position.
   B. The door is usually operated by an integrated manual and electrical system. A manual input at the latch lock handle locks or unlocks the main latch cams, closes or opens the pressure vent doors, and energizes or de-energizes the electrical system control switches. The cargo door control switches operate a 115V ac 3-phase actuation system which operates the latch/hook actuator and the hinge power unit in sequence. Two auxiliary manual drives let the door be operated without electrical power.
   C. The door can be left open in any position in winds up to 65 knots without structural damage. The door actuators are designed to operate in winds up to 40 knots. In winds more than 40 knots, there may not be sufficient power to operate the door. This would be indicated by actuator clutch slippage.
2. Component Details
   A. Large Forward Cargo Door Mechanisms (Fig. 1)
      (1) The latch lock handle mechanism has a manual handle which controls the latch lock mechanism. This handle can be unlatched from the inner or outer side of the airplane. Operation of the latch lock handle turns the lock sector torque tube to move twelve lock sectors and open or close two pressure vent doors. When the airplane is pressurized, the vent doors do not let the lock sector torque tube turn.

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(2) The latch/hook mechanism has an electro-mechanical actuator which turns the latch/hook torque tube. The latch/hook actuator can be operated manually if there is an electrical failure. The latch/hook torque tube is connected by a system of pushrods and bellcranks to latch or unlatch the twelve main latch cams and the two mid-span latch cams. The latch/hook torque tube operates the pull-in hooks.

(3) The lift drive mechanism has a hinge power unit, two torque tubes, two rotary actuators, and two drive arm assemblies. The hinge power unit has a manual drive gearbox which permits manual operation of the hinge power unit. The hinge power unit operates the drive torque tubes connected to the two rotary actuators. The rotary actuators, planetary gear reduction units, are linked to the door support brackets (View A, Fig. 1). The manual drive gearbox has two manual drive sockets found in these locations: (1) in the external skin on the cargo door above and forward of the hinge power unit, (2) on the forward edge of the cargo door above the drive arm (View B, Fig. 1). The drive arm assembly has a drive arm connected to a torque shaft, and a drive link connected to the fuselage structure.

(a) AIRPLANES WITH VIBRATION DAMPERS (POST SB 52-74 OR PRR B12731); Vibration dampers installed on the large cargo door lift system. These vibration dampers will eliminate the loud noise coming from the large cargo door lift system while closing the cargo door.

B. Large Forward Cargo Door Proximity Sensors (Fig. 2 thru 6)

(1) There are seven proximity sensors on the large forward cargo door. Two of the proximity sensors are door warning sensors and are used to activate door warning indications. The proximity sensors are listed in Fig. 2 and are shown in Fig. 3 thru 6.

3. Operation

A. Functional Description

(1) Electrical door open operation.

(a) Before the door can be electrically opened or closed, the door must be manually unlocked. The latch lock handle mechanism locks the latches and prevents the door from being opened.

(b) When the latch lock handle is released (pushed out by the vent door springs) and moves, it turns the latch lock torque tube. When the latch lock torque tube turns, it retracts the twelve lock sectors to let the main latches turn. When the latch lock torque tube turns, it causes the vent door torque tube to turn with the use of bellcranks and pushrods. The two vent doors are turned inboard, as the vent door torque tube turns, which releases the residual cabin pressure before the door is opened. When the eleventh lock sector (from the forward side of the door) moves to the retracted position, the door open message FWD CARGO DOOR will show on the top EICAS display. When the latch lock handle mechanism is in the fully unlocked position, the PSEU (Proximity Switch Electronics Unit), uses the handle unlocked proximity sensor, S153, (target near condition) to complete the circuit to the door control switches.

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(c) In this position, the door is fully unlocked and ready to be electrically opened.

NOTE: The handle unlocked sensor proximity sensor, S153 is in the target near condition and will stay in this condition until the door is manually locked.

(d) When the door is closed, (but not locked) these sensors are in the target far condition: DOOR UNLATCHED (S150) and DOOR OPEN (S151). These sensors are in the target near condition: LATCH RANGE (S152), HANDLE UNLOCKED (S153), and DOOR LATCHED (S154). These sensors give logic signals for the PSEU.

NOTE: The PSEU controls the electrical sequence of the door with use of the door control sensors listed above.

(e) When you put the internal or external cargo door control switch in the OPEN position, power (28V dc) is supplied to one side of the FWD DOOR LIFT/LATCH relay K33 and FWD CARGO DR HINGE UP relay K31. The PSEU closes the FWD CARGO DR LIFT/LATCH relay K33 using the DOOR UNLATCHED (S150) and HANDLE UNLOCKED (S153) sensors.

(f) The FWD CARGO DR LIFT/LATCH relay supplies (115V ac) power to the latch/hook actuator, and releases the internal brake. This unlatches the twelve main latch cams, the two mid-span latch cams and then moves the door open, with use of the pull-in hooks, approximately 2.6 inches.

(g) When the pull-in hooks are in the fully open position the DOOR UNLATCHED (S150) sensor now in the target near condition, gives a logic signal to the PSEU opening the FWD CARGO DR LIFT/LATCH relay. This stops the power to the latch/hook actuator.

(h) At the same time, the PSEU closes the control side of the FWD CARGO DR HINGE UP relay. This relay supplies power (115V ac) to the hinge power unit.

(i) The hinge power unit continues to move the door open until the DOOR OPEN (S151) sensor is in the target near condition (door fully open). The DOOR OPEN (S151) sensor gives a logic signal for the PSEU that opens the FORWARD CARGO DOOR HINGE UP relay and makes the DOOR OPEN light go on. This also de-energizes the door open control circuit which stops the power to the hinge power unit.

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(2) Electrical door close operation.

(a) When the door is open and not locked, these sensors are in the target far condition: LATCH RANGE (S152) and DOOR LATCHED (S154). These sensors are in the target near condition: DOOR UNLATCHED (S150), DOOR OPEN (S151), and HANDLE UNLOCKED (S153). These sensors give logic signals for the PSEU.

(b) When you put the internal or external cargo door control switch in the CLOSE position, power (28V dc) is supplied to one side of the FWD CARGO DR HINGE DN relay K32 and FWD CARGO DR LATCH relay K34. The PSEU closes the FWD CARGO DR HINGE DN relay K32 using the DOOR UNLATCHED (S150), LATCH RANGE (S152) and HANDLE UNLOCKED (S153) sensors.

(c) The FWD CARGO DR HINGE DN relay supplies (115V ac) power to the hinge power unit. The hinge power unit supplies mechanical power, and closes the door to approximately 2.6 inches. The LATCH RANGE sensor (S152) (now in the target near condition) tells the PSEU to open the control side of the door FWD CARGO DR HINGE DN relay and closes the FWD CARGO DR LATCH relay.

(d) The FWD CARGO DR LATCH relay supplies (115V ac) power to the latch/hook actuator and releases the internal brake unit in the actuator. The latch/hook actuator first moves (turns) the pull-in hooks which pull the cargo door to the closed position. The actuator then turns the main latch cams to the latched position. At this point the DOOR LATCHED (S154) sensor is in the target near condition. The PSEU opens the control side of the FWD CARGO DR LATCH relay. This removes the power to the latch/hook actuator and applies the internal brake unit in the actuator. The PSEU also makes the DOOR CLOSE light go on. The door close control circuit is de-energized at this point.

NOTE: The door is faired and latched but not locked at this time.

(e) When the latch lock handle in the fuselage skin, forward of the cargo door, is manually pushed up into its housing, the latch lock torque tube is turned and extends the twelve lock sectors. The lock sectors lock the lower main latches and do not let the main latches turn. When the latch lock torque tube turns it causes the vent door torque tube to turn, which closes the two vent doors. When the eleventh lock sector (from the forward side of the door) moves to the extended position, the door open message FWD CARGO DOOR will not show on the top EICAS display.

(f) When the latch lock handle is latched into its housing, (S153 target far condition) it prevents the PSEU from completing any electrical circuit through the relays.

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CAUTION: DO NOT LET THE DOOR STAY OPEN IN WINDS MORE THAN 65 KNOTS.

STRONG WINDS CAN CAUSE DAMAGE TO THE DOOR. IF THE WIND VELOCITY IS LESS THAN BUT NEAR TO 40 KNOTS, DO NOT OPERATE THE DOOR MORE THAN TWO COMPLETE OPEN/CLOSE CYCLES IN 5 MINUTES. IF YOU OPEN AND CLOSE THE DOOR TOO MANY TIMES IN HIGH WINDS THE THERMAL OVERLOAD DEVICE WILL BE ACTUATED.

WARNING: BEFORE YOU OPERATE THE DOOR, MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF DOOR OPERATION PATH. IF PERSONS AND EQUIPMENT ARE NOT CLEAR OF THE DOOR, INJURY AND DAMAGE CAN OCCUR.

B. Control

(1) Open the cargo door electrically as follows:

NOTE: The cargo door can be opened or closed from the inner or outer side of the airplane, but the latch lock handle mechanism can only be closed from the outer side.

(a) Connect the electrical power.

(b) Push the external latch lock handle release button or the internal release lever and make sure the latch lock handle moves to the fully open position.

(c) Hold the external or internal door control switch in the OPEN position until the door is in the fully open position.

NOTE: You can stop or change the direction of the door movement at any time, if you put the door control switch in the OFF or CLOSE position.

The time to open the door is approximately 50 seconds.

(d) Install the safety barrier, A52007-1, across the door opening if you do work near the open door.

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(2) Close the cargo door electrically as follows:
(a) Hold the external or internal door control switch in the CLOSE position until the door is in the fully closed and latched position.

NOTE: Hold the door control switch in the CLOSE position for approximately 3 seconds after the door is aligned with the fuselage to let the main latch cams move to the fully latched position.

(b) Make sure the green "DOOR CLOSE" light on the door control panel comes on. The door is in the fully latched position when the "DOOR CLOSE" light comes on.
(c) Make sure the vent doors are open before you close the latch lock handle.

CAUTION: MAKE SURE YOU CANNOT SEE THE RED ZONE THAT IS FORWARD OF THE LOCK HANDLE RELEASE BUTTON. IF YOU CAN SEE THE RED ZONE, THE LATCH LOCK HANDLE MECHANISM CAN UNLOCK.

(d) Close the latch lock handle to the locked position.
(e) Make sure this EICAS message, FWD CARGO DOOR, does not show on the top display.
(f) After you closed the latch lock handle, make sure the vent doors are fully closed or open no more than 0.50 inch at the lower edge.

NOTE: The seals on the vent door can cause the doors to not fully close until the airplane is pressurized.

(g) Look through the view ports (12 locations) on the external side of the cargo door (Fig. 10). Make sure you see the green alignment mark on each of the main latch cams.
(h) AIRPLANES WITH AN ALIGNMENT MARK ON THE LATCH PIN FITTING (POST SB 52-59 OR PRR B12184);
Make sure the green alignment mark on the main latch cam is fully in the limits of the larger green alignment mark on the main latch pin fitting.

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(3) Open the cargo door manually as follows:

(a) Push the latch lock handle release button. Make sure the latch lock handle moves to the fully down position.

CAUTION: DO NOT LET THE LATCH/HOOK ACTUATOR OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE LATCH/HOOK ACTUATOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 70 POUND-INCHES. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE LATCH/HOOK ACTUATOR.

(b) Put a 3/8-inch square drive speed wrench in the manual drive socket of the latch/hook actuator (Fig. 10).

(c) Turn the speed wrench clockwise approximately 115 turns to the fully not latched and not hooked position of the cargo door.

NOTE: The stops that prevent travel are touched when you feel or hear clutch slippage. The cargo door moves outboard approximately 2.6 inches when the stops are touched.

CAUTION: DO NOT LET THE HINGE POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE HINGE POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 190 POUND-INCHES. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE HINGE POWER UNIT.

(d) Put a 3/8-inch square drive speed wrench in the manual drive socket of the hinge power unit that is found on the external surface of the door near the forward side (Fig. 10).

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(e) Turn the speed wrench counterclockwise until the lower part of the cargo door turns 6 feet from the lower fuselage frame.

NOTE: It is usual for the door to stop at the lowest point of its travel.

(f) Move the 3/8-inch square drive speed wrench to the manual drive socket of the hinge power unit that is found on the forward edge of the cargo door (Fig. 10).
(g) Turn the speed wrench counterclockwise until the cargo door is in the fully open position and you can feel or hear clutch slippage.
(h) Install the safety barrier, A52007-1, across the door opening if you do work near the open door.

(4) Close the cargo door manually as follows:
(a) Remove the safety barrier from the cargo door.

CAUTION: DO NOT LET THE HINGE POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE HINGE POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 190 POUND-INCHES. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE HINGE POWER UNIT.

(b) Put a 3/8-inch square drive speed wrench in the manual drive socket of the hinge power unit that is found on the forward edge of the cargo door (Fig. 10).
(c) Turn the speed wrench clockwise until the lower part of the cargo door is approximately 6 feet from the lower fuselage frame.
(d) Move the 3/8-inch square drive speed wrench to the manual drive socket of the hinge power unit found on the external surface of the door near the forward side (Fig. 10).

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(e) Turn the speed wrench clockwise until the lower edge of the cargo door is 2.6 inches from the fuselage skin.

CAUTION: DO NOT LET THE LATCH/HOOK ACTUATOR OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE LATCH/HOOK ACTUATOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 70 POUND-INCHES. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE LATCH/HOOK ACTUATOR.

(f) Put a 3/8-inch square drive speed wrench in the manual drive socket of the latch/hook actuator (Fig. 10).
(g) Turn the speed wrench counterclockwise approximately 115 turns to the fully latched position until you can feel or hear the clutch slippage of the latch/hook actuator.
(h) Make sure the vent doors are open before you close the latch lock handle.

CAUTION: MAKE SURE YOU CANNOT SEE THE RED ZONE THAT IS FORWARD OF THE LOCK HANDLE RELEASE BUTTON. IF YOU CAN SEE THE RED ZONE, THE LATCH LOCK HANDLE MECHANISM CAN UNLOCK.

(i) Close the latch lock handle to the locked position.
(j) Make sure this EICAS message, FWD CARGO DOOR, does not show on the top display.
(k) After you closed the latch lock handle, make sure the vent doors are fully closed or open no more than 0.50 inch at the lower edge.

NOTE: The seals on the vent door can cause the doors to not fully close until the airplane is pressurized.

(l) Look through the view ports (12 locations) on the external side of the cargo door (Fig. 10). Make sure you see the green alignment mark on each of the main latch cams.

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(m) AIRPLANES WITH AN ALIGNMENT MARK ON THE LATCH PIN FITTING (POST SB 52-59 OR PRR B12184);
make sure the green alignment mark on the main latch cam is fully in the limits of the larger green alignment mark on the main latch pin fitting.

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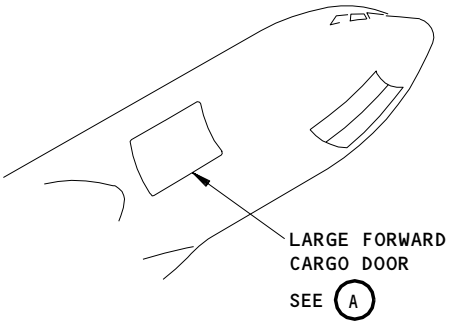

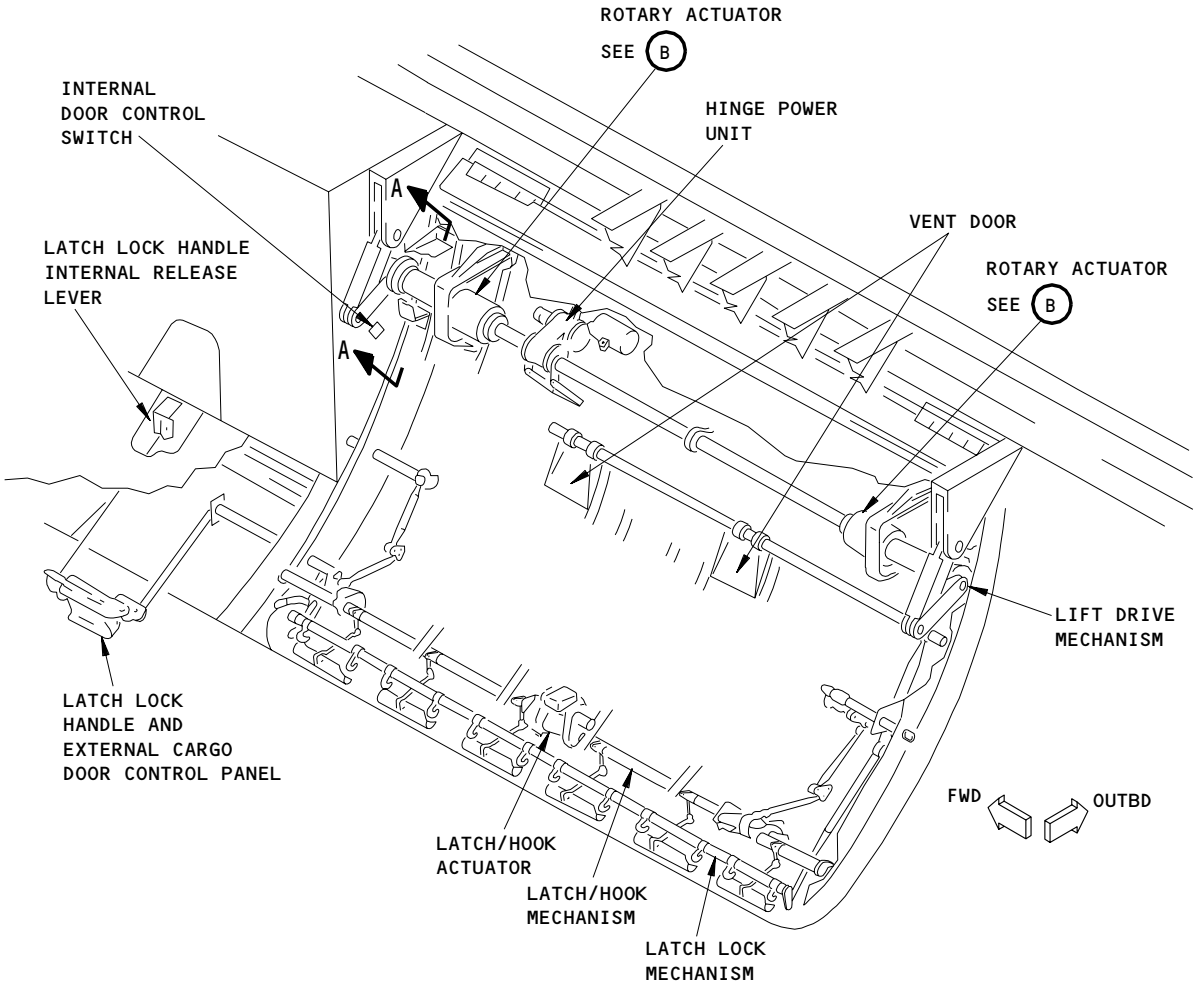

LARGE FORWARD CARGO DOOR

(A)

Large Forward Cargo Door Mechanisms
Figure 1 (Sheet 1)

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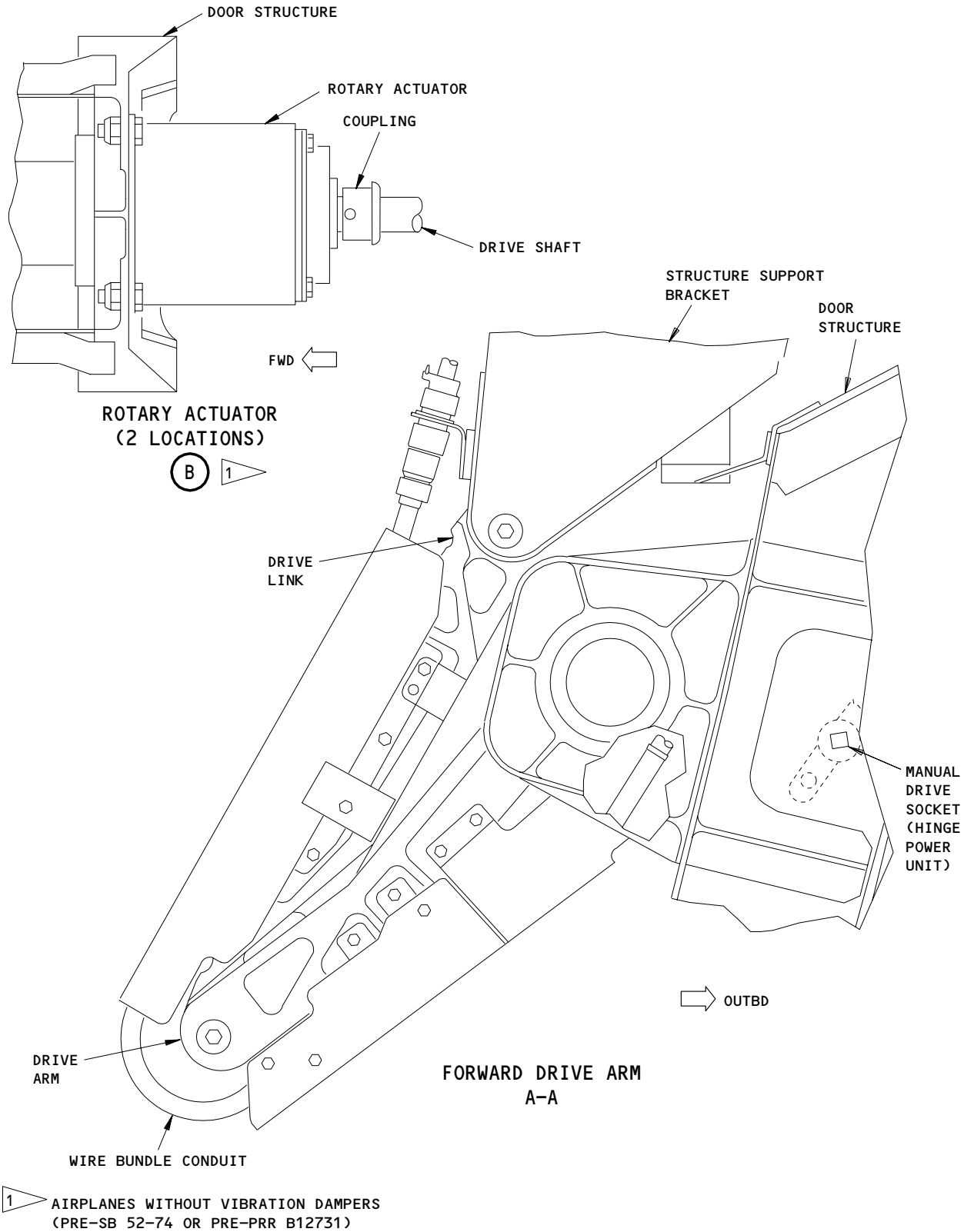

Large Forward Cargo Door Mechanisms
Figure 1 (Sheet 2)

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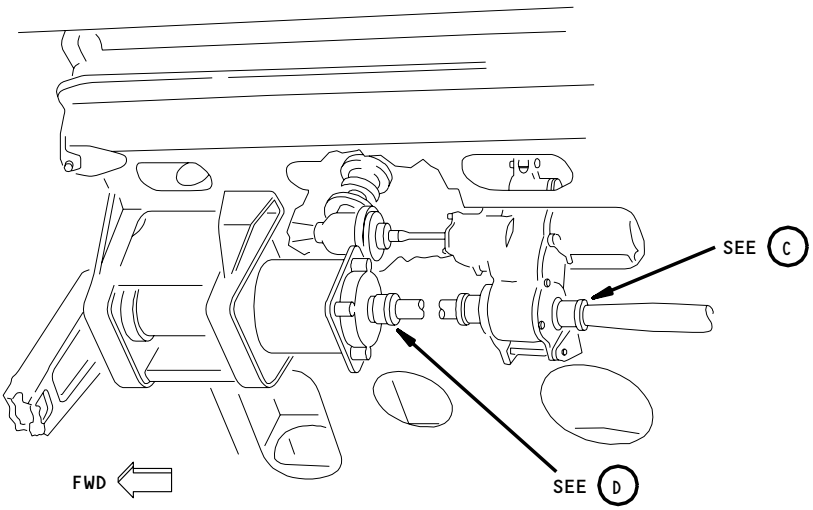
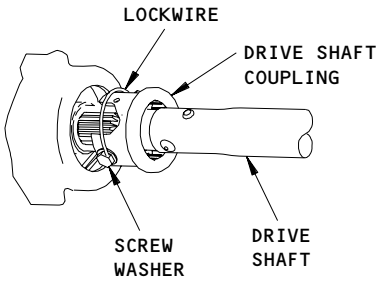


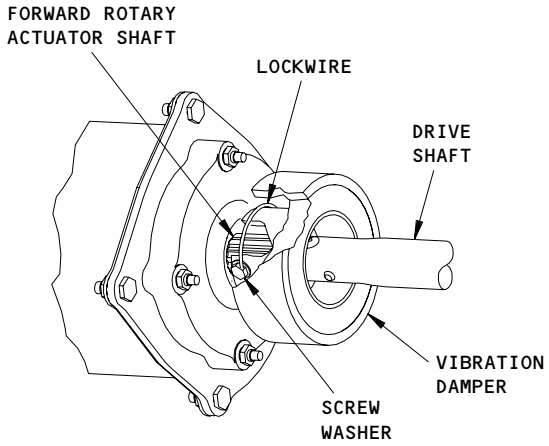
ROTARY ACTUATOR

B 2



HINGE POWER UNIT

C



ROTARY ACTUATOR

D

1 AIRPLANES WITH VIBRATION DAMPERS (POST-SB 52-74 OR POST-PRR B12731)

Large Forward Cargo Door Mechanisms
Figure 1 (Sheet 3)

G94584

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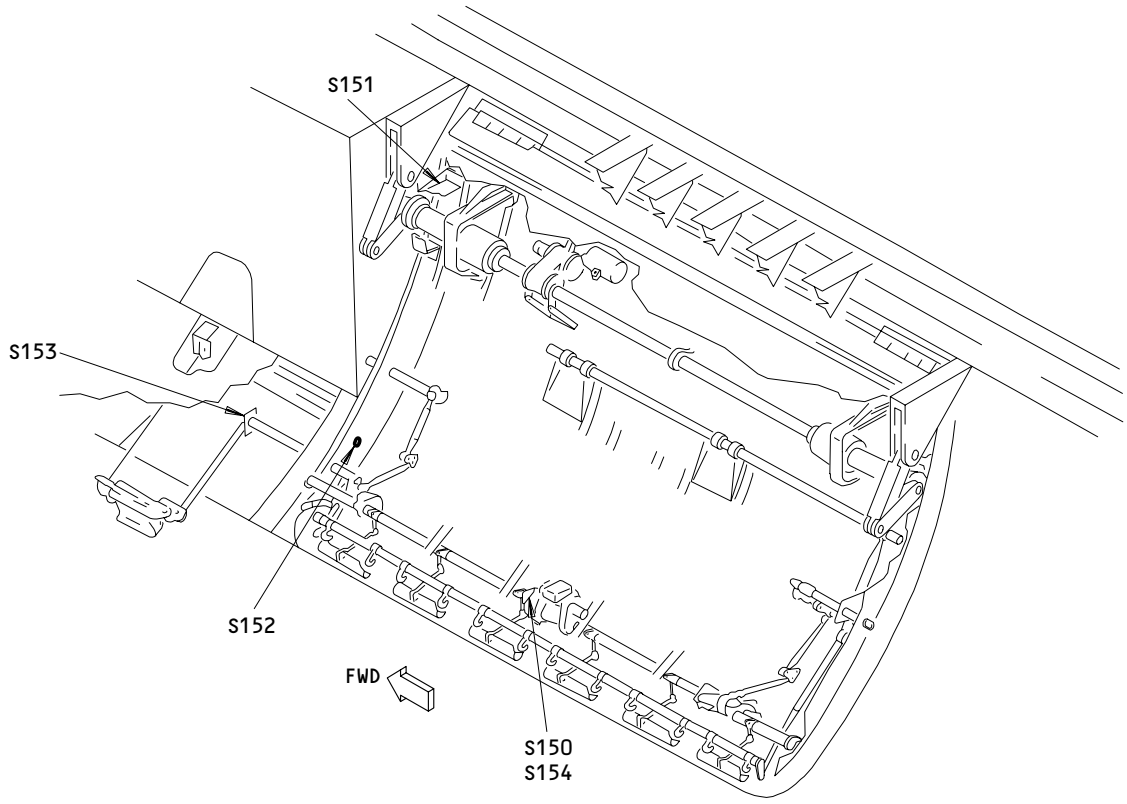

LARGE FORWARD CARGO DOOR

LARGE FORWARD CARGO DOOR PROXIMITY SENSORS		
NOMENCLATURE	EQUIPMENT NO.	SENSOR FUNCTION
FWD CARGO DOOR UNLATCHED PROX SENSOR	S150	CONTROL SEQUENCING
FWD CARGO DOOR OPEN PROX SENSOR	S151	CONTROL SEQUENCING
FWD CARGO DOOR LATCH RANGE PROX SENSOR	S152	CONTROL SEQUENCING
FWD CARGO DOOR HANDLE UNLOCKED PROX SENSOR	S153	CONTROL SEQUENCING
FWD CARGO DOOR LATCHED PROX SENSOR	S154	CONTROL SEQUENCING
FWD CARGO DOOR LOCKED PROX SENSOR	S214	DOOR WARNING
FWD CARGO DOOR CLOSED PROX SENSOR	S215	DOOR WARNING

NOTE: PROXIMITY SENSORS S214 AND S215 ARE PART OF THE DOOR WARNING SYSTEM AND ARE NOT SHOWN. REFER TO 52-71-00 FOR MORE DATA ON THE DOOR WARNING SYSTEM.

Large Forward Cargo Door Proximity Sensors
Figure 2

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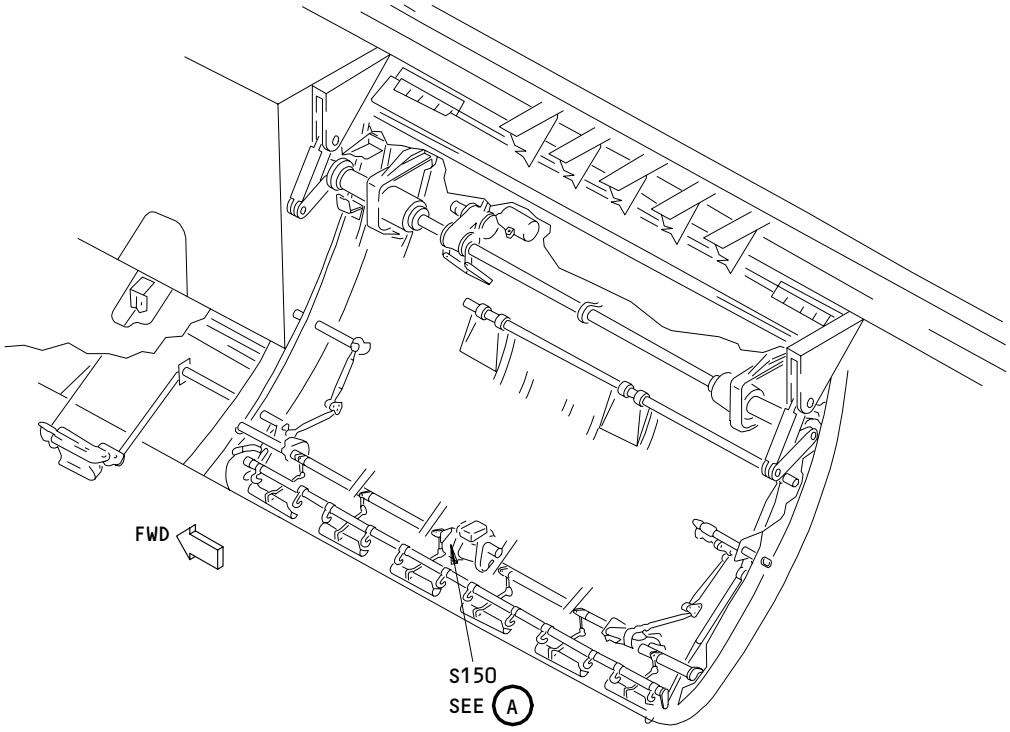
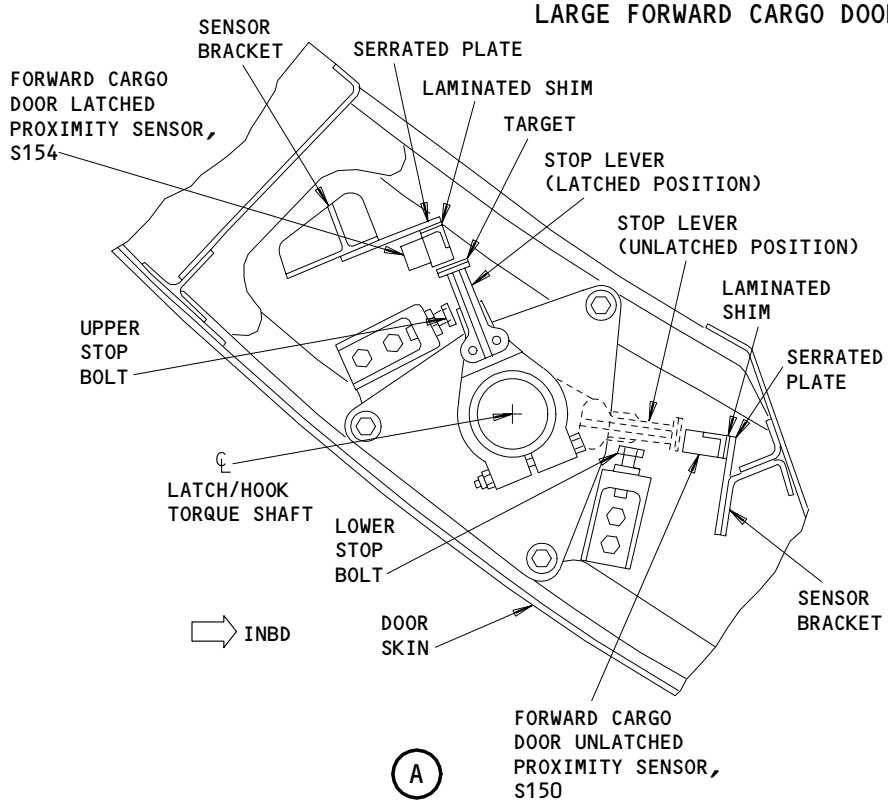


LARGE FORWARD CARGO DOOR



Forward Cargo Door Unlatched Proximity Sensor, S150
Forward Cargo Door Latched Proximity Sensor, S154
Figure 3

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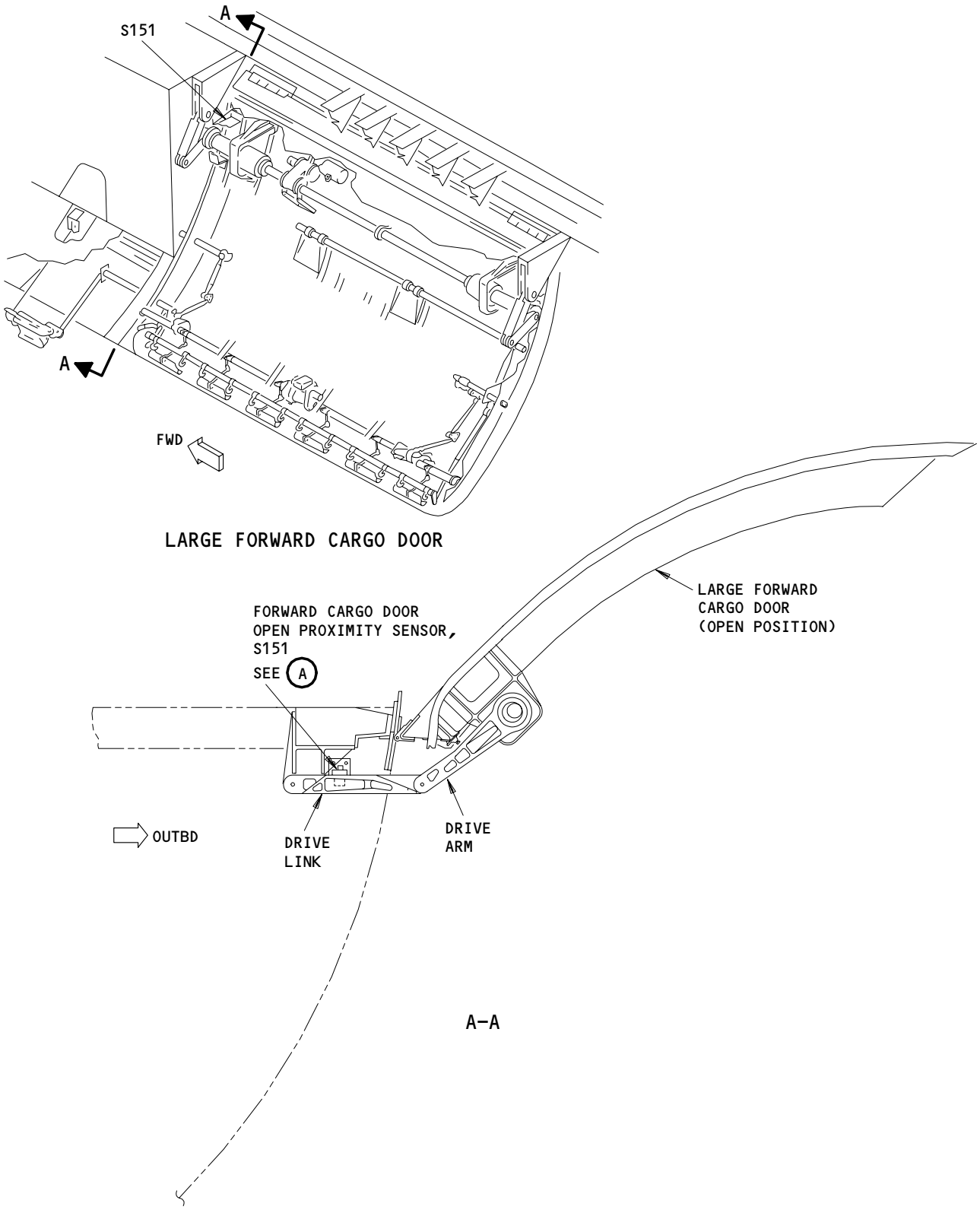

Forward Cargo Door Open Proximity Sensor, S151
Figure 4 (Sheet 1)

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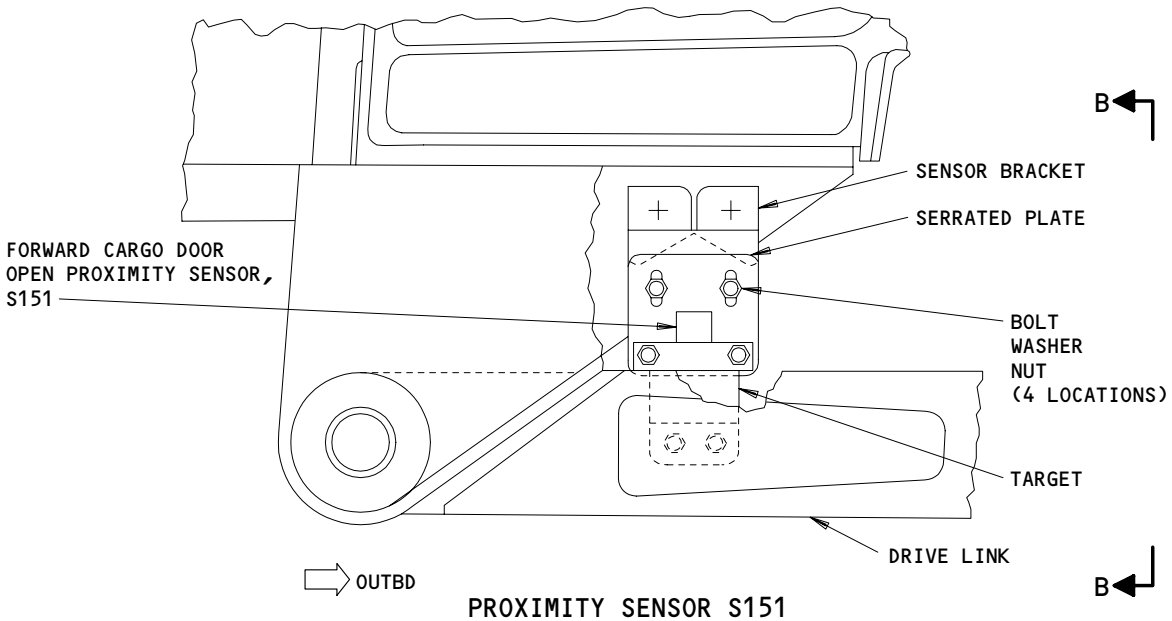
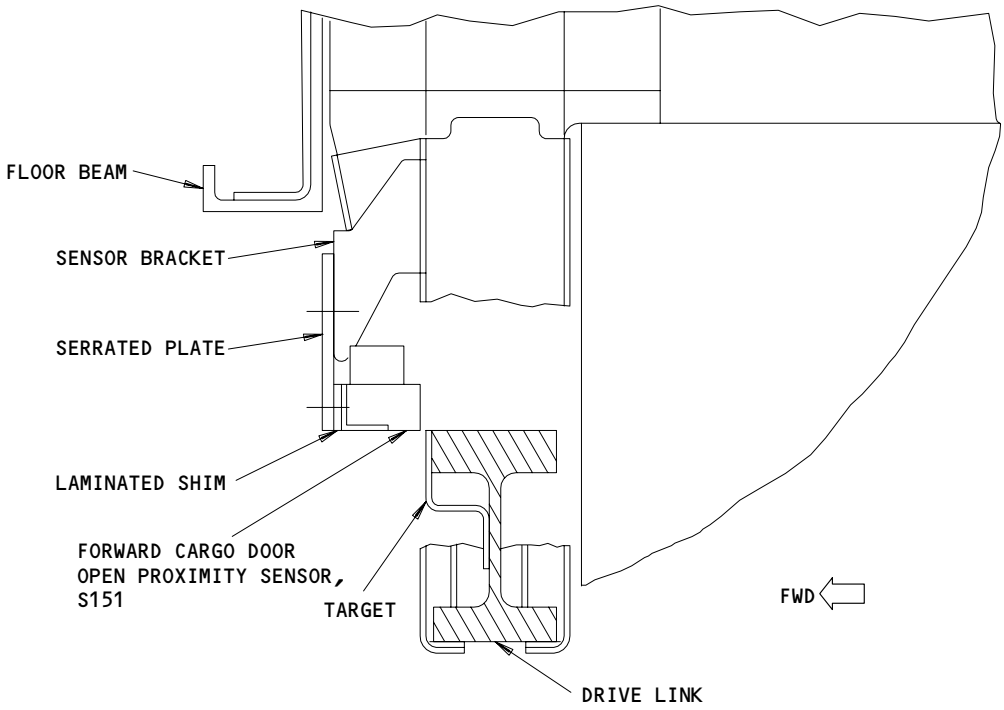


PROXIMITY SENSOR S151

A



B–B

Forward Cargo Door Open Proximity Sensor, S151
Figure 4 (Sheet 2)

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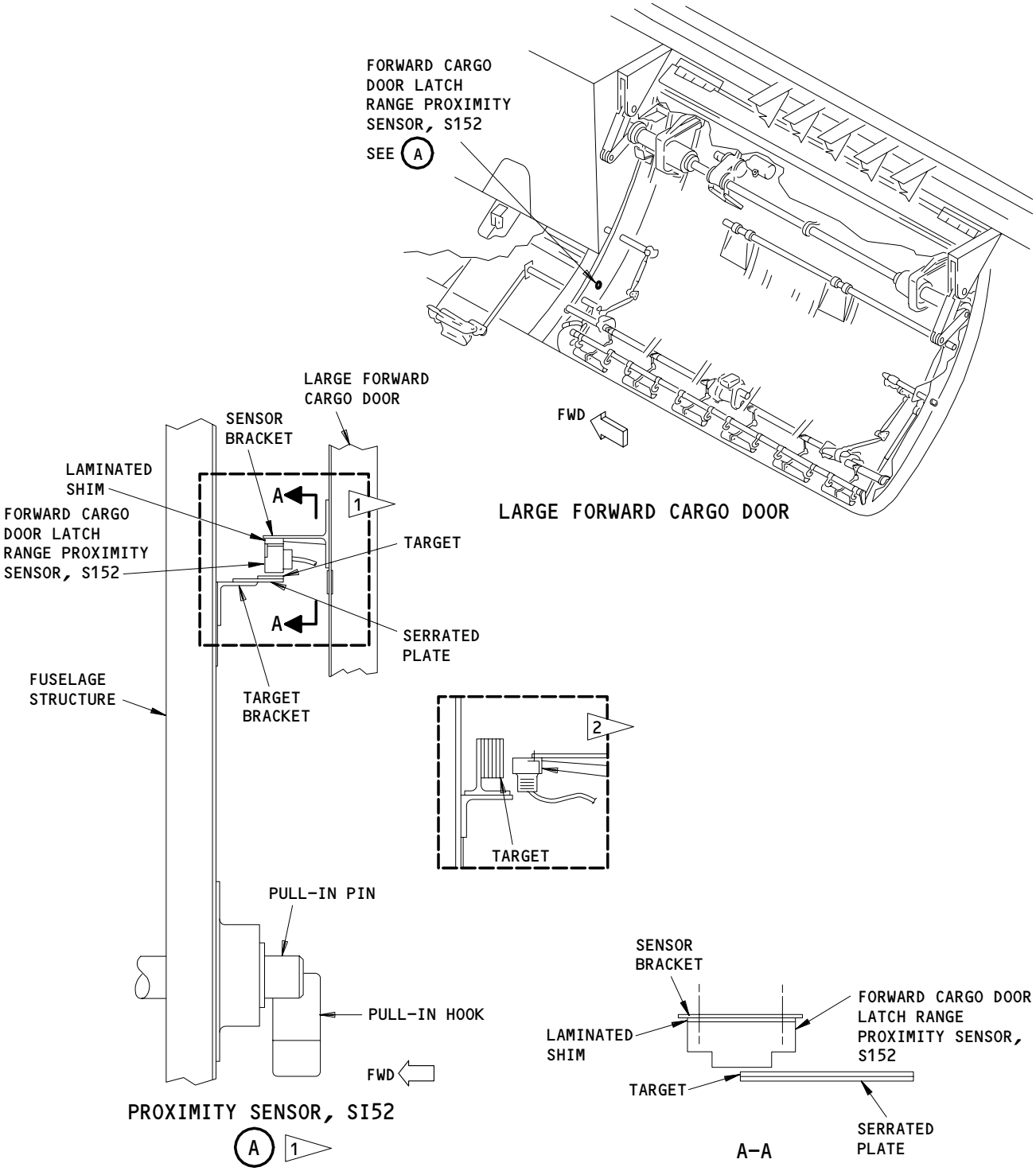

Forward Cargo Door Latch Range Proximity Sensor, S152
Figure 5

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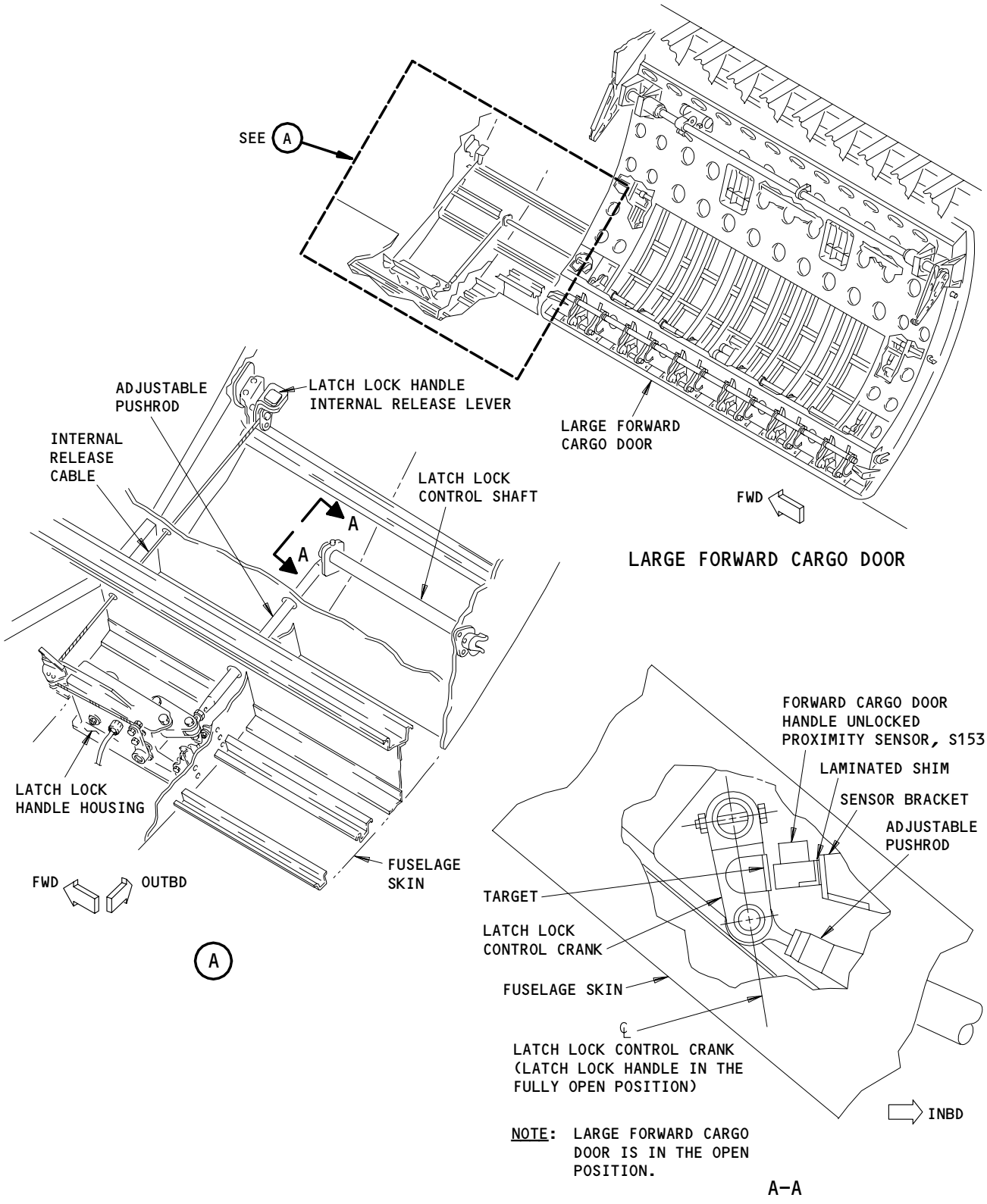

Forward Cargo Door Handle Unlocked Proximity Sensor, S153
Figure 6

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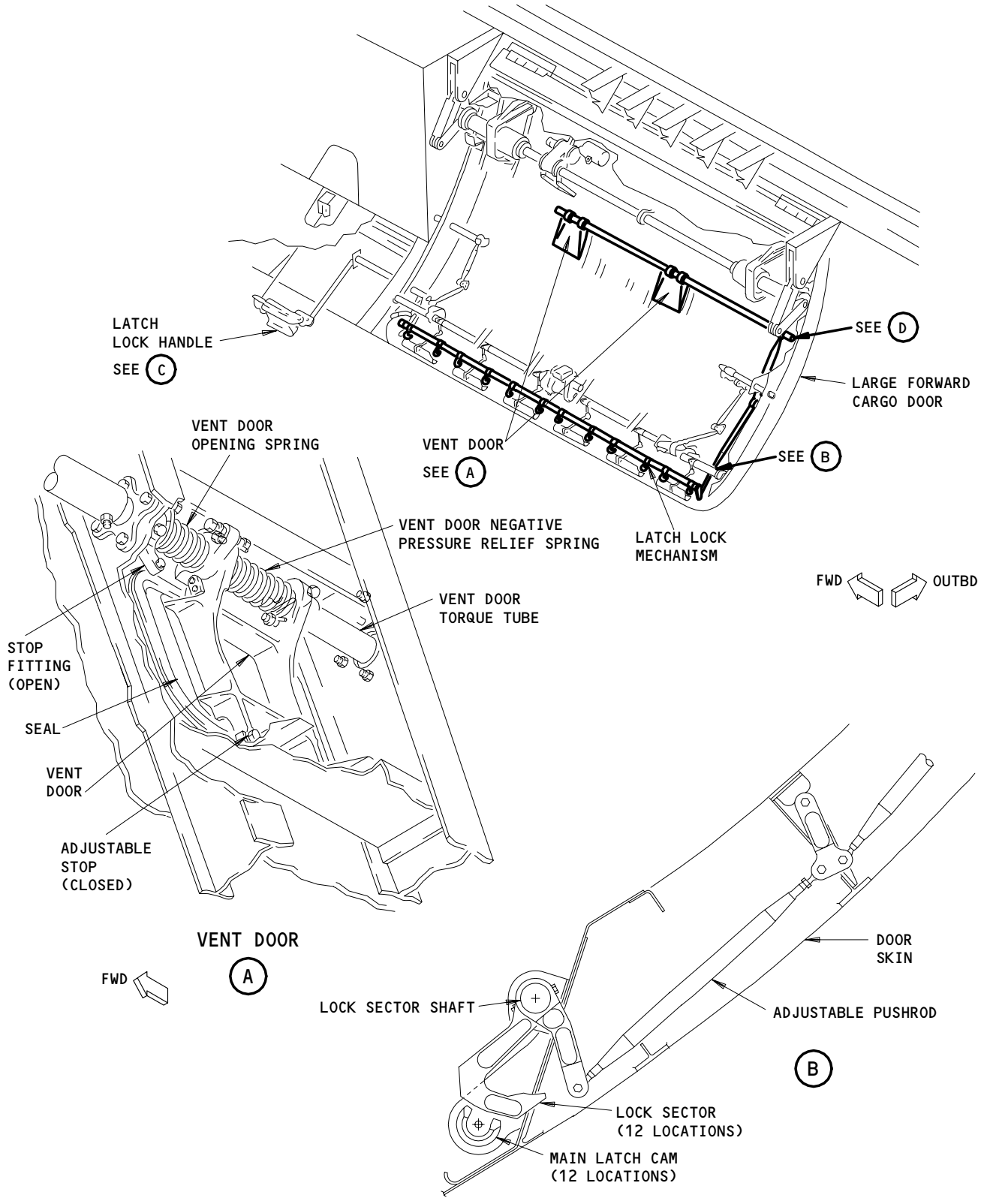

Large Forward Cargo Door Latch Lock Mechanism
Figure 7 (Sheet 1)

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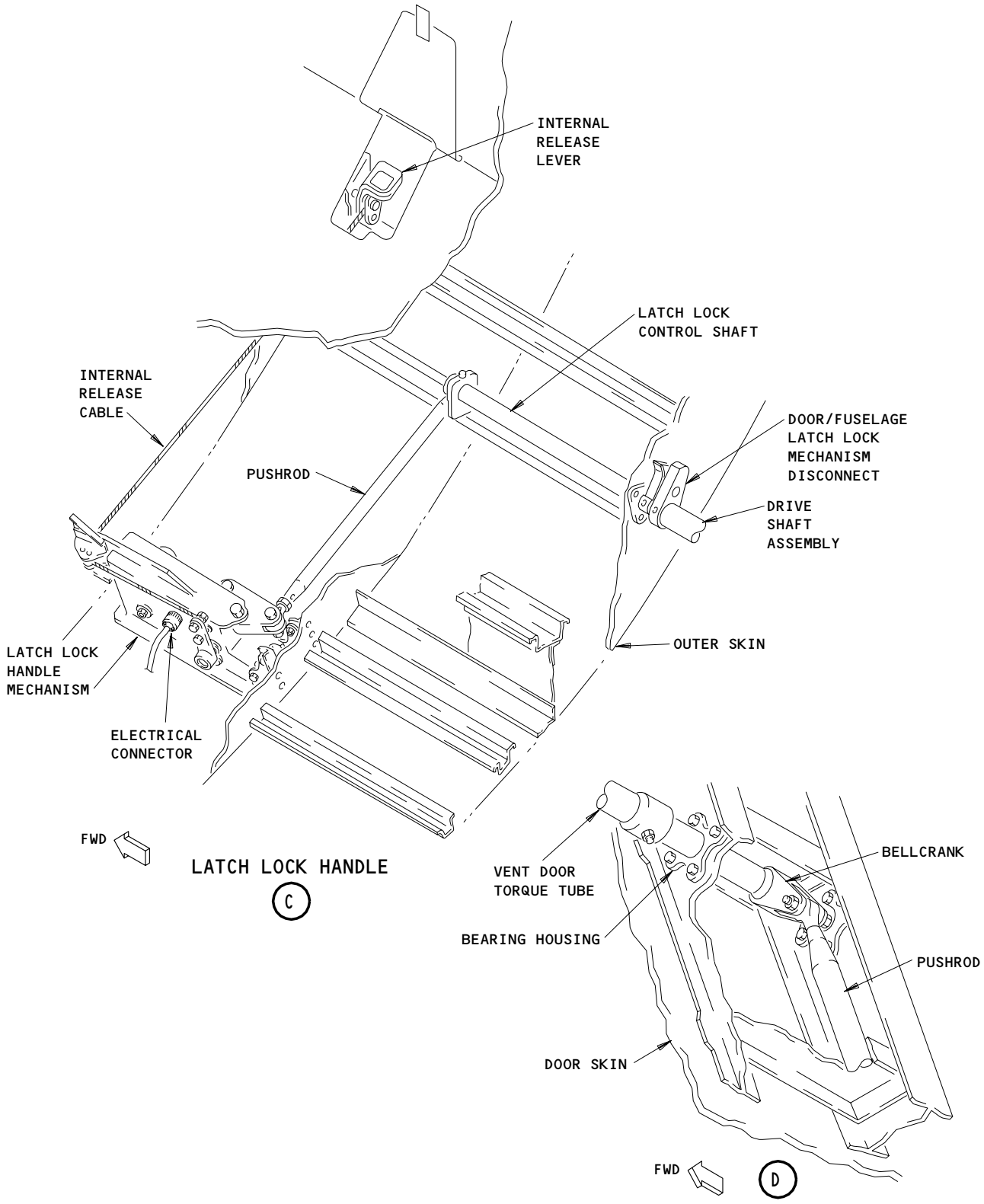

Large Forward Cargo Door Latch Lock Mechanism
Figure 7 (Sheet 2)

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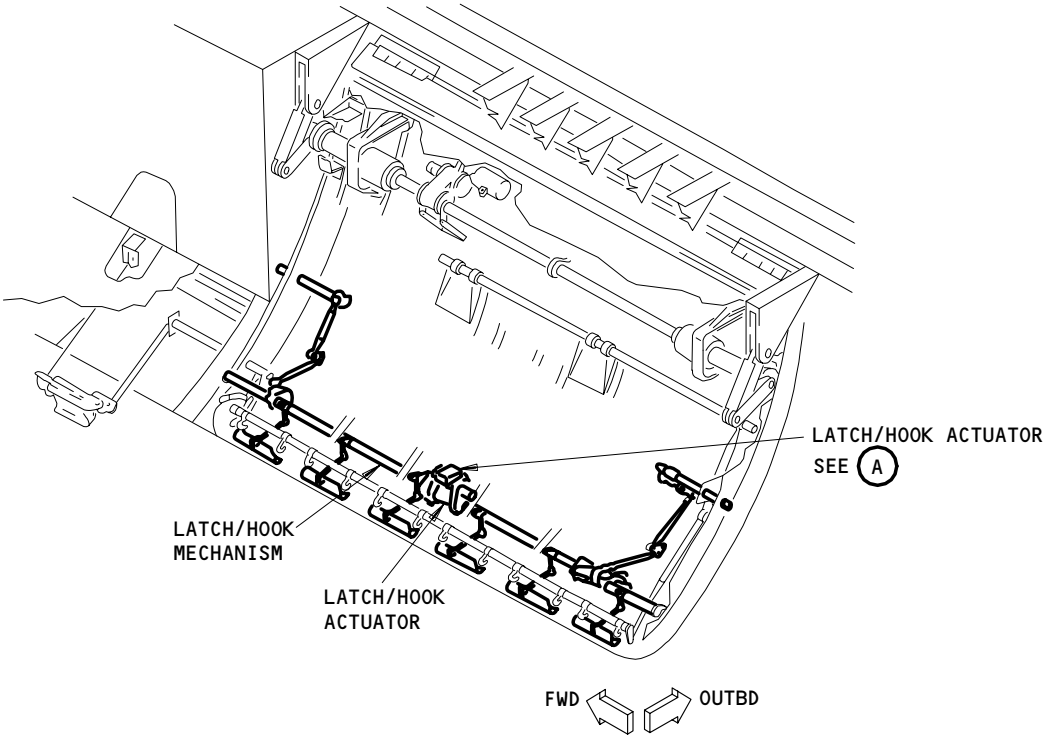

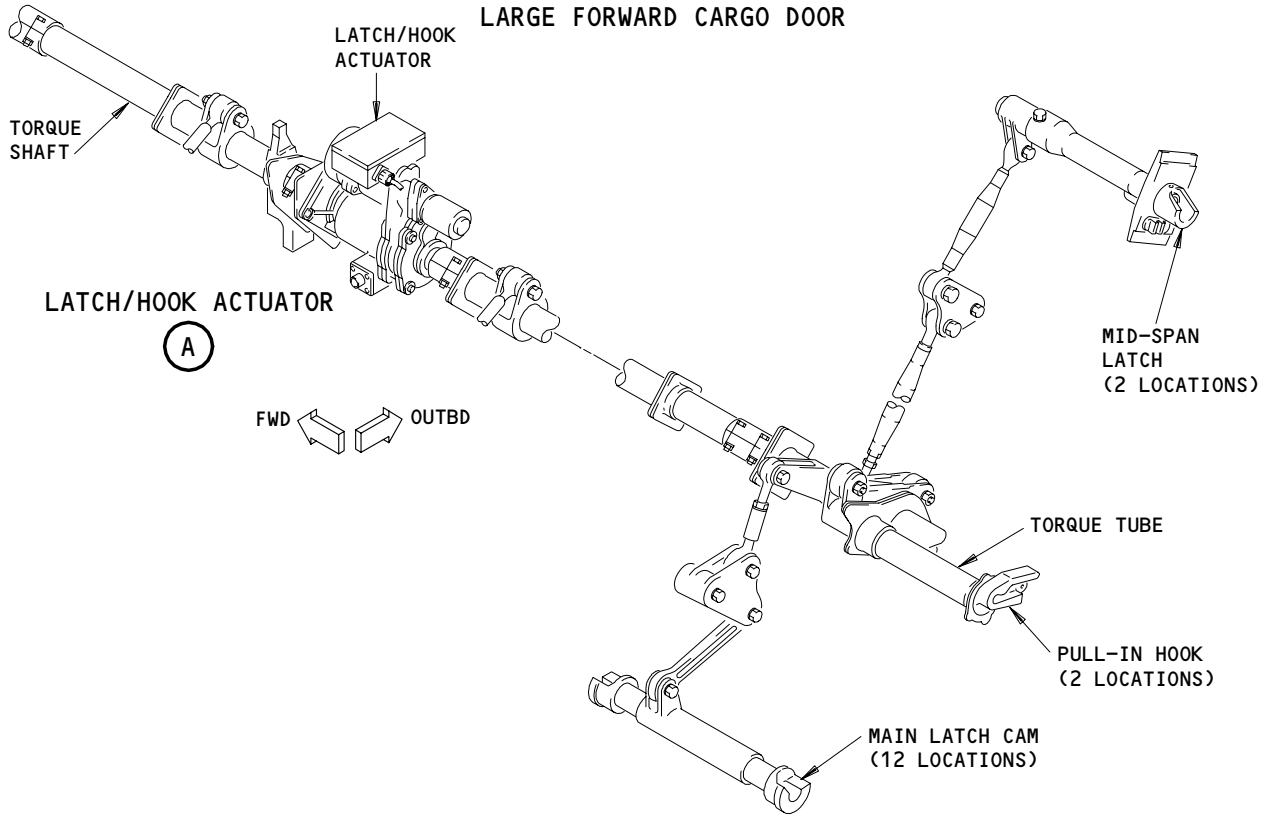

Large Forward Cargo Door Latch/Hook Mechanism
Figure 8

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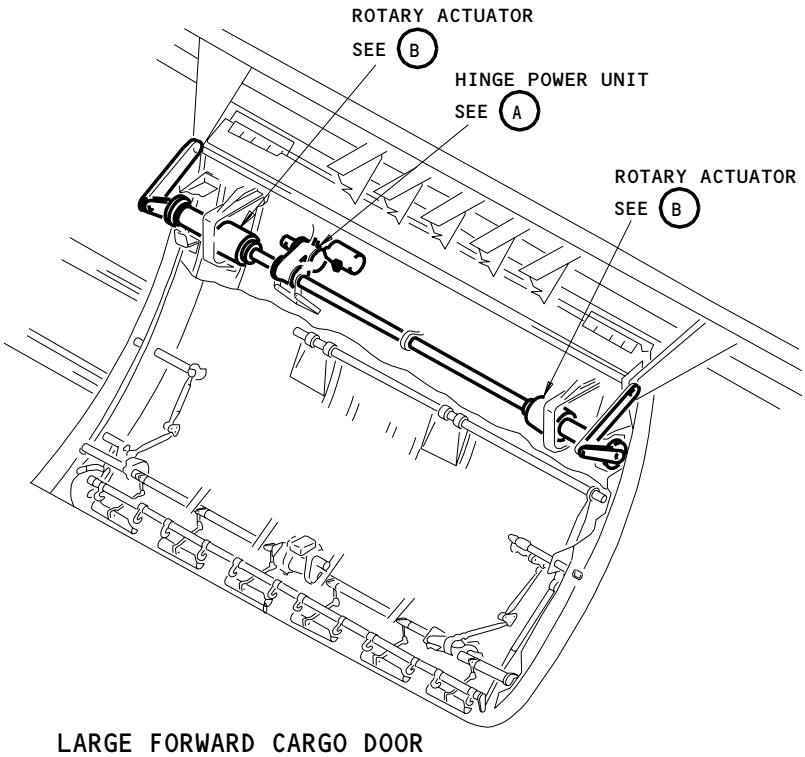
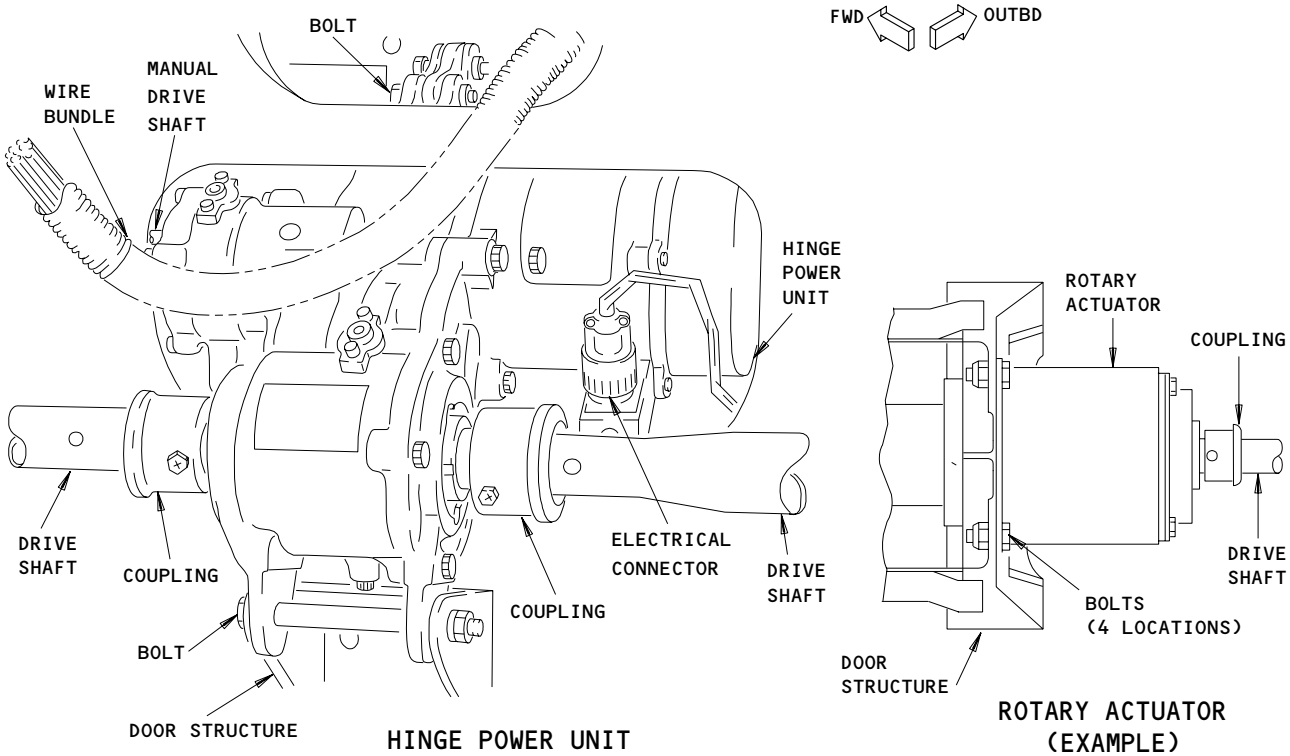


LARGE FORWARD CARGO DOOR



HINGE POWER UNIT

A

ROTARY ACTUATOR (EXAMPLE)

B

Large Forward Cargo Door Lift Drive Mechanism
Figure 9

774391

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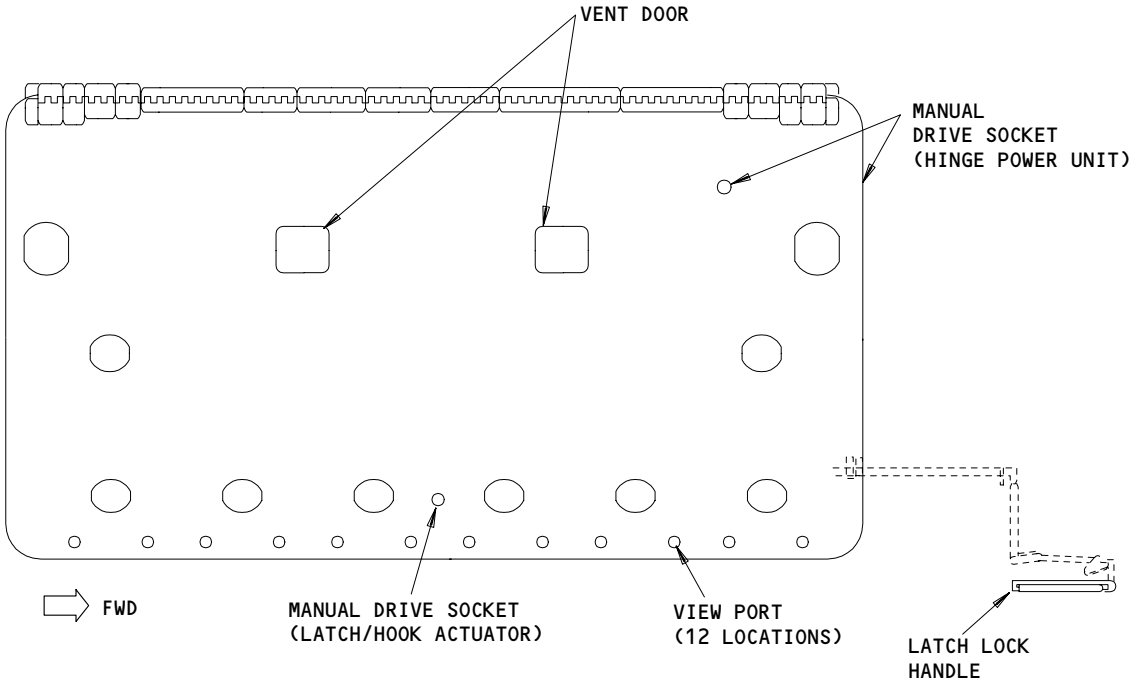

Large Forward Cargo Door
Figure 10

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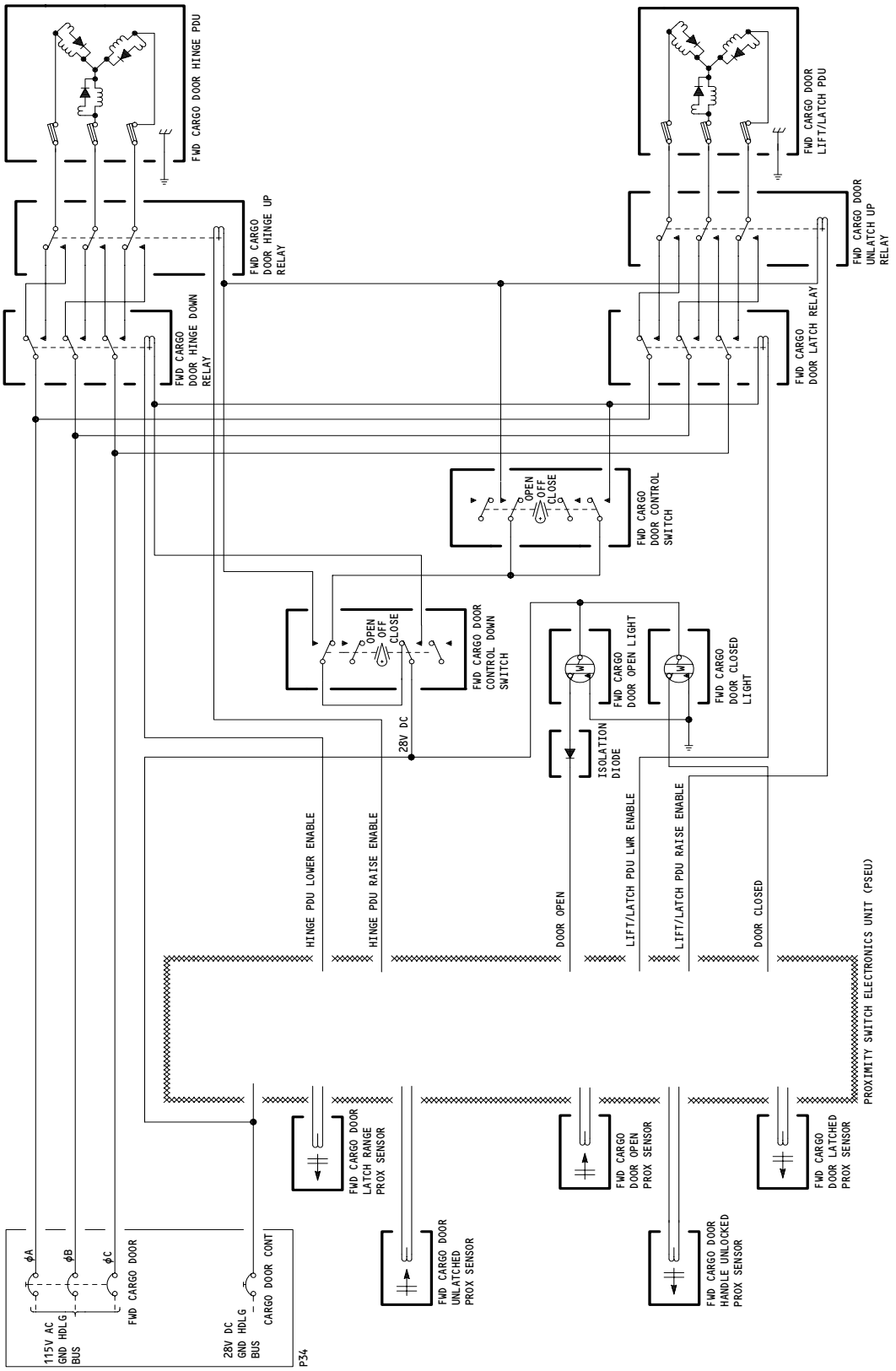

Large Forward Cargo Door Schematic
Figure 11

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LARGE FORWARD CARGO DOOR

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
ACTUATOR – LATCH/HOOK, M630	1	1	821, FWD CARGO DOOR	52-33-08
ACTUATOR – ROTARY	1	1	821, FWD CARGO DOOR	52-33-04
CAMS – MAIN LATCH	2	2	821, FWD CARGO DOOR	52-33-00
CAMS – MIDSPAN LATCH	2	1	821, FWD CARGO DOOR	52-33-00
CENTERING RAMP AND ROLLER	3	12	821, FWD CARGO DOOR	52-33-00
CIRCUIT BREAKERS			FLT COMPT, P11	*
DOOR INDICATION, C1406		1	11T33	
CIRCUIT BREAKERS			119AL, MAIN EQUIP CTR, P34	*
CARGO DOOR CONTROL, C1403		1	34J4	
FORWARD CARGO DOOR, C360		1	34J7	
DIODE – (REF 31-01-35, FIG. 101)				
R35				
DOOR – LARGE FORWARD CARGO	1	1	821, FWD CARGO DOOR	52-33-01
DOOR – VENT	3	2	821, FWD CARGO DOOR	52-33-07
HINGE – DOOR	2	2	821, FWD CARGO DOOR	52-33-00
HOOK – PULL-IN	3	2	821, FWD CARGO DOOR	52-33-00
LEVER – STOP	3	1	821, FWD CARGO DOOR	52-33-00
LIGHT – INDICATOR, FWD CARGO DOOR CLOSED LIGHT, L599	8	1	124AR, EXT FWD CARGO DR CONT PNL, P43	52-33-00
LIGHT – INDICATOR, FWD CARGO DOOR OPEN LIGHT, L597	8	1	124AR, EXT FWD CARGO DR CONT PNL, P43	52-33-00
MECHANISM – LATCH/HOOK	1	1	821, FWD CARGO DOOR	52-33-00
MECHANISM – LATCH LOCK HANDLE	2	1	821, FWD CARGO COMPARTMENT	52-33-06
MECHANISM – LIFT DRIVE	1	1	821, FWD CARGO DOOR	52-33-00
PINS – MAIN LATCH	5	12	821, FWD CARGO COMPARTMENT	52-33-09
PINS – MIDSPAN LATCH	5	2	821, FWD CARGO COMPARTMENT	52-33-09
PINS – PULL-IN	5	2	821, FWD CARGO COMPARTMENT	52-33-10
RELAY – (REF 31-01-35, FIG. 101)				
FWD CARGO DOOR HINGE DN, K32				
FWD CARGO DOOR HINGE UP, K31				
FWD CARGO DOOR LATCH, K34				
FWD CARGO DOOR UNLATCH, K33				
SENSOR – (REF 52-71-00, FIG. 101)				
PROXIMITY, DOOR CLOSED INDICATOR, S215				
PROXIMITY, LOCK SECTOR LOCKED INDICATOR, S214				
SENSOR – PROXIMITY, DOOR LATCHED CONTROL, S154	7	1	821, FWD CARGO DOOR	52-33-00
SENSOR – PROXIMITY, DOOR OPEN CONTROL, S151	6	1	821, FWD CARGO COMPARTMENT	52-33-00
SENSOR – PROXIMITY, DOOR OPENING LATCH RANGE, S152	7	1	821, FWD CARGO DOOR	52-33-00
SENSOR – PROXIMITY, DOOR UNLATCHED CONTROL, S150	7	1	821, FWD CARGO DOOR	52-33-00
SENSOR – PROXIMITY, HANDLE UNLOCKED POWER CONTROL, S153	7	1	821, FWD CARGO COMPARTMENT	52-33-00
SWITCH – FWD CARGO DOOR CONTROL, S411	9	1	821, FWD COMPT CARGO HDLG ACCESS PNL, P35	52-33-00
SWITCH – FWD CARGO DOOR CONTROL, S511	8	1	821, EXT FWD CARGO DR CONT PNL, P43	52-33-00
TORQUE TUBE – LATCH/LOCK	1,3	1	821, FWD CARGO DOOR	52-33-00
UNIT – HINGE POWER, M629	4	1	821, FWD CARGO DOOR	52-33-02
UNIT – (REF 32-09-03, FIG. 101)				
PROX SW ELEC, M162				

* SEE THE WDM EQUIPMENT LIST

Large Forward Cargo Door – Component Index
Figure 101

777398

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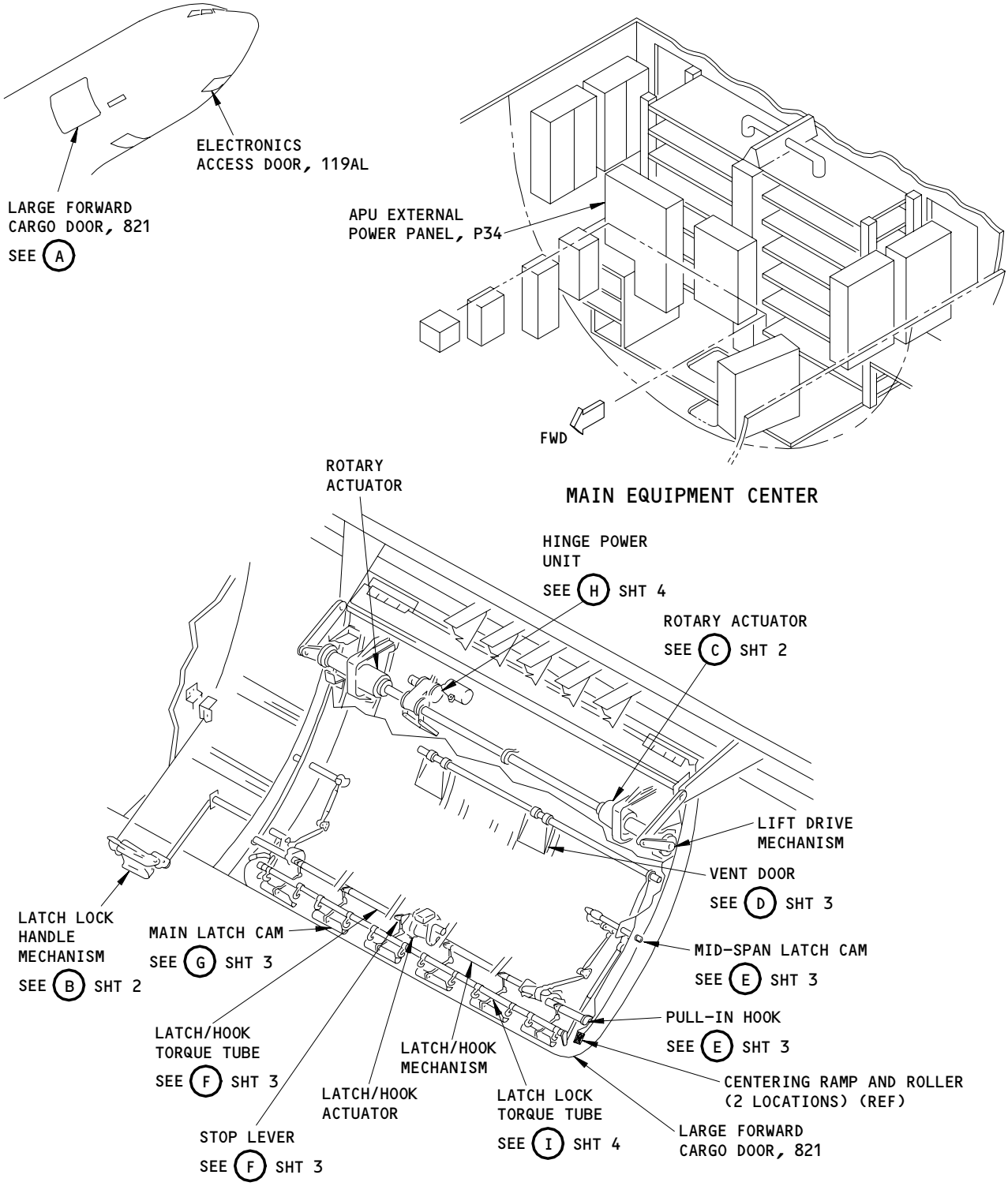

Large Forward Cargo Door - Component Location
Figure 102 (Sheet 1)

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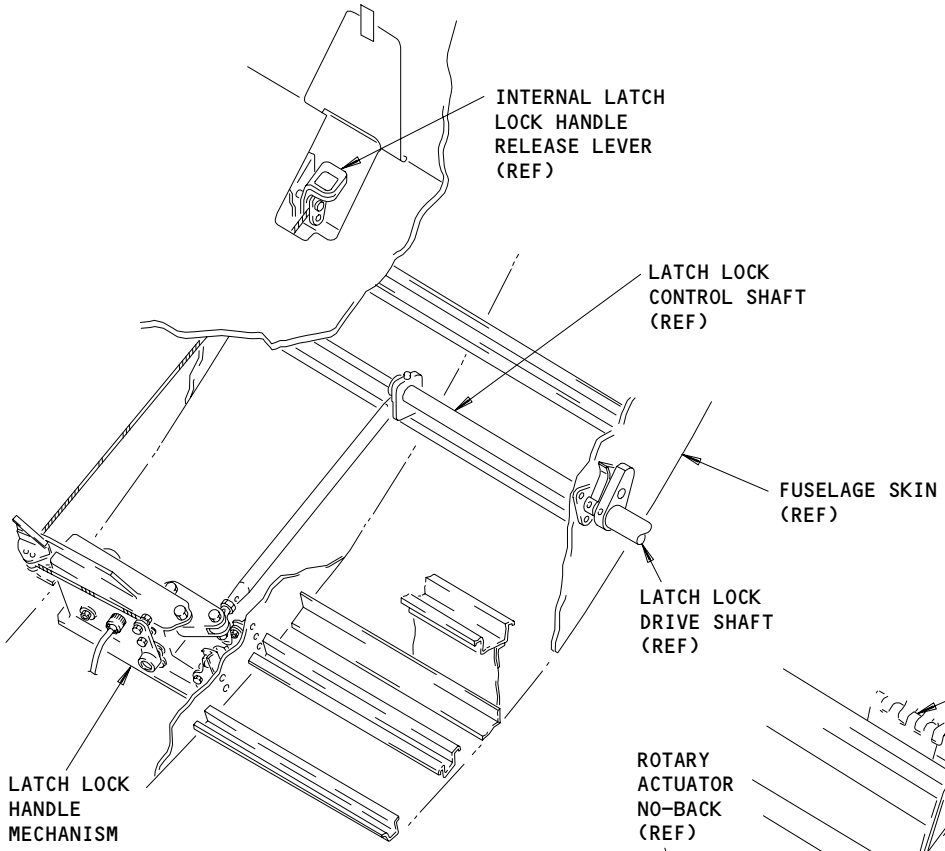
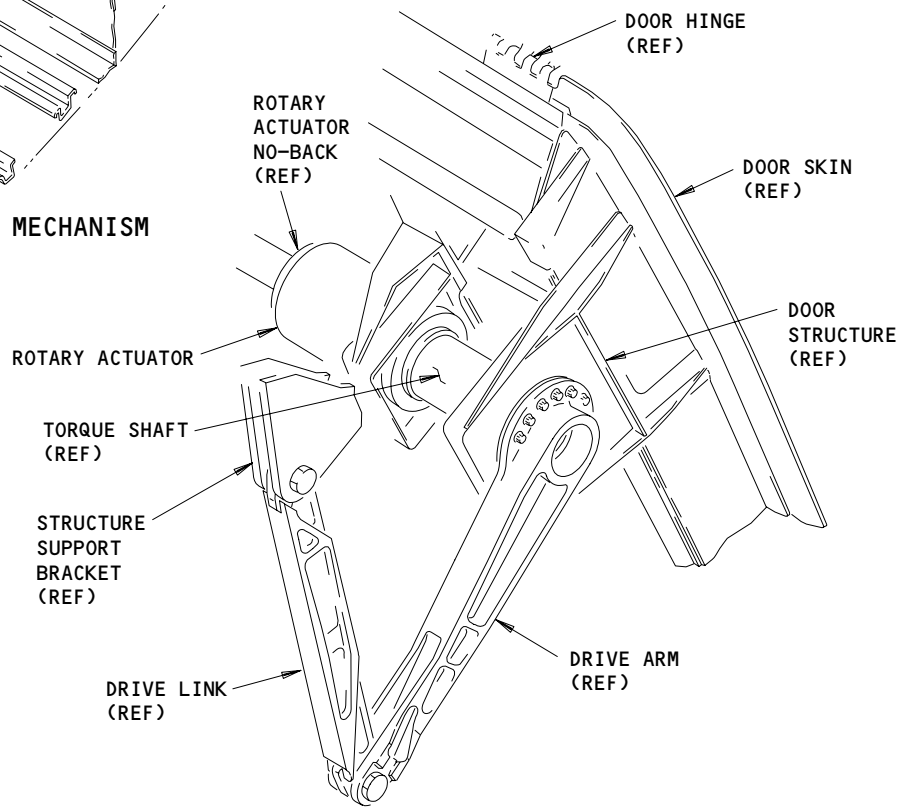


LATCH LOCK HANDLE MECHANISM

B



ROTARY ACTUATOR
(AFT VIEW)

C

Large Forward Cargo Door - Component Location
Figure 102 (Sheet 2)

774324

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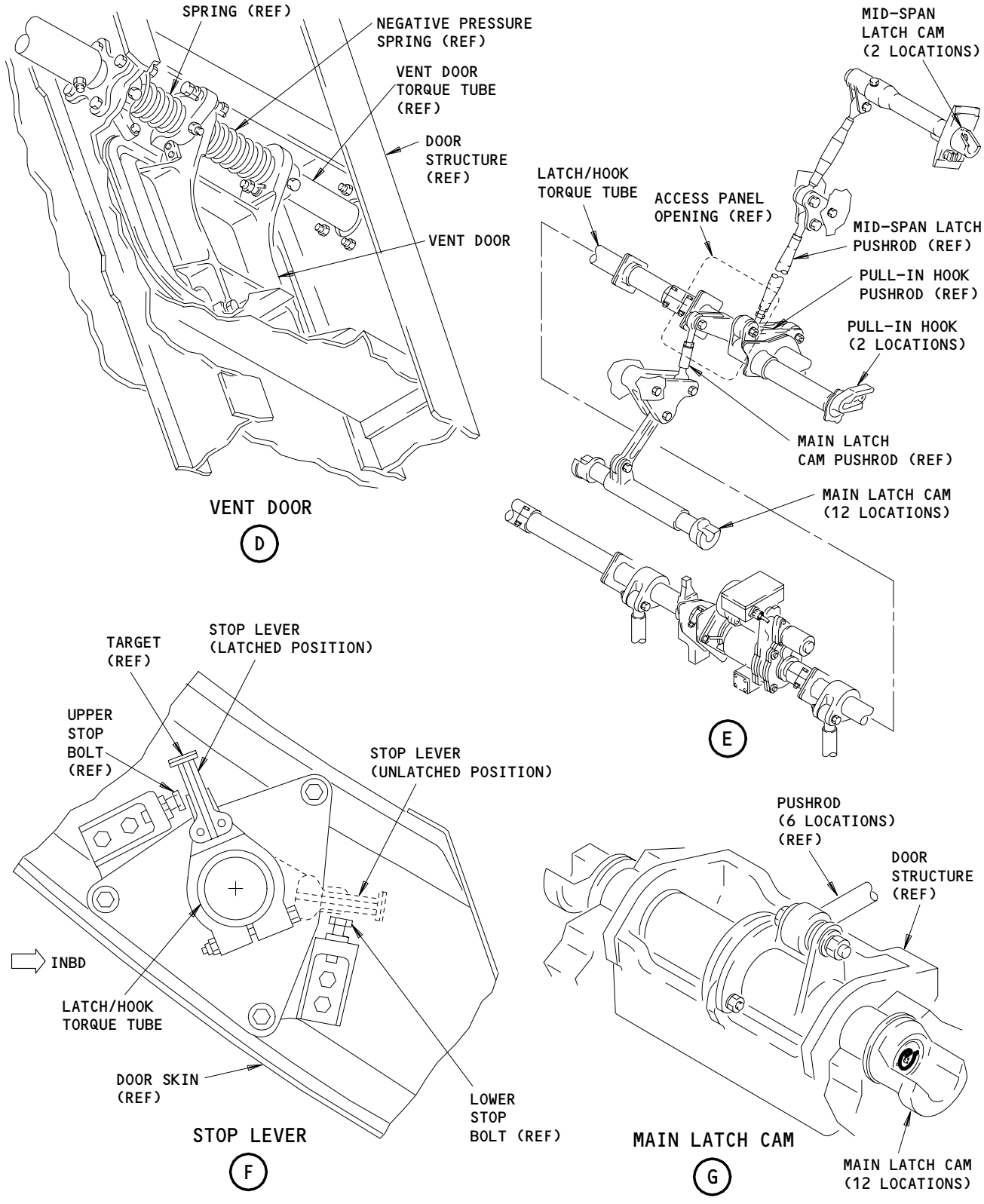

Large Forward Cargo Door - Component Location
Figure 102 (Sheet 3)

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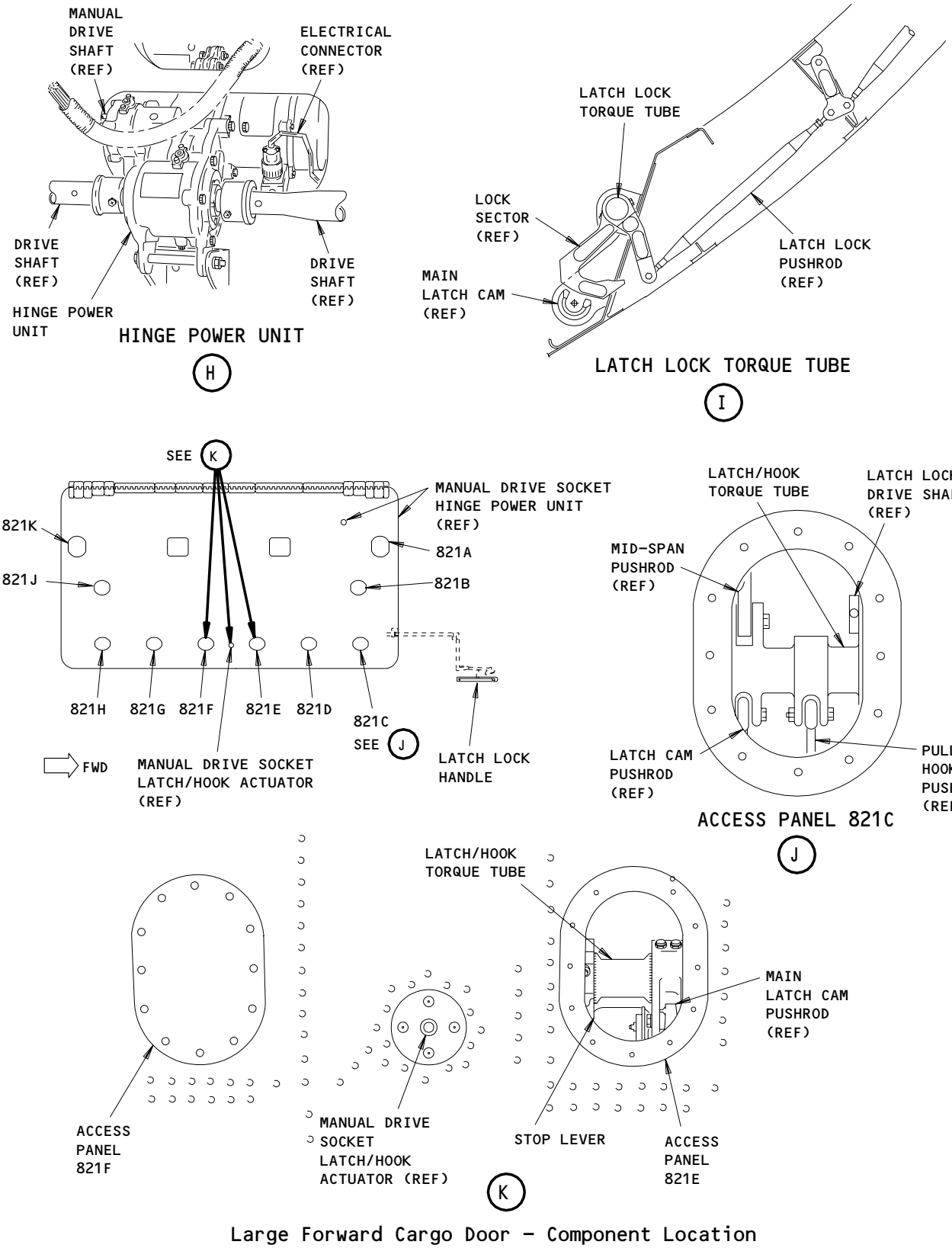

Large Forward Cargo Door - Component Location
Figure 102 (Sheet 4)

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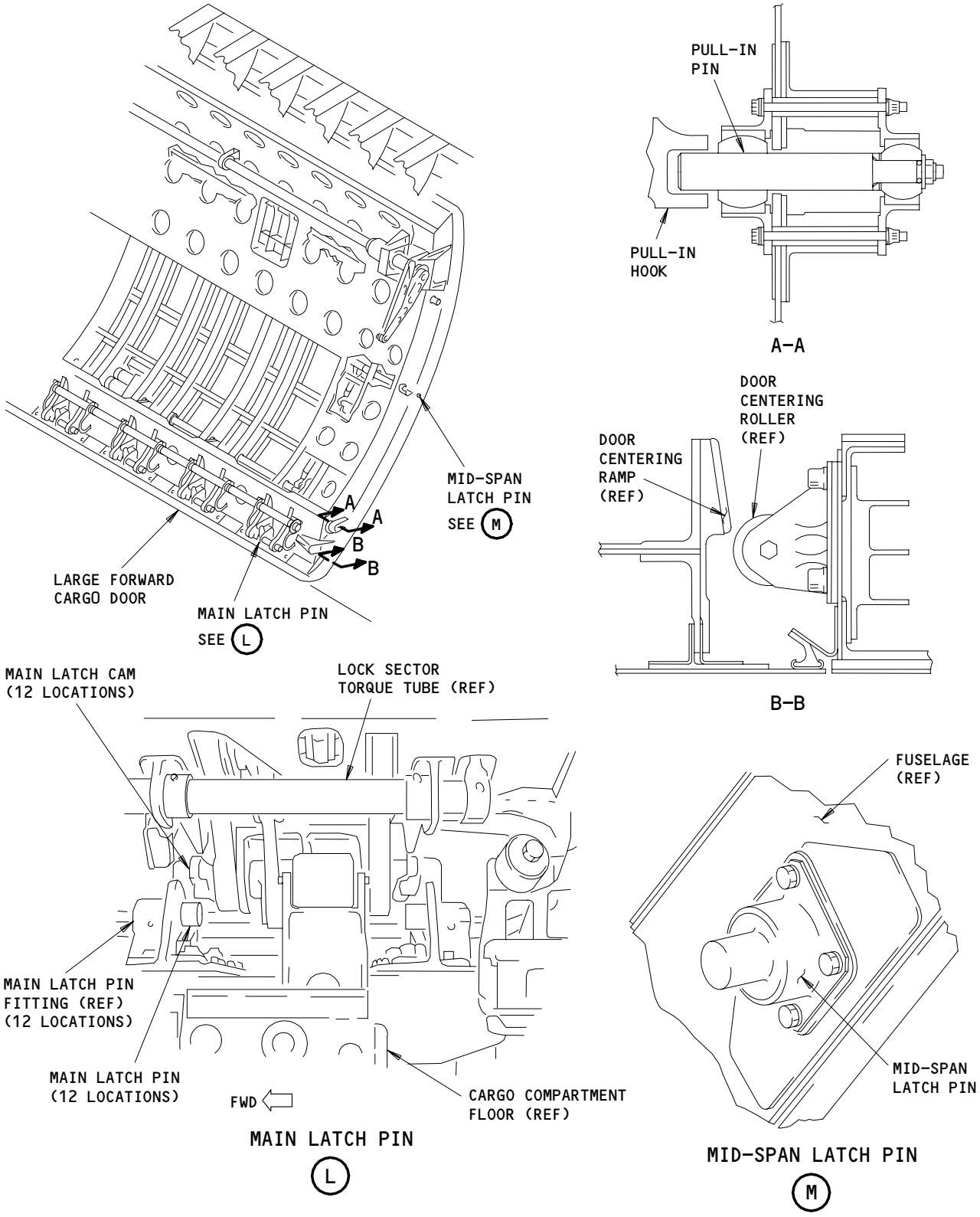

Large Forward Cargo Door - Component Location
Figure 102 (Sheet 5)

774351

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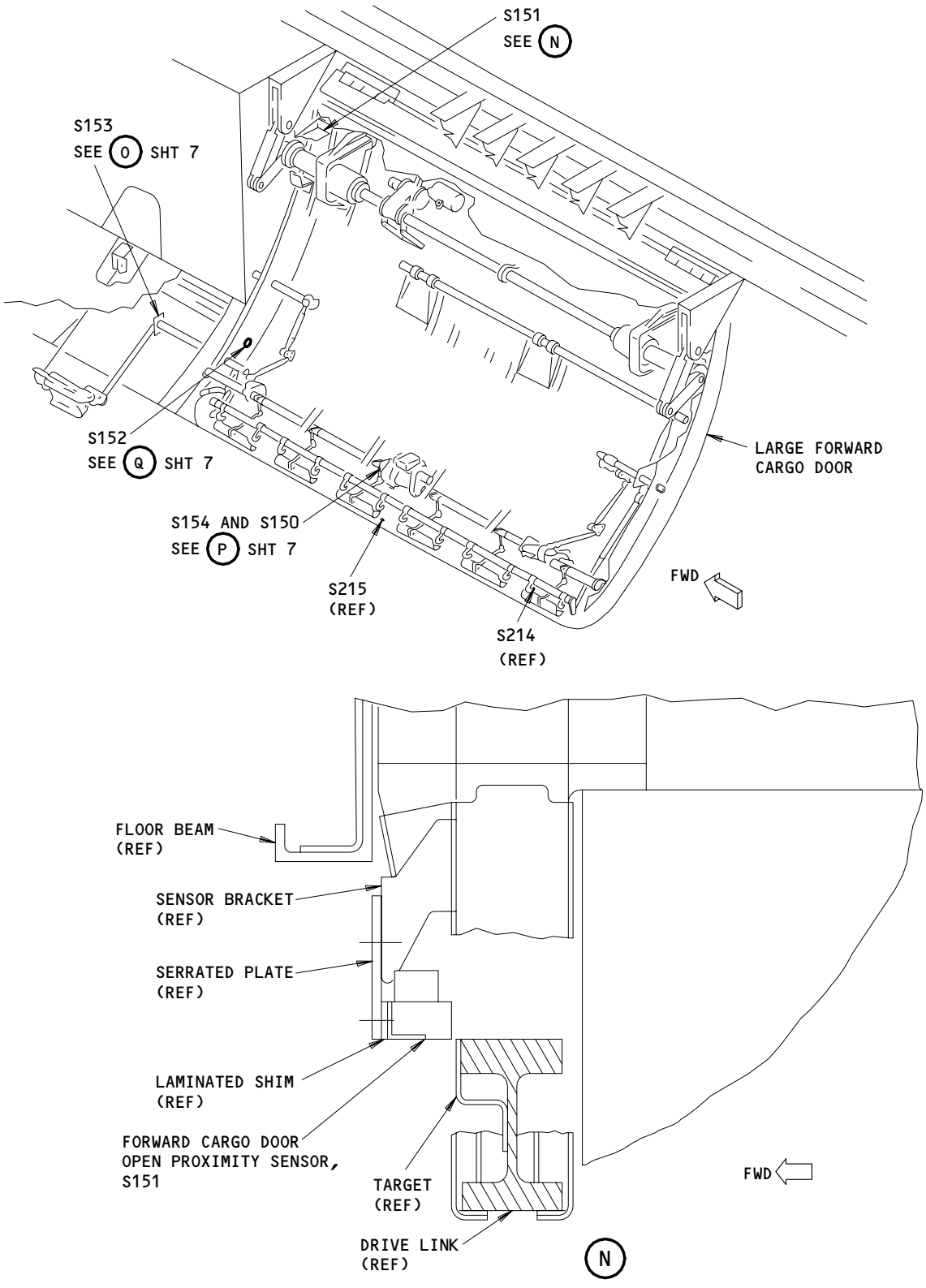

Large Forward Cargo Door – Component Location
Figure 102 (Sheet 6)

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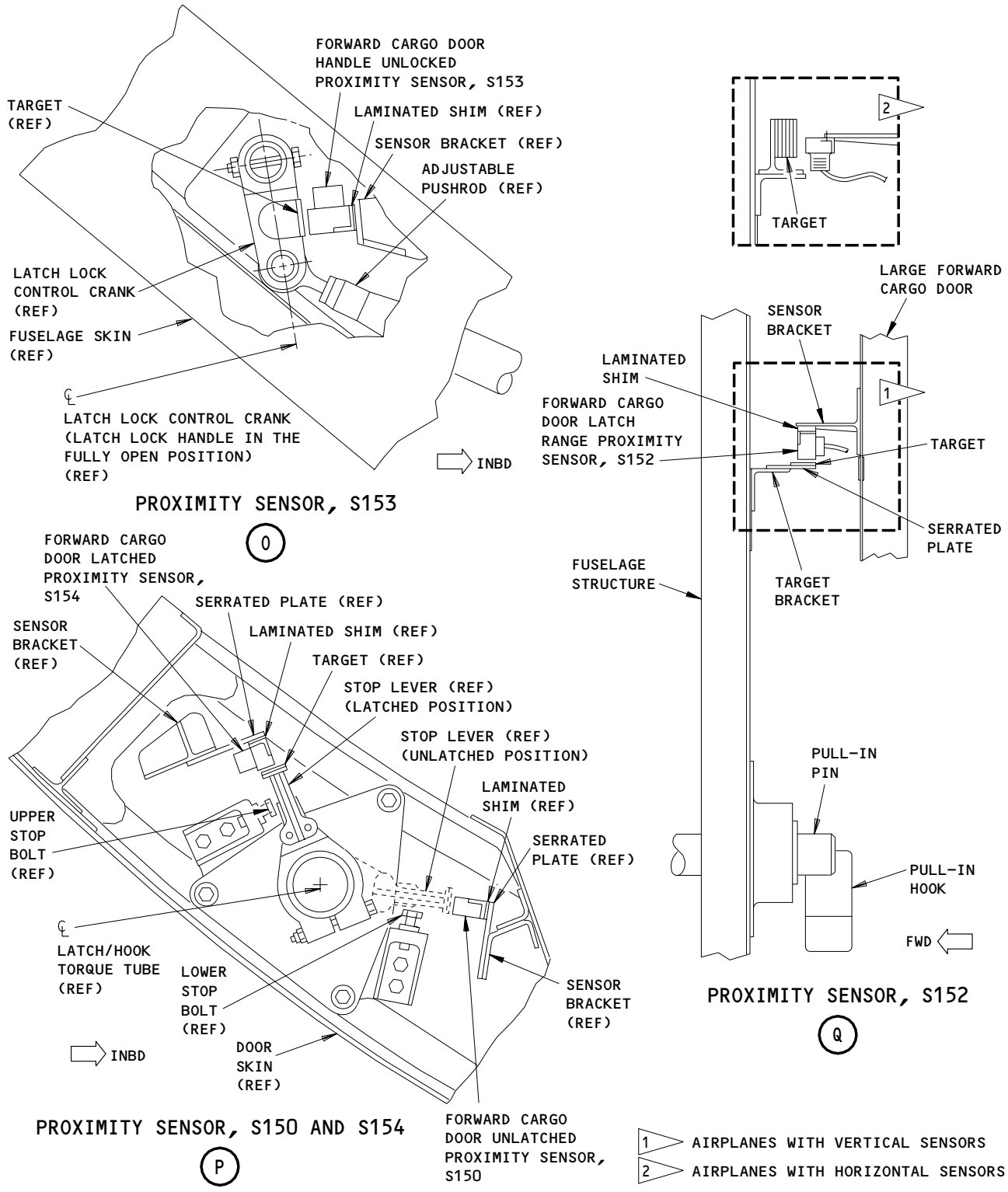

Large Forward Cargo Door - Component Location
Figure 102 (Sheet 7)

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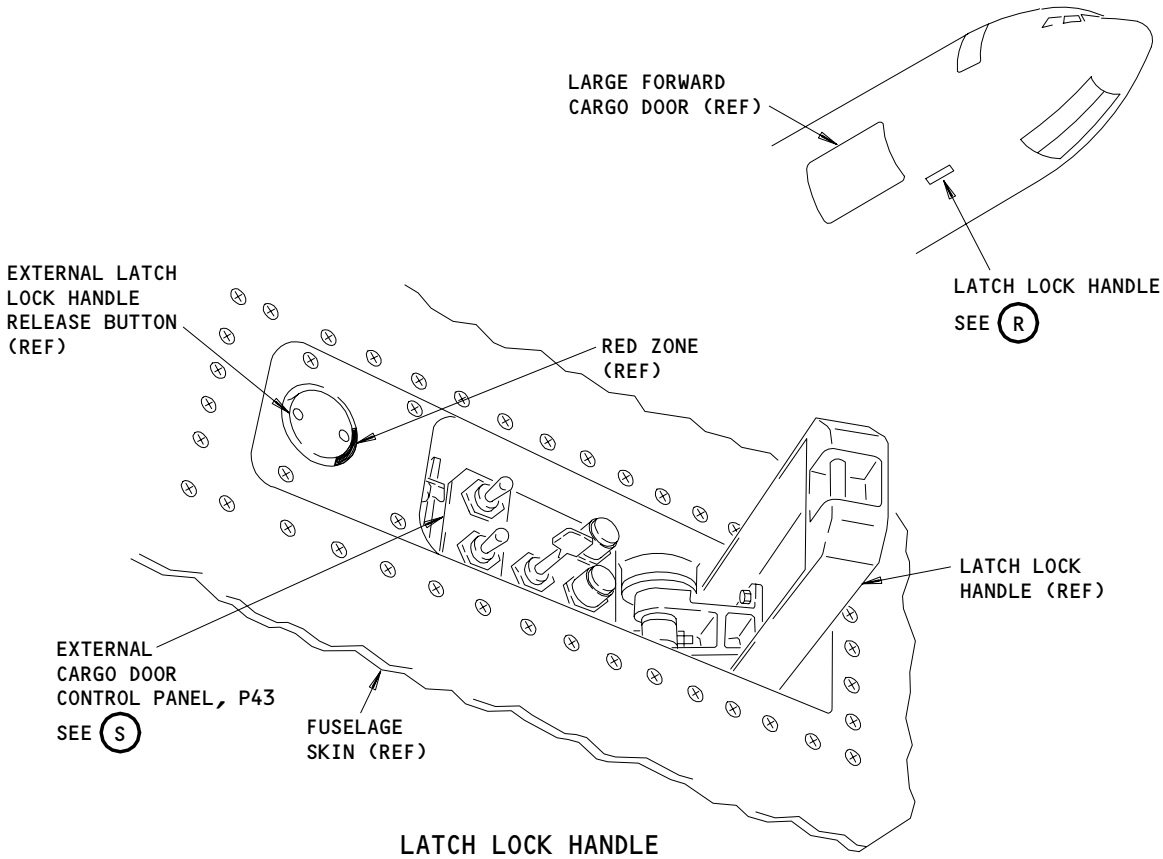
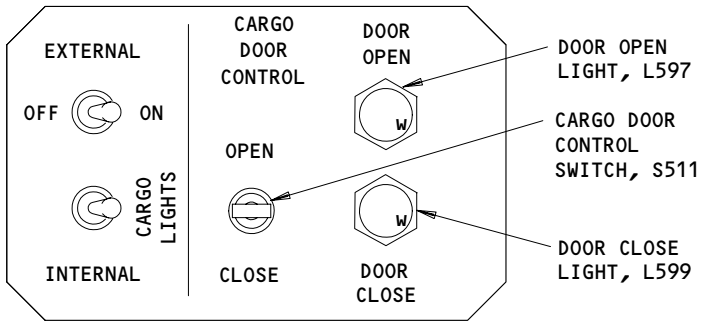


LATCH LOCK HANDLE
(EXAMPLE)
(R)



EXTERNAL CARGO DOOR CONTROL PANEL, P43
(EXAMPLE)
(S)

Large Forward Cargo Door – Component Location
Figure 102 (Sheet 8)

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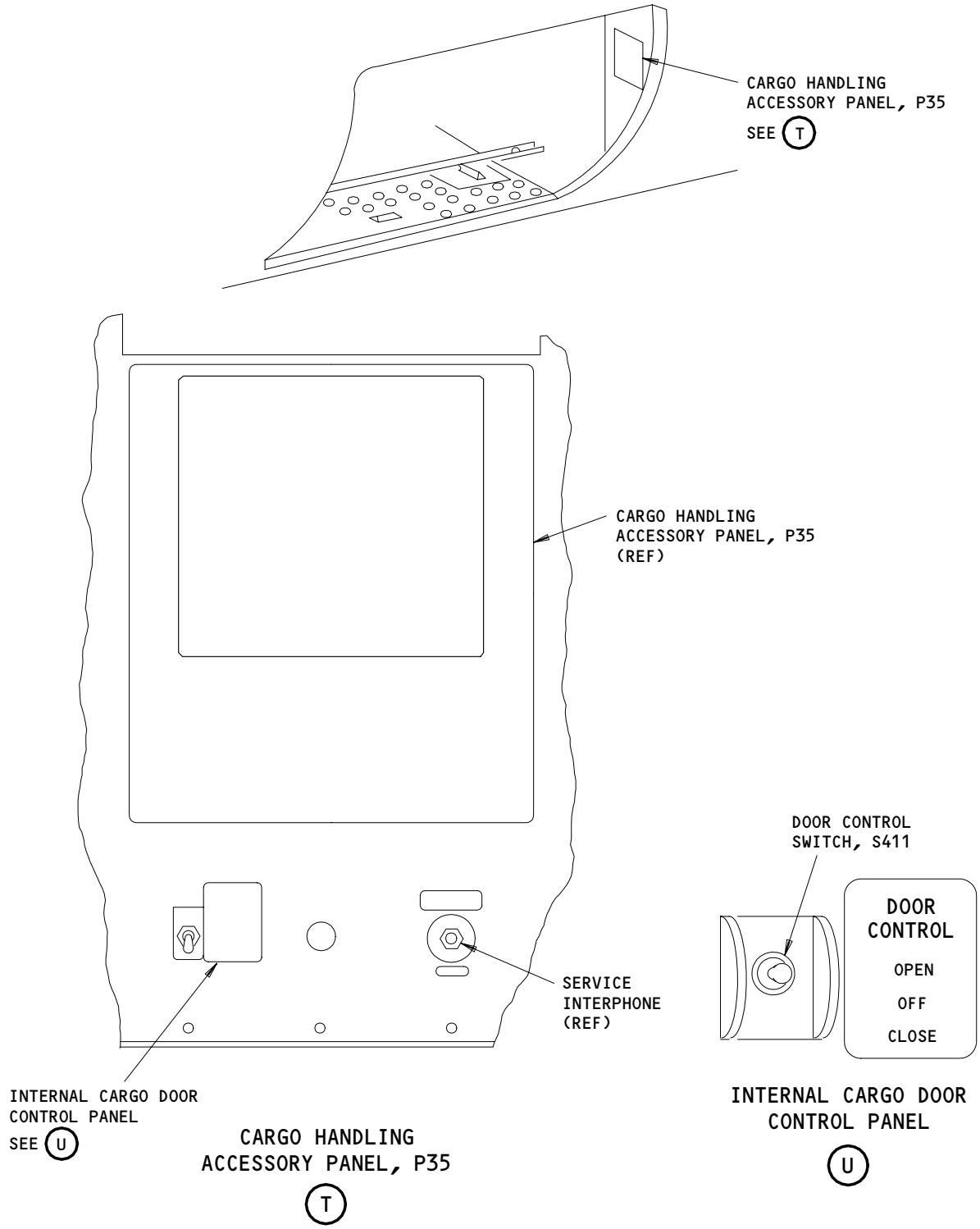

Large Forward Cargo Door - Component Location
Figure 102 (Sheet 9)

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LARGE FORWARD CARGO DOOR - MAINTENANCE PRACTICES

1. General
   A. This procedure contains eight tasks:
      (1) The first task is to electrically open the large forward cargo door.
      (2) The second task is to electrically close the large forward cargo door.
      (3) The third task is to manually open the large forward cargo door.
      (4) The fourth task is to manually close the large forward cargo door.
      (5) The fifth task is to open the large forward cargo door with failure of the hinge power unit (jammed).
      (6) The sixth task is to open the large forward cargo door with failure of the rotary actuator (jammed).
      (7) The seventh task is to open the large forward cargo door with failure of the latch/hook actuator (jammed).
      (8) The eighth task is to apply corrosion prevention treatment.

TASK 52-33-00-862-052

2. Open the Large Forward Cargo Door Electrically
   A. General
      (1) The cargo door can be opened or closed from the inner or outer side of the airplane, but the latch lock handle mechanism can only be closed from the outer side.

      CAUTION: DO NOT LET THE DOOR STAY OPEN IN WINDS MORE THAN 65 KNOTS. STRONG WINDS CAN CAUSE DAMAGE TO THE DOOR. IF THE WIND VELOCITY IS LESS THAN BUT NEAR TO 40 KNOTS, DO NOT OPERATE THE DOOR MORE THAN TWO COMPLETE OPEN/CLOSE CYCLES IN 5 MINUTES. IF YOU OPEN AND CLOSE THE DOOR TOO MANY TIMES IN HIGH WINDS THE THERMAL OVERLOAD DEVICE WILL BE ACTUATED.

      (2) Do not operate the door in high winds.
   B. Access
      (1) Location Zone
          821 Forward Cargo Door

   C. Procedure

      S 862-040
      (1) Connect the electrical power.

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S 862-041

(2) Push the external latch lock handle release button or the internal release lever and make sure the latch lock handle moves to the fully open position.

S 862-042

(3) Hold the external or internal door control switch in the OPEN position until the door is in the fully open position.

NOTE: You can stop or change the direction of the door movement at any time, if you put the door control switch in the OFF or CLOSE position.

The time to open the door is approximately 50 seconds.

S 492-043

(4) Install the safety barrier, A52007-1, across the door opening if you do work near the open door.

TASK 52-33-00-862-053

3. Close the Large Forward Cargo Door Electrically

A. General

(1) The cargo door can be opened or closed from the inner or outer side of the airplane, but the latch lock handle mechanism can only be closed from the outer side.

CAUTION: DO NOT LET THE DOOR STAY OPEN IN WINDS MORE THAN 65 KNOTS. STRONG WINDS CAN CAUSE DAMAGE TO THE DOOR. IF THE WIND VELOCITY IS LESS THAN BUT NEAR TO 40 KNOTS, DO NOT OPERATE THE DOOR MORE THAN TWO COMPLETE OPEN/CLOSE CYCLES IN 5 MINUTES. IF YOU OPEN AND CLOSE THE DOOR TOO MANY TIMES IN HIGH WINDS THE THERMAL OVERLOAD DEVICE WILL BE ACTUATED.

(2) Do not operate the door in high winds.

B. Access

(1) Location Zone

821 Forward Cargo Door

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C. Procedure

S 862-044

(1) Hold the external or internal door control switch in the CLOSE position until the door is in the fully closed and latched position.

NOTE: Hold the door control switch in the CLOSE position for approximately 3 seconds after the door is aligned with the fuselage to let the main latch cams move to the fully latched position.

S 212-045

(2) Make sure the vent doors are open before you close the latch lock handle.

S 862-046

CAUTION: MAKE SURE YOU CANNOT SEE THE RED ZONE THAT IS FORWARD OF THE LOCK HANDLE RELEASE BUTTON. IF YOU CAN SEE THE RED ZONE, THE LATCH LOCK HANDLE MECHANISM CAN UNLOCK.

(3) Close the latch lock handle to the locked position.

S 212-047

(4) Make sure this EICAS message, FWD CARGO DOOR, does not show on the top display.

S 222-048

(5) After you closed the latch lock handle, make sure the vent doors are fully closed or open no more than 0.50 inch at the lower edge.

NOTE: The seals on the vent door can cause the doors to not fully close until the airplane is pressurized.

S 212-049

(6) Look through the view ports (12 locations) on the external side of the cargo door. Make sure you see the green alignment mark on each of the main latch cams.

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S 212-051
(7) AIRPLANES WITH AN ALIGNMENT MARK ON THE LATCH PIN FITTINGS (POST SB 52-59 OR PRR B12184);
Make sure the green alignment mark on the main latch cam is fully in the limits of the larger green alignment mark on the main latch pin fitting.

TASK 52-33-00-862-001

4. Manually Open the Large Forward Cargo Door

A. General

CAUTION: DO NOT LET THE DOOR STAY OPEN IN WINDS MORE THAN 65 KNOTS. STRONG WINDS CAN CAUSE DAMAGE TO THE DOOR.

(1) Do not operate the door in high winds.

B. Access

(1) Location Zone
821 Forward Cargo Door

C. Procedure

S 862-058
(1) Push the latch lock handle release button. Make sure the latch lock handle moves to the fully down position.

S 862-003

CAUTION: DO NOT LET THE LATCH/HOOK ACTUATOR OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE LATCH/HOOK ACTUATOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 70 POUND-INCHES. INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE LATCH/HOOK ACTUATOR.

(2) Put a 3/8-inch square drive speed wrench in the manual drive socket of the latch/hook actuator.

S 862-004
(3) Turn the speed wrench clockwise approximately 115 turns to the fully not latched and not hooked position of the cargo door.

NOTE: The stops that prevent travel are touched when you feel or hear clutch slippage. The cargo door moves outboard approximately 2.6 inches when the stops are touched.

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S 862-005

CAUTION: DO NOT LET THE HINGE POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE HINGE POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 190 POUND-INCHES. INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE HINGE POWER UNIT.

(4) Put a 3/8-inch square drive speed wrench in the manual drive socket of the hinge power unit that is found on the external surface of the door near the forward side.

S 862-006

(5) Turn the speed wrench counterclockwise until the lower part of the cargo door turns 6 feet from the lower fuselage frame.

NOTE: It is usual for the door to stop at the lowest point of its travel.

S 862-007

(6) Move the 3/8-inch square drive speed wrench to the manual drive socket of the hinge power unit that is found on the forward edge of the cargo door.

S 862-008

(7) Turn the speed wrench counterclockwise until the cargo door is in the fully open position and you can feel or hear clutch slippage.

TASK 52-33-00-862-009

5. Manually Close the Large Forward Cargo Door

A. General

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CAUTION: DO NOT LET THE DOOR STAY OPEN IN WINDS MORE THAN 65 KNOTS. STRONG WINDS CAN CAUSE DAMAGE TO THE DOOR.

(1) Do not operate the door in high winds.

B. Access

(1) Location Zone

821 Forward Cargo Door

C. Procedure

S 862-010

CAUTION: DO NOT LET THE HINGE POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE HINGE POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 190 POUND-INCHES. INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE HINGE POWER UNIT.

(1) Put a 3/8-inch square drive speed wrench in the manual drive socket of the hinge power unit that is found on the forward edge of the cargo door.

S 862-011

(2) Turn the speed wrench clockwise until the lower part of the cargo door is approximately 6 feet from the lower fuselage frame.

S 862-012

(3) Move the 3/8-inch square drive speed wrench to the manual drive socket of the hinge power unit found on the external surface of the door near the forward side.

S 862-013

(4) Turn the speed wrench clockwise until the lower edge of the cargo door is 2.6 inches from the fuselage skin.

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S 862-014

CAUTION: DO NOT LET THE LATCH/HOOK ACTUATOR OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE LATCH/HOOK ACTUATOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 70 POUND-INCHES. INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE LATCH/HOOK ACTUATOR.

(5) Put a 3/8-inch square drive speed wrench in the manual drive socket of the latch/hook actuator.

S 862-015

(6) Turn the speed wrench counterclockwise approximately 115 turns to the fully latched position until you can feel or hear the clutch slippage of the latch/hook actuator.

S 862-016

(7) Push the latch lock handle up into the housing to manually lock the cargo door. Do the steps that follow:
   (a) Make sure this EICAS message, FWD CARGO DOOR, does not show on the top display.
   (b) Make sure the CARGO DOORS indicator light on the overhead annunciator panel is off.
   (c) Make sure the vent doors were open before you moved the latch lock handle.
   (d) Make sure the vent doors closed while you closed the latch lock handle.

S 222-019

(8) Make sure the vent doors are in the fully closed position or open not more than 0.50 inch at the lower edge.

NOTE: The seals on the vent doors can cause the vent doors to not fully close until the airplane is pressurized.

S 862-020

(9) Make sure the latch lock handle release button and the button seal make a smooth surface. Make sure you cannot see the red zone immediately forward of the release button.

NOTE: If you can see the red zone, the latch lock system is not fully locked.

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S 212-020
(10) Look through the 12 view ports on the external side of the cargo door. Make sure you see the green alignment mark on each of the main latch cams.

S 212-054
(11) AIRPLANES WITH AN ALIGNMENT MARK ON THE LATCH PIN FITTINGS (POST SB 52-59 OR PRR B12184);
Make sure the green alignment mark on the main latch cam is fully in the limits of the larger green alignment mark on the main latch pin fitting.

TASK 52-33-00-862-022

6. Open the Cargo Door with Failure of the Hinge Power Unit (Jammed)

A. Access

(1) Location Zone
821 Forward Cargo Door

B. Procedure

S 862-023
(1) Hold the cargo door at the lower edge to prevent the door from sudden movement in the open direction.

S 012-024
(2) Remove the external access doors 821 A and 821 K.

S 032-025
(3) Through the access doors, remove the lockwire, bolt, and pin at the joint between the drive arm and the drive link at the forward and aft sides of the cargo door.

S 862-026
(4) At the forward side of the cargo door, loosen the electrical conduit and move the conduit to make it loose when the door opens.

S 862-027

WARNING: BE CAREFUL WHEN YOU OPEN THE LATCH LOCK HANDLE. THE CARGO DOOR WILL MOVE IN THE OPEN DIRECTION WHEN THE PULL-IN HOOKS RELEASE AND CAN CAUSE INJURY OR DAMAGE.
(5) Open the latch lock handle to unlock the cargo door.

S 862-028
(6) Operate the manual drive of the latch/hook actuator to open the main latches and the pull-in hooks.

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S 862-029
(7) Slowly turn back the support for the cargo door approximately 18 inches to get access to the inner side of the cargo door to replace the hinge power unit.

TASK 52-33-00-862-030

7. Open the Cargo Door with Failure of the Rotary Actuator (Jammed)

A. Access

(1) Location Zone
821 Forward Cargo Door

B. Procedure

S 862-031
(1) Do the "Open the Cargo Door with Failure of the Hinge Power Unit (Jammed)" procedure.

TASK 52-33-00-862-032

8. Open the Cargo Door with Failure of the Latch/hook Actuator (Jammed)

A. Access

(1) Location Zone
821 Forward Cargo Door

B. Procedure

S 012-033
(1) Remove the 8 external access doors 821 B through 821 J to get access to the main latches and the mid-span latches.

S 032-034
(2) Disconnect the pushrod from each of the two mid-span latches and use a strap wrench to turn the mid-span latches to the not latched position.

S 032-035
(3) Disconnect the pushrod from the idler assembly at the main latch cams (6 locations).

S 862-036
(4) Hit lightly the idler assembly to move each of the main latch cams to the not latched position.

NOTE: You can use the 12 view ports to see the latched position of the main latch cams.

S 032-037
(5) Disconnect the pushrod from the pull-in hook bellcrank at the forward and aft ends of the cargo door.

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S 862-038

(6) Use a strap wrench to move the pull-in hooks to the open position.

S 862-039

(7) Use the manual drive of the hinge power unit to open the cargo door approximately 18 inches to get access to the inner side of the cargo door to replace the latch/hook actuator.

TASK 52-33-00-622-078

9. Corrosion Prevention Treatment (Fig. 201)

A. General

(1) The cargo door has a corrosion protective finish that consists of chemical finish (Alodine) on clad aluminum parts, anodize surface treatment on non-clad aluminum parts and a coat of BMS 10-11, Type I, primer. The exterior surface of the door is unfinished unless otherwise requested by the operator. Aluminum parts are coated with BMS 10-11, Type II, white enamel. All interior surfaces are coated with BMS 3-23, Type II, corrosion preventive compound after assembly and painting.

(2) Areas of possible corrosion are the internal structure of the door, connection points, mechanisms and on airplanes with the large cargo door, the large cargo door latch fitting fasteners and lower sill.

(3) The cargo door should be treated with corrosion preventive compound at the same time as the cargo door opening.

(4) Following cleaning of suspected areas (Ref AMM 51-21-03/701), a full inspection is effective to make sure that protective finishes provided during manufacture stay intact. For details on the application of corrosion preventive compound, refer to AMM 51-24-09/701.

(5) For minor corrosion, to keep the downtime of the airplane to a minimum, the corrosion products should be cleaned off, followed by the application of a corrosion preventive compound into the affected area to decrease the corrosion process (Ref AMM 51-24-09/701). The finish system should be repaired at the first opportunity consistent with the maintenance schedule.

(6) Frequency of Application

(a) Periodic inspection is required in areas that can get corrosion and should be consistent to schedules specified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.

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(b) Periodic application of BMS 3-23 compounds is necessary on areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

(7) Obey the precautions that follow when applying the corrosion preventive compound:

(a) Do not apply corrosion preventive compounds on grease joints or sealed bearings. These compounds dissolve grease and other lubricants. They are penetrating compounds and can get around the seals and into the bearings.

(b) Do not apply corrosion preventive compounds on interior materials such as cargo liners. The compounds change the flammable quality of these materials.

B. References

(1) AMM 12-21-22/301, Forward and Aft Cargo Door

C. Consumable Materials

(1) G00009 Compound, Organic Corrosion Preventive - BMS3-23, Type II

D. Access

(1) Location Zone

821 Forward Cargo Door

E. Prepare for the Corrosion Prevention Treatment

S 012-074

(1) Remove cargo door liner and gain access to interior structure of the door.

S 162-075

(2) Clean out drains and drain paths.

(a) Make sure that the drain valve is free to open and close.

CAUTION: EXCESSIVE TIGHTENING OF PLUNGER TYPE DRAIN VALVE WILL CAUSE VALVE FLANGE TO CRACK OR BREAK.

(b) If necessary, remove plunger type drain valve from outside of door, clean out obstructions and install valve until flange contacts skin.

F. Procedure

S 622-076

(1) Apply the corrosion prevention treatment, do these steps:

(a) Apply corrosion preventive compound BMS 3-23, Type II, to the interior of the door, giving special attention to the lower corners. Do not apply to drain valves or other operational mechanisms.

(b) Lubricate the interior door fitting, as necessary (Ref AMM 12-21-22/301).

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S 412-077

(2) Install the cargo door liner and put the door back to its usual condition.

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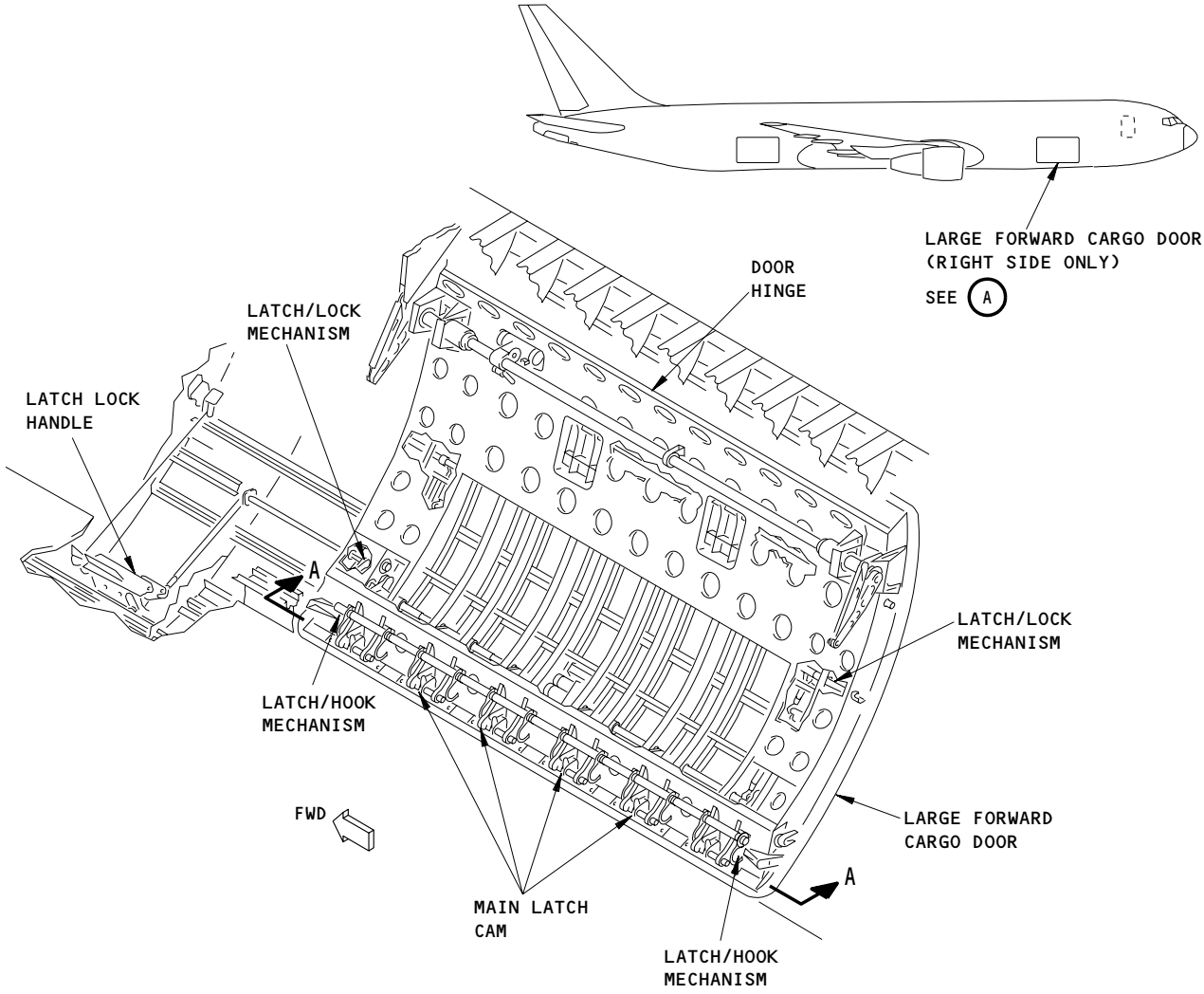
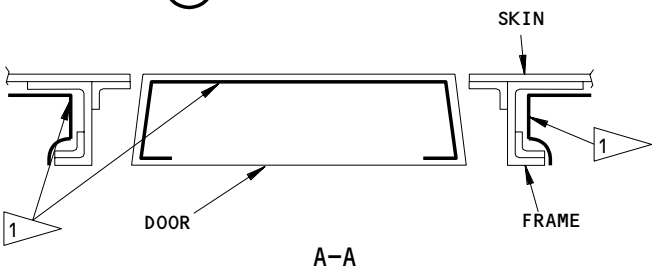


LARGE CARGO DOOR
(FORWARD AND AFT DOORS ARE SIMILAR)

A



A-A

1 APPLY BMS 3-23, TYPE II CORROSION PREVENTIVE COMPOUND TO STRUCTURAL SURFACES. MASK ALL OPERATIONAL MECHANISMS AND VISIBLE AREAS.

Large Forward Cargo Door - Corrosion Prevention
Figure 201

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LARGE FORWARD CARGO DOOR - ADJUSTMENT/TEST

1. General
   A. This procedure contains three tasks. The first task is the operational test of the large forward cargo door. The second task is the adjustment of the large forward cargo door. The third task is the system test of the large forward cargo door.
   B. Refer to AMM 52-71-00/501 for the adjustment and the system test of the proximity sensors for the door warning system.

TASK 52-33-00-715-001

2. Operational Test - Large Forward Cargo Door
   A. General
      (1) The operational test is a check of the cargo door operation to make sure the movement is smooth, the latch mechanisms engage correctly, and each operation mechanism follows the correct electrical sequence.
      (2) The operational test is also a check of the correct indication of the condition of the door at the control panels and the flight deck.
      (3) Do the test with the airplane on its landing gear and empty.
   B. Equipment
      (1) A27092-61 Actuator/Deactuator Set - Proximity Sensor (2 rectangular sensor actuators)
   C. References
      (1) AMM 24-22-00/201, Electrical Power - Control
      (2) AMM 52-33-09/201, Large Forward Cargo Door Latch Cams and Latch Pins
   D. Access
      (1) Location Zone
          821 Forward Cargo Door

   E. Procedure - Do the Operational Test - Large Forward Cargo Door

      S 865-002
      (1) Supply electrical power (AMM 24-22-00/201).

      S 715-003
      (2) Push the latch lock handle release button to manually unlock the cargo door (View B, Fig. 501). Make sure the latch lock handle moves to the fully open position.

      S 215-244
      (3) Make sure the vent doors are in the fully open position (View A, Fig. 501).

      S 215-246
      (4) Make sure this EICAS message, FWD CARGO DOOR, shows on the top display.

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S 215-247

(5) Make sure the CARGO DOORS indicator light on the annunciator panel is on.

S 715-004

(6) Hold the internal or external cargo door control switch in the OPEN position to open the cargo door (Fig. 501 and 502). While the door opens, do the steps that follow:
   (a) Make sure the hinge power unit, rotary actuators, and latch/hook actuator operate in the correct sequence.
   (b) Make sure the cargo door moves smoothly and continuously to the fully open position.
   (c) Make sure the DOOR OPEN light on the external cargo door control panel, P43, is on when the cargo door stops automatically at the fully open position.

S 715-359

(7) Do a test on the cargo door indication proximity sensors:
   (a) Open the forward cargo door.
   (b) Make sure this EICAS message, FWD CARGO DOOR, shows on the top display.
   (c) Install the proximity sensor actuators on the cargo door locked proximity sensor, S214 and on the cargo door closed proximity sensor, S215.
   (d) Make sure this EICAS message, FWD CARGO DOOR does not show.
   (e) Remove the proximity sensor actuator from the cargo door closed proximity sensor, S215.
   (f) Make sure this EICAS message, FWD CARGO DOOR shows on the top display.
   (g) Install the proximity sensor actuator on the cargo door closed proximity sensor, S215 (Fig. 525).
   (h) Make sure this EICAS message, FWD CARGO DOOR does not show.
   (i) Remove the proximity sensor actuator from the cargo door locked proximity sensor, S214.

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(j) Make sure this EICAS message, FWD CARGO DOOR shows on the top display.
(k) Remove the proximity sensor actuator from the cargo door closed proximity sensor, S215.
(l) Close and latch the forward cargo door.
(m) Make sure the EICAS message, FWD CARGO DOOR does not show.

S 715-008
(8) Hold the external cargo door control switch in the CLOSE position until the cargo door closes and latches. While the door closes, do the steps that follow:
(a) Make sure the hinge power unit, rotary actuators, and latch/hook actuator operate in the correct sequence.
(b) Make sure the cargo door moves smoothly and continuously to the fully closed and latched position.
(c) Make sure the DOOR CLOSE light on the external cargo door control panel, P43, is on when the cargo door stops automatically at the fully closed and latched position.

S 715-009
(9) Push the latch lock handle up into the housing to manually lock the cargo door. While you lock the door, do the step that follows:
(a) Make sure the vent doors close tightly.

S 215-139
(10) Make sure this EICAS message, FWD CARGO DOOR, does not show on the top display.

S 215-140
(11) Make sure the CARGO DOORS indicator light on the annunciator panel is off.

S 215-141
(12) Make sure the cargo door has the correct flushness with the fuselage.

S 865-010
(13) Make sure the cargo door is in the fully closed and latched position.
(a) Look through the 12 view ports on the external side of the cargo door (View A, Fig. 501). Make sure you see the green alignment mark on each of the main latch cams (AMM 52-33-09/201).

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(b) AIRPLANES WITH AN ALIGNMENT MARK ON THE LATCH PIN FITTINGS (POST SB 52-59 OR PRR B12184);
Make sure the green alignment mark on the main latch cam is fully in the limits of the larger green alignment mark on the main latch pin fitting.

TASK 52-33-00-825-013

3. Adjustment - Large Forward Cargo Door

A. Equipment
(1) Rig Pins from set A20004-X (AMM 20-10-24)
(a) LCD1 - P/N A20004-5
(b) LCD2 - P/N A20004-8
(c) LCD3 - P/N A20004-5
(d) LCD4 - P/N A20004-8
(e) LCD5 - P/N A20004-8
(f) LCD6 - P/N A20004-8
(2) Adjustment Set - Large Forward Cargo Door Main Latch Pin - A52014-1
(3) Force Gage - commercially available:
(a) 0-100 Pounds (Compression)
FDV 100 Wagner Instruments or equivalent (Optional)
(b) 0-100 Pounds (Compression)
DPPH-200 Analog Force Gage (Recommended)

B. Consumable Materials
(1) A00247 Sealant - BMS 5-95, Class C

C. References
(1) AMM 25-53-03/401, Ball Transfer Panel
(2) AMM 52-09-02/401, Cargo Door Seals
(3) AMM 52-33-00/201, Large Forward Cargo Door
(4) AMM 52-33-05/401, Large Forward Cargo Door Lift Drive Mechanism
(5) AMM 52-71-00/501, Door Warning System
(6) AMM 52-71-02/201, Large Forward Cargo Door Warning System

D. Access
(1) Location Zone
821 Forward Cargo Door

E. Prepare to Adjust the Large Forward Cargo Door

S 035-145
(1) Remove the main latch pins (12 locations) (Fig. 503).

S 035-146
(2) Remove the laminated shim from the door centering roller fitting (2 locations) (View E-E, Fig. 506).

S 035-147
(3) Remove the laminated shim from the bumper (View F-F, Fig. 506).

F. Adjust the Lift Drive Mechanism

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S 865-148

WARNING: DO NOT ADJUST THE LIFT DRIVE MECHANISM WHEN THE DOOR IS IN THE FULLY OPEN POSITION. THE DOOR CAN CLOSE SUDDENLY AND CAUSE INJURY TO PERSONS.

(1) Operate the manual drive of the hinge power unit to put the cargo door in the vertical, free-hang position.

S 495-149

(2) Put a block in the front of the cargo door to prevent the movement of the door in the open direction.

S 035-150

(3) Disconnect the drive shafts from the forward and aft rotary actuators (View A, Fig. 507).

S 825-151

CAUTION: DO NOT PUT A TORQUE OF MORE THAN 35 POUND-INCHES ON THE INPUT TO THE ROTARY ACTUATOR. IF YOU PUT TOO MUCH TORQUE ON THE INPUT TO THE ROTARY ACTUATOR, DAMAGE TO THE EQUIPMENT CAN OCCUR.

(4) Turn with your hand the input to the forward rotary actuator in the door open direction (clockwise, forward view) until you feel resistance and the free play between the rotary actuator and the drive arm is removed.

NOTE: When the torque of the rotary actuator input suddenly increases, the free play is removed. The free play is removed in approximately 3.4 turns.

S 435-152

(5) Connect the drive shaft to the forward rotary actuator. If the drive shaft splines and the rotary actuator splines do not align, turn the rotary actuator input in the door open direction to align the splines.

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S 825-153

CAUTION: DO NOT PUT A TORQUE OF MORE THAN 35 POUND-INCHES ON THE INPUT TO THE ROTARY ACTUATOR. IF YOU PUT TOO MUCH TORQUE ON THE INPUT TO THE ROTARY ACTUATOR, DAMAGE TO THE EQUIPMENT CAN OCCUR.

(6) Turn with your hand the input to the aft rotary actuator in the door open direction (counterclockwise, aft view) until you feel resistance and the free play between the rotary actuator and the drive arm is removed.

NOTE: When the torque of the rotary actuator input suddenly increases, the free play is removed.

S 435-154

(7) Connect the drive shaft to the aft rotary actuator.

S 095-156

(8) Remove the block from the front of the cargo door.

S 725-391

(9) Make sure that all of the backlash is removed.

NOTE: The free hanging travel must be at a maximum to make sure that the drive shafts are equally loaded and the system overloads are at a minimum.

(a) Apply approximately 30 pounds (133 newtons) of force to move the lower half of the large cargo door inboard and outboard.

1) Measure the distance that the lower edge of the door moves.

NOTE: The free hanging travel must be at a maximum to make sure that the drive shafts are equally loaded and the system overloads are at a minimum.

2) Make sure that the distance of inboard-to-outboard movement is more than 7.25 inches (184.15 mm) and less than 8.20 inches (208.28 mm).

S 435-155

(10) Install the lockwires on the drive shafts.

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G. Adjust the Main Latch Cams

S 865-157
(1) Put the latch/hook actuator in the closed and latched, rigged position. Do the steps that follow:
(a) Adjust the upper stop bolt and the lower stop bolt to the dimension shown (View B, Fig. 508).

NOTE: This will let the latch/hook torque tube turn approximately 123 degrees.

(b) Operate the manual drive to turn the latch/hook actuator and move the stop lever 0.065-0.075 inch from the upper stop bolt in the latched position.

S 825-158
(2) Adjust the main latch pushrod (6 locations) until you can install the rig pin LCD1 through the lower latch idlers (View C, Fig. 508).

S 435-159
(3) Tighten the adjustment nut to 95-160 pound-inches (View C, Fig. 508).

S 095-160
(4) Remove the rig pin LCD1 from the lower latch idler (6 locations).

H. Adjust the Mid-span Latch Fittings

S 865-161
(1) Put the latch/hook actuator in the closed and latched, rigged position.

S 825-162
(2) Adjust the mid-span latch pushrod (2 locations) until you can install the rig pin LCD3 through the rigging plate and the mid-span latch fitting (Views A and D, Fig. 508).

S 435-163
(3) Tighten the adjustment nut to 95-160 pound-inches (View A, Fig. 508).

S 435-164
(4) Install the lockwire.

S 095-165
(5) Remove the rig pin LCD3 from the rigging plate.

S 825-166
(6) Adjust the clearances of the mid-span latch pins, if it is necessary.

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I. Adjust the Pull-in Hooks and Pins

S 825-167

(1) Adjust the pull-in hooks.
   (a) Put the latch/hook actuator in the closed and latched, rigged position.
   (b) Adjust the pull-in hook pushrod (2 locations) until you can install the rig pin LCD2 through the pull-in hook fitting (Views A and E, Fig. 508).
   (c) Tighten the nut and install the lockwire.
   (d) Remove the rig pin LCD2 from the pull-in hook fitting
   (e) Add or remove the thrust rings between the pull-in hook fitting and the bellcrank to get 0.010-0.030 inch end play (View B-B, Fig. 509).

S 825-168

(2) Adjust the pull-in pins.
   (a) Use the manual drive of the hinge power unit to close the cargo door slowly until the pull-in hooks are 0.25-0.75 inch from the pull-in pins.
   (b) Use the manual drive of the latch/hook actuator to turn the actuator 88 degrees (82 turns of manual drive) from the overtravel stop until the cargo door is in the fully pulled-in position (AMM 52-33-00/201).
   (c) Make sure the cargo door has the correct flushness (Fig. 510).
   (d) If the cargo door does not have the correct flushness (Fig. 510), adjust the pull-in pins on the serrations in a direction 90 degrees to the fuselage skin (View C-C, Fig. 506).
   (e) Do a check on the flushness of the cargo door again and adjust the pull-in pins again until the cargo door has the correct flushness (Fig. 510).

   CAUTION: DO NOT PUT THE AXIS OF THE PULL-IN PIN AT AN ANGLE. DAMAGE TO THE EQUIPMENT CAN OCCUR.

   (f) Adjust the pull-in pins on the serrations in a direction parallel to the fuselage contour until you get the clearance between the pull-in pin and the pull-in hook that is shown (View A-A, Fig. 506).
   (g) Tighten the nut to 170-240 pound-inches (View B-B, Fig. 506).

J. Adjust the Main Latch Pins

S 015-169

(1) Remove the ball transfer panel (AMM 25-53-03/401) from the forward cargo compartment to get access to the bolts that attach the main latch pin fitting to the fuselage frame.

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S 825-170
(2) Adjust the main latch pin fittings on the fuselage frame to their middle range of adjustment.

NOTE: Make the vertical, forward and aft adjustments on the serrations. Make the inboard and outboard adjustments with the shims.

S 495-171
(3) Install the adjustment assemblies in the main latch pin fittings and make sure the adjustment assemblies do not turn (Step 1, Fig. 504).

S 435-172
(4) Loosen the nuts on the adjustment assemblies sufficiently to let the spindles move in the holes (View A-A, Fig. 504).

S 825-173
(5) Lightly hit the ends of the main latch cams on the cargo door to remove the end play.

S 865-174
(6) Operate the manual drive of the hinge power unit to close the cargo door slowly until the pull-in hooks are 0.25-0.75 inch from the pull-in pins.

S 865-175
(7) Operate the manual drive of the latch/hook actuator to turn the actuator 88 degrees (82 turns of manual drive) from the overtravel stop until the cargo door is in the fully pulled-in position (Step 2, Fig. 504) (AMM 52-33-00/201). Do not let the main latch cams turn.

S 225-176
(8) Make sure the spindle heads of the adjustment assemblies fully touch the inner surfaces of the main latch cams on the cargo door.

S 435-177
(9) Tighten the nuts on the spindles.

S 225-178
(10) Write the longitudinal clearances between the main latch cams and the main latch pin fittings for the main latch cams No. 1 thru 12 (Fig. 505).
(a) Make sure the airplane is on the landing gear.

NOTE: Do this step to make sure the longitudinal clearances do not change when you measure and adjust the clearances.

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(b) With the cargo door open a small distance, hit lightly the ends of the main latch cams to remove the 0.005-0.015 inch end play.
(c) Close the cargo door.
(d) Write the skin clearances of the forward and aft sides of the cargo door near the lower corners.
(e) Write the longitudinal clearances between the main latch cams and the main latch pin fittings for the main latch cams No. 1, 2, 11, and 12.
(f) Write the longitudinal clearances between the main latch cams and the bearing plates for the main latch cams No. 3 thru 10.

S 865-179
(11) Open the cargo door to disengage the main latch cams from the spindle heads of the adjustment assembly.

S 225-180
(12) Measure the inboard/outboard (H) and vertical (V) dimensions shown (Step 3, Fig. 504).

NOTE: The 0.125 inch subtracted from the dimensions H and V is the distance of adjustment necessary to get the correct main latch pin position.

S 825-181
(13) Move the main latch pin fitting the distance 0.125 inch subtracted from V (Step 3, Fig. 504).

S 825-182
(14) Add shim below the main latch pin fitting of the thickness 0.125 inch subtracted from H (Step 3, Fig. 504).

S 825-183
(15) Adjust the longitudinal clearances to get the correct dimensions that are shown (Fig. 505).

NOTE: Move the main latch pin fitting forward or aft on the serrations for the initial adjustment. Add or remove shims below the bearing plate of the main latch pin fitting for the last adjustment.

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S 825-184

(16) Use the adjustment assemblies to do a check on the location of the main latch pins.

NOTE: It is permitted to have a difference of 0.02 inch maximum between the centerlines of the main latch cam and main latch pin. Because the vertical adjustment is serrated at a 0.036 inch pitch, the best vertical specification possible is 0.018 inch. It is recommended to put the main latch pins at a height of 0.018 inch too high instead of 0.018 inch too low when it is possible.

S 095-185

CAUTION: KEEP THE DRY FILM LUBRICATED BEARING SURFACES OF THE MAIN LATCH PIN CLEAN AND BE CAREFUL NOT TO CAUSE DAMAGE TO THE SURFACES. IF YOU ARE NOT CAREFUL, DAMAGE TO THE SURFACES OF THE MAIN LATCH PIN CAN EASILY OCCUR.

CAUTION: DO NOT INSTALL THE PINS BACKWARDS. IF A PIN IS INSTALLED BACKWARDS, IT WILL NOT CARRY THE LOAD OF THE CAM. WHEN THE AIRPLANE IS PRESSURIZED, THE OTHER PINS WILL HAVE TO CARRY THE EXTRA LOAD. THIS CAN CAUSE DAMAGE TO THE FITTINGS, CAMS AND ADJACENT STRUCTURE.

TO MAKE SURE THE PIN IS NOT INSTALLED BACKWARDS, MAKE SURE THE PIN EXTENDS FROM THE FITTING MORE THAN 0.75 INCH ON THE SIDE OF THE FITTING WHERE THE PIN ENGAGES THE CAM.

(17) Remove the adjustment assemblies and install the production main latch pins.

S 865-186

(18) Use the manual drive of the latch/hook actuator to turn the actuator 88 degrees (82 turns of manual drive) from the overtravel stop until the cargo door is in the fully pulled-in position (AMM 52-33-00/201). Do not let the main latch cams turn.

S 225-187

(19) With the main latch cams not turned, make sure you can install a 0.002 feeler gage between the main latch cam and the main latch pin at each point around the main latch pin. Make sure you can do this for each main latch cam and pin.

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K. Apply the Sealant to the Main Latch Pin Fittings and to the Main Latch Pins

S 395-188

(1) Apply the sealant to the main latch pin fitting as follows:
   (a) Install the four bolts with the wet sealant and fill the holes around the bolts with the wet sealant as shown (View B-B, Fig. 512).
   (b) Tighten the four nuts on the main latch pin fitting (Fig. 503) to the values that follow:

BOLT SIZE	MAIN LATCH PIN FITTING - NUT TORQUE VALUES	
	ALLOY STEEL BOLT (BACB30MT__) (BACB30US__)	CADMIUM PLATED STEEL BOLT (BACB30LE__)
7/16 INCH DIAMETER BOLT	510-840 POUND-INCHES	370-690 POUND-INCHES
9/16 INCH DIAMETER BOLT	1300-1800 POUND-INCHES	1000-1470 POUND-INCHES
5/8 INCH DIAMETER BOLT	1900-2300 POUND-INCHES	1400-1900 POUND-INCHES

   (c) Make a fillet seal on the bolt heads and the nuts with the wet sealant as shown (View B-B, Fig. 512).
   (d) Make a fillet seal around the edge of the main latch pin fitting with the wet sealant as shown (View A-A, Fig. 512).
   (e) Make a fillet seal on the ten bolt collars with the wet sealant as shown (View A-A, Fig. 512).

S 395-189

(2) Apply additional sealant to the main latch pin fittings No. 3 thru 10 as follows:
   (a) Apply the wet sealant on the faying surfaces between the main latch pin fitting and the shim (View B, Fig. 512).
   (b) Apply the wet sealant on the faying surfaces between the shim and the bearing plate (View B, Fig. 512).
   (c) Install the three bolts with the wet sealant to attach the shim and the bearing plate to the main latch pin fitting.
   (d) Install the washers and the nuts on the three bolts.
   (e) Make a fillet seal on the three nuts with the sealant (Views B and C-C, Fig. 512).

S 395-190

(3) Apply the sealant to the main latch pin as follows:
   (a) Remove the bolt to disconnect the main latch pin from the main latch pin fitting.
   (b) Remove the main latch pin out of the main latch pin fitting.
   (c) Apply the wet sealant to the faying surface of the outer diameter of the main latch pin and the inner diameter of the main latch pin fitting (View A, Fig. 513).

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CAUTION: DO NOT INSTALL THE PINS BACKWARDS. IF A PIN IS INSTALLED BACKWARDS, IT WILL NOT CARRY THE LOAD OF THE CAM. WHEN THE AIRPLANE IS PRESSURIZED, THE OTHER PINS WILL HAVE TO CARRY THE EXTRA LOAD. THIS CAN CAUSE DAMAGE TO THE FITTINGS, CAMS AND ADJACENT STRUCTURE.

TO MAKE SURE THE PIN IS NOT INSTALLED BACKWARDS, MAKE SURE THE PIN EXTENDS FROM THE FITTING MORE THAN 0.75 INCH ON THE SIDE OF THE FITTING WHERE THE PIN ENGAGES THE CAM.

(d) Move the main latch pin into the main latch pin fitting. Align the holes in the main latch pin with the holes in the main latch pin fitting.
(e) Install the main latch pin retaining bolt. Tighten the bolt.
(f) Make a fillet seal along the edge of the main latch pin and the bearing plate (or the main latch pin fitting if there is no bearing plate) with the wet sealant as shown (View A-A, Fig. 513).
(g) Make a fillet seal along the edge of the main latch pin and the main latch pin fitting with the wet sealant as shown (View B-B, Fig. 513).
(h) Make a fillet seal on the bolt head and the nut with the wet sealant as shown (View B-B, Fig. 513).
(i) Clean the unwanted sealant from the area on the main latch pin that is shown (View A, Fig. 513).

S 415-191
(4) Install the ball transfer panel (AMM 25-53-03/401) in the large forward cargo door compartment, if you removed it during the adjustment of the main latch pins.

L. Adjust the Mid-span Latch Pin, Door Centering Roller, and Bumper on the Fuselage Frame

S 225-192
(1) Make sure the clearance between the mid-span latch pin and the mid-span latch cam is as shown (View D-D, Fig. 506).

S 225-193
(2) Make sure the clearance between the door centering roller and the door centering ramp is the dimension that is shown (View E-E, Fig. 506).

S 825-194
(3) Add or remove the laminated shim between the bumper and the fuselage frame to get the correct clearance (View F-F, Fig. 506).

M. Adjust the Closed and Latched Position of the Large Forward Cargo Door

S 865-195
(1) Operate the manual drive to put the cargo door in the fully closed and latched position until the overtravel stop is touched.

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S 865-196

(2) Turn the manual drive back 1.5 degrees from the overtravel stop (1.4 turns of the manual drive).

S 225-197

(3) Make sure the clearance between the two pull-in hooks and the pull-in pins is 0.05 inch minimum.

S 225-198

(4) Make sure the flushness of the cargo door with the fuselage is correct (Fig. 510).

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TABLE 501
LARGE FORWARD CARGO DOOR DEVIATIONS

EFFECTIVITY	ZONE	FLUSHNESS *[1] inch (mm)	CLEARANCE inch (mm)
SAS 156	A	-0.07 to +0.06 (-1.8 to +1.5)	NONE
SAS 277	B	-0.06 to +0.11 (-1.5 to +2.8)	NONE

*[1] A negative flushness shows the door is inboard of the fuselage contour.
A positive flushness shows the door is outboard of the fuselage contour.

S 225-199
(5) Close the latch lock handle. Make sure the vent doors are fully closed or are open no more than 0.50 inch at the lower edge.

NOTE: The seals on the vent doors can cause the doors to not fully close until the airplane is pressurized.

S 215-200
(6) Make sure the lock sectors have engaged the latches.

S 225-201
(7) Use the force gage to make sure the force to close the latch lock handle is not more than 32 pounds at the aft end of the latch lock handle.

NOTE: It is not necessary to measure the force during the last 0.50 inch of the travel of the latch lock handle.

N. Do a Check on the Pressure Seal

S 215-202
(1) Make sure the seal on the cargo door is satisfactory when the door is in the closed position.

S 225-204
(2) Make sure the waviness in the seal blade is not more than 0.10 inch in each direction from the peak points if the seal is flat with no clearances when the cargo door is in the closed position (AMM 52-09-02/401).

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O. Check the Proximity Sensors S150, S151, S152, S153, and S154 for the target near or far using PSEU

S 865-355

(1) Put the cargo door in the CLOSE position and the latch handle to the locked and closed position, the sensors are as follows:

SENSOR		TARGET POSITION
S150	(DOOR UNLATCHED)	FAR
S151	(DOOR OPEN)	FAR
S152	(LATCH RANGE)	NEAR
S153	(HANDLE UNLOCKED)	FAR
S154	(DOOR LATCHED)	NEAR

S 865-356

(2) Put the cargo door in the CLOSE position and the latch handle in the open position, the sensors sre as follows:

SENSOR		TARGET POSITION
S150	(DOOR UNLATCHED)	FAR
S151	(DOOR OPEN)	FAR
S152	(LATCH RANGE)	NEAR
S153	(HANDLE UNLOCKED)	NEAR
S154	(DOOR LATCHED)	NEAR

S 865-357

(3) Put the cargo door in the OPEN position 2.6 inches minimum, the sensors are as follows:

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SENSOR		TARGET POSITION
S150	(DOOR UNLATCHED)	NEAR
S151	(DOOR OPEN)	FAR
S152	(LATCH RANGE)	FAR
S153	(HANDLE UNLOCKED)	NEAR
S154	(DOOR LATCHED)	FAR

S 865-358

(4) Put the cargo door in fully OPEN position, the sensors are as follows:

SENSOR		TARGET POSITION
S150	(DOOR UNLATCHED)	NEAR
S151	(DOOR OPEN)	NEAR
S152	(LATCH RANGE)	FAR
S153	(HANDLE UNLOCKED)	NEAR
S154	(DOOR LATCHED)	FAR

P. Adjust the Forward Cargo Door Unlatched Proximity Sensor, S150

S 865-205

(1) Put the internal door control switch in the CLOSE position to close the cargo door.

S 035-206

(2) Remove the electrical connector from the hinge power unit.

S 865-208

(3) Put the internal door control switch in the OPEN position to open the cargo door and to put the latch/hook actuator in the not latched position.

S 225-209

(4) Make sure the proximity sensor S150 stops the electrical power to the latch/hook actuator at the dimension that is shown between the lower stop bolt and the stop lever (View A, Fig. 514).

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S 825-210

(5) If the proximity sensor S150 does not stop the electrical power to the latch/hook actuator at the dimension that is shown (View A, Fig. 514), do the steps that follow:

(a) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
1) 34J4, CONT DOOR CARGO
2) 34J7, CARGO DOOR FWD

(b) Make sure the lower stop bolt has the dimension that is shown (View B, Fig. 508).

NOTE: The lower stop bolt was put at this dimension in the "Adjust the Main Latch Cams" procedure.

(c) Put a 3/8-inch square drive speed wrench in the manual drive socket of the latch/hook actuator.

(d) Slowly turn the speed wrench clockwise (door open direction) until you get the dimension between the stop lever and the lower stop bolt that is shown (View A, Fig. 514).

(e) Make sure the clearance between the stop lever and the proximity sensor S150 is in the dimension that is shown (View A, Fig. 514). Adjust the 0.002 inch laminations of shim between the proximity sensor and the sensor bracket to get this clearance.

(f) Apply the corrosion preventive compound to the serrations on the serrated plate (View A, Fig. 514).

(g) Move the proximity sensor S150 on the serrated plate to get the dimension that is shown between the proximity sensor and the stop lever (View A, Fig. 514).

(h) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
1) 34J4, CONT DOOR CARGO
2) 34J7, CARGO DOOR FWD

(i) Put the internal door control switch in the CLOSE position to close the cargo door.

(j) Put the internal door control switch in the OPEN position to open the cargo door and to put the latch/hook actuator in the not latched position.

(k) If it is necessary, move the proximity sensor S150 on the serrated plate to make sure the proximity sensor stops the electrical power to the latch/hook actuator at the dimension that is shown between the lower stop bolt and the stop lever (View A, Fig. 514). Do not adjust the lower stop bolt.

(l) Bond the laminated shim to the adjacent structure with the sealant.

(m) Install the electrical connector to the hinge power unit.

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Q. Adjust the Forward Cargo Door Open Proximity Sensor, S151

S 865-211
(1) Put the internal or external cargo door control switch in the OPEN position.

S 225-212
(2) Make sure the proximity sensor S151 stops the electrical power to the hinge power unit at the dimension that is shown (View A, Fig. 515).

S 825-213
(3) If the proximity sensor S151 does not stop the electrical power to the hinge power unit at the dimension that is shown (View A, Fig. 515), do the steps that follow:
   (a) Use the internal or external cargo door control switch to operate the hinge power unit until the drive link is parallel to the floor beams.
   (b) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
      1) 34J4, CONT DOOR CARGO
      2) 34J7, CARGO DOOR FWD
   (c) Make sure the clearance between the proximity sensor S150 and the target is the dimension that is shown (View B-B, Fig. 515). Adjust the 0.002 inch laminations of shim to get this clearance.
   (d) Apply the corrosion preventive compound to the serrations on the serrated plate.
   (e) Move the proximity sensor S151 on the serrated plate to get the clearance that is shown (View B-B, Fig. 515).
   (f) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
      1) 34J4, CONT DOOR CARGO
      2) 34J7, CARGO DOOR FWD
   (g) Put the internal or external cargo door control switch in the CLOSE position to close the cargo door.
   (h) Put the internal or external cargo door control switch in the OPEN position.
   (i) Move the proximity sensor S151 on the serrated plate to make sure the proximity sensor stops the electrical power to the hinge power unit at the dimension that is shown (View A, Fig. 515). Do not adjust the overtravel stop bolt.
   (j) Bond the laminated shim to the adjacent structure with the sealant.

R. Adjust the Forward Cargo Door Latch Proximity Sensor, S152

S 035-214
(1) Remove the electrical connector from the latch/hook actuator.

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S 865-215
(2) Put the internal or external cargo door control switch in the CLOSE position.

S 225-216
(3) Make sure the proximity sensor S152 stops the electrical power to the hinge power unit at the dimension that is shown (View A-A, Fig. 516 Sheet 1) for the position of the pull-in hook before it turns.

S 825-217
(4) If the proximity sensor S152 does not stop the electrical power to the hinge power unit at the dimension that is shown (View A-A, Fig. 516), do the steps that follow:
   (a) Electrically operate the hinge power unit to the closed position.

      NOTE: This is the position of the pull-in hook before it turns (View A-A, Fig. 516).

   (b) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
      1) 34J4, CONT DOOR CARGO
      2) 34J7, CARGO DOOR FWD
   (c) Make sure the clearance between the proximity sensor S152 and the target is the dimension that is shown (View A, Fig. 516). Adjust the 0.002 inch laminations of shim to get this clearance.
   (d) Apply the corrosion preventive compound to the serrations on the serrated plate.
   (e) Move the target for the proximity sensor S152 on the serrated plate to get the clearance that is shown (View B-B, Fig. 516).
   (f) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
      1) 34J4, CONT DOOR CARGO
      2) 34J7, CARGO DOOR FWD
   (g) Put the internal or external cargo door control switch in the OPEN position to open the cargo door.
   (h) Put the internal or external cargo door control switch in the CLOSE position.
   (i) Move the target for the proximity sensor S152 on the serrated plate to get the clearance between the pull-in hook and the pull-in pin that is shown (View A-A, Fig. 516).
   (j) Bond the laminated shim to the adjacent structure with the sealant.

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S 435-256
(5) Install the electrical connector to the latch/hook actuator.

S. Adjust the Forward Cargo Door Handle Unlocked Proximity Sensor, S153

S 865-218
(1) Put the external cargo door control switch in the CLOSE position.

S 865-219
(2) Close the latch lock handle to the locked position.

S 225-220
(3) Make sure the proximity sensor S153 has the operation range that is shown before it stops the electrical power to the latch/hook actuator (View A, Fig. 517).

S 825-221
(4) If the proximity sensor S153 does not have the operation range that is shown before it stops the electrical power to the latch/hook actuator (View A, Fig. 517), do the steps that follow:
   (a) Put the external cargo door control switch in the OPEN position.
   (b) Move the latch lock handle to the open position.
   (c) Remove the sloping sidewall panel to get access to the proximity sensor S153.
   (d) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
      1) 34J4, CONT DOOR CARGO
      2) 34J7, CARGO DOOR FWD
   (e) Make sure the clearance between the proximity sensor S153 and the target is the dimension that is shown (View A-A, Fig. 517). Adjust the 0.002 inch laminations of shim to get this clearance.
   (f) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
      1) 34J4, CONT DOOR CARGO

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2) 34J7, CARGO DOOR FWD

(g) Put the external cargo door control switch in the CLOSE position.

(h) Close the latch lock handle to the locked position.

(i) Make sure the operation range for the proximity sensor S150 is the dimension that is shown (View A-A, Fig. 517). Adjust the 0.002 inch laminations of shim to get the correct operation range (View A, Fig. 517).

(j) Bond the laminated shim to the adjacent structure with the sealant.

(k) Install the sloping sidewall panel.

T. Adjust the Forward Cargo Door Latched Proximity Sensor, S154

S 865-222

(1) Put the internal door control switch in the CLOSE position to close the cargo door and to put the latch/hook actuator in the closed and latched position.

S 225-223

(2) Make sure the proximity sensor S154 stops the electrical power to the latch/hook actuator at the dimension between the stop lever and the upper stop bolt that is shown (View A, Fig. 518).

S 825-224

(3) If the proximity sensor S154 does not stop the electrical power to the latch/hook actuator in the dimension between the stop lever and the upper stop bolt that is shown (View A, Fig. 518), do the steps that follow:

(a) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:

1) 34J4, CONT DOOR CARGO

2) 34J7, CARGO DOOR FWD

(b) Make sure the upper stop bolt has the dimension that is shown (View B, Fig. 508).

NOTE: The upper stop bolt was put at this dimension in the "Adjust the Main Latch Cams" procedure.

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(c) Make sure the clearance between the proximity sensor S154 and the target is in the dimension that is shown (View A, Fig. 518). Adjust the 0.002 inch laminations of shim to get this clearance.
(d) Apply the corrosion preventive compound to the serrations on the serrated plate.
(e) Move the proximity sensor S154 on the serrated plate to get the clearance that is shown (View A, Fig. 518).
(f) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
1) 34J4, CONT DOOR CARGO
2) 34J7, CARGO DOOR FWD
(g) Put the internal door control switch in the OPEN position.
(h) Put the internal door control switch in the CLOSE position to close the cargo door and to put the latch/hook actuator in the closed and latched position.
(i) Move the proximity sensor S154 on the serrated plate to make sure the proximity sensor stops the electrical power to the latch/hook actuator at the dimension between the stop lever and the upper stop bolt that is shown (View A, Fig. 518). Do not adjust the upper stop bolt.
(j) Bond the laminated shim to the adjacent structure with the sealant.

U. Adjust the Forward Cargo Door Locked Proximity Sensor, S214

S 825-261
(1) Adjust the Forward Cargo Door Locked Proximity Sensor, S214 (AMM 52-71-02/201).

V. Adjust the Forward Cargo Door Closed Proximity Sensor, S215

S 825-265
(1) Adjust the Forward Cargo Door Closed Proximity Sensor, S215 (AMM 52-71-02/201).

W. Adjust the Latch Lock Handle Mechanism

S 825-230
(1) Adjust the clearance between the door centering roller and the door centering ramp with the shim, if it is necessary (View E-E, Fig. 506).

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S 865-231
(2) Put the latch/hook actuator in the closed and latched, rigged position.

S 225-232
(3) Make sure the clearance between the forward cargo door handle unlocked proximity sensor, S153, and the sensor target is the dimension that is shown (View A-A, Fig. 517).

S 865-233
(4) Open the cargo door.

S 865-234
(5) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
(a) 34J4, CONT DOOR CARGO
(b) 34J7, CARGO DOOR FWD

S 015-235
(6) Remove the cargo floor panels, approximately 44 inches forward of the cargo door, to get access to the handle mechanism.

S 825-236
(7) With the latch lock handle in the locked position, adjust the adjustable pushrod to let the rig pin LCD6 be installed through the crank and the bearing housing.

S 225-237
(8) Do a check on the adjustable rod end or pushrod to make sure the threads are engaged correctly.

NOTE: The threads are engaged correctly when you can see the rod end through the inspection hole in the pushrod.

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S 435-238
(9) Tighten the locknut on the adjustable pushrod (View A, Fig. 519).

S 095-239
(10) Remove the rig pin LCD6.

S 825-240
(11) Open the latch lock handle and adjust the stop screw on the crank.
  (a) Adjust the screw to get 2.01 inches of travel on the roller bellcrank, measured from the rig pin hole LCD6.
  (b) Install a lockwire on the screw.
  (c) Move the support assembly for the internal handle release to get the clearance between the internal release lever and the inner side of the handle housing shown (View A-A, Fig. 519).

    NOTE: The internal release cable must be tight.

  (d) If it is necessary, remove the 0.002 inch laminations from the shim on the target of the forward cargo door handle unlocked proximity sensor, S153, to get the clearance that is shown (View A-A, Fig. 517).

S 825-241
(12) Adjust the latch lock mechanism and the vent doors.
  (a) Temporarily disconnect the adjustable rod from the idler assembly (View A, Fig. 520).
  (b) Use a clamp to hold the two vent doors in the closed position.
  (c) Install the rig pin LCD4 through the roller bellcrank into the rig pin hole (locked position) in the door structure (View A-A, Fig. 520).
  (d) Adjust the adjustment screw (2 locations) on each vent door to make sure the flushness of the vent door and the cargo door align in ±0.02 inch (View A-A, Fig. 521).
  (e) Adjust the length of the adjustable rod to connect to the idler assembly (View A, Fig. 520).

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(f) Remove the clamps from the vent doors.

NOTE: When you remove the clamps, the vent doors can open a small distance because of the spring and seal pressure.

(g) Remove the rig pin LCD4 from the roller bellcrank.

NOTE: When you remove the rig pin, the roller bellcrank will turn automatically to the not locked position because of the load on the vent door spring.

(h) Adjust the stop screw at the forward, top edge of each vent door (View A-A, Fig. 521) until the rig pin LCD5 goes through the roller bellcrank into the rig pin hole (unlocked position) (View A-A, Fig. 520).

(i) Make sure the threads at the end of the adjustable rod are engaged correctly.

1) Make sure you can see 50 percent or more of the end of the adjustable rod through the inspection hole (View A, Fig. 520).

(j) Tighten the locknut on the end of the adjustable rod (View A, Fig. 520).

(k) Remove the rig pin LCD5 from the roller bellcrank.

(l) Turn with your hand the roller bellcrank 6-8 times from the not locked position to the locked position. Make sure the latch lock mechanism is adjusted satisfactorily. If it is necessary, do the procedure to adjust the latch lock mechanism again.

(m) Install a lockwire on the adjustment screws at the forward edge of each vent door.

(n) Install a lockwire on the adjustment screws (2 locations) at the bottom edge of each vent door.

X. Adjust the Door Wire Bundle

S 825-242

(1) Adjust the wire bundle on the forward drive link and drive arm (AMM 52-33-05/401).

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Y. Put the Airplane Back to its Usual Condition

S 865-243

(1) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO
(b) 34J7, CARGO DOOR FWD

TASK 52-33-00-735-014

4. System Test - Large Forward Cargo Door

A. Equipment

(1) AC Ammeter - clip-on type (10 Amp range, Accuracy ±10%)
Fluke Model 31 - commercially available
Fluke Corporation
or equivalent

(2) A27092-61 Actuator/Deactuator Set - Proximity Sensor

(3) Rig Pins from set A20004-XX (AMM 20-10-24)
(a) LCD1 - P/N A20004-5
(b) LCD2 - P/N A20004-8
(c) LCD3 - P/N A20004-5
(d) LCD4 - P/N A20004-8
(e) LCD5 - P/N A20004-8
(f) LCD6 - P/N A20004-8

(4) Spring scales - commercially available:
(a) 0-100 pounds (tension)

(5) Force Gage - commercially avaialble:
(a) 0-100 pounds (compression)
FDV 100 Wagner instruments or equivalent (Optional)
(b) 0-100 pounds (compression)
DPPH-200 Analog Force Gage (Recommended)

(6) Stop watch - commercially available

(7) Wood blocks (two necessary) - 1.50 x 1.50 inch, 3.0 inch length

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B. References
(1) AMM 24-22-00/201, Electrical Power - Control
(2) AMM 52-33-09/201, Large Forward Cargo Door Latch Cams and Pins
(3) AMM 52-71-02/201, Large Forward Cargo Door Warning System

C. Access
(1) Location Zone
821 Forward Cargo Door

D. Do a Test on the Mechanical Operation of the Cargo Door

S 015-273
(1) Remove the two lower door liners.

S 865-274
(2) Open these circuit breakers and attach the DO-NOT-CLOSE tags:
(a) On the APU external power panel P34:
1) 34J4, CARGO DOOR CONTROL
2) 34J7, CARGO DOOR

S 865-015
(3) Operate the manual drive of the hinge power unit to close the cargo door until the lower edge of the door is 2.3-2.9 inches from the fuselage skin (View A, Fig. 522).

S 225-275
(4) Make sure that the height of the upper and lower stop bolts for the latch/hook system are adjusted per View B, Figure 508.

S 865-016
(5) Operate the manual drive of the latch/hook actuator to obtain a stop lever clearance of 0.065-0.075 inch from the upper stop bolt.

S 865-017
(6) Close the latch lock handle.

S 495-018
(7) Install the rig pin LCD1 (6 locations) in the lower latch idler and the door structure (View C, Fig. 508).

S 495-019
(8) Install the rig pin LCD2 (2 locations) in the pull-in hook and the door structure (View E, Fig. 508).

S 495-020
(9) Install the rig pin LCD3 (2 locations) in the rigging plate and the mid-span latch fitting (View D, Fig. 508).

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S 095-021
(10) Remove the rig pins.

S 225-022
(11) Make sure the flushness of the cargo door is correct (Fig. 510).

S 225-023
(12) Make sure the clearance between the cargo door and the cargo door cutout is correct (Fig. 511).

S 225-024
(13) Make sure the forward and aft vent doors have the correct flushness with the cargo door when the stop screws touch the door stops (View A-A, Fig. 521).

NOTE: The vent doors can be open initially a maximum of 0.50 inches at the lower edge because of the seal pressure. It can be necessary to put a load on the vent doors in the closed direction to make sure the stop screws touch the door stops.

S 215-025
(14) Make sure the latch lock handle release button and the button seal make a smooth surface. Make sure you cannot see the red zone immediately forward of the release button (Fig. 522)

NOTE: If you can see the red zone, the latch lock system is not fully locked.

S 215-026
(15) Make sure the latch lock handle is fully locked and makes a smooth surface with the fuselage contour.

NOTE: This shows the cargo door is fully latched and locked.

S 215-027
(16) Look through the 12 view ports on the external side of the cargo door. Make sure you see the green alignment mark on each of the main latch cams (View A, Fig. 501) (AMM 52-33-09/201).

S 215-250
(17) AIRPLANES WITH AN ALIGNMENT MARK ON THE LATCH PIN FITTINGS (POST SB 52-59 OR PRR B12184);
Make sure the green alignment mark on the main latch cam is fully in the limits of the larger green alignment mark on the main latch pin fitting.

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S 215-029
(18) Make sure the door seal touches the edges of the seal depressor.

S 215-030
(19) Make sure the vent door seal touches the edges of the seal depressor around the vent door when the stop screws touch the door stops.

S 225-251
(20) Do a check on the longitudinal clearances between the main latch cams and the main latch pin fittings. Make sure the longitudinal clearances are the in the limits that follow:

NOTE: The main latch cams have the numbers 1 thru 12 from forward to aft.

(a) For the main latch cams No. 3, 5, 7, and 9 the clearances must be the same value to ±0.02 inch.
(b) For the main latch cams No. 4, 6, 8, and 10 the clearances must be the same value to ±0.02 inch.
(c) The sum of the clearances at each main latch cam pair No. 3 and 4, 5 and 6, 7 and 8, and 9 and 10 must be 0.14-0.18 inch.
(d) The clearance at the main latch cam No. 1 must be more than the clearance at the main latch cam No. 3 by 0.09 inch.
(e) The clearance at the main latch cam No. 2 must be more than the clearance at the main latch cam No. 4 by 0.09 inch.
(f) The clearance at the main latch cam No. 11 must be more than the clearance at the main latch cam No. 9 by 0.09 inch.
(g) The clearance at the main latch cam No. 12 must be more than the clearance at the main latch cam No. 10 by 0.09 inch.
(h) The sum of the clearances at the main latch cam pair No. 1 and 2 and No. 11 and 12 must be 0.40-0.48 inch.

E. Do a Test on the Negative Pressure of the Vent Door

S 215-034
(1) Make sure all of the rig pins are removed from the cargo door.

S 495-035
(2) Install a spring scale to one of the stop arms on the vent door approximately 0.40 inch above the vent door stop.

S 865-036
(3) Slowly put a tension load on the vent door in the open direction.

NOTE: Keep the spring scale at an angle of 90 degrees to the vent door while you open the door.

S 225-037
(4) Measure the load on the spring scale when the vent door is approximately 0.50 inch from the locked position.

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S 225-038
(5) Make sure the load on the spring scale is 8.0-9.8 pounds when the vent door is 0.50 inch from the closed position.

S 225-039
(6) Measure the load on the spring scale when the vent door is in the fully open position.

S 225-040
(7) Make sure the load on the spring scale is 11.4-14.0 pounds when the vent door is in the fully open position.

S 865-041
(8) At the same time, quickly put the two vent doors in the fully open position. Make sure the latch lock mechanism stays in the same position and the latch lock handle stays in its locked position.

S 095-042
(9) Remove the spring scale from the vent door.

F. Do a Test on the Positive Pressure of the Vent Door

S 865-043
(1) Use the spring scale to put a 26.0-26.5 pound load in the outboard direction on the inner surface of the aft vent door. Put the load in the approximate center of the door at an angle of 90 degrees to the inner surface of the door.

S 225-044
(2) Push the latch lock handle release button to release the latch lock handle (Fig. 522). Make sure the aft end of the latch lock handle opens less than or equal to 3.0 inches.

S 865-045
(3) Close the latch lock handle into the housing.

NOTE: The latch lock handle is in the correct position when you cannot see the red zone forward of the release button.

S 865-046
(4) Remove the load that you put on the aft vent door.

G. Do a Test on the Operation of the Latch Lock Handle

S 735-047
(1) Push the latch lock handle release button.

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S 215-248
(2) Make sure the latch lock handle extends to the fully open position with no manual aid.

S 215-249
(3) Make sure you can see the red zone that is forward of the latch lock handle release button (Fig. 522).

S 735-048
(4) Do a check on the unlock operation of the latch lock mechanism as follows:
  (a) Make sure the adjustable stop on the outer side of the latch lock handle housing touches the fixed stop on the housing (View A-A, Fig. 522).
  (b) Make sure the forward and aft vent doors are in the fully open position. Make sure the vent door adjustable stops, forward of each vent door, touch the fixed stops (View A-A, Fig. 522).
  (c) Make sure all of the lock sectors are turned and are clear of the main latch cams.
  (d) Make sure you can install the rig pin LCD5 with your hand through the roller bellcrank on the door structure (View A-A, Fig. 520).
  (e) Remove the rig pin LCD5 from the cargo door.

S 735-049
(5) Measure the maximum load necessary to move the latch lock handle to the locked position as follows:
  (a) Use the spring scale to put a load 0.50 inch from the end of the latch lock handle in the locked direction of the handle.
  (b) With the latch lock handle 0.50 inch from the fully locked position, make sure the load is not more than 32 pounds.

    NOTE: Keep the load at an angle of 90 degrees to the handle.

S 865-050
(6) Close the latch lock handle to the locked position.

S 735-051
(7) Do a check on the lock operation of the latch lock handle mechanism.
  (a) Make sure the latch lock handle and the release button make a smooth surface with the fuselage skin. Make sure you cannot see the red zone that is forward of the release button (Fig. 522).

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(b) Make sure the vent doors are in the fully closed position or are open less than or equal to 0.50 inch at the lower edge.

NOTE: The seals on the vent doors can cause the doors to not fully close until the airplane is pressurized.

(c) Make sure the lock sectors (12 locations) are in a position to prevent the turn of the main latch cams to the not latched position.

S 865-052

(8) In the cargo compartment, push the internal latch lock handle release. Make sure the latch lock handle extends to the fully open position (Fig. 522).

S 865-053

(9) Close the latch lock handle to the locked position.

H. Do a Test on the Load Limiter of the Latch Lock Handle

S 865-054

(1) Push the latch lock handle release button and prevent the movement of the latch lock handle at approximately the middle point of the handle's travel.

S 495-055

(2) With the latch lock handle in this position, install blocks to prevent the movement of the latch lock mechanism at the No. 12 lock sector on the cargo door. Put the blocks between the lock sector, door beam web and the main latch cam.

S 865-056

(3) Use the spring scale to pull the latch lock handle towards the open position.

S 225-057

(4) Make sure the load limiter operates.

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S 215-276
(5) Make sure the pawl fully stops.

S 215-058
(6) Make sure that when you increase the load to 100 pounds there is no more movement of the latch lock handle.

S 865-059

WARNING: KEEP YOUR HANDS ON THE EXTERNAL SURFACE OF THE LATCH LOCK HANDLE. WHEN THE LOAD LIMITER RELEASES, INJURY TO PERSONS CAN OCCUR.

(7) Remove the load. Remove the spring scale from the latch lock handle. Make sure the load limiter releases.

NOTE: It can be necessary to lightly hit the latch lock handle to make the load limiter release.

S 865-060
(8) Put a force gage (0-100 pounds compression) approximately 0.50 inch from the end of the latch lock handle to push the latch lock handle towards the locked position.

S 225-061

WARNING: KEEP YOUR HANDS ON THE EXTERNAL SURFACE OF THE LATCH LOCK HANDLE. WHEN THE LOAD LIMITER RELEASES, INJURY TO PERSONS CAN OCCUR.

(9) Put the load on the latch lock handle and make sure the load limiter operates.

S 215-277
(10) Make sure the pawl fully stops.

S 215-062
(11) Make sure that when you increase the load to 100 pounds there is no more movement of the latch lock handle.

S 095-063
(12) Remove the load. Remove the force gage from the latch lock handle. Make sure the load limiter releases.

NOTE: It can be necessary to lightly hit the latch lock handle to make the load limiter release.

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S 095-064

(13) Remove the blocks from the latch lock mechanism and close the latch lock handle to the locked position.

I. Do a Test on the Manual Unlatch and Unhook Operation

S 865-065

CAUTION: DO NOT LET THE LATCH/HOOK ACTUATOR OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE LATCH/HOOK ACTUATOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 70 POUND-INCHES. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE LATCH/HOOK ACTUATOR.

(1) Push the latch lock handle release button and let the latch lock handle move to the fully open position.

S 865-066

(2) Put a 3/8-inch square drive speed wrench in the manual drive socket of the latch/hook actuator.

S 735-067

(3) Turn the speed wrench clockwise approximately 115 turns to put the cargo door in the fully not latched and not hooked position. While the door unlatches and unhooks, do the steps that follow:

NOTE: The stops that prevent travel are touched when you feel or hear clutch slippage. The cargo door moves outboard approximately 2.6 inches when the stops are touched.

(a) While the door centering ramps move by the door centering rollers, make sure the sum of the clearances between the ramps and the rollers is 0.06-0.10 inch.
(b) Make sure the main latch cams (12 locations) turn freely and disengage from the main latch pins on the fuselage frame.
(c) Make sure that on the forward side of the door the latch lock roller on the door freely disengages from the latch lock crank on the body frame.
(d) Make sure the pull-in hooks, on the forward and aft sides of the cargo door, turn smoothly and open the door approximately 2.6 inches.

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(e) Make sure the two hinge arms move freely and that one of the two hinge arms does not prevent the movement of the cargo door.

NOTE: If one hinge arm prevents the movement of the cargo door, the pull-in hook on that side of the door will move slower from the pull-in pin than the other pull-in hook.

(f) Make sure the latch and hook mechanism operates smoothly and correctly when you use the manual drive of the latch/hook actuator.

(g) Make sure the stop lever adjacent to the latch/hook actuator touches the lower stop bolt.

J. Do a Test on the Manual Latch and Hook Operation

S 865-068

CAUTION: DO NOT LET THE LATCH/HOOK ACTUATOR OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE LATCH/HOOK ACTUATOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 70 POUND-INCHES. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE LATCH/HOOK ACTUATOR.

(1) Put a 3/8-inch square drive speed wrench in the manual drive socket of the latch/hook actuator.

S 735-069

(2) Turn the speed wrench counterclockwise approximately 115 turns to put the cargo door in the fully latched and hooked position. While the door hooks and latches, do the steps that follow:

NOTE: The stops that prevent travel are touched when you feel or hear clutch slippage.

(a) Make sure the pull-in hooks, on the forward and aft sides of the cargo door, smoothly engage the pull-in pins and pull the two sides of the cargo door to the closed position.

(b) Make sure the latch lock roller smoothly enters the latch lock crank on the body frame without noticeable movement of the crank.

(c) Make sure the latch and hook mechanism operates smoothly and correctly when you use the manual drive of the latch/hook actuator.

(d) Make sure the stop lever adjacent to the latch/hook actuator touches the upper stop bolt.

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K. Do a Test on the Manual Open Operation

S 865-070
(1) Manually unlock and unlatch the cargo door.

S 865-071

CAUTION: DO NOT LET THE HINGE POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE HINGE POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 190 POUND-INCHES. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE HINGE POWER UNIT.

(2) Put a 3/8-inch square drive speed wrench in the manual drive socket of the hinge power unit. Use the manual drive socket that is found on the external surface of the door near the forward side.

S 865-072
(3) Turn the speed wrench counterclockwise until the lower part of the cargo door moves approximately 6 feet from the lower fuselage frame. As the door opens, do this check:
(a) Make sure the pull-in hooks move clear of the pull-in pins on the fuselage frame while the cargo door opens.

S 865-073
(4) Move the 3/8-inch square drive speed wrench to the other manual drive socket of the hinge power unit. Use the manual drive socket that is found on the forward edge of the cargo door.

S 735-074
(5) Turn the speed wrench counterclockwise until the cargo door is in the fully open position and you can feel or hear clutch slippage. While the door opens, do the steps that follow:

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(a) Make sure the hinge arms have smooth and synchronized movement while the door opens.
(b) Make sure the lift drive mechanism operates smoothly and correctly when you use the manual drive of the hinge power unit.

NOTE: It is usual for the cargo door to stop at the lowest point of its travel.

(c) Make sure the conduit on the forward drive link and drive arm moves smoothly in the conduit tube (Fig. 523).

S 225-280
(6) Examine each latch pin and corresponding latch cam surface for abrasive marks.

NOTE: There shall be no circumferential local marks. Uniform abrasion through the solid film lubricant of the pin is allowable provided it does not cover more than 20 percent of the total area.

S 225-281
(7) Make sure that the forward and aft pull-in hook pins can be turned with your hand.

S 865-282
(8) Close the latch lock handle to the locked position.

S 865-283
(9) Push the latch lock handle release button. Make sure the latch lock handle moves to the fully open position.

S 215-284
(10) Make sure the door open stops on the forward and aft sides of the cargo door touch the drive arms (View B, Fig. 524).

S 225-285
(11) Make sure the dimensions of the door open stops are correct (View B, Fig. 524).

S 865-286
(12) Remove the speed wrench.

S 215-287
(13) Make sure the rain seal is not made too tight from the door in the overtravel position.

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S 215-288

(14) Make sure that the rain seal is continuously fastened and tight along its edges.

L. Do a Test on the Manual Close Operation

S 865-075

CAUTION: DO NOT LET THE HINGE POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE HINGE POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 190 POUND-INCHES. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE HINGE POWER UNIT.

(1) Put the 3/8-inch square drive speed wrench in the manual drive socket of the hinge power unit. Use the manual drive socket that is found on the forward edge of the cargo door.

S 865-076

(2) Turn the speed wrench clockwise until the lower part of the cargo door is approximately 6 feet from the lower fuselage frame.

S 865-077

(3) Move the 3/8-inch square drive speed wrench to the other manual drive socket of the hinge power unit. Use the manual drive socket that is found on the external surface of the door near the forward side.

S 735-078

(4) Turn the speed wrench clockwise until the lower edge of the cargo door is 2.6 inches from the fuselage skin. While the door closes, do the steps that follow:
   (a) Make sure the hinge arms have smooth and synchronized movement while the cargo door closes.
   (b) Make sure the lift drive mechanism operates with no vibration or unusual noises.
   (c) Make sure the conduit on the forward drive link and drive arm moves smoothly in the conduit tube (Fig. 523).

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S 865-289
(5) Remove the speed wrench.

S 865-290
(6) Latch and lock the door.

S 215-291
(7) Make sure the rainseal has folded evenly.

M. Do a Test on the Electrical Operation

S 865-079
(1) Supply electrical power (AMM 24-22-00/201).

S 865-292
(2) Remove the DO-NOT-CLOSE tags and close these circuit breakers:
(a) On the APU external power panel P34:
1) 34J4, CARGO DOOR CONTROL
2) 34J7, CARGO DOOR

S 865-080
(3) Push the latch lock handle release button to release the latch lock handle.

S 215-081
(4) Make sure the DOOR CLOSE indicator light goes on.

NOTE: Indicator lights are located on the door operating panel under the latch lock handle.

S 215-293
(5) Make sure the door does not open.

S 865-294
(6) Move the exterior door control switch to the CLOSE position.

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S 215-295
(7) Make sure the door does not open.

S 865-296
(8) Release the exterior door control switch.

S 865-297
(9) Open this circuit breaker and attach the DO-NOT-CLOSE tag:
(a) On the APU external power panel P34:
1) 34J4, CARGO DOOR CONTROL

S 215-298
(10) Make sure that the DOOR CLOSE indicator light goes off.

S 865-082
(11) Close the latch lock handle to the locked position.

S 865-299
(12) Move the interior door control switch to the OPEN position.

S 215-300
(13) Make sure the door does not move.

S 865-301
(14) Release the interior door control switch.

N. Do a Test on the Open Operation with the Internal Door Control Switch, S411

S 215-083
(1) Make sure the cargo door is closed and the latch lock handle is in the locked position.

S 865-302
(2) Close this circuit breaker and remove the DO-NOT-CLOSE tag:
(a) On the APU external power panel P34:
1) 34J4, CARGO DOOR CONTROL

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S 865-084
(3) Push the latch lock handle release button to release the latch lock handle.

S 865-085
(4) Put the internal door control switch, S411, to the OPEN position.

S 735-086
(5) Make sure the cargo door unlatches and smoothly goes into the door open mode with no vibration or unusual noises.

S 215-087
(6) Make sure the DOOR CLOSE light is off immediately after the latches turn.

S 865-268
(7) Open the cargo door to where it is approximately in the vertical, free-hang position.

S 865-269
(8) Release the internal door control switch, S411.

S 225-270
(9) Make sure that the clearance between the stop lever, adjacent to the latch/hook actuator, and the lower stop bolt is 0.04 to 0.10 inch (View A, Fig. 514).

S 865-271
(10) Put the internal door control switch, S411, to the OPEN position.

S 865-088
(11) When the cargo door opens to the position where it is approximately parallel to the ground, open this circuit breaker on the APU external power panel, P34:
(a) 34J7, CARGO DOOR FWD

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S 225-089
(12) Make sure the movement of the cargo door stops and the door stays stopped in this position.

NOTE: Look at the outer edge of the door to see that the door is stopped.

S 865-090
(13) Close this circuit breaker on the P34 panel:
(a) 34J7, CARGO DOOR FWD

S 215-091
(14) Make sure the cargo door continues to move up when you hold the internal door control switch in the OPEN position.

S 215-092
(15) When the cargo door stops in the fully open position, make sure the DOOR OPEN light is on.

S 215-093
(16) Release the internal door control switch. Make sure the cargo door stays open and the DOOR OPEN light stays on.

S 865-094
(17) Close the latch lock handle to the locked position. Make sure the cargo door does not move.

S 865-095
(18) Put the internal door control switch in the CLOSE position. Make sure the cargo door does not move.

S 225-096
(19) Make sure the clearance between the door open stops on the forward and aft sides of the cargo door and the drive arms is 0.10-0.26 inch (View B, Fig. 524).

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O. Do a Test on the Close Operation with the Internal Door Control Switch, S411

S 035-097
(1) Disconnect the electrical connector from the latch/hook actuator.

S 865-098
(2) Release the latch lock handle.

S 865-099
(3) Put the internal door control switch, S411, to the CLOSE position. While the door closes, do the steps that follow:
(a) Make sure the DOOR OPEN light goes off when the door moves towards the closed position.
(b) Make sure the door moves smoothly, there is no vibration, and you do not hear unusual noises.

S 865-100
(4) Release the internal door control switch when the hinge power unit is off and the movement of the cargo door has stopped.

S 225-101
(5) Make sure the distance from the lower edge of the door to the edge of the fuselage skin on the fuselage frame is 2.3-2.9 inches. Measure this distance at the main latch cams No. 1 and 12.

S 435-102
(6) Connect the electrical connector to the latch/hook actuator.

S 735-103
(7) Put the internal door control switch in the CLOSE position. While the door closes and latches, do the steps that follow:
(a) Make sure the pull-in hooks, on the forward and aft sides of the cargo door, smoothly engage the pull-in pins.
(b) Make sure the door moves to the closed and latched position with no vibration or unusual noises.

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S 215-144
(8) Make sure the DOOR CLOSE light is on.

S 735-104
(9) Release the internal door control switch.

S 215-142
(10) Make sure the DOOR CLOSE light stays on.

S 225-143
(11) Make sure the clearance between the stop lever, adjacent to the latch/hook actuator, and the upper stop bolt is 0.04 to 0.10 inch (View A, Fig 518).

S 865-105
(12) Close the latch lock handle to the locked position.

P. Do a Test on the Open Operation with the External Cargo Door Control Switch, S511

S 865-106
(1) Release the latch lock handle.

S 865-107
(2) Push the DOOR OPEN light and make sure the light comes on. Release the DOOR OPEN light.

S 735-108
(3) Put the external cargo door control switch in the OPEN position. With the stop watch, measure the time for the cargo door to move from the closed position to the open position.

S 225-109
(4) Make sure the time for the cargo door to move from the closed position to the open position is not more than 50 seconds.

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S 865-110
(5) Push the DOOR CLOSE light and make sure the light comes on. Release the DOOR CLOSE light.

Q. Do a Test on the Reversibility Operation of the Cargo Door

S 215-111
(1) Make sure the latch lock handle is in the open position.

S 215-112
(2) Make sure the cargo door is in the fully open position.

S 865-113
(3) Put the external cargo door control switch in the CLOSE position.

S 735-114
(4) When the door moves approximately to the half-open position, put the external cargo door control switch in the OPEN position. Make sure the door changes direction and moves in the open direction.

S 735-115
(5) While the cargo door moves in the open direction, put the cargo door control switch in the CLOSE position. Make sure the cargo door changes direction and moves in the close direction.

S 735-116
(6) When the cargo door is in the pulled-in position, but before the door latches, put the cargo door control switch in the OPEN position. Make sure the latches and the pull-in hooks change direction.

S 735-117
(7) While the cargo door unlatches, but before the pull-in hooks disengage, put the cargo door control switch in the CLOSE position. Make sure the latch/hook mechanism changes direction and moves in the latch direction.

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S 865-116
(8) Release the cargo door control switch after the cargo door is in the latched position.

R. Do a Test on the Switch Override Operation

S 215-117
(1) Make sure the latch lock handle is in the open position.

S 865-118
(2) Hold the external cargo door control switch in the OPEN position.

S 735-119
(3) While the cargo door opens, move and hold the internal door control switch in the CLOSE position. Make sure the cargo door changes direction and moves to the closed and latched position.

S 865-120
(4) Release the internal and external cargo door control switch.

S 865-121
(5) Close the latch lock handle to the locked position.

S. Do a check of the Hinge Power Drive Unit and the Rotary Actuator Operation.

S 865-377
(1) Open the cargo door electrically until the door is in the vertical free hang position.

S 865-378
(2) Operate the manual drive of the hinge power drive unit until the door starts to move away from the body.

S 865-379
(3) Back off 25 turns.

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S 025-380
(4) Disconnect the drive shafts from the forward and aft rotary actuators (Fig. 507).

S 725-381
(5) Use a torque wrench to measure the input torque to each rotary actuator in the open direction and in the close direction for 1 turn in each direction.
(a) Make sure the torque is between 23 and 35 pound-inches.

S 485-382
(6) Connect torque wrenches to the output shafts of the hinge power drive unit.

S 985-383
(7) Turn the manual drive of the hinge power drive unit.

NOTE: Do not let the torque wrenches on the output shafts turn.

S 725-384
(8) Measure the output torque necessary to cause clutch slippage in the hinge power drive unit.
(a) Make sure the slippage occurs when the sum of the measurements on the two torque wrenches is between 432 and 562 pound-inches.

S 085-385
(9) Remove the torque wrenches.

S 985-386
(10) Turn the input to the forward rotary actuator in the door open direction (clockwise, forward view) until you feel resistance and the free play between the rotary actuator and the drive arm is removed.

NOTE: When the torque of the rotary actuator input suddenly increases, the free play is removed. The free play is removed in approximately 3.4 turns.

S 425-387
(11) Connect the drive shaft to the forward rotary actuator. If the drive shaft splines and the rotary actuator splines do not align, turn the rotary actuator input in the door open direction to align the splines.

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S 985-388

(12) Turn input to the aft rotary actuator in the door open direction (counterclockwise, aft view) until you feel resistance and the free play between the rotary actuator and the drive arm is removed.

NOTE: When the torque of the rotary actuator input suddenly increases, the free play is removed.

S 425-389

(13) Connect the drive shaft to the aft rotary actuator. If the drive shaft splines and the rotary actuator splines do not align, turn the rotary actuator input in the door open direction to align the splines.

S 425-390

(14) Install lockwires on the drive shafts.

T. Do a Test on the Door Warning Indication

S 725-272

(1) Do a test on the door warning indication (AMM 52-71-02/201).

U. Do a Test on the No-back of the Rotary Actuators.

NOTE: The no-back unit (manual drive unit) is adjacent to the forward rotary actuator with the drive shaft.

S 215-131

(1) Make sure all of the rig pins and the proximity sensor actuator/deactuator set are removed from the cargo door.

S 865-132

(2) Supply electrical power (AMM 24-22-00/201).

S 865-133

(3) Open the latch lock handle.

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S 865-134
(4) Electrically open and close the cargo door three times successively.

NOTE: It is not necessary to latch and unlatch the door between cycles. Change the direction of door movement from close to open just prior to operation of the latch/hook actuator.

NOTE: It is necessary for two persons to do this procedure. One person at the manual drive port on the top forward corner of the large cargo door and one person at the forward rotary actuator.

S 735-135
(5) Open fully the large cargo door electrically.

S 735-366
(6) Put a 3/8-inch square drive wrench in the manual drive port on the top forward corner of the large cargo door (Fig. 507).

S 735-376

CAUTION: DO NOT LET THE ROTARY ACTUATOR OPERATE WITH TORQUE LIMITER MOVEMENT FOR MORE THAN 5 SECONDS. DAMAGE TO THE ROTARY ACTUATOR CAN OCCUR.

DO NOT OPERATE THE MANUAL DRIVE UNIT AT MORE THAN 500 RPM OR A TORQUE OF MORE THAN 110 POUND-INCHES. DAMAGE TO THE MANUAL DRIVE UNIT CAN OCCUR.

(7) Turn the manual drive socket slowly clockwise in the close direction.

S 215-368
(8) Make sure that one of the drive shafts between the hinge power unit and the rotary actuators has a small movement.

NOTE: When the drive shaft has a small movement or is moved in the forward or aft direction, there must be no load on the drive shaft.

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S 735-369
(9) Continue to turn the manual drive socket clockwise in the close direction.

S 215-370
(10) In two turns or less of the manual drive socket, make sure that you find a position where there is no load on the other drive shaft.

NOTE: You can turn the manual drive socket in the close and open directions in two turns or less. Find the no-load position.

S 215-371
(11) Continue to turn the manual drive until the two drive shafts move freely.

S 215-372
(12) Make sure that the rotary actuators hold the weight of the large cargo door and are in a servicable condition.

S 865-392
(13) Put the door in the vertical free hang position.

S 735-373
(14) Apply approximately 30 pounds (133 newtons) of force to move the lower half of the large cargo door inboard and outboard.

NOTE: This will remove the backlash from the system.

(a) Measure the distance that the lower edge of the door moves.

NOTE: The free hanging travel must be at a maximum to make sure that the drive shafts are equally loaded and the system overloads are at a minimum.

(b) Make sure that the distance of inboard-to-outboard movement is more than 7.25 inches (184.15 mm) and less than 8.20 inches (208.28 mm).

V. Put the Airplane Back to its Usual Condition

S 865-136
(1) Close the cargo door to the fully closed and latched position.

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S 865-137
(2) Close the latch lock handle to the locked position.

TASK 52-33-00-715-331

5. Operational Check - Large Forward Cargo Door Manual Drive Sytems, Lift Power Unit Brake, and Latch/Hook Actuator Torque Limiters

A. Access
(1) Location Zone
821 Forward Cargo Door

B. Latch/Hook Actuator Manual Drive and Torque Limiter Test - Open

S 865-332
(1) Make sure the door is closed, latched, and locked.

S 865-304
(2) Push the latch lock handle release button and let the latch lock handle move to the fully open position.

S 865-303

CAUTION: DO NOT LET THE LATCH/HOOK ACTUATOR OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE LATCH/HOOK ACTUATOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 70 POUND-INCHES. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE LATCH/HOOK ACTUATOR.

(3) Put a 3/8-inch square drive speed wrench in the manual drive socket of the latch/hook actuator.

S 735-306
(4) Turn the speed wrench clockwise approximately 115 turns to put the cargo door in the fully not latched and not hooked position. While the door unlatches and unhooks, do the steps that follow:

NOTE: The stops that prevent travel are touched when you feel or hear clutch slippage. The cargo door moves outboard approximately 2.6 inches when the stops are touched.

(a) Make sure the main latch cams (12 locations) turn freely and disengage from the main latch pins on the fuselage frame.

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(b) Make sure that on the forward side of the door the latch lock roller on the door freely disengages from the latch lock crank on the body frame.
(c) Make sure the pull-in hooks, on the forward and aft sides of the cargo door, turn smoothly and open the door approximately 2.6 inches.
(d) Make sure the two hinge arms move freely and that one of the two hinge arms does not prevent the movement of the cargo door.

NOTE: If one hinge arm prevents the movement of the cargo door, the pull-in hook on that side of the door will move slower from the pull-in pin than the other pull-in hook.

(e) Make sure the latch and hook mechanism operates smoothly and correctly when you use the manual drive of the latch/hook actuator.
(f) Make sure the stop lever adjacent to the latch/hook actuator touches the lower stop bolt.

S 725-333
(5) Use the torque wrench to turn the latch/hook manual drive clockwise until the torque limiter slippage is felt or heard.
(a) Make sure that you can apply a minimum of 54 pound-inches (6.1 Nm) to the manual drive port with no clutch slippage.
(b) It is recommended that you replace actuators with clutch slippage less than 54 pound-inches (6.1 Nm) (AMM 52-33-08/401).

NOTE: This check makes sure that the operation of the brake and manual drive is satisfactory. It also gives a check of the system function and latch restraint.

S 865-334
(6) Remove the torque wrench.

C. Lift Manual Drive and Lift Power Drive Unit Brake Test - Open

NOTE: The lift manual drive test also tests the lift power drive unit brake. When the lift manual drive is used to open the door, the lift power drive unit brake holds the door.

S 865-307
(1) Make sure the door is closed but not latched.

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S 865-308

CAUTION: DO NOT LET THE HINGE POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE HINGE POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 190 POUND-INCHES. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE HINGE POWER UNIT.

(2) Put a 3/8-inch square drive speed wrench in the manual drive socket of the hinge power unit. Use the manual drive socket that is found on the external surface of the door near the forward side.

S 865-309

(3) Turn the speed wrench counterclockwise until the lower part of the cargo door moves approximately 6 feet from the lower fuselage frame. As the door opens, do this check:
   (a) Make sure the pull-in hooks move clear of the pull-in pins on the fuselage frame while the cargo door opens.

S 865-310

(4) Move the 3/8-inch square drive speed wrench to the other manual drive socket of the hinge power unit. Use the manual drive socket that is found on the forward edge of the cargo door.

S 735-311

(5) Turn the speed wrench counterclockwise until the cargo door is in the fully open position and you can feel or hear clutch slippage. While the door opens, do the steps that follow:
   (a) Make sure the hinge arms have smooth and synchronized movement while the door opens.

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(b) Make sure the lift drive mechanism operates smoothly and correctly when you use the manual drive of the hinge power unit.

NOTE: It is usual for the cargo door to stop at the lowest point of its travel.

(c) Make sure the conduit on the forward drive link and drive arm moves smoothly in the conduit tube.

S 215-316

(6) Make sure the door open stops on the forward and aft sides of the cargo door touch the drive arms.

S 865-318

(7) Remove the speed wrench.

D. Lift Manual Drive and Lift Power Drive Unit Brake Test - Close

S 865-321

CAUTION: DO NOT LET THE HINGE POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE HINGE POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 190 POUND-INCHES. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE HINGE POWER UNIT.

(1) Put the 3/8-inch square drive speed wrench in the manual drive socket of the hinge power unit. Use the manual drive socket that is found on the forward edge of the cargo door.

S 865-322

(2) Turn the speed wrench clockwise until the lower part of the cargo door is approximately 6 feet from the lower fuselage frame.

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S 865-323

(3) Move the 3/8-inch square drive speed wrench to the other manual drive socket of the hinge power unit. Use the manual drive socket that is found on the external surface of the door near the forward side.

S 735-324

(4) Turn the speed wrench clockwise until the lower edge of the cargo door is 2.6 inches from the fuselage skin. While the door closes, do the steps that follow:
   (a) Make sure the hinge arms have smooth and synchronized movement while the cargo door closes.
   (b) Make sure the lift drive mechanism operates with no vibration or unusual noises.
   (c) Make sure the conduit on the forward drive link and drive arm moves smoothly in the conduit tube.

S 865-325

(5) Remove the speed wrench.

E. Latch/Hook Actuator Manual Drive and Torque Limiter Test - Close

S 865-328

CAUTION: DO NOT LET THE LATCH/HOOK ACTUATOR OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE LATCH/HOOK ACTUATOR CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 70 POUND-INCHES. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE LATCH/HOOK ACTUATOR.

(1) Put a 3/8-inch square drive speed wrench in the manual drive socket of the latch/hook actuator.

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S 735-330

(2) Turn the speed wrench counterclockwise approximately 115 turns to put the cargo door in the fully latched and hooked position. While the door hooks and latches, do the steps that follow:

NOTE: The stops that prevent travel are touched when you feel or hear clutch slippage.

(a) Make sure the pull-in hooks, on the forward and aft sides of the cargo door, smoothly engage the pull-in pins and pull the two sides of the cargo door to the closed position.
(b) Make sure the latch lock roller smoothly enters the latch lock crank on the body frame without noticeable movement of the crank.
(c) Make sure the latch and hook mechanism operates smoothly and correctly when you use the manual drive of the latch/hook actuator.
(d) Make sure the main cam latches and midspan latch cams turn easily and freely engage the pins on the fuselage frame.
(e) Make sure the stop lever adjacent to the latch/hook actuator touches the upper stop bolt.

S 725-337

(3) Use the torque wrench to turn the latch/hook manual drive counterclockwise until the torque limiter slippage is felt or heard.
(a) Make sure that you can apply a minimum of 54 pound-inches (6.1 Nm) to the manual drive port with no clutch slippage.
(b) It is recommended that you replace actuators with clutch slippage less than 54 pound-inches (6.2 Nm) (AMM 52-33-08/401).

NOTE: This check makes sure that the operation of the brake and manual drive is satisfactory. It also gives a check of the system function and latch restraint.

S 865-338

(4) Remove the torque wrench.

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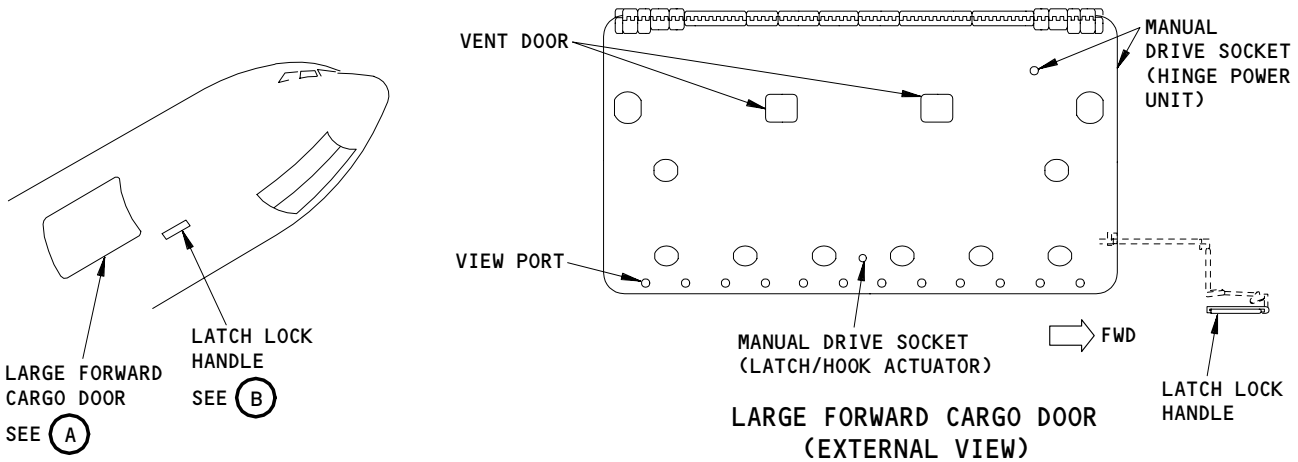
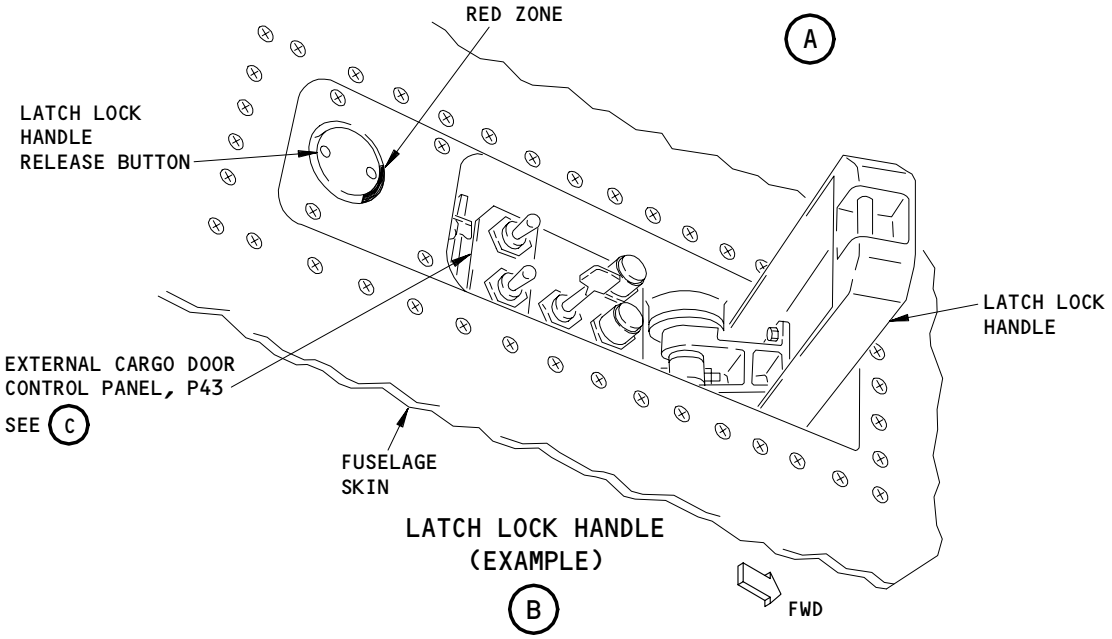


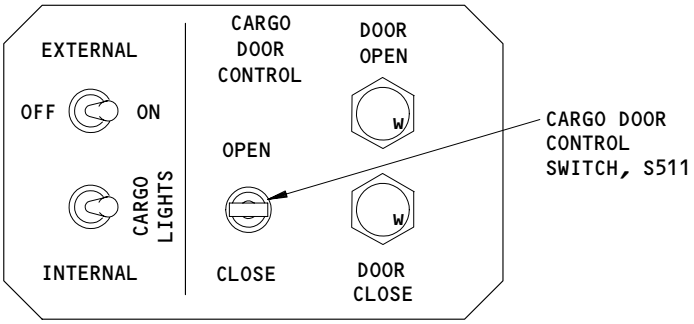
LARGE FORWARD CARGO DOOR
(EXTERNAL VIEW)

A



LATCH LOCK HANDLE
(EXAMPLE)

B



EXTERNAL CARGO DOOR CONTROL PANEL, P43
(EXAMPLE)

C

Large Forward Cargo Door External Cargo Door Control Switch
Figure 501

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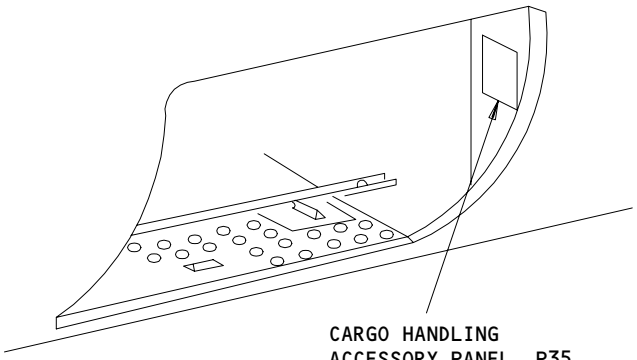
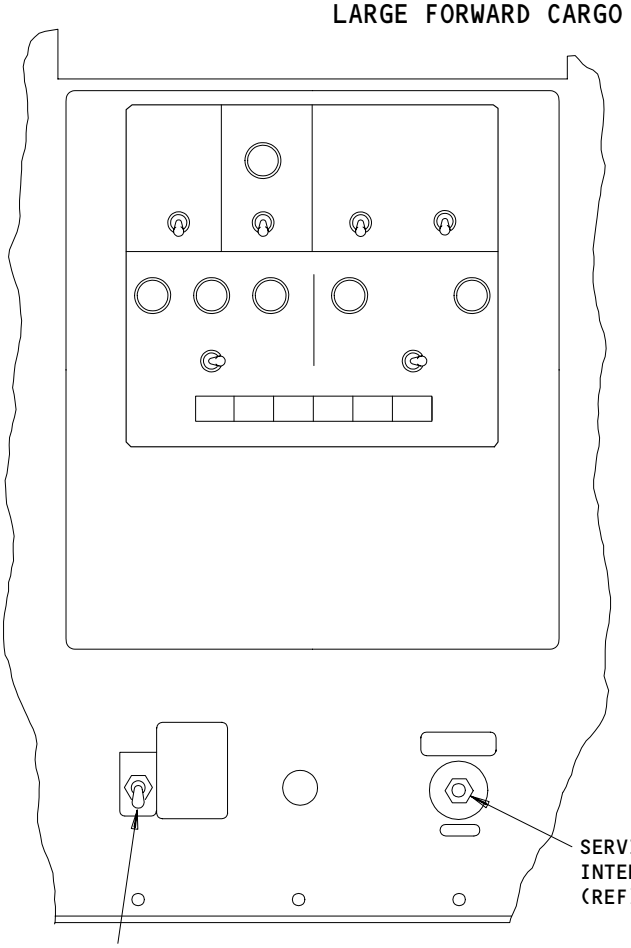
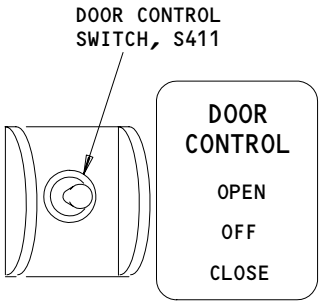


LARGE FORWARD CARGO DOOR CUTOUT



CARGO HANDLING ACCESSORY PANEL, P35

(A)



DOOR CONTROL SWITCH, S411

(B)

Large Forward Cargo Door Internal Door Control Switch
Figure 502

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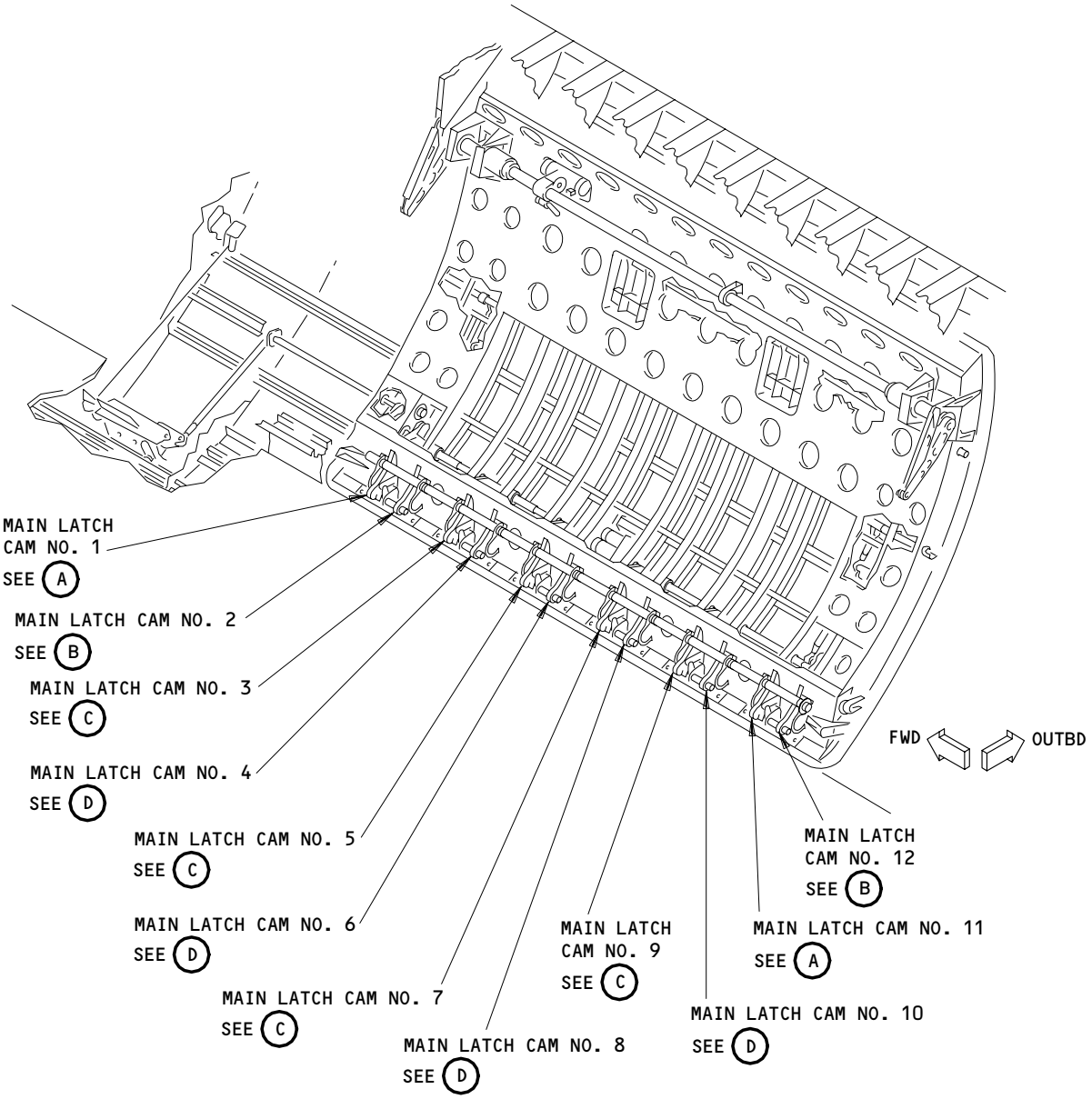

LARGE FORWARD CARGO DOOR
(CLOSED AND LATCHED POSITION)

Main Latch Pin Fitting Adjustment
Figure 503 (Sheet 1)

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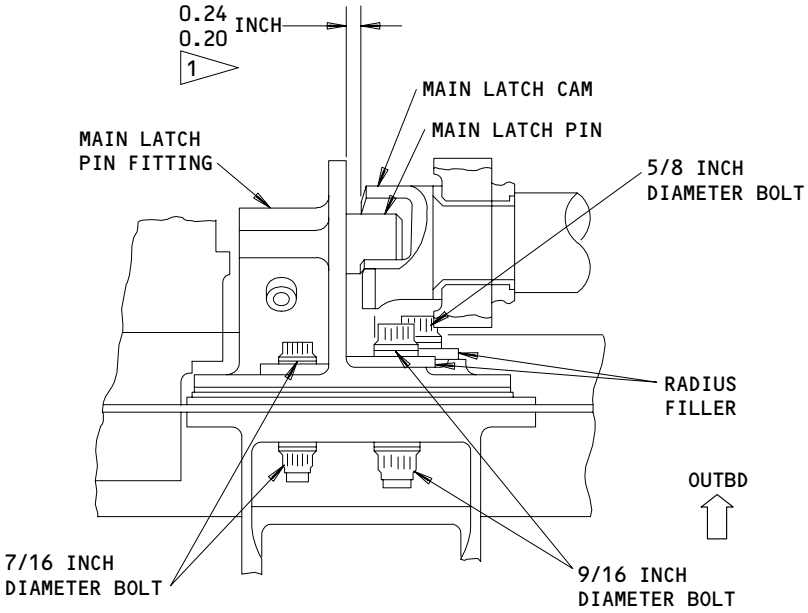
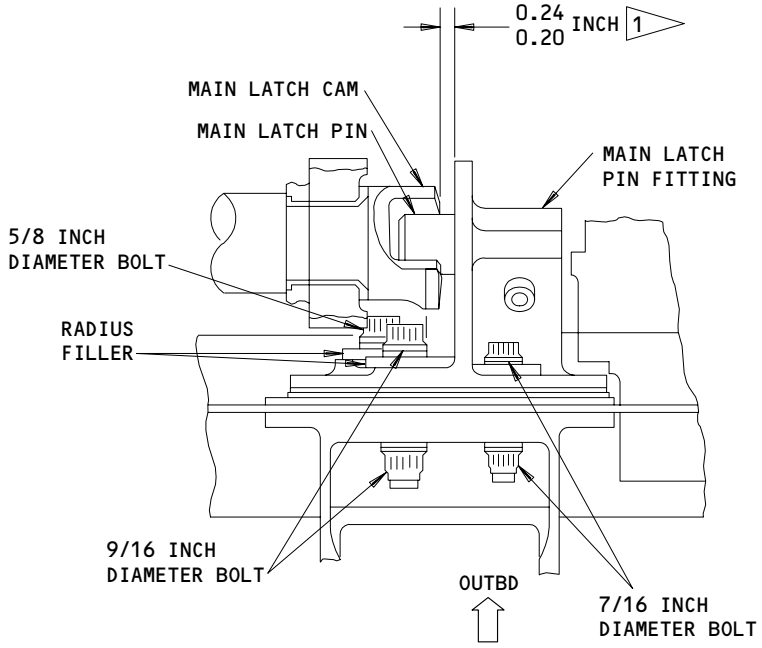


MAIN LATCH CAM NO. 1, 11

(A)



MAIN LATCH CAM NO. 2, 12

(B)

1 SEE FIG. 505 FOR THE LONGITUDINAL CLEARANCES ADJUSTMENT

Main Latch Pin Fitting Adjustment
Figure 503 (Sheet 2)

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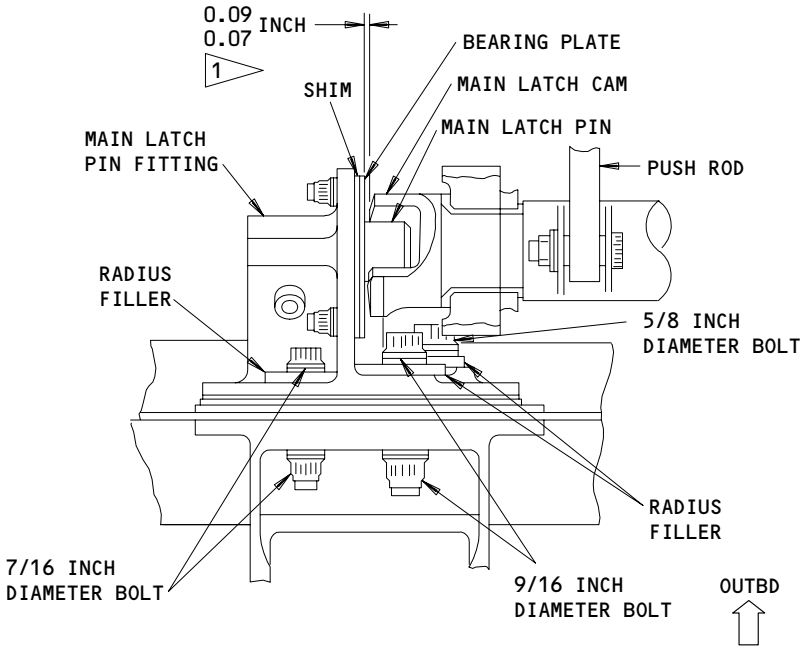
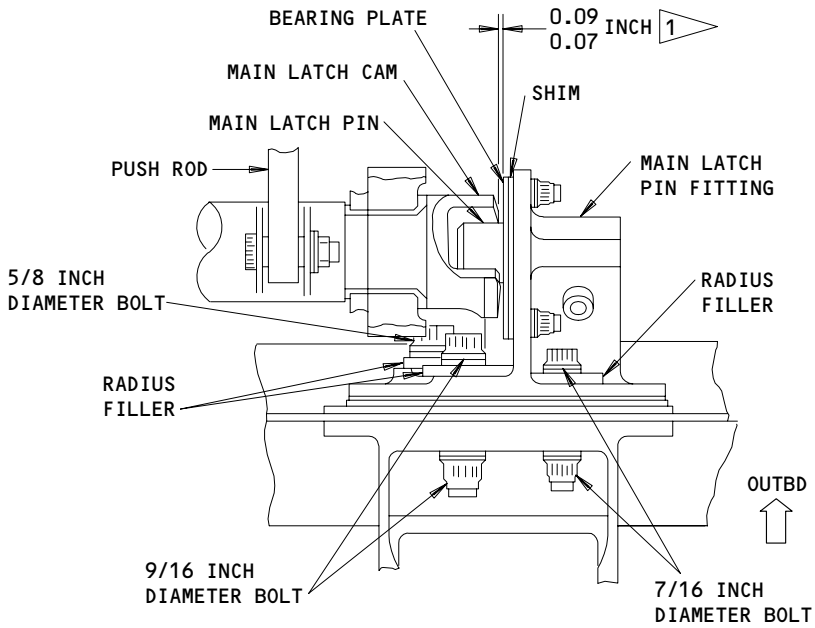


MAIN LATCH CAM NO. 3,5,7,9

C



MAIN LATCH CAM NO. 4,6,8,10

D

Main Latch Pin Fitting Adjustment
Figure 503 (Sheet 3)

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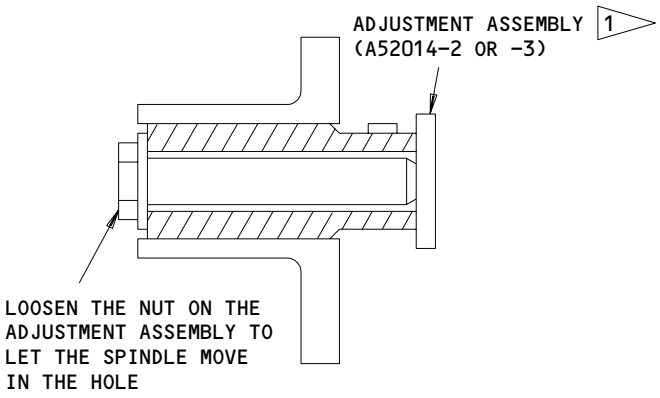
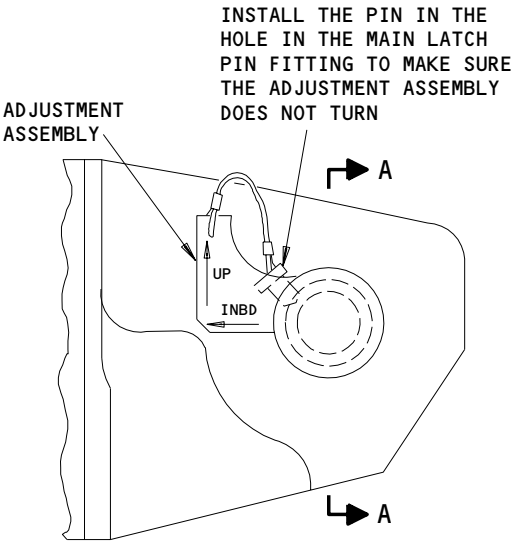


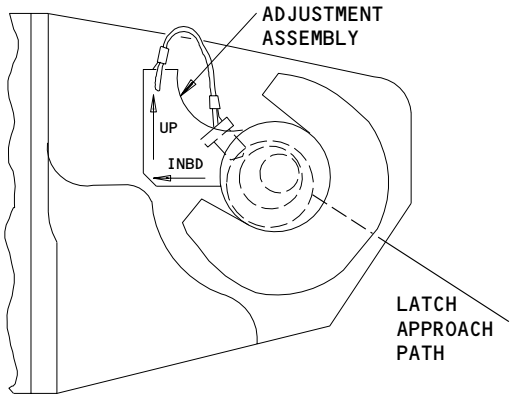
A-A

1 THE ADJUSTMENT SET A52014 HAS SIX A52014-2 AND SIX A52014-3 ADJUSTMENT ASSEMBLIES



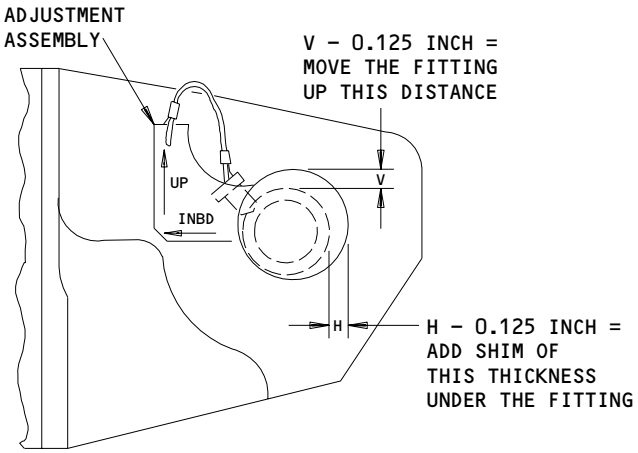
INSTALL THE ADJUSTMENT ASSEMBLY IN THE MAIN LATCH PIN FITTING (6 LOCATIONS AS SHOWN AND 6 LOCATIONS OPPOSITE)

STEP 1



STEP 2

OPERATE THE MANUAL DRIVE OF THE LATCH/HOOK ACTUATOR TO PUT THE DOOR IN THE FULLY PULLED-IN POSITION. DO NOT LET THE MAIN LATCH CAMS TURN. MAKE SURE THE SPINDLE HEAD FULLY TOUCHES THE INNER SURFACE OF THE MAIN LATCH CAM. TIGHTEN THE NUT ON THE SPINDLE



STEP 3

OPEN THE CARGO DOOR. MEASURE THE DIMENSIONS H AND V. 0.125 INCH SUBTRACTED FROM THE DIMENSIONS H AND V IS THE DISTANCE OF ADJUSTMENT NECESSARY TO GET THE CORRECT MAIN LATCH PIN POSITION. ADJUST THE MAIN LATCH PIN. DO THE CHECK AGAIN. REMOVE THE ADJUSTMENT ASSEMBLY. INSTALL THE CORRECT MAIN LATCH PIN.

Main Latch Pin Vertical and Inboard/Outboard Adjustment
Figure 504

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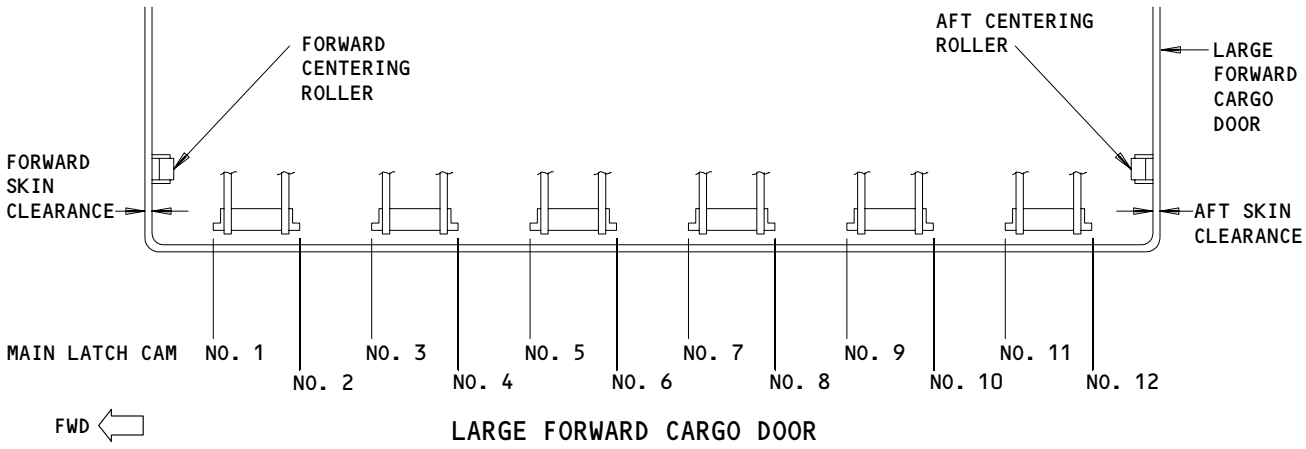

LARGE FORWARD CARGO DOOR

LONGITUDINAL CLEARANCE ADJUSTMENT

1. MAKE SURE THE AIRPLANE IS STABLE.
2. WITH THE CARGO DOOR OPEN A SMALL DISTANCE, LIGHTLY HIT THE ENDS OF THE MAIN LATCH CAMS TO REMOVE THE 0.005 TO 0.015 INCH END PLAY.
3. CLOSE THE CARGO DOOR.
4. WRITE THE SKIN CLEARANCES OF THE FORWARD AND AFT SIDES OF THE DOOR NEAR THE LOWER CORNERS.
5. WRITE THE LONGITUDINAL CLEARANCES BETWEEN THE MAIN LATCH CAMS AND THE MAIN LATCH PIN FITTINGS FOR THE MAIN LATCH CAMS NO. 1 THRU 12.
6. IF THE FORWARD SKIN CLEARANCE IS MORE THAN THE AFT SKIN CLEARANCE: -

(a)	CLEARANCE AT LATCH NO. 3, 5, 7 & 9	MUST BE	[0.08 + 1/2 SKIN CLEARANCE DIFFERENCE]	± 0.01 INCH
(b)	1 & 11		[0.22 +]	± 0.02
(c)	4, 6, 8 & 10		[0.08 -]	± 0.01
(d)	2 & 12		[0.22 -]	± 0.02
(e)	FORWARD CENTERING ROLLER CLEARANCE	MUST BE	[0.04 + 1/2 SKIN CLEARANCE DIFFERENCE]	± 0.01 INCH
(f)	AFT		[0.04 -]	

IF THE AFT SKIN CLEARANCE IS MORE THAN FORWARD SKIN CLEARANCE: -

(g)	CLEARANCE AT LATCH NO. 3, 5, 7 & 9	MUST BE	[0.08 - 1/2 SKIN CLEARANCE DIFFERENCE]	± 0.01 INCH
(h)	1 & 11		[0.22 -]	± 0.02
(i)	4, 6, 8 & 10		[0.08 +]	± 0.01
(j)	2 & 12		[0.22 +]	± 0.02
(k)	FORWARD CENTERING ROLLER CLEARANCE	MUST BE	[0.04 - 1/2 SKIN CLEARANCE DIFFERENCE]	± 0.01 INCH
(l)	AFT		[0.04 +]	

Large Forward Cargo Door Longitudinal Clearances
Figure 505

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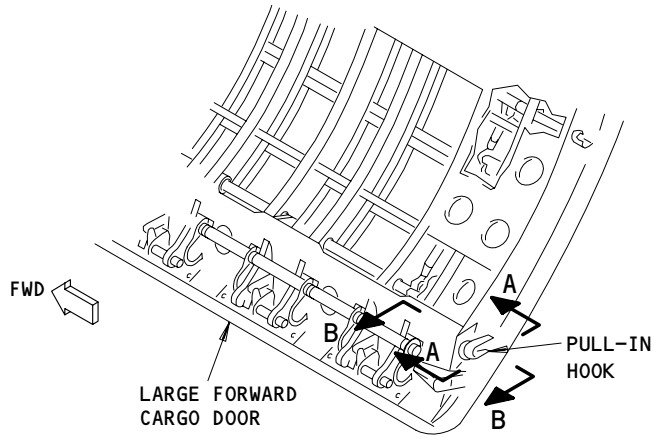
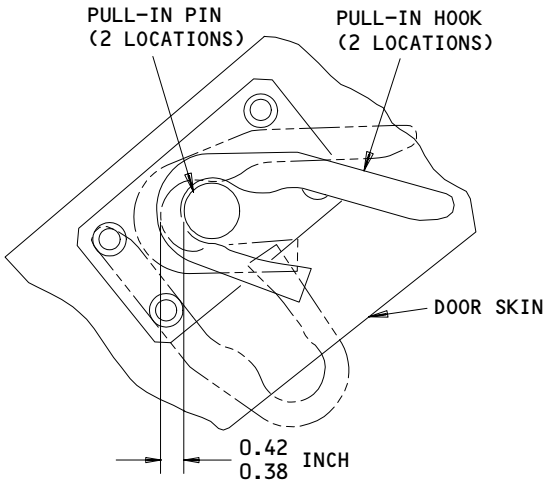
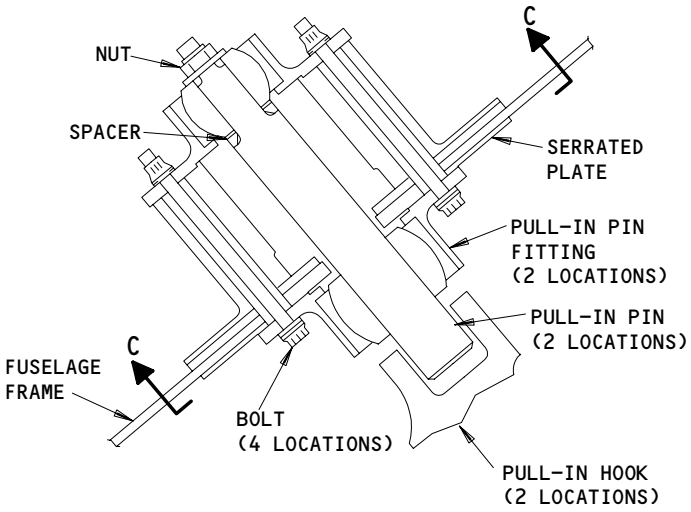


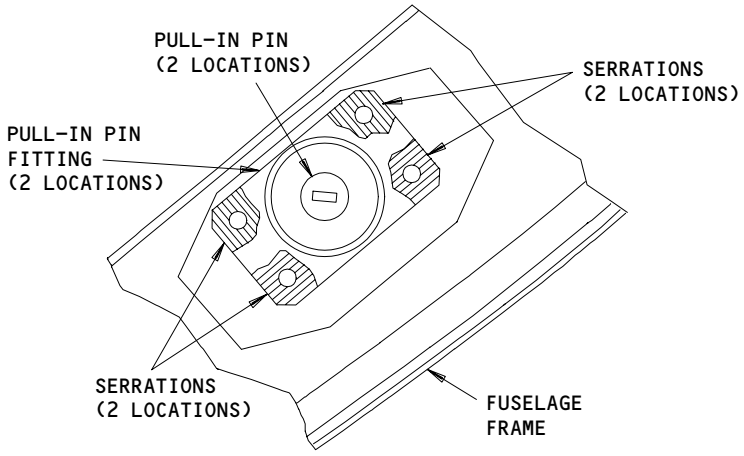
LARGE FORWARD CARGO DOOR



A-A



B-B



C-C

Adjustments on the Fuselage Frame
Figure 506 (Sheet 1)

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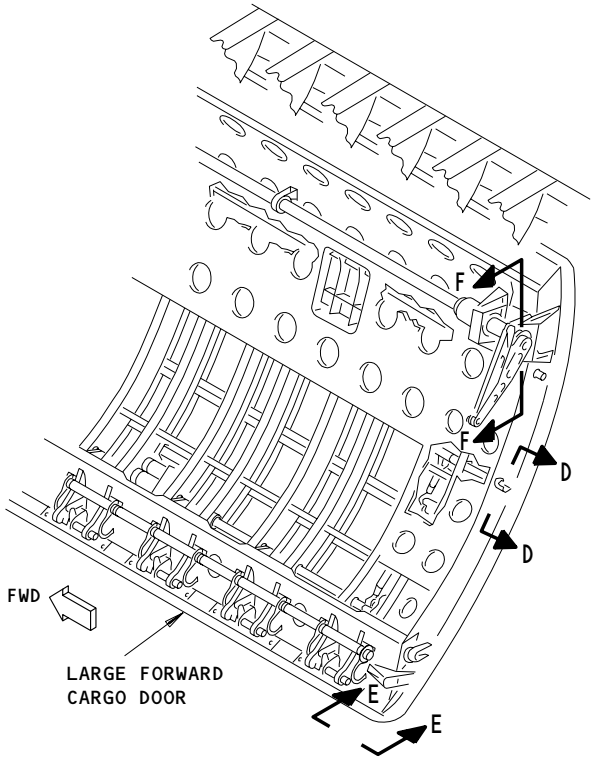
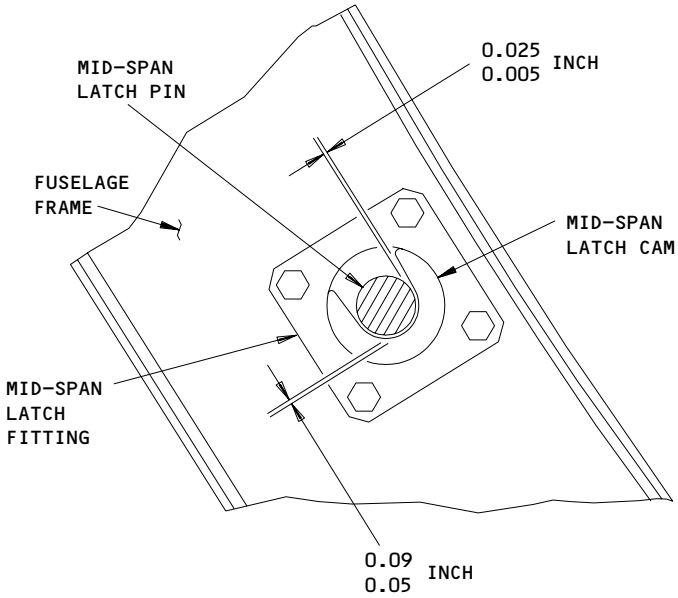
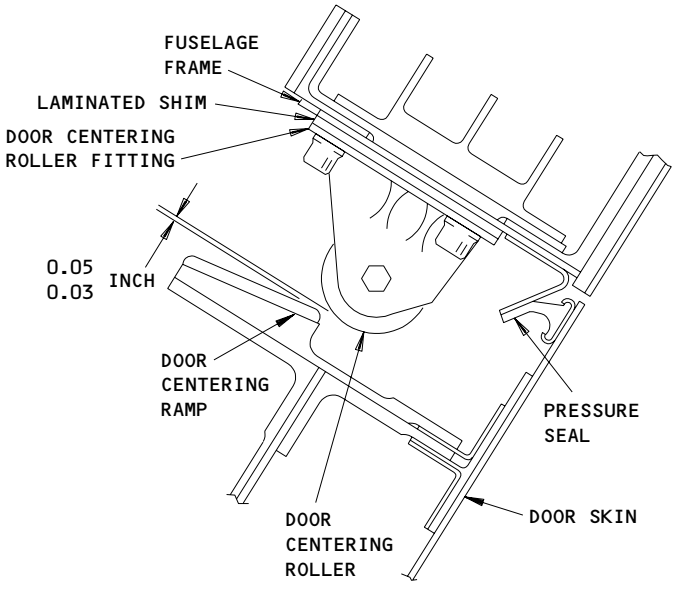
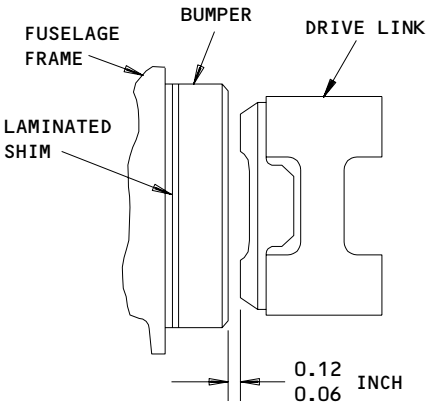




D-D



E-E



F-F

Adjustments on the Fuselage Frame
Figure 506 (Sheet 2)

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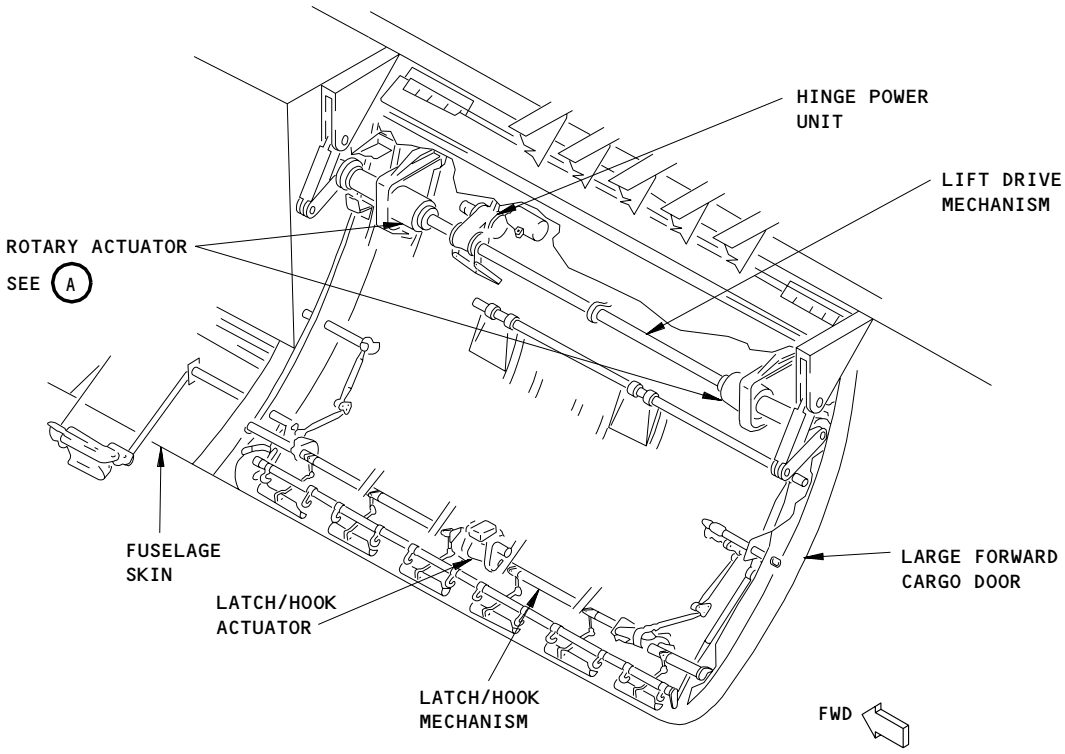
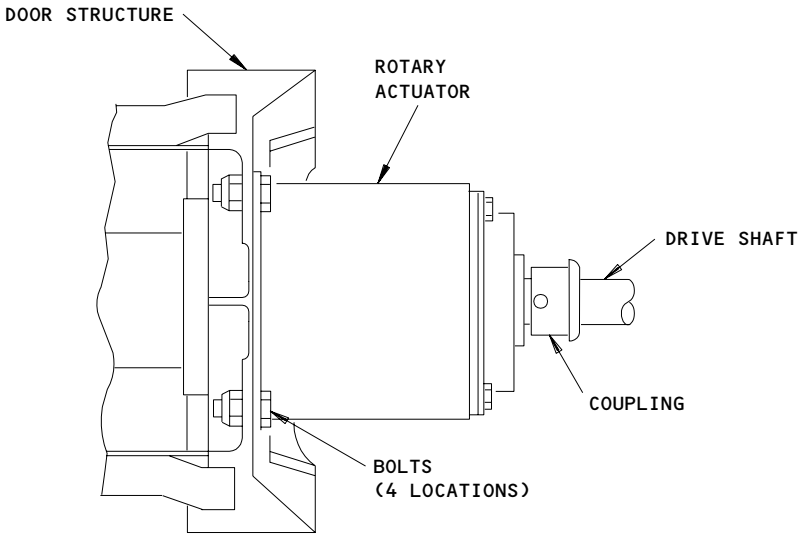


LARGE FORWARD CARGO DOOR



ROTARY ACTUATOR
(2 LOCATIONS)

1 AIRPLANES WITHOUT VIBRATION DAMPERS (PRE-SB 52-74 OR PRE-PRR B12731)

(A) 1

Large Forward Cargo Door Rotary Actuator
Figure 507

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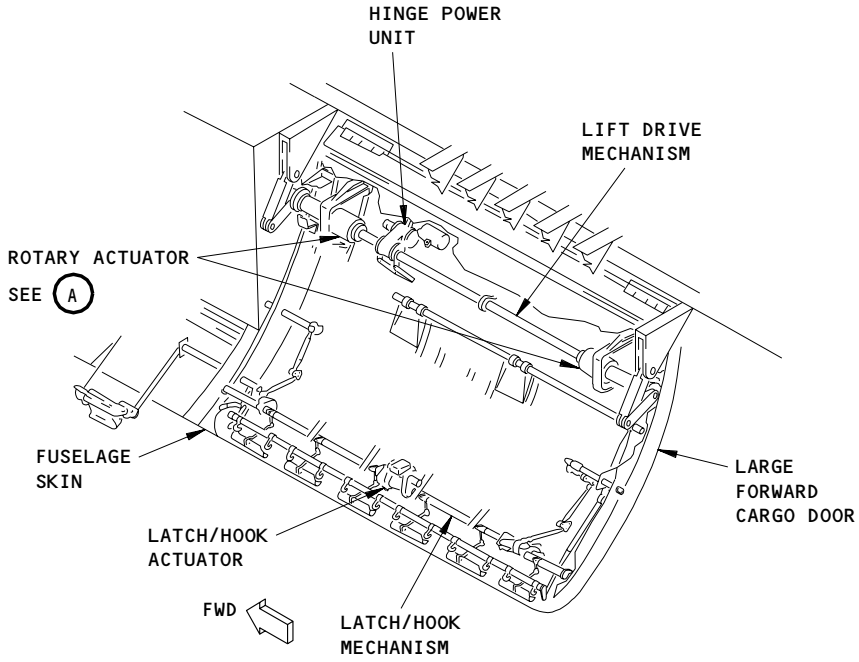
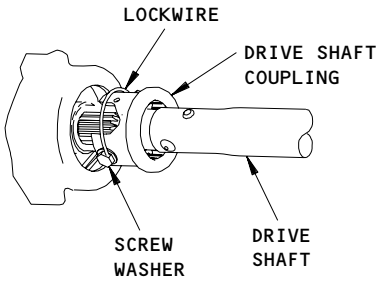
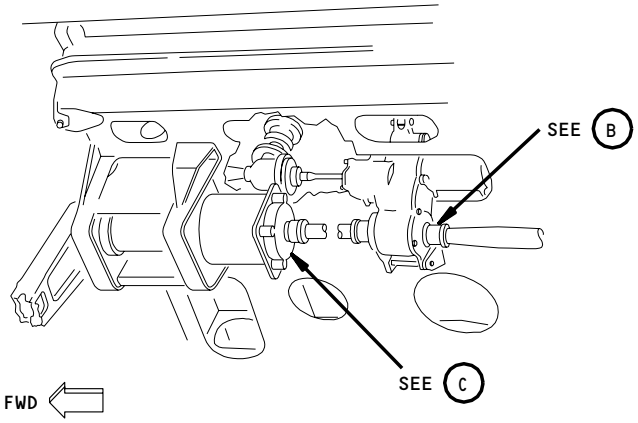


LARGE FORWARD CARGO DOOR



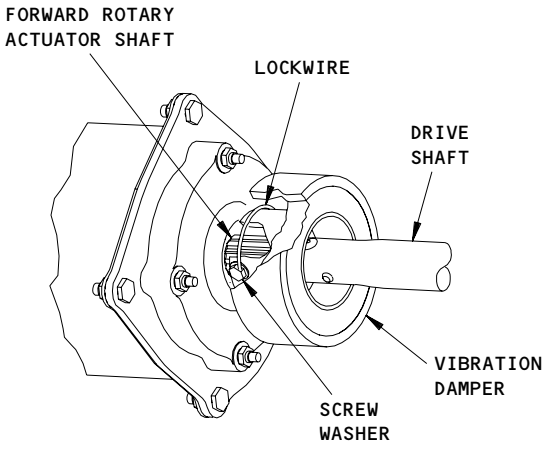
HINGE POWER UNIT

B



ROTARY ACTUATOR

A 2



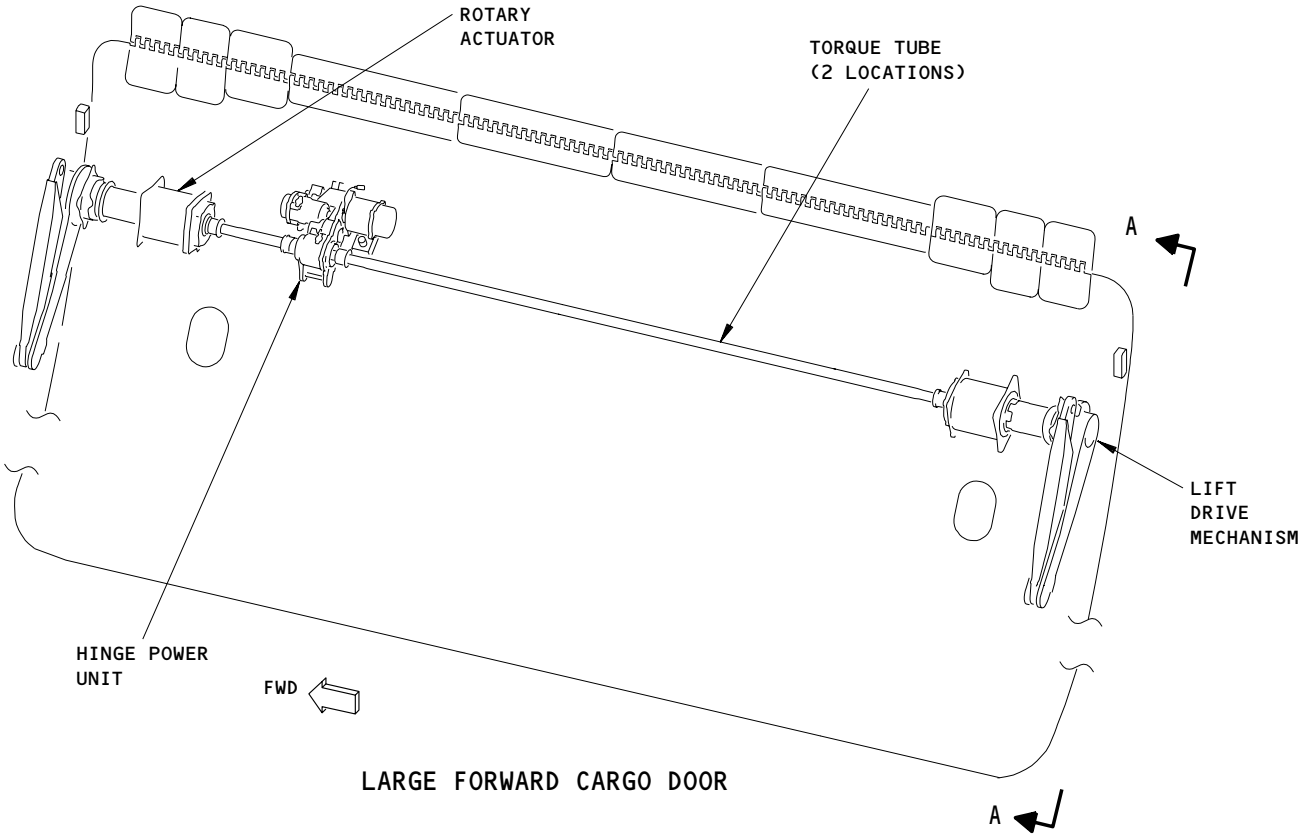
ROTARY ACTUATOR

C

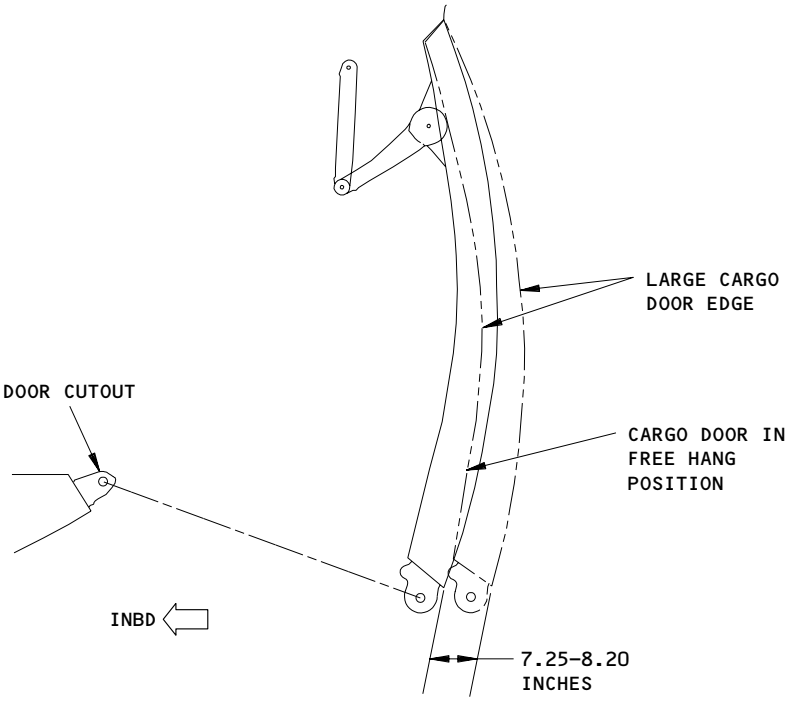
1 AIRPLANES WITH VIBRATION DAMPERS (POST-SB 52-74 OR POST-PRR B12731)

Large Forward Cargo Door Rotary Actuator
Figure 507A

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.



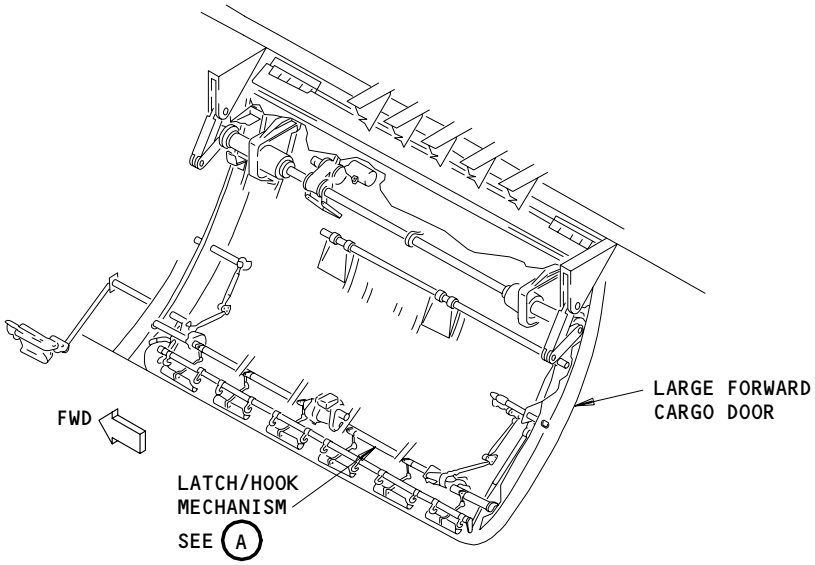
LARGE FORWARD CARGO DOOR



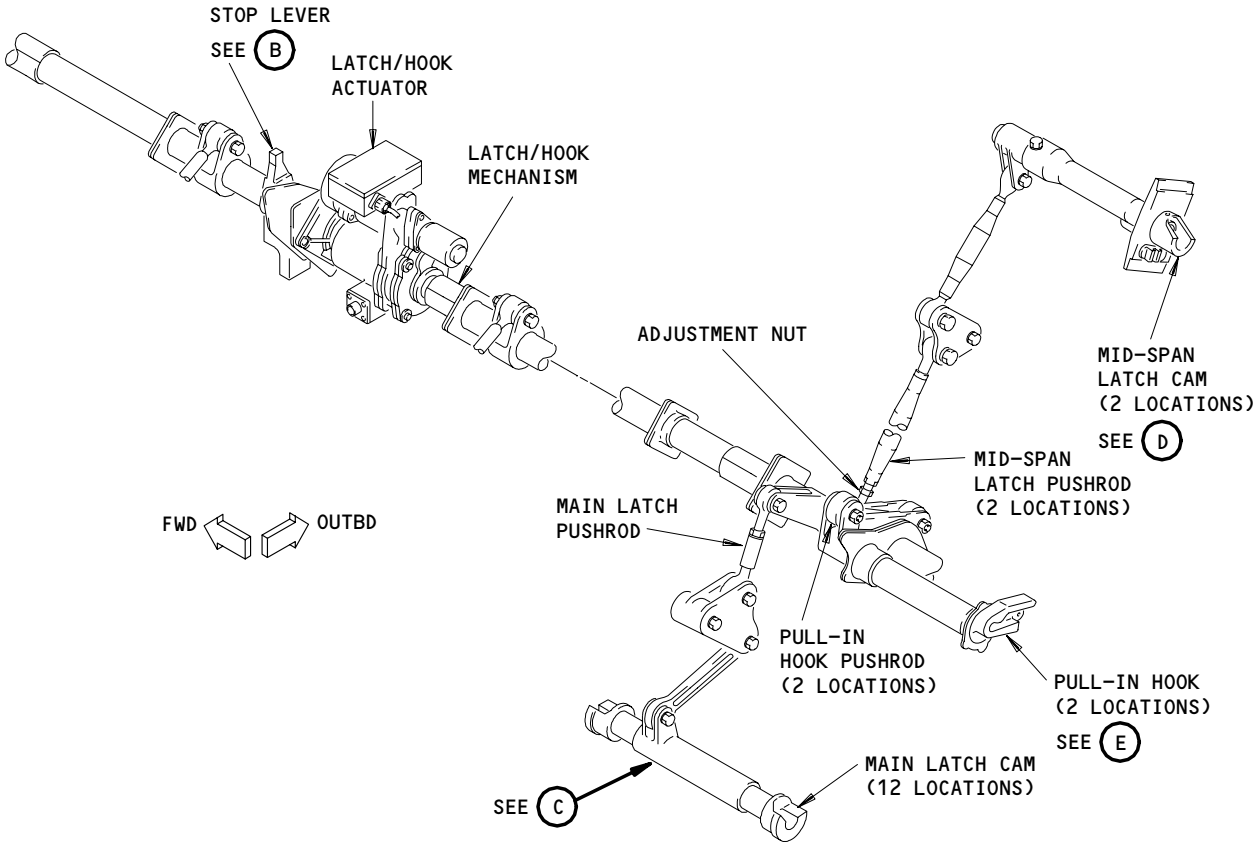
A-A

Large Forward Cargo Door Free Play
Figure 507B

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.



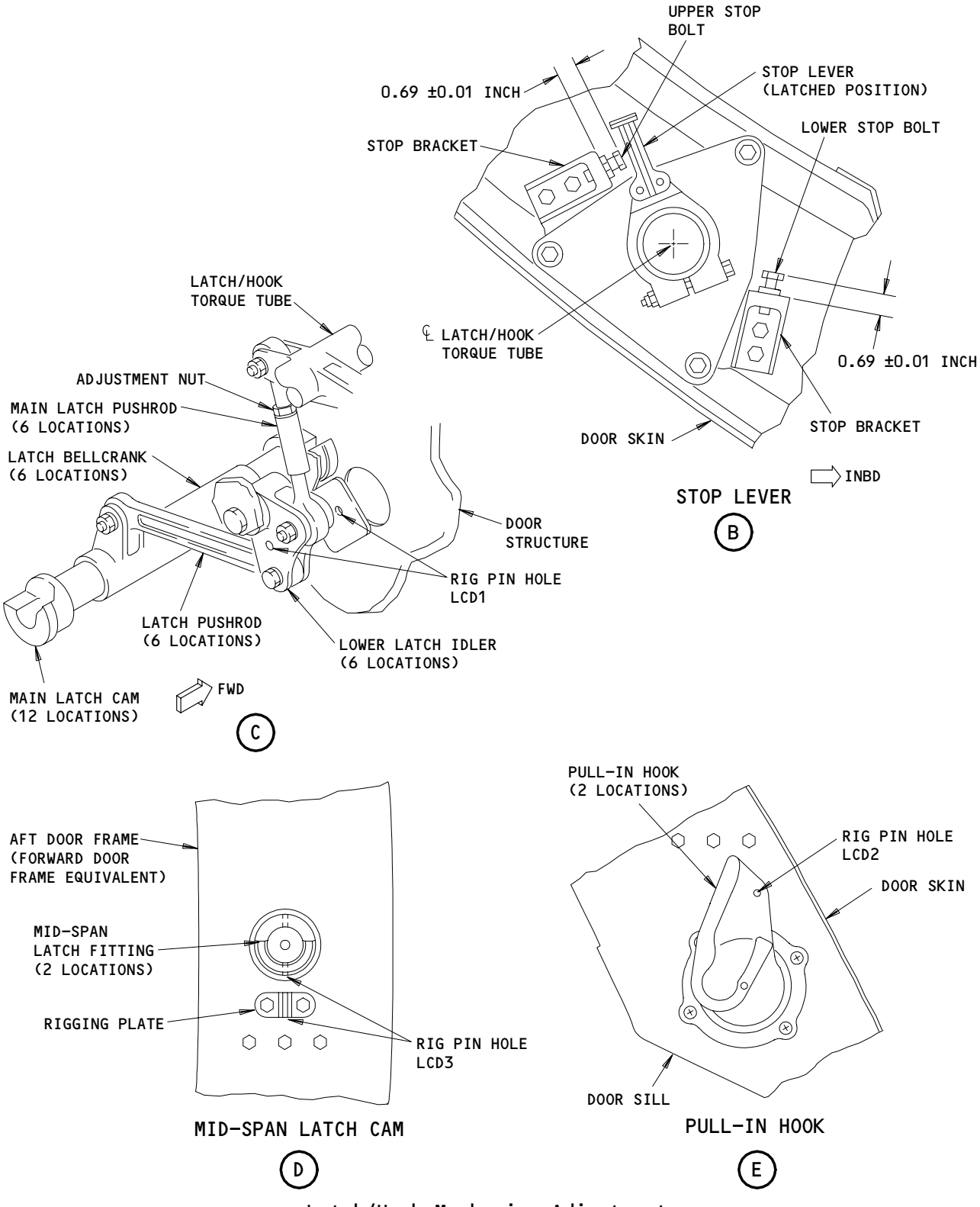
LARGE FORWARD CARGO DOOR



LATCH/HOOK MECHANISM
A

Latch/Hook Mechanism Adjustment
Figure 508 (Sheet 1)

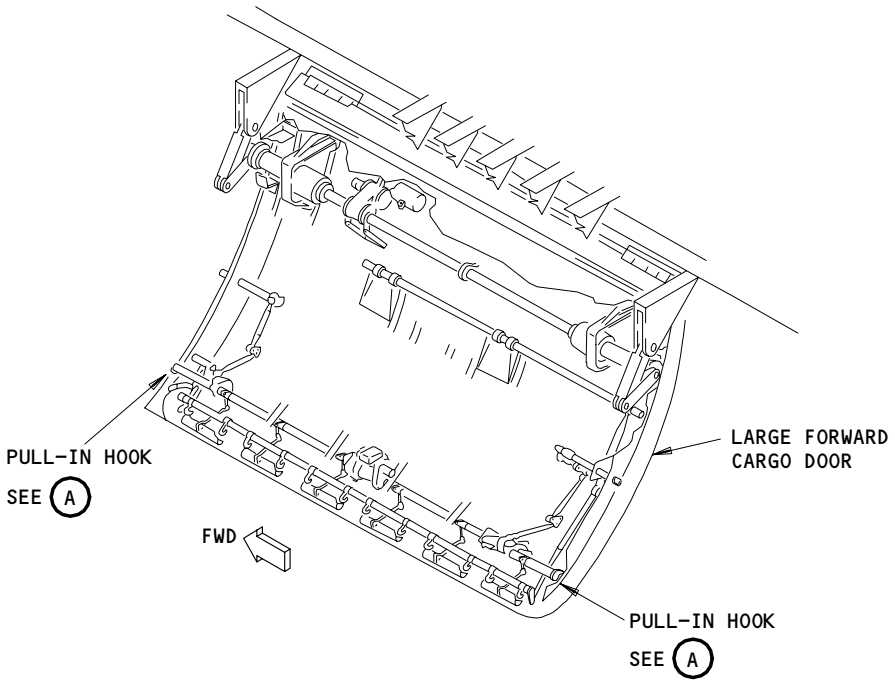
BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.



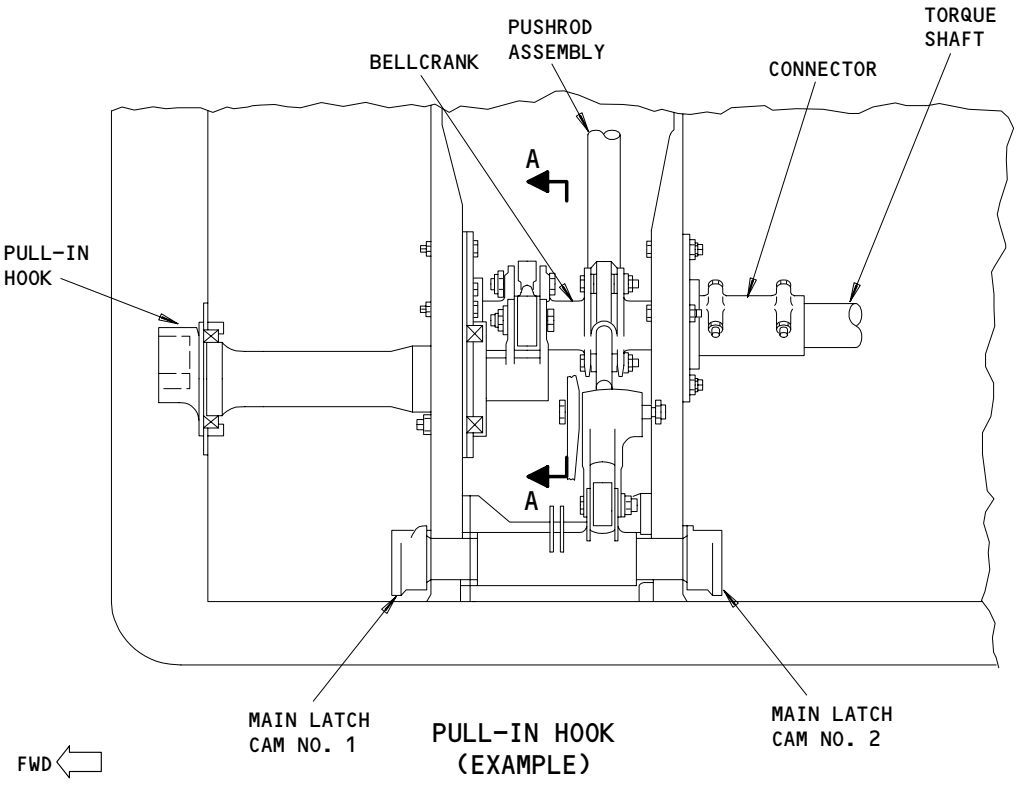
Latch/Hook Mechanism Adjustment
Figure 508 (Sheet 2)

773113

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.



LARGE FORWARD CARGO DOOR

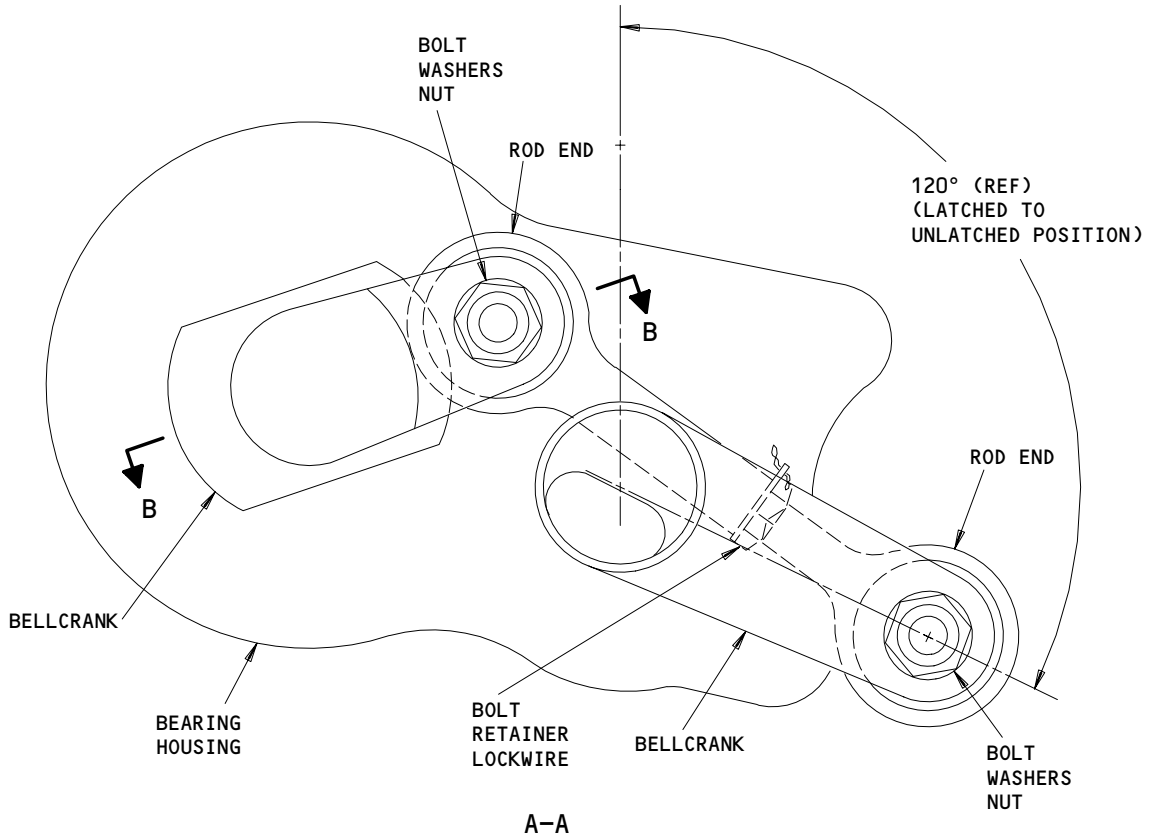


PULL–IN HOOK
(EXAMPLE)

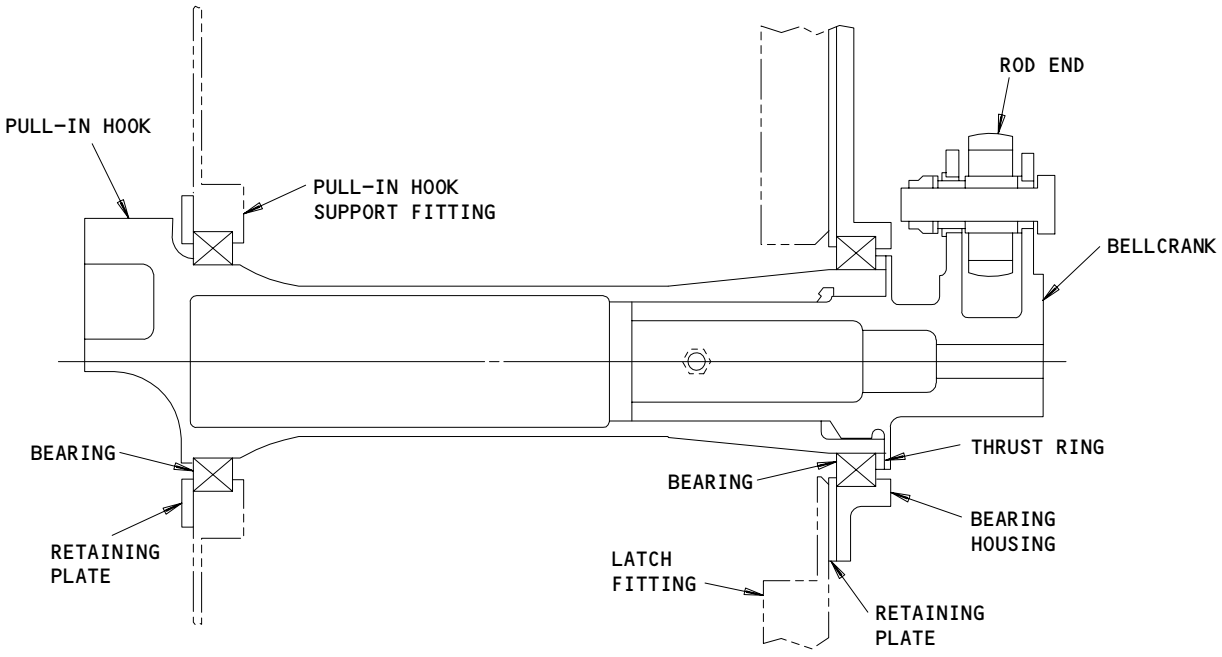
A

Pull–in Hook End Play Adjustment
Figure 509 (Sheet 1)

BOEING PROPRIETARY – Copyright (C) – Unpublished Work – See title page for details.



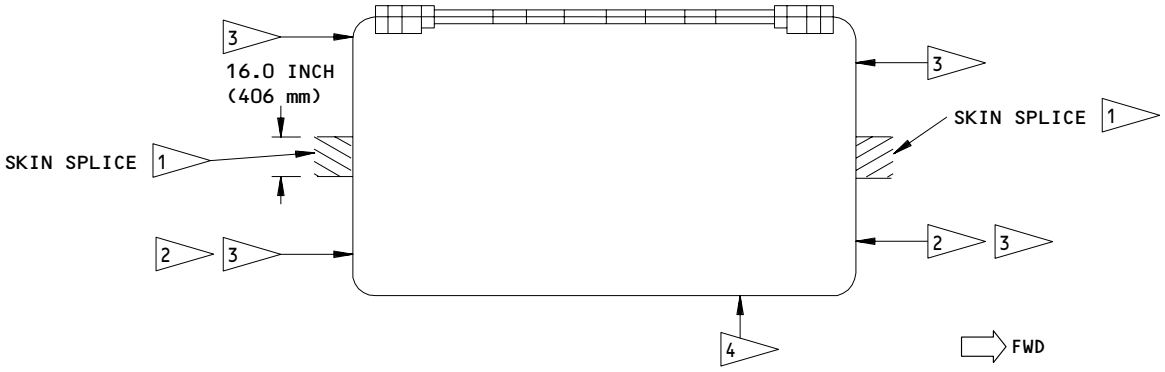
A–A



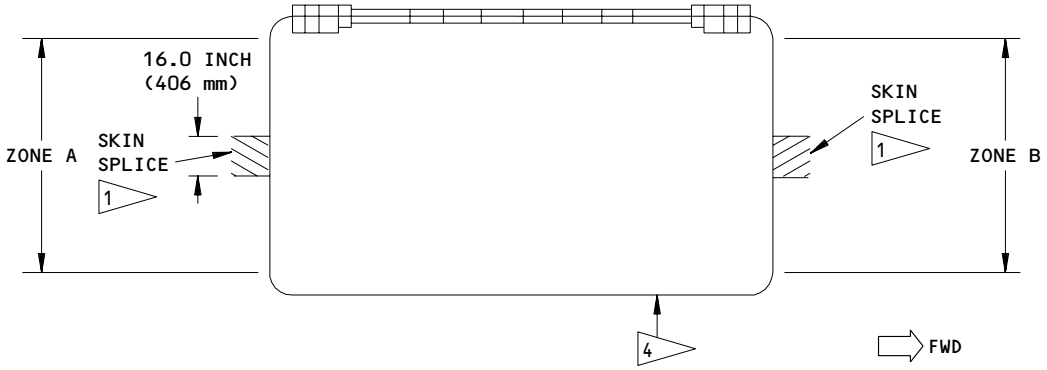
B–B

Pull–in Hook End Play Adjustment
Figure 509 (Sheet 2)

BOEING PROPRIETARY – Copyright (C) – Unpublished Work – See title page for details.



DOOR FLUSHNESS



DOOR DEVIATION ZONES

NOTE: A NEGATIVE TOLERANCE FOR THE FLUSHNESS SHOWS THE DOOR IS INBOARD OF THE FUSELAGE CONTOUR.

SEE TABLE 501 FOR DEVIATIONS.

1 THE FLUSHNESS TOLERANCES ARE NOT APPLICABLE IN THE SKIN SPLICE

2 WHEN YOU ADJUST THE TWO PULL-IN HOOK PIN LOCATIONS,
THE FLUSHNESS ALONG THIS EDGE IS:
$^{0.00}_{-0.09}$ INCH ($^{0.0}_{-2.3}$ mm)

3 WHEN THE CARGO DOOR IS FULLY CLOSED AND LATCHED,
THE FLUSHNESS ALONG THIS EDGE IS:
$^{+0.06}_{-0.06}$ INCH ($^{+1.5}_{-1.5}$ mm)

20% OF THE LENGTH OF THE AFT EDGE IS PERMITTED TO HAVE A FLUSHNESS +0.02 INCH (+0.5 mm) MORE THAN THE TOLERANCE SHOWN

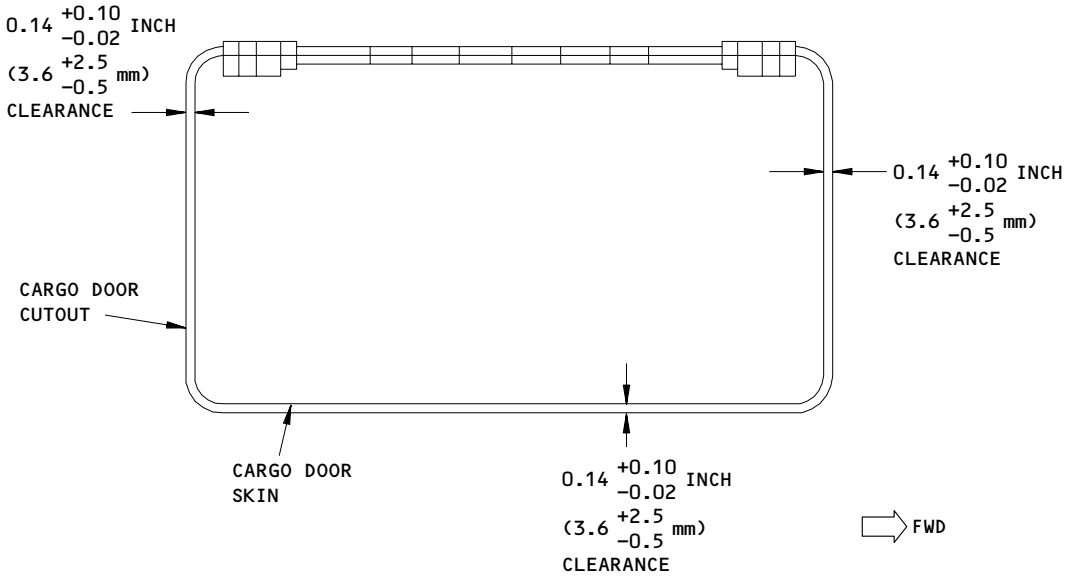
20% OF THE LENGTH OF THE FORWARD EDGE IS PERMITTED TO HAVE A FLUSHNESS -0.02 INCH (-0.5 mm) LESS THAN THE TOLERANCE SHOWN

SEE TABLE 501 FOR DEVIATIONS TO THE FLUSHNESS TOLERANCES

4 THERE IS NO FLUSHNESS TOLERANCE FOR THE LOWER EDGE

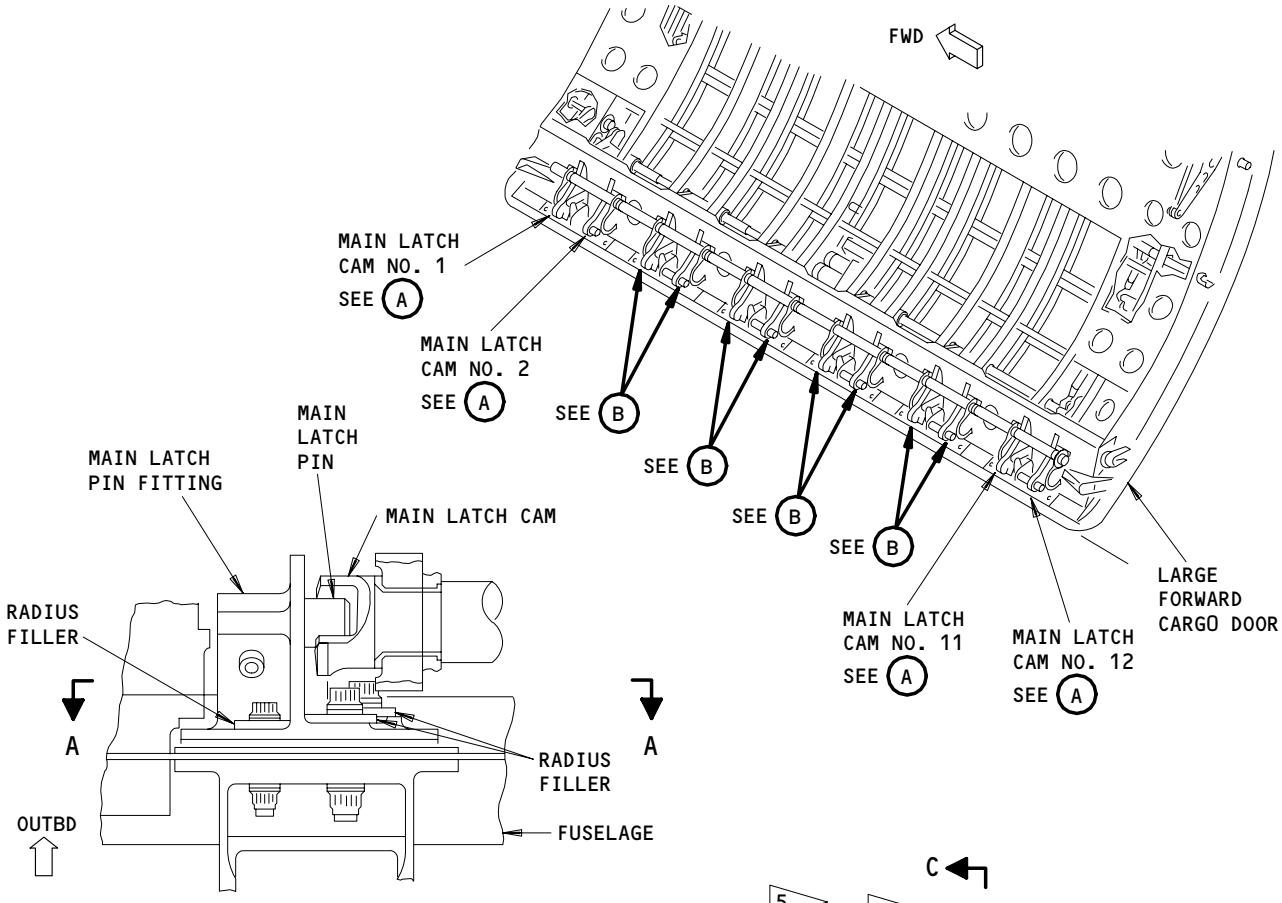
Large Forward Cargo Door Flushness
Figure 510

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.

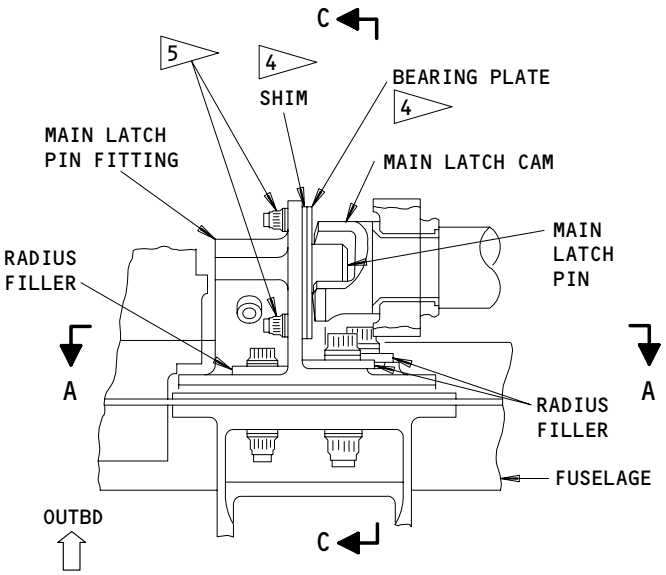


Large Forward Cargo Door Skin Clearances
Figure 511

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.



MAIN LATCH CAM NO. 1,2,11,12
(EXAMPLE)
A

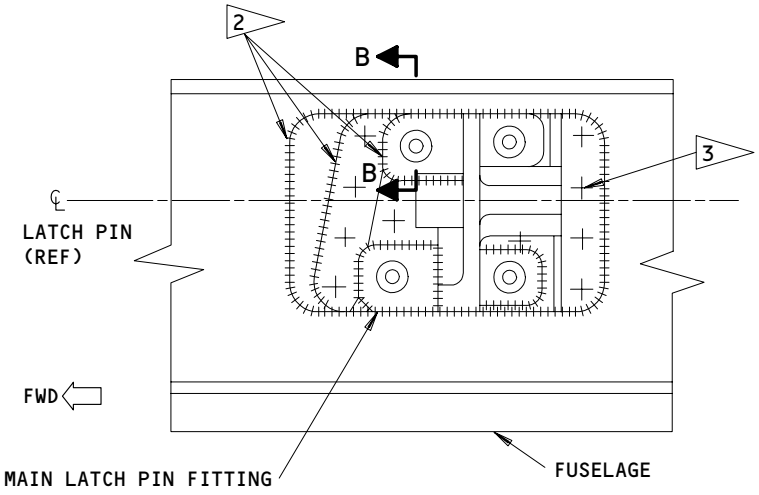


MAIN LATCH CAM NO. 3 THRU 10
(EXAMPLE)
B

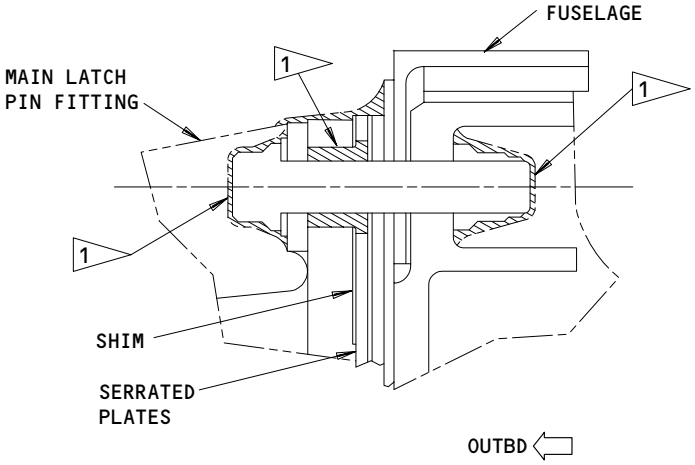
1. INSTALL THE FOUR BOLTS WITH THE WET SEALANT AND FILL THE HOLES AROUND THE BOLTS WITH THE WET SEALANT. TIGHTEN THE BOLTS. MAKE A FILLET SEAL OVER THE BOLT HEADS AND THE NUTS WITH THE WET SEALANT.
2. MAKE A FILLET SEAL AROUND THE EDGES OF THE MAIN LATCH PIN FITTING WITH THE WET SEALANT
3. MAKE A FILLET SEAL ON THE BOLT COLLARS (10 LOCATIONS) WITH THE WET SEALANT
4. APPLY THE WET SEALANT ON THE FAYING SURFACES BETWEEN THE MAIN LATCH PIN FITTING, SHIM AND BEARING PLATE
5. INSTALL THE THREE BOLTS WITH THE WET SEALANT. MAKE A FILLET SEAL ON THE NUTS WITH THE WET SEALANT

Main Latch Pin Fitting Sealing
Figure 512 (Sheet 1)

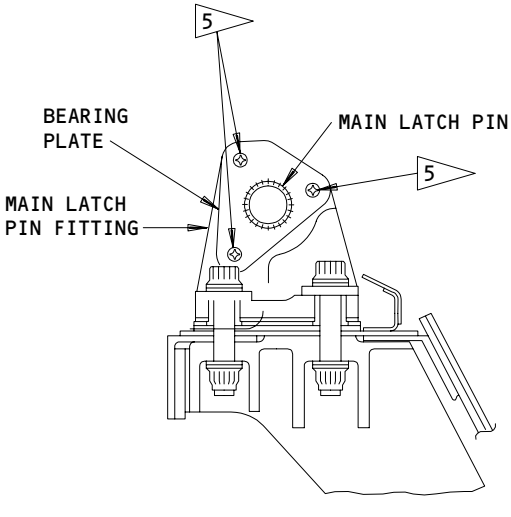
BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.

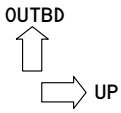


A–A



B–B



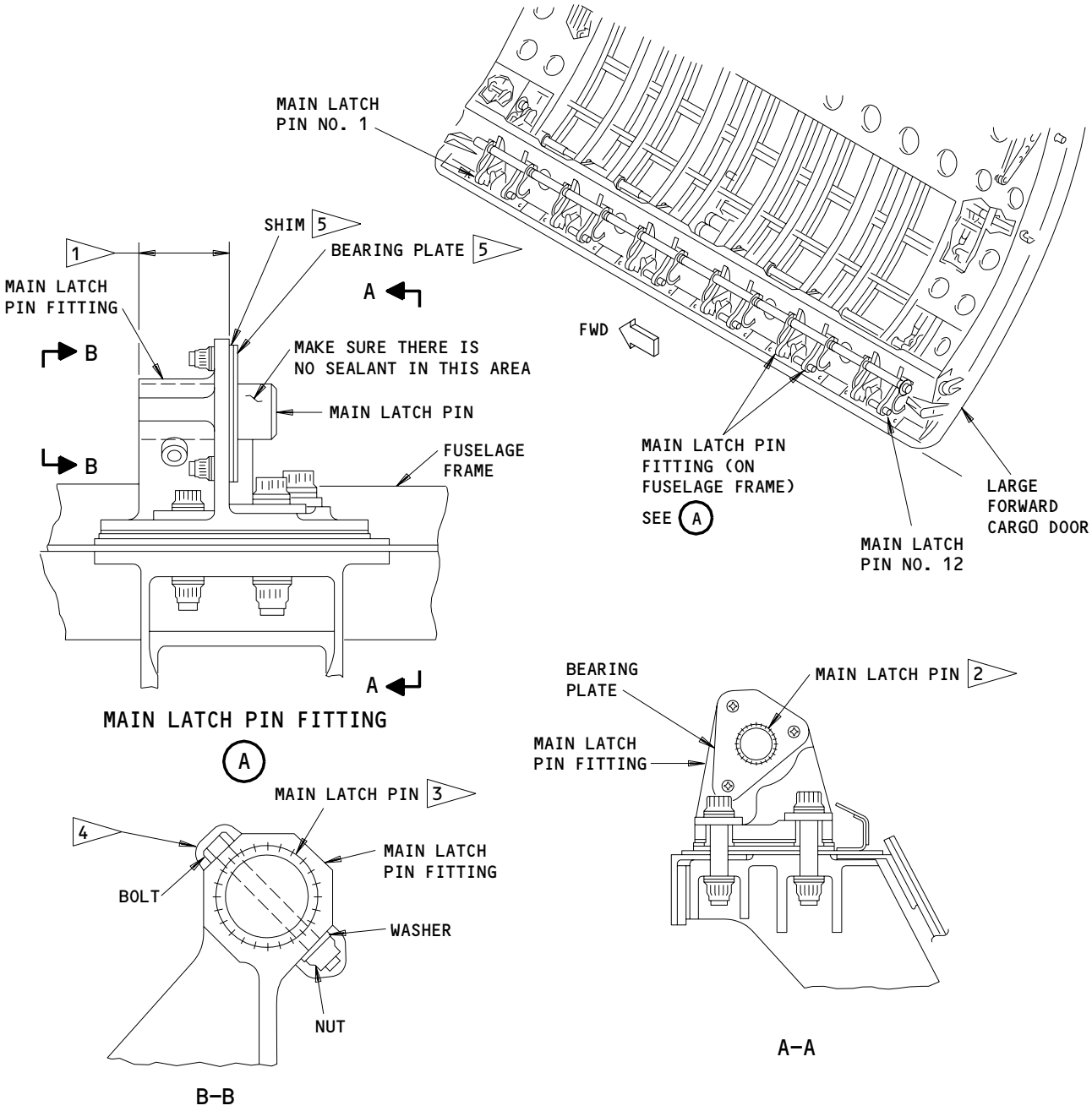


(MAIN LATCH CAM NOT SHOWN)

C–C

Main Latch Pin Fitting Sealing
Figure 512 (Sheet 2)

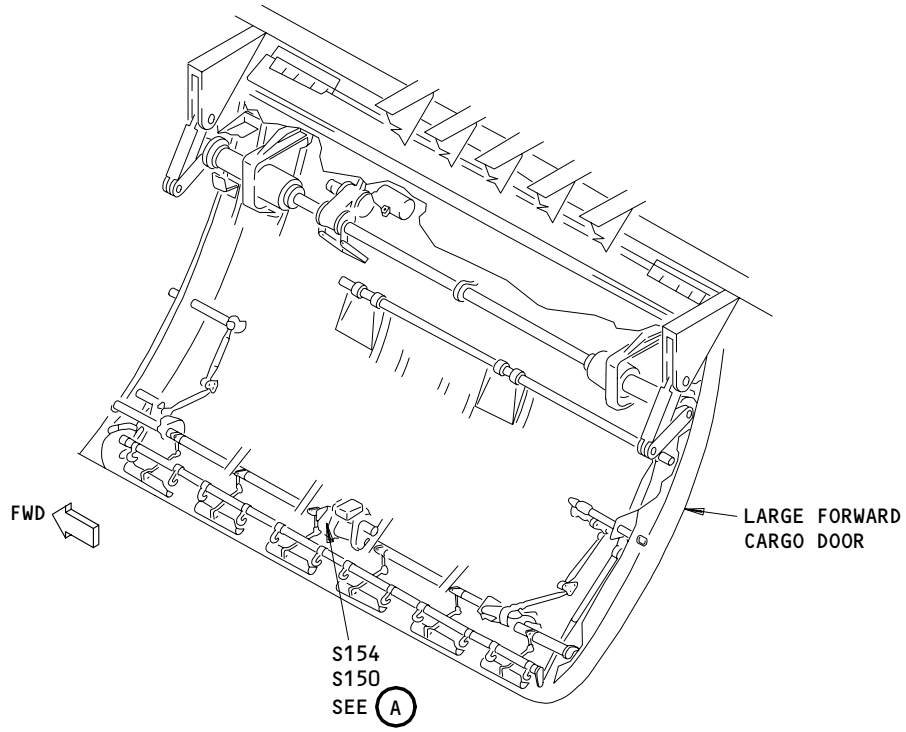
BOEING PROPRIETARY – Copyright (C) – Unpublished Work – See title page for details.



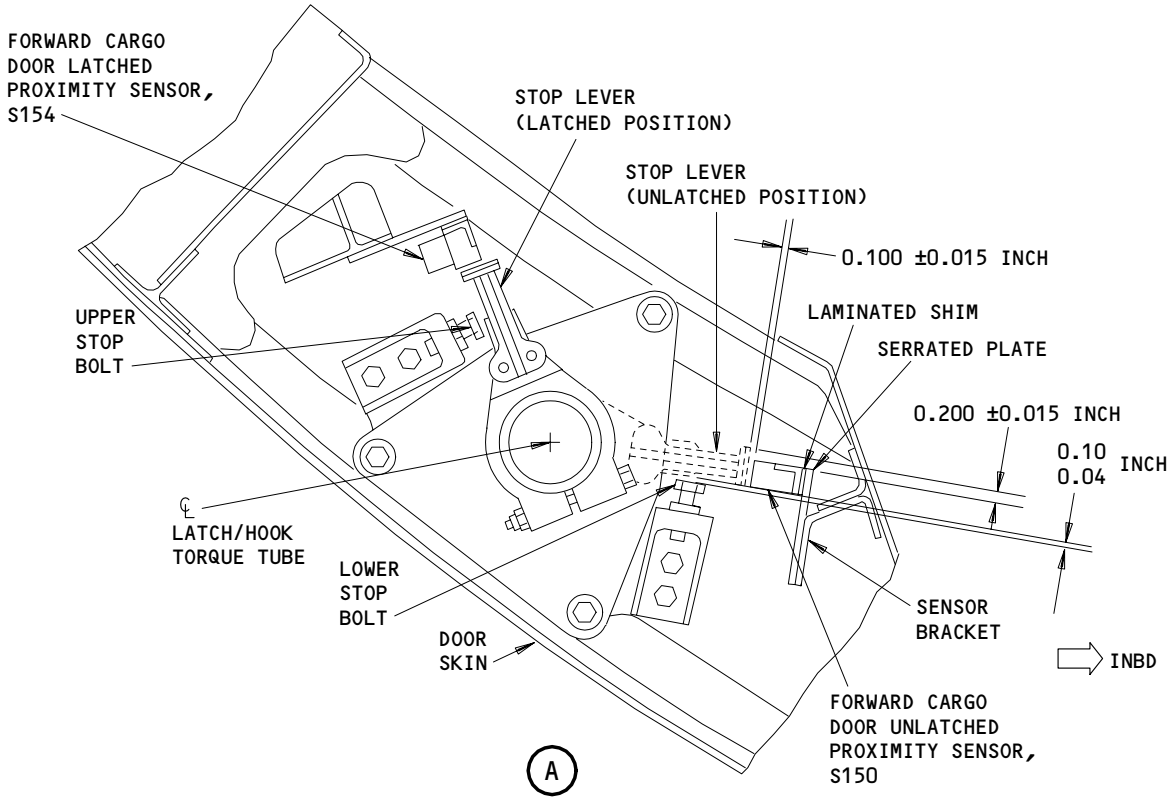
1. APPLY THE WET SEALANT TO THE MATING SURFACE OF THE OUTER DIAMETER OF THE MAIN LATCH PIN AND THE INNER DIAMETER OF THE MAIN LATCH PIN FITTING.
2. MAKE A FILLET SEAL ALONG THE EDGE OF THE MAIN LATCH PIN AND THE BEARING PLATE (OR MAIN LATCH PIN FITTING IF THERE IS NO BEARING PLATE) WITH THE WET SEALANT.
3. MAKE A FILLET SEAL ALONG THE EDGE OF THE MAIN LATCH PIN AND THE MAIN LATCH PIN FITTING WITH THE WET SEALANT.
4. MAKE A FILLET SEAL ON THE BOLT HEAD AND THE NUT WITH THE WET SEALANT.
5. AT MAIN LATCH PIN NO. 1, 2, 11, 12 THE SHIM AND BEARING PLATE ARE NOT INSTALLED.

Main Latch Pin Sealing
Figure 513

BOEING PROPRIETARY – Copyright (C) – Unpublished Work – See title page for details.

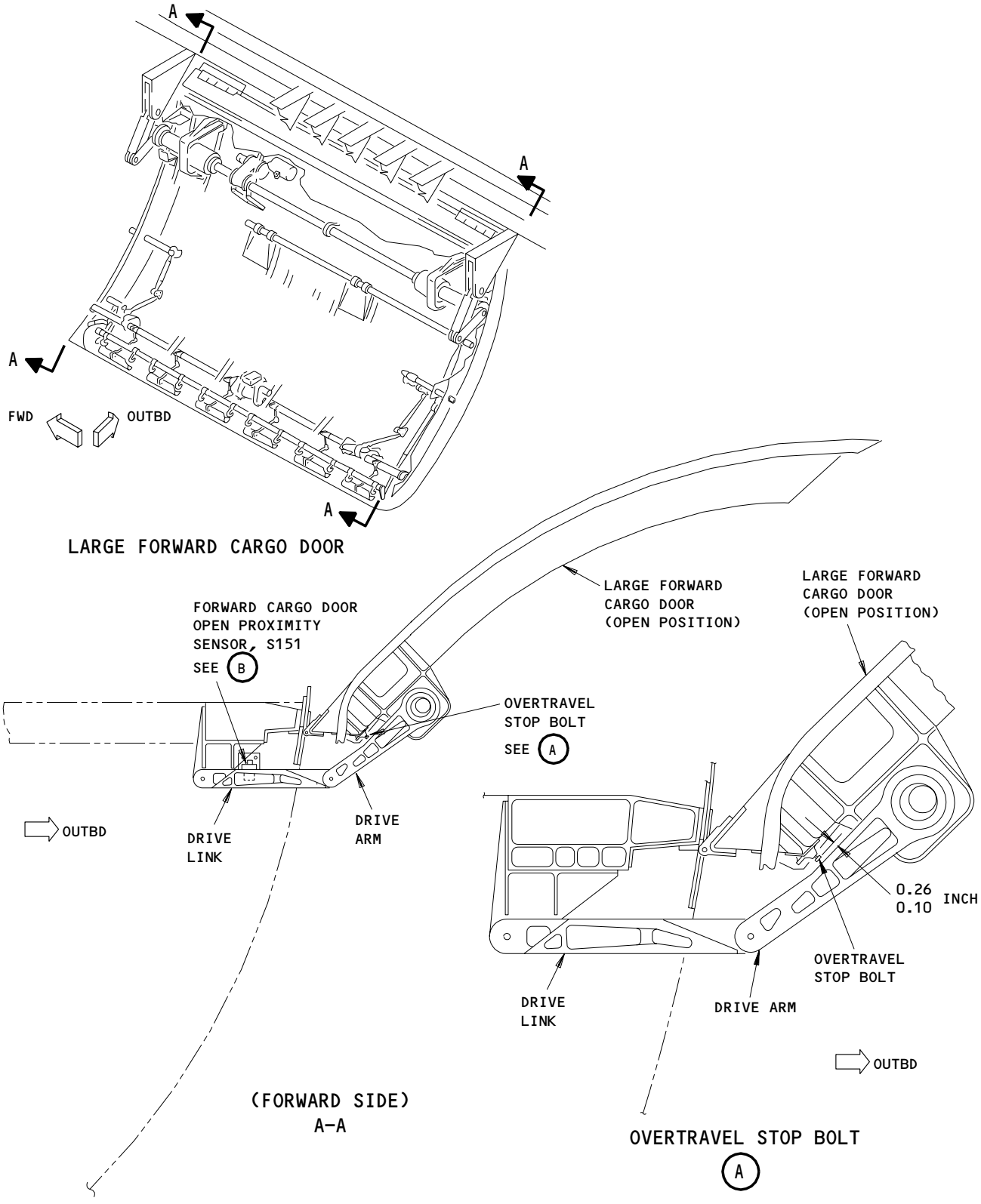


LARGE FORWARD CARGO DOOR



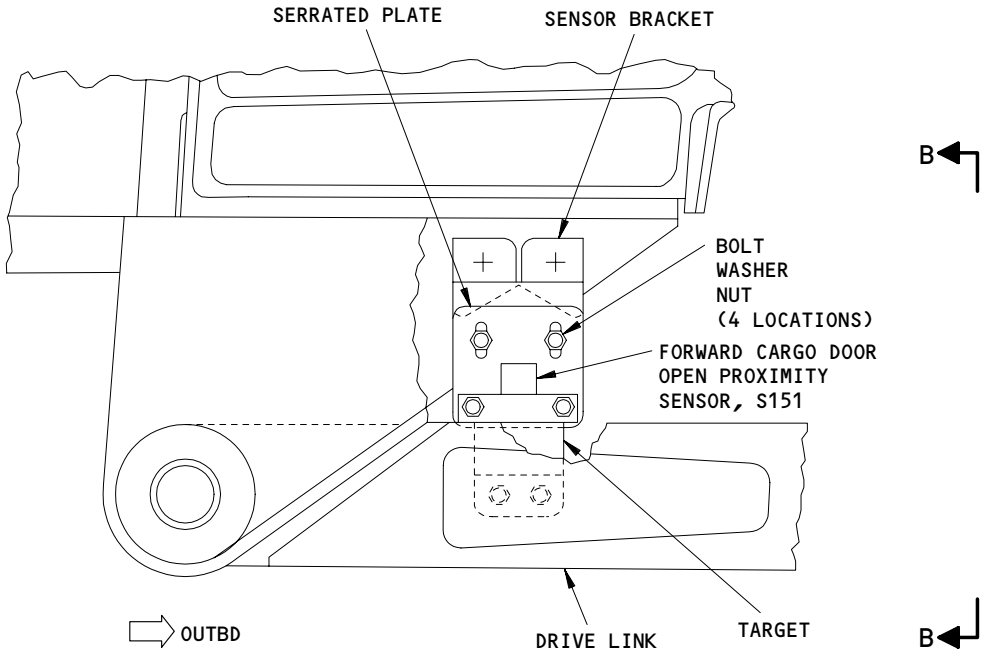
Forward Cargo Door Unlatched Proximity Sensor, S150, Adjustment
Figure 514

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.



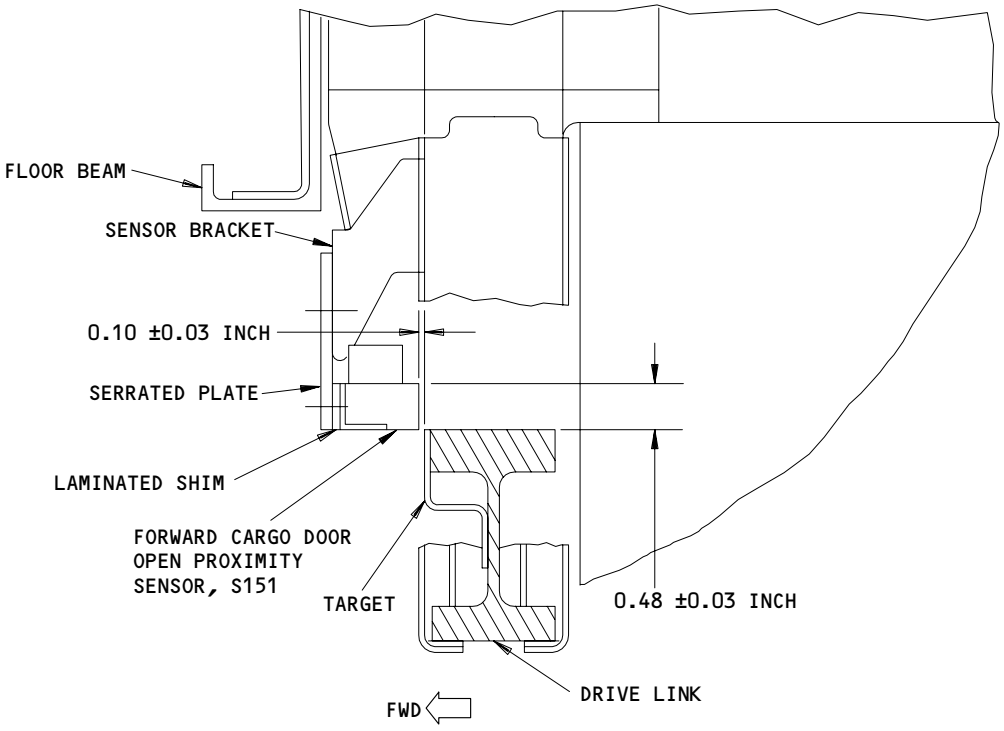
Forward Cargo Door Open Proximity Sensor, S151, Adjustment
Figure 515 (Sheet 1)

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.



PROXIMITY SENSOR S151

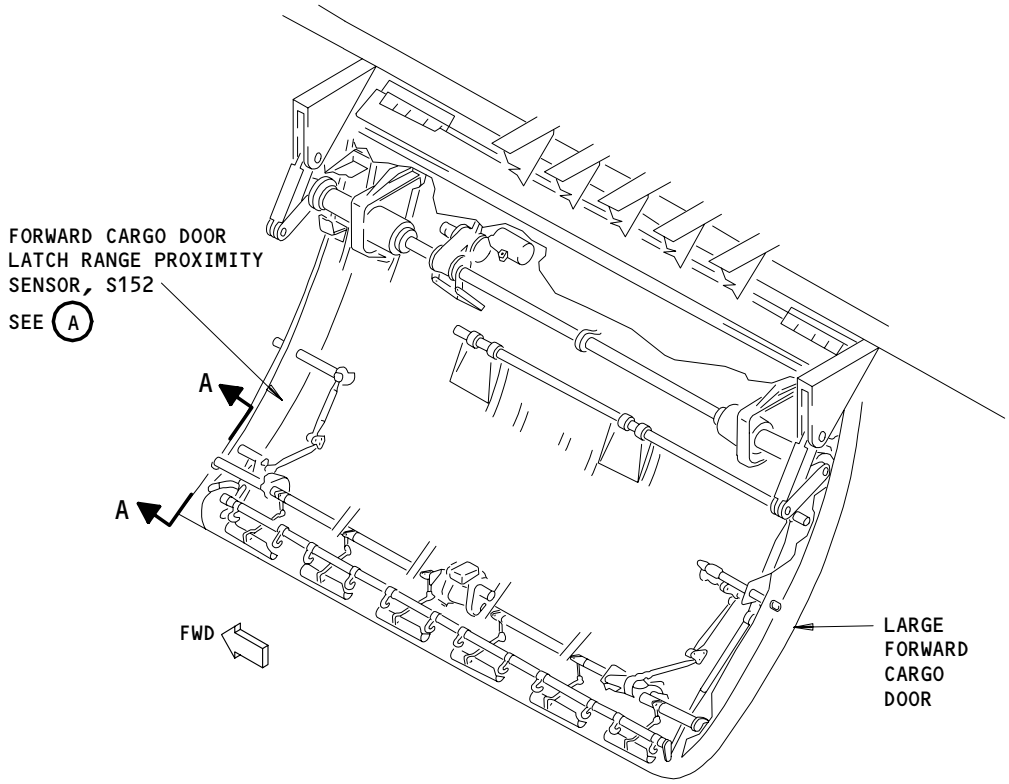
(B)



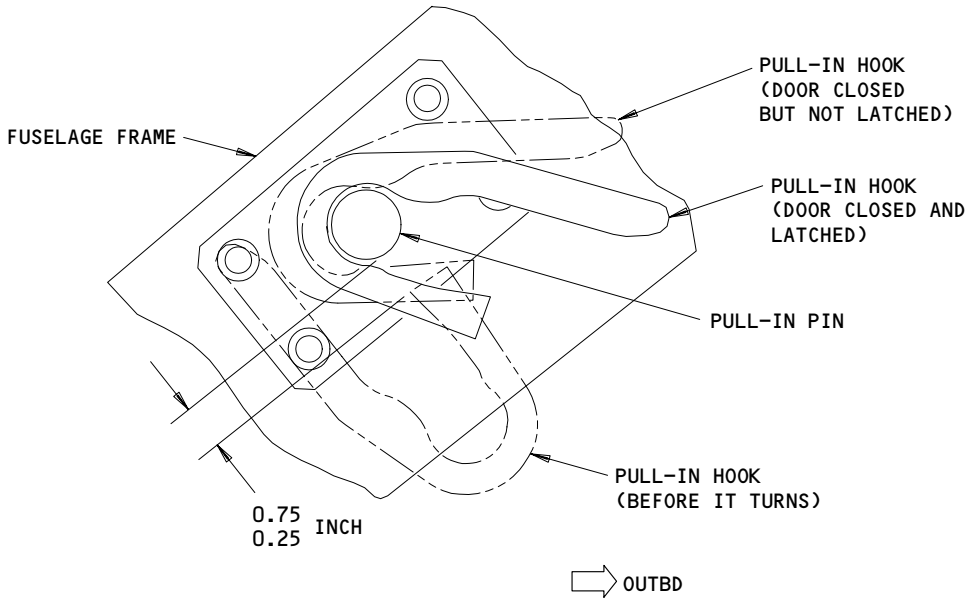
B–B

Forward Cargo Door Open Proximity Sensor, S151, Adjustment
Figure 515 (Sheet 2)

BOEING PROPRIETARY – Copyright (C) – Unpublished Work – See title page for details.



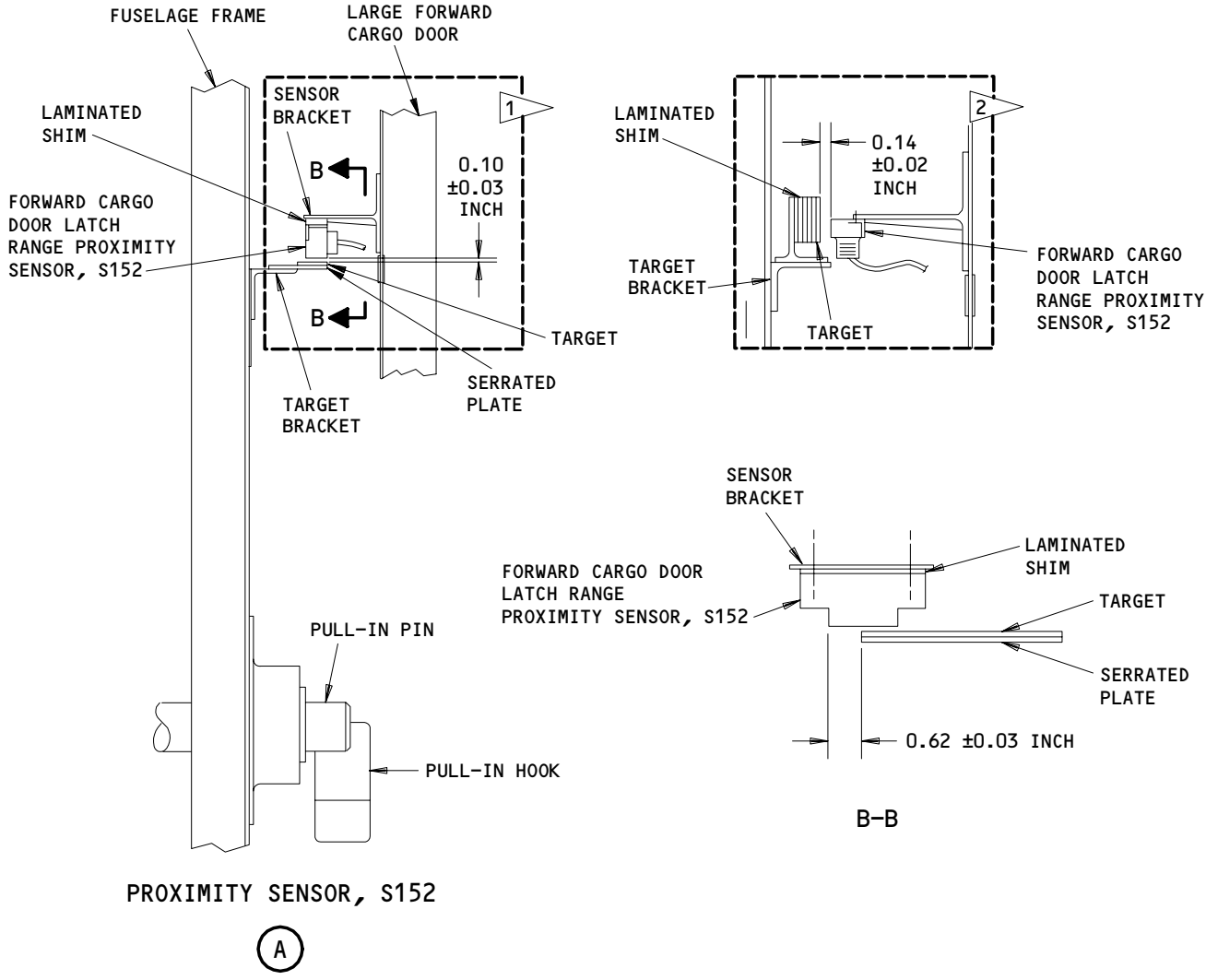
LARGE FORWARD CARGO DOOR



A-A

Forward Cargo Door Latch Proximity Sensor, S152, Adjustment
Figure 516 (Sheet 1)

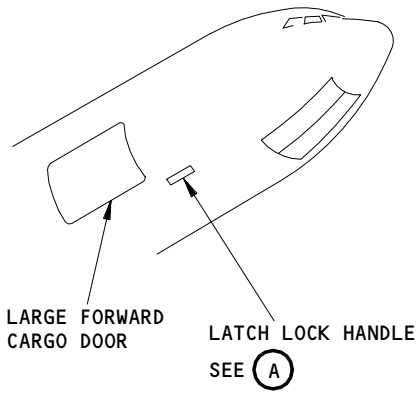
BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.

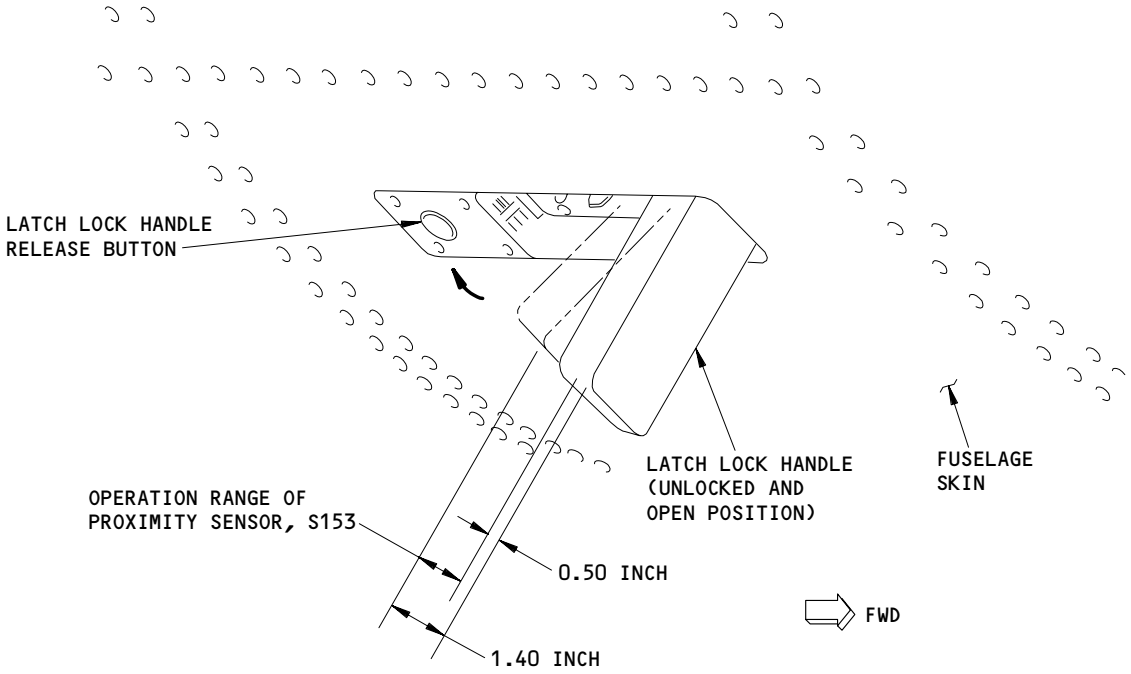


1 AIRPLANES WITH VERTICAL SENSORS
2 AIRPLANES WITH HORIZONTAL SENSORS

Forward Cargo Door Latch Range Proximity Sensor, S152, Adjustment
Figure 516 (Sheet 2)

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.

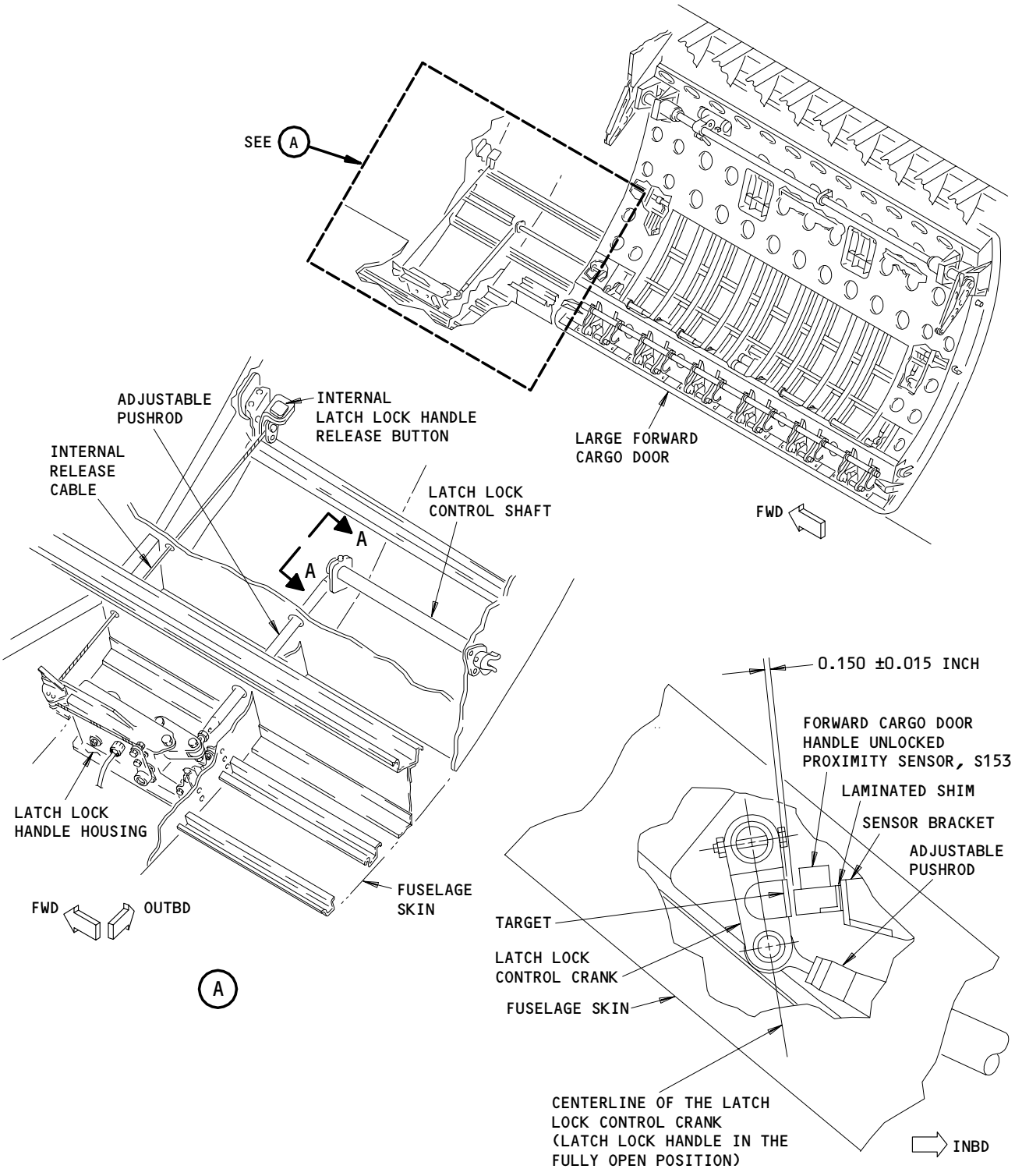




LATCH LOCK HANDLE
A

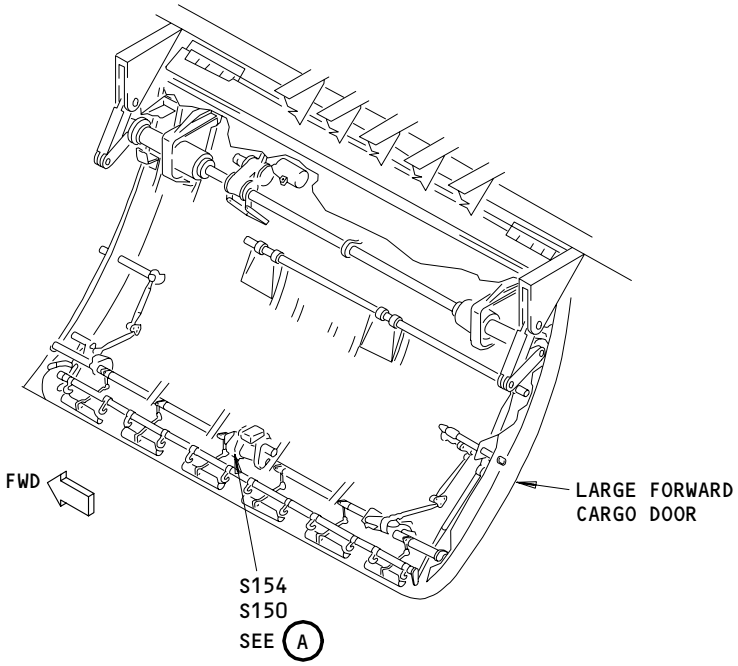
Forward Cargo Door Handle Unlocked Proximity Sensor, S153, Adjustment
Figure 517 (Sheet 1)

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.

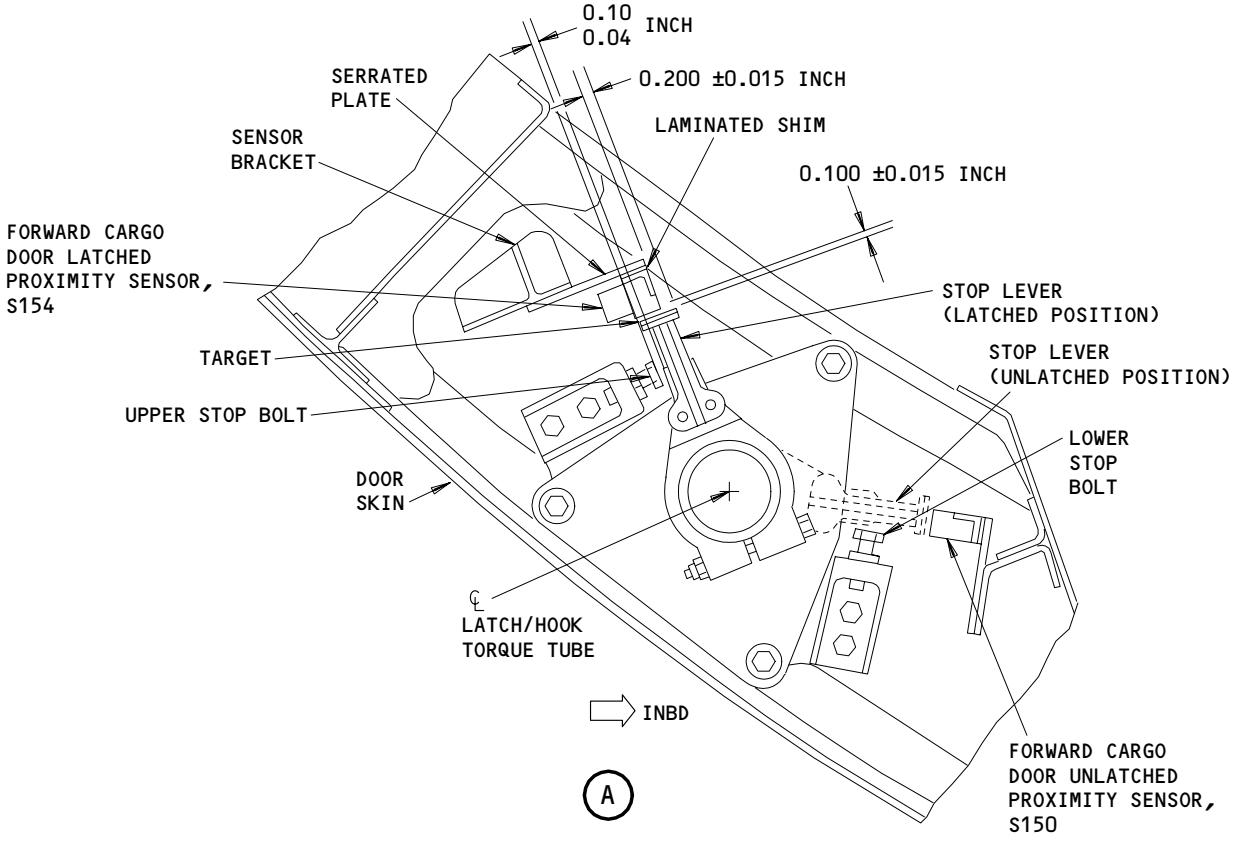


Forward Cargo Door Handle Unlocked Proximity Sensor, S153, Adjustment
Figure 517 (Sheet 2)

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.

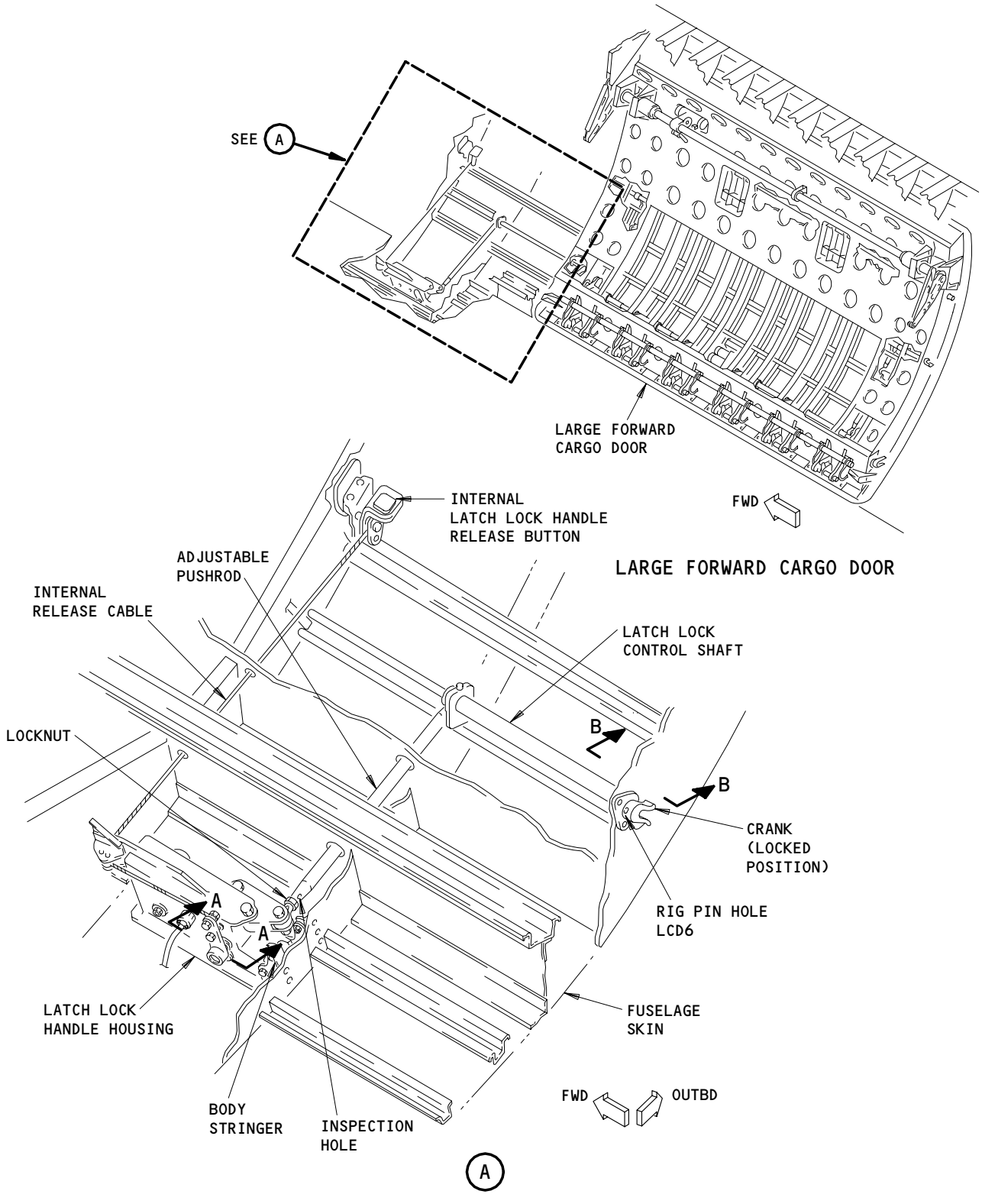


LARGE FORWARD CARGO DOOR



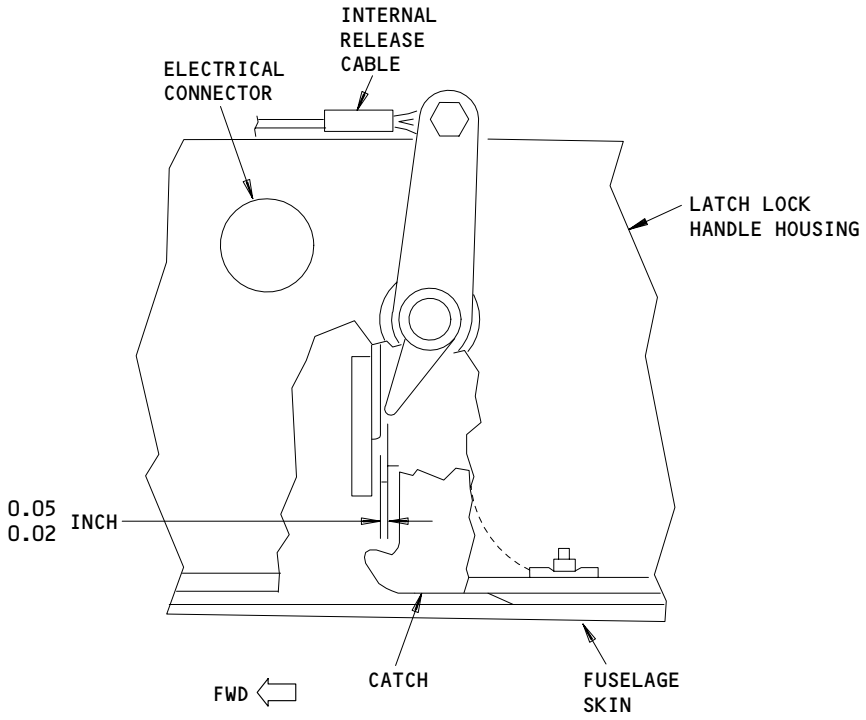
Forward Cargo Door Latched Proximity Sensor, S154, Adjustment
Figure 518

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.

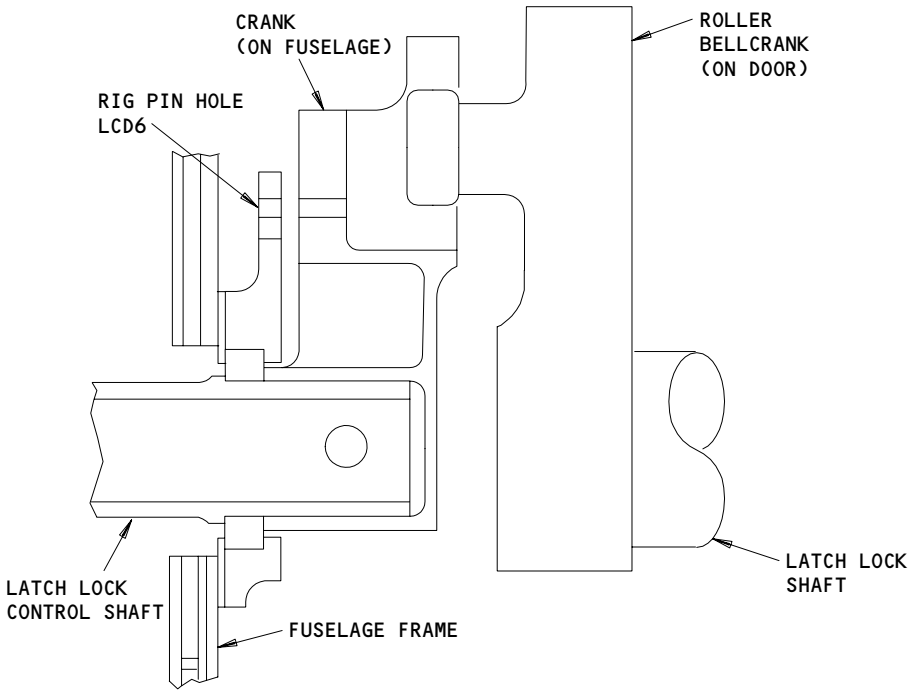


Latch Lock Handle Mechanism
Figure 519 (Sheet 1)

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.



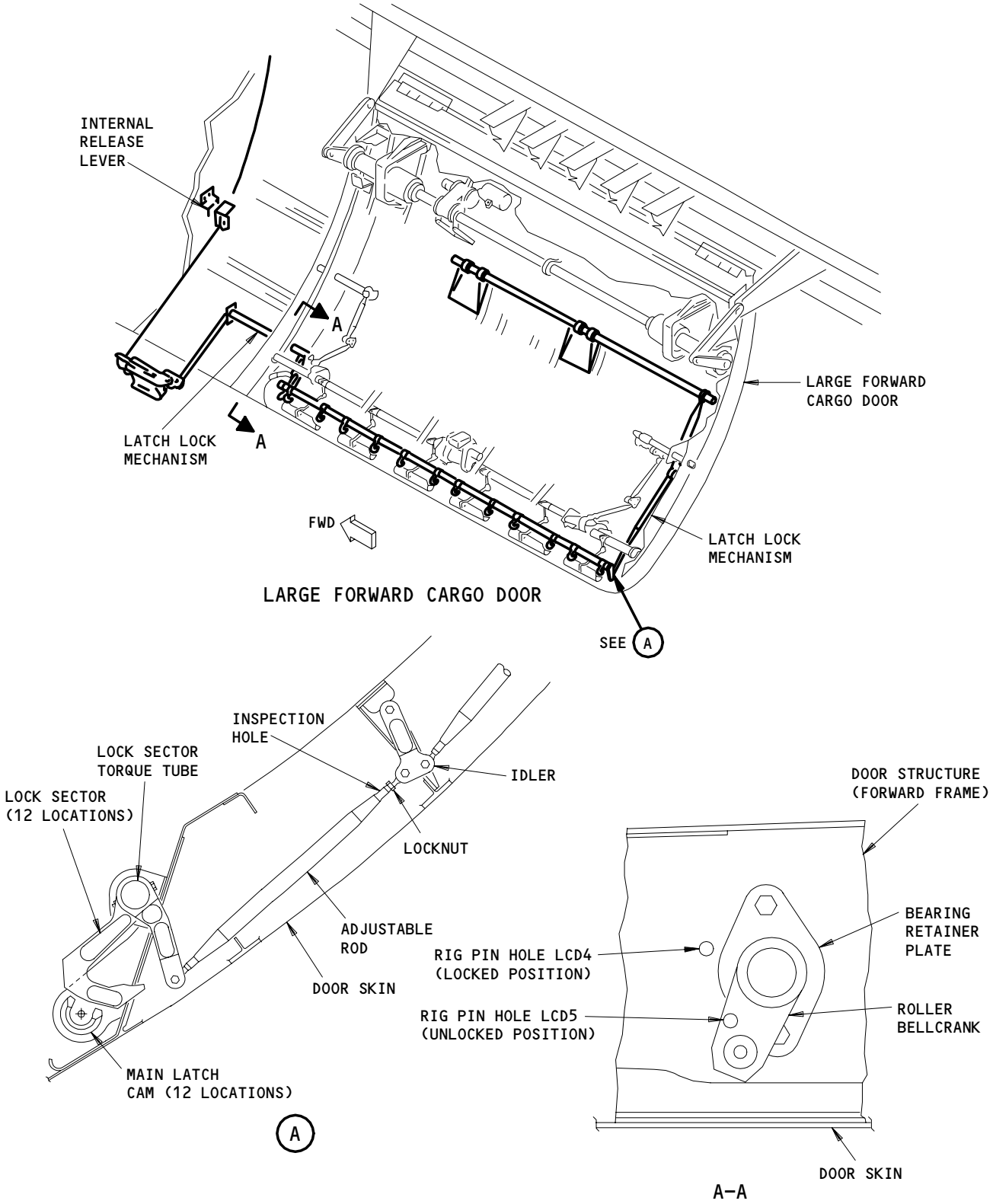
A–A



B–B

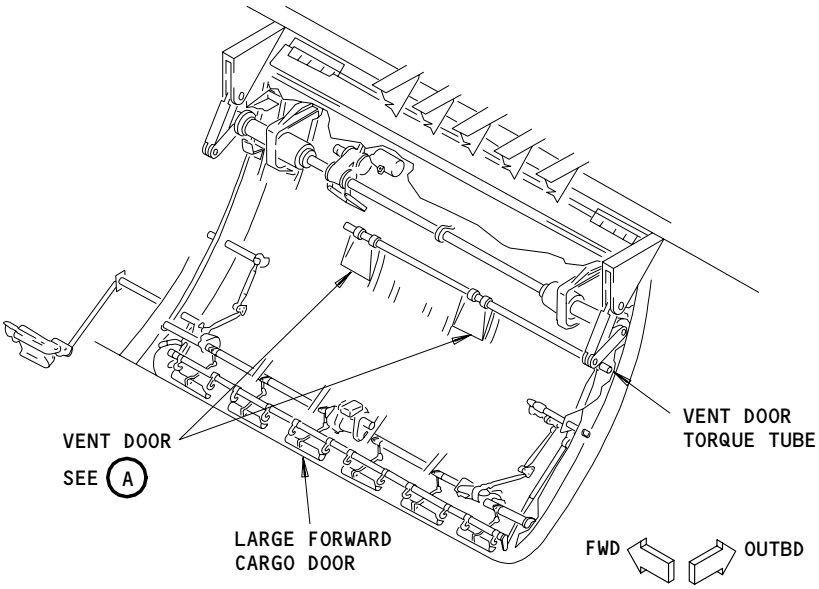
Latch Lock Handle Mechanism
Figure 519 (Sheet 2)

BOEING PROPRIETARY – Copyright (C) – Unpublished Work – See title page for details.

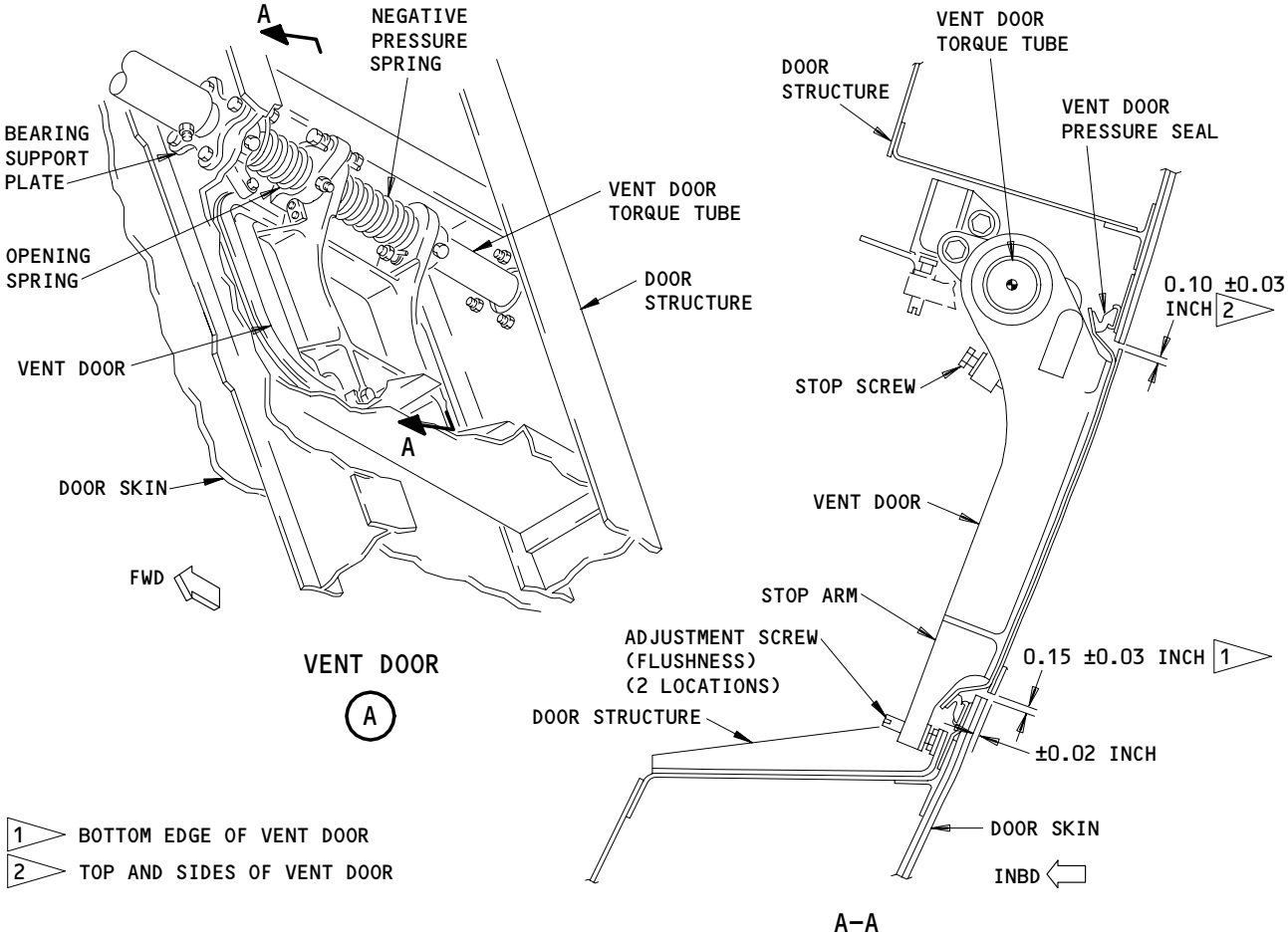


Latch Lock Mechanism Adjustment
Figure 520

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.



LARGE FORWARD CARGO DOOR

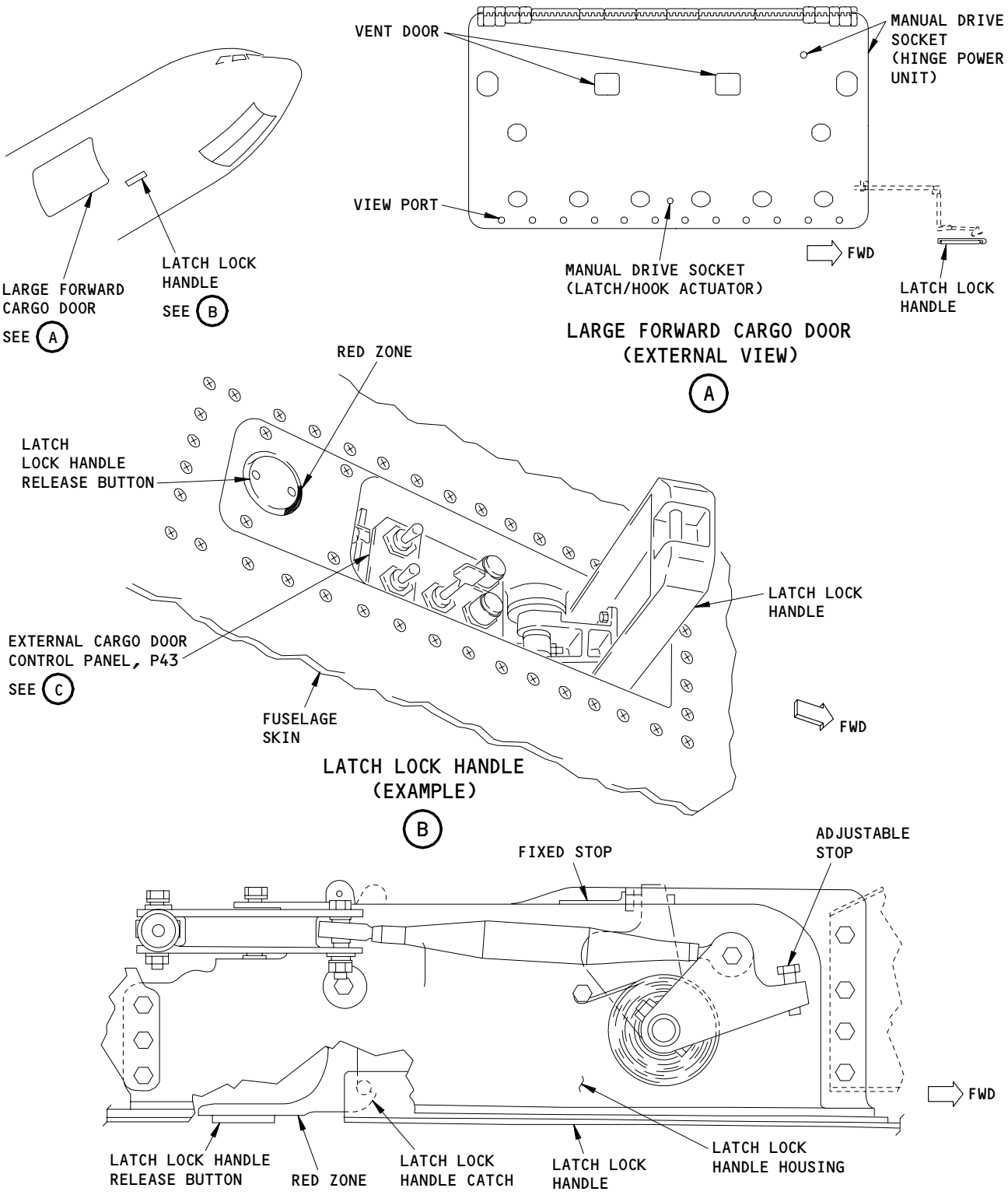


VENT DOOR
A

A-A

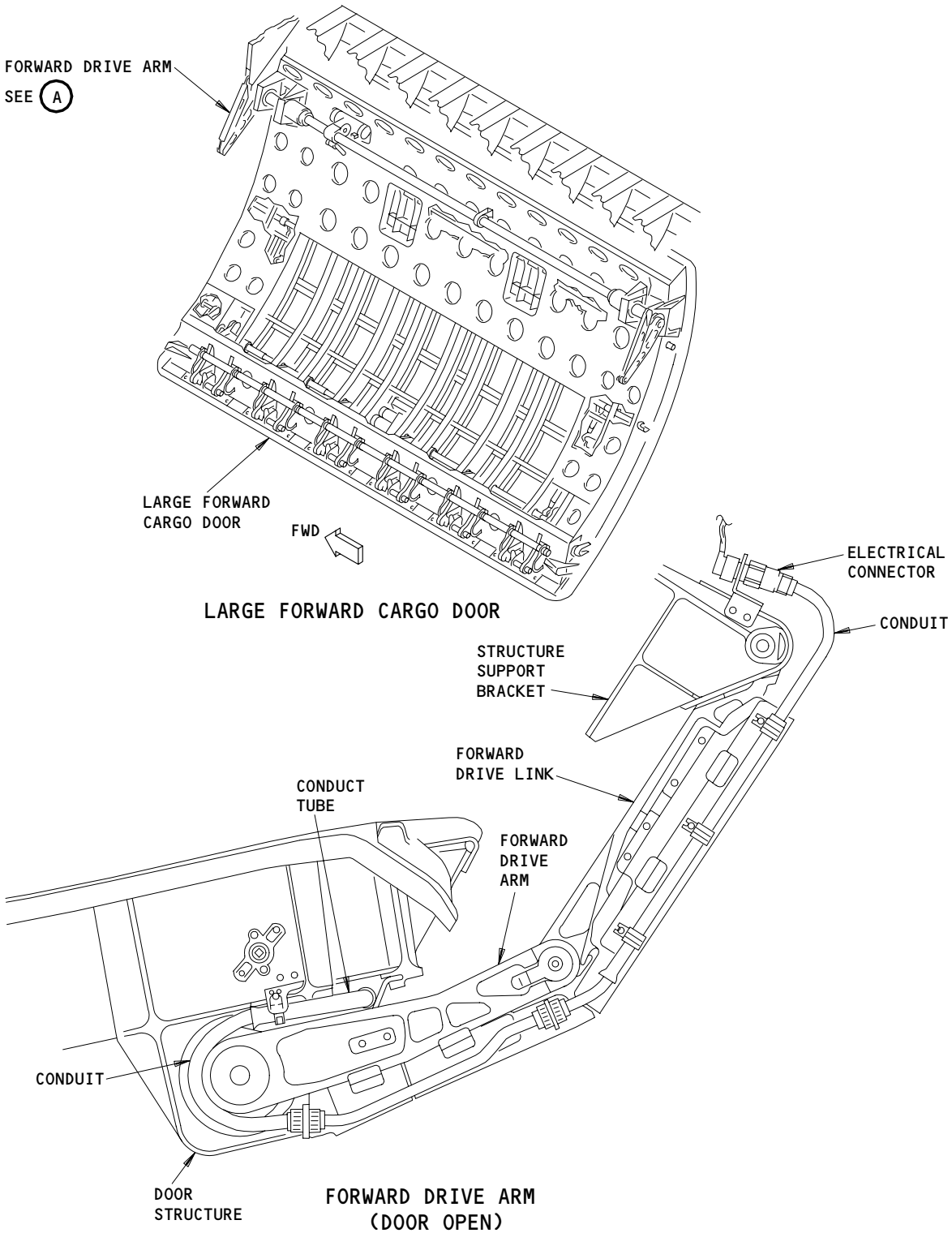
Vent Door Adjustment
Figure 521

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.



External Cargo Door Control Switch
Figure 522

BOEING PROPRIETARY - Copyright (C) - Unpublished Work - See title page for details.



LARGE FORWARD CARGO DOOR

FORWARD DRIVE ARM
(DOOR OPEN)

(A)

Forward Drive Arm Wire Bundle
Figure 523

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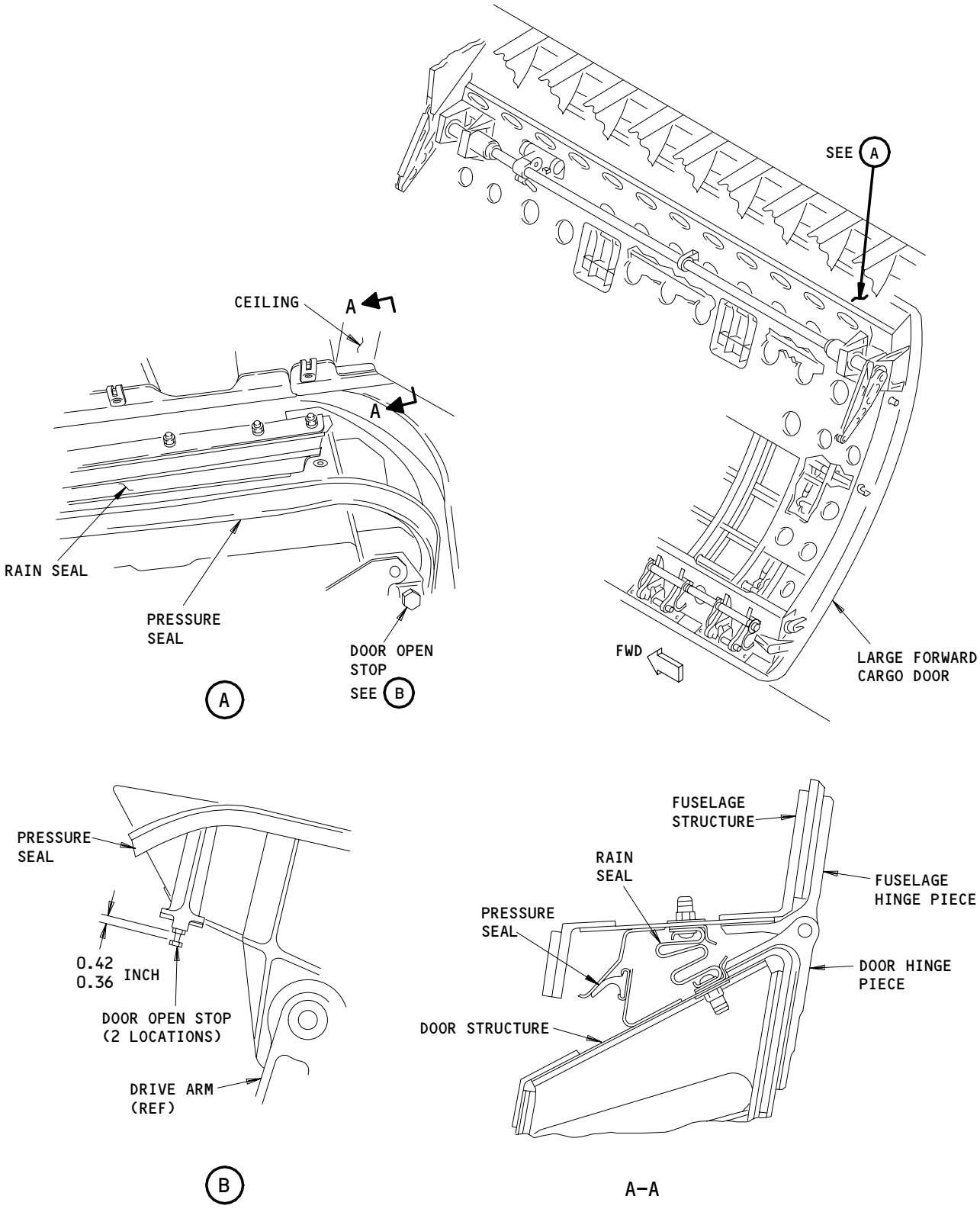

Rain Seal and Door Open Stop
Figure 524

773884

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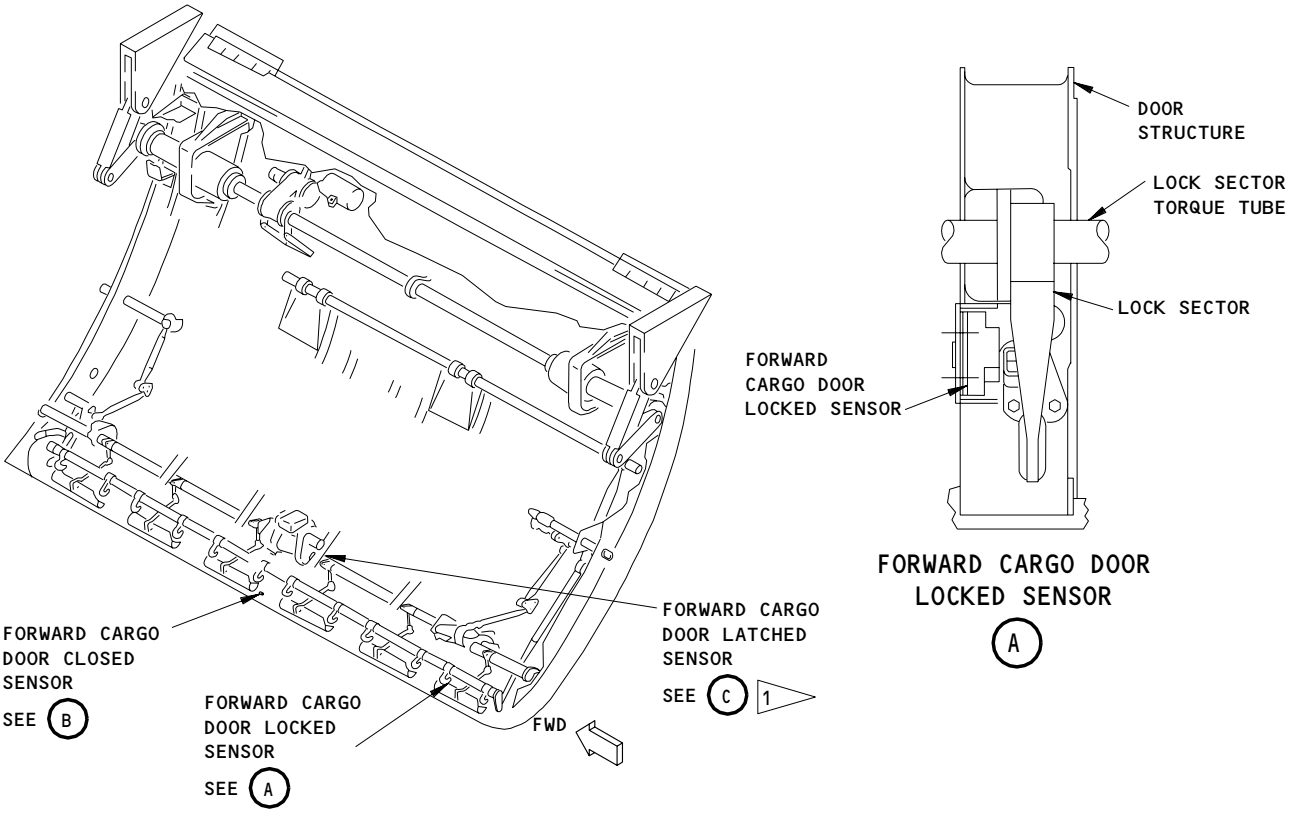

LARGE FORWARD CARGO DOOR

FORWARD CARGO DOOR LOCKED SENSOR

A

FORWARD CARGO DOOR CLOSED SENSOR

B

FORWARD CARGO DOOR LATCHED SENSOR

C 1

1 FREIGHTERS

Sensor Locations
Figure 525

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LARGE FORWARD CARGO DOOR - INSPECTION/CHECK

1. General
   A. This procedure contains one task. The task is the fast check of the large forward cargo door.
   B. This procedure gives a fast check for the correct operation and rigging of the large forward cargo door systems. This procedure is not a full system test. For a full system test refer to AMM 52-33-00/501.

TASK 52-33-00-736-040

2. Large Forward Cargo Door System Fast Check
   A. Equipment
      (1) Spring Scale - 100 pound (45 kg) capacity
      (2) Torque wrench - 100 pound-inches (11 Nm) capacity
   B. References
      (1) AMM 52-33-00/201, Large Forward Cargo Door
      (2) AMM 52-33-00/501, Large Forward Cargo Door
   C. Access
      (1) Location Zone
          821 Forward Cargo Door
   D. Procedure

S 726-055

(1) Do a check of the manual drive system of the latch/hook actuator.
   (a) Use the torque wrench to manually operate the latch/hook actuator until the stop lever touches the unlatched stop bolt.
      1) Make sure that the torque is not more than 20 pound-inches (2.3 Nm).
   (b) Use the torque wrench to manually operate the latch/hook actuator until the stop lever touches the latched stop bolt.
      1) Make sure that the torque is not more than 20 pound-inches (2.3 Nm).
   (c) If the torque is more than 20 pound-inches (2.3 Nm) during the manual operation of the latch/hook actuator, do these steps:
      1) Adjust the main latch pin longitudinal clearances (AMM 52-33-00/501).

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2) Adjust the pull in pins (AMM 52-33-00/501).
3) Adjust the midspan latch pins, the door centering roller, and the bumper on the fuselage frame (AMM 52-33-00/501).

(d) Use the torque wrench to move the stop lever into the external travel stop in the latch direction.
(e) Use the torque wrench to move the stope lever into the external travel stop in the unlatch direction.
(f) Make sure that you can input 60 pound-inches (6.8 Nm) through the manual drive port in the unlatch and the latch direction with no clutch slippage.

NOTE: It is recommended that actuators with clutch slippage at less than 60 pound-inches (6.8 Nm) be replaced. To replace the actuator, refer to AMM 52-33-08/401.

S 866-006

(2) Open the cargo door electrically to the fully open position (AMM 52-33-00/201). While the door opens, do this check:
(a) Make sure the cargo door moves smoothly and continuously to the fully open position.

S 216-041

(3) Make sure the EICAS message, FWD CARGO DOOR, shows on the top display.

S 226-007

(4) Make sure the drive arms do not touch the overtravel stop bolts on the forward and aft sides of the cargo door (2 locations) (View A-A, Fig. 602).

S 826-042

(5) If the drive arms touch the overtravel stop bolts, adjust the forward cargo door open proximity sensor, S151 (AMM 52-33-00/501).

S 866-008

(6) Close the cargo door electrically (AMM 52-33-00/201). Do not close the latch lock handle to the locked position.

S 226-054

(7) Make sure that the DOOR CLOSED indication light is lit after the door is fully closed and latched (Fig. 605).
(a) If the indication light is not lit, press the light button to test the bulb.
(b) If necessary, replace the bulb.
(c) If the bulb is satifactory and the indication light does not light, adjust the door latched stop and the proximity sensor, S154 (AMM 52-33-00/501).

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S 226-009
(8) Make sure the midspan latch cams on the cargo door do not touch the midspan latch pins on the fuselage frame (2 locations) (View A, Fig. 603).

S 826-043
(9) If the midspan latch cams touch the midspan latch pins, adjust the midspan latches (AMM 52-33-00/501).

S 226-056
(10) Make sure that the forward and aft pull-in pins will turn with hand pressure.

S 826-057
(11) If the pull-in pins will not turn or if they touch the pull-in hook, adjust the pull-in pins (AMM 52-33-00/501).

S 226-041
(12) Make sure the stop lever for the latch/hook actuator does not touch the upper stop bolt (View B, Fig. 604).

S 826-049
(13) If the stop lever touches the upper stop bolt, adjust the forward cargo door latched proximity sensor, S154 (AMM 52-33-00/501).

S 216-043
(14) Open the cargo door electrically to the vertical, free-hang position. While the door opens, do this check:
(a) Make sure the pull-in hooks disengage smoothly from the pull-in pins (Fig. 601).

S 826-047
(15) If the pull-in pins hooks and pins do not operate correctly, adjust the pull-in hooks and pins (AMM 52-33-00/501).

S 226-010
(16) Make sure the clearance between the stop lever of the latch/hook actuator and the lower stop bolt is as shown (View B, Fig. 604).

S 826-011
(17) If the clearance between the stop lever and the lower stop bolt is not correct, adjust the forward cargo door unlatched proximity sensor, S150 (AMM 52-33-00/501).

S 866-012
(18) Close the cargo door electrically.

S 866-013
(19) Close the latch lock handle to the locked position.

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S 866-015
(20) Push the latch lock handle release button (View A, Fig. 605).
  (a) Make sure the latch lock handle extends to the fully open position with no manual aid.
  (b) Make sure you can see the red zone that is forward of the latch lock handle release button (View A, Fig. 605).

S 216-044
(21) Make sure the forward and aft vent doors are in the fully open position (Fig. 606).

S 226-017
(22) Make sure all of the lock sectors are turned and are clear of the main latch cams.

S 226-018
(23) Measure the maximum load necessary to move the latch lock handle to the locked position as follows:
  (a) Use the spring scale to put a load 0.50 inch (13 mm) from the end of the latch lock handle in the close direction of the handle.
  (b) Measure the load necessary to move the latch lock handle to the locked position. Do not measure the load in the last 0.50 inch (13 mm) of travel before the handle is in the locked position.

  NOTE: Keep the load at an angle of 90 degrees to the handle.

S 826-019
(24) If the load is more than 32 pounds (14 kg), adjust the latch lock handle (AMM 52-33-00/501).

S 866-045
(25) Close the latch lock handle to the locked position.

S 226-046
(26) Make sure the vent doors are in the fully closed position or are open less than or equal to 0.50 inch (13 mm) at the lower edge.

  NOTE: The seals on the vent door can cause the door to not fully close until the airplane is pressurized.

S 826-048
(27) If the vent doors do not operate correctly, adjust the vent doors (AMM 52-33-00/501).

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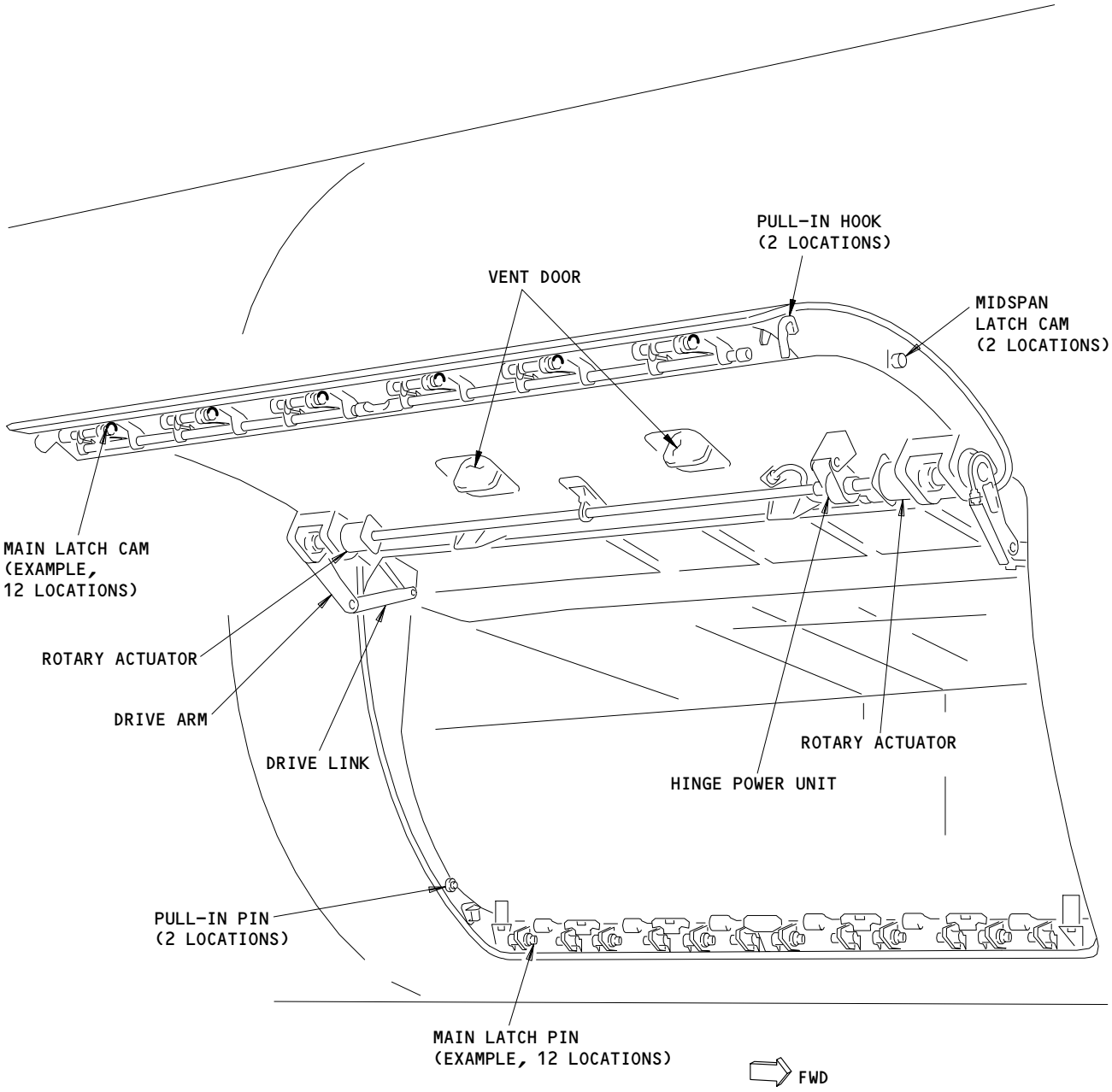

LARGE FORWARD CARGO DOOR

Large Forward Cargo Door
Figure 601

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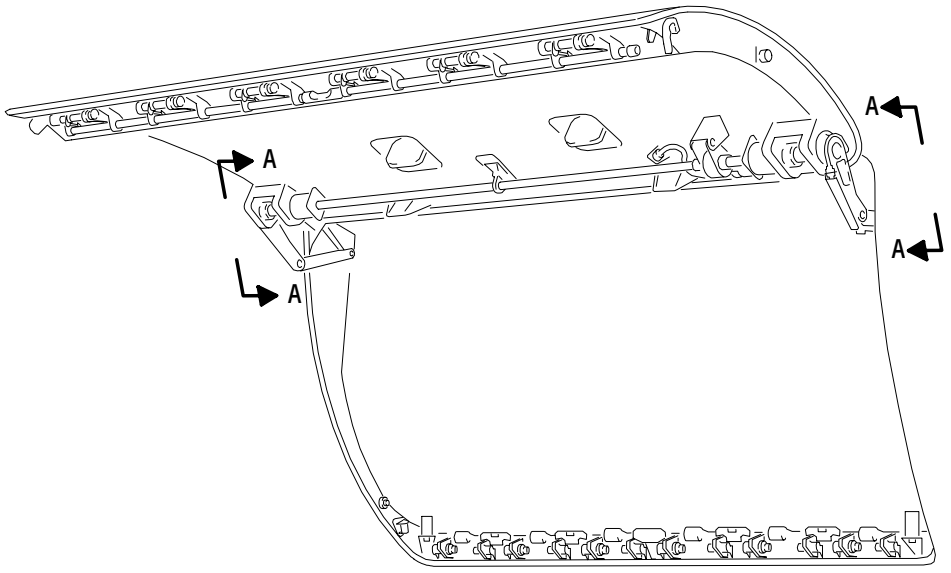
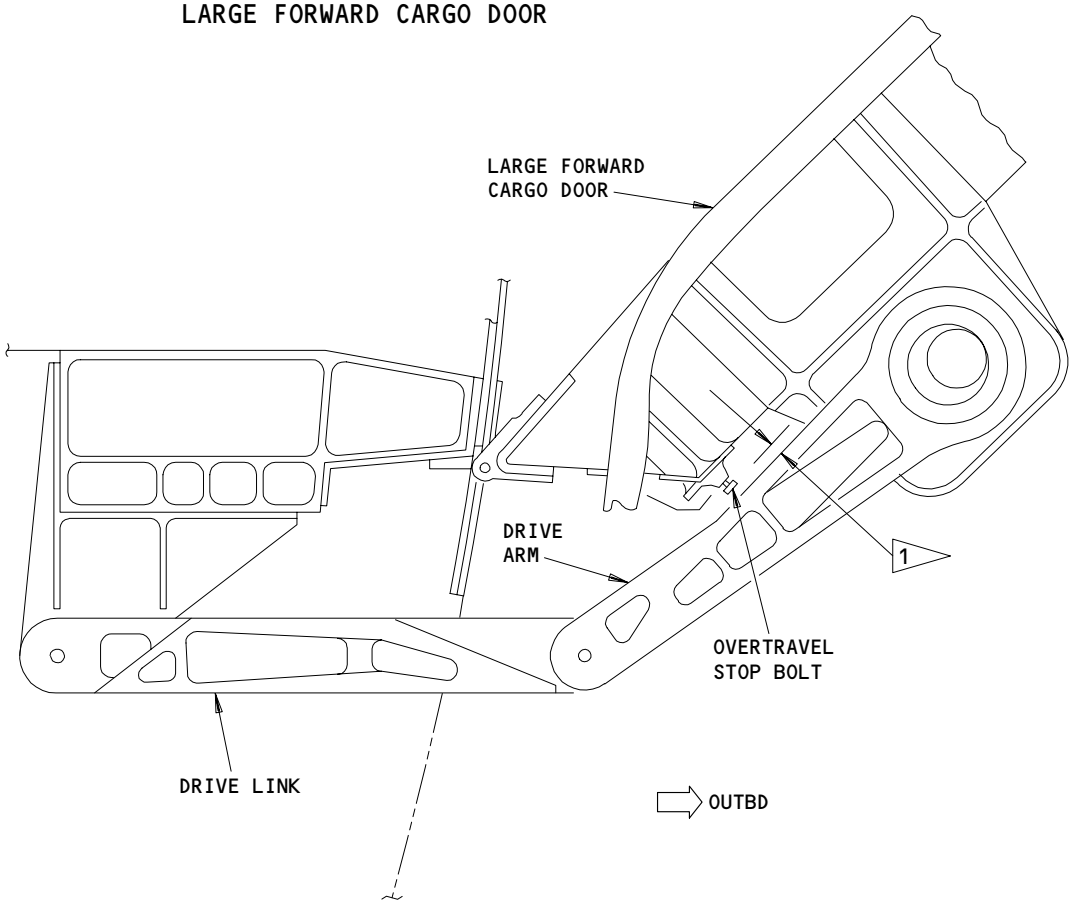


LARGE FORWARD CARGO DOOR



1 MAKE SURE THERE IS CLEARANCE BETWEEN THE DRIVE ARM AND THE OVERTRAVEL STOP BOLT.

(EXAMPLE)
A-A

Drive Arm and Overtravel Stop Bolt Clearance
Figure 602

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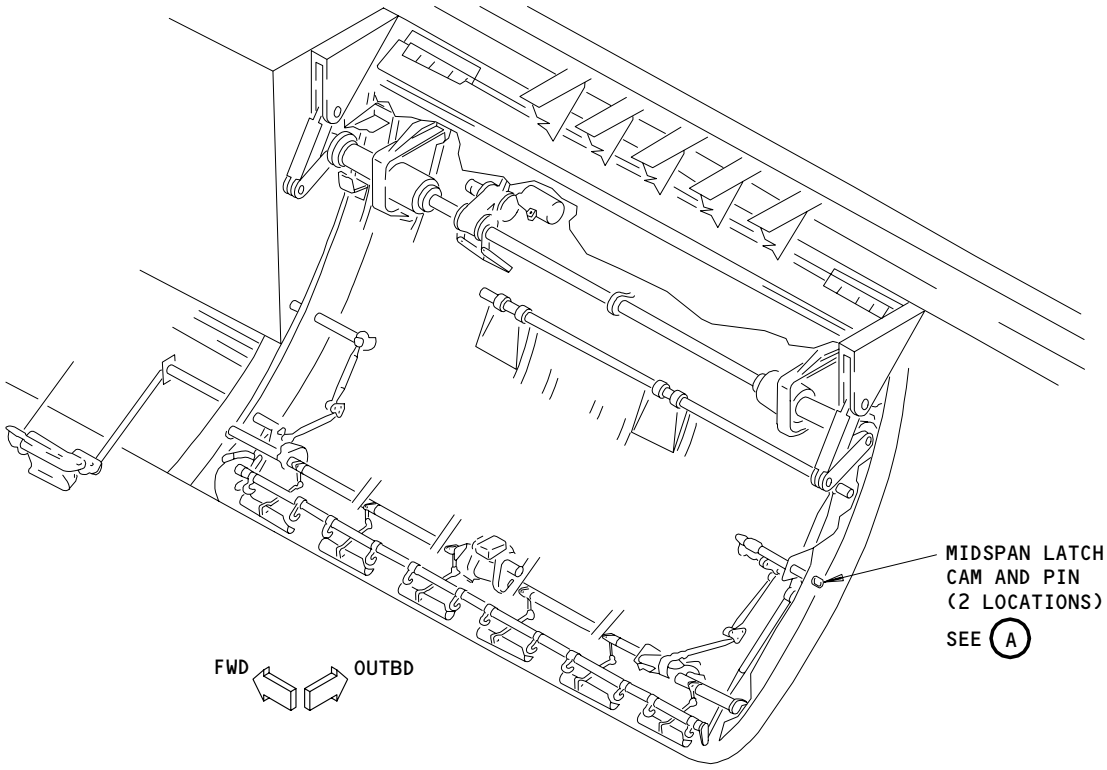
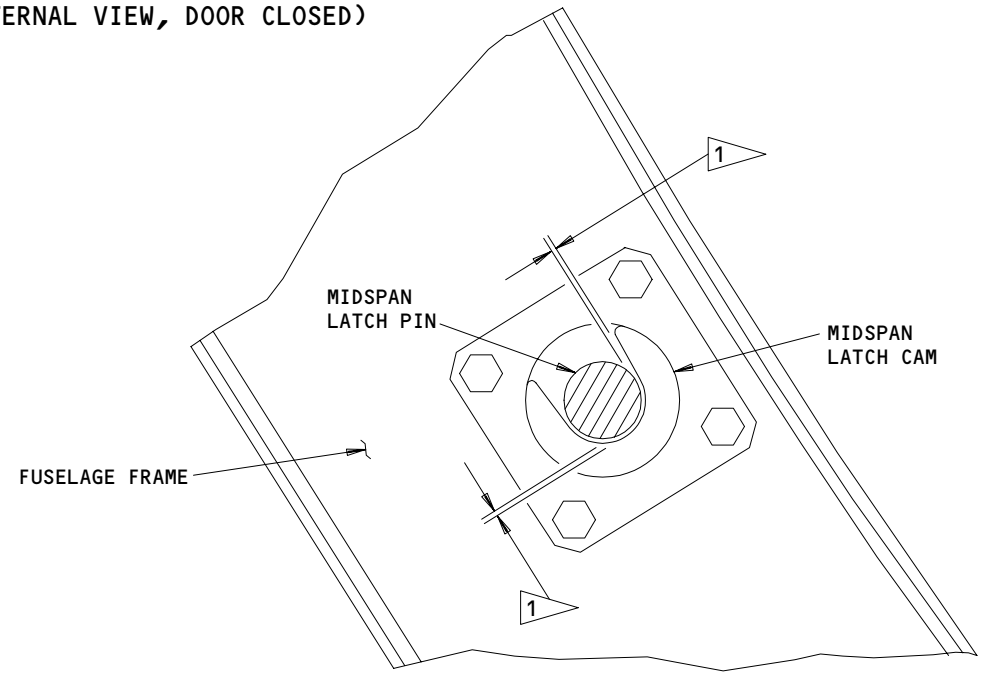


LARGE FORWARD CARGO DOOR
(INTERNAL VIEW, DOOR CLOSED)



MIDSPAN LATCH CAM AND PIN
A

1 MAKE SURE THERE IS CLEARANCE BETWEEN THE MIDSPAN LATCH CAM AND THE MIDSPAN LATCH PIN.

Midspan Latches
Figure 603

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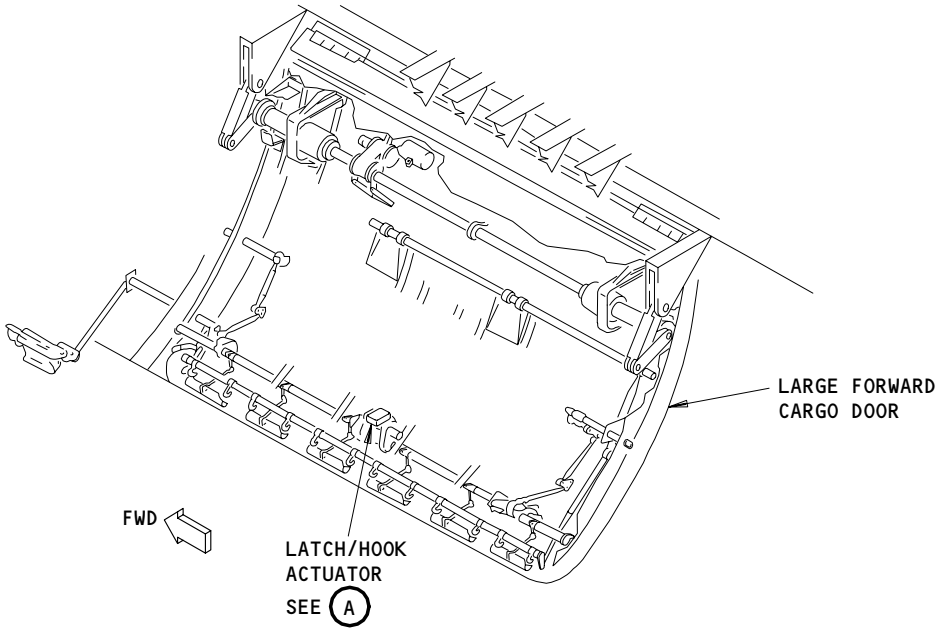
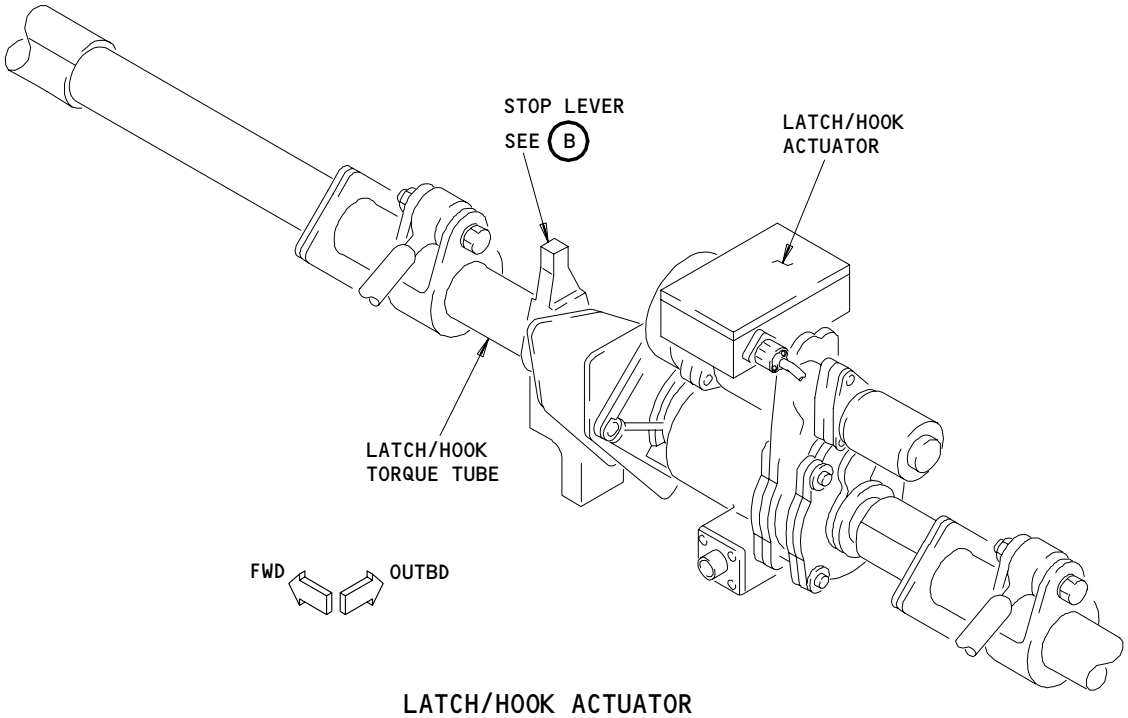


LARGE FORWARD CARGO DOOR



LATCH/HOOK ACTUATOR

A

Latch/Hook Actuator
Figure 604 (Sheet 1)

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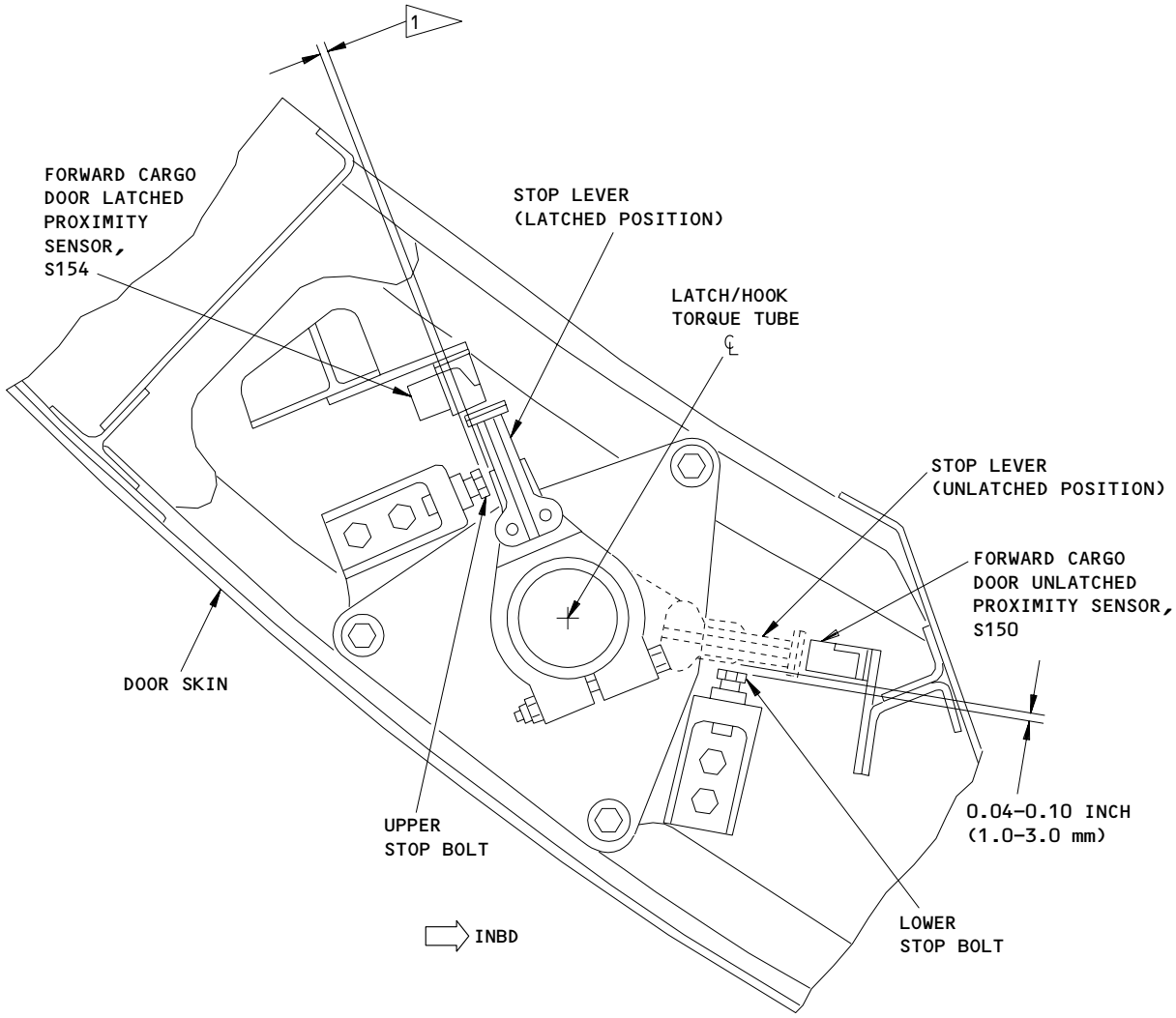

STOP LEVER
B

1 MAKE SURE THERE IS CLEARANCE BETWEEN THE STOP LEVER AND THE UPPER STOP BOLT.

Latch/Hook Actuator
Figure 604 (Sheet 2)

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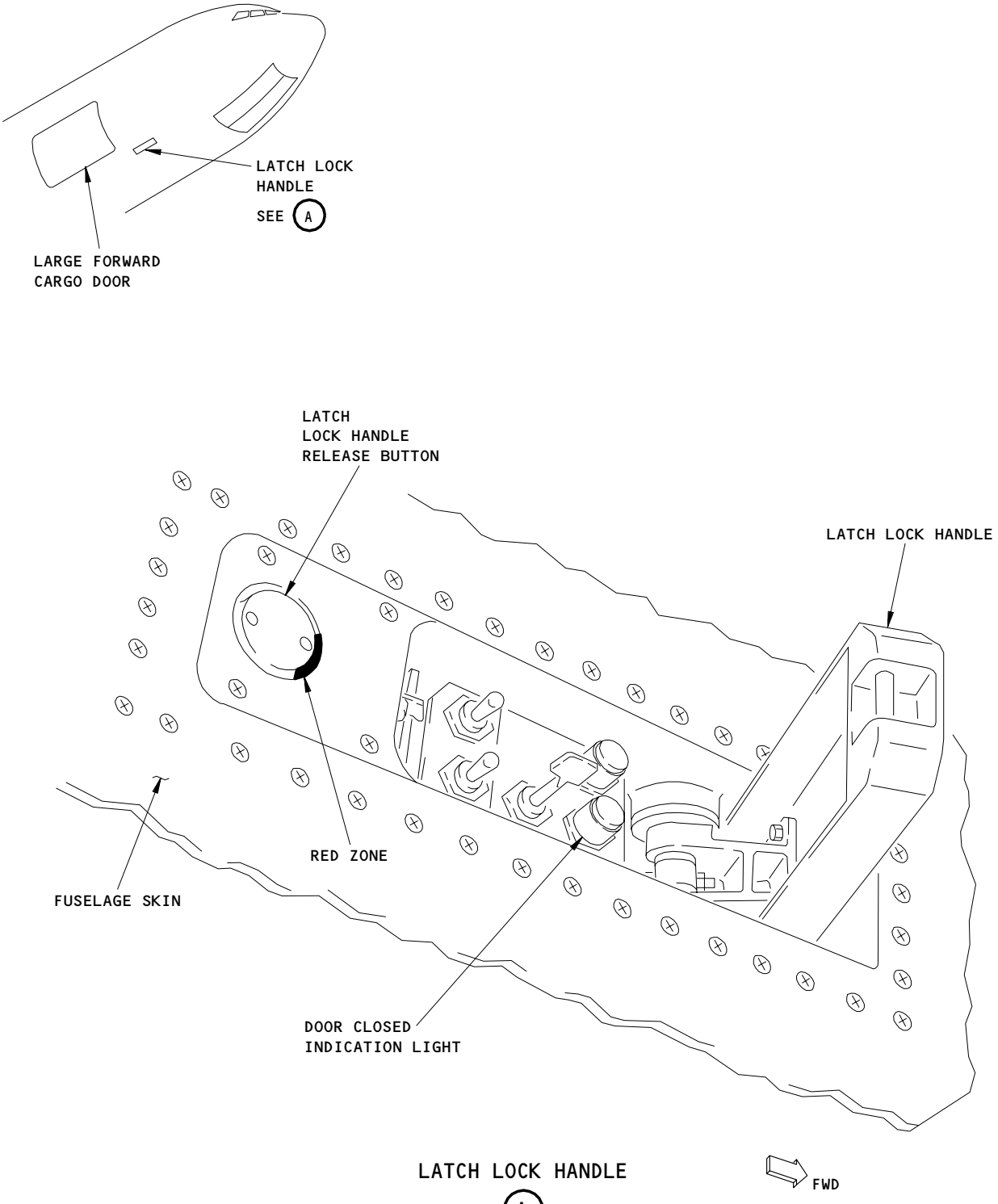

Latch Lock Handle
Figure 605

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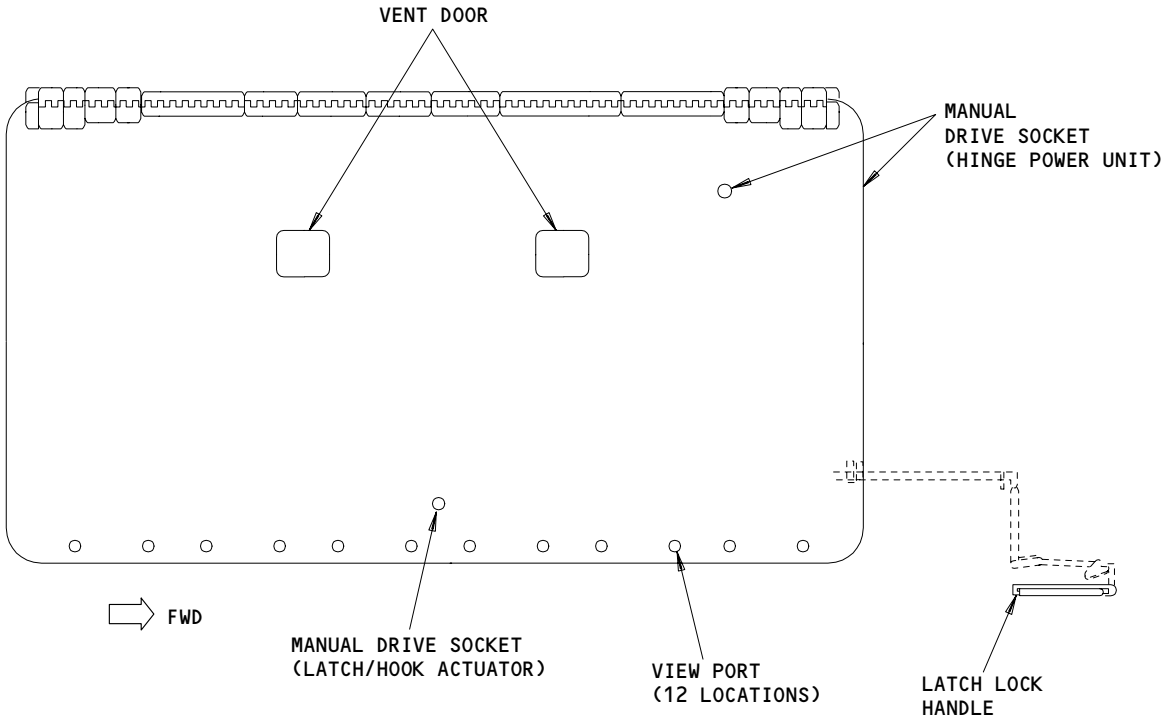

Large Forward Cargo Door – External View
Figure 606

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LARGE FORWARD CARGO DOOR - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the large forward cargo door from the airplane. The second task is the installation of the large forward cargo door on the airplane.
   B. You can install the cargo door with the airplane on its landing gear. Before you adjust the cargo door, the airplane must be on its landing gear and stable with jacks.

TASK 52-33-01-004-060

2. Remove the Large Forward Cargo Door
   A. Equipment
      (1) A52004-42 - Cargo Door Sling
      (2) Hinge Pin Driver Set - A52019-1
      (3) Transport Dolly
      (4) Hinge Pin Removal Tool (0.125 inch diameter, 5 inches minimum length)
      (5) Cargo Door Safety Barrier - A52007-1
   B. Access
      (1) Location Zone
          821 Forward Cargo Door

   C. Procedure - Remove the Large Forward Cargo Door

      S 014-002
      (1) Open the cargo door sufficiently to get access to the rain seal.

      S 034-003
      (2) Remove the rain seal guide from the cargo door (View B-B, Fig. 401).

      S 034-004
      (3) Disconnect the bonding jumper from each end of the cargo door (View A-A, Fig. 401).

      S 864-005
      (4) Close the cargo door to approximately the vertical, free-hang position.

      S 864-006
      (5) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
          (a) 34J4, CONT DOOR CARGO
          (b) 34J7, CARGO DOOR FWD

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S 494-007
(6) Install the cargo door sling hoist fitting.

S 494-008
(7) Install the cargo door sling.

S 864-009
(8) Put a sufficient load on the sling to remove the weight of the cargo door from the door hinges.

S 034-010
(9) Remove the hinge fairing plate (1) from the cargo door (View A-A, Fig. 401).

S 034-011
(10) Remove the rain seal from the cargo door (6) (View B-B, Fig. 401).

S 034-012
(11) Disconnect the wire bundle conduit at the connector on the structure support bracket (View C-C, Fig. 401).

S 034-013
(12) Remove the bolt (4) and the link pin (5) from the forward and aft drive links (View C-C, Fig. 401).

S 024-014
(13) Disconnect the drive links from the structure support bracket (View C-C, Fig. 401).

S 864-015
(14) Put the drive links and the drive arms together in a position farther than the fully closed position of the cargo door.

S 494-016
(15) Attach the drive links and the drive arms together with a tie in the fully closed position of the cargo door.

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S 824-017

(16) Turn the manual drive of the hinge power unit counterclockwise until the drive arms are approximately 90 degrees to the inner skin of the cargo door at the lift drive mechanism (Sheet 1, Fig. 401).

S 024-018

(17) Disconnect the cargo door from the fuselage hinge piece (View B-B, Fig. 401). Do the steps that follow:

(a) Disconnect the removable hinge pieces (3) from the cargo door and the fuselage structure (Sheet 2, Fig. 401). Do not remove the shims from the cargo door or the external skin of the fuselage structure.

(b) Remove the hinge pins in the center with the hinge pin driver. Attach tags to the hinge pins to identify for the subsequent installation.

NOTE: The hinge pins have different lengths. The tags you put on the hinge pins will help you identify the correct location for the hinge pins when you install the cargo door.

(c) Install the hinge pin removal tool through the hole in the end of the forward and aft hinge pins.

(d) Pull the hinge pins out of the hinge fittings toward the center of the cargo door.

S 024-019

(18) Remove the cargo door from the airplane and put it on the transport dolly.

S 494-020

(19) Install the cargo door safety barrier.

TASK 52-33-01-404-061

3. Install the Large Forward Cargo Door

A. Equipment

(1) Cargo Door Safety Barrier - A52007-1

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(2) A52004-42 - Cargo Door Sling

B. Consumable Materials
(1) D00633 Grease - BMS 3-33 (Preferred)
(2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)
(3) A50067 Adhesive - Silicone Rubber - RTV 102 (BAC 5010 Type 60) (Recommended)
(4) A00169 Sealant - RTV 174 (Alternate)

C. Parts

AMM			AIPC		
FIG	ITEM	NOMENCLATURE	SUBJECT	FIG	ITEM
401	1	Hinge Fairing	52-34-01	20	65,70
	2	Bonding Jumper			30
	3	Removable Hinge Segment	53-34-53	01	90
			52-34-41	06	125,250
					380
	4	Link Bolt	52-34-41	05	601
	5	Link Pin	52-34-41	05	607
	6	Pressure Seal	52-34-41	05	5
	7	Hinge Pins	52-34-01	20	105,110
					115,120
	8	Washer	52-34-41	05	604

D. References
(1) 12-21-22/301, Forward/Aft Cargo Door
(2) 24-22-00/201, Electrical Power - Control
(3) 52-09-02/401, Cargo Door Seals
(4) 52-33-00/501, Large Forward Cargo Door

E. Access
(1) Location Zone
821 Forward Cargo Door

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F. Prepare to Install the Large Forward Cargo Door

S 034-022

(1) If you install a new cargo door, remove the parts that follow from the initial door:
(a) Door lining
(b) Door pressure seal
(c) Hinge fairing plates
(d) Two bonding jumpers

S 214-023

(2) Do a check on the cargo door seals for damage or deterioration (Ref 52-09-02).

S 354-024

(3) If there is damage or deterioration of the cargo door seals, do the "Repair the Cargo Door Seals" procedure (Ref 52-09-02).

S 434-025

(4) If it is necessary to install the seal on the cargo door, install the seal (AMM 52-09-02/401) before you install the cargo door.

NOTE: It is necessary that the drive links be disconnected to install the seal on the cargo door.

G. Procedure - Install the Large Forward Cargo Door

S 094-026

(1) Remove the cargo door safety barrier.

S 034-027

CAUTION: KEEP THE DRY FILM LUBRICATED BEARING SURFACES OF THE MAIN LATCH PINS CLEAN AND BE CAREFUL NOT TO CAUSE DAMAGE TO THE SURFACES. IF YOU ARE NOT CAREFUL, DAMAGE TO THE SURFACES OF THE MAIN LATCH PINS CAN EASILY OCCUR.

(2) Remove the main latch pins from the main latch pin fittings on the lower door sill.

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S 034-028
(3) Remove the main latch pins in the center and the centering roller shims.

S 824-029
(4) Adjust the pull-in pin fittings to their mid-range position on the serrated plates.

S 864-030
(5) Open the latch lock handle (Sheet 2, Fig. 401).

S 824-031
(6) Use the manual drive of the hinge power unit to put the drive arms approximately 90 degrees to the inner skin of the cargo door at the lift drive mechanism (Sheet 1, Fig. 401).

NOTE: This will make sure the drive arms are clear of the seal depressor for the installation of the cargo door.

S 864-032
(7) Operate the manual drive of the latch/hook actuator to move the cargo door to touch the overtravel stops.

S 494-033
(8) Install the cargo door sling on the cargo door.

S 824-034
(9) If you install a new cargo door, do the steps that follow to put the drive links and the drive arms in the correct position:
(a) Put the drive links and the drive arms together in a position farther than the fully closed position of the cargo door.
(b) Attach the drive links and the drive arms together with a tie in the fully closed position of the cargo door.

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(c) Turn the manual drive of the hinge power unit counterclockwise until the drive arms are approximately 90 degrees to the inner skin of the cargo door at the lift drive mechanism (Sheet 1, Fig. 401).

NOTE: This will make sure the drive arms are clear of the seal depressor for the installation of the cargo door.

S 354-035

CAUTION: IF YOU INSTALL A NEW, REPLACEMENT CARGO DOOR, REMOVE THE UNWANTED SKIN AROUND THE EDGES OF THE DOOR BEFORE YOU CLOSE THE DOOR. IF YOU DO NOT REMOVE THE UNWANTED SKIN AROUND THE DOOR EDGES, DAMAGE TO THE DOOR AND THE FUSELAGE CAN OCCUR WHEN YOU CLOSE THE DOOR.

(10) If you insall a new, replacement door, remove the unwanted skin around the edges of the door to get the correct skin clearances between the door skin and the fuselage skin.

S 424-036

(11) Use the hoist to lift the cargo door into the correct position with the door hinge pieces and the fuselage hinge pieces engaged.

S 644-037

(12) Lubricate the hinge pins with the grease before you install the hinge pins into the hinges.

S 434-038

(13) Install the end hinge pins with the drilled hole in the direction of the center of the cargo door.

S 434-039

(14) Install the center hinge pins, with the one short pin in the first and the last position in the string.

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S 434-040
(15) Install the removable hinge piece across the door to the fuselage structure hinge line as before (Sheet 2, Fig. 401).

S 434-041
(16) Tighten the nuts on the 5/16-inch bolts (9) to 130-180 pound-inches (Sheet 2, Fig. 401).

S 434-042
(17) Tighten the 1/4-inch bolts (10) and (11) (Sheet 2, Fig. 401).

S 434-043
(18) Install the hinge fairing plates (1).

S 434-044
(19) Turn the manual drive of the hinge power unit clockwise until you can install the link pin (5) through the drive link and the structure support bracket (View C-C, Fig. 401).

S 434-045
(20) Install the rain seal (6) on the door structure (View B-B, Fig. 401).

S 424-046
(21) Install the bolts (4), link pins (5), and washers (8) to connect the drive links to the structure support bracket (View C-C, Fig. 401).

S 434-047
(22) Install the lockwires to the bolts of the two drive links.

S 434-048
(23) Connect the wire bundle conduit at the connector on the structure support bracket (View C-C, Fig. 401).

S 864-049
(24) Remove the weight of the cargo door from the cargo door sling.

S 094-050
(25) Remove the cargo door sling.

S 824-051
(26) Adjust the cargo door installation (Ref 52-33-00).

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S 434-052
(27) Connect the two bonding jumpers to the cargo door (View A-A, Fig. 401).

S 764-053
(28) Make sure the maximum electrical resistance between the cargo door and the structure is 10 milliohms.

S 214-054
(29) Open and close the cargo door three times. Do the steps that follow:
(a) Make sure the seal is flat when the cargo door is closed.
(b) Make sure the seal waviness for the straight parts is less than 0.10 inch and the seal is flat with no clearances when the door is closed.

S 644-055
(30) Lubricate the cargo door (Ref 12-21-22).

S 864-056
(31) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO
(b) 34J7, CARGO DOOR FWD

S 714-057
(32) Do the operational test on the cargo door (Ref 52-33-00).

S 414-058
(33) Install the door lining on the cargo door.

S 864-059
(34) Remove electrical power if it is not necessary (Ref 24-22-00).

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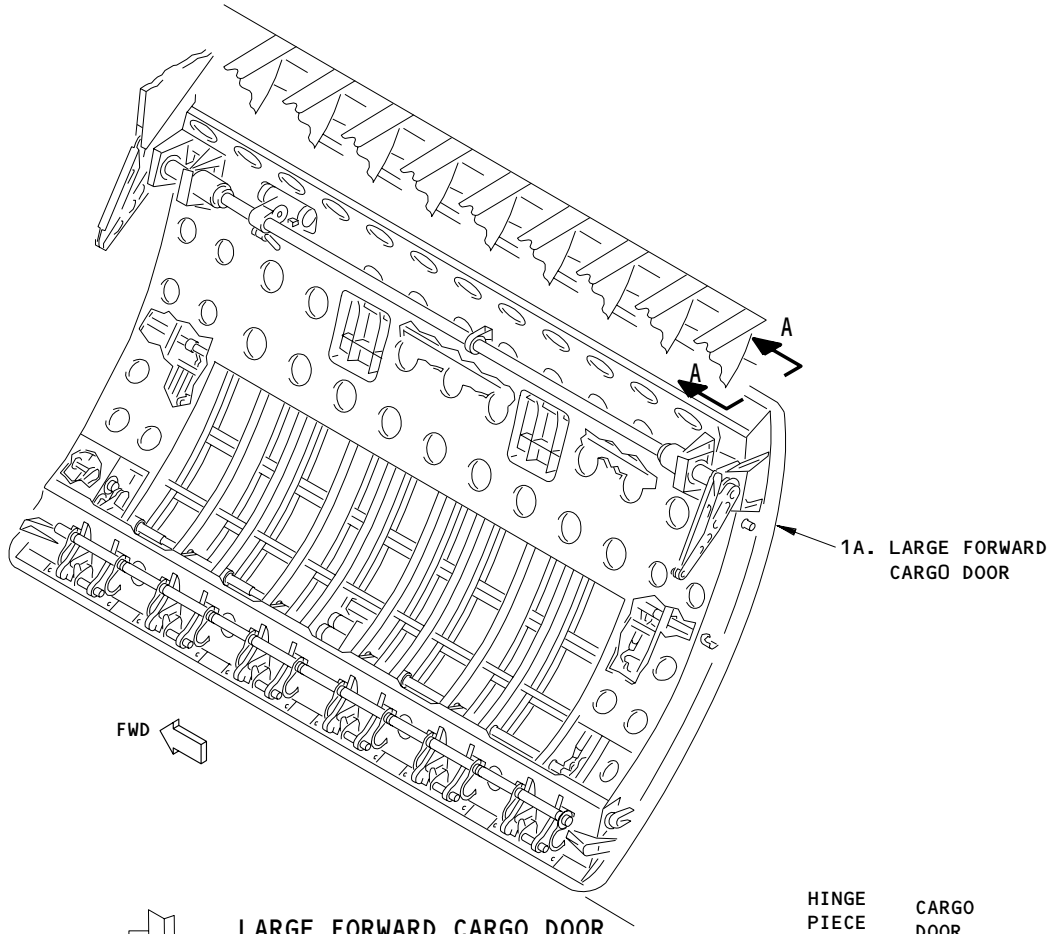
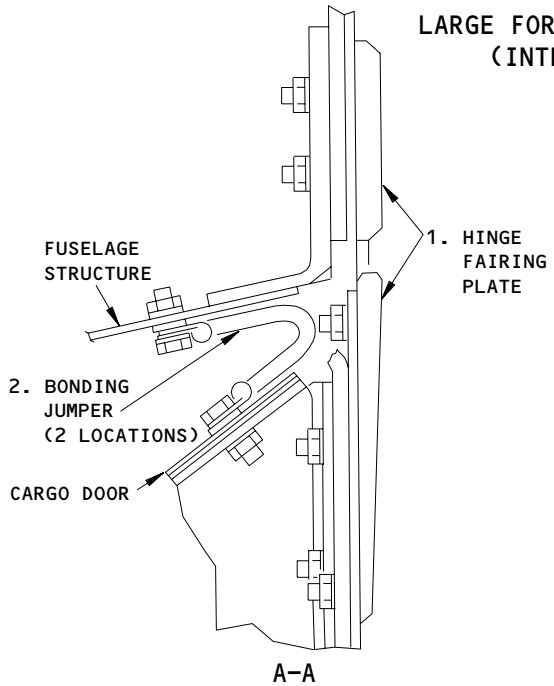
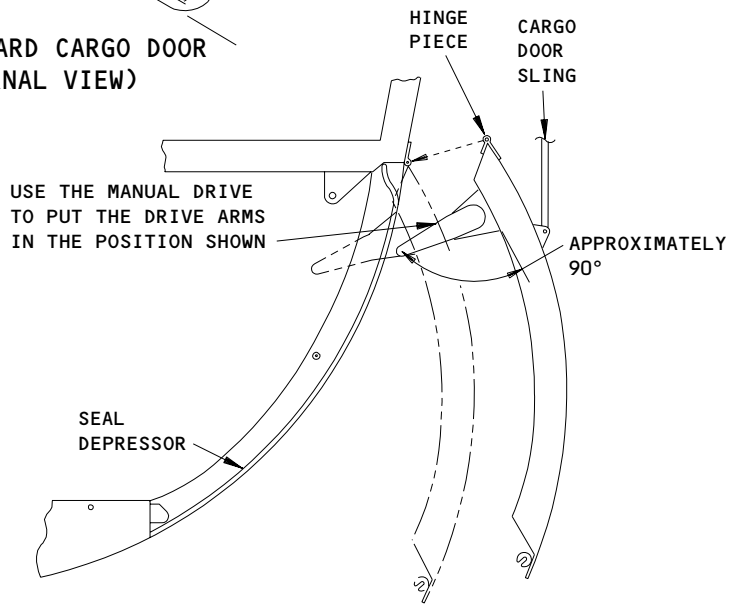


LARGE FORWARD CARGO DOOR
(INTERNAL VIEW)



A-A



LARGE FORWARD CARGO DOOR
(SIDE VIEW)

Large Forward Cargo Door
Figure 401 (Sheet 1)

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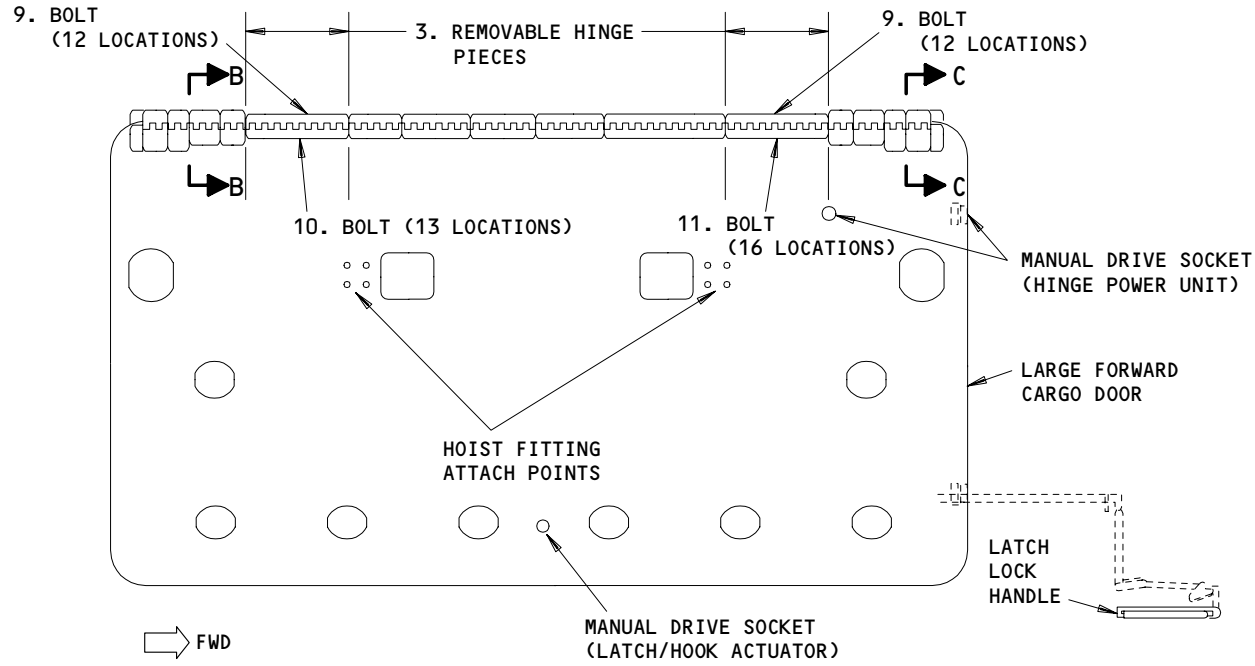
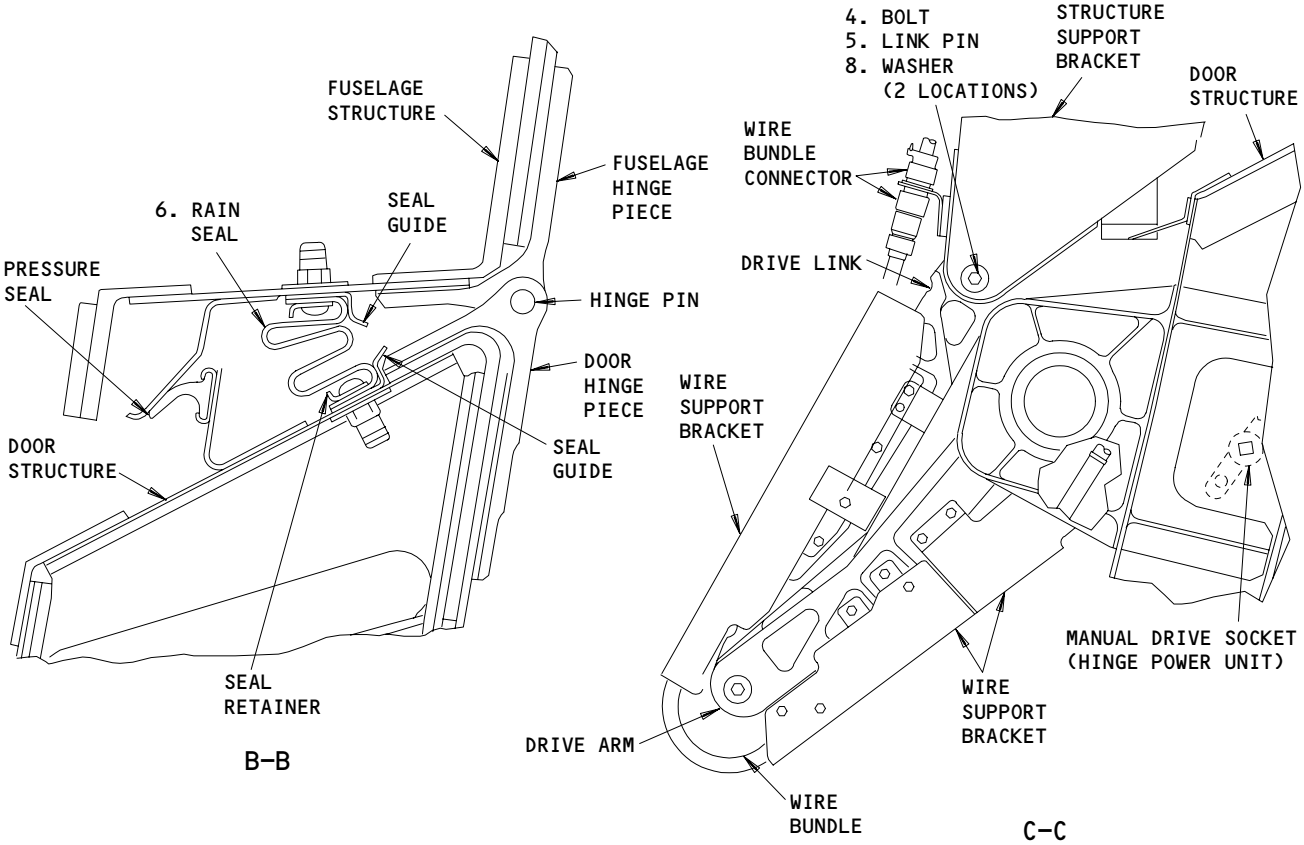


LARGE FORWARD CARGO DOOR
(EXTERNAL VIEW)



Large Forward Cargo Door
Figure 401 (Sheet 2)

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LARGE FORWARD CARGO DOOR - INSPECTION/CHECK

1. General
   A. This procedure has a task to do a wear limits check for the large forward cargo door.

   TASK 52-33-01-206-006

2. Do a Wear Limits Check on the Large Forward Cargo Door (Fig. 601)
   A. General
      (1) In this task, no instructions are given to get access to, remove, or install the large forward cargo door after the inspection for wear. For this data, refer to Large Forward Cargo Door - Removal/Installation (AMM 52-33-01/401).

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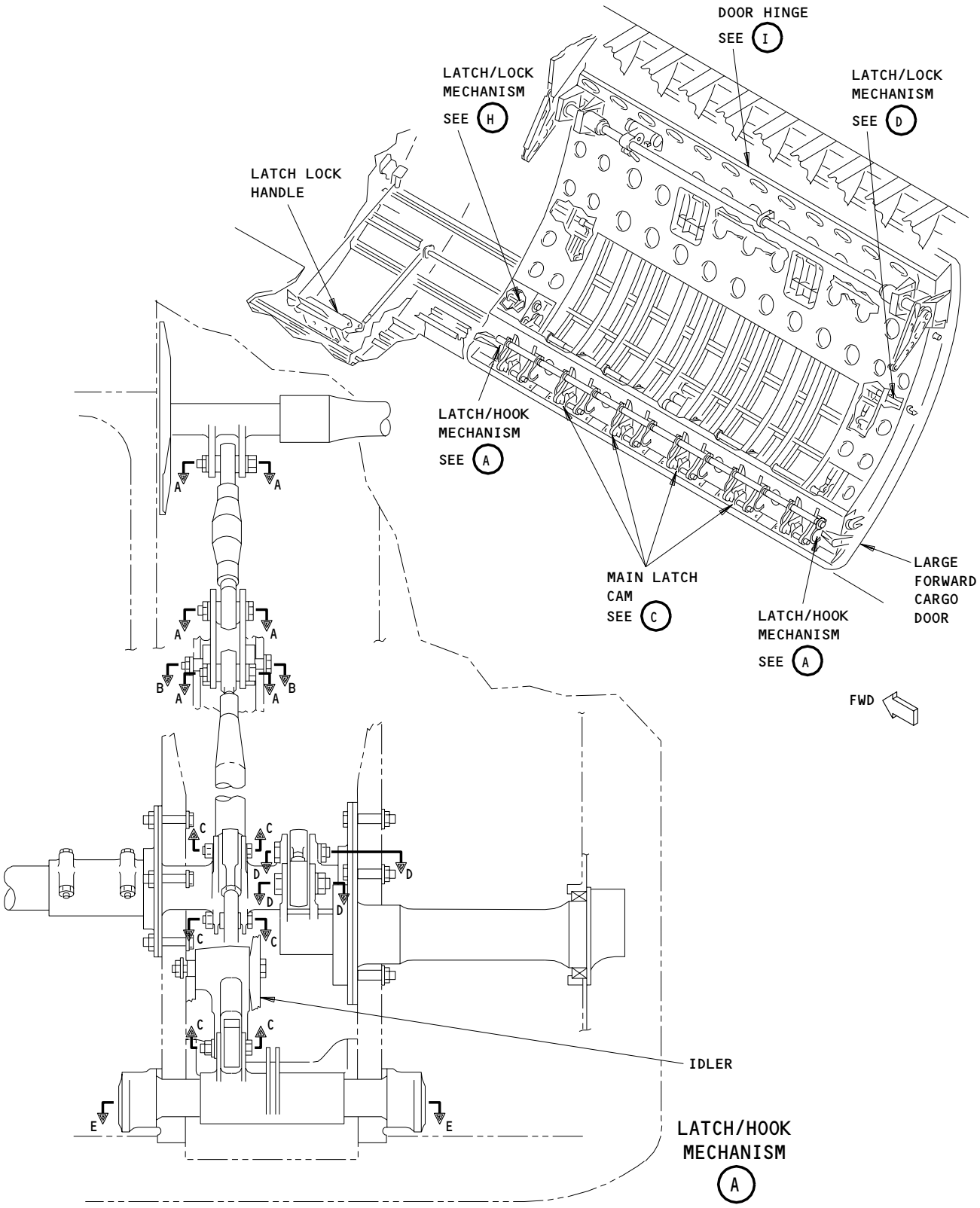

Large Forward Cargo Door Wear Limits
Figure 601 (Sheet 1)

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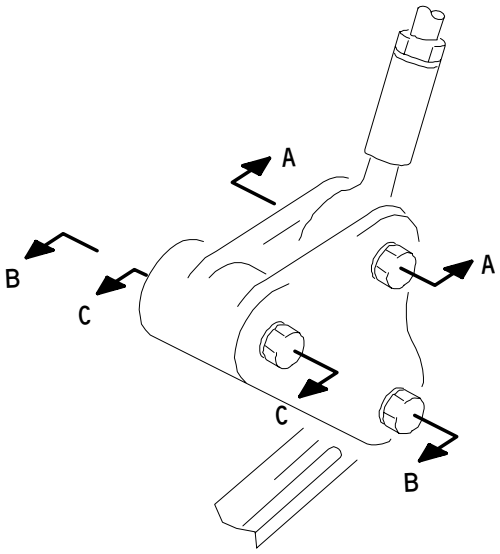
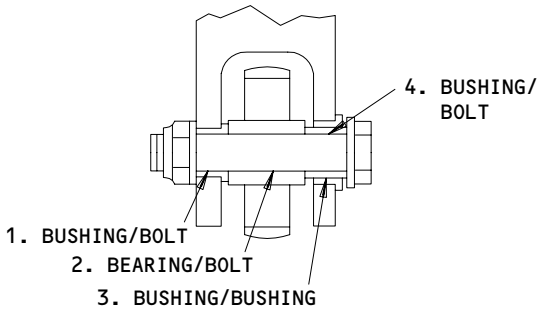
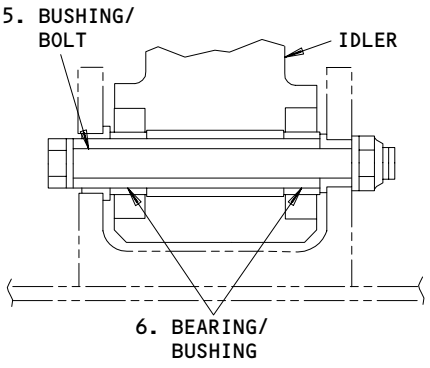
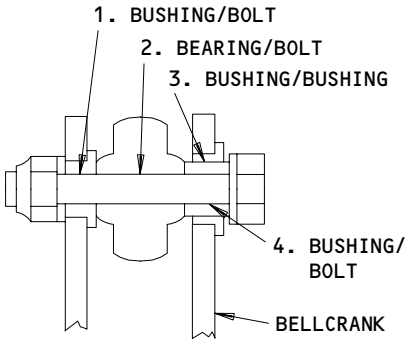




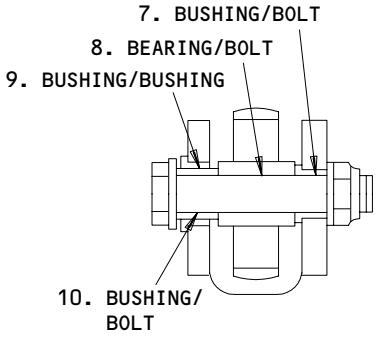
A–A



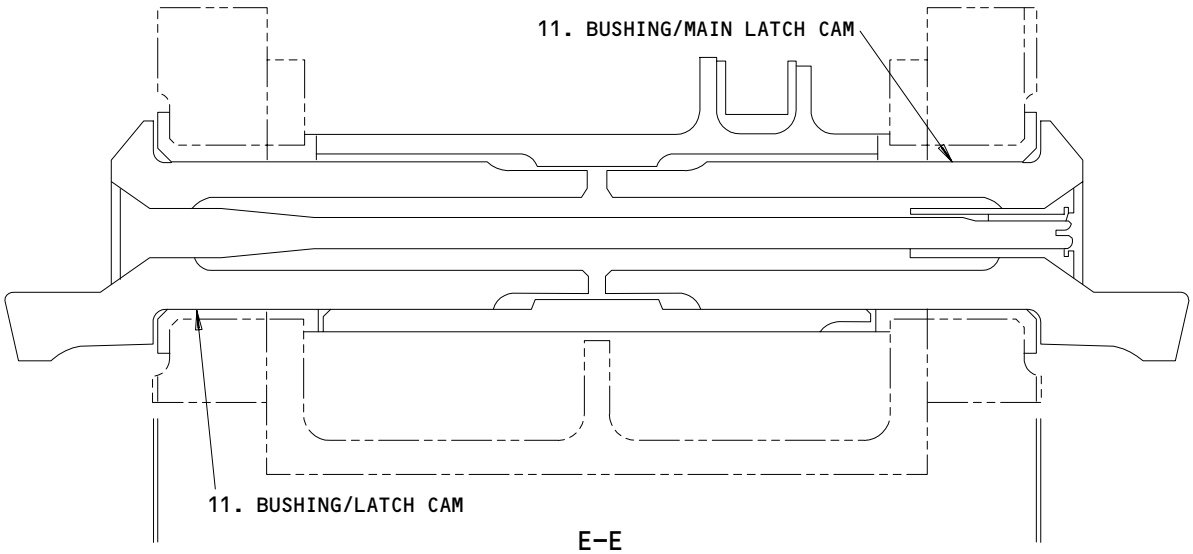
B–B



C–C



D–D



E–E

Large Forward Cargo Door Wear Limits
Figure 601 (Sheet 2)

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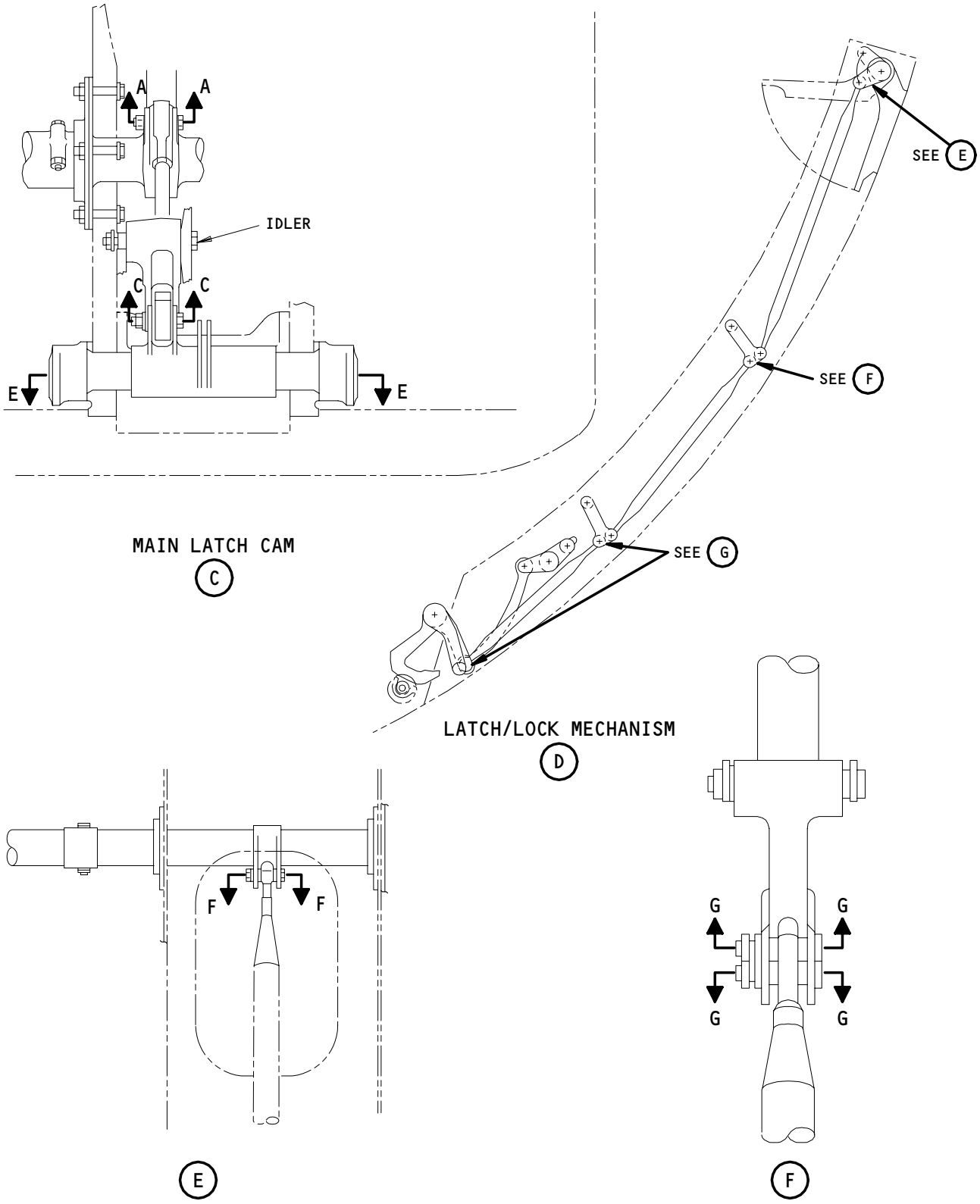

Large Forward Cargo Door Wear Limits
Figure 601 (Sheet 3)

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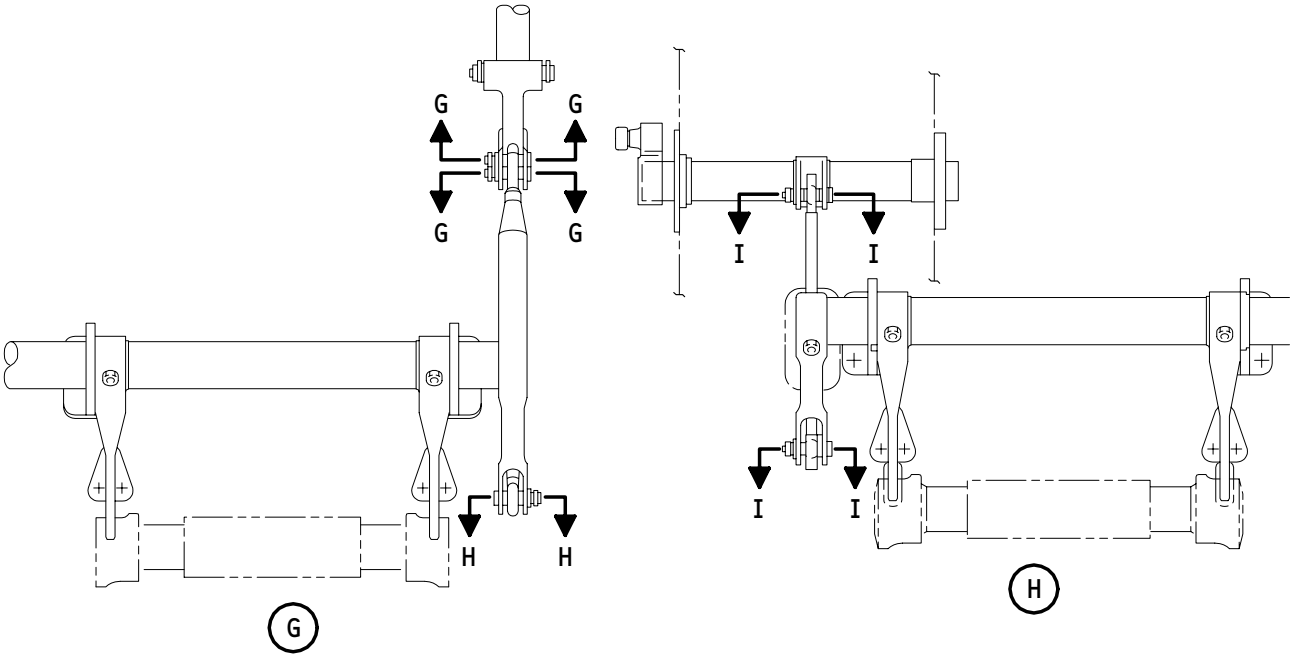

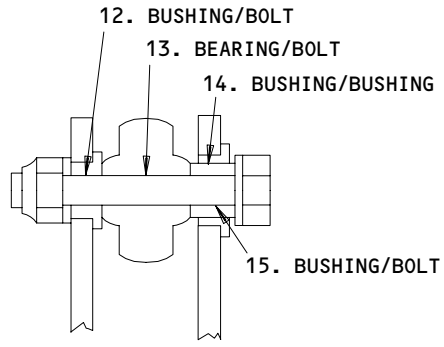

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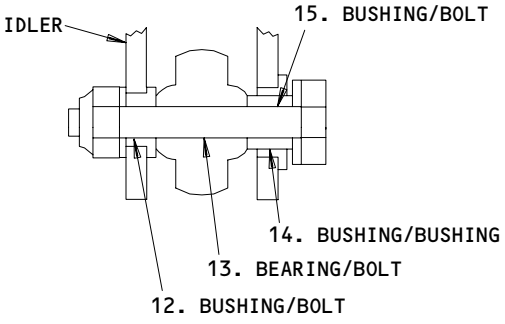
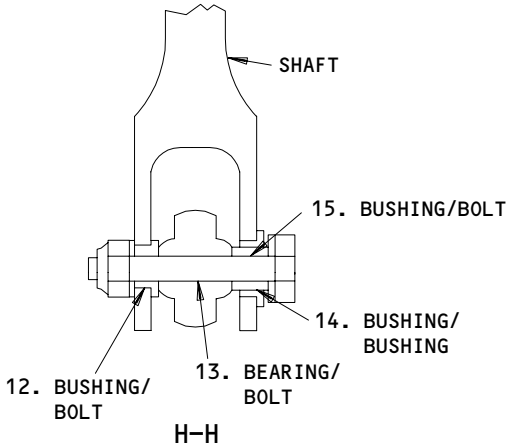
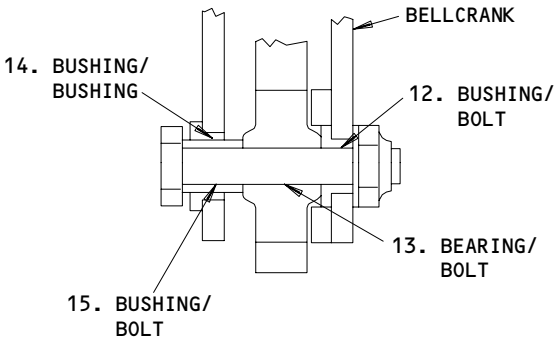


G–G



H–H



I–I

Large Forward Cargo Door Wear Limits
Figure 601 (Sheet 4)

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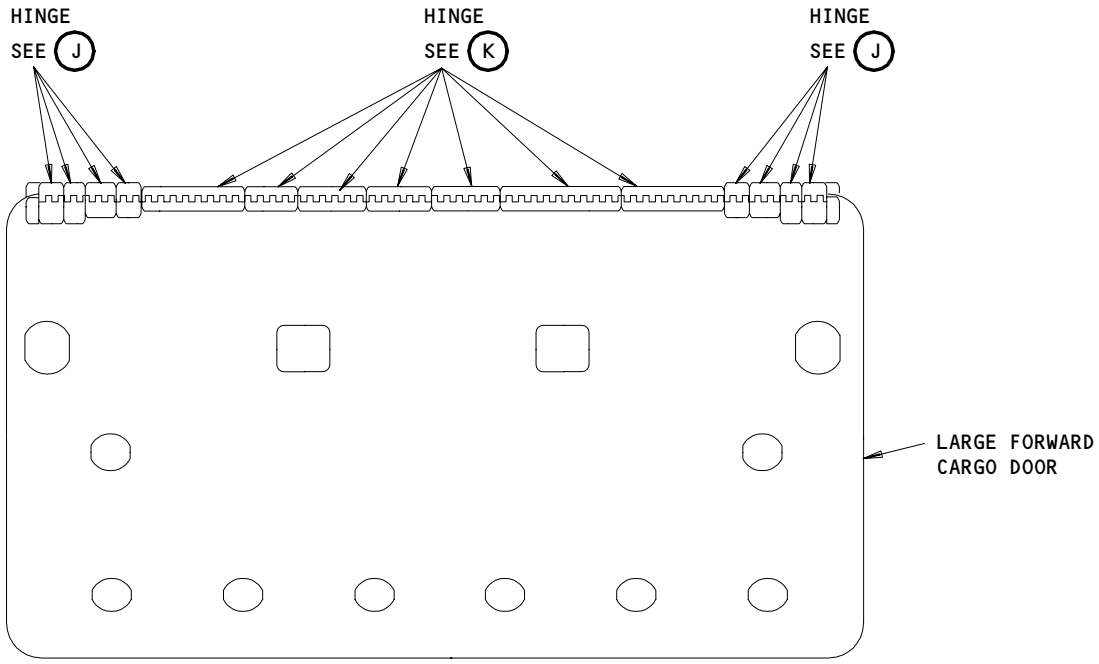
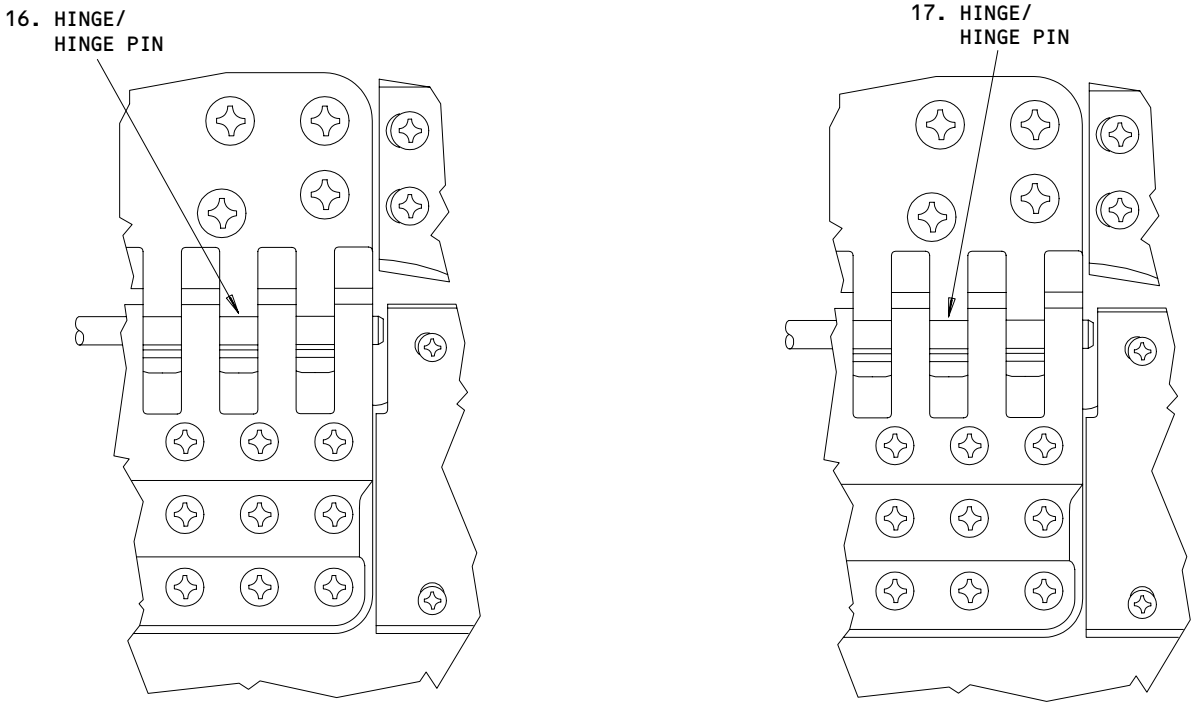


DOOR HINGE
I



HINGE
J

HINGE
K

Large Forward Cargo Door Wear Limits
Figure 601 (Sheet 5)

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INDEX NO.	PART NAME	DIM.	DESIGN LIMITS		WEAR LIMITS		REPLACE WORN PART	REPAIR WORN PART	REPAIR INSTR.
			DIAMETER		ALLOWED WEAR DIM.	MAX DIAM CLEAR-ANCE			
			MIN	MAX					
1	BUSHING	ID	0.3750	0.3765	0.3795	0.0050	X		
	BOLT	OD	0.3735	0.3745	0.3715		X		
2	BEARING	ID	0.3745	0.3750	0.3795	0.0050	X		
	BOLT	OD	0.3735	0.3745	0.3700		X		
3	BUSHING	ID	0.5625	0.5640	0.5665	0.0050	X		
	BUSHING	OD	0.5610	0.5615	0.5590		X		
4	BUSHING	ID	0.3750	0.3755	0.3795	0.0050	X		
	BOLT	OD	0.3735	0.3745	0.3705		X		
5	BUSHING	ID	0.3120	0.3135	0.3170	0.0050	X		
	BOLT	OD	0.3110	0.3120	0.3085		X		
6	BEARING	ID	0.4995	0.5000	0.5030	0.0050	X		
	BUSHING	OD	0.4970	0.4980	0.4950		X		
7	BUSHING	ID	0.5000	0.5015	0.5045	0.0050	X		
	BOLT	OD	0.4985	0.4995	0.4965		X		
8	BEARING	ID	0.4995	0.5000	0.5045	0.0050	X		
	BOLT	OD	0.4985	0.4995	0.4950		X		
9	BUSHING	ID	0.6875	0.6890	0.6915	0.0050	X		
	BUSHING	OD	0.6860	0.6865	0.6840		X		
10	BUSHING	ID	0.5000	0.5005	0.5045	0.0050	X		
	BOLT	OD	0.4985	0.4995	0.4955		X		
11	BUSHING	ID	1.5010	1.5020	1.5060	0.0070	X		
	LATCH CAM	OD	1.4985	1.4990	1.4985		X		
12	BUSHING	ID	0.2500	0.2515	0.2545	0.0050	X		
	BOLT	OD	0.2485	0.2495	0.2465		X		
13	BEARING	ID	0.2495	0.2500	0.2545	0.0050	X		
	BOLT	OD	0.2485	0.2495	0.2450		X		
14	BUSHING	ID	0.3750	0.3765	0.3795	0.0050	X		
	BUSHING	OD	0.3740	0.3745	0.3715		X		

Large Forward Cargo Door Wear Limits
Figure 601 (Sheet 6)

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INDEX NO.	PART NAME	DIM.	DESIGN LIMITS		WEAR LIMITS		REPLACE WORN PART	REPAIR WORN PART	REPAIR INSTR
			DIAMETER		PER-MITTED WEAR DIM.	MAX DIA CLEAR-ANCE			
			MIN	MAX					
15	BUSHING	ID	0.2500	0.2505	0.2545	0.0050	X		
	BOLT	OD	0.2485	0.2495	0.2455		X		
16	HINGE	ID	0.3750	0.3780	0.3800	0.014	X		
	HINGE PIN	OD	0.3680	0.3690	0.3660		X		
17	HINGE	ID	0.2520	0.2570	0.2590	0.018	X		
	HINGE PIN	OD	0.2430	0.2450	0.2410		X		

Large Forward Cargo Door Wear Limits
Figure 601 (Sheet 7)

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LARGE FORWARD CARGO DOOR HINGE POWER UNIT - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the hinge power unit from the large forward cargo door. The second task is the installation of the hinge power unit on the large forward cargo door.

TASK 52-33-02-004-024

2. Remove the Hinge Power Unit (Fig. 401)
   A. Access
      (1) Location Zone
          821 Forward Cargo Door

   B. Procedure - Remove the Hinge Power Unit

      S 864-002
      (1) Put the cargo door in its vertical, free-hang position.

      S 864-003
      (2) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
          (a) 34J4, CONT DOOR CARGO
          (b) 34J7, CARGO DOOR FWD

      S 034-004
      (3) Remove the two drive shaft installation bolts that attach the manual drive shaft assembly to the forward door sill (View B, Fig. 401).

      S 024-005
      (4) Pull the manual drive shaft assembly forward until the aft end of the shaft is out of the hinge power unit receptacle.

      S 024-006
      (5) Remove the couplings that attach the drive shafts to the hinge power unit (View A, Fig. 401).

      S 034-007
      (6) Disconnect the electrical connector from the hinge power unit (View A, Fig. 401).

      S 034-008
      (7) Disconnect the bonding jumper from the hinge power unit (View A, Fig. 401).

      S 024-009
      (8) Hold the hinge power unit.

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S 034-010
(9) Remove the hinge power unit installation bolts (View A, Fig. 401).

S 024-011
(10) Remove the hinge power unit from the cargo door.

TASK 52-33-02-404-025

3. Install the Hinge Power Unit (Fig. 401)

A. Consumable Materials
(1) D00633 Grease - BMS 3-33 (Preferred)
(2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

B. References
(1) 24-22-00/201, Electrical Power - Control

C. Access
(1) Location Zone
821 Forward Cargo Door

D. Procedure - Install the Hinge Power Unit

S 424-013
(1) Hold the hinge power unit in its correct position.

S 434-014
(2) Install the hinge power unit installation bolts at the two locations (View A, Fig. 401).

S 424-015
(3) Put the aft end of the manual drive shaft in the hinge power unit receptacle.

S 434-016
(4) Install the two drive shaft installation bolts to attach the forward end of the manual drive shaft assembly to the forward door sill (View B, Fig. 401).

S 434-017
(5) Connect the electrical connector to the hinge power unit (View A, Fig. 401).

S 434-018
(6) Connect the bonding jumper to the hinge power unit (View A, Fig. 401).

S 824-019
(7) Adjust the lift drive mechanism (Fig. 401). Do the steps that follow:
(a) Put the cargo door in its vertical, free-hang position.

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(b) Put a block in the front of the cargo door to prevent the movement of the door in the open direction.
(c) Disconnect the drive shafts from the forward and aft rotary actuators (View A, Fig. 401).

CAUTION: DO NOT PUT A TORQUE OF MORE THAN 35 POUND-INCHES ON THE INPUT TO THE ROTARY ACTUATOR. IF YOU PUT TOO MUCH TORQUE ON THE INPUT TO THE ROTARY ACTUATOR, DAMAGE TO THE EQUIPMENT CAN OCCUR.

(d) Turn the input to the forward rotary actuator in the door open direction (clockwise, forward view) until you feel resistance.

NOTE: When the torque of the rotary actuator input suddenly increases, the free play is removed.
Maximum rotation at input to remove backlash is 3.4 revolutions.

(e) Apply the grease to the coupling of the forward rotary actuator drive shaft.
(f) Connect the drive shaft to the forward rotary actuator. If the drive shaft splines and the rotary actuator splines do not align, turn the rotary actuator input in the door open direction to align the splines.

CAUTION: DO NOT PUT A TORQUE OF MORE THAN 35 POUND-INCHES ON THE INPUT TO THE ROTARY ACTUATOR. IF YOU PUT TOO MUCH TORQUE ON THE INPUT TO THE ROTARY ACTUATOR, DAMAGE TO THE EQUIPMENT CAN OCCUR.

(g) Turn the input to the aft rotary actuator in the door open direction (counterclockwise, aft view) until you feel resistance.

NOTE: When the torque of the rotary actuator input suddenly increases, the free play is removed.

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(h) Apply the grease to the coupling of the aft rotary actuator drive shaft.
(i) Connect the drive shaft to the aft rotary actuator.
(j) Install a lockwire on the drive shafts.
(k) Apply the grease to the couplings of the hinge power unit drive shafts.
(l) Connect the drive shafts to the hinge power unit.

S 494-026
(8) Remove the block from the front of the cargo door.

S 224-020
(9) Make sure that when the door is in the vertical, free-hang position the door moves through a displacement of 7.25 to 8.20 inches measured at the bottom edge of the door.

NOTE: This step is a check that the lift drive mechanism adjustment has made sufficient free play for the latch pull-in.

S 864-021
(10) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO
(b) 34J7, CARGO DOOR FWD

S 714-027

WARNING: MAKE SURE THE LIFT SYSTEM IS INSTALLED AND ADJUSTED CORRECTLY BEFORE YOU OPERATE THE DOOR. DAMAGE TO THE DOOR OR INJURY TO PERSONS CAN OCCUR.

(11) Do a check on the operation of the hinge power unit. Do the steps that follow:
(a) Supply electrical power (Ref 24-22-00).
(b) Operate the cargo door electrically. Make sure the door opens and closes correctly.

S 864-023
(12) Remove electrical power if it is not necessary (Ref 24-22-00).

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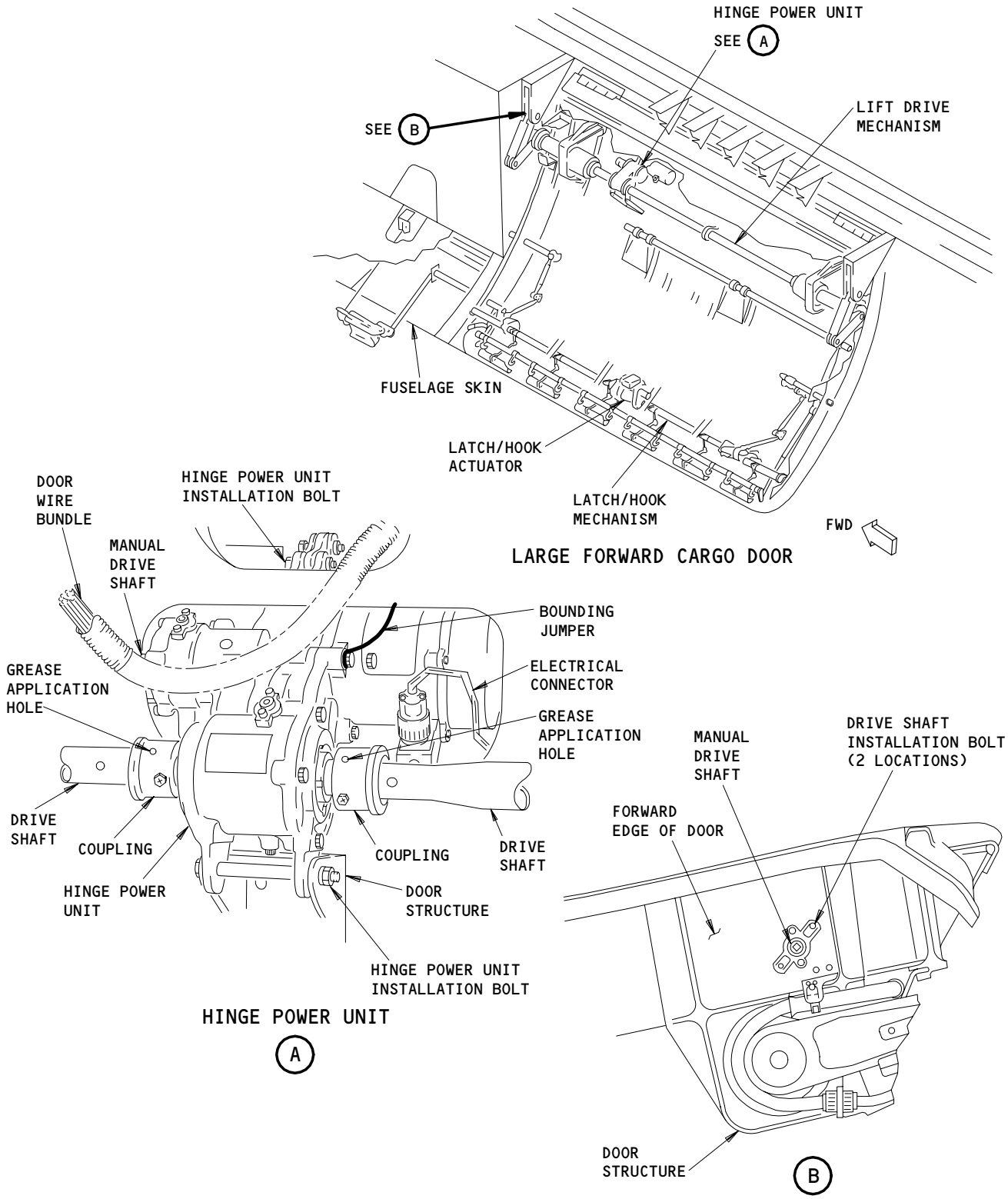

Large Forward Cargo Door Hinge Power Unit
Figure 401

773589

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LARGE FORWARD CARGO DOOR MANUAL DRIVE GEARBOX - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the manual drive gearbox from the large forward cargo door. The second task is the installation of the manual drive gearbox on the large forward cargo door.

TASK 52-33-03-004-027

2. Remove the Manual Drive Gearbox (Fig. 401)
   A. References
      (1) 52-33-04/401, Large Forward Cargo Door Rotary Actuator
   B. Access
      (1) Location Zone
          821 Forward Cargo Door

   C. Procedure - Remove the Manual Drive Gearbox

      S 014-002
      (1) Open the cargo door sufficiently to get access to the forward edge of the door.

      S 864-003
      (2) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
          (a) 34J4, CONT DOOR CARGO
          (b) 34J7, CARGO DOOR FWD

      S 034-004
      (3) Remove the forward rotary actuator that is connected to the forward drive arm (Ref 52-33-04).

      S 034-005
      (4) Remove the bolts (2 locations) that attach the manual drive shaft assembly to the forward edge of the door (View B, Fig. 401).

      S 024-006
      (5) Move the manual drive shaft assembly out of the receptacle in the hinge power unit and through the manual drive gearbox.

      S 864-007
      (6) Hold the manual drive gearbox.

      S 034-008
      (7) Remove the bolts (4 locations) that hold the manual drive gearbox to the door structure.

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S 024-009
(8) Remove the manual drive gearbox.

NOTE: Put the manual drive gearbox at an angle to remove it from the door structure.

TASK 52-33-03-404-028

3. Install the Manual Drive Gearbox (Fig. 401)

A. Consumable Materials
(1) D00633 Grease - BMS 3-33 (Preferred)
(2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

B. References
(1) 24-22-00-/201, Electrical Power - Control
(2) 52-33-00/501, Large Forward Cargo Door
(3) 52-33-04/401, Large Forward Cargo Door Rotary Actuator

C. Access
(1) Location Zone
821 Forward Cargo Door

D. Procedure - Install the Manual Drive Gearbox

S 224-011
(1) Measure the distance from the shaft flat of the manual drive to the intercostal (dimension A) and subtract 1.52 inches to find the thickness of shims (± 0.005 inch) that you must install between the manual drive gearbox and the intercostal (View A-A, Fig. 401).

S 644-012
(2) Lubricate the square shaft end of the manual drive socket.

S 424-013
(3) Put the manual drive gearbox into the door structure and engage with the square shaft end of the manual drive socket.

S 434-014
(4) Attach the manual drive gearbox to the door structure with the bolts and the washers. Install the correct thickness of shims between the manual drive gearbox and the intercostal (View A-A, Fig. 401).

S 644-015
(5) Apply the grease to the two square parts of the manual drive shaft assembly.

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S 424-016
(6) Install the manual drive shaft assembly through the gearbox and into the socket in the hinge power unit.

S 714-017
(7) Make sure the manual drive shaft assembly turns smoothly.

S 824-018
(8) If the manual drive shaft assembly does not turn smoothly, loosen the bolts and adjust the centerline position of the manual drive gearbox with the shims (View A-A, Fig. 401).

S 714-019
(9) Make sure the manual drive socket on the external door skin turns freely.

S 434-020
(10) Tighten the bolts that hold the manual drive gearbox to the door structure.

S 434-021
(11) Install the bolts (2 locations) that hold the manual drive shaft assembly to the forward edge of the door (View B, Fig. 401).

S 434-022
(12) Tighten the bolts.

S 434-023
(13) Install the rotary actuator (Ref 52-33-04).

S 824-024
(14) Adjust the lift drive mechanism (Ref 52-33-00).

S 714-025
(15) Do a test on the operation of the manual drive gearbox. Do the steps that follow:
(a) Make sure these circuit breakers on the APU external power panel, P34, are open and that DO-NOT-CLOSE tags are installed:
1) 34J4, CONT DOOR CARGO
2) 34J7, CARGO DOOR FWD

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CAUTION: IF YOU USE A POWER TOOL TO MANUALLY OPERATE THE HINGE POWER UNIT, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM OE A TORQUE OF MORE THAN 190 POUND-INCHES. THE INCORRECT OPERATION OF THE POWER TOOL CAN CAUSE DAMAGE TO THE HINGE POWER UNIT.

(b) Put a 3/8-inch square drive speed wrench into the manual drive socket on the forward edge of the door.
(c) Slowly turn the manual drive gearbox clockwise and counterclockwise.
(d) Make sure the manual drive gearbox turns smoothly.

NOTE: When the cargo door moves from the free-hang position, the torque will increase.

S 864-026

(16) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO
(b) 34J7, CARGO DOOR FWD

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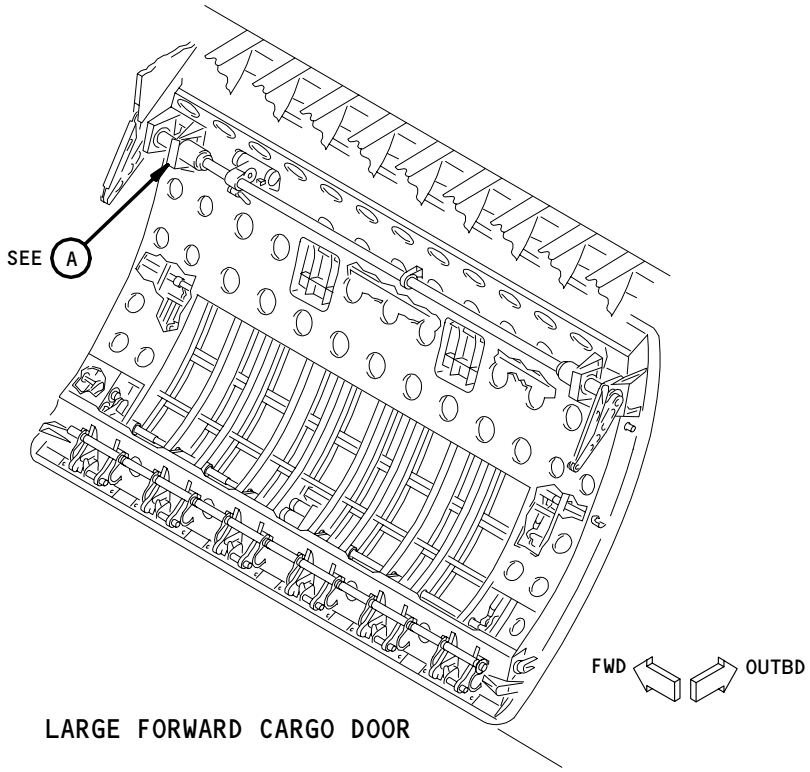
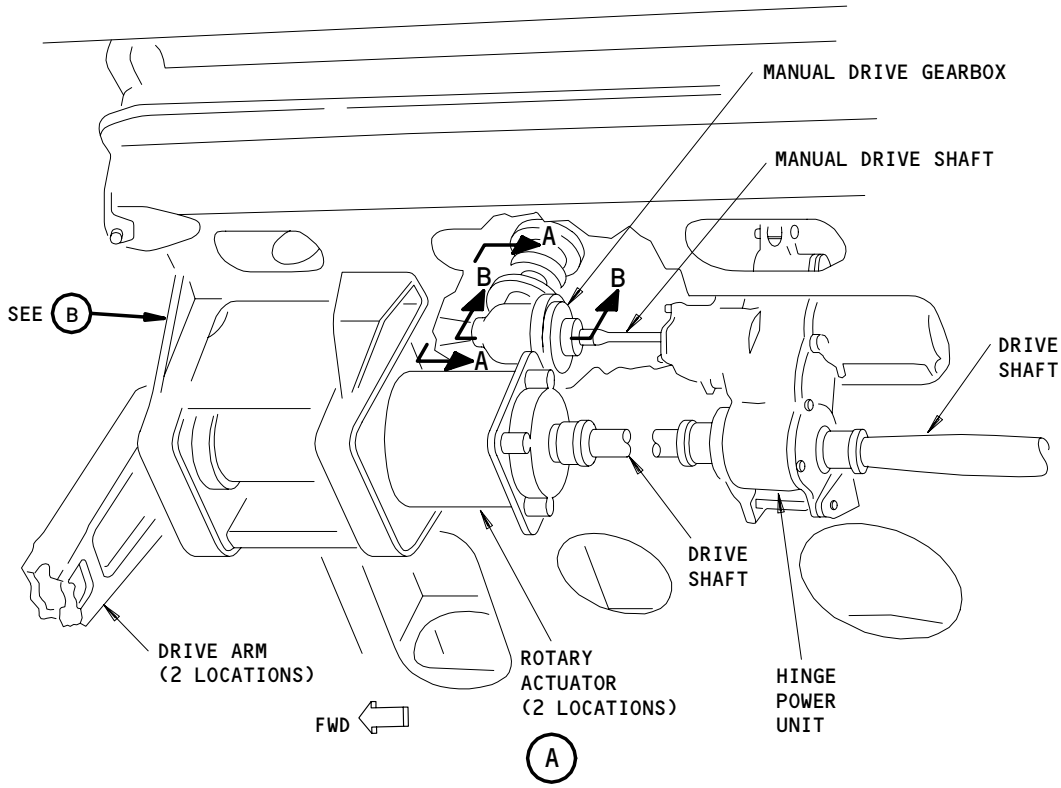


LARGE FORWARD CARGO DOOR



Manual Drive Gearbox
Figure 401 (Sheet 1)

773921

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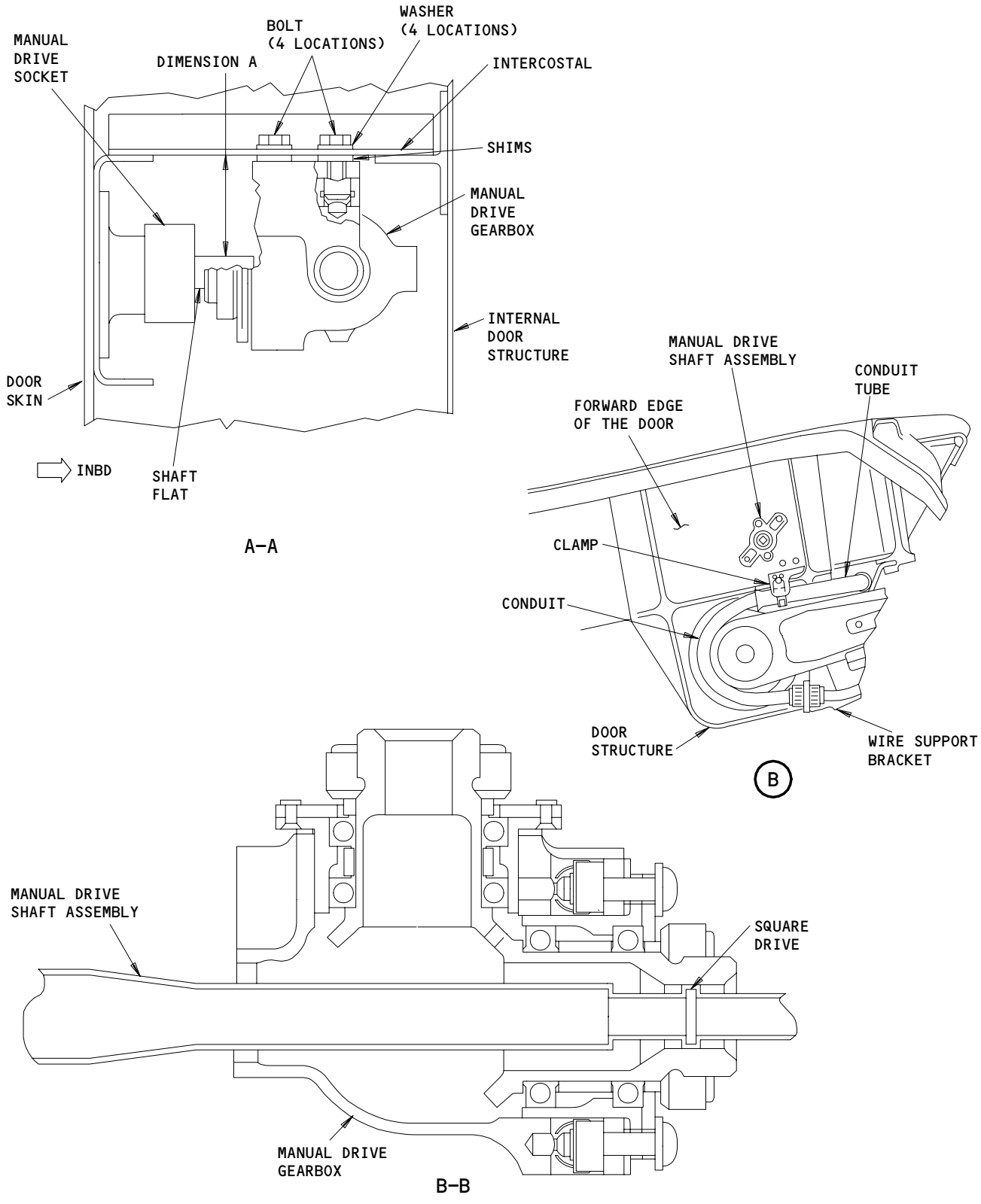

Manual Drive Gearbox
Figure 401 (Sheet 2)

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LARGE FORWARD CARGO DOOR ROTARY ACTUATOR - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the rotary actuator from the large forward cargo door. The second task is the installation of the rotary actuator on the large forward cargo door.

TASK 52-33-04-004-027

2. Remove the Rotary Actuator (Fig. 401)
   A. Access
      (1) Location Zone
          821 Forward Cargo Door

   B. Procedure - Remove the Rotary Actuator

S 014-002
(1) Open the cargo door to the vertical, free-hang position.

S 864-003
(2) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
(a) 34J4, CONT DOOR CARGO
(b) 34J7, CARGO DOOR FWD

S 034-004
(3) Disconnect the couplings that attach the drive shaft to the actuator and the hinge power unit (View A).

S 024-005
(4) Remove the drive shaft (View A).

S 024-032
(5) AIRPLANES WITH VIBRATION DAMPERS
(POST SB 52-74 OR POST PRR B12731);
Remove the vibration damper.

S 864-006
(6) Hold the rotary actuator.

S 034-007
(7) Remove the bolts that attach the rotary actuator to the door structure (View A).

S 024-008
(8) Move the rotary actuator in the direction of the hinge power unit. Remove the rotary actuator.

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TASK 52-33-04-404-028

3. Install the Rotary Actuator (Fig. 401)

A. Consumable Materials

(1) D00633 Grease - BMS 3-33 (Preferred)
(2) D00015 Grease - BMS 3-24 (Alternate)
(3) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

B. References

(1) AMM 24-22-00/201, Electrical Power - Control

C. Access

(1) Location Zone
821 Forward Cargo Door

D. Procedure - Install the Rotary Actuator

S 434-011

(1) Install the rotary actuator on the door structure with the bolts (View A).

S 864-012

(2) Make sure the cargo door is in the vertical, free-hang position.

S 494-013

(3) Make sure the cargo door stays open in a stationary position.

S 034-014

(4) Disconnect the drive shaft from the other rotary actuator.

NOTE: The two drive shafts are disconnected from the rotary actuators to align the rotary actuators.

S 434-033

(5) AIRPLANES WITH VIBRATION DAMPERS
(POST SB 52-74 OR POST PRR B12731);
Do the steps that follow:
(a) Apply grease.
(b) Install the vibration damper on to the drive shaft coupling (Fig. 401A).

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S 864-015

CAUTION: DO NOT PUT A TORQUE OF MORE THAN 35 POUND-INCHES ON THE INPUT TO THE ROTARY ACTUATOR. IF YOU PUT TOO MUCH TORQUE ON THE INPUT TO THE ROTARY ACTUATOR, DAMAGE TO THE EQUIPMENT CAN OCCUR.

(6) Turn the input to the forward rotary actuator in the door open direction (clockwise, forward view) until you can feel resistance.

NOTE: When the torque of the rotary actuator input increases suddenly, the free play is removed.
Maximum rotation at input to remove backlash is 3.4 revolutions.

S 644-016

(7) Fill the coupling of the drive shaft with the grease.

S 434-017

(8) Connect the drive shaft to the forward rotary actuator. If the drive shaft splines and the rotary actuator splines do not align, turn the rotary actuator in the door open direction to align the splines.

S 864-018

CAUTION: DO NOT PUT A TORQUE OF MORE THAN 35 POUND-INCHES ON THE INPUT TO THE ROTARY ACTUATOR. IF YOU PUT TOO MUCH TORQUE ON THE INPUT TO THE ROTARY ACTUATOR, DAMAGE TO THE EQUIPMENT CAN OCCUR.

(9) Turn the input to the aft rotary actuator in the door open direction (counterclockwise, aft view) until you can feel resistance.

NOTE: When the torque of the rotary actuator input increases suddenly, the free play is removed.

S 644-020

(10) Fill the coupling of the drive shaft with the grease.

S 424-021

(11) Connect the drive shaft to the aft rotary actuator.

S 434-022

(12) Install a lockwire on the drive shafts.

S 094-023

(13) Remove the block from the front of the cargo door.

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S 224-034

(14) AIRPLANES WITH VIBRATION DAMPERS
(POST SB 52-74 OR POST PRR B12731);
Move the door by hand and make sure the total displacement is 7.25-8.20 inches measured at the bottom edge of the door.

NOTE: This will make sure there is sufficient free play for the pull-in hooks and that the rotary actuators have equal loads.

S 864-024

(15) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO
(b) 34J7, CARGO DOOR FWD

S 714-029

WARNING: MAKE SURE THE LIFT SYSTEM IS INSTALLED AND ADJUSTED CORRECTLY BEFORE YOU OPERATE THE DOOR. DAMAGE TO THE DOOR OR INJURY TO PERSONS CAN OCCUR.

(16) Do a check on the operation of the cargo door as follows:
(a) Supply electrical power (AMM 24-22-00/201).
(b) Operate the cargo door electrically. Make sure the door opens and closes correctly.

S 864-026

(17) Remove electrical power if it is not necessary (AMM 24-22-00/201).

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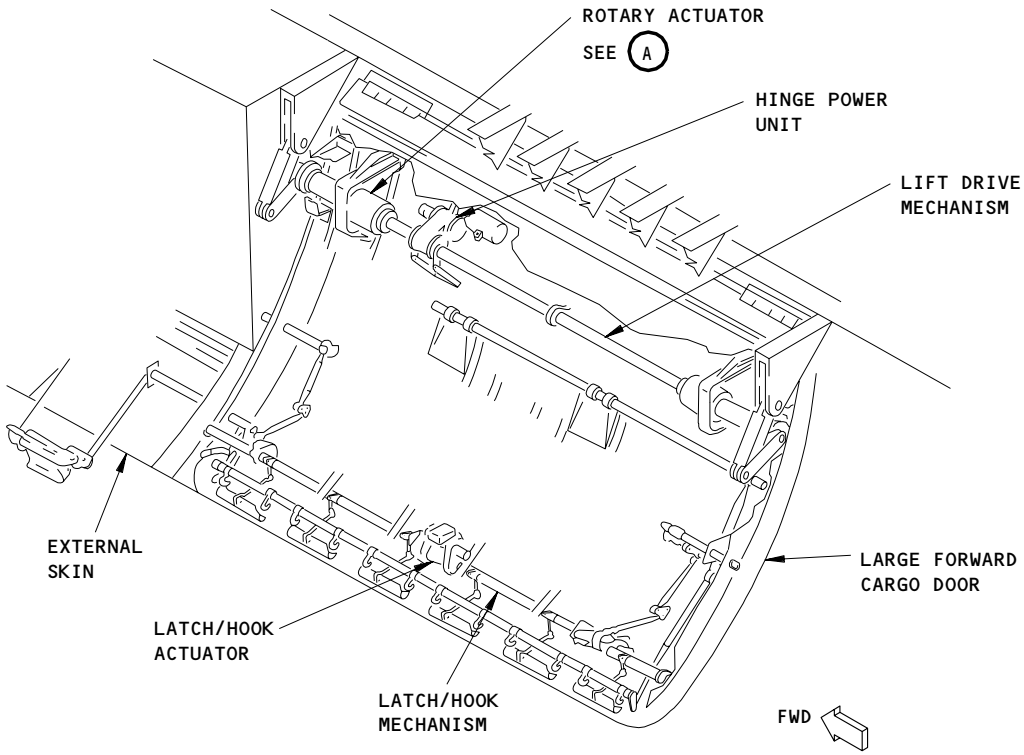
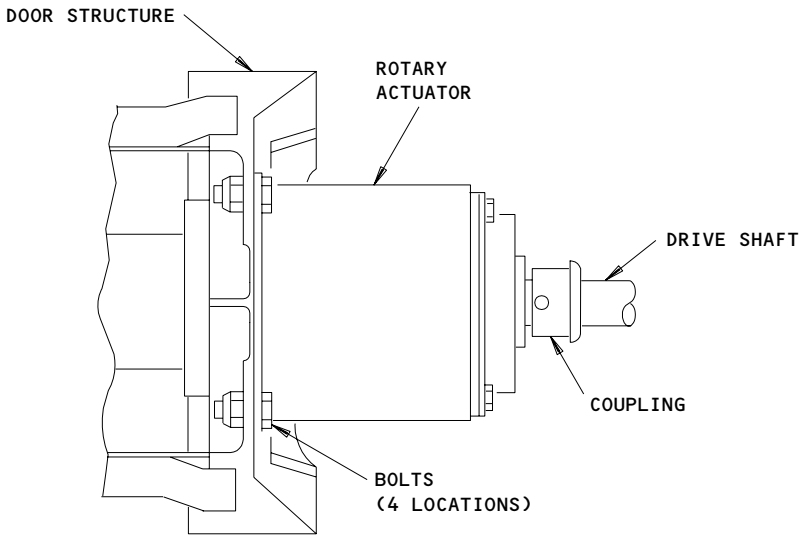


LARGE FORWARD CARGO DOOR



ROTARY ACTUATOR
(2 LOCATIONS)

A 1

1 AIRPLANES WITHOUT VIBRATION DAMPERS
(PRE-SB 52-74 OR PRE-PRR B12731)

Large Forward Cargo Door Rotary Actuator
Figure 401

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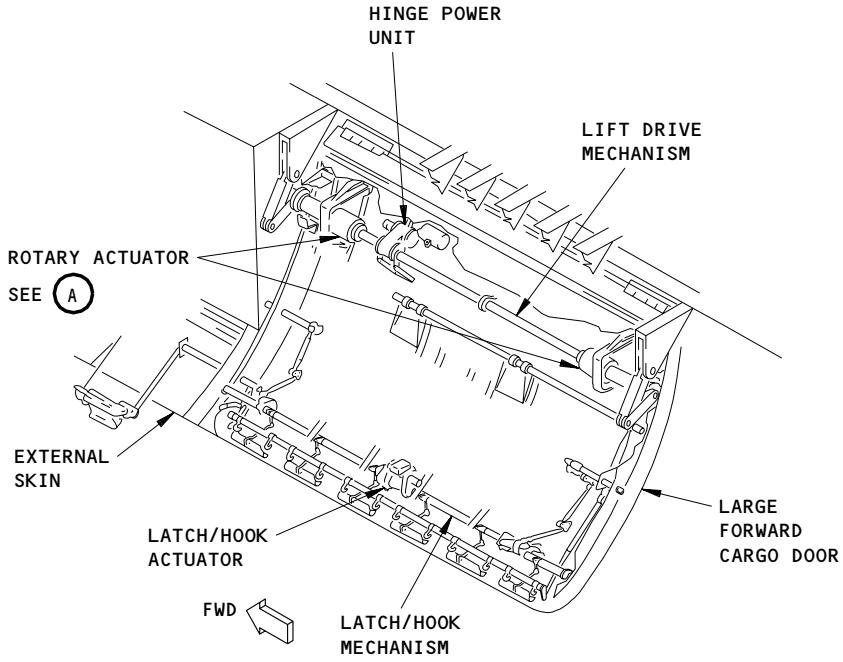
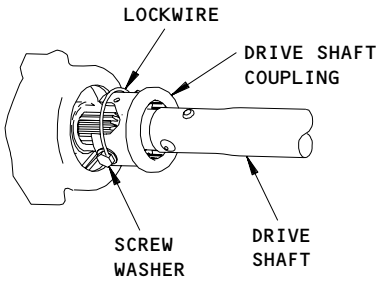
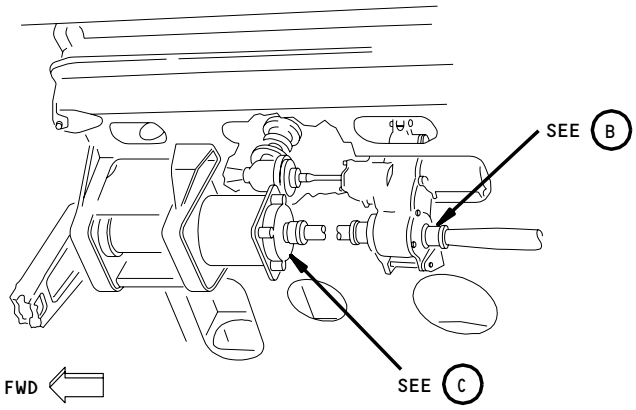


LARGE FORWARD CARGO DOOR



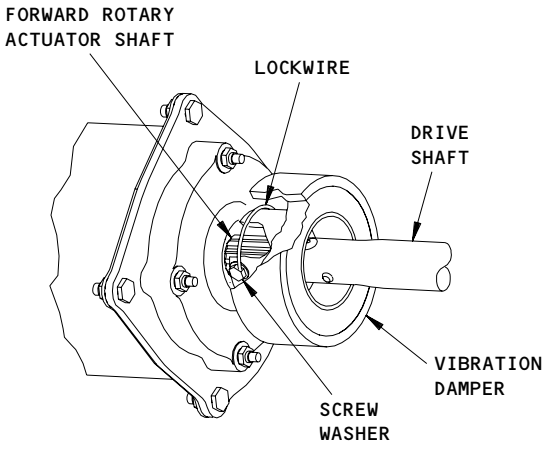
HINGE POWER UNIT

B



ROTARY ACTUATOR

A 3



ROTARY ACTUATOR

C

1 AIRPLANES WITH VIBRATION DAMPERS (POST-SB 52-74 OR POST-PRR B12731)

Large Forward Cargo Door Rotary Actuator
Figure 401A

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LARGE FORWARD CARGO DOOR LIFT DRIVE MECHANISM - REMOVAL/INSTALLATION

1. General
   A. This procedure contains seven tasks.
      (1) The first task is to prepare the cargo door for the removal of the lift drive mechanism.
      (2) The second task is the removal of the drive link.
      (3) The third task is the installation of the drive link.
      (4) The fourth task is the removal of the drive arm and the torque shaft.
      (5) The fifth task is the installation of the drive arm and the torque shaft.
      (6) The sixth task is to put the airplane back to the usual condition.
      (7) The seventh task is the do a check on the operation of the large forward cargo door.
   B. The lift drive mechanism has a drive link, drive arm, and torque shaft as assemblies.
   C. The forward drive link and drive arm is symmetrically equivalent to the aft drive link and drive arm except, the forward drive link and drive arm has a wire support structure to hold the wire bundle. This procedure uses the same illustrations to show the parts of the forward and aft drive links and drive arms.

TASK 52-33-05-004-072

2. Prepare to Remove the Lift Drive Mechanism
   A. Equipment
      (1) Cargo Door Sling - A52004-42
   B. References
      (1) 24-22-00/201, Electrical Power - Control
   C. Access
      (1) Location Zone
          821 Forward Cargo Door
   D. Procedure - Prepare to Remove the Lift Drive Mechanism

      S 014-002
      (1) Open the cargo door sufficiently to get access to the bolts that connect the drive arm to the torque shaft.

      S 864-003
      (2) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
          (a) 34J4, CONT DOOR CARGO
          (b) 34J7, CARGO DOOR FWD

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S 494-004
(3) Install the cargo door sling to hold the weight of the cargo door.

TASK 52-33-05-004-073

3. Remove the Drive Link

A. Access

(1) Location Zone
821 Forward Cargo Door

B. Remove the Forward Drive Link

S 864-006
(1) Do the "Prepare to Remove the Lift Drive Mechanism" procedure.

S 034-007
(2) Remove the wire support bracket from the forward drive link. Do the steps that follow:
(a) Disconnect the wire bundle at the electrical connector on the structure support bracket (View A, Fig. 401).
(b) Remove the bolts that hold the wire support bracket to the forward drive link (View A-A, Fig. 401).
(c) Remove the wire support bracket from the forward drive link. Keep the bolts, nuts, washers, and spacers. Write the location of the washers and spacers to identify for the subsequent installation.

S 034-008
(3) Remove the bolt and link pin that connect the drive link to the structure support bracket (Views A-A and C-C, Fig. 401).

S 034-009
(4) Remove the bolt and link pin that connect the drive link to the drive arm (Views A-A and D-D, Fig. 401). Keep the bolt, link pin, washers, and nut for the subsequent installation of the drive link.

S 024-010
(5) Remove the forward drive link.

C. Remove the Aft Drive Link

S 864-011
(1) Do the "Prepare to Remove the Lift Drive Mechanism" procedure if you did not do the procedure before.

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S 034-012
(2) Remove the bolt and the link pin that connect the drive link to the structure support bracket (Views A and C-C, Fig. 401).

S 034-013
(3) Remove the bolt and link pin that connect the drive link to the drive arm (Views A and D-D, Fig. 401). Keep the bolt, link pin, washers, and nut for the subsequent installation of the drive link.

S 024-014
(4) Remove the aft drive link.

TASK 52-33-05-404-074

4. Install the Drive Link

A. Consumable Materials
(1) D00633 Grease - BMS 3-33 (Preferred)
(2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

B. Access
(1) Location Zone
821 Forward Cargo Door

C. Install the Aft Drive Link

S 644-016
(1) Lubricate the link pins with the grease before you install.

S 424-017
(2) Connect the drive link to the drive arm with the bolt, link pin, washers, and nut (Views A and D-D, Fig. 401). Make sure to install the bolt with the head in the correct direction.

S 424-018
(3) Connect the drive link to the structure support bracket with the bolt, link pin, washers, and nut (Views A and C-C, Fig. 401). Make sure to install the bolt with the head in the correct direction.

D. Install the Forward Drive Link

S 644-019
(1) Lubricate the link pins with the grease before you install.

S 424-020
(2) Connect the drive link to the drive arm with the bolt, link pin, washers, and nut (Views A-A and D-D, Fig. 401). Make sure to install the bolt with the head in the correct direction.

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S 424-021

(3) Connect the drive link to the structure support bracket with the bolt, link pin, washers, and nut (Views A-A and C-C, Fig. 401). Make sure to install the bolt with the head in the correct direction.

S 434-022

(4) Install the wire support bracket on the forward drive link. Do the steps that follow:
   (a) Put the wire support bracket on the drive link.
   (b) Install the spacers and washers in the correct location.
   (c) Install the bolts and the nuts through the wire support bracket and the drive link (View A-A, Fig. 401).
   (d) Tighten the bolts.
   (e) Connect the wire bundle to the electrical connector on the structure support bracket (View A-A, Fig. 401).

   NOTE: You can move the conduit to the inner side of the wire support bracket to allow the connection of the electrical connector to the structure support bracket. The connector will have a detent when it is locked correctly.

   (f) Make sure the conduit tube does not have a deformation or a kink. Make sure the conduit moves freely in the conduit tube.

TASK 52-33-05-004-075

5. Remove the Drive Arm and the Torque Shaft

A. Equipment
   (1) Spanner Wrench F72959-8

B. Access
   (1) Location Zone
      821 Forward Cargo Door

C. Remove the Forward Drive Arm and Torque Shaft

S 864-024

(1) Do the "Prepare to Remove the Lift Drive Mechanism" procedure if you did not do the procedure before.

S 034-025

(2) Remove the wire support bracket from the forward drive arm. Do the steps that follow:
   (a) Remove the end of the helical spring from the stationary bracket on the door structure (View A-A, Fig. 402).

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(b) Move the wire support bracket in the channel to the forward end of the channel (View A-A, Fig. 402).
(c) Loosen the two clamp bolts that hold the conduit tube above the forward torque shaft (Views A and A-A, Fig. 402).
(d) Remove the clamp on the conduit tube on the forward door sill (View A, Fig. 402).
(e) Disconnect the wire bundle at the electrical connector on the structure support bracket (View A-A, Fig. 402).
(f) Remove the bolts that hold the wire support bracket to the drive arm (4 locations). Keep the bolts, nuts, washers, and spacers. Write the location of the washers and spacers to identify for the subsequent installation.
(g) Turn the conduit tube until the conduit tube is clear of the flange of the drive shaft and the drive arm.
(h) Move the conduit through the conduit tube on the drive link in the direction of the drive arm to remove.

S 034-026
(3) Remove the bolt and link pin that connect the drive link to the drive arm (Views A-A and D-D, Fig. 401). Keep the bolt, link pin, washers, and nut for the subsequent installation of the drive link.

S 824-027
(4) Bend the tang of the key washer away from the slot in the spanner nut (View B-B, Fig. 401).

S 034-028
(5) Loosen the spanner nut with the spanner wrench (View B-B, Fig. 401).

S 024-029
(6) Remove the drive arm and the torque shaft (View B-B, Fig. 401).

S 024-030
(7) Remove the 14 bolts to disconnect the drive arm from the torque shaft (View A, Fig. 401).

D. Remove the Aft Drive Arm and Torque Shaft

S 864-031
(1) Do the "Prepare to Remove the Lift Drive Mechanism" procedure if you did not do the procedure before.

S 034-032
(2) Remove the bolt and link pin that connect the drive link to the drive arm (Views A and D-D, Fig. 401).

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S 864-033
(3) Bend the tang of the key washer away from the slot in the spanner nut (View B-B, Fig. 401).

S 034-034
(4) Loosen the spanner nut with the spanner wrench (View B-B, Fig. 401).

S 024-035
(5) Remove the drive arm and the torque shaft (View B-B, Fig. 401).

S 424-036
(6) Remove the 14 bolts to disconnect the drive arm from the torque shaft (View A, Fig. 401).

TASK 52-33-05-404-076

6. Install the Drive Arm and the Torque Shaft

A. Consumable Materials
(1) D00633 Grease - BMS 3-33 (Preferred)
(2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

B. Access
(1) Location Zone
821 Forward Cargo Door

C. Install the Aft Drive Arm and Torque Shaft

S 424-038
(1) If the torque shaft is disconnected from the drive arm, do the steps that follow:
(a) Install the 14 bolts to connect the torque shaft to the drive arm (View A, Fig. 401).
(b) Install the clip for the wire support bracket on the flange of the drive arm.
(c) Make sure the heads of the bolts are in the correct direction (View B-B, Fig. 401).
(d) Tighten the three 5/16 inch self-locking nuts (View A, Fig. 401).
(e) Tighten the eleven 1/4-inch nuts (View A, Fig. 401).

S 824-039
(2) Move the torque shaft through the bearing in the door structure, but do not install into the rotary actuator.

S 644-040
(3) Apply the grease to the thrust washer and the key washer before you install on the torque shaft (View B-B, Fig. 401).

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S 434-041
(4) Put the thrust washer, key washer (with the key side near the drive arm) and spanner nut on the torque shaft (View B-B, Fig. 401).

S 434-042
(5) Connect the torque shaft in the output shaft of the rotary actuator.

S 434-043
(6) Install the thrust washer against the bearing inner race (View B-B, Fig. 401).

S 434-044
(7) Install the tang of the key washer in the slot in the torque shaft and put the nut on the torque shaft.

S 434-045
(8) Tighten the spanner nut with your hand to prevent free play between the torque shaft and the bearing inner race (View B-B, Fig. 401).

S 434-046
(9) Continue to tighten the nut to the first position that lets one tang of the external key washer align with a slot in the spanner nut.

S 864-047
(10) Bend the tang on the key washer into the slot in the spanner nut to make sure the nut does not turn.

D. Install the Forward Drive Arm and Torque Shaft

S 424-048
(1) If the torque shaft is disconnected from the drive arm, do the steps that follow:
   (a) Install the 14 bolts to connect the torque shaft to the drive arm (View A, Fig. 401).
   (b) Install the clip for the wire support bracket on the flange of the drive arm.
   (c) Make sure the heads of the bolts are in the correct direction (View B-B, Fig. 401).
   (d) Tighten the three 5/16 inch self-locking nuts (View A, Fig. 401).
   (e) Tighten the eleven 1/4-inch nuts (View A, Fig. 401).

S 824-049
(2) Move the torque shaft through the bearing in the door structure, but do not install into the rotary actuator.

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S 644-050
(3) Apply the grease to the thrust washer and the key washer before you install on the torque shaft (View B-B, Fig. 401).

S 434-051
(4) Put the thrust washer, key washer (with the key side near the drive arm) and spanner nut on the torque shaft (View B-B, Fig. 401).

S 434-052
(5) Connect the torque shaft in the output shaft of the rotary actuator.

S 434-053
(6) Install the thrust washer against the bearing inner race (View B-B, Fig. 401).

S 434-054
(7) Install the tang of the key washer in the slot in the torque shaft and put the nut on the torque shaft.

S 434-055
(8) Tighten the spanner nut with your hand to prevent free play between the torque shaft and the bearing inner race (View B-B, Fig. 401).

S 434-056
(9) Continue to tighten the nut to the first position that lets one tang of the external key washer align with a slot in the spanner nut.

S 864-057
(10) Bend the tang on the key washer into the slot in the spanner nut to make sure the nut does not turn.

S 434-058
(11) Install the wire support bracket on the forward drive arm. Do the steps that follow:
   (a) Move the conduit through the conduit tube to put the wire support bracket in a position along the drive arm.
   (b) Align the mounting holes in the wire support bracket with the holes in the drive arm.
   (c) Install the spacers, washers, bolts, and nuts in the correct location (Fig. 402).

      NOTE: Install the bolt for the wire support bracket through the forward side of the drive arm.

   (d) Tighten the bolts.

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(e) Connect the wire bundle to the electrical connector on the structure support bracket (View A-A, Fig. 401).

NOTE: You can move the conduit to the inner side of the wire support bracket to allow the connection of the electrical connector to the structure support bracket. The connector will have a detent when it is locked correctly.

(f) Turn the conduit tube until the holes in the clamp on the conduit tube align with the holes in the door structure.
(g) To adjust the position of the conduit tube add or remove a 0.003 inch lamination from the shim to align the conduit tube with the edge of the drive arm to ± 0.030 inch.
(h) Install the screw through the clamp in the door structure.
(i) Tighten the two clamp bolts that attach the conduit tube above the forward torque shaft (Views A and A-A, Fig. 402).
(j) Move the wire support bracket in the channel in the aft direction until there is no slack in the conduit around the drive arm.
(k) Install the end of the helical spring in the stationary bracket on the door structure (View A-A, Fig. 402).

S 864-080
(12) Do the "Put the Airplane Back to its Usual Condition" procedure.

TASK 52-33-05-864-077
7. Put the Airplane Back to its Usual Condition
A. Equipment
(1) Cargo Door Sling - A52004-42
B. Access
(1) Location Zone
821 Forward Cargo Door

C. Procedure

S 094-060
(1) Remove the cargo door sling.

S 864-061
(2) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO
(b) 34J7, CARGO DOOR FWD

S 714-062
(3) Do the "Do a Check on the Cargo Door Operation" procedure.

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TASK 52-33-05-714-078

8. Do a Check on the Cargo Door Operation

A. References

(1) 24-22-00/201, Electrical Power - Control

B. Access

(1) Location Zone

821 Forward Cargo Door

C. Procedure - Do a Check on the Cargo Door Operation

S 214-064

CAUTION: MAKE SURE THE HELICAL SPRING ON THE WIRE BUNDLE ISINSTALLED. IF THE SPRING IS NOT INSTALLED, DAMAGE TO THE WIRE BUNDLE CONDUIT WILL OCCUR.

(1) Make sure the conduit tube does not touch the fasteners on the drive arm.

S 824-065

(2) If the conduit tube touches the fasteners on the drive arm, adjust the position of the conduit tube.

S 864-066

(3) Supply electrical power (Ref 24-22-00).

S 714-079

WARNING: MAKE SURE THE LIFT SYSTEM IS INSTALLED AND ADJUSTED CORRECTLY BEFORE YOU OPERATE THE DOOR. DAMAGE TO THE DOOR OR INJURY TO PERSONS CAN OCCUR.

(4) Open and close the cargo door electrically. Make sure the door operates correctly.

S 214-068

(5) Make sure the conduit tube does not touch the fasteners on the drive arm.

S 214-069

(6) Make sure the conduit moves smoothly in the conduit tubes.

S 824-070

(7) If the conduit tube touches the fasteners on the drive arm or the conduit does not move smoothly in the conduit tube, adjust the position of the conduit tube.

S 864-071

(8) Remove the electrical power if it is not necessary (Ref 24-22-00).

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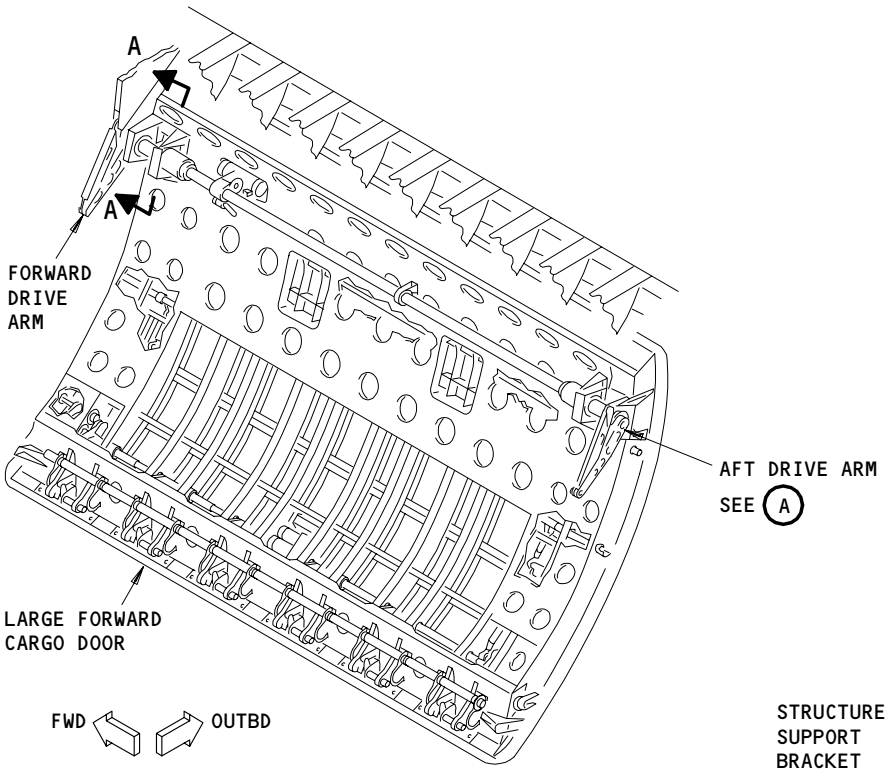
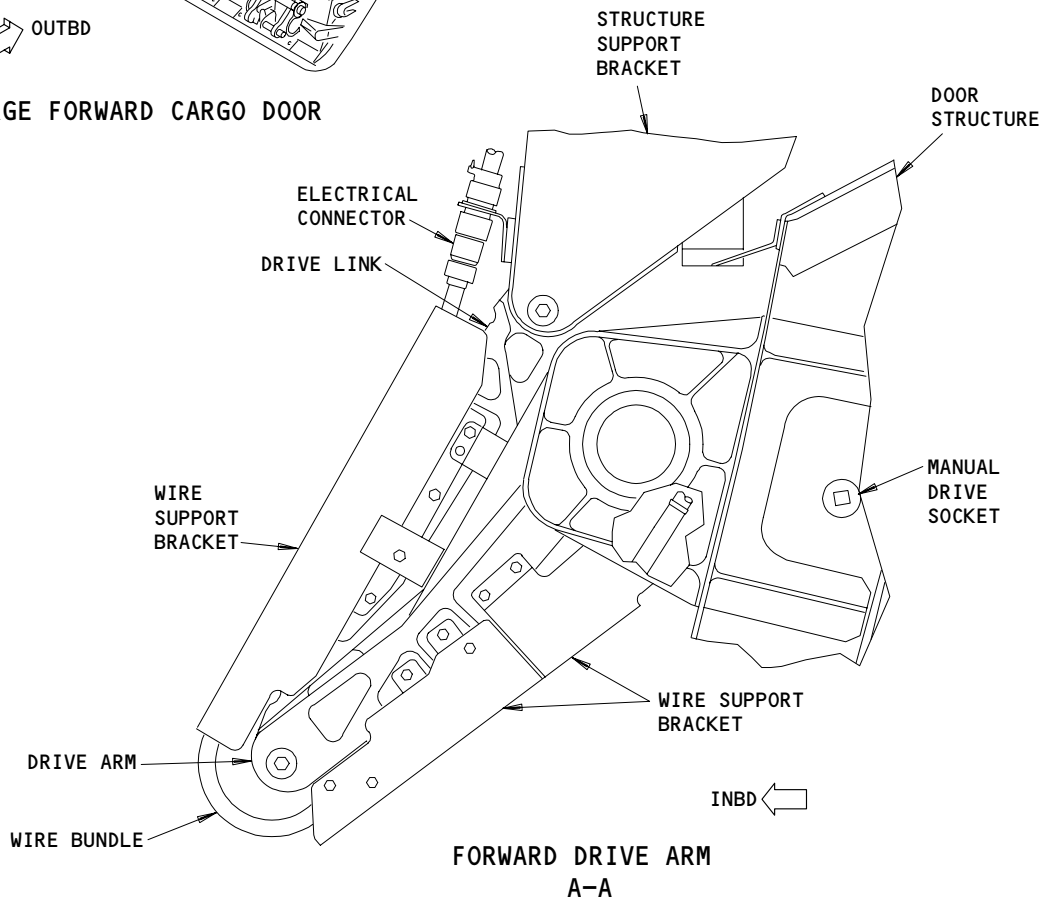


LARGE FORWARD CARGO DOOR



FORWARD DRIVE ARM
A-A

Lift Drive Mechanism
Figure 401 (Sheet 1)

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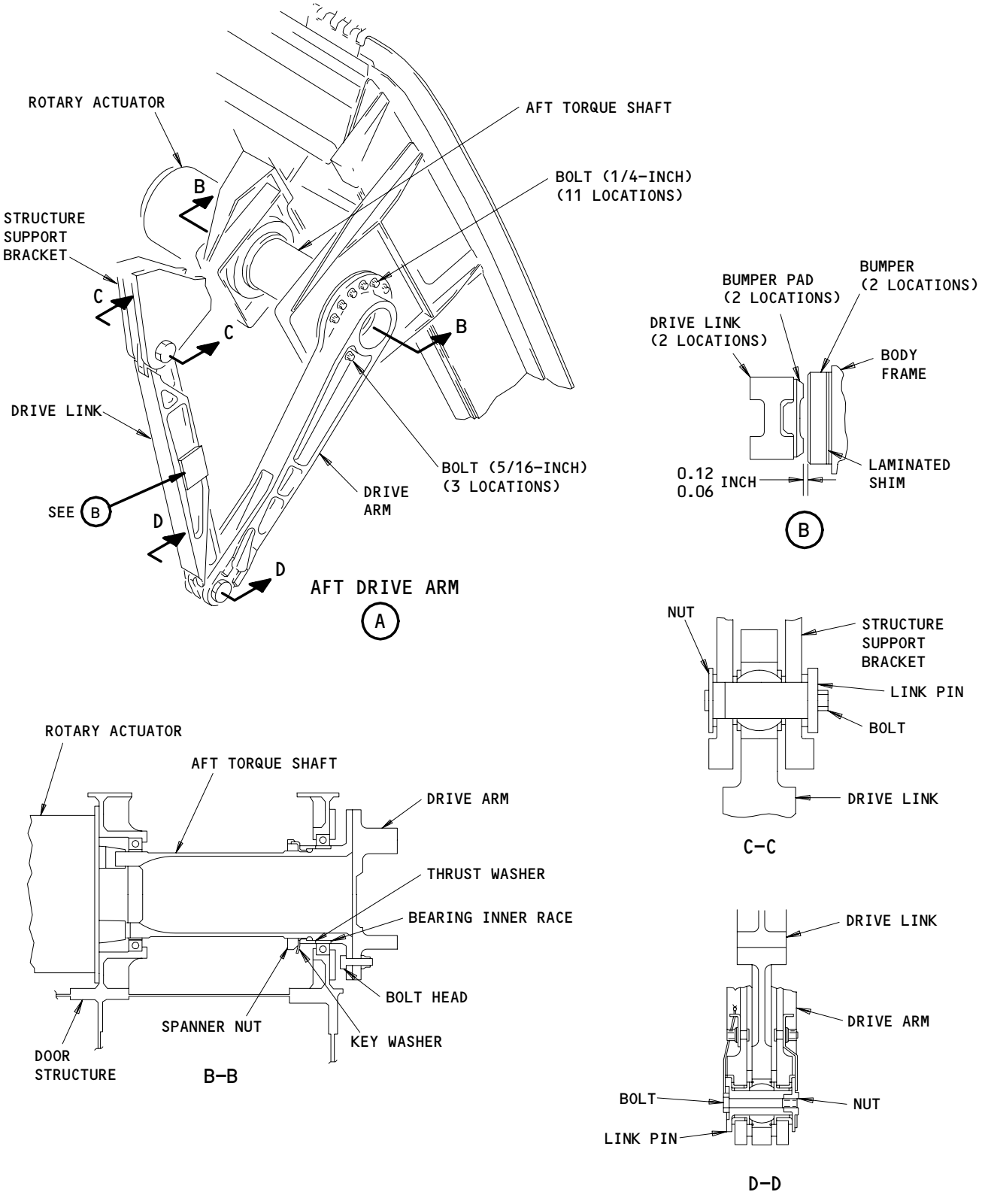

Lift Drive Mechanism
Figure 401 (Sheet 2)

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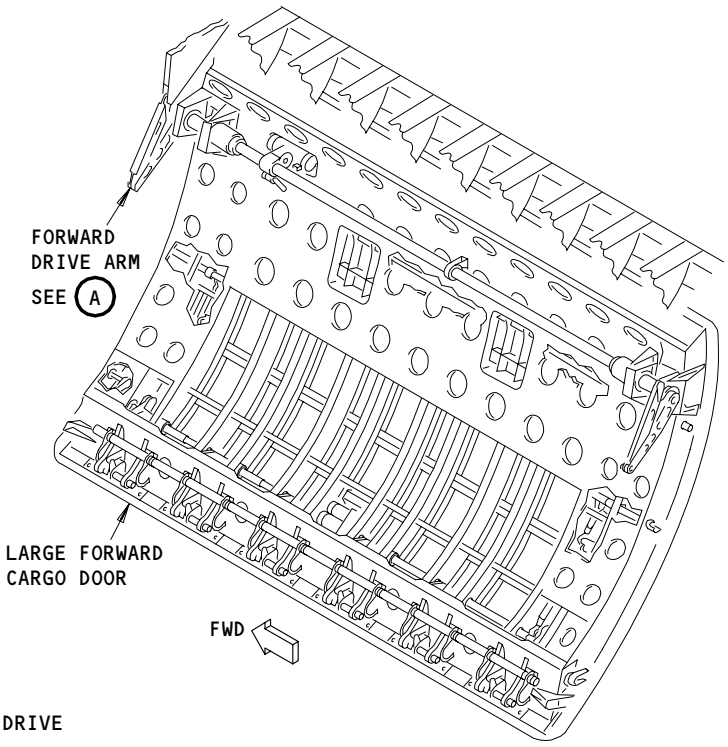
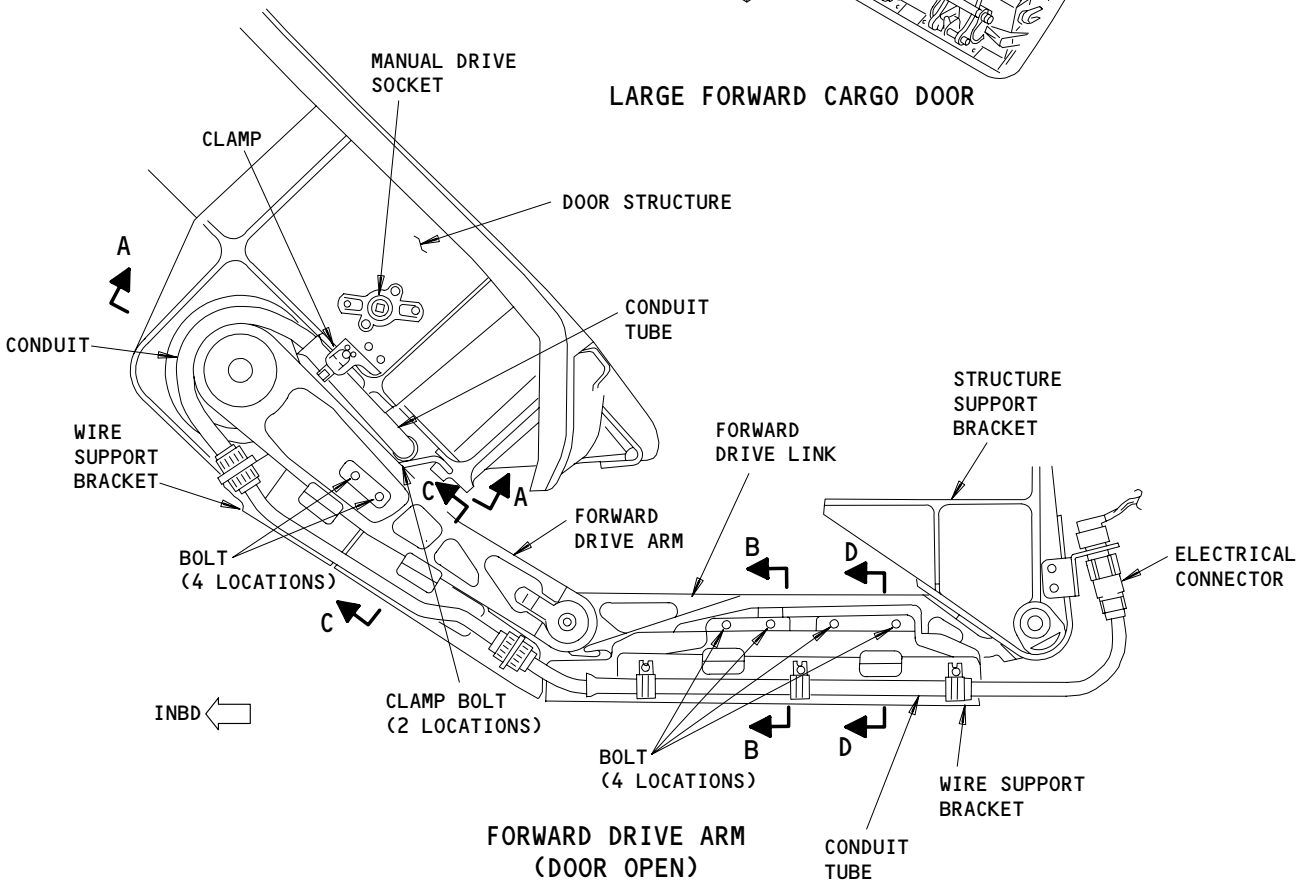


LARGE FORWARD CARGO DOOR



FORWARD DRIVE ARM
(DOOR OPEN)

A

Forward Drive Arm Wire Bundle
Figure 402 (Sheet 1)

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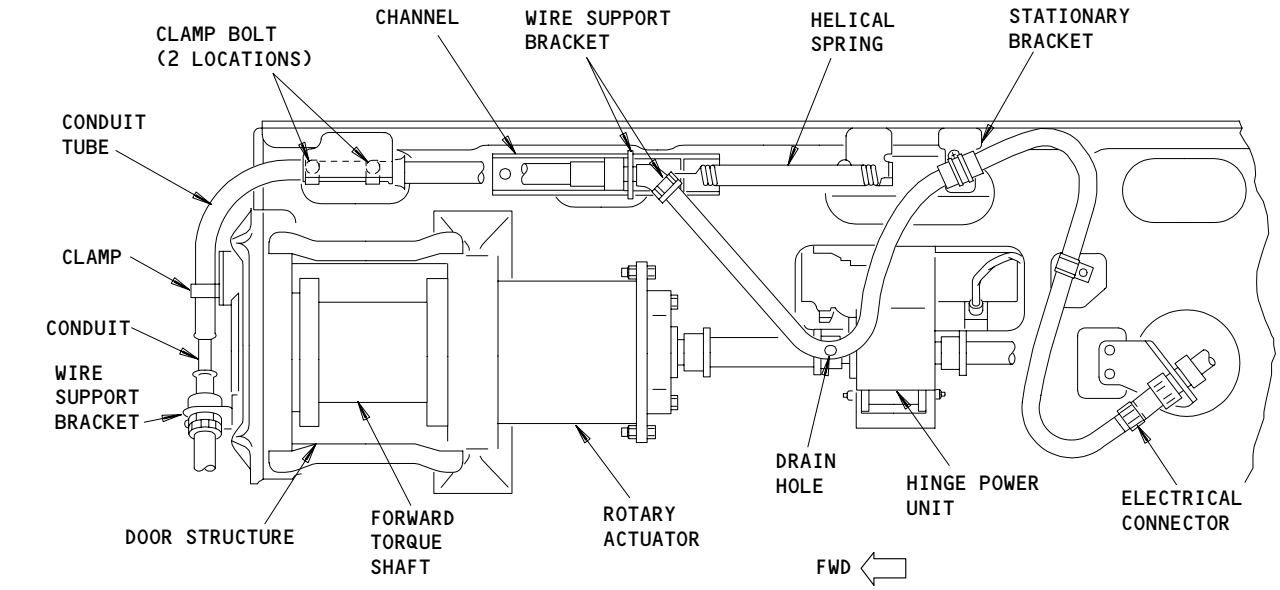
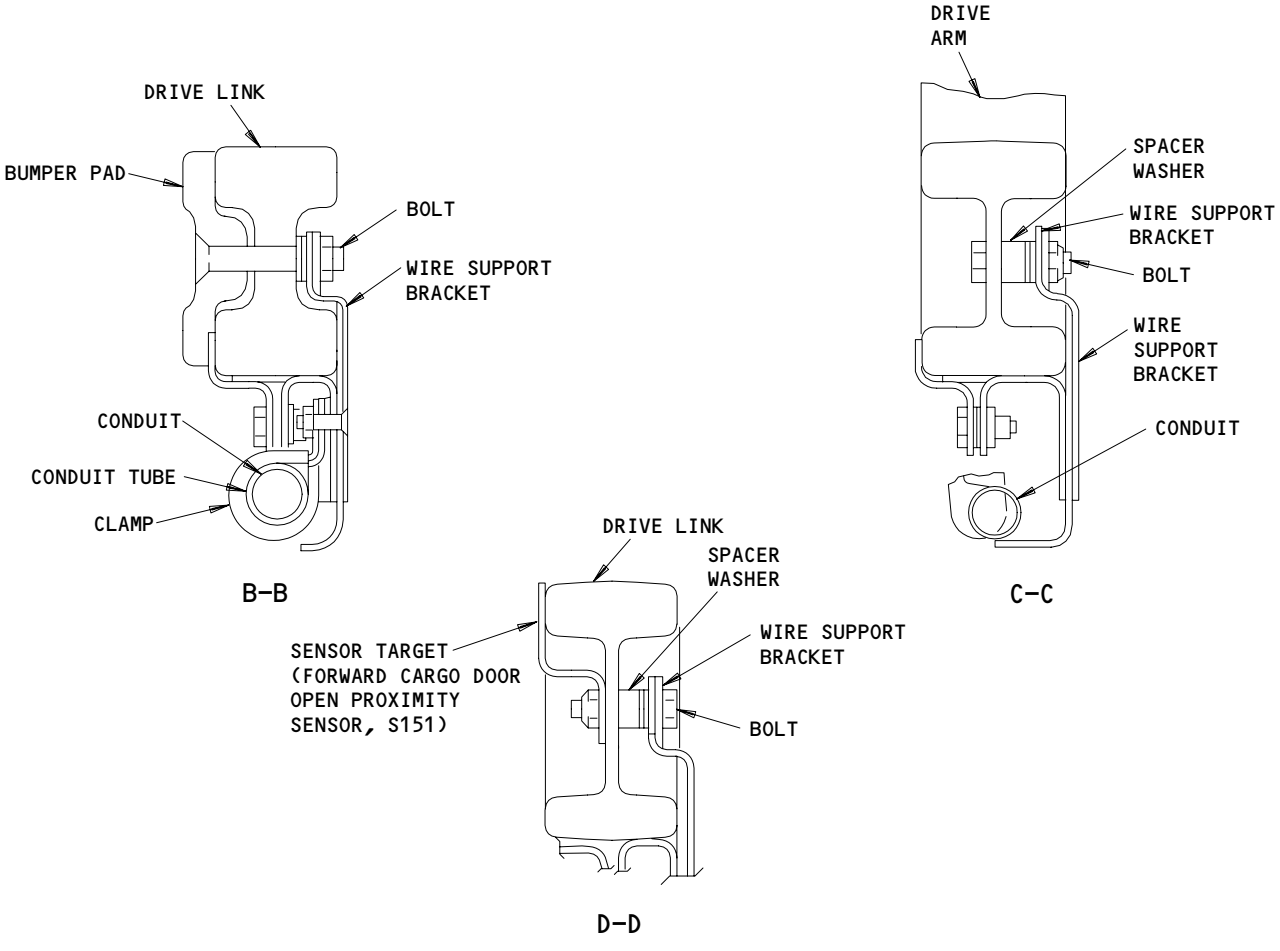


A–A



B–B

C–C

D–D

Forward Drive Arm Wire Bundle
Figure 402 (Sheet 2)

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LARGE FORWARD CARGO DOOR LIFT DRIVE MECHANISM - REPAIRS

1. General
   A. This procedure has this task:
      (1) Vibration Damper Repair
   B. Some aircraft have vibration dampers installed on the torque tubes of the cargo door lift system.

TASK 52-33-05-308-026

2. Repair of the Vibration Damper
   A. Consumable Materials
      (1) A00251 Sealant - BMS 5-26
      (2) B01008 Solvent - Final Cleaning of Metal Prior to Non-structural Bonding (Series 88) (AMM 20-30-88/201 or SOPM 20-30-88)
   B. Access
      (1) Location Zone
          821 Forward Cargo Door

   C. Procedure to Repair the Vibration Damper

      S 018-027
      (1) Open the cargo door to the vertical free hang position.

      S 868-028
      (2) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
          (a) 34J4, CONT DOOR CARGO
          (b) 34J7, CARGO DOOR FWD

      S 148-029
      (3) Remove any sealant residue from the loose hub.

      S 128-030
      (4) Lightly abrade the surface of the sealant ring.

      S 118-032

      WARNING: DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

      (5) Clean the hub and the surface of the sealant ring with solvent, Series 88 (AMM 20-30-88/201 or SOPM 20-30-88).

      S 828-033
      (6) Slip the two pieces together.

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S 228-034
(7) Make sure there is no more than 0.04 inch gap at any point between the hub and the sealant ring when the two pieces are centered.

S 828-035
(8) Slip the pieces apart.

S 398-036
(9) Apply the sealant to the sealant ring as necessary.

S 828-037
(10) Slip the two pieces together.

S 168-038
(11) Remove the excess sealant.

S 398-039
(12) Allow the sealant to cure for at least 48 hours.

S 218-040
(13) Make sure there are no visible voids or delaminations at the interface of the cured sealant and the hub.

S 868-041
(14) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO
(b) 34J7, CARGO DOOR FWD

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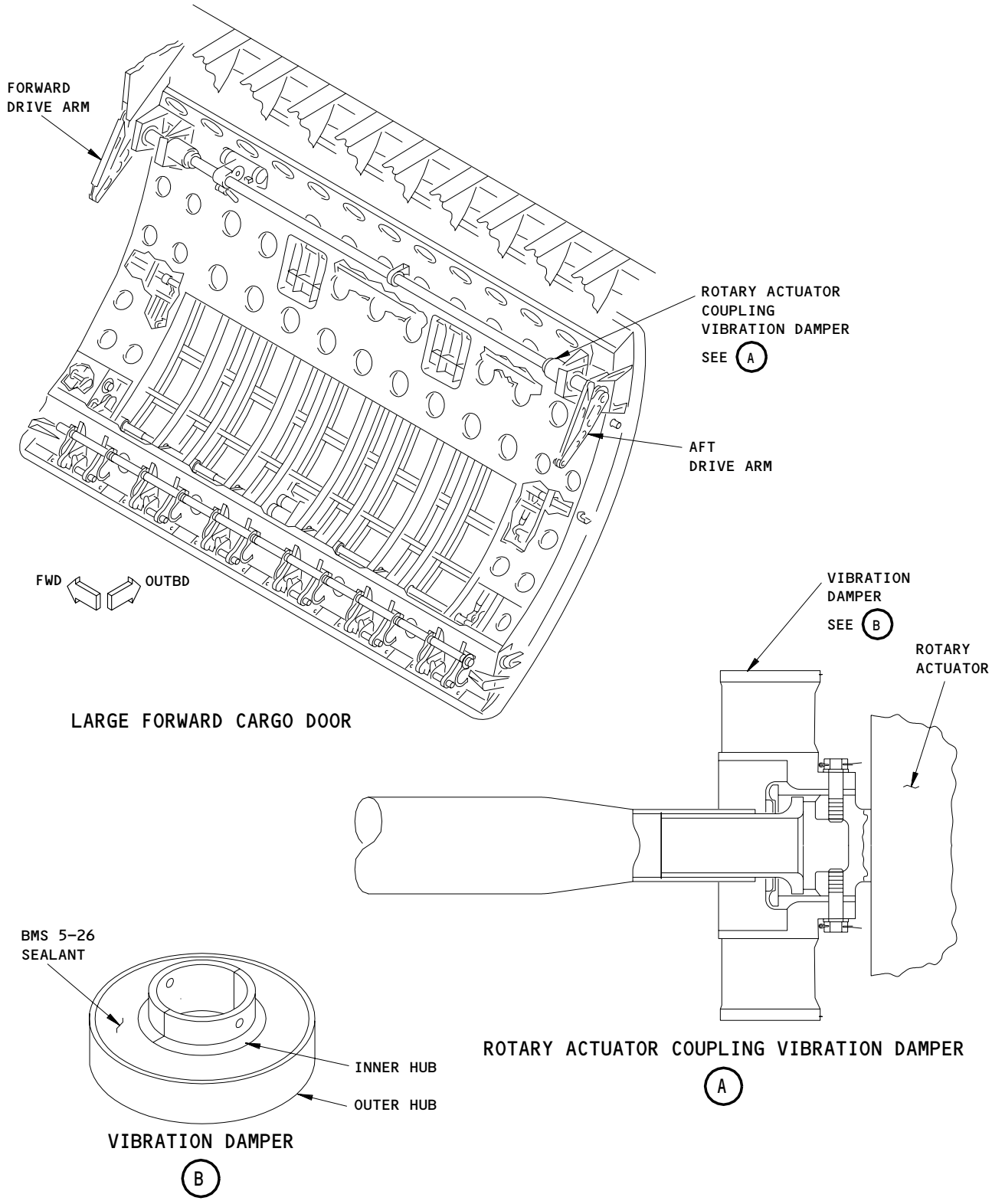

Vibration Damper Repair
Figure 801

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LARGE FORWARD CARGO DOOR LATCH LOCK HANDLE MECHANISM - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the latch lock handle mechanism from the large forward cargo door. The second task is the installation of the latch lock handle mechanism on the large forward cargo door.

   TASK 52-33-06-004-045
2. Remove the Latch Lock Handle Mechanism
   A. Access
      (1) Location Zone
          821 Forward Cargo Door

   B. Procedure - Remove the Latch Lock Handle Mechanism

      S 014-002
      (1) Open the cargo door.

      S 864-003
      (2) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
          (a) 34J4, CONT DOOR CARGO
          (b) 34J7, CARGO DOOR FWD

      S 014-004
      (3) Remove the cargo floor panels, approximately 44 inches forward of the cargo door, to get access to the latch lock handle mechanism.

      S 014-005
      (4) Remove the sloping sidewall panel (View A).

      S 034-006
      (5) Remove the bellcrank cross bolt (View A).

      S 034-007
      (6) Disconnect the adjustable pushrod from the latch lock control shaft (View A).

      S 034-008
      (7) Remove the bolt in the adjustable pushrod (on the latch lock handle mechanism side).

      S 034-009
      (8) Move the adjustable pushrod up and outboard to remove.

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S 024-010
(9) Remove the bolt and disconnect the internal release cable from the latch lock handle mechanism (View A).

S 034-011
(10) Disconnect the electrical connector from the latch lock handle mechanism (View A).

S 034-012
(11) Remove the bolts (40 locations) that attach the latch lock handle mechanism to the fuselage skin (View A).

S 864-013
(12) Hold the latch lock handle mechanism.

S 034-014
(13) Remove the bolts (12 locations) in the angles to disconnect the shear ties at the aft end of the latch lock mechanism handle (View A).

S 034-015
(14) Remove the bolts to disconnect the bracket assembly from the forward end of the latch lock handle mechanism.

S 024-016
(15) Move the latch lock handle mechanism aft and turn the aft end slightly inboard. Remove the latch lock handle mechanism.

TASK 52-33-06-404-046

3. Install the Latch Lock Handle Mechanism

A. Equipment
(1) Rig Pin LCD6 - P/N A20004-60, part of set A20004-XX (Ref 20-10-24)

B. Consumable Materials
(1) D00633 Grease - BMS 3-33 (Preferred)
(2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)
(3) D00015 Grease - BMS 3-24 (Alternate)
(4) A00247 Sealant - BMS 5-95 Class C

C. References
(1) 51-31-01/201, Seals and Sealing
(2) 52-33-00/501, Large Forward Cargo Door

D. Access
(1) Location Zone
821 Forward Cargo Door

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E. Procedure - Install the Latch Lock Handle Mechannism

S 144-018
(1) Clean the mating surfaces of the latch lock handle mechanism and the fuselage skin (Ref 51-31-01).

S 644-019
(2) Apply the grease, to the mating surface of the latch lock handle assembly.

S 144-020
(3) Wipe the grease off with a clean, dry cloth. Do not use solvent.

S 394-021
(4) Apply a light layer of the sealant, BMS 5-95, to the area on the internal skin where the latch lock handle mechanism touches.

S 394-022
(5) Apply a bead of the sealant to the internal skin near the edge of the mating surface.

S 644-023
(6) Put a layer of the grease, on the bolts for the latch lock handle mechanism flange.

S 434-024
(7) Install the bolts into the flange through the skin and tighten.

S 214-025
(8) Make sure the sealant makes a continuous, smooth bead along the joint.

S 144-026
(9) From the external side of the airplane, open the latch lock handle and clean the unwanted sealant from the joint to make sure the latch lock handle can move smoothly.

S 144-027
(10) Clean the unwanted grease from the area of the joint.

S 644-028
(11) Apply the grease, to the open end of the bolts in the flange.

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S 394-029
(12) Apply a bead of the sealant, BMS 5-95, to make a pressure seal along the edge of the joint of the latch lock handle mechanism.

S 394-030
(13) Apply the sealant to the bolts in the flange to make a fastener seal.

S 434-031
(14) Install the bolts (12 locations) in the angles to connect the shear ties at the aft end of the latch lock mechanism handle (View A).

S 434-032
(15) Tighten the bolts.

S 434-033
(16) Connect the electrical connector to the latch lock handle mechanism (View A).

S 424-034
(17) Install the bolt to connect the internal release cable to the latch lock handle mechanism (View A).

S 434-035
(18) Tighten the bolts.

S 644-036
(19) Lubricate the bolt that connects the adjustable pushrod to the latch lock handle mechanism with the grease.

S 424-037
(20) Connect the adjustable pushrod to the idler on the latch lock handle mechanism (View A).

S 434-038

CAUTION: DO NOT TIGHTEN THE BELLCRANK CROSS BOLT TOO MUCH. IF YOU TIGHTEN THE BOLT TOO MUCH, DAMAGE TO THE LATCH LOCK CONTROL SHAFT CAN OCCUR.

(21) Connect the bellcrank and the adjustable pushrod to the latch lock control shaft (View A).

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S 434-039
(22) Install the bellcrank cross bolt through the bellcrank and the latch lock control shaft (View A).

S 434-040
(23) Tighten the bellcrank cross bolt to 5-15 pound-inches above the run-on torque.

S 434-041
(24) Tighten the locknut (View A).

S 824-042
(25) Adjust the latch lock handle mechanism (Ref 52-33-00).

S 714-043
(26) Do a test on the latch lock handle mechanism (Ref 52-33-00).

S 824-044
(27) Adjust the forward cargo door handle unlocked proximity sensor, S153, (Ref 52-33-00).

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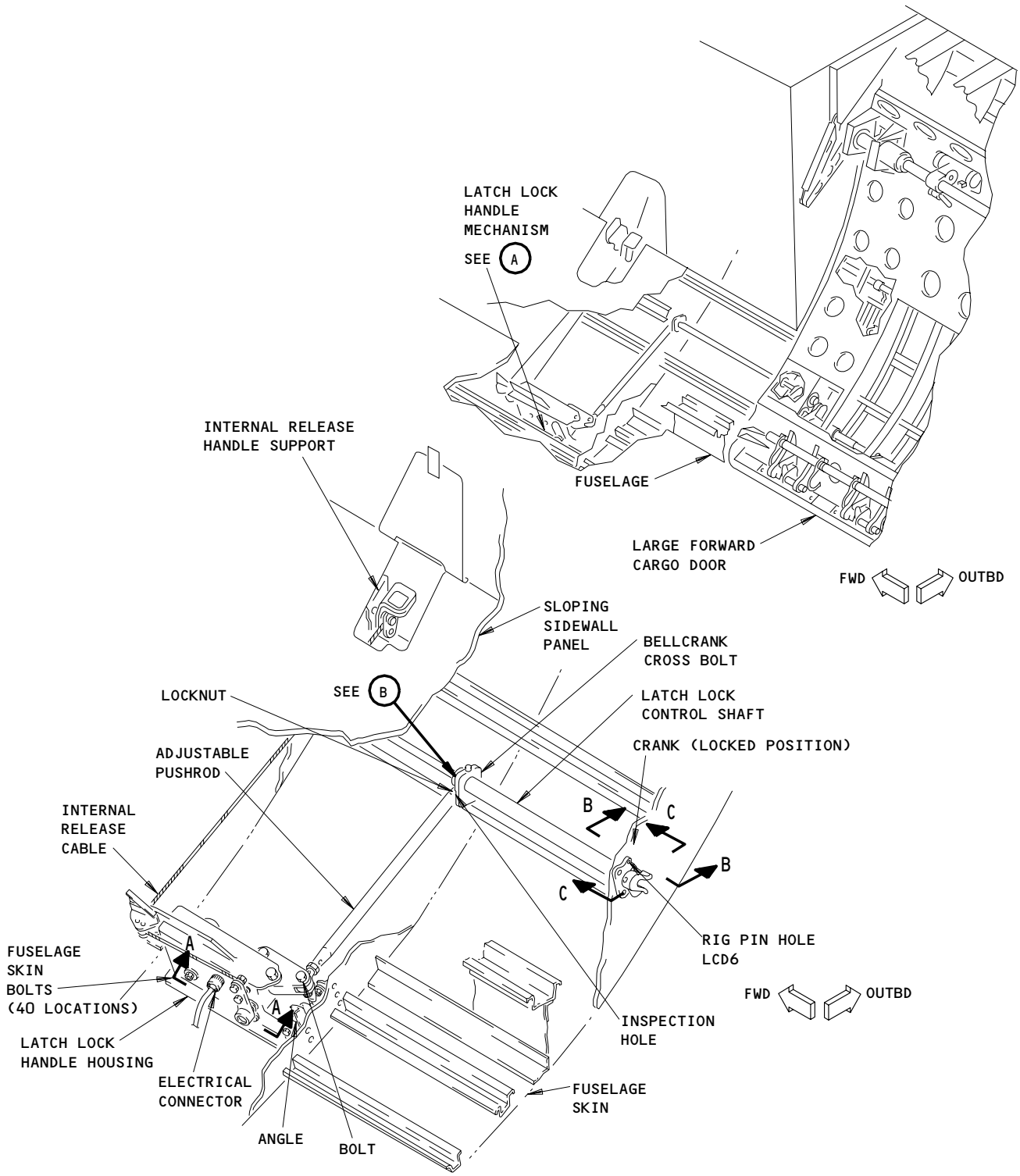

LATCH LOCK HANDLE MECHANISM

(A)

Large Forward Cargo Door Latch Lock Handle Mechanism
Figure 401 (Sheet 1)

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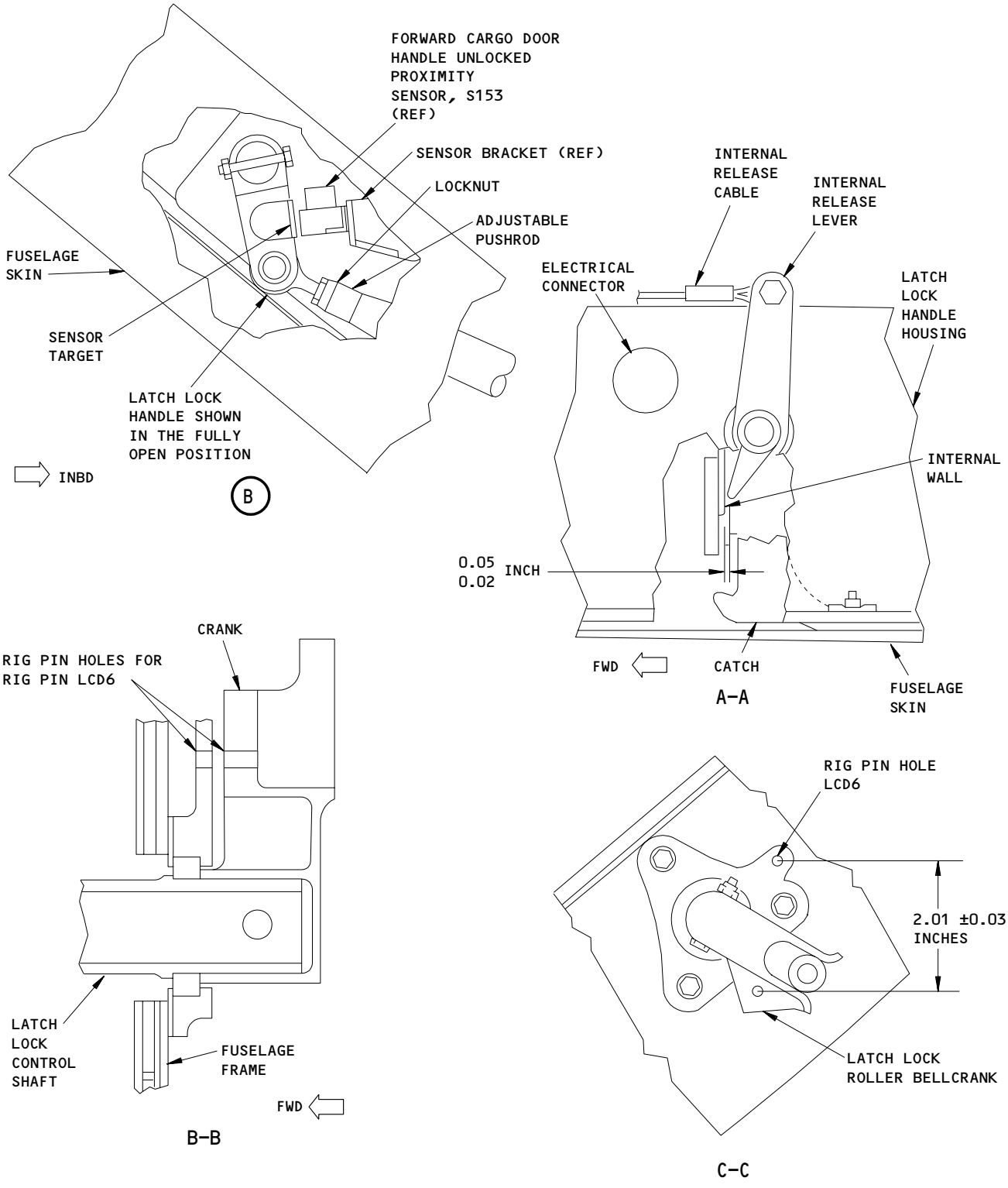

Large Forward Cargo Door Latch Lock Handle Mechanism
Figure 401 (Sheet 2)

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LARGE FORWARD CARGO DOOR LATCH LOCK HANDLE MECHANISM - ADJUSTMENT/TEST

1. General
   A. This procedure contains one task. The task is the functional check of the latch lock handle mechanism operating force required to lock the large forward cargo door.

   TASK 52-33-06-205-045

2. Latch Lock Handle Mechanism Operating Force - Check
   A. Equipment
      (1) Spring scale - compression
   B. Access
      (1) Location Zone
          821 Forward Cargo Door

   C. Procedure - Check the Latch Lock Handle Mechanism Operating Force

      S 865-046
      (1) Close and latch the large forward cargo door.

      S 225-047
      (2) Lock the door and measure the handle force as follows:
          (a) Use the spring scale to close the master latch lock handle.
          (b) Make sure the force necessary to move the handle to the closed position is not more than 32 pounds at the aft end of handle.

              NOTE: Measurement of handle load is not required during the final 0.50 inch of travel prior to locking.

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LARGE FORWARD CARGO DOOR VENT DOORS - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the vent doors from the large forward cargo door. The second task is the installation of the vent doors on the large forward cargo door.
   B. The installation of the forward and aft vent doors is the same. You can remove the aft vent door as one part, but you must remove the aft vent door before you can remove the forward vent door because of the small clearance.

TASK 52-33-07-004-038

2. Remove the Vent Doors (Fig. 401)
   A. References
      (1) 24-22-00/201, Electrical Power - Control
   B. Access
      (1) Location Zone
          821 Forward Cargo Door

   C. Prepare to Remove the Vent Doors

      S 014-002
      (1) Open the cargo door to get access.

      S 864-003
      (2) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
          (a) 34J4, CONT DOOR CARGO
          (b) 34J7, CARGO DOOR FWD

      S 014-004
      (3) Remove the door lining.
   D. Remove the Aft Vent Door

      S 864-005
      (1) Move the latch lock roller bellcrank on the latch lock control shaft to the fully unlocked position (View A).

      S 034-006
      (2) Disconnect the pushrod from the bellcrank at the aft end of the vent door torque tube (View B).

      S 034-007
      (3) Remove the aft torque tube coupling bolt immediately aft of the vent door (View C).

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S 034-008
(4) Remove the bolts that attach the bearing retainer plate to the door structure aft frame. Remove the bearing retainer plate.

S 864-009
(5) Move the vent door torque tube aft as far as possible.

S 034-010
(6) Remove the forward torque tube coupling bolt immediately forward of the vent door.

S 034-011
(7) Remove the bolts that attach the bearing support plate to the cargo door structure immediately aft of the aft vent door. Remove the bearing support plate (View C).

S 034-012
(8) Release the spring from the stop fitting on the door structure.

S 864-013
(9) Move the aft vent door assembly aft until the vent door torque tube is clear of the bearing. Put the forward edge of the vent door at an angle inboard. Move the aft vent door assembly forward.

S 024-014
(10) Remove the aft vent door assembly from the cargo door structure.

E. Remove the Forward Vent Door

NOTE: You must remove the aft vent door before you can remove the forward vent door.

S 024-015
(1) Do the "Remove the Aft Vent Door" procedure.

S 034-016
(2) Remove the aft torque tube coupling bolt (View C).

S 864-017
(3) Move the vent door torque tube aft.

S 024-018
(4) Remove the bolts that attach the bearing support plate to the cargo door structure immediately aft of the vent door. Remove the bearing support plate (View C).

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S 864-019
(5) Move the forward vent door assembly aft until the vent door torque tube is clear of the bearing. Put the forward edge of the vent door at an angle inboard. Move the forward vent door assembly forward.

S 024-020
(6) Remove the forward vent door assembly from the cargo door structure.

TASK 52-33-07-404-039

3. Install the Vent Doors (Fig. 401)

A. General
(1) If the forward and aft vent doors are removed, install the forward vent door first. You cannot install the forward vent door after the aft vent door is installed.

B. Equipment
(1) Clamps (to hold the vent doors in the closed position) - commercially available
(2) Rig pins from set A20004-XX (Ref 20-10-24)
(a) LCD4 - P/N A20004-60
(b) LCD5 - P/N A20004-60

C. Consumable Materials
(1) D00633 Grease - BMS 3-33 (Preferred)
(2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

D. References
(1) 24-22-00/201, Electrical Power - Control
(2) 52-09-02/401, Cargo Door Seals
(3) 52-33-00/501, Large Forward Cargo Door

E. Access
(1) Location Zone
821 Forward Cargo Door

F. Install the Vent Door

S 214-022
(1) Make sure there is no damage or deterioration of the vent door seal.

S 434-023
(2) If you find damage or deterioration of the vent door seal, replace the seal (Ref 52-09-02).

S 864-024
(3) Put the vent door in the correct position in the cargo door structure (View C).

S 434-025
(4) Attach the spring to the stop fitting on the cargo door structure.

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S 864-026
(5) Put the bearing support plates in the correct position on the vent door torque tube.

S 824-027
(6) Add or remove the shims to keep a clearance of 0.005-0.015 inch between the forward bearing and the stop fitting (View C). Add shim as required to 0.063 maximum thickness.

S 824-019
(7) Add or remove the shims to keep a clearance of 0.005-0.015 inch between the aft bearing and the torque tube (View C). Add shim as required to 0.063 maximum thickness.

S 434-028
(8) Install the bolts that attach the bearing support plate to the cargo door structure (View C).

S 864-029
(9) Move the vent door torque tube, aft of the vent door, forward and align the holes in the vent door torque tubes.

S 434-030
(10) Install the forward and aft torque tube coupling bolts (View C).

S 434-031
(11) Tighten the forward torque tube coupling bolt to 40-50 pound-inches (View C).

S 434-032
(12) Tighten the aft torque tube coupling bolt to 40-50 pound-inches (View C).

S 434-033
(13) If you install the aft vent door, install the bearing retainer plate with the bolts on the door structure aft frame.

S 434-034
(14) If you install the aft vent door, connect the pushrod to the bellcrank on the vent door torque tube. Install the bolt through the bellcrank and tighten (View B).

S 824-035
(15) Adjust the vent doors (Ref 52-33-00)

G. Put the Airplane Back to its Usual Condition

S 864-036
(1) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO

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(b) 34J7, CARGO DOOR FWD

S 864-037

(2) Remove electrical power if it is not necessary (24-22-00).

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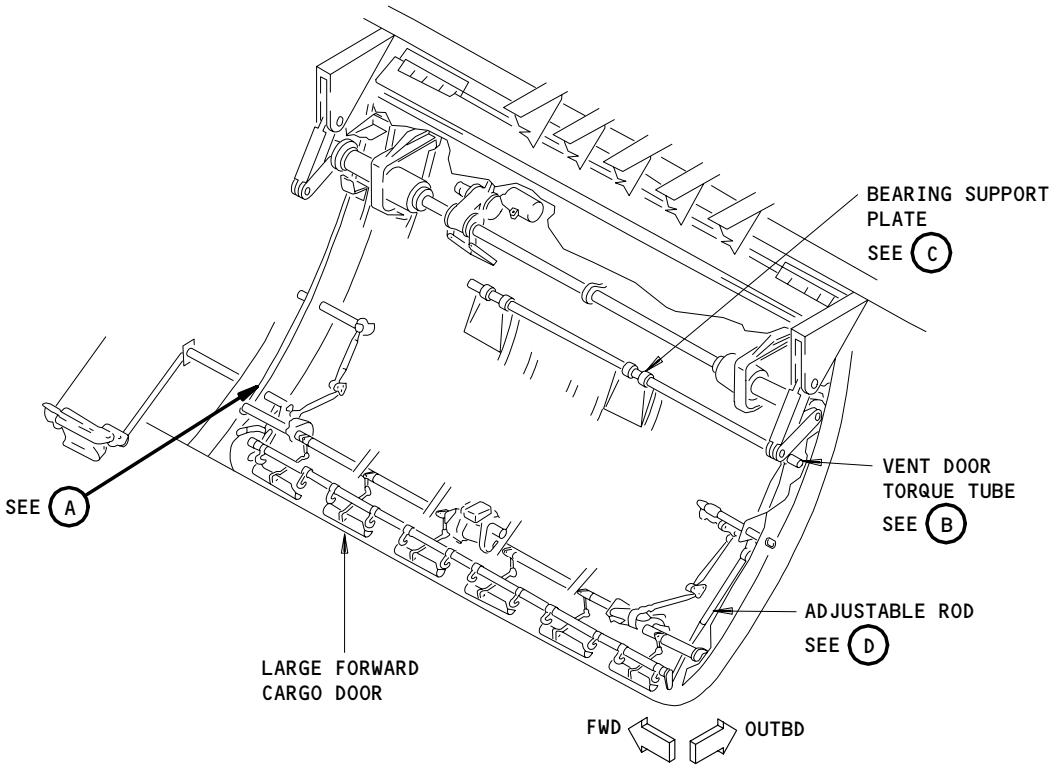
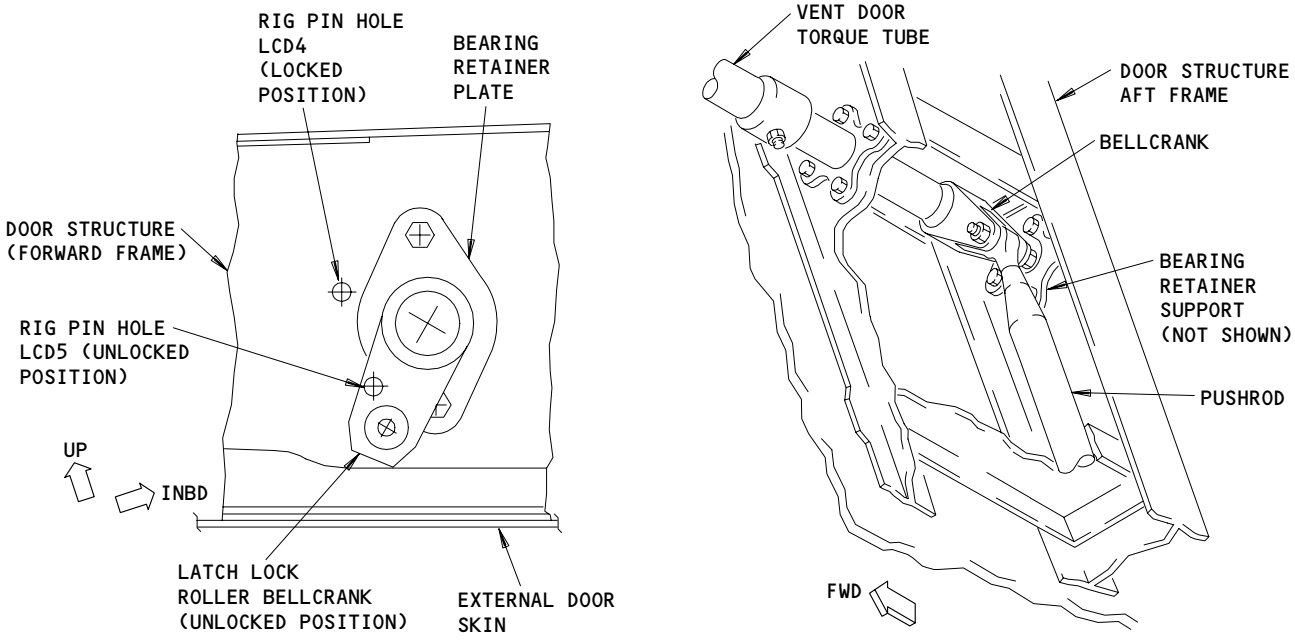


LARGE FORWARD CARGO DOOR



Large Forward Cargo Door Vent Door
Figure 401 (Sheet 1)

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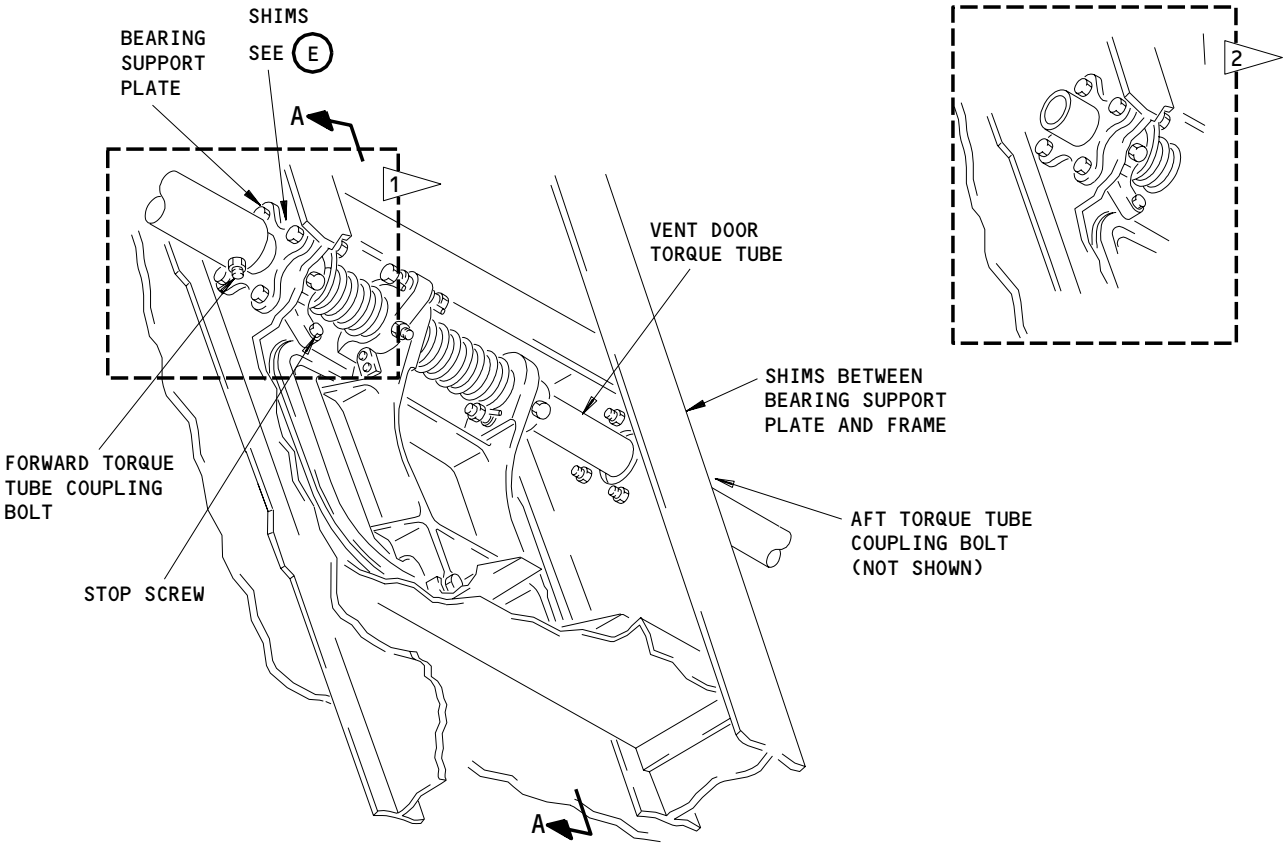
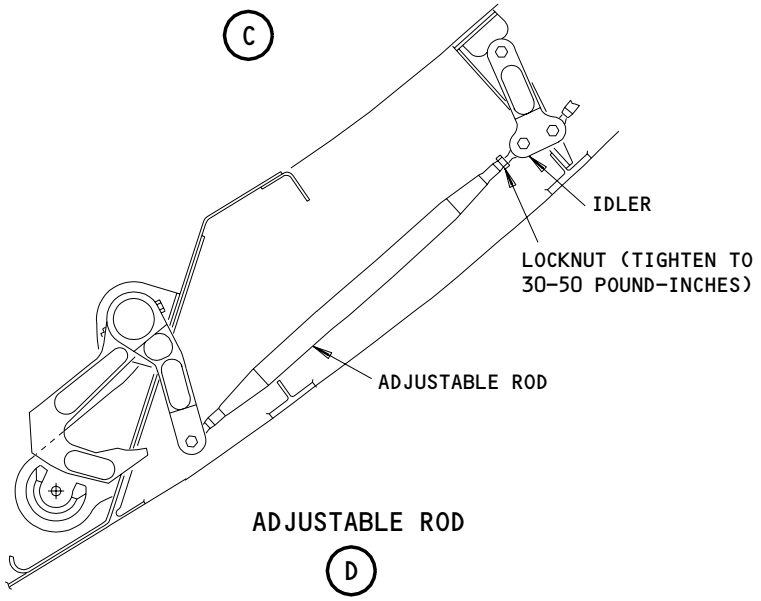


BEARING SUPPORT PLATE

C



ADJUSTABLE ROD

D

1 AFT VENT DOOR

2 FORWARD VENT DOOR

Large Forward Cargo Door Vent Door
Figure 401 (Sheet 2)

774434

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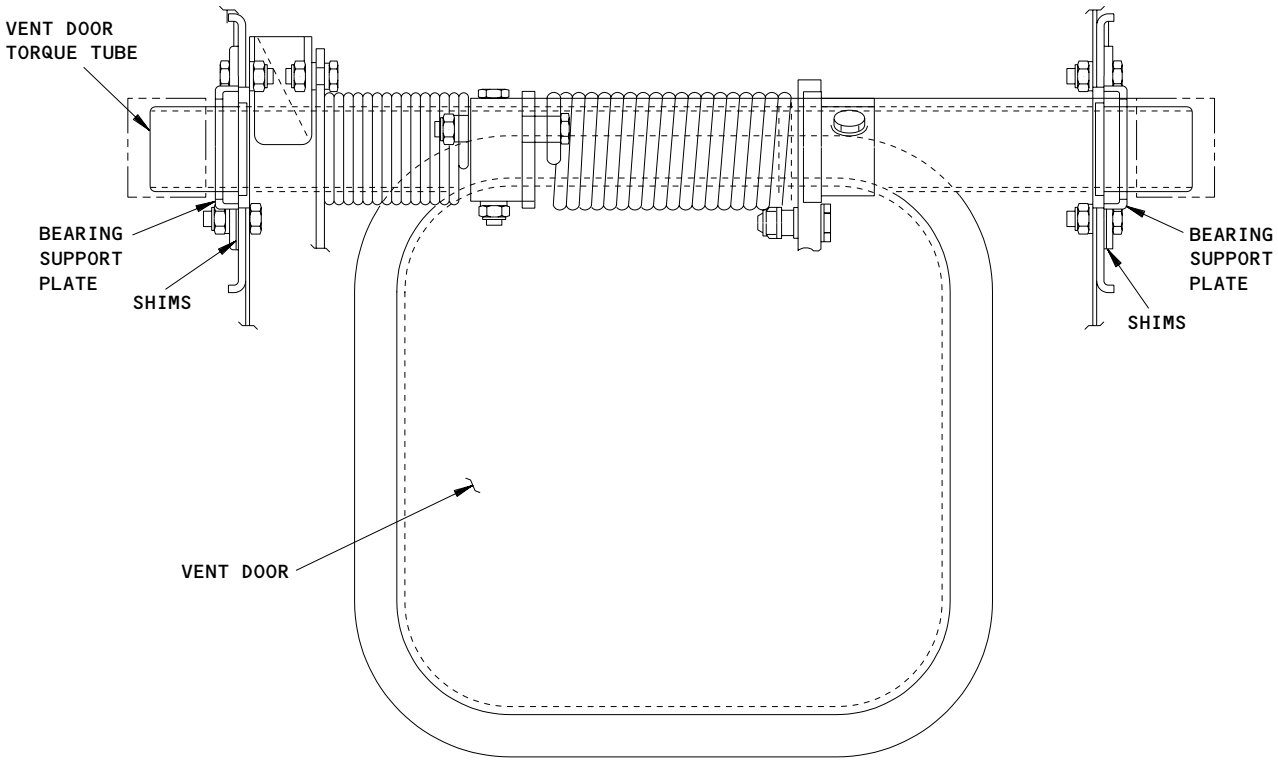

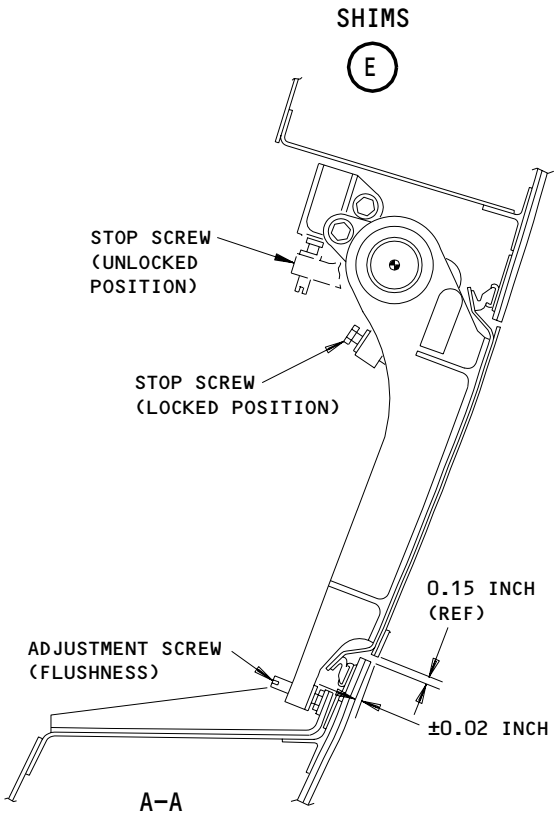

Large Forward Cargo Door Vent Door
Figure 401 (Sheet 3)

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LARGE FORWARD CARGO DOOR LATCH/HOOK ACTUATOR - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the latch/hook actuator from the large forward cargo door. The second task is the installation of the latch/hook actuator on the large forward cargo door.

TASK 52-33-08-004-046

2. Remove the Latch/Hook Actuator (Fig. 401)
   A. Equipment
      (1) Rig Pin LCD2 - P/N A20004-60 (two necessary), part of set A20004-XX (Ref 20-10-24)
   B. Access
      (1) Location Zone
          821 Forward Cargo Door

   C. Procedure - Remove the Latch/Hook Actuator

      S 014-002
      (1) Open the cargo door sufficiently to get access to the latch/hook actuator.

      S 864-003
      (2) Open this circuit breaker on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
          (a) 34J4, CONT DOOR CARGO
          (b) 34J7, CARGO DOOR FWD

      S 014-004
      (3) Remove the door lining.

      S 034-005
      (4) Disconnect the electrical connector from the latch/hook actuator (View A).

      S 864-006
      (5) Put the latch/hook mechanism in the latched position.

      S 494-007
      (6) Install the rig pins LCD2 into the forward and aft pull-in hooks.

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S 034-010
(7) Remove the bolt that attaches the top end of the pushrod to the bellcrank, immediately forward of the latch/hook actuator (View A).

S 034-011
(8) Turn the pushrod and make it clear of the bellcrank (View A).

S 864-012
(9) Hold the latch/hook actuator.

S 034-013
(10) Remove the 3 mounting bolts in the mounting plate and the bearing housing (View A).

S 034-014
(11) Remove the three coupling tangent bolts in the torque shaft couplings forward of the latch/hook actuator (View A).

S 034-015
(12) Remove the coupling tangent bolt in the torque shaft coupling aft of the latch/hook actuator (View A).

S 864-016
(13) Move the aft torque shaft coupling forward into the latch/hook actuator body.

S 864-018
(14) Move the forward torque shaft forward, against the next torque shaft.

S 864-019
(15) Move the latch/hook actuator aft sufficiently to be clear of the forward torque shaft coupling.

S 024-020
(16) Put the forward end of the latch/hook actuator at an angle inboard and lift the latch/hook from the cargo door structure.

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S 034-021

(17) If you replace the latch/hook actuator with a new actuator, remove the bolts that attach the mounting plate to the initial actuator (4 locations).

TASK 52-33-08-404-047

3. Install the Latch/Hook Actuator (Fig. 401)

A. Consumable Materials

(1) D00633 Grease - BMS 3-33 (Preferred)

(2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

(3) D00015 Grease - BMS 3-24 (Alternate)

B. References

(1) 24-22-00/201, Electrical Power - Control

C. Access

(1) Location Zone

821 Forward Cargo Door

D. Procedure - Install the Latch/Hook Actuator

S 644-023

(1) Lubricate the splines and the bearing housing with the grease.

S 434-024

(2) Install the forward torque shaft coupling of the latch/hook actuator on the forward torque shaft.

S 434-025

(3) Install the coupling tangent bolts (View A).

S 434-026

(4) Install the aft torque shaft coupling on the latch/hook actuator (View A).

S 434-027

(5) If you install a new latch/hook actuator, attach the mounting plate to the actuator with the bolts (4 locations).

S 424-028

(6) Install the latch/hook actuator with the mounting plate attached into the cargo door structure. Put the aft end of the latch/hook actuator at an angle outboard and install.

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S 824-029

(7) Put the forward end of the latch/hook actuator at an angle outboard and move the actuator and the mounting plate forward to align with the 3 holes in the structure.

NOTE: Turn the latch/hook actuator slightly until the splines in coupling and the actuator align.

S 434-030

(8) Install the 3 bolts from the forward side of the door frame through the bearing housing, retaining plate, door frame, and mounting plate.

S 434-031

(9) Tighten the bolts.

S 824-032

(10) Add or remove the shim between the mounting plate and the door frame to align the aft end of the latch/hook actuator with the aft torque shaft. Remove the 0.003 inch laminations as necessary to align the aft end of the latch/hook actuator with the aft torque shaft connector.

S 864-033

(11) Move the forward torque shaft, with the coupling attached, aft until the coupling engages the spline on the latch/hook actuator.

S 824-035

(12) Put the retainer couplings in the center on the splines.

S 434-036

(13) Install the coupling tangent bolts and tighten.

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S 434-037
(14) Connect the pushrod to the bellcrank. Install the plain bushing, bolt, and nut (View A). Tighten the nut.

S 094-038
(15) Remove the rig pins from the forward and aft pull-in hooks.

S 434-039
(16) Connect the electrical connector to the latch/hook actuator (View A).

S 644-040
(17) Lubricate the O-ring in the manual drive adapter with the grease.

S 864-042
(18) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO
(b) 34J7, CARGO DOOR FWD

S 714-043
(19) Do a check on the operation of the cargo door as follows:
(a) Supply electrical power (Ref 24-22-00).
(b) Operate the cargo door electrically. Make sure the door opens and closes correctly.

S 414-044
(20) Install the door lining.

S 864-045
(21) Remove electrical power if it is not necessary (Ref 24-22-00).

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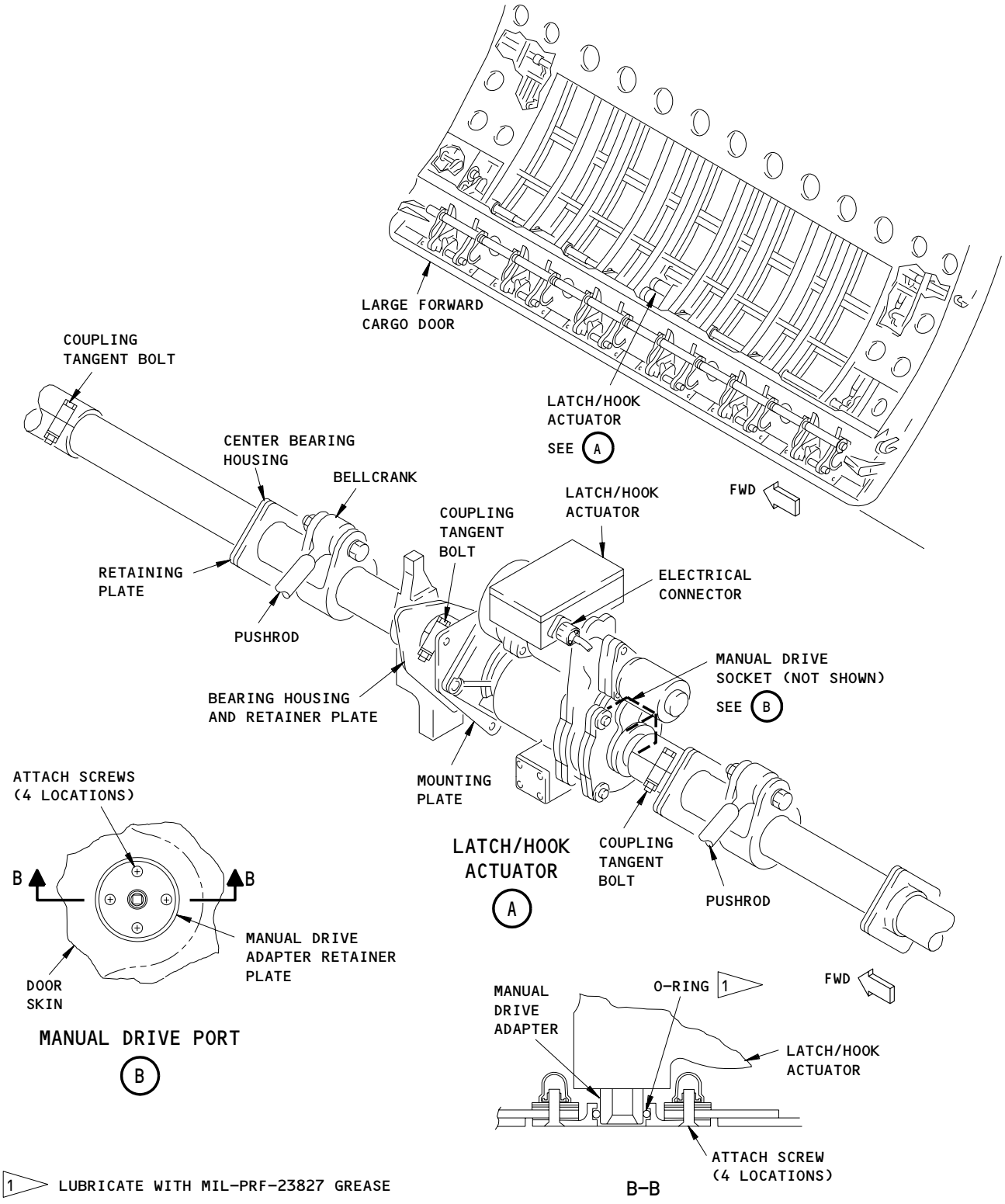

Latch/Hook Actuator
Figure 401

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LARGE FORWARD CARGO DOOR LATCH CAMS AND LATCH PINS - MAINTENANCE PRACTICES

1. General
   A. This procedure contains four tasks.
      (1) The first task is the inspection/check of the green alignment marks on the main latch cams.
      (2) AIRPLANES WITH ALIGNMENT MARKS ON THE LATCH PIN FITTINGS (POST SB 52-59 OR PRR B12184);
      The second task is the inspection/check of the green alignment marks on the main latch pin fittings.
      (3) The third task is the approved repairs for the green alignment marks on the main latch cams.
      (4) AIRPLANES WITH ALIGNMENT MARKS ON THE LATCH PIN FITTINGS (POST SB 52-59 OR PRR B12184);
      The fourth task is the approved repairs for the green alignment marks on the main latch pin fittings.

TASK 52-33-09-202-001

2. Main Latch Cam Alignment Mark - Inspection/Check
   A. Equipment
      (1) Main Latch Cam Template - Large Forward Cargo Door, A52028-2 (part of Main Latch Fittings Verification Equipment - Large Forward Cargo Door, A52028-1)
   B. Access
      (1) Location Zone
          821 Forward Cargo Door

   C. Do a Check on the Main Latch Cams

      S 862-003
      (1) Make sure the cargo door is in the fully closed and latched position.

      S 212-004
      (2) Look through the view ports (12 locations) on the external side of the cargo door (Fig. 201). Make sure you see the green alignment mark on each of the main latch cams.

          NOTE: The green alignment mark is a thin green stripe on the main latch cam.

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S 212-035
(3) AIRPLANES WITH ALIGNMENT MARKS ON THE LATCH PIN FITTINGS (POST SB 52-59 OR PRR B12184);
Make sure the green alignment mark on the main latch cam is fully in the limits of the larger green alignment mark on the main latch pin fitting (View A, Fig. 201).

S 012-006
(4) Open the cargo door sufficiently to get access to the lower part of the door.

S 862-007
(5) Hold a metal target on the front of the forward cargo door latch range proximity sensor, S152.

S 862-008
(6) Put the interior door control switch to the CLOSE position to turn the main latch cams.

NOTE: This causes the latch/hook actuator to turn the main latch cams to the closed position while the door is not in the fully closed position.

S 862-009
(7) Release the interior door control switch when the main latch cams stop.

S 862-010
(8) Remove the metal target from the forward cargo door latch range proximity sensor, S152.

S 492-011
(9) Use the main latch cam template to make sure the green alignment marks are in the correct position on the main latch cams (12 locations) (Fig. 202).

S 352-014
(10) If the green alignment marks are not in the correct position on the main latch cam, do the "Main Latch Cam Alignmnet Mark - Approved Repairs" procedure.

TASK 52-33-09-202-037
3. AIRPLANES WITH ALIGNMENT MARK ON THE LATCH PIN FITTINGS (POST SB 52-59 OR PRR B12184);
Main Latch Pin Fitting Alignment Mark - Inspection/Check
A. Equipment
(1) Main Latch Pin Fitting Template - Large Forward Cargo Door, A52028-3 (part of Main Latch Fittings Verification Equipment - Large Forward Cargo Door, A52028-1)

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B. Access
(1) Location Zone
821 Forward Cargo Door

C. Do a Check on the Main Latch Pin Fittings

S 012-016
(1) Open the cargo door sufficiently to get access to the main latch pin fittings on the fuselage structure.

S 492-017
(2) Use the main latch pin fitting template to make sure the green alignment marks on the main latch pin fittings are in the correct position (12 locations) (Fig. 203).

S 352-018
(3) If the green alignment marks are not in the correct position on the main latch pin fitting, do the "Main Latch Pin Fitting Alignment Mark - Approved Repairs" procedure.

TASK 52-33-09-352-019

4. Main Latch Cam Alignment Mark - Approved Repairs

A. General
(1) Do this procedure to repair a green alignment mark if it is not in the correct position or if the green or the white enamel is damaged.

B. Equipment
(1) Main Latch Cam Template - Large Forward Cargo Door, A52028-2 (part of Main Latch Fittings Verification Equipment - Large Forward Cargo Door, A52028-1)

C. Consumable Materials
(1) C00621 Primer, BMS 10-11, Type I
(2) C00543 White enamel, gloss, BMS 10-11, Type 2
(3) C00329 Apple green epoxy enamel, gloss, BMS 10-11, Type 2

D. References
(1) AMM 52-33-09/401, Large Forward Cargo Door Latch Cams and Pins
(2) AMM 51-21-02/701, Prepaint Cleaning and Treatment

E. Access
(1) Location Zone
821 Forward Cargo Door

F. Repair the Green Alignment Marks on the Main Latch Cams

S 012-021
(1) Open the cargo door sufficiently to get access to the main latch cams.

S 022-022
(2) Remove the main latch cams (AMM 52-33-09/401).

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S 212-023
(3) Make sure the area on the main latch cam is clean and there is no lubricant (Views B and A-A, Fig. 202).

S 352-024
(4) If the white enamel is damaged or if it is necessary to remove the green alignment mark, do the steps that follow:
(a) Remove the remaining enamel from the main latch cam (AMM 51-21-02/701).
(b) Apply the primer to the main latch cam (Views B and A-A, Fig. 202).
(c) Apply the white enamel to the main latch cam (Views B and A-A, Fig. 202).

S 492-025
(5) Use the main latch cam template to find the correct position of the green alignment mark on the main latch cam.

S 372-027
(6) Apply the green enamel to the main latch cam in the correct position (Views B and A-A, Fig. 202).

S 422-028
(7) Install the main latch cams (AMM 52-33-09/401).

TASK 52-33-09-352-039

5. AIRPLANES WITH ALIGNMENT MARK ON THE LATCH PIN FITTINGS (POST SB 52-59 OR PRR B12184);
Main Latch Pin Fitting Alignment Mark - Approved Repairs

A. General
(1) Do this procedure to repair a green alignment mark if it is not in the correct position or if the green or the white enamel is damaged.

B. Equipment
(1) Main Latch Pin Fitting Template - Large Forward Cargo Door, A52028-3 (part of Main Latch Fittings Verification Equipment - Large Forward Cargo Door, A52028-1)

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C. Consumable Materials
   (1) C00621 Primer, BMS 10-11, Type I
   (2) C00543 White enamel, gloss, BMS 10-11, Type 2
   (3) C00329 Apple green epoxy enamel, gloss, BMS 10-11, Type 2
D. References
   (1) AMM 51-21-02/701, Prepaint Cleaning and Treatment
E. Access
   (1) Location Zone
       821 Forward Cargo Door

F. Repair the Green Alignment Mark on the Main Latch Pin Fitting

S 212-029
(1) Make sure the area on the main latch pin fitting is clean and there is no lubricant or sealant (Views B and C, Fig. 203).

S 352-030
(2) If the white enamel is damaged or if it is necessary to remove the green alignment mark, do the steps that follow:
   (a) Remove the remaining paint from the main latch pin fitting (AMM 51-21-02/701).
   (b) Apply the primer to the main latch pin fitting (Views B and C, Fig. 203).
   (c) Apply the white enamel to the main latch pin fitting (Views B and C, Fig. 203).

S 492-031
(3) Use the main latch pin fitting template to find the correct position of the green alignment mark on the main latch pin fitting.

S 372-032
(4) Apply the green enamel to the main latch pin fitting in the correct position (Views B and C, Fig. 203).

S 492-033
(5) Use the main latch pin fitting template to make sure the green alignment mark is in the correct position on the main latch pin fitting.

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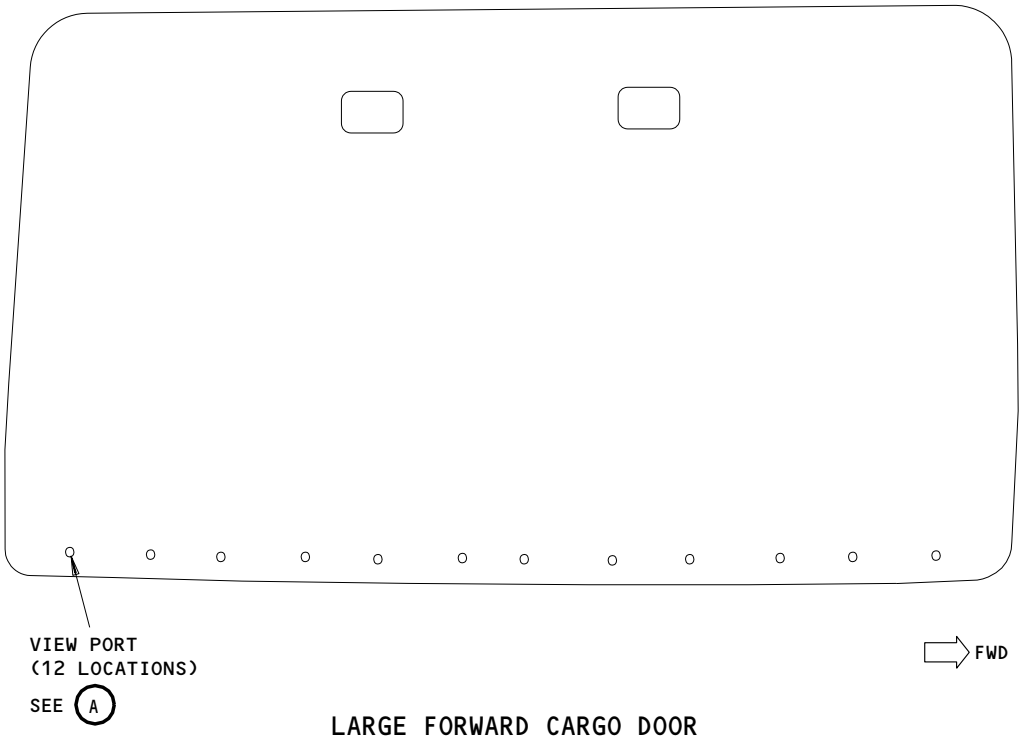
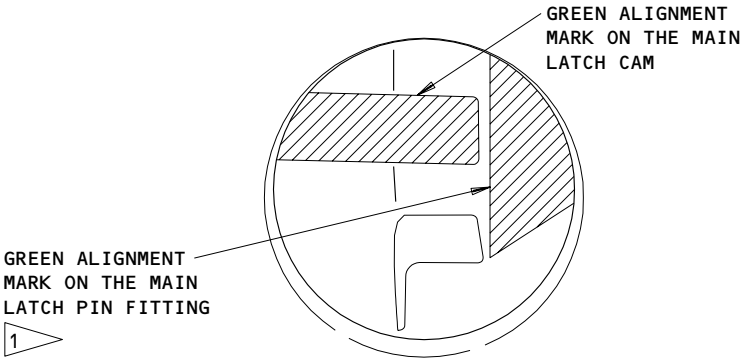


LARGE FORWARD CARGO DOOR



VIEW PORT
(EXAMPLE)
(A)

NOTE: MAKE SURE THE GREEN ALIGNMENT MARK ON THE MAIN LATCH CAM IS FULLY BETWEEN THE LIMITS OF THE LARGER GREEN ALIGNMENT MARK ON THE MAIN LATCH PIN FITTING.

1 AIRPLANES WITH ALIGNMENT MARK ON THE LATCH PIN FITTINGS (POST-SB 52-59 OR PRR B12184)

Large Forward Cargo Door View Ports
Figure 201

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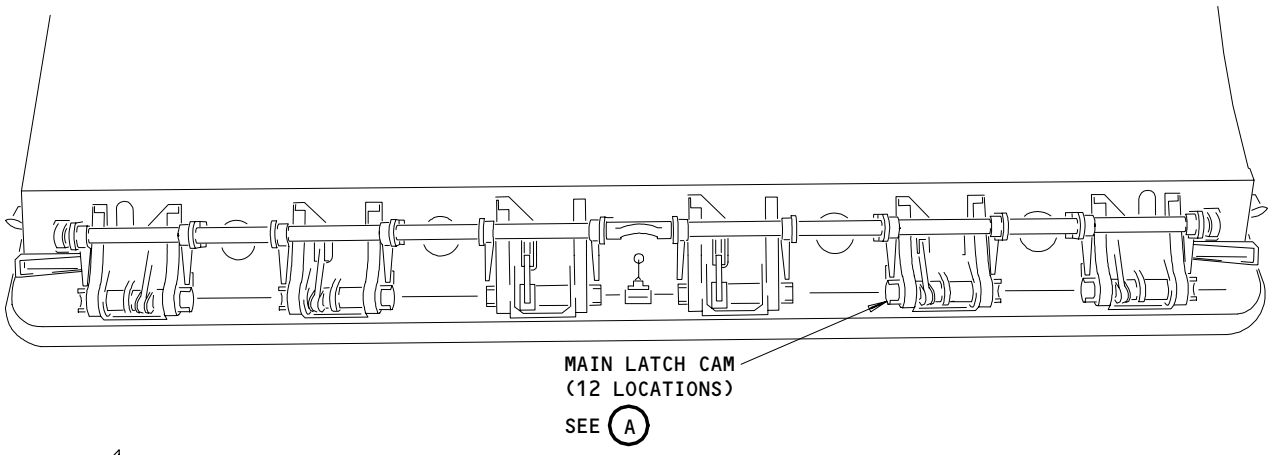
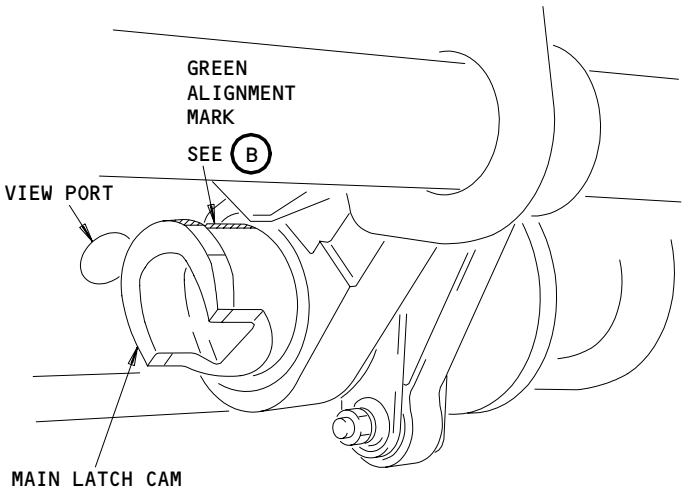
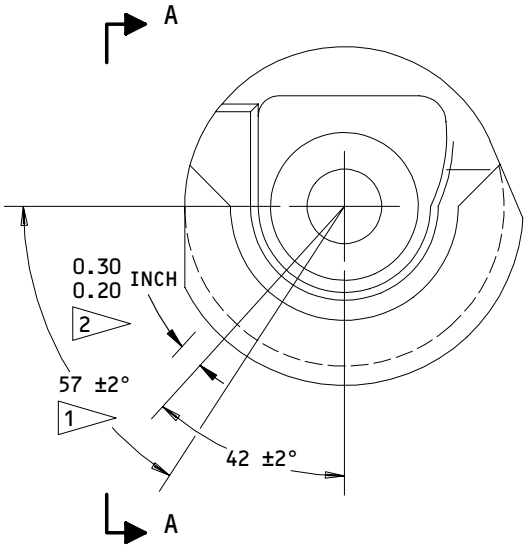


LARGE FORWARD CARGO DOOR
(INTERNAL VIEW)



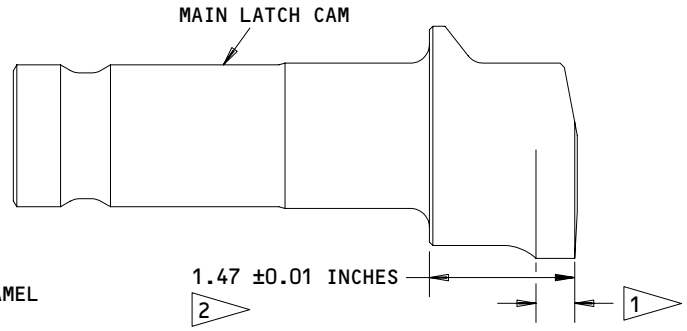
MAIN LATCH CAM
(EXAMPLE)

A



GREEN ALIGNMENT MARK

B



A-A

1 MAKE SURE THE WHITE ENAMEL IS ONLY IN THIS AREA

2 MAKE SURE THE GREEN ENAMEL IS ONLY IN THIS AREA

Main Latch Cam
Figure 202

773624

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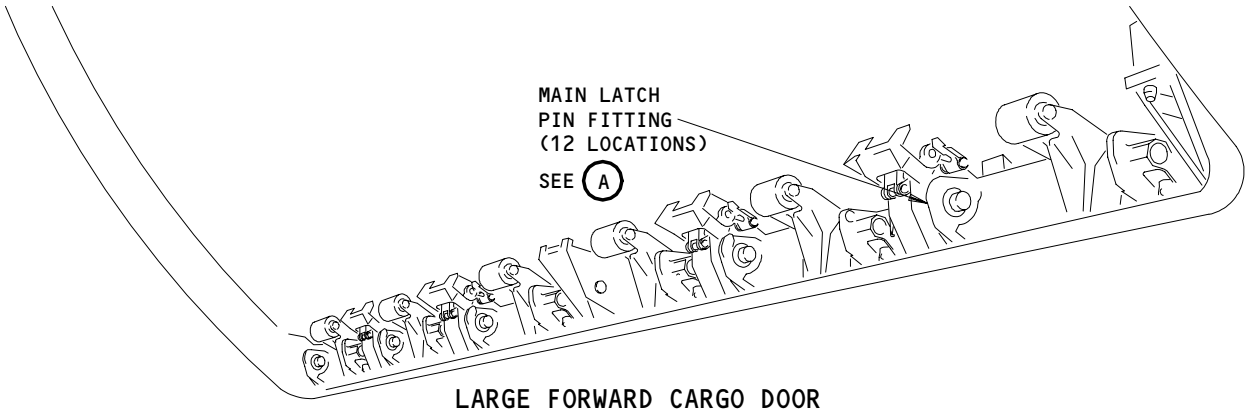
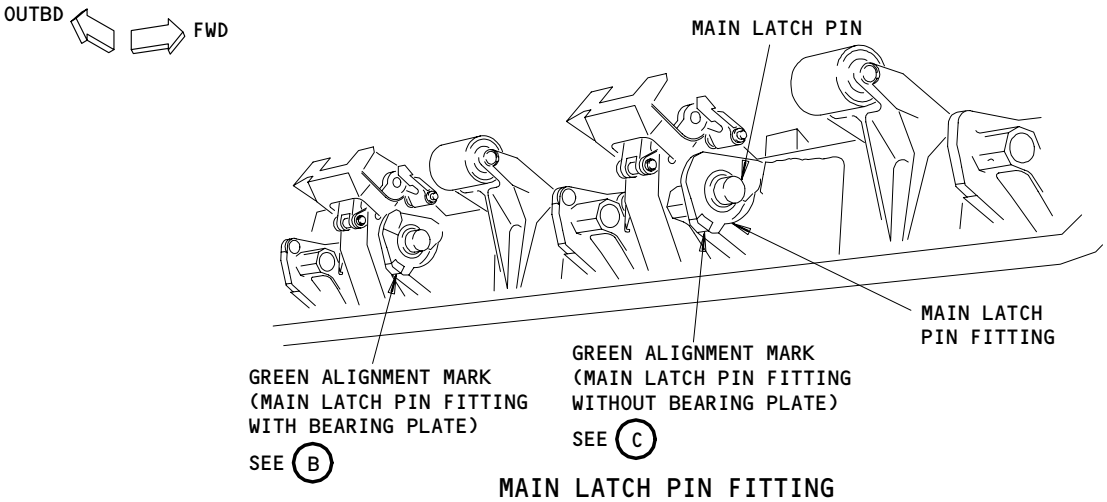
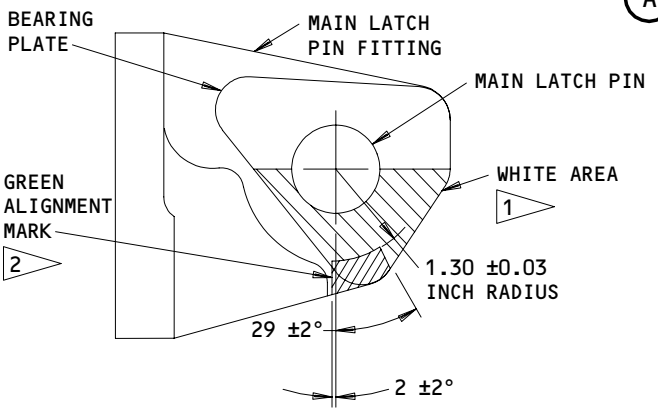


LARGE FORWARD CARGO DOOR



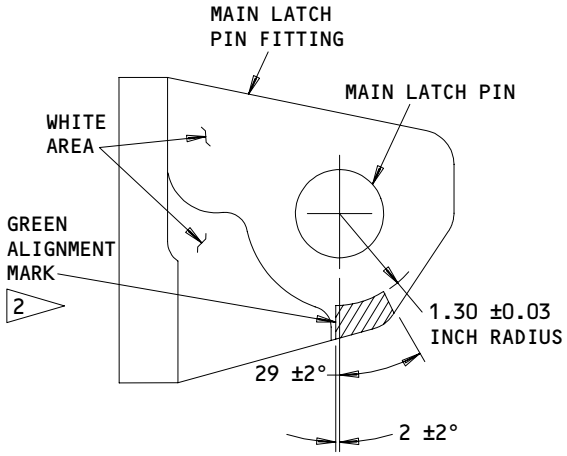
MAIN LATCH PIN FITTING

A



GREEN ALIGNMENT MARK
(MAIN LATCH PIN FITTING WITH BEARING PLATE)

B



GREEN ALIGNMENT MARK
(MAIN LATCH PIN FITTING
WITHOUT BEARING PLATE)

C

1 MAKE SURE THE WHITE ENAMEL IS ONLY IN THIS AREA

2 MAKE SURE THE GREEN ENAMEL IS ONLY IN THIS AREA ON THE FRONT AND THE SIDE OF THE MAIN LATCH PIN FITTING

Main Latch Pin Fitting
Figure 203

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LARGE FORWARD CARGO DOOR LATCH CAMS AND LATCH PINS - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the main latch cams, main latch pins, mid-span latch fittings, and mid-span latch pins from the large forward cargo door. The second task is the installation of the main latch cams, main latch pins, mid-span latch fittings, and mid-span latch pins on the large forward cargo door.

TASK 52-33-09-004-046

2. Remove the Latch Cams and the Latch Pins (Fig. 401)
   A. Access
      (1) Location Zone
          821 Forward Cargo Door

   B. Prepare to Remove the Latch Cams and the Latch Pins

      S 014-002
      (1) Open the cargo door sufficiently to get access to the latch cams and the latch pins.

      S 864-003
      (2) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
          (a) 34J4, CONT DOOR CARGO
          (b) 34J7, CARGO DOOR FWD

      S 014-004
      (3) Remove the door lining.
   C. Remove the Main Latch Cam

      S 034-005
      (1) Remove the bolt in the latch bellcrank assembly that attaches the latch cam pushrod to the latch bellcrank assembly (View B). Disconnect the latch cam pushrod.

      S 034-006
      (2) Remove the bolt retaining spring from the grooves in the latch retaining bolt and latch retaining nut (View B).

      S 034-007
      (3) Remove the latch retaining bolt from the main latch cam.

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S 024-008

CAUTION: BE CAREFUL WHEN YOU REMOVE OR INSTALL THE MAIN LATCH CAM. DAMAGE TO THE SPLINES ON THE MAIN LATCH CAM CAN EASILY OCCUR.

(4) Remove the main latch cam from the splines in the bellcrank assembly.

NOTE: The main latch cam is aligned in the bellcrank assembly with a missing tooth in splines that aligns with the bellcrank assembly.

D. Remove the Main Latch Pin

S 034-009

CAUTION: KEEP THE DRY FILM LUBRICATED BEARING SURFACES OF THE MAIN LATCH PIN CLEAN AND BE CAREFUL NOT TO CAUSE DAMAGE TO THE SURFACES. IF YOU ARE NOT CAREFUL, DAMAGE TO THE SURFACES OF THE MAIN LATCH PIN CAN EASILY OCCUR.

(1) Remove the main latch pin retaining bolt that connects the main latch pin to the main latch pin fitting (View C).

S 024-010

(2) Remove the main latch pin from the main latch pin fitting.

E. Remove the Mid-span Latch Fitting

NOTE: The mid-span latch fitting and cam are one piece.

S 034-011

(1) Remove the bolts (2 locations) to disconnect the mid-span latch fitting from the mid-span latch bellcrank (View D). Do not keep the two mid-span latch fittings on the forward and aft sides of the cargo door together.

S 034-012

(2) Remove the bolt in the collar of the mid-span latch fitting (View D).

S 024-013

(3) Move the mid-span latch fitting in the direction of the center of the cargo door to loosen the fitting (View D).

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S 024-059

(4) Move the mid-span latch fitting in the direction away from the center of the cargo door to remove the fitting from the bearing housing (View D).

S 034-014

(5) Keep the washers at the end of the mid-span latch fitting with the mid-span latch bellcrank (View D).

F. Remove the Mid-span Latch Pin

S 864-015

(1) Make a mark at the location of the mid-span latch pin on the fuselage frame.

NOTE: The mark will help you find the correct location for the subsequent installation of the mid-span latch pin.

S 024-016

(2) Remove the bolts (4 locations) that attach the mid-span latch pin to the fuselage frame (View E). Remove the mid-span latch pin.

TASK 52-33-09-404-047

3. Install the Latch Cams and the Latch Pins

A. Consumable Materials

(1) D00633 Grease, Corrosion Preventive - BMS 3-33 (Preferred)
(2) D00015 Grease, Corrosion Preventive - BMS 3-24 (Alternate)
(3) D00113 Grease - BMS 3-8
(4) C00174 Corrosion Preventive Compound - MIL-C-16173
(5) A00247 Sealant, BMS 5-95

B. Reference

(1) 24-22-00/201, Electrical Power - Control

C. Access

(1) Location Zone
821 Forward Cargo Door

D. Install the Main Latch Cam

S 644-018

(1) Fill the inner part of the latch bellcrank with the BMS 3-33 grease.

S 644-019

CAUTION: BE CAREFUL WHEN YOU REMOVE OR INSTALL THE MAIN LATCH CAM. DAMAGE TO THE SPLINES ON THE MAIN LATCH CAM CAN EASILY OCCUR.

(2) Lubricate the splines of the main latch cam with the BMS 3-33 grease before you install the main latch cam in the latch bellcrank.

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S 644-049
(3) Apply a layer of the BMS 3-33 grease to the sleeve part of the main latch cam before you install the main latch cam.

S 624-021
(4) Fill and then drain the inner part of the main latch cam with the corrosion preventive compound.

S 424-022
(5) Install the main latch cam in the correct end of the bellcrank assembly. Align the splines in bellcrank with the splines in the main latch cams. Make sure the open side of the cam is in the direction of the fuselage (View B, Fig. 401).

S 434-023
(6) Install the latch retaining bolt from the forward side of the main latch cam (View B).

S 434-024
(7) Install the latch retaining nut on the latch retaining bolt (View B, Fig. 401).

S 824-025
(8) Slowly tighten the latch retaining bolt. Adjust the clearance between one main latch cam and the bearing to 0.005-0.015 inch.

NOTE: The clearance between the other main latch cam and the bearing is zero for this adjustment.

S 434-026
(9) Install the bolt retaining spring into the grooves in the latch retaining bolt and the latch retainer nut (View B, Fig. 401). If the grooves are not aligned, tighten the latch retaining bolt until the grooves are aligned.

S 224-027
(10) Make sure the clearance is 0.005-0.015 inch between the main latch cam and the bearing.

S 434-028
(11) Connect the latch cam pushrod to the latch bellcrank assembly and install the bolt, nut, and washers (View B, Fig. 401).

E. Install the Main Latch Pin

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S 624-029

CAUTION: KEEP THE DRY FILM LUBRICATED BEARING SURFACES OF THE MAIN LATCH PIN CLEAN AND BE CAREFUL NOT TO CAUSE DAMAGE TO THE SURFACES. IF YOU ARE NOT CAREFUL, DAMAGE TO THE SURFACES OF THE MAIN LATCH PIN CAN EASILY OCCUR.

(1) Apply the wet sealant to the mating surface of the outer diameter of the main latch pin and inner diameter of the main latch pin fitting (View A, Fig. 402).

S 824-048

CAUTION: DO NOT INSTALL THE PINS BACKWARDS. IF A PIN IS INSTALLED BACKWARDS, IT WILL NOT CARRY THE LOAD OF THE CAM. WHEN THE AIRPLANE IS PRESSURIZED, THE OTHER PINS WILL HAVE TO CARRY THE EXTRA LOAD. THIS CAN CAUSE DAMAGE TO THE FITTINGS, CAMS AND ADJACENT STRUCTURE.

TO MAKE SURE THE PIN IS NOT INSTALLED BACKWARDS, MAKE SURE THE PIN EXTENDS FROM THE FITTING MORE THAN 0.75 INCH ON THE SIDE OF THE FITTING WHERE THE PIN ENGAGES THE CAM.

(2) Move the main latch pin into the main latch pin fitting. Align the holes in main latch pin and the main latch pin fitting (View C, Fig. 401).

S 624-058

(3) Do these steps:
   (a) Apply the sealant to the mating surfaces of the main latch pin clip and main latch pin fitting.
   (b) Put the main latch pin clip in its correct position on the main latch pin fitting.

S 434-031

(4) Install the main latch pin retaining bolt (View C, Fig. 401). Tighten the bolt.

S 624-032

(5) Make a fillet seal along the edge of the main latch pin and the bearing plate (or the main latch pin fitting if there is no bearing plate) with the wet sealant (View A-A, Fig. 402).

S 624-033

(6) Make a fillet seal along the edge of the main latch pin and the main latch pin fitting with the wet sealant (View B-B, Fig. 402).

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S 624-034
(7) Make a fillet seal on the bolt head and the nut with the wet sealant (View B-B, Fig. 402).

S 144-035
(8) Clean the unwanted sealant from the area on the main latch pin shown (View A, Fig. 402).

F. Install the Mid-span Latch Fitting

S 424-036
(1) Install the mid-span latch fitting through the bearing in the outboard bearing housing (View D, Fig. 401).

S 434-037
(2) Install the collar on the end of mid-span latch fitting with the mid-span latch bellcrank (View D, Fig. 401).

NOTE: Install the side of the collar with the flange away from the mid-span latch bellcrank.

S 434-038
(3) Install the bolts that connect the mid-span latch fitting to the mid-span latch bellcrank (View D, Fig. 401).

NOTE: The bolts are installed into the latch fitting and the bellcrank in only one position. Do not keep the parts of the mid-span latch fittings together.

S 434-039
(4) Move the mid-span latch fitting and the mid-span latch bellcrank assembly in the direction of the center of the door. Move the collar in the opposite direction.

S 434-040
(5) Install the bolt through the collar and the mid-span latch fitting. Tighten the nut.

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S 824-041

(6) Add or remove the washers until the clearance between the mid-span latch bellcrank and the bearing plate is 0.01 to 0.03 inch (View D, Fig. 401).

G. Install the Mid-span Latch Pins

S 424-042

(1) Put the mid-span latch pin on the fuselage frame in the location that you made a mark at before.

S 434-043

(2) Install the bolts (4 locations) through the fuselage frame and the mid-span latch pin.

S 434-044

(3) Install the nuts and tighten.

H. Put the Airplane Back to its Usual Condition

S 864-045

(1) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO
(b) 34J7, CARGO DOOR FWD

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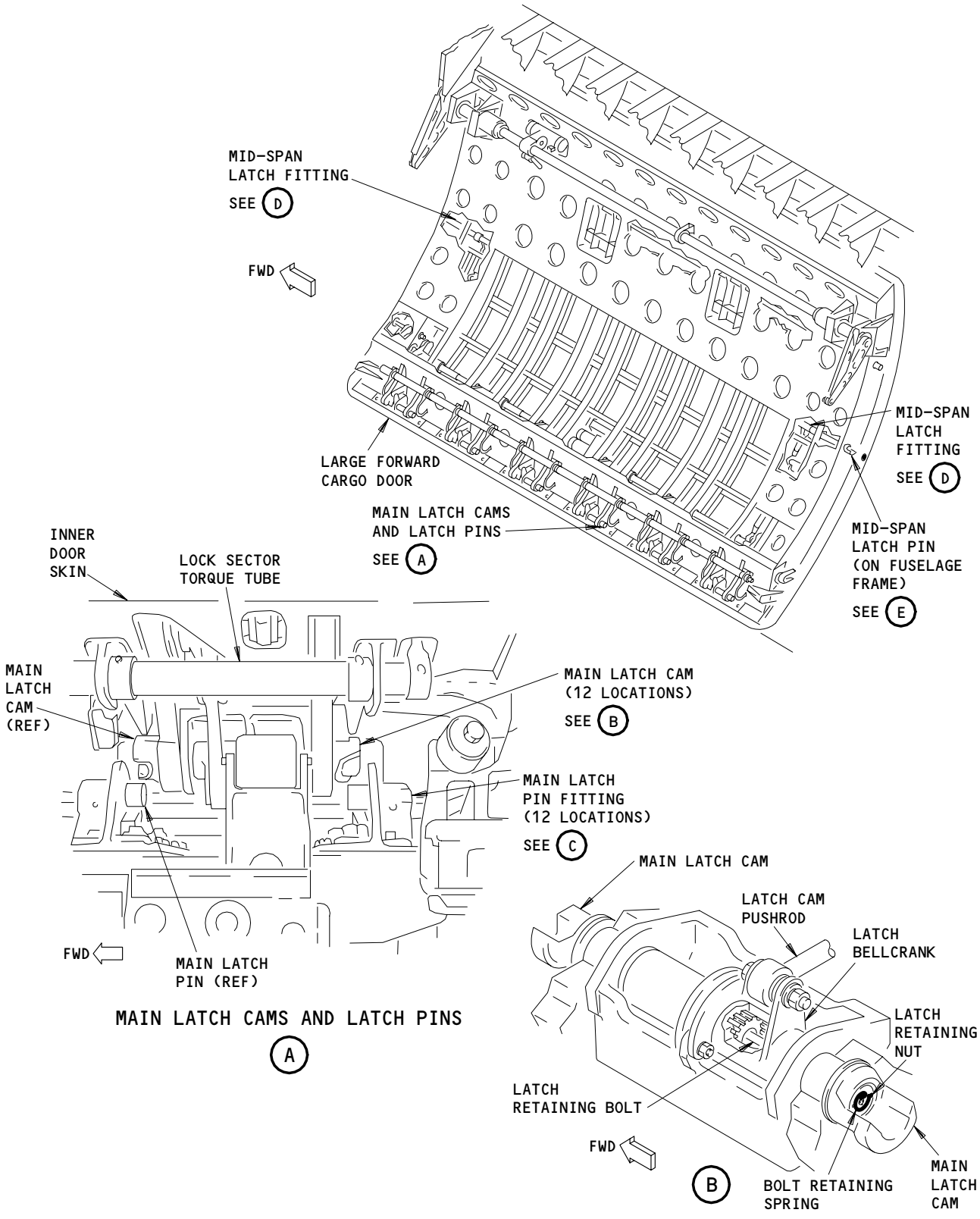

MAIN LATCH CAMS AND LATCH PINS

A

B

Large Forward Cargo Door Latch Cams and Latch Pins
Figure 401 (Sheet 1)

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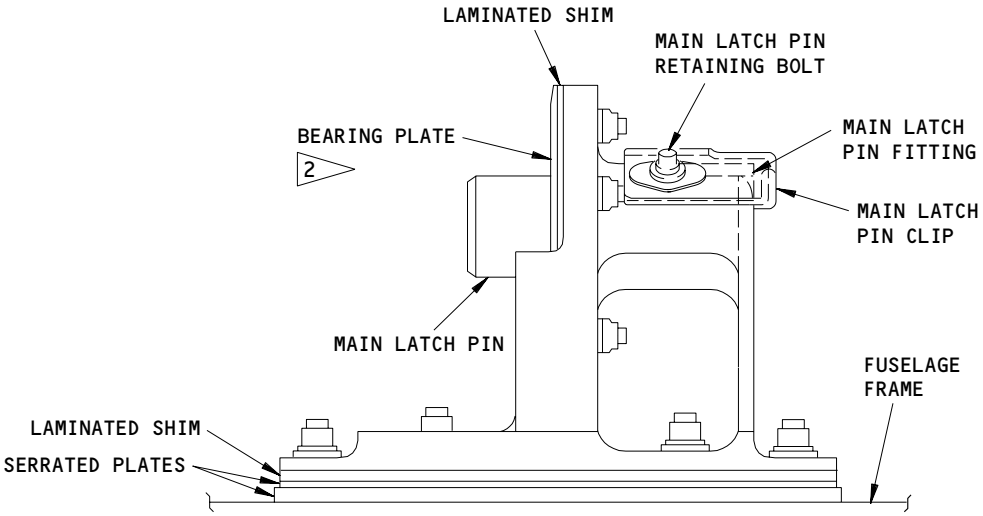
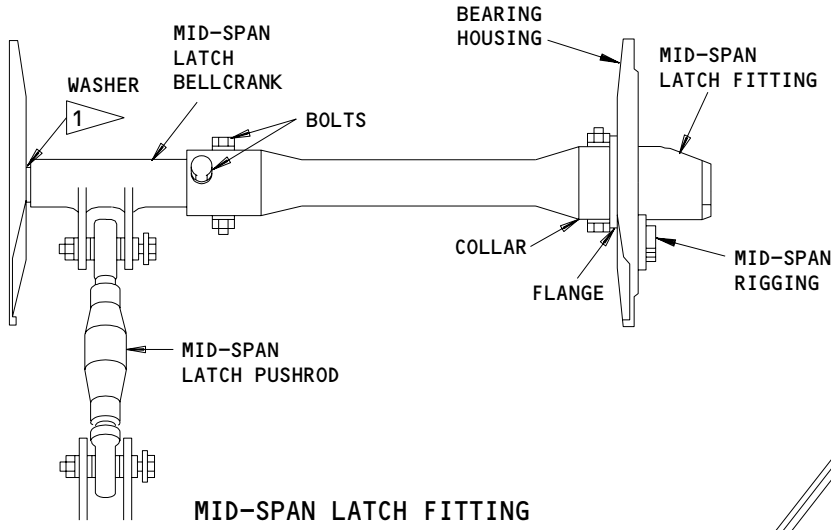


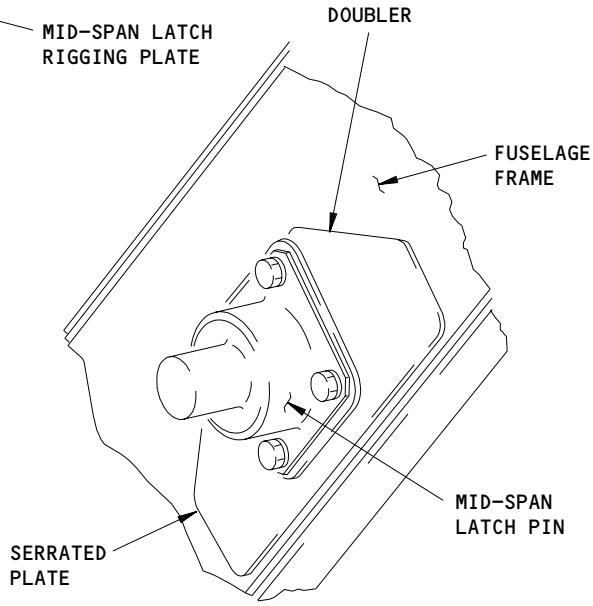
MAIN LATCH PIN FITTING

C



MID-SPAN LATCH FITTING

D



MID-SPAN LATCH PIN

E

1 ADD OR REMOVE THE WASHERS UNTIL THE CLEARANCE BETWEEN THE BELLCRANK AND THE BEARING PLATE IS 0.01 TO 0.03 INCH.

2 THE BEARING PLATE AND SHIM ARE INSTALLED ON THE EIGHT FITTINGS IN THE CENTER OF THE FUSELAGE STRUCTURE.

Large Forward Cargo Door Latch Cams and Latch Pins
Figure 401 (Sheet 2)

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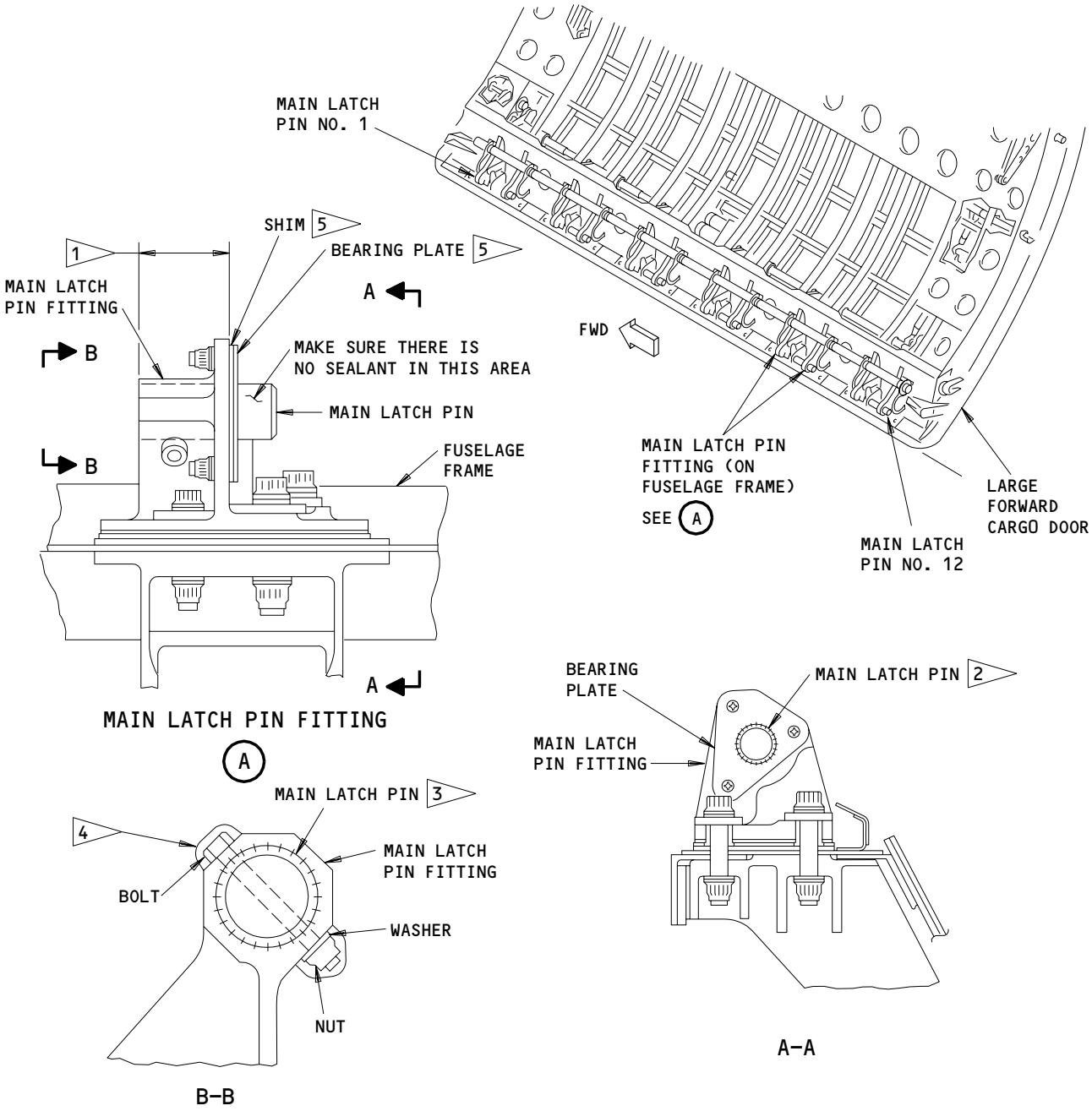

1. APPLY THE WET SEALANT TO THE MATING SURFACE OF THE OUTER DIAMETER OF THE MAIN LATCH PIN AND THE INNER DIAMETER OF THE MAIN LATCH PIN FITTING.
2. MAKE A FILLET SEAL ALONG THE EDGE OF THE MAIN LATCH PIN AND THE BEARING PLATE (OR MAIN LATCH PIN FITTING IF THERE IS NO BEARING PLATE) WITH THE WET SEALANT.
3. MAKE A FILLET SEAL ALONG THE EDGE OF THE MAIN LATCH PIN AND THE MAIN LATCH PIN FITTING WITH THE WET SEALANT.
4. MAKE A FILLET SEAL ON THE BOLT HEAD AND THE NUT WITH THE WET SEALANT.
5. AT MAIN LATCH PIN NO. 1, 2, 11, 12 THE SHIM AND BEARING PLATE ARE NOT INSTALLED.

Large Forward Cargo Door Main Latch Pin Fitting Sealing
Figure 402

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LARGE FORWARD CARGO DOOR PULL-IN HOOKS AND PINS - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the pull-in hooks and pins from the large forward cargo door. The second task is the installation of the pull-in hooks and pins on the large forward cargo door.

TASK 52-33-10-004-032

2. Remove the Pull-in Hooks and Pins (Fig. 401)
   A. Access
      (1) Location Zone
          821 Forward Cargo Door

   B. Prepare to Remove the Pull-in Hooks and Pins

      S 014-002
      (1) Open the cargo door sufficiently to get access to the pull-in hooks on the door.

      S 864-003
      (2) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
          (a) 34J4, CONT DOOR CARGO
          (b) 34J7, CARGO DOOR FWD

      S 014-004
      (3) Remove the door lining.

   C. Remove the Pull-in Hook

      S 214-005
      (1) Make sure the latch and hook mechanism is in the fully latched position.

      NOTE: In the fully latched position, the stop lever, which is forward of the latch/hook actuator, almost touches the upper stop bolt.

      S 824-006
      (2) Do not change the length of the pushrod that is attached to the bellcrank.

      S 014-007
      (3) To get more access to the pull-in hook, remove the applicable access cover 821C (forward) or 821H (aft).

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S 034-008
(4) Remove the bolt, nut, and washer that hold the hook fitting to the bellcrank.

S 224-031
(5) Write the position that the hook fitting and the bellcrank align for the subsequent installation.

S 024-009
(6) Move the hook fitting until it is free of the splines on the bellcrank.

S 024-010
(7) Move the hook fitting out of the bearing on the door frame. Keep the thrust rings that are between the hook fitting and the bellcrank for the subsequent installation.

D. Remove the Pull-in Pin

S 494-011
(1) Put an applicable screwdriver in the end of the pull-in pin.

S 034-012
(2) Remove the lining in the area of the pull-in pin.

S 034-013
(3) Remove the nut that holds the pull-in pin to the pull-in pin fitting (View C-C). Do the steps that follow:
(a) Do not remove the four bolts that attach the pull-in pin fitting.

NOTE: If you remove the four bolts that attach the pull-in pin fitting, adjustment is necessary.

(b) Keep the nut, washers, and spacers for the subsequent installation. Write the size and location of the spacers on the pull-in pin.

S 024-014
(4) Move the pull-in pin out of the pull-in pin fitting on the fuselage frame.

TASK 52-33-10-404-033

3. Install the Pull-in Hooks and Pins (Fig. 401)

A. Consumable Materials
(1) D00633 Grease, Corrosion Preventive - BMS 3-33 (Preferred)
(2) D00015 Grease, Corrosion Preventive - BMS 3-24 (Alternate)

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B. References
(1) 52-33-00/501, Large Forward Cargo Door

C. Access
(1) Location Zone
821 Forward Cargo Door

D. Install the Pull-in Hook

S 644-016
(1) Lubricate the splines on the hook fitting and the bellcrank with the grease.

S 434-017
(2) Install the thrust rings on the bellcrank.

S 424-018
(3) Move the hook fitting through the bearing on the door frame.

S 034-019
(4) Connect the hook fitting and the bellcrank and align the bolt holes in the two parts.

NOTE: The bolt holes are aligned in only one position of the splines.

S 034-020
(5) Install the bolt, nut and washer that hold the hook fitting and the bellcrank.

S 034-021
(6) Tighten the bolt.

S 224-022
(7) Make sure the movement of the end of the hook fitting and the bellcrank assembly is 0.010 to 0.030 inch.

S 824-023
(8) Add or remove the thrust rings to decrease or increase the movement of the end of the hook fitting and the bellcrank assembly.

E. Install the Pull-in Pin

S 434-024
(1) Install the spacers on the pull-in pin in the correct locations.

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S 424-025
(2) Move the pin through the pull-in pin fitting on the body frame.

S 434-026
(3) Install the washer and the nut on the pull-in pin (View B-B).

S 434-027
(4) Tighten the nut to 170-240 pound-inches (View B-B).

S 224-028
(5) Make sure the end of the pull-in pin is 2.49 ±0.03 inch from the fuselage frame.

S 864-029
(6) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO
(b) 34J7, CARGO DOOR FWD

S 824-030
(7) If it is necessary to adjust the pull-in hook, do the adjustment procedure (Ref 52-33-00).

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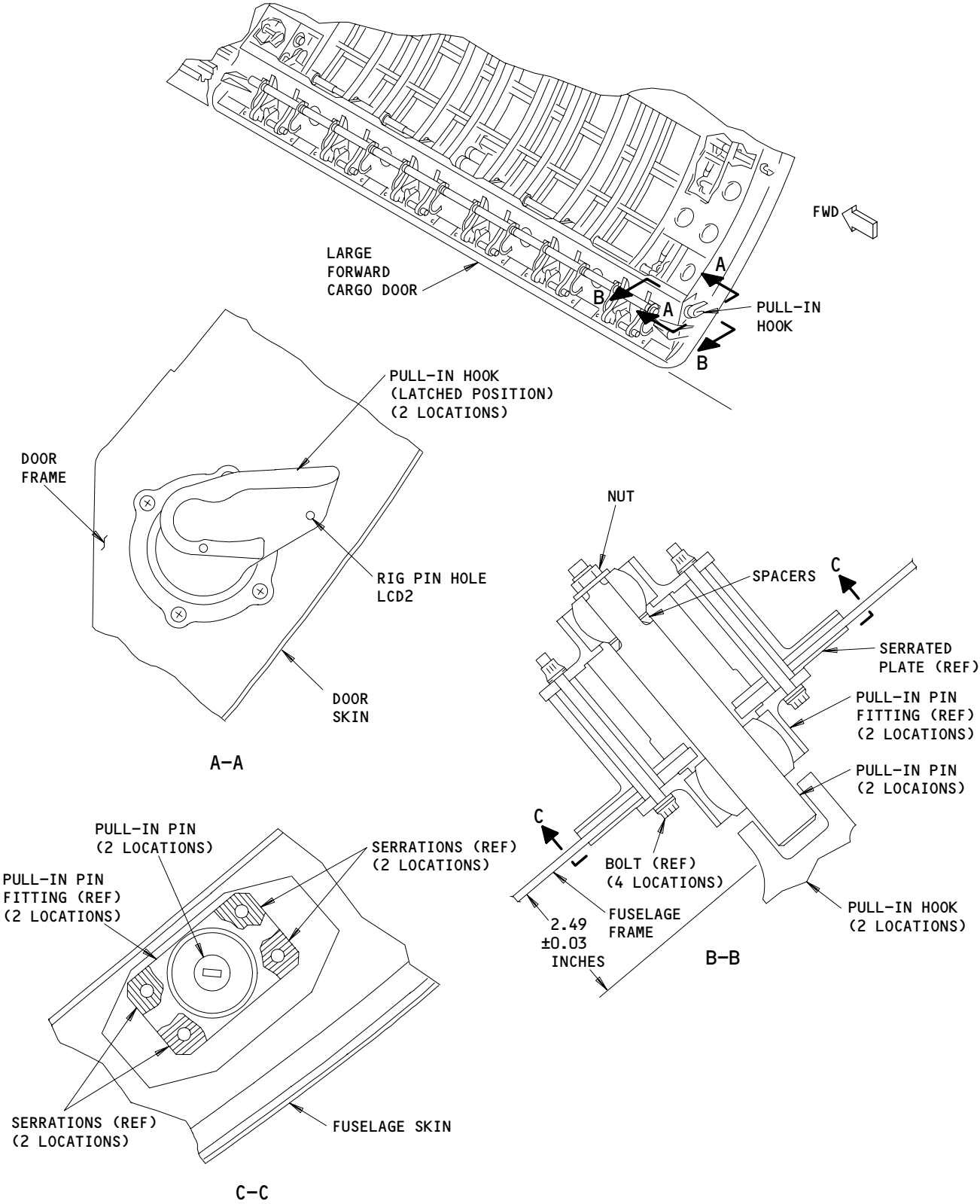

Pull-In Hooks and Pins
Figure 401

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LARGE FORWARD CARGO DOOR CONTROL SWITCHES - REMOVAL/INSTALLATION

1. General
   A. This procedure contains four tasks.
      (1) The first task is the removal of the external cargo door control switch, S511, the door open light, L597, or the door close light, L599, from the external cargo door control panel, P43.
      (2) The second task is the removal of the internal door control switch, S411, from the cargo handling accessory panel, P35.
      (3) The third task is the installation of the external cargo door control switch, S511, the door open light, L597, or the door close light, L599, on the external cargo door control panel, P43.
      (4) The fourth task is the installation of the internal door control switch, S411, on the cargo handling accessory panel, P35.
   B. The cargo door control switches are found in the latch lock handle housing on the external cargo door control panel, P43, and on the cargo handling accessory panel, P35.
   C. The door open light and door close light are found in the latch lock handle housing on the external cargo door control panel, P43.

TASK 52-33-11-004-040

2. Remove the External Cargo Door Control Switch, S511, Door Open Light, L597, or Door Close Light, L599 (Fig. 401)
   A. Access
      (1) Location Zone
          821 Forward Cargo Door

   B. Procedure

      S 864-002
      (1) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
          (a) 34J4, CONT DOOR CARGO
          (b) 34J7, CARGO DOOR FWD

      S 014-003
      (2) Open the latch lock handle.

      S 014-004
      (3) Open the cargo door.

      S 034-005
      (4) Remove the four screws that hold the external cargo door control panel, P43, to the latch lock handle housing.

      S 034-006
      (5) Pull the external cargo door control panel outboard to get access to the cargo door control switch or light.

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S 034-007
(6) Remove the wires from the cargo door control switch or light. Write the terminal number location of the wires for the subsequent installation.

S 034-008
(7) Loosen and remove the locknut.

S 024-009
(8) Remove the cargo door control switch or light from the panel.

TASK 52-33-11-004-041

3. Remove the Internal Door Control Switch, S411 (Fig. 402)

A. Access

(1) Location Zone
821 Forward Cargo Door

B. Procedure

S 864-011
(1) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
(a) 34J4, CONT DOOR CARGO
(b) 34J7, CARGO DOOR FWD

S 014-012
(2) Open the latch lock handle.

S 014-013
(3) Open the cargo door.

S 014-014
(4) Remove the applicable panel to get access to the door control switch.

S 034-015
(5) Remove the wires from the door control switch. Write the switch terminal number location of the wires for the subsequent installation.

S 034-016
(6) Loosen and remove the locknut.

S 024-017
(7) Remove the door control switch from the panel.

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TASK 52-33-11-404-042

4. Install the External Cargo Door Control Switch, S511, the Door Open Light, L597, or the Door Close Light, L599 (Fig. 401)

A. Equipment

(1) Bonding Meter - Microhm, Type 2 Bonding Meter
Avtron Model T477W, Avtron Manufacturing Inc.,
Cleveland, Ohio

B. References

(1) 20-10-21/401, Bonding Jumper and Ground Leads

C. Access

(1) Location Zone
821 Forward Cargo Door

D. Procedure

S 424-019

(1) Install the cargo door control switch or light in the external cargo door control panel, P43.

S 424-051

(2) Put the cargo door control switch or light in the correct position.

S 434-021

(3) Install the locknut on the cargo door control switch or light.

S 434-022

(4) Tighten the locknut.

S 434-023

(5) Connect the wires to the cargo door control switch or light.

S 434-052

(6) Apply BMS5-37 sealant to the door control switch or light terminals.

S 414-024

(7) Put the external cargo door control panel, P43, in the latch lock handle housing.

S 434-025

(8) Install the four screws that hold the external cargo door control panel to the latch lock handle housing.

S 434-026

(9) Tighten the screws.

S 764-027

(10) Use the bonding meter to make sure the electrical bond between the cargo door control switch or light and the external cargo door control panel, P43, is not more than 0.0025 ohm.

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S 144-028
(11) If the bonding resistance is more than 0.0025 ohm, do the steps that follow:
(a) Remove the cargo door control switch or light from the external cargo door control panel.
(b) Clean the bonding surface (Ref 20-10-21).
(c) Install the cargo door control switch or light.
(d) Do a check on the electrical bond again.

TASK 52-33-11-404-043

5. Install the Internal Door Control Switch, S411 (Fig. 402)
A. Access
(1) Location Zone
821 Forward Cargo Door

B. Procedure

S 424-030
(1) Install the door control switch in the panel.

S 434-031
(2) Install the locknut on the door control switch.

S 434-032
(3) Tighten the locknut.

S 434-033
(4) Connect the wires to the door control switch.

S 434-034
(5) Install the panel with the door control switch.

TASK 52-33-11-864-044

6. Put the Airplane Back to its Usual Condition
A. References
(1) 24-22-00/201, Electrical Power - Control
B. Access
(1) Location Zone
821 Forward Cargo Door

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C. Procedure

S 864-036
(1) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO
(b) 34J7, CARGO DOOR FWD

S 864-037
(2) Supply electrical power.

S 714-038
(3) Operate the cargo door electrically. Make sure the door operates correctly.

S 864-039
(4) Remove electrical power if it is not necessary (Ref 24-22-00).

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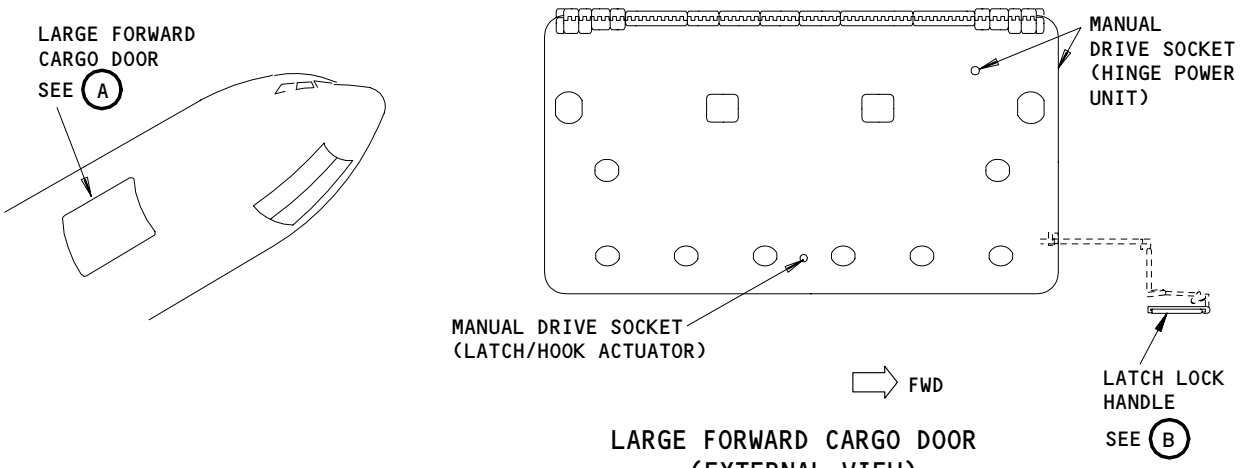
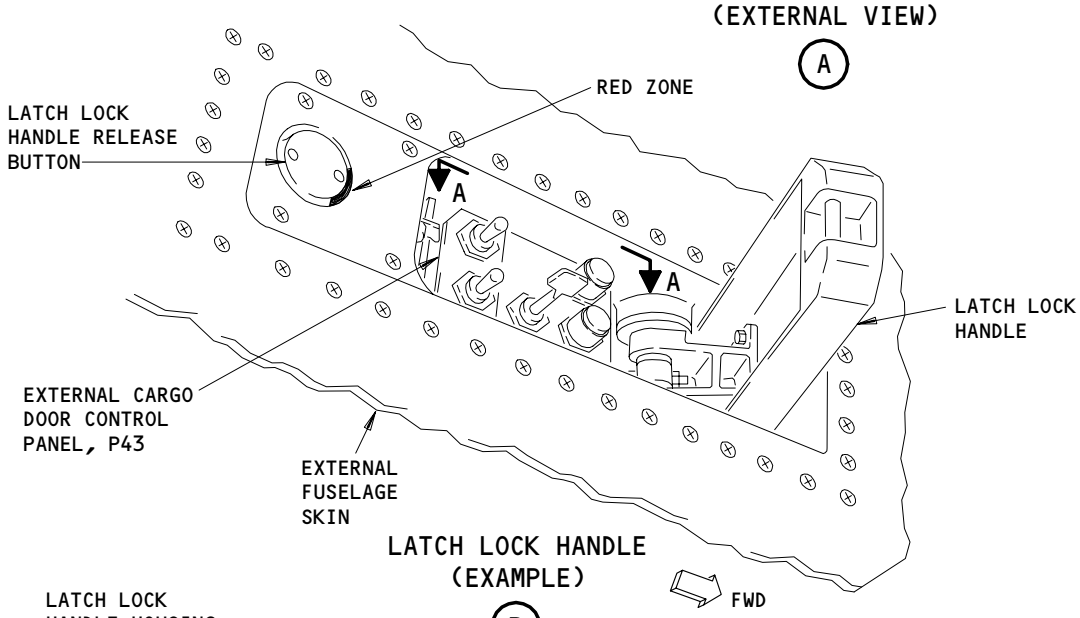


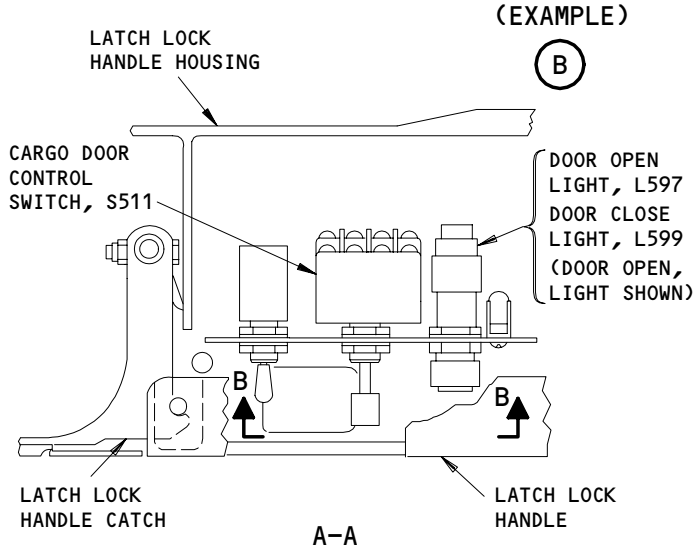
LARGE FORWARD CARGO DOOR
(EXTERNAL VIEW)

A

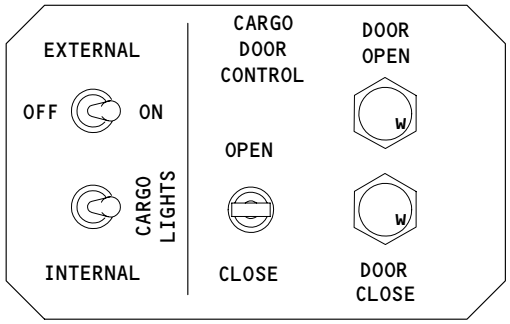


LATCH LOCK HANDLE
(EXAMPLE)

B



A–A



EXTERNAL CARGO DOOR CONTROL
PANEL, P43 (EXAMPLE)
B–B

External Cargo Door Control Switch
Figure 401

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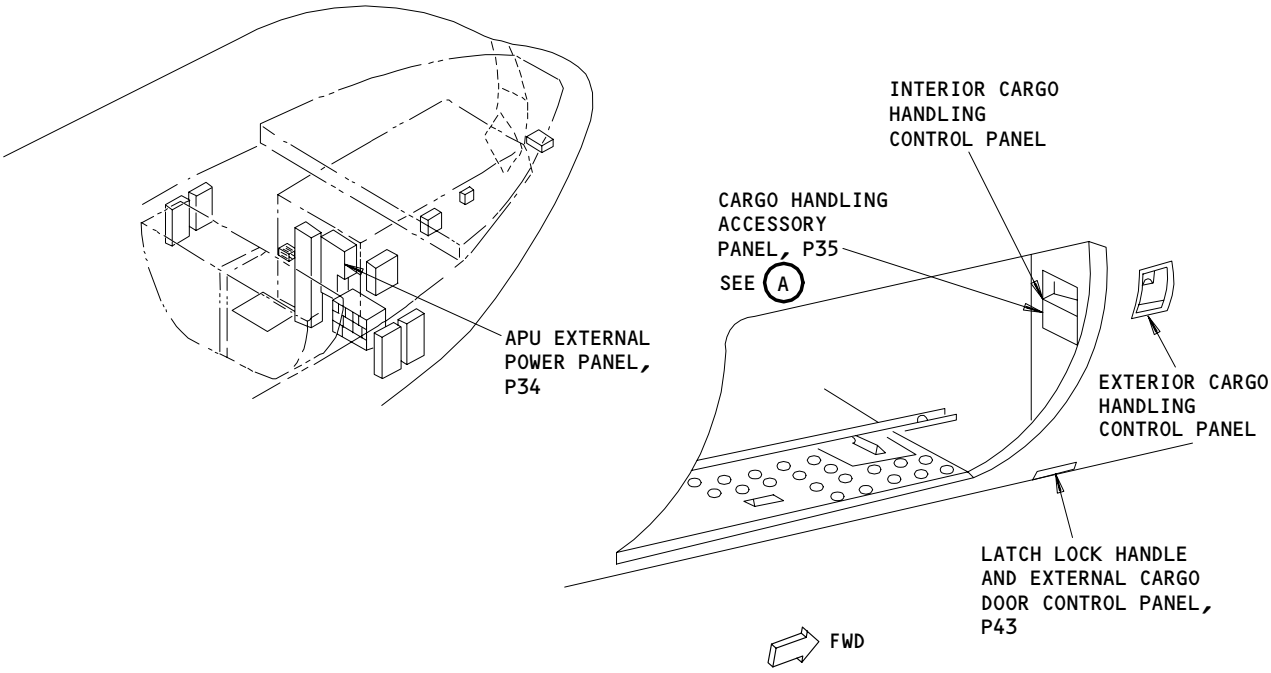
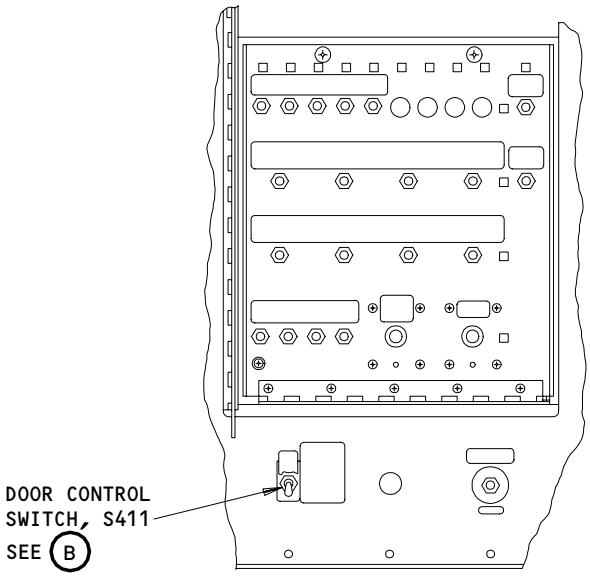
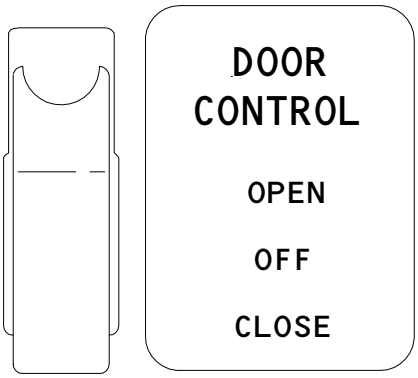




CARGO HANDLING ACCESSORY PANEL, P35

A



DOOR CONTROL SWITCH, S411

B

Internal Door Control Switch
Figure 402

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AFT CARGO DOOR - DESCRIPTION AND OPERATION

1. General
   A. The aft cargo door is located on the lower right side of the fuselage (Fig. 1). It is an outward opening door, approximately 70-inches wide by 69-inches high.
   B. Cabin pressure loads on the door are absorbed by stops on each side of the door. A pressure seal is installed around the door to prevent pressure loss when the door is in the closed position.
   C. The door is normally operated electrically, from controls inside or outside the cargo compartment. An auxiliary manual drive permits door operation from outside without electrical power.
   D. The cargo door has two guide rollers on each side of the door. They guide the door in and out of the latched and lifted positions. The rollers engage guide tracks on body frames next to the door.
   E. The cargo door has one latch roller on each side of the door. The latch rollers hold the vertical position of the door and latch the door through the lift/latch mechanism.
   F. Cabin pressure door loads are transferred to the fuselage through ten stop fittings on each side of the door and 3 hook-stop fittings at the top and bottom of the door. Ditching fittings are installed at every other stop fitting on the aft cargo door to absorb additional loads in case of ditching.
   G. Aerodynamic fair is maintained along the sides, top and bottom of the door by the above stop and hook-stop fittings.
   H. A pressure seal is installed around the door to prevent pressure loss when the door is in the closed position.
   I. For more details on the Standard Aft Cargo Door Control system, refer to these wiring diagrams and functional schematics.
      SSM 52-35-01: STANDARD AFT CARGO DOOR CONTROL
      WDM 52-35-11: AFT CARGO DOOR - POWER
      WDM 52-35-12: AFT CARGO DOOR - CONTROL
      WDM 52-35-13: AFT CARGO DOOR - SENSORS
2. Component Details
   A. Lift Latch Mechanism (Fig. 2)
      (1) The lift/latch mechanism completes final closing and latching of the door from the door lifted position in door close operation. The lift/latch mechanism unlatches and lifts the door to the lifted position. However, the latter can only be accomplished by operation of the vent door mechanism, if the fuselage pressurization differential is below ± 0.4 psi.

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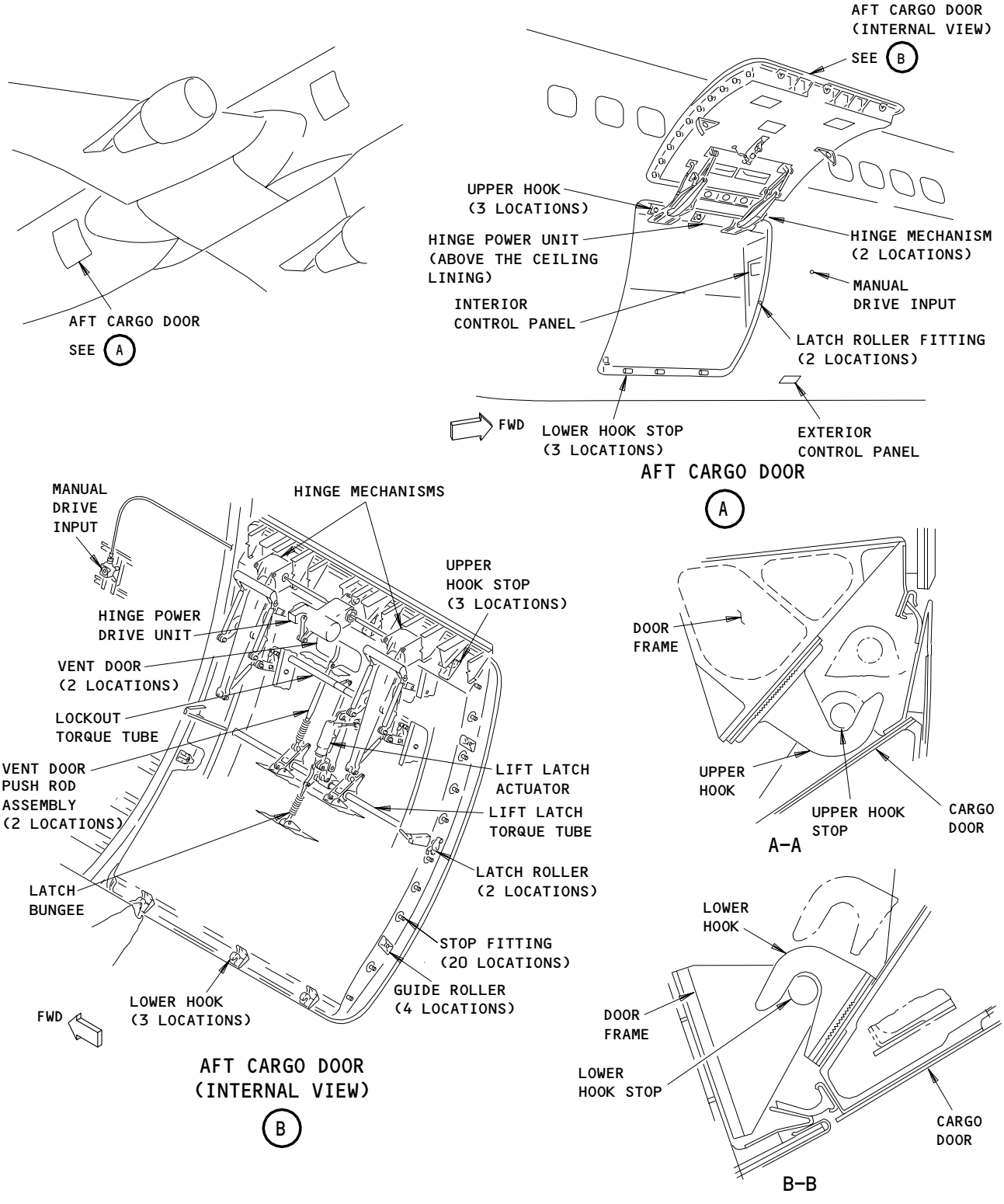

Aft Cargo Door
Figure 1

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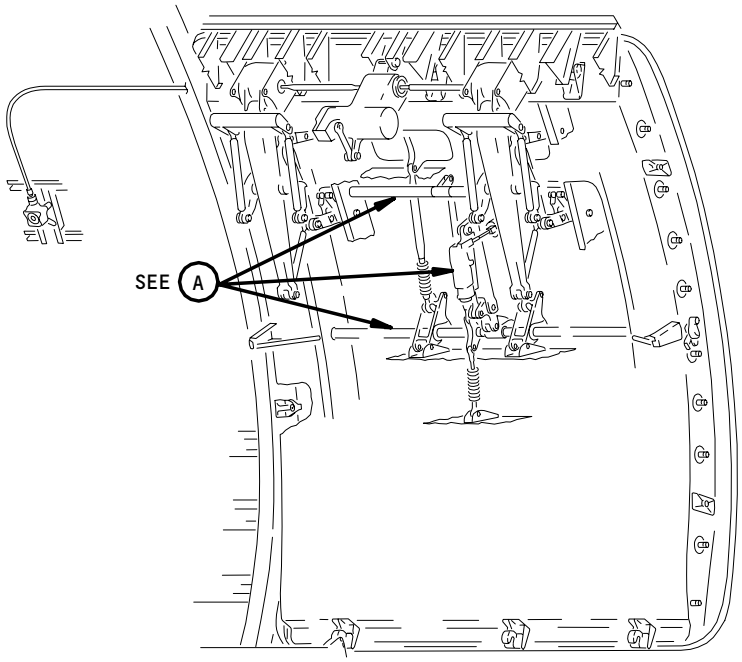

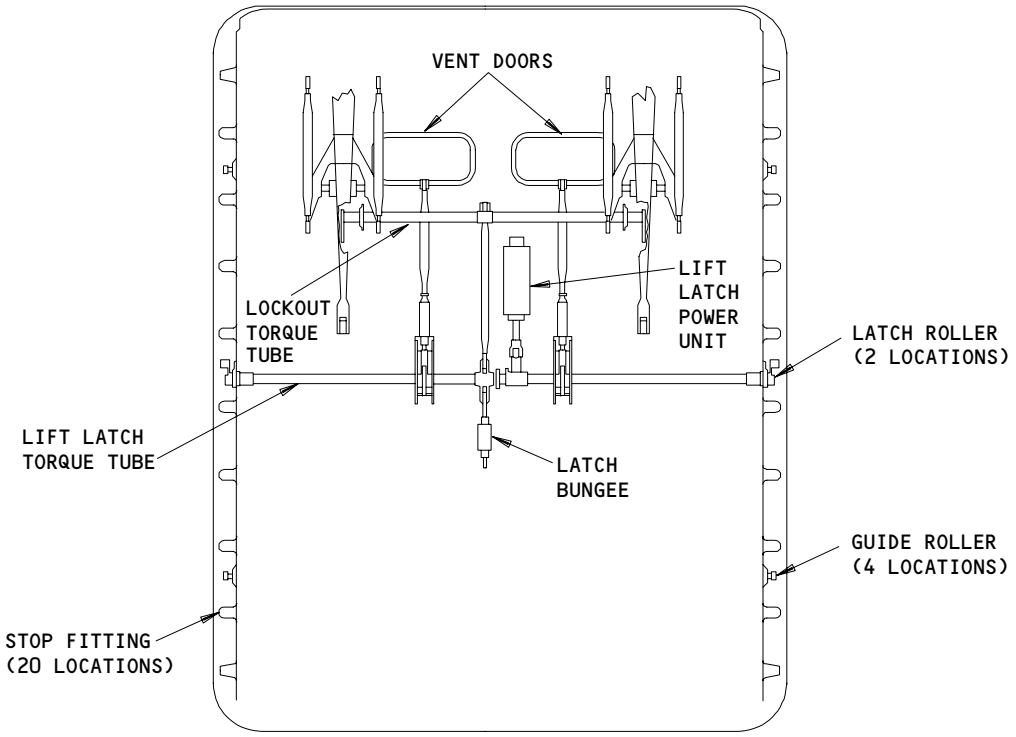

A

Lift Latch Mechanism
Figure 2

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(2) The lift/latch mechanism consists of a power unit, a lift/latch torque tube, two latch cranks, a latch bungee, and latch tracks on the body frame at each side of the door. The power unit rotates the lift/latch torque tube, and the latch cranks on each end of it. With the door closed or in the door lifted position, the latch crank rollers are trapped in latch tracks on the body frames. From the door closed and latched position, rotation of the torque tube causes the latch cranks to lift the door until the lift lockout and lockout upstop cams engage the lift rollers. Engagement of the lift rollers disengages the latch cam rollers from the latch tracks. The lift lockout and lockout upstop cams then lift and lock the door in the door lifted position.

(3) The lift latch mechanism also includes a lift lockout mechanism, and a vent door mechanism. These two mechanisms are described in more detail later.

B. Lift Lockout Mechanism (Fig. 3)

(1) The lift lockout mechanism is part of the lift/latch mechanism. Its purpose is to keep the door in the lifted position when the door is unlatched and to provide additional vertical restraint when the door is latched.

(2) The mechanism consists of a lockout upstop cam, a lift lockout torque tube, and a pushrod. The pushrod causes the lift lockout torque tube to rotate with the lift latch torque tube. The lift lockout and lockout upstop cams engage lift rollers on the hinge mechanism to keep the door in the lifted position when the latch cams disengage latch tracks as the door opens.

C. Vent Door Mechanism (Fig. 4)

(1) The vent door mechanism prevents pressurization of the airplane if the door is not latched, prevents opening of the door if the airplane is pressurized above a predetermined pressure and provides negative pressure relief for the fuselage.

(2) The mechanism contains two vent doors, each of which is connected by a spring-loaded pushrod to a bellcrank with cam follower rollers. Cams on the lift/latch torque tube are in constant contact with the bellcrank rollers. As the torque tube rotates, the cams pull the vent doors open, or push them closed, as the cargo door is unlatched or latched.

D. Hinge Mechanism (Fig. 5)

(1) The hinge mechanism opens the door after it has been lifted from the latched position, and closes the door to the lifted position.

(2) The mechanism consists of two mechanical linkages on the door, and a hinge power drive unit, drive shaft, and two rotary actuators in body structure above the door. Each mechanical linkage has a hinge arm, programming rod, scissors link, and other rods and links. The hinge arms are bolted to the rotary actuators to rotate with them. When the hinge power drive unit drives the rotary actuators, the hinge arms rotate to open the door. The hinge arm and links form a pantograph linkage that enables the door to be opened higher than if the door were connected solidly to the hinge arm.

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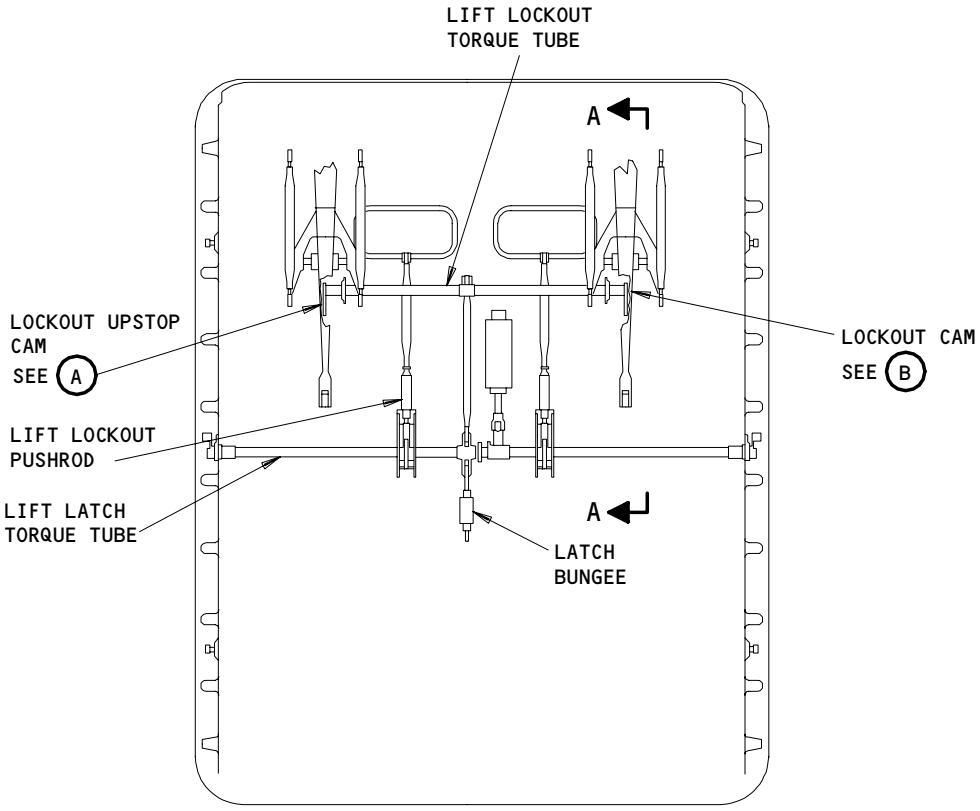
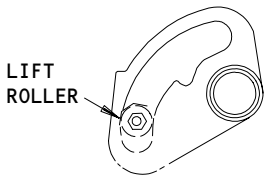
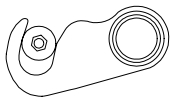


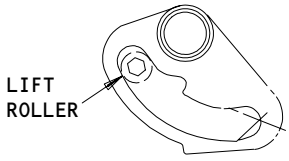
INBOARD LOOKING OUTBOARD



DOOR LIFTED



DOOR LIFTED



DOOR LATCHED

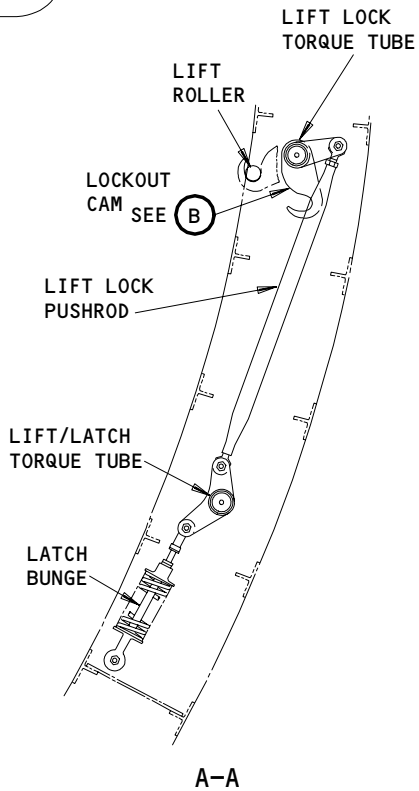
LOCKOUT UPSTOP CAM

A

DOOR LATCHED

LOCKOUT CAM

B



A-A

Lift Lockout Mechanism
Figure 3

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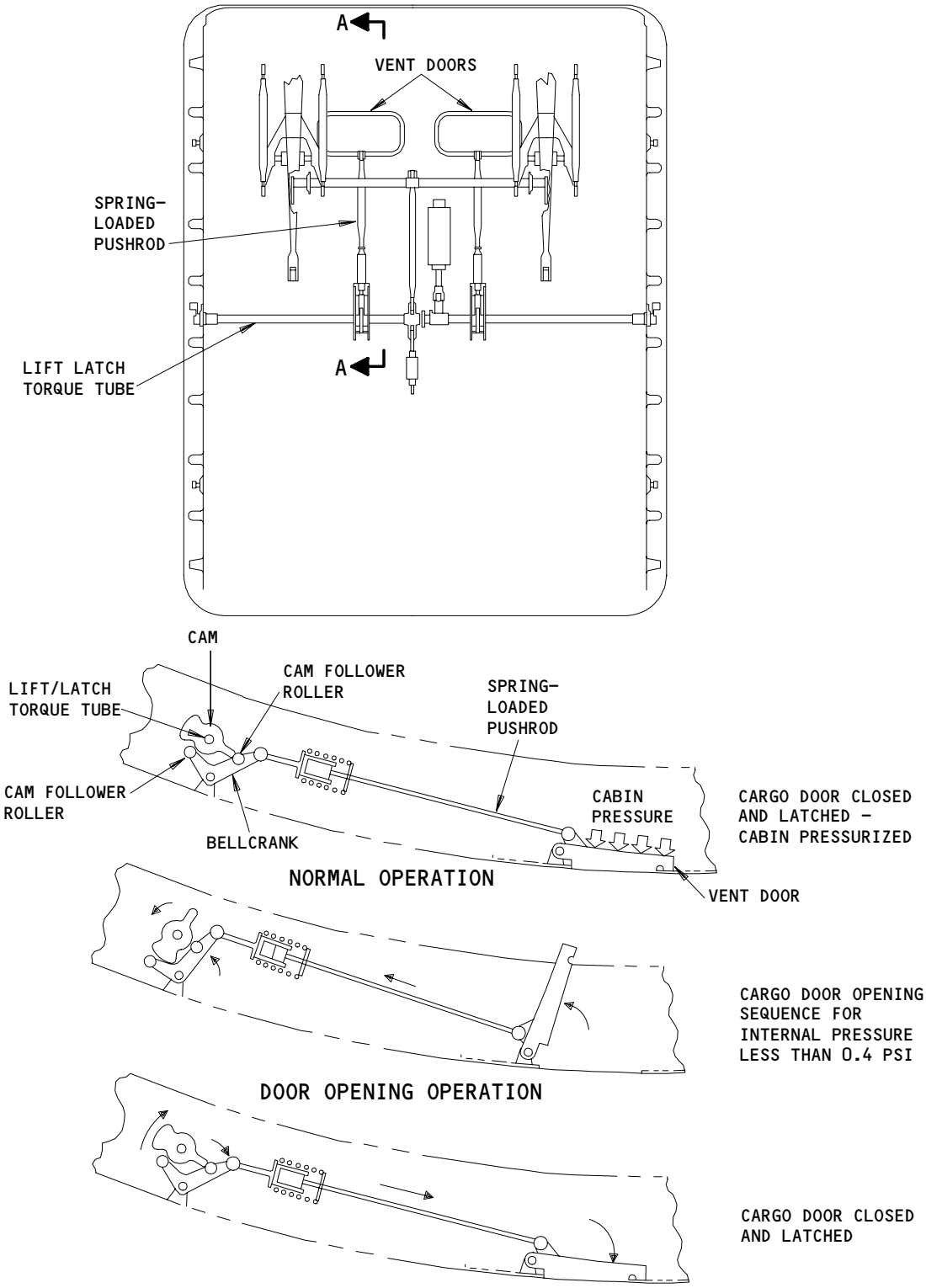

A-A
Vent Door Mechanism
Figure 4

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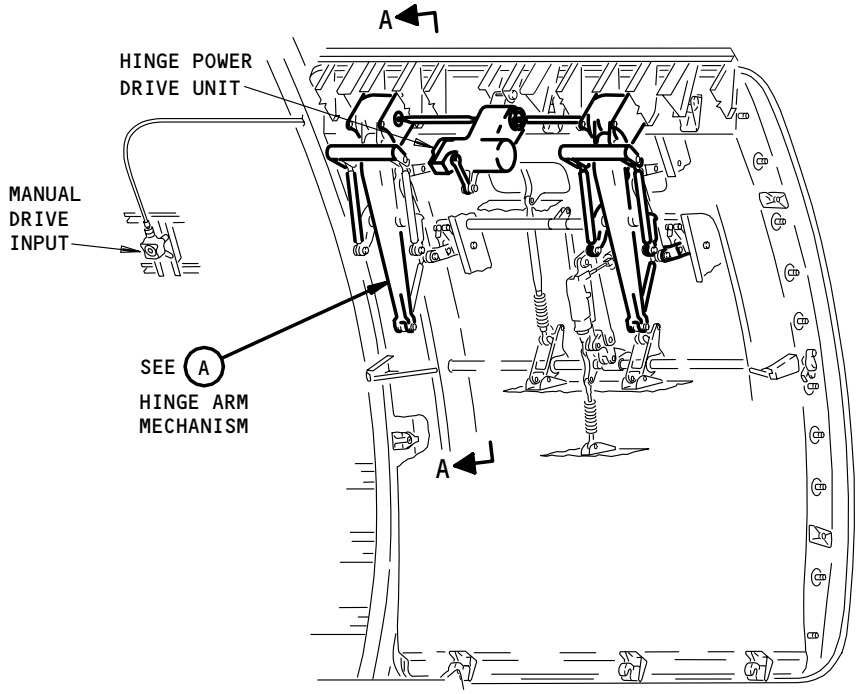

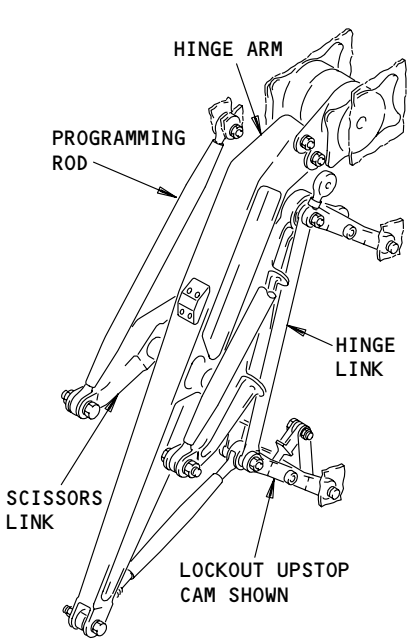

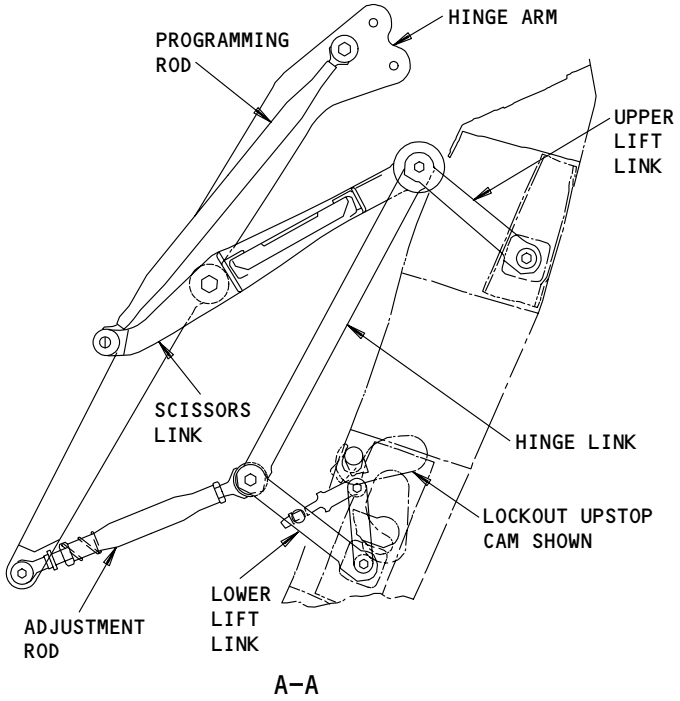

Hinge Mechanism
Figure 5

36693
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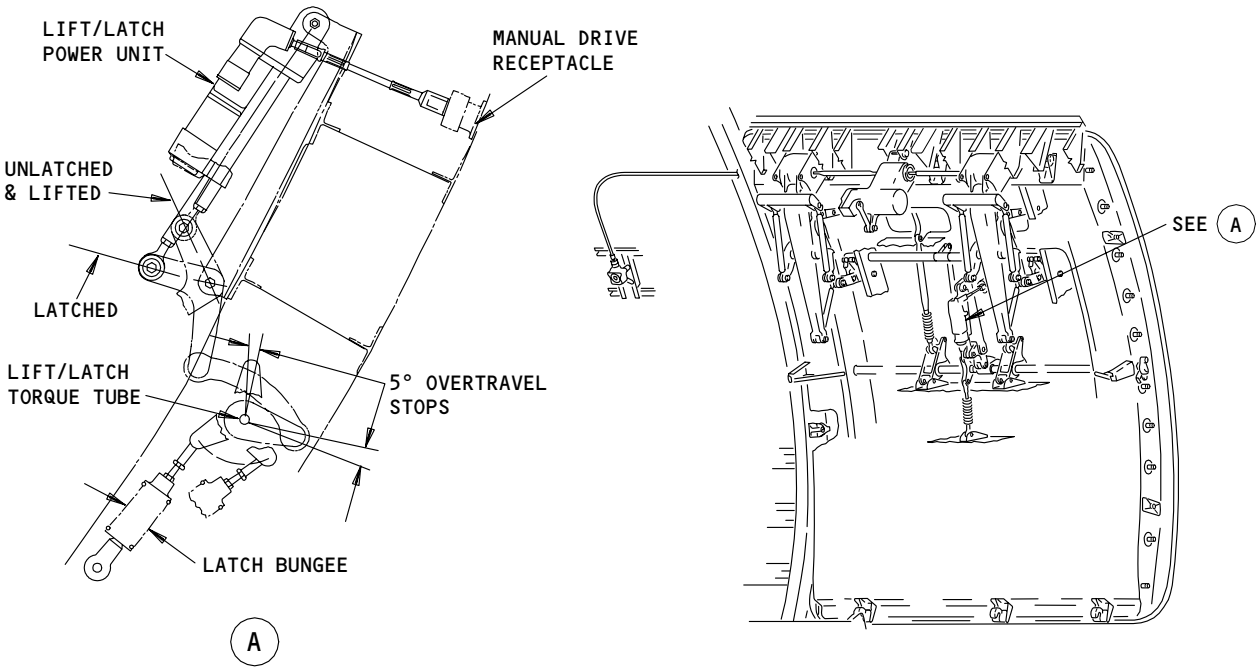
E. Lift/Latch Power Unit (Fig. 6)
   (1) Lift/latch power is provided by a 3-phase, 115-volt ac, 400 Hz electric-motor-driven, linear-actuating power unit. It has a manual drive receptacle for manual operation when electric power is not available. The lift/latch power unit rotates the lift/latch torque tube to lift the door clear of the stops and guide pins, freeing the door for opening.

F. Hinge Power Drive Unit (Fig. 7)
   (1) The hinge power drive unit installed in body structure above the door contains a 115v ac, 3-phase, 400 Hz electrical motor and reduction gearbox. The hinge power drive unit has an internal brake which is applied when electrical power is off. The hinge power drive unit also has a manual drive receptacle for manual operation when electrical power is not available. The manual drive bypasses the internal brake. To prevent an overload in a door jammed condition, the hinge power drive unit has a limited-slip differential between the two output shafts.



Lift Latch Power Unit
Figure 6

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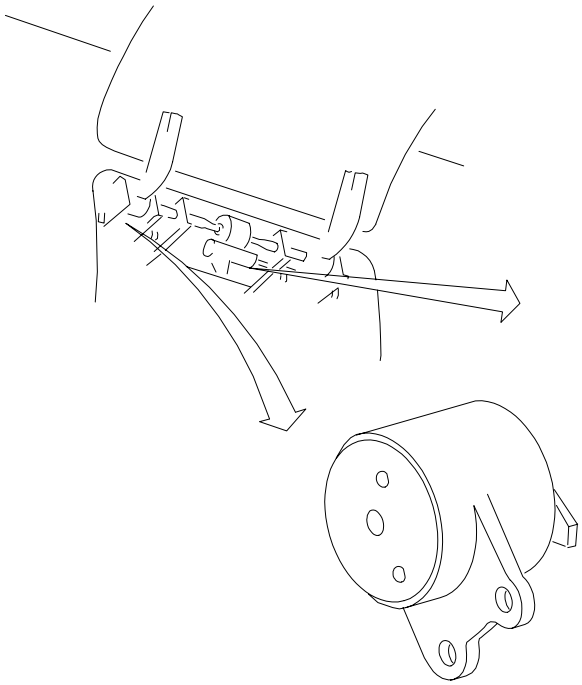
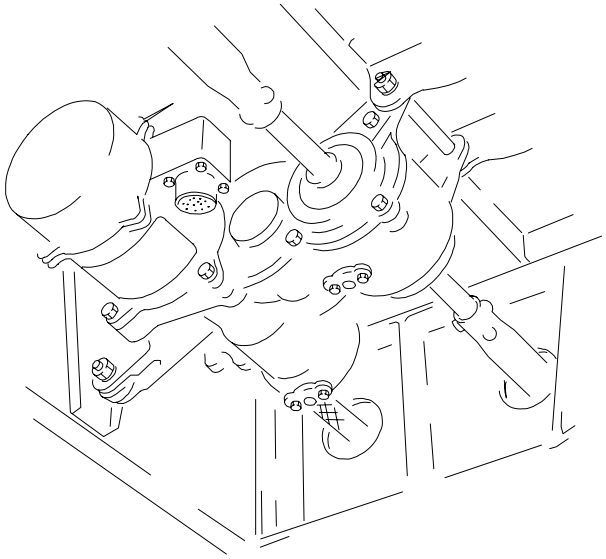
G. Rotary Actuator (Fig. 7)
   (1) Two rotary actuators are installed in body structure above the door, one at each side of the door. Each actuator drives a hinge arm and mechanical linkage attached to the door. The rotary actuators are multi-stage planetary gearbox units with an input-to-output ratio of approximately 250:1. The 250:1 input to output gear ratio of the rotary actuators prevents cargo doors from accidentally falling shut.

H. Cargo Door Sensors (Fig. 8)



ROTARY ACTUATOR (2 PLACES)



HINGE POWER DRIVE UNIT

Hinge Power Drive Unit and Rotary Actuator
Figure 7

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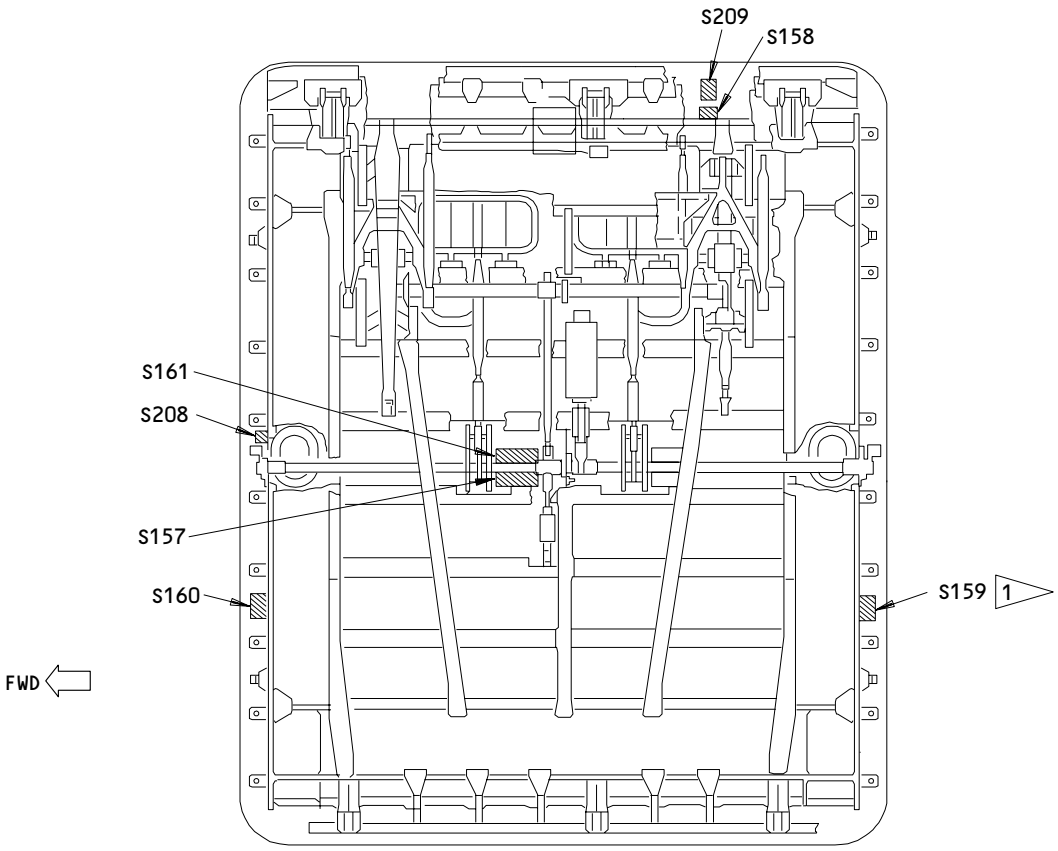

AFT CARGO DOOR PROXIMITY SENSORS		
NOMENCLATURE	EQUIPMENT NO.	SENSOR FUNCTION
AFT CARGO DOOR LIFT RANGE PROX SENSOR	S157	CONTROL SEQUENCING
AFT CARGO DOOR OPEN PROX SENSOR	S158	CONTROL SEQUENCING
AFT CARGO DOOR DOWN NO. 1 PROX SENSOR	S159	CONTROL SEQUENCING
AFT CARGO DOOR DOWN NO. 2 PROX SENSOR	S160	CONTROL SEQUENCING
AFT CARGO DOOR LATCHED PROX SENSOR	S161	CONTROL SEQUENCING
AFT CARGO DOOR LOCKED PROX SENSOR	S208	DOOR WARNING
AFT CARGO DOOR CLOSED PROX SENSOR	S209	DOOR WARNING

NOTES: PROXIMITY SENSORS S208 AND S209 ARE PART OF THE DOOR WARNING SYSTEM. REFER TO 52-71-00 FOR DATA ON THE DOOR WARNING SYSTEM.

ON 767-300 AIRPLANES, PROXIMITY SENSOR S159 IS NOT INSTALLED.

1 PROXIMITY SENSOR S159 HAS A STEEL TARGET PERMANENTLY INSTALLED AND DOES NOT OPERATE.

Aft Cargo Door Proximity Sensors
Figure 8

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(1) 767-200 AIRPLANES;
there are seven electrical proximity sensors on the aft cargo door. Two of these are warning sensors and activate door warning indications. The warning sensors are: Aft Door Closed (S209), and Aft Door Locked (S208). For more data on the door warning system refer to 52-71-00.

(2) 767-300 AIRPLANES;
there are six electrical proximity sensors on the aft cargo door. Two of these are warning sensors and activate door warning indications. The warning sensors are: Aft Door Closed (S209), and Aft Door Locked (S208). For more data on the door warning system refer to 52-71-00.

(3) 767-200 AIRPLANES;
there are five control sequencing sensors: Lift Range (S157), door open (S158), door down No. 1 and No. 2 (S159 and S160), and door latched (S161).

(4) 767-300 AIRPLANES;
there are four control sequencing sensors: Lift Range (S157), door open (S158), door down No. 1 and No. 2 (S159 and S160), and door latched (S161).

(5) The specific function of each proximity sensor is as follows:
(a) S157 - controls shutoff of lift/latch power unit when lifting.
(b) S158 - controls shutoff of hinge power unit when aft cargo door is fully open and transfers electrical power to the cargo handling system.
(c) S160 - controls shutoff of hinge power unit when aft cargo door is in closed position.
(d) S161 - controls shutoff of lift/latch power unit when latching.
(e) S208 - indicates when the aft cargo door is latched.
(f) S209 - indicates when the aft cargo door is in the fuselage cutout.

(6) Proximity sensor S159 has a steel target permanently installed and does not operate.

I. Manual Drive Mechanisms (Fig. 9)

(1) The lift/latch power unit manual drive is a flexible shaft connected between the power unit and a receptacle on the door outer skin.

(2) The hinge power drive unit manual drive has a gearbox and receptacle in the body skin forward of the door. A flexible shaft runs from the gearbox through floor beams above the door to the hinge power drive unit.

(3) Both manual drive receptacles require 3/8-inch square drive tools. The manual drives can be used to operate the power units manually in case of electrical failure.

3. Operation

A. Functional Description

(1) The doors are normally electrically operated, but can be manually operated in case of electrical failure.

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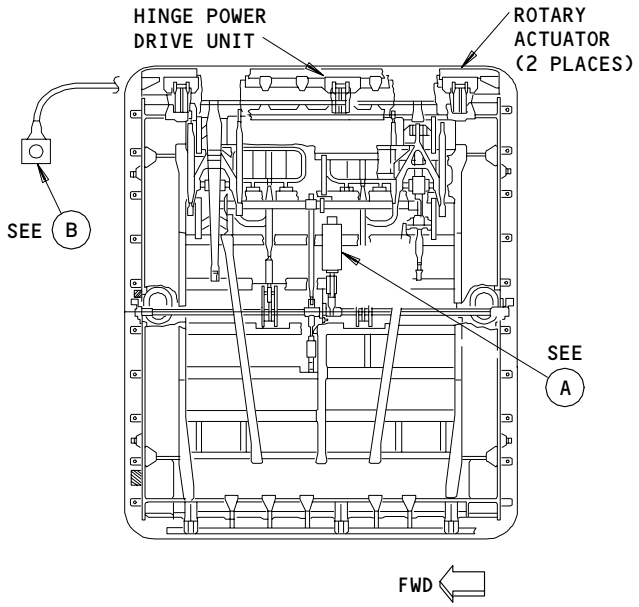
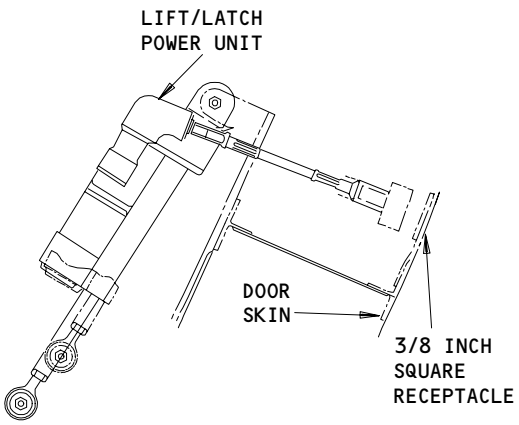
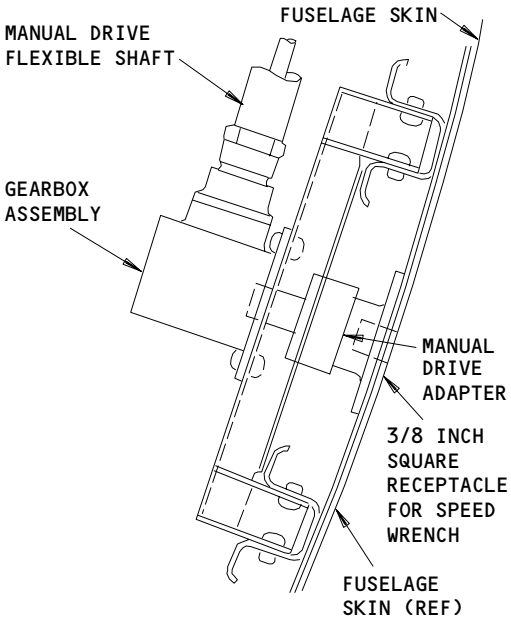


AFT CARGO DOOR



LIFT/LATCH POWER UNIT
A



MANUAL DRIVE RECEPTACLE
B

Manual Drive Mechanisms
Figure 9

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(2) Mechanical sequencing of aft cargo door is as follows:
  (a) The vent doors are driven by the lift/latch torque tube and begin to open first to relieve compartment pressure. Further rotation of the torque tube unlatches and lifts the door to clear hooks and stops. The weight of the door is then transferred to the hinge assembly, and is raised to the open position by the hinge drive mechanism.
  (b) Closing and latching of door is the reverse of this sequence.
(3) When the cargo door is latched in unpressurized condition, all stop fittings will be in contact behind but not touching their respective stop pads on the fuselage. The upper and lower hooks will be hooked over their stops. The guide rollers will be at the bottom of their tracks. The latch rollers and lift/latch torque tube will be rotated to the latched and locked position. The vent doors will be closed.
(4) Door Opening

CAUTION: DO NOT OPERATE DOOR IN WINDS EXCEEDING 40 KNOTS OR LEAVE DOOR OPEN IN WINDS EXCEEDING 65 KNOTS

  (a) With the door closed and latched, holding the arming switch on the inside or outside control panel in ARM provides power to the door control switch.
  (b) Holding the door control switch in OPEN sequences power through the lift/latch up relay to the lift/latch power unit. The power unit drives the lift/latch torque tube through a bellcrank and link, causing the torque tube to rotate. Lift/latch cranks on both ends of the torque tube acting through rollers engaging tracks on the fuselage door frame, cause the door to lift as the torque tube rotates.
  (c) The vent doors are driven by push rods from the lift/latch torque tube. During cabin pressurization, the doors are closed to retain cabin pressure. In the event of a negative differential pressure in flight the doors open (against a spring on the push rod) to equalize inside and outside pressure. When the lift/latch torque tube begins to rotate, the vent doors are pulled open before any unlatching action occurs. If residual cabin pressure is present, the vent doors will not open, and the lift/latch power unit will stall and prevent door unlatching. Cabin pressure will have to be relieved through outflow valves if this condition occurs on the ground.

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(d) The lift lockout torque tube is driven by a push rod from the lift/latch torque tube. As the lift/latch torque tube rotates lifting the door, the lift lockout torque tube rotates the lockout and lockout up stop cams. These cams engage their respective clevis rollers disengaging the latch crank rollers from the latch tracks. This action transfers the weight of the door to the hinge assembly through the lift links. Full rotation of the lockout and lockout upstop cams locks the door in the lifted position. This also locks lift links and hinge links in position with respect to the door.

(e) When the door is unlatched and lifted (approximately two inches) to clear stops, the lift range proximity sensor is actuated by its target, causing the door lift/latch up relay to open. This removes power from the lift/latch power unit and transfers power through the door hinge up relay to the hinge power drive unit.

(f) The hinge power drive unit drives the rotary actuators through drive shafts to open the door.

(g) The rotary actuators rotate the hinge arms and drive the door open through the scissor links, adjustable rods, hinge links, and lift links. Two program rods per hinge arm are attached to ceiling structure and to the scissor links. (The program rods also prevent twisting of the hinge assembly and assure proper alignment of door in the frame during closing).

(h) When the door is fully open, the door open proximity sensor is near its target, causing the door hinge up relay to open. This removes power from the hinge power drive unit when the door is fully open and applies power to the cargo handling system.

B. Install safety barrier (A52005-18) across cargo door opening if work will be done near open door.

(1) Door Closing

NOTE: Mechanical operation is the reverse of door opening. The following describes electrical sequencing during door closure.

CAUTION: DO NOT OPERATE DOOR IN WINDS EXCEEDING 40 KNOTS OR LEAVE DOOR OPEN IN WINDS EXCEEDING 65 KNOTS

(a) With the door fully open, holding the arming switch on control panel in ARM position provides power to the door control switch.

(b) Holding the door control switch in the CLOSE position removes power from the cargo handling system, and sequences power through the door hinge down relay to the hinge power drive unit. The hinge power drive unit then drives the rotary actuators to lower the door.

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(c) When the door is lowered to where lift/latch and guide rollers engage tracks on the fuselage door frames, the door down No. 1 and No. 2 proximity sensors are actuated by their targets. This causes the door hinge down relay to open and remove power from the hinge power drive unit. At the same time, the lift/latch down relay closes to provide power to the lift/latch power unit to lower and latch the door.

(d) When the door is closed and latched, the door closed proximity sensor is actuated by its target, causing the lift/latch down relay to open and remove power from the lift/latch power unit.

(e) Door is now closed and latched and door control switch and arm switch should be placed in off position.

(2) Manual Operation

(a) The lift/latch receptacle drives the lift/latch power unit through a flexible drive shaft. To unlatch and lift the door, the receptacle is rotated in the door lift direction. To lower and latch the door, the receptacle is driven in the door latch direction. With door unlatched and lifted, the hinge can be manually driven. The square drive receptacle drives the hinge power unit through a gearbox assembly and flexible drive shaft. To raise the door open, the receptacle is rotated in the door open direction. To lower the door closed, the receptacle is rotated in the door close direction.

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AFT CARGO DOOR

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
ACTUATOR - ROTARY	2	2	822, AFT CARGO COMPARTMENT	52-35-03
ARM - HINGE	2	2	822, AFT CARGO COMPARTMENT	52-35-04
CIRCUIT BREAKERS	1		119AL, MAIN EQUIP CTR, P34	
CARGO DOOR, C361		1	34J10	*
CARGO DOOR CONTROL, C1403		1	34J4	*
LIGHT - INDICATOR, DOOR CLOSED, L600	1	1	156AR, EXT FUSELAGE CONTROL PANEL, P44	*
LIGHT - INDICATOR, DOOR OPEN, L598	1	1	156AR, EXT FUSELAGE CONTROL PANEL, P44	*
DIODE - (FIM 31-01-39/101)				
R37				
DOOR - CARGO, 822	1	1	822, AFT CARGO COMPARTMENT	52-35-01
DOOR - VENT	3	2	822, AFT CARGO DOOR	52-35-15
FLEXIBLE SHAFT - MANUAL DRIVE	2	1	822, AFT CARGO COMPARTMENT	52-35-26
MECHANISM - HINGE	2	2	822, AFT CARGO COMPARTMENT	52-35-00
MECHANISM - HINGE DRIVE	2	1	822, AFT CARGO COMPARTMENT	52-35-00
MECHANISM - LIFT/LATCH	2	1	822, AFT CARGO COMPARTMENT	52-35-00
RELAY - (FIM 31-01-39/101)				
CARGO DOOR CONTROL ARM, K40				
CARGO DOOR HINGE DOWN, K37				
CARGO DOOR HINGE UP, K36				
CARGO DOOR LIFT LATCH DOWN, K39				
CARGO DOOR LIFT LATCH UP, K38				
SENSOR - PROX, AFT CARGO DOOR DOWN NO. 1, S159 1>	5	1	822, AFT CARGO DOOR	52-35-43
SENSOR - PROX, AFT CARGO DOOR DOWN NO. 2, S160	5	1	822, AFT CARGO DOOR	52-35-43
SENSOR - PROX, AFT CARGO DOOR OPEN, S158	5	1	822, AFT CARGO DOOR	52-35-43
SENSOR - PROX, AFT CARGO DOOR LATCHED, S161	4	1	822, AFT CARGO DOOR	52-35-43
SENSOR - PROX, AFT CARGO DOOR LIFT RANGE, S157	4	1	822, AFT CARGO DOOR	52-35-43
SENSOR - (FIM 52-71-00/101)				
DOOR WARNING, S208				
DOOR WARNING, S209				
SWITCH - CARGO DOOR CONTROL, S413	1	1	822, AFT CARGO COMP HDLG ACCESS PANEL, P39	*
SWITCH - CARGO DOOR CONTROL ARM, S414	1	1	822, AFT CARGO COMP HDLG ACCESS PANEL, P39	*
SWITCH - CARGO DOOR CONTROL, S512	1	1	156AR, P44 EXT FUSELAGE CONTROL PANEL	*
SWITCH - CARGO DOOR CONTROL ARM, S510	1	1	156AR, P44 EXT FUSELAGE CONTROL PANEL	*
UNIT - HINGE POWER DRIVE, M631	3	1	822, AFT CARGO COMPARTMENT	52-35-02
UNIT - LIFT/LATCH POWER, M632	3	1	822, AFT CARGO DOOR	52-35-10
UNIT - (FIM 32-09-03/101)				
PROX SW ELECT, M162				

* SEE THE WDM EQUIPMENT LIST

NOTE: 767-300 AIRPLANES;
PROXIMITY SENSOR, S159, IS NOT INSTALLED.

1> PROXIMITY SENSOR, S159, HAS A STEEL TARGET PERMANENTLY INSTALLED AND DOES NOT OPERATE.

Aft Cargo Door - Component Index
Figure 101

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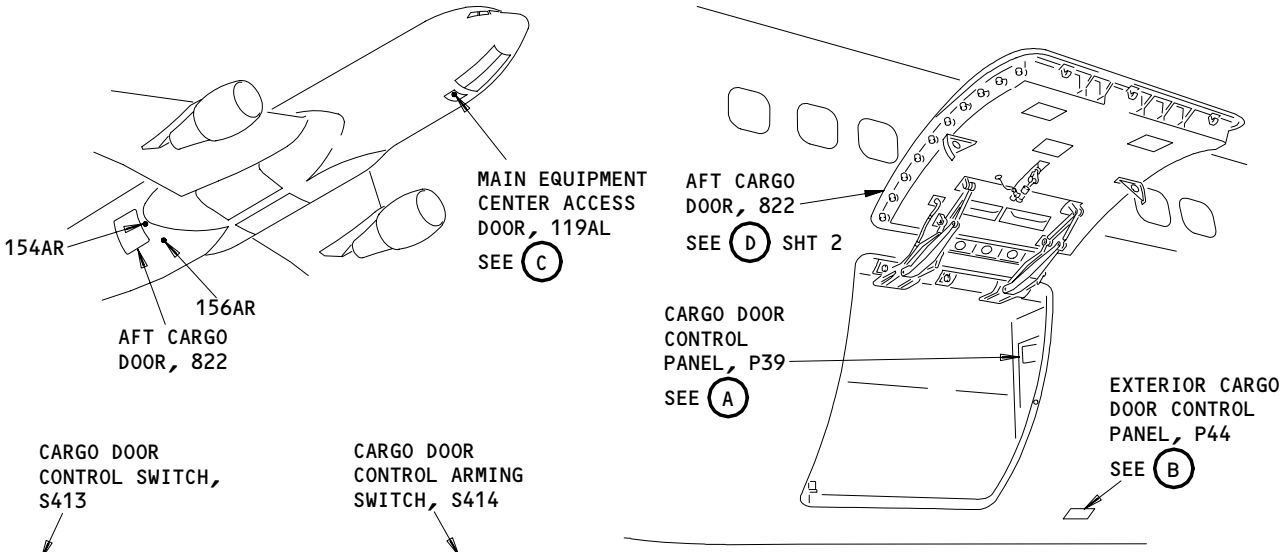
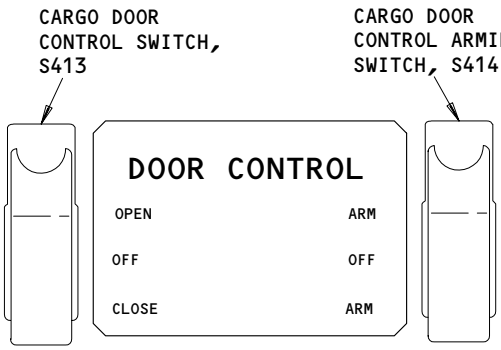
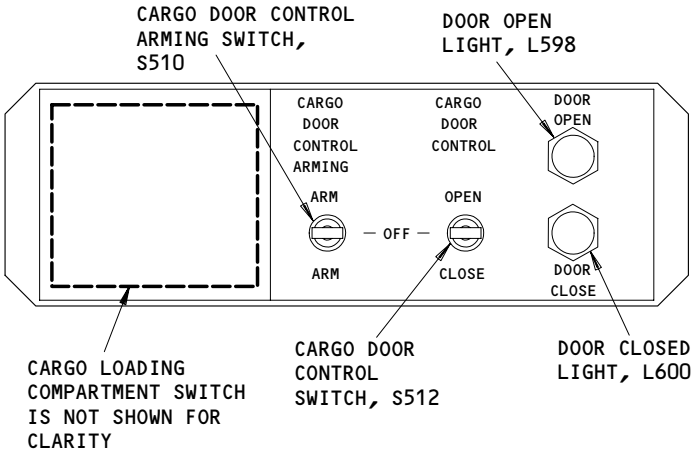




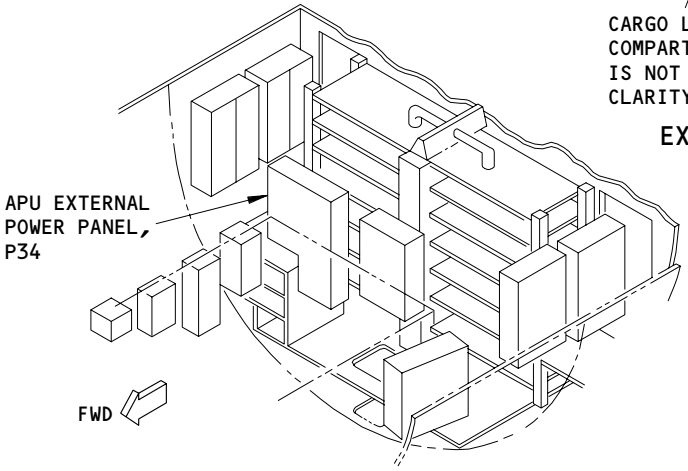
CARGO DOOR CONTROL PANEL, P39

A



EXTERIOR CARGO DOOR CONTROL PANEL, P44

B



MAIN EQUIPMENT CENTER

C

Aft Cargo Door - Component Location
Figure 102 (Sheet 1)

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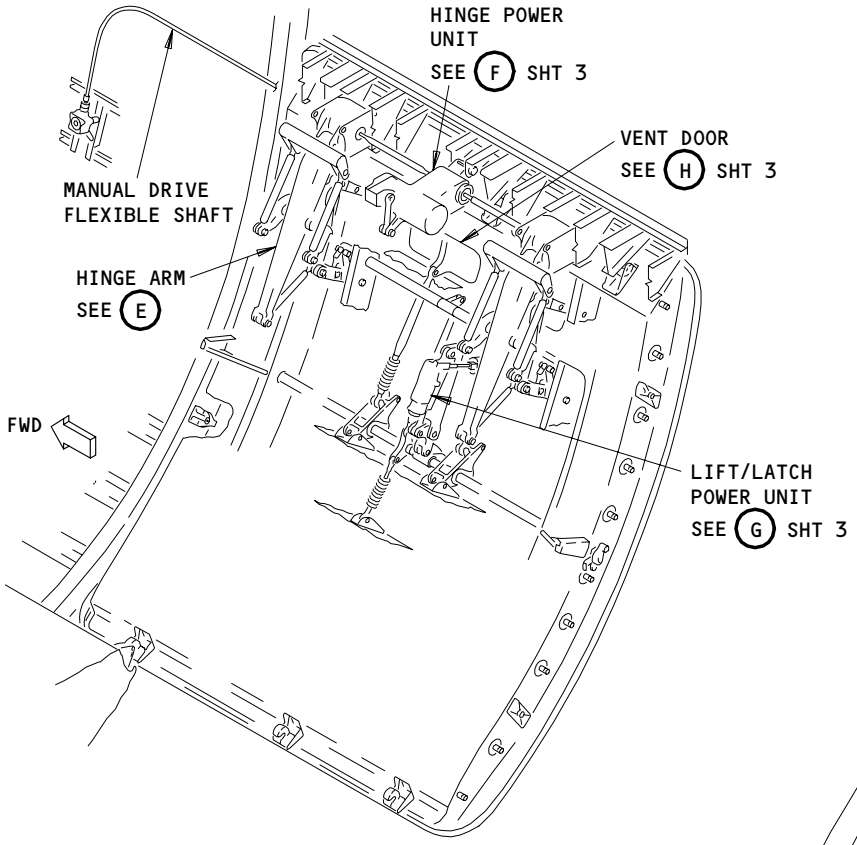
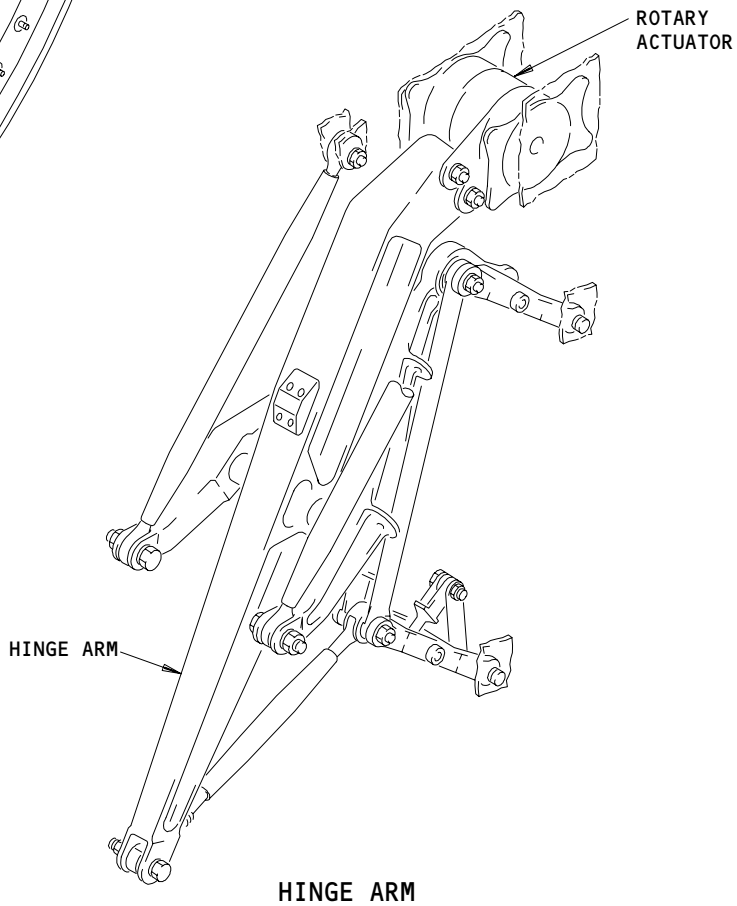


AFT CARGO DOOR, 822

(D) FROM SHT 1



HINGE ARM

(E)

Aft Cargo Door - Component Location
Figure 102 (Sheet 2)

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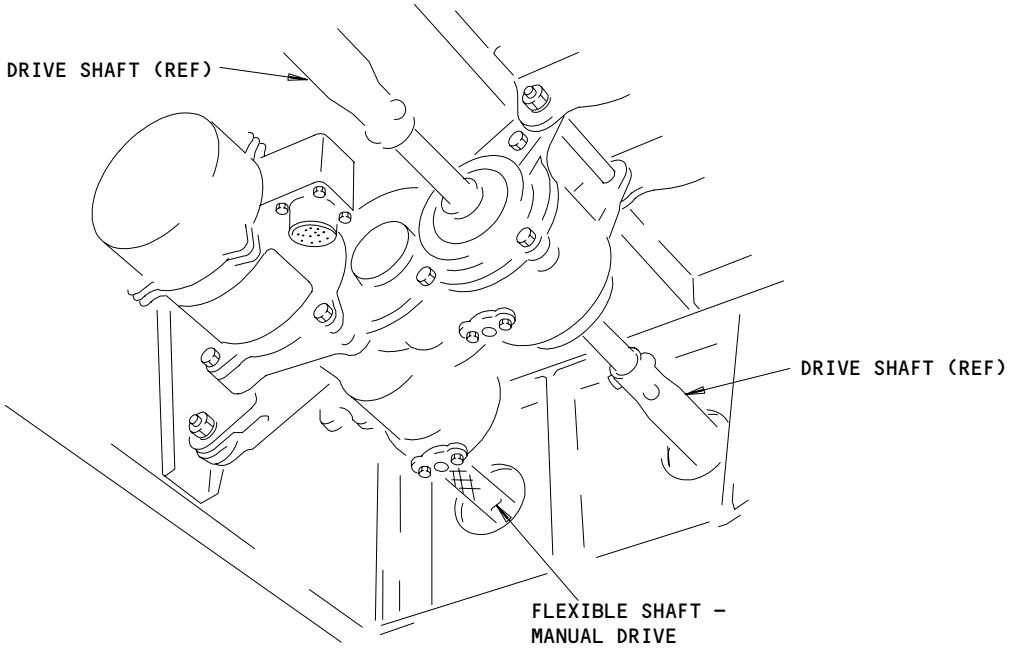
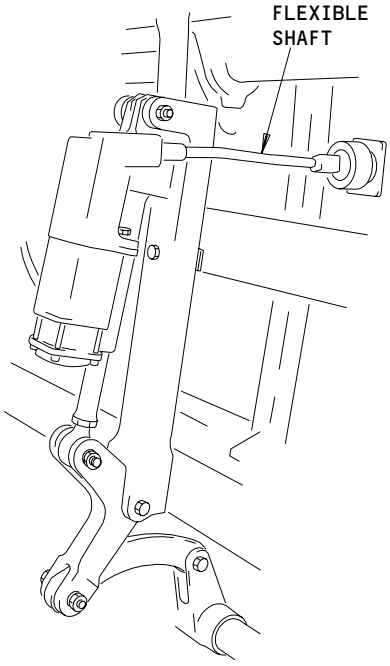


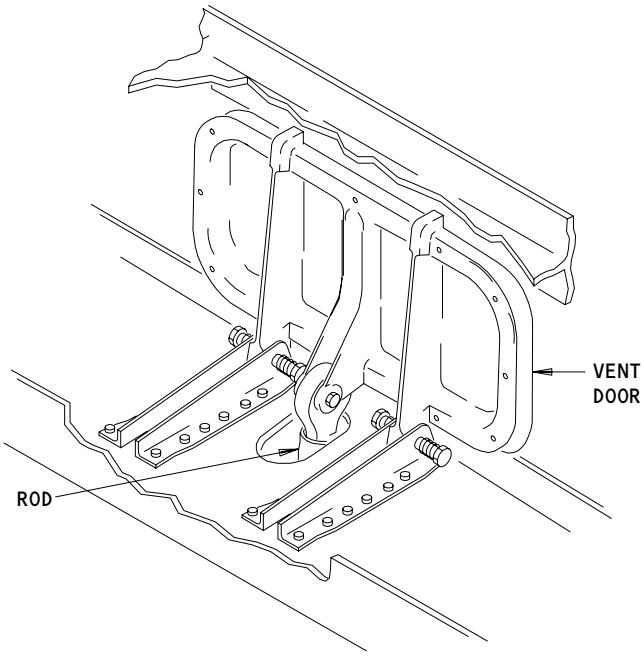
HINGE POWER UNIT, M631

F



LIFT/LATCH POWER UNIT, M632

G



VENT DOOR

H

Aft Cargo Door - Component Location (Details from Sht 2)
Figure 102 (Sheet 3)

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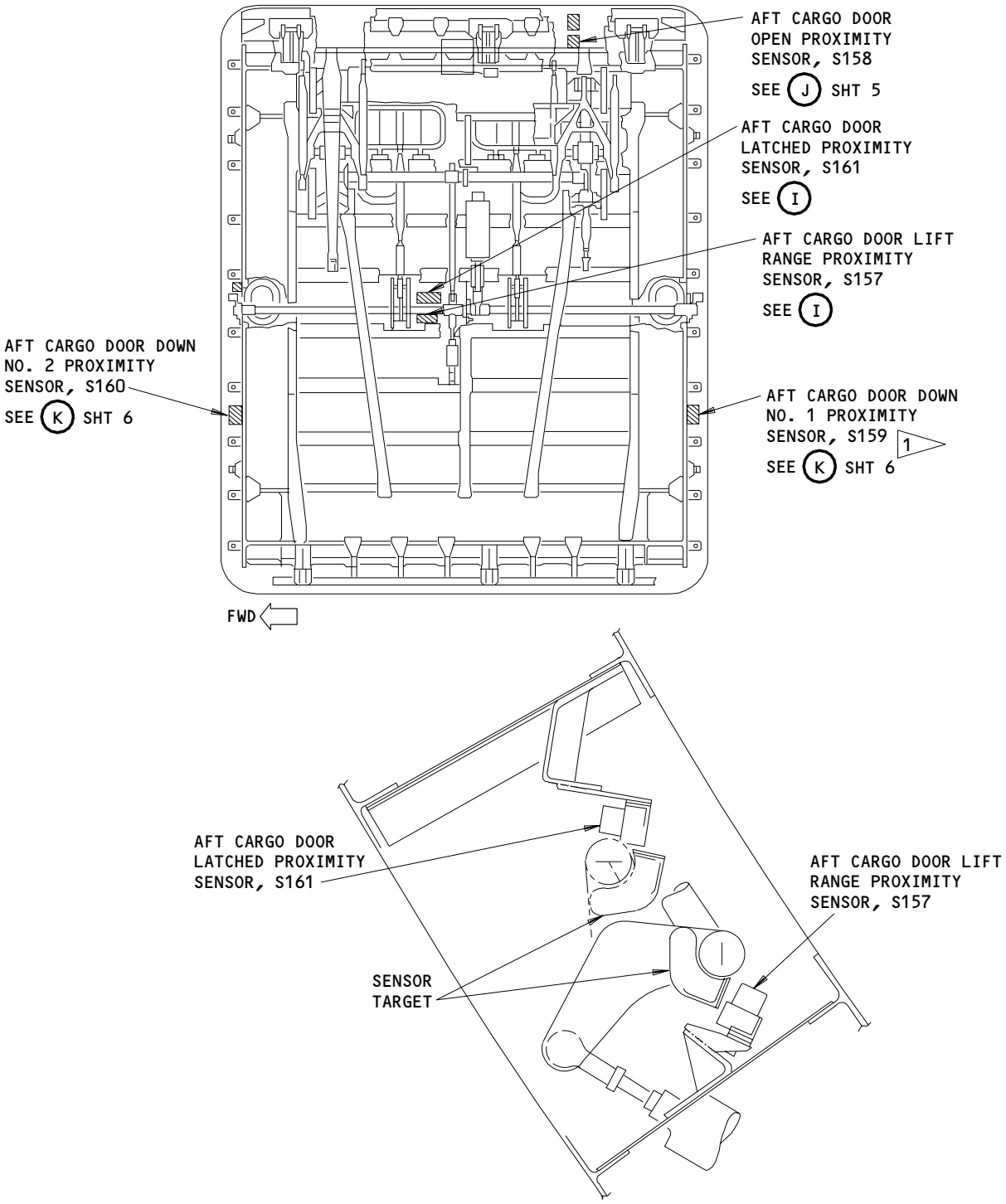

NOTE: ON 767-300 AIRPLANES, PROXIMITY SENSOR S159 IS NOT INSTALLED.

1 PROXIMITY SENSOR S159 HAS A STEEL TARGET PERMANENTLY INSTALLED AND DOES NOT OPERATE.

Aft Cargo Door - Component Location
Figure 102 (Sheet 4)

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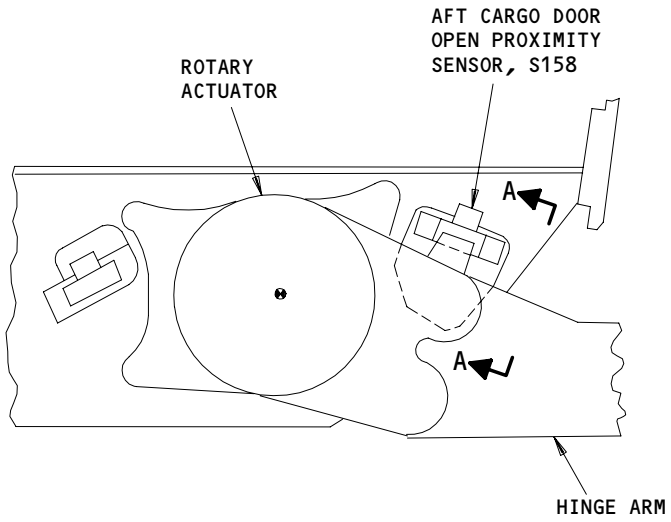
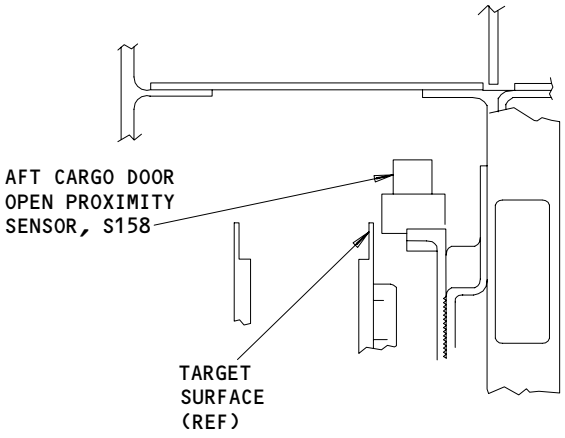


S158
(CARGO DOOR IN THE OPEN POSITION)

J FROM SHT 4



A-A

Aft Cargo Door - Component Location
Figure 102 (Sheet 5)

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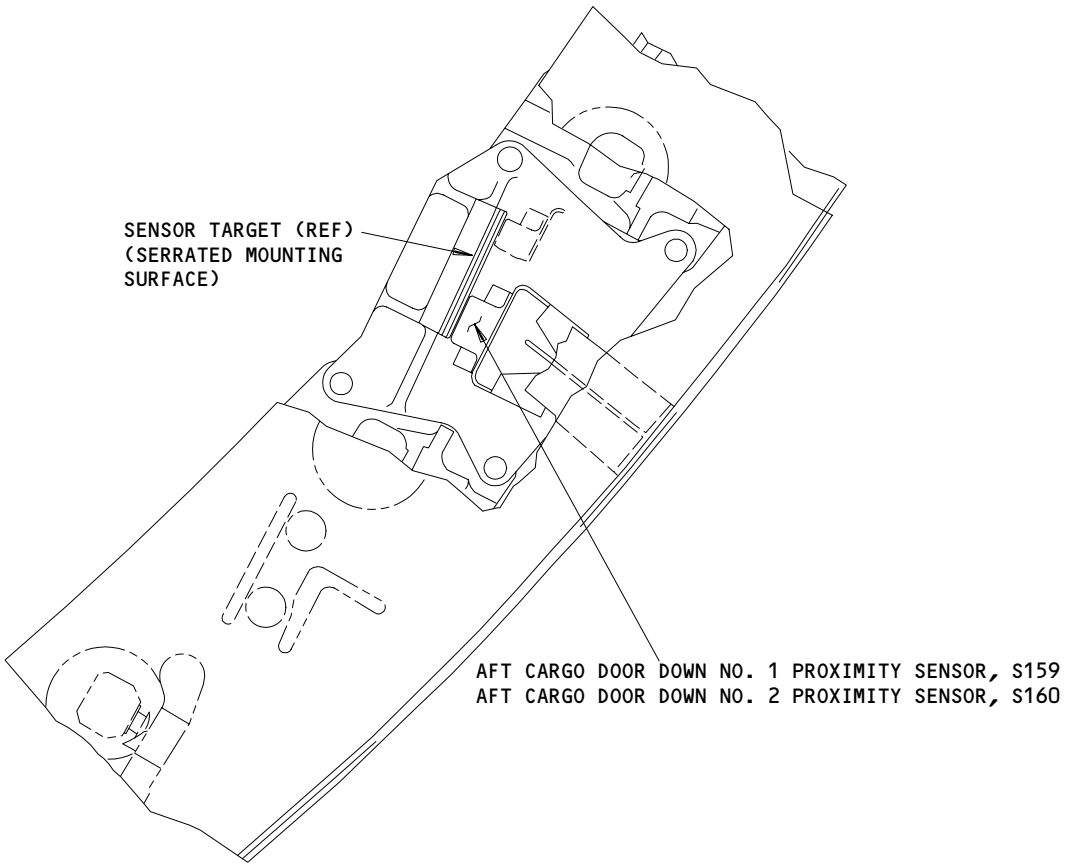

Aft Cargo Door - Component Location (Detail from Sht 4)
Figure 102 (Sheet 6)

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AFT CARGO DOOR - MAINTENANCE PRACTICES

1. General
   A. This procedure contains nine tasks:
      (1) The first task is to electrically open the aft cargo door.
      (2) The second task is to electrically close the aft cargo door.
      (3) The third task is to manually open the aft cargo door.
      (4) The fourth task is to manually close the aft cargo door.
      (5) The fifth task is to open the cargo door with failure of the lift/latch power unit.
      (6) The sixth task is to open the cargo door with failure of the rotary actuator (jammed).
      (7) The seventh task is to close the cargo door with failure of the lift/latch mechanisms or hinge drive mechanisms (jammed).
      (8) The eighth task is to open or close the cargo door with failure of the cargo door in the open position (jammed).
      (9) The ninth task is to apply corrosion prevention treatment.
   B. This procedure contains instructions to open and close the aft cargo door when there is failure in the lift/latch power unit mechanisms, rotary actuators, or hinge power unit mechanisms. The procedure gives instructions to manually bypass the mechanism that has failure.

TASK 52-35-00-912-046

2. Open the Aft Cargo Door Electrically
   A. Access
      (1) Location Zone
          822 Aft Cargo Door

   B. Procedure

      S 862-067

      CAUTION: DO NOT OPERATE THE DOOR IF THE WIND EXCEEDS 40 KNOTS. DO NOT LEAVE THE DOOR OPEN IF WIND GUSTS EXCEED 65 KNOTS. IF YOU OPERATE OR LEAVE THE DOOR OPEN IN EXCESS OF THESE WIND CONDITIONS, DAMAGE TO THE EQUIPMENT CAN OCCURE.

      (1) Move the exterior or the interior arming switch up to the ARM position.

      S 862-047
      (2) Move the exterior or the interior door control switch to the OPEN position.

      S 712-048
      (3) Make sure the DOOR OPEN light on the exterior door control panel is on when the cargo door stops automatically at the fully open position.

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S 712-049
(4) Make sure the EICAS massage, AFT CARGO DOOR, show on the top display and the CARGO DOORS indicator light on the overhead panel, P5, is on.

S 942-050
(5) Install a safety barrier (A52005-18) across the door opening, if you do work near the open door.

TASK 52-35-00-912-051
3. Close the Aft Cargo Door Electrically
A. Access
(1) Location Zone
822 Aft Cargo Door

B. Procedure

S 862-068

CAUTION: DO NOT OPERATE THE DOOR IF THE WIND EXCEEDS 40 KNOTS. DO NOT LEAVE THE DOOR OPEN IF WIND GUSTS EXCEED 65 KNOTS. IF YOU OPERATE OR LEAVE THE DOOR OPEN IN EXCESS OF THESE WIND CONDITIONS, DAMAGE TO THE EQUIPMENT CAN OCCURE.

(1) Move the exterior or the interior arming switch down to the ARM position.

S 862-053
(2) Move the exterior or the interior door control switch to the CLOSE position.

S 212-054
(3) Make sure the vent doors are in the fully close position.

S 712-055
(4) Make sure the DOOR CLOSE light on the exterior door control panel is on when the cargo door stops automatically at the fully closed position.

S 712-056
(5) Make sure the EICAS massage, AFT CARGO DOOR, does not show on the top display and the CARGO DOORS indicator light on the overhead panel, P5, is off.

TASK 52-35-00-912-001
4. Open the Aft Cargo Door Manually
A. General
(1) Do not operate the door in high winds.

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B. Access
(1) Location Zone
822 Aft Cargo Door

C. Procedure - Open the Aft Cargo Door Manually

S 862-069

CAUTION: DO NOT OPERATE THE DOOR IF THE WIND EXCEEDS 40 KNOTS. DO NOT LEAVE THE DOOR OPEN IF WIND GUSTS EXCEED 65 KNOTS. IF YOU OPERATE OR LEAVE THE DOOR OPEN IN EXCESS OF THESE WIND CONDITIONS, DAMAGE TO THE EQUIPMENT CAN OCCURE.

CAUTION: IF YOU USE A POWER TOOL, DO NOT OPERATE IT AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 50 POUND-INCHES. INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE LIFT/LATCH POWER UNIT.

(1) Put a 3/8-inch speed drive wrench into the lift/latch manual drive receptacle. Turn the wrench counterclockwise to lift the cargo door to the lifted position.

NOTE: The door is in the lifted position when it is lifted vertically two inches from the latched position.

It takes approximately 60 full turns of the wrench to move the door from the latched position to the lifted position.

S 862-003

CAUTION: IF YOU USE A POWER TOOL, DO NOT OPERATE IT AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 190 POUND-INCHES. INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE HINGE POWER UNIT.

(2) Put a 3/8-inch drive speed wrench in the open/close manual drive receptacle. Turn the wrench clockwise to open the cargo door to the fully open position.

NOTE: It takes approximately 1150 full turns of the wrench to move the cargo door from the lifted position to the fully open position.

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TASK 52-35-00-912-004

5. Close the Aft Cargo Door Manually

A. Access

(1) Location Zone

822 Aft Cargo Door

B. Procedure - Close the Aft Cargo Door Manually

S 862-070

CAUTION: DO NOT OPERATE THE DOOR IF THE WIND EXCEEDS 40 KNOTS. DO NOT LEAVE THE DOOR OPEN IF WIND GUSTS EXCEED 65 KNOTS. IF YOU OPERATE OR LEAVE THE DOOR OPEN IN EXCESS OF THESE WIND CONDITIONS, DAMAGE TO THE EQUIPMENT CAN OCCURE.

CAUTION: IF YOU USE A POWER TOOL, DO NOT OPERATE IT AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 190 POUND-INCHES. INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE HINGE POWER UNIT.

(1) Put a 3/8-inch drive speed wrench in the open/close manual drive receptacle. Turn the wrench counterclockwise to close the cargo door until you can feel or hear clutch slippage in the hinge power unit.

S 862-006

CAUTION: IF YOU USE A POWER TOOL, DO NOT OPERATE IT AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 50 POUND-INCHES. INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE LIFT/LATCH POWER UNIT.

(2) Put a 3/8-inch speed drive wrench into the lift/latch manual drive receptacle. Turn the wrench clockwise to latch the cargo door until you can feel or hear clutch slippage in the lift/latch power unit.

TASK 52-35-00-912-007

6. Open the Cargo Door with Failure of the Lift/Latch Power Unit

A. Access

(1) Location Zone

822 Aft Cargo Door

B. Procedure - Open the Cargo Door With Failure of the Lift/Latch Power Unit

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S 862-071

CAUTION: DO NOT OPERATE THE DOOR IF THE WIND EXCEEDS 40 KNOTS. DO NOT LEAVE THE DOOR OPEN IF WIND GUSTS EXCEED 65 KNOTS. IF YOU OPERATE OR LEAVE THE DOOR OPEN IN EXCESS OF THESE WIND CONDITIONS, DAMAGE TO THE EQUIPMENT CAN OCCURE.

(1) Remove the access panels for the lift/latch power unit (4 lower locations).

S 012-058

(2) Get access to the lift/latch power unit through the access panel openings below the vent doors.

NOTE: You can also push the vent doors in.

S 012-009

(3) Push the door lining behind the openings to one side. It is attached with velcro.

S 032-010

(4) Disconnect the top end of the lift/latch power unit from the lift/latch torque tube at the top end connection.

NOTE: It is not always easy to remove the spacer at the lift/latch power unit top end attachments.

S 862-011

(5) Put a strap wrench through each of the two lower access panels openings.

S 862-059

(6) Use the strap wrench to turn the lift/latch torque tube counterclockwise (view from the aft end) to turn the latch cranks and lift the cargo door 2.0 ±0.15 inches.

NOTE: You can put a crocus cloth or other abrasive material between the strap on the strap wrench and the lift/latch torque tube to prevent slippage of the strap.

S 862-060

(7) Manually help to lift the cargo door at the access panel openings.

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S 492-012

(8) Put a wood wedge under the cargo door to hold the door in position while you move the strap wrench to lift the door more.

S 492-015

(9) Put a block of wood between the door and the body sill when the door has lifted sufficiently to let the hinge power unit manual drive operate.

S 862-016

(10) Use the hinge power unit manual drive to open the door sufficiently to get access to the lift/latch power unit.

TASK 52-35-00-912-022

7. Open the Cargo Door with Failure of the Rotary Actuator (Jammed)

A. References

(1) 52-35-01/401, Aft Cargo Door

B. Access

(1) Location Zone

822 Aft Cargo Door

C. Procedure

S 862-072

CAUTION: DO NOT OPERATE THE DOOR IF THE WIND EXCEEDS 40 KNOTS. DO NOT LEAVE THE DOOR OPEN IF WIND GUSTS EXCEED 65 KNOTS. IF YOU OPERATE OR LEAVE THE DOOR OPEN IN EXCESS OF THESE WIND CONDITIONS, DAMAGE TO THE EQUIPMENT CAN OCCURE.

(1) If there is failure of the rotary actuator (jammed), remove the cargo door with the "Remove the Cargo Door Externally with Failure of the Rotary Actuator (Jammed)" procedure. Refer to 52-35-01 for this procedure.

TASK 52-35-00-912-024

8. Close the Cargo Door with Failure of the Lift/Latch Mechanisms or Hinge Drive Mechanisms (Jammed)

A. Equipment

(1) Sling, Lower Lobe Cargo Door - A52004-41, 42, 43

B. References

(1) 52-35-03/401, Aft Cargo Door Rotary Actuator

C. Access

(1) Location Zone

822 Aft Cargo Door

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D. Prepare to Close the Cargo Door with Failure (Jammed)

S 862-025
(1) Operate the cargo door electrically until there is failure of the lift/latch mechanism or the hinge drive mechanism.

E. Close the Cargo Door with Failure of the Hinge Drive Mechanism

S 492-026
(1) Attach the sling to the cargo door.

S 862-027
(2) Lift the cargo door up to take the weight of the door off of the hinge drive mechanisms.

S 032-028
(3) If the hinge drive mechanism is jammed, disconnect the forward and aft rotary actuators.

S 032-029
(4) If one of the rotary actuators is jammed, remove the rotary actuator (Ref 52-35-03).

S 032-030
(5) Disconnect or remove the parts of the hinge mechanism linkage that are jammed.

S 822-031
(6) Lower the cargo door to the lifted position with the sling and hoist. Align the cargo door in the door opening to make the upper and lower hooks and stops engage.

NOTE: The cargo door guide rollers will engage the guide fittings and the lift/latch torque tube rollers will engage the guide tracks as the door is operated to the latched position.

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S 862-032

(7) While you hold the cargo door with the sling in the lifted position, put a 3/8-inch speed drive wrench in the lift/latch manual drive receptacle. Turn the wrench clockwise to lower the cargo door to the latched position. Manually move the cargo door to make the upper and lower hooks and stops engage correctly.

S 212-033

(8) Make sure the CARGO DOORS indicator light on the overhead annunciator panel is off.

F. Close the Cargo Door with Failure of the Lift/Latch Mechanism (Jammed)

S 032-034

(1) Disconnect the jammed or damaged lift/latch power unit and the damaged linkage of the lift/latch power unit.

S 862-035

(2) Put a 3/8-inch speed drive wrench in the open/close manual drive receptacle. Turn the wrench counterclockwise to close the cargo door until the door movement is stopped.

S 012-036

(3) Remove the access panels for the lift/latch power unit to get access to the lift/latch torque tube.

S 492-037

(4) Put a strap wrench through the lower access doors for the lift/latch power unit. Use the strap wrench to turn the lift/latch torque tube until the cargo door is closed and latched.

S 212-038

(5) Make sure the CARGO DOORS indicator light on the overhead annunciator panel is off.

S 212-039

(6) Make sure the EICAS message, AFT CARGO DOOR, does not show on the top display.

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S 412-040

(7) Close the access panels used in this procedure.

TASK 52-35-00-912-041

9. Open or Close the Cargo Door With Failure in the Open Position (Jammed)

A. General

(1) Use this procedure to open or close the cargo door when the lift/latch power unit was operated without the latch crank rollers engaged with the latch tracks.

(2) If you operate the lift/latch power unit without the latch crank rollers engaged with the latch tracks, the lockout upstop cam roller goes into the detent in the lockout upstop cam (Fig. 201). It is not possible to open or close the cargo door until the lockout upstop cam roller goes out of the detent.

NOTE: No damage to the cargo door occurs when the door is in this condition.

(3) This condition will not occur during the usual electrical operation of the cargo door because of the electrical control sensors.

B. Access

(1) Location Zone

822 Aft Cargo Door

C. Procedure

S 862-073

CAUTION: DO NOT OPERATE THE DOOR IF THE WIND EXCEEDS 40 KNOTS. DO NOT LEAVE THE DOOR OPEN IF WIND GUSTS EXCEED 65 KNOTS. IF YOU OPERATE OR LEAVE THE DOOR OPEN IN EXCESS OF THESE WIND CONDITIONS, DAMAGE TO THE EQUIPMENT CAN OCCURE.

(1) Use two or more persons to push and lift the cargo door up. Use one person to manually turn the lift/latch power unit to the open position.

NOTE: The weight of the cargo door is approximately 375 pounds.

S 862-044

(2) Electrically or manually open or close the cargo door.

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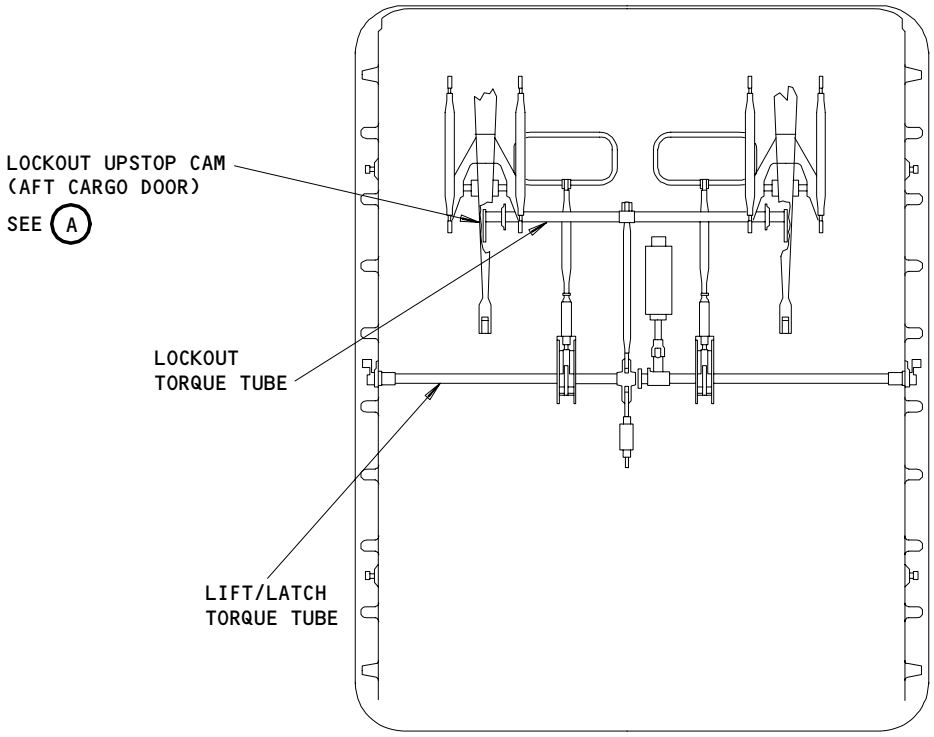
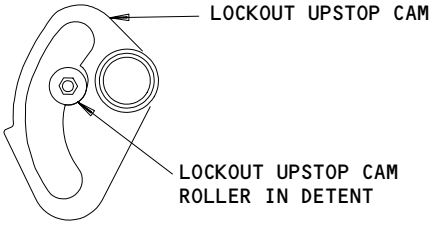
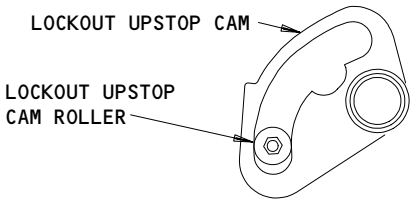


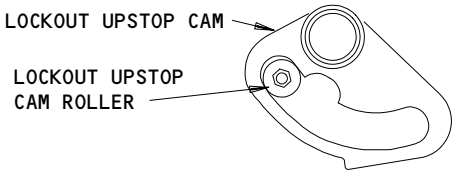
STANDARD AFT CARGO DOOR



CARGO DOOR JAMMED



CARGO DOOR IN THE LIFTED POSITION



CARGO DOOR IN THE LATCHED POSITION

LOCKOUT UPSTOP CAM
(EXAMPLE)

(A)

Lockout Upstop Cam
Figure 201

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TASK 52-35-00-622-074

10. Corrosion Prevention Treatment (Fig. 202)

A. General

(1) The cargo doors have a corrosion protective finish that consists of chemical finish (Alodine) on clad aluminum parts, anodize surface treatment on non-clad aluminum parts and a coat of BMS 10-11, Type I, primer. The exterior surface of the doors is unfinished unless otherwise requested by the operator. Aluminum parts are coated with BMS 10-11, Type II, white enamel. All interior surfaces are coated with BMS 3-23, Type II, corrosion preventive compound after assembly and painting.

(2) Areas of possible corrosion are the internal structure of the door, connection points and mechanisms.

(3) The cargo door should be treated with corrosion preventive compound at the same time as the cargo door opening.

(4) Following cleaning of suspected areas (Ref AMM 51-21-03/701), a full inspection is effective to make sure that protective finishes provided during manufacture stay intact. For details on the application of corrosion preventive compound, refer to AMM 51-24-09/701.

(5) For minor corrosion, to keep the downtime of the airplane to a minimum, the corrosion products should be cleaned off, followed by the application of a corrosion preventive compound into the affected area to decrease the corrosion process (Ref AMM 51-24-09/701). The finish system should be repaired at the first opportunity consistent with the maintenance schedule.

(6) Frequency of Application

(a) Periodic inspection is required to areas identified as susceptible to corrosion and should be consistent to the schedules specified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences

(b) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

(7) Obey the precautions that follow when applying the corrosion preventive compound:

(a) Do not apply corrosion preventive compounds on grease joints or sealed bearings. These compounds dissolve grease and other lubricants. They are penetrating compounds and can get around the seals and into the bearings.

(b) Do not apply corrosion preventive compounds on interior materials such as cargo liners. The compounds change the flammable quality of these materials.

B. References

(1) AMM 12-21-22/301, Forward and Aft Cargo Door

C. Consumable Materials

(1) G00009 Compound, Organic Corrosion Preventive - BMS3-23, Type II

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D. Access
(1) Location Zone
822 Aft Cargo Door

E. Prepare for the Corrosion Prevention Treatment

S 012-075
(1) Remove cargo door liner and gain access to interior structure of the door.

S 162-076
(2) Clean out drains and drain paths.
(a) Make sure that the drain valve is free to open and close.

CAUTION: EXCESSIVE TIGHTENING OF PLUNGER TYPE DRAIN VALVE WILL CAUSE VALVE FLANGE TO CRACK OR BREAK.

(b) If necessary, remove plunger type drain valve from outside of door, clean out obstructions and install valve until flange contacts skin.

F. Procedure

S 622-077
(1) Apply the corrosion prevention treatment, do these steps:
(a) Apply corrosion preventive compound BMS 3-23, Type II, to the interior of the door, giving special attention to the lower corners. Do not apply to drain valves or other operational mechanisms.
(b) Lubricate the interior door fitting, as necessary (Ref AMM 12-21-22/301).

S 412-078
(2) Install the cargo door liner and put the door back to its usual condition.

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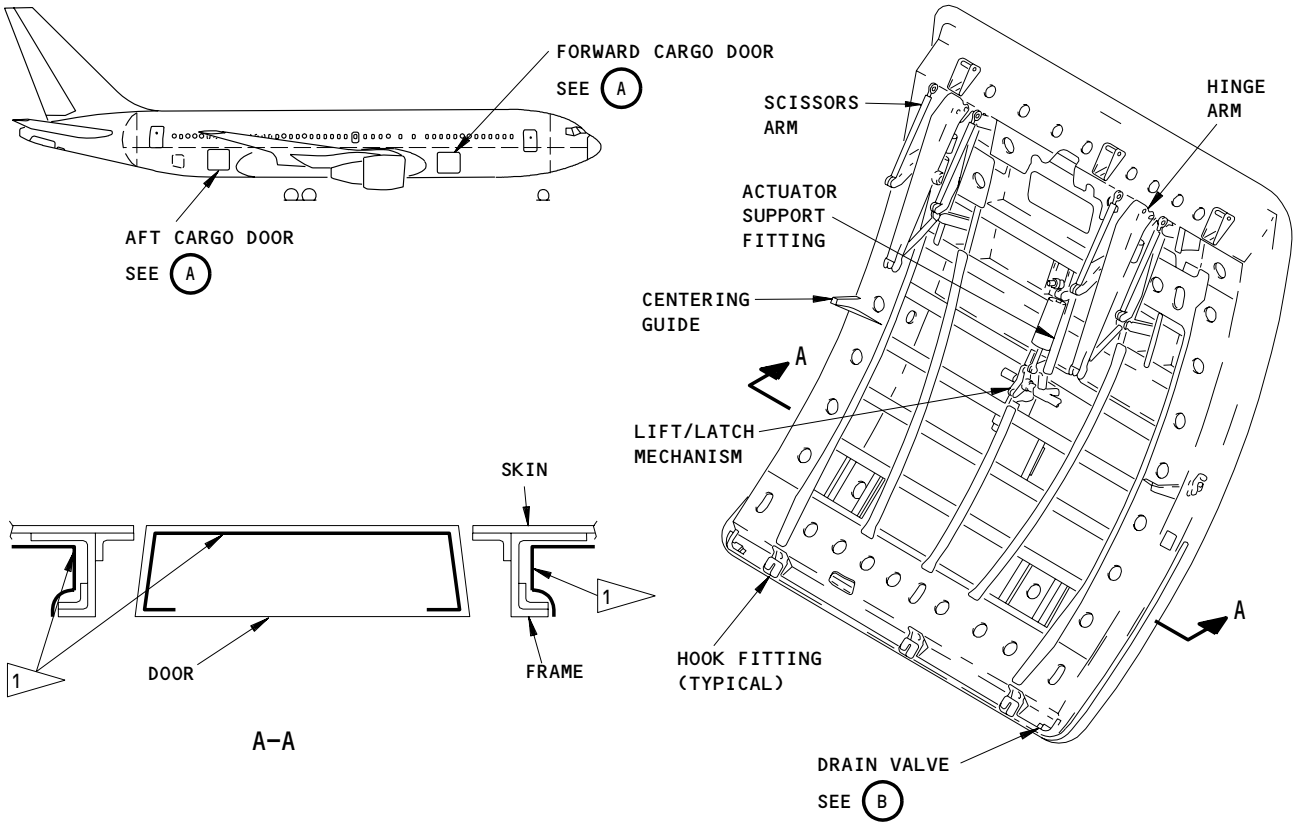
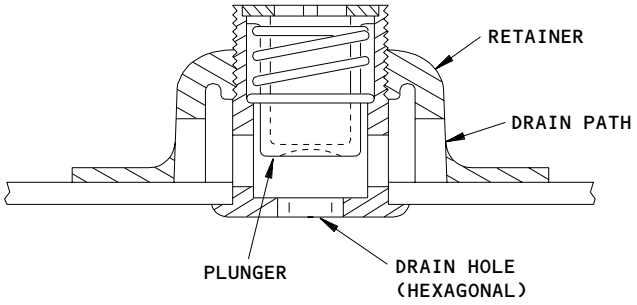


A–A

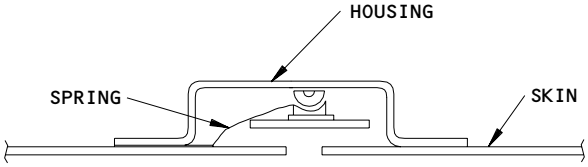
CARGO DOOR

A



PLUNGER TYPE DRAIN VALVE

B



LEAF SPRING TYPE DRAIN VALVE

B

1 APPLY BMS 3-23, TYPE II TO STRUCTURAL SURFACES.
MASK ALL OPERATIONAL MECHANISMS AND VISIBLE AREAS.

Cargo Door
Figure 202

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AFT CARGO DOOR - ADJUSTMENT/TEST

1. General
   A. This procedure contains three tasks. The first task is the operational test of the aft cargo door operation mechanisms. The second task is the adjustment of the aft cargo door. The third task is the system test of the aft cargo door.
   B. Refer to 52-71-00/501 for the adjustment and the system test of the proximity sensors for the door warning system.

TASK 52-35-00-715-003

2. Operational Test - Cargo Door Operation Mechanisms
   A. General
      (1) This test is a check of the cargo door for smooth operation, latch operation, electrical sequence of the mechanisms, and indication of the cargo door condition at the door control panels and the flight deck.
      (2) Do this operational test with the airplane on its landing gear. It is permitted that the airplane be empty or with the furnishings, seats, and fuel.
   B. Equipment
      (1) Actuator/Deactuator Set, Proximity Sensors -
      A27092-106 (Recommended)
      A27092-84 (Alternate)
      A27092-61 (Alternate)

      NOTE: Make sure that you use the correct tool for actuating or deactuating applicable proximity sensor.

   C. References
      (1) 24-22-00/201, Electrical Power - Control
   D. Access
      (1) Location Zone
      822 Aft Cargo Door

   E. Procedure - Operational Test - Cargo Door Operation Mechanisms

      S 865-004
      (1) Supply electrical power (Ref 24-22-00).

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S 715-006

(2) Put the 3/8-inch drive speed wrench in the lift/latch manual drive receptacle. Turn the wrench counterclockwise for five turns to manually unlatch the cargo door. Do the steps that follow:
   (a) Make sure this EICAS message, AFT CARGO DOOR, shows on the top display.
   (b) Make sure the CARGO DOORS indicator light on the overhead panel, P5, is on.
   (c) Make sure the vent doors start to open.

S 715-007

(3) Hold the internal or external door control switch in the OPEN position while you hold the arming switch in the ARM position to open the cargo door. Do the steps that follow:
   (a) Make sure the lift/latch power unit, hinge power unit, and rotary actuators follow the correct sequence.
   (b) Make sure the cargo door moves smoothly and continuously to the fully open position.

S 015-008

(4) Hold the internal or external door control switch for the aft cargo door in the CLOSE position and the arming switch in the ARM position. Release the door control switch and the arming switch when the aft cargo door is closed sufficiently to give access to the aft cargo door locked proximity sensor, S208, and the aft cargo door closed proximity sensor, S209.

   NOTE: The door locked proximity sensor (S208) is located on the forward frame of the door by the midspan latch cam. The door closed proximity sensor (S209) is located on the floor beam by the aft hinge arm.

S 715-009

(5) Do a test on the door indication proximity sensors.
   (a) Make sure the EICAS message, AFT CARGO DOOR, shows on the top display and the CARGO DOORS indicator light on the overhead panel, P5, is on.
   (b) Install the proximity sensor actuators in the door locked proximity sensor, S208, and in the door closed proximity sensor, S209.

      NOTE: The door locked proximity sensor, S208, is connected in series with the door closed proximity sensor, S209.

   (c) Make sure the EICAS message, AFT CARGO DOOR, does not show on the top display and the CARGO DOORS indicator light on the overhead panel, P5, is off.
   (d) Remove the proximity sensor actuator from the door locked proximity sensor, S208.

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(e) Make sure the EICAS message, AFT CARGO DOOR, shows on the top display and the CARGO DOORS indicator light on the overhead panel, P5, is on.
(f) Install the proximity sensor actuators in the door locked proximity sensor, S208.
(g) Make sure the EICAS message, AFT CARGO DOOR, does not show on the top display and the CARGO DOORS indicator light on the overhead panel, P5, is off.
(h) Remove the proximity sensor actuator from the door closed proximity sensor, S209.
(i) Make sure the EICAS message, AFT CARGO DOOR, shows on the top display and the CARGO DOORS indicator light on the overhead panel, P5, is on.
(j) Remove the proximity sensor actuator from the door locked proximity sensor, S208.

S 715-011
(6) Continue to use the door control switch and the arming switch until the cargo door is in the closed and latched position. Do the steps that follow:
(a) Make sure the lift/latch power unit, hinge power unit, and rotary actuators follow the correct sequence.
(b) Make sure the cargo door moves smoothly and continuously to the closed and latched position.
(c) Make sure the vent doors click closed during the last movement of the cargo door into the fully closed and latched position.
(d) Make sure the DOOR CLOSE light on the exterior door control panel is on when the cargo door stops automatically at the fully closed and latched position.
(e) Make sure the EICAS message, AFT CARGO DOOR, does not show on the top display and the CARGO DOORS indicator light on the overhead panel, P5, is off.
(f) Make sure the cargo door makes a smooth surface along the fuselage.

S 215-012
(7) Make sure the cargo door is in the fully closed and latched position.

S 215-015
(8) Put the internal arming switch to the OFF position. Put the internal door control switch to the OPEN position.

S 215-013
(9) Make sure the cargo door does not unlatch or open.

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S 215-285
(10) Release the internal arming and the door control switches.

S 215-014
(11) Put the internal door control switch to the OFF position. Put the internal arming switch to the ARM position.

S 215-278
(12) Make sure the cargo door does not unlatch or open.

S 215-286
(13) Release the internal arming and the door control switches.

S 215-016
(14) Put the external arming switch to the OFF position. Put the external door control switch to the OPEN position.

S 215-017
(15) Make sure the cargo door does not unlatch or open.

S 215-287
(16) Release the external arming and the door control switches.

S 215-018
(17) Put the external door control switch to the OFF position. Put the external arming switch to the ARM position.

S 215-019
(18) Make sure the cargo door does not unlatch or open.

S 215-288
(19) Release the external arming and the door control switches.

TASK 52-35-00-825-020

3. Adjustment - Cargo Door

A. General

(1) This procedure contains instructions to adjust an installed cargo door back to the correct rigged condition. If it is not easy to make the adjustments, or if it is necessary to replace part of the lift/latch mechanism, you can try to do the "Adjust the lift/latch mechanism" procedure.

(2) During the installation of a cargo door, adjust the clearances (Table 1) only after you close and latch the door, put the stop pins on the center of the fuselage stop pads, and install the wedge tools (Fig. 507).

(a) The wedges make allowances for the effect of the pressure seal and give the correct clearance values.

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(b) Hit the wedges lightly into the clearances of the forward and aft stop pins Nos. 2 and 9, or Nos. 3 and 8, only until you can not manually turn the upper and lower guide track rollers.

NOTE: You can put a forward or aft force on the door to put the door stop pins over the center of the stop pads (Fig. 507).

TABLE 1	
CLEARANCE	FIG.
FLUSHNESS - AERODYNAMIC FAIR	504
LATERAL STOP CLEARANCE	511
GUIDE TRACK LATERAL CLEARANCE	512
LATCH TRACK LATERAL CLEARANCE	514
STOP PIN AND STOP PAD CLEARANCE	516
UPPER HOOK AND STOP CLEARANCE	517
LOWER HOOK AND STOP CLEARANCE	517
SKIN CLEARANCE	522

(3) Adjustment of the Lateral Clearances (Table 2)
(a) Move the cargo door forward or aft to do a check on the stop pin and stop pad limits (View B, Fig. 507).
(b) If you cannot get the correct lateral clearance when you move the cargo door forward and aft in the stop pin and stop pad limits, move the door until the stop pins are as near as possible to the center of the stop pads.
(c) Install the wedge tool.
(d) Do a check on all the lateral clearances before you make the adjustments. See Table 2.

TABLE 2	
LATERAL CLEARANCE	FIG.
LATERAL STOP CLEARANCE	511
GUIDE TRACK LATERAL CLEARANCE	512
LATCH TRACK LATERAL CLEARANCE	514
SKIN CLEARANCE	522

(e) If it is necessary to adjust the lateral clearances, remove the wedges and move the door forward or aft in the stop pin and stop pad limits until the other lateral clearances are correct.
(f) Install the wedge tool.

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(g) Do the adjustment and then do a check on all the other lateral clearances again.
(h) Remove the wedges.

(4) Adjustment of the Vertical Clearances (Table 3)
(a) If a vertical clearance is not correct, move the cargo door forward and aft in the stop pin and stop pad limits until the stop pins are as near as possible to the center of the stop pads (View B, Fig. 507).
(b) Do a check on the vertical position of the stop pins on the stop pads to see if it is in the correct limits (View B, Fig. 507).
(c) If the vertical clearances of the stop pins on the stop pads are not in the limits, adjust the door or the clearance.
(d) If the door does not need vertical adjustment of the stop pins or the stop pads, install the wedge tool.
1) Do a check on all the vertical clearances before you make the adjustments. See Table 3.

TABLE 3

VERTICAL CLEARANCE	FIG.
UPPER HOOK AND STOP CLEARANCE	517
LOWER HOOK AND STOP CLEARANCE	517
SKIN CLEARANCE	522

2) Do the adjustment and then do a check on all the other vertical clearances again.
3) Remove the wedges.

(5) Adjustment of the Inboard and Outboard Clearances (Table 4)
(a) Install the wedge tool.
(b) It is not necessary to put the stop pins on the center of the stop pads to do these inboard or outboard clearance checks or adjustments.

TABLE 4

INBOARD AND OUTBOARD CLEARANCE	FIG.
FLUSHNESS - AERODYNAMIC FAIR	504
STOP PIN AND STOP PAD CLEARANCE	516
UPPER HOOK AND STOP CLEARANCE	517
LOWER HOOK AND STOP CLEARANCE	517

B. Equipment
(1) Rig Pins from Set A20004-XX (Ref 20-10-24)
(a) CDA1 - A20004-12

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(b) CDA2 - A20004-12
(c) CDA3 - A20004-15
(d) CDA4 - A20004-15

(2) Rigging Adjustment Equipment, Aft Cargo Door - A52016-1
(a) Wedge tool from Rigging Adjustment Tool Set MIT 143T0620 - A52016-2.

C. Consumable Materials
(1) D00014 Grease - MIL-G-21164

D. References
(1) 25-52-02/401, Containerized Cargo Compartment Ceiling Lining
(2) 52-35-01/401, Aft Cargo Door
(3) 52-35-43/501, Aft Cargo Door Control Proximity Sensors

E. Access
(1) Location Zone
822 Aft Cargo Door

F. Do a check on the operation of the lift/latch and open/close manual drive mechanisms.

S 735-021
(1) Do a check on the lift/latch manual drive.
(a) Before you operate the lift/latch manual drive do a check on the clearance of the flexible shaft end fitting at the lift/latch power unit manual input shaft housing (Fig. 501).
(b) Hold the flexible shaft and push it in the direction of the lift/latch power unit. With the flexible shaft end fitting (square sleeve) fully on the drive shaft, make sure the end of the sleeve is not nearer than 0.09 inch to the shaft bearing retainer.

CAUTION: DO NOT LET THE LIFT/LATCH POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF FIVE SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE LIFT/LATCH POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE LIFT/LATCH POWER UNIT.

(c) With the cargo door in the latched position put a 3/8-inch drive speed wrench in the door lift/latch manual drive receptacle. Turn the wrench in the door lift direction (counterclockwise) until the vertical movement stops and you can feel or hear clutch slippage.

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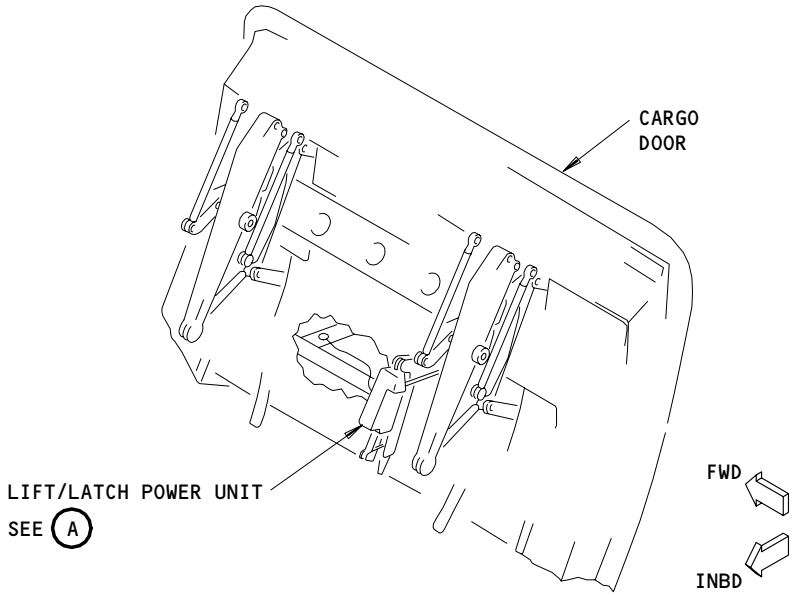
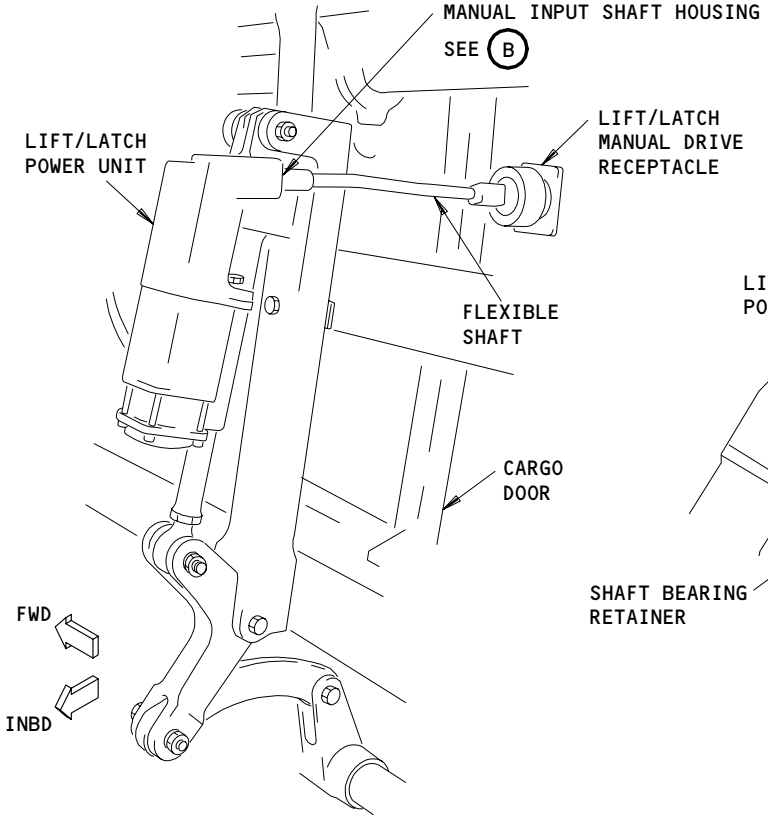
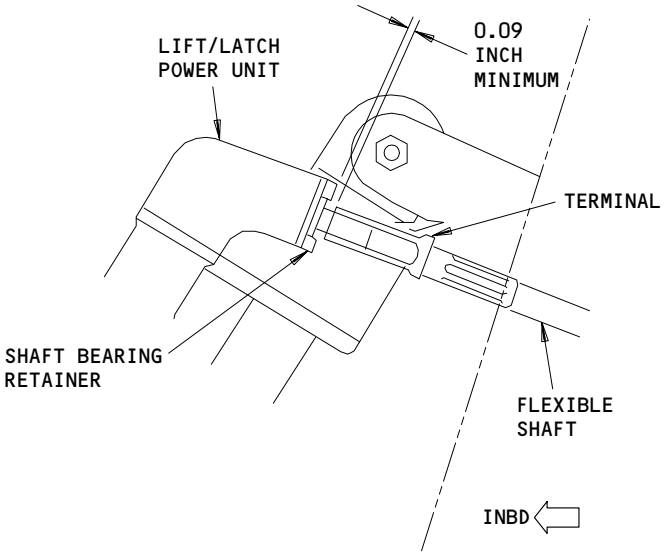


STANDARD AFT CARGO DOOR



LIFT/LATCH POWER UNIT

(A)



MANUAL INPUT SHAFT HOUSING

(B)

Lift/latch Power Unit
Figure 501

63484

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(d) During the door operation and when the door stops (clutch slippage), do not permit too much vibration or deflection of the flexible shaft.

NOTE: If the lift/latch flexible shaft does not operate in the correct position then do a check on the clutch slippage torque value.

S 735-022

(2) Do a check on the open/close manual drive.

CAUTION: DO NOT LET THE HINGE POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF FIVE SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE HINGE POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE IT AT A SPEED FASTER THAN 500 RPM. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE HINGE POWER UNIT.

(a) With the cargo door in the latched position, put a 3/8-inch drive speed wrench in the door open/close manual drive receptacle. Turn the wrench in the door open direction until the door is in the fully open position and there is clutch slippage that you can feel or hear.

(b) During the door operation and when there is clutch slippage of the hinge power unit, do not permit too much vibration or deflection of the flexible shaft.

NOTE: If the door open/close flexible shaft does not operate in the correct position, then do a check on the clutch slippage torque value.

(c) Close and latch the cargo door.

(d) Do a check on the flexible shafts for defects.

G. Do a check on the stop pads on the door stop fittings.

S 015-023

(1) Open the cargo door to get access to the door stop fittings.

S 215-024

(2) Make sure the stop pads are tightly bonded to the door stop fittings.

S 215-025

(3) Do a check on the stop fittings for cracks.

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H. Prepare the cargo door for the adjustment.

S 015-026
(1) Remove the lining from the door and from the ceiling and sidewall adjacent to the cargo door (Ref 25-52-02).

S 025-027
(2) Remove the pin retainer (spring clip) from all the door stop fittings if you fully adjust an installed door, or when you install a new door.

S 825-028
(3) Turn back all stop pins approximately two full turns or sufficiently to make clearance during the cargo door installation.

S 865-029
(4) Put a 3/8-inch drive speed wrench in the door lift/latch manual drive receptacle. Turn the wrench in the door lift direction (counterclockwise) until the vertical movement stops and there is clutch slippage that you can feel or hear.

NOTE: When the clutch slippage occurs, the door is usually lifted vertically two inches from the latched position. This is called the door lifted position.

S 865-030
(5) Turn the 3/8-inch drive speed wrench in the opposite direction (clockwise) until the door is in the latched position.

S 215-031
(6) Make sure that there is sufficient clearance between the upper hooks on the fuselage structure and the stops on the cargo door (Fig. 502).

S 215-032
(7) Make sure that there is sufficient clearance between the lower hooks on the cargo door and the stops on the fuselage structure (Fig. 502).

S 495-033
(8) Install four rig pins in the rig pin locations shown (Fig. 502) to make sure the door is in the latched position.

NOTE: The manual drive mode turns the latch shaft five degrees more than the electrical mode. You can go back some turns on the manual drive to put in the rig pins.

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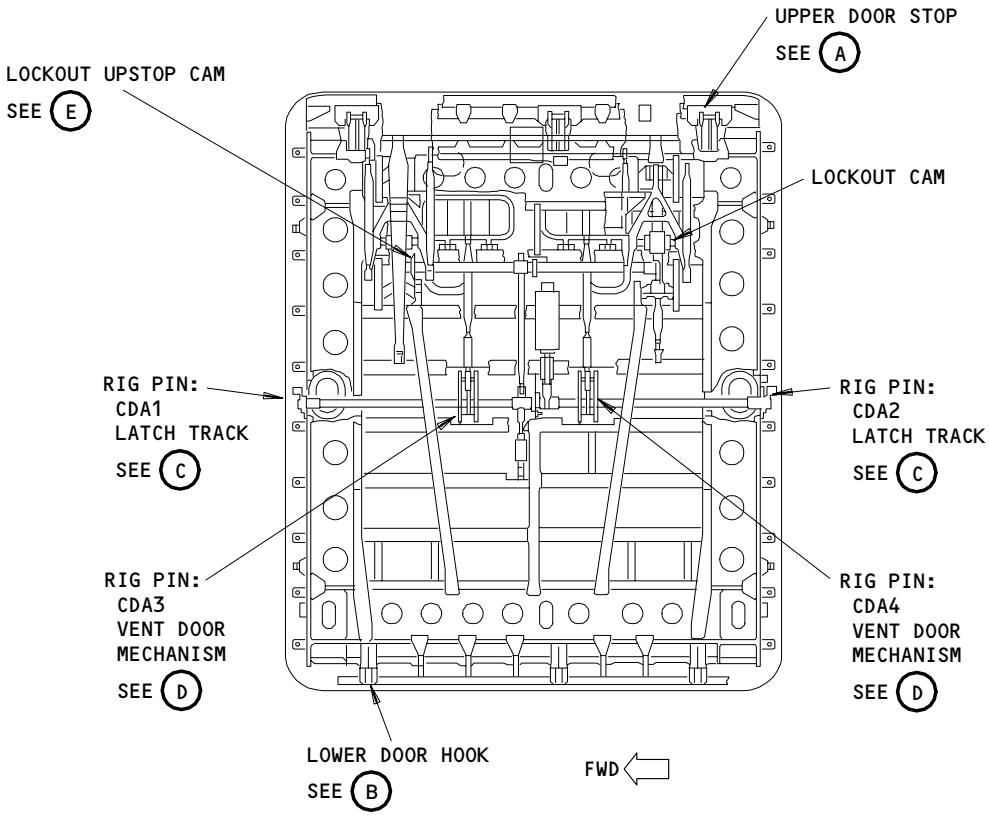
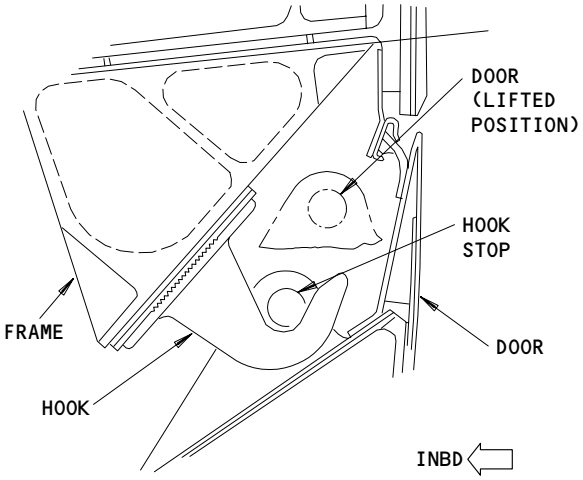
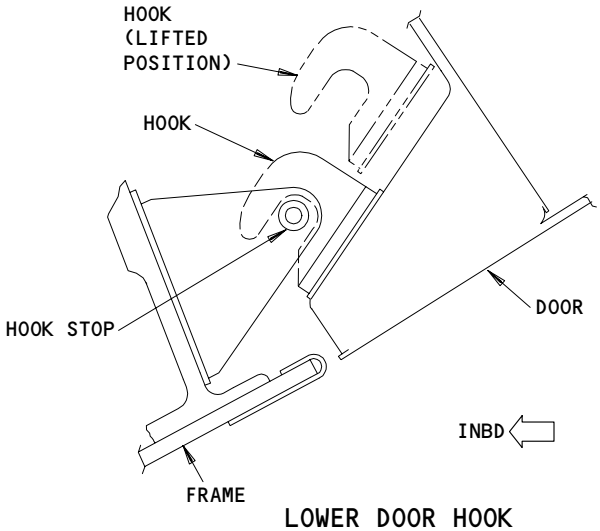


STANDARD AFT CARGO DOOR



UPPER DOOR STOP
(3 LOCATIONS)

A



LOWER DOOR HOOK
(3 LOCATIONS)

B

Initial Adjustments
Figure 502 (Sheet 1)

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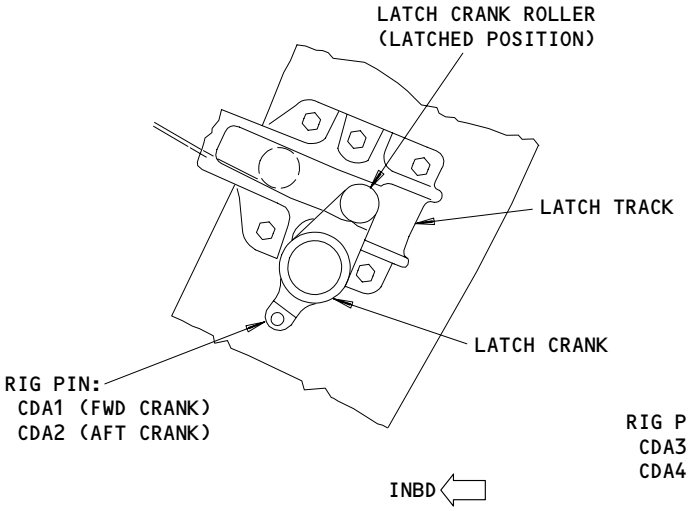
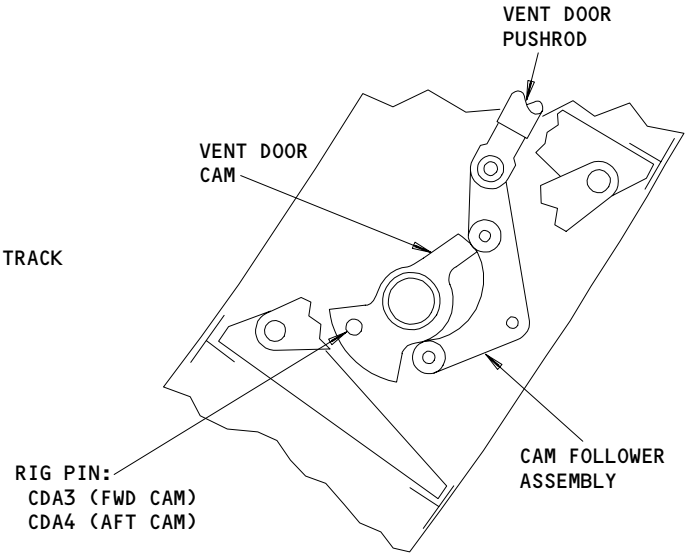


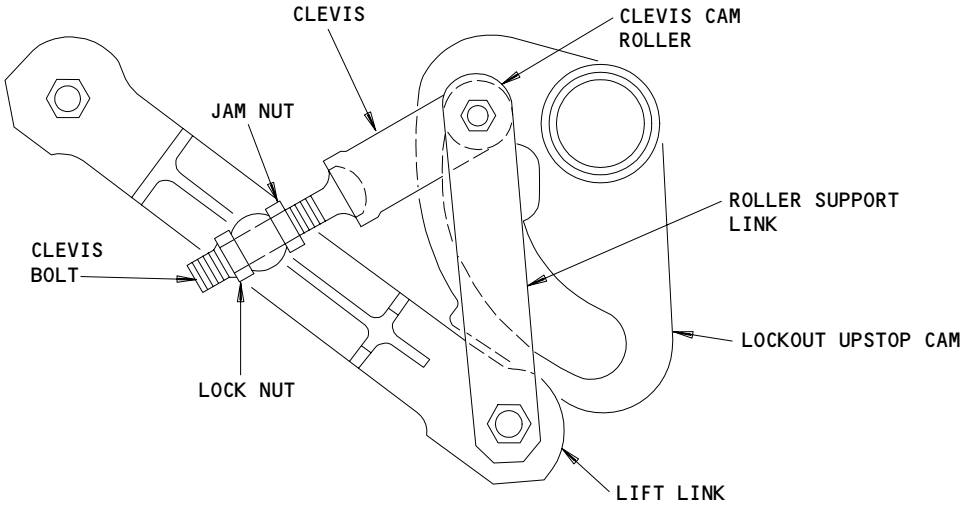
LATCH TRACK
(2 LOCATIONS)

C



VENT DOOR MECHANISM

D



LOCKOUT UPSTOP CAM (LATCHED POSITION)

E

Initial Adjustments
Figure 502 (Sheet 2)

63746

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S 735-034
(9) Make sure the latch crank rollers are tight against the bottom surface of the latch track.

S 735-035
(10) Try to turn the latch crank rollers by hand and do check for clearance between the top of the roller and the track.

S 735-036
(11) If the latch rollers are free to turn, push against the top surface of the track, or you cannot put the rig pins in, push down on the door while you manually drive the door to the latched position.

NOTE: The manual drive mode turns the latch shaft five degrees more than the electrical mode. You can go back some turns on the manual drive to put in the rig pins.

I. Adjust the guide track position (Fig. 503).

S 015-037
(1) Open the door manually. Operate the lift/latch and open/close manual drives until the door is in a position where you can get access to the mounting bolts of the four guide track fittings.

S 035-038
(2) Temporarily loosen all the bolts sufficiently to let the fitting move laterally. Push the fittings inboard against the bolt shanks and tighten the bolts. Keep this position during all the subsequent guide track adjustments.

NOTE: This adjustment step is recommended because it is possible that unwanted hole and bolt tolerances can add to as much as 0.04 inch.

J. Adjust the door flushness (unpressurized) and the guide rollers (Fig. 504).

S 035-039
(1) With the door not fully open loosen the two outboard mounting bolts of the guide roller fittings sufficiently to permit adjustment on their serrations.

S 035-040
(2) Close and latch the cargo door.

S 035-041
(3) Loosen the two remaining (inboard) bolts of the guide roller fittings.

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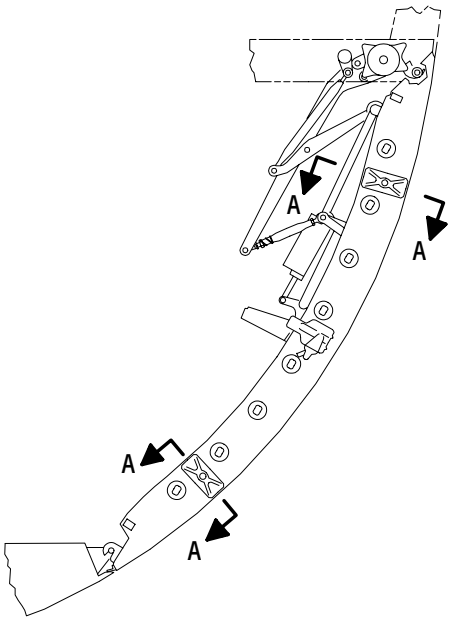
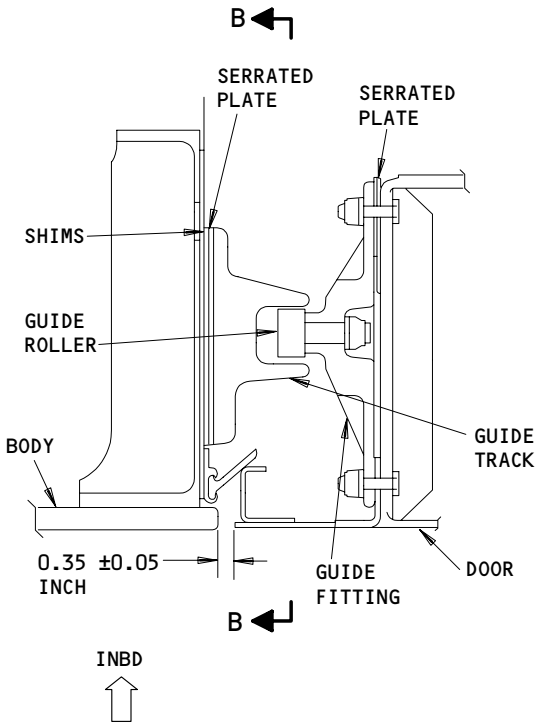
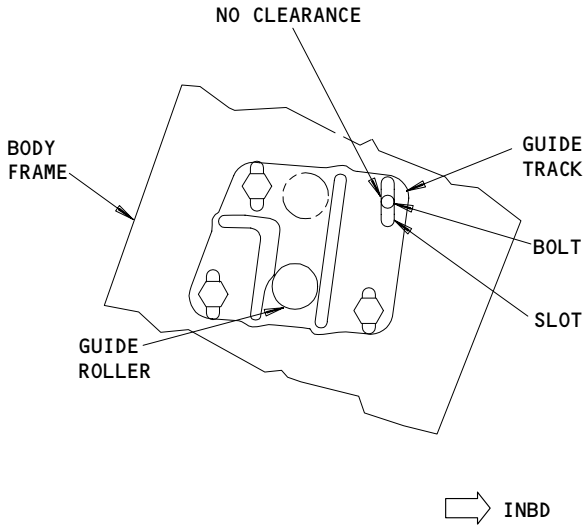


STANDARD AFT CARGO DOOR
(SIDE VIEW)



A–A



B–B

Guide Track Position Adjustment
Figure 503

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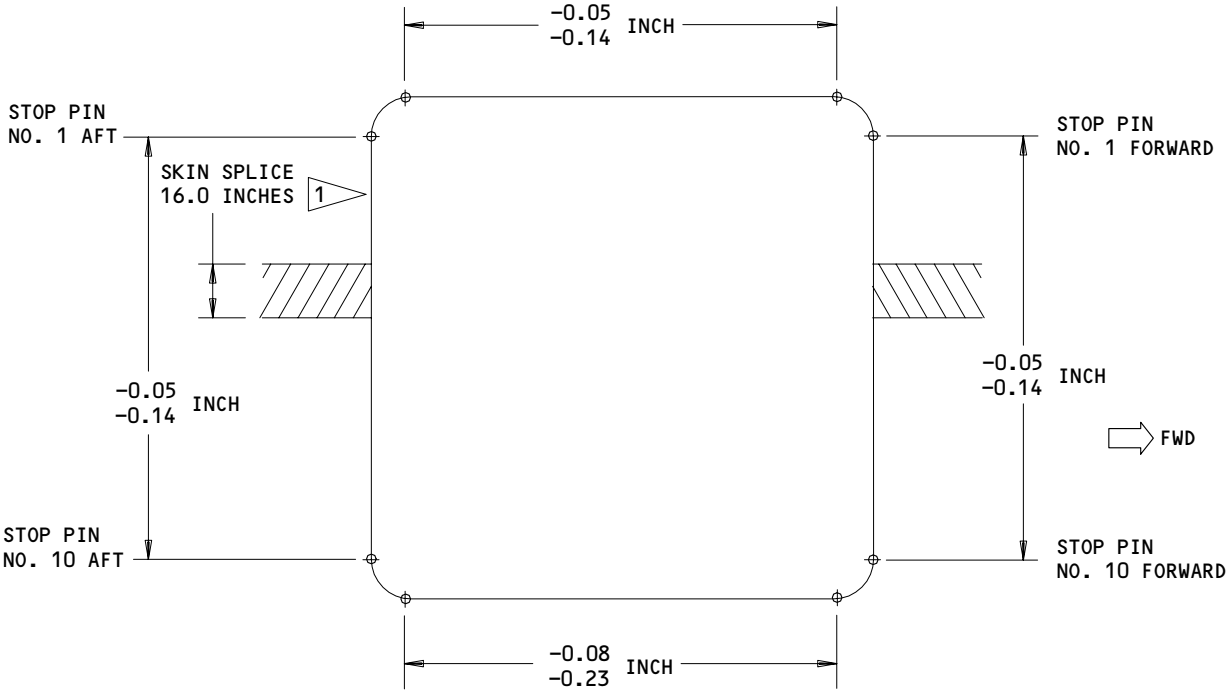

AFT CARGO DOOR FLUSHNESS

NOTE: 20% OF THE FORWARD EDGE IS PERMITTED TO BE -0.02 INCH MORE THAN THE TOLERANCE SHOWN.

20% OF THE AFT EDGE IS PERMITTED TO BE +0.02 INCH MORE THAN THE TOLERANCE SHOWN.

ALL THE TOLERANCES ARE MEASURED WHEN THE CARGO DOOR IS NOT PRESSURIZED.

A NEGATIVE TOLERANCE SHOWS THE DOOR IS INSIDE OF THE AIRPLANE CONTOUR.

FLUSHNESS IS MEASURED PERPENDICULAR TO THE SKIN.

1 DO NOT MEASURE THE FLUSHNESS IN THIS AREA.

Flushness (Unpressurized) and Guide Roller Adjustment
Figure 504 (Sheet 1)

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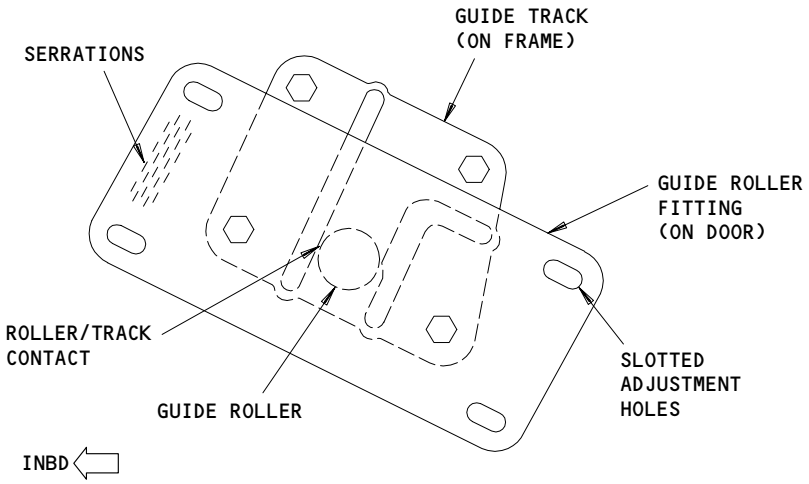

UPPER AND LOWER GUIDE FITTINGS

Flushness (Unpressurized) and Guide Roller Adjustment
Figure 504 (Sheet 2)

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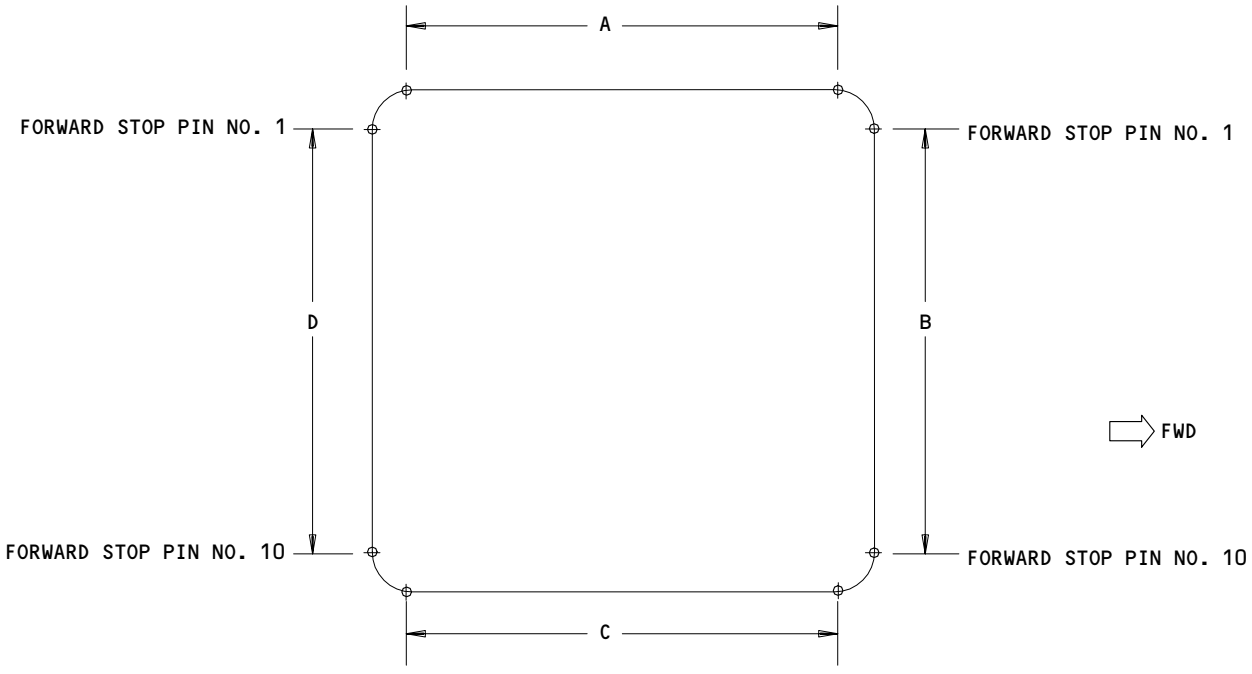
S 865-042
(4) Use the lift/latch manual drive to put the door in a position as near as possible to the flushness values shown (Fig. 504).

S 825-043
(5) Put the fittings on their serrations to let the roller touch the guide track face. Tighten the inboard bolts.

S 865-044
(6) Manually unlatch and open the door sufficiently to tighten the remaining guide roller bolts.

S 865-045
(7) Close and latch the cargo door.



Flushness and Skin Clearance Deviation Zones
Figure 504A

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S 225-283
(8) Do a check on the flushness deviations (Fig. 504, Fig. 504A and table 501) with the wedge tool installed at the stop fitting positions shown (Fig. 507).

S 215-047
(9) Make sure the guide rollers touch the bottom surface of the track fittings.

TABLE 501
FLUSHNESS AND SKIN CLEARANCE DEVIATIONS

EFFECTIVITY	ZONE	FLUSHNESS *[1]	SKIN CLEARANCE
MTH 278	D	-0.04 To -0.14 INCH	NONE
MTH 280	D	-0.03 To -.014 INCH	NONE

*[1] A negative flushness shows the door is inboard of the fuselage contour. A positive flushness shows the door is outboard of the fuselage contour. All dimensions are in inches.

K. Adjust the position of the door with the adjustment rod (Fig. 505).

NOTE: The two adjustment rod assemblies in each door give the turn position adjustment to prevent a preload on the hinge mechanism when the door is in the latched position.

S 825-048
(1) For the initial adjustment, adjust the rod end bearing in 1/2-turn increments.

S 825-049
(2) For the final adjustment, turn the tube assembly. Do not remove the two rod end bolts.

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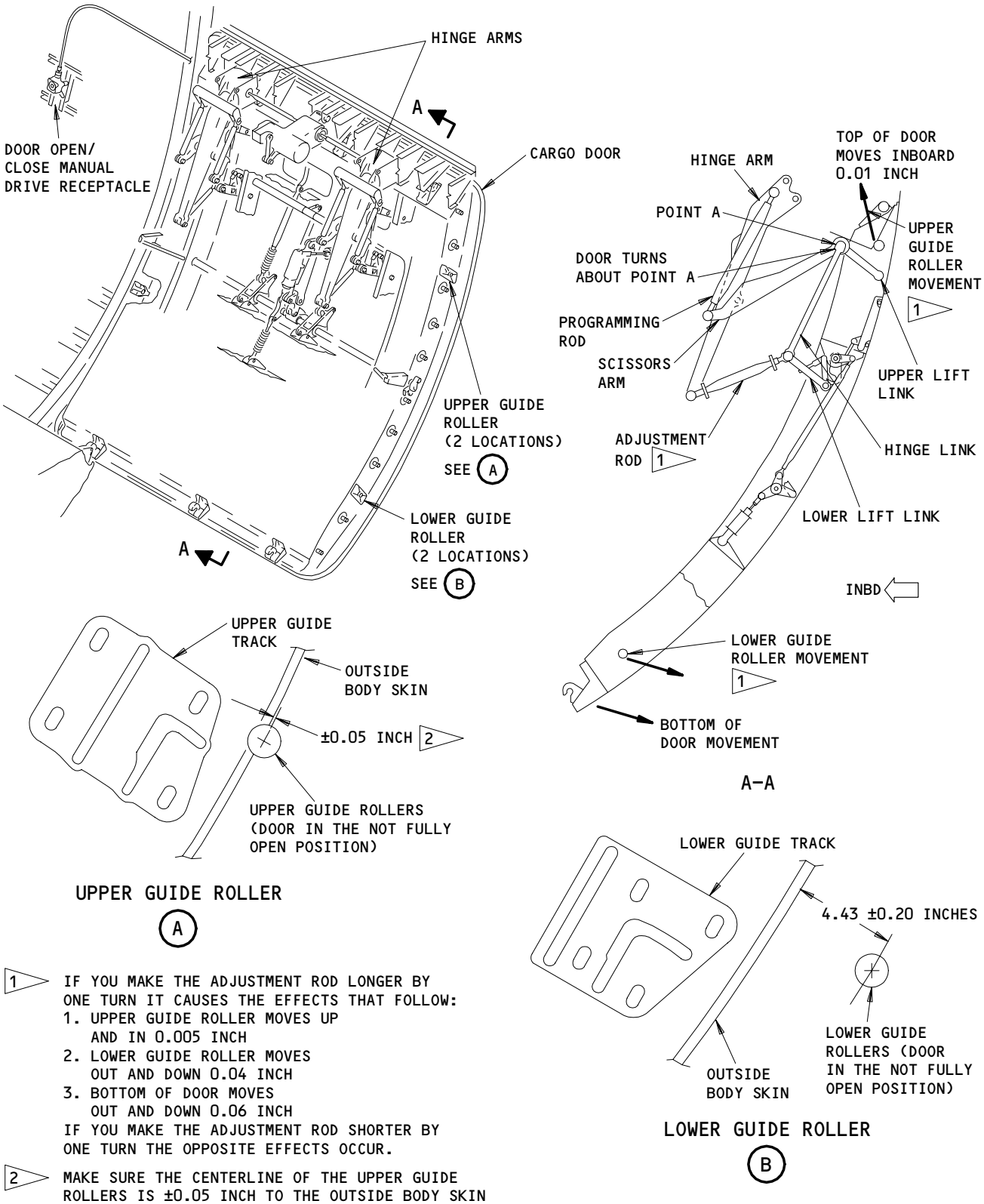

1 IF YOU MAKE THE ADJUSTMENT ROD LONGER BY ONE TURN IT CAUSES THE EFFECTS THAT FOLLOW:
1. UPPER GUIDE ROLLER MOVES UP AND IN 0.005 INCH
2. LOWER GUIDE ROLLER MOVES OUT AND DOWN 0.04 INCH
3. BOTTOM OF DOOR MOVES OUT AND DOWN 0.06 INCH

IF YOU MAKE THE ADJUSTMENT ROD SHORTER BY ONE TURN THE OPPOSITE EFFECTS OCCUR.

2 MAKE SURE THE CENTERLINE OF THE UPPER GUIDE ROLLERS IS ±0.05 INCH TO THE OUTSIDE BODY SKIN

Standard Cargo Door Turn Position Adjustment
Figure 505

64019
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S 825-050

(3) After you adjust the upper and lower guide rollers, do the steps that follow to do the final adjustment:
   (a) Turn the open/close manual drive to close the door until there is clutch slippage or the two upper guide rollers are the same distance from the upper guide track inboard surface.
   (b) Slowly turn the open/close manual drive to open the door until the centerline of the two upper guide rollers are on the body skin out of the mold line to ±0.05 inch.
   (c) With the door in this position, adjust the adjustment rod length to make the centerline of the lower guide rollers as shown (View B, Fig. 505).

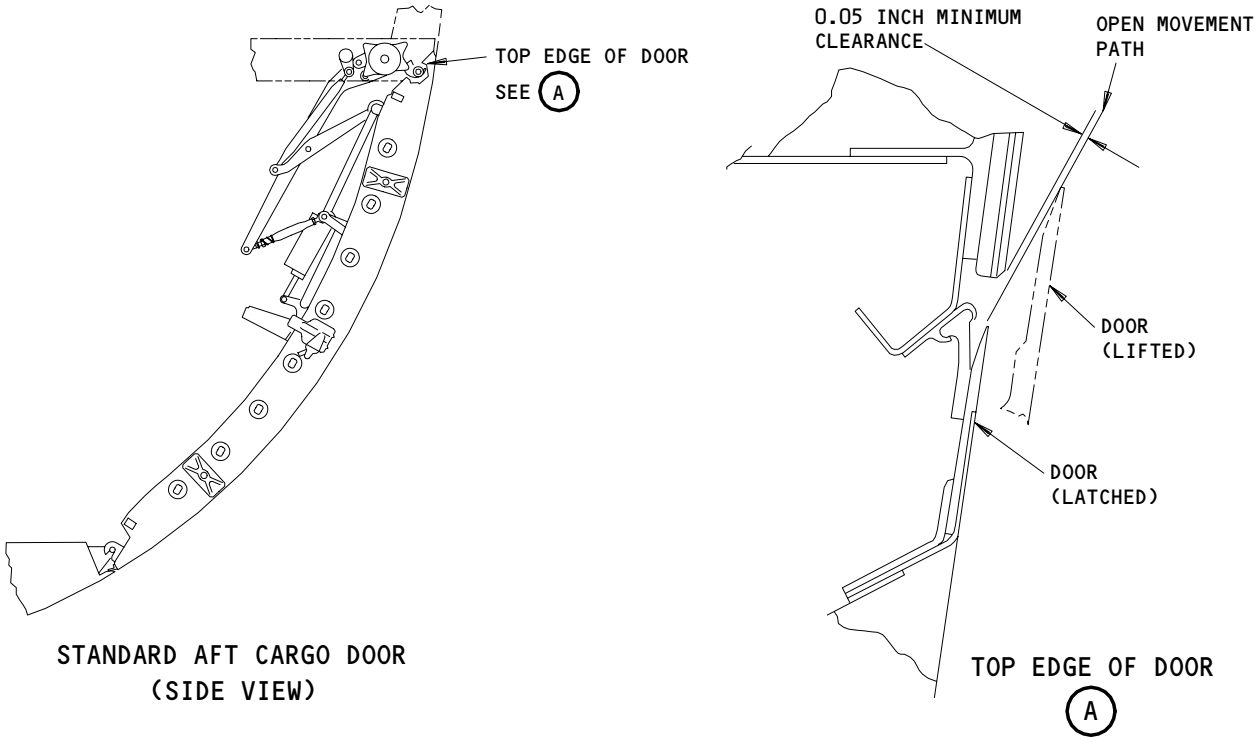
L. Adjust the top edge of the door open movement clearance.

S 225-051

(1) With the door in a position which gives the minimum clearance between the door and the top edge of the cutout, make sure the clearance is not less than the minimum as shown (View A, Fig. 506).

S 825-052

(2) If the clearance is not in the limits, adjust the door again to the maximum allowable outboard flushness adjustment. Do not lose the inboard position that you got in the "Adjust the guide track position" procedure.



Standard Cargo Door Top Edge Open Movement Clearance
Figure 506

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S 225-053
(3) Do the check on the clearance as shown (Fig. 506) again.

M. Adjust the door to the center of the cutout.

S 825-054
(1) Make sure the door is in the fully latched position.

S 825-055
(2) Make sure the wedge tools are installed.

S 825-056
(3) Adjust the door to align the forward and aft stop pins to the center of the mating stop pads to the limits shown (View B, Fig. 507).

S 825-057
(4) Adjust the vertical alignment.
  (a) Latch the cargo door.
  (b) Turn the forward and aft stop pins No. 1 and No. 10 outboard to touch the stop pads.
  (c) With an applicable scale, measure the stop pin head position related to the stop pad.
  (d) If the measurement is not in the limits shown (Fig. 507), open the door sufficiently to get access to the latch track mounting bolts (Fig. 508).
  (e) Loosen the bolts and move the latch track the number of serrations necessary to align the stop pins with the stop pads, and tighten the bolts.

    NOTE: When you move the latch track one serration it changes the door position 0.036 inch in the vertical direction.

  (f) Close the cargo door and do the check again on the stop pins and the stop pads.
  (g) During the adjustment procedure keep the door position at the same level in the body frame cutout. Do not put the door at an angle.
  (h) Make sure the horizontal location of each forward and aft stop pins is not more than 0.06 inch measured vertically.

S 825-058
(5) Adjust the longitudinal alignment (Fig. 509).
  (a) Release the two pip pins from the hinge arms and move the door forward and aft by hand to do the longitudinal adjustment of the No. 1 and No. 10 stop pins on the stop pads to the limits shown (Fig. 507).

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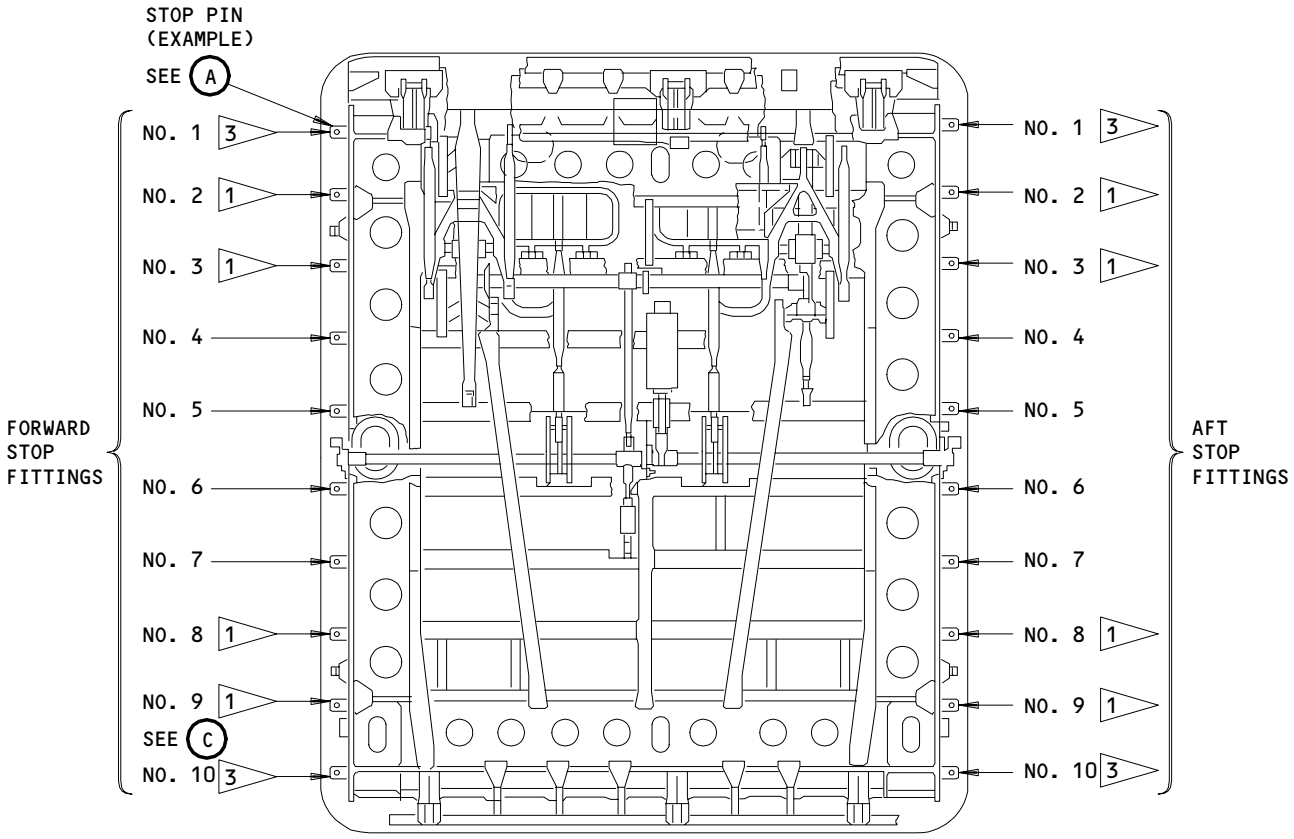

STANDARD AFT CARGO DOOR
(INTERNAL VIEW)

Stop Pin and Stop Pad Alignment
Figure 507 (Sheet 1)

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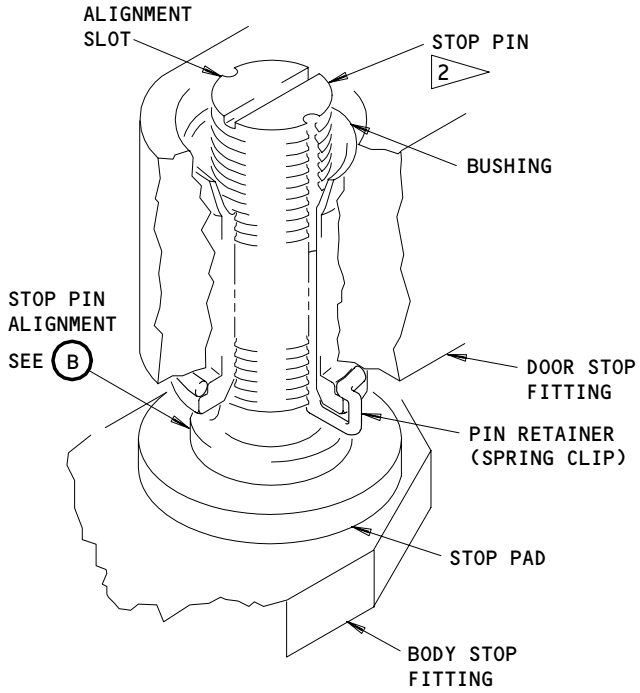
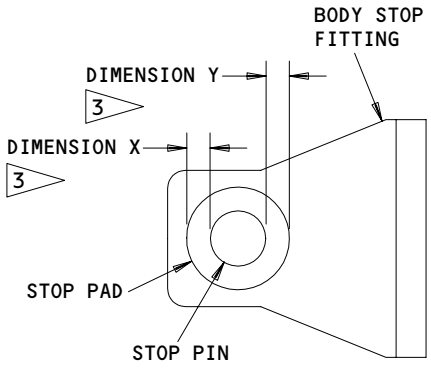
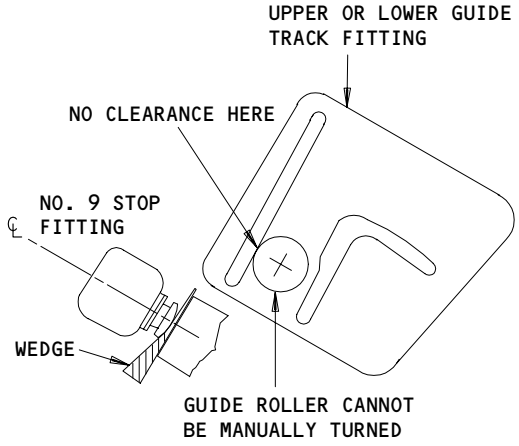


STOP PIN
(EXAMPLE)
A



STOP PIN ALIGNMENT
B



STOP PIN NO. 9
C

1 INSTALL THE WEDGES AT THE STOP FITTINGS NO. 2 AND NO. 9 OR NO. 3 AND NO. 8 WHEN YOU MAKE THE ADJUSTMENTS

2 60 DEGREE TURN OF THE STOP PIN CHANGES THE CLEARANCE 0.007 INCH

3 MAKE THE DIMENSIONS X AND Y AT ALL LOCATIONS ON THE CIRCLES EQUAL TO 0.08 INCH (STOP NO. 1 AND 10).
DO NOT LET THE HORIZONTAL POSITION OF THE FORWARD AND THE AFT STOP PINS BE MORE THAN 0.06 INCH MEASURED VERTICALLY

Stop Pin and Stop Pad Alignment
Figure 507 (Sheet 2)

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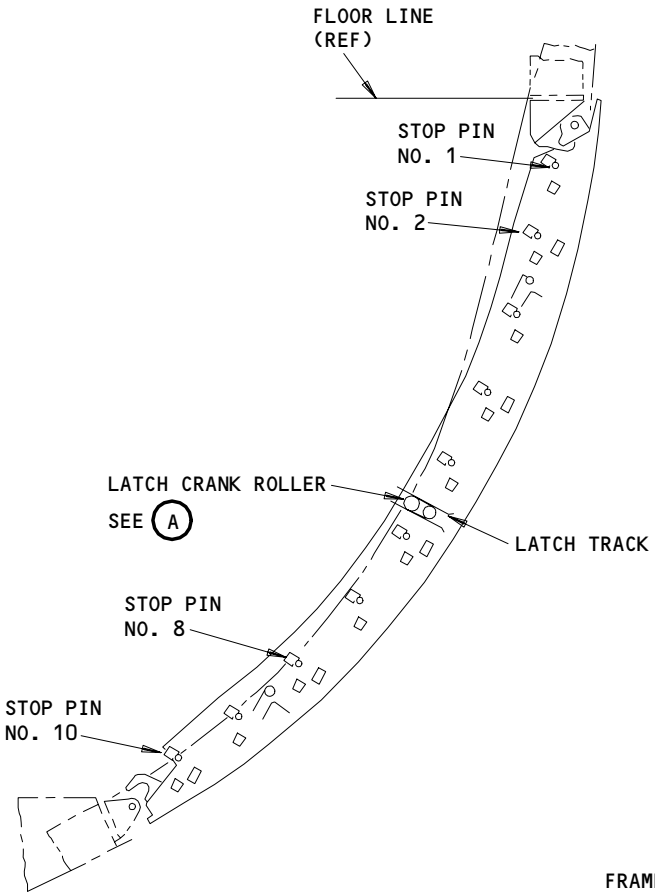
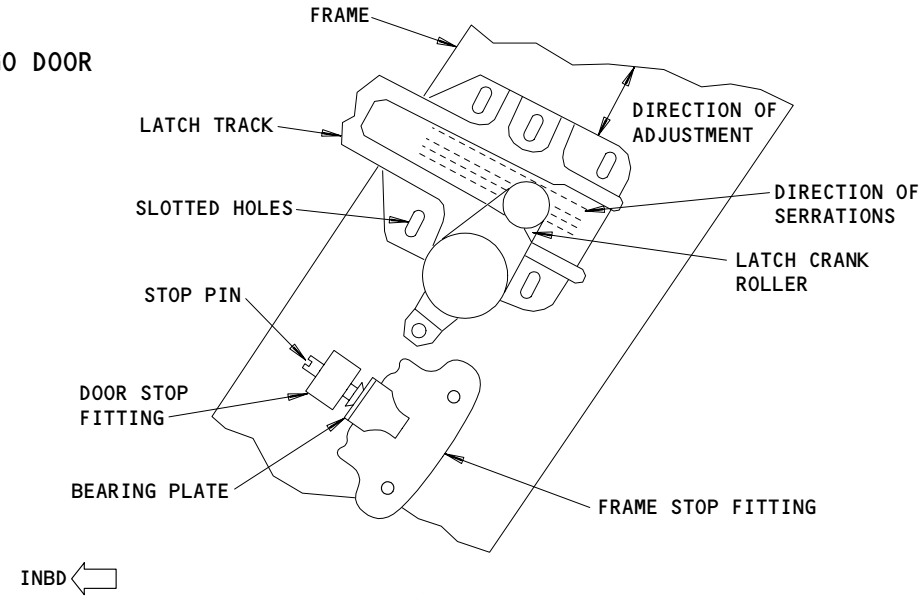


STANDARD AFT CARGO DOOR
(SIDE VIEW)



LATCH CRANK ROLLER
(DOOR IN THE LATCHED POSITION)

A

Vertical Alignment Adjustment
Figure 508

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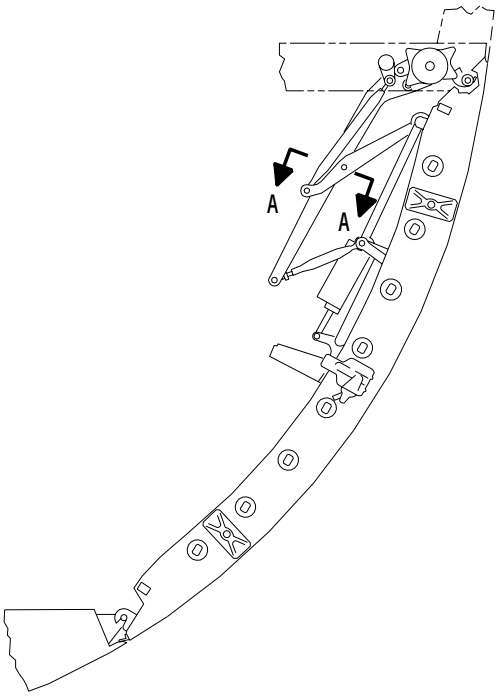
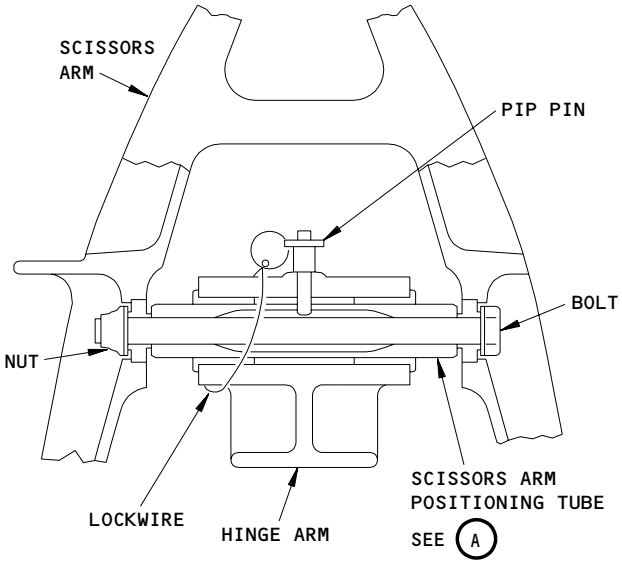
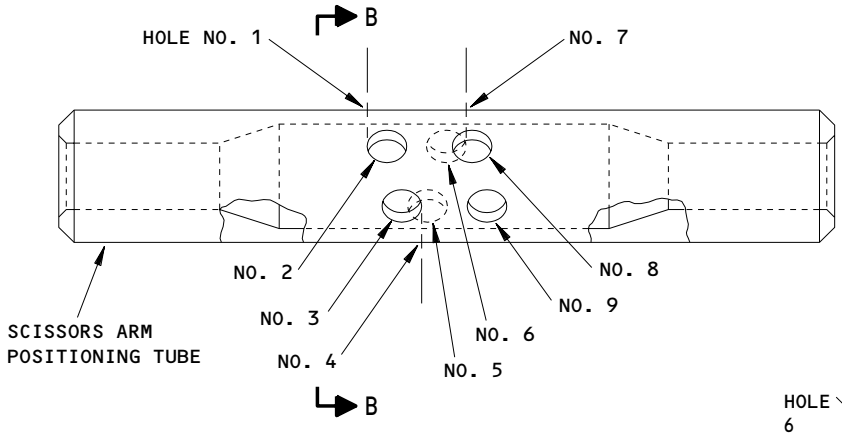


STANDARD AFT CARGO DOOR
(SIDE VIEW)

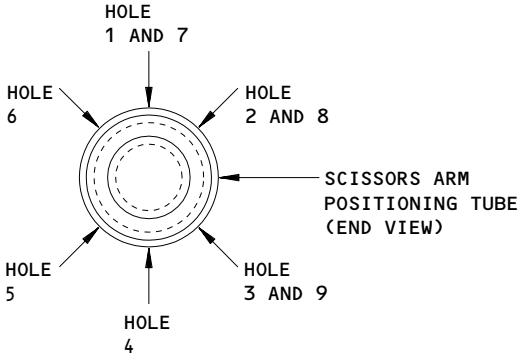


FWD

A-A



SCISSORS ARM POSITIONING TUBE
(A)



B-B

Standard Cargo Door Longitudinal Adjustments
Figure 509

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(b) To install the pip pins turn the scissors arm positioning tube until the pip pins fall into position at the new location.

NOTE: There are nine holes at distances such that you can change the axial positions along the positioning tube in 0.10 inch increments.

(c) Make a final check to make sure the stop pins are in the center of the stop pads with the pip pins in position.
(d) Make sure the hinge arms are parallel with the procedure that follows before you install the lockwire on the pip pins.

S 825-059
(6) Make sure the hinge arms are parallel (Fig. 510).
(a) With the forward and aft stop pins No. 1 and No. 10 in the center of their stop pads make sure the two hinge arm mechanisms are parallel.

NOTE: To prevent a large preload between the scissors arm and the hinge arm shaft or between the forward and aft hinge mechanisms the hinge arm mechanisms must be parallel.

(b) To do a check for a preload put the door in the approximate straight down position and then remove one of the pip pins from its mechanism.
1) Use a mallet to hit lightly the hinge arm of the scissors arm joint.

NOTE: An axial movement more than 0.05 inch shows that a large preload is on the mechanism.

(c) To adjust for the large preload turn the scissors arm positioning tube and install the pin in a hole which decreases the preload to the limits. Make sure to keep the stop pins aligned as shown (Fig. 507).
(d) Do a check again to make sure the hinge arms are parallel.
1) Attach masking tape at the center of each hinge arm.
2) Find the center of the arm at each location and make a mark with a fine point pen or pencil.
3) Measure the dimensions "X" and "Y" (Fig. 510). Make sure the dimensions are in 0.06 inch of each other. (In theory, ±0.03 inch of the center of each arm.)
(e) Do a check again to make sure the door is in the center of the cutout.
(f) After the final adjustment and the check of the door and the hinge arms, install the lockwire to hold the two pip pins.
(g) Use a tamper proof seal or putty on the lockwires to prevent accidental removal of the pip pins.

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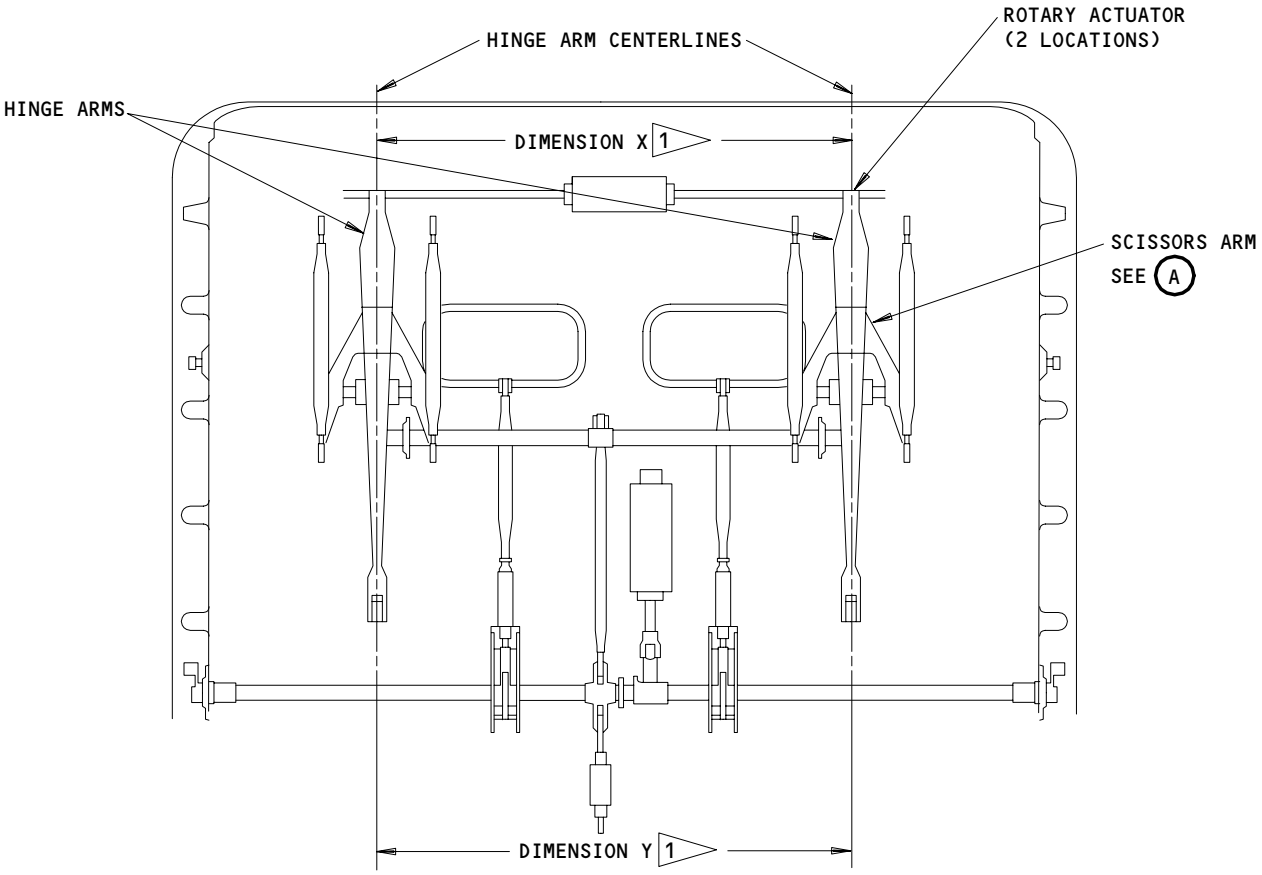
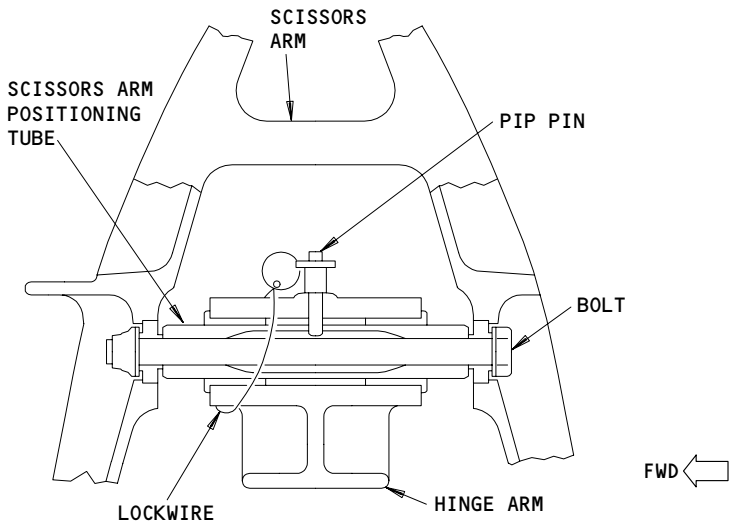


STANDARD AFT CARGO DOOR



SCISSORS ARM
A

1 MAKE DIMENSIONS X AND Y THE SAME TO ±0.03 INCH

Parallel Hinge Arm Adjustment
Figure 510

63938

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N. Adjust the lateral stops (Fig. 511).

NOTE: The lateral stop pads do not let the body skin touch the door skin edge when heavy loads cause the body structure to bend.

S 865-060

(1) Make sure the cargo door is in the fully latched position, the wedge tools are installed, and the door is in the center of the cutout.

S 825-061

(2) To adjust the lateral stop clearance, add or remove shims under the lateral stop pads to get the clearances shown (Fig. 511).

O. Adjust the upper and lower guide track.

S 825-062

(1) Adjust the upper and lower guide track lateral position (Fig. 512).
   (a) With the door in the fully latched position and in the center of the door cutout, install the wedge tools at the forward and aft stop fittings No. 2 and No. 9 or at the forward and aft stop fittings No. 3 and No. 8.
   (b) Add or remove the shims under the guide track to get the lateral clearance (Fig. 512). (The lateral clearance is the position of the guide roller related to the guide track).

      NOTE: The maximum total thickness of the shim permitted under each guide track is 0.18 inch.

   (c) When you make this adjustment, do not change the guide track inboard position.

      NOTE: An incorrect guide track inboard position can cause an unsatisfactory door flushness.

S 825-063

(2) Adjust the upper and lower guide track vertical position (Fig. 512).
   (a) Adjust the guide track fittings vertically on the serrations to get the upper or lower guide track dimensions shown (View B, Fig. 512).

      NOTE: Do not change the inboard guide track position.

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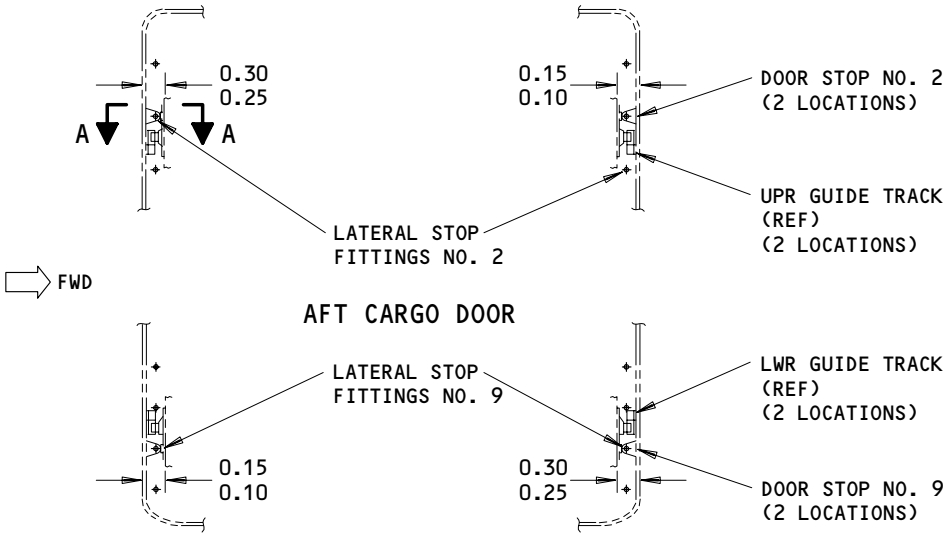

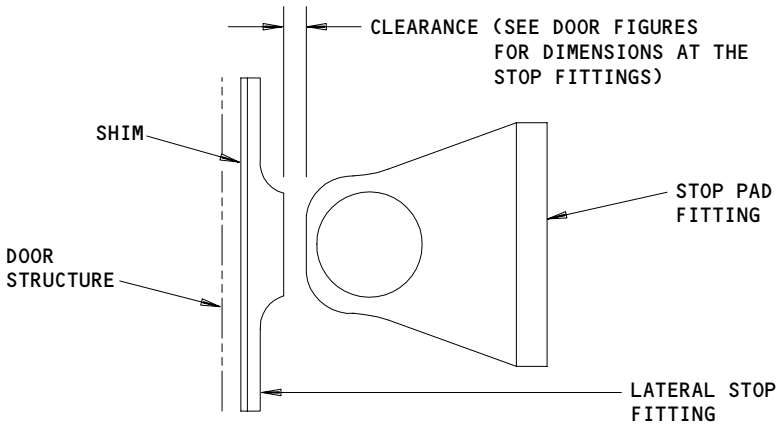

A-A
(EXAMPLE)

Lateral Stops Adjustment
Figure 511

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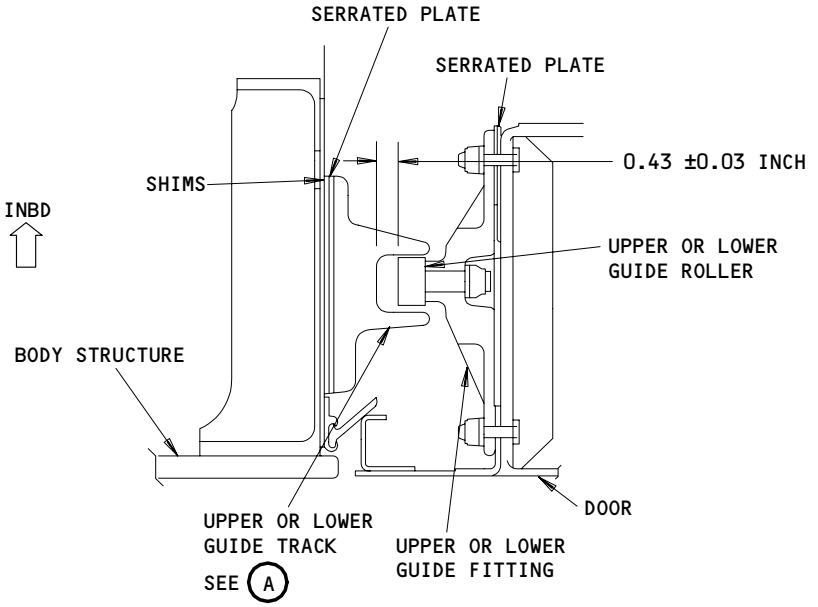
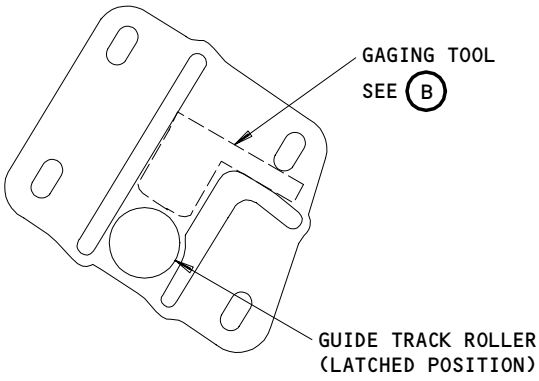
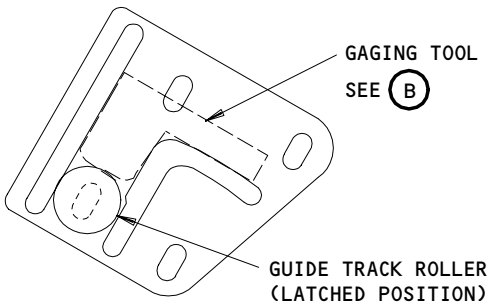




UPPER GUIDE TRACK

A



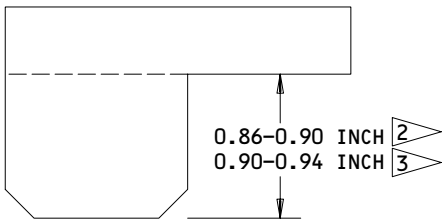
LOWER GUIDE TRACK

A

1 MAKE FROM 0.125 INCH ALUMINUM STOCK

2 LOWER GUIDE TRACK

3 UPPER GUIDE TRACK



GAGING TOOL 1

B

Upper and Lower Guide Track Lateral Stops Adjustment
Figure 512

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(b) When you make this adjustment, do not change the guide track inboard position.

NOTE: An incorrect guide track inboard position can cause an unsatisfactory door flushness.

S 825-064

(3) Adjust the upper and lower guide track closed position clearance (Fig. 513).
   (a) Manually close the door to the lifted position until one of the four guide rollers touches the inboard surface of its guide track.
   (b) Make sure the closed position clearances are as shown (Fig. 513). Do not change the position of the door.
   (c) If you cannot get the clearances in the tolerances, adjust the door turn position again with the procedure that follows.
   (d) If the sum of the clearances at the upper forward and aft fittings or the lower forward and aft fittings is zero, adjust the guide tracks again to make the clearances more equal.
   (e) To adjust the door turn position do the steps that follow:
      1) Unlatch and manually open the cargo door sufficiently to tighten the remaining guide roller bolts.
      2) Close and latch the door.
      3) Do a check on the flushness with the wedge tool installed at the stop fitting positions shown (Fig. 507).
      4) Make sure the lift/latch rollers touch the bottom surface of the track fitting.

S 825-065

(4) Do a check on the latch track and the crank clearance (Fig. 514).
   (a) With the door in the fully latched position and the lateral stop clearances adjusted, install the wedge tool before you measure the clearance.

CAUTION: BEFORE YOU LOOSEN THE FASTENERS, CAREFULLY MAKE A MARK FOR THE VERTICAL POSITION OF EACH LATCH. IF YOU DO NOT INSTALL THE LATCH TRACK IN THE SAME POSITION, THE DOOR WILL NOT BE PUT BACK IN THE CENTER OF THE DOOR CUTOUT.

   (b) Add or remove shims under the latch track to get the lateral clearances.

NOTE: The maximum total thickness of shims permitted under each of the latch tracks is 0.12 inch.

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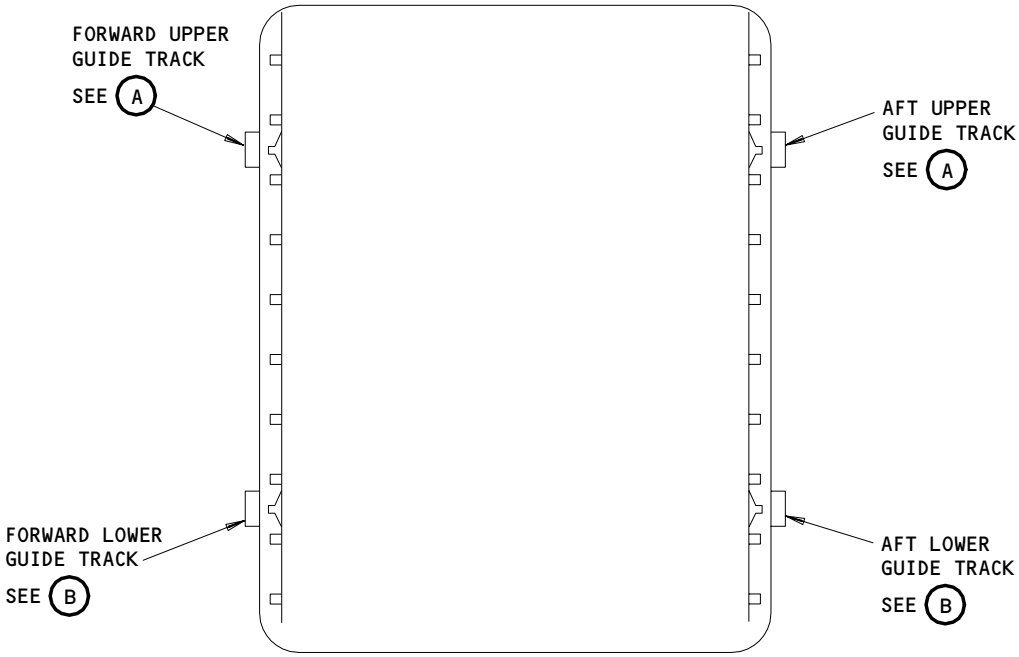
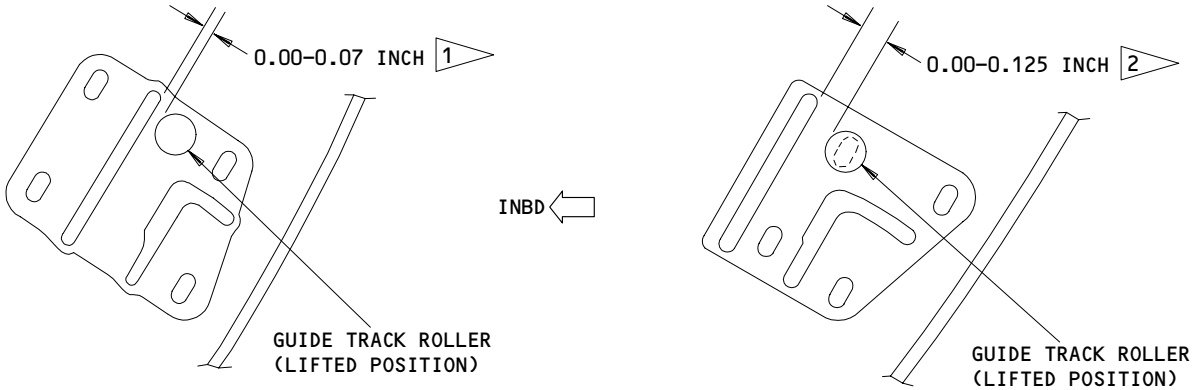


STANDARD AFT CARGO DOOR



UPPER GUIDE TRACK
A

LOWER GUIDE TRACK
B

1 MAKE THE SUM OF THE CLEARANCES AT THE FORWARD AND AFT UPPER TRACKS THE SAME TO 0.01-0.14 INCH. FORWARD AND AFT CLEARANCES CAN NOT BE ZERO

2 MAKE THE SUM OF THE CLEARANCES AT THE FORWARD AND AFT LOWER TRACKS THE SAME TO 0.01-0.35 INCH. FORWARD AND AFT CLEARANCES CAN NOT BE ZERO

Upper and Lower Guide Track Closed Position Clearance Adjustment
Figure 513

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(c) Do a check again on the door vertical alignment and adjust if it is necessary.

P. Adjust the centering guide clearance (Fig. 515).

S 865-066

(1) Put the door in the lifted position when you do a check on the centering guide clearance.

NOTE: The cargo door is in the lifted position when it is lifted vertically two inches from its latched position.

S 825-067

(2) Add or remove the washers from under the forward and aft nylon centering guide on the latch track assembly to get the correct clearance (Fig. 515).

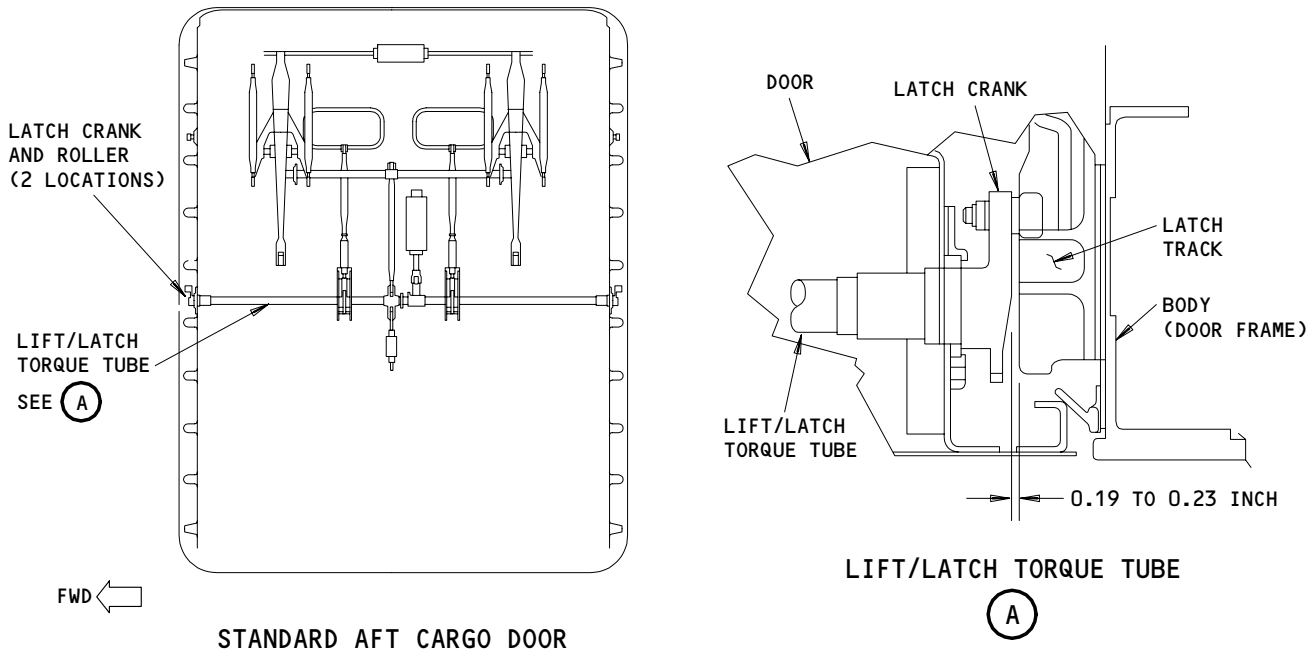
Q. Adjust the stop pin and stop pad clearance (Fig. 516).

S 215-068

(1) Make sure the door is in the fully latched position and the door is in the center of the cutout.

S 495-069

(2) Install the wedge tools in the forward and aft stop fittings No. 2 and No. 9.



STANDARD AFT CARGO DOOR

LIFT/LATCH TORQUE TUBE
A

Latch Track and Crank Clearance Adjustment
Figure 514

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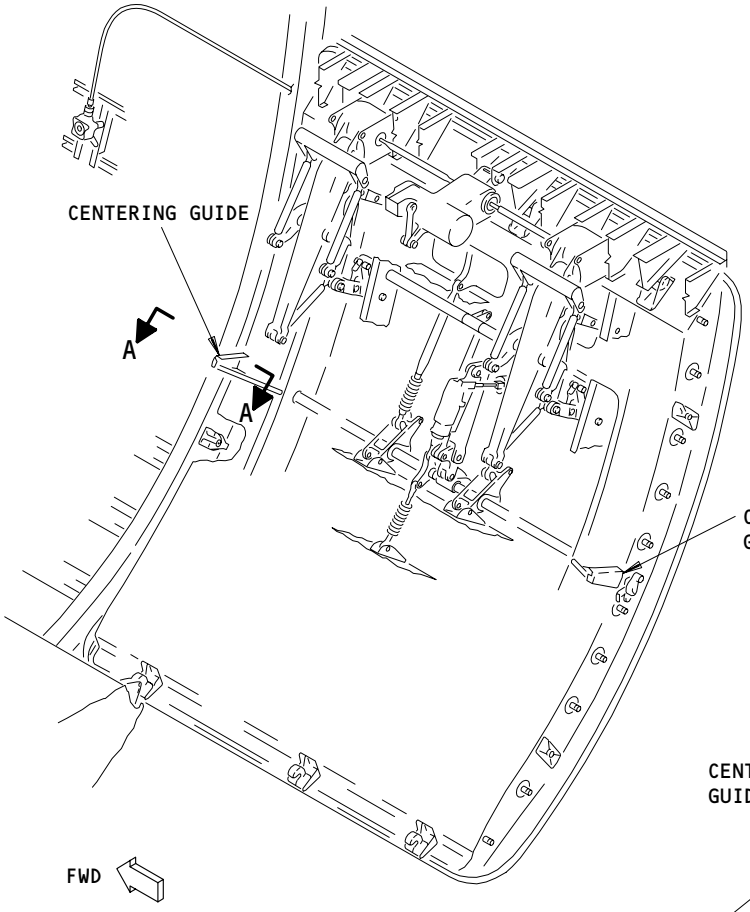
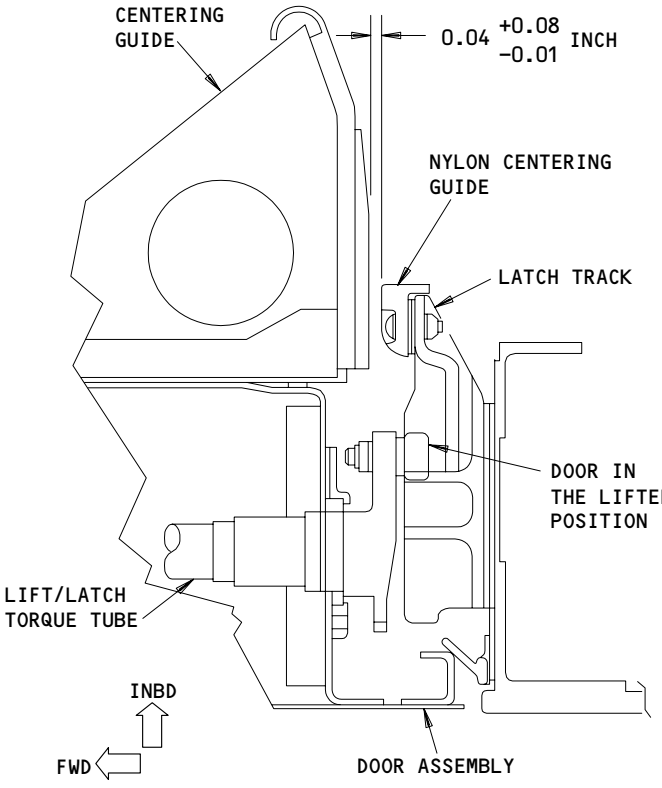


STANDARD AFT CARGO DOOR



A–A

Centering Guide Clearance Adjustment
Figure 515

63920

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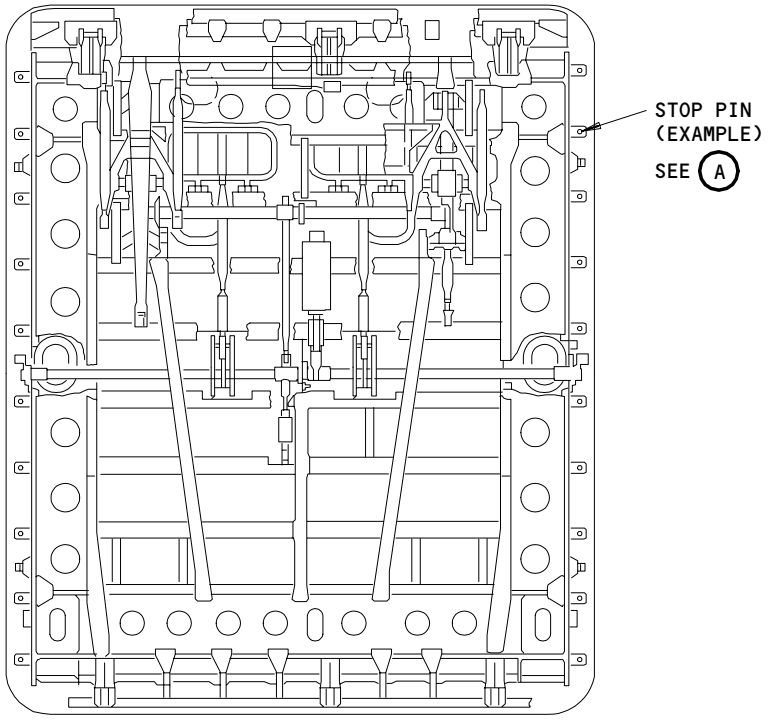
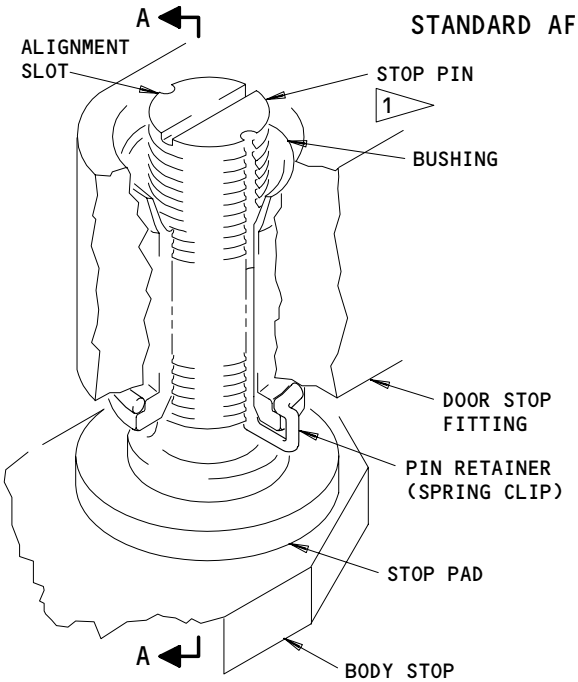
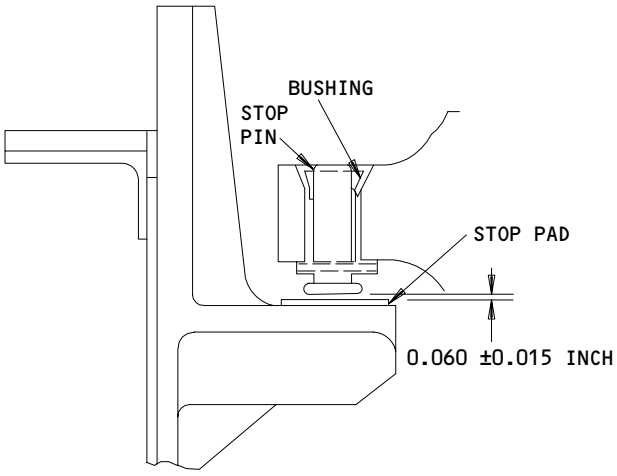


STANDARD AFT CARGO DOOR



STOP PIN
(EXAMPLE)
A



A–A

1 60 DEGREE TURN OF THE STOP PIN CHANGES THE CLEARANCE 0.007 INCH

Stop Pin and Stop Pad Clearance Adjustment
Figure 516

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S 495-070

(3) Put a 0.056 inch spacer between the stop pad and the stop pin you will adjust.

NOTE: If you use the spacer to make the clearance 0.056 inch and then turn back the stop pin the full 60 degrees to align the retainer slots, a clearance of 0.064 inch is the result. The 0.056-0.064 inch range is in the center of the permitted tolerance range of 0.075-0.045 inch.

S 825-071

(4) Turn the stop pin outboard to touch the spacer, then turn it back until the first two pin retainer (spring clip) slots in the pin and the bushing align.

S 435-072

(5) Install the pin retainer and put the spring clip around the bushing flange.

S 825-073

(6) Do the steps above again to adjust the remaining stop pin and stop pad clearances.

S 495-074

(7) Remove the wedges from the forward and aft stop fittings No. 2 and No. 9 and install at the forward and aft stops fittings No. 3 and No. 8.

S 825-075

(8) Adjust the clearances at stop fittings No. 2 and No. 9.

S 645-076

(9) After the final adjustment of the stop pins and the installation of the pin retainers (spring clips) apply a light layer of grease to the mating surfaces of the stop pins and the stop pads.

R. Adjust the upper and lower hook and stop clearances (Fig. 517).

S 215-077

(1) Make sure the door is in the fully latched position, the wedge tools are installed, and the door is in the center of the cutout.

S 225-078

(2) Make sure the clearance between the upper hooks on the fuselage structure and the stops on the cargo door is as shown (View A-A, Fig. 517).

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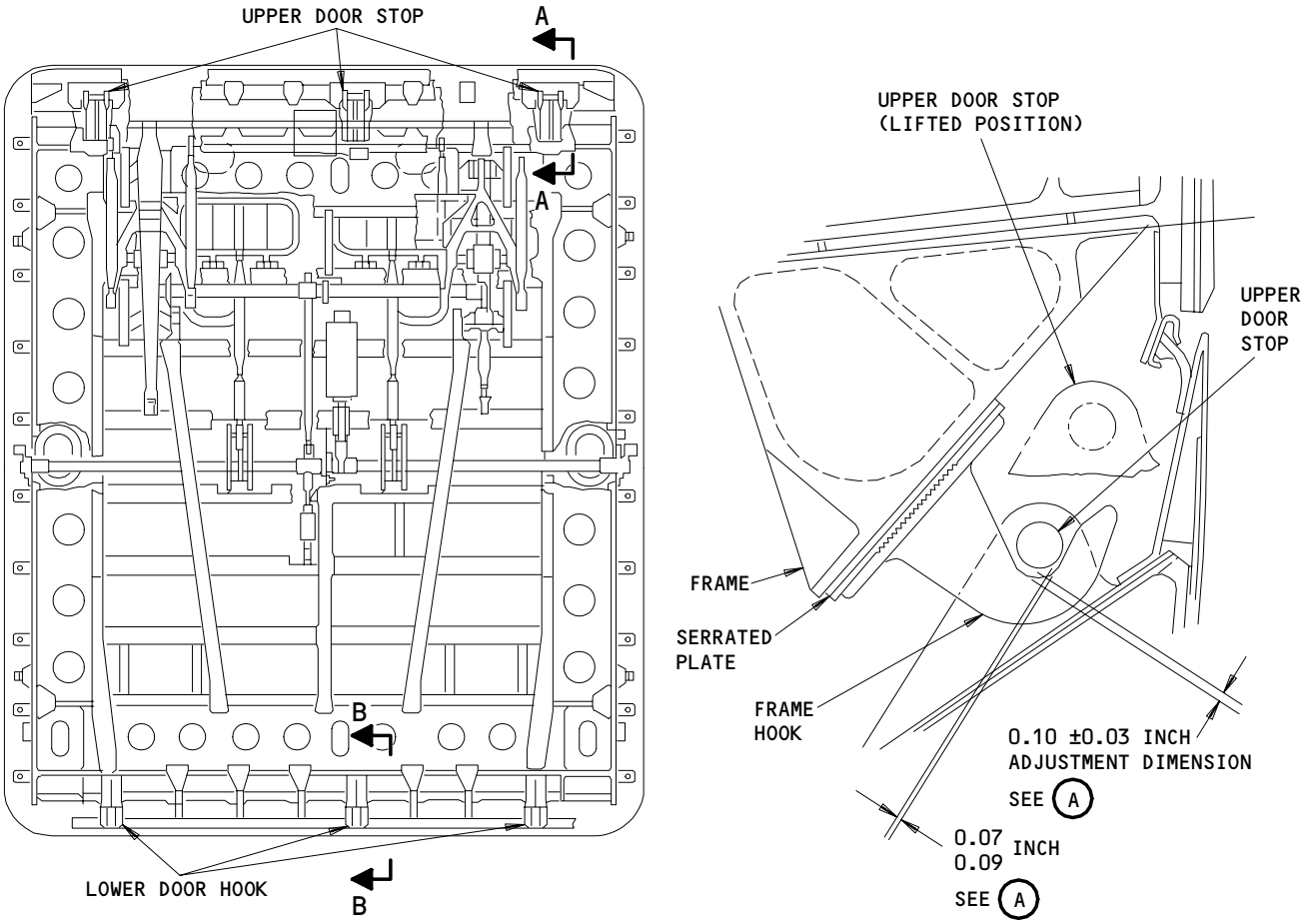

UPPER FRAME HOOK AND DOOR STOP
A–A

LOWER DOOR HOOK AND FRAME STOP
B–B

ADJUSTMENT DIMENSION
(A)

Upper and Lower Hook and Stop Clearance Adjustments
Figure 517

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S 225-073
(3) Make sure the clearance between the lower hooks on the cargo door and the stops on the fuselage structure is as shown (View B-B, Fig. 517).

S 825-079
(4) If the hook and stop clearances are not as shown (Fig. 517), do the steps that follow to adjust:
(a) Move the upper and lower hooks on the fuselage structure and the cargo door on their serrated plates to get the clearances shown (Views A-A and B-B).

NOTE: Each serrations gives a 0.036 inch increment of adjustment.

(b) Add or remove shims (0.016 and 0.032 inch thick) to get the clearances shown (Views A-A and B-B) for the upper and lower hooks and stops.

NOTE: The maximum permitted total thickness of the shim is 0.15 inch.

(c) Adjust the center hooks to a 0.07-0.13 inch clearance if you cannot get the 0.07-0.09 inch clearance with all the shims removed.
(d) Extend the slotted holes in the hook stop fitting to get the correct clearance.

S. Adjust the lockout upstop cam (latched position) (Fig. 518).

S 215-080
(1) Make sure the door is in the fully latched position and the latch track rollers touch the latch track.

S 825-081
(2) Turn back the jamnut on the clevis assembly at least two full turns to make the clevis cam roller loose in the cam track.

S 825-082
(3) Put a spacer at the approximate center of the top end radius of the lockout upstop cam as shown (View A, Fig. 518).

S 825-083
(4) Adjust the lockout pushrod to turn the lockout upstop cam to make the spacer touch the clevis cam roller.

S 825-084
(5) Turn back to the nearest half turn of the lockout pushhrod to give a clearance between the clevis cam roller and the spacer. Hold the lockout pushrod.

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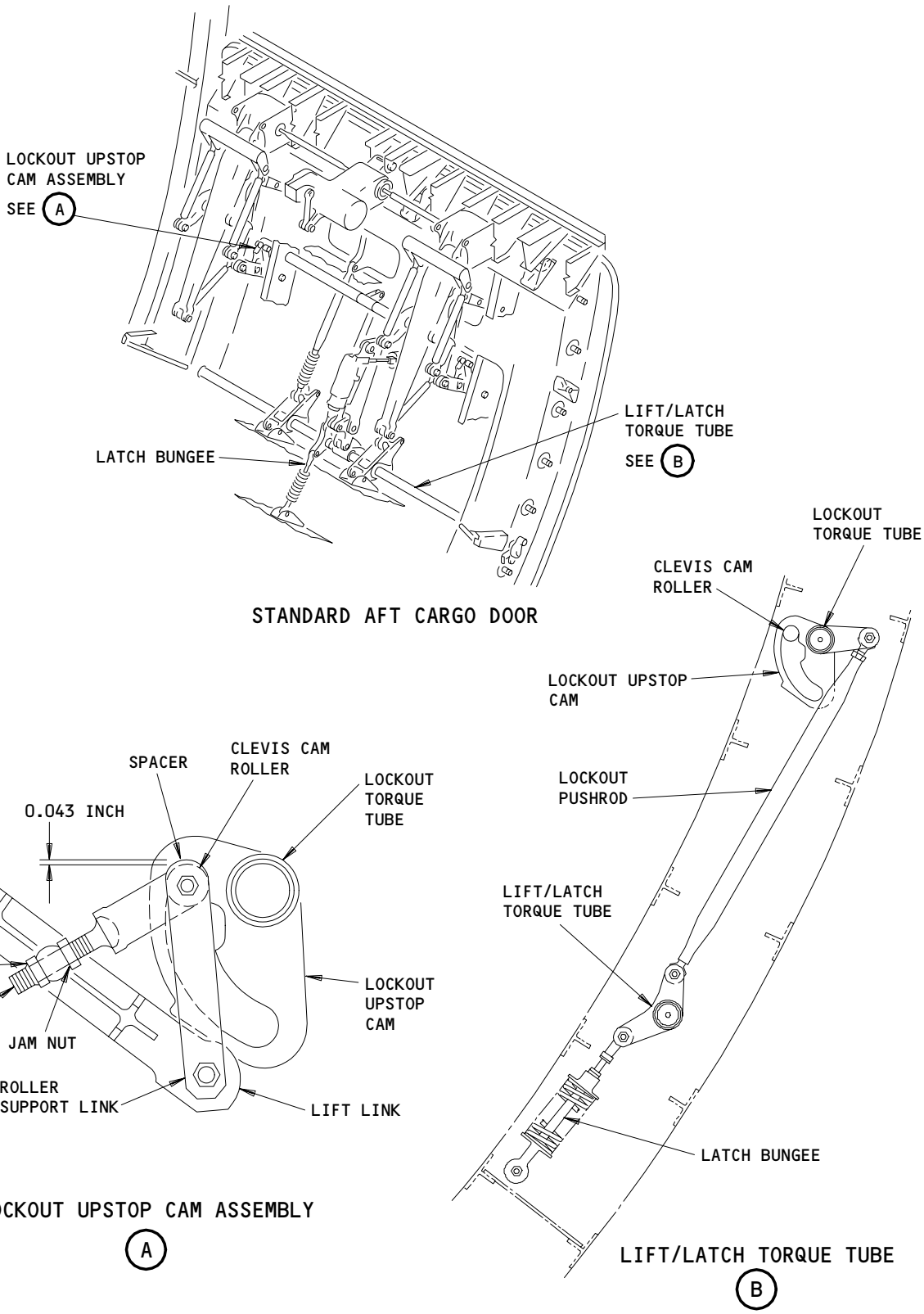

Lockout Upstop Cam Adjustment
Figure 518

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S 825-085
(6) Adjust the jamnuts on the clevis assembly to put the clevis cam roller in the lockout upstop cam slot and to let the clevis cam roller turn freely. Tighten the jamnuts in this position.

S 865-086
(7) If the spacer is not easy to remove, remove the rig pins and lift the door slightly to make a clearance for the spacer removal.

T. Adjust the door lift mechanism (Fig. 519).

S 215-087
(1) Make sure the door is in the fully latched position, the latch track rollers touch the latch track bottom surface, and the rig pins are removed.

S 825-088
(2) Before you lift the door, turn back the jamnuts on the lockout upstop cam at least two full turns (View B, Fig. 519).

S 735-089
(3) Do a check to make sure the door is level during its operation:
(a) Attach the tape to the external surface of the door and to the adjacent body skin to make the measurements (Fig. 519, Sheet 1).
(b) Put the tape in the area of the forward and aft latch tracks.
(c) Use the lift/latch manual drive to lift the door to the position shown (Fig. 519, Sheet 1).
(d) Measure the door position at the aft edge of the door at the tapes.
(e) Make sure the door lift travel difference between the forward and aft edges is not more than 0.08 inch.
(f) Make sure you can turn the four guide rollers manually.
(g) If it is necessary, turn the open/close manual drive in the open direction a minimum quantity to get all four guide rollers to turn manually.

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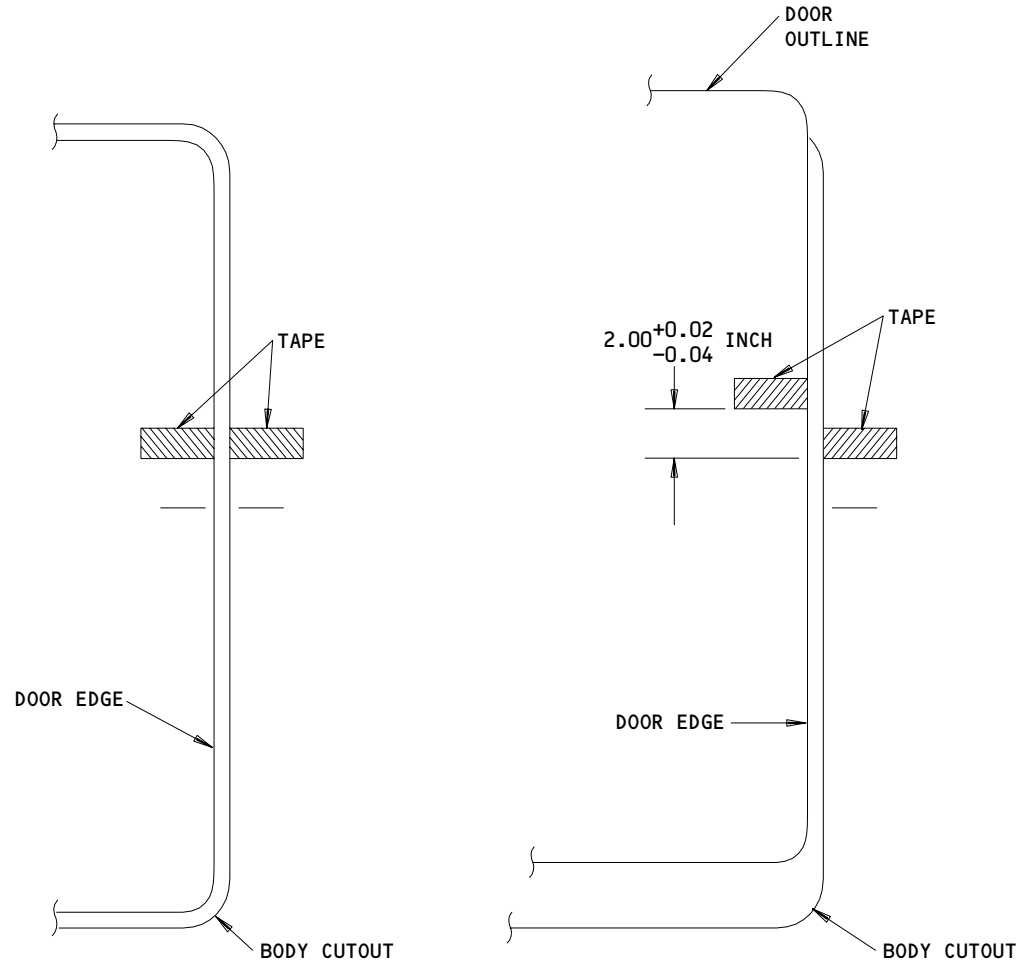

DOOR IN THE LATCHED POSITION

DOOR IN THE LIFTED POSITION

Lift Mechanism Adjustment
Figure 519 (Sheet 1)

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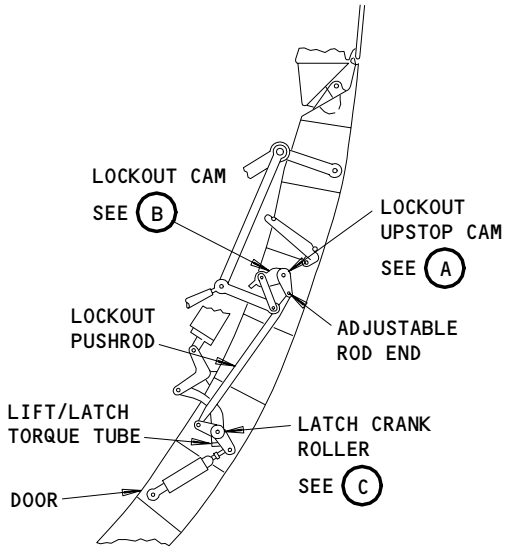
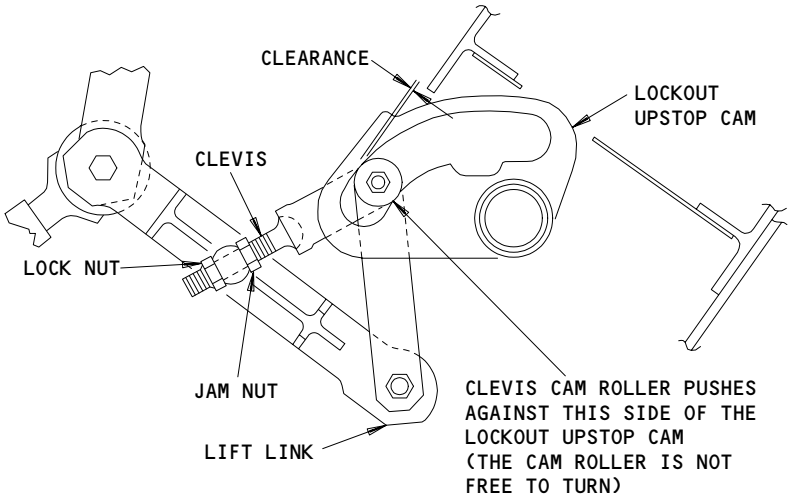
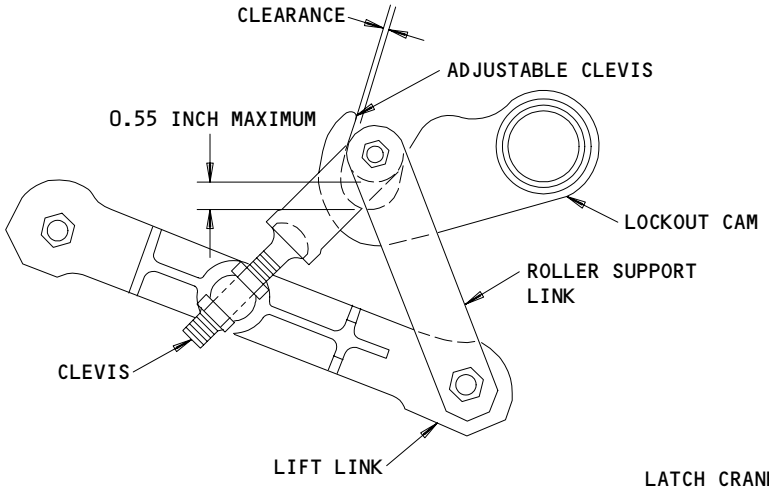


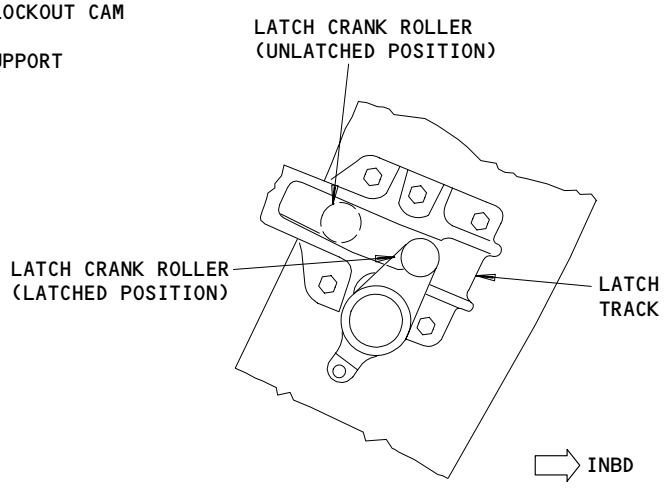
STANDARD AFT CARGO DOOR
(SIDE VIEW)



LOCKOUT UPSTOP CAM
(LIFTED POSITION)
A



LOCKOUT CAM
(LIFTED POSITION)
B



LATCH CRANK ROLLER
C

Lift Mechanism Adjustment
Figure 519 (Sheet 2)

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S 825-090

(4) Adjust the latch crank roller (near the lockout upstop cam) (Fig. 519):

(a) With the door in the lifted position, make sure the clevis cam roller on the lockout upstop cam (View A) is not free to turn and that the latch crank roller (View C) is free to turn.

(b) If the latch crank roller is free to turn, adjust the lockout pushrod in 1/2-turn increments in the door lift direction (make the rod shorter) until the latch crank roller is not free to turn. Then turn back the lockout pushrod 1/2-turn (make the rod longer) until the latch crank roller is free to turn again.

NOTE: This adjustment is to push the latch crank roller in the direction of the top of the slot in the latch track. You can use a wood or plastic lift mechanism to decrease the weight of the door. This makes it easier to remove or install the top bolt through the lockout pushrod during the adjustment of the rod length.

(c) If the latch crank roller at the lockout upstop cam side of the of door is not free to turn, find which surface (top or bottom) the latch crank roller pushes against.

1) If the latch crank roller pushes against the bottom surface of the latch track, do the procedure to adjust the lockout pushrod when the latch crank is free to turn in the procedure before.

2) If the latch crank roller pushes against the top surface of the latch track, adjust the lockout pushrod in 1/2-turn increments in the door latch direction (make the lockout pushrod longer). Do not turn more than two 1/2-turn increments to latch the door until the latch crank roller is free to turn.

S 825-091

(5) Adjust the latch crank roller (near the lockout cam) (Fig. 519).

(a) Make sure the latch crank roller at the lockout cam side of the door is free to turn.

(b) If it is not free to turn, do the steps that follow:

1) If the latch crank roller pushes against the top surface, turn the jam nut to move the latch crank roller down until it is free to turn.

2) If the latch crank roller pushes against the bottom track surface, adjust the clevis locknut and jamnut until the latch crank roller touches the top surface of the latch track and is not free to turn.

3) Turn the jamnuts back until the latch crank roller does not push against the top surface and is free to turn.

4) Tighten the jamnuts and make sure the roller can turn.

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5) Do a check on the clearance between the clevis cam roller and the lockout cam bottom end radius. Make sure the clearance is not more than the dimension shown (View B).

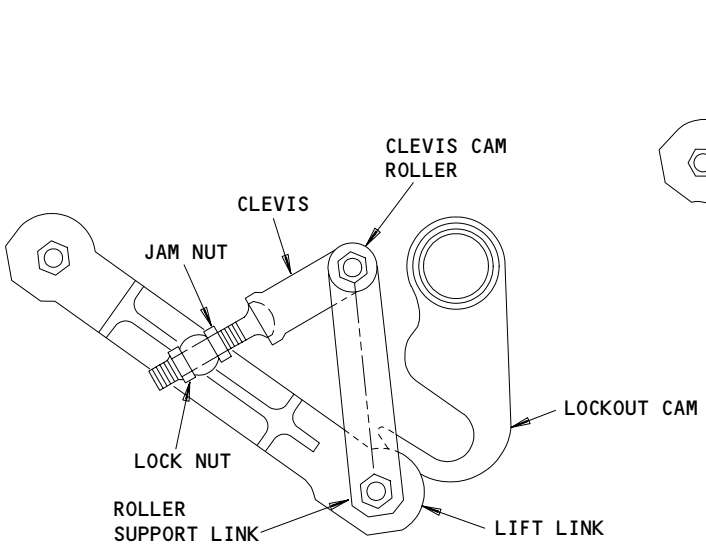
NOTE: Make the adjustments in 1/2-turn increments of the jam nuts. Each 1/2-turn moves the door approximately 0.025 inch.

S 825-092

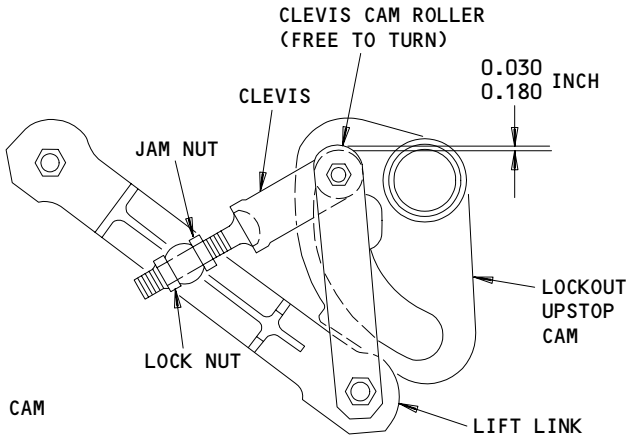
(6) Do a check again on the adjustment of the latch crank roller near the lockout upstop cam:
   (a) If the latch crank roller is free to turn, use the lift/latch manual drive to move the door to the latched position.
   (b) If the latch crank roller is not free to turn, do the two adjustments again (Adjust the latch crank roller near the lockout upstop cam and Adjust the latch crank roller near the lockout cam).
   (c) After you put the door back to the latched position, do a check on the latch crank rollers. Make sure the rollers touch the latch track and are free to turn.
   (d) Make sure the door is in the fully latched position.

S 825-093

(7) Do the final adjustment of the lockout upstop cam and the lockout cam (Fig. 520):



LOCKOUT CAM (LATCHED POSITION)



LOCKOUT UPSTOP CAM (LATCHED POSITION)

Lockout Cam and Lockout Upstop Cam Final Adjustment
Figure 520

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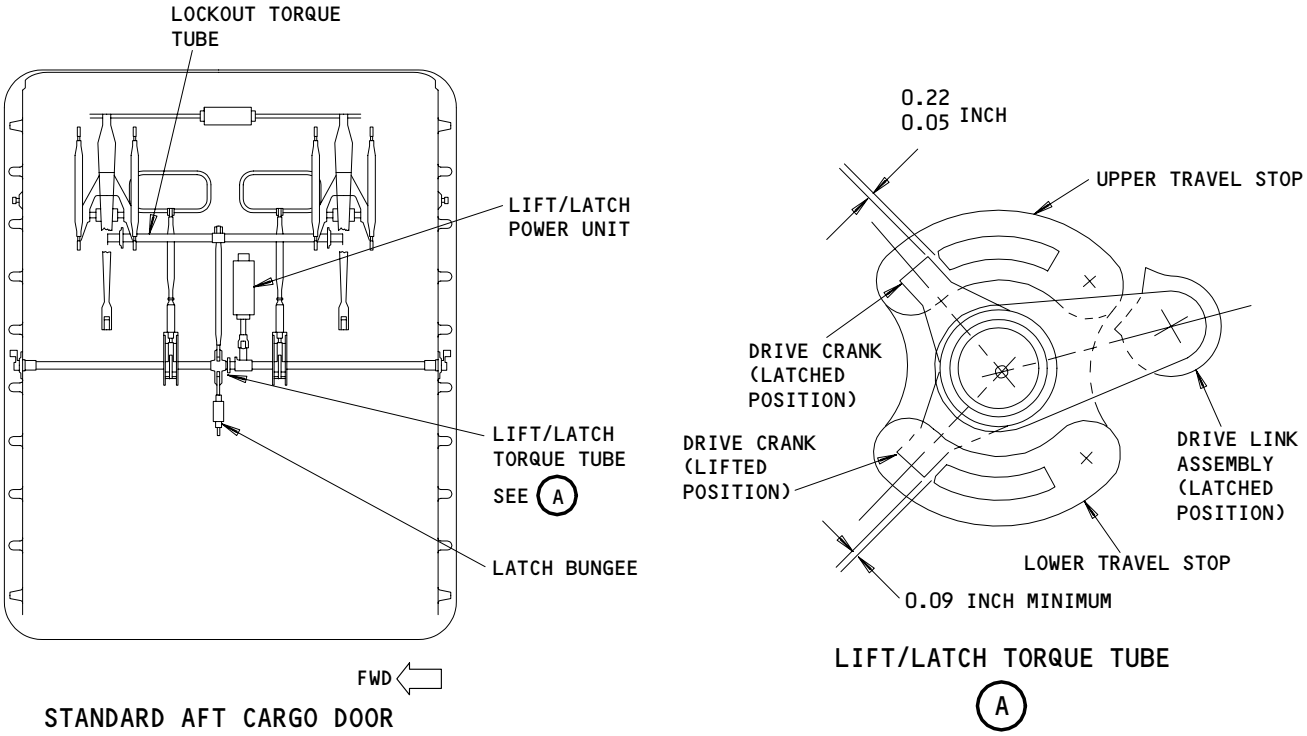
(a) Make sure the clevis cam roller in the lockout upstop cam is free to turn. Make sure there is clearance between the clevis cam roller and the top end of the lockout upstop cam (Fig. 502).
(b) Make sure the lockout clevis cam roller in the lockout cam is free to turn because of its large clearance from the lockout cam surface.

S 825-094
(8) Do a check on the lift/latch torque tube travel stop (Fig. 521).
(a) Put the door in the fully latched position.
(b) Make sure the clearance between the drive crank and the upper travel stop is 0.22 - 0.05 inch (5.59 - 1.27 mm) minimum when the door is in the fully latched position (View A, Fig. 521).
(c) Put the door in the lifted position.

NOTE: The cargo door is in the lifted position when it is lifted vertically two inches from its latched position.

(d) Make sure the clearance between the drive crank and the lower travel stop is 0.09 inch (2.29 mm) minimum when the door is in the lifted position (View A, Fig. 521).



Lift/Latch Torque Tube Travel Stop Adjustment
Figure 521

63761
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U. Do a final check on the door skin clearance (Fig. 522).

S 215-095
(1) Make sure the airplane is on its landing gear.

S 865-096
(2) Put the door in the fully latched position to measure the clearance.

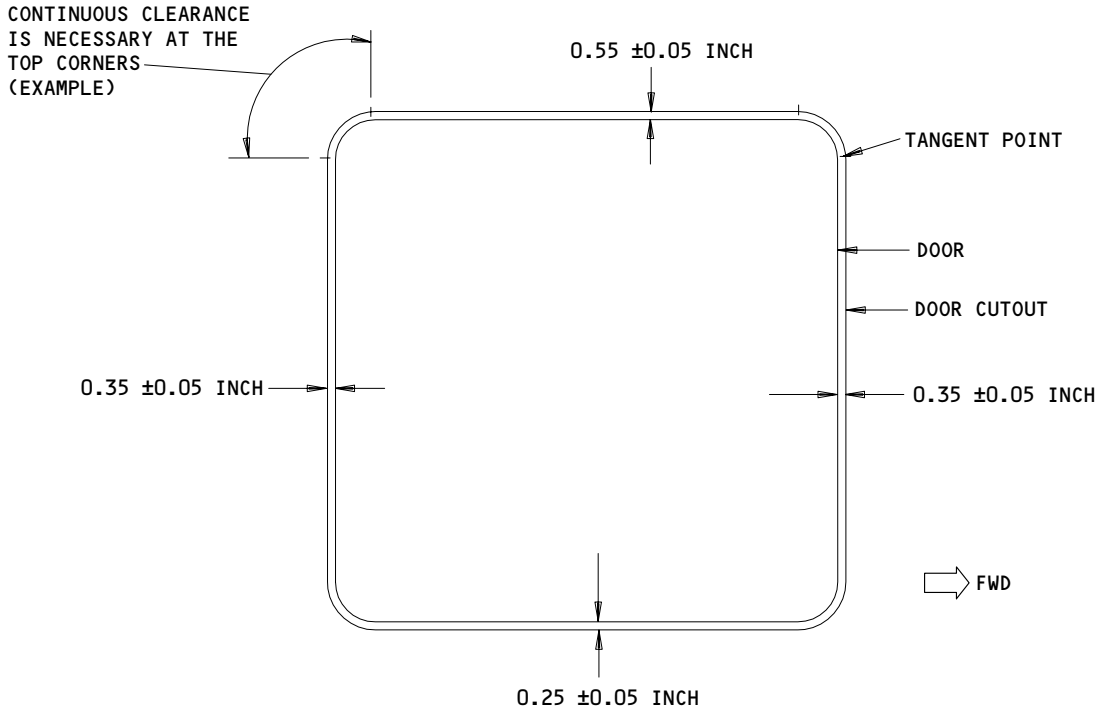
S 825-097
(3) Make sure the wedge tools are installed, the lateral stops are adjusted, and the door is in the center of the cutout.

S 225-098
(4) Make sure the door skin clearances are as shown (Fig. 522).

S 825-099
(5) If you install a new door or do large repairs to the door, it is necessary to remove the unwanted skin from the door edges to get the correct clearances.

NOTE: Use the Boeing Structural Repair Manual for more data.

V. Adjust the rotary actuator stop clearances (Fig. 523).



Skin Clearance
Figure 522

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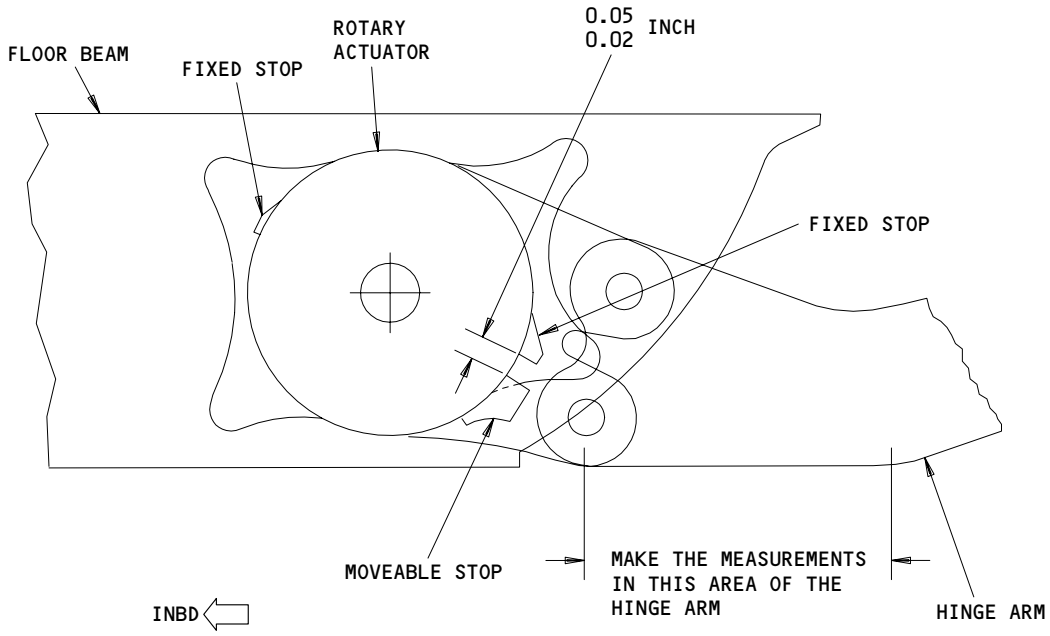
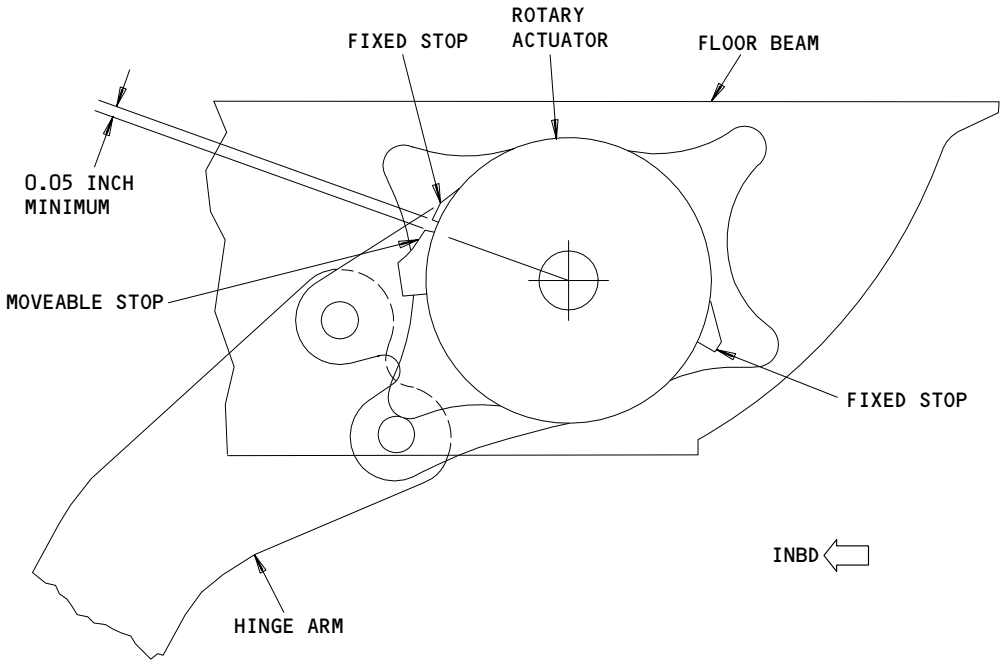


ROTARY ACTUATOR (DOOR IN THE OPEN POSITION)



ROTARY ACTUATOR (DOOR IN THE CLOSED POSITION)

Rotary Actuator Stop Clearance Adjustment
Figure 523

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S 825-100

(1) Do a check on the rotary actuator stop clearances with the cargo door in the fully open position:
   (a) Make sure the clearance between the fixed and moveable stops of each rotary actuator is in the 0.02-0.05 inch tolerance when the door is operated electrically to the fully open position (Fig. 523).
   (b) If the clearance is not in the tolerance, adjust the cargo door open proximity sensor (Ref 52-35-43).

S 825-101

(2) Do a check on the rotary actuator stop clearances with the door in the fully closed position:

NOTE: The door can also be in the lifted position for this check.

   (a) Make sure the door is adjusted for flushness before this check.
   (b) Close the door manually or electrically to the lifted position.
   (c) If the door is closed electrically, disconnect the lift/latch actuator electrical connector to stop the door in the lifted position.
   (d) Make sure the clearance between the fixed and moveable stops of the rotary actuator is a minimum of 0.05 inch.

W. Adjust the door warning sensors.

S 865-102

(1) For the aft cargo door, make sure these circuit breakers on the APU external power panel, P34, are closed:
   (a) 34J4, CONT DOOR CARGO
   (b) 34J10, CARGO DOOR AFT

S 825-103

(2) Adjust the cargo door control proximity sensors (Ref 52-35-43).

S 825-279

(3) Adjust the aft cargo door locked proximity sensor, S208.
   (a) Install the proximity sensor actuator on the door closed proximity sensor, S209.

NOTE: The aft cargo door locked proximity sensor, S208, is connected in series with the aft cargo door closed proximity sensor, S209.

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(b) Make sure the door is in the latched position.
(c) Make sure the door warning indicator light is off.
(d) Put a 0.1875 inch diameter pin (standard 3/16 dia drill rod) in the rig pin hole 3 or 4.
(e) Put a 3/8-inch drive speed wrench in the lift/latch manual drive receptacle.
(f) Slowly turn the 3/8-inch drive speed wrench in the counterclockwise direction. Turn the wrench until the pin stops the movement of the torque tube turn and before the pin bends.
(g) Make sure the door warning indicator light is off.
(h) Remove the 0.1875 inch diameter pin and replace it with a 0.1406 inch diameter pin (standard 9/64 dia drill rod) in the same rig pin hole.
(i) Turn the 3/8-inch drive speed wrench counterclockwise in the lift/latch manual drive receptacle until the second pin that you put in stops the movement of the torque tube turn.
(j) Make sure that the door warning indicator light is on.

NOTE: The door warning indicator light comes on when the crank turns 5.25 to 7 degrees from the latched position to the unlatched position. The torque tube turns a maximum of 7 degrees.

(k) Use the serrations on the support plate, if it is necessary, to adjust the sensor S208.

NOTE: If you move the sensor one serration, it changes the angle approximately 0.75 degrees. Move the sensor closer to the target to make the door warning indicator light go off and farther to make the light come on.

(l) Remove the proximity sensor actuator from the door closed proximity sensor, S209.

S 825-104
(4) Adjust the aft cargo door closed proximity sensor, S209.
(a) Install the proximity sensor actuator on the door locked proximity sensor, S208.

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(b) Add or remove shims to get the correct adjustment of the sensor S209. The sensor is correctly adjusted when the conditions that follow occur:
1) Make sure the cargo door indicator light on the flight deck comes on when the aft upper guide roller is 0.75 to 1.70 inches from the surface of the aft upper guide track. This occurs when the door moves in the open direction.
2) Make sure the light goes off in this range when the door closes.
(c) Remove the proximity sensor actuator from the door locked proximity sensor, S208.

S 715-105
(5) Operate the cargo door electrically to make sure the door operates correctly.

X. Adjust the lift/latch mechanism.

NOTE: Do this procedure if you cannot do the door installation adjustments of the procedures before.

S 865-106
(1) Remove the cargo door (Ref 52-35-01) or hold the weight of the door with a sling. If you hold the weight of the door with a sling, do these steps:
(a) Disconnect the hinge mechanism lower lift links at the door attach points (Fig. 505).
(b) Remove the cam roller at the lockout upstop cam location only.
(c) Turn the lift link assemblies clear of the lockout cams.
(d) Hold the linkage assembly to prevent interference with the lockout torque tube during the adjustment.

S 035-107
(2) Disconnect the forward and aft vent door pushrods from the lift/latch torque tube.

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S 035-108
(3) Disconnect the lockout pushrod from the lift/latch torque tube.

S 495-109
(4) Install the rig pin CD1 (forward door) or CD4 (aft door) through the torque tube latch crank and bearing housing. This will put the torque tube in the rigged position.

S 435-110
(5) With the rig pin installed, connect the lockout pushrod to the lift/latch torque tube crank.

S 825-111
(6) Adjust the vent door pushrod (Fig. 524):
  (a) Put the cargo door in the fully latched position.
  (b) Install one rig pin through the vent door cam.
  (c) Put a load against the inboard side of vent door, to push the vent door against the vent door stops.
  (d) Adjust the vent door pushrod until the upper crank roller touches the vent door cam surface and is not free to turn.
  (e) Make sure there is no clearance between the upper crank roller and the vent door cam.

  (f) Make sure that the witness hole in the vent door pushrod is closed.
  (g) Remove all the rig pins. Turn the lift/latch torque tube through a full travel from vent door stop to stop.
  (h) Make sure the crank roller bearings do not touch at the same time.

S 825-112
(7) Adjust the latch bungee (Fig. 525):
  (a) Make sure the door is in the fully latched position.
  (b) With the lower end of the bungee connected at the door beam stiffeners, compress the spring to align the rig pin holes in rod end. Install the rig pin (BACB18AN3 or equivalent).

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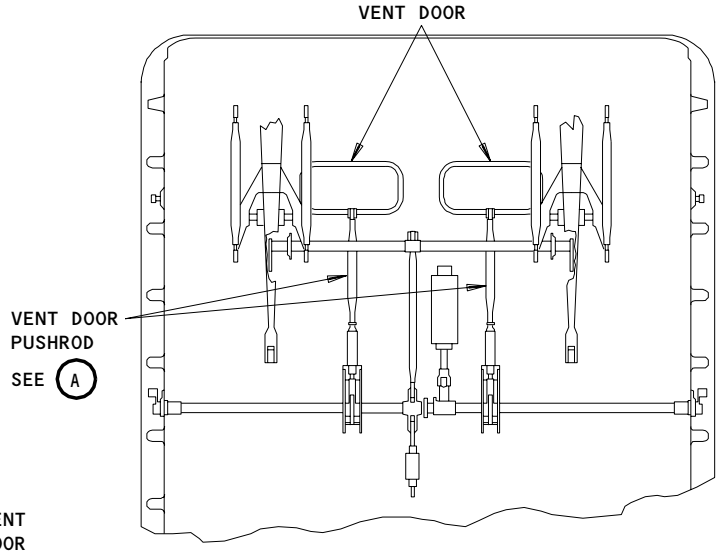
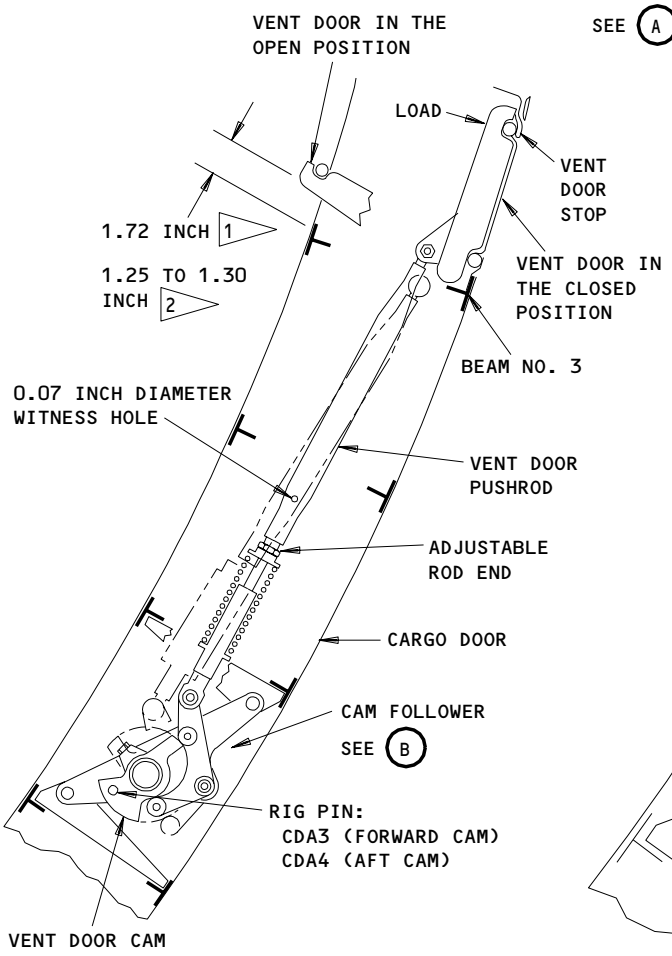
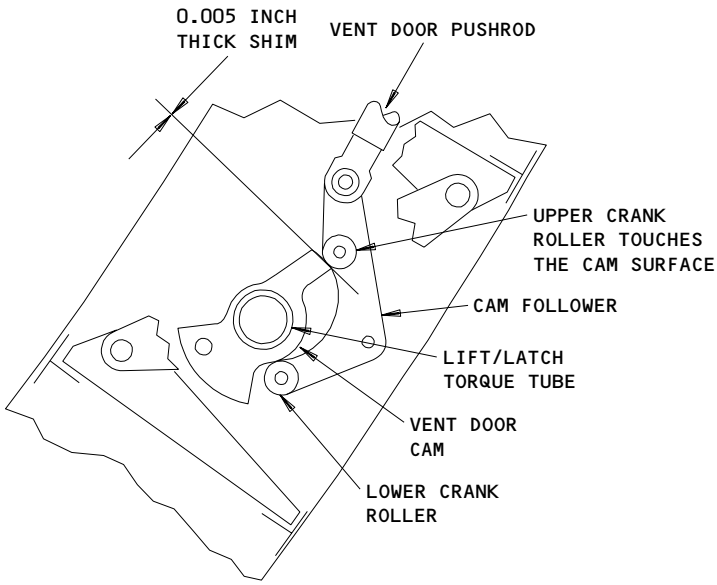


PRESSURE VENT DOORS



VENT DOOR PUSHROD
A



CAM FOLLOWER
B

1 FOR THE VENT DOOR PUSHROD ADJUSTMENT
2 FOR THE VENT DOOR NEGATIVE PRESSURE TEST

Vent Door Pushrod Adjustment
Figure 524

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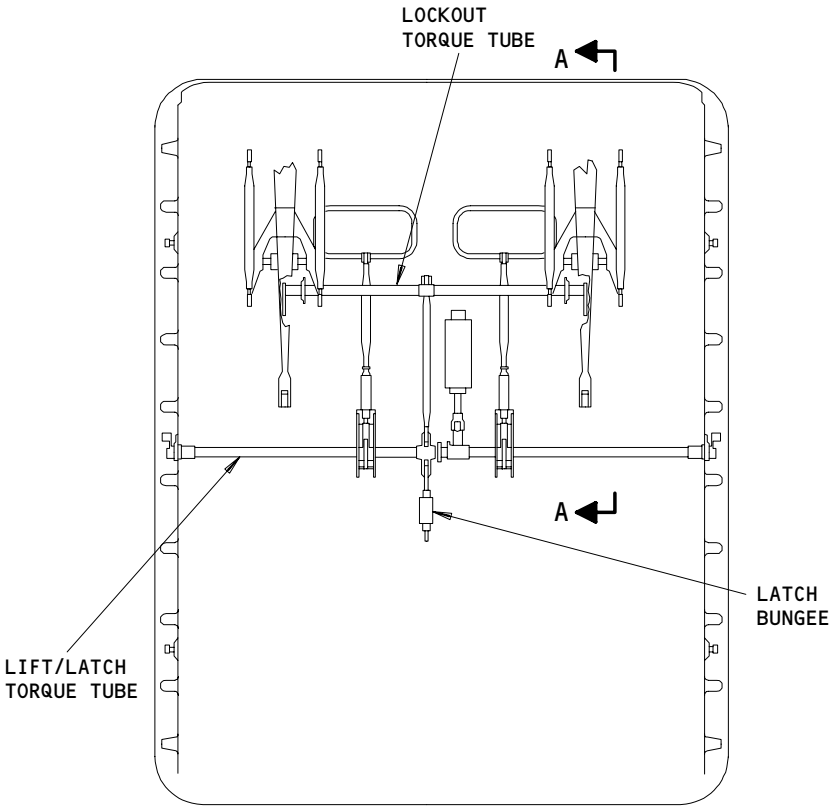
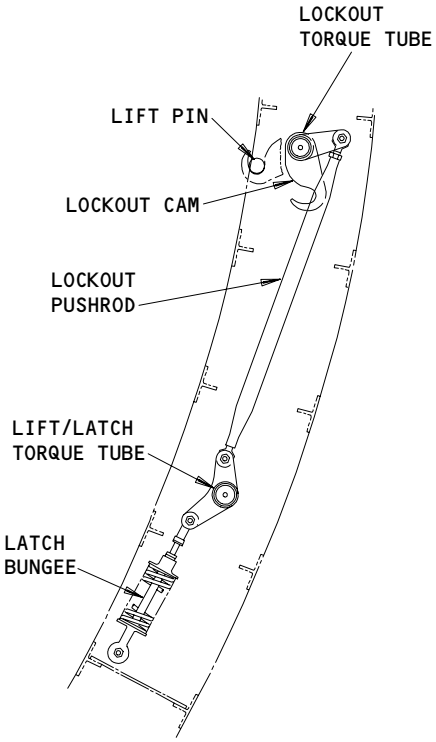


STANDARD AFT CARGO DOOR



A–A

Latch Bungee Adjustment
Figure 525

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(c) Loosen the one jamnut against the base of the top end of the latch bungee. Adjust the length of the latch bungee until the bolt hole in the bungee and the bungee crank nearly align.

NOTE: If the holes do not align, make the latch bungee longer. Do not make the latch bungee shorter.

(d) Connect the rod end to the crank with the bolt, nut, spacer, and washer under the bolt head and nut. Remove the rig pin CD1 or CD4 from the latch crank if it is necessary.
(e) Tighten the jamnut against the base of the rod end. Make sure the hole in the rod end is closed.
(f) Carefully remove the rig pin from the bottom end of the latch bungee.
(g) Turn the lift/latch torque tube assembly until these conditions occur:
1) The rig pin comes out easily.
2) The bungee spring turns the torque tube until the five degree overtravel stops are touched on the actuator crank and the stop fitting on the door frame.

S 715-113
(8) Do a check on the operation of the lift/latch mechanism:
(a) Slowly turn the lift/latch torque tube from stop to stop.
(b) Make sure that the mechanism has a clearance and that it operates smoothly.

S 425-114
(9) Connect the forward and aft vent door pushrods to the lift/latch torque tube.

Y. Put the Airplane Back to its usual Condition

S 425-272
(1) Install the cargo door (Ref 52-35-00).

S 415-115
(2) Install the door lining panels.

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S 415-116
(3) Install the ceiling panels above the cargo door cutout (Ref 25-52-02).

TASK 52-35-00-735-117

4. System Test - Cargo Door

A. Equipment
(1) Two spring scales (soft head, 0-50 pound range) - commercially available
(2) Clip-on ammeter, 0-10 Amp range, ±10 percent accuracy - commercially available
(3) Actuator/Deactuator Set, Proximity Sensors - A27092-61 (A27092-25 is superseded by A27092-61)

NOTE: Make sure that you use the correct tool for actuating or deactuating applicable proximity sensor.

B. References
(1) 24-22-00/201, Electrical Power - Control
(2) 52-35-01/401, Aft Cargo Door
(3) 52-71-00/501, Door Warning System Proximity Sensors

C. Access
(1) Location Zone
822 Aft Cargo Door

D. Do a test on the vent door negative pressure (manual operation).

NOTE: Do the test on the two vent doors at the same time.

S 735-117
(1) Use the two spring scales to put a tension load in the inboard direction on the two vent doors at the same time. Put the load on the vent doors in the approximate centers of the vent door stops.

S 735-118
(2) Pull inboard on the two spring scales.

S 225-119
(3) Make sure the vent doors start to open at a load of 8-14 pounds.

S 225-120
(4) Make sure the load to keep the vent doors in the fully open position (65 degrees) is 10-16 pounds.

S 825-121
(5) If the loads are not in the permitted ranges, adjust the vent door pushrods.

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S 215-122

(6) Make sure that during this test the latch cranks on the cargo door do not turn.

E. Do a test on the vent door positive pressure (manual operation).

S 735-123

(1) Use the spring scale with a soft compression head to put a 37-49 pound load in the outboard direction on the vent door. Put the load at the top end of the cavity formed by the two stiffener webs at the center of the vent door.

S 865-118

CAUTION: DO NOT LET THE LIFT/LATCH POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF FIVE SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE LIFT/LATCH POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE LIFT/LATCH POWER UNIT.

(2) Put a 3/8-inch drive speed wrench in the lift/latch manual drive receptacle. Turn the wrench counterclockwise until you can feel or hear clutch slippage in the lift/latch power unit.

NOTE: The latch crank on the door will turn until clutch slippage occurs in the lift/latch power unit.

S 225-125

(3) Make sure the travel of the cargo door caused by the movement of the latch crank is not more than 0.07 inch.

S 225-126

(4) Make sure that no increase in the load is necessary to keep the vent door in the closed position.

S 225-280

(5) Make sure the manual drive torque during the clutch slippage is more than 22 pound-inches.

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S 865-120

CAUTION: DO NOT LET THE LIFT/LATCH POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF FIVE SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE LIFT/LATCH POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE LIFT/LATCH POWER UNIT.

(6) Put a 3/8-inch drive speed wrench in the lift/latch manual drive receptacle. Turn the wrench clockwise until the door is in the fully latched position.

S 735-121

(7) Do the test again on the aft vent door.

F. Do a test on the manual door operation to the lifted position.

NOTE: The cargo door is in the lifted position when it is lifted vertically two inches from its latched position.

S 865-122

CAUTION: DO NOT LET THE LIFT/LATCH POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF FIVE SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE LIFT/LATCH POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE AT A SPEED FASTER THAN 500 RPM. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE LIFT/LATCH POWER UNIT.

(1) Put a 3/8-inch drive speed wrench in the lift/latch manual drive receptacle and turn counterclockwise until the door's vertical travel stops.

S 735-281

(2) To do a check for smooth door operation do the steps that follow:
   (a) Make sure the door operates smoothly.
   (b) Make sure the door does not catch and you do not see sudden movement.
   (c) Make sure the door moves freely in and out of the door cutout and does not touch the body structure.
   (d) Make sure you do not hear unusual noises when you start or stop the door operation.
   (e) Make sure that you do not hear unusual noises when you lift or lower the door.

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S 225-124

(3) Keep the side clearances of 0.05 inch minimum top edge clearance and 0.025 inch minimum top corner clearance as the door moves through the top edge of the door cutout.

S 215-125

(4) Make sure the vent doors stay in the fully open position (65 degrees).

S 215-126

(5) Do a check on the seal edges for a seal that rubs or catches, seal failure, or a worn seal on the door and the door cutout structure.

S 735-127

(6) After you lift the door in the door cutout, do a check for the conditions that follow:
   (a) Make sure the clearance between the door centering guides on the latch track assemblies on the fuselage and the centering guides of the door are from 0.01-0.08 inch.
   (b) Make sure the forward and aft latch crank rollers turn freely.
   (c) On the forward side of the door, make sure the roller on the lift link clevis touches the outboard roller surface of the open cam. Make sure the roller does not turn manually.

G. Do a test on the manual door operation to open.

S 735-128

CAUTION: DO NOT LET THE HINGE POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF FIVE SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE HINGE POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE IT AT A SPEED FASTER THAN 500 RPM. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE HINGE POWER UNIT.

(1) Put a 3/8-inch drive speed wrench in the door open/close manual drive receptacle. Turn the wrench clockwise until the door is in the fully open position. As the door opens, do the checks that follow:
   (a) Make sure the two rotary actuator hinge arms start to move to the open position at the same time.
   (b) Do a check on the clearance on the top and bottom ends, and on the forward and aft side of the door as the bottom part of the door moves through the door opening.
   (c) Make sure the guide rollers move smoothly out of the guide tracks (four locations).
   (d) Make sure the door does not fall when the guide rollers move out of the guide tracks.

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(e) Make sure the latch crank rollers on the door move smoothly from the latch tracks on the fuselage frame (two locations).
(f) Make sure the door does not fall when the latch crank rollers move out of the latch tracks.

S 735-129
(2) To do a check for smooth operation during the door movement and at the door fully open position, do the steps that follow:
(a) Make sure the manual drive flexible shaft does not vibrate or deflect too much during the door movement.
(b) Make sure the manual drive flexible shaft moves correctly when there is clutch slippage in the hinge power unit.
(c) Make sure the two rotary actuator drive shafts have synchronized movement.
(d) Listen for unusual noises when you move the door.

S 215-130
(3) Make sure that all the pin retainer (springs clips) are correctly installed on the door stop fittings (20 locations).

S 215-131
(4) Make sure the stop pads on the door stop fittings are tightly bonded to the stop fittings.

S 215-132
(5) Make sure the two rotary actuators moveable stops touch the fixed stops.

S 225-133
(6) Make sure the clearance between the top of the floor beam and the bottom edge of the forward and aft hinge arms is from 6.02-6.11 inches.

S 215-134
(7) Make sure the door hinge arms are the same in position.

S 215-135
(8) Make sure the door is not turned.

S 735-136
(9) To do a check on the forward and aft end adjustment of the hinge drive shafts, do the steps that follow:
(a) Turn the open/close manual drive slightly counterclockwise to remove the preload in the hinge drive system.
(b) Use your hand to make sure the hinge drive shaft easily moves forward and aft from 0.05-0.32 inch.

H. Do a test on the manual door operation to close.

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S 865-138

CAUTION: DO NOT LET THE HINGE POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF FIVE SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE HINGE POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE IT AT A SPEED FASTER THAN 500 RPM. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE HINGE POWER UNIT.

(1) Put a 3/8-inch drive speed wrench in the door open/close manual drive receptacle. Turn the wrench counterclockwise until the door is in the lifted position.

NOTE: The door movement is to lift and open, and then to close and latch. The door is in the lifted position when it is lifted vertically two inches from its latched position.

S 735-139

(2) As the door closes, do the checks that follow:
   (a) Make sure the two rotary actuator hinge arms start to move to the closed position at the same time.
   (b) Do a check for smooth operation the same as in the door open procedure.
   (c) Make sure the guide rollers move smoothly into the guide tracks (four locations).
   (d) Make sure door is not lifted when the guide rollers move into the guide tracks.
   (e) Make sure the latch crank rollers on the door move smoothly into the latch tracks on the fuselage frame (two locations).
   (f) Make sure the door does not lift or lower when the latch crank rollers move into the latch tracks.

S 225-140

(3) Do a check on the clearance on the top and bottom ends, and on the forward and aft side of the door as the bottom part of the door moves into the door opening:
   (a) Make sure the clearance between the upper guide rollers and the inboard surface of the door guide tracks is from 0.00-0.07 inch.
   (b) Make sure the clearance between the lower guide roller and the inboard surface of the door forward and aft guide tracks is from 0.00 to 0.125 inch.

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S 865-282

CAUTION: DO NOT TURN THE OPEN/CLOSE MANUAL DRIVE MORE THAN 1.5 TURNS IN THE CLOCKWISE DIRECTION TO PREVENT A PRELOAD ON THE HINGE ARMS WHEN THE DOOR IS LATCHED. A PRELOAD ON THE HINGE ARMS CAN CAUSE DAMAGE TO THE DOOR.

(4) Turn the door open/close manual drive clockwise 1.5 turns to remove the preload from the hinge arms.

I. Do a test on the manual door operation to the latched position.

S 865-143

CAUTION: DO NOT LET THE LIFT/LATCH POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF FIVE SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE LIFT/LATCH POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE IT AT A SPEED FASTER THAN 500 RPM. THE INCORRECT OPERATION OF A POWER TOOL CAN CAUSE DAMAGE TO THE LIFT/LATCH POWER UNIT.

(1) Put a 3/8-inch drive speed wrench in the lift/latch manual drive receptacle. Turn the wrench clockwise until the door is in the fully latched position.

S 735-144

(2) As the door moves from the lifted position to the latched position, do the checks that follow:
  (a) Make sure the door operation is smooth.
  (b) Make sure the clearance between the door and the cutout does not change.
  (c) Make sure the top and bottom edge clearance is kept as door moves into the latched position (Fig. 522).
  (d) Make sure the vent doors are in the fully closed position.
  (e) Make sure the upper hooks on the cargo door frame engage smoothly with the stops on the door.
  (f) Make sure the lower hooks on the cargo door engage smoothly with the stops on the door frame.

J. Do a test on the electrical operation.

S 865-145

(1) Make sure these buses are energized:
  (a) 115 VAC GROUND HANDLING BUS
  (b) 28 VDC GROUND HANDLING BUS

S 865-146

(2) For the aft cargo door, make sure the these circuit breakers on the APU external power panel, P34, are closed:

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S 215-147
(3) Make sure the DOOR CLOSE light on the exterior door control panel is on.

S 865-148
(4) Make sure the latch crank is in a position to put the rig pins CDA1 or CDA2 (aft door) into the rig pin holes on the door.

S 865-149
(5) Open this circuit breaker on the APU external power panel, P34, and make sure the DOOR CLOSE light on the exterior door control panel is off:
(a) 34J4, CONT DOOR CARGO

S 865-150
(6) Close this circuit breaker on the APU external power panel, P34:
(a) 34J4, CONT DOOR CARGO

S 735-151
(7) Move the interior arming switch up to the ARM position. Make sure the door does not open.

S 735-152
(8) Move the interior arming switch down to the ARM position. Make sure the door does not open.

S 735-153
(9) Release the door arming switch and move the interior door control switch to the OPEN position. Make sure the door does not open.

S 865-154
(10) Release the door control switch.

K. Do a test on the vent door positive pressure with use of the interior door control switch.

S 865-155
(1) Disconnect the power supply connector from the door hinge power unit. Put a cap on the end of the power supply connector.

S 735-156
(2) Use the spring scale with a soft compression head to put a 37-49 pound load in the outboard direction on the vent door. Put the load at the top end of the cavity formed by the two stiffener webs at the center of the vent door.

S 735-157
(3) At the same time move the interior arming switch up to the ARM position and the interior door control switch to the OPEN position.

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S 735-158

CAUTION: DO NOT LET THE LIFT/LATCH POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF FIVE SECONDS. CLUTCH SLIPPAGE DURING OPERATION OF THE LIFT/LATCH POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

(4) Make sure the DOOR CLOSE light goes off when the latch crank turns.

S 225-159

(5) Make sure the vertical travel of the door is not more than 0.07 inch.

S 735-161

(6) Make sure the lift/latch power unit stalls with the door movement.

NOTE: The latch crank on the door will turn until clutch slippage occurs in the lift/latch power unit.

S 225-162

(7) Make sure the load to keep the vent door in the closed position while the lift/latch power unit has clutch slippage does not increase more than three pounds.

S 735-163

(8) Release the door control switch and the arming switch before five seconds of lift/latch power unit clutch slippage.

S 215-164

(9) Make sure the DOOR CLOSE light is off.

S 735-165

(10) Move the interior arming switch down to the ARM position. Move the interior door control switch to the CLOSE position.

S 735-166

(11) Make sure the latch cranks turn to the fully latched position. Make sure the lift/latch power unit is off. Make sure the DOOR CLOSE light is on.

S 215-167

(12) Make sure the DOOR CLOSE light stays on when the door control and arming switches are released.

S 225-168

(13) Make sure the lift/latch power unit is off when the lift/latch travel stop has a clearance between 0.05-0.10 inch (in the latched position).

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S 735-169
(14) Do the test again on the aft vent door.

L. Do a test on the door operation to the lifted position with use of the interior switch.

S 865-170
(1) Make sure the power supply connector is disconnected from the door hinge power unit.

S 735-171
(2) Move the interior arming switch up to the ARM position. Move the interior door control switch to the OPEN position.

S 215-172
(3) Make sure the DOOR CLOSE light goes off at the same time the latch crank turns.

S 215-173
(4) Do a check for smooth operation as the cargo door unlatches and lifts in the door opening.

S 735-174
(5) Make sure the lift/latch power unit operation stops when the travel of the door stops.

S 865-175
(6) Release the interior arming switch and the door control switch.

S 225-176
(7) Make sure the door travel measured along a door lift line near the center of the door on the forward or aft edge is from 1.94-2.06 inches.

S 225-177
(8) Make sure the vent doors are in the fully open position (65 degrees) or have 1.72 inches maximum clearance between the beam No. 3 and the vent door.

M. Do a test on the door operation to the latched position with use of the interior switch.

S 735-178
(1) Move the interior arming switch up to the ARM position. Make sure the cargo door does not move.

S 735-179
(2) Move the interior arming switch down to the ARM position. Make sure the door does not move.

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S 735-180
(3) Release the door arming switch. Move the interior door control switch to the CLOSE position and then to the OPEN position. Make sure the door does not move.

S 865-181
(4) Release the door control switch.

S 865-182
(5) Move the interior arming switch down to the ARM position. Move the interior door control switch to the CLOSE position.

S 735-183
(6) Do a check for smooth operation as the door lowers in the cargo door opening and comes to the fully latched position:
(a) Make sure that you do not hear unusual noises when you lift or lower the door.
(b) Make sure there is a side clearance of 0.05 inch minimum top edge clearance and 0.025 inch minimum top corner clearance as the door moves through the top edge of the door cutout.
(c) Make sure the vent doors stay in the fully open position (65 degrees).

S 215-184
(7) Make sure the lift/latch power unit operation stops when the latch crank stops.

S 215-185
(8) Make sure the DOOR CLOSE light goes on when the latch crank stops.

S 865-186
(9) Release the interior door arming switch and the door control switch.

S 215-187
(10) Make sure the DOOR CLOSE light stays on.

S 215-188
(11) Make sure the vent doors are in the fully closed position.

N. Do a test on the door open operation with use of the interior switch.

S 865-195
(1) Connect the power supply to the door hinge power unit.

S 485-189
(2) Put an ammeter around the wire W616-034-20, aft cargo door, (WDM 52-35-11).

S 865-190
(3) Move the interior arming switch up to the ARM position. Move the interior door control switch to the OPEN position.

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S 865-191
(4) For the aft cargo door, when the door is opened to a position approximately parallel to the ground, open this circuit breaker on the APU external power panel, P34:
(a) 34J10, CARGO DOOR AFT

S 735-192
(5) Make sure the door movement stops. Make sure the door stays in a stopped position:
(a) Measure the stopped position of the door at the edge of the door farthest from the fuselage.
(b) After 2 minutes measure the stopped position of the door again. Make sure that there is no change in the door position.

S 735-193
(6) For the aft cargo door, close this circuit breaker on the APU external power panel, P34:
(a) 34J10, CARGO DOOR AFT

S 735-194
(7) Make sure the door continues to move up.

S 765-195
(8) Do a check that the ammeter value while the door moves is 0.20 amps minimum.

S 215-196
(9) Make sure the cargo door moves smoothly through the movement from the latched position to the open position.

S 765-197
(10) After the door stops, read the ammeter to make sure there is no current flow. Make sure the DOOR OPEN light is on.

S 215-198
(11) Release the interior door arming switch and the door control switch. Make sure the DOOR OPEN light stays on.

S 225-199
(12) Make sure the clearance between the moveable stops and the fixed stops on the two rotary actuators is as shown (Fig. 523).

O. Do a test on the door close operation with use of the interior switch.

S 865-200
(1) Disconnect the power supply connector from the lift/latch power unit. Put a cap on the end of the power supply connector.

S 735-201
(2) Move the interior arming switch down to the ARM position. Move the interior door control switch to the CLOSE position.

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S 735-202
(3) Make sure the DOOR OPEN light is off.

S 735-203
(4) Make sure the door moves to the closed position.

S 865-204
(5) For the aft cargo door, when the door is closed to a position approximately parallel to the ground, open this circuit breaker on the APU external power panel, P34:
(a) 34J10, CARGO DOOR AFT

S 735-205
(6) Make sure the door movement stops. Make sure the door stays in a stopped position:
(a) Measure the stopped position of the door at the edge of the door farthest from the fuselage.
(b) After 2 minutes measure the stopped position of the door again. Make sure that there is no change in the door position.

S 865-206
(7) For the aft cargo door, close this circuit breaker on the APU external power panel, P34:
(a) 34J10, CARGO DOOR AFT

S 215-207
(8) Do a check for a stop in the door movement as the door goes into the door opening.

NOTE: A stop in movement can show a problem with the door seal.

S 865-208

CAUTION: DO NOT LET THE HINGE POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF FIVE SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE HINGE POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

(9) Make sure that the door movement and the hinge power unit operation stop at the same time. Make sure the ammeter shows zero current after the door movement stops or listen that there is no clutch slippage in the hinge power unit.

S 865-209
(10) Release the interior door arming switch and the door control switch.

S 215-210
(11) Make sure there is a clearance between the guide rollers and the inboard track roller surface of the guide tracks.

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S 225-211
(12) Make sure the clearance between the moveable stops and fixed stops of the door hinge actuators is as shown (Fig. 523).

P. Do a test on the door latch operation with use of the interior switch.

S 865-212
(1) Remove the cap from the end of the power supply connector. Reconnect the power supply connector to the lift/latch power unit.

S 735-213
(2) Move the interior arming switch down to the ARM position. Move the interior door control switch to the CLOSE position.

S 735-214
(3) Make sure the door moves in the direction of the latched position.

S 735-215
(4) Do a check for smooth operation.

S 735-216
(5) Make sure the latch crank movement and the lift/latch power unit operation stop at the same time.

S 735-217
(6) Make sure the ammeter shows zero current.

S 865-218
(7) Release the interior door arming switch and the door control switch.

S 735-219
(8) Move the interior arming switch up to the ARM position. Move the interior door control switch to the OPEN position.

S 735-220
(9) Make sure the door moves to the fully open position.

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S 735-271
(10) Release the switches.

S 735-221
(11) Move the interior arming switch to the ARM position. Move the interior door control switch to the CLOSE position.

S 735-222
(12) Make sure the door moves to the closed and latched position.

Q. Do a test on the door open operation with use of the exterior switch.

S 225-223
(1) Push the DOOR OPEN light. Make sure the light is on. Release the light.

S 735-224
(2) Move the exterior arming switch up to the ARM position. Make sure the door does not open.

S 735-225
(3) Move the exterior arming switch down to the ARM position. Make sure the door does not open.

S 735-226
(4) Release the door arming switch and move the exterior door control switch to the OPEN position and then to the CLOSE position. Make sure the door does not move.

S 865-227
(5) Release the door control switch.

S 735-228
(6) Move the exterior arming switch up to the ARM position and move the exterior door control switch to the OPEN position.

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S 225-229
(7) Use a stopwatch to make sure the time to go from the DOOR OPEN switch operation to the door fully open and stopped position is a maximum of 45 seconds.

S 215-230
(8) Make sure the door moves smoothly through the movement from the latched position to the open position.

R. Do a test on the door close operation with use of the exterior switch.

S 735-231
(1) Push the DOOR CLOSE light. Make sure the light is on. Release the light.

S 735-232
(2) Move the exterior arming switch up to the ARM position. Make sure the door does not close.

S 735-233
(3) Move the exterior arming switch down to the ARM position. Make sure the door does not close.

S 735-234
(4) Release the arming switch. Move the exterior door control switch to the CLOSE position and then to the OPEN position. Make sure the door does not move.

S 865-235
(5) Release the door control switch.

S 225-236
(6) Move the exterior arming switch down to the ARM position. Move the exterior door control switch to the CLOSE position.

S 735-237
(7) Use a stopwatch to make sure the time to go from the DOOR CLOSE switch operation to the door fully closed and latched position is a maximum of 45 seconds.

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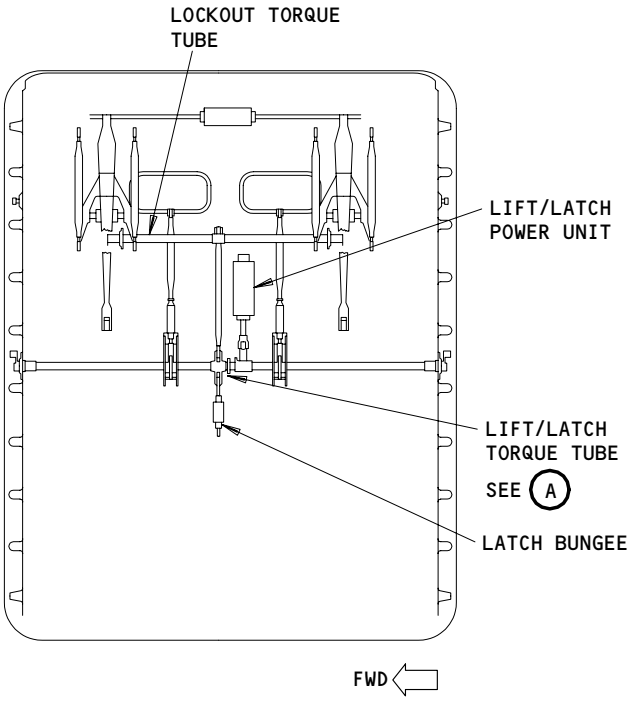
S 215-238
(8) Make sure the door operates smoothly.

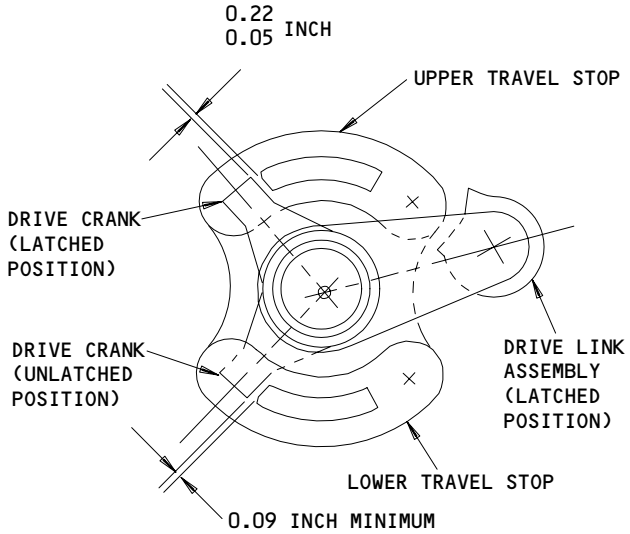
S 215-239
(9) Make sure the vent doors are in the fully closed position.

S 215-240
(10) Make sure the DOOR CLOSE light at the control panel is on.

S 215-241
(11) Make sure the CARGO DOORS indicator light on the flight deck is on.



STANDARD FORWARD AND AFT CARGO DOOR



LIFT/LATCH TORQUE TUBE
A

Lift/Latch Torque Tube Travel Stop Final Adjustment
Figure 526

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S 225-242

(12) Make sure the lift/latch power unit is on when the lift/latch torque tube travel stop has a clearance between 0.05-0.22 inch (in the latched position) as shown (Fig. 526).

S. Do a test on the reversibility operation with use of the exterior switch.

S 735-243

(1) Move the exterior arming switch up to the ARM position. Move the exterior door control switch to the OPEN position. As the door moves up in the door opening and before it goes into the door hinge actuation mode, approximately 1.5 inches of door travel in the door open direction, move the two switches to the door CLOSE position.

S 735-244

(2) Make sure the door moves in the opposite direction and moves down to the latched position. When you see the door move down to the latched position, move the two switches to the door OPEN position.

S 735-245

(3) Make sure the door moves in the opposite direction and moves up into the door opening. When the bottom edge of the door is a minimum of four feet away from the bottom door sill, move the two switches to the door CLOSE position.

S 735-246

(4) Make sure the door moves in the opposite direction and turns to the door opening. When the bottom edge of the door is approximately 12 inches away from the bottom door sill, move the two switches to the door OPEN position.

S 735-247

(5) Make sure the door moves in the opposite direction and turns to the door open position. When you see the door move in the opposite direction and turn to the door open position, move the two switches to the door CLOSE position. Let the door close and latch.

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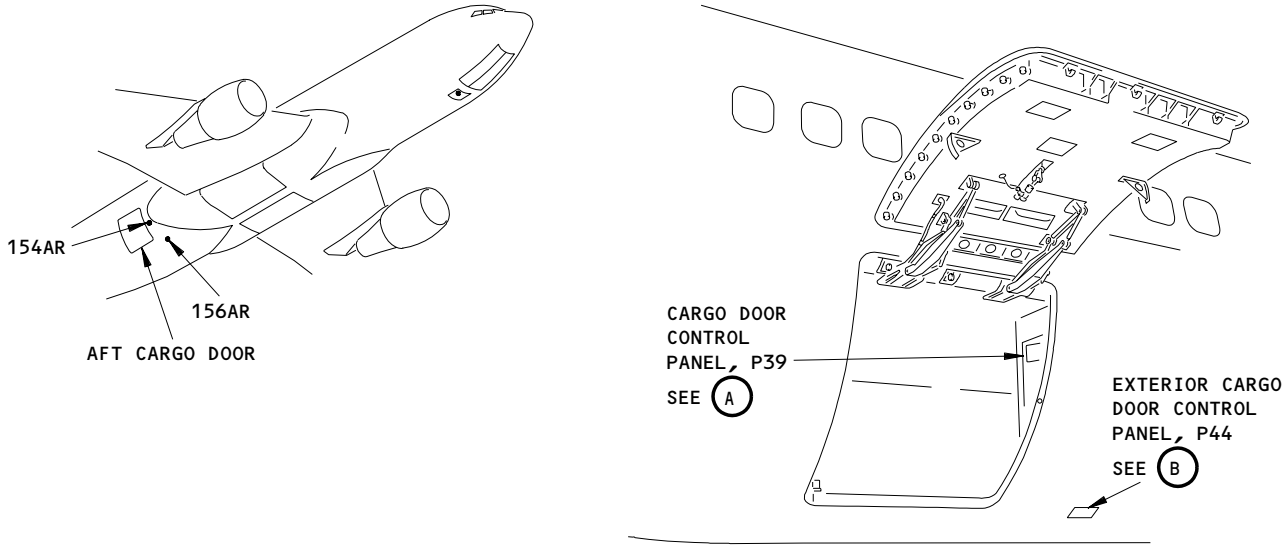
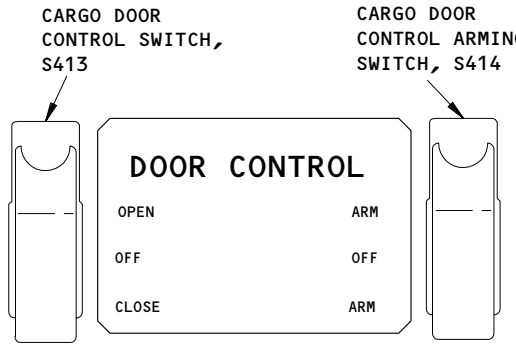
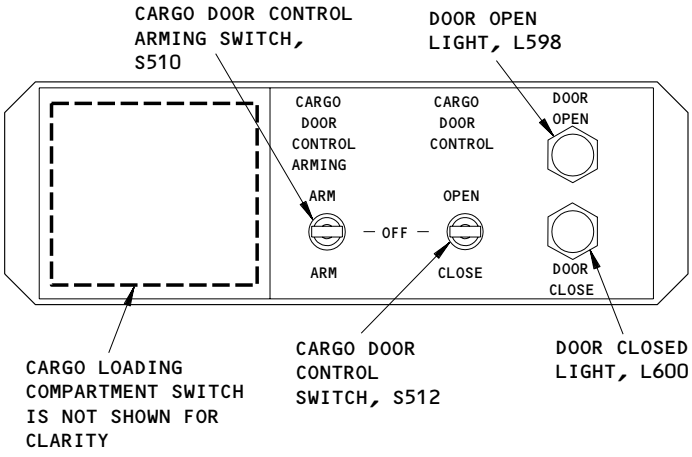




CARGO DOOR CONTROL PANEL, P39

A



EXTERIOR CARGO DOOR CONTROL PANEL, P44

B

Aft Cargo Door Control Switch
Figure 527

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T. Do a test on the door control override operation.

S 735-248
(1) At the same time, move the interior arming switch to the ARM position, the interior door control switch to the CLOSE position, the exterior arming switch to the ARM position, and the exterior door control switch to the OPEN position.

S 215-249
(2) Make sure the door does not move.

S 865-250
(3) Release the interior and exterior arming and door control switches.

S 735-251
(4) Move the exterior arming switch to the ARM position and the exterior door control switch to the CLOSE position. Move the interior arming switch to the ARM position and the interior door control switch to the OPEN position.

S 215-250
(5) Make sure the door moves to the open position.

S 735-252
(6) Release the interior switches only. Make sure the door moves back to the latched position.

S 865-253
(7) Release the exterior switches.

U. Do a test on the door warning indication (Ref 52-71-00).

NOTE: The cargo door warning indicator light is on the flight deck instrument panel, P5.

S 865-254
(1) Make sure this circuit breaker on the overhead circuit breaker panel, P11, is closed:
(a) 11T33, DOOR INDICATION

S 865-255
(2) Make sure the door is in the fully latched position.

NOTE: The rig pin can be installed through the aft latch crank and the mating rig pin hole.

S 215-256
(3) Make sure the CARGO DOORS indicator light is off on the flight deck instrument panel, P5.

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S 735-257

(4) Make sure the latch cranks turn the correct quantity (2 degrees minimum) to make the CARGO DOORS indicator light go on. Do the steps that follow:
   (a) Install a 0.2460-diameter pin through the rig pin holes at the rig pin locations for the rig pins CDA3 or CDA4 (aft door).
   (b) Put a 3/8-inch square drive wrench into the lift/latch manual drive receptacle. Slowly turn the wrench in the counterclockwise direction until the pin you put in does not turn. Stop before the pin bends or deflects.
   (c) Make sure the door warning indicator light does not go on.
   (d) Remove the 0.2460-inch diameter rig pin and replace it in the same rig pin hole with a 0.2055-inch diameter rig pin.
   (e) Turn the lift/latch manual drive counterclockwise until the second pin you put in does not turn. Stop before the pin bends or deflects.
   (f) Make sure the door warning indicator light is on (the latch crank turns 4 1/2 degrees maximum).
   (g) Remove the 0.2055-inch diameter pin.
   (h) Continue to turn the lift/latch manual drive counterclockwise until the door lifts in the door opening a minimum of 2.0 inches.
   (i) Remove the 3/8-inch drive speed wrench from the lift/latch manual drive receptacle.
   (j) Install the proximity sensor actuator on the door locked proximity sensor, S208.
   (k) Make sure the CARGO DOORS indicator light is off.

S 865-258

(5) Put a 3/8-inch drive speed wrench into the door open/close manual drive receptacle. Slowly turn the wrench clockwise in the door open direction.

S 225-259

(6) Make sure the CARGO DOORS light goes on when the upper guide roller on the door is 0.75-1.70 inches from the inboard surface of the upper guide track.

S 865-260

(7) Remove the proximity sensor actuator from the door locked proximity sensor, S208.

V. Do a test on the door down No. 2 proximity sensor circuit.

S 865-267

(1) Open this circuit breaker on the APU external power panel, P34:
   (a) 34J4, CONT DOOR CARGO

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S 735-269

(2) Install the proximity sensor actuator on the door down No. 2 proximity sensor, S160. Make sure that the S160 indicator on the PSEU BITE panel shows TARGET NEAR.

S 735-270

(3) Remove the proximity sensor actuator from the proximity sensor S160. Make sure that the S160 indicator on the PSEU BITE panel shows TARGET FAR.

S 865-268

(4) Close this circuit breaker on the P34 panel:
(a) 34J4, CONT DOOR CARGO

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AFT CARGO DOOR - INSPECTION/CHECK

1. General
   A. This procedure contains one task. The task is the fast check of the standard cargo door.
   B. This procedure gives a fast check for the correct operation and rigging of the standard cargo door systems. This procedure is not a full system test. For a full system test refer to 52-35-00/501.

TASK 52-35-00-706-041

2. Standard Cargo Door System Fast Check
   A. Equipment
      (1) Wedge tool from Rigging Adjustment Tool Set MIT 143T0620 - A52016-2.
      (2) Two spring scales (push-pull type with soft compression heads, 100 pounds capacity)
      (3) 3/8-inch drive speed wrench
   B. References
      (1) 52-35-00/501, Aft Cargo Door
   C. Access
      (1) Location Zone
          822 Aft Cargo Door
   D. Stop Fitting Clearance Check

      S 866-042
      (1) Electrically operate the cargo door to the fully closed and latched position.

      S 496-043
      (2) Install the wedge tools on the forward and aft stop pins No. 2 and No. 9 (Fig. 601).
          (a) Lightly hit the wedges into the stop fitting until you cannot manually turn the guide roller that is nearest to the stop fitting.

      S 226-044
      (3) Make sure the clearance between the stop pins and stop pads is correct (View A-A, Fig. 602).

      S 826-045
      (4) If the clearance between the stop pin and stop pad is not correct (View A-A, Fig. 602), adjust the stop pin (Ref 52-35-00).

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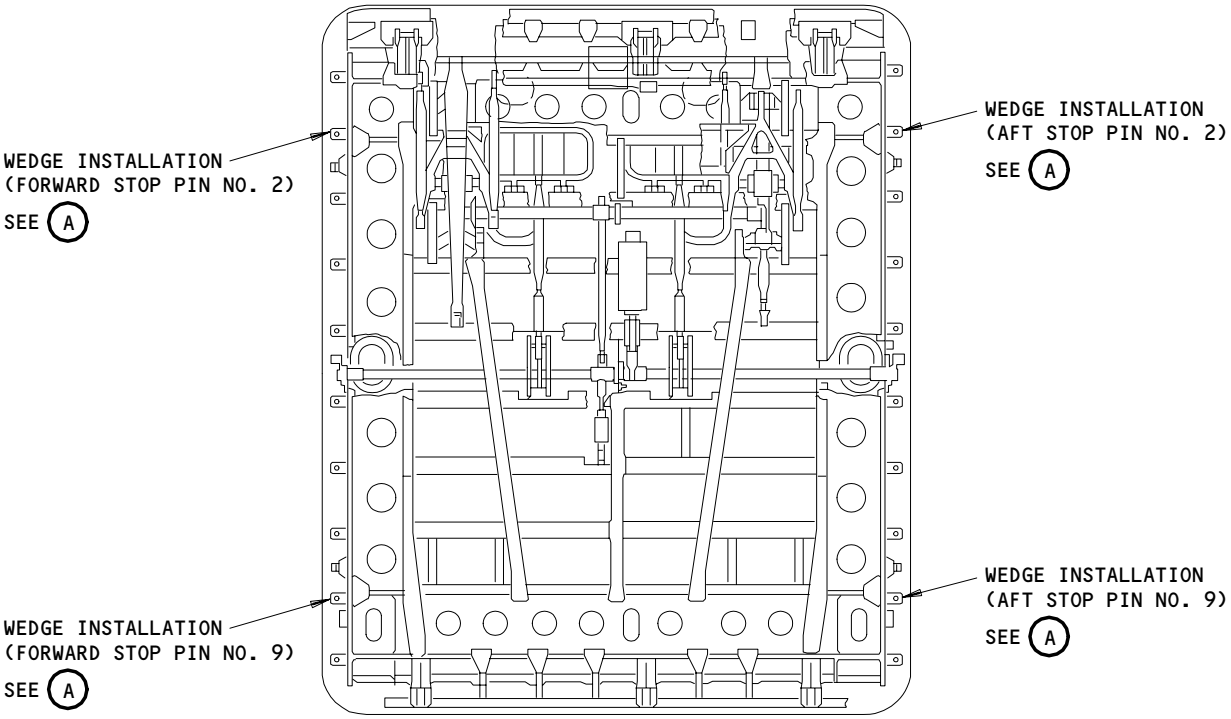
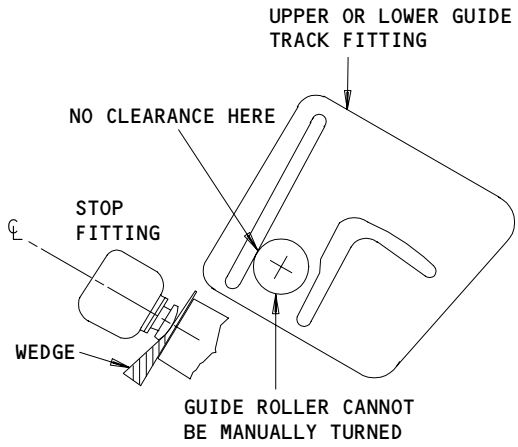


STANDARD CARGO DOOR
(INTERNAL VIEW)



WEDGE INSTALLATION
A

Wedge Installation
Figure 601

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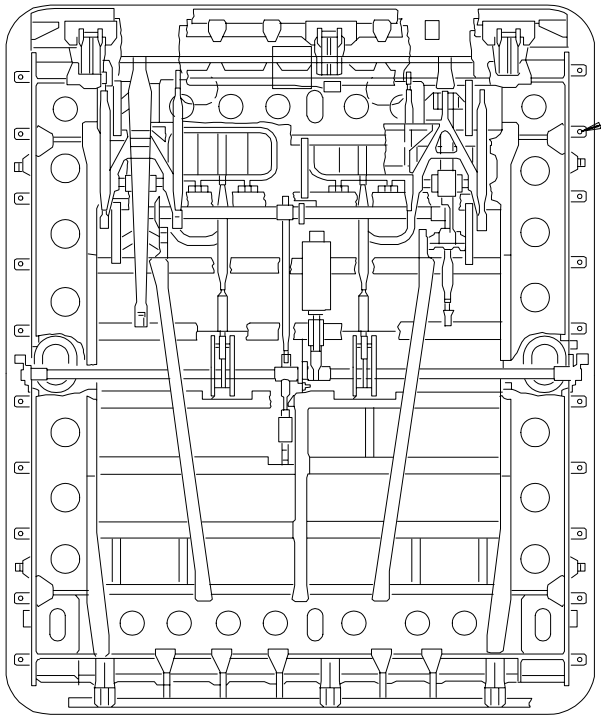
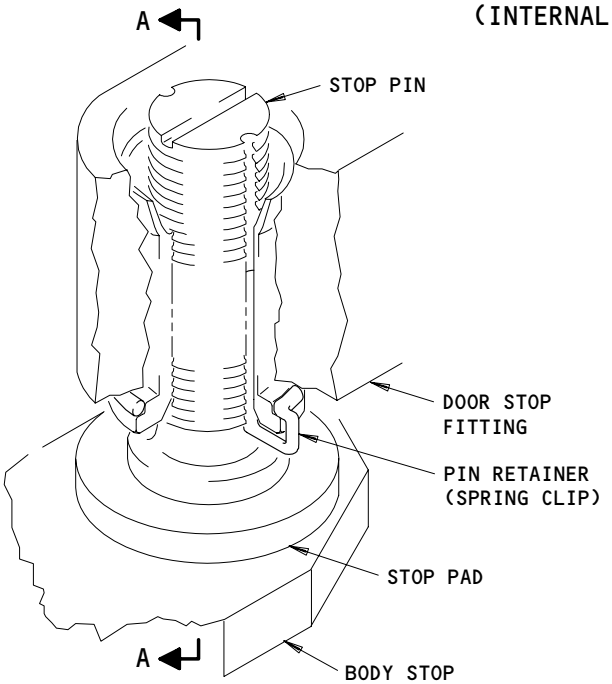
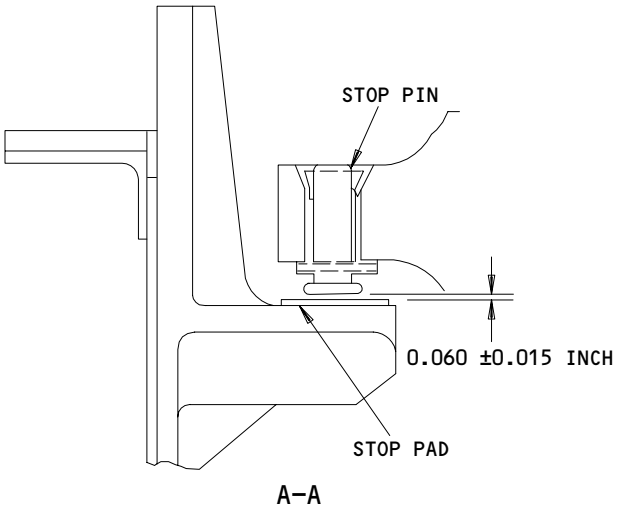


STANDARD AFT CARGO DOOR
(INTERNAL VIEW)



STOP PIN
(EXAMPLE)
A



A–A

Stop Fitting Clearance
Figure 602

727508

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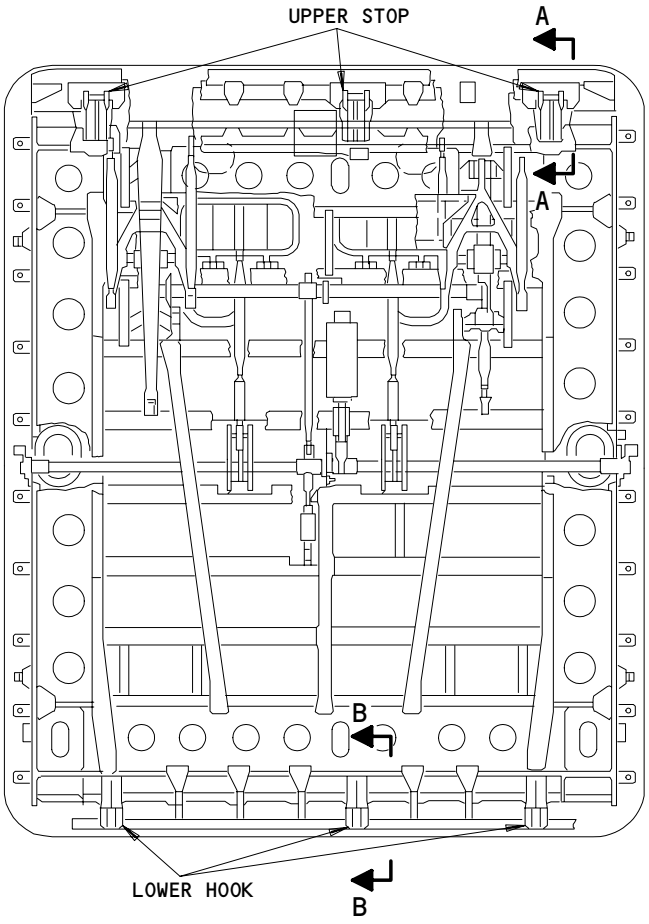
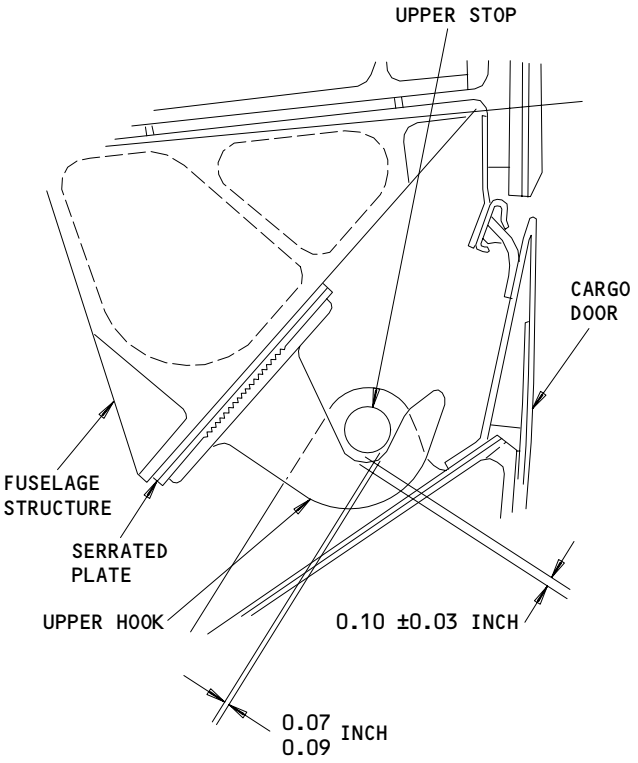
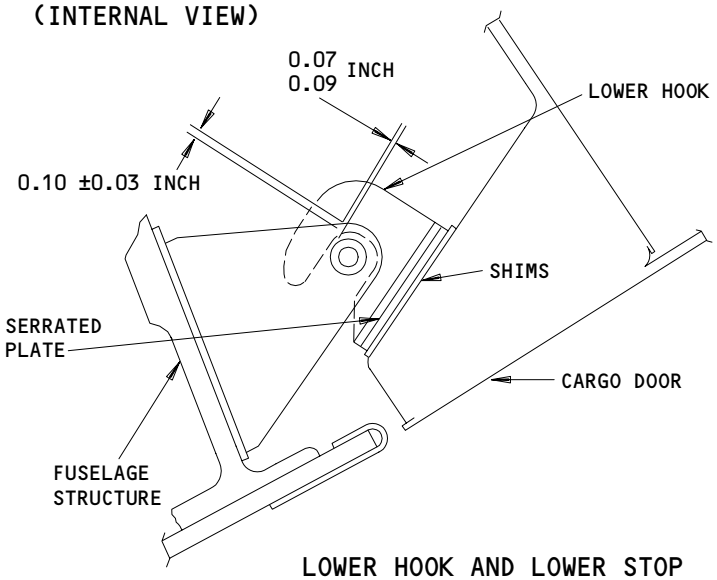


STANDARD AFT CARGO DOOR
(INTERNAL VIEW)



UPPER HOOK AND UPPER STOP
A–A



LOWER HOOK AND LOWER STOP
B–B

Upper and Lower Hook and Stop Clearance
Figure 603

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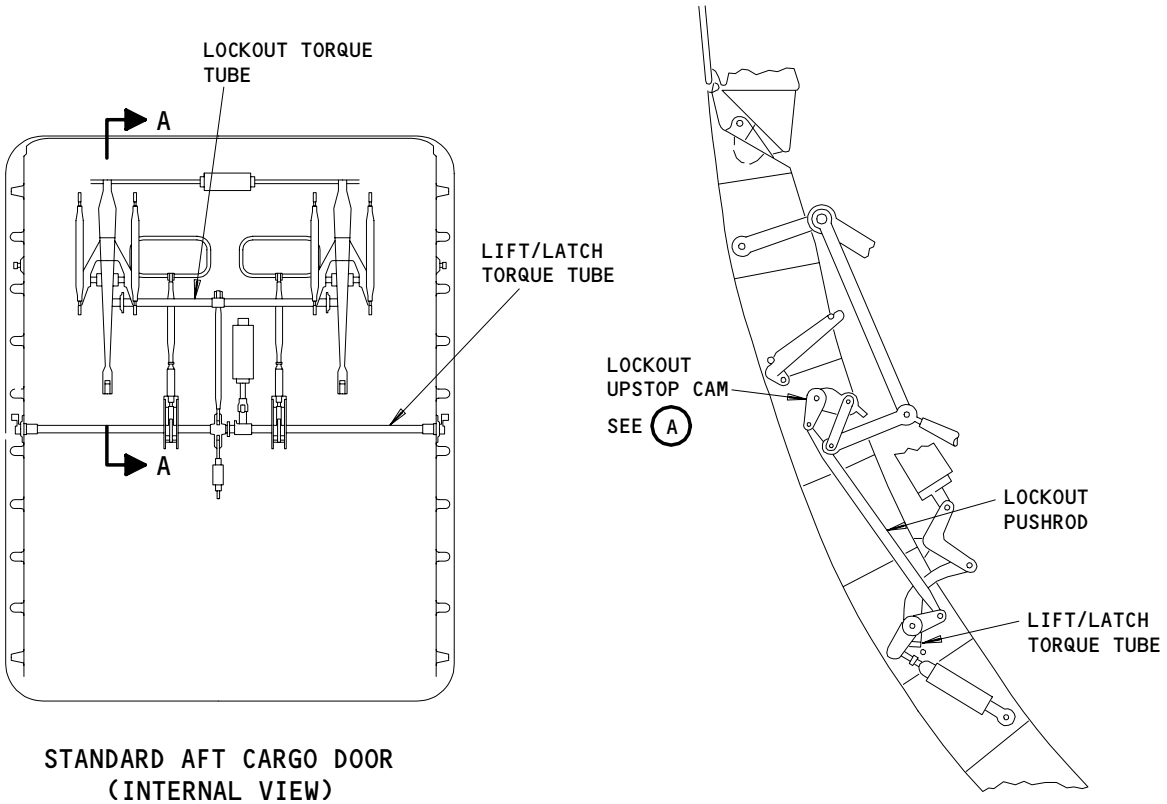
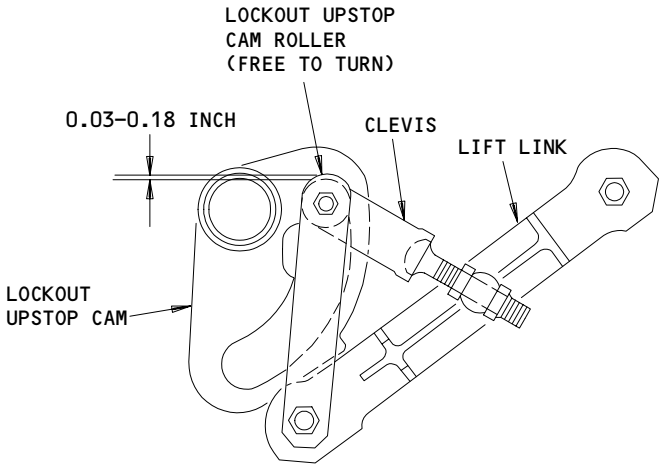


STANDARD AFT CARGO DOOR
(INTERNAL VIEW)

A–A



LOCKOUT UPSTOP CAM
(DOOR IS IN THE LATCHED POSITION)

(A)

Lockout Upstop Cam Roller Clearance
Figure 604

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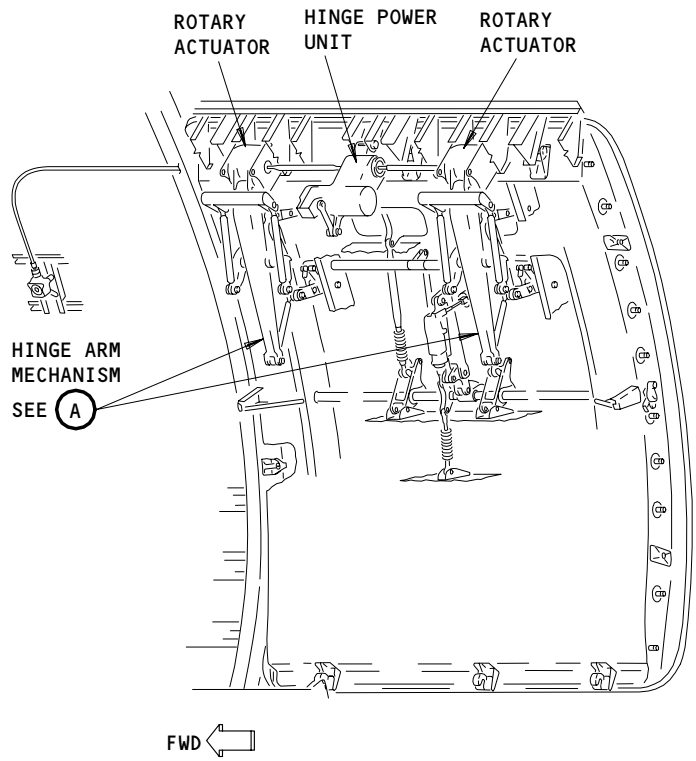
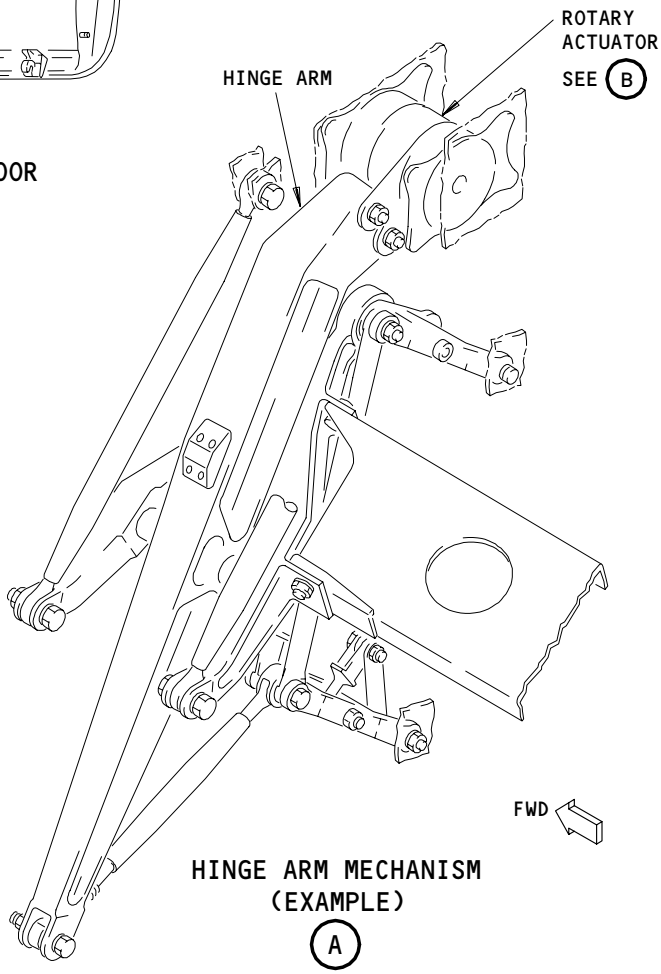


STANDARD AFT CARGO DOOR



HINGE ARM MECHANISM (EXAMPLE) A

Rotary Actuator Stop Clearance
Figure 605 (Sheet 1)

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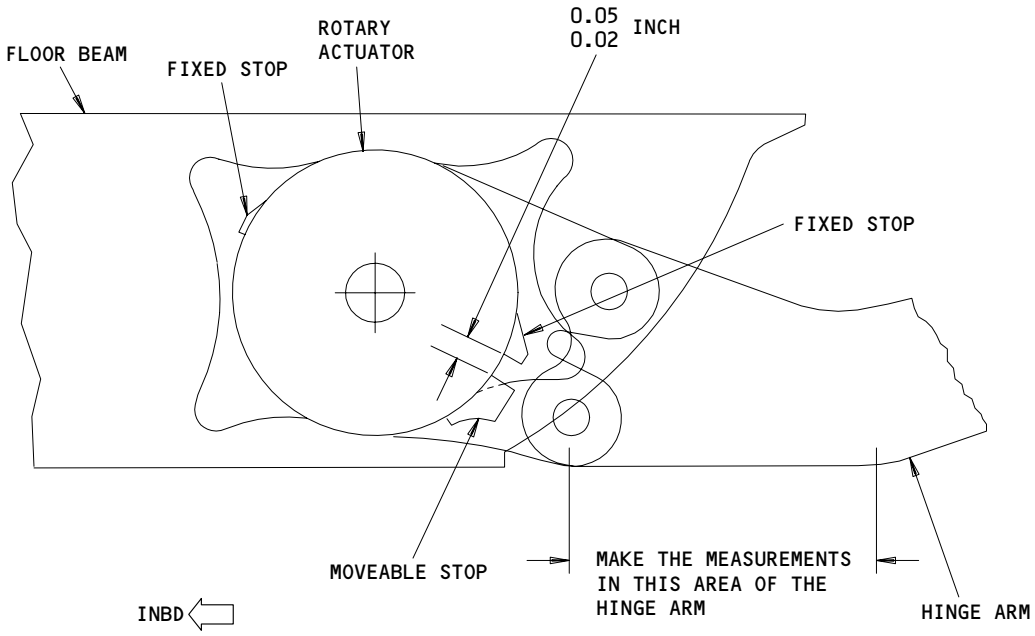
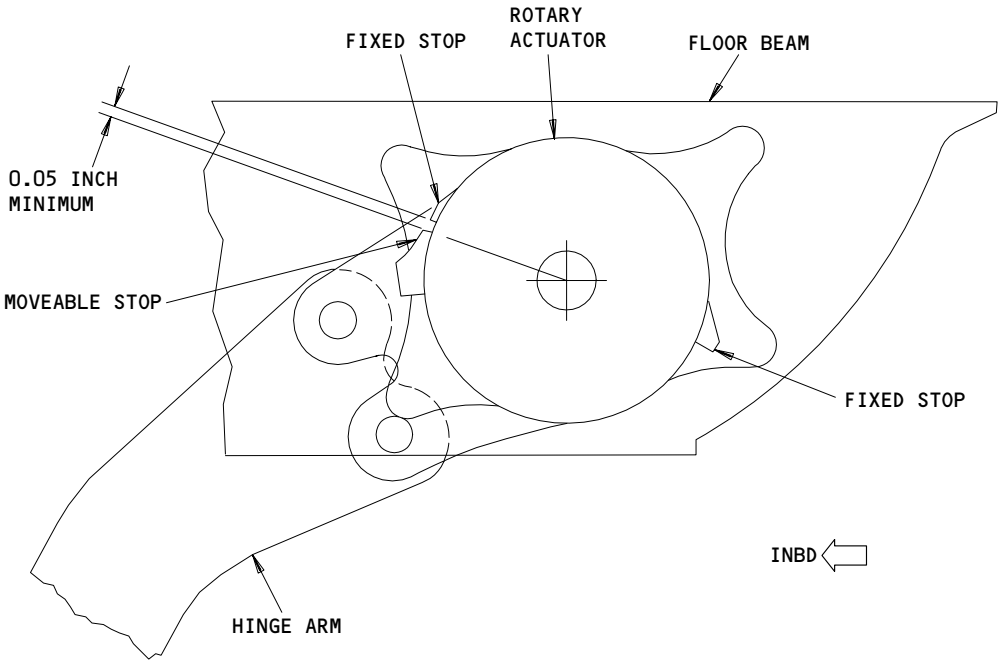


ROTARY ACTUATOR (DOOR IN THE OPEN POSITION)

(B)



ROTARY ACTUATOR (DOOR IN THE CLOSED POSITION)

(B)

Rotary Actuator Stop Clearance
Figure 605 (Sheet 2)

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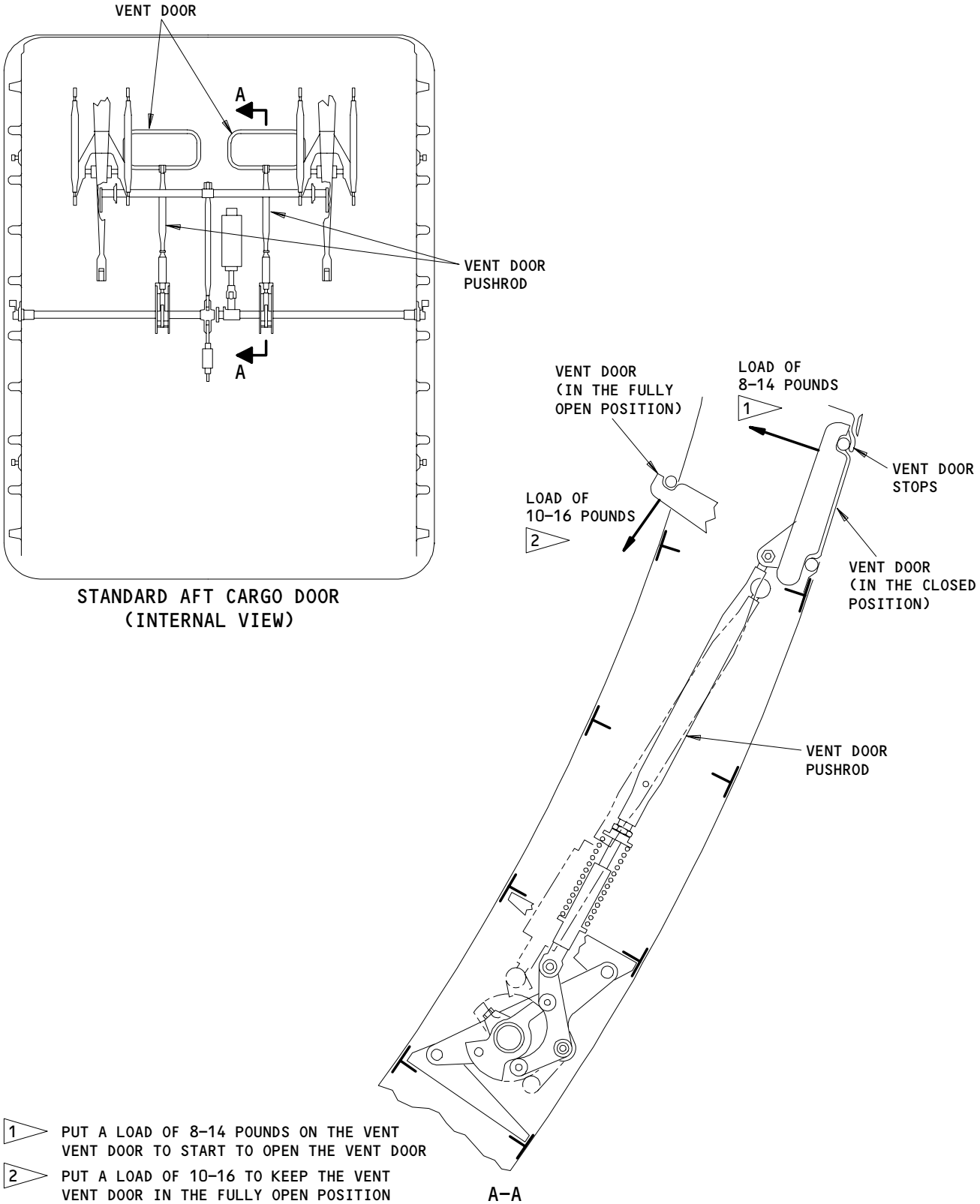

Vent Door Negative Pressure Check
Figure 606

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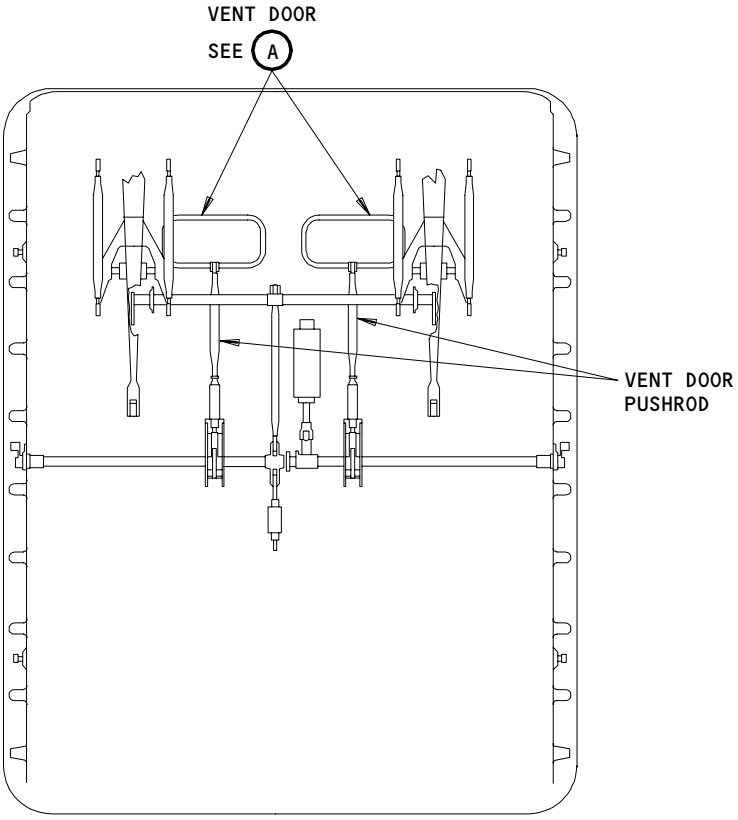
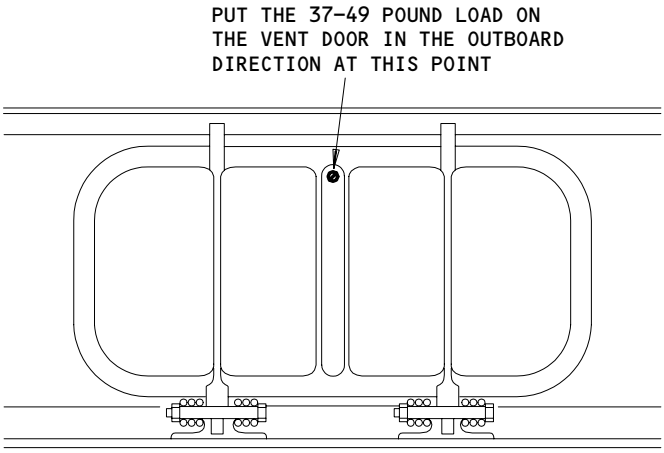


STANDARD AFT CARGO DOOR
(INTERNAL VIEW)



VENT DOOR

A

Vent Door Positive Pressure Check
Figure 607

727533
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S 096-046

CAUTION: MAKE SURE YOU REMOVE THE WEDGES BEFORE YOU UNLATCH THE CARGO DOOR. IF THE WEDGES ARE NOT REMOVED BEFORE THE DOOR IS UNLATCHED, DAMAGE TO THE EQUIPMENT CAN OCCUR.

(5) Remove the wedges.

S 866-047

(6) Open the cargo door.

S 216-048

(7) Make sure the pin retainers (spring clips) are installed on the stop pins (20 locations).

S 216-049

(8) Make sure the stop fittings on the fuselage structure have stop pads.

E. Upper and Lower Hook and Stop Clearance Check

S 216-050

(1) Electrically operate the cargo door to the fully closed and latched position.

S 216-051

(2) Install the wedge tools on the forward and aft stop pins No. 2 and No. 9 (Fig. 601).

S 226-052

(3) Make sure the clearance between the upper stops on the cargo door and the lower hooks on the fuselage structure is correct (View A-A, Fig. 603).

S 226-053

(4) Make sure the clearance between the lower hooks on the cargo door and the lower stops on the fuselage structure is correct (View B-B, Fig. 603).

S 826-054

(5) If the clearances between the upper and lower hooks and stops are not in the correct range, add or remove shims or move the hook on the serrated plate (Ref 52-35-00).

S 096-055

(6) Remove the wedges.

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F. Lockout Upstop Cam Roller Clearance Check

S 216-056
(1) Electrically operate the cargo door to the fully closed and latched position.

S 226-057
(2) Do a check on the lockout upstop cam roller clearance (Fig. 604).

S 216-058
(3) Make sure the lockout upstop cam roller is free to turn.

G. Rotary Actuator Stop Clearance Check

S 866-059
(1) Electrically operate the cargo door to the fully open position.

S 226-060
(2) Do a check that the clearance between the fixed and moveable stops of each rotary actuator is correct (View B, Fig. 605).

S 826-063
(3) If the clearance is not correct, adjust the cargo door open proximity sensor (Ref 52-35-00).

S 866-064
(4) Manually close the cargo door to the lifted position, or electrically close the cargo door with the lift/latch actuator plug disconnected.

NOTE: The door is in the lifted position when it is lifted two inches vertically from the closed and latched position.

S 226-065
(5) Do a check that the clearance between the fixed and moveable stops of each rotary actuator is a minimum of 0.05 inch (View B, Fig. 605).

H. Vent Door Negative Pressure Check

S 866-066
(1) Use the two spring scales to put a tension load in the inboard direction on the two vent doors at the same time. Put the load on the vent doors in the approximate center of the vent door stops.

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S 866-067
(2) Pull inboard on the two spring scales with the spring scales approximately perpendicular to the vent doors.

S 226-068
(3) Make sure the vent doors start to open at a load of 8 to 14 pounds (Fig. 606).

S 226-069
(4) Make sure the load to keep the vent doors in the fully open position (65 degrees from the closed position) is 10 to 16 pounds.

S 826-070
(5) If the loads are not in the permitted ranges, adjust the vent door pushrods (Ref 52-35-00).

S 216-071
(6) Make sure that during this check the latch cranks on the cargo doors do not turn.

I. Vent Door Positive Pressure Check

S 866-072
(1) Make sure the cargo door is in the fully closed and latched position.

S 866-073
(2) Use the spring scale to put a 37 to 49 pound load in the outboard direction on the forward vent door (Fig. 607).

S 866-074

CAUTION: DO NOT LET THE LIFT/LATCH POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE LIFT/LATCH POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE IT AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 190 POUND-INCHES. INCORRECT OPERATION OF THE POWER TOOL CAN CAUSE DAMAGE TO THE LIFT/LATCH POWER UNIT.

(3) Put a 3/8-inch drive speed wrench in the lift/latch manual drive receptacle. Turn the wrench counterclockwise until you can feel or hear the clutch slippage in the lift/latch power unit.

NOTE: The cargo door latch cranks will turn until there is clutch slippage in the lift/latch power unit.

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S 226-075

(4) Do a check that during the clutch slippage there is a maximum load increase of 3 pounds more than the compression load of 37 to 49 pounds that you put on to keep the vent door in the closed position.

S 226-076

(5) Make sure the travel of the cargo door caused by the movement of the latch crank is not more than 0.07 inch.

S 826-077

(6) If the travel of the cargo door is more than the permitted distance adjust the lift/latch mechanism (Ref 52-35-00).

S 866-078

(7) Turn the lift/latch manual drive clockwise to fully close and latch the cargo door.

S 736-079

(8) Do this procedure again for the aft vent door on the cargo door.

J. Lift, Open, Close, and Latch Manual Operation Check

S 736-036

CAUTION: DO NOT LET THE LIFT/LATCH POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE LIFT/LATCH POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE IT AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 190 POUND-INCHES. INCORRECT OPERATION OF THE POWER TOOL CAN CAUSE DAMAGE TO THE LIFT/LATCH POWER UNIT.

(1) Put a 3/8-inch drive speed wrench in the lift/latch manual drive receptacle. Turn the wrench counterclockwise until the vertical travel of the door stops. As the cargo door lifts, do the steps that follow:

(a) Make sure the cargo door moves inboard and outboard in the door cutout freely with a minimum clearance of 0.05 inch to the top edge of the door cutout.

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(b) Make sure that you do not hear unusual noises during the operation.
(c) Make sure the vent doors are fully opened with a minimum angle of 65 degrees from the closed position.

S 216-037

(2) After the cargo door stops, make sure the forward and aft latch crank rollers turn freely.

S 736-038

CAUTION: DO NOT LET THE HINGE POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN A MAXIMUM OF 5 SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE HINGE POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

IF YOU USE A POWER TOOL, DO NOT OPERATE IT AT A SPEED FASTER THAN 500 RPM OR A TORQUE MORE THAN 190 POUND-INCHES. STOP THE TOOL OPERATION WHEN THE DOOR IS IN THE FULLY OPEN POSITION. INCORRECT OPERATION OF THE POWER TOOL CAN CAUSE DAMAGE TO THE HINGE POWER UNIT.

(3) Put a 3/8-inch drive speed wrench in the cargo door open/close manual drive receptacle. Turn the wrench clockwise until the cargo door is in the fully open position. As the cargo door opens, do the steps that follow:
(a) Make sure the two actuator drive shafts start to move at the same time.
(b) Make sure the two actuator hinge arms start to move at the same time.
(c) Make sure the upper and lower guide rollers move smoothly from the guide tracks and the cargo door does not fall.
(d) Make sure the latch crank rollers move smoothly from the latch tracks.
(e) Make sure that you do not hear unusual noises during the operation.

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S 866-039
(4) Turn the open/close manual drive counterclockwise to close the cargo door.

S 736-040
(5) Turn the lift/latch manual drive clockwise until the cargo door is in the fully closed and latched position. As the cargo door latches, do the steps that follow:
(a) Make sure the upper and lower hooks and stops engage smoothly.
(b) Make sure the vent doors on the cargo door fully close.

K. EICAS Message Check

S 866-080
(1) Open the cargo door.

S 866-081
(2) Make sure the EICAS message, AFT CARGO DOOR, shows on the top display.

S 866-082
(3) Close the cargo door, but do not latch.

S 866-083
(4) Make sure the EICAS message, AFT CARGO DOOR, shows on the top display.

S 866-084
(5) Close and latch the cargo door.

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AFT CARGO DOOR - APPROVED REPAIRS

1. General
   A. This procedure contains one task. The task is the removal and installation of the stop pad on the fuselage structure for the aft cargo door.

   TASK 52-35-00-358-001

2. Repair the Stop Pad
   A. Consumable Materials
      (1) D00014 Lubricant - MIL-G-21164
      (2) A00247 Sealant - BMS 5-95, Type I, Class B
   B. References
      (1) 24-22-00/201, Electrical Power - Control
   C. Access
      (1) Location Zone
          822 Aft Cargo Door

   D. Prepare for the Repair of the Stop Pad

      S 868-002
      (1) Supply electrical power (Ref 24-22-00).

      S 868-003
      (2) Open the cargo door to get access to the stop fittings.

      S 868-004
      (3) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
          (a) 34J4, CONT DOOR CARGO
          (b) 34J10, AFT CARGO DOOR
   E. Procedure - Repair the Stop Pad

      S 028-005
      (1) Remove the stop pad from the stop fitting.

      S 038-006
      (2) Remove all of the sealant from the hole in the stop fitting and the stop fitting.

      S 428-009
      (3) For the stop fitting No. 1, do the steps that follow (Fig. 801):
          (a) Install the replacement stop pad (with the extended spindle) into the stop fitting with the wet sealant on the faying surfaces.
          (b) Install the guard with the wet sealant on the faying surfaces.
          (c) Make sure the clearances between the guard and the stop fitting are filled with the sealant.
          (d) Make sure the slotted hole in the guard is filled with the sealant.

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(e) Install the washer and nut. Tighten the nut with your hand.
(f) Adjust the guard to make sure the guard and the stop fitting touch correctly (Fig. 801).
(g) Tighten the nut to 12-15 pound-inches (Fig. 801).

S 428-019
(4) For the stop fittings No. 2 thru 9 (stop pads with the extended spindles, washers, and nuts), do the steps that follow (Fig. 802):
(a) Install the replacement stop pad into the stop fitting with the wet sealant on the mating surfaces.
(b) Install the washer and nut. Tighten the nut.

S 428-020
(5) For the stop fitting No. 10, do the steps that follow (Fig. 803):
(a) Install the replacement stop pad into the stop fitting with the wet sealant on the faying surfaces.
(b) Install the washer and nut. Tighten the nut.

S 038-013
(6) Remove the unwanted sealant from around the stop pad and the stop fitting.

S 648-014
(7) Apply a light layer of the lubricant to the surface of the stop pad.

F. Put the Airplane Back to its Usual Condition

S 868-015
(1) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO
(b) 34J10, AFT CARGO DOOR

S 868-016
(2) Close the cargo door.

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S 868-017

(3) Remove electrical power, if it is not necessary (Ref 24-22-00).

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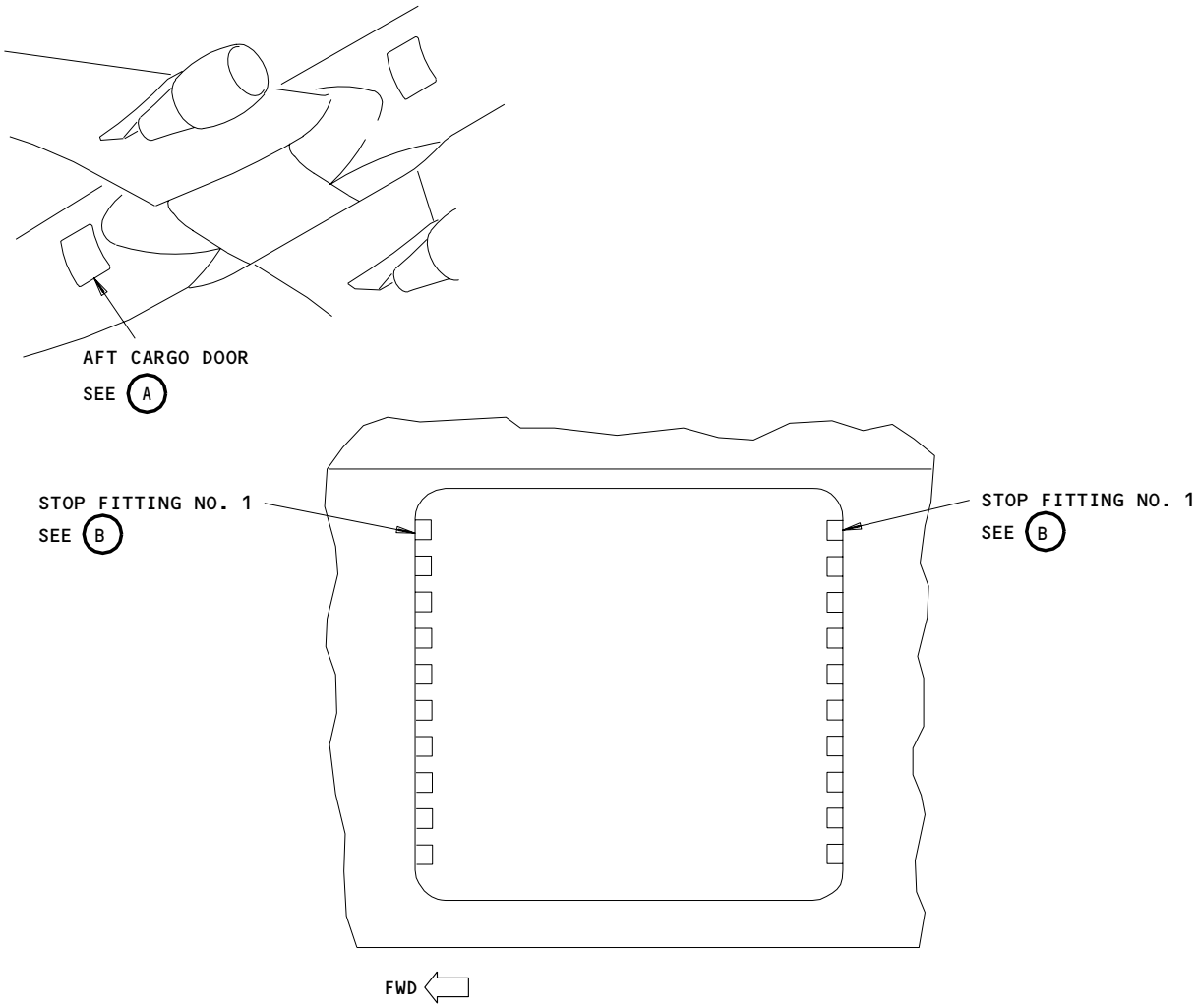

AFT CARGO DOOR
(INTERNAL VIEW)
A

1 APPLY THE SEALANT ON THE FAYING SURFACES

2 AFTER THE INSTALLATION OF THE STOP PAD APPLY A LIGHT LAYER OF THE LUBRICANT TO THE INBOARD SURFACE OF THE STOP PAD

3 FILL THE SLOTTED HOLE IN THE GUARD WITH THE SEALANT

4 FILL THE CLEARANCES BETWEEN THE GUARD AND THE STOP FITTING WITH THE SEALANT

Stop Fitting No. 1
Figure 801 (Sheet 1)

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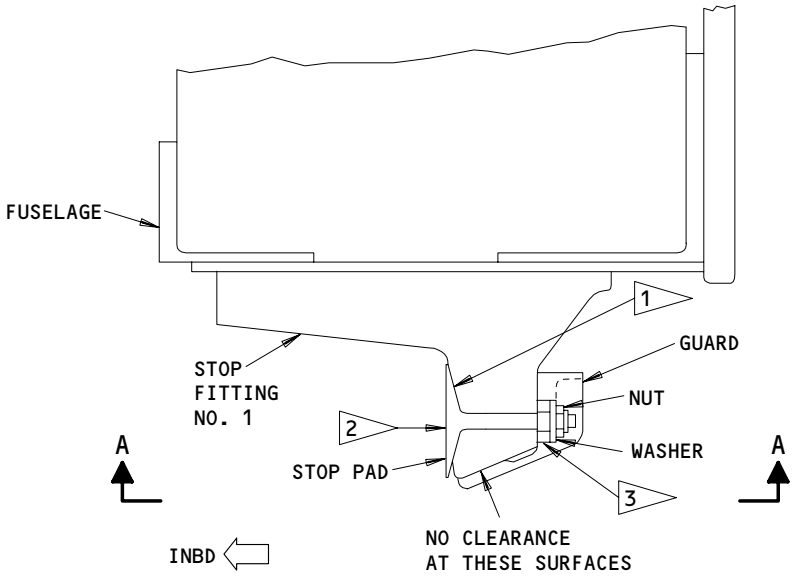
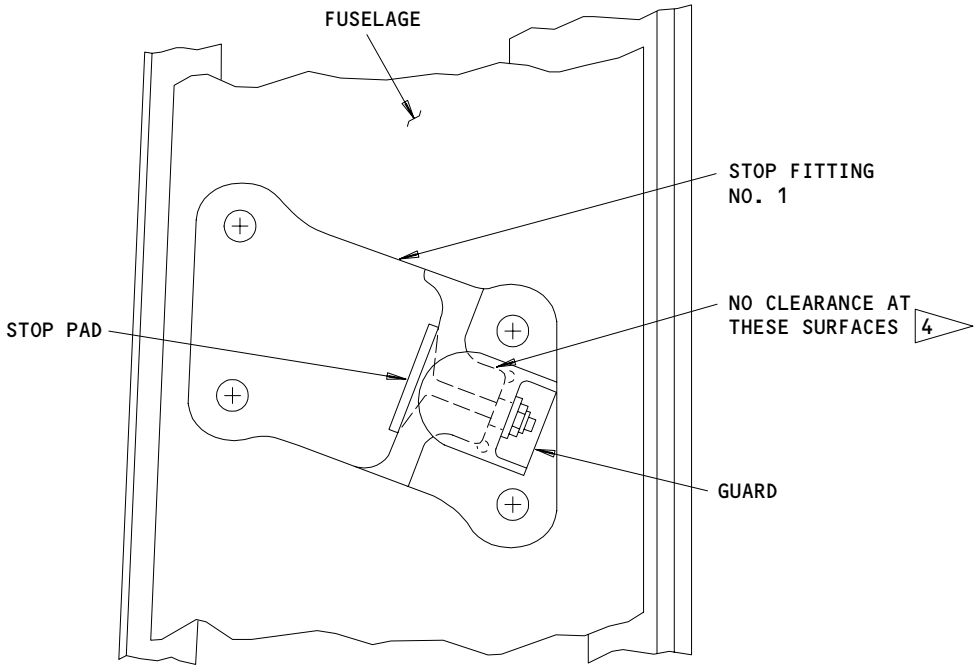


STOP FITTING NO. 1

(B)



A-A

Stop Fitting No. 1
Figure 801 (Sheet 2)

272147
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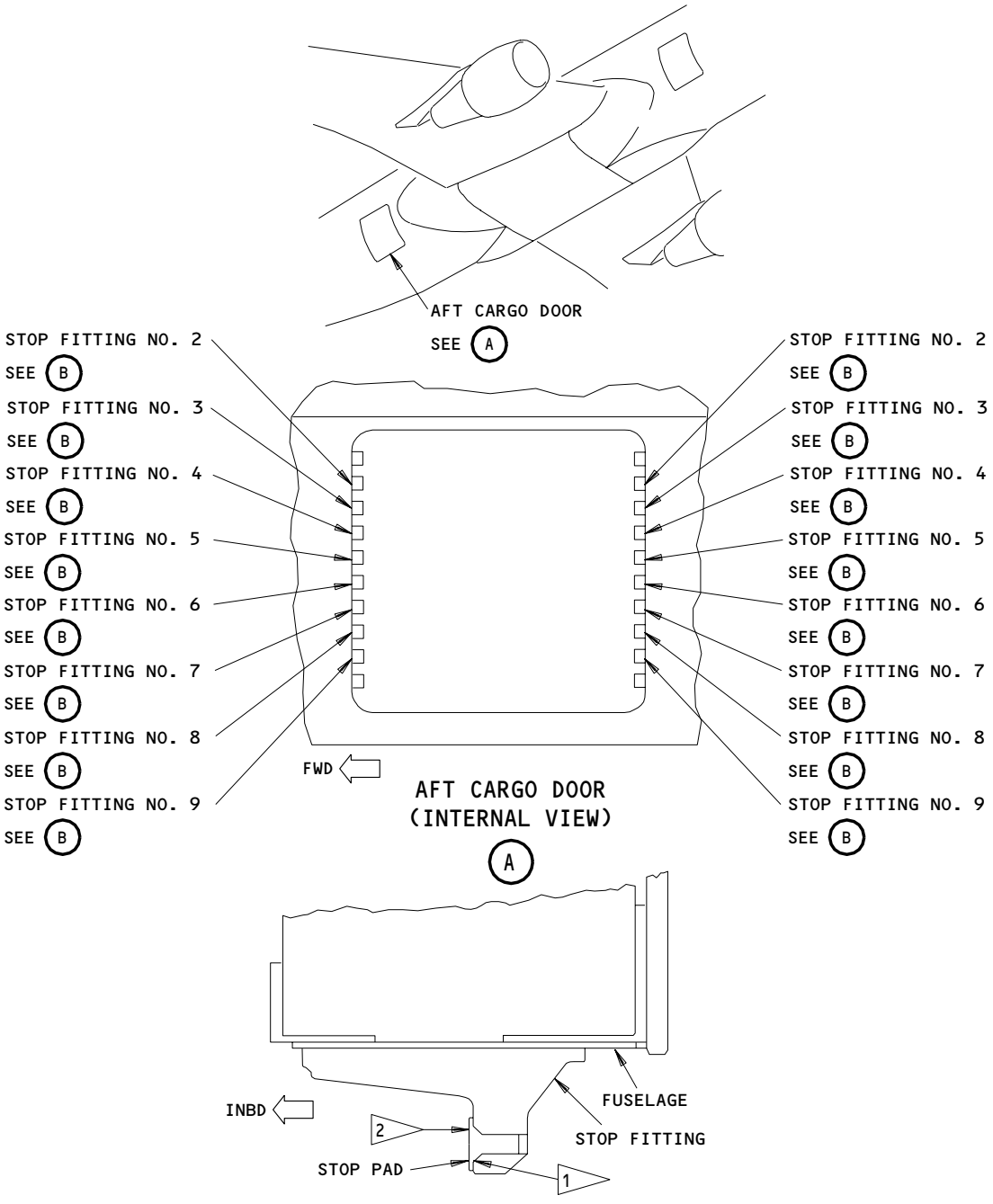

1 APPLY THE SEALANT ON THE FAYING SURFACES

2 AFTER THE INSTALLATION OF THE STOP PAD APPLY A LIGHT LAYER OF THE LUBRICANT TO THE INBOARD SURFACE OF THE STOP PAD

Stop Fitting No. 2 thru 9
Figure 802

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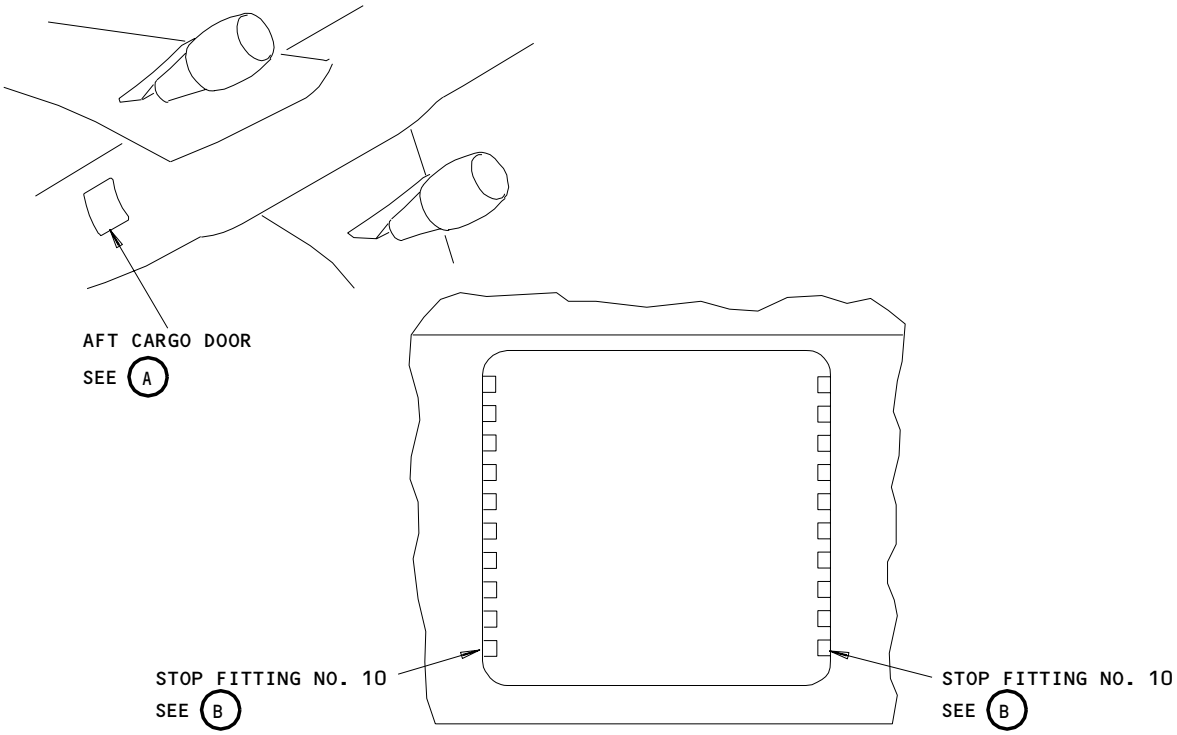
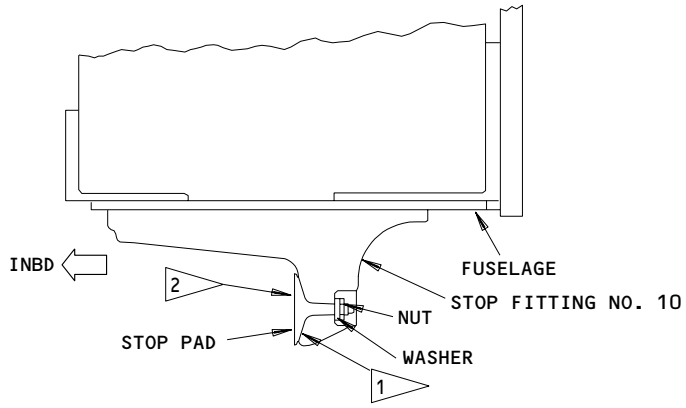


AFT CARGO DOOR
(INTERNAL VIEW)

A



STOP FITTING NO. 10

B

1 APPLY THE SEALANT ON THE FAYING SURFACES

2 AFTER THE INSTALLATION OF THE STOP PAD APPLY A LIGHT LAYER OF THE LUBRICANT TO THE INBOARD SURFACE OF THE STOP PAD

Stop Fitting No. 10
Figure 803

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AFT CARGO DOOR - REMOVAL/INSTALLATION

1. General
   A. This procedure contains three tasks. The first task is the removal of the aft cargo door. The second task is the installation of the aft cargo door. The third task is the removal of the cargo door with door failure in the closed position.

TASK 52-35-01-004-002

2. Remove the Aft Cargo Door
   A. Equipment
      (1) Sling, Lower Lobe Cargo Door - A52004-41, 42, 43
      (2) Safety Barrier, Cargo Door - A52005-18
   B. References
      (1) AMM 25-52-02/401, Containerized Cargo Compartment Ceiling Lining
      (2) AMM 52-35-04/401, Aft Cargo Door Hinge Arm
   C. Access
      (1) Location Zone
          822 Aft Cargo Door

   D. Procedure - Remove the Aft Cargo Door

      S 014-004
      (1) Open the cargo door sufficiently to get access to the hinge mechanism attach points (Fig. 401).

      S 864-002
      (2) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
          (a) 34J4, CONT DOOR CARGO
          (b) 34J10, CARGO DOOR AFT

      S 014-003
      (3) Remove the lining on the top and bottom of the cargo door.

      S 014-006
      (4) Remove the ceiling panels from above the opening of the cargo door (AMM 25-52-02/401).

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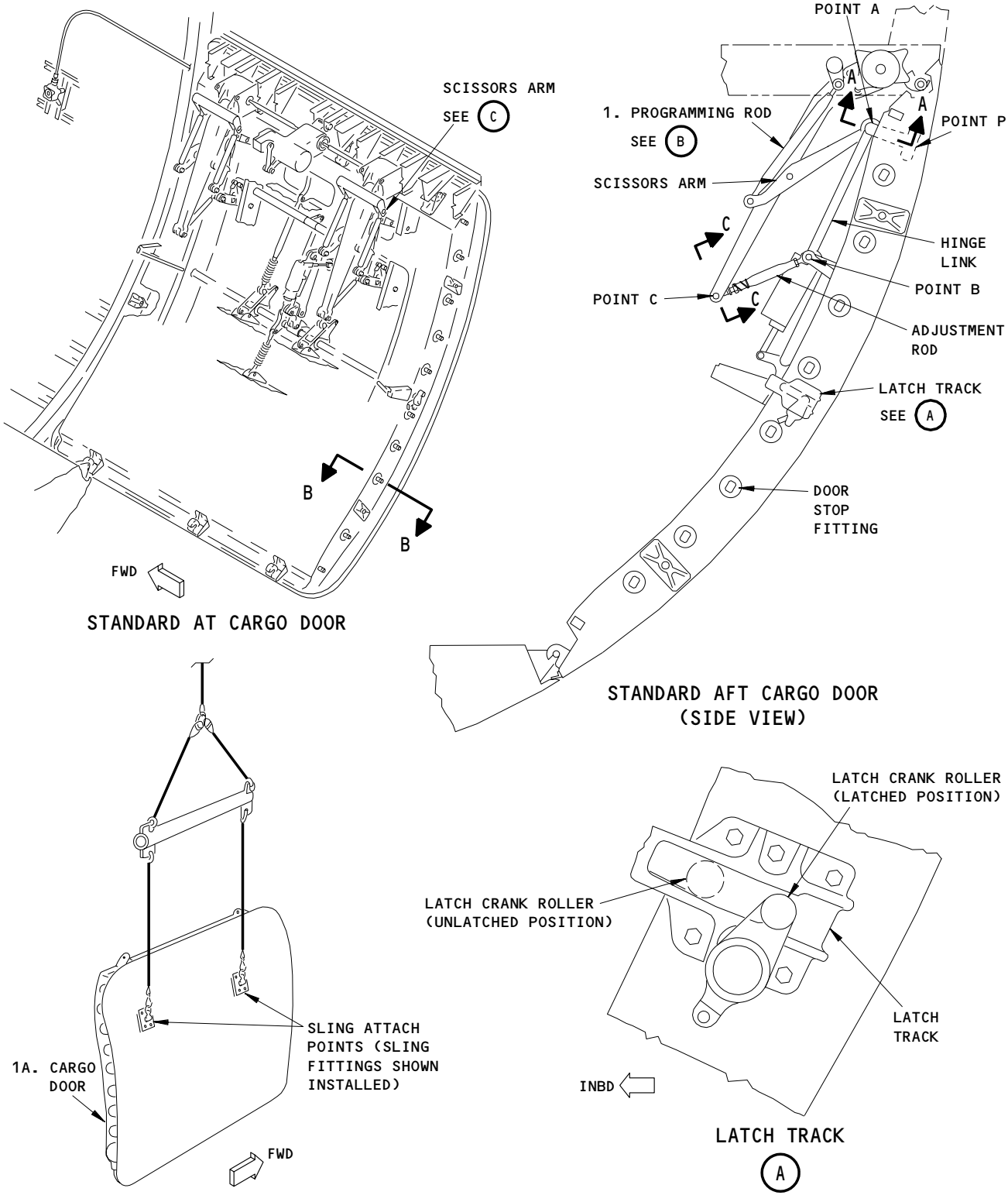

Cargo Door Installation
Figure 401 (Sheet 1)

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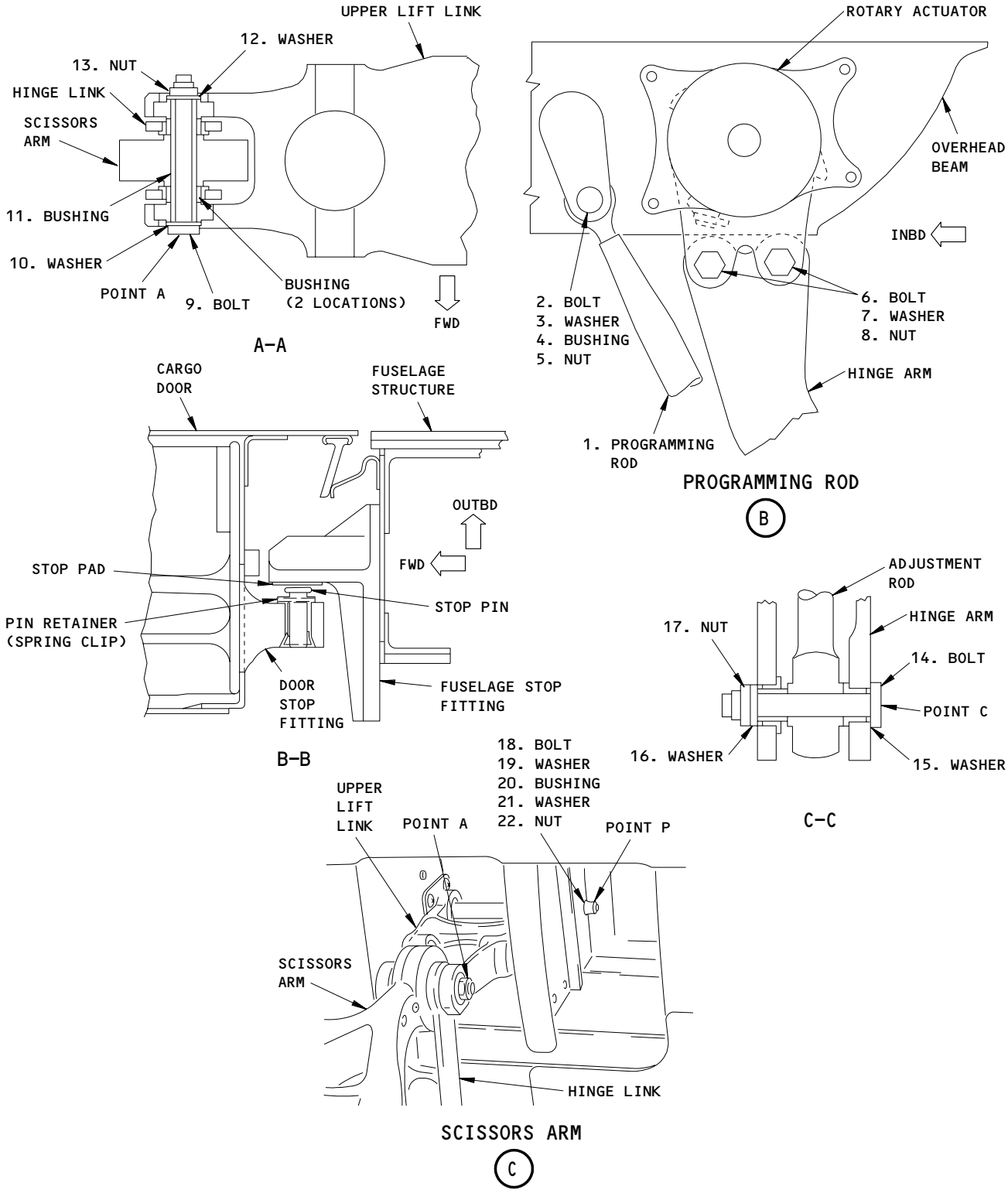

Cargo Door Installation
Figure 401 (Sheet 2)

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S 034-005
(5) Disconnect and remove the wire bundle from the cargo door.

S 034-006
(6) Remove the four bolts at each of the two sling attach points on the cargo door (Fig. 401). Attach a tag to the bolts to identify for subsequent installation.

S 494-007

CAUTION: MAKE SURE THE SLING IS INSTALLED CORRECTLY AND HOLDS THE WEIGHT OF THE CARGO DOOR. IF THE SLING IS NOT INSTALLED CORRECTLY, DAMAGE TO THE HINGE MECHANISM CAN OCCUR.

(7) Install the sling on the cargo door.

S 864-008
(8) Put a sufficient tension load on the sling to hold the weight of the cargo door off of the hinges.

S 034-009
(9) Remove the bolts (9 and 14) at the hinge mechanism linkage points A and C (Views A-A and C-C, Fig. 401).

S 024-010
(10) Remove the cargo door from the airplane and put it on the transportation stand.

S 034-011
(11) Remove the bolts (2) to disconnect the programming rods (1) from the overhead beam at the two hinges (View B, Fig. 401).

NOTE: Keep the programming rods (1) with the cargo door.

S 034-012
(12) If you replace the cargo door and the new door assembly includes hinge arms, remove the bolts (6) to remove the unwanted hinge arms from the overhead beam (View B, Fig. 401).

S 034-013
(13) Disconnect the assembly of the scissors arms and the programming rods (1) from the hinge arms (AMM 52-35-04/401). Keep the assembly with the cargo door.

S 494-014
(14) Install the cargo door personnel safety barrier across the door opening if you do not immediately install a new door.

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TASK 52-35-01-404-003

3. Install the Aft Cargo Door

A. General

(1) Install and adjust the cargo door with the airplane on its landing gear. Make sure the airplane is not held by jacks when the cargo door is adjusted.

(2) If you install a new door, do the steps to remove the unwanted skin around the door edges. If you install an old door, do not do the steps to remove the unwanted skin around the door edges.

(3) Refer to AMM 52-35-00/501 for the adjustment procedure for the aft cargo door.

B. Equipment

(1) Sling, Lower Lobe Cargo Door - A52004-41, 42, 43

(2) Safety Barrier, Cargo Door - A52005-18

(3) Rig Pins from kit A20004-XX - (AMM 20-10-24/201)

(a) CDA1 - P/N A20004-12

(b) CDA2 - P/N A20004-12

(c) CDA3 - P/N A20004-15

(d) CDA4 - P/N A20004-15

(4) Rigging Adjustment Equipment, Aft Cargo Door - A52016-1

(5) Four Rigging Wedges (0.90-inch wide and 6-inches long, thickness 0.16 inch tapered to 0.02 inch, aluminum stock). Wedges are part of rigging equipment A52016-1.

C. Consumable Materials

(1) D00633 Grease - BMS 3-33 (Preferred)

(2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

(3) D00014 Grease - MIL-G-21164 (Alternate)

(4) A00247 Sealant - BMS 5-95

D. Parts

E. References

(1) AMM 20-10-23/401, Lockwires

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(2) AMM 20-10-24/201, Rig Pins
(3) AMM 25-52-02/401, Containerized Cargo Compartment Ceiling Lining
(4) AMM 52-35-00/501, Aft Cargo Door
(5) AMM 52-35-04/401, Aft Cargo Door Hinge Arm
(6) AMM 52-35-43/501, Aft Cargo Door Control Proximity Sensors
(7) AMM 52-71-00/501, Door Warning System Proximity Sensors

F. Access
(1) Location Zone
822 Aft Cargo Door

G. Install the Aft Cargo Door

S 094-016
(1) Remove the cargo door personnel safety barrier if it was installed before.

S 434-017
(2) If the hinge arms are not installed on the overhead beam, install the hinge arms with the bolts (6), washers (7), and nuts (8) (View B, Fig. 401) and install the scissors arms on the hinge arms (AMM 52-35-04/401).

NOTE: If the hinge arms and scissors arms are installed on the replacement cargo door, remove them from the door and install on the overhead beam before you install the door.

S 434-018
(3) Install the programming rods (1) to the overhead beam with the bolts (2), washers (3), bushings (4), and nuts (5) (View B, Fig, 401).

S 434-019
(4) Connect the lower ends of the programming rods (1) to the scissors arms.

S 824-020
(5) Manually turn the latch crank roller to the unlatched position (View A, Fig. 401) to permit the latch crank roller to align in the latch track on the fuselage structure.

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S 424-021

(6) Hold the replacement cargo door with the hoist and the sling. Move the door into position in the door cutout.

S 644-022

(7) Apply the grease to the mating surfaces of all the bushings (Fig. 401).

S 434-023

(8) Install the bolts (9), washers (10), bushings (11), washers (12), and nuts (13) at point A (View A-A, Fig. 401).

S 434-024

(9) Install the bolts (14), washers (15), washers (16), and nuts (17) at point C (View C-C, Fig. 401).

S 094-025

CAUTION: MAKE SURE YOU INSTALL THE BOLTS AT THE SLING ATTACH POINTS. IF THE BOLTS ARE NOT INSTALLED, PRESSURIZATION LEAKAGE CAN OCCUR.

(10) Remove the sling. Install the four bolts in the cargo door skin at the two sling attach points (Fig. 401).

S 434-026

(11) Install and connect the wiring bundle.

S 034-027

(12) Remove the pin retainers (spring clips) from all the stop fittings (View B-B, Fig. 401).

S 864-028

(13) Turn back all the stop pins approximately two full turns.

NOTE: This will make sufficient clearance for the cargo door during the installation.

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S 824-007
(14) Adjust the aft cargo door (AMM 52-35-00/501).

S 204-008
(15) Do a Check on the Adjustment of the Cargo Door Control Proximity Sensors (AMM 52-35-43/501)

S 204-009
(16) Do a Check on the Adjustment of the Cargo Door Warning Sensors (AMM 52-71-00/501)

S 734-010
(17) Do a System Test on the Cargo Door Operation (AMM 52-35-00/501)

TASK 52-35-01-004-001

4. Remove the Cargo Door with Door Failure in the Closed Position

A. General
(1) This procedure gives instructions to remove the cargo door if there is failure of the door in the closed position and the door will not operate electrically or manually.

B. Equipment
(1) Sling, Lower Lobe Cargo Door - A52004-41, 42, 43

C. References
(1) AMM 25-25-01/201, Passenger Seats
(2) AMM 25-52-02/401, Containerized Cargo Compartment Ceiling Lining
(3) AMM 53-01-01/401, Floor Panel

D. Access
(1) Location Zone
822 Aft Cargo Door

E. Remove the Cargo Door with Lift/Latch Power Unit Failure

S 014-126
(1) Remove the access doors for the lift/latch power unit (6 locations) and open the vent doors.

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S 014-127
(2) Remove the door lining (attached with Velcro) and get access through the openings to the lift/latch power unit.

S 034-128
(3) Disconnect the top end of the the lift/latch power unit from the lift/latch torque tube at the top end connection.

NOTE: It is not always easy to remove the spacer at the lift/latch power unit top end attachments.

S 494-129
(4) Put a strap wrench through the lower access doors. Use the strap wrench to turn the lift/latch torque tube counterclockwise (view from the aft end) to turn the latch cranks and lift the cargo door 2.0 ±0.15 inches. Manually help to lift the cargo door at the access openings.

NOTE: You can put a crocus cloth or other abrasive material between the strap on the strap wrench and the lift/latch torque tube to prevent slippage of the strap.

S 494-130
(5) Put a wood wedge under the cargo door to hold the door in position while you move the strap wrench to lift the door more.

S 864-131
(6) If you cannot lift the cargo door with the above procedure, do the steps that follow:
(a) Go through the access doors near the latch cranks and disconnect the latch cranks from the lift/latch torque tube.
(b) Put a strap wrench through the lower access doors. Use the strap wrench to turn the lift/latch torque tube counterclockwise (view from the aft end) to turn the latch cranks and lift the cargo door 2.0 ±0.15 inches. Manually help to lift the cargo door at the access openings.

NOTE: You can put a crocus cloth or other abrasive material between the strap on the strap wrench and the lift/latch torque tube to prevent slippage of the strap.

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(c) Put a wood wedge under the cargo door to hold the door in position while you move the strap wrench to lift the door more.

S 864-132

(7) Use the strap wrench to make sure the lift/latch torque tube does not turn.

S 864-133

(8) When the cargo door has lifted sufficiently to permit the operation of the open/close manual drive hold a 2 inch by 4 inch piece of wood or equivalent under the edge of the door until the hinge power unit operates.

S 864-134

(9) Put a 3/8-inch speed drive wrench into the open/close manual drive receptacle. Turn the wrench in the door open direction to open the door sufficiently to get access to the hinge mechanism attach points.

S 024-135

(10) Continue the removal of the cargo door. Refer to the "Remove the Aft Cargo Door" procedure.

F. Remove the Cargo Door with Failure of the Lift/Latch Power Unit (Jammed)

NOTE: The lift/latch actuator must be serviceable for this procedure.

S 014-136

(1) If you can get access through the cargo compartment inboard of the cargo door, remove the cargo compartment ceiling panels (AMM 25-52-02/401).

S 014-137

(2) If you cannot get access through the cargo compartment, remove the passenger seats, carpets and floor panels to get access to the hinge mechanisms through the passenger floor (AMM 25-25-01/201 and AMM 53-01-01/401).

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S 864-138

(3) Put a 3/8-inch speed drive wrench in the lift/latch manual drive receptacle. Turn the wrench counterclockwise to lift the cargo door to the lifted position.

S 014-139

(4) Get access through the passenger compartment floor or the cargo compartment and open the cargo door. Do the steps that follow:
   (a) Disconnect the bolts that attach the lift/latch power unit output shaft to the rotary actuator input shafts.
   (b) Use the machined splined fitting of the drive shaft that has a 1/4-inch square drive hole in it along with a ratchet and a short extension to turn the input spline of the two rotary actuators clockwise (view from behind).

       NOTE: This will move the cargo door from the cutout to the fully open position if it is necessary.

S 024-140

(5) Continue the removal of the cargo door. Refer to the "Remove the Aft Cargo Door" procedure.

G. Remove the Cargo Door Externally with Failure of the Rotary Actuator (Jammed)

S 214-141

(1) Make sure the door is in the fully closed position.

S 494-142

(2) Attach the cargo door sling to hold the weight of the door when the door is disconnected at the hinges.

S 014-143

(3) Remove the access doors for the rotary actuator (4 locations).

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S 034-144

(4) Get access to the hinge links and disconnect at points P and B at the two sides of the cargo door (Fig. 401). Do the steps that follow:

(a) Remove the bolts (18), washers (19), bushings (20), washers (21), nuts (22) at point P. If the bolts are tight, use the lift/latch manual drive to lift the cargo door slightly (approximately 1/8 to 1/4 inch) to make the bolt removal easier.

(b) Remove the bolt at point B. Do the steps that follow:

1) Hold the nut with a socket wrench and remove the bolt through the access opening.

2) Use a punch that you hold with your hand and a hammer that you hold through the vent door to remove the bushing through the access door.

(c) Lift the cargo door slightly so that the cargo door clears the upper and lower stop fitting spools. Make sure the upper stop fitting spools on the door do not touch the seal support structure when the door starts to move away from the cutout. Make sure the door does not turn when the door starts to move away from the cutout.

(d) Pull slightly outboard with the crane at the top of the cargo door while two persons hold the door externally near the bottom until the door is clear of the cutout.

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AFT CARGO DOOR - INSPECTION/CHECK

1. General
   A. This procedure has a task to do a wear limits check for the aft cargo door.

   TASK 52-35-01-206-006

2. Do a Wear Limits Check on the Aft Cargo Door (Fig. 601)
   A. General
      (1) In this task, no instructions are given to get access to, remove, or install the aft cargo door after the inspection for wear. For this data, refer to Aft Cargo Door - Removal/Installation (AMM 52-35-01/401).

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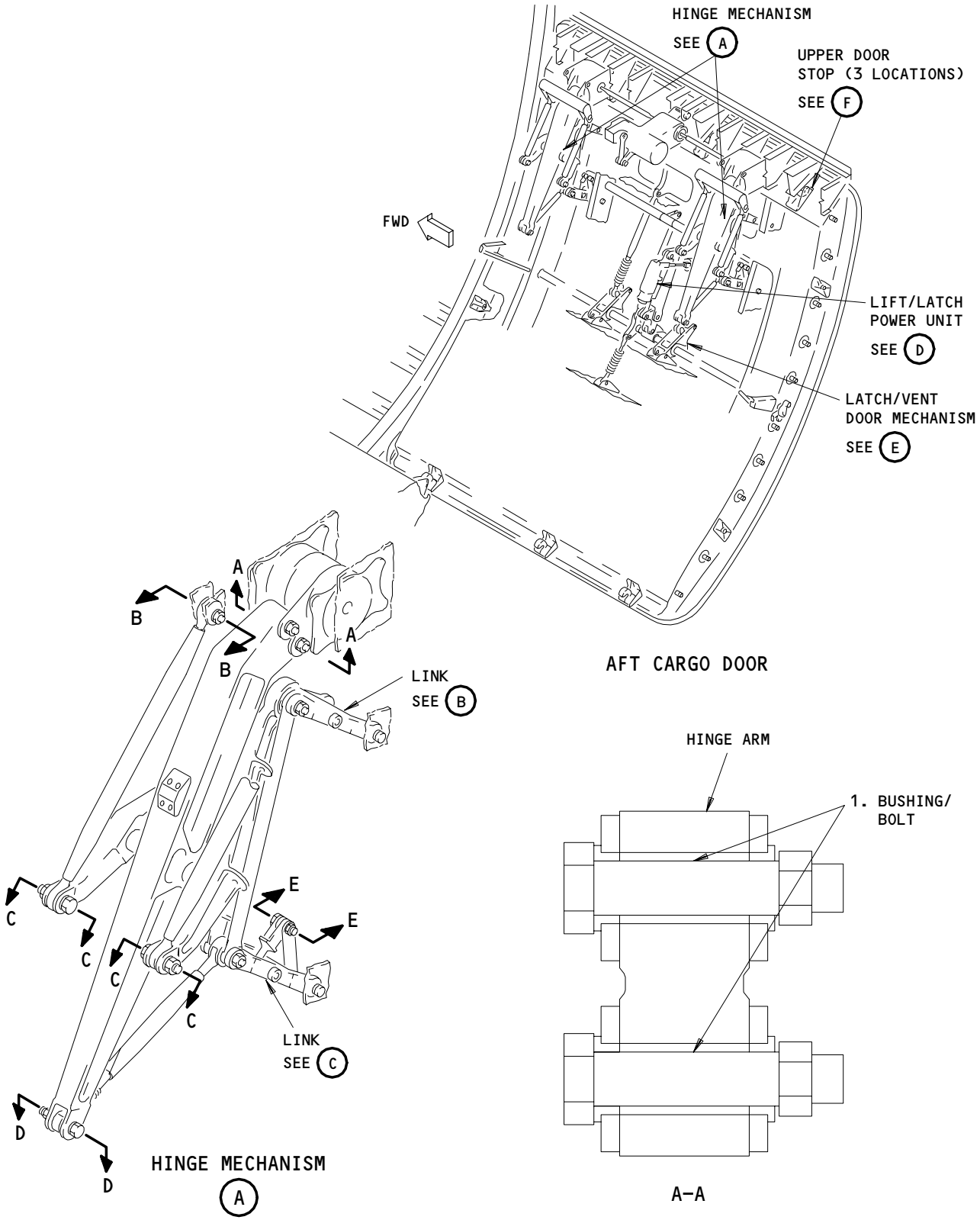

Aft Cargo Door Wear Limits
Figure 601 (Sheet 1)

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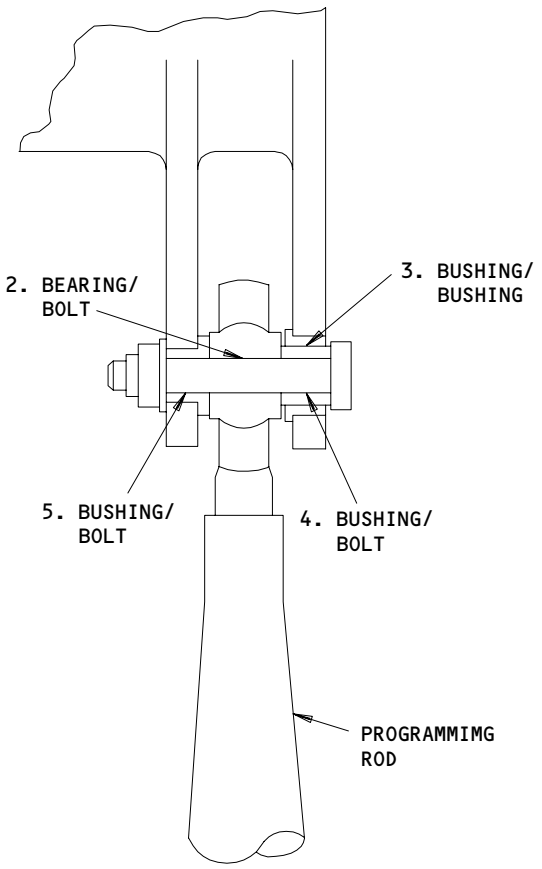
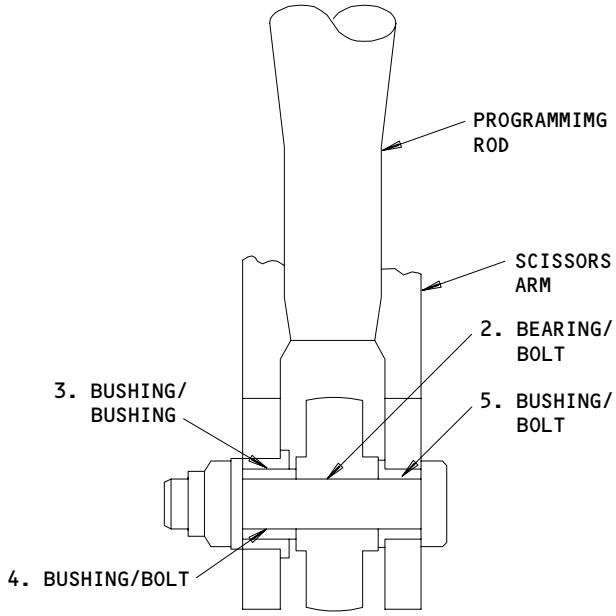
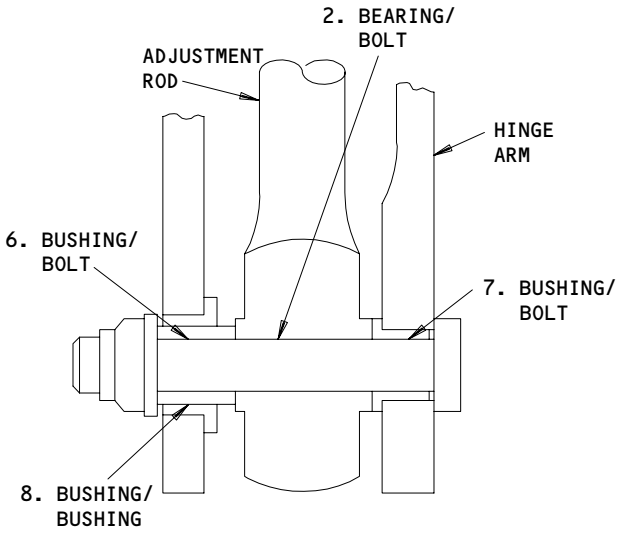


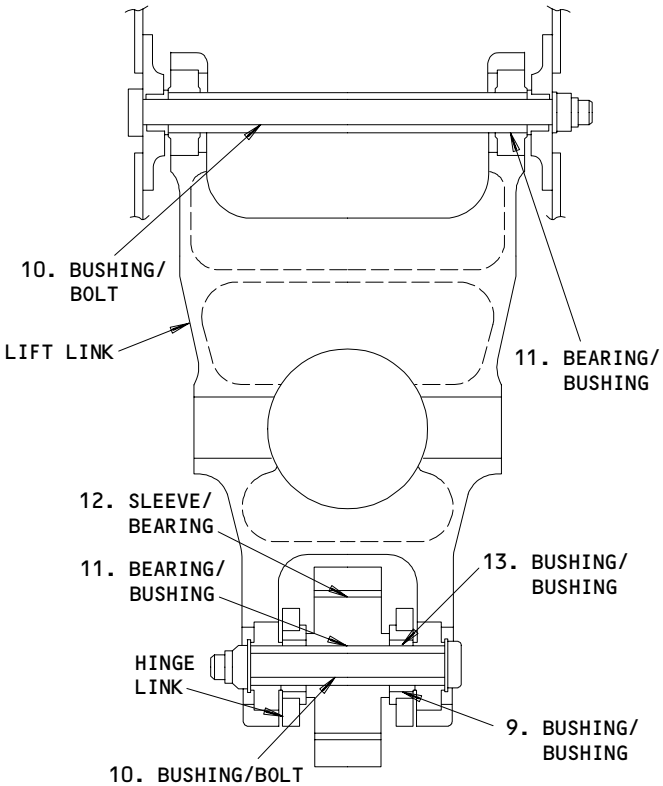
(TWO LOCATIONS ON EACH HINGE MECHANISM)
B-B



C-C



D-D



LINK B

Aft Cargo Door Wear Limits
Figure 601 (Sheet 2)

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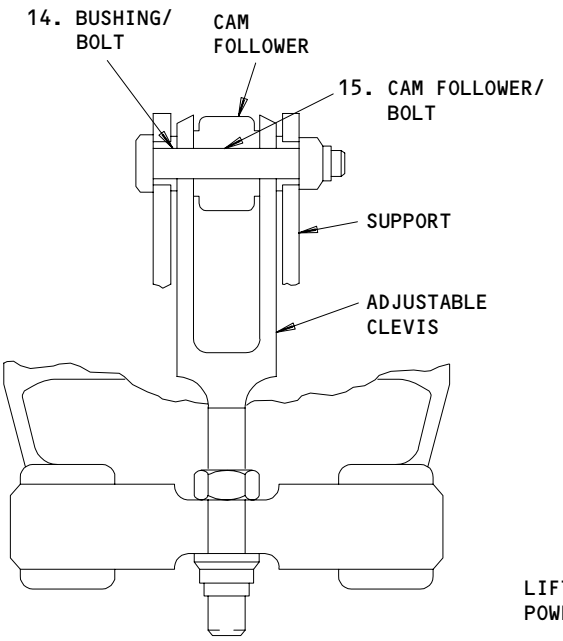
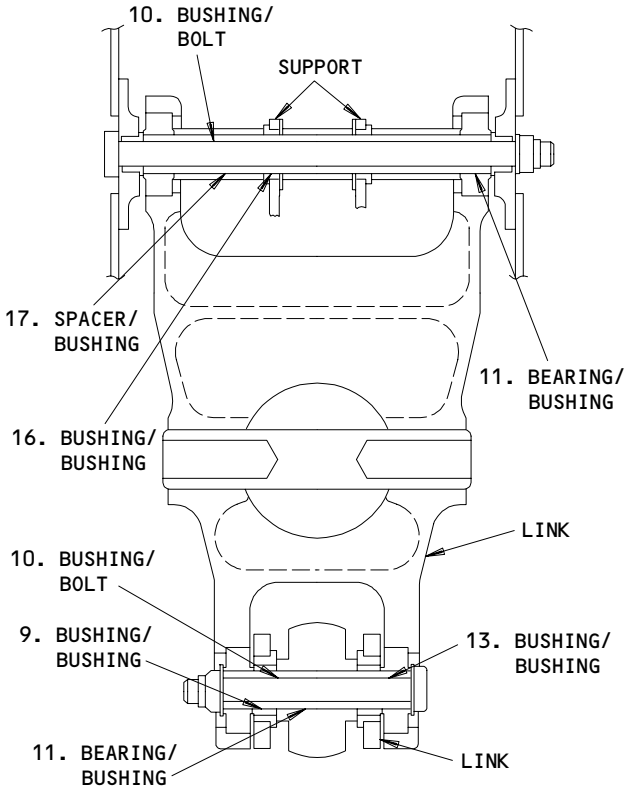


E-E



LINK

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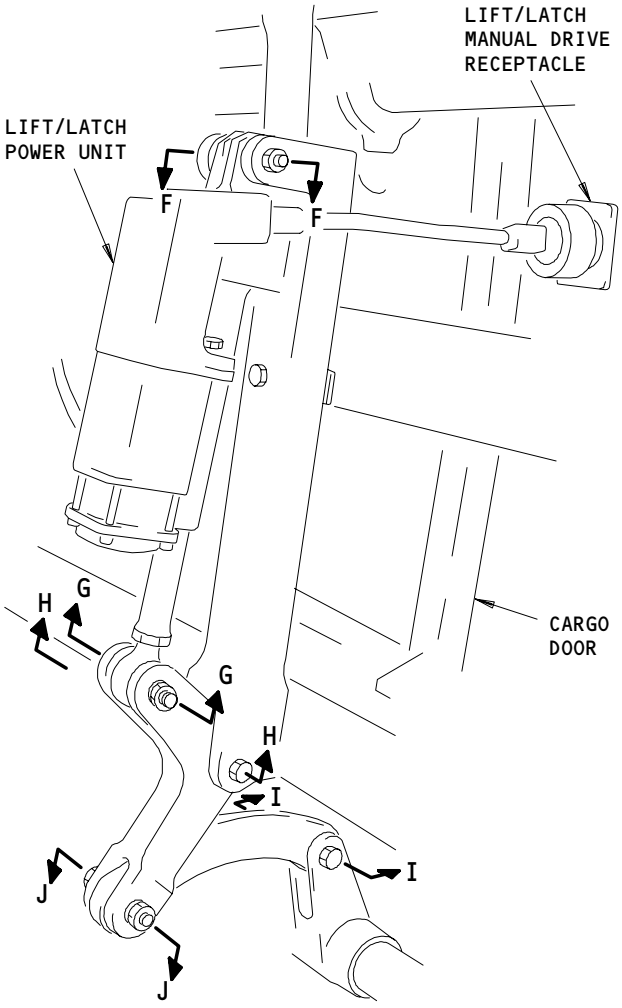

LIFT/LATCH POWER UNIT

D

Aft Cargo Door Wear Limits
Figure 601 (Sheet 3)

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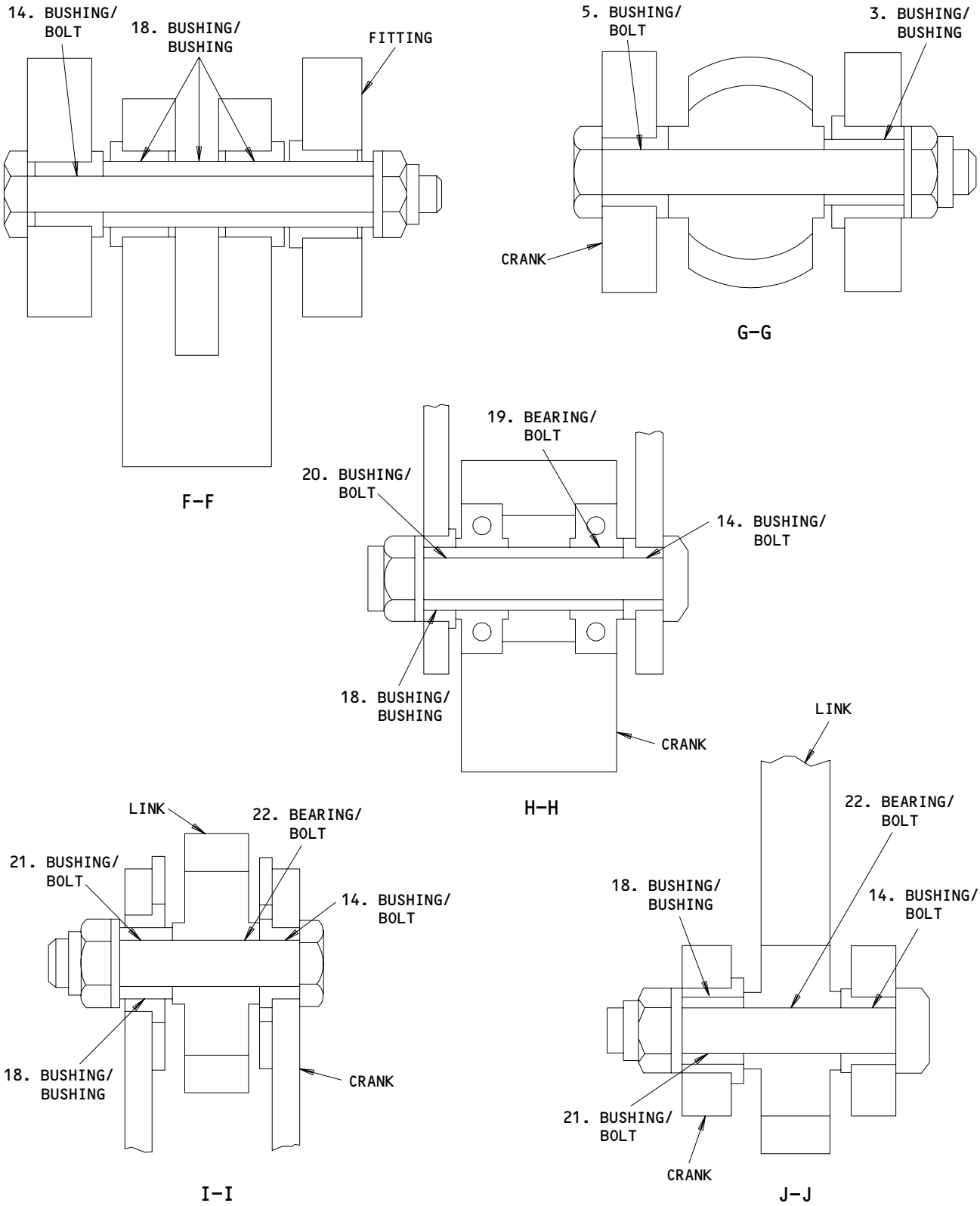

Aft Cargo Door Wear Limits
Figure 601 (Sheet 4)

780626

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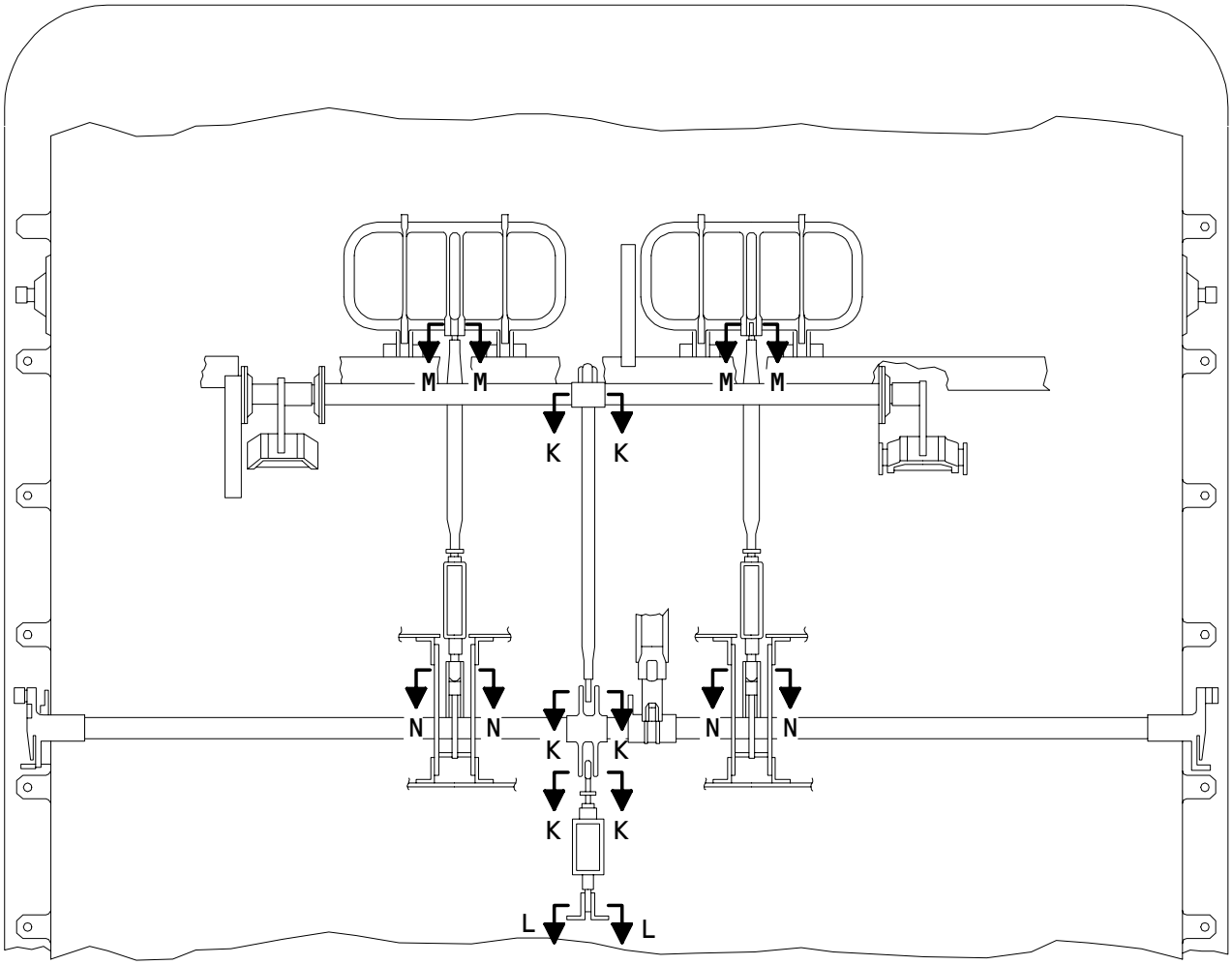
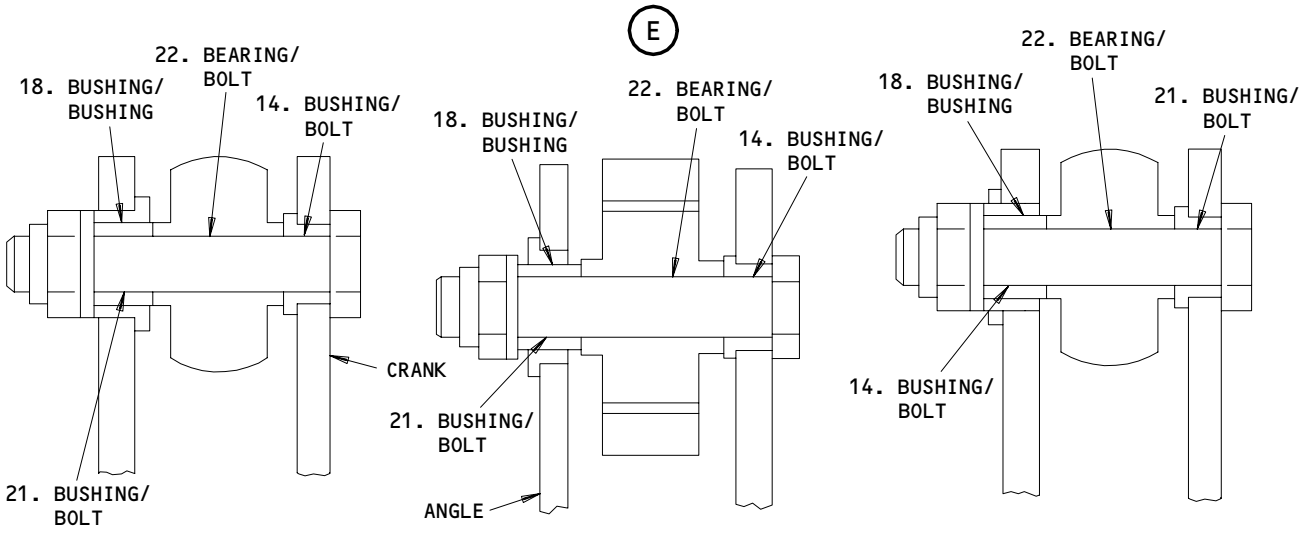


LATCH/VENT DOOR MECHANISM

E



Aft Cargo Door Wear Limits
Figure 601 (Sheet 5)

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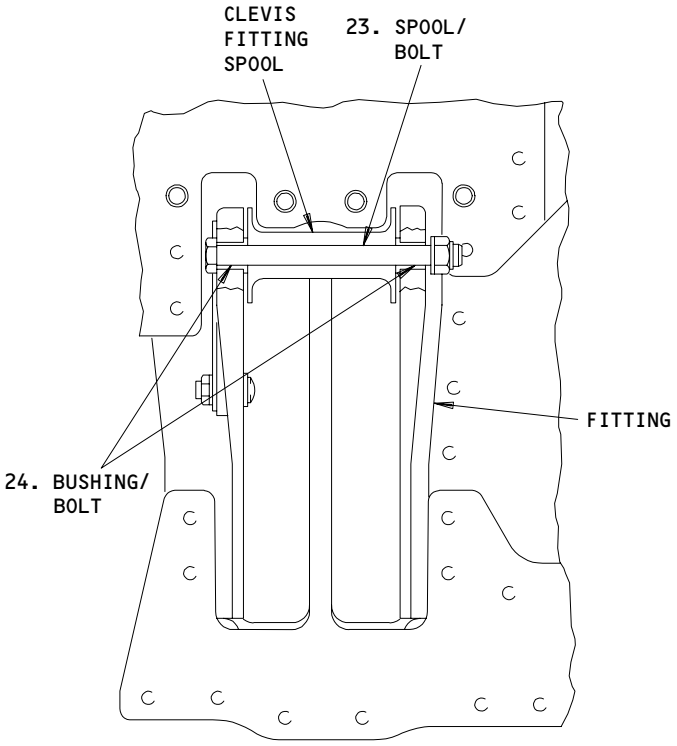
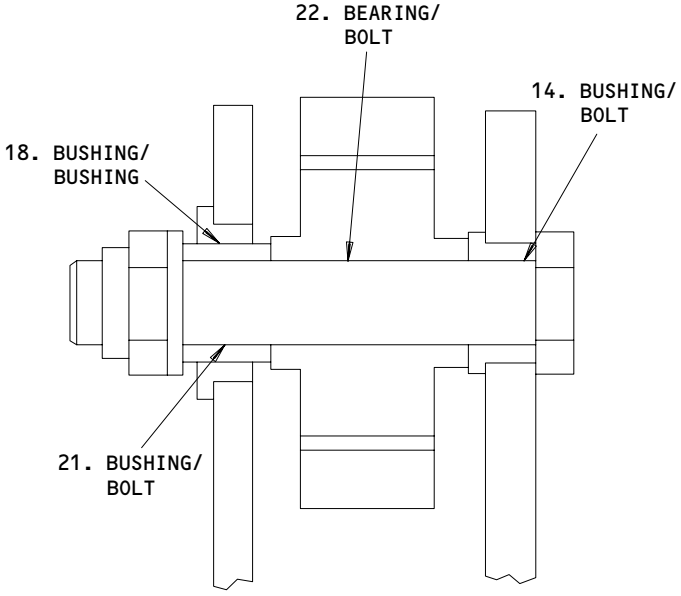


UPPER DOOR STOP

F



N–N

Aft Cargo Door Wear Limits
Figure 601 (Sheet 6)

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INDEX NO.	PART NAME	DIM.	DESIGN LIMITS		WEAR LIMITS		REPLACE WORN PART	REPAIR WORN PART	REPAIR INSTR.
			DIAMETER		ALLOWED WEAR DIM.	MAX DIAM CLEAR-ANCE			
			MIN	MAX					
1	BUSHING	ID	0.6250	0.6265	0.6290	0.0050	X		
	BOLT	OD	0.6230	0.6240	0.6215		X		
2	BEARING	ID	0.3120	0.3125	0.3170	0.0050	X		
	BOLT	OD	0.3110	0.3120	0.3075		X		
3	BUSHING	ID	0.4375	0.4390	0.4420	0.0050	X		
	BUSHING	OD	0.4365	0.4370	0.4340		X		
4	BUSHING	ID	0.3125	0.3130	0.3170	0.0050	X		
	BOLT	OD	0.3110	0.3120	0.3080		X		
5	BUSHING	ID	0.3125	0.3140	0.3170	0.0050	X		
	BOLT	OD	0.3110	0.3120	0.3090		X		
6	BUSHING	ID	0.3125	0.3131	0.3170	0.0050	X		
	BOLT	OD	0.3110	0.3120	0.3075		X		
7	BUSHING	ID	0.3125	0.3131	0.3170	0.0050	X		
	BOLT	OD	0.3110	0.3120	0.3081		X		
8	BUSHING	ID	0.4375	0.4381	0.4420	0.0050	X		
	BUSHING	OD	0.4365	0.4370	0.4320		X		
9	BUSHING	ID	0.6875	0.6890	0.6915	0.0050	X		
	BUSHING	OD	0.6860	0.6865	0.6840		X		
10	BUSHING	ID	0.3125	0.3145	0.3170	0.0050	X		
	BOLT	OD	0.3110	0.3120	0.3095		X		
11	BEARING	ID	0.4995	0.5000	0.5045	0.0050	X		
	BUSHING	OD	0.4990	0.4995	0.4950		X		
12	SLEEVE	ID	1.6875	1.6880	1.6925	0.0050	X		
	BEARING	OD	1.6870	1.6875	1.6830		X		
13	BUSHING	ID	0.5000	0.5005	0.5045	0.0050	X		
	BUSHING	OD	0.4990	0.4995	0.4955		X		
14	BUSHING	ID	0.2500	0.2515	0.2545	0.0050	X		
	BOLT	OD	0.2485	0.2495	0.2465		X		

Aft Cargo Door Wear Limits
Figure 601 (Sheet 7)

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INDEX NO.	PART NAME	DIM.	DESIGN LIMITS		WEAR LIMITS		REPLACE WORN PART	REPAIR WORN PART	REPAIR INSTR.
			DIAMETER		ALLOWED WEAR DIM.	MAX DIAM CLEAR-ANCE			
			MIN	MAX					
15	CAM FOLLOWER	ID	0.2496	0.2502	0.2545	0.0050	X		
	BOLT	OD	0.2485	0.2495	0.2452		X		
16	BUSHING	ID	0.5000	0.5050	0.5080	0.0080	X		
	BUSHING	OD	0.4990	0.4995	0.4910		X		
17	SPACER	ID	0.5170	0.5670	0.5670	0.0000	X		
	BUSHING	OD	0.4990	0.4995	0.4995		X		
18	BUSHING	ID	0.3750	0.3765	0.3795	0.0050	X		
	BUSHING	OD	0.3740	0.3745	0.3715		X		
19	BEARING	ID	0.3745	0.3750	0.3795	0.0050	X		
	BOLT	OD	0.3740	0.3745	0.3700		X		
20	BUSHING	ID	0.2500	0.2505	0.2500	0.0050	X		
	BOLT	OD	0.2485	0.2495	0.2455		X		
21	BUSHING	ID	0.2500	0.2505	0.2545	0.0050	X		
	BOLT	OD	0.2485	0.2495	0.2455		X		
22	BEARING	ID	0.2495	0.2500	0.2545	0.0050	X		
	BOLT	OD	0.2485	0.2495	0.2450		X		
23	SPOOL	ID	0.3750	0.3790	0.3895	0.0150	X		
	BOLT	OD	0.3735	0.3745	0.3640		X		
24	BUSHING	ID	0.3750	0.3765	0.3895	0.0150	X		
	BOLT	OD	0.3735	0.3745	0.3615		X		

Aft Cargo Door Wear Limits
Figure 601 (Sheet 8)

780643

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AFT CARGO DOOR HINGE POWER UNIT - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the hinge power unit. The second task is the installation of the hinge power unit.

TASK 52-35-02-004-001

2. Remove the Hinge Power Unit (Fig. 401)
   A. Equipment
      (1) Safety Barrier, Cargo Door - A52005-18
      (2) Sling, Lower Lobe Cargo Door - A52004-41, 42, 43
   B. References
      (1) 25-52-02/401, Containerized Cargo Compartment Ceiling Lining
   C. Access
      (1) Location Zone
          822 Aft Cargo Door

   D. Procedure - Remove the Hinge Power Unit

      S 014-002
      (1) Open the cargo door sufficiently to get access to the hinge power unit for the removal.

      NOTE: The best position to get access to the hinge power unit for the removal is with the cargo door in the almost fully open position (cantilevered).

      S 494-003
      (2) Use the lower lobe cargo door sling to hold the cargo door in the open position.

      S 494-004
      (3) Install the safety barrier across the door opening.

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S 864-005
(4) Open these circuit breakers on the APU external power panel, P34 and attach DO-NOT-CLOSE tags:
(a) 34J4, CONT DOOR CARGO
(b) 34J10, CARGO DOOR AFT

S 014-006
(5) Remove the ceiling panel above the cargo door to get access to the hinge power unit (13) (Ref 25-52-02).

S 034-007
(6) Remove the electrical connector from the hinge power unit (13).

S 034-008
(7) Remove the bolts (7, 10) from the drive shafts (1, 2). Retract the drive shafts and remove them from the airplane (Fig. 402).

NOTE: The drive shaft assemblies are matched drilled sets. Install tags on the parts to identify for the subsequent installation.

S 034-009
(8) Remove the flexible shaft (22) from the hinge power unit (13) (View B).

S 024-010
(9) Hold the hinge power unit (13). Remove the bolts (14, 18) (Views A-A and B-B). Remove the hinge power unit (13).

TASK 52-35-02-404-011
3. Install the Hinge Power Unit (Fig. 401)
A. Equipment
(1) Safety Barrier, Cargo Door - A52005-18
(2) Sling, Lower Lobe Cargo Door - A52004-41, 42, 43
B. Consumable Materials
(1) D00633 Grease - BMS 3-33 (Preferred)
(2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

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C. Parts

AMM			AIPC		
FIG	ITEM	NOMENCLATURE	SUBJECT	FIG	ITEM
401	1	Hinge Power Unit	52-34-54	01	45

D. References
(1) 24-22-00/201, Electrical Power - Control
(2) 25-52-02/401, Containerized Cargo Compartment Ceiling Lining
(3) 52-35-00/501 - Aft Cargo Door

E. Access
(1) Location Zone
822 Aft Cargo Door

F. Procedure - Install the Hinge Power Unit

S 824-012
(1) Hold the hinge power unit (13) in its correct position on the cargo door.

S 434-013
(2) Install the bolt (14), bushing (15), washer (16), and nut (17) (View A-A).

S 434-014
(3) Install the bolt (18), bushing (19), washer (20), and nut (21) (View B-B).

S 434-015
(4) Connect the flexible shaft (22) to the hinge power unit (13) (View B).

S 434-016
(5) Tighten the nut to 150-200 pound-inches (View B).

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S 434-017
(6) Install the lockwire (View B).

S 644-018
(7) Apply the grease to the splines of the drive shafts (1, 2) (Fig. 402).

S 434-019
(8) Put the drive shafts (1, 2) in position. Extend the drive shafts to engage the spline fittings (5, 6) in the rotary actuators and the hinge power unit (13). Align the paint stripes on the drive shaft (Fig. 402).

NOTE: The drive shaft assemblies (1, 2) are a matched drilled set. Keep the components of each of the drive shaft assemblies apart.

S 434-020
(9) Install the bolts (7), washers (8), and nuts (9).

S 434-021
(10) Install the bolts (10), washers (11), and nuts (12).

S 434-022
(11) Connect the electrical connector.

S 494-023
(12) Remove the safety barrier from the door opening.

S 094-024
(13) Remove the lower lobe cargo door sling from the cargo door.

S 864-025
(14) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO

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(b) 34J10, CARGO DOOR AFT

S 864-026
(15) Supply electrical power (Ref 24-22-00).

S 714-027
(16) Do the operational test on the cargo door to make sure it opens and closes correctly (Ref 52-35-00).

S 414-028
(17) Install the ceiling panel (Ref 25-52-02).

S 864-029
(18) Remove electrical power if it is not necessary (Ref 24-22-00).

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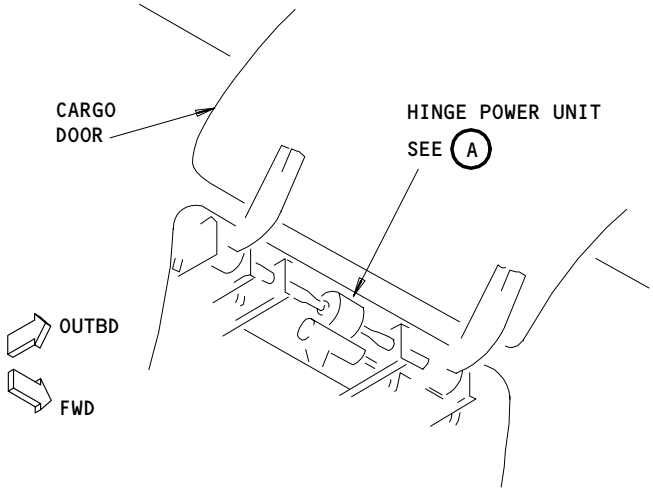
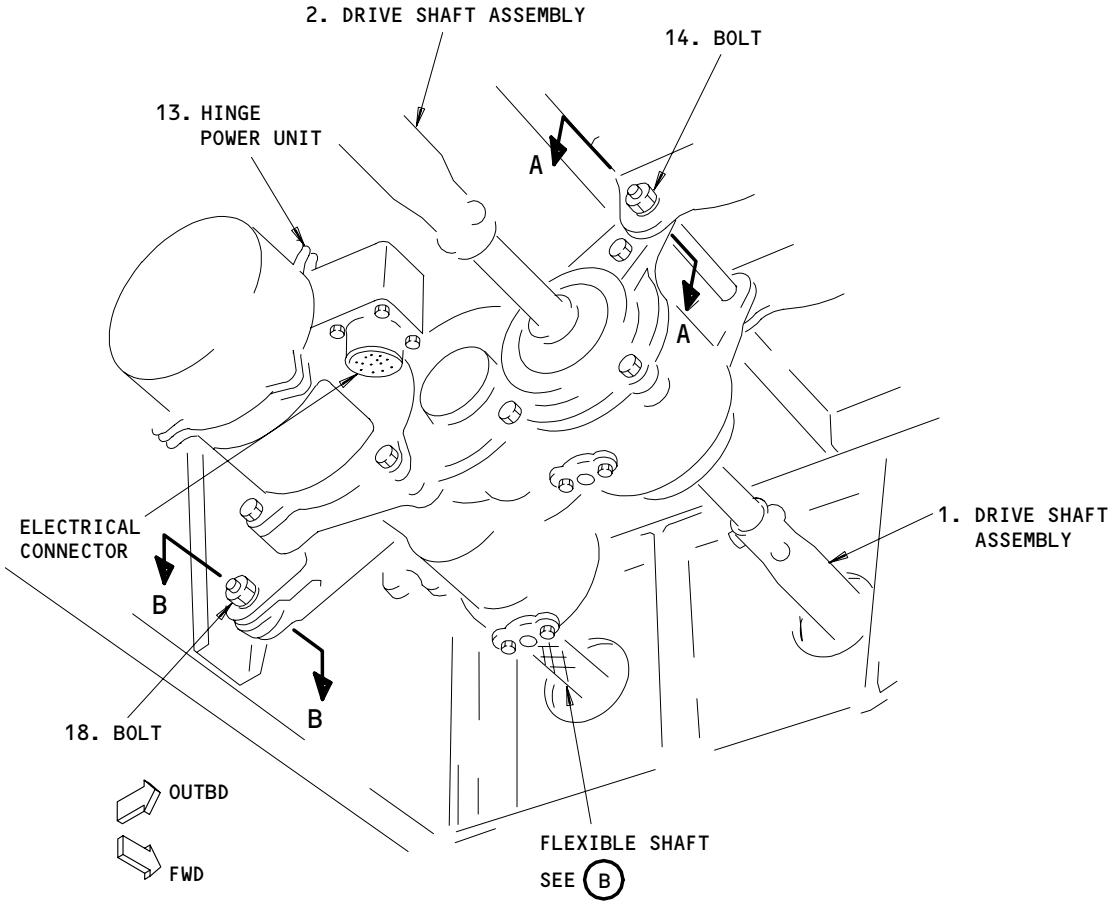


CARGO DOOR



HINGE POWER UNIT

A

Cargo Door Hinge Power Unit
Figure 401 (Sheet 1)

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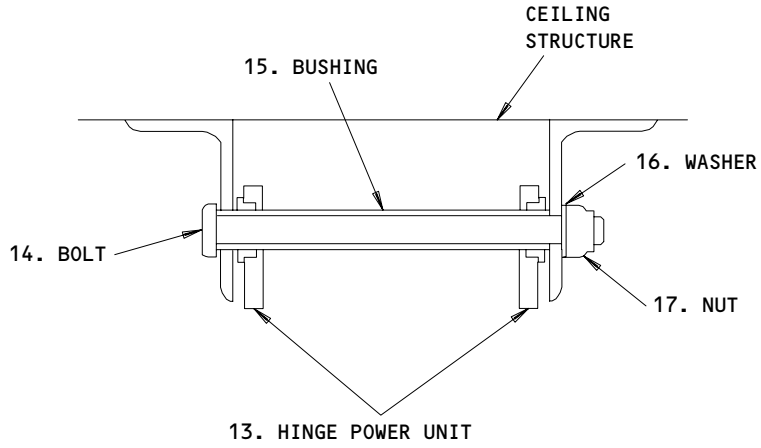
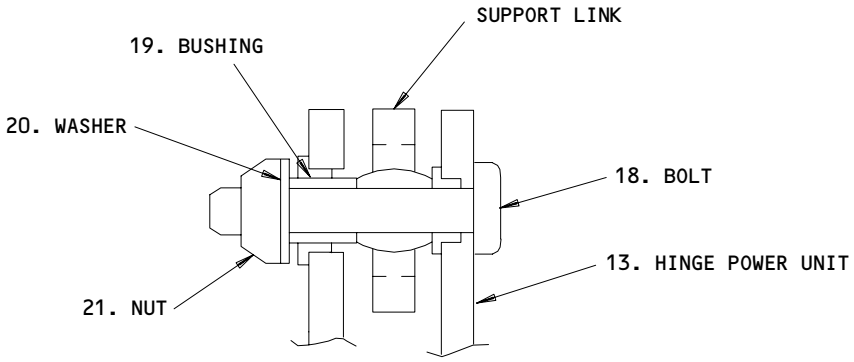
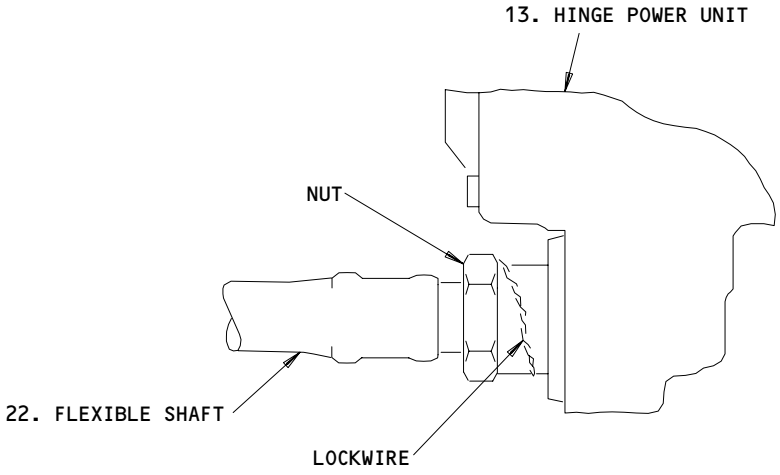


A–A



B–B



FLEXIBLE SHAFT

B

Cargo Door Hinge Power Unit Installation
Figure 401 (Sheet 2)

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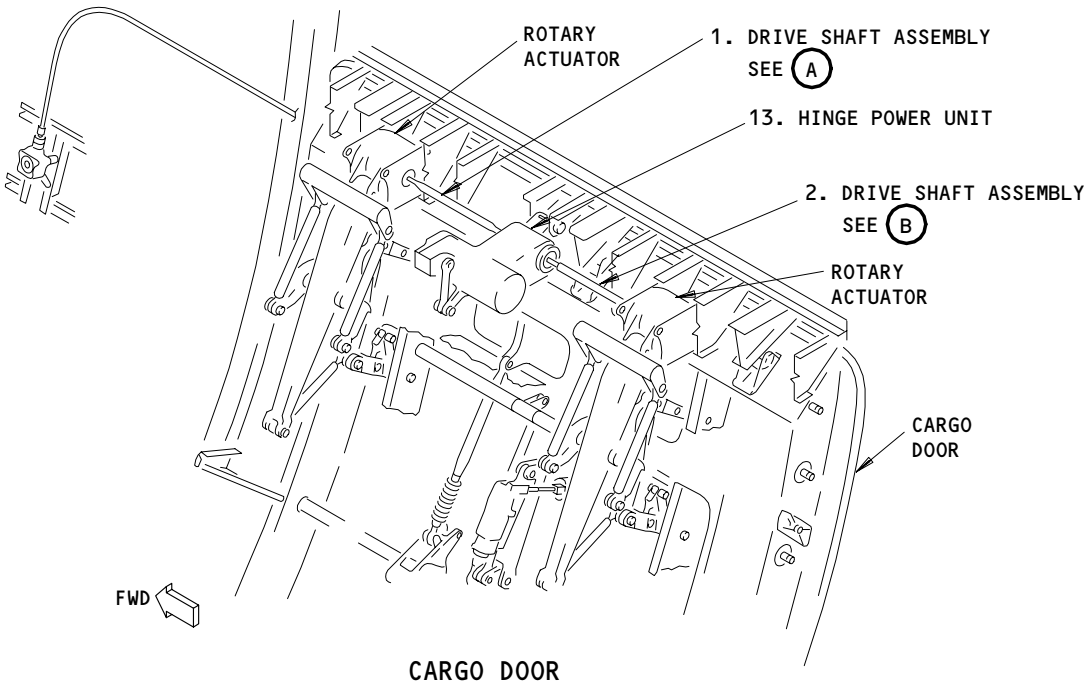
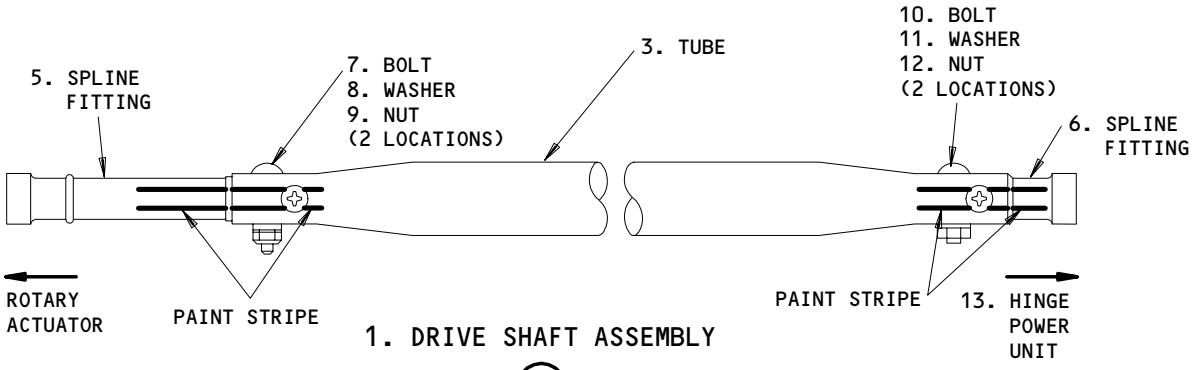
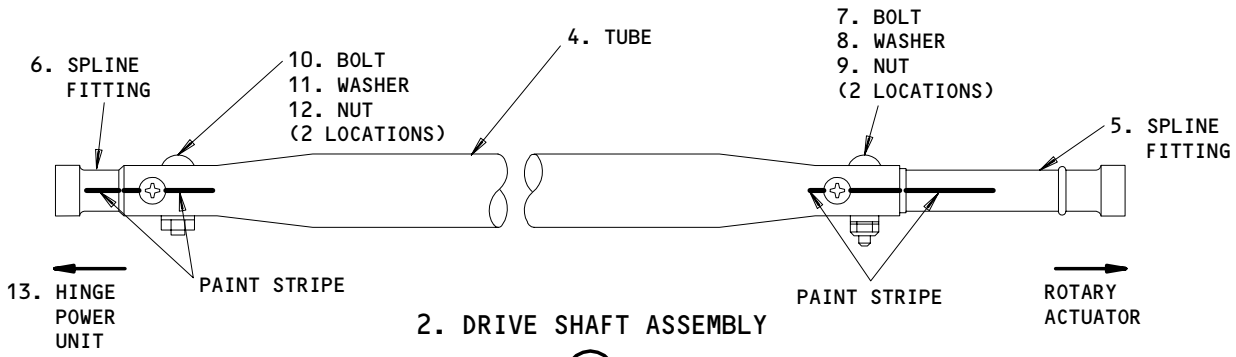


CARGO DOOR



1. DRIVE SHAFT ASSEMBLY

A



2. DRIVE SHAFT ASSEMBLY

B

Cargo Door Drive Shaft Assemblies
Figure 402

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AFT CARGO DOOR ROTARY ACTUATOR - REMOVAL/INSTALLATION

1. General
   A. This procedure contains four tasks.
      (1) The first task is the removal of the rotary actuator from the cargo door with the door removed from the airplane.
      (2) The second task is the installation of the rotary actuator on the cargo door with the door removed from the airplane.
      (3) The third task is the removal of the rotary actuator from the cargo door with the door in the fully closed and latched position.
      (4) The fourth task is the installation of the rotary actuator on the cargo door with the door in the fully closed and latched position.
   B. You can remove the rotary actuator from the cargo door with the cargo door removed from the airplane or with the cargo door in the fully closed and latched position.

TASK 52-35-03-004-001

2. Remove the Rotary Actuator

NOTE: To do this procedure it is necessary to remove the cargo door from the airplane.

To remove the rotary actuator without the removal of the cargo door from the airplane do the "Remove the Rotary Actuator with the Cargo Door in the Fully Closed and Latched Position" procedure.

A. Equipment
   (1) Safety Barrier, Cargo Door - A52005-18
B. References
   (1) AMM 52-35-01/401, Aft Cargo Door
C. Access
   (1) Location Zone
       822 Aft Cargo Door

D. Procedure - Remove the Rotary Actuator

S 004-002
(1) Remove the cargo door (AMM 52-35-01/401).

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S 494-003
(2) Install the cargo door safety barrier across the door opening.

S 034-004
(3) Remove the bolts (7, 10) from the drive shaft assemblies (1, 2) (Fig. 402).

S 034-005
(4) Retract the spline fittings (5, 6) into the tubes (3, 4) and remove the drive shaft assemblies (1, 2) (Views A and B, Fig. 402).

NOTE: The drive shaft assemblies are matched drilled assemblies. Keep the components of each of the drive shaft assemblies apart.

S 014-006
(5) Use one end of the drive shaft assembly (1, 2) to manually turn the rotary actuator input shaft until you can get access to the bolts (17, 20) which connect the hinge arm to the rotary actuator (View A, Fig. 401).

S 034-007
(6) Remove the bolts (17, 20) (View A, Fig. 401).

S 024-008
(7) Remove the bolts (14) that attach the rotary actuator (13) to the beams (View A, Fig. 401).

S 024-065
(8) Remove the rotary actuator (13).

NOTE: The rotary actuator (13) is spring-loaded to approximately 70 pounds. The width of the rotary actuator (13) is limited by its support structure and will become larger while it is removed.

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TASK 52-35-03-404-002

3. Install the Rotary Actuator

NOTE: To do this procedure it is necessary that the cargo door is removed from the airplane.

To install the rotary actuator without the removal of the cargo door from the airplane do the "Install the Rotary Actuator with the Cargo Door in the Fully Closed and Latched Position" procedure.

A. Equipment
(1) Safety Barrier, Cargo Door - A52005-18

B. Consumable Materials
(1) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

C. Parts

AMM			AIPC		
FIG	ITEM	NOMENCLATURE	SUBJECT	FIG	ITEM
401	13	Rotary Actuator	52-34-54	01	10

D. References
(1) AMM 52-35-01/401, Aft Cargo Door

E. Access
(1) Location Zone
822 Aft Cargo Door

F. Procedure - Install the Rotary Actuator

S 094-010
(1) Remove the cargo door safety barrier.

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S 434-066

(2) Compress the rotary actuator (13) and install it between the beams. Hold the rotary actuator (13) in position and install the bolts (14), washers (15) and nuts (16) (View A, Fig. 401).

S 824-012

(3) Manually move the rotary actuator (13) to align the attachment lug of the rotary actuator (13) with the holes in the hinge arm.

S 434-013

(4) Install the bolts (17, 20), washers (18, 21) and nuts (19, 22) to attach the hinge arm to the rotary actuator (13) (View A, Fig. 401).

S 034-014

(5) Install the drive shaft assemblies (1, 2) (Fig. 402). Do the steps that follow:

NOTE: The drive shaft assemblies are matched drilled assemblies. Keep the components of each of the drive shaft assemblies apart.

(a) Lubricate the spline fittings (5, 6) with the grease.
(b) Put the spline fittings (5, 6) into the tubes (3, 4). Install into the hinge power unit and the rotary actuator (13).
(c) Extend the spline fittings (5, 6) from the tubes (3, 4) to engage the rotary actuator (13) and the hinge power unit.
(d) Make sure the spline fitting (5) is engaged into the rotary actuator (13).
(e) Make sure the spline fitting (6) is engaged into the hinge power unit.
(f) Align the paint stripes on the spline fittings (5, 6) to the the paint stripes on the tubes (3, 4) correctly (Views A and B, Fig. 402).
(g) Install the bolts (7, 10), washers (8, 11), and nuts (9, 12) through the tubes (3, 4) and the spline fittings (5, 6).

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S 404-015

(6) Install the cargo door (AMM 52-35-01/401).

S 714-016

(7) Do a check on the operation of the cargo door. Make sure the cargo door operates correctly when you open and close the door electrically.

TASK 52-35-03-004-003

4. Remove the Rotary Actuator with the Cargo Door in the Fully Closed and Latched Position

A. References
(1) AMM 24-22-00/201, Electrical Power - Control
(2) AMM 52-35-00/501, Aft Cargo Door
(3) AMM 52-71-01/401, Door Warning System Proximity Sensors

B. Access
(1) Location Zone
822 Aft Cargo Door

C. Prepare for the removal

S 024-058

(1) Remove the closed proximity sensor, S209 and the bracket as follows:

NOTE: The sensor and bracket must be removed to get access to the rotary actuator.

(a) Open the door partially.

NOTE: The door must be partially open to remove the sensor and bracket.

(b) Remove the sensor and bracket (AMM 52-71-01/401).

NOTE: Do not disconnect the wiring to the sensor.

Make sure that the sensor and bracket are correctly attached away from the rotary actuator bolts (14) and door components when the door is closed and latched.

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D. Procedure - Remove the Rotary Actuator with the Cargo Door in the Fully Closed and Latched Position

NOTE: Use this procedure when the cargo door is in the fully closed and latched position on the airplane.

To remove the rotary actuator with the removal of the cargo door from the airplane do the "Remove the rotary Actuator" procedure.

S 214-018
(1) Make sure the cargo door is in the fully closed and latched position.

S 864-019
(2) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
(a) 34J4, CONT DOOR CARGO
(b) 34J10, CARGO DOOR AFT

S 824-059
(3) Use the manual drive to turn the hinge power unit 5 to 6 turns in the open direction.

NOTE: When the door is closed, there is a preload in the drive shafts.

S 014-021
(4) Get access to the aft cargo door in the aft cargo compartment through the bulk cargo compartment.

S 034-022
(5) Remove the bolts (7, 10) from the drive shaft assemblies (1, 2) (Fig. 402).

S 034-023
(6) Retract the spline fittings (5, 6) into the tubes (3, 4) and remove the drive shaft assemblies (1, 2) (Fig. 402).

NOTE: The drive shaft assemblies are matched drilled assemblies. Keep the components of each of the drive shaft assemblies apart.

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S 034-024
(7) Remove the bolt (23) at point A, bolt (28) at point B, bolt (33) at point C, bolt (37) at point D, and bolt (40) at point E (Fig. 403). Do not remove the bolt at point F.

NOTE: If you remove the bolt at point F, it will be necessary to adjust the cargo door (AMM 52-35-00/501).

S 034-025
(8) Remove the bolts (14) (Step 1, Fig. 404).

S 824-026
(9) Move the rotary actuator (13) down to the position shown (Step 2, Fig. 404).

S 034-027
(10) Remove the bolt (17) to let the hinge arm turn and make clearance.

S 034-028
(11) Loosen the nut (22).

S 824-029
(12) Turn the rotary actuator (13) approximately 15 degrees counterclockwise (view from the aft end) while you turn the hinge arm approximately 15 degrees clockwise around the bolt (20) (Step 3, Fig. 404).

S 034-030
(13) Remove the bolt (20) and the hinge arm.

S 824-031
(14) Turn the rotary actuator (13) approximately 25 degrees more counterclockwise (Step 4, Fig. 404).

S 024-032
(15) Move the rotary actuator (13) in the direction of the arrow shown (Step 4, Fig. 404). Remove the rotary actuator.

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TASK 52-35-03-404-004

5. Install the Rotary Actuator with the Cargo Door in the Fully Closed and Latched Position

NOTE: Use this procedure when the cargo door is in the fully closed and latched position on the airplane.

To install the rotary actuator with the removal of the cargo door from the airplane do the "Install the Rotary Actuator" procedure.

A. Consumable Materials
(1) D00633 Grease - BMS 3-33 (Preferred)
(2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

B. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	13	Rotary Actuator	52-34-54	01	10

C. References
(1) AMM 52-35-00/501, Aft Cargo Door
(2) AMM 52-71-01/401, Door Warning System Proximity Sensors

D. Access
(1) Location Zone
822 Aft Cargo Door

E. Procedure - Install the Rotary Actuator with the Cargo Door in the Fully Closed and Latched Position

S 424-034
(1) Compress the rotary actuator (13) and install it in the direction of the arrow shown (Step 1, Fig. 405).

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S 824-035
(2) Turn the rotary actuator (13) approximately 25 degrees clockwise (view from the aft end) (Step 2, Fig. 405).

S 434-036
(3) Install the bolt (20), washer (21), and nut (22) that attach the hinge arm to the rotary actuator (13). Do not tighten the nut (22) (Step 2, Fig. 405).

S 824-037
(4) Turn the rotary actuator (13) approximately 15 degrees clockwise while you turn the hinge arm approximately 15 degrees counterclockwise around the bolt (20) (Step 3, Fig. 405).

S 434-038
(5) Install the bolt (17), washer (18), and nut (19). Tighten the nut (22).

S 824-039
(6) Move the rotary actuator (13) up to the position shown (Step 4, Fig. 405).

S 434-040
(7) Install the bolts (14), washers (15), and nuts (16).

S 644-041
(8) Lubricate all the bushings of the hinge arm and the scissors arm with the grease.

S 824-042
(9) Turn the hinge arm until it is parallel with the other hinge arm.

S 434-043
(10) Install the bolt (40), washer (41), and nut (42) at point E (View E-E, Fig. 403).

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S 434-044
(11) Install the bolt (37), washer (38), and nut (39) at point D (View D-D, Fig. 403).

S 434-045
(12) Install the bolt (33), washer (34), washer (35), and nut (36) at point C (View C-C, Fig. 403).

S 434-046
(13) Install the bolt (28), washer (29), bushing (30), washer (31), and nut (32) at point B (View B-B, Fig. 403).

S 434-047
(14) Install the bolt (23), washer (24), bushing (25), washer (26), and nut (27) at point A (View A-A, Fig. 403).

S 434-048
(15) Install the drive shaft assemblies (1, 2) (Fig. 402). Do the steps that follow:

NOTE: The drive shaft assemblies are matched drilled assemblies. Keep the components of each of the drive shaft assemblies apart.

(a) Lubricate the spline fittings (5, 6) with the grease.
(b) Install the spline fittings (5, 6) into the tubes (3, 4). Install into the hinge power unit and the rotary actuator (13).
(c) Extend the spline fittings (5, 6) from the tubes (3, 4) to engage the rotary actuator (13) and the hinge power unit.
(d) Make sure the spline fitting (5) is engaged into the rotary actuator (13).
(e) Make sure the spline fitting (6) is engaged into the hinge power unit.
(f) Align the paint stripes on the spline fittings (5, 6) with the paint stripes on the tubes (3, 4) (Views A and B, Fig. 402).
(g) Install the bolts (7, 10), washers (8, 11), and nuts (9, 12) through the tubes (3, 4) and the spline fittings (5, 6).
(h) Make sure the hinge arms are parallel (AMM 52-35-00/501).

S 434-060
(16) Install the sensor, S209 (AMM 52-71-01/401).

S 414-050
(17) Go out of the aft cargo compartment through the bulk cargo compartment.

S 864-051
(18) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO

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(b) 34J10, CARGO DOOR AFT

S 714-052

(19) Do a check on the operation of the cargo door. Make sure the door operates correctly when you open and close the door electrically.

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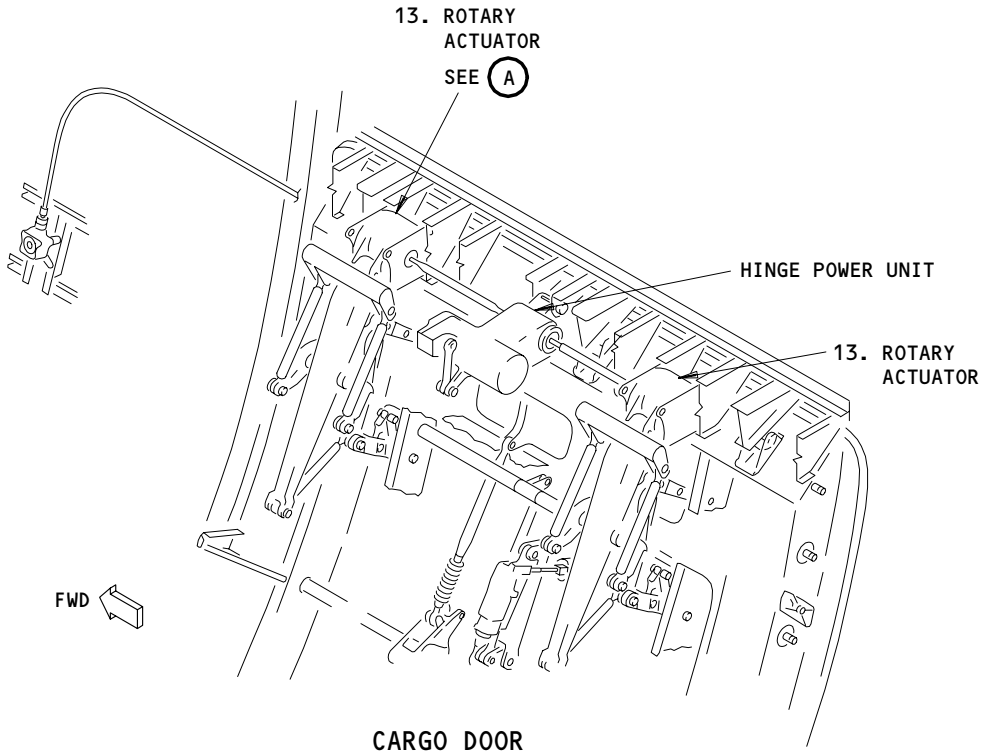
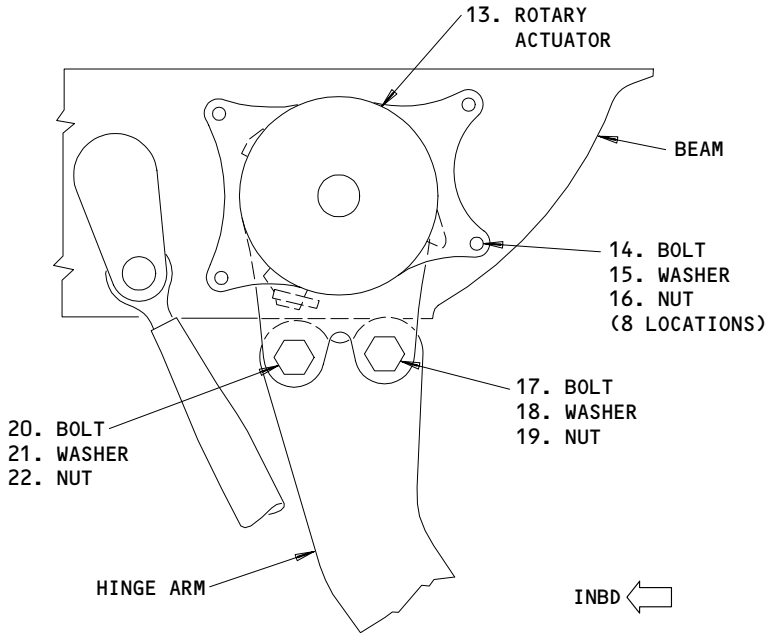


CARGO DOOR



ROTARY ACTUATOR

A

Aft Cargo Door Rotary Actuator Installation
Figure 401

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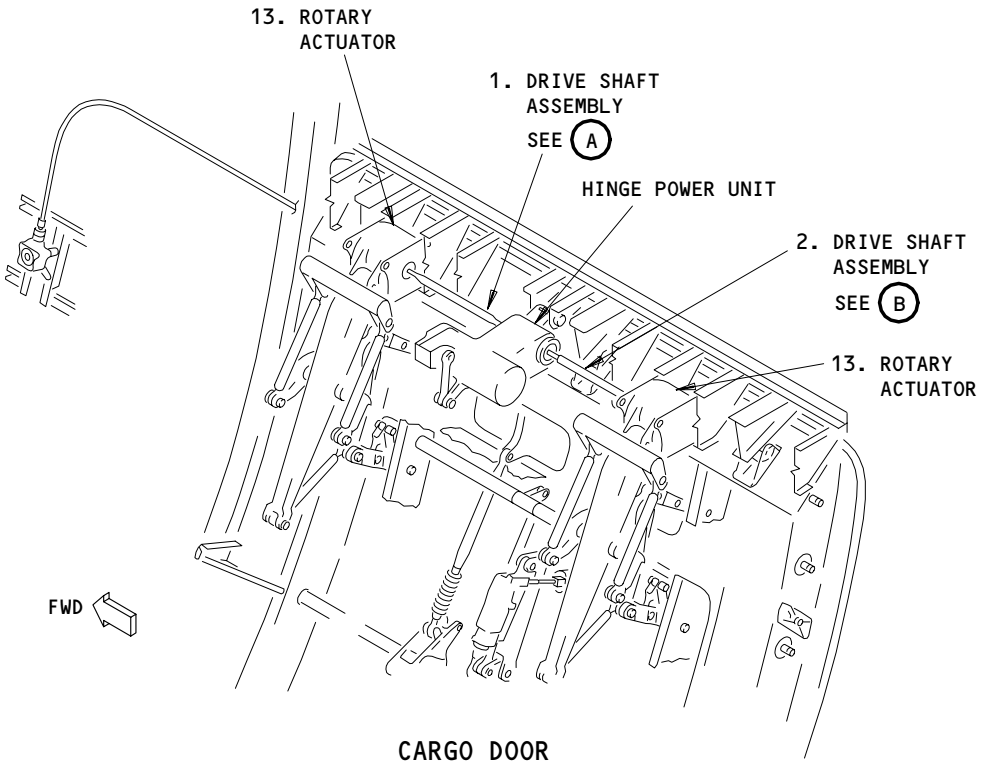
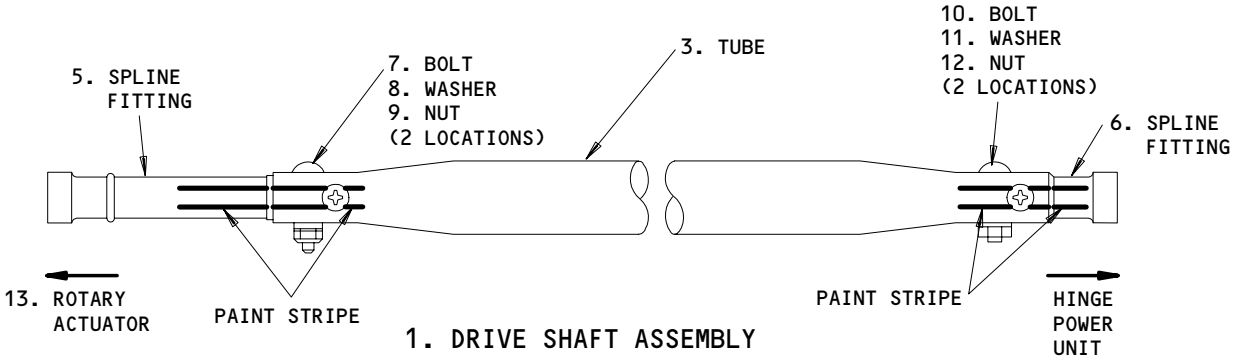
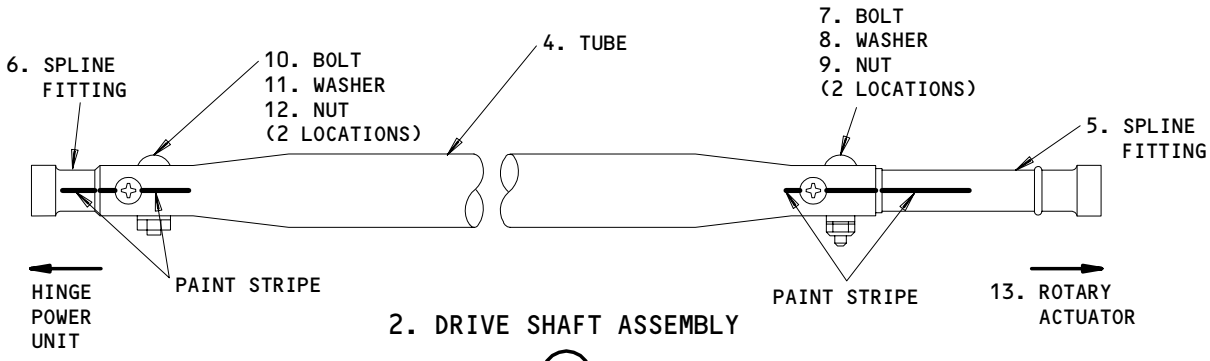




1. DRIVE SHAFT ASSEMBLY

A



2. DRIVE SHAFT ASSEMBLY

B

Paint Stripe Alignment on Drive Shaft Assemblies
Figure 402

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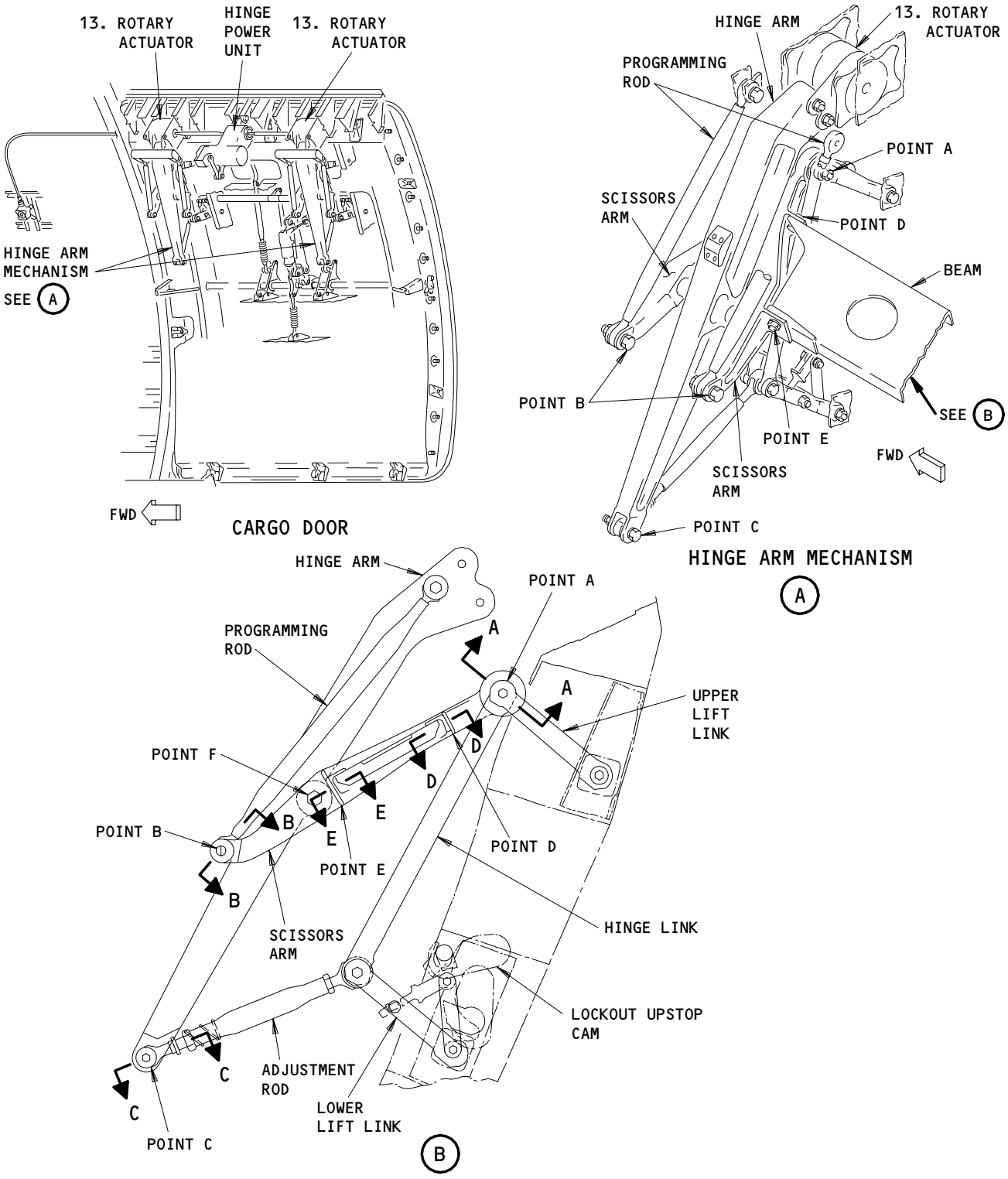

Bolt Removal Before Rotary Actuator Removal
(Rotary Actuator Removal with the Cargo Door
in the Fully Closed and Latched Position)
Figure 403 (Sheet 1)

213560
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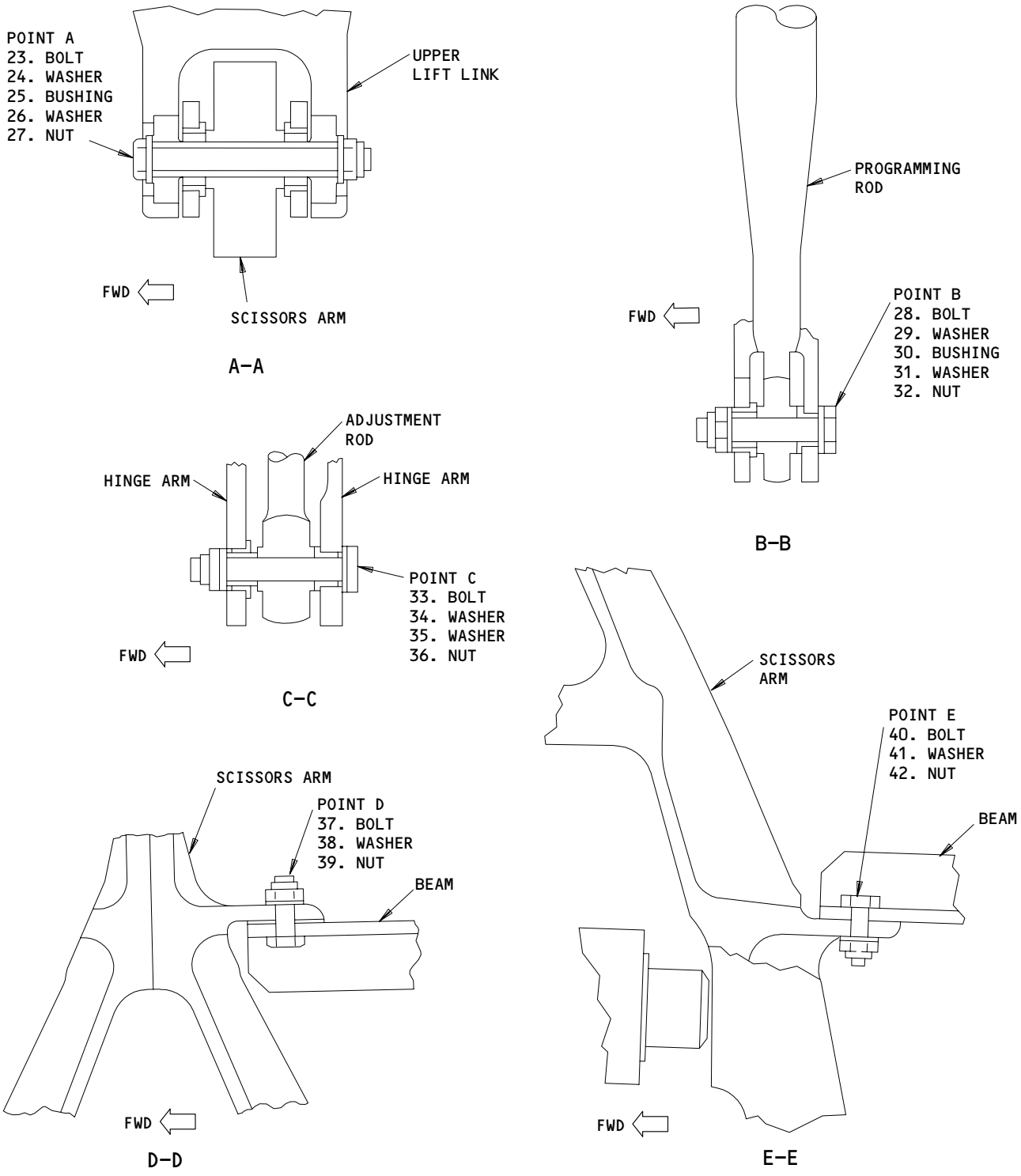

Bolt Removal Before Rotary Actuator Removal
(Rotary Actuator Removal with the Cargo Door
in the Fully Closed and Latched Position)
Figure 403 (Sheet 2)

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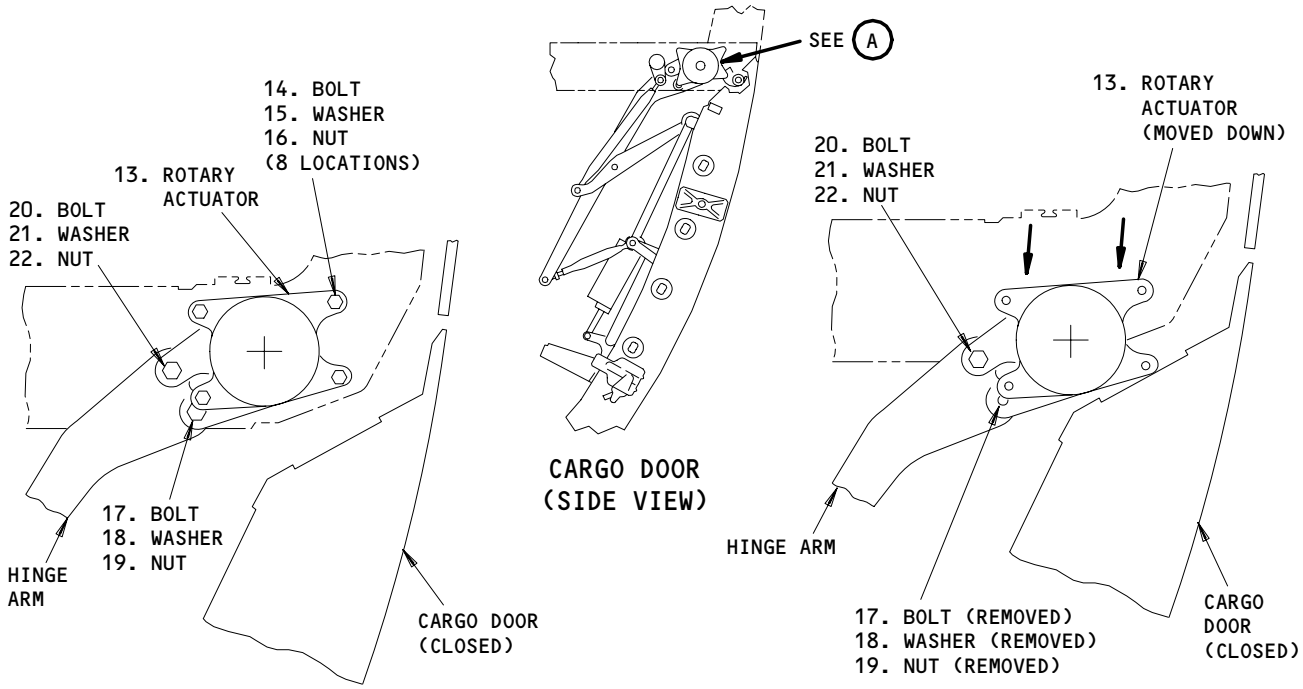

ROTARY ACTUATOR REMOVAL SEQUENCE
(STEP 1 THRU STEP 4 ABOVE)

(A)

Rotary Actuator Removal with the Cargo Door
in the Fully Closed and Latched Position
Figure 404

213870

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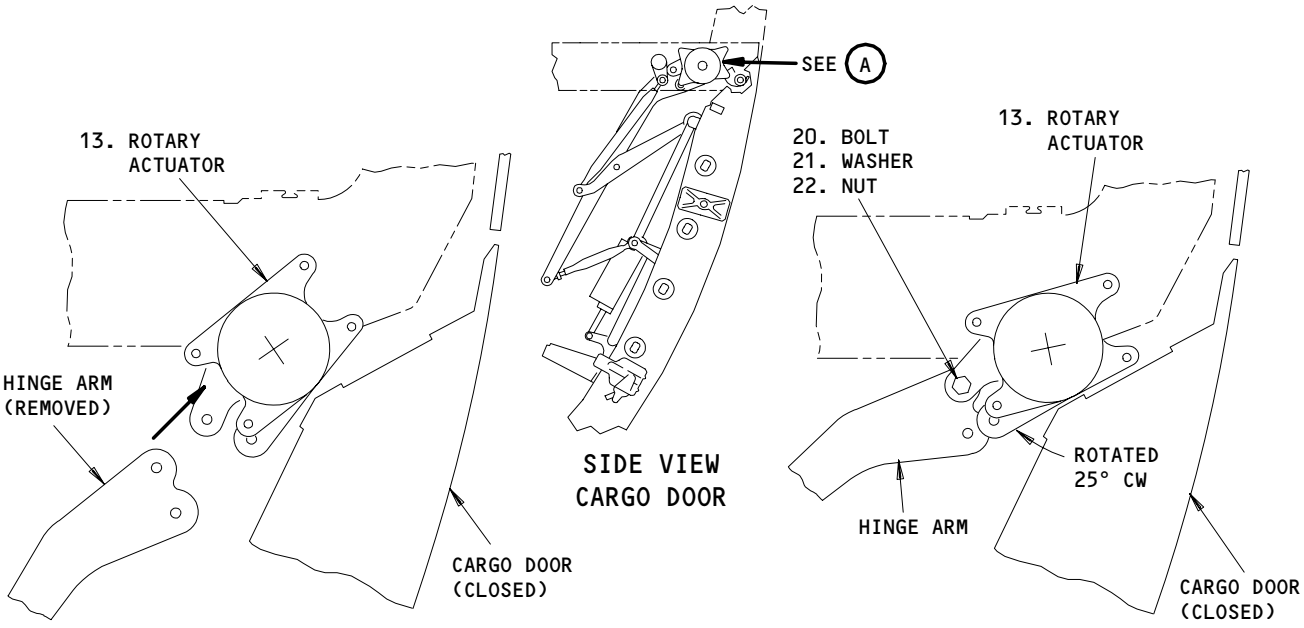
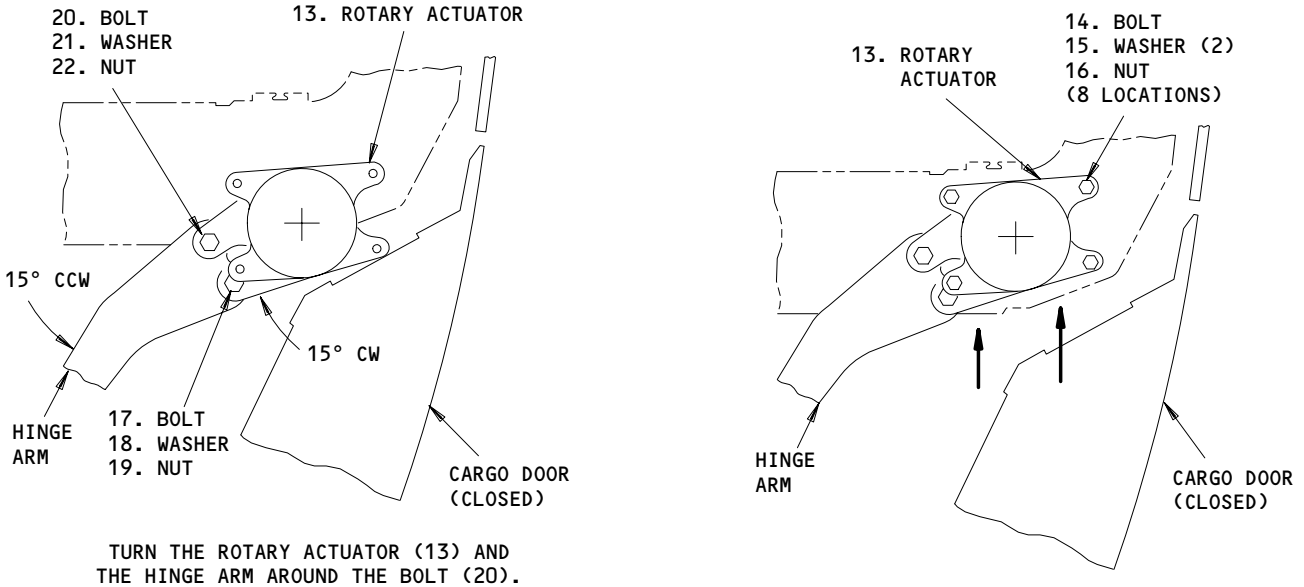


INSTALL THE ROTARY ACTUATOR (13) IN THE DIRECTION OF THE ARROW

STEP 1

INSTALL THE BOLT (20), WASHER (21), AND NUT (22). DO NOT TIGHTEN THE NUT (22).

STEP 2



TURN THE ROTARY ACTUATOR (13) AND THE HINGE ARM AROUND THE BOLT (20). INSTALL THE BOLT (17), WASHER (18), AND NUT (19). TIGHTEN THE NUT (22).

STEP 3

MOVE THE ROTARY ACTUATOR (13) UP. INSTALL THE BOLTS (14), WASHERS (15), AND NUTS (16).

STEP 4

ROTARY ACTUATOR INSTALLATION SEQUENCE
(STEP 1 THRU STEP 4 ABOVE)

(A)

Rotary Actuator Installation with the Cargo Door in the Fully Closed and Latched Position
Figure 405

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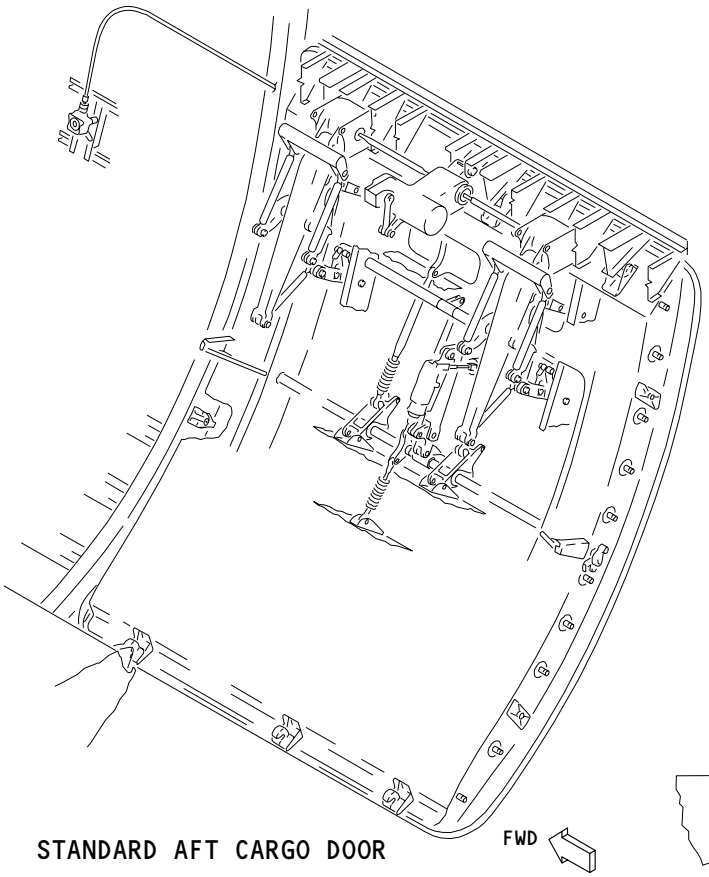
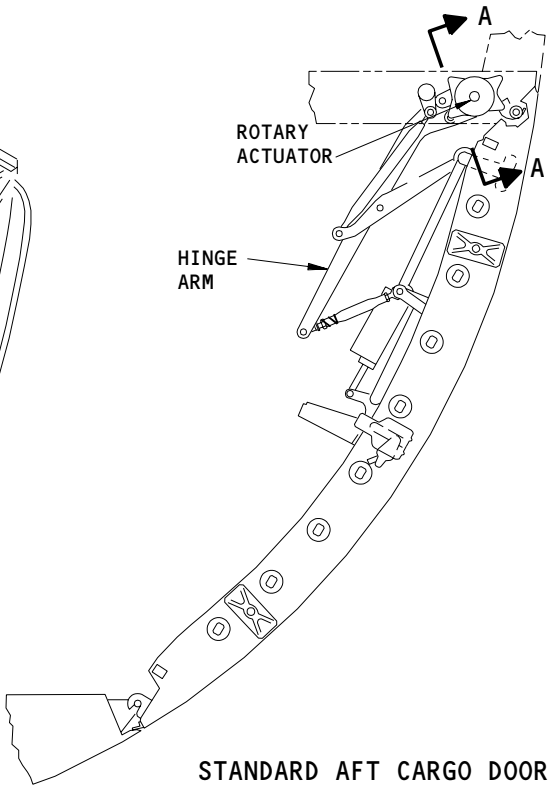
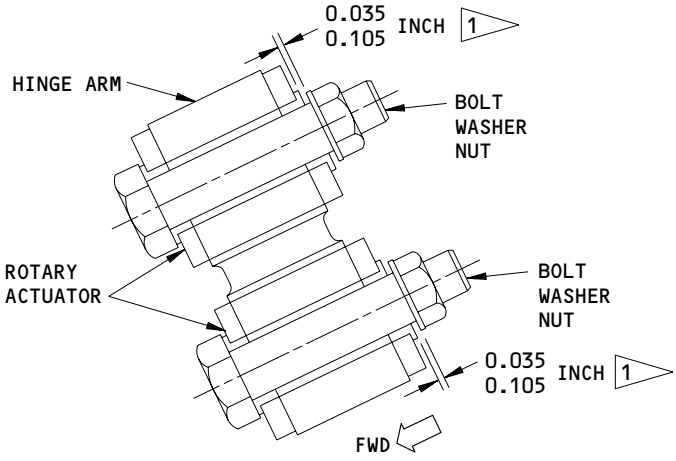


STANDARD AFT CARGO DOOR



STANDARD AFT CARGO DOOR
(SIDE VIEW)



A-A

1 NOTE: A CLEARANCE OF 0.035 TO 0.105 INCH BETWEEN THE WASHER AND BUSHING IS CORRECT.

Aft Cargo Door Rotary Actuator and Hinge Arm
Figure 406

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AFT CARGO DOOR HINGE ARM - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the cargo door hinge arm. The second task is the installation of the cargo door hinge arm.

TASK 52-35-04-004-001

2. Remove the Cargo Door Hinge Arm (Fig. 401)
   A. References
      (1) 52-35-01/401, Aft Cargo Door
   B. Access
      (1) Location Zone
          822 Aft Cargo Door

   C. Procedure - Remove the Cargo Door Hinge Arm

      S 014-002
      (1) Remove the cargo door from the airplane (Ref 52-35-01).

      S 034-003
      (2) Remove the bolts, nuts, and washers that attach the hinge arm to the rotary actuator.

      S 034-004
      (3) Remove the pip pin and the lockwire from the hinge arm and the scissors arm positioning tube (View A-A).

      S 034-005
      (4) Remove the nut, bolt, and washers that connect the hinge arm to the scissors arm.

      S 024-006
      (5) Remove the hinge arm from the cargo door.

      S 034-007
      (6) Remove the scissors arm positioning tube from the hinge arm.

TASK 52-35-04-404-008

3. Install the Cargo Door Hinge Arm (Fig. 401)
   A. Consumable Materials
      (1) D00633 Grease - BMS 3-33 (Preferred)
      (2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

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B. References
(1) 52-35-01/401, Aft Cargo Door

C. Access
(1) Location Zone
822 Aft Cargo Door

D. Procedure - Install the Cargo Door Hinge Arm

S 434-009
(1) Install the bolts, nuts, and washers that attach the hinge arm to the rotary actuator.

S 644-010
(2) Apply the grease to the mating surfaces of the scissors arm positioning tube, the hinge arm, and the scissors arm.

S 434-011
(3) Install the scissors arm positioning tube in the hinge arm.

S 424-012
(4) Install the bolt through the scissors arm and the scissors arm positioning tube to connect the hinge arm to the scissors arm.

S 434-013
(5) Install the pip pin.

NOTE: The final installation of the pip pin and the lockwire is done during the door installation.

S 414-014
(6) Install the cargo door on the airplane (Ref 52-35-01).

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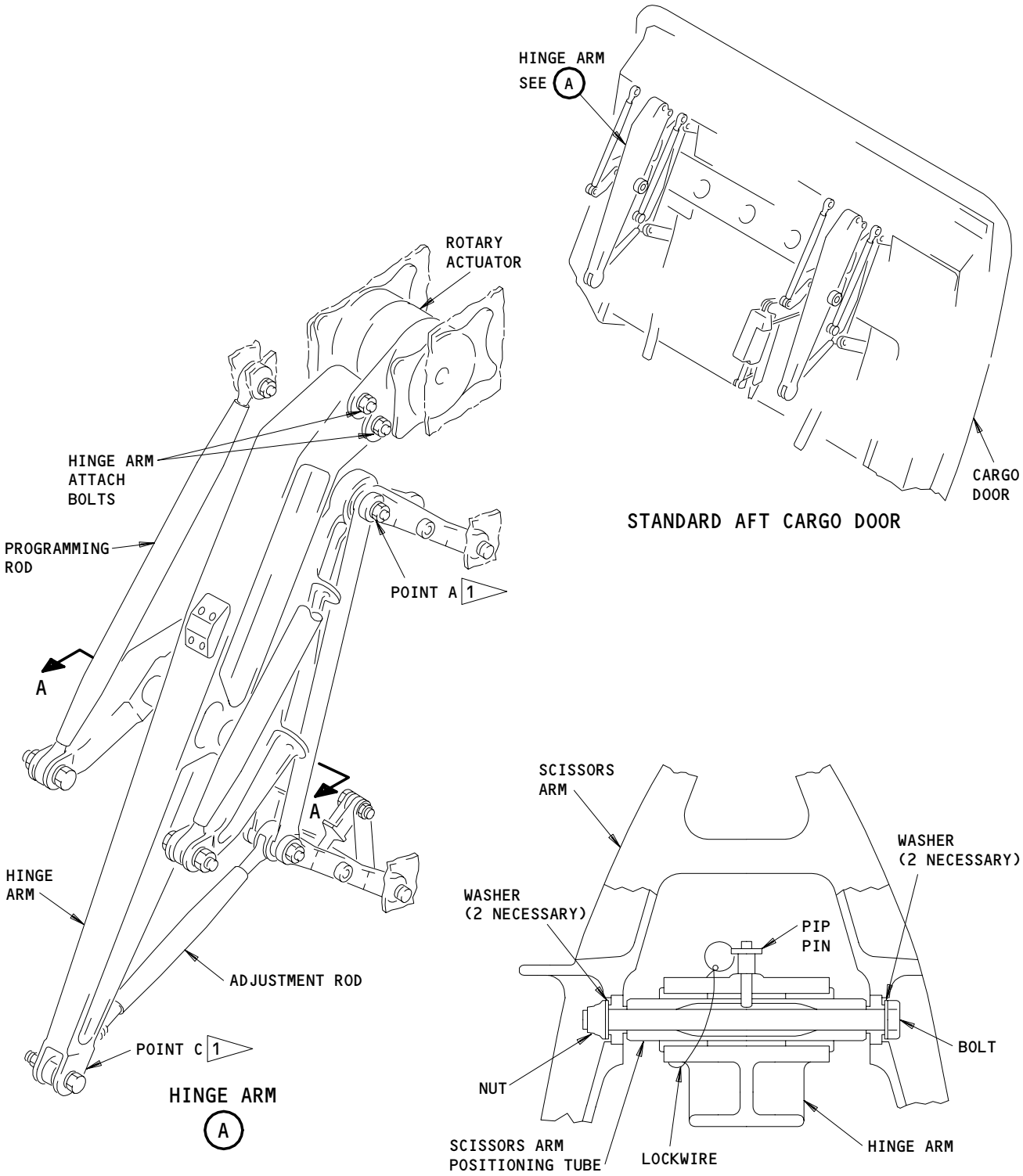

Hinge Arm Installation
Figure 401

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AFT CARGO DOOR LIFT/LATCH POWER UNIT - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the cargo door lift/latch power unit. The second task is the installation of the lift/latch power unit.

TASK 52-35-10-004-001

2. Remove the Cargo Door Lift/Latch Power Unit (Fig. 401)
   A. Access
      (1) Location Zone
          822 Aft Cargo Door

   B. Procedure - Remove the Cargo Door Lift/Latch Power Unit

      S 014-002
      (1) Close and latch the cargo door.

      S 864-003
      (2) Open this circuit breaker on the APU external power panel, P34, and attach a DO-NOT-CLOSE tag:
          (a) 34J4, CONT DOOR CARGO
          (b) 34J10, CARGO DOOR AFT

      S 034-002
      (3) Disconnect the bonding jumper from the lift/latch power unit (1).

      S 034-003
      (4) Remove the electrical connector from the lift/latch power unit (1).

      S 034-004
      (5) Hold the lift/latch power unit (1) and remove the top and the bottom attach bolts (3, 8) and the bushings (5, 10) (View A-A and B-B).

      S 024-005
      (6) Move the lift/latch power unit (1) in a straight direction out of the mounts to disconnect it from the flexible shaft (2).

      S 034-006
      (7) Remove the flexible shaft (2) from the lift/latch manual drive receptacle on the door and put it in a safe location to prevent damage.

TASK 52-35-10-404-007

3. Install the Cargo Door Lift/Latch Power Unit (Fig. 401)
   A. Equipment
      (1) Bonding Meter - Microhm Bridge, Type 2 Bonding Meter Avtron Model T477W, Avtron Manufacturing Inc., Cleveland, Ohio
   B. Parts

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AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Lift/Latch Power Unit	52-34-01	01	100

C. Consumable Materials
(1) D00633 Grease - BMS 3-33 (Preferred)
(2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

D. References
(1) 24-22-00/201, Electrical Power - Control
(2) 20-10-22/701, Metal Surface Cleaning
(3) 20-10-21/401, Electrical Bonding

E. Access
(1) Location Zone
822 Aft Cargo Door

F. Procedure - Install the Cargo Door Lift/Latch Power Unit

S 434-007
(1) Move the large end of the flexible shaft (2) onto the lift/latch manual drive receptacle on the door.

S 644-008
(2) Lubricate the top and bottom bushings with the grease (Ref 20-30-04).

S 434-009
(3) Put the manual drive adapter of the lift/latch power unit (1) into the flexible shaft (2). Install the top attach bolt (3), washer (4), bushing (5), washer (6), and nut (7) (View A-A).

S 864-010
(4) To do a check on the flexible shaft terminal clearance (View C) on the lift/latch power unit manual input shaft do the steps that follow:
(a) Hold the flexible shaft (2) and push it in the direction of the lift/latch power unit (1).

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(b) With the flexible shaft terminal square fully on the lift/latch power unit manual input shaft, make sure that the end of the sleeve is not nearer than 0.09 inch from the shaft bearing retainer.

S 434-011

(5) Manually extend or retract the lift/latch power unit (1) to make the installation of the bottom attach bolt easier.

S 434-012

(6) Install the bottom attach bolt (8), washer (9), bushing (10), washer (11), and nut (12) (View B-B).

S 434-013

(7) Connect the electrical connector to the lift/latch power unit.

S 434-014

WARNING: IF THE BONDING METER USED TO DO A CHECK ON THE BOND RESISTANCE IS NOT EXPLOSION-PROOF, MAKE SURE THE DANGEROUS GAS QUANTITY IN THE ATMOSPHERE AS MEASURED BY A COMBUSTIBLE GAS DETECTOR IS LESS THAN 20 PERCENT OF THE LOWER EXPLOSIVE LIMIT.

(8) Connect the bonding jumper (View B).

S 164-015

(9) Clean the conductive surface if it is necessary (Ref 20-10-22).

S 864-016

(10) Make sure the resistance between the lift/latch power unit (1) and the door structure is not more than 10 milliohms (Ref 20-10-21).

S 164-017

(11) If a new bonding jumper is installed, grind the bonding jumper terminal the minimum amount necessary to install correctly.

S 864-018

(12) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P34 panel:
(a) 34J4, CONT DOOR CARGO
(b) 34J10, CARGO DOOR AFT

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S 864-021

(13) To do a check on the operation of the lift/latch power unit, do the steps that follow:

(a) Supply electrical power (Ref 24-22-00).

(b) Close the door electrically. Make sure that the door latches correctly.

(c) Open the door electrically. Make sure that the door unlatches and starts to open.

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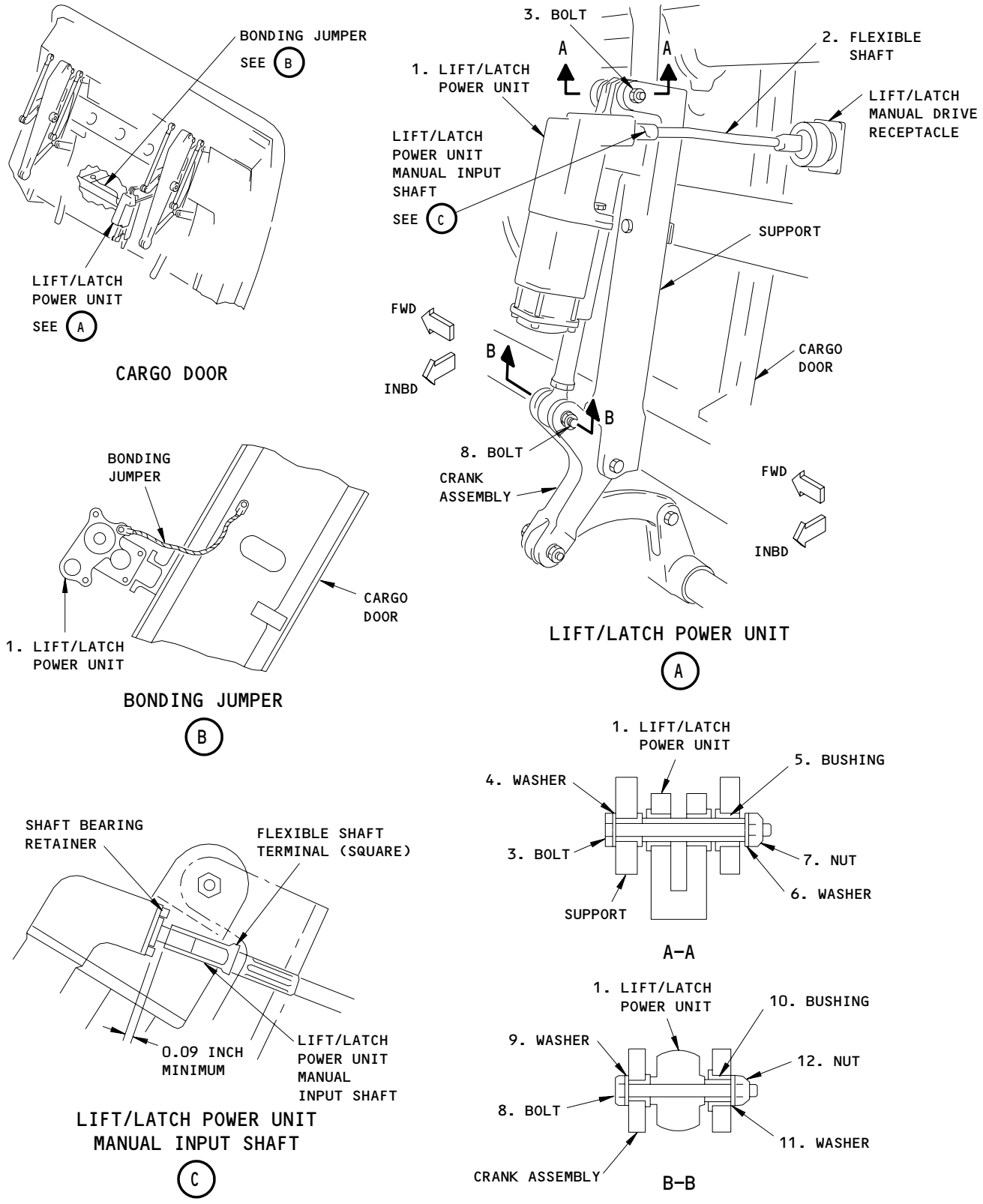

Lift/Latch Power Unit Installation
Figure 401

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AFT CARGO DOOR VENT DOOR - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the cargo door vent door. The second task is the installation of the cargo door vent door.

TASK 52-35-15-004-001

2. Remove the Cargo Door Vent Door (Fig. 401)
   A. Access
      (1) Location Zone
          822 Aft Cargo Door

   B. Procedure - Remove the Cargo Door Vent Door

      S 014-001
      (1) Remove the door liner panel to get access.

      S 034-002
      (2) Disconnect the vent door pushrod. Install tags on the spacer, washers, nut, and bolt to identify the correct installation location and sequence.

      S 034-003
      (3) Remove the bolts and remove the vent door. Install tags on the nuts, bolts, washers, springs, and spacers to identify the correct installation location and sequence.

TASK 52-35-15-404-002

3. Install the Cargo Door Vent Door (Fig. 401)
   A. References
      (1) 25-52-01/401, Sidewall Panels
      (2) 52-09-02/401, Cargo Door Seals
      (3) 52-35-00/501, Aft Cargo Door
   B. Access
      (1) Location Zone
          822 Aft Cargo Door

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C. Procedure - Install the Cargo Door Vent Door

S 214-005
(1) Do a check on the cargo door seal for damage or deterioration. Repair the seal if it is necessary (Ref 52-09-02).

S 424-006
(2) Put the vent door in position at the skin opening. Remove the tags from the nuts, bolts, washers, springs, and spacers. Install the nuts, bolts, washers, springs, and spacers in the same sequence as they were removed.

S 434-007
(3) Connect the vent door pushrod. Remove the tags from the spacer, washers, nut, and bolt. Install the spacer, washers, nut, and bolt in the same sequence as they were removed.

S 864-008
(4) Adjust the vent door pushrod (Ref 52-35-00).

S 864-009
(5) Do the vent door negative and positive pressure test (manual operation). If necessary, adjust the vent door (Ref 52-35-00).

S 414-010
(6) Install the sidewall panels (Ref 25-52-01).

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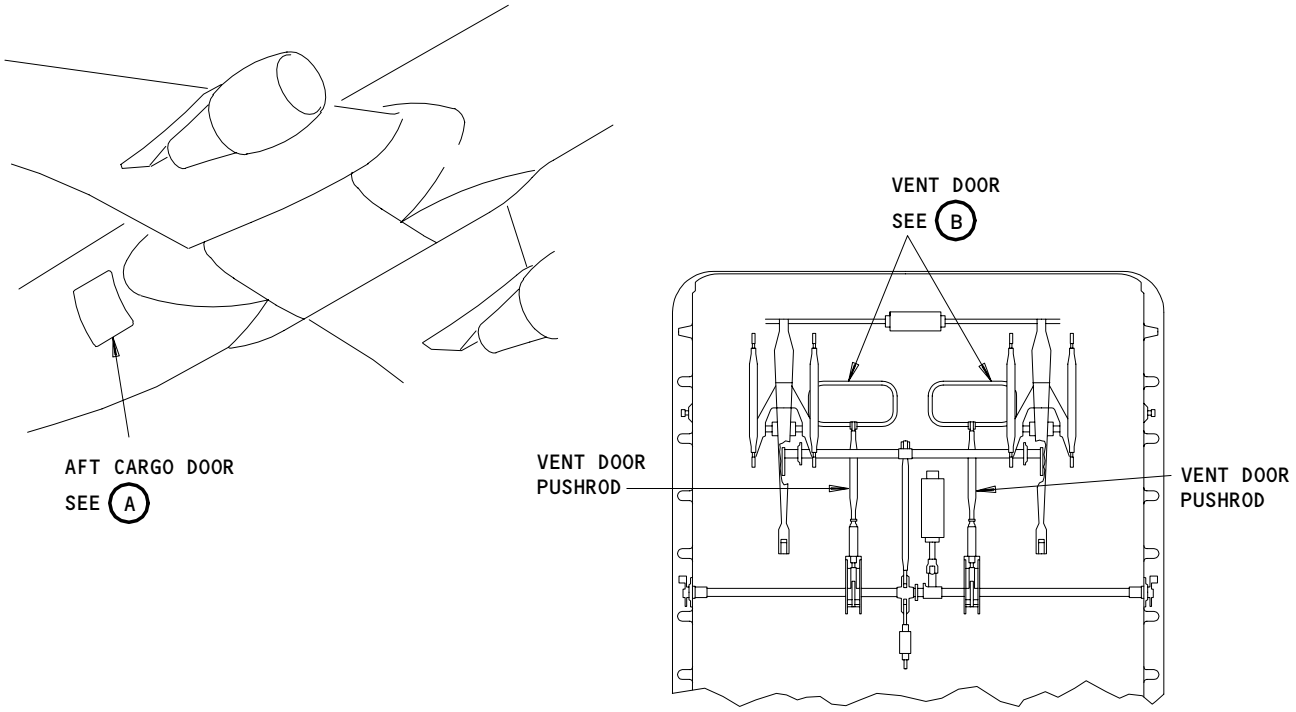
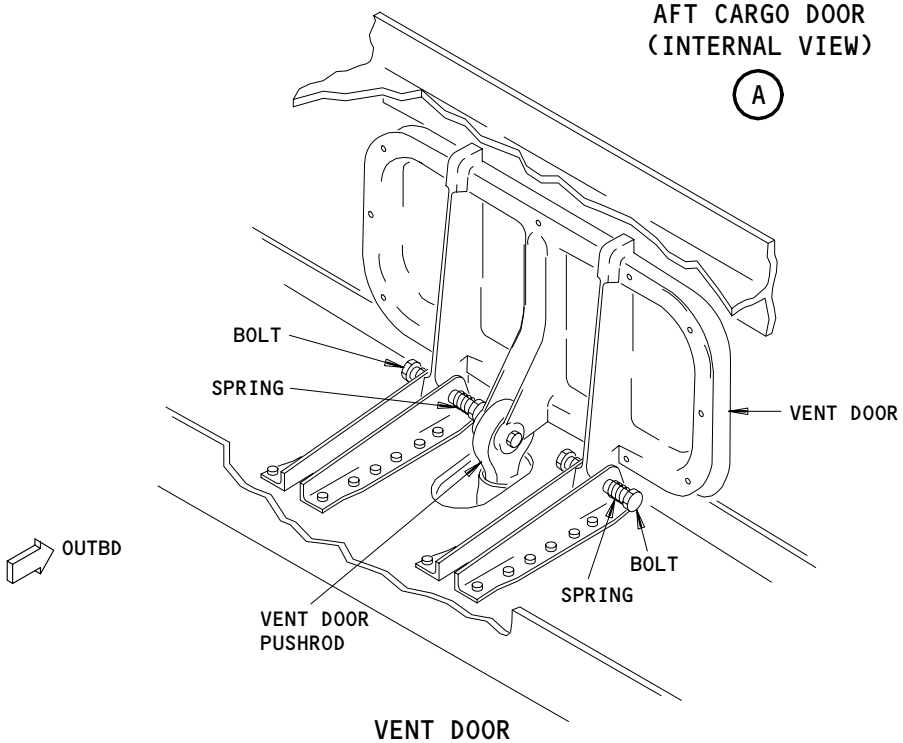


AFT CARGO DOOR
(INTERNAL VIEW)
A



VENT DOOR
(EXAMPLE)
B

Aft Cargo Door Vent Door Assembly
Figure 401

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AFT CARGO DOOR MANUAL DRIVE FLEXIBLE SHAFT - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the manual drive flexible shaft. The second task is the installation of the manual drive flexible shaft.

TASK 52-35-26-004-008

2. Remove the Manual Drive Flexible Shaft (Fig. 401)
   A. Access
      (1) Location Zone
          822 Aft Cargo Door

   B. Procedure - Remove the Manual Drive Flexible Shaft

      S 024-001
      (1) Remove the clamps that hold the flexible shaft to the structure. Install the tags on the clamp installation locations.

      S 024-002
      (2) Remove the lockwire and remove the nuts at the two ends of the flexible shaft from the door open/close manual drive gearbox and the hinge power unit.

      S 024-010
      (3) Remove the manual drive flexible shaft.

TASK 52-35-26-404-009

3. Install the Manual Drive Flexible Shaft (Fig. 401)
   A. Access
      (1) Location Zone
          822 Aft Cargo Door

   B. Procedure - Install the Manual Drive Flexible Shaft

      S 424-005
      (1) Put the flexible shaft on the door open/close manual drive gearbox and tighten the nut to 150-250 pound-inches.

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S 424-004
(2) Use a lockwire to attach the nut to the adjacent structure.

S 424-011
(3) Put the opposite end of the flexible shaft on the square drive port on the hinge power unit. Tighten the nut to 150-250 pound-inches.

S 424-006
(4) Use a lockwire to attach the nut to the hinge power unit.

S 424-007
(5) Use a clamp to attach the flexible shaft (3 locations) to the structure. Remove the tags from the clamp installation locations.

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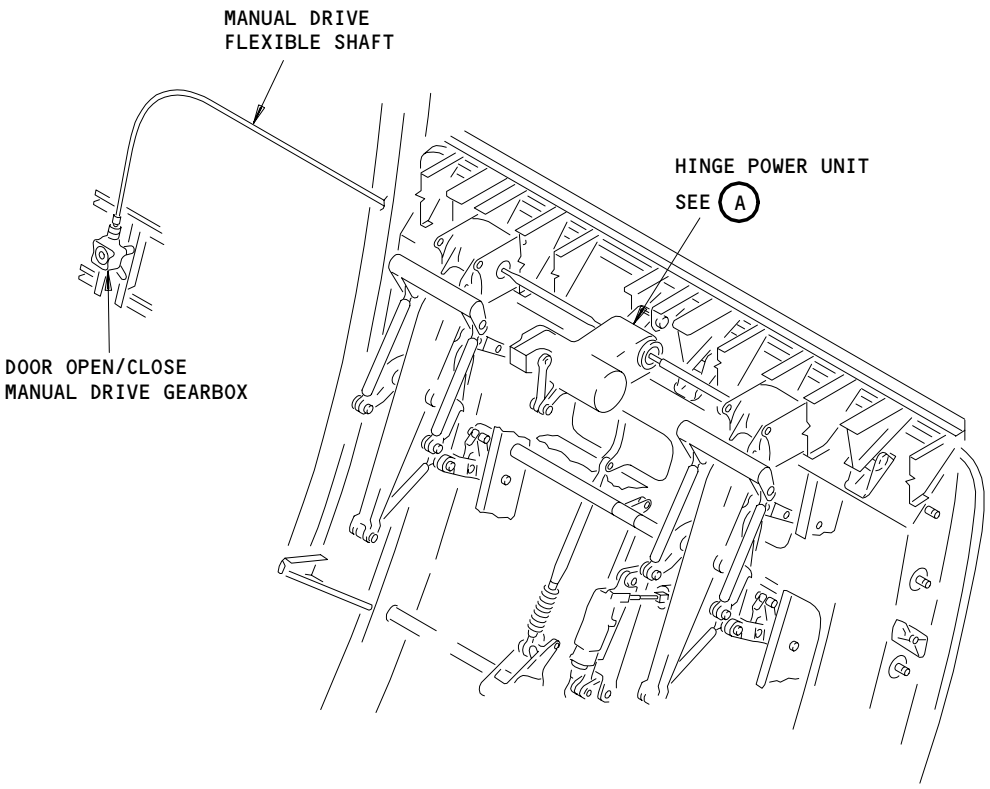

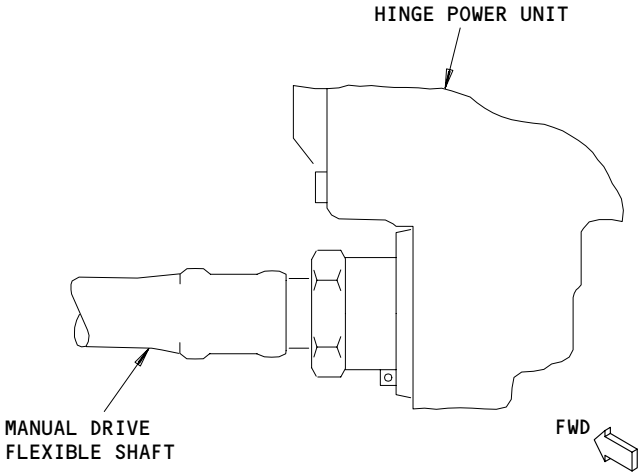

HINGE POWER UNIT

A

Manual Drive Flexible Shaft Installation
Figure 401

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AFT CARGO DOOR CONTROL SWITCHES - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the cargo door control switches. The second task is the installation of the cargo door control switches.
   B. This procedure contains the removal and installation of the cargo door control and arming switches, cargo loading lights switches, and door open and close lights found on the exterior control panel adjacent to the cargo door.

TASK 52-35-42-004-002

2. Remove the Cargo Door Control Switches (Fig. 401)
   A. Access
      (1) Location Zone
          822 Aft Cargo Door

   B. Procedure - Remove the Cargo Door Control Switches

      S 864-001
      (1) Open these circuit breakers on the APU/EXT power panel, P34, and attach DO-NOT-CLOSE tags:
          (a) 34J4, CARGO DOOR CONTROL
          (b) 34J10, AFT CARGO DOOR

      S 014-002
      (2) Open the control panel access door.

      S 034-003
      (3) Remove the four attach bolts that hold the exterior door control panel to the pan.

      S 014-004
      (4) Pull the exterior door control panel out to get access to the switches and the lights.

      S 034-005
      (5) Remove the wires from the switch or light. Identify the wires with the terminal number locations for subsequent installation.

      S 024-006
      (6) Remove the switch or the light.

TASK 52-35-42-404-003

3. Install the Cargo Door Control Switches (Fig. 401)
   A. Equipment
      (1) Bonding Meter - Microhm Bridge, Type 2 Bonding Meter Avtron Model T477W, Avtron Manufacturing Inc., Cleveland, Ohio

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B. Consumable Materials
(1) B00192 Solvent - BMS 3-2
(2) A00776 potting compound - DC-738
(3) A00777 potting compound - DC-3145
(4) A00778 potting compound - GE-162
(5) A00084 potting compound - RTV-3145

C. Access
(1) Location Zone
822 Aft Cargo Door

D. Procedure - Install the Cargo Door Control Switches

S 424-008
(1) Install the switch or light in the exterior door control panel.

S 164-009

WARNING: DO NOT BREATHE THE SOLVENT FUMES. DO NOT LET THE SOLVENT TOUCH YOUR SKIN. KEEP THE SOLVENT AWAY FROM HEAT, SPARKS, AND FLAME. INJURY CAN OCCUR IF YOU ARE NOT CAREFUL WITH THE SOLVENT. THE SOLVENT IS POISONOUS AND FLAMMABLE.

(2) Clean the switch or the light terminals and the wire leads with the solvent.

S 434-010
(3) Connect the wiring to the switch or the light. Apply the potting compound to the terminals.

S 434-011
(4) Install the exterior door control panel to the panel with the four attach bolts.

S 864-012
(5) Use the bonding meter to make sure the electrical bond between the switch or the light and the exterior door control panel is not more than 0.0025 ohm.

S 354-001
(6) If the bonding resistance is more than 0.0025 ohm, do the steps that follow:
(a) Remove the switch or the light from the exterior door control panel.
(b) Clean the bonding surface.
(c) Put back the switch or the light and do a check on the electrical bond.

S 864-013
(7) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CARGO DOOR CONTROL

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(b) 34J10, AFT CARGO DOOR

S 864-014
(8) Supply electrical power.

S 864-015
(9) Operate the door electrically. Make sure the door operates correctly.

S 864-016
(10) Remove the electrical power if it is not necessary.

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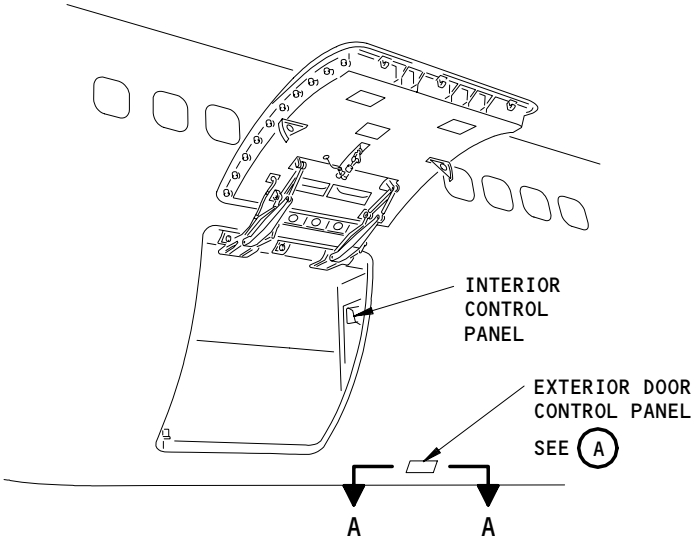
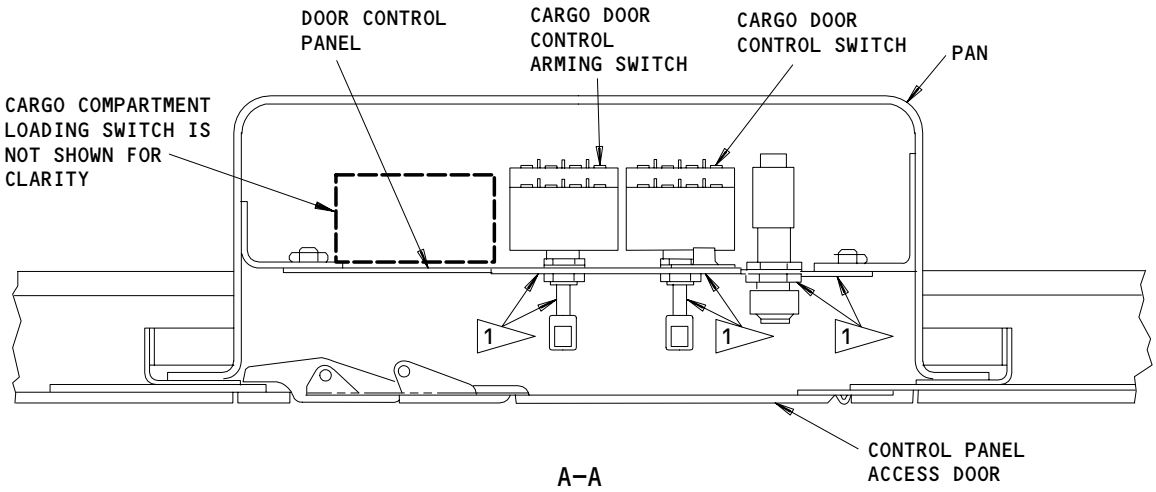
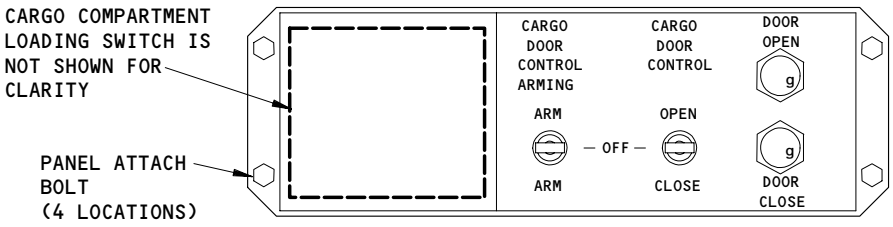


STANDARD AFT CARGO DOOR



A–A



EXTERIOR DOOR CONTROL PANEL

(A)

1 0.0025 OHM MAXIMUM RESISTANCE BETWEEN THE SWITCH OR THE LIGHT AND THE STRUCTURE

Standard Aft Cargo Door Control Switches Installation
Figure 401

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AFT CARGO DOOR CONTROL PROXIMITY SENSORS - ADJUSTMENT/TEST

1. General
   A. This procedure contains one task. The task is the adjustment of the cargo door control proximity sensors on the aft cargo door.

   TASK 52-35-43-825-001

2. Adjust the Cargo Door Control Proximity Sensors
   A. General
      (1) Move the sensor, not the target, to adjust the cargo door control proximity sensors.
      (2) These are the cargo door control proximity sensors for the aft cargo door:

TABLE 1
CARGO DOOR PROXIMITY SENSORS

NOMENCLATURE	EQUIPMENT NO.	SENSOR FUNCTION
AFT CARGO DOOR LIFT RANGE PROX SENSOR	S157	CONTROL SEQUENCING
AFT CARGO DOOR OPEN PROX SENSOR	S158	CONTROL SEQUENCING
AFT CARGO DOOR DOWN NO. 1 PROX SENSOR	S159	CONTROL SEQUENCING
AFT CARGO DOOR DOWN NO. 2 PROX SENSOR	S160	CONTROL SEQUENCING
AFT CARGO DOOR LATCHED PROX SENSOR	S161	CONTROL SEQUENCING
AFT CARGO DOOR LOCKED PROX SENSOR	S208	DOOR WARNING
AFT CARGO DOOR CLOSED PROX SENSOR	S209	DOOR WARNING

      (3) The cargo door proximity sensors S208 and S209 are part of the door warning system. Refer to 52-71-00 for more data on the cargo door warning system.
      (4) The cargo door down proximity sensor, S159, has a steel target permanently installed and adjustment is not necessary.
   B. Equipment
      (1) Two Rigging wedges (0.90 inches by 6.00 inches long, thickness 0.16 inch tapered to 0.02 inch, aluminum stock)

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C. Consumable Materials
(1) C00308 Corrosion Preventive Compound - MIL-C-11796B, Class III

D. References
(1) AMM 24-22-00/201, Electrical Power - Control
(2) AMM 52-09-02/401, Cargo Door Seals
(3) AMM 52-35-00/501, Aft Cargo Door
(4) AMM 52-71-00/501, Door Warning System

E. Access
(1) Location Zone
822 Aft Cargo Door

F. Prepare to Adjust the Cargo Door Control Proximity Sensors

S 035-002
(1) Remove the door lining on the cargo door.

S 865-003
(2) Close and latch the cargo door.

G. Adjust the Cargo Door Lift Range Proximity Sensor, S157 (View A, Fig. 501)

S 865-004
(1) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
(a) 34J4, CONT DOOR CARGO
(b) 34J10, CARGO DOOR AFT

S 035-005
(2) Remove the electrical connector from the hinge power unit.

NOTE: This is to let the lift/latch power unit operate, but not the hinge power unit when you open the door electrically. The lift/latch power unit will lift the door, but the movement of the door will stop when the door is in the lifted position.

S 825-006
(3) Use a straightedge and a pencil to make a mark between the stop fittings No. 5 and No. 6 that aligns the cargo door and the fuselage skin.

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S 865-007
(4) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO
(b) 34J10, CARGO DOOR AFT

S 865-008
(5) Open the cargo door electrically until the door movement stops.

S 215-009
(6) Make sure the cargo door has lifted 2.00 ±0.06 inches vertically from the latched position.

NOTE: This is called the lifted position for the cargo door.

S 825-010
(7) If the cargo door has lifted less than 1.94 inches, remove the shims from the cargo door lift range proximity sensor (View A, Fig. 501).

NOTE: If you move the proximity sensor 0.036 inch when you add or remove the shims, the lifted position of the door changes by approximately 0.024 inch.

S 825-011
(8) If the cargo door has lifted more than 2.06 inches, add the shims to the cargo door lift range proximity sensor.

NOTE: If you move the the proximity sensor 0.036 inch when you add or remove the shims, the lifted position of the door changes by approximately 0.024 inch.

S 225-002
(9) Make sure there is a clearance of 0.09 inch between the drive crank and the lower travel stop when the door is in the lifted position (View A, Fig. 502).

S 865-013
(10) Close and latch the cargo door.

S 865-014
(11) Open the cargo door electrically until the door movement stops.

S 215-015
(12) Make sure the cargo door has lifted 2.00 ±0.06 inches vertically from the latched position.

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S 825-016
(13) Adjust the shims on the cargo door lift range proximity sensor again, if it is necessary.

S 435-017
(14) Bond the shims to the structure after the last adjustment.

S 865-018
(15) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
(a) 34J4, CONT DOOR CARGO
(b) 34J10, CARGO DOOR AFT

S 435-019
(16) Install the electrical connector into the hinge power unit.

S 865-020
(17) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO
(b) 34J10, CARGO DOOR AFT

S 865-021
(18) Electrically open the cargo door sufficiently to make sure the door lifts and then starts to open.

NOTE: Do this step to make sure the hinge power unit operates correctly.

S 865-022
(19) Close and latch the cargo door.

H. Adjust the Cargo Door Open Proximity Sensor, S158 (View B, Fig. 501)

S 865-023
(1) Open the cargo door electrically until the door movement stops.

S 825-029
(2) If the operation of the hinge power unit does not stop when the nearest of the moveable stops on one of the rotary actuators is 0.02 to 0.05 inch to the fixed stop, move the cargo door open proximity sensor up or down on the serrated plate on the rear of the sensor bracket (Views B and A-A, Fig. 501).

S 715-030
(3) Do a check on the electrical power to the cargo handling system. Do the steps that follow:
(a) Make sure the cargo handling equipment operates and the cargo door lights go on when the door is in the fully open position.

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(b) Make sure the cargo handling equipment does not operate when the door is approximately 75 percent open.

I. Adjust the Cargo Door Down Proximity Sensor, S160 (View C, Fig. 501)

NOTE: The cargo door down proximity sensor, S159, has a steel target permanently installed and adjustment is not necessary.

S 865-031

(1) Open the cargo door electrically until the door stops in the fully open position.

S 865-032

(2) Open these circuit breakers on the APU external power panel, P34, and attach DO-NOT-CLOSE tags:
(a) 34J4, CONT DOOR CARGO
(b) 34J10, CARGO DOOR AFT

S 035-033

(3) Remove the electrical connector from the lift/latch power unit.

S 865-034

(4) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO
(b) 34J10, CARGO DOOR AFT

S 865-035

CAUTION: DO NOT LET THE HINGE POWER UNIT OPERATE WITH CLUTCH SLIPPAGE FOR MORE THAN THREE SECONDS. CLUTCH SLIPPAGE DURING THE OPERATION OF THE HINGE POWER UNIT CAN CAUSE DAMAGE TO THE EQUIPMENT.

(5) Close the cargo door electrically until the hinge power unit stops or until you feel or hear clutch slippage of the hinge power unit.

S 215-036

(6) Measure the clearance A (View C) between the lower guide roller and the inboard surface of the guide track.

S 825-037

(7) If the clearance A is not 0 inch, manually push the lower part of the cargo door while you continue to close the door electrically until the clearance A equals 0 inch.

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S 715-038
(8) If you cannot get clearance A to equal 0 inch, then do the checks that follow:
(a) Make sure the cargo door does not touch the fuselage structure while it moves into the door cutout.
(b) Make sure the pressure seal does not stop the cargo door when the door moves into the door cutout (AMM 52-09-02/401).
(c) Make sure that one or more of guide rollers do not touch the guide tracks (AMM 52-35-00/501).

NOTE: Adjustment of the guide rollers can change the cargo door flushness.

(d) Make sure the torque limiter clutch on the hinge power unit operates correctly.

S 215-039
(9) Measure the clearance B between the proximity sensor and its target. Keep the clearance A equal to 0 inch.

S 825-040
(10) If the clearance B is not 0.03 to 0.09 inch adjust the target support bracket for the cargo door down proximity sensor.

S 865-041
(11) Open these circuit breakers the on APU external power panel, P34, and attach DO-NOT-CLOSE tags:
(a) 34J4, CONT DOOR CARGO
(b) 34J10, CARGO DOOR AFT

S 435-042
(12) Install the electrical connector into the lift/latch power unit.

S 865-043
(13) Remove the DO-NOT-CLOSE tags and close these circuit breakers on the P34 panel:
(a) 34J4, CONT DOOR CARGO
(b) 34J10, CARGO DOOR AFT

S 865-044
(14) Lower and latch the cargo door.

S 495-045
(15) Install the wedges to make sure the lower guide roller touches the inboard surface of the guide track.

S 215-046
(16) Make sure the clearance C, between the cargo door down proximity sensor and its target, is 0.03 to 0.12 inch.

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S 825-047
(17) Adjust the target support bracket, if it is necessary, to get the correct clearance for the cargo door down proximity sensor.

S 215-048
(18) If it was necessary to adjust the target support bracket do the steps to do a check on the clearances A, B, and C again.

S 715-049
(19) Make sure there is electrical power to the lift/latch power unit. Do the steps that follow:
(a) Open and close the door. Make sure the lift/latch power unit and the hinge power unit operate correctly.
(b) Make sure the cargo door lowers and latches correctly. Do the checks that follow:
1) Make sure the lower and latch operations occur immediately after the hinge drive system's drive shafts stop and do not turn.
2) Make sure the hinge power unit does not have clutch slippage when the power changes to the lift/latch power unit. Make sure the time for the power change is not more than one second.

J. Adjust the Cargo Door Latched Proximity Sensor, S161 (View A, Fig. 501).

S 865-050
(1) Electrically close the cargo door to the latched position.

S 225-003
(2) Make sure the lift/latch power unit stops with a clearance of 0.05 to 0.10 inch between the drive crank and the travel stop on the lift/latch torque tube (View A, Fig. 502).

S 825-052
(3) If the clearance is not correct, adjust the cargo door latched proximity sensor on the serrated plate to get the correct clearance.

NOTE: If you move the sensor one serration, it changes the clearance approximately 0.025 inch.

K. Put the Airplane Back to its Usual Condition

S 715-053
(1) Open and close the cargo door electrically. Make sure the door operates correctly and in the correct sequence.

S 865-054
(2) Remove electrical power if it is not necessary (AMM 24-22-00/201).

S 435-055
(3) Install the door lining on the cargo door.

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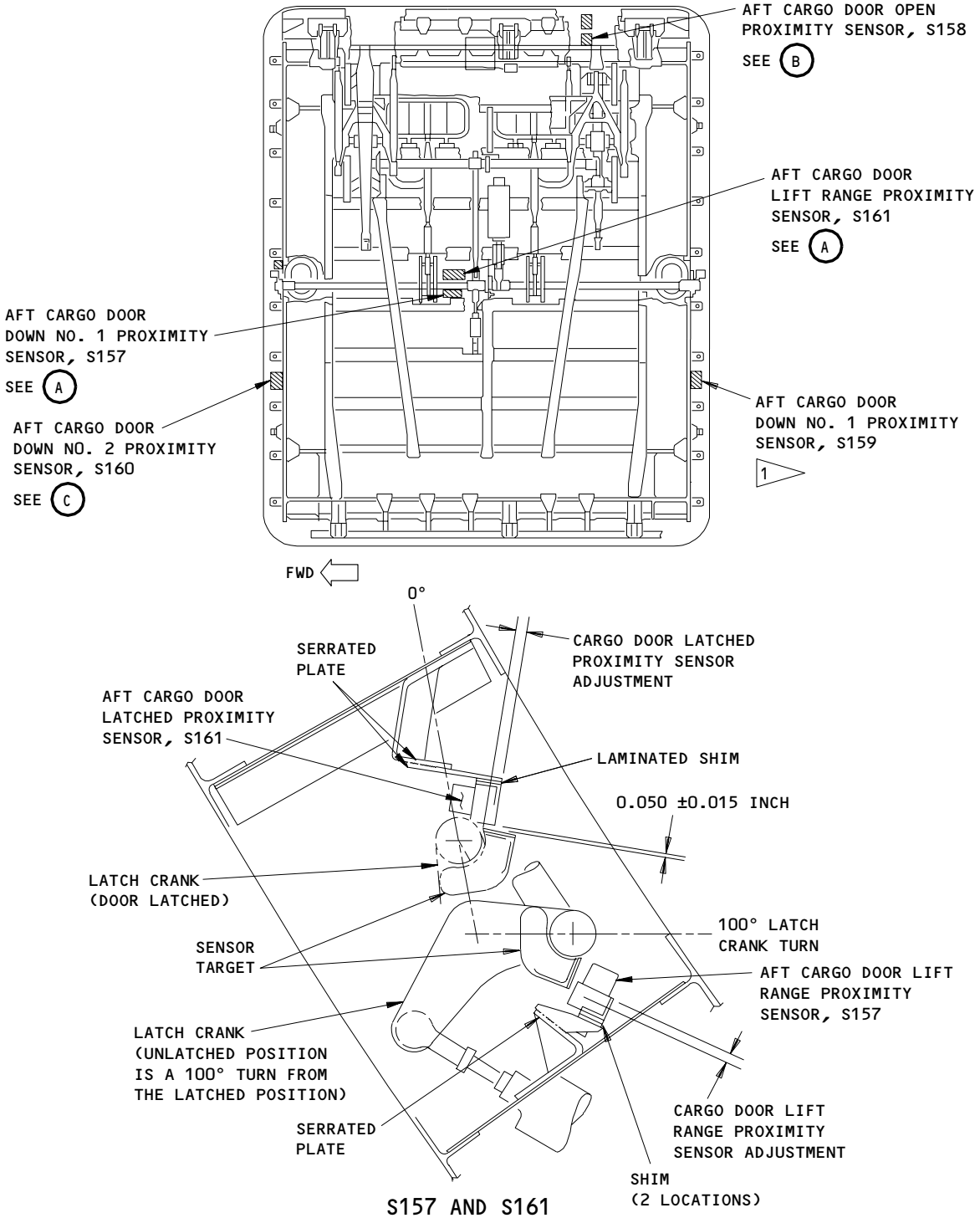

S157 AND S161

A

NOTE: ON 767-300 AIRPLANES, PROXIMITY SENSOR S159 IS NOT INSTALLED

1 PROXIMITY SENSOR S159 HAS A STEEL TARGET PERMANENTLY INSTALLED AND DOES NOT OPERATE

Aft Cargo Door Control Proximity Sensors Adjustment
Figure 501 (Sheet 1)

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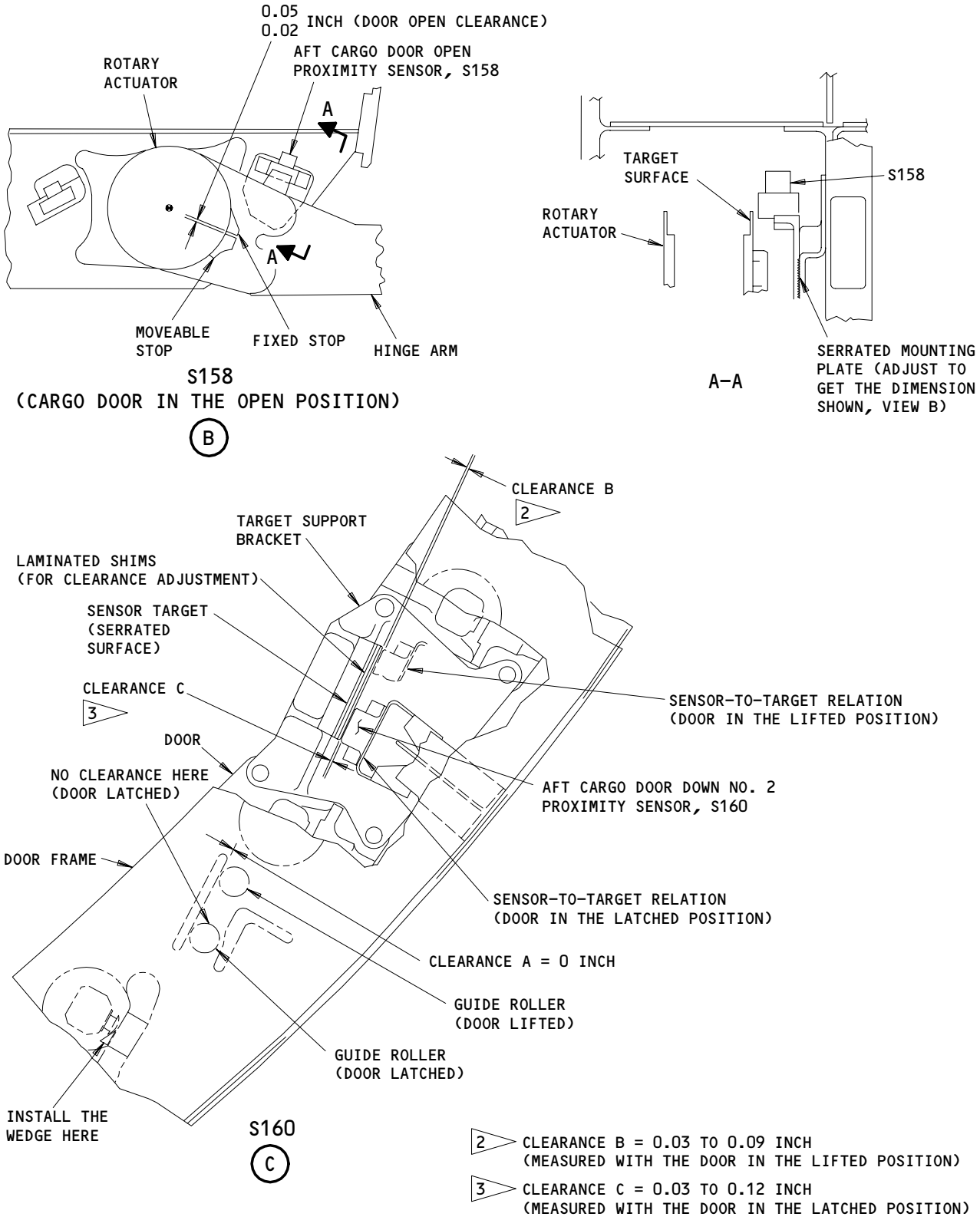

Aft Cargo Door Control Proximity Sensors Adjustment
Figure 501 (Sheet 2)

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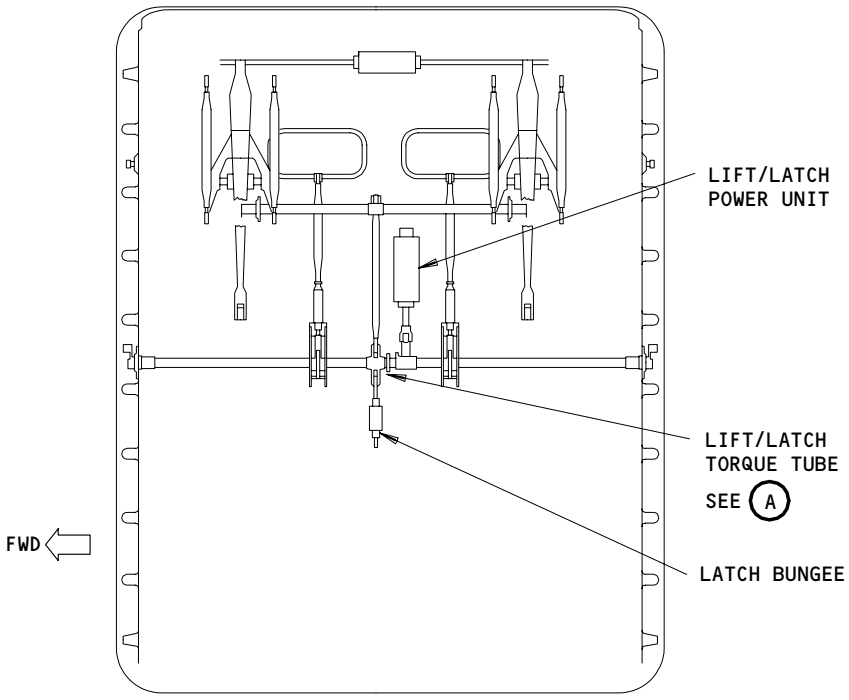
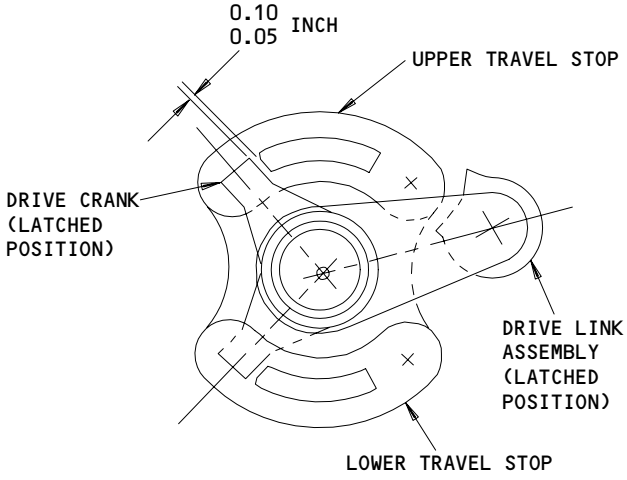


AFT CARGO DOOR



LIFT/LATCH TORQUE TUBE

A

Cargo Door Latched Proximity Sensor Adjustment
Figure 502

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BULK CARGO DOOR - DESCRIPTION AND OPERATION

1. General
   A. The bulk cargo door is a manually-operated, spring-balanced, inward-opening door. It is located on the left side of the airplane, aft of the wing.
2. Component Details
   A. Bulk Cargo Door (Fig. 1)
      (1) The bulk cargo door is on the left side of the airplane, aft of the wing. It is an inward opening, plug-type door, hinged at the upper edge, and operated manually from either inside or outside the airplane.
      (2) Cabin pressure loads on the door are transmitted to the fuselage by stop fittings on the forward, aft, and lower edges of door. Hinges transmit pressure loads at the top of the door.
      (3) A continuous seal around the door prevents loss of cabin pressure.
      (4) A spring and cable counterbalance mechanism reduces door opening forces. The snubber is an effective safety device in the event of a broken cable.
      (5) The door has inside and outside operating handles. The outside handle is spring loaded to retract flush with the outside surface when released.
      (6) The latching mechanism consists of a latch torque tube with latch cams on each end. The latch cams engage latch rollers on the fuselage to latch the door. The torque tube is spring-loaded to return to the latched position when handles are released. Two access panels provide access to the latching mechanism to enable the door to be opened if the mechanism were to fail.
   B. Counterbalance Mechanism
      (1) Door balance is maintained by a tension counterbalance mechanism. The mechanism comprises compression springs, cable drum, and a cable attached to the door. The cable drum has decreasing radius cable grooves to provide constant balance (force) as the door opens and closes.
      (2) The springs in the tube compress as the door closes. When the door is opened, the springs expand to assist opening the door.

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C. Snubber (Fig. 1)
(1) The snubber is a self-contained hydraulic snubbing device. It is installed between the door and overhead structure. It extends during closing, and retracts during opening. Orifices restrict flow of fluid within the snubber to oppose extension and retraction, and slow movement of the door.

D. AIRPLANES WITH BULK CARGO DOOR PROTECTOR;
Bulk Door Protector (Fig. 2)
(1) The bulk cargo door protector is a hinged fiberglass shield, formed to the contour of the door. When the door is closed, the protector swings down and is held down by a hinged strut. The protector keeps the door way clear of cargo and obstructions.
(2) When the door is open, the strut folds to allow the protector to swing up out of the way.

3. Operation
A. Functional Description
(1) The outer handle is pulled from its recess and rotated counterclockwise to unlatch the door. The inner handle is rotated clockwise.
(2) Rotation of either handle rotates the latch torque tube through a connecting rod. This causes the latch cams on the ends of the torque tube to rotate clear of the latch rollers, allowing door to be opened.
(3) The door is pushed inward manually to initiate opening.
(4) With the latch cams clear of the latch rollers, the counterbalance system provides cable tension sufficient to lift the door and hold it in the fully open position. The operator may maintain handle contact as the door is opening.
(5) A rubber bumper is provided on the cargo compartment ceiling to stop the door should it rotate beyond fully open.
(6) There is an uplock strap on the cargo compartment ceiling to hold the door open if the counterbalance cable is detached. The strap is engaged by looping it over the lower stop of the aft door frame.

WARNING: ASSURE THAT THE SNUBBER IS INSTALLED WHENEVER THE COUNTERBALANCE CABLE IS DETACHED. INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT MAY OCCUR IF DOOR FALLS FREE TO CLOSED POSITION.

(7) A snubber is provided to slow descent of the door on closing.

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(8) AIRPLANES WITH BULK CARGO DOOR PROTECTOR;
The door protector is pivoted upward out of the way and is retained in the stowed position by the door protector uplock.

(9) The door is closed by rotating either handle to the unlatched position and applying downward force to overcome tension in the counterbalance cable until the door is lowered nearly to the closed position.

(10) With the door nearly closed, latch cams on the door contact latch rollers on the body structure. Rotating either handle to the latched position then rotates the latch torque tube and the cams on the ends of the torque tube engage the cam rollers on the door cutout to latch the door.

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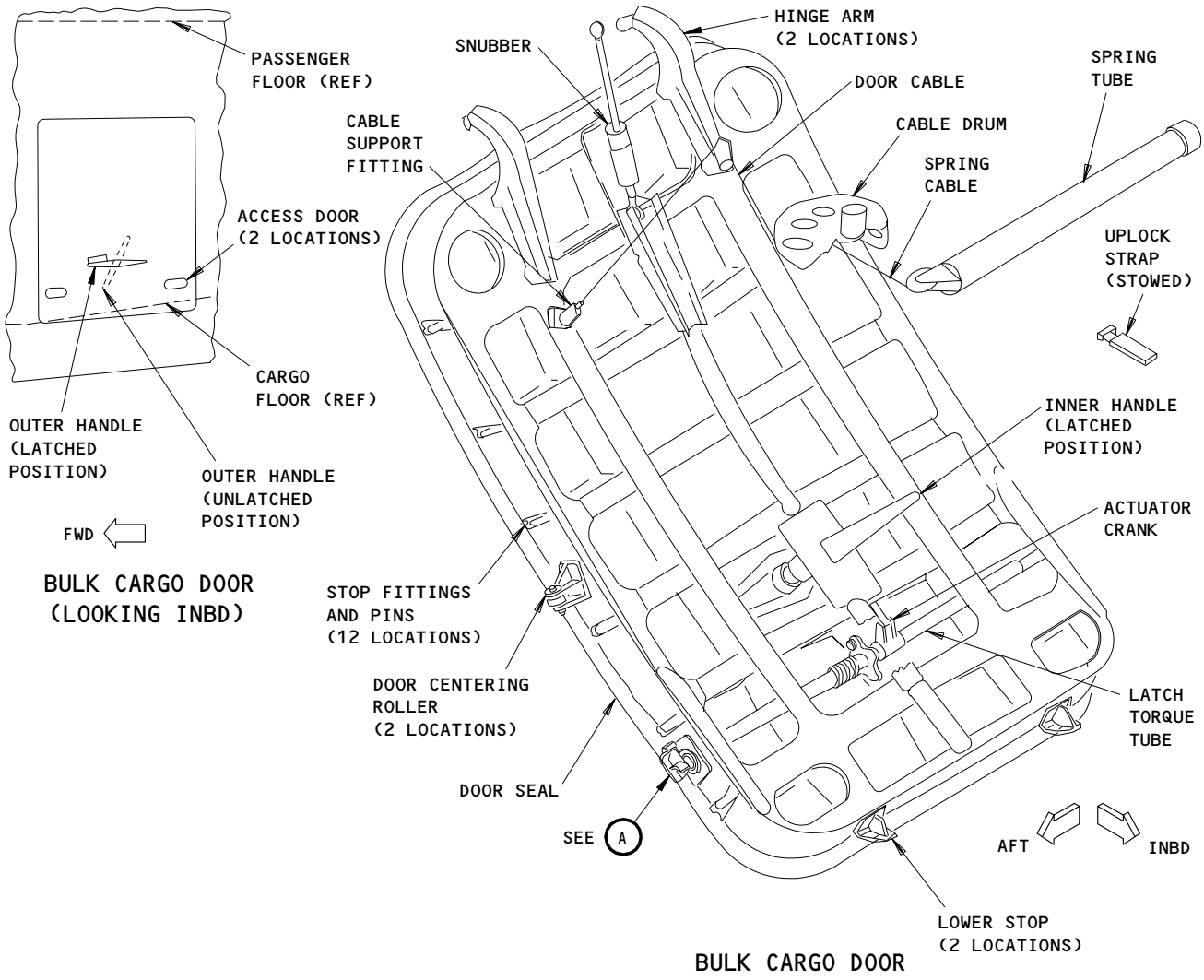

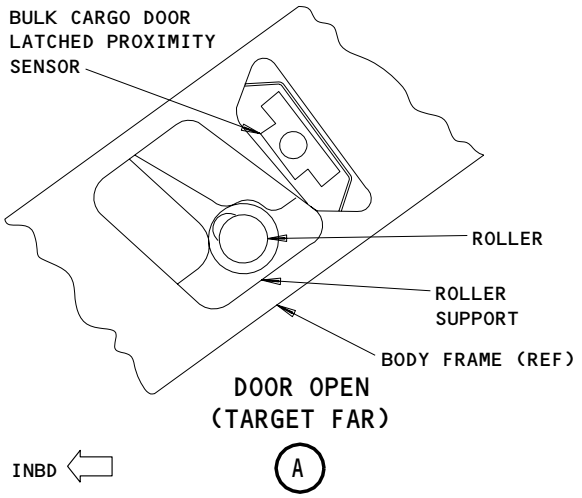

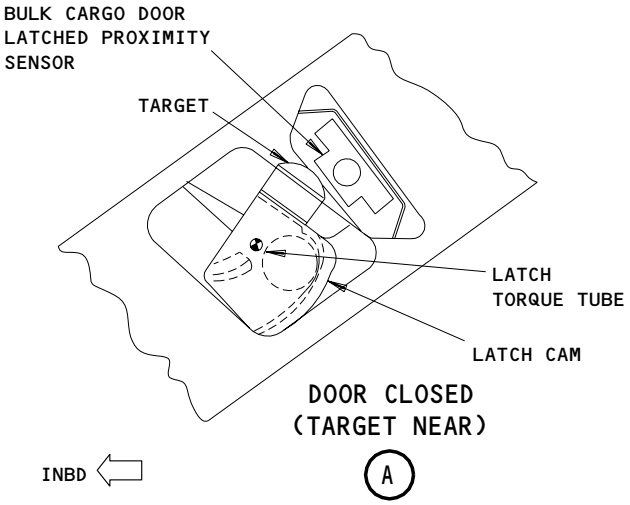

Bulk Cargo Door
Figure 1 (Sheet 1)

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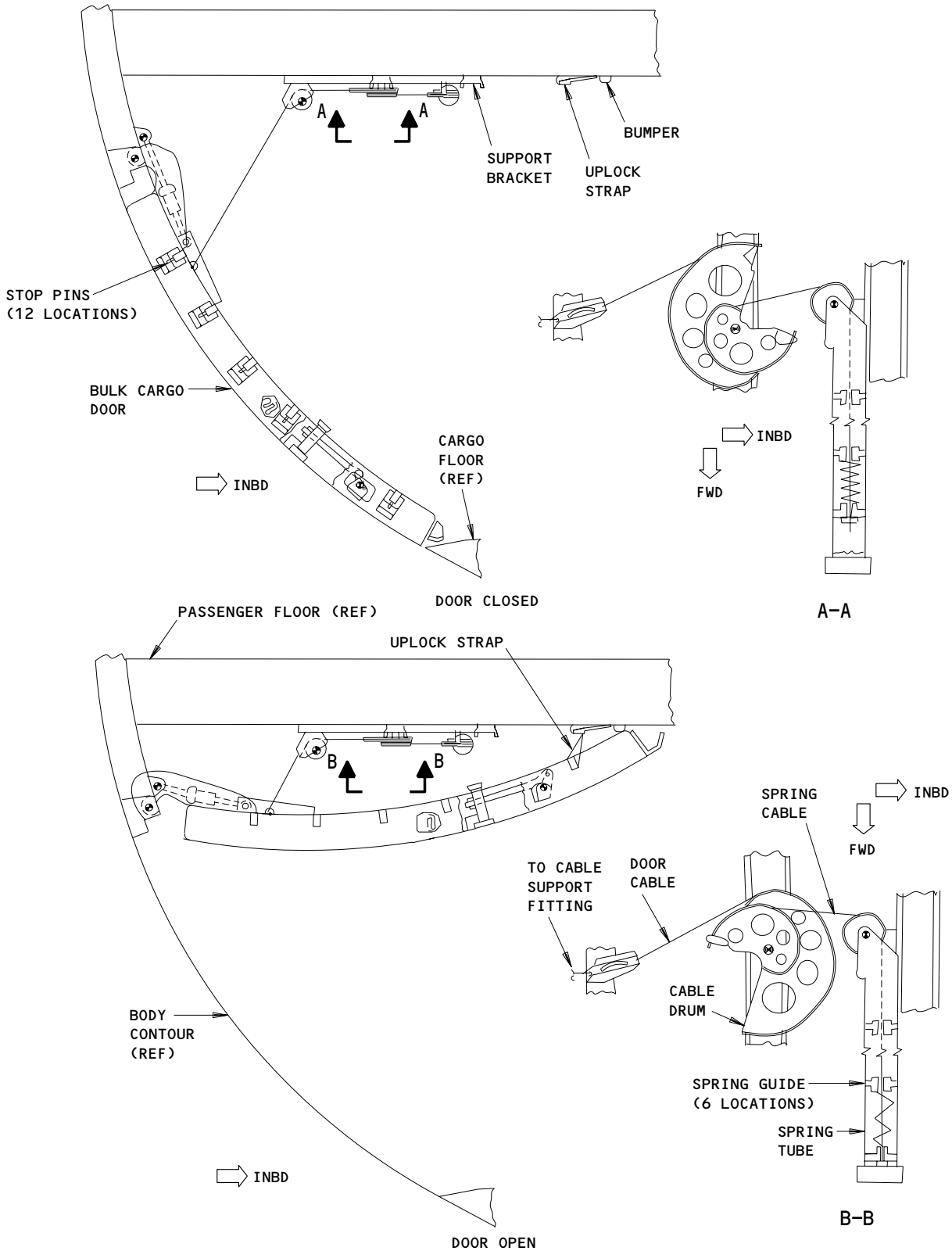

Bulk Cargo Door
Figure 1 (Sheet 2)

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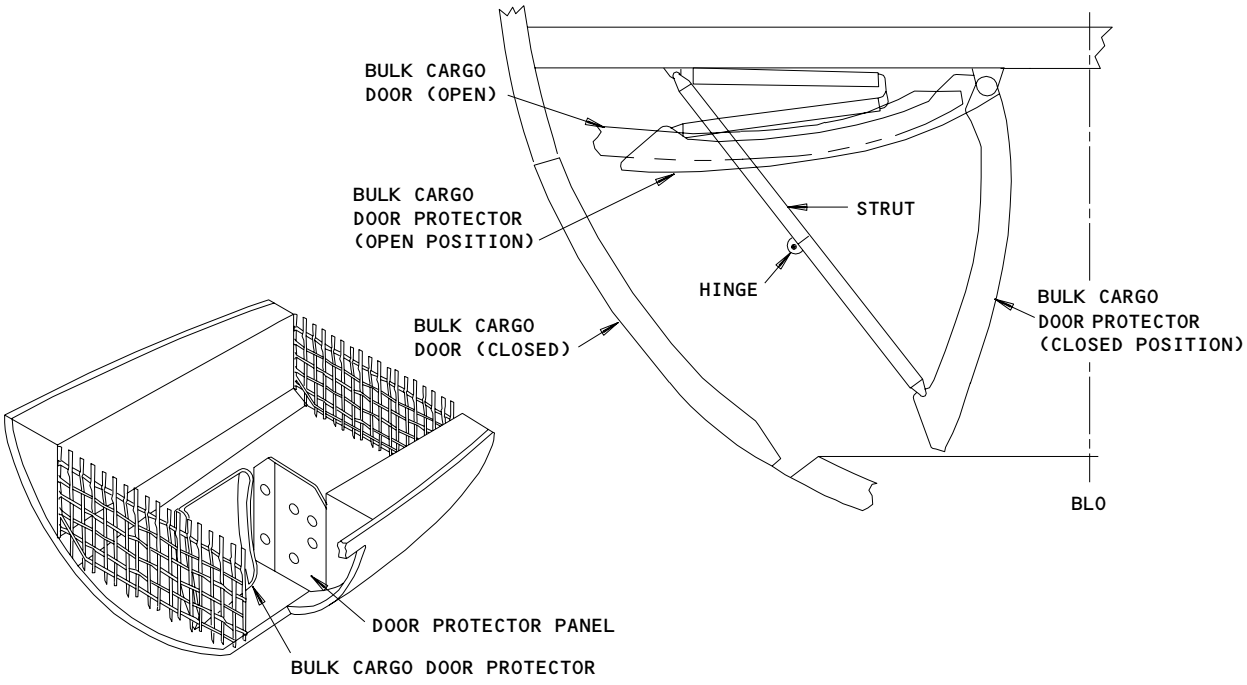

Bulk Cargo Door Protector
Figure 2

13595

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BULK CARGO DOOR

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
ARM - HINGE	--	2	811, AFT CARGO COMPARTMENT	52-36-04
DOOR - BULK CARGO	--	1	811, AFT CARGO COMPARTMENT	52-36-01
MECHANISM - BALANCE	--	1	811, AFT CARGO COMPARTMENT	52-36-02
MECHANISM - DOOR LATCHING	--	1	811, AFT CARGO COMPARTMENT	52-36-00
PROTECTOR - BULK CARGO DOOR 1	--	1	811, AFT CARGO COMPARTMENT	52-36-10
SENSOR - (AMM 52-71-00/101) PROX, BULK CARGO DOOR LATCHED, S211				
SNUBBER	--	1	811, AFT CARGO COMPARTMENT	52-36-03

1 AIRPLANES WITH BULK CARGO DOOR PROTECTOR

Bulk Cargo Door - Component Index
Figure 101

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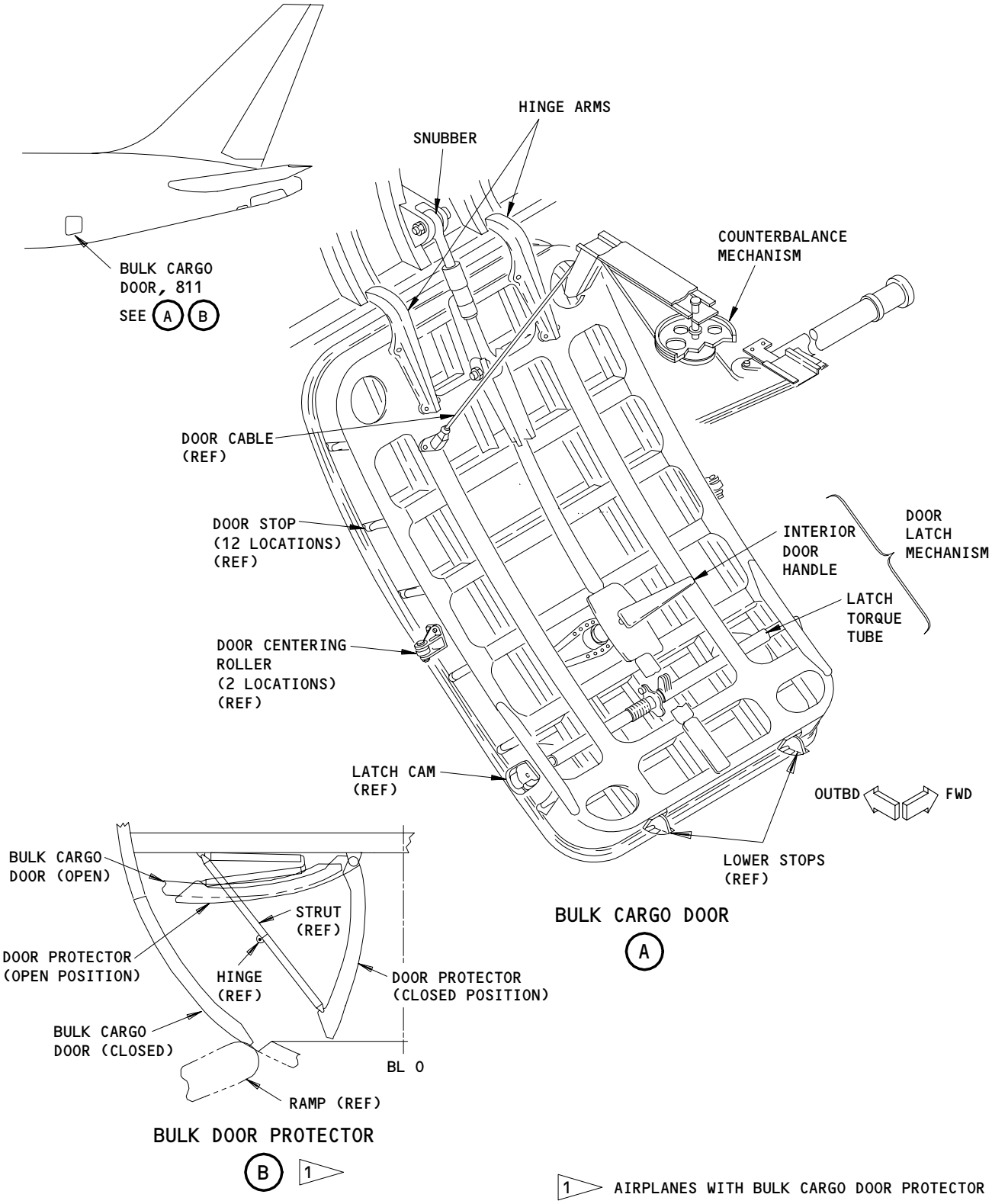

Bulk Cargo Door - Component Index
Figure 102

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BULK CARGO DOOR - MAINTENANCE PRACTICES

1. General
   A. This procedure contains the task to apply corrosion prevention treatment to the bulk cargo door.

TASK 52-36-01-622-001

2. Corrosion Prevention Treatment (Fig. 201)
   A. General
      (1) The cargo doors have a corrosion protective finish that consists of chemical finish (Alodine) on clad aluminum parts, anodize surface treatment on non-clad aluminum parts and a coat of BMS 10-11, Type I, primer. The exterior surface of the doors is unfinished unless otherwise requested by the operator. Aluminum parts are coated with BMS 10-11, Type II, white enamel. All interior surfaces are coated with BMS 3-23, Type II, corrosion preventive compound after assembly and painting.
      (2) Areas of possible corrosion are the internal structure of the door, connection points and mechanisms.
      (3) The bulk cargo door should be treated with corrosion preventive compound at the same time as the door opening.
      (4) Following cleaning of suspected areas (Ref AMM 51-21-03/701), a full inspection is effective to make sure that the protective finishes provided during manufacture stay intact. For details on the application of corrosion preventive compound, refer to AMM 51-24-09/701.
      (5) Corrosion may show as noticeable bulges of the skin or white deposits of corrosion products at fastener heads or joint edges.
      (6) For minor corrosion, to keep the airplane downtime to a minimum, the corrosion products should be cleaned off, followed by the application of a corrosion preventive compound into the affected area to decrease the corrosion process (Ref AMM 51-24-09/701). The finish system should be repaired at the first opportunity consistent with the maintenance schedule.
      (7) Frequency of Application
         (a) Periodic inspection is required to areas identified as susceptible to corrosion and should be consistent to the schedules specified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.
         (b) Periodic application of BMS 3-23 compounds is necessary to areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

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(8) Obey the precautions that follow when you apply the corrosion preventive compound:
  (a) Do not apply corrosion preventive compounds on grease joints or sealed bearings. These compounds dissolve grease and other lubricants. They are penetrating compounds and can get around the seals and into the bearings.
  (b) Do not apply corrosion preventive compounds on interior materials such as cargo liners. The compounds change the flammable quality of these materials.

B. References
(1) AMM 12-21-24/301, Bulk Cargo Door

C. Consumable Materials
(1) G00009 Compound, Organic Corrosion Preventive - BMS3-23, Type II

D. Access
(1) Location Zone
811 Bulk Cargo Door

E. Procedure

S 012-002
(1) Remove liner and gain access to interior structure of the door.

S 622-005
(2) Apply corrosion prevention treatment, do these steps:
  (a) Apply corrosion preventive compound BMS 3-23, Type II, to the interior of the door, giving special attention to the lower corners. Do not apply to drain valves or other operational mechanisms.
  (b) Lubricate the interior door fitting, as necessary (Ref AMM 12-21-24/301).

S 412-006
(3) Install liner and put the door back to its usual condition.

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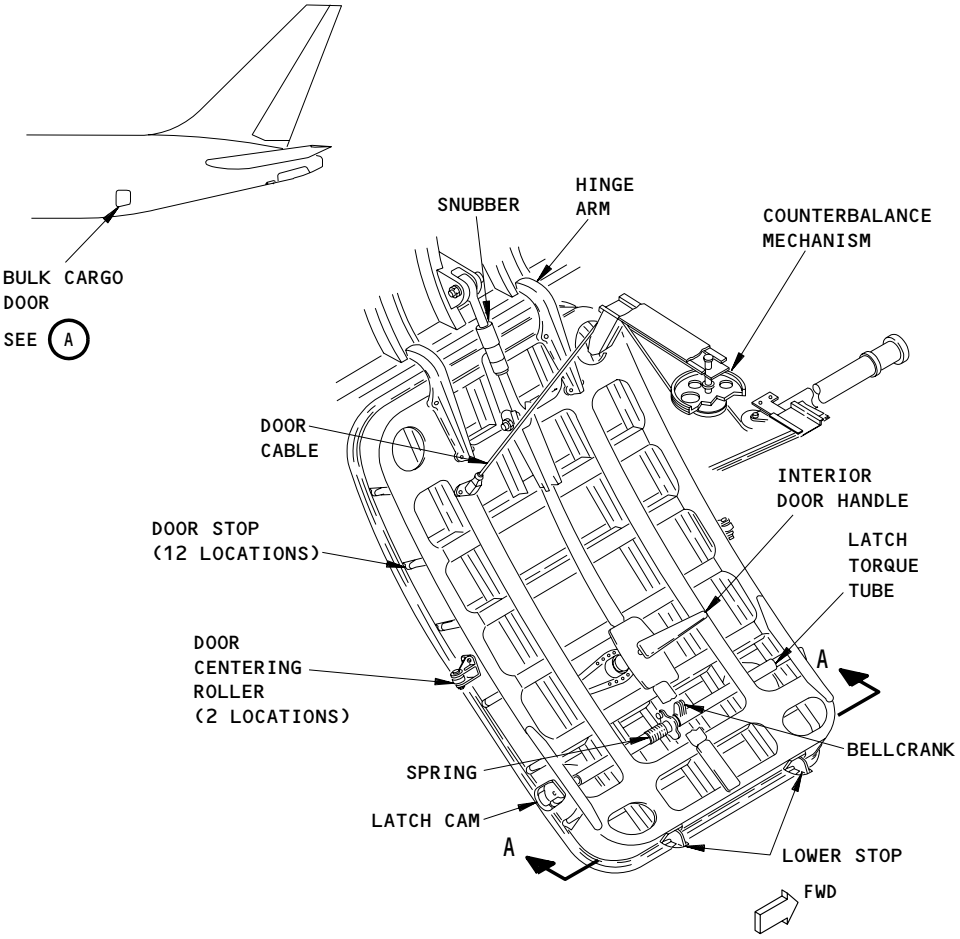
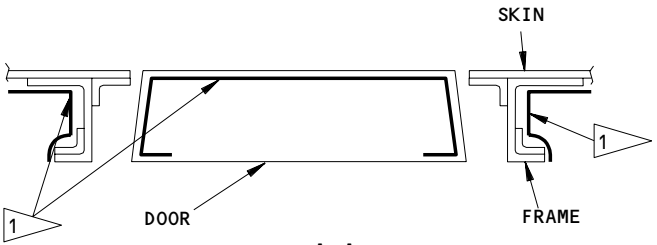


BULK CARGO DOOR
(INTERNAL VIEW)

A



A-A

1 APPLY BMS 3-23, TYPE II CORROSION PREVENTIVE COMPOUND TO STRUCTURAL SURFACES. MASK ALL OPERATIONAL MECHANISMS AND VISIBLE AREAS.

Bulk Cargo Door
Figure 201

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BULK CARGO DOOR - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the bulk cargo door. The second task is the installation of the bulk cargo door.
   B. Refer to AMM 52-71-00/501 for the adjustment and the system test of the proximity sensors for the door warning system.

TASK 52-36-01-004-031

2. Remove the Bulk Cargo Door
   A. Equipment
      (1) Replacement Equipment - Bulk Cargo Door - A52006-1
      (2) PF-51 Hoist, Fishpole
          P.F. Industries
          9320 15th Ave. So.
          Seattle, WA 98108
          (Alternative)

          Minilift Hoist Fishpole
          Didsbury Engineering Co. Ltd.
          Manchester M19 3 EJ
          (Alternative)

          Hoist , Fishpole - Commercially Available
          (Alternative)
      (3) Safety Pin - 0.248 inch diameter by 4.0-inches long (Rig pin A20004-10, part of A20004-78 rig pin set)
   B. References
      (1) AMM 25-55-01/401, Bulk Cargo Compartment Sidewall Lining
      (2) AMM 52-36-03/401, Bulk Cargo Door Snubber
      (3) AIRPLANES WITH BULK CARGO DOOR PROTECTOR; AMM 52-36-10/401, Bulk Cargo Door Protector
   C. Access
      (1) Location Zone
          811 Bulk Cargo Door

   D. Procedure - Remove the Bulk Cargo Door

      S 014-049
      (1) AIRPLANES WITH BULK CARGO DOOR PROTECTOR; Remove the bulk cargo door protector (AMM 52-36-10/401).

      S 014-003
      (2) Remove the door liner panel, sidewall panel above the door, and ceiling panel to get access to the counterbalance mechanism (AMM 25-55-01/401).

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S 414-039
(3) Close the bulk cargo door.

S 094-033

WARNING: DO NOT TRY TO HOLD THE COUNTERBALANCE MECHANISM CABLES WITH BLOCKS AND A C-CLAMP. IF THE CABLES MOVE, THE FAST RETRACTION CAN CAUSE INJURY OR DAMAGE.

(4) Install the safety pin in the spring tube to hold the spring cable in position in the spring tube.

S 864-004
(5) Open the door a small distance to release the tension in the door cable.

S 034-040
(6) Disconnect the door cable from the fitting on the door.

S 864-005
(7) Close the bulk cargo door.

S 034-006
(8) Remove the snubber from the bulk cargo door (AMM 52-36-03/401).

S 494-007
(9) Install the bulk cargo door replacement equipment and the fishpole hoist (Fig. 401). Do the steps that follow:

NOTE: The weight of the bulk cargo door is approximately 130 pounds.

(a) Attach the beam assembly (-2 part of the bulk cargo door replacement equipment) with a clamp on the main deck floor beam.

NOTE: The beam assembly (-2 part of the bulk cargo door replacement equipment) lets the bulk cargo door move laterally and puts the fishpole hoist in the correct position.

(b) Install the carrier assembly (-3 part of the bulk cargo door replacement equipment) on the bulk cargo door.

NOTE: The carrier assembly lifts or lowers the door with a cable.

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S 034-008

(10) Remove the hinge bolts (1), washers (2), and nuts (3) (View A-A, Fig. 401).

S 024-009

(11) Carefully remove the bulk cargo door from the door opening.

S 034-010

(12) If you install a replacement bulk cargo door, do the steps that follow:
   (a) Remove the roller support assemblies, the serrated plate and the shims (View A-A, Fig. 402) temporarily from the sides of the door frame (two locations).
   (b) Remove the centering plates and the shims temporarily from the sides of the door frame (two locations).

TASK 52-36-01-404-011

3. Install the Bulk Cargo Door

A. Equipment

(1) Replacement Equipment - Bulk Cargo Door - A52006-1

(2) PF-51 Hoist, Fishpole
P.F. Industries
9320 15th Ave. So.
Seattle, WA 98108
(Alternative)

Minilift Hoist Fishpole
Didsbury Engineering Co. Ltd.
Manchester M19 3 EJ
(Alternative)

Hoist , Fishpole - Commercially Available
(Alternative)

(3) Safety Pin - 0.248 inch diameter by 4.0-inches long (Rig pin A20004-10, part of A20004-78 rig pin set)

B. Consumable Materials

(1) C00064 Alodine 1000 (clear) - MIL-C-5541

C. Parts

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AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Bolt	52-36-01	05	45
	2	Washer			50
	3	Nut			55

D. References
(1) AMM 25-55-01/401, Bulk Cargo Compartment Sidewall Lining
(2) AMM 51-21-04/701, Alodine Coating
(3) AMM 52-36-03/401, Bulk Cargo Door Snubber
(4) AIRPLANES WITH BULK CARGO DOOR PROTECTOR;
AMM 52-36-10/401, Bulk Cargo Door Protector
(5) AMM 52-71-00/501, Door Warning System Proximity Sensors

E. Access
(1) Location Zone
811 Bulk Cargo Door

F. Procedure - Install the Bulk Cargo Door

S 494-034
(1) Attach the bulk cargo door replacement equipment to the main deck floor beam and the cargo door (Fig. 401).

S 024-036
(2) Remove the spring locks at all the stop pins.

S 494-035
(3) Use the fishpole hoist to put the bulk cargo door in the door opening and make the centers of the stop pins touch the centers of the stop pads in a 0.20 inch (5.1 mm) diameter circle (Views C and C-C, Fig. 401).

S 354-012
(4) Remove the unwanted skin around the top, sides, and bottom of the door to get the correct skin clearances between the fuselage skin and the door skin (Fig. 403). Break the sharp edges after the door skin removal.

S 374-015
(5) Apply the clear alodine with a brush to the edges of the bulk cargo door where you removed the unwanted skin (AMM 51-21-04/701).

S 434-016
(6) Install the door hinge bolts (1), washers (2), and nuts (3) (View A-A, Fig. 401).

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S 214-017
(7) With the door in the closed position, make sure the flushness of the door is correct (Fig. 404).

TABLE 401
BULK CARGO DOOR DEVIATIONS

EFFECTIVITY	ZONE	FLUSHNESS *[1] INCH (mm)	CLEARANCE INCH (mm)
SAS 157	A	NONE	0.07 to 0.19 (1.8 to 4.8)
	B	NONE	0.20 to 0.32 (5.1 to 8.1)
SAS 277	A	NONE	0.07 to 0.19 (1.8 to 4.8)
	B	NONE	0.20 to 0.31 (5.1 to 7.9)
SAS 280	B	-0.03 +0.00/-0.14 (-0.76 +0.0/-3.6)	NONE

*[1] A negative flushness shows the door is inboard of the fuselage contour. A positive flushness shows the door is outboard of the fuselage contour. All dimensions are in inches.

S 824-045
(8) Adjust the shims under the hinge arm attach points to get the correct flushness (Fig. 404).

NOTE: The total shim thickness permitted is 0.19 inch (4.8 mm). Install a maximum of one shim (View A-A, Fig. 401) to get the flushness shown (Fig. 404).

S 094-018
(9) Remove the sling and the fishpole hoist.

S 434-019
(10) Install the forward and aft centering plates with the shims.

S 824-037
(11) Adjust the laminated shims to keep the tolerance (View A, Fig. 402).

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S 434-020

(12) Install the forward and aft latch rollers. Adjust the latch rollers to get the clearances shown in Views A-A and B-B, Fig. 402.

S 824-021

(13) To adjust the stop pins do the steps that follow:
  (a) Close and latch the bulk cargo door.
  (b) Adjust the stop pins outboard to touch the stop pads (View C, Fig. 401).
  (c) Turn back the stop pins to the first alignment slot in the pin and the bushing.
  (d) Do a check on the door handle torque. Do the steps that follow:
    1) Make sure the door locks with a maximum of 300 pound-inches (34 Nm) torque put on the inner or outer handle.
    2) Make sure the door unlocks with no less than 150 pound-inches (17 Nm) torque put on one of the two handles.
  (e) If you cannot get the minimum torque values, turn in the lower two stop pins one notch (one-sixth of a turn) and do a check on the handle torque again.
  (f) If you cannot get the minimum torque value, turn screw in the lower two stop pins one notch and do a check on the handle torque again.
  (g) Make sure the clearance shown in View C, Fig. 401 is not more than 0.01 inch (0.25 mm) maximium.
  (h) Install the spring locks on all 12 stop pins.
  (i) Add or remove the shims on the lower stops to get the correct clearances (View B-B, Fig. 401).

S 864-022

WARNING: DO NOT REMOVE THE SAFETY PIN OR THE SPRING REMOVAL/INSTALLATION CLAMP EQUIPMENT WHICH HOLDS THE SPRING CABLE IN THE SPRING TUBE UNTIL THE DOOR CABLE IS CONNECTED TO THE BULK CARGO DOOR. A STRONG FORCE IS ON THE CABLES AND THE CABLES WILL RETRACT FAST IF NOT CORRECTLY HELD. THIS FAST MOVEMENT OF THE CABLES CAN CAUSE INJURY.

(14) Connect the door cable to the bulk cargo door.

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S 214-023

CAUTION: DO A CHECK ON THE PULLEYS, CABLE TERMINAL ENDS, AND CABLE DRUM FOR THE CORRECT ENGAGEMENT OF THE COUNTERBALANCE MECHANISM CABLES. INCORRECT CABLE ENGAGEMENT CAN CAUSE DAMAGE TO THE COUNTERBALANCE MECHANISM COMPONENTS.

(15) Install the door snubber (AMM 52-36-03/401).

S 414-024

(16) Close the bulk cargo door to release the force on the safety pin or the spring removal/installation clamp equipment.

S 094-032

WARNING: MAKE SURE THE COUNTERBALANCE MECHANISM CABLES ARE FULLY ENGAGED ON THE CABLE DRUM AND THE PULLEYS. MAKE SURE THE DOOR CABLE IS CONNECTED TO THE DOOR BEFORE YOU REMOVE THE SAFETY PIN. THE FAST RETRACTION OF THE CABLES CAN CAUSE INJURY OR DAMAGE.

(17) Remove the safety pin or the spring removal/installation clamp equipment.

S 414-025

(18) Install the door liner panel, sidewall liner panel over the door, and ceiling panel that puts a cover on the counterbalance mechanism (AMM 25-55-01/401).

S 864-026

(19) Do a check on the seal installation. Do the steps that follow:
- (a) Close the bulk cargo door and monitor the seal.
- (b) Make sure the seal makes a flat surface and does not turn or move under.
- (c) If the seal starts to move under, pull the seal material into the corners from the sides.
- (d) Do a check on the door close operation 6 to 8 times to make sure the seal operates correctly.

NOTE: A small wave in the seal not more than 0.10 inch (2.5 mm) in total height is permitted if the seal makes a flat surface when the door is closed and the seal does not turn under.

S 864-027

(20) Do a check on the door handle torque again.

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S 424-047

(21) AIRPLANES WITH BULK CARGO DOOR PROTECTOR;
Install the bulk cargo door protector (AMM 52-36-10/401).

S 864-030

(22) Do a check on the door warning system for the correct switch operation. Adjust the door warning system if it is necessary (AMM 52-71-00/501).

S 214-044

(23) AIRPLANES WITH ALIGNMENT MARKS ON THE INTERIOR DOOR HANDLE;
Make sure the alignment marks are aligned (Fig. 405).

NOTE: The alignment marks are to show a visual indication that the interior door handle is fully closed.

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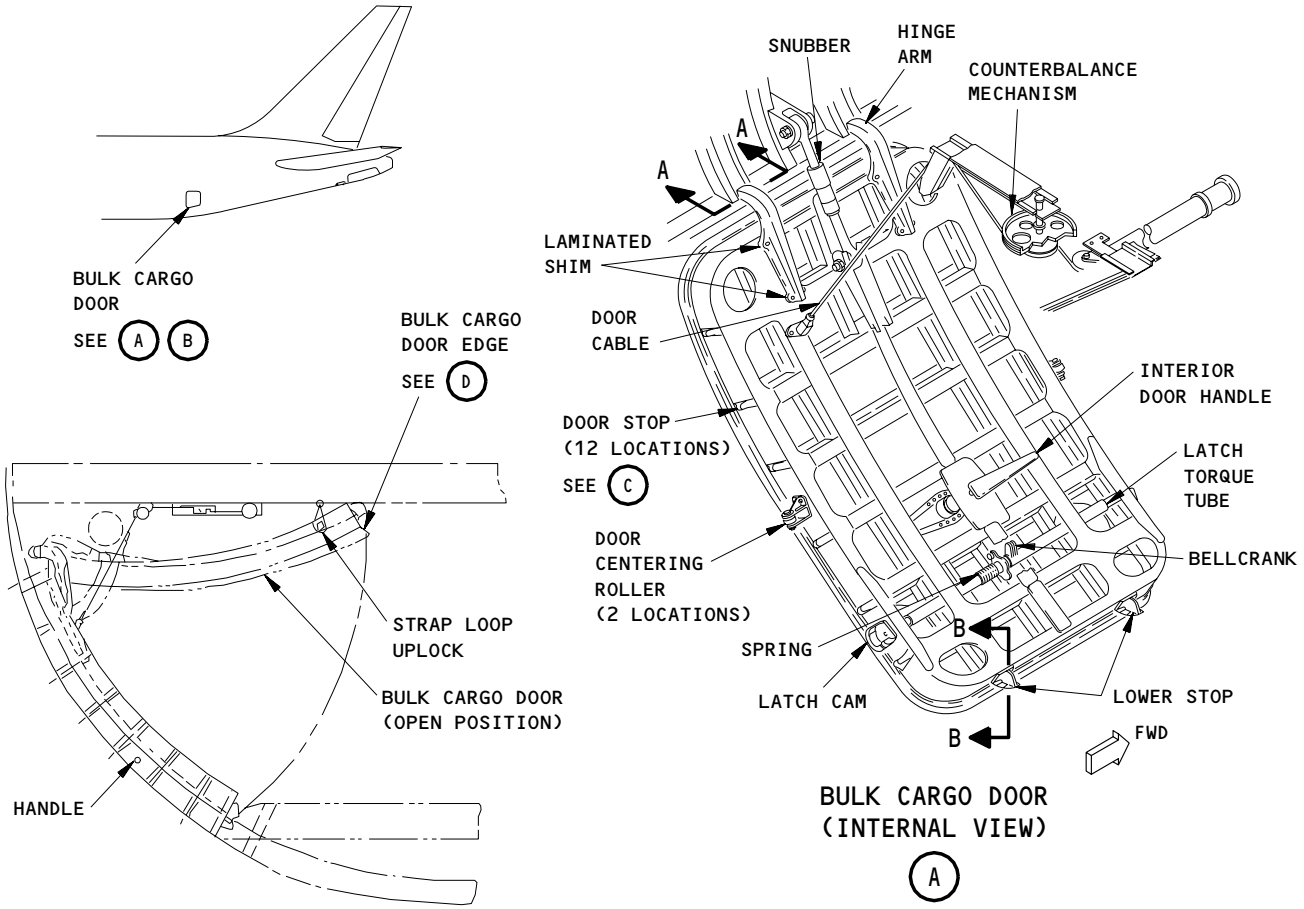

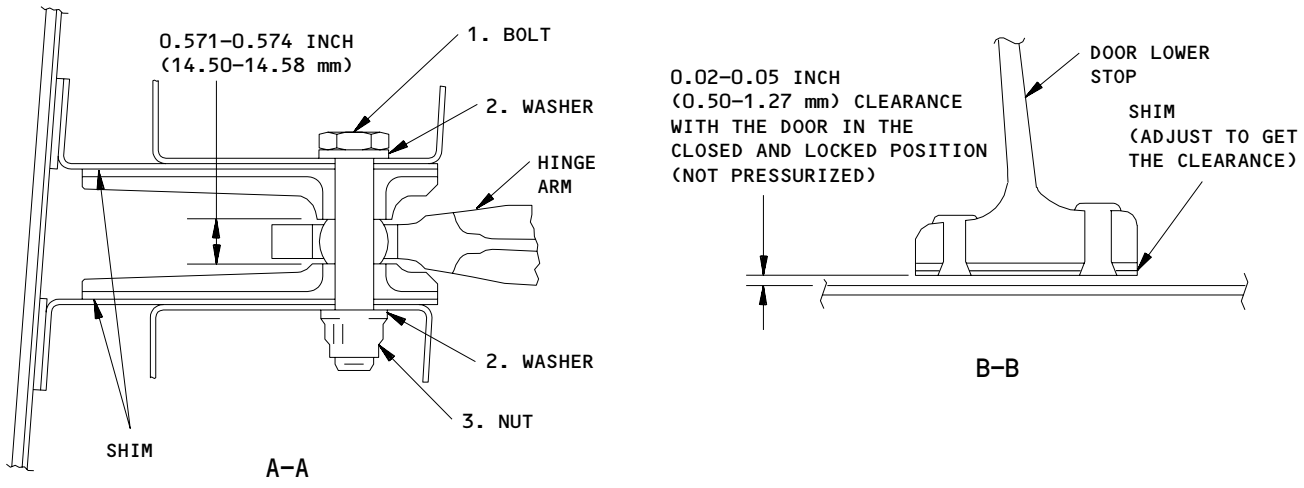

Bulk Cargo Door Installation
Figure 401 (Sheet 1)

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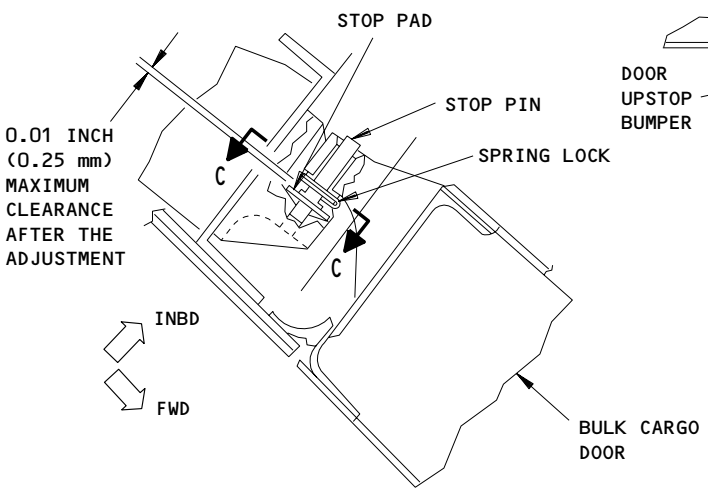
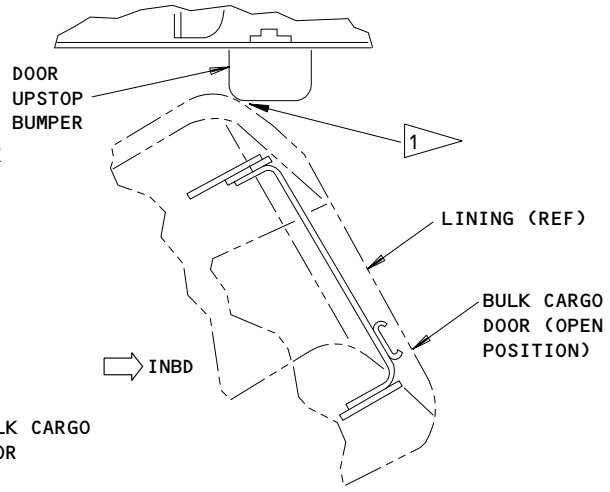


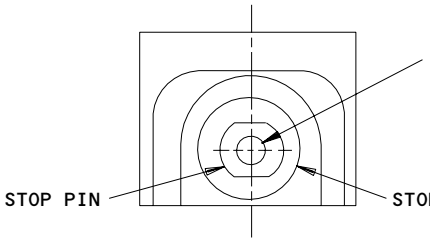
DOOR STOP

C

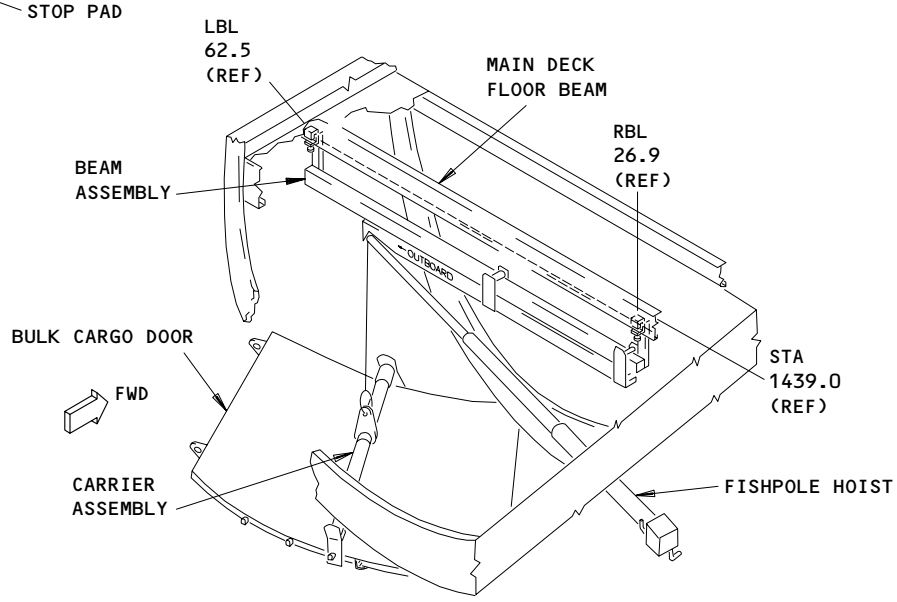


BULK CARGO DOOR EDGE

D



C–C



1 IT IS ACCEPTABLE FOR THE DOOR TO TOUCH THE BUMPER.

BULK CARGO DOOR REPLACEMENT EQUIPMENT
(INSTALLED ON THE DOOR)

Bulk Cargo Door Installation
Figure 401 (Sheet 2)

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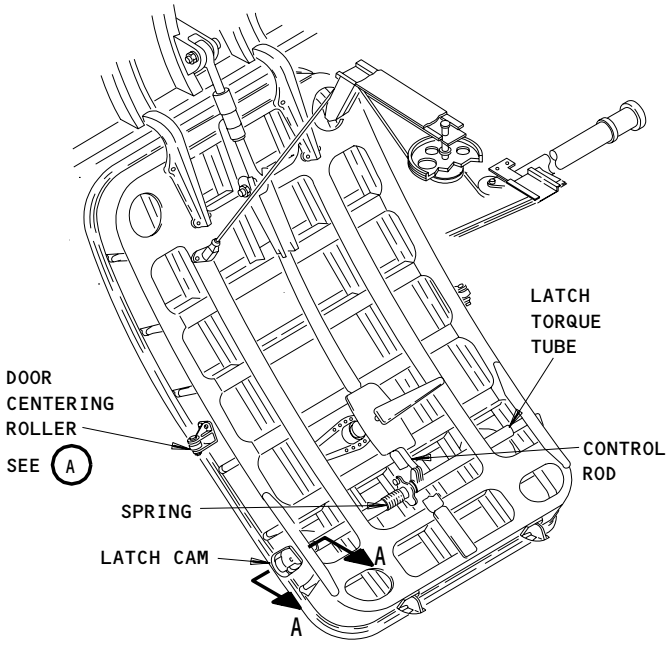
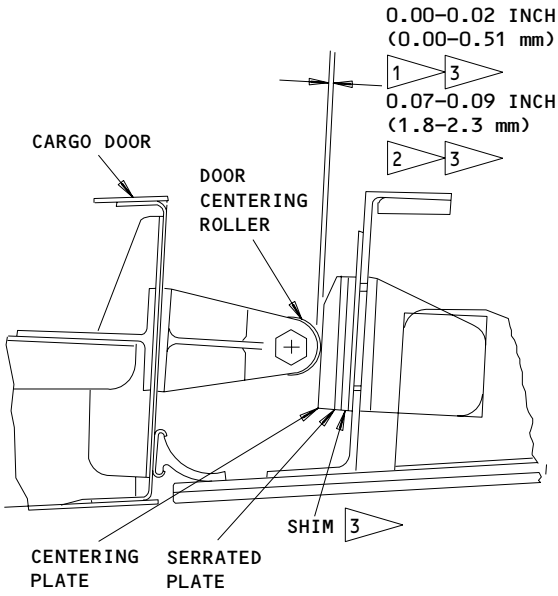
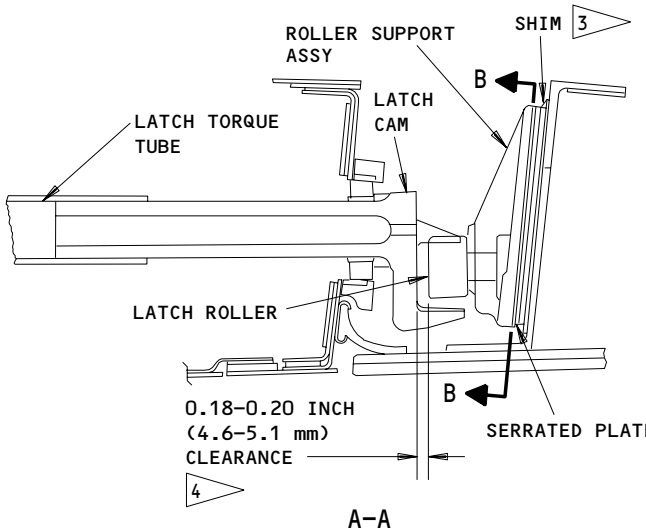
49814

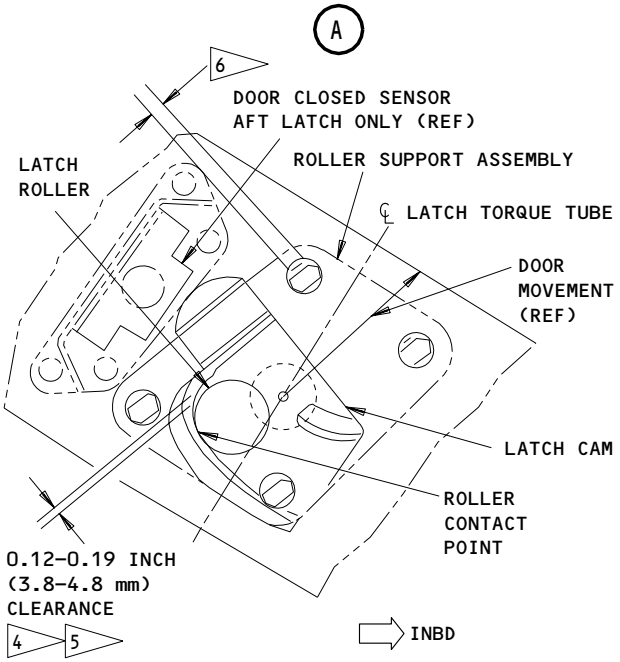




DOOR CENTERING ROLLER



A–A



B–B

1 AFT CENTERING ROLLER INSTALLATION

2 FORWARD CENTERING ROLLER INSTALLATION

3 ADJUST SHIM AS NECESSARY TO GET THE CORRECT CLEARANCE

4 DOOR IN THE CLOSED AND LOCKED POSITION AND NOT PRESSURIZED

5 ADJUST THE LENGTH OF THE CONTROL ROD TO CHANGE THE POSITION OF THE LATCH CAM

6 0.25 INCH (6.4 mm) ADJUSTMENT AVAILABLE, ADJUST THE ROLLER SUPPORT ASSEMBLY ON THE SERRATED PLATE (THE LATCH ROLLER WILL TOUCH THE LATCH CAM 4)

Centering Roller and Latch Cam Adjustment
Figure 402

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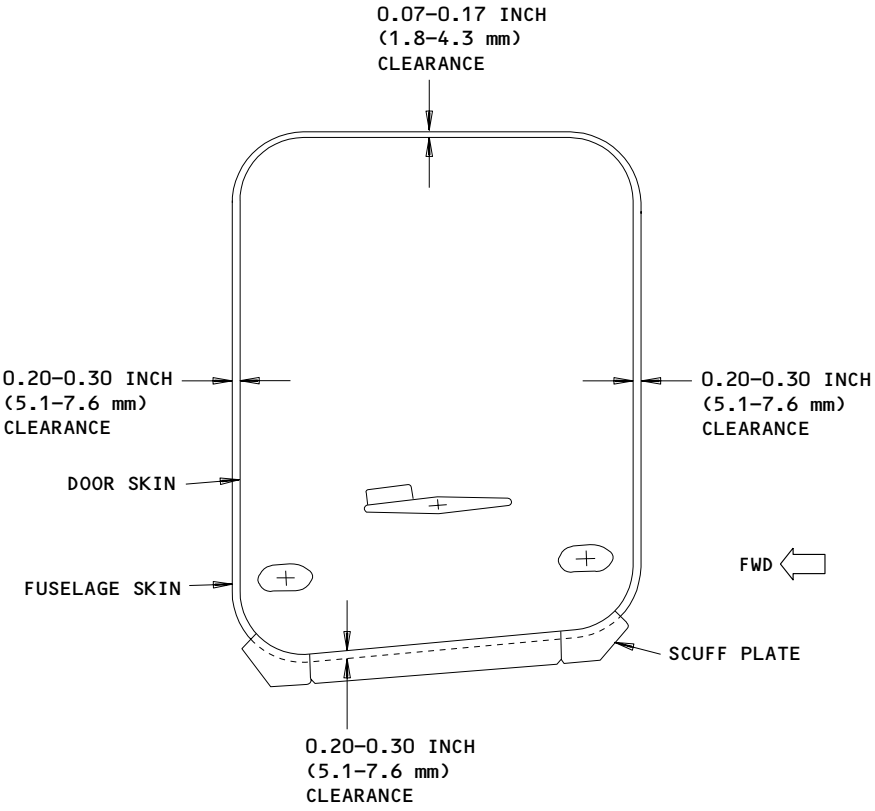
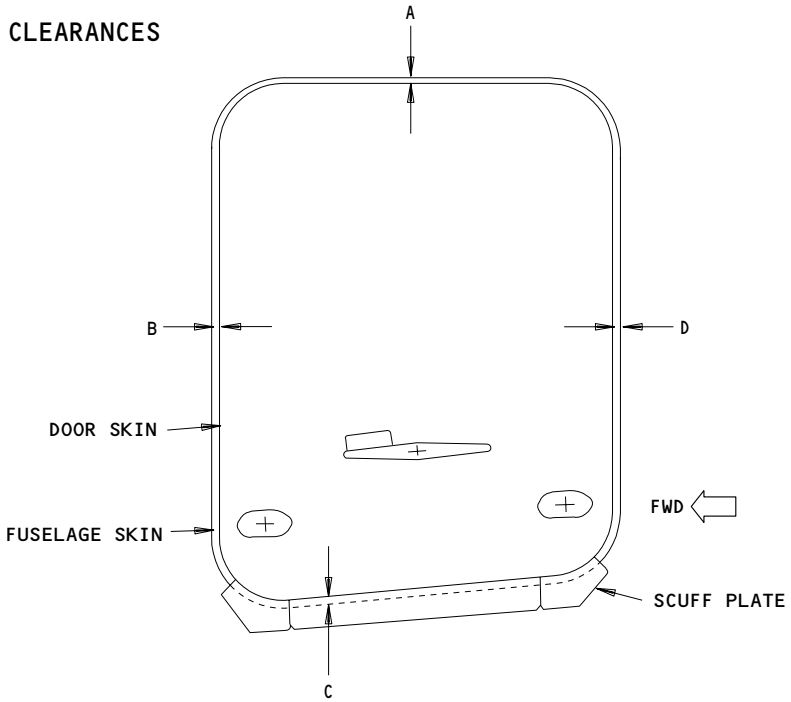


BULK CARGO DOOR SKIN CLEARANCES



NOTE: REFER TO TABLE 401 FOR THE BULK CARGO DOOR DEVIATIONS.

BULK CARGO DOOR DEVIATIONS

Bulk Cargo Door Skin Clearances
Figure 403

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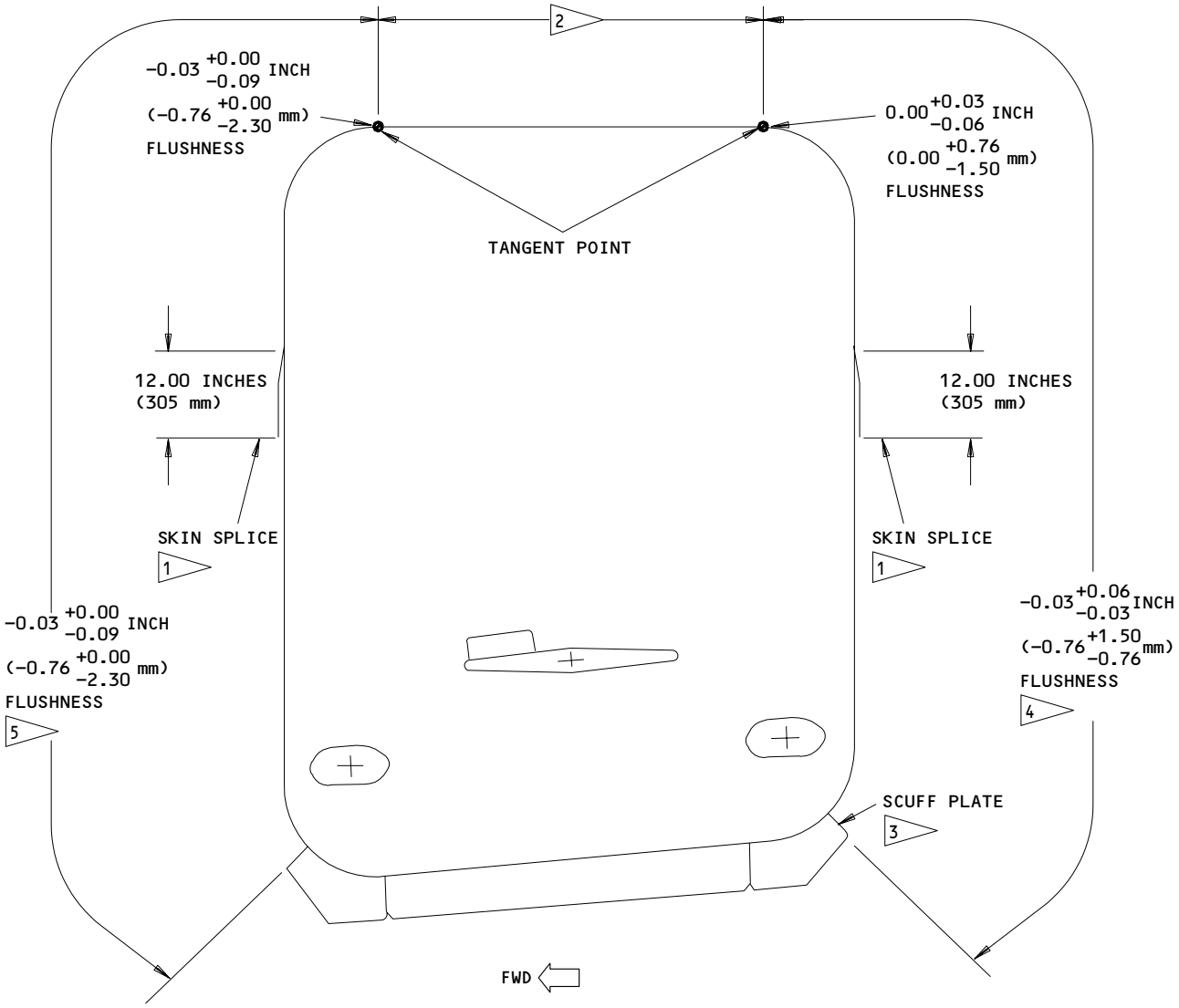

BULK CARGO DOOR FLUSHNESS TOLERANCES

NOTE: A NEGATIVE TOLERANCE FOR THE FLUSHNESS SHOWS THE DOOR IS INBOARD OF THE FUSELAGE CONTOUR.

1 THE FLUSHNESS TOLERANCES ARE NOT APPLICABLE IN THE SKIN SPLICE.

2 THERE IS A SMOOTH TRANSITION OF THE FLUSHNESS TOLERANCES BETWEEN THE TANGENT POINTS IN THIS AREA.

3 THE FLUSHNESS TOLERANCES ARE NOT APPLICABLE IN THE AREA OF THE SCUFF PLATE.

4 20% OF THE LENGTH OF THE AFT EDGE IS PERMITTED TO HAVE A FLUSHNESS +0.02 INCH (0.51 mm) MORE THEN THE TOLERANCE SHOWN.

5 20% OF THE LENGTH OF THE FORWARD EDGE IS PERMITTED TO HAVE A FLUSHNESS −0.02 INCH (0.51 mm) LESS THEN THE TOLERANCE SHOWN.

Bulk Cargo Door Flushness Tolerances
Figure 404 (Sheet 1)

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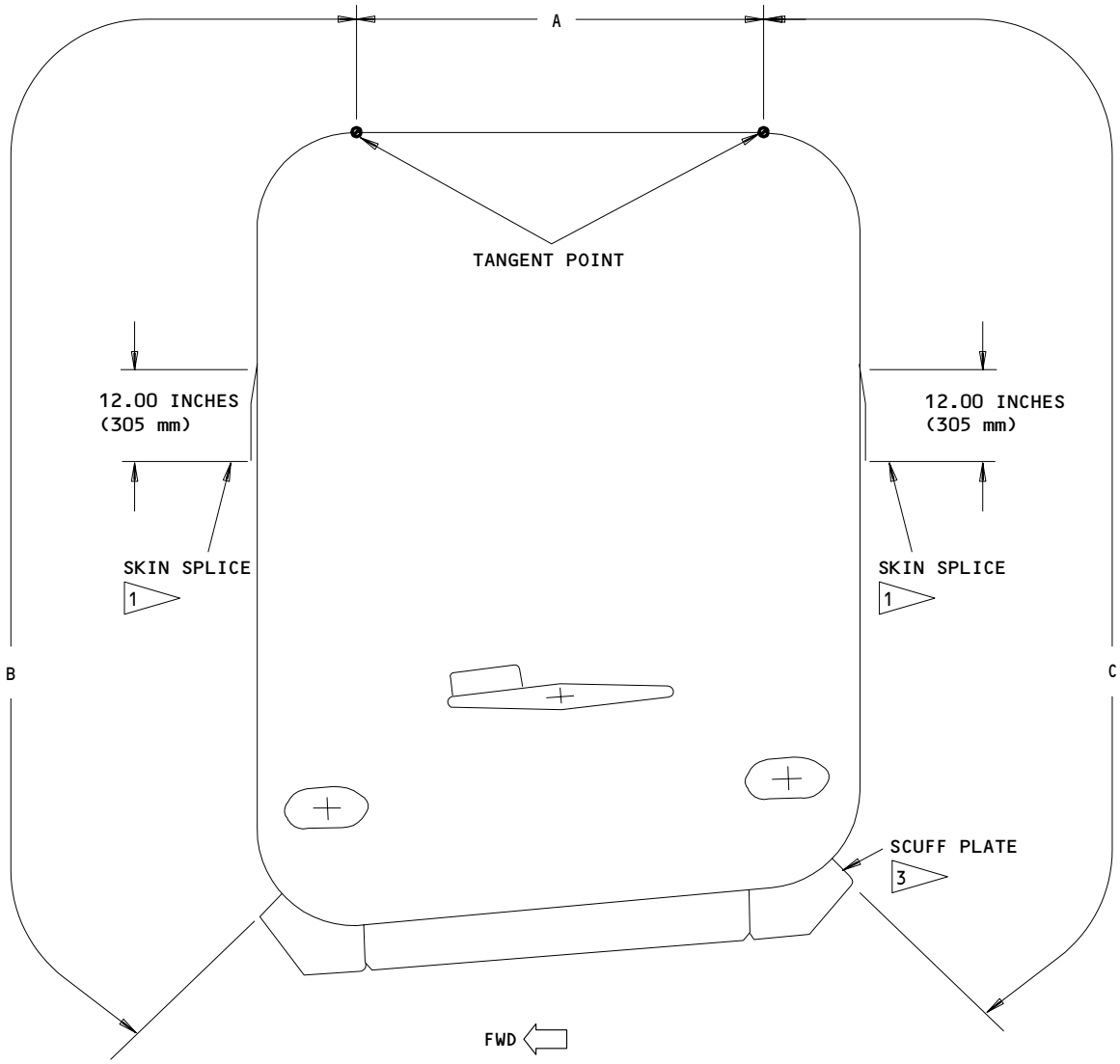

BULK CARGO DOOR DEVIATIONS

NOTE: REFER TO TABLE 401 FOR THE BULK CARGO DOOR DEVIATIONS.

Bulk Cargo Door Flushness Tolerances
Figure 404 (Sheet 2)

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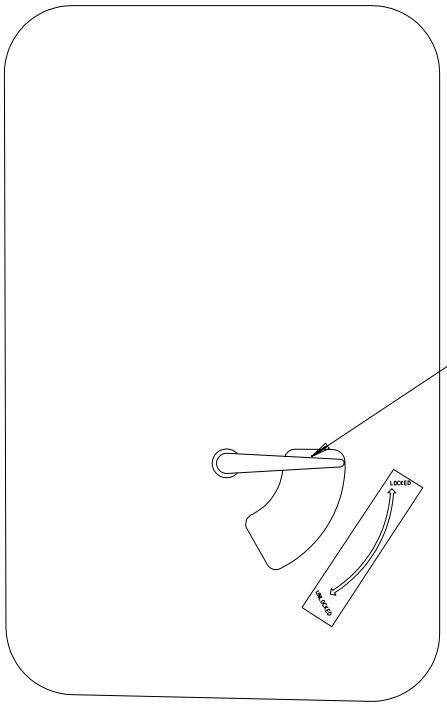
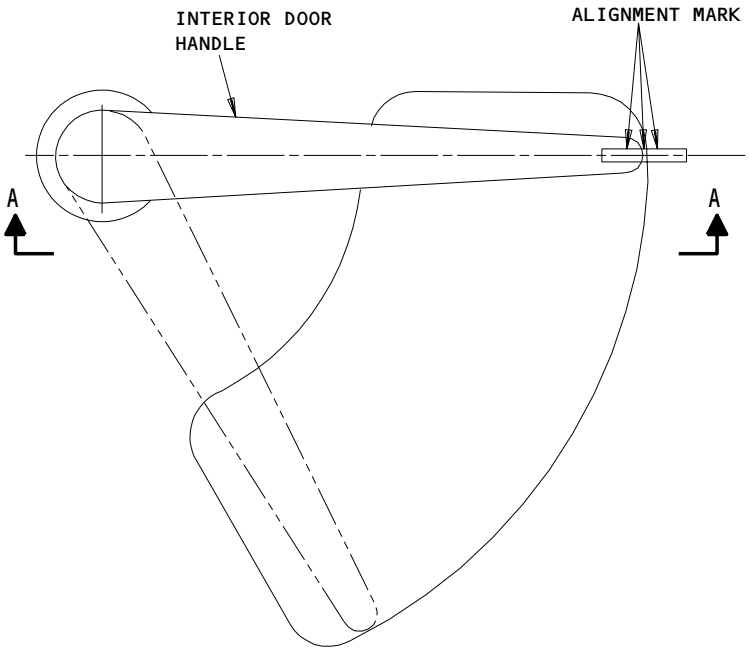
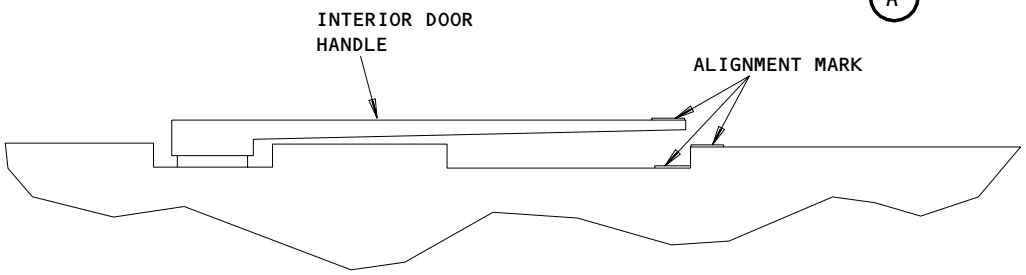


BULK CARGO DOOR
(INTERNAL VIEW)



INTERIOR DOOR HANDLE
A



A-A

Alignment Marks
Figure 405

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BULK CARGO DOOR COUNTERBALANCE MECHANISM - REMOVAL/INSTALLATION

1. General
   A. This procedure contains these tasks:
      (1) A removal of the counterbalance mechanism assembly.
      (2) An installation of the counterbalance mechanism assembly.
      (3) A removal of the counterbalance mechanism.
      (4) An installation of the counterbalance mechanism.
   B. The counterbalance mechanism has a spring tube, a cable drum, and two cables. One of the cables is between the spring tube and the cable drum and the other is between the cable drum and the door. Release the tension in the cables before you remove the components.

TASK 52-36-02-004-027

2. Counterbalance Mechanism Assembly Removal (Figs. 401 and 402)
   A. Equipment
      (1) Safety Pin - 0.248 inch diameter by 4.0 inches long (Rig pin A20004-10, part of A20004-78 rig pin set)
   B. References
      (1) AMM 52-36-01/401, Bulk Cargo Door
   C. Access
      (1) Location Zone
          811 Bulk Cargo Door

   D. Removal

      S 864-052
      (1) Close and latch the bulk cargo door.

      S 494-028

      WARNING: DO NOT TRY TO HOLD THE COUNTERBALANCE MECHANISM CABLES WITH BLOCKS AND A C-CLAMP. IF THE CABLES MOVE, THE FAST RETRACTION CAN CAUSE INJURY OR DAMAGE.

      (2) Install the safety pin in the spring tube (4) (Fig. 402).

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S 034-063

WARNING: MAKE SURE THAT THE SNUBBER IS INSTALLED ON THE DOOR AND THE FUSELAGE BEFORE YOU REMOVE THE COUNTERBALANCE MECHANISM CABLES. IF THE SNUBBER IS NOT INSTALLED, THE DOOR CAN FALL AND CAUSE DAMAGE AND INJURY.

(3) Remove the door cable (2) from the attach fitting on the door as follows:
   (a) Unlatch and lift the door a small distance to release the cable tension.
   (b) Remove bolt (10), washer (11), washers (12), and nut (13) that attach the door cable (2) to the attach fitting on the door.
   (c) Remove the door cable (2) from the attach fitting on the door.

S 864-030

(4) Close and latch the bulk cargo door.

S 024-053

(5) Remove the bolts (14), washers (15), and nuts (16) that attach the brackets (17) on the counterbalance mechanism assembly to the bottom of the floor beams.

S 864-054

(6) Lower the counterbalance mechanism assembly and remove from the airplane.

TASK 52-36-02-404-037

3. Counterbalance Mechanism Assembly Installation (Figs. 401 and 402)
   A. Equipment
      (1) Safety Pin - 0.248 inch diameter by 4.0 inches long (Rig pin A20004-10, part of A20004-78 rig pin set)
   B. Access
      (1) Location Zone
          811 Bulk Cargo Door

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C. Installation

S 864-056

WARNING: BE CAREFUL WHEN YOU WORK NEAR THE OPEN BULK CARGO DOOR WHEN THE COUNTERBALANCE MECHANISM IS DISCONNECTED. IF YOU ACCIDENTALLY SHAKE THE DOOR, THE STRAP LOOP UPLOCK CAN MOVE AND LET THE DOOR FALL. THIS CAN CAUSE INJURY TO PERSONS.

MAKE SURE THAT THE SNUBBER IS INSTALLED ON THE DOOR AND THE FUSELAGE BEFORE YOU REMOVE THE COUNTERBALANCE MECHANISM CABLES. IF THE SNUBBER IS NOT INSTALLED, THE DOOR CAN FALL AND CAUSE DAMAGE AND INJURY.

(1) Make sure the bulk cargo door is closed and latched.

S 864-058

(2) Lift the counterbalance mechanism assembly and hold in its correct position.

S 424-059

(3) Install the bolts (14), washers (15), and nuts (16) to attach the brackets (17) of the counterbalance mechanism assembly to the bottom of the floor beams.

S 434-064

WARNING: DO NOT REMOVE THE SAFETY PIN FROM THE SPRING TUBE BEFORE THE COUNTERBALANCE MECHANISM CABLES ARE FULLY ENGAGED AND CONNECTED. THERE IS A VERY STRONG FORCE ON THE SPRING THAT CAN CAUSE INJURY OR DAMAGE.

(4) Connect the door cable (2) to the attach fitting on the door as follows:
(a) Unlatch and lift the bulk cargo door a small distance.

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(b) Install the bolt (10), washer (11), washers (12), and nut (13) to connect the door cable (2) to the attach fitting on the door.

S 864-045

CAUTION: DO A CHECK ON THE PULLEYS, CABLE TERMINAL ENDS, AND CABLE DRUM TO MAKE SURE THE CABLE IS ENGAGED CORRECTLY. IF THE CABLE IS INCORRECTLY ENGAGED, DAMAGE TO THE COUNTERBALANCE MECHANISM CAN OCCUR.

(5) Close and latch the bulk cargo door to compress the spring in the spring tube (4).

S 094-046

WARNING: MAKE SURE THAT THE COUNTERBALANCE MECHANISM CABLES ARE FULLY ENGAGED ON THE CABLE DRUM AND THE PULLEYS. MAKE SURE THE COUNTERBALANCE MECHANISM CABLES ARE CONNECTED TO THE DOOR BEFORE YOU REMOVE THE SAFETY PIN. THE FAST RETRACTION OF THE CABLES CAN CAUSE INJURY OR DAMAGE.

(6) Remove the safety pin from the spring tube (4).

S 714-077

(7) Do a check of the operation of the counterbalance mechanism (AMM 52-36-02/501).

TASK 52-36-02-004-001

4. Counterbalance Mechanism Removal (Figs. 401 and 402)

A. Equipment

(1) Red streamer

(2) Safety Pin - 0.248 inch diameter by 4.0 inches long (Rig pin A20004-10, part of A20004-78 rig pin set)

(3) Bulk Cargo Door Spring Removal/Installation Clamp Equipment - A52010-51 (recommended)

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(4) Bulk Cargo Door Spring Removal/Installation Clamp Equipment - A52010-50 (optional)

B. References

(1) AMM 52-36-01/401, Bulk Cargo Door

C. Access

(1) Location Zone

811 Bulk Cargo Door

D. Removal

S 494-003

WARNING: DO NOT TRY TO HOLD THE COUNTERBALANCE MECHANISM CABLES WITH BLOCKS AND A C-CLAMP. IF THE CABLES MOVE, THE FAST RETRACTION CAN CAUSE INJURY OR DAMAGE.

(1) With the bulk cargo door in the closed position, install the safety pin in the spring tube (4) (Fig. 402).

S 034-021

WARNING: MAKE SURE THAT THE SNUBBER IS INSTALLED ON THE DOOR AND THE FUSELAGE BEFORE YOU REMOVE THE COUNTERBALANCE MECHANISM CABLES. IF THE SNUBBER IS NOT INSTALLED, THE DOOR CAN FALL AND CAUSE DAMAGE AND INJURY.

(2) Remove the door cable (2) from the attach fitting on the door as follows:

(a) Unlatch and lift the door to release the cable tension.

(b) Remove bolt (10), washer (11), washers (12), and nut (13) that attach the door cable (2) to the attach fitting on the door.

(c) Remove the door cable (2) from the attach fitting on the door.

S 864-006

(3) Close and latch the bulk cargo door.

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S 944-024

(4) If you keep the door in the open position, make sure the strap loop uplock is installed over the lower door stop (AMM 52-36-01). Attach a red streamer.

S 034-007

(5) Remove the cable guard (18) from the pulley bracket (19) as follow:
(a) Remove screw (22), spacer (21), washer (23), and nut (24) from the pulley bracket (19).

NOTE: The screw, spacer, washer and nut are installed on the pulley bracket to form a cable guard.

S 034-008

(6) Remove the cable (2) from the cable drum (3).

S 034-072

(7) Remove the spring cable (33) from the cable drum (3).

S 034-009

(8) Remove the bracket attach bolts (6) on the lower support bracket (9).

S 034-010

(9) Remove the nut (7) that holds the lower support bracket (9) and the cable drum (3) to the shaft bolt to remove the cable drum (3) and the lower support bracket (9).

S 034-011

WARNING: DO NOT REMOVE THE SAFETY PIN FROM THE SPRING TUBE. THERE IS A VERY STRONG FORCE ON THE SPRING THAT CAN CAUSE INJURY OR DAMAGE.

(10) Remove the bolts (20) at the pulley end of the spring tube (4) and disconnect the clamp (5) at the other end to remove the spring tube (4).

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TASK 52-36-02-404-012

5. Counterbalance Mechanism Installation (Figs. 401 and 402)

A. Equipment

(1) Red streamer

(2) Safety Pin - 0.248 inch diameter by 4.0 inches long (Rig pin A20004-10, part of A20004-78 rig pin set)

(3) Bulk Cargo Door Spring Removal/Installation Clamp Equipment - A52010-51 (recommended)

(4) Bulk Cargo Door Spring Removal/Installation Clamp Equipment - A52010-50 (optional)

(5) Spring Puller - Commercially available

B. References

(1) AMM 52-36-02/501, Bulk Cargo Door Counterbalance Mechanism

C. Access

(1) Location Zone

811 Bulk Cargo Door

D. Installation

S 864-013

WARNING: DO NOT TRY TO HOLD THE COUNTERBALANCE MECHANISM CABLES WITH BLOCKS AND A C-CLAMP. IF THE CABLES MOVE, THE FAST RETRACTION CAN CAUSE INJURY OR DAMAGE.

(1) If the springs in the spring tube (4) are not held in the compressed position, do the steps that follow to compress and hold the springs:

NOTE: Spring compression is necessary to make the cable extend outside the spring tube sufficiently to let the spring cable (33) attach to the cable drum.

(a) Remove the spring tube cover (31) and the guard (32).

WARNING: BE VERY CAREFULL WHEN YOU INSTALL THE BULK CARGO DOOR SPRING REMOVAL/INSTALLATION CLAMP EQUIPMENT AND THE SPRING PULLER ON THE SPRING TUBE. THE COMPRESSED SPRINGS CONTAIN SUFFICIENT ENERGY TO CAUSE INJURY OR DAMAGE. USE AN APPROVED EYE PROTECTION DEVICE.

(b) Use the spring removal/installation clamp equipment and the spring puller to compress the spring sufficiently to install the safety pin. Install the safety pin, release the tension on the spring puller, and remove the clamp equipment and the spring puller.

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S 434-014

(2) To install the spring tube (4), put the clamp (5) around the tube and over the support bracket. Install the bolts (20) at the pulley end of the spring tube (4), then tighten the clamp (5).

S 434-015

(3) Install the cable drum (3) and the lower support bracket (9) on the shaft bolt. Install the bracket to the support channel at the outboard end and to the cable pulley guard bracket at the aft end. Attach the cable drum (3) and the lower support bracket (9) to the shaft bolt with the nut (7) and the washer (8).

S 434-016

(4) Put the cable (2) and the spring cable (33) around the cable drum (3).

S 434-025

(5) Install the cable end fittings into the slots on the cable drum (3) and attach with the retention clips (27), bolts (25), washers (26) and nuts (28).
   (a) Make sure you install the bolt (25), washer (26) and nut (28) as shown in Fig. 401.

S 434-017

(6) Install the cable guard (18) on the pulley bracket (19) as follow:
   (a) Install the screw (22), spacer (21), washer (23), and nut (24) on the pulley bracket (19).

   NOTE: The screw, spacer, washer and nut are installed on the pulley bracket to form a cable guard.

S 434-002

WARNING: DO NOT REMOVE THE SAFETY PIN FROM THE SPRING TUBE BEFORE THE COUNTERBALANCE MECHANISM CABLES ARE FULLY ENGAGED AND CONNECTED. THERE IS A VERY STRONG FORCE ON THE SPRING THAT CAN CAUSE INJURY OR DAMAGE.

(7) Connect the door cable end to the attach fitting on the door as follows:
   (a) Lift the bulk cargo door.

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(b) Install the bolt (10), washer (11), washers (12), and nut (13) to connect the door cable (2) to the attach fitting on the door.

S 864-018

CAUTION: DO A CHECK ON THE PULLEYS, CABLE TERMINAL ENDS, AND CABLE DRUM TO MAKE SURE THE CABLE IS ENGAGED CORRECTLY. IF THE CABLE IS INCORRECTLY ENGAGED, DAMAGE TO THE COUNTERBALANCE MECHANISM CAN OCCUR.

(8) Close and latch the bulk cargo door to compress the spring in the spring tube (4).

S 094-004

WARNING: MAKE SURE THAT THE COUNTERBALANCE MECHANISM CABLES ARE FULLY ENGAGED ON THE CABLE DRUM AND THE PULLEYS. MAKE SURE THE COUNTERBALANCE MECHANISM CABLES ARE CONNECTED TO THE DOOR BEFORE YOU REMOVE THE SAFETY PIN. THE FAST RETRACTION OF THE CABLES CAN CAUSE INJURY OR DAMAGE.

(9) Remove the safety pin from the spring tube (4).

S 714-076

(10) Do a check of the operation of the counterbalance mechanism (AMM 52-36-02/501).

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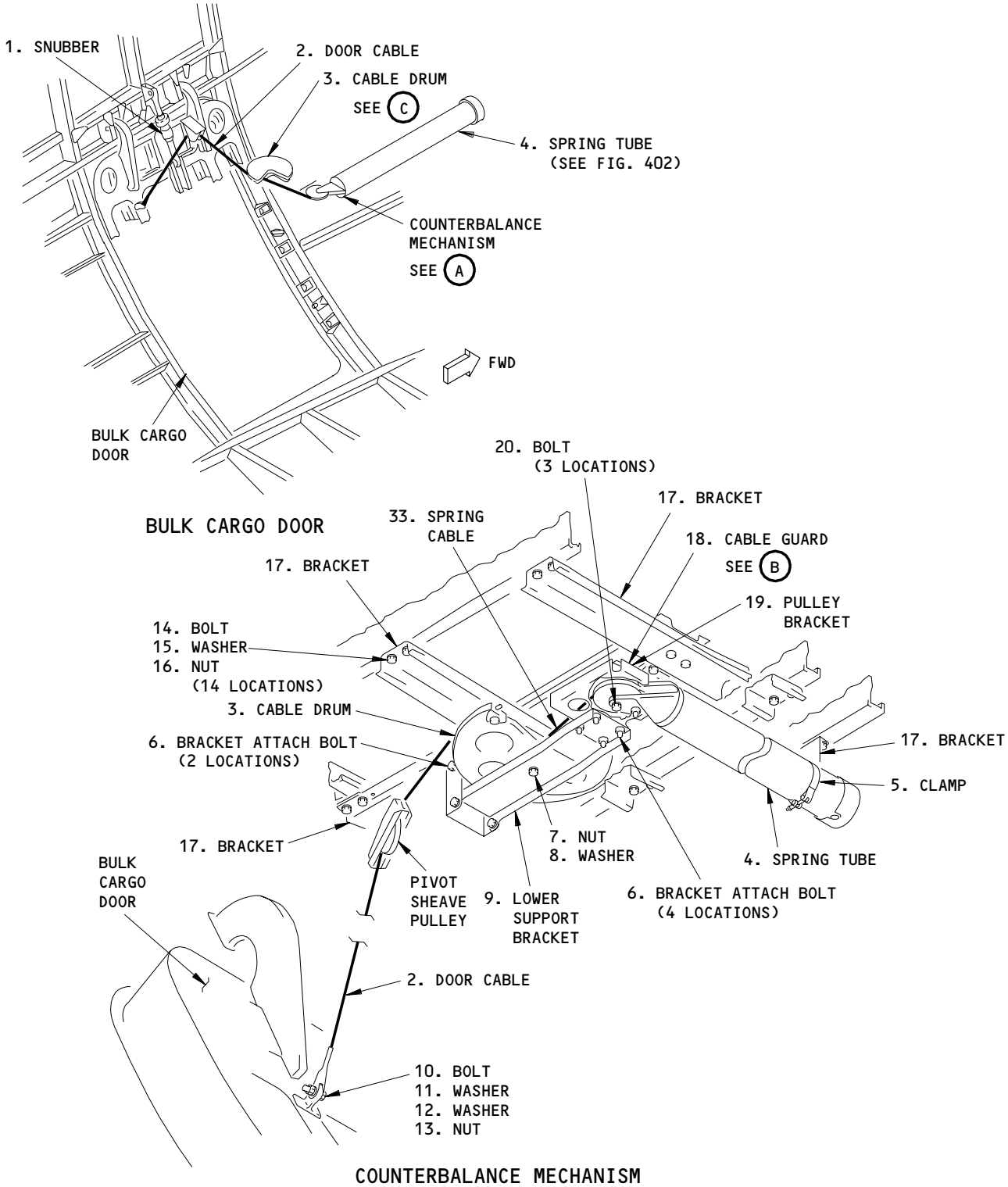

Counterbalance Mechanism Installation
Figure 401 (Sheet 1)

36888
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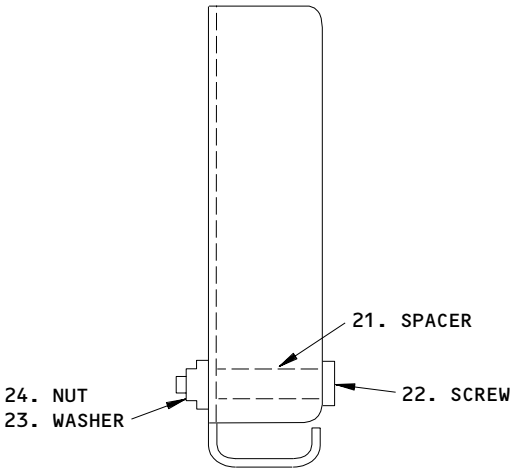
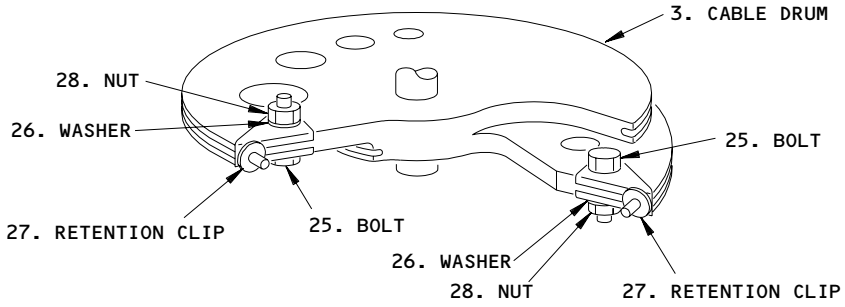


CABLE GUARD

B



CABLE DRUM

C

Counterbalance Mechanism Installation
Figure 401 (Sheet 2)

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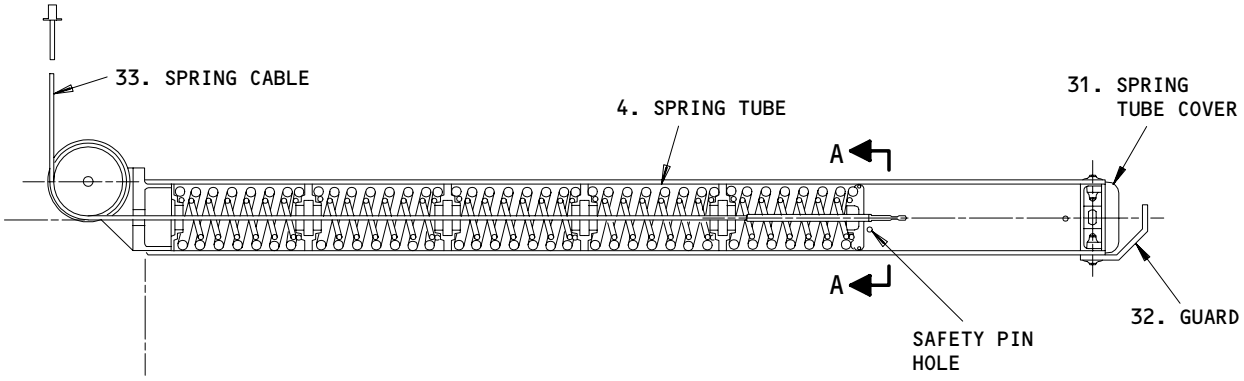
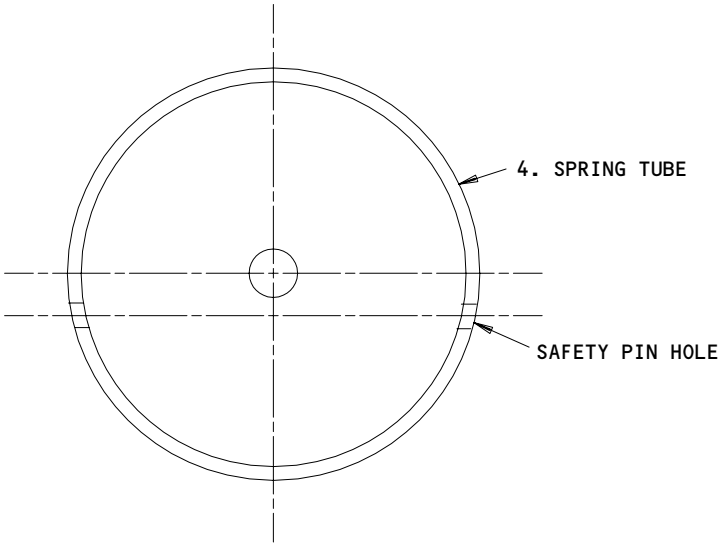


SPRING TUBE



A-A

Spring Tube Safety Pin Installation
Figure 402

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BULK CARGO DOOR COUNTERBALANCE MECHANISM - ADJUSTMENT/TEST

1. General
   A. This procedure contains these tasks:
      (1) AIRPLANES WITH THE 146T6303 -1 OR -2 COUNTERBALANCE (146T6387-5 OR -6 SPRING TUBE);
      An operational test of the counterbalance mechanism.
      (2) AIRPLANES WITH THE 146T6303 -3 COUNTERBALANCE (146T6387-8 SPRING TUBE);
      An operational test of the counterbalance mechanism.
      (3) An adjustment of the counterbalance mechanism.

   TASK 52-36-02-705-005

2. AIRPLANES WITH THE 146T6303 -1 OR -2 COUNTERBALANCE (146T6387-5 OR-6 SPRING TUBE);
   Counterbalance Mechanism - Operational Test
   A. References
      (1) AMM 52-36-03/401, Bulk Cargo Door Snubber
   B. Access
      (1) Location Zone
          811 Bulk Cargo Door

   C. Procedure

      S 025-015
      (1) Disconnect the snubber from the bulk cargo door (AMM 52-36-03/401).

      S 225-019

      CAUTION: DO A CHECK ON THE PULLEYS, CABLE TERMINAL ENDS, AND CABLE DRUM TO MAKE SURE THAT THE CABLE IS ENGAGED CORRECTLY. IF THE CABLE IS INCORRECTLY ENGAGED, DAMAGE TO THE COUNTERBALANCE MECHANISM CAN OCCUR.

      (2) Do a check of the forces at the handle while you lift and lower the bulk cargo door.
          (a) Make sure the maximum door open force is 5 pounds (2.3 kg) at the door handle.
          (b) Make sure the maximum door close force is 35 pounds (15.9 kg) at the door handle.

      S 825-017
      (3) If the open and close forces are more than the maximum values, adjust the counterbalance mechanism.

      S 425-016
      (4) Connect the snubber to the bulk cargo door (AMM 52-36-03/401).

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TASK 52-36-02-705-006

3. AIRPLANES WITH THE 146T6303 -3 COUNTERBALANCE (146T6387-8 SPRING TUBE); Counterbalance Mechanism - Operational Test

A. Access

(1) Location Zone

811 Bulk Cargo Door

B. Procedure

S 215-020

CAUTION: DO A CHECK ON THE PULLEYS, CABLE TERMINAL ENDS, AND CABLE DRUM TO MAKE SURE THAT THE CABLE IS ENGAGED CORRECTLY. IF THE CABLE IS INCORRECTLY ENGAGED, DAMAGE TO THE COUNTERBALANCE MECHANISM CAN OCCUR.

(1) Monitor the operation of the door while you open and close it.
   (a) Hold and release the door in two or more positions a minimum of 12 inches (305 mm) below the bumper.
   (b) Make sure that the door does not move.
   (c) Hold and release the door 12 inches (305 mm) or less from the bumper.
   (d) Make sure that the door does not move or moves up.
   (e) When the door is fully open against the bumper, it must stay there.

S 825-021

(2) If the operation of the door is defective, adjust the counterbalance.

TASK 52-36-02-825-012

4. Counterbalance Mechanism - Adjustment (Fig. 501)

A. Procedure

S 485-022

WARNING: DO NOT TRY TO HOLD THE COUNTERBALANCE MECHANISM CABLES WITH BLOCKS AND A C-CLAMP. IF THE CABLES MOVE, THE FAST RETRACTION CAN CAUSE INJURY OR DAMAGE.

(1) With the bulk cargo door in the closed position, install the safety pin in the spring tube.

S 865-023

(2) Open the door and use the hold-open strap to hold the door.

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S 025-024
(3) Remove the inboard and outboard screws (3) and washers (4) from the forward end of the spring tube.

S 025-025
(4) Loosen but do not remove the lower screw (3).

S 025-026
(5) Remove the spring tube cover (2).

S 025-027
(6) Remove the bolt (5), washer (8), nut (7) and the spring cable retention clip (6) from the cable drum.

S 025-028
(7) Move the cable assembly forward until you can get access to the threaded terminal end of the cable assembly.

S 825-029

WARNING: A MINIMUM OF SIX THREADS MUST EXTEND THROUGH THE NUT AFTER THE ADJUSTMENT OR THE NUT CAN LOOSEN. IF THE NUT LOOSENS, THE DOOR CAN FALL AND CAUSE INJURY OR DAMAGE.

(8) Adjust the location of the nuts (1) on the threaded terminal.
   (a) AIRPLANES WITH THE 146T6303 -1 AND -2 COUNTERBALANCE (146T6387-5 AND -6 SPRING TUBE);
   The adjustment is as follows:
      1) If more than 35 pounds is required to close the door, loosen the nuts (1).
      2) If more than 5 pounds is required to open the door, tighten the nuts (1).
   (b) AIRPLANES WITH 146T6303 -3 COUNTERBALANCE (146T6387-8 SPRING TUBE);
   The adjustment is as follows:
      1) If the door moves up from positions more than 12 inches from the bumper, loosen the nuts (1).
      2) If the door does not stay up against the bumper, tighten the nuts (1).

S 425-030
(9) Slide the cable assembly aft.

S 425-031
(10) Install the bolt (5), washer (8), nut (7) and the spring cable retention clip (6) on the cable drum as shown on Fig. 501.

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S 865-032

CAUTION: DO A CHECK ON THE PULLEYS, CABLE TERMINAL ENDS, AND CABLE DRUM TO MAKE SURE THAT THE CABLE IS ENGAGED CORRECTLY. IF THE CABLE IS INCORRECTLY ENGAGED, DAMAGE TO THE COUNTERBALANCE CAN OCCUR.

(11) Close and latch the door to compress the spring in the spring tube.

S 425-033

WARNING: MAKE SURE THAT THE COUNTERBALANCE MECHANISM CABLES ARE FULLY ENGAGED ON THE CABLE DRUM AND THE PULLEYS. MAKE SURE THE COUNTERBALANCE MECHANISM CABLES ARE CONNECTED TO THE DOOR BEFORE YOU REMOVE THE SAFETY PIN. THE FAST RETRACTION OF THE CABLES CAN CAUSE INJURY OR DAMAGE.

(12) Remove the safety pin from the spring tube.

S 715-034

(13) Make sure that the counterbalance operates correctly.

S 425-035

(14) Install the spring tube cover (2), screws (3) and washers (4) on the forward end of the spring tube.

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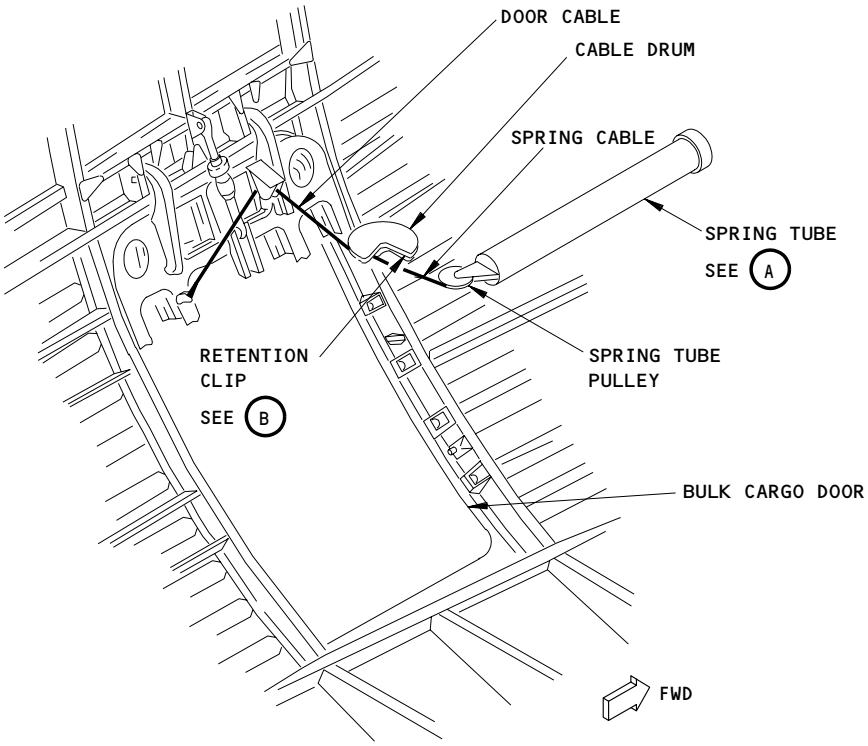
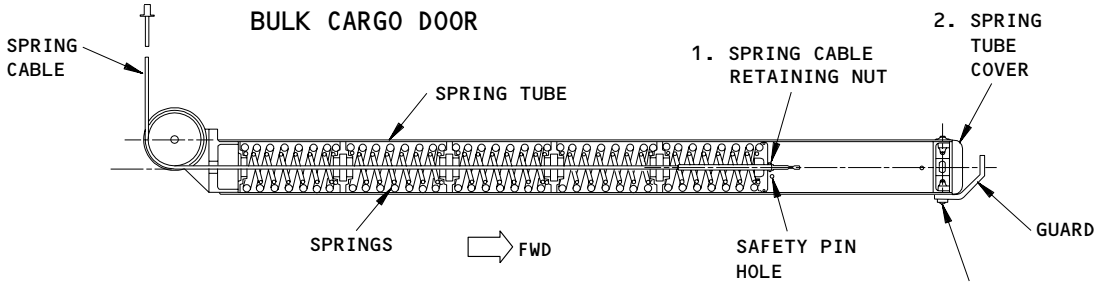
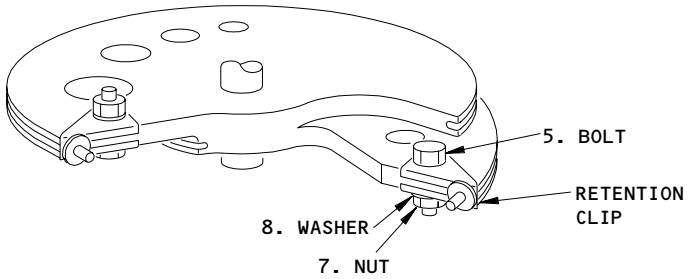


BULK CARGO DOOR



SPRING TUBE
A



RETENTION CLIP
B

Bulk Cargo Door Counterbalance
Figure 501

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BULK CARGO DOOR COUNTERBALANCE MECHANISM - INSPECTION/CHECK

1. General
   A. This procedure contains one task. The task is the inspection of the bulk cargo door counterbalance mechanism cables.

   TASK 52-36-02-206-001

2. Do an Inspection of the Counterbalance Mechanism Cables (Fig. 601)
   A. General
      (1) The bulk cargo door has two cables. The spring cable is the cable between the spring tube and the cable drum. The door cable is the cable between the cable drum and the door.
      (2) Use this procedure to do a check on the spring cable and the door cable for damage while the cables have a small preload.
   B. Equipment
      (1) Safety Pin - 0.248 inch diameter by 4.0-inches long (Rig pin A20004-10, part of A20004-78 rig pin set)
   C. Consumable Materials
      (1) G00034 Cheesecloth - BMS 15-5
   D. References
      (1) AMM 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
      (2) AMM 52-36-02/501, Bulk Cargo Door Counterbalance Mechanism
      (3) AMM 52-36-05/401, Bulk Cargo Door Cable
      (4) AIRPLANES WITH BULK CARGO DOOR PROTECTOR; AMM 52-36-10/401, Bulk Cargo Door Protector
      (5) CMM 52-36-25, Bulk Cargo Door Tube Assembly
   E. Access
      (1) Location Zone
          811 Bulk Cargo Door

   F. Prepare for the Inspection of the Counterbalance Mechanism Cables

      S 016-026
      (1) AIRPLANES WITH BULK CARGO DOOR PROTECTOR; Remove the bulk cargo door protector (AMM 52-36-10/401).

      S 016-004
      (2) Close and latch the bulk cargo door. Attach a DO-NOT-OPERATE tag to the door exterior handle.

      S 496-005

      WARNING: DO NOT TRY TO HOLD THE COUNTERBALANCE MECHANISM CABLE WITH BLOCKS AND A C-CLAMP. IF THE CABLE MOVES, THE FAST RETRACTION CAN CAUSE INJURY OR DAMAGE.

      (3) Install the safety pin in the spring tube to hold the counterbalance cable mechanism in position.

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S 866-006

WARNING: DO NOT REMOVE THE SAFETY PIN FROM THE SPRING TUBE. A STRONG FORCE IS ON THE SPRING. IF YOU REMOVE THE RIG PIN, INJURY OR DAMAGE CAN OCCUR.

(4) Open the door slightly to release the load on the cable system. Let the weight of the door put a small preload on the cable system to do the check.

G. Do a Check on the Counterbalance Mechanism Cables

S 216-007

(1) Do a check on the cables for damage. Do the steps that follow:
(a) With bright-lighting conditions, look at the spring cable and the door cable to do a check for damage.

NOTE: It is not satisfactory to use only a flashlight for this check. The interior of the airplane must have bright lighting.

WARNING: DO NOT TOUCH THE CABLES WITH YOUR HANDS. THE SHARP EDGES (FRAYS) ON THE CABLE SURFACE CAN CAUSE INJURY IF THEY ARE TOUCHED.

(b) Pull a small part of the cheesecloth across the cables and move it along the length of the cables as far as possible.
(c) Damage to the cable is found if the cheesecloth catches on the cable or gets a tear.
(d) Do a visual check to make sure there is damage.

S 426-019

(2) Replace the cables that have damage (AMM 52-36-05/401 for the door cable, CMM 52-36-25 for the spring cable).

S 866-008

(3) With the safety pin installed in the spring tube, open the door sufficiently to let you push the door cable and the spring cable through their pulleys. Make sure the door is blocked. Do not let the door close.

S 426-009

(4) Push the loose door cable through the pivot sheave pulley.

S 426-010

(5) Push the loose spring cable through the spring tube pulley.

S 216-011

(6) Do a check on the parts of the cables you can get access to for damage. Do the procedure "Do a check on the cables for damage."

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H. Put the Airplane Back to the Usual Condition

S 866-012

(1) Remove the door blockage and slowly lower the door to hang from its hinges. While you slowly lower the door, make sure that the cables engage the cable drum and the pulleys.

S 416-013

WARNING: DO NOT TRY TO CLOSE AND LATCH THE DOOR BEFORE THE CABLES ARE FULLY ENGAGED ON THE CABLE DRUM AND THE PULLEYS. DO A CAREFUL CHECK TO MAKE SURE THE CABLE IS ENGAGED ON THE SPRING TUBE PULLEY BECAUSE IT IS NOT EASY TO SEE IF THE CABLE IS ENGAGED. IF THE CABLES ARE NOT FULLY ENGAGED ON THE COUNTERBALANCE MECHANISM, INJURY OR DAMAGE CAN OCCUR.

(2) Close and latch the bulk cargo door.

S 096-014

WARNING: MAKE SURE THAT THE COUNTERBALANCE MECHANISM CABLES ARE FULLY ENGAGED ON THE CABLE DRUM AND THE PULLEYS BEFORE YOU REMOVE THE SAFETY PIN. MAKE SURE THE CABLES ARE CONNECTED TO THE DOOR BEFORE YOU REMOVE THE SAFETY PIN. THE FAST RETRACTION OF THE CABLES CAN CAUSE INJURY OR DAMAGE.

(3) Remove the safety pin from the spring tube.

S 216-015

(4) Do a check on the door operation. Make sure the door opens and closes correctly.

S 096-016

(5) Remove the DO-NOT-OPERATE tag from exterior handle of the bulk cargo door.

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S 426-025

(6) AIRPLANES WITH BULK CARGO DOOR PROTECTOR;
Install the bulk cargo door protector (AMM 52-36-10/401).

S 216-022

(7) AIRPLANES WITH ALIGNMENT MARKS ON THE INTERIOR DOOR HANDLE;
Make sure the alignment mark on the interior door handle is aligned with the alignment mark on the door lining (Fig. 602).

NOTE: The alignment marks are to show a visual indication that the interior door handle is fully closed.

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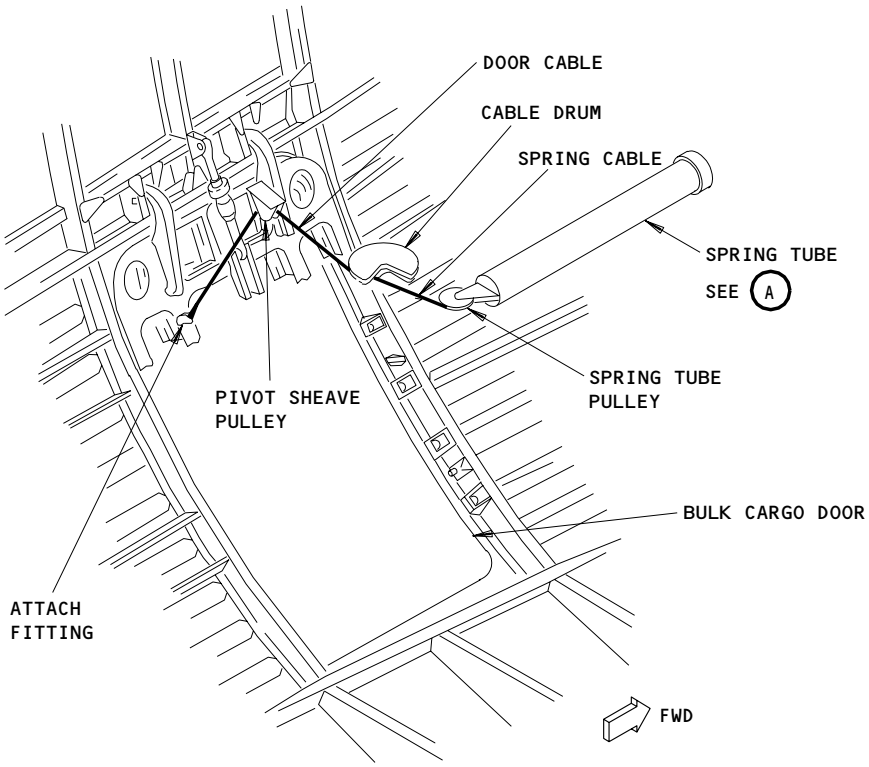
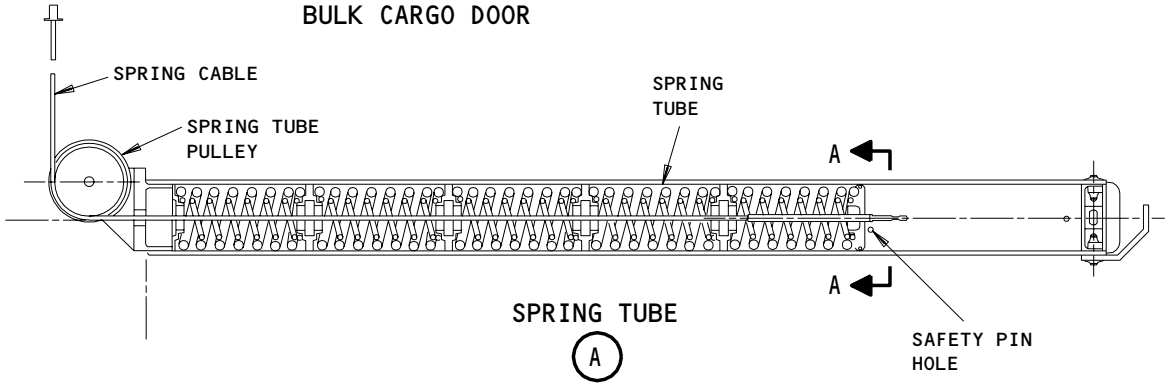
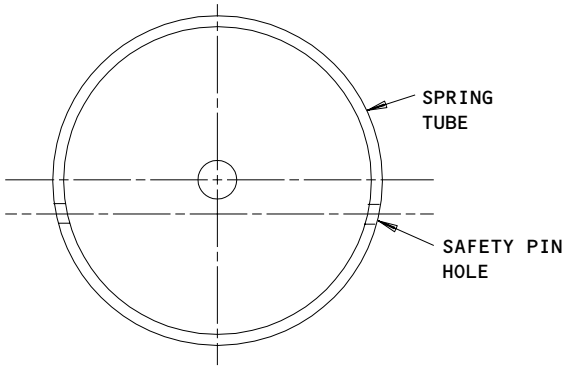


BULK CARGO DOOR



SPRING TUBE
A



A–A

Bulk Cargo Door Cables
Figure 601

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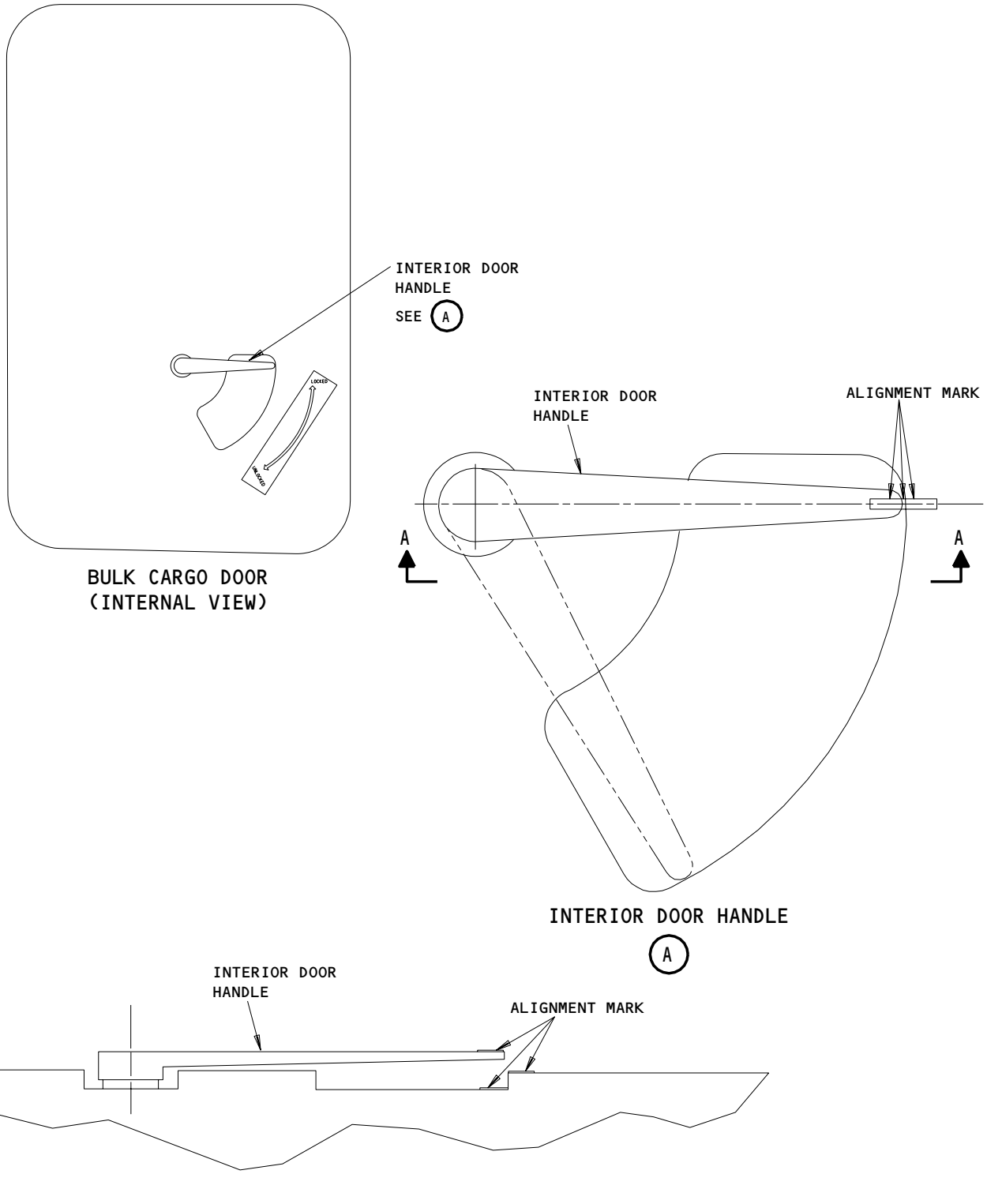

Alignment Marks
Figure 602

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BULK CARGO DOOR SNUBBER - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the bulk cargo door snubber. The second task is the installation of the bulk cargo door snubber.

TASK 52-36-03-004-001

2. Remove the Bulk Cargo Door Snubber (Fig. 401)
   A. Access
      (1) Location Zone
          811 Bulk Cargo Door

   B. Procedure - Remove the Bulk Cargo Door Snubber

      S 014-002
      (1) Close and latch the bulk cargo door.

      S 024-003
      (2) Remove the bolt (8) from the bottom end of the snubber (1) and the mounting bracket on the bulk cargo door (View B-B).

      S 024-004
      (3) Remove the bolt (3) from the top end of the snubber (1) and the mounting bracket on the fuselage (View A-A).

      S 024-005
      (4) Remove the snubber (1) from the airplane.

          NOTE: Do not open the bulk cargo door until the snubber is installed again.

TASK 52-36-03-404-006

3. Install the Bulk Cargo Door Snubber (Fig. 401)
   A. Consumable Materials
      (1) D00633 Grease - BMS 3-33 (Preferred)
      (2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

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B. Reference
(1) AMM 52-36-03/501, Bulk Cargo Door Snubber - Adjustment/Test

C. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
401	1	Snubber	52-36-01	05	40

D. Access
(1) Location Zone
811 Bulk Cargo Door

E. Procedure - Install the Bulk Cargo Door Snubber

S 824-011
(1) Manually extend the snubber (1) to align with the mounting brackets on the bulk cargo door and the fuselage.

S 644-008
(2) Apply the grease to the bushings and the bolts.

S 424-009
(3) Install the bolt (3), bushing (2), washers (4, 5), and nut (6) through the mounting bracket on the fuselage and the top end of the snubber (View A-A).

S 424-010
(4) Install the bolt (8), bushing (9), washers (7, 11), and nut (10) through the mounting bracket on the door and the bottom end of the snubber (View B-B).

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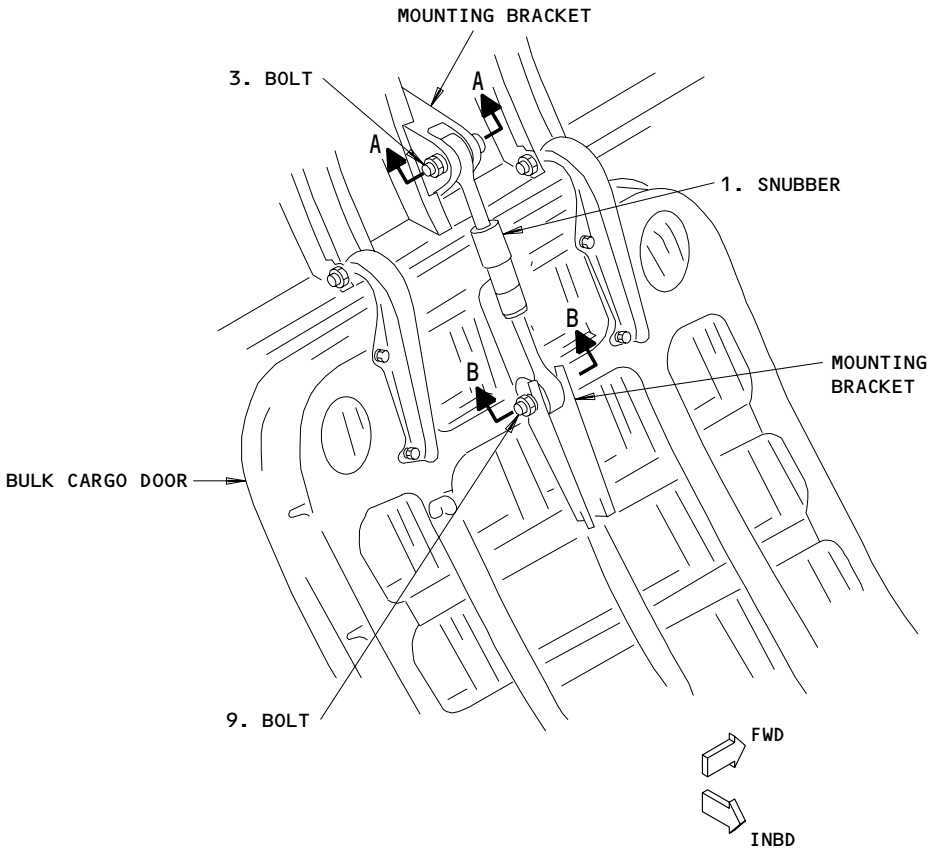
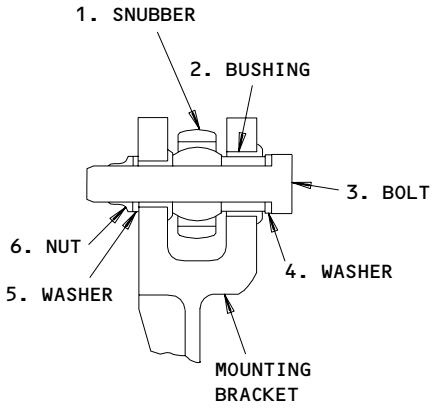
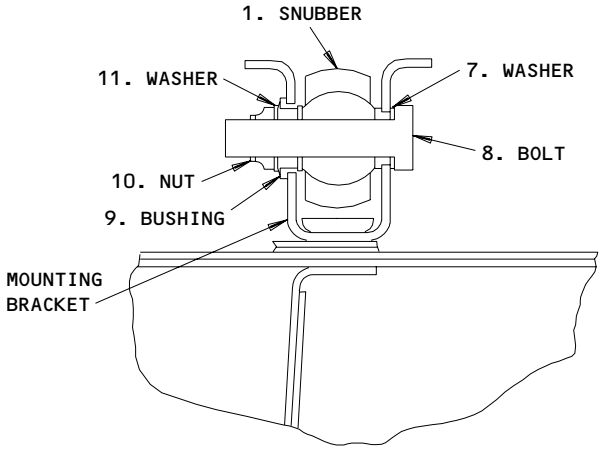


BULK CARGO DOOR



A–A



B–B

Bulk Cargo Door Snubber Installation
Figure 401

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BULK CARGO DOOR SNUBBER - ADJUSTMENT/TEST

1. General
   A. This procedure contains one task. The task is a test of the bulk cargo door snubber.

   TASK 52-36-03-715-001

2. Bulk Cargo Door Snubber Test
   A. Equipment
      (1) Safety Pin - 0.248 inch diameter by 4.0-inches long (Rig pin A20004-10, part of A20004-78 rig pin set)
   B. Consumable Materials
      (1) D00633 Grease - BMS 3-33 (Preferred)
      (2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)
   C. References
      (1) AMM 52-36-02/401, Bulk Cargo Door Counterbalance Mechanism
      (2) AMM 52-36-03/401, Bulk Cargo Door Snubber
      (3) AIRPLANES WITH BULK CARGO DOOR PROTECTOR; AMM 52-36-10/401, Bulk Cargo Door Protector
   D. Access
      (1) Location Zone
          811 Bulk Cargo Door

   E. Prepare to do the Bulk Cargo Door Snubber Test

      S 015-048
      (1) AIRPLANES WITH BULK CARGO DOOR PROTECTOR; Remove the bulk cargo door protector (AMM 52-36-10/401).

      S 865-004
      (2) Put the bulk cargo door in the closed position. Attach a DO-NOT-OPERATE tag to the exterior handle of the door.

      S 495-005

      WARNING: DO NOT TRY TO HOLD THE COUNTERBALANCE MECHANISM CABLE WITH BLOCKS AND A C-CLAMP. IF THE CABLE MOVES, THE FAST RETRACTION CAN CAUSE INJURY OR DAMAGE.

      (3) Install the safety pin in the spring tube to hold the counterbalance mechanism cable (Fig. 501).

      S 865-006
      (4) Open the bulk cargo door slightly to release the load on the cable system.

      S 035-007
      (5) Disconnect the door cable from the attach fitting on the bulk cargo door.

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S 215-010

(6) Do a check on the bulk cargo door snubber for internal or external leakage of the hydraulic fluid.

S 425-011

(7) If the bulk cargo door snubber has hydraulic fluid leakage, then you must replace it (AMM 52-36-03/401).

S 165-014

(8) Clean the bulk cargo door snubber with a cloth.

S 495-013

WARNING: BE CAREFUL IF YOU DO WORK NEAR THE OPEN BULK CARGO DOOR WHEN THE DOOR CABLE IS NOT CONNECTED TO THE ATTACH FITTING. IF YOU ACCIDENTALLY MOVE THE DOOR, THE STRAP LOOP UPLOCK CAN FALL OFF AND CAUSE THE DOOR TO CLOSE QUICKLY WHICH CAN CAUSE INJURY OR DAMAGE.

(9) Lift the bulk cargo door to the fully open position. Put the strap loop uplock over the bottom door stop and attach a red streamer (Fig. 503).

S 495-018

(10) Install a six-inch-thick Styrofoam pad or blanket across the door opening.

NOTE: The Styrofoam pad or blanket is used to prevent damage to the door opening and to absorb the shock of the door if it falls.

F. Do the Bulk Cargo Door Snubber Test

S 095-019

WARNING: BE CAREFUL WHEN YOU RELEASE THE STRAP LOOP UPLOCK. IF THE BULK CARGO DOOR SNUBBER IS DEFECTIVE, THE BULK CARGO DOOR WILL FALL WHEN YOU RELEASE THE STRAP LOOP UPLOCK. THIS CAN CAUSE INJURY OR DAMAGE.

(1) Release the strap loop uplock and measure the time for the bulk cargo door to touch the Styrofoam pad or the blanket (Fig. 503).

NOTE: Monitor the velocity of the door at the bottom edge of the door.

(a) If the door closes in less than 2.5 seconds, then you must replace the bulk cargo door snubber (AMM 52-36-03/401).

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(b) If the movement of the door in the down direction was not at a smooth, constant velocity, then you must replace the bulk cargo door snubber (AMM 52-36-03/401).

S 215-022

(2) Do a check on the bulk cargo door snubber for internal or external leakage of the hydraulic fluid.
(a) Examine the filler plug, the shaft area, and the leakage hole (Fig. 502).

S 425-023

(3) If the bulk cargo door snubber has hydraulic fluid leakage, then you must replace it (AMM 52-36-03/401).

S 165-024

(4) Clean the bulk cargo door snubber with a cloth.

G. Put the Airplane Back to its Usual Condition

S 865-028

WARNING: BE CAREFUL IF YOU DO WORK NEAR THE OPEN BULK CARGO DOOR WHEN THE DOOR CABLE IS NOT CONNECTED TO THE ATTACH FITTING. IF YOU ACCIDENTALLY MOVE THE DOOR, THE STRAP LOOP UPLOCK CAN FALL OFF AND CAUSE THE DOOR TO CLOSE QUICKLY WHICH CAN CAUSE INJURY OR DAMAGE.

(1) Lift the bulk cargo door to the fully open position.

S 095-030

(2) Put the strap loop uplock over the lower door stop (Fig. 503).

S 095-039

(3) Remove the Styrofoam pad or the blanket from the bulk cargo door opening.

S 095-031

WARNING: BE CAREFUL WHEN YOU RELEASE THE STRAP LOOP UPLOCK. STAY AWAY FROM THE BULK CARGO DOOR OPENING. WHEN YOU RELEASE THE STRAP LOOP UPLOCK THE DOOR WILL CLOSE QUICKLY WHICH CAN CAUSE DAMAGE OR INJURY.

(4) Release the strap loop uplock to close the bulk cargo door.

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S 095-033
(5) Remove the red streamer from the bulk cargo door.

S 435-034
(6) Lift the bulk cargo door and connect the door cable to the attach fitting on the door.

S 865-034

WARNING: MAKE SURE THE COUNTERBALANCE MECHANISM CABLES ARE FULLY ENGAGED ON THE CABLE DRUM AND THE PULLEYS BEFORE YOU TRY TO CLOSE THE BULK CARGO DOOR. MAKE SURE THE CABLES ARE CONNECTED TO THE DOOR BEFORE YOU TRY TO CLOSE THE DOOR. THE FAST RETRACTION OF THE CABLES CAN CAUSE INJURY OR DAMAGE.

(7) Close and latch the bulk cargo door.

S 095-035

WARNING: DO NOT REMOVE THE SAFETY PIN FROM THE SPRING TUBE BEFORE THE COUNTERBALANCE MECHANISM CABLES ARE FULLY ENGAGED AND CONNECTED. THERE IS A VERY STRONG FORCE ON THE SPRING THAT CAN CAUSE INJURY OR DAMAGE.

(8) Remove the safety pin from the spring tube (Fig. 501).

S 215-037
(9) Make sure that the bulk cargo door opens and closes correctly.

S 095-038
(10) Remove DO-NOT-OPERATE tag from the exterior handle of the bulk cargo door.

S 425-046
(11) AIRPLANES WITH BULK CARGO DOOR PROTECTOR;
Install the bulk cargo door protector (AMM 52-36-10/401).

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S 215-043

(12) AIRPLANES WITH ALIGNMENT MARKS ON THE INTERIOR DOOR HANDLE;
Make sure the alignment mark on the interior door handle is aligned with the alignment mark on the door lining (Fig. 504).

NOTE: The alignment marks are to show a visual indication that the interior door handle is fully closed.

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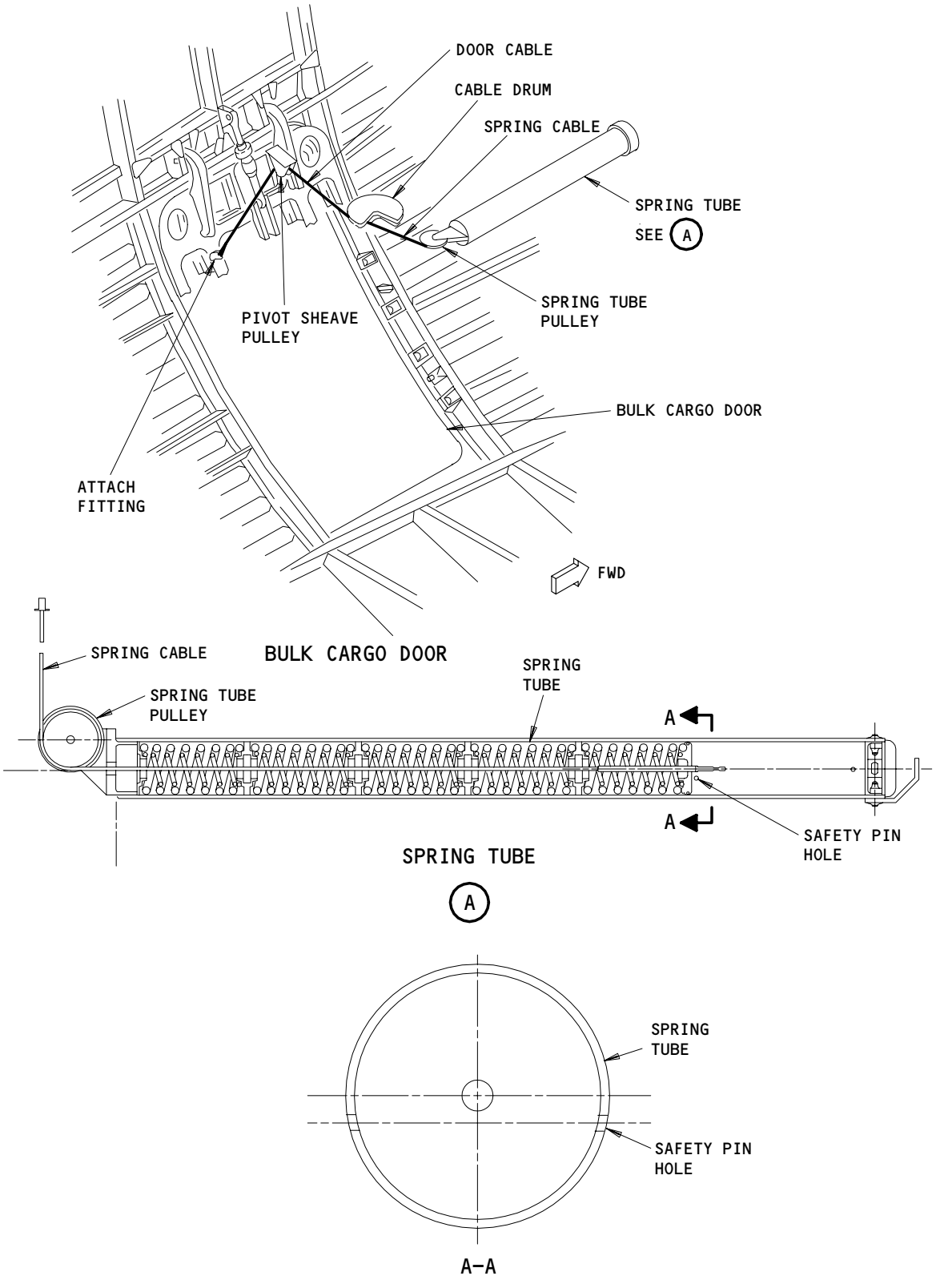

Bulk Cargo Door Spring Tube
Figure 501

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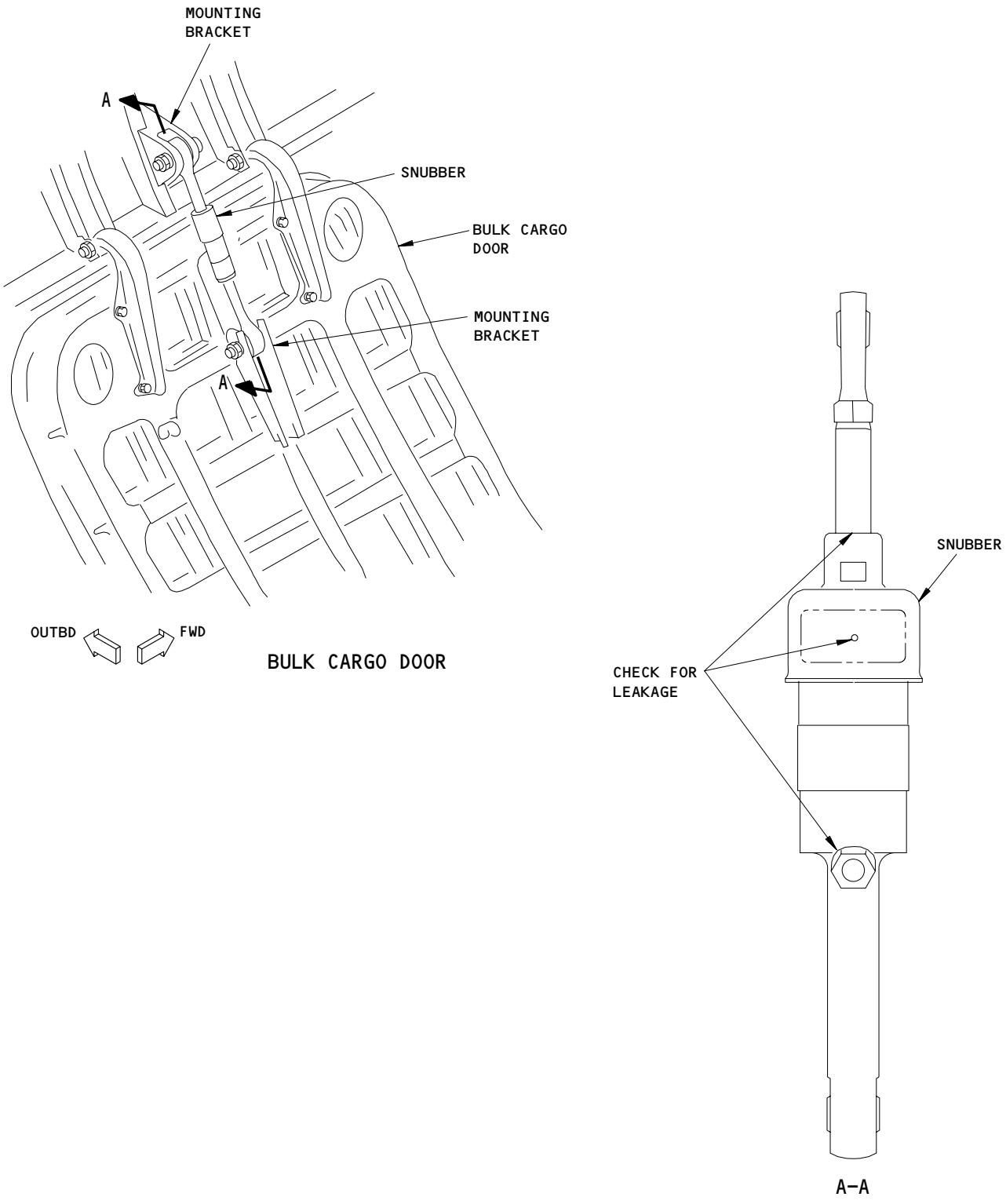

Bulk Cargo Door Snubber
Figure 502

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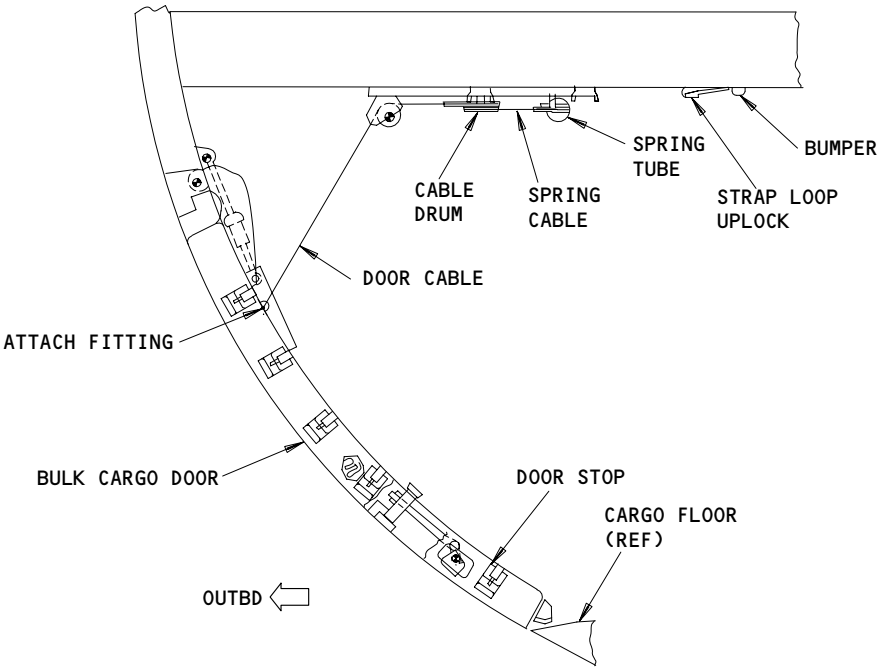
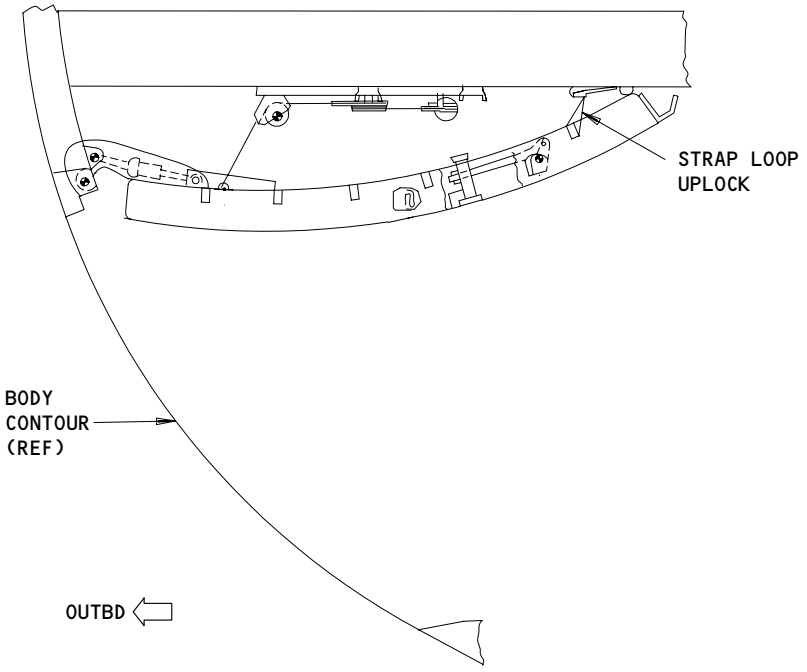


BULK CARGO DOOR (SIDE VIEW)
(CLOSED POSITION)



BULK CARGO DOOR (SIDE VIEW)
(OPEN POSITION)

Bulk Cargo Door Strap Loop Uplock
Figure 503

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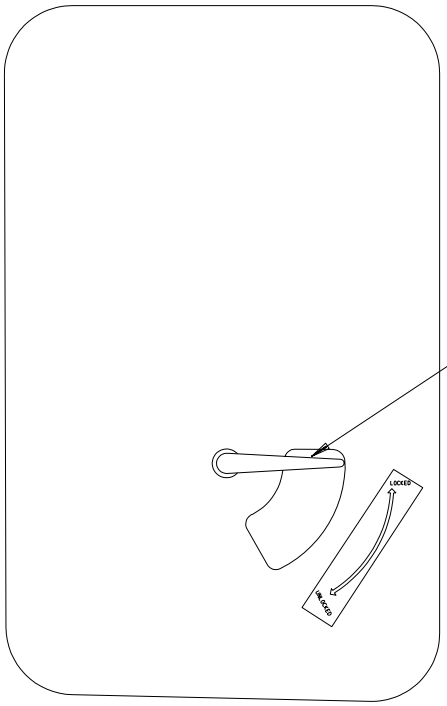
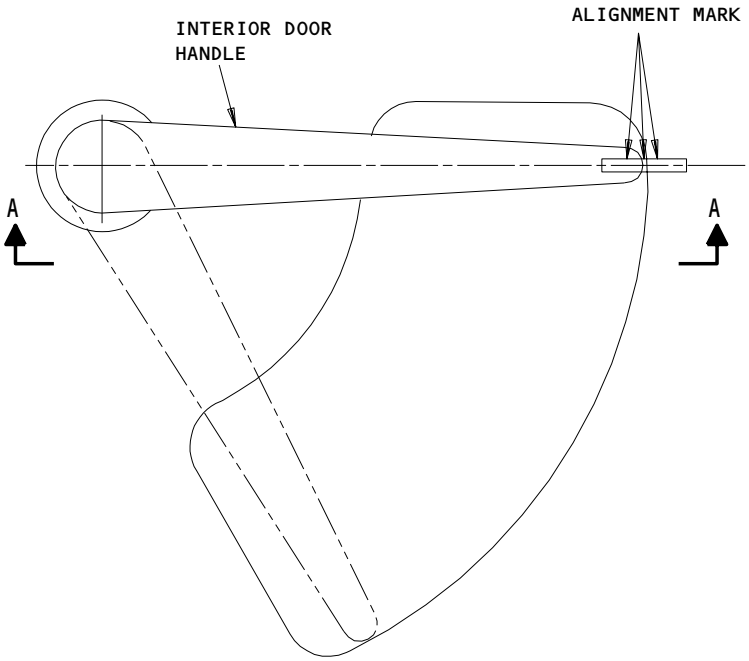
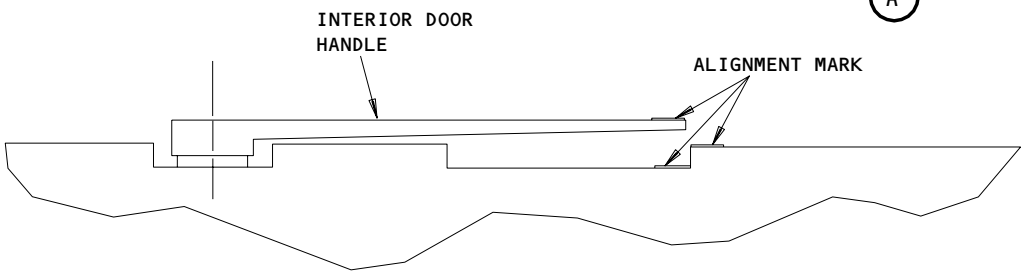


BULK CARGO DOOR
(INTERNAL VIEW)



INTERIOR DOOR HANDLE
A



A-A

Alignment Marks
Figure 504

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BULK CARGO DOOR SNUBBER - INSPECTION/CHECK

1. General
   A. This procedure has a task to do a wear limits check on the bulk cargo door snubber.

   TASK 52-36-03-206-001

2. Do a Wear Limits Check on the Bulk Cargo Door Snubber (Fig. 601)
   A. General
      (1) In this task, no instructions are given to get access to, remove, or install the actuator after the inspection for wear. For this data, refer to Bulk Cargo Door Snubber Removal/Installation (AMM 52-36-03/401).

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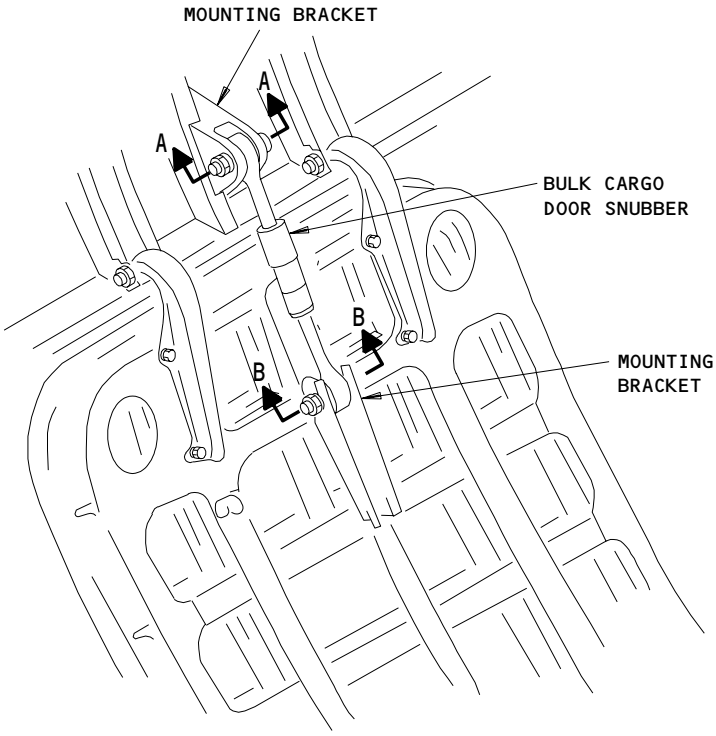
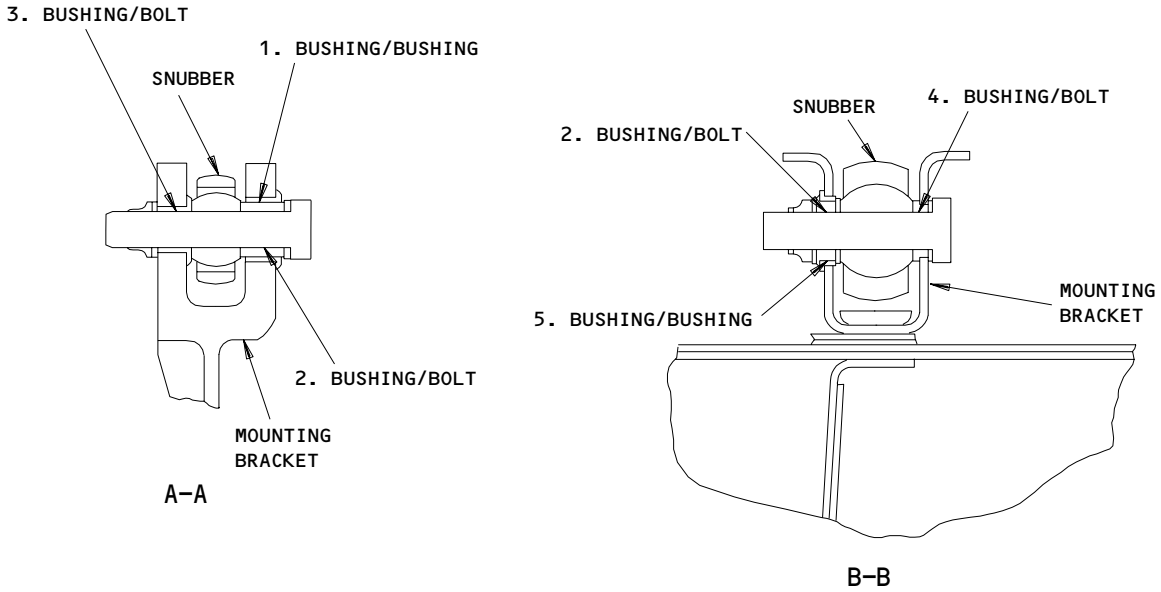


BULK CARGO DOOR



Bulk Cargo Door Snubber Wear Limits
Figure 601 (Sheet 1)

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INDEX NO.	PART NAME	DIM.	DESIGN LIMITS		WEAR LIMITS		REPLACE WORN PART	REPAIR WORN PART	REPAIR INSTR.
			DIAMETER		ALLOWED WEAR DIM.	MAX DIAM CLEAR-ANCE			
			MIN	MAX					
1	BUSHING	ID	0.5620	0.5627	0.5665	0.0050	X		
	BUSHING	OD	0.5610	0.5615	0.5577		X		
2	BUSHING	ID	0.3750	0.3755	0.3795	0.0050	X		
	BOLT	OD	0.3735	0.3745	0.3705		X		
3	BUSHING	ID	0.3750	0.3756	0.3795	0.0050	X		
	BOLT	OD	0.3735	0.3745	0.3706		X		
4	BUSHING	ID	0.3750	0.3765	0.3795	0.0050	X		
	BOLT	OD	0.3735	0.3745	0.3715		X		
5	BUSHING	ID	0.5625	0.5640	0.5665	0.0050	X		
	BUSHING	OD	0.5610	0.5615	0.5590		X		

Bulk Cargo Door Snubber Wear Limits
Figure 601 (Sheet 2)

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BULK CARGO DOOR HINGE ARM - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the bulk cargo door hinge arm. The second task is the installation of the bulk cargo door hinge arm.
   B. This procedure gives instructions to install the individual hinge arms on the bulk cargo door with the door in the closed and latched position.

TASK 52-36-04-004-016

2. Remove the Bulk Cargo Door Hinge Arm (Fig. 401)
   A. References
      (1) AMM 25-52-01/401, Sidewall Panels
   B. Access
      (1) Location Zone
          811 Bulk Cargo Door

   C. Procedure - Remove the Bulk Cargo Door Hinge Arm

      S 014-001
      (1) Close and latch the bulk cargo door. Attach a DO-NOT-OPERATE tag to the exterior handle of the door.

      S 014-002
      (2) While in the airplane, remove the door lining and the panel from above the bulk cargo door opening (AMM 25-52-01/401).

      S 024-003
      (3) Remove the hinge arm pivot bolt, washers, and nut.

      S 024-004
      (4) Remove the four bolts, washers and nuts that attach the hinge arm to the door. Remove the hinge arm from the bulk cargo door.

      S 024-015
      (5) Keep the shims between the hinge arm and the door structure. Make marks at the locations of the shims.

TASK 52-36-04-404-005

3. Install the Bulk Cargo Door Hinge Arm (Fig. 401)
   A. Consumable Materials
      (1) D00633 Grease - BMS 3-33 (Preferred)
      (2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

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B. References
(1) AMM 25-52-01/401, Sidewall Panels
(2) AMM 52-36-01/401, Bulk Cargo Door

C. Access
(1) Location Zone
811 Bulk Cargo Door

D. Procedure - Install the Bulk Cargo Door Hinge Arm

S 424-006
(1) Connect the hinge arm to the fuselage with the pivot bolt.
(a) Lubricate the pivot bolt with the grease.

S 424-017
(2) Put the hinge arm in its correct position on the bulk cargo door.

S 434-018
(3) Install the hinge arm attach bolts, washers, and nuts loosely.

S 424-009
(4) Align the hinge arm with the bulk cargo door and the pivot bracket.

S 424-007
(5) Install all the shims between the hinge arm and the bulk cargo door at the same locations from which they were removed.

S 354-008
(6) If the new hinge arms have only pilot holes at the fastener locations, do the steps that follow to drill the fastener holes in the hinge arms:
(a) Put the door in a blocked position and correctly align the stop pins (AMM 52-36-01/401) with the stop pads before you drill the holes.
(b) Make marks for the bolt hole locations in the hinge arms through the mating bolt holes in the door structure. Do not use the pilot holes.
(c) Remove the hinge arms to bend and drill the holes to the correct dimension.
(d) Install the hinge arm at the pivot points and install the shims in the correct locations.

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(e) Do a check on the alignment of the bolt holes in the hinge arms and the door skin.
(f) If the bolt holes are aligned correctly, install the bolts.
(g) If not aligned, drill oversize holes through the hinge arms and the door to align. Install the oversize bolts.

S 424-010
(7) Keep the hinge arm aligned correctly and tighten all the bolts and nuts.

S 094-011
(8) Remove the DO-NOT-OPERATE tag from the door exterior handle on the bulk cargo door.

S 864-012
(9) Open and close the door to do a check for smooth operation.

S 214-013
(10) Make sure the clearance between the stop pins and the stop pads at the forward and aft edges of the bulk cargo door is not more than 0.01 inch (12 locations) (AMM 52-36-01/401).

S 414-014
(11) Install the bulk cargo door lining (AMM 25-52-01/401).

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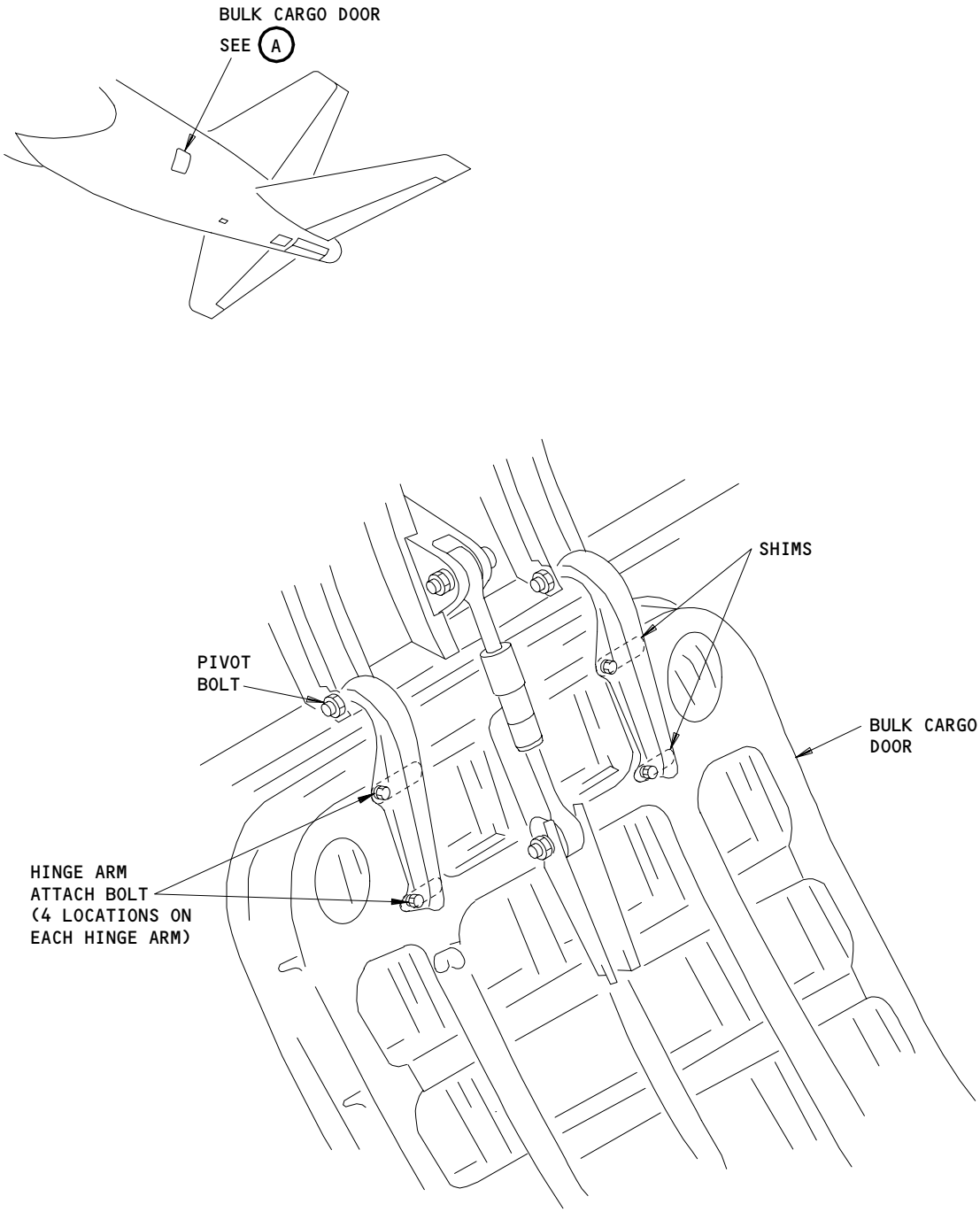

Bulk Cargo Door Hinge Arm Installation
Figure 401

22575
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BULK CARGO DOOR CABLE - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the door cable from the bulk cargo door. The second task is the installation of the door cable on the bulk cargo door.

   TASK 52-36-05-004-001

2. Remove the Door Cable (Fig. 401)
   A. Equipment
      (1) Safety Pin - 0.248 inch diameter by 4.0-inches long (Rig pin A20004-10, part of A20004-78 rig pin set)
   B. References
      (1) AMM 52-36-02/601, Bulk Cargo Door Counterbalance Mechanism
      (2) AIRPLANES WITH BULK CARGO DOOR PROTECTOR; AMM 52-36-10/401, Bulk Cargo Door Protector
   C. Access
      (1) Location Zone
          811 Bulk Cargo Door
   D. Procedure - Remove the Door Cable

      S 014-031
      (1) AIRPLANES WITH BULK CARGO DOOR PROTECTOR; Remove the bulk cargo door protector (AMM 52-36-10/401).

      S 864-025
      (2) Close the bulk cargo door.

      S 494-004

      WARNING: DO NOT TRY TO HOLD THE COUNTERBALANCE MECHANISM CABLES WITH BLOCKS AND A C-CLAMP. IF THE CABLES MOVE, THE FAST RETRACTION OF THE CABLES CAN CAUSE INJURY OR DAMAGE.

      (3) Install the safety pin in the spring tube to hold the counterbalance mechanism (View A).

      S 864-005
      (4) Open the door sufficiently to release the spring cable tension and disconnect the door cable attach fitting from the door.

      S 864-006
      (5) Put the door back to the closed position.

      S 024-007
      (6) Remove the retention clip, bolt, nut and washer, and the door cable from the cable drum.

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S 024-023

(7) Remove the screws that hold the pivot sheave pulley and the pulley guard halves together and remove the door cable.

TASK 52-36-05-404-008

3. Install the Door Cable (Fig. 401)

A. Equipment

(1) Safety Pin - 0.248 inch diameter by 4.0-inches long (Rig pin A20004-10, part of A20004-78 rig pin set)

(2) Bulk Cargo Door Spring Removal/Installation Clamp Equipment - A52010-51 (recommended)

(3) Bulk Cargo Door Spring Removal/Installation Clamp Equipment - A52010-50 (optional)

(4) Spring Puller - Commercially available

(5) Spring Scale, 25 pound mimimum capacity - Commercially available

B. References

(1) AMM 52-36-02/501, Bulk Cargo Door Counterbalance Mechanism

(2) AMM 52-36-02/601, Bulk Cargo Door Counterbalance Mechanism

(3) AIRPLANES WITH BULK CARGO DOOR PROTECTOR; AMM 52-36-10/401, Bulk Cargo Door Protector

C. Access

(1) Location Zone

811 Bulk Cargo Door

D. Procedure - Install the Door Cable

S 864-009

WARNING: DO NOT TRY TO HOLD THE COUNTERBALANCE MECHANISM CABLES WITH BLOCKS AND A C-CLAMP. IF THE CABLES MOVE, THE FAST RETRACTION OF THE CABLES CAN CAUSE INJURY OR DAMAGE.

(1) If the springs in the spring tube are not in the compressed position, do the steps that follow to compress and hold the springs:

NOTE: It is necessary to compress the springs to make the spring cable extend external to the spring tube and to let the door cable be attached to the bulk cargo door.

(a) Remove the spring tube cover and guard.

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WARNING: BE VERY CAREFUL WHEN YOU INSTALL THE BULK CARGO DOOR SPRING REMOVAL/INSTALLATION CLAMP EQUIPMENT AND THE SPRING PULLER ON THE SPRING TUBE. THE COMPRESSED SPRINGS CONTAIN SUFFICIENT ENERGY TO CAUSE INJURY OR DAMAGE. USE AN APPROVED EYE PROTECTION DEVICE BEFORE YOU DO WORK ON THE SPRING TUBE.

(b) Use the bulk cargo door spring removal/installation clamp equipment and the spring puller to compress the spring sufficiently to install the safety pin (View A).
(c) Install the safety pin and release the tension on the spring puller. Remove the bulk cargo door spring removal/installation clamp equipment and the spring puller.

S 424-011

(2) Put the door cable between the pulley guard halves. Install the screws that hold the pivot sheave pulley and pulley guard halves.

S 424-012

(3) Put the door cable end terminal in the cable drum. Install the retention clip, bolt, washer and nut.
(a) Make sure to install the bolt, washer and nut as shown in Fig. 401 (View B).

S 424-013

WARNING: DO NOT REMOVE THE SAFETY PIN FROM THE SPRING TUBE BEFORE THE COUNTERBALANCE MECHANISM CABLES ARE FULLY ENGAGED AND CONNECTED. THERE IS A VERY STRONG FORCE ON THE SPRING THAT CAN CAUSE INJURY OR DAMAGE.

(4) Lift the bulk cargo door and connect the door cable attach fitting to the door with the bolt, washers, and nut.

S 864-014

CAUTION: DO A CHECK ON THE PULLEYS, CABLE TERMINAL ENDS, AND CABLE DRUM TO MAKE SURE THE CABLE IS ENGAGED CORRECTLY. IF THE CABLE IS INCORRECTLY ENGAGED, DAMAGE CAN OCCUR TO THE COUNTERBALANCE MECHANISM.

(5) Lower the door to compress the springs in the spring tube.

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S 094-015

WARNING: MAKE SURE THE COUNTERBALANCE MECHANISM CABLES ARE FULLY ENGAGED ON THE CABLE DRUM AND THE PULLEYS. MAKE SURE THE COUNTERBALANCE MECHANISM CABLES ARE CONNECTED TO THE DOOR BEFORE YOU REMOVE THE SAFETY PIN. THE FAST RETRACTION OF THE CABLES CAN CAUSE INJURY OR DAMAGE.

(6) Remove the safety pin from the spring tube.

S 714-016

(7) Do a check on the operation of the counterbalance mechanism (AMM 52-36-02/501).

S 424-018

(8) Install the spring tube cover and guard on the spring tube with the screws and washers.

S 214-020

(9) Do a check on the spring cable and the door cable for damage (AMM 52-36-02/601).

S 414-029

(10) AIRPLANES WITH BULK CARGO DOOR PROTECTOR;
Install the bulk cargo door protector, if you removed it before (AMM 52-36-10/401).

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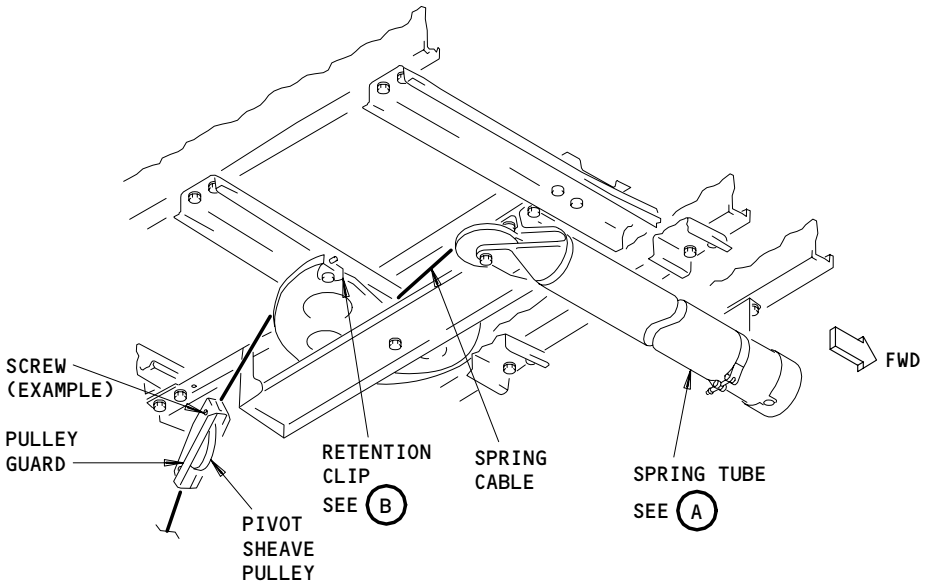
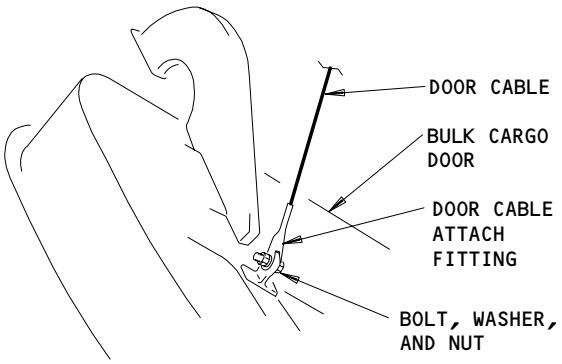
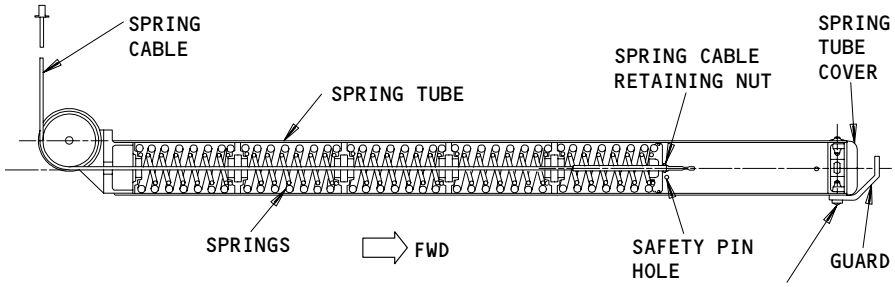


COUNTERBALANCE MECHANISM





SPRING TUBE
A

Bulk Cargo Door Cable
Figure 401 (Sheet 1)

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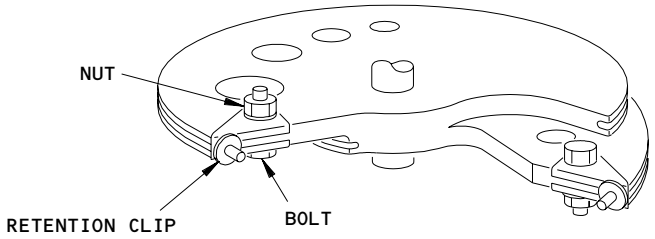
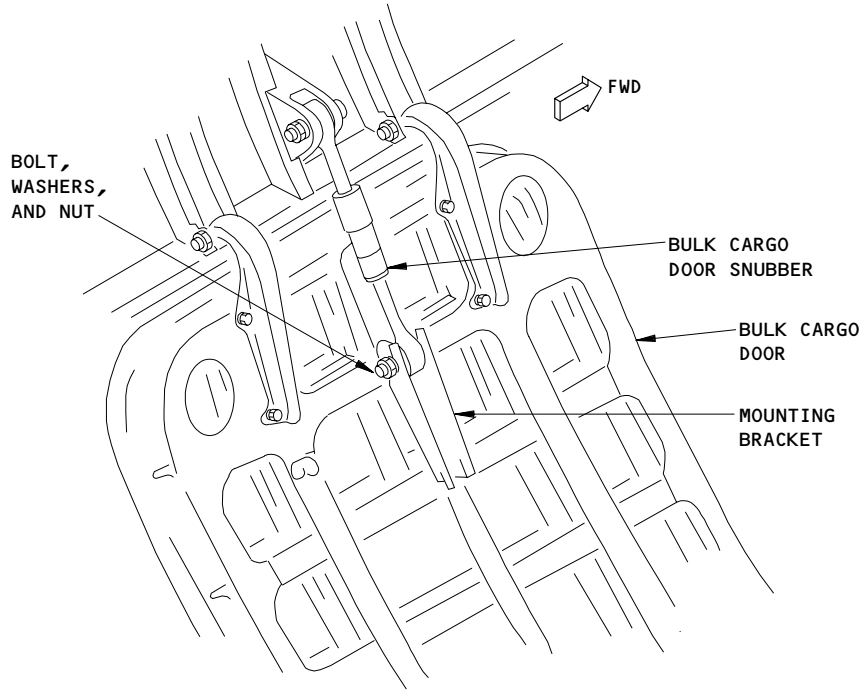


RETENTION CLIP

B



BULK CARGO DOOR

Bulk Cargo Door Cable
Figure 401 (Sheet 2)

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HANDLE MECHANISM - MAINTENANCE PRACTICES

1. General
   A. This procedure has these tasks:
      (1) The interior and exterior handle removal from the bulk cargo door.
      (2) The interior and exterior handle installation on the bulk cargo door.
      (3) AIRPLANES WITH INTERIOR HANDLE ALIGNMENT MARKS;
      the inspection/check of the alignment marks on the interior handle and the alignment marks on the door lining of the bulk cargo door.
      (4) AIRPLANES WITH INTERIOR HANDLE ALIGNMENT MARKS;
      the approved repairs for the alignment marks on the interior handle and the alignment marks on the door lining of the bulk cargo door.

   TASK 52-36-07-002-012

2. Interior and Exterior Handle Removal
   A. Access
      (1) Location Zone
      811 Bulk Cargo Door

   B. Procedure

      S 862-079
      (1) Close and latch the bulk cargo door.

      S 022-047
      (2) Remove the bolt (16), washer (18), and nut (19) that attach the interior handle (17) to the actuator (14).

      S 022-048
      (3) Remove the interior handle (17).

      S 022-083
      (4) Remove the screws (25).

      S 022-045
      (5) Remove the panel (24) with the collar (20) from the actuator (14).

      S 022-028
      (6) Remove the two screws (21) that attach the screw fitting (22) to the actuator (14).

      S 022-029
      (7) Remove the screw fitting (22).

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S 022-060
(8) Remove the bolt (24), washer (25), bushing (15), washer (27) and nut(28) to disconnect the rod (26) from the handle assembly.

S 022-018
(9) Remove the actuator (14), quad ring (13), and two inserts (23) as an assembly.

NOTE: Do not remove the inserts (23) from the actuator (14) unless they are damaged.

S 022-019
(10) Remove and discard the quad ring (13).

S 862-020
(11) Lift the spring keeper (12) away from the housing (11) and disengage from the spring (7). Allow the spring (7) to retract into the sleeve (6).

S 022-049
(12) Remove the exterior handle assembly from the housing (11).

S 022-021
(13) Remove and discard the washer(s) (8).

S 862-022
(14) Push the pin (4) from the sleeve (6) and remove the spring (7) then discard the pin (4).

S 022-023
(15) Remove and discard the pin (3) and the bearing stud (5).

S 822-046
(16) Keep the sleeve (6), exterior handle (2), and pin (1) as an assembly.

NOTE: The sleeve (6) and the exterior handle (2) are aligned and secured by the pin (1) and it is not necessary to disassemble. If replacement of either component is necessary, replace the whole handle assembly.

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S 022-030
(17) Do not remove the rivets (9) or hinge assembly (10) unless they are damaged and replacement is necessary.

S 022-024
(18) Do not disassemble the hinge assembly (10) unless it is necessary.

TASK 52-36-07-002-013

3. Interior and Exterior Handle Installation

A. Access

(1) Location Zone
811 Bulk Cargo Door

B. Consumable Materials

(1) C00521 Compound, corrosion preventative MIL-C-11796, Class 3 (Commercially Available)
(2) C00684 Primer, Zinc-chromate MIL-P-8585 (Commercially available)
(3) D00379 Fluorolube oil
(4) D00013 Grease - MIL-G23827 (Commercially available)

C. References

(1) 52-36-01/401 Bulk Cargo Door

D. Procedure

S 862-080
(1) Close and latch the bulk cargo door.

S 422-061
(2) HANDLES WITH BEARING STUDS RETAINED BY PINS;
Push the new bearing stud (5) tightly into the boss in the exterior handle (2).

S 212-062
(3) HANDLES WITH BEARING STUDS RETAINED BY PINS;
Make sure there is no clearance between the top of the boss and the shoulder of the bearing stud (5).

S 822-052
(4) HANDLES WITH BEARING STUDS RETAINED BY PINS;
Align the hole in boss and drill a 0.094-0.097 inch (2.38-2.46 mm) diameter hole through the bearing stud (5).

S 422-063
(5) HANDLES WITH BEARING STUDS RETAINED BY PINS;
Install and tighten the new pin (3).

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S 422-086
(6) HANDLES WITH BEARING STUDS RETAINED BY WEDGES;
Put the wedge (29) on the bearing stud (5).

S 422-087
(7) HANDLES WITH BEARING STUDS RETAINED BY WEDGES;
Press the wedge (29) and bearing stud (5) into the boss in the exterior handle (2).

S 422-044
(8) Install the spring (7) into the sleeve (6).

S 642-054
(9) Apply a light coat of oil to the surface of the new pin (4).

S 642-081
(10) Apply the primer at the two ends of the pin (4).

S 422-064
(11) Push the pin (4) into position through the spring (7) while the primer is wet.

S 212-056
(12) Make sure that the pin (4) is attached at both ends.

S 422-026
(13) Install one or more new washers (8) as necessary to get the dimension of 0.614 ± 0.015 inch (15.596 ± 0.381mm) from the exterior handle (2) to the washer(s) (8) on the exterior handle assembly.

S 422-027
(14) If the hinge assembly is removed, do the step that follows:
(a) Install the four rivets (9) to attach the hinge assembly to the housing (11).

S 642-031
(15) Apply a light coat of oil to the surface of the sleeve (6).

S 422-042
(16) Install the exterior handle assembly in the housing (11).

S 862-032
(17) Extend the spring (7) to permit sufficient clearance to install the spring keeper (12) and install the spring keeper (12).

S 422-034
(18) If the inserts (23) are removed, do the step that follows:
(a) Install the two new inserts (23) in the actuator (14) one-half to three-quarter turn below the surface and remove the tang.

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S 422-035
(19) Install the new quad ring (13) into the actuator (14).

S 642-036
(20) Lubricate the mating surfaces of the actuator (14) and the housing (11) with the grease.

S 422-065
(21) Put the actuator (14), quad ring (13), and two inserts (23) as an assembly over the shaft of the housing (11).

S 822-037
(22) Align the hole in the actuator (14) with the slot in the housing (11) and the sleeve (6).

S 422-067
(23) Install the bolt (24), washer (25), bushing (15), washer (27), and nut (28) to install the rod (26) to the handle assembly.

S 222-082
(24) Check the length of the rod (26) (AMM 52-36-01/401).

S 642-039
(25) Apply zinc-chromate primer or corrosion preventative compound to threads of the two screws (21).

S 422-066
(26) Put the screw fitting (22) in its correct position on the actuator (14) and install the two screws (21).

S 422-040
(27) Install the collar (20) and the panel (24) on the actuator (14).

S 422-084
(28) Install the screws (25).

S 422-041
(29) Put the interior handle (17) in its correct position on the actuator (14) and install the bolt (16), washer (18), and nut (19).

TASK 52-36-07-202-068

4. Interior Handle Alignment Marks Inspection/Check

A. Access

(1) Location Zone

811 Bulk Cargo Door

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B. Procedure

S 212-069
(1) Make sure the bulk cargo door is in the fully closed and latched position.

S 212-070
(2) Make sure the alignment mark on the interior door handle is aligned with the alignment marks on the door lining (Fig. 201).

S 352-071
(3) If the alignment marks are not in the correct position or if they are damaged, do the Interior Door Handle Alignment Marks - Approved Repairs procedure.

TASK 52-36-07-352-072

5. Interior Handle Alignment Marks Approved Repairs

A. General
(1) Do this procedure to repair the alignment marks if they are not in the correct position or if they are damaged.

B. Consumable Materials
(1) A00694 Pressure Sensitive Tape - Vinyl Fluorescent Film - Red Orange

C. Access
(1) Location Zone
811 Bulk Cargo Door

D. Procedure

S 352-073
(1) Remove the alignment marks that are not in the correct position or are damaged.

S 212-074
(2) Make sure the area where you will install the new alignment marks is clean.

S 352-075
(3) Install the pressure sensitive tape in the correct position (Fig. 201).

S 702-076
(4) Open the bulk cargo door.

S 702-077
(5) Fully close and latch the bulk cargo door.

S 212-078
(6) Make sure the alignment marks are in the correct position (Fig. 201).

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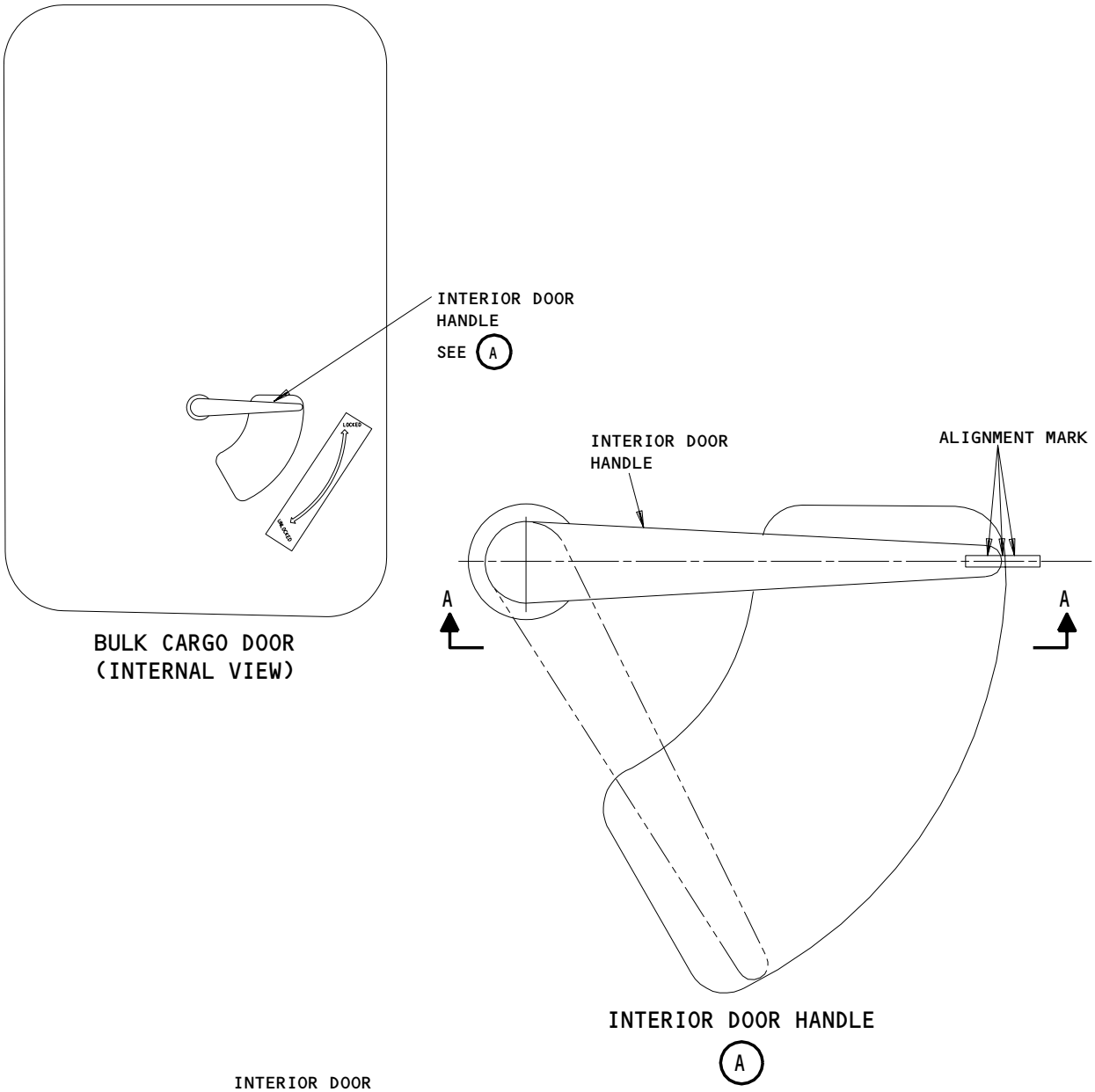

Alignment Marks
Figure 201

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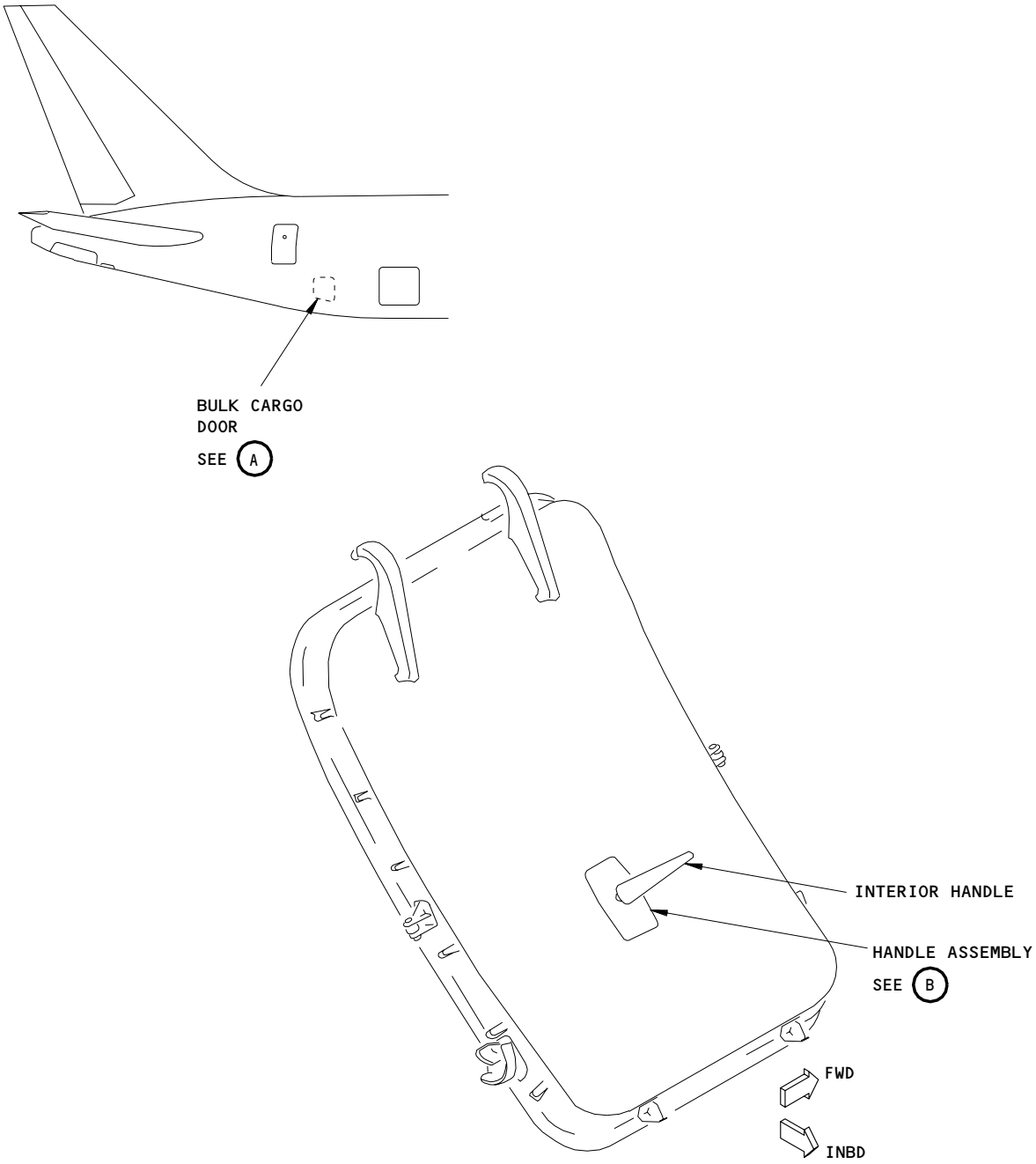

BULK CARGO DOOR
A

Bulk Cargo Door Latch Handle Assembly
Figure 202 (Sheet 1)

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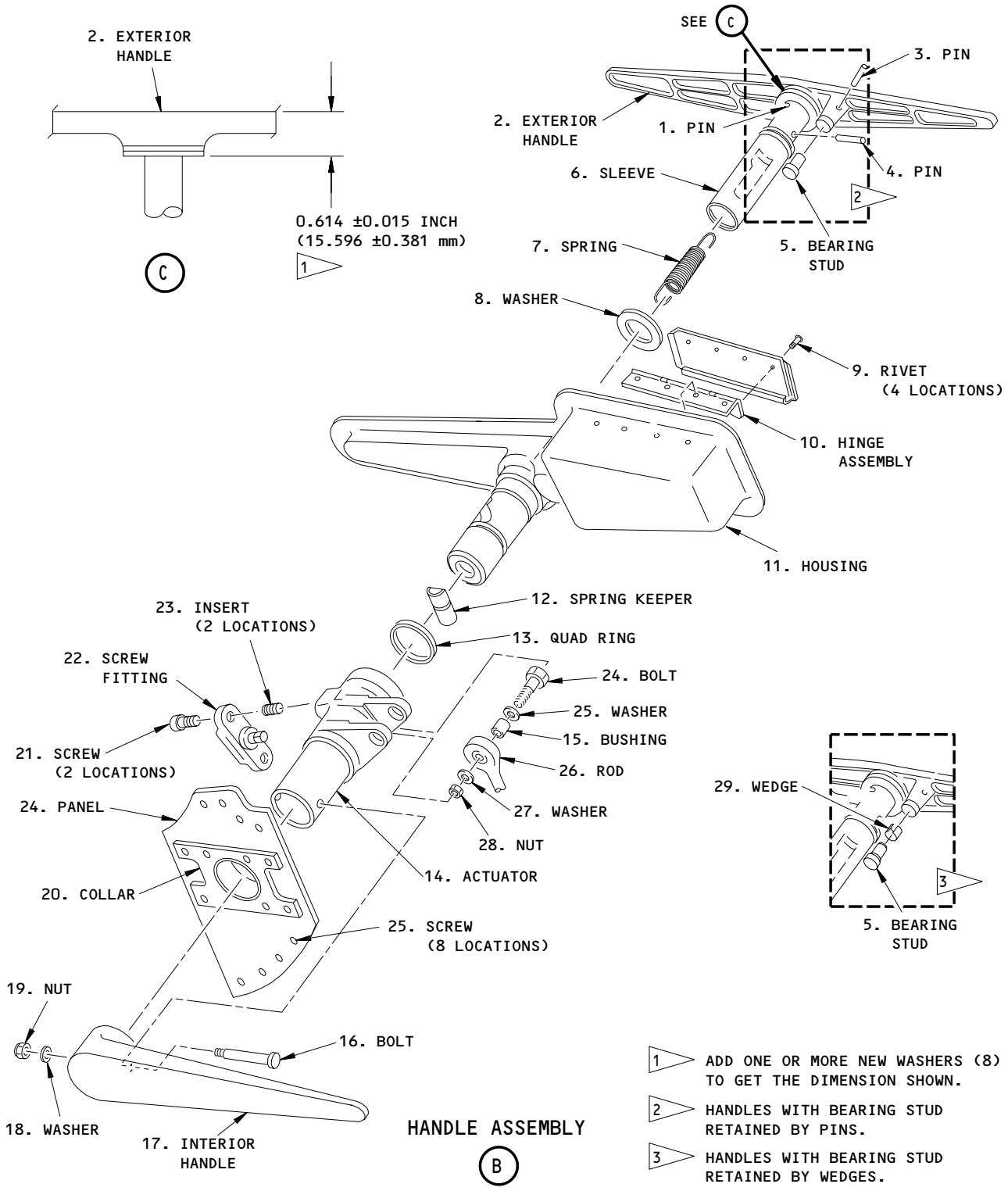

Bulk Cargo Door Interior and Exterior Handle
Figure 202 (Sheet 2)

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BULK CARGO DOOR PROTECTOR - REMOVAL/INSTALLATION

1. General
   A. This procedure contains four tasks. The first task is the removal of the bulk cargo door protector. The second task is the installation of the bulk cargo door protector. The third task is the removal of the door protector uplatch. The fourth task is the installation of the door protector uplatch.

TASK 52-36-10-004-003

2. Remove the Bulk Cargo Door Protector (Fig. 401)
   A. Access
      (1) Location Zone
          811 Bulk Cargo Door

   B. Procedure - Remove the Bulk Cargo Door Protector

      S 014-004
      (1) Close and latch the bulk cargo door.

      S 024-005
      (2) Remove the two door protector struts. Disconnect the door protector struts from the floor beam at the top end and from the bulk cargo door at the bottom end.
          (a) Put tags on the washers to make sure you can subsequently install in the correct sequence.

      S 024-006
      (3) Remove the door protector from the floor beams at the clevis attach points (two locations) (View A-A).
          (a) Put tags on the washers to make sure you can subsequently install in the correct sequence.

TASK 52-36-10-404-001

3. Install the Bulk Cargo Door Protector (Fig. 401)
   A. Consumable Materials
      (1) D00015 Grease - BMS 3-24
   B. Access
      (1) Location Zone
          811 Bulk Cargo Door

   C. Procedure - Install the Bulk Cargo Door Protector

      S 864-007
      (1) Put the bulk cargo door in the closed position.

      S 644-008
      (2) Apply grease to the mating surfaces of the bolts, bearings, and bushings at all the attach points before you install.

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S 424-009
(3) Connect the door protector at the clevis attach points (two locations) (View A-A). Tighten the nuts to 85-110 pound-inches.

S 424-010
(4) Connect the door protector struts to the floor beam (View B-B) and to the door protector (View C-C). Tighten the nuts to 85-110 pound-inches.

TASK 52-36-10-004-011

4. Remove the Door Protector Uplatch (Fig. 402)

A. Access

(1) Location Zone
811 Bulk Cargo Door

B. Procedure - Remove the Door Protector Uplatch

S 864-012
(1) Put the bulk cargo door and the door protector in the closed position unless you removed them for maintenance.

S 024-013
(2) Disconnect the cable assembly from the forward and aft latch assembly. Keep the snap plug removed from the forward latch assembly keyhole for the installation.

S 024-014
(3) To remove each forward or aft latch assembly remove the four bolts that hold each latch assembly to the lining shroud.

TASK 52-36-10-424-002

5. Install the Door Protector Uplatch (Fig. 402)

A. Access

(1) Location Zone
811 Bulk Cargo Door

B. Procedure - Install the Door Protector Uplatch

S 424-015
(1) Install the forward or aft latch assembly to the lining shroud with the four bolts and washers. Do not tighten the bolts until you do the adjustments that follow:
(a) Move the latch mounting plate on the slotted mounting holes to get the correct clearance between the latch arm and the door protector (View A).
(b) Install or remove the shims between the latch mounting plate and the mounting surface to align the latch arm with the slot in the door protector.

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S 434-016
(2) If a new cable is necessary, use the specification on Fig. 403.

S 424-017
(3) Attach the terminal tie rod to the cable with the nut.

S 424-018
(4) Connect the cable at the terminal tie rod end to the aft latch with the pin. Install the cotter pin.

S 824-019
(5) Adjust the cable length to attach the cable to the forward latch arm. Attach the cable ball end fitting in the keyhole slot in the forward latch arm.

S 424-020
(6) Install the plastic snap plug in the keyhole to keep the cable ball end in the slot.

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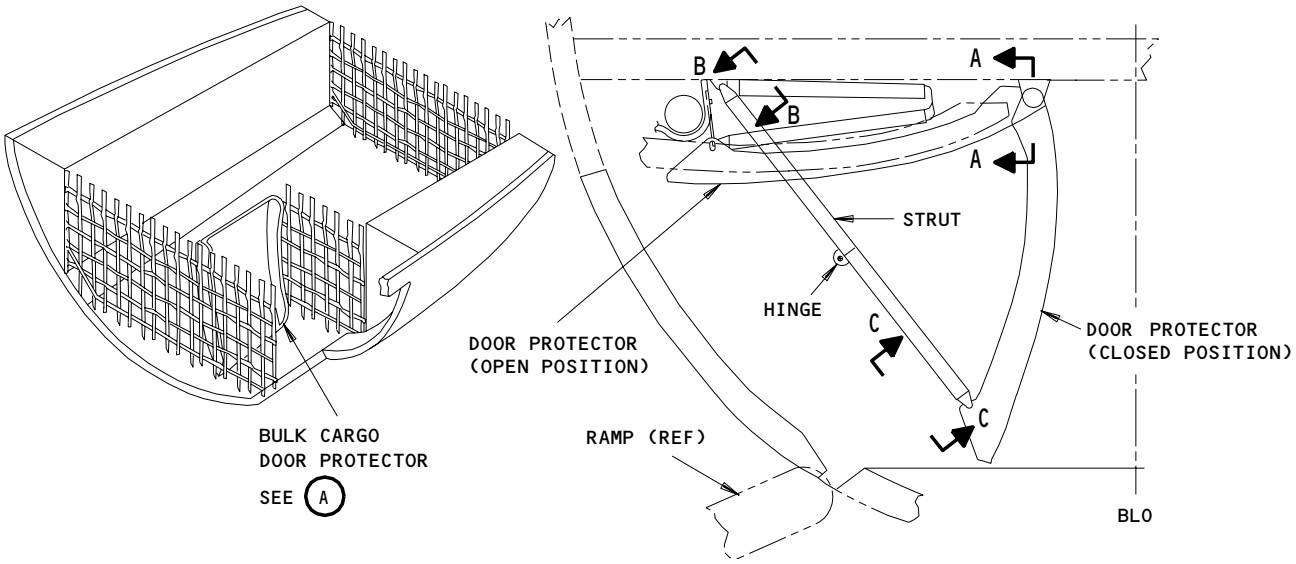
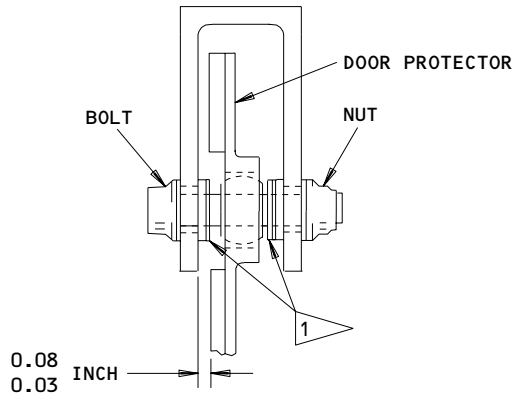
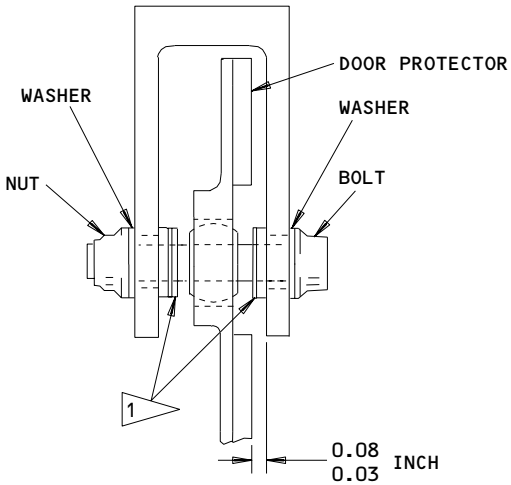


BULK CARGO DOOR PROTECTOR

A



FORWARD CLEVIS
ATTACH POSITION
A-A



AFT CLEVIS
ATTACH POSITION
A-A

1 INSTALL THE WASHERS TO GET A TOTAL CLEARANCE OF 0.01 INCH BEFORE YOU TIGHTEN THE NUT

Bulk Cargo Door Protector Installation
Figure 401 (Sheet 1)

49261

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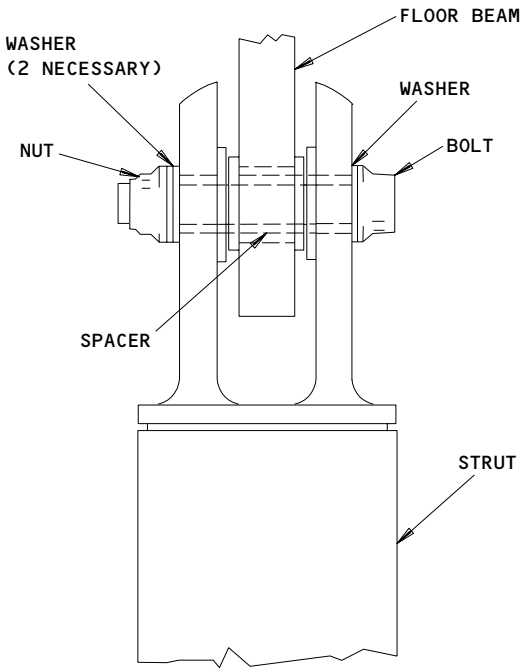
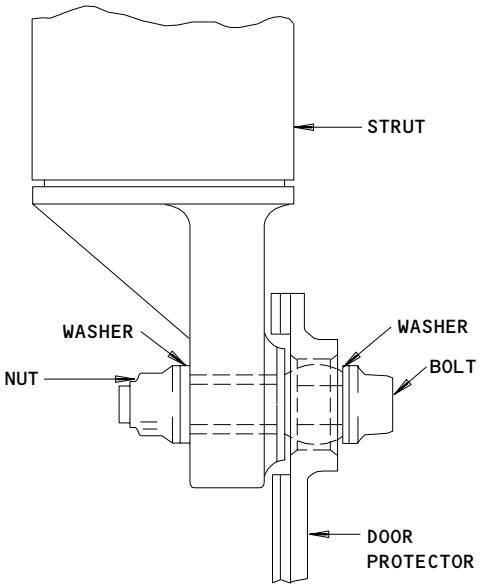
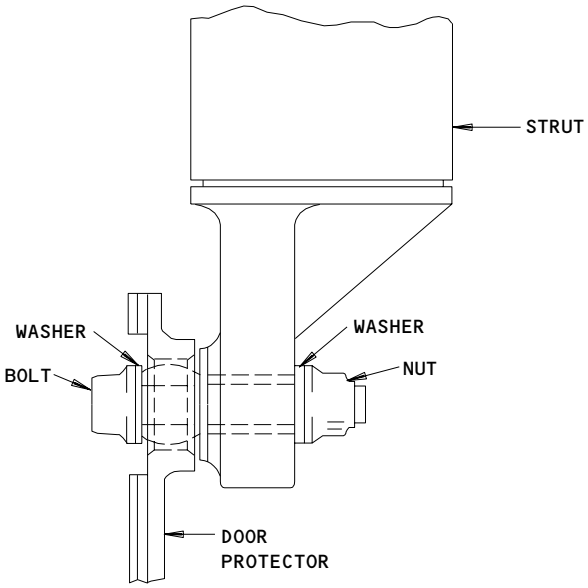


B-B



FORWARD STRUT AND DOOR PROTECTOR POSITION
C-C



AFT STRUT AND DOOR PROTECTOR POSITION
C-C

Bulk Cargo Door Protector Installation
Figure 401 (Sheet 2)

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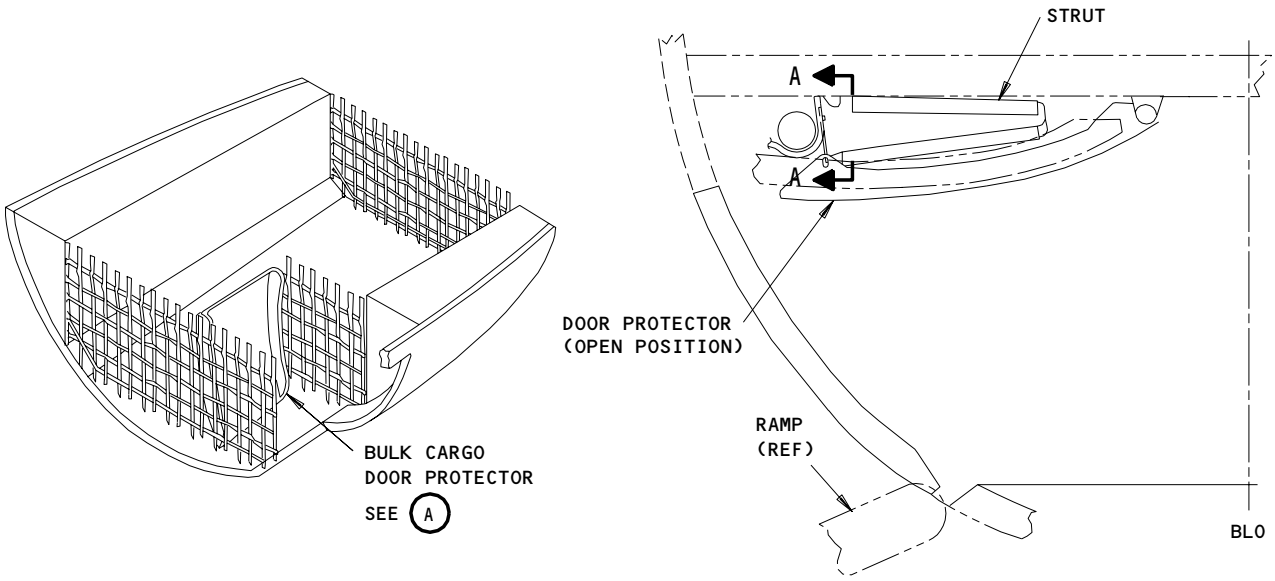
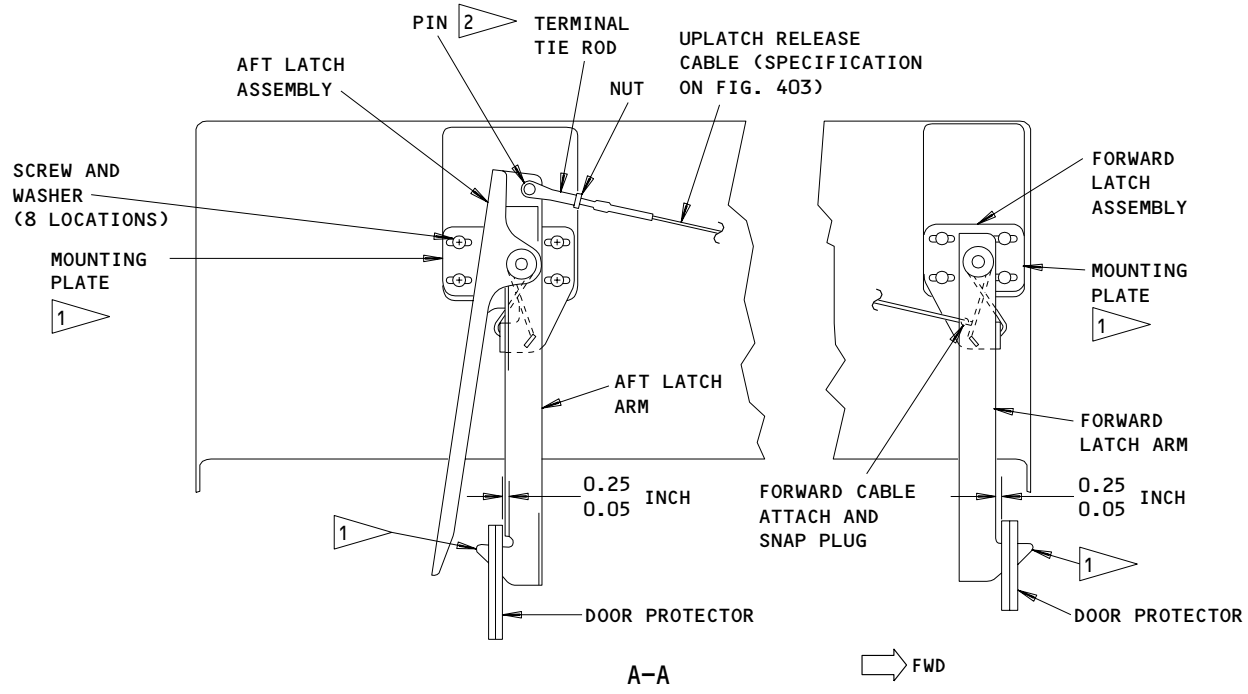
49275



BULK CARGO DOOR PROTECTOR

A



A-A

1 ADD OR REMOVE SHIMS ON THE MOUNTING PLATE IF NECESSACY TO ALIGN THE LATCH ARM HOOK WITH THE LATCH ENGAGEMENT HOLE IN THE DOOR PROTECTOR

2 MAKE SURE THE COTTER PIN IS INSTALLED

Bulk Cargo Door Protector Uplatch Installation
Figure 402

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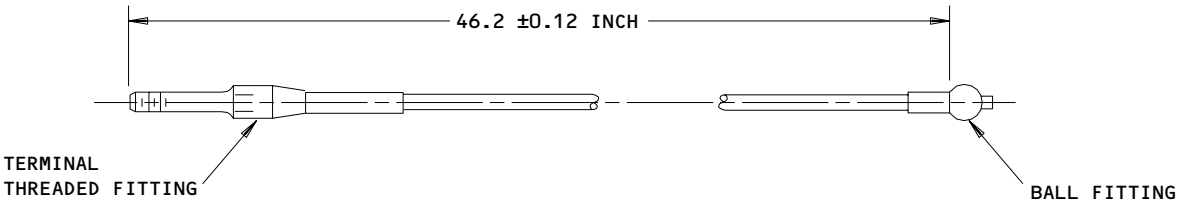
CABLE REF	DRAWING NUMBER	QUANTITY NECESSARY	CABLE ASSY LENGTH	CABLE SIZE (DIA)	TERMINAL THREADED FITTING	BALL FITTING
NONE	NAS312C10462	1	46.2 ±0.12 INCH	1/16 INCH	MS21259-2	MS20664-2



MATERIAL

CABLE: CORROSION RESISTANT STEEL FLEXIBLE, BY SPECIFICATION MIL-C-5424

FITTINGS: CORROSION RESISTANT BY SPECIFICATION MIL-T-781

Uplatch Release Cable
Figure 403

49292

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EQUIPMENT COMPARTMENT EXTERIOR DOORS - DESCRIPTION AND OPERATION

1. General
   A. The equipment compartment exterior doors are those doors which provide access to equipment compartments for maintenance purposes (Fig. 1).
2. Component Details
   A. Forward Access Door (Fig. 2)
      (1) The forward access door is a plug-type inward opening pivot hinged door. It is constructed of clad aluminum. It is located on the lower fuselage centerline forward of the nose wheel well. It is approximately 18 x 19 inches in dimensions.
      (2) This door is operable from inside or outside the fuselage and is included in the door warning system. The exterior handle is flush with fuselage skin. There is one latch bolt on the forward side of door. Cabin pressure loads are transmitted to fuselage through four pin stops. A pressure seal around door prevents cabin pressure loss.
      (3) To unlatch the door from outside the fuselage, remove the exterior handle from the flush position. Rotate the handle until unlatched.
      (4) To latch the door from outside the fuselage, rotate the exterior handle, then push the handle into the flush position. The rotation of the handle must be completed before pushing the handle towards the flush position.
   B. Electronics Access Door (Fig. 3)
      (1) The electronics access door is a plug-type inward opening sliding door. It is located on the lower fuselage centerline aft of the nose wheel well. It is approximately 18.5 x 23.0 inches in dimensions. It is constructed of clad aluminum.
      (2) This door is operable from inside or outside the fuselage and is included in the door warning system. The exterior handle is flush with fuselage skin. Rotating the handle moves an actuator rod, which in turn releases the latch bolt. There are three guide rollers which ride in three guide tracks, allowing the door to be pushed inward and to the right of the door opening. Cabin pressure loads are transmitted to fuselage through four pin stops. A pressure seal around door prevents cabin pressure loss.
      (3) To unlatch the door from outside the fuselage, remove the exterior handle from the flush position. Rotate the handle until unlatched.
      (4) To latch the door from outside the fuselage, rotate the exterior handle, then push the handle into the flush position. The rotation of the handle must be completed before pushing the handle towards the flush position.

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(5) If work is to be done in the compartment,
  (a) Push the electronics access door to the full open position to engage the hold open detent.
  (b) Install the E/E Access Hatch Safety Barrier across the electronics access door opening.

C. E/E Bay Main Deck Access Panel (Fig. 4)
  (1) The E/E bay main deck access panel, located inboard of the forward entry door, allows access to E/E bay while in flight.
  (2) The access panel is removed by rotating a handle located in the center of the panel. Rotation of handle moves four actuator rods, which in turn release four latch bolts, freeing panel for removal (Detail A).
  (3) A seal around the periphery of the panel prevents passage of liquid from upper to lower surface of panel. The seal is compressed when the panel is latched in place.
  (4) Install safety barrier (McMaster-Carr, No. 5900T14) in cabin across access door panel whenever panel is removed.

D. Environmental Control Systems Doors (Fig. 5)
  (1) There are two environmental control system doors providing access to the environmental control systems packs. They are located to the left and right of the centerline on the bottom of the wing to body fairing, just forward of the main landing gear doors.
  (2) These doors are honeycomb composite structures, constructed of fiberglass and graphite reinforced epoxy. Outer surfaces are coated with anti-static and conductive coatings. Both doors are hinged on inboard edges and equipped with spring loaded plunger latches on other edges. These doors also have hold open struts to prevent doors from swinging on hinges when open.

E. Service Access Door (Fig. 6)
  (1) The service access door provides access to the stabilizer trim actuator and stabilizer trim jackscrew. It is located on the lower fuselage in section 48, forward of the APU access doors. It is a hinged access door, secured by a pressure relief latch assembly. The pressure relief latch has a blowout feature which automatically releases the latch assembly if pressure in the compartment exceeds a predetermined level (170 ±20 pounds). The latch also has a manual release feature. Depressing the outer handle trigger releases the handle to the free position. Pulling the handle to the fully open position unloads the latch assembly. Operation of the inner handle releases the outer handle to the free position.

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(2) Install the service platform (A52025-1) across the service access door opening if you do work in the compartment.

F. Controls Bay Access Door (Fig. 7)

(1) The controls bay access door provides access to the elevator and rudder controls. It is located on the lower fuselage in section 48, forward of the APU access doors.

(2) The access door is hinged, secured by a trigger-lock latch assembly.

(3) Install Service Platform (A51001-19) across door opening if work is being done in the compartment.

G. APU Access Doors (Fig. 8)

(1) There are two APU access doors located on the tail cone, below the auxiliary power unit. These doors provide access to the auxiliary power unit. They are hinged, outward opening aluminum doors. Each door has a hold open strut. Both doors are equipped with tension latches to provide positive door locks. The latches are designed so that failure of the springs will not cause latches to open. To unlatch latches, insert a standard screwdriver blade into the latch trigger slot and rotate up.

H. Air Driven Pump Access Door (Fig. 9)

(1) The air driven pump access door is located in the left wing/body fairing just aft of the wing trailing edge. The door is hinged along its upper surface and secured by ten quick-release Hartwell latches along the sides and lower edge.

I. Vertical Fin Access Door (Fig. 10)

(1) The vertical fin access door provides access to the vertical stabilizer inspar structure. It is located on the upper fuselage centerline aft of the aft pressure bulkhead. The door opens downward and is hinged on the aft edge and latched on the forward edge.

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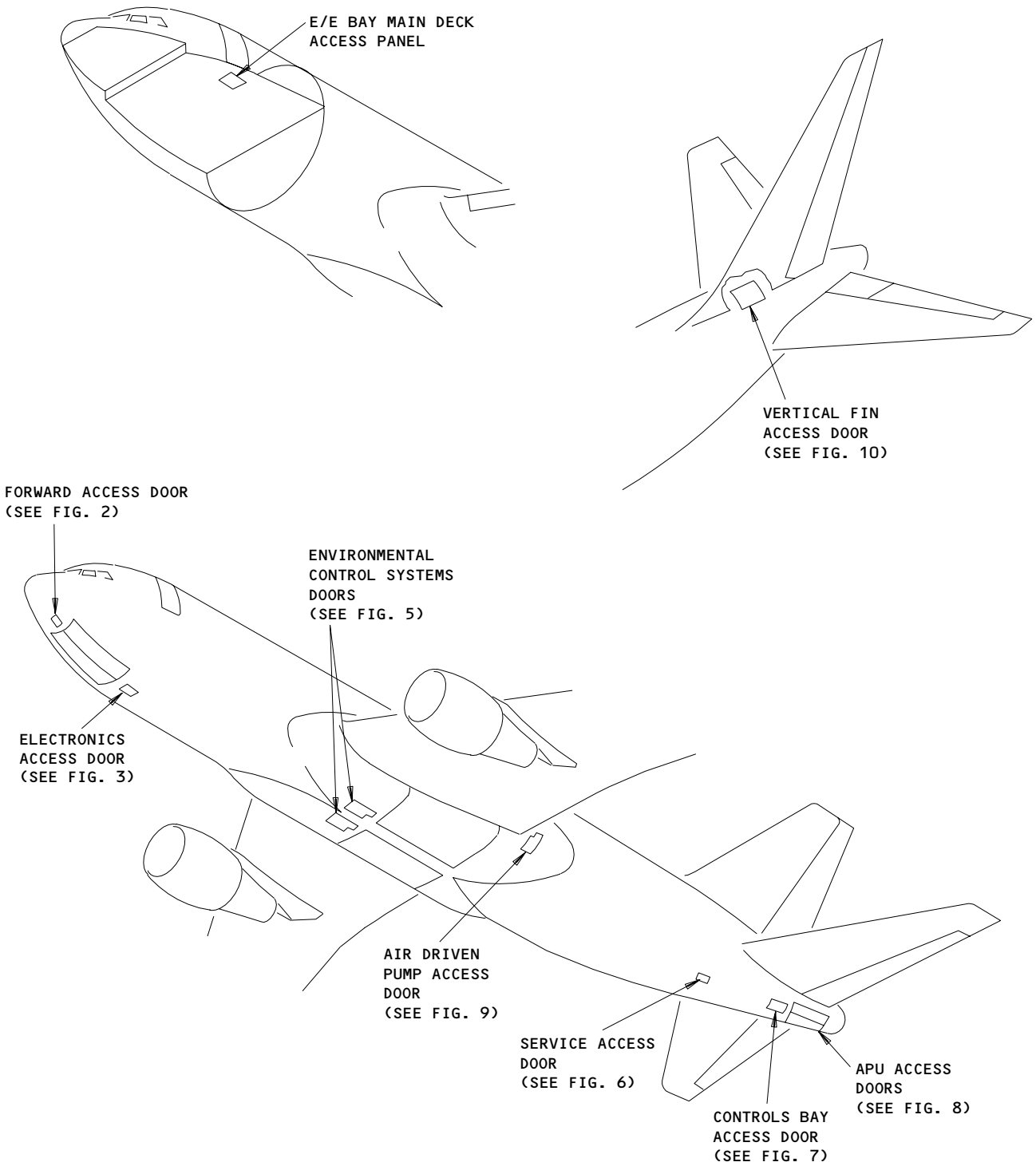

Equipment Compartment Exterior Doors Location
Figure 1

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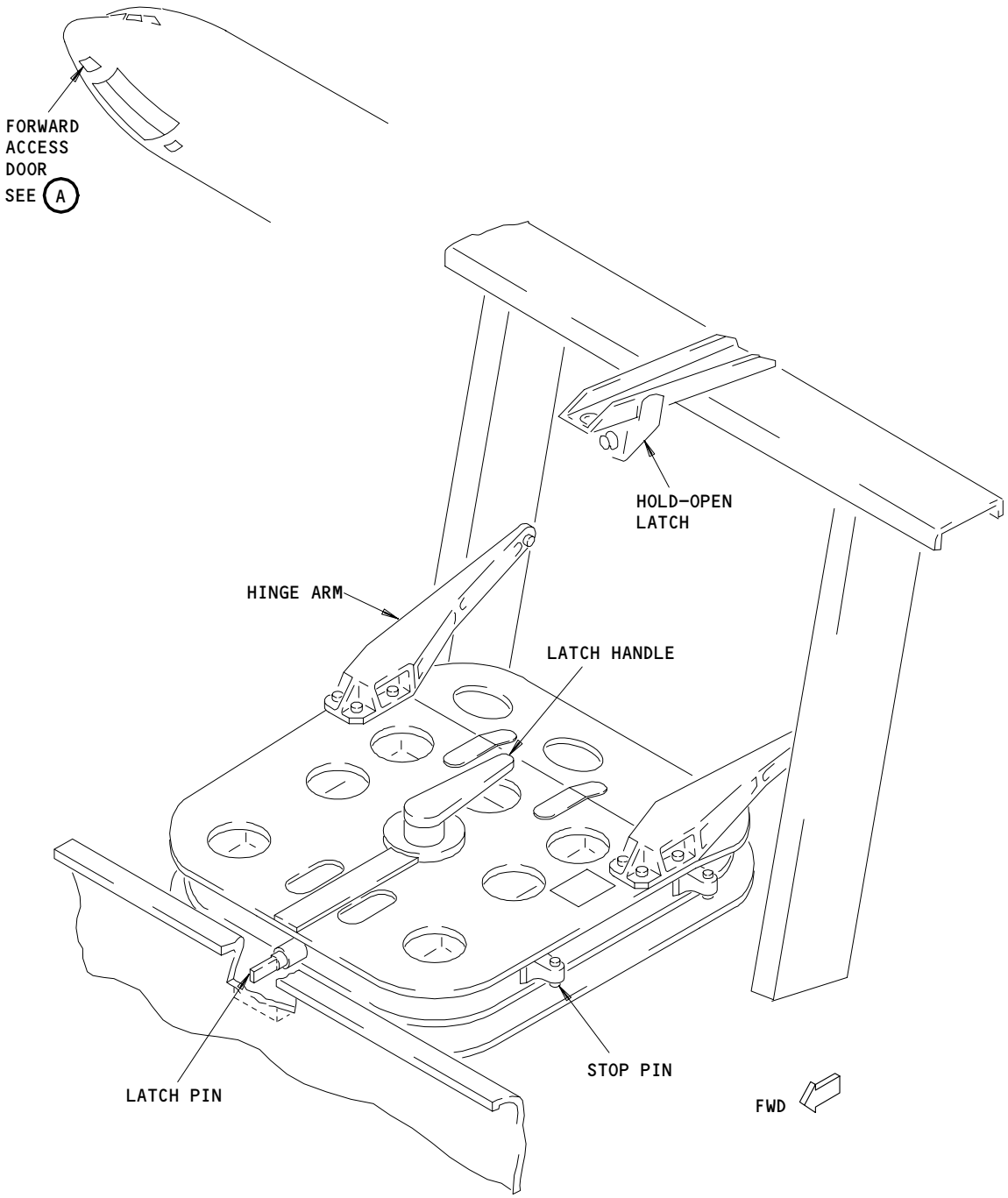

FORWARD ACCESS DOOR

A

Forward Access Door
Figure 2

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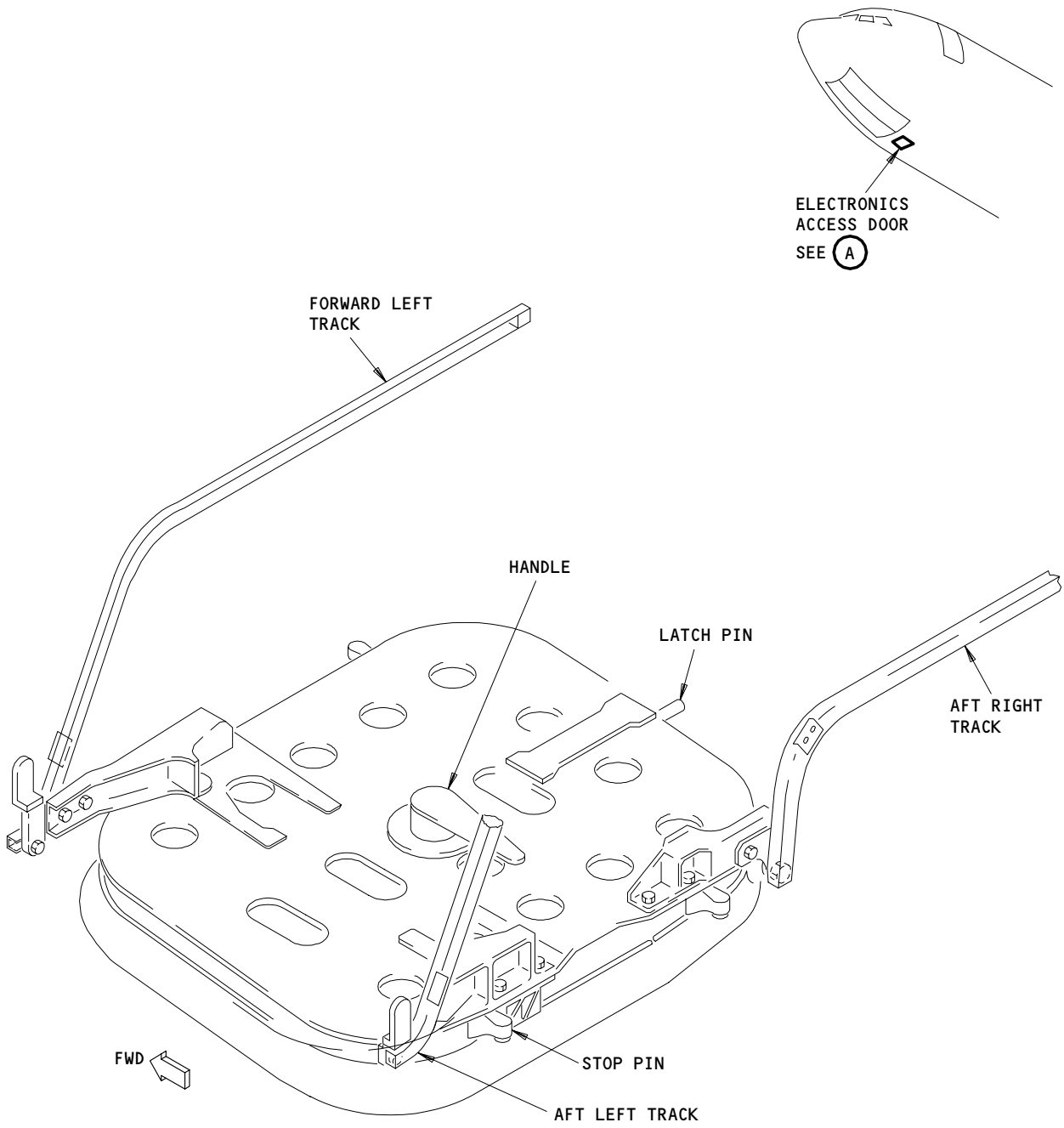

ELECTRONICS ACCESS DOOR

A

Electronics Access Door
Figure 3

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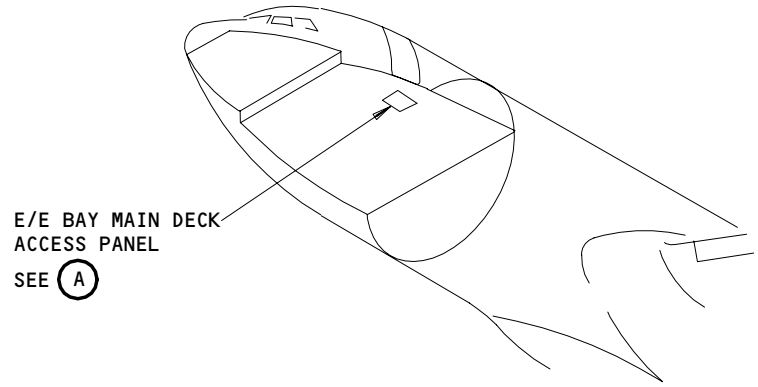

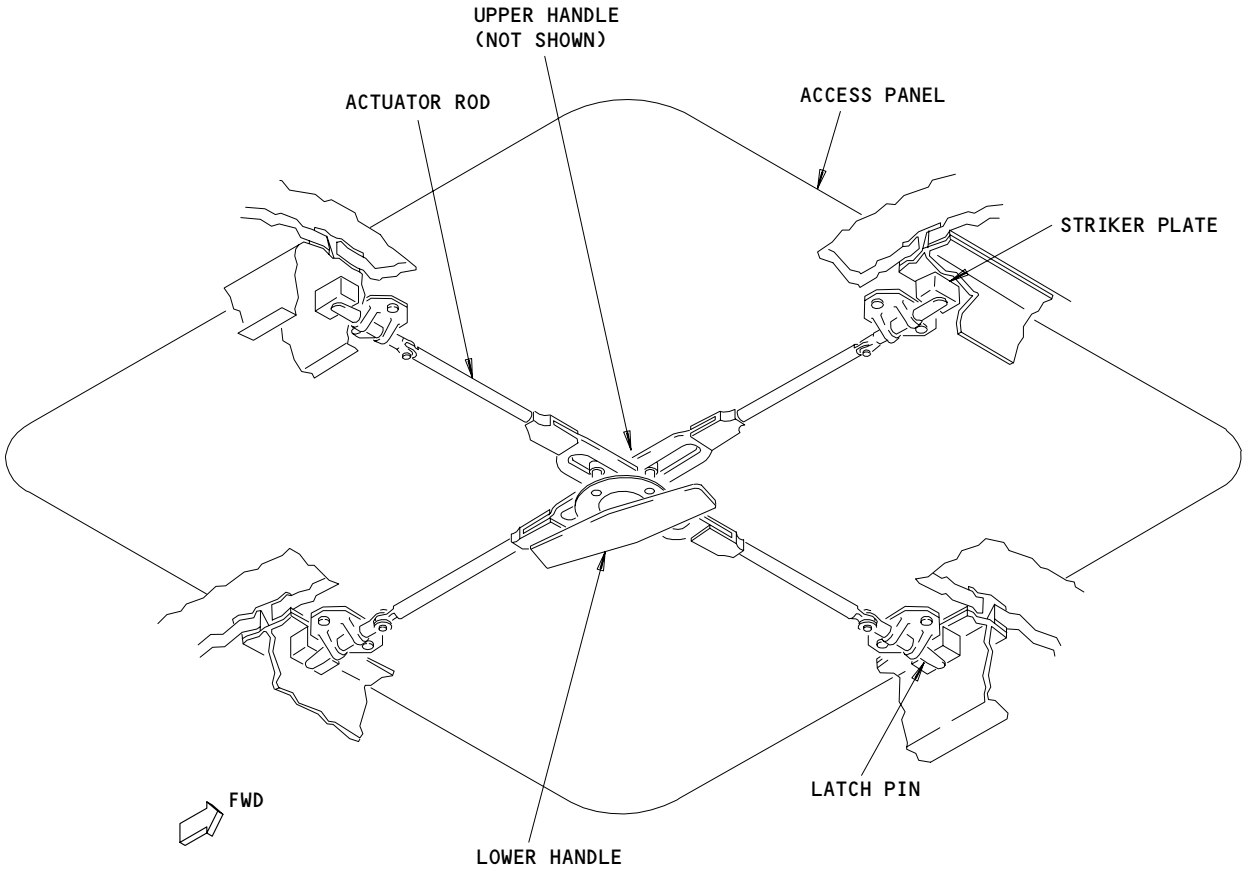

E/E BAY MAIN DECK ACCESS PANEL

A

E/E Bay Main Deck Access Panel
Figure 4

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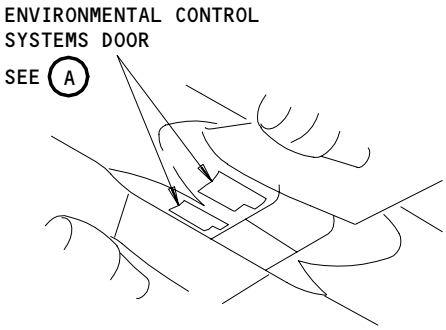

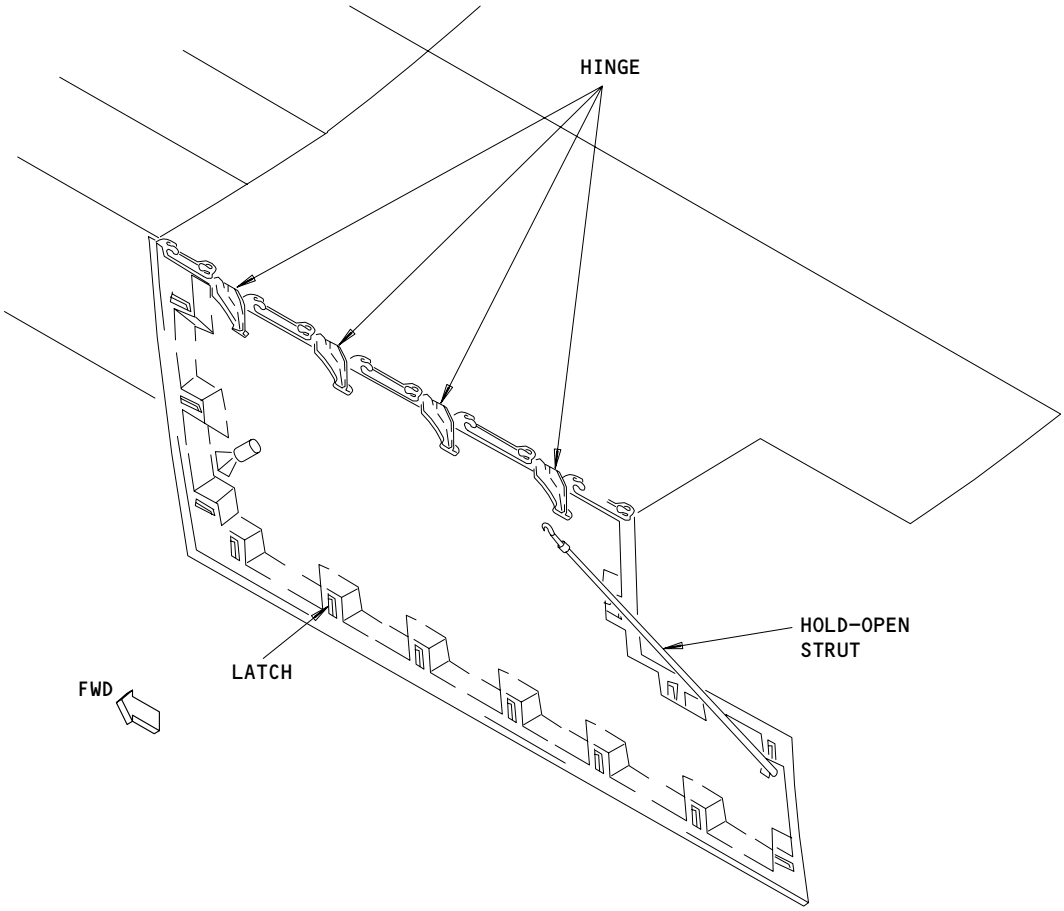

ENVIRONMENTAL CONTROL
SYSTEMS DOOR
A

Environmental Control Systems Doors
Figure 5

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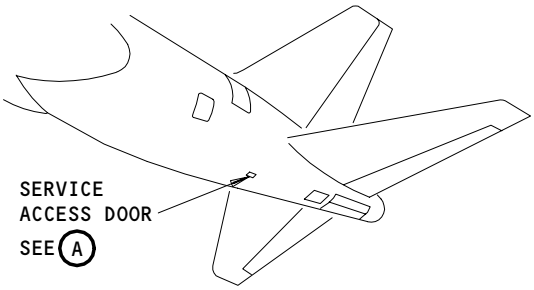

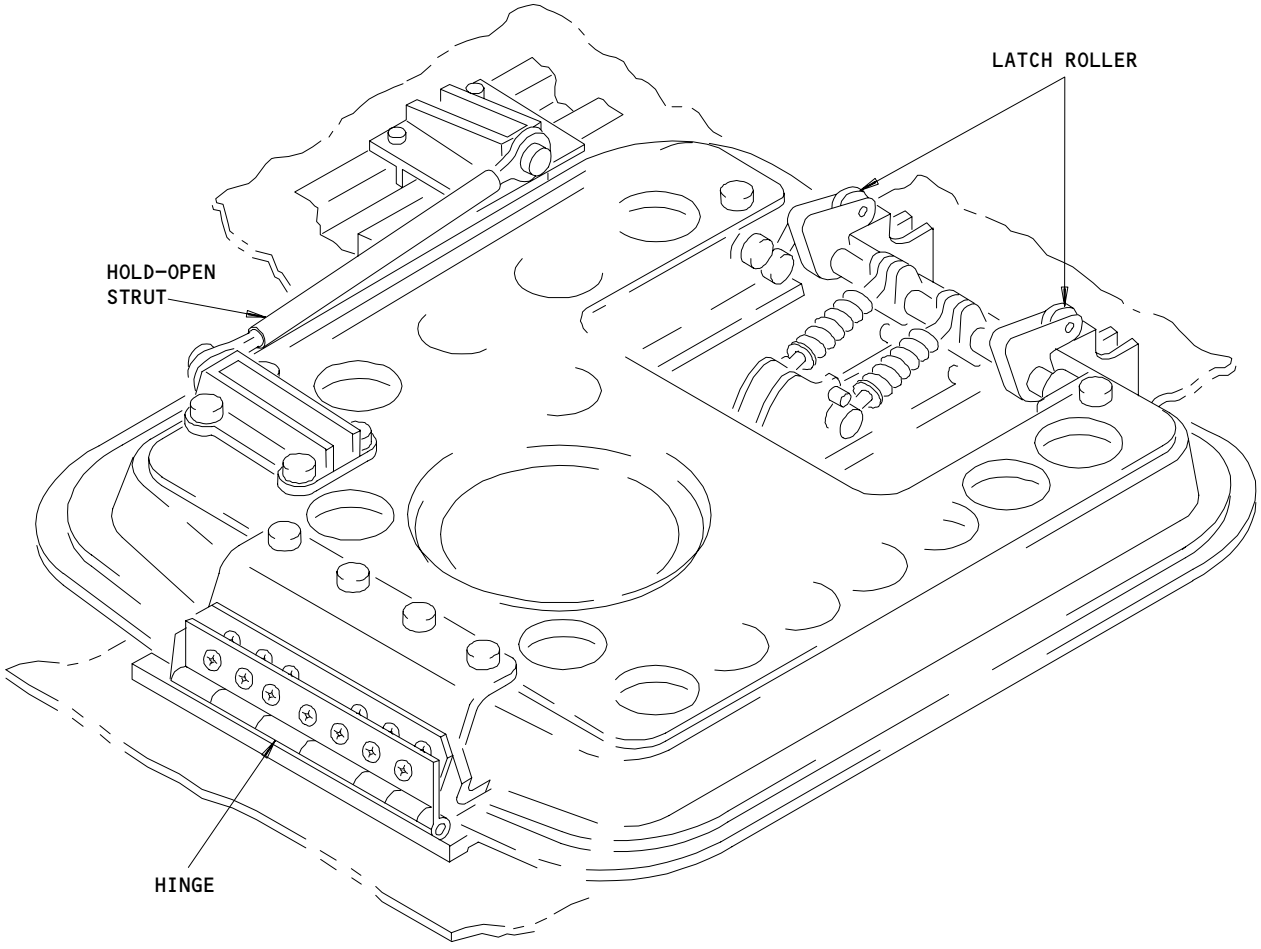

SERVICE ACCESS DOOR
A

Service Access Door
Figure 6

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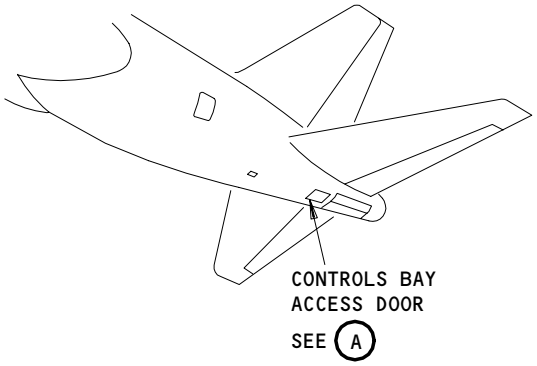

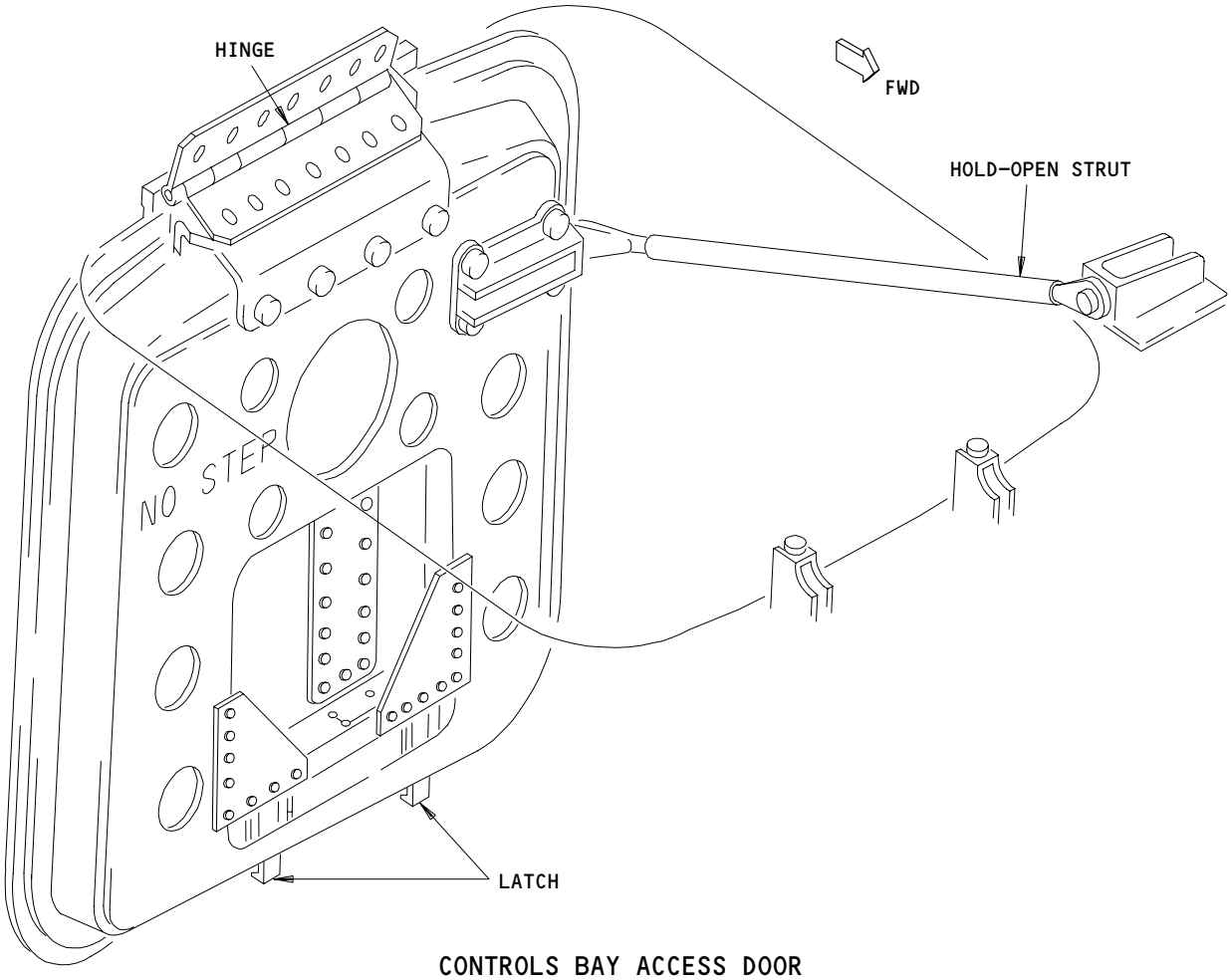

CONTROLS BAY ACCESS DOOR

A

Controls Bay Access Door
Figure 7

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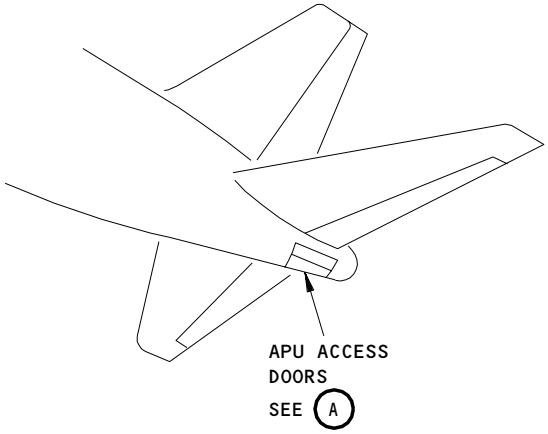

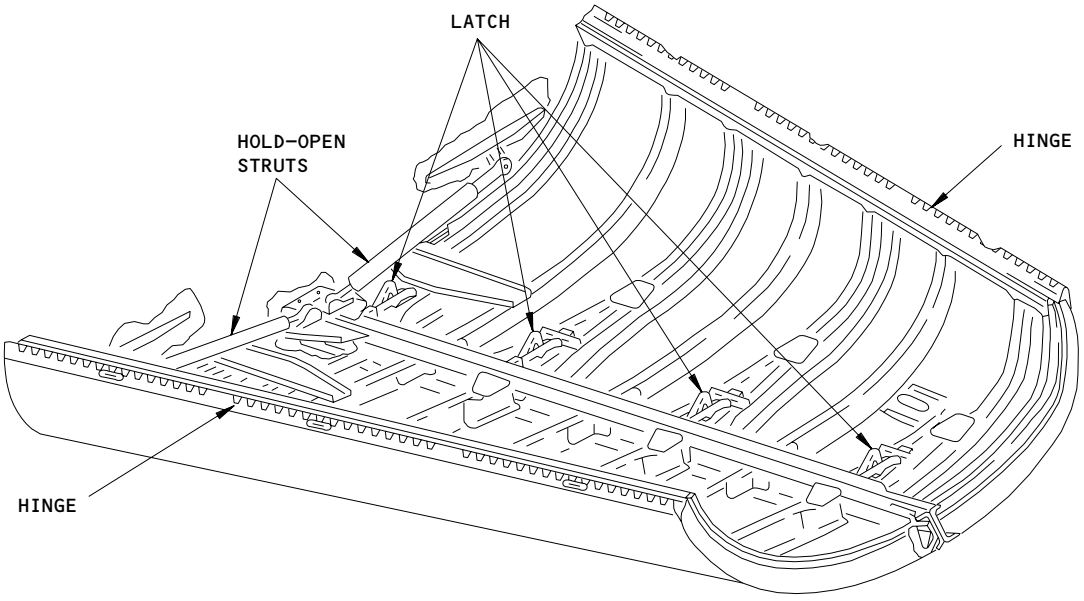

APU ACCESS DOORS
A

APU Access Doors
Figure 8

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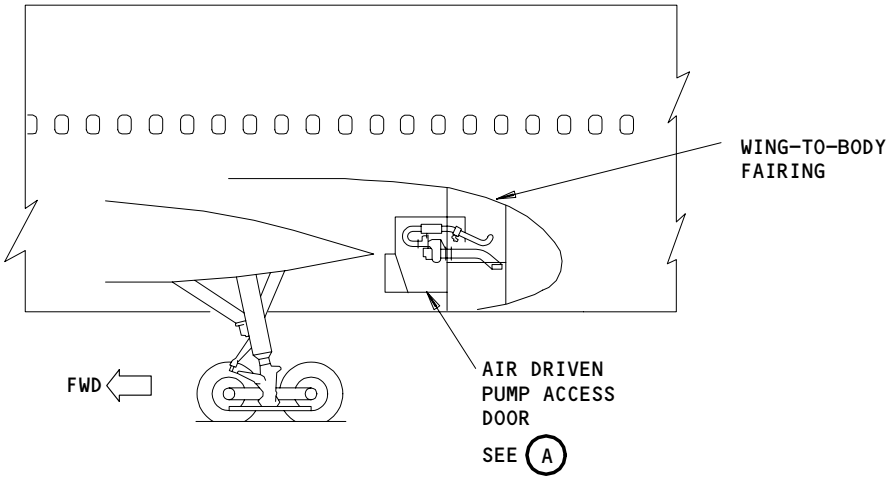

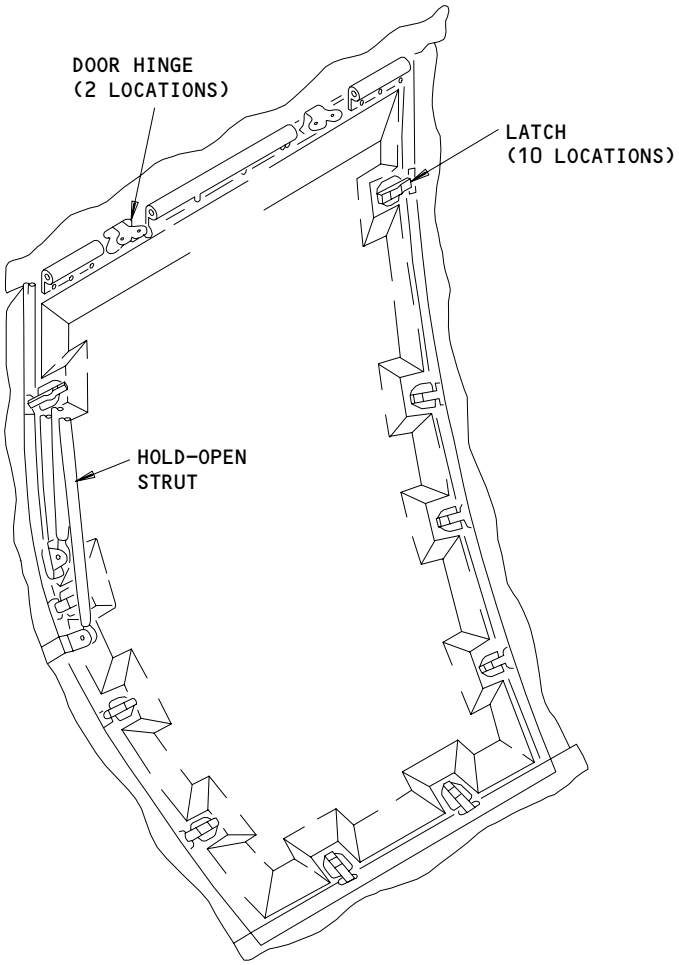

AIR DRIVEN PUMP ACCESS DOOR

A

Air Driven Pump Access Door
Figure 9

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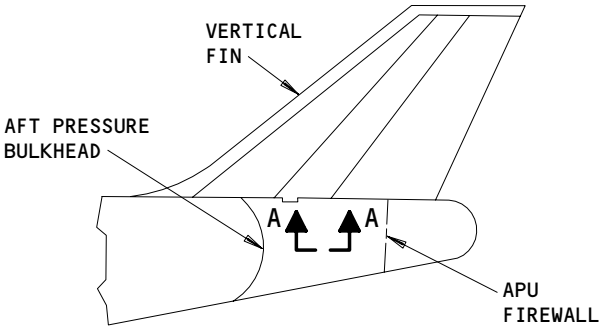

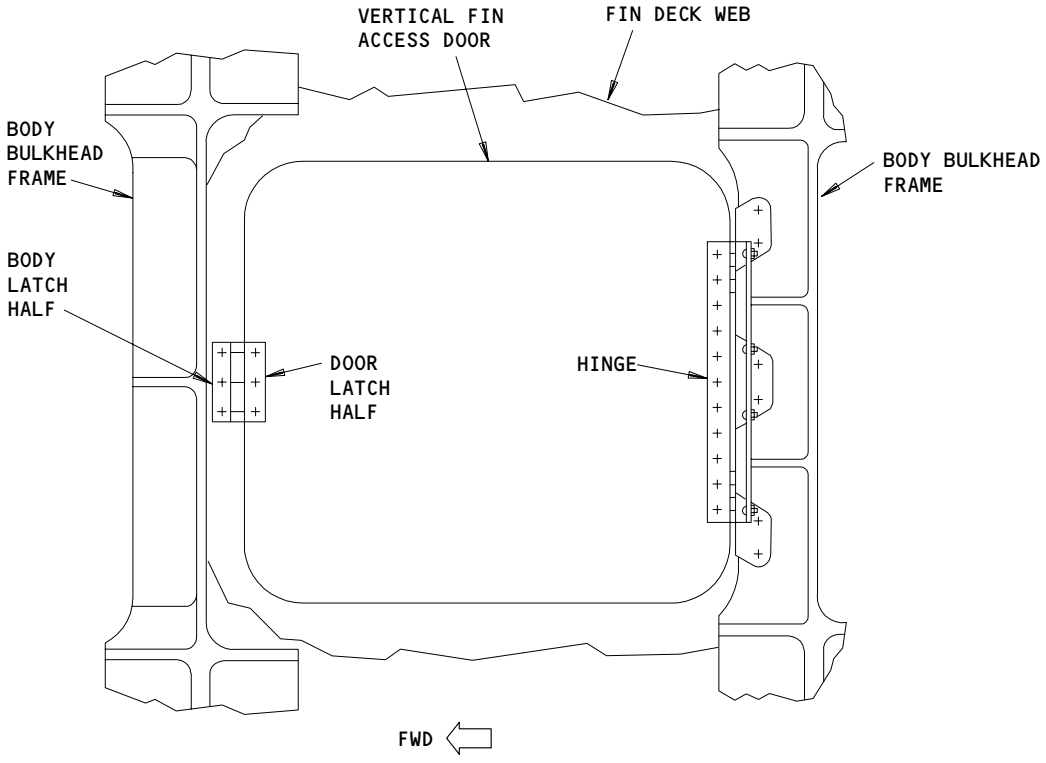

A-A

Vertical Fin Access Door
Figure 10

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FORWARD ACCESS DOOR - MAINTENANCE PRACTICES

1. General
   A. This procedure contains the task to apply corrosion prevention treatment to the forward access door.

TASK 52-48-01-622-001

2. Corrosion Prevention Treatment (Fig. 201)
   A. General
      (1) The forward access door has a corrosion protective finish that consists of chemical finish (Alodine) on clad aluminum parts, anodize surface treatment on non-clad aluminum parts, a coat of BMS 10-11, Type I, primer and a coat of BMS 10-11, Type II, enamel. Faying surfaces of parts attached to the door skin were fay sealed with BMS 5-95 sealant. All areas of possible moisture accumulation are drained or filled with BMS 5-125 leveling compound. The exterior of the door was unfinished during production unless otherwise specified by the operator. The interior surface of the door received a coat of BMS 3-23, Type II, corrosion preventive compound after assembly and painting.
      (2) Areas of possible corrosion are the internal structure of the door, connection points and mechanisms.
      (3) The door should be treated with corrosion preventive compound at the same time as the door opening.
      (4) Following cleaning of suspected areas (Ref AMM 51-21-03/701), a full inspection is effective to make sure that protective finishes provided during manufacture stay intact. For details on the application of corrosion preventive compound, refer to AMM 51-24-09/701.
      (5) Corrosion may show as noticeable bulges of the skin or as white deposits of corrosion products at fastener heads or joint edges.
      (6) For minor corrosion, to keep the downtime of the airplane to a minimum, the corrosion products should be cleaned off, followed by the application of a corrosion preventive compound into the affected area to decrease the corrosion process (Ref AMM 51-24-09/701). The finish system should be repaired at the first opportunity consistent with the maintenance schedule.
      (7) Frequency of Application
         (a) Periodic inspection is required in areas that can get corrosion and should be consistent to the schedules specified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.
         (b) Periodic application of BMS 3-23 compounds is necessary on areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.

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(8) Obey the precautions that follow when you apply the corrosion preventive compound:
(a) Do not apply corrosion preventive compounds on grease joints or sealed bearings. These compounds dissolve grease and other lubricants. They are penetrating compounds and can get around the seals and into the bearings.
(b) Do not apply corrosion preventive compounds on interior materials such as liners. The compounds can change the flammable quality of these materials.

B. References
(1) AMM 12-21-27/301, Equipment Compartment and Exterior Service Doors.
C. Consumable Materials
(1) G00009 Compound, Organic Corrosion Preventive - BMS3-23, Type II
D. Access
(1) Location Zone
113 Area forward of NLG wheel well

(2) Access Panel
113AL Forward Access Door

E. Prepare for the Corrosion Prevention Treatment

S 012-002
(1) Open the forward access door and gain access to the interior structure of the door.

S 162-003
(2) Clean out drains and drain paths.
(a) Make sure that the drain valve is free to open and close.

CAUTION: EXCESSIVE TIGHTENING OF PLUNGER TYPE DRAIN VALVE WILL CAUSE VALVE FLANGE TO CRACK OR BREAK.

(b) If necessary, remove plunger type drain valve from outside of door, clean out obstructions and install valve until flange contacts skin.

F. Procedure

S 622-004
(1) Apply the corrosion prevention treatment, do these steps:
(a) Apply corrosion preventive compound BMS 3-23, Type II, to the accessible interior surfaces of the door, giving special attention to the structural seams. Do not apply to drain valve or other operational mechanisms.

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(b) Lubricate the interior door fittings, as necessary (Ref AMM 12-21-27/301).

S 412-005

(2) Close and latch the forward access door.

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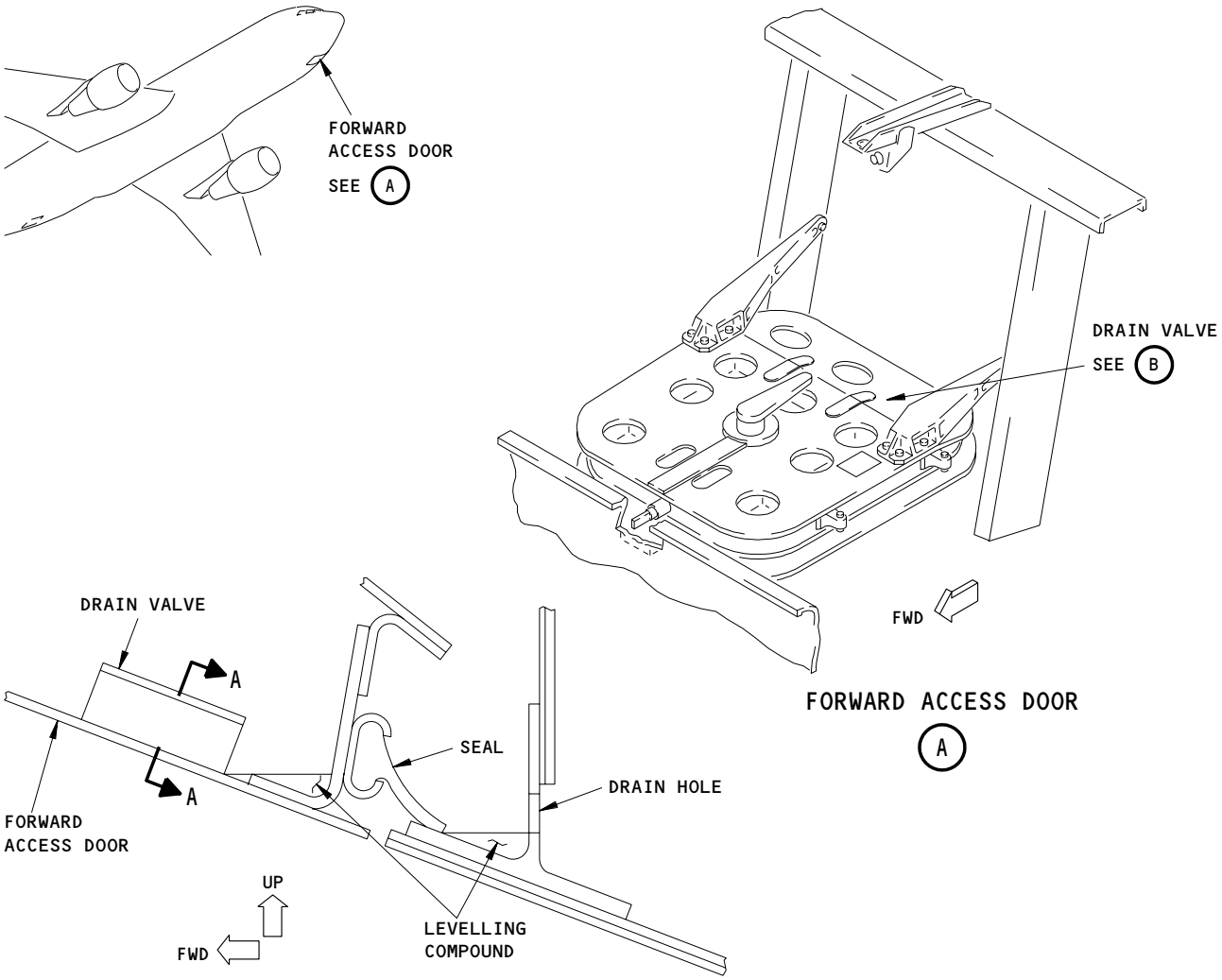

FORWARD ACCESS DOOR
A

DRAIN VALVE
B

A–A
(PLUNGER TYPE DRAIN VALVE)

A–A
(LEAF SPRING TYPE DRAIN VALVE)

Forward Access Door
Figure 201

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FORWARD ACCESS DOOR - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the forward access door. The second task is the installation of the forward access door.
   B. Unwanted skin is removed from the initial door to get the correct clearance between the forward access door and fuselage opening. This is done during the assembly of the airplane. It is not necessary to remove the skin around the edges of the door when you install the same door. It can be necessary to remove the unwanted skin around the edges of the door when you install a new, replacement door.
   C. Refer to 52-71-00/501 for the adjustment and the system test of the proximity sensors for the door warning system.

TASK 52-48-01-004-012

2. Remove the Forward Access Door (Fig. 401)
   A. Access
      (1) Location Zone
          113 Area forward of NLG wheel well

      (2) Access Panel
          113AL Forward Access Door

   B. Procedure - Remove the Forward Access Door

      S 034-001
      (1) Disconnect the electrical bonding jumper from the two hinge arms (View B, Fig. 401).

      S 034-002
      (2) Remove the fasteners that hold the hinge arms to the fuselage frame (View B, Fig. 401).

      S 024-013
      (3) Release the latch and remove the door from the airplane.

      S 034-014
      (4) If the replacement door does not have hinges and stop pins installed, do the steps that follow:
          (a) Remove the stop pins and retainers from the door that you removed from the airplane (View C, Fig. 401).
          (b) Install the stop pins and retainers on the replacement door.
          (c) Remove the hinge arms and the fasteners that hold the hinges to the initial door (View D, Fig. 401).

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(d) Install the hinges on the replacement door.

TASK 52-48-01-424-003

3. Install the Forward Access Door (Fig. 401)

A. Consumable Materials

(1) D00633 Grease - BMS 3-33 (Preferred)
(2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)
(3) C00064 Coating - Aluminum Chemical Conversion (Alodine) MIL-C-5541
(4) A00247 Sealant - BMS 5-95

B. References

(1) 52-71-00/501, Door Warning Sensor System
(2) 51-31-01/201, Seals and Sealing - Maintenance Practices

C. Access

(1) Location Zone
113 Area Forward of NLG Wheel Well

(2) Access Panel
113AL Forward Access Door

D. Procedure - Install the Forward Access Door

S 424-004
(1) Put the door in the correct position.

S 644-026
(2) Apply grease to the bushings and the bolts for the pivot attachment (View B, Fig. 401).

S 424-019
(3) Attach the hinge arms loosely at the pivot attachment points (View B, Fig. 401).

NOTE: Make sure all the bushings, spacers, and washers are in the correct position.

S 824-018
(4) Adjust the door to get the clearance between the door skin edge and the fuselage edge as shown (Fig. 402).

NOTE: Move washers from one hinge arm to the other to adjust the clearance at the sides of the door (View B, Fig. 401). Move the position of the door on the serrated plates to adjust the forward and aft clearances of the door.

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S 354-009

(5) If it is necessary, remove the unwanted skin from the edges of the door to get the correct clearance between the door skin and the fuselage skin.

NOTE: Remove skin only from replacement doors. Do not remove skin from the initial door.

S 374-021

(6) Apply the clear alodine to the areas of the door where you removed the unwanted skin.

S 224-028

(7) Do a check of the flushness of the door skin (Fig. 402).
   (a) Use a non-permanent marker to make 6 marks at the locations shown on Fig. 402.
   (b) Make sure the door is closed.
   (c) Measure and record the distance between the door skin and the fuselage skin at each of the 6 location marks.
   (d) If any of the 6 flushness measurements is not in the range shown in Fig. 402, use the Aero-Averaging method to determine if the flushness deviation is acceptable.
      1) Use Table 401 to determine a drag value for each of the 6 flushness measurements.
      2) Calculate the sum of the 6 drag values.
      3) Divide the sum of the 6 drag values by 6.
      4) If the sum of the drag values divided by 6 is less than 1.00, then the flushness deviation is acceptable.

FLUSHNESS AERO-AVERAGING TABLE *
TABLE 401

STEP HEIGHT				DRAG VALUE
FWD EDGE		AFT EDGE		
INCH	(MM)	INCH	(MM)	
-0.17	(-4.32)	0.13	(3.30)	0.78
-0.16	(-4.06)	0.12	(3.05)	0.73
-0.15	(-3.81)	0.11	(2.79)	0.68
-0.14	(-3.56)	0.10	(2.54)	0.63

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FLUSHNESS AERO-AVERAGING TABLE *
TABLE 401

STEP HEIGHT				DRAG VALUE
FWD EDGE		AFT EDGE		
INCH	(MM)	INCH	(MM)	
-0.13	(-3.30)	0.09	(2.29)	0.58
-0.12	(-3.05)	0.08	(2.03)	0.53
-0.11	(-2.79)	0.07	(1.78)	0.47
-0.10	(-2.54)	0.06	(1.52)	0.42
-0.09	(-2.29)	0.05	(1.27)	0.37
-0.08	(-2.03)	0.04	(1.02)	0.31
-0.07	(-1.78)	0.03	(0.76)	0.26
-0.06	(-1.52)	0.02	(0.51)	0.21
-0.05	(-1.27)	0.01	(0.25)	0.15
-0.04	(-1.02)	0.00	(0.00)	0.13
-0.03	(-0.76)	-0.01	(-0.25)	0.11
-0.02	(-0.51)	-0.02	(-0.51)	0.00
-0.01	(-0.25)	-0.03	(-0.76)	0.05
0.00	(0.00)	-0.04	(-1.02)	0.11
0.01	(0.25)	-0.05	(-1.27)	0.16
0.02	(0.51)	-0.06	(-1.52)	0.26
0.03	(0.76)	-0.07	(-1.78)	0.37
0.04	(1.02)	-0.08	(-2.03)	0.47
0.05	(1.27)	-0.09	(-2.29)	0.58
0.06	(1.52)	-0.10	(-2.54)	0.68
0.07	(1.78)	-0.11	(-2.79)	0.78

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FLUSHNESS AERO-AVERAGING TABLE * TABLE 401				
STEP HEIGHT				DRAG VALUE
FWD EDGE		AFT EDGE		
INCH	(MM)	INCH	(MM)	
0.08	(2.03)	-0.12	(-3.05)	0.89
0.09	(2.29)	-0.13	(-3.30)	1.00
0.10	(2.54)	-0.14	(-3.56)	1.15
0.11	(2.79)	-0.15	(-3.81)	1.26
0.12	(3.05)	-0.16	(-4.06)	1.37
0.13	(3.30)	-0.17	(-4.32)	1.53
0.14	(3.56)	-0.18	(-4.57)	1.63
0.15	(3.81)	-0.19	(-4.83)	1.78

* A negative flushness shows that the door is inboard of the fuselage.

A positive flushness shows that the door is outboard of the fuselage.

S 824-017

(8) Do the steps that follow to get the correct door to fuselage skin flushness:

(a) Adjust the stop pins to make all four of the stop pins touch the stop pads at the same time.

(b) Adjust the stop pins to make sure the door skin to fuselage skin flushness is correct (Fig. 402).

NOTE: There is not a flushness tolerance in the skin splice area. The door will be inboard of the fuselage in the skin splice area.

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S 424-022
(9) Tighten the hinge arm bolts (View D, Fig. 401).

S 424-023
(10) Tighten the pivot attachment bolts (View B, Fig. 401).

S 824-008
(11) When you are sure the door flushness and clearances are correct, adjust the latch pin as follows (View A-A, Fig. 401):
  (a) Extend the latch pin with the latch handle.
  (b) Adjust the handle mechanism rod to get the correct latch pin extension (View A-A, Fig. 401).
  (c) Make sure the latch pin operates freely and smoothly.
  (d) If the latch pin does not operate freely and smoothly, adjust the latch fitting (View E, Fig. 401).

S 424-010
(12) Install the bonding jumpers.

S 374-025
(13) Make a fillet seal around the bolt and the jumper connection (Ref 51-31-01).

S 824-011
(14) Adjust the door warning sensor system (Ref 52-71-00).

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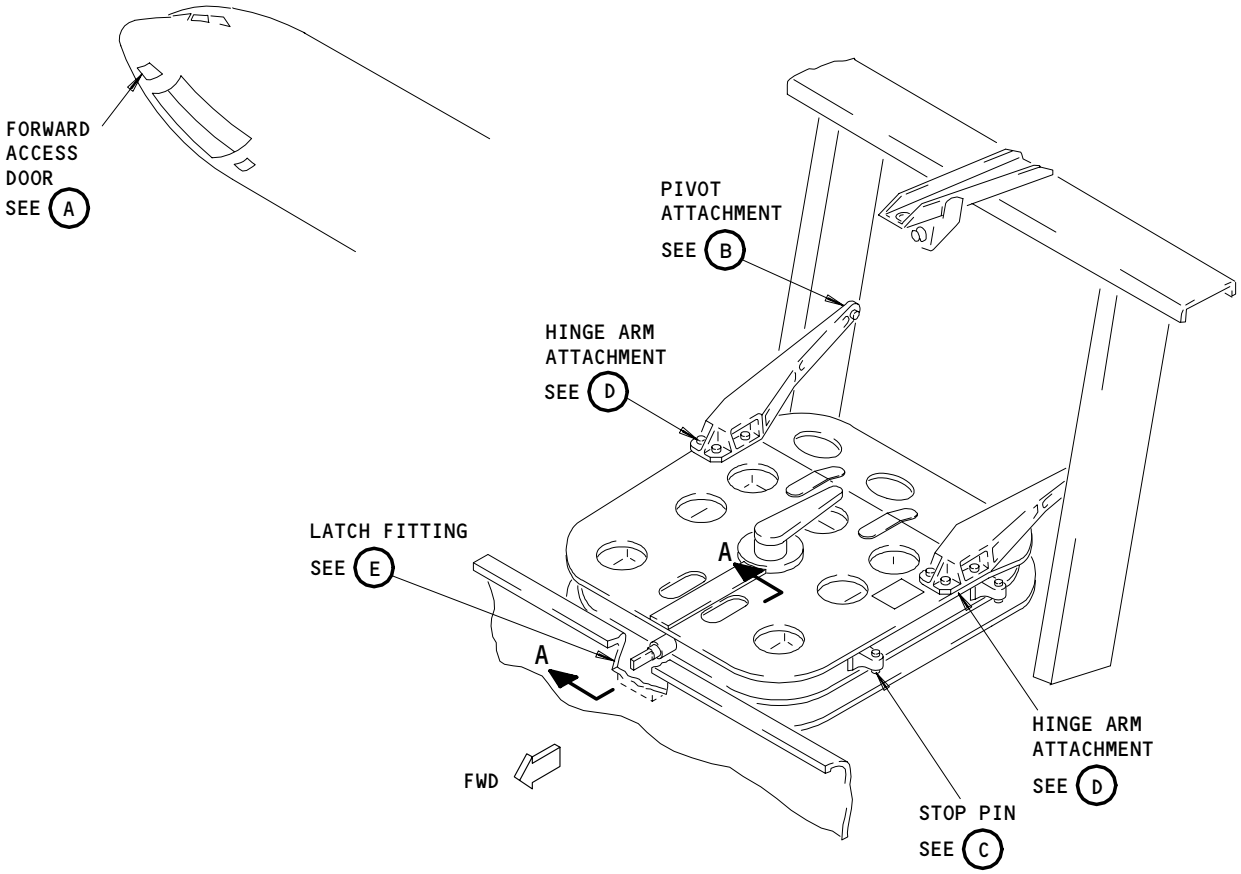
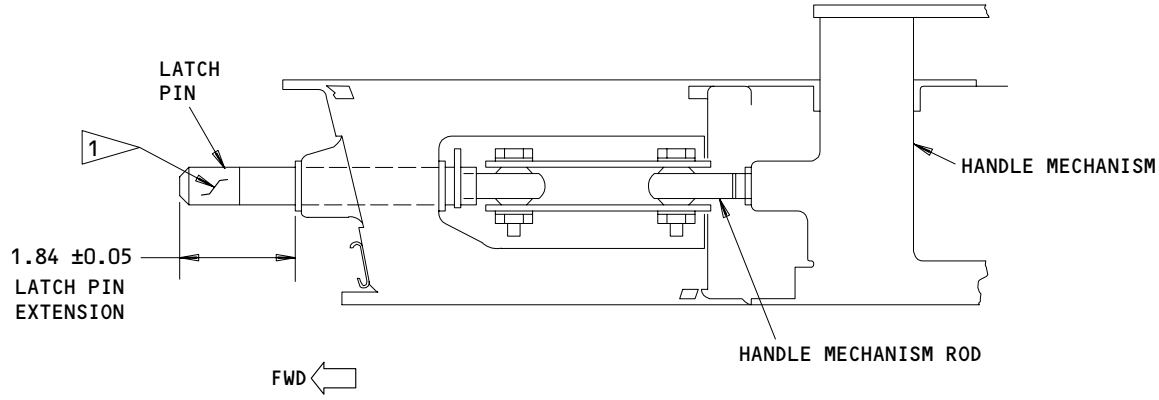


FORWARD ACCESS DOOR
(INTERNAL VIEW)

A



A-A

1 MAKE SURE THE FLAT SURFACE ON THE LATCH PIN IS IN THE POSITION SHOWN

Forward Access Door
Figure 401 (Sheet 1)

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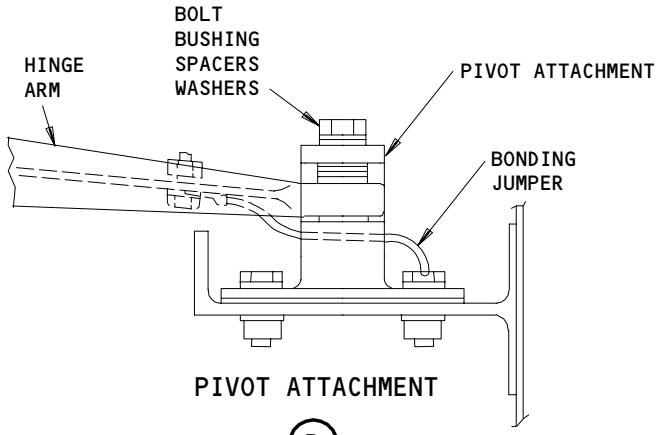
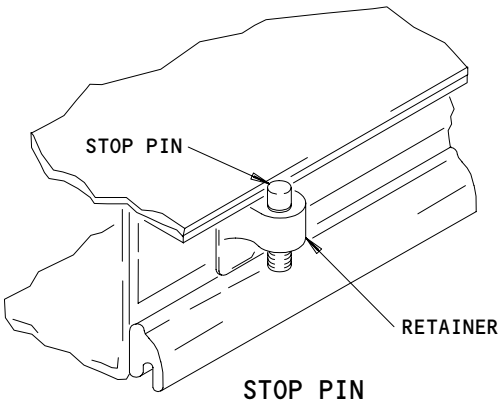


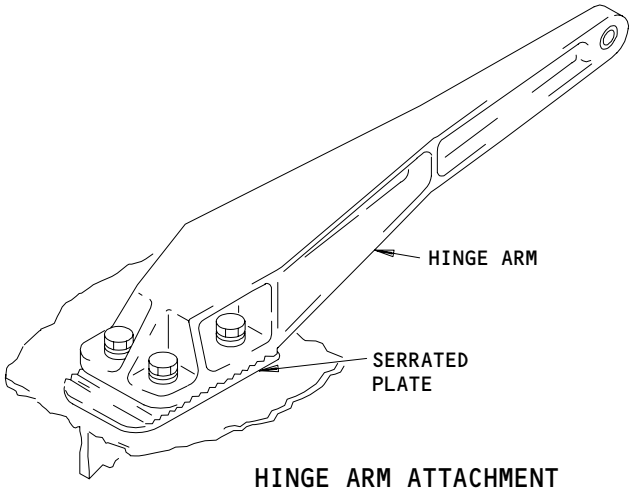
PIVOT ATTACHMENT

B



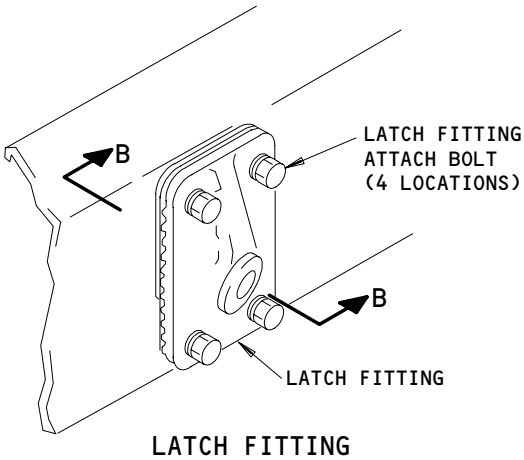
STOP PIN

C



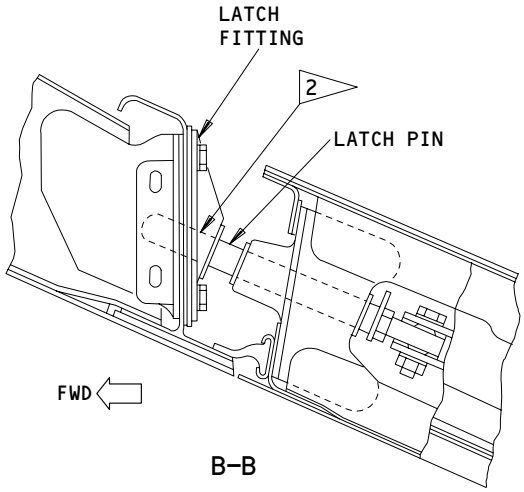
HINGE ARM ATTACHMENT

D



LATCH FITTING

E



B–B

2 LUBRICATE THE MATING SURFACE OF THE LATCH PIN AND THE LATCH FITTING WITH THE GREASE

Forward Access Door
Figure 401 (Sheet 2)

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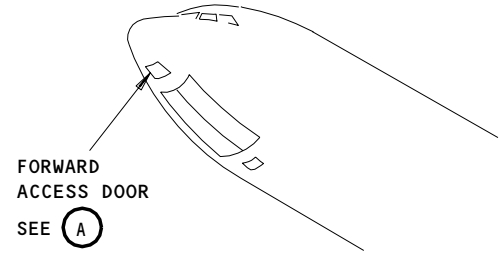
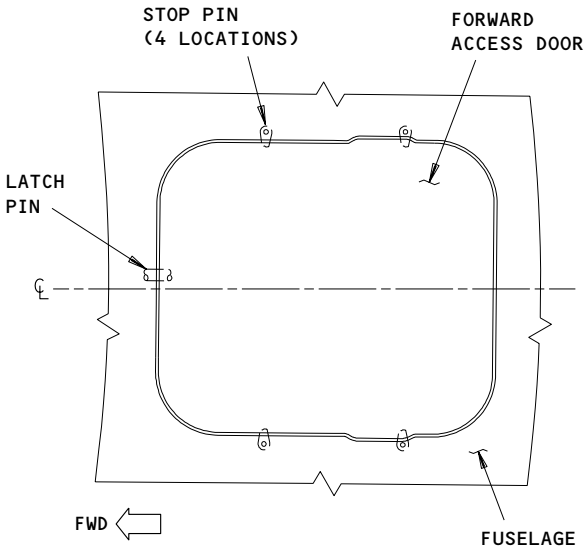
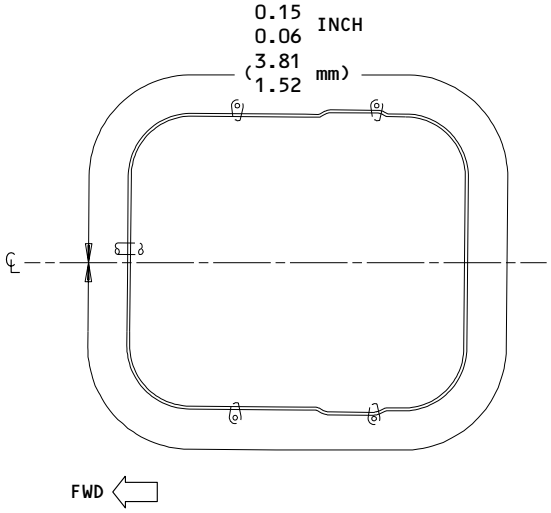


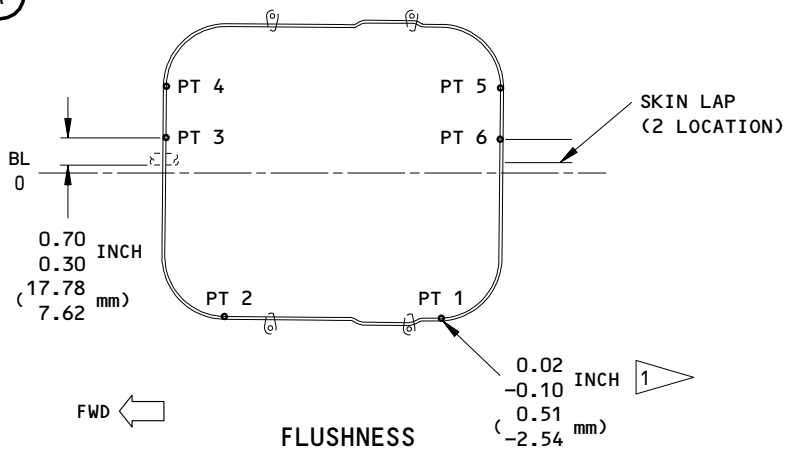


FORWARD ACCESS DOOR



SKIN CLEARANCE

A



FLUSHNESS

1 A NEGATIVE FLUSHNESS SHOWS THAT THE DOOR IS INBOARD OF THE FUSELAGE
A POSITIVE FLUSHNESS SHOWS THAT THE DOOR IS OUTBOARD OF THE FUSELAGE

Forward Access Door Flushness and Clearance
Figure 402

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ELECTRONICS ACCESS DOOR - MAINTENANCE PRACTICES

1. General
   A. This procedure contains three tasks:
      (1) The first task is the inspection/check of the alignment marks on the interior door handle and on the door installation lining of the electronics access door.
      (2) The second task is the approved repairs for the alignment marks on the interior door handle and the door installation lining of the electronics access door.
      (3) The third task is to apply corrosion prevention treatment.

TASK 52-48-04-202-012

2. Alignment Marks - Inspection/Check
   A. Access
      (1) Location Zone
          119 Main Equipment Center

      (2) Access Panel
          119AL Electronics Access Door
   B. Procedure

      S 212-002
      (1) Make sure the electronics access door is in the fully closed and latched position.

      S 212-003
      (2) Make sure the alignment mark on the interior door handle is aligned with the alignment marks on the door installation lining (View A, Fig. 201).

      S 352-005
      (3) If the alignment marks are not in the correct position or if they are damaged, do the "Alignment Marks - Approved Repairs" task.

TASK 52-48-04-352-013

3. Alignment Marks - Approved Repairs
   A. General
      (1) Do this task to repair the alignment marks if they are not in the correct position or if they are damaged.
   B. Consumable Materials
      (1) A00694 Pressure Sensitive Tape - Vinyl
          Fluorescent Film - Red Orange
   C. Access
      (1) Location Zone
          119 Main Equipment Center

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(2) Access Panel
119AL Electronics Access Door

D. Procedure

S 352-006
(1) Remove the alignment marks that are not in the correct position or are damaged.

S 212-007
(2) Make sure the areas where you will install the new alignment marks are clean.

S 352-008
(3) Install the pressure sensitive tape in the correct position (Fig. 201).

S 702-009
(4) Open the electronics access door.

S 702-010
(5) Close and latch the electronics access door.

S 212-011
(6) Make sure the alignment marks are in the correct position (View A, Fig. 201).

TASK 52-48-04-622-015

4. Corrosion Prevention Treatment (Fig. 202)

A. General

(1) The electronics access door has a corrosion protective finish that consists of chemical finish (Alodine) on clad aluminum parts, anodize surface treatment on non-clad aluminum parts, a coat of BMS 10-11, Type I, primer and a coat of BMS 10-11, Type II, enamel. Faying surfaces of parts attached to the door skin were fay sealed with BMS 5-95 sealant. All areas of possible moisture accumulation are drained or filled with BMS 5-125 leveling compound. The exterior of the door was unfinished during production unless otherwise requested by the operator. The interior surface of the door received a coat of BMS 3-23, Type II, corrosion preventive compound after assembly and painting.

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(2) Areas of possible corrosion are the internal structure of the door, connection points and mechanisms.
(3) The door should be treated at the same time as the door opening.
(4) Following cleaning of suspected areas (Ref AMM 51-21-03/701), a full inspection is effective to make sure that protective finishes provided during manufacture stay intact. For details on the application of corrosion preventive compound, refer to AMM 51-24-09/701.
(5) Corrosion may show as noticeable bulges of the skin or white deposits of corrosion products at fastener heads or joint edges.
(6) For minor corrosion, to keep the downtime of the airplane to a minimum, the corrosion products should be cleaned off, followed by the application of a corrosion preventive compound into the affected area to decrease the corrosion process (Ref AMM 51-24-09/701). The finish system should be repaired at the first opportunity consistent with the maintenance schedule.
(7) Frequency of Application
  (a) Periodic inspection is required in areas that can get corrosion and should be consistent to the schedules specified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.
  (b) Periodic application of BMS 3-23 compounds is necessary on areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.
(8) Obey the precautions that follow when applying the corrosion preventive compound:
  (a) Do not apply corrosion preventive compounds on grease joints or sealed bearings. These compounds dissolve grease and other lubricants. They are penetrating compounds and can get around the seals and into the bearings.
  (b) Do not apply corrosion preventive compounds on interior materials such as liners. The compounds can change the flammable quality of these materials.

B. References
(1) AMM 12-21-27/301, Equipment Compartment and Exterior Service Doors
C. Consumable Materials
(1) G00009 Compound, Organic Corrosion Preventive - BMS3-23, Type II
D. Access
(1) Location Zone
119 Main Equipment Center

(2) Access Panel
119AL Electronics Access Door

E. Prepare for the Corrosion Prevention Treatment

S 012-016
(1) Open the electronics access door and gain access to the interior structure of the door.

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S 162-017
(2) Clean out drains and drain paths.
(a) Make sure that the drain valve is free to open and close.

CAUTION: EXCESSIVE TIGHTENING OF PLUNGER TYPE DRAIN VALVE WILL CAUSE VALVE FLANGE TO CRACK OR BREAK.

(b) If necessary, remove plunger type drain valve from outside of door, clean out obstructions and install valve until flange contacts skin.

F. Procedure

S 622-018
(1) Apply the corrosion prevention treatment, do these steps:
(a) Apply corrosion preventive compound BMS 3-23, Type II, to the accessible interior surfaces of the door, giving special attention to the structural seams. Do not apply to drain valve or other operational mechanisms.
(b) Lubricate the interior door fittings, as necessary (Ref AMM 12-21-27/301).

S 412-019
(2) Close and latch the electronics access door.

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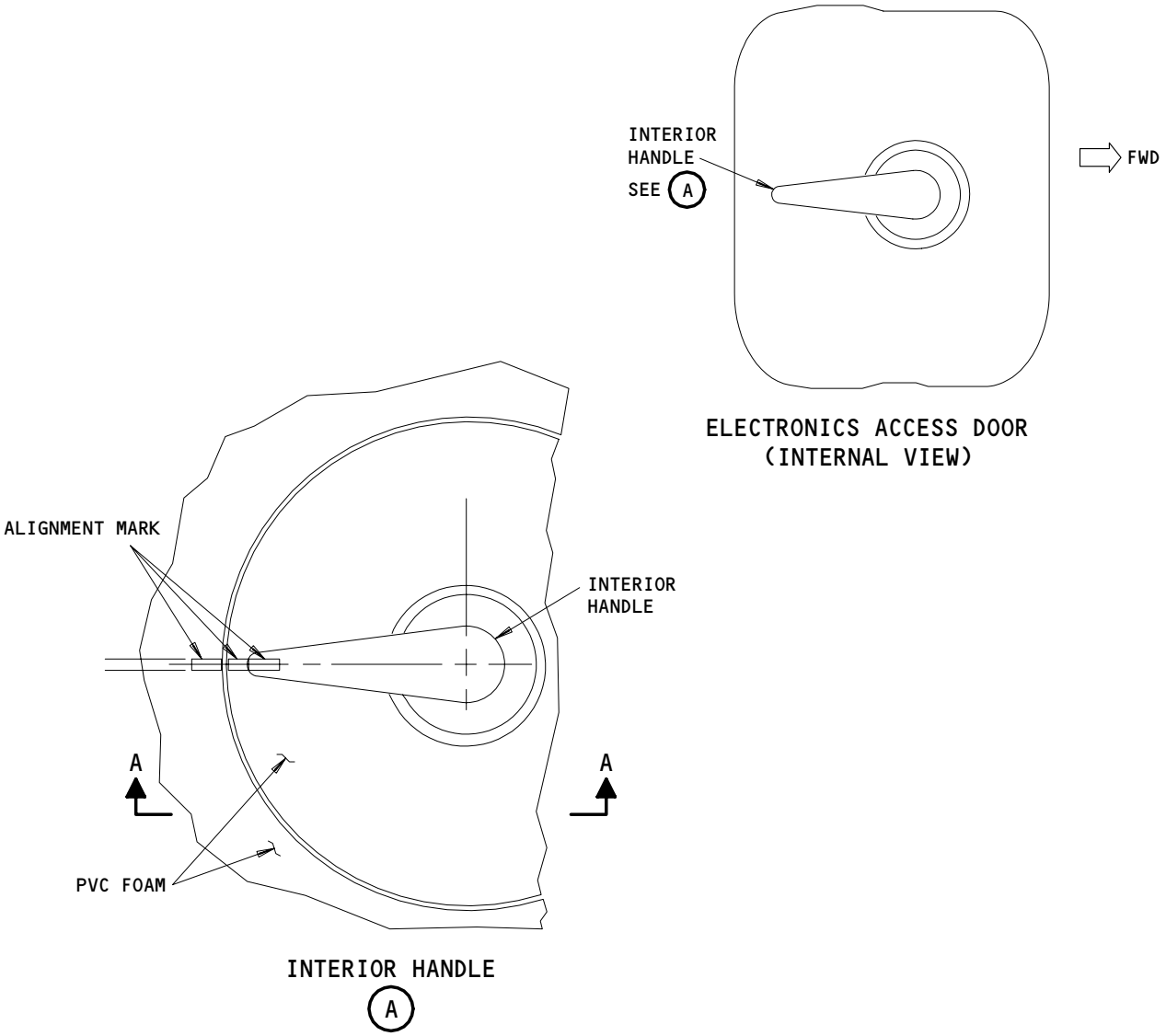

Alignment Marks
Figure 201

804779

EFFECTIVITY
AIRPLANES WITH ALIGNMENT MARKS
ON THE INTERIOR HANDLE

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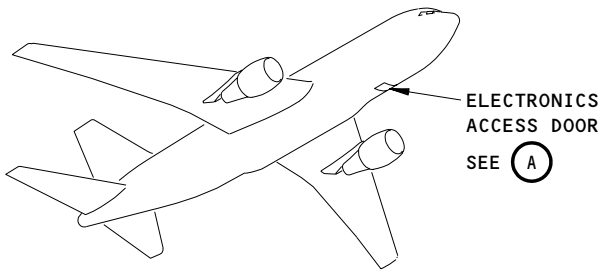
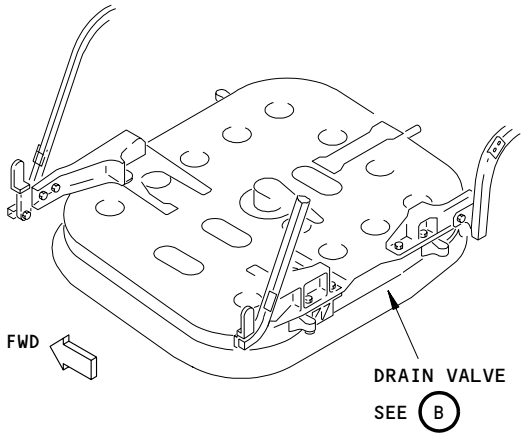
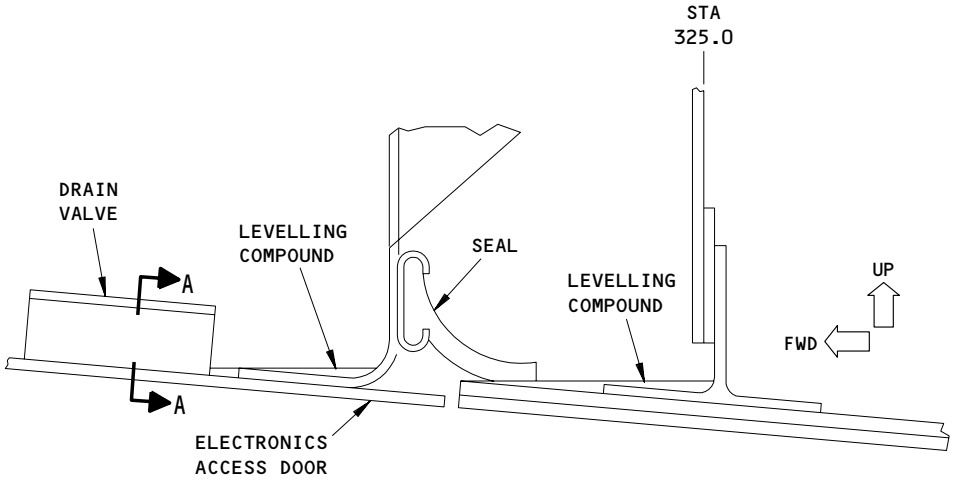




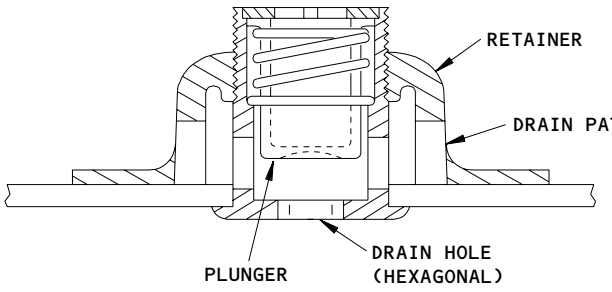
ELECTRONICS ACCESS DOOR

A

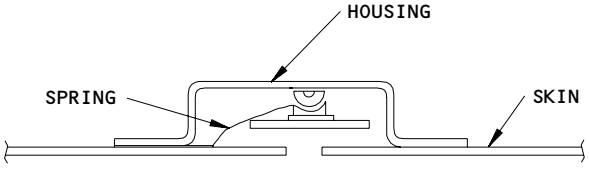


DRAIN VALVE

B



PLUNGER TYPE DRAIN VALVE



LEAF SPRING TYPE DRAIN VALVE

A–A

Electronics Access Door
Figure 202

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ELECTRONICS ACCESS DOOR - REMOVAL/INSTALLATION

1. General

A. This procedure contains two tasks. The first task is the removal of the the electronics access door. The second task is the installation of the electronics access door.
B. Unwanted skin is removed from the initial door to get the correct clearance between the electronics access door and the fuselage opening. This is done during the assembly of the airplane. It is not necessary to remove the skin around the edges of the door when you install the initial door. It can be necessary to remove the unwanted skin around the edges of the door when you install a new, replacement door.
C. You can install the door with the airplane on its landing gear.
D. Refer to 52-71-00/501 for the adjustment and the system test of the proximity sensors for the door warning system.

TASK 52-48-04-004-001

2. Remove the Electronics Access Door (Fig. 401)

A. Equipment
(1) A53002-5 Safety Barrier, E/E Access Hatch
B. Access
(1) Location Zone
119 Main Equipment Center

(2) Access Panel
119AL Electronics Access Door

C. Procedure - Remove the Electronics Access Door

S 014-002
(1) Go into the main equipment center and close the door.

S 024-003
(2) Remove the track clips from the lower sections of the door tracks.

S 024-027
(3) Align the door track rollers with the openings in the track.

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S 024-031
(4) Lift the door up and remove it from the airplane.

S 494-005
(5) Install the safety barrier.

TASK 52-48-04-404-006

3. Install the Electronics Access Door (Fig. 401)

A. Equipment
(1) A53002-5 Safety Barrier, E/E Access Hatch

B. Consumable Materials
(1) D00633 Grease - BMS 3-33 (Preferred)
(2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)
(3) C00064 Coating - Aluminum Chemical Conversion (Alodine) MIL-C-5541

C. References
(1) 52-71-00/501, Door Warning
(2) 52-09-02/401, Electronics Access Door Seal
(3) 52-48-04/201, Electronics Access Door - Approved Repairs

D. Access
(1) Location Zones
119 Main Equipment Center

(2) Access Panel
119AL Electronics Access Door

E. Procedure - Install the Electronics Access Door

S 094-007
(1) Remove the safety barrier.

S 414-008
(2) Insert the door through the opening in the main equipment center.

S 414-009
(3) Install the track rollers in the openings of the tracks.

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S 414-011

(4) Move the door on the tracks up and to the right. Continue until the rollers engage the detents in the forward and aft left tracks. This will hold the door in the open position (View A, Fig. 401).

S 414-014

(5) Close and lock the door.

S 414-030

(6) Install the track clips.

S 224-033

(7) Do a check of the flushness of the door skin (Fig. 402).
   (a) Use a non-permanent marker to make 5 equally spaced location marks on the forward edge of the door. Make sure the outboard marks are on the forward tagent point of the door corners.
   (b) Use a non-permanent marker to make 5 equally spaced location marks on the aft edge of the door. Make sure the outboard marks are on the aft tagent point of the door corners.
   (c) Make sure the door is closed.
   (d) Measure and record the distance between the door skin and the fuselage skin at each of the 10 location marks.
   (e) If any of the 10 flushness measurements is not in the range shown in Fig. 402, use the Aero-Averaging method to determine if the flushness deviation is acceptable.
      1) Use Table 401 to determine a drag value for each of the 10 flushness measurements.
      2) Calculate the sum of the 10 drag values.
      3) Divide the sum of the 10 drag values by 10.
      4) If the sum of the drag values divided by 10 is less than 1.00, then the flushness deviation is acceptable.

FLUSHNESS AERO-AVERAGING TABLE *
TABLE 401

STEP HEIGHT				
FWD EDGE		AFT EDGE		
INCH	(MM)	INCH	(MM)	DRAG VALUE

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FLUSHNESS AERO-AVERAGING TABLE * TABLE 401				
STEP HEIGHT				DRAG VALUE
FWD EDGE		AFT EDGE		
INCH	(MM)	INCH	(MM)	
-0.17	(-4.32)	0.13	(3.30)	1.60
-0.16	(-4.06)	0.12	(3.05)	1.48
-0.15	(-3.81)	0.11	(2.79)	1.35
-0.14	(-3.56)	0.10	(2.54)	1.23
-0.13	(-3.30)	0.09	(2.29)	1.10
-0.12	(-3.05)	0.08	(2.03)	0.99
-0.11	(-2.79)	0.07	(1.78)	0.88
-0.10	(-2.54)	0.06	(1.52)	0.76
-0.09	(-2.29)	0.05	(1.27)	0.65
-0.08	(-2.03)	0.04	(1.02)	0.54
-0.07	(-1.78)	0.03	(0.76)	0.43
-0.06	(-1.52)	0.02	(0.51)	0.31
-0.05	(-1.27)	0.01	(0.25)	0.22
-0.04	(-1.02)	0.00	(0.00)	0.13
-0.03	(-0.76)	-0.01	(-0.25)	0.04
-0.02	(-0.51)	-0.02	(-0.51)	0.00
0.00	(0.00)	-0.04	(-1.02)	0.22
0.01	(0.25)	-0.05	(-1.27)	0.40
0.02	(0.51)	-0.06	(-1.52)	0.63
0.03	(0.76)	-0.07	(-1.78)	0.85

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FLUSHNESS AERO-AVERAGING TABLE * TABLE 401				
STEP HEIGHT				DRAG VALUE
FWD EDGE		AFT EDGE		
INCH	(MM)	INCH	(MM)	
0.04	(1.02)	-0.08	(-2.03)	1.10
0.05	(1.27)	-0.09	(-2.29)	1.35
0.06	(1.52)	-0.10	(-2.54)	1.60
0.07	(1.78)	-0.11	(-2.79)	1.86
0.08	(2.03)	-0.12	(-3.05)	2.13
0.09	(2.29)	-0.13	(-3.30)	2.43
0.10	(2.54)	-0.14	(-3.56)	2.69
0.11	(2.79)	-0.15	(-3.81)	2.98

* A negative flushness shows that the door is inboard of the fuselage.

A positive flushness shows that the door is outboard of the fuselage.

S 224-034

(8) Make sure the clearance between the door skin and the fuselage skin is in the range in Fig. 402.

S 824-018

(9) Do these steps to get the correct clearance and flushness as necessary (Fig. 402):

NOTE: The adjustments are made with the airplane not pressurized. When the airplane is pressurized, no measurements are necessary.

(a) Make sure that the door seal is installed (AMM 52-09-04/401).

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(b) Loosen the attach bolts on the three roller brackets on the door (View A, Fig. 401).

NOTE: Make sure there is sufficient clearance between the serrated plates for adjustment.

(c) Loosen the attach bolts on the latch fitting on the body structure.

NOTE: Make sure there is sufficient clearance between the serrated plates to permit adjustment.

(d) Loosen the four stop bolts to get clearance between the door stop fittings and the stop bolts.
(e) Lower the access door to the closed and latched position.
(f) Adjust the access door to the body flushness:
1) Adjust the roller brackets on the door.
2) Adjust the latch fitting on the body structure in the vertical position.
3) Shim the roller tracks as necessary to get a clearance of 0.02-0.04 inch (0.508-1.016 mm) between the roller face and the track inner surface.
(g) Adjust the stop bolts to get the clearance fo 0.005-0.020 inch (0.127-0.508 mm) between the stop bolts and the door stop fittings until the flushness is correct.

NOTE: Make sure all the stop bolts touch the door stops at the same time.

(h) Adjust the clearance between the door skin and the body skin around the door as necessary (Fig. 402).

NOTE: During the clearance adjustment, the door can move forward or aft because of the clearance between the rollers and the tracks. Inboard and outboard movement can also occur because of the clearance between the right roller and the track. This movement can be in some direction. Make sure the clearance is correct after the adjustments. Close the door correctly. Push the door in the down direction only.

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(i) Adjust the serrated plates on the roller brackets in the horizontal direction.
(j) This will move the door in the inboard or outboard direction.
(k) Install the lockwire on the stop bolt nuts (View B, Fig. 401).
(l) Tighten the attach bolts for the three roller brackets on the door.

NOTE: When you tighten the bolts, make sure the clearance stays correct.

(m) Tighten the attach bolts for the latch fitting on the body structure.

NOTE: Make sure the weight of the door is on the door stops and not on the roller brackets or the latch pin.

S 824-029
(10) Make sure the door moves smoothly and freely on the tracks.

S 824-036
(11) Adjust the latch pin as follows (View B-B, Fig.401):
(a) Open the door.
(b) Extend the latch pin with the latch handle to the position as shown (View B-B, Fig. 401).
(c) Make sure the latch handle is in the fully closed position.
(d) Adjust the push rod on the latch handle to get the extension of the latch pin correct (View B-B, Fig. 401).
(e) Make sure the latch pin operates freely and smoothly.

S 644-024
(12) Apply the grease to the latch pin.

S 214-025
(13) Do a check on the door operation as follows:
(a) Make sure the door moves freely along the track.

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(b) Make sure the rollers engage the detents on the forward and the aft left tracks.
(c) Make sure the latch pin is clear of the latch fitting during the open and close cycle.
(d) Make sure the door is clear of the edge of the fuselage when the door is closed.
(e) Do the Check of the Electronics Access Door Seal (Ref 52-09-04/401).
(f) Close and lock the door.
1) AIRPLANES WITH ALIGNMENT MARKS;
Make sure the interior handle mark and the marks on the door frame are aligned
(View A, Fig. 403).
2) Repair the alignment marks if they are damaged
(Ref 52-48-04/201).

S 734-026
(14) Adjust the door warning system (Ref 52-71-00).

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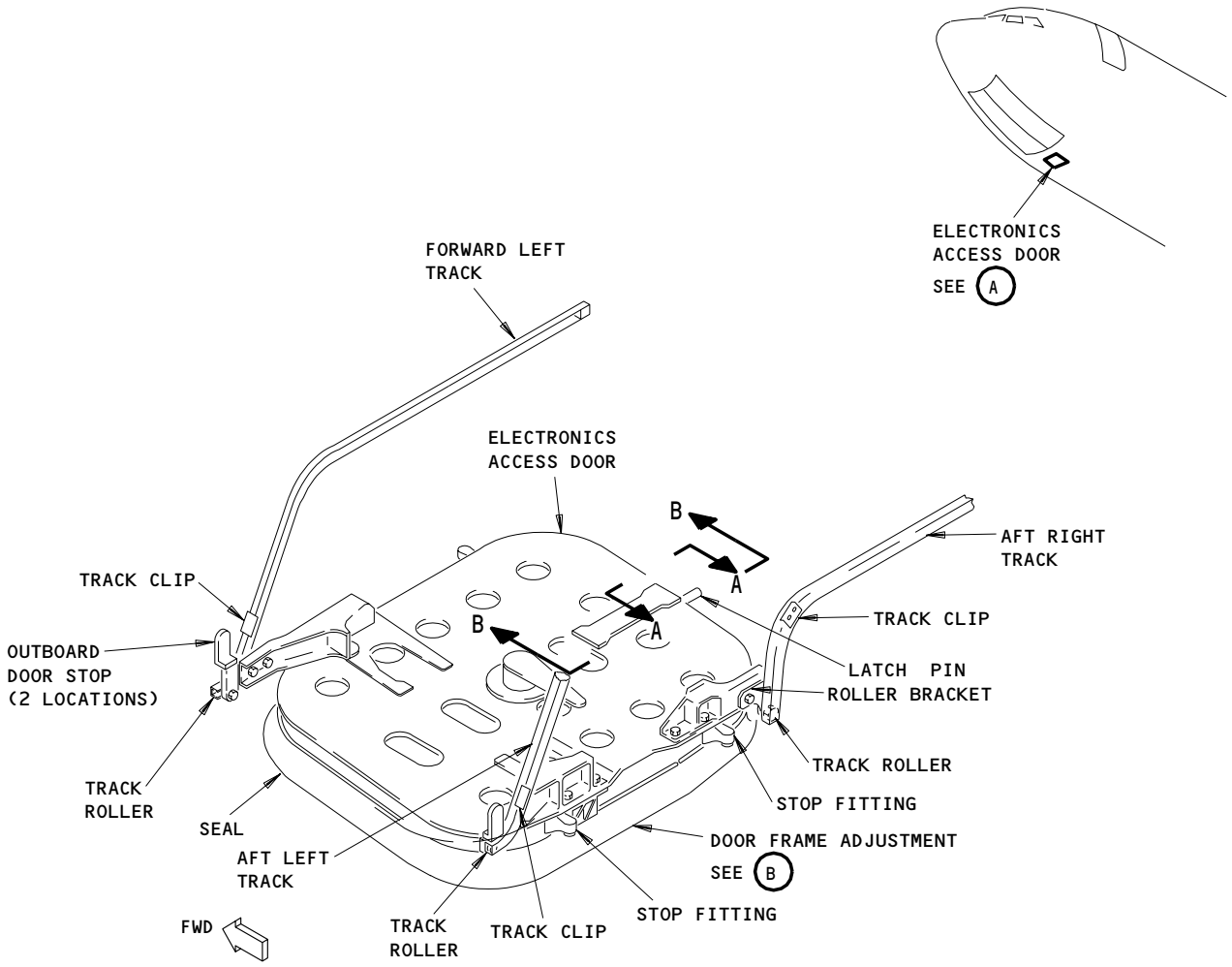
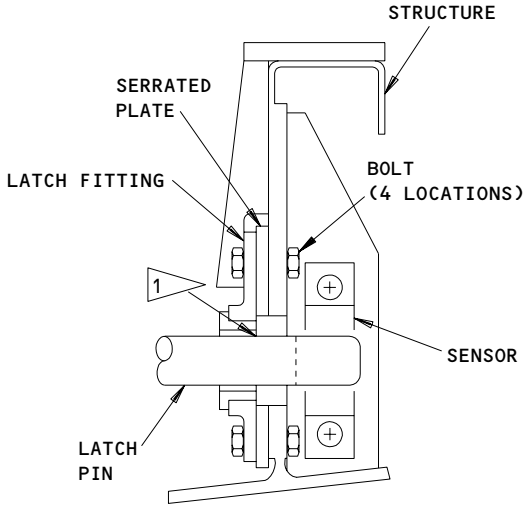


ELECTRONICS ACCESS DOOR
(INTERNAL VIEW)
A



A-A

1 LUBRICATE THE MATING SURFACE OF THE LATCH PIN AND THE LATCH FITTING WITH THE GREASE. AVOID APPLYING GREASE ON TARGET FACE OF LATCH PIN.

Electronics Access Door
Figure 401 (Sheet 1)

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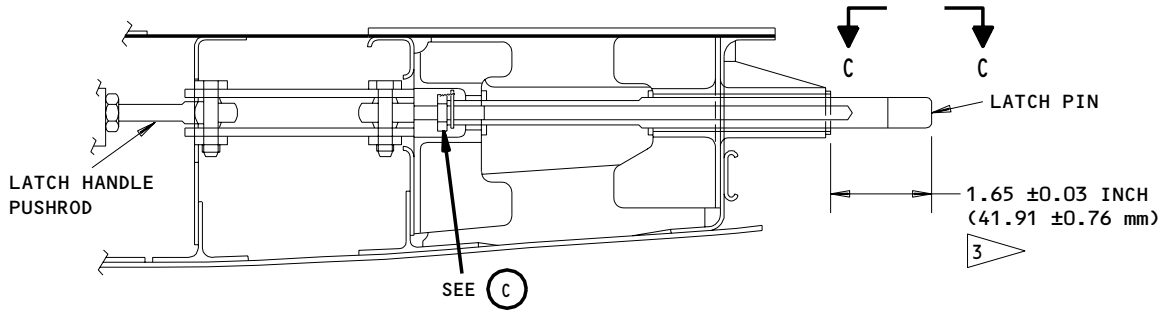
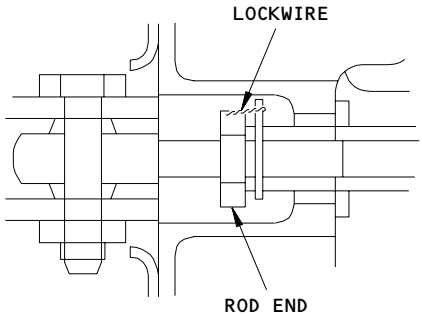
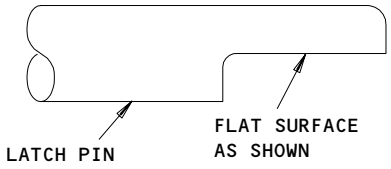


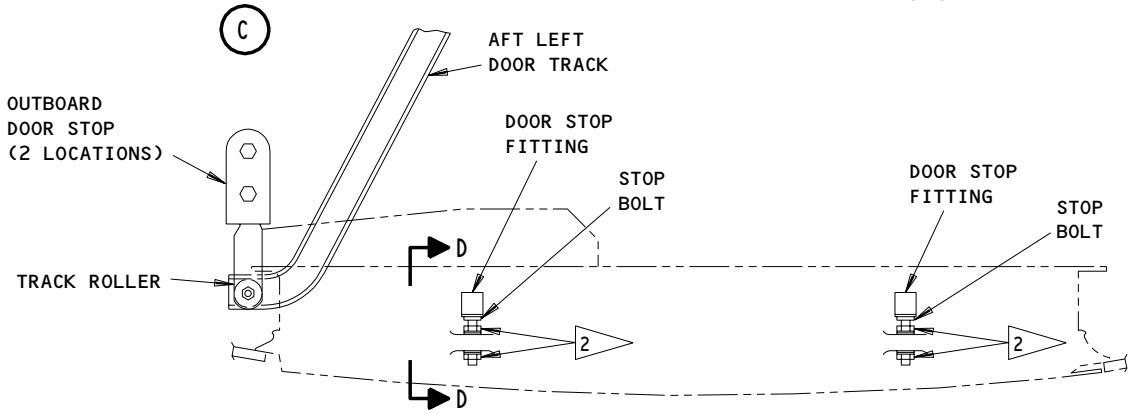
B–B





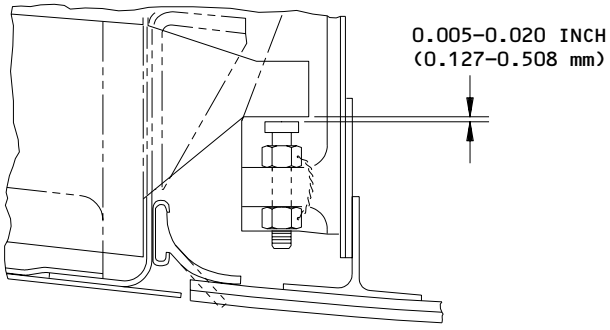
C–C

C



AFT SIDE DOOR FRAME ADJUSTMENT
(FORWARD SIDE IS EQUIVALENT)

B



D–D

2 INSTALL LOCKWIRE ON THE NUTS AFTER ADJUSTMENT. PUT THE LOCKWIRE THRU THE HOLE SUPPLIED IN THE FITTING

3 ADJUST THE LATCH HANDLE PUSHROD TO GET THIS DIMENSION

Electronics Access Door
Figure 401 (Sheet 2)

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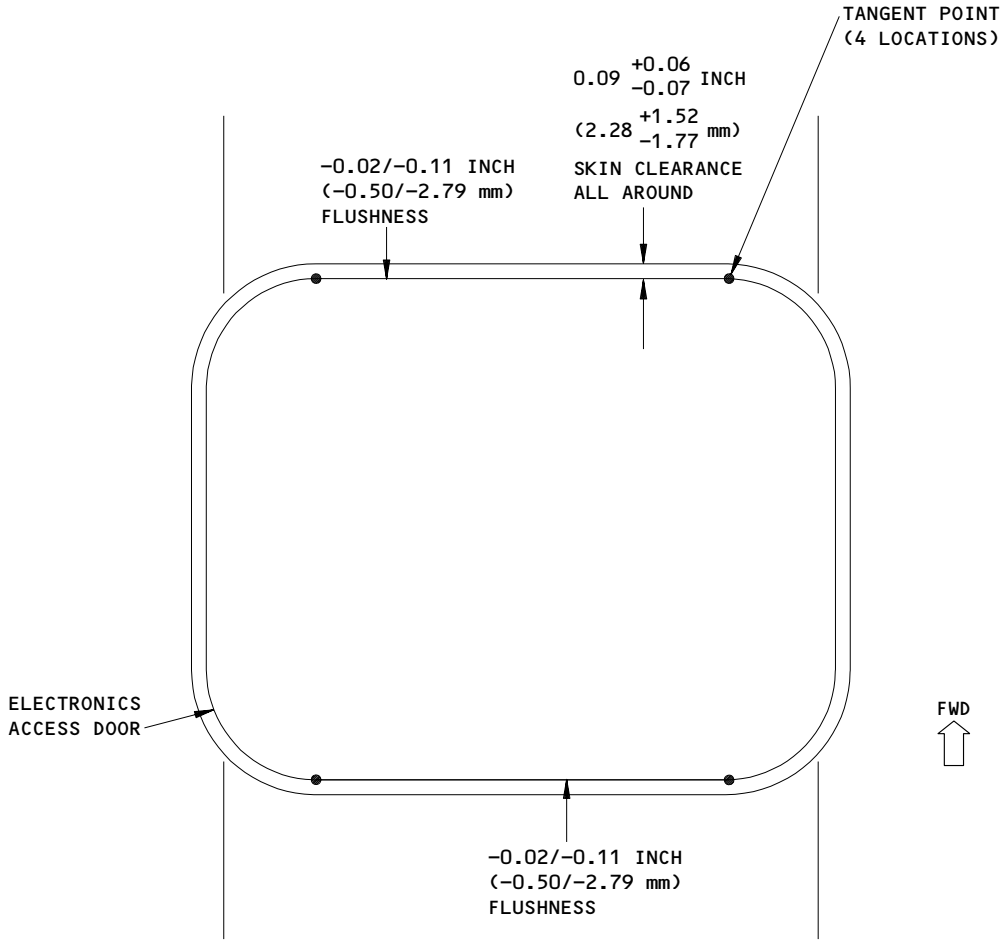

SKIN CLEARANCE AND FLUSHNESS

Electronics Access Door
Figure 402

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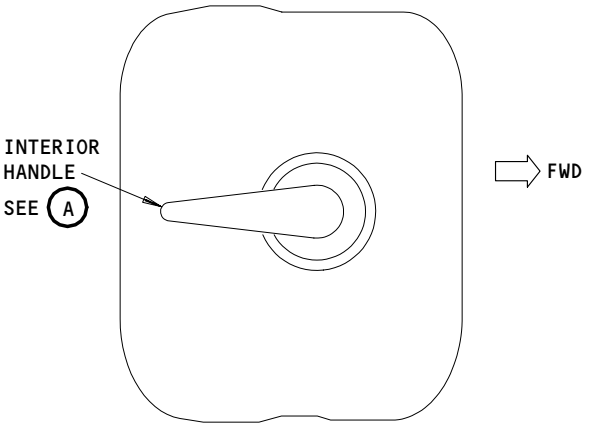
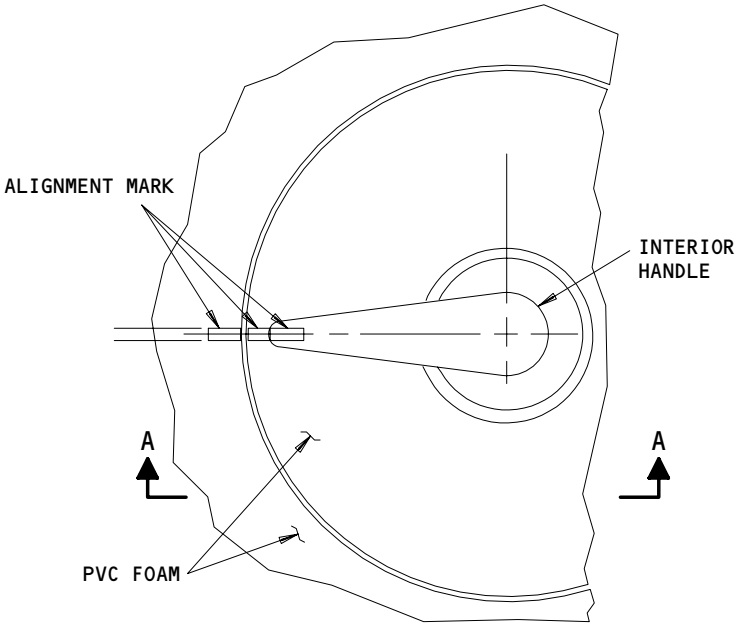
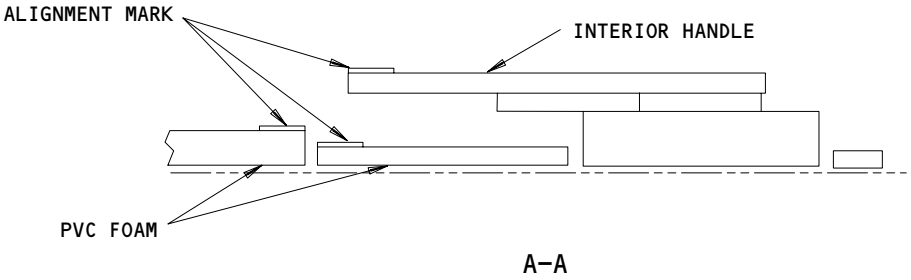


ELECTRONICS ACCESS DOOR
(INTERNAL VIEW)



INTERIOR HANDLE
A



A–A

Alignment Marks
Figure 403

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E/E BAY MAIN DECK ACCESS PANEL - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task gives the instructions to remove the E/E Bay Main Deck Access Panel (access panel). The second task gives the instructions to install the access panel.
   B. You will find the access panel under the floor covering just inboard and aligned with the forward entry door. You can remove the access panel from two locations. There is a handle on the top of the access panel. With this handle, you can remove the panel from the main deck. Also, there is a handle that you can use to remove the panel from the Main Equipment Center area.

TASK 52-48-05-004-001

2. Remove the E/E Bay Main Deck Access Panel (Fig. 401)
   A. Equipment
      (1) Barricade, Safety, McMaster-Carr, No. 5900T14
   B. References
      (1) AMM 25-27-01/401, Floor Covering
   C. Access
      (1) Location Zones
          119 Main Equipment Center
          221 Passenger Cabin - Section 41

   D. Procedure

      S 014-002
      (1) Remove the floor covering to get access to the access panel (AMM 25-27-01/401).

      S 024-003
      (2) Turn the handle that is in the center of the access panel to release the four latch bolts.

      S 024-004
      (3) Lift the access panel from the floor.

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S 494-014

WARNING: IF SAFETY BARRICADE IS NOT INSTALLED AROUND THE ACCESS PANEL OPENING, PERSONNEL CAN ACCIDENTALLY STEP INTO OPENING AND BECOME INJURED.

(4) Install the safety barricade around the access panel opening.

TASK 52-48-05-404-006

3. Install the E/E Bay Main Deck Access Panel (Fig. 401)

A. Equipment

(1) Barricade, Safety, McMaster-Carr, No. 5900T14

B. References

(1) AMM 25-27-01/401, Floor Covering

C. Access

(1) Location Zones

119 Main Equipment Center
221 Passenger Cabin - Section 41

D. Procedure

S 094-007

(1) Remove the safety barricade from the access panel opening.

S 424-008

(2) Put the door in its position in the opening.

S 424-009

(3) Turn the handle until the latch bolts engage to lock the access panel.

S 214-010

(4) Examine the access panel seal to make sure it is tight.

S 424-011

(5) Push the top handle into the recess.

S 414-012

(6) Install the floor covering (AMM 25-27-01/401).

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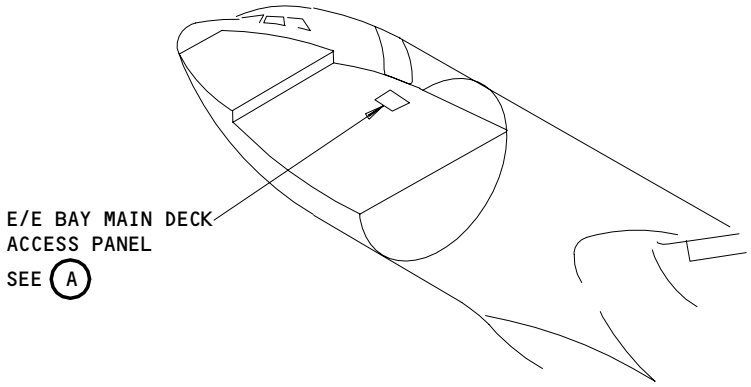

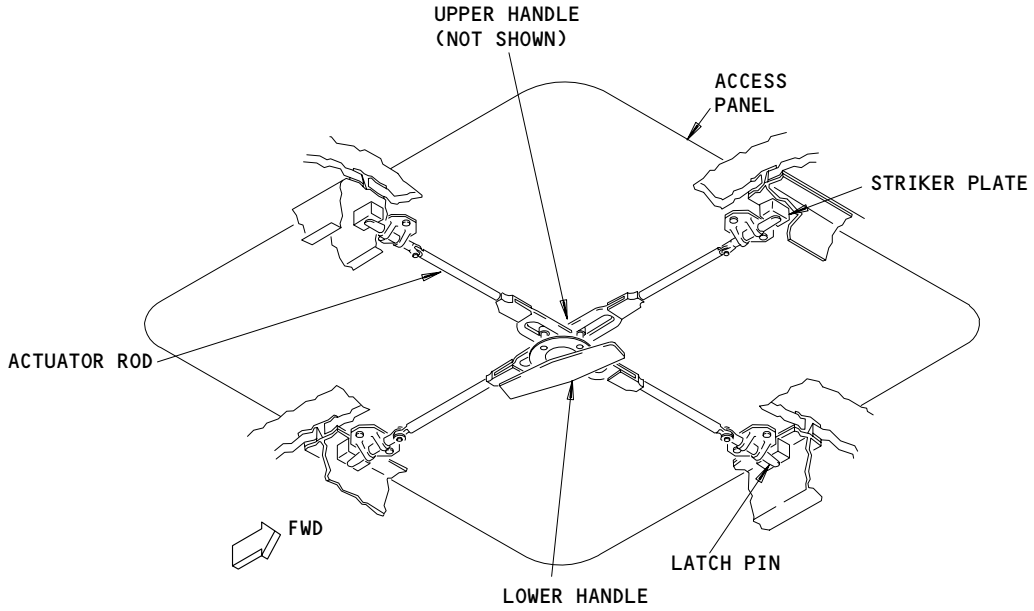

E/E BAY MAIN DECK ACCESS PANEL
A

E/E Bay Main Deck Access Panel
Figure 401

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ENVIRONMENTAL CONTROL SYSTEMS DOORS - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the Environmental Control System (ECS) doors. The second task is the installation of the ECS doors.

TASK 52-48-07-004-001

2. Remove the ECS doors (Fig. 401)
   A. Access
      (1) Location Zones
          193 Wing to body - forward lower half (Left)
          194 Wing to body - forward lower half (Right)

      (2) Access Panels
          193NL Environmental Control Systems door (Left)
          194LR Environmental Control Systems door (Right)

   B. Procedure

      S 014-003
      (1) Open the ECS doors.

      S 034-004
      (2) Disconnect the bonding jumpers at the ECS door surface.

      S 034-005
      (3) Disconnect the hold-open strut from the ECS doors (View A-A, Fig. 401).

      S 034-007
      (4) Hold the ECS door and remove the hinge pins carefully to make sure the spacers and washers do not fall.

      S 934-008
      (5) Make a note of the locations for the spacers and washers to help the installation of the door.

      S 024-009
      (6) Remove the ECS doors.

TASK 52-48-07-404-002

3. Install the ECS Doors (Fig. 401)
   A. Equipment
      (1) Ohmmeter with probes, measures from 0.0 to 1.0 ohm.
   B. References
      (1) 51-24-02, Conductive Coating for Exterior Fiberglass and Kevlar

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C. Access

(1) Location Zones

193 Wing to body - forward lower half (Left)
194 Wing to body - forward lower half (Right)

(2) Access Panels

193NL Environmental Control Systems door (Left)
194LR Environmental Control Systems door (Right)

D. Procedure

S 424-012

(1) Put the ECS door in the correct position.

S 434-013

(2) Install the hinge pins.

S 434-014

(3) Install all of the washers and spacers in the correct locations.

S 434-015

(4) Install the nut on each hinge pin.

S 864-017

(5) Close the ECS door.

S 214-018

(6) Make sure the clearances along the door edge are as shown in Views A-A through F-F, Fig. 401.

S 824-026

(7) If the clearances are not correct, do these steps:

(a) If you installed a replacement door, remove the unwanted skin around the edges of the door.

(b) If you did not install a replacement door, adjust the position of the door.

S 214-031

(8) Examine the latch installation as follows:

(a) With the latches open, make sure the flushness between the access door and the fairing structure is +0.03 to -0.03 inch at each latch location.

(b) Do the check that follows for the correct free play (View C, Fig. 401):

1) Lock the latch.
2) Push the edge of the latch bolt that makes an overlap with the fairing structure (View C, Fig. 401).
3) Make sure the free play for the latch is between 0.00 and 0.01 inch.

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4) If you did not get the correct free play, do these steps:
   a) Loosen the latch bolt.
   b) Adjust the shim.
   c) Apply primer to the bare shim surface.
   d) Tighten the latch bolt.
   e) Do the check for the correct free play again.
5) Make sure that the latch overlap is a minimum of 0.60 inch (View C, Fig. 401).

(c) Open and close the door to make sure the access door operates smoothly and latches correctly.

S 214-025

(9) Make sure the flushness between the door and the fairing structure is +0.03 to -0.03 inch. The flushness must not change more than 0.03 inch in 12 inches.

S 434-020

(10) Connect the hold-open strut to the door (View G-G, Fig. 401).

S 434-021

(11) Tighten the nut from 85 to 110 pound-inches (View G-G, Fig. 401).

S 434-022

(12) Attach the bonding jumpers to the door.

S 284-027

(13) Measure the resistance of the conductive coating (AMM 51-24-02/701).

S 144-029

(14) If you did not get the permitted resistance, clean the conductive surfaces (AMM 51-24-02/701).

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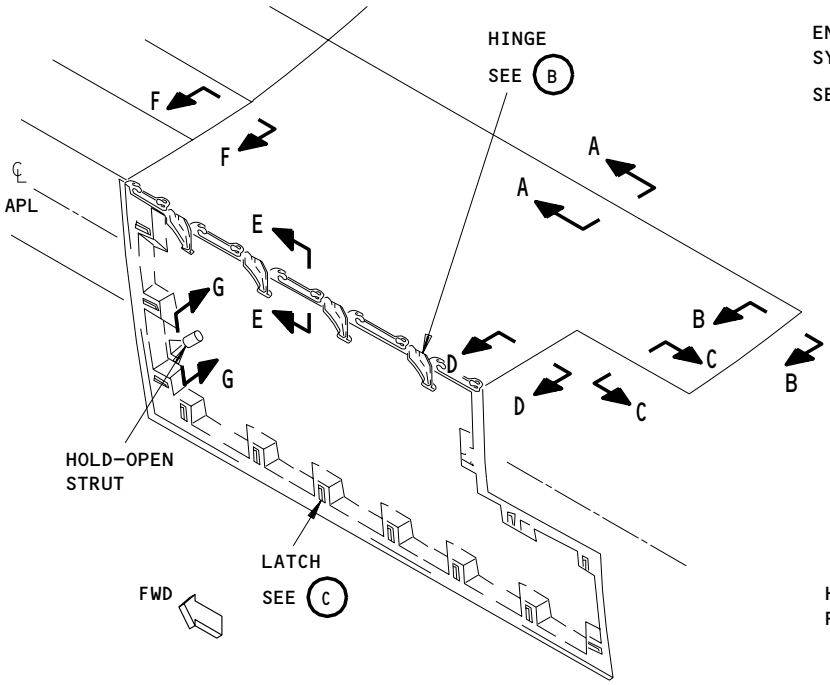
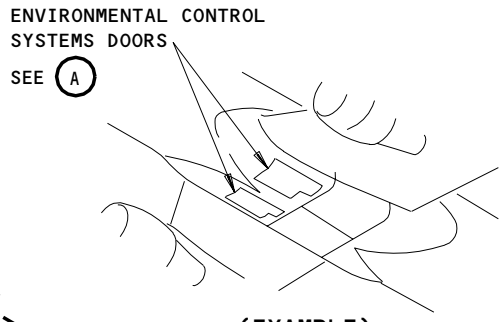
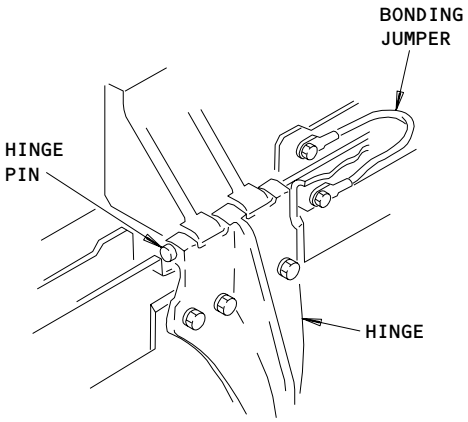


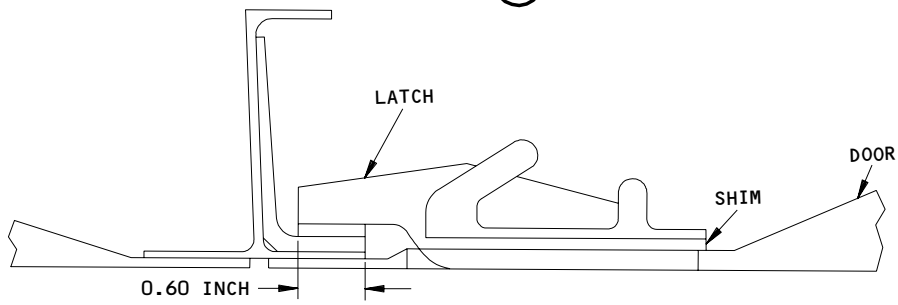
ENVIRONMENTAL CONTROL
SYSTEMS DOOR
A



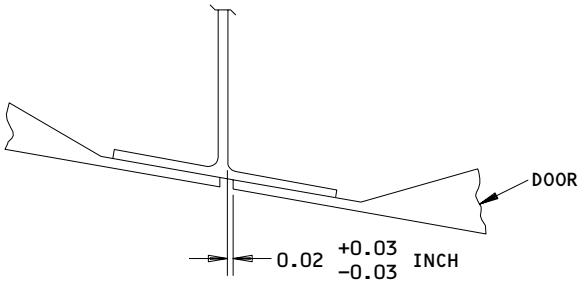
(EXAMPLE)



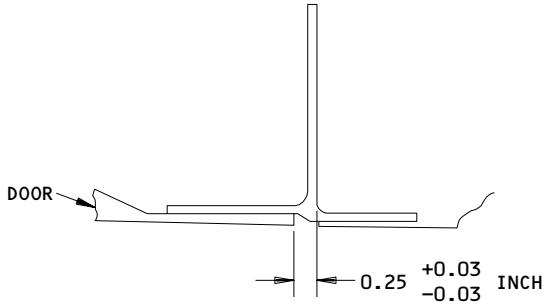
HINGE
B



LATCH
C



A-A



B-B

Environmental Control Systems Doors
Figure 401 (Sheet 1)

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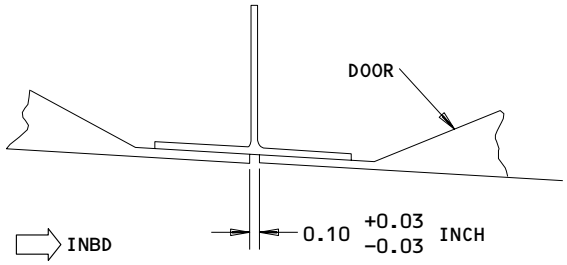
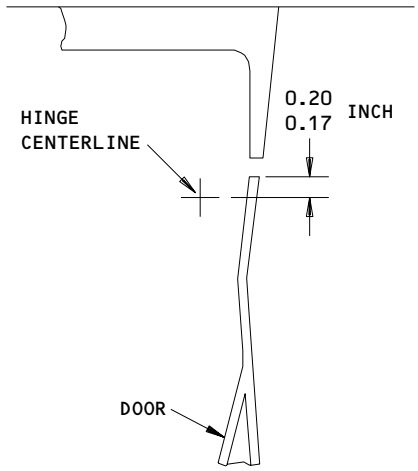
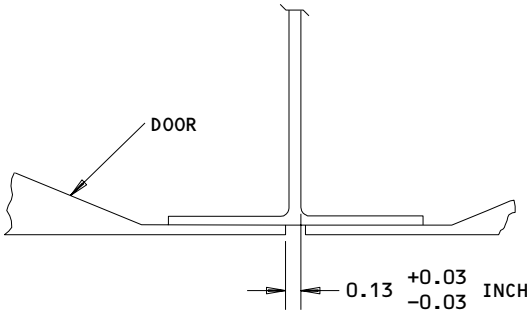


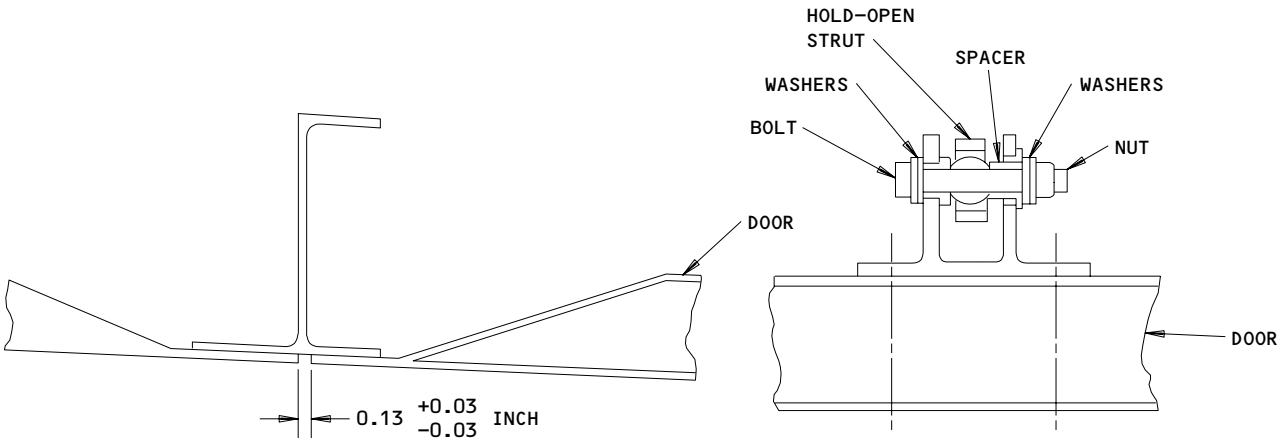
C–C



E–E



D–D



F–F

G–G

Environmental Control Systems Doors
Figure 401 (Sheet 2)

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SERVICE ACCESS DOOR - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the service access door. The second task is the installation of the service access door.

TASK 52-48-09-004-001

2. Remove the Service Access Door (Fig. 401)
   A. Equipment
      (1) Service Platform - A52025-1
   B. Access
      (1) Location Zone
          312 Area aft of pressure bulkhead to BS 1725 (Right)

      (2) Access Panel
          312AR Service Access Door

   C. Procedure

      S 014-002
      (1) Open the door.

      S 034-003
      (2) Disconnect the hold-open strut from the door.

      S 034-004
      (3) Remove the fasteners and shims that connect the door hinge to the access door (View A-A, Fig. 401).

      S 024-005
      (4) Remove the access door.

      S 494-006
      (5) Install the service platform across the opening for the service access door if you will do work in the compartment.

TASK 52-48-09-404-007

3. Install the Service Access Door (Fig. 401)
   A. Equipment
      (1) Blowout Tool - J52024-2 or J52024-3
   B. Consumable Materials
      (1) C00259 Primer, BMS 10-11, Type 1, wet or dry
   C. Access
      (1) Location Zone
          312 Area aft of pressure bulkhead to BS 1725 (Right)

      (2) Access Panel
          312AR Service Access Door

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D. Procedure

S 094-008

(1) Remove the service platform if you installed it to do work in the compartment.

S 414-009

(2) Hold the door in the correct position on the fuselage.

S 424-010

(3) Attach the hinge angle assembly to the access door with six bolts (View A, Fig. 401).

S 864-011

WARNING: STAY OFF THE SERVICE ACCESS DOOR, 312AR, AND THE ACCESS DOOR FOR THE CONTROLS BAY, 313AL. YOUR WEIGHT CAN CAUSE THE SPRING-LOADED LATCHES TO RELEASE. IF YOU FALL THROUGH THE DOOR, INJURY CAN OCCUR.

(4) Close the access door.

S 224-015

(5) Make sure you get the correct dimension between the center of the latch rollers and the cylinders (View B-B, Fig. 401).

S 224-018

(6) Make sure the clearance between all sides of the door and the fuselage is less than 0.13 inch and more than 0.02 inch.

S 824-027

(7) If you do not get the correct clearance, do these steps:
(a) Adjust the shim between the hinge flange and the hinge angle.
(b) Apply primer to the bare shim surface.

S 224-019

(8) Make sure the flushness between all sides of the door and the fuselage is less than +0.03 inch and more than -0.03 inch.

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S 824-028

(9) If you do not get the correct flushness, do these steps:
  (a) Adjust the shims between the hinge angle assembly and the door (View A-A, Fig. 401).
  (b) Apply primer to the bare shim surface.

S 224-020

(10) Make sure the clearance between the latch rollers and the top of the cylinders is 0.018 inch (View B-B, Fig. 401).

S 824-021

(11) If you do not get the correct clearance, adjust the shim or the quantity of washers.

S 424-022

(12) Connect the hold-open strut to the door.

S 714-023

(13) Open and close the door to make sure the door operates smoothly and latches correctly.

S 714-024

(14) Do the test that follows to make sure the blowout feature operates correctly:
  (a) Apply 150 to 190 pounds of force at the two ends of the torque tube shaft on the latch at the same time.
  (b) If the tool J52024 is used, apply 1010-1275 PSI pressure.
  (c) Make sure the latch releases.

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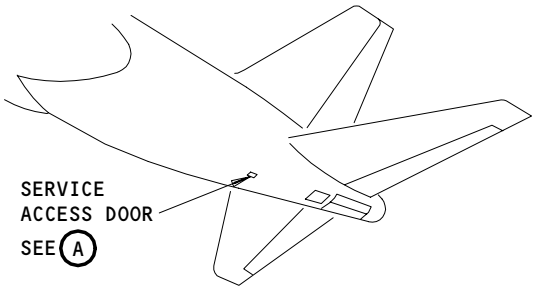
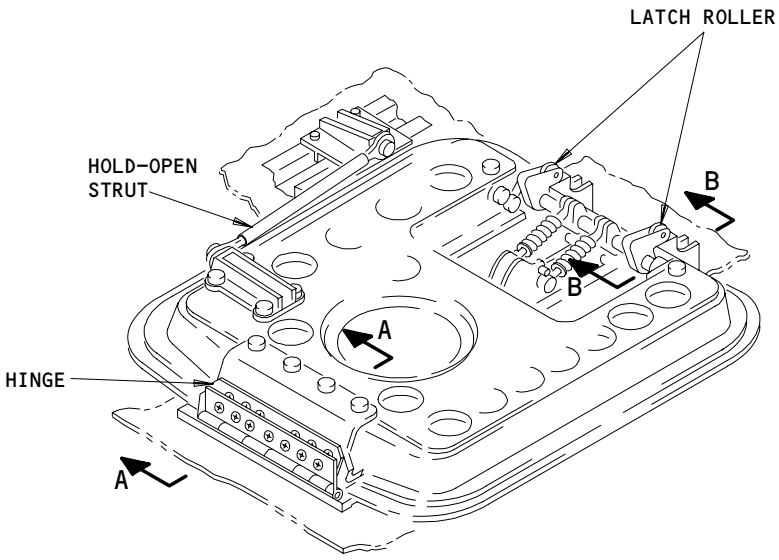
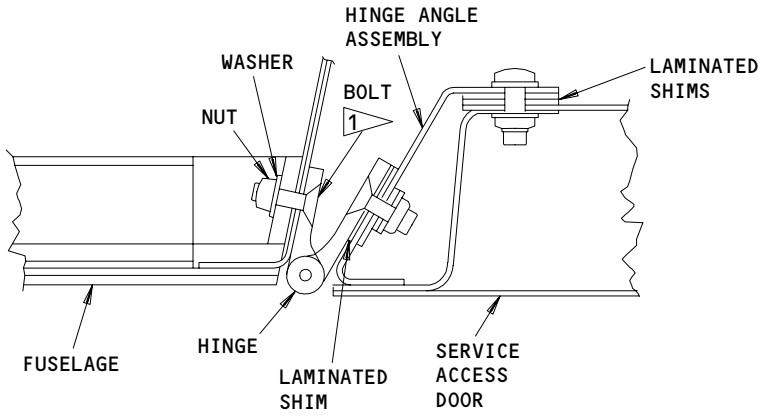
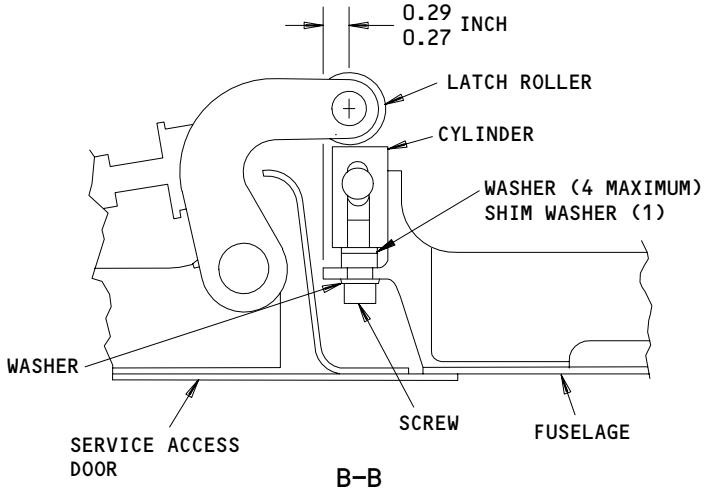




SERVICE ACCESS DOOR
A



A-A



B-B

1 BOLT BACB30LH-3-8 (4 LOCATIONS)
BOLT BACB30LH-3-5 (3 LOCATIONS)

Service Access Door
Figure 401

22587
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CONTROLS BAY ACCESS DOOR - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the access door for the controls bay. The second task is the installation of the access door for the controls bay.

TASK 52-48-11-004-001

2. Remove the Controls Bay Access Door (Fig. 401)
   A. Access
      (1) Location Zone
          313 Stabilizer torsion box compartment (Left)

      (2) Access Panel
          313AL Controls Bay Access Door

   B. Procedure

      S 014-002
      (1) Open the access door for the controls bay.

      S 034-003
      (2) Disconnect the hold-open strut from the access door.

      S 024-043
      (3) Remove the fasteners and shims that connect the door hinge to the fuselage (View B-B, Fig. 401).

      S 024-005
      (4) Remove the access door.

TASK 52-48-11-404-041

3. Install the Controls Bay Access Door (Fig. 401)
   A. Consumable Materials
      (1) C00259 Primer, BMS 10-11, Type 1, wet or dry
   B. Access
      (1) Location Zone
          313 Stabilizer torsion box compartment (Left)

      (2) Access Panel
          313AL Controls Bay Access Door

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C. Procedure

S 424-045

(1) Hold the door in the correct position and attach the hinge angle assembly to the fuselage with six bolts (View B-B, Fig. 401).

S 864-007

WARNING: STAY OFF THE SERVICE ACCESS DOOR, 312AR, AND THE ACCESS DOOR FOR THE CONTROLS BAY, 313AL. YOUR WEIGHT CAN CAUSE THE SPRING-LOADED LATCHES TO RELEASE. IF YOU FALL THROUGH THE DOOR, INJURY CAN OCCUR.

(2) Close the access door.

S 224-044

(3) Make sure the flushness between the forward edge of the door and the fuselage aligns correctly (View B-B, Fig. 401).

S 824-036

(4) If it does not align correctly, do these steps:
   (a) Adjust the shims between the hinge angle assembly and the hinge.
   (b) Apply primer to the bare shim surface.

S 214-011

(5) Make sure the pressure you use to close the latches is 20 to 30 pounds (View A-A, Fig. 401).

S 824-037

(6) If the pressure to close the latches is not 20 to 30 pounds, do these steps:
   (a) Adjust the shim thickness.
   (b) Apply primer to the bare shim surface.

S 224-017

(7) Make sure the clearance between all sides of the door and the fuselage is less than 0.13 and more than 0.02 inch.

S 434-034

(8) Connect the hold-open strut to the door.

S 714-033

(9) Open and close the door to make sure the door operates smoothly and latches correctly.

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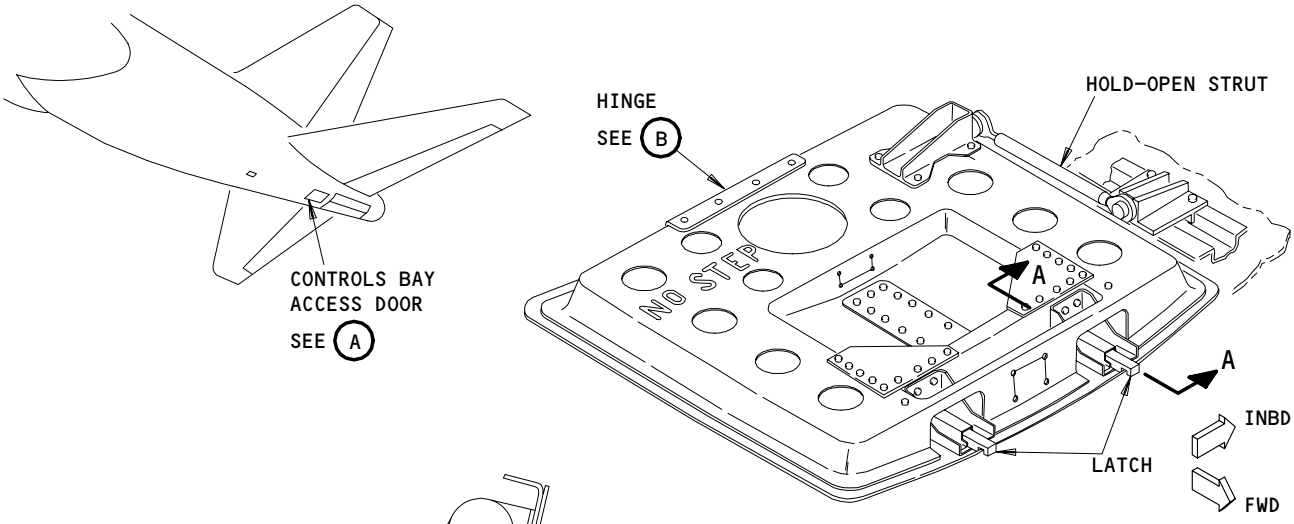
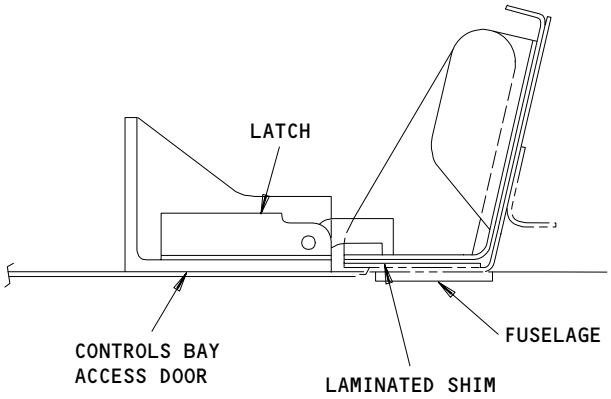
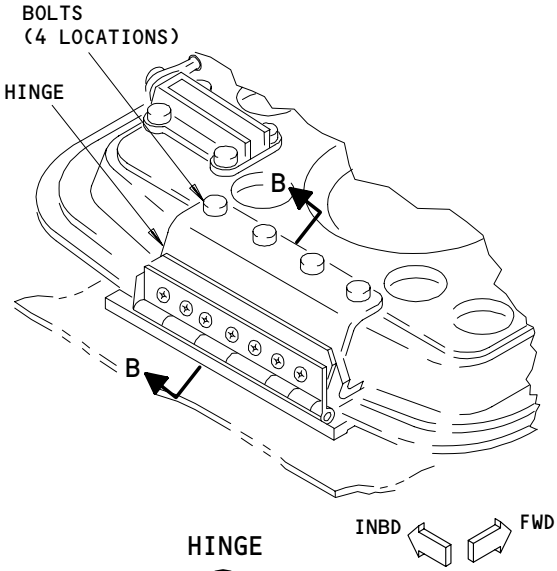


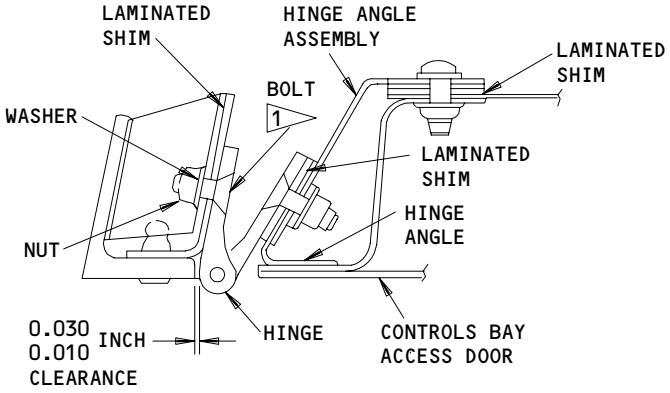
CONTROLS BAY ACCESS DOOR
A



A-A



HINGE
B



B-B

1 BOLT BACB30LH-4-5 (2 LOCATIONS)
BOLT BACB30LH-4-4 (4 LOCATIONS)

Controls Bay Access Door
Figure 401

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APU ACCESS DOORS - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the APU access doors. The second task is the installation of the APU access doors.

   TASK 52-48-13-004-001

2. Remove the APU Access Doors (Fig. 401)
   A. Access
      (1) Location Zones
          315 APU Compartment (Left)
          316 APU Compartment (Right)

      (2) Access Panels
          315AL APU Access Door (Left)
          316AR APU Access Door (Right)

   B. Prepare for Procedure

      S 844-026
      (1) Do this task: APU Fire Detector Element Removal (AMM 26-15-02/401).
   C. Procedure

      S 864-002
      (1) Hold the left access door in the closed position.

      S 864-021
      (2) Put a screwdriver into the latch trigger slot and lift it up to release the latches from the aft to forward positions.

      S 014-004
      (3) Let the left access door open.

      S 864-005
      (4) Push the right access door up and pull the detent latch aft until the latch disengages.

      S 014-006
      (5) Let the right access door open.

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S 864-007
(6) Move the access doors until the doors are in approximately the vertical position.

S 024-024
(7) Disconnect the hold-open struts from the access doors.

S 024-010
(8) Hold the access door and start with the hinge pin in the center of the door and do these steps to remove the hinge pins:
(a) Hold the end of the hinge pin that you can see.
(b) Move the hinge pin above the end of the adjacent hinge pin.
(c) Pull the hinge pin from the hinge.
(d) Do these steps again until you remove all of the hinge pins.

TASK 52-48-13-404-011

3. Install the APU Access Doors (Fig. 401)

A. Consumable Materials
(1) D00633 Grease - BMS 3-33 (Preferred)
(2) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

B. Access
(1) Location Zones
315 APU Compartment (Left)
316 APU Compartment (Right)

(2) Access Panels
315AL APU Access Door (Left)
316AR APU Access Door (Right)

C. Procedure

S 864-012
(1) Put the right access door in approximately the vertical position.

S 424-022
(2) Engage the door hinges with the lugs on the airplane structure.

S 424-013
(3) Install the hinge pins as follows:
(a) Lubricate the hinge pins with the grease.

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(b) Install the forward (short) hinge pin into the forward hinge until 1.10 inches of the hinge pin shows through the opening.
(c) Install the aft (short) hinge pin into the aft hinge until 1.10 inches of the hinge pin shows through the opening.
(d) Install the center (long) hinge pin into the hinge until the front end pushes against the end of the adjacent hinge pin.
(e) Let the remaining end of the hinge pin align with and push against the other end of the adjacent hinge pin.

S 424-023
(4) Connect the hold-open struts to the access door (View A, Fig. 401).

NOTE: Make sure the telescopic end of the hold-open struts attach to the fuselage structure.

S 864-015
(5) Close the right access door.

S 424-016
(6) Do the steps above again to install the left access door.

S 224-017
(7) Make sure the clearance between the door skin and the fuselage skin is correct around the edges of the doors (Views A-A and B-B, Fig. 402).

S 224-018
(8) Make sure the flushness of the doors is correct (Views A-A and B-B, Fig. 402).

S 824-019
(9) If the flushness is not correct, do the steps that follow:
(a) To adjust the forward edge, add or remove the laminations of shim below the forward stop fitting to get the correct flushness (View E, Fig. 401).
(b) To adjust the aft edge, add or remove the laminations of shim below the aft stop fitting to get the correct flushness (View D, Fig. 401).

S 714-020
(10) Close and latch the access doors. Do the steps that follow:
(a) Make sure the doors close smoothly.
(b) Make sure the latches on the access doors operate correctly (View F, Fig. 401).
1) Put a 10 inch (254 mm) screwdriver in the slot on the latch trigger.

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2) Make sure that the force needed to open the latches is 10 to 30 pounds.
3) If required, add or remove shims to get the 10 to 30 pounds of force required.

S 844-028

(11) Do this task: APU Fire Detector Element Installation (AMM 26-15-02/401).

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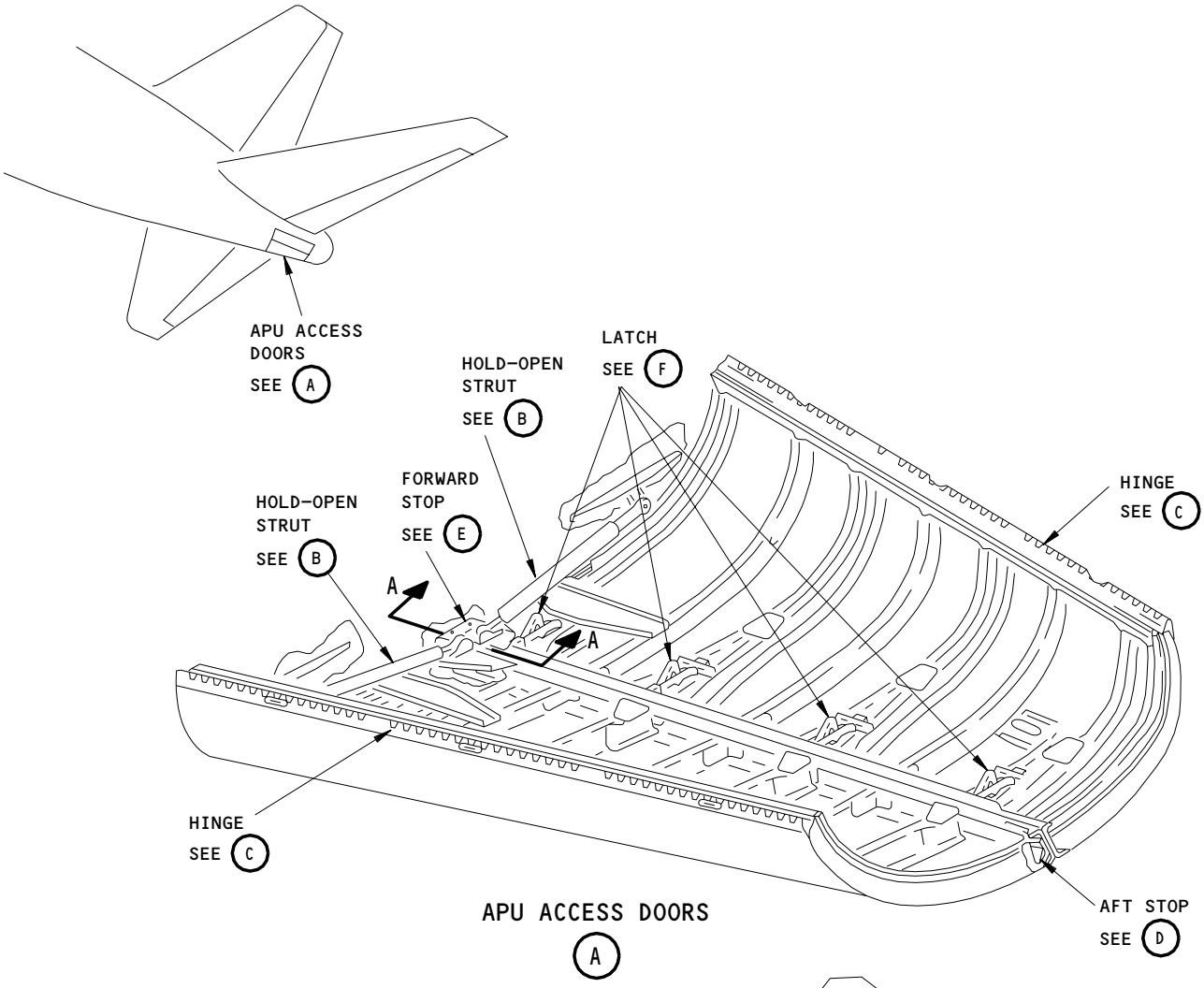
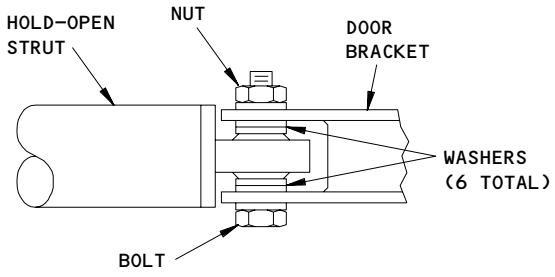
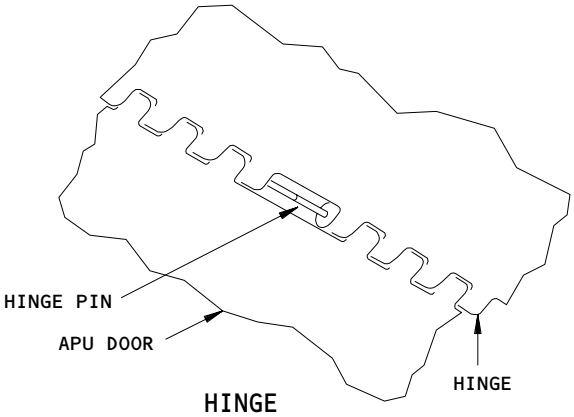


APU ACCESS DOORS
A



HOLD-OPEN STRUT
B



HINGE
C

APU Access Doors
Figure 401 (Sheet 1)

E72815

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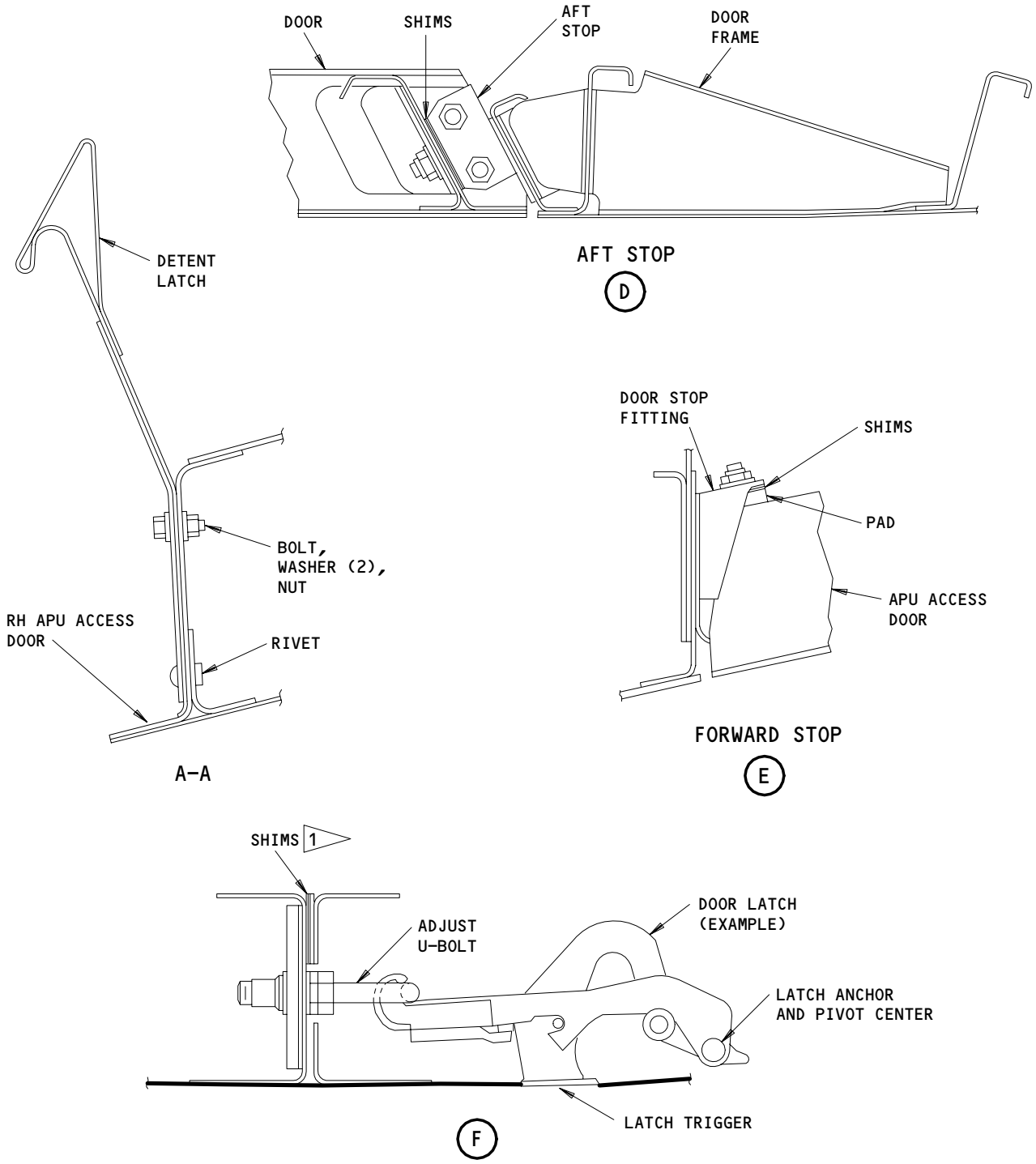

1 THE FORCE NECESSARY TO OPEN THE LATCHES MUST BE 10-30 POUNDS. ADD OR REMOVE THE SHIMS AND ADJUST THE U-BOLT TO GET THE NECESSARY VALUE. YOU CAN MEASURE THE FORCE WITH A 10 INCH SCREWDRIVER INSTALLED IN THE SLOT OF THE LATCH HANDLE. A FORCE OF 10-30 POUNDS IS NECESSARY AT EACH LATCH. THE OTHER LATCHES CAN BE IN THE OPEN OR CLOSED POSITIONS WHEN YOU MEASURE THE FORCE.

APU Access Doors
Figure 401 (Sheet 2)

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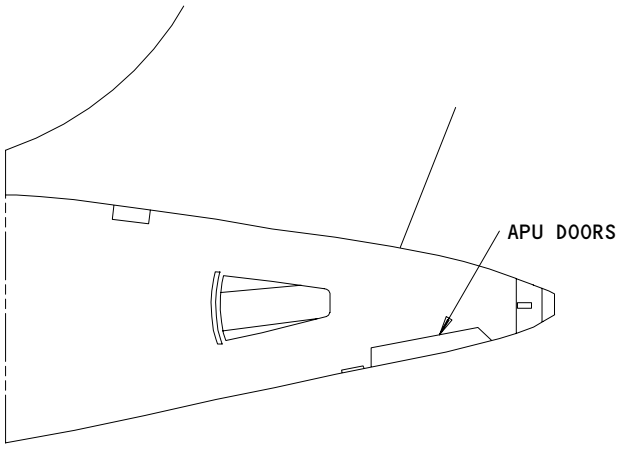
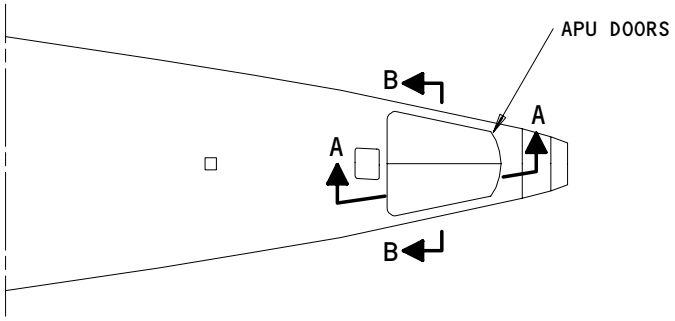
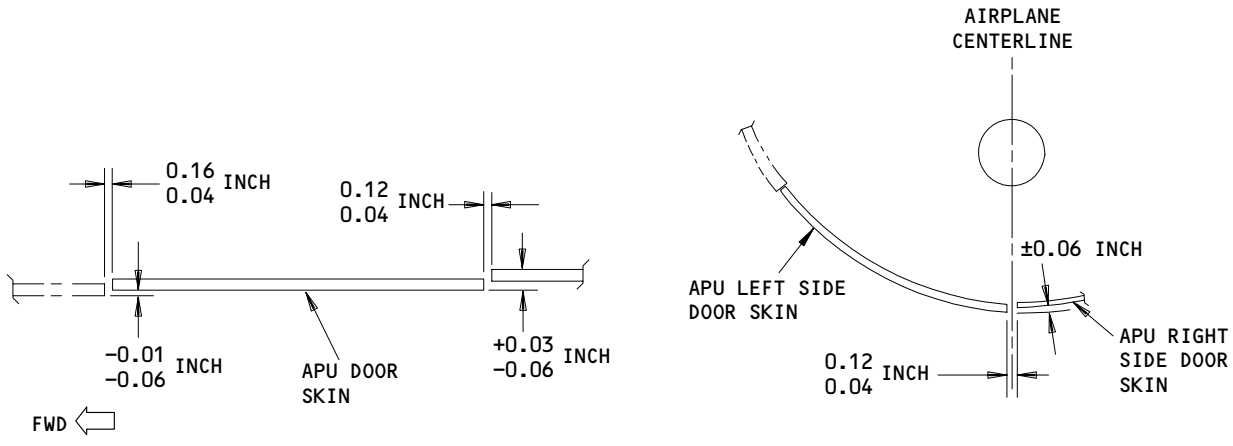


LEFT SIDE



BOTTOM VIEW



A-A B-B

APU Access Doors - Skin Clearances
Figure 402

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AIR DRIVEN PUMP ACCESS DOOR - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the access door for the air driven pump. The second task is the installation of the access door for the air driven pump.

TASK 52-48-14-004-001

2. Remove the Air Driven Pump Access Door (Fig. 401)
   A. Access
      (1) Location Zone
          195 Wing to Body - Aft Upper Half (Left)

      (2) Access Panel
          195SL Air Driven Pump Access Door

   B. Procedure

      S 864-002
      (1) Release the ten access door latches.

      S 014-003
      (2) Open the door to get access to the hold-open strut and the hinges.

      S 034-004
      (3) Disconnect the hold-open strut fron the door (View B-B, Fig. 401).

      S 024-029
      (4) Disconnect the bonding jumper (View A-A, Fig. 401).

          NOTE: Make a note of the bonding jumper location and the washer configuration for the subsequent door installation.

      S 034-005
      (5) Disconnect the hinges from the access door in three locations (View A-A, Fig. 401).

      S 024-006
      (6) Remove the door.

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TASK 52-48-14-404-008

3. Install the Air Driven Pump Access Door (Fig. 401)

A. Consumable Materials

(1) A00247 Sealant - BMS 5-95

(2) C00259 Primer - BMS 10-11, Type I, Wet or Dry

B. Reference

(1) 20-10-21/401, Grounding and Bonding

C. Access

(1) Location Zone

195 Wing to Body - Aft Upper Half (Left)

(2) Access Panel

195SL Air Driven Pump Access Door

D. Procedure

S 864-009

(1) Hold the door in position to align the hinges (View A-A, Fig. 401).

S 864-010

(2) Put the solid shim and the laminated shim between each hinge and the fairing.

S 434-011

(3) Loosely install the bolts, nuts, and washers.

S 824-012

(4) Change the thickness of the laminated shims if it is necessary to align the hinges.

S 374-013

(5) Apply primer to all bare shim surfaces.

S 424-014

(6) Attach the two hinges to the access door with the bolts. (View A-A, Fig. 401).

NOTE: The shorter bolts attach the forward hinge to the access door.

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S 434-018
(7) Install the bonding jumpers (Ref 20-10-21).

S 224-020
(8) Make sure the clearance between the access door and the airplane structure along the hinge line is correct (View C-C, Fig. 401).

S 224-021
(9) Make sure the clearance between the door and the adjacent fairing panels is 0.14 ±0.06 inch.

S 434-023
(10) Do the steps that follow to connect the hold-open strut to the door (View B-B, Fig. 401):
  (a) Apply primer to the bushing bore to install the bolt.
  (b) Install the washer with the bevel away from the fitting.
  (c) Install the nut.
  (d) Tighten the nut from 30 to 35 pound-inches.

S 714-028
(11) Examine the door latch installation as follows:
  (a) Close the access door.
  (b) With the latches open, make sure the flushness between the access door and the airplane structure is +0.10 to -0.03 inch at each latch location.
  (c) Make sure the latches operate freely when the access door is closed.
  (d) Lock the latches.
  (e) Do the check that follows for the correct free play (View D-D, Fig. 401).
    1) Push the edge of the door.
    2) Change the thickness of the shim to get the correct free play.
  (f) Make sure the minimum overlap for the latch bolt is correct (View D-D, Fig. 401)

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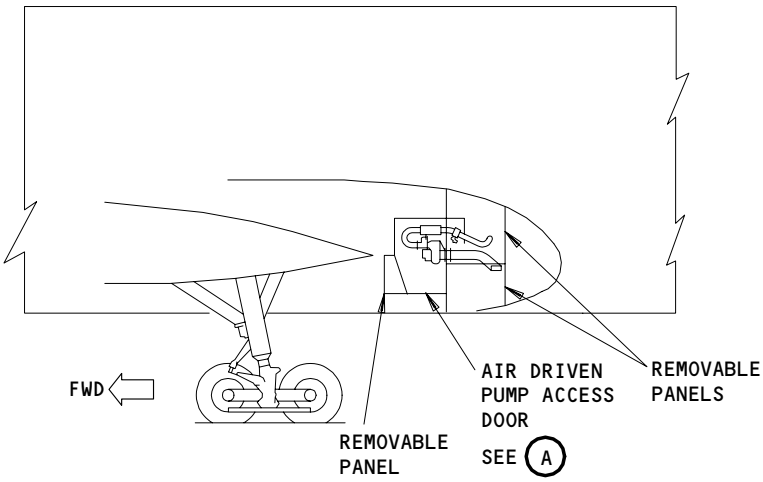

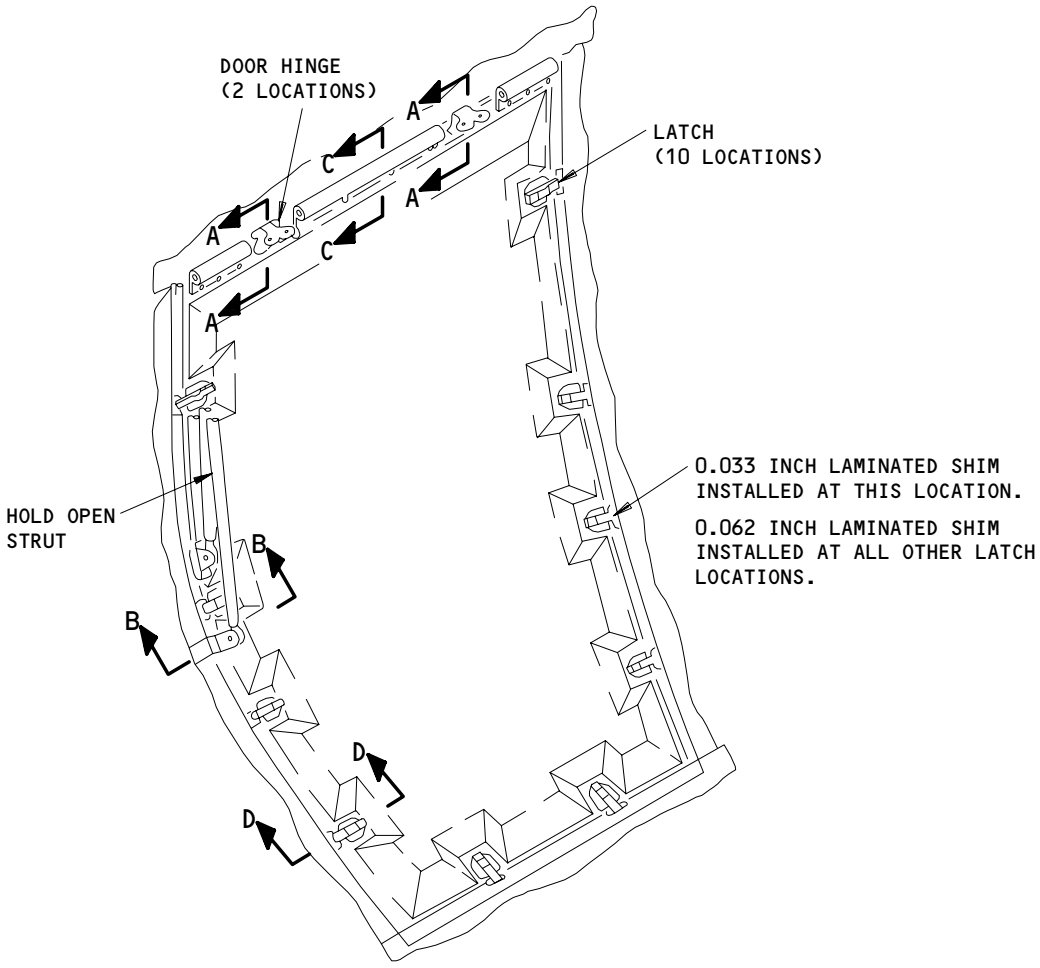

AIR DRIVEN PUMP ACCESS DOOR

A

Air Driven Pump Access Door
Figure 401 (Sheet 1)

48370
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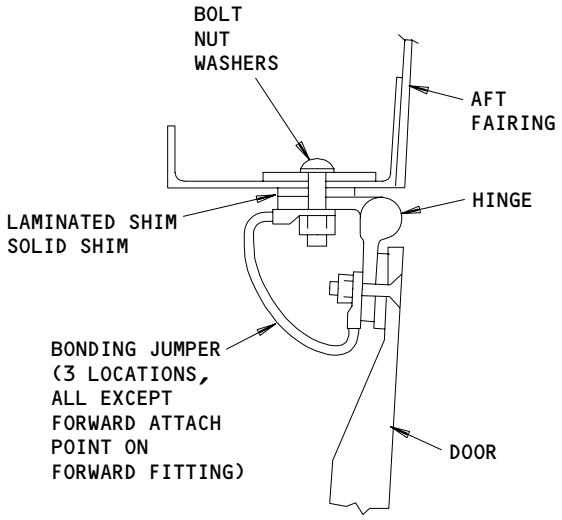
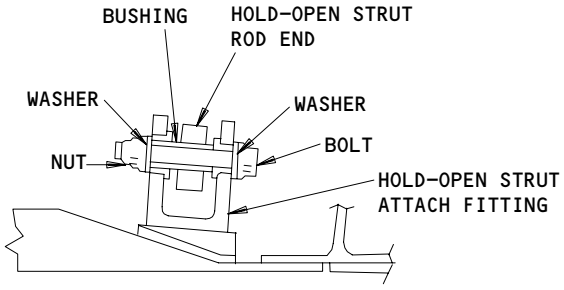
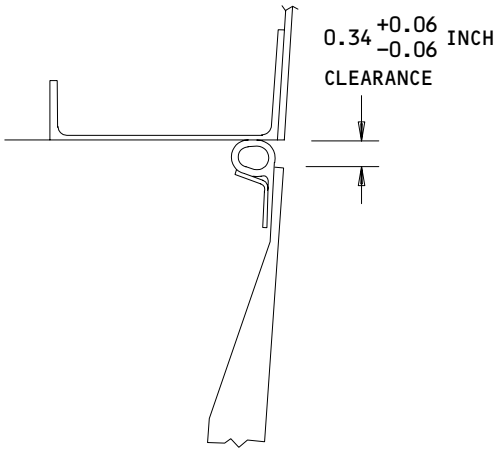


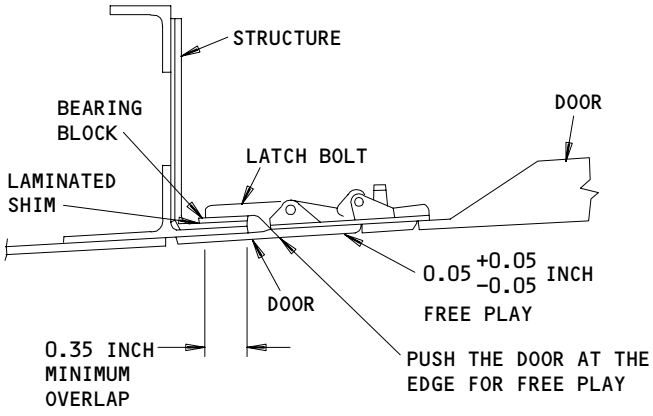
A–A



B–B



C–C



D–D

Air Driven Pump Access Door
Figure 401 (Sheet 2)

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VERTICAL FIN ACCESS DOOR - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the access door for the vertical fin. The second task is the installation of the access door for the vertical fin.

TASK 52-48-15-004-004

2. Remove the Vertical Fin Access Door (Fig. 401)
   A. References
      (1) 06-42-00/201, Empennage Access Doors and Panels
      (2) 29-11-00/201, Main (Left, Right, and Center) Hydraulic Systems
   B. Access
      (1) Location Zone
          300 Empennage and Body Section 48

      (2) Access Panel
          311AZ Vertical Fin Access Door

   C. Prepare to Remove the Access Door for the Vertical Fin

      S 864-001

      WARNING: THE AILERONS, ELEVATORS, RUDDER, FLAPS, SPOILERS AND STABILIZER ARE SUPPLIED WITH POWER. MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE HYDRAULIC POWER IS SUPPLIED. INJURY TO PERSONS OR DAMAGE TO EQUIPMENT CAN OCCUR.

      (1) Pressurize the left and center hydraulic systems (Ref 29-11-00).

      S 864-002
      (2) Use the STAB TRIM levers and put the stabilizer at the neutral position (2 units of trim on the position indicator).

      S 024-003

      WARNING: DISCONNECT THE HYDRAULIC SYSTEM FOR THE HORIZONTAL STABILIZER TRIM BEFORE YOU GO INTO BODY SECTION 48. ACCIDENTAL STABILIZER OPERATION CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

      (3) Disconnect the hydraulic system for the horizontal stabilizer trim as follows:
          (a) Decrease the pressure from the left and center hydraulic systems (Ref 29-11-00).
          (b) Put the LEFT and CENTER STAB TRIM SHUTOFF valve switches, on the control stand panel, P10, to the CUTOUT position.

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(c) Attach a DO-NOT-OPERATE tag to the P10 panel.
(d) Open these circuit breakers on the overhead circuit breaker panel, P11, and attach DO-NOT-CLOSE tags:
1) 11C12, FLIGHT CONTROLS STAB TRIM SHUTOFF L
2) 11C13, FLIGHT CONTROLS STAB TRIM SHUTOFF CTR

S 014-005
(4) Go into the body Section 48 through the access door for the horizontal stabilizer jackscrew (Ref 06-42-00).

S 014-006
(5) Find the access door for the vertical fin (Ref 06-42-00).

D. Procedure - Remove the Vertical Fin Access Door

S 024-007
(1) Remove the bolts that attach the door hinge to the hanger bracket.

S 014-008
(2) Release the door latch.

S 024-009
(3) Remove the access door for the vertical fin.

TASK 52-48-15-404-010

3. Install the Vertical Fin Access Door (Fig. 401)

A. Access

(1) Location Zone
300 Empennage and Body Section 48

(2) Access Panel
311AZ Vertical Fin Access Door

B. Procedure - Install the Vertical Fin Access Door

S 414-011
(1) Engage the door latch half to the body latch half.

S 424-012
(2) Attach the hinge to the hanger bracket with the bolts, washers, and nuts.

NOTE: The bolt heads must be forward.

S 214-013
(3) Make sure the top edges of the door are smooth against the lower surface of the fin deck web.

S 824-014
(4) Adjust the door hinge vertically on the hanger brackets if it is necessary.

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S 824-015
(5) Adjust the thickness of the filler between the body latch half and the fin deck web if it is necessary.

C. Put the Airplane back to its Usual Condition

S 864-016
(1) Remove the DO-NOT-CLOSE tags, and close these circuit breakers on the P11 panel:
(a) 11C12, FLIGHT CONTROLS STAB TRIM SHUTOFF L
(b) 11C13, FLIGHT CONTROLS STAB TRIM SHUTOFF CTR

S 864-017
(2) Remove the DO-NOT-OPERATE tag from the P10 panel.

S 864-018
(3) Put the LEFT and CENTER STAB TRIM SHUTOFF valve switches, on the control stand panel, P10, to the NORM position.

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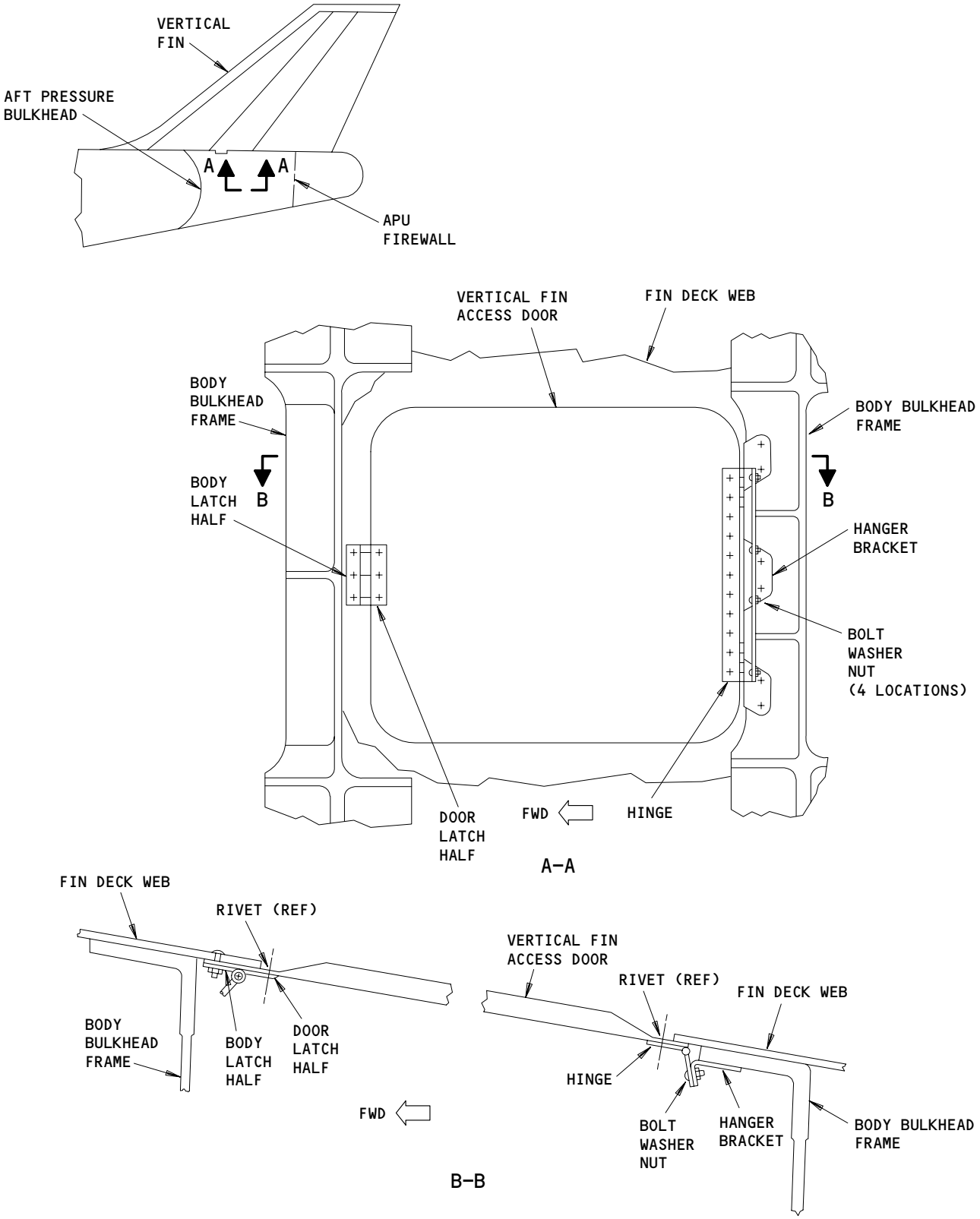

Vertical Fin Access Door
Figure 401

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EXTERIOR SERVICE DOORS - DESCRIPTION AND OPERATION

1. General
   A. The exterior service doors are those which provide access to panels and compartments for servicing (Fig. 1).
   B. The doors are hinged, outward opening doors with quick release latches. Bonding jumpers are installed to prevent build-up of static charge.
2. Component Details (Fig. 2)
   A. E/E External Power Access Door
      (1) The E/E external power access door provides access to the E/E external power connection. The access door is located on the lower fuselage in section 41 right of the electronics access door.
   B. Aft Potable Water Service Door
      (1) The aft potable water service door provides access to the aft potable water service and drain panel. The service door is located on the lower fuselage centerline forward of the bulk cargo compartment access door.
   C. Forward Potable Water Drain Door
      (1) The forward potable water drain door provides access to the forward potable water drain panel. The drain door is located on the lower fuselage centerline forward of the wing/body fairing.
   D. Underwing Fairing Ground Air Supply Access Door
      (1) The ground air supply access door provides access to the ground air service connection. It is located on the wing/body fairing, just forward of the left environmental control systems door.
   E. Underwing Fairing Pressure Relief Panels
      (1) The pressure relief panels are located in both left and right underwing fairings forward of the environmental control systems doors. The panels provide access to environmental control systems compartments. The left panel also provides access to the ground supplied conditioned air connection. Each panel has positive stop light spring flush type latches that engage hanger assemblies with a shear rivet fuse. Overpressure in the compartment will shear the rivets, causing the latches to disengage, and the door to rotate open on its hinges.
   F. Aft Fairing Hydraulic Reservoir Fill Access Door
      (1) The aft fairing hydraulic reservoir fill access door provides access to the hydraulic reservoir service station. The door is located in the right wing/body fairing just aft of the main landing gear doors.

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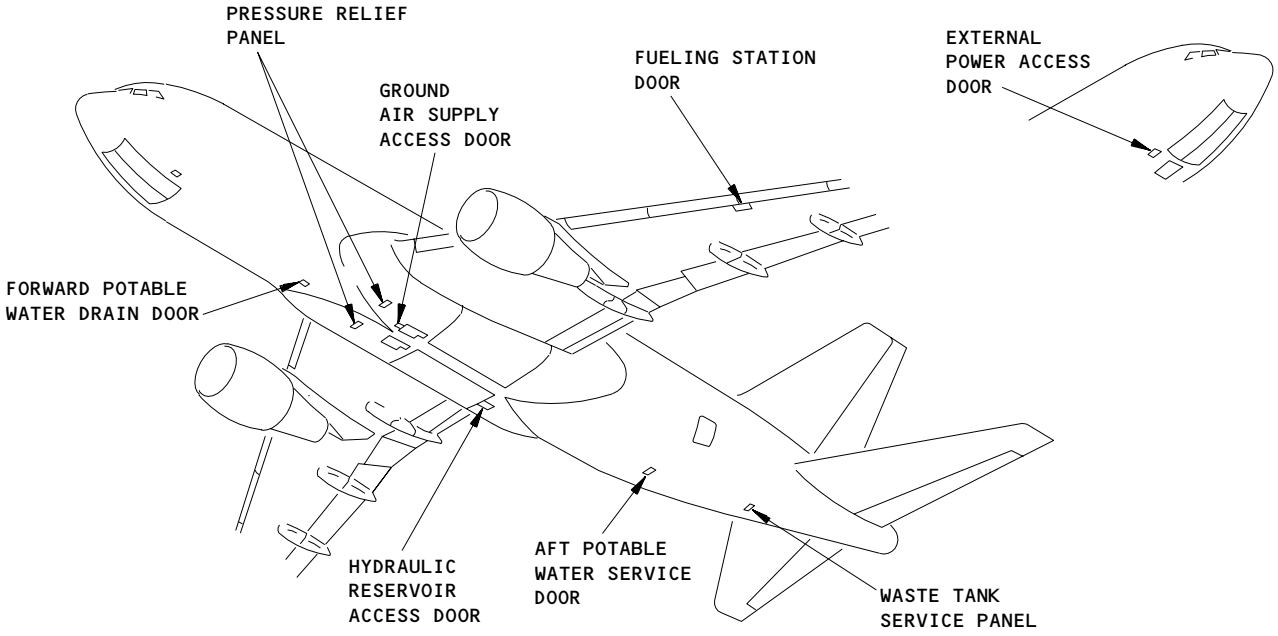
G. Waste Water Service Panel Access Door
   (1) The waste water service panel access door provides access to the waste tank service panel. The access door is located on the lower fuselage centerline forward of the controls bay access door.

H. Leading Edge, Outboard Wing Fueling Station Door
   (1) The leading edge, outboard wing fueling station door provides access to the fueling station. The door is located on the bottom side leading edge of the left wing outboard of the engine.



Exterior Service Doors Location
Figure 1

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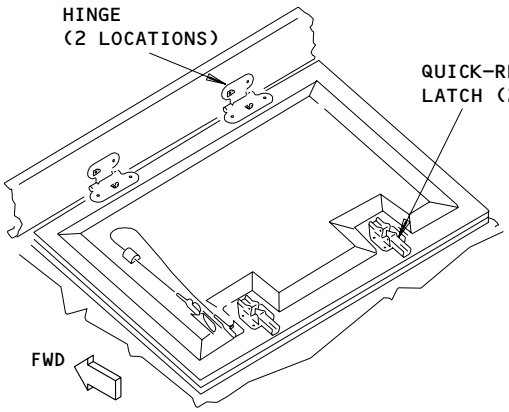
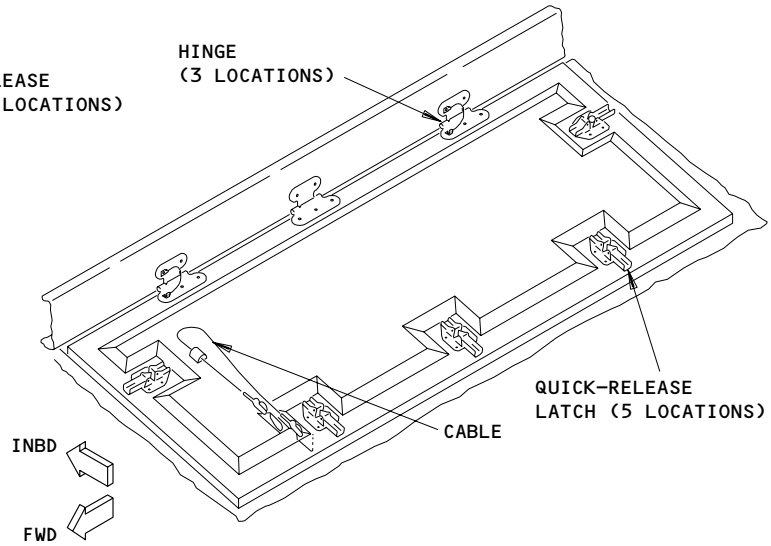


GROUND AIR SUPPLY ACCESS DOOR



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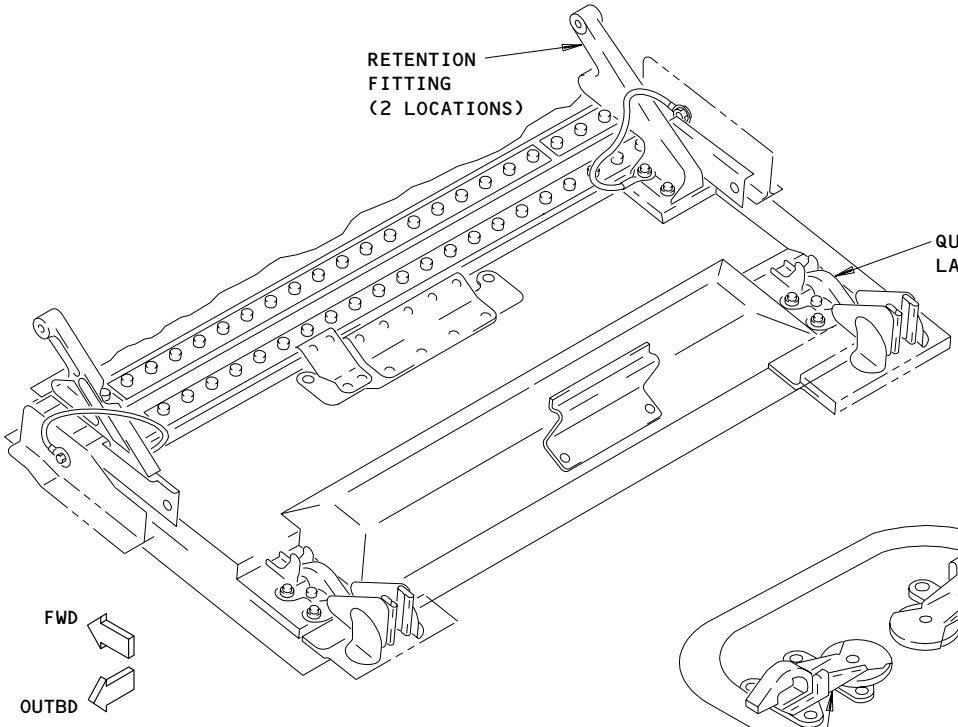
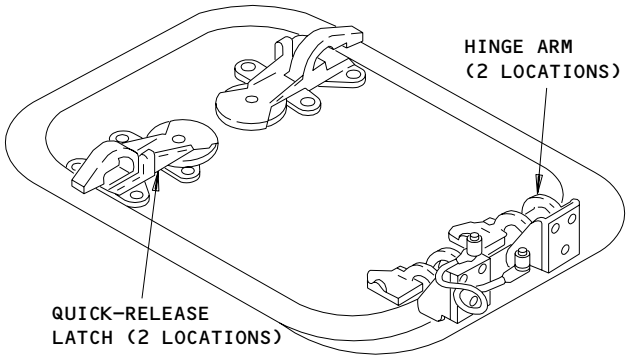


FUELING STATION DOOR



EXTERNAL POWER ACCESS DOOR

Exterior Service Doors
Figure 2 (Sheet 1)

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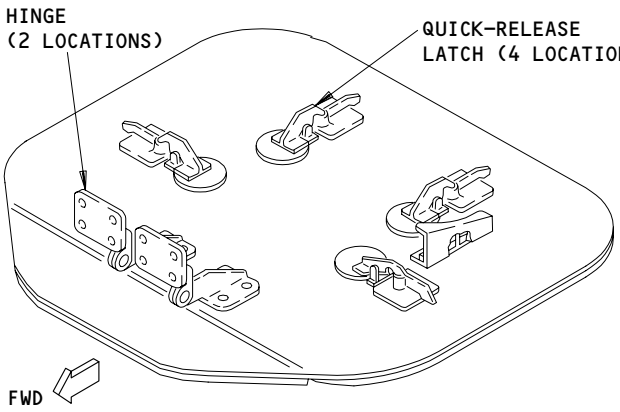
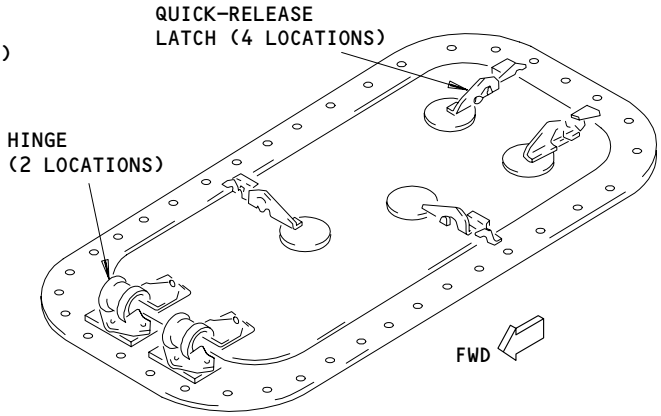
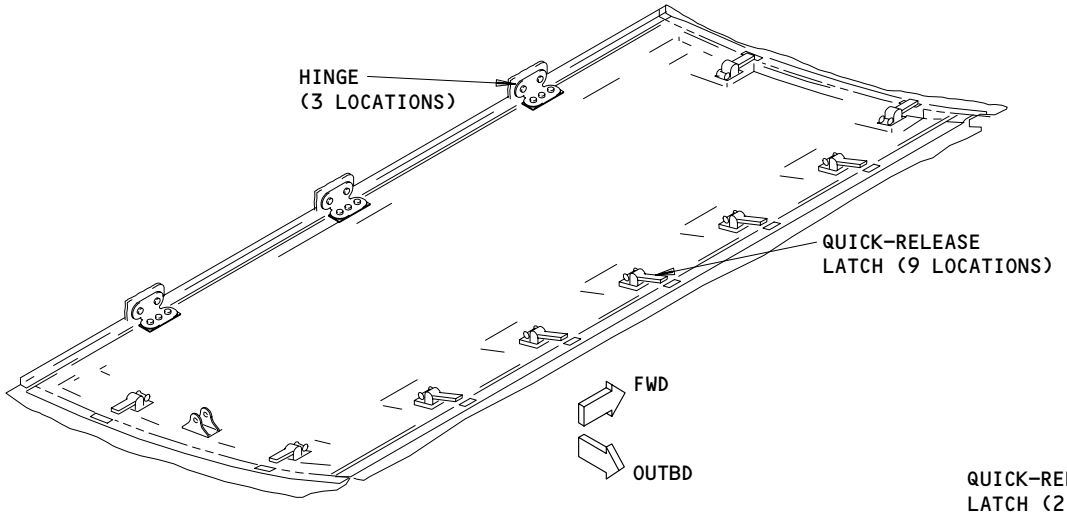


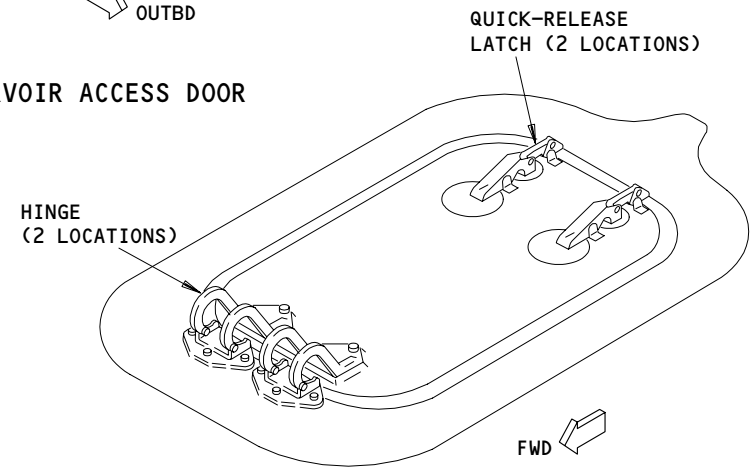
WASTE TANK SERVICE PANEL



AFT POTABLE WATER SERVICE DOOR



HYDRAULIC RESERVOIR ACCESS DOOR



FORWARD POTABLE WATER DRAIN DOOR

Exterior Service Doors
Figure 2 (Sheet 2)

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E/E EXTERNAL POWER ACCESS DOOR - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the access door for the external power. The second task is the installation of the access door for the external power.

TASK 52-49-01-004-001

2. Remove the E/E External Power Access Door (Fig. 401)
   A. Access
      (1) Location Zone
          120 Main Equipment Center (Right)

      (2) Access Panel
          120AR E/E External Power Access Door

   B. Procedure

      S 864-002
      (1) Release the latches.

      S 014-003
      (2) Open the access door.

      S 034-004
      (3) Disconnect the bonding jumper.

      S 324-005
      (4) Remove the nuts, washers, and bolts that hold the hinges to the access door.

      S 024-006
      (5) Remove the access door.

TASK 52-49-01-404-007

3. Install the E/E External Power Access Door (Fig. 401)
   A. Consumable Materials
      (1) A00247 Sealant - BMS 5-95

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(2) C00259 Primer - BMS 10-11, Type I

B. References

(1) 20-30-01/201, Grounding and Bonding

(2) 20-10-22/701, Metal Surface Cleaning

C. Access

(1) Location Zone

120 Main Equipment Center (Right)

(2) Access Panel

120AR E/E External Power Access Door

D. Procedure

S 864-008

(1) Put the access door in the opening.

S 424-009

(2) Attach the access door to each hinge as follows:

(a) Put the shim between the access door and the hinge half.

(b) Install the bolts, washers, and nuts.

S 424-010

(3) If the access door does not have the latches installed, install the latches with the nuts, washers, and bolts.

S 714-012

(4) Examine the latch installation as follows:

(a) With the latches open, make sure the flushness between the access door and the airplane structure is +0.10 to -0.03 inch at each latch location.

(b) Make sure the latches operate freely when the access door is closed.

(c) Lock the latches.

(d) Make sure the flushness between the latch button and the contour of the access door is +0.02 to -0.02 inch.

(e) Examine the clearance between the latch bolt and the rub block as follows:

1) Make sure the clearance is a maximum of 0.01 inch (Views B and C, Fig. 401).

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2) Adjust the shims under the rub block to get the correct clearance (Views B and C, Fig. 401).
3) Apply primer to the bare shim surface.

(f) Make sure the latch overlap on the rub block is correct (View C, Fig. 401).

(g) Do the check that follows for the correct free play (View B, Fig. 401):
1) Push the edge of the door.
2) Adjust the shim to get the correct free play.
3) Apply primer to the bare shim surface.

S 214-016

(5) Make sure the flushness between the airplane structure and the access door is +0.02 to -0.02 inch.

S 164-013

(6) Clean the conductive surface for the bonding jumper if it is necessary (Ref 20-10-22).

S 434-014

(7) Connect the bonding jumper.

S 394-015

(8) Make a fillet seal on the bonding jumper connections (Ref 20-30-01).

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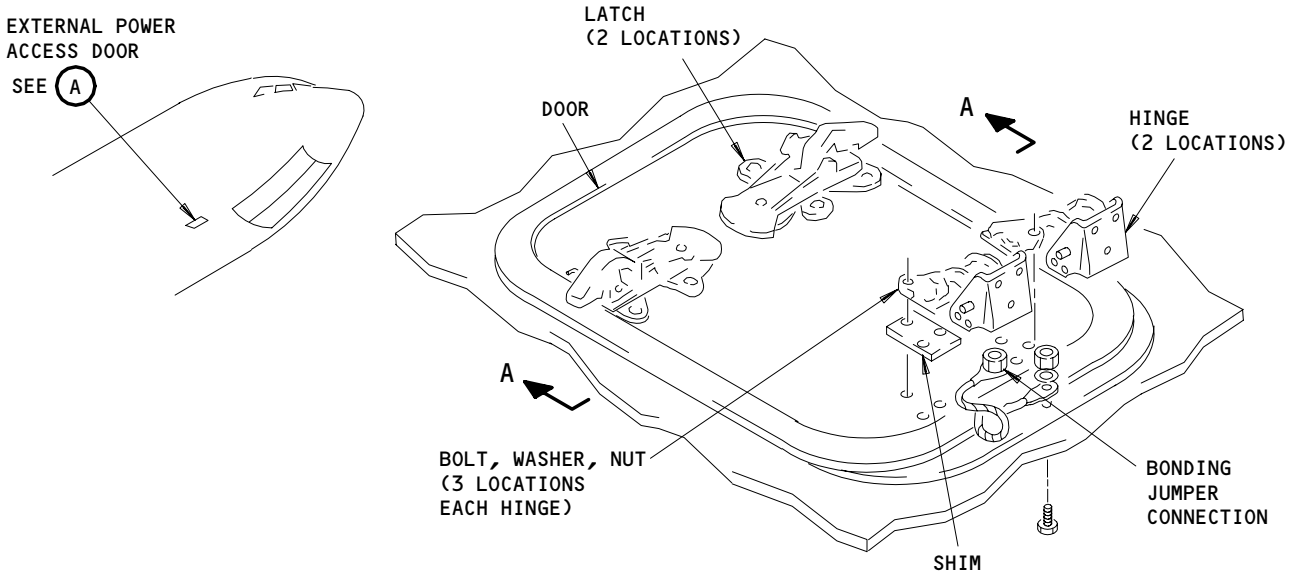
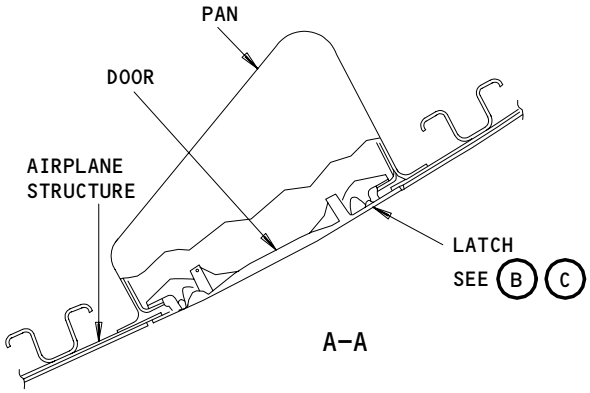
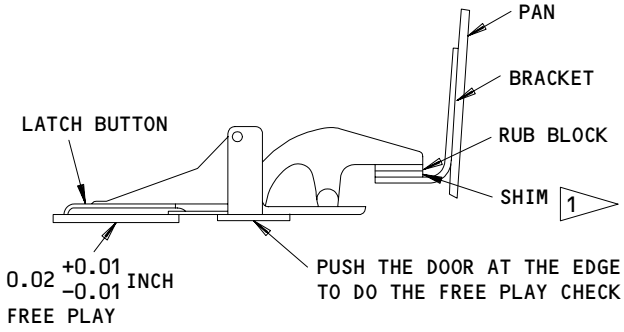


EXTERNAL POWER ACCESS DOOR

A

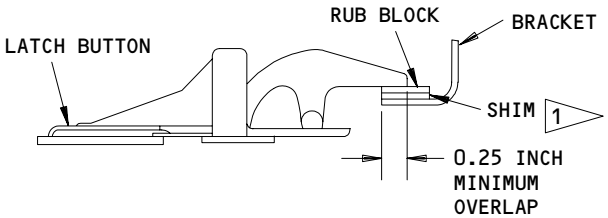


A–A



LATCH

B



LATCH

C

1 0.125 INCH THICK LAMINATED PHENOLIC SHIM STOCK.

External Power Access Door Installation
Figure 401

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48536

POTABLE WATER SERVICE DOOR - REMOVAL/INSTALLATION

1. General
   A. This procedure has these tasks:
      (1) The removal of the forward potable water system door.
      (2) The installation of the forward potable water system door.
      (3) The removal of the aft potable water service door.
      (4) The installation of the aft potable water service door.

TASK 52-49-03-004-018

2. Remove the Forward Potable Water System Door (Fig. 401)
   A. Access
      (1) Location Zones
          124 Area below fwd cargo compartment (Right)

      (2) Access Panel
          124BR Potable Water System Door

   B. Procedure

      S 024-038
      (1) Remove the Forward Potable Water System Door:
          (a) Release and open the door (4) for the potable water system.
          (b) Remove the bolts (1), nuts (3) and washers (2) that hold the hinges to the fuselage.
          (c) Remove the door.

TASK 52-49-03-404-022

3. Install the Forward Potable Water System Door (Fig. 401)
   A. Consumable Materials
      (1) C00304 Teflon filled coating - BMS 10-86, Type I or Type II
   B. Access
      (1) Location Zones
          124 Area below fwd cargo compartment (Right)

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(2) Access Panel
124BR Potable Water System Door

C. Procedure

S 424-039
(1) Install the Forward Potable Water System Door:
(a) Put the door (4) in the correct position.
(b) Install the bolts (1), nuts (3) and washers (2) to connect the door hinges to the fuselage.
(c) Put the door (4) in the fit and fair position.
(d) Make sure the door (4) has the correct clearance and fair to the fuselage.
(e) Tighten the nuts to 15 - 20 pound-inches (1.7 - 2.3 Nm).

S 754-025
(2) Examine the latch free play when the door (4) is latched:
(a) Make sure the free play of the latch is 0.01 to 0.03 inch (0.25 to 0.76 mm) at the center of the latch button.
(b) If you did not get the correct free play, adjust the thickness of the teflon coating on the strap.

NOTE: The maximum permitted thickness is 0.05 inch (1.27 mm) and the minimum permitted thickness is 0.01 inch (0.25 mm).

S 214-026
(3) Make sure the clearance between the stop bracket and the valve handle is 0.25 inch (6.35 mm).

S 824-027
(4) Adjust the stop bracket position if you did not get the correct clearance.

NOTE: When the stop bracket is adjusted correctly, the door will not close unless the valve handle is closed.

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TASK 52-49-03-004-004

4. Remove the Aft Potable Water Service Door (Fig. 402)

A. Access

(1) Location Zones

155 Area below aft cargo compartment (Left)

(2) Access Panel

155AL Potable Water Service Door

B. Procedure

S 024-040

(1) Remove the Aft Potable Water Service Door:

(a) Release and open the aft service door (26) for the potable water.

(b) Remove the rivets (25) that hold the hinge to the service door (26).

(c) Remove the service door (26).

(d) Keep the shims (28) and fillers (27) for the installation of the service door (26).

TASK 52-49-03-404-006

5. Install the Aft Potable Water Service Door (Fig. 402)

A. Consumable Materials

(1) C00259 Primer - BMS 10-11, Type I
(2) C00304 Teflon filled coating - BMS 10-86, Type I or Type II
(3) A00139 adhesive - BMS 5-19 Class B-1/2 (optional)
(4) A00952 adhesive - BMS 5-19 Class B-1 (optional)
(5) A00140 adhesive - BMS 5-19 Class B-2 (optional)
(6) A00141 adhesive - BMS 5-19 Class B-4 (optional)
(7) A00953 adhesive - BMS 5-19 Class B-8 (optional)
(8) A00250 adhesive - BMS 5-26 Type II, Class B-1/2 (optional)
(9) A00251 adhesive - BMS 5-26 Type II, Class B-2 (optional)
(10) A00247 adhesive - BMS 5-95 Class B-1/2, or Class B-2, or Class B-4 (optional)

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B. Access

(1) Location Zones

155 Area below aft cargo compartment (Left)

(2) Access Panel

155AL Potable Water Service Door

C. Procedure

S 424-041

(1) Install the Aft Potable Water Service Door:

(a) Put the aft service door (26) in the correct position.

(b) Remove the 0.003 inch (0.08 mm) shim laminations as necessary from the shims (28) to get the correct flushness between the fuselage and the service door.

(c) Apply primer to the bare shim surface.

(d) With the fillers (27) and shims (28) in the correct positions, align the hinges with the rivet holes.

(e) Attach the hinges to the service door (26) with the rivets (25).

(f) Close the service door (26).

S 224-008

(2) Examine the latch installation as follows:

(a) Make sure the flushness between the latch button and the service door (26) is 0.02 inch (0.5 mm) or less.

(b) If the flushness is more than 0.02 inch (0.5 mm), adjust the shim laminations on shims (30) to get the correct flushness.

(c) Do the steps that follow if you did not get the correct flushness after the shim adjustment:

1) Remove the rivet from the latch button.

2) Remove a maximum of 0.05 inch (1.2 mm) from the unlettered surface of the latch button.

3) Apply a finish to the machined surface.

4) Install the latch button.

(d) If the latch buttons make a recess of more than 0.02 inch (0.5 mm), follow the steps below:

1) Remove the rivet from the latch button.

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2) Install a 1.45 inch (36.8 mm) diameter shim (29) of the necessary thickness between the latch and the rubber seal.
3) Alternatively, bond a 0.77 inch (19.6 mm) diameter aluminum filler (31) on the latch button as follows:
   a) Clean all the mating surfaces.
   b) Follow the manufacturer's instructions to mix the base compound with the activator. Do not make the adhesive thin.

NOTE: The class terminal dash number indicates the work life, in hours, below 100°F (37 C) as shown below.

Adhesive	Work Life
BMS 5-19 Class B-1/2	1/2 hour
BMS 5-19 Class B-1	1 hour
BMS 5-19 Class B-2	2 hours
BMS 5-19 Class B-4	4 hours
BMS 5-19 Class B-8	8 hours
BMS 5-26 Class B-1/2	1/2 hour
BMS 5-26 Class B-2	2 hours
BMS 5-95 Class B-1/2	1/2 hour
BMS 5-95 Class B-2	2 hours
BMS 5-95 Class B-4	4 hours

(e) Apply sufficient pressure to make sure the mating surfaces of the filler and the latch button touch.
(f) Cure at a temperature below 100°F (37 C) for the necessary cure time shown below.

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Adhesive	Cure Time
BMS 5-19 Class B-1/2	16 hours
BMS 5-19 Class B-1	36 hours
BMS 5-19 Class B-2	48 hours
BMS 5-19 Class B-4	60 hours
BMS 5-19 Class B-8	96 hours
BMS 5-26 Class B-1/2	16 hours
BMS 5-26 Class B-2	48 hours
BMS 5-95 Class B-1/2	24 hours
BMS 5-95 Class B-2	48 hours
BMS 5-95 Class B-4	7 days

(g) Put the service door (26) in the fit and fair position.
(h) Examine the free play of the latch when there is a load from the latch spring.
1) Make sure the free play of the latch is 0.01 to 0.03 inch (0.25 to 0.76 mm) at the center of the latch button.
2) If you did not get the correct free play, adjust the thickness of the teflon coating on the strap.

NOTE: The maximum permitted thickness is 0.05 inch (1.27 mm) and the minimum permitted thickness is 0.01 inch (0.25 mm).

S 214-044
(3) Make sure the clearance between the stop bracket and the drain valve handle is 0.25 inch (6.35 mm).

S 824-016
(4) Adjust the stop bracket position if you did not get the correct clearance.

NOTE: When the stop bracket is adjusted correctly, the service door will not close unless the drain valve handle is closed.

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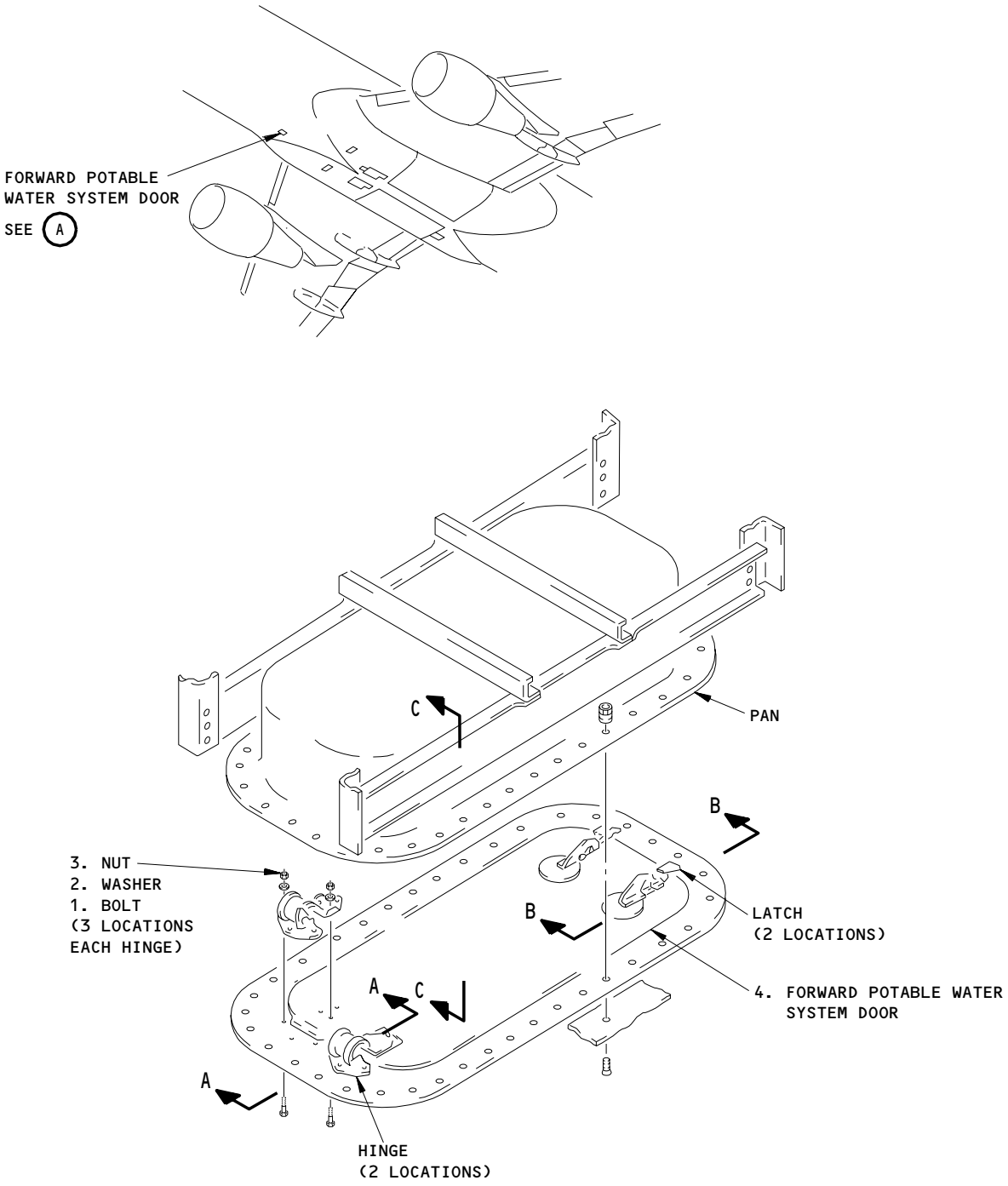

FORWARD POTABLE WATER SYSTEM DOOR

(A)

Forward Potable Water System Door
Figure 401 (Sheet 1)

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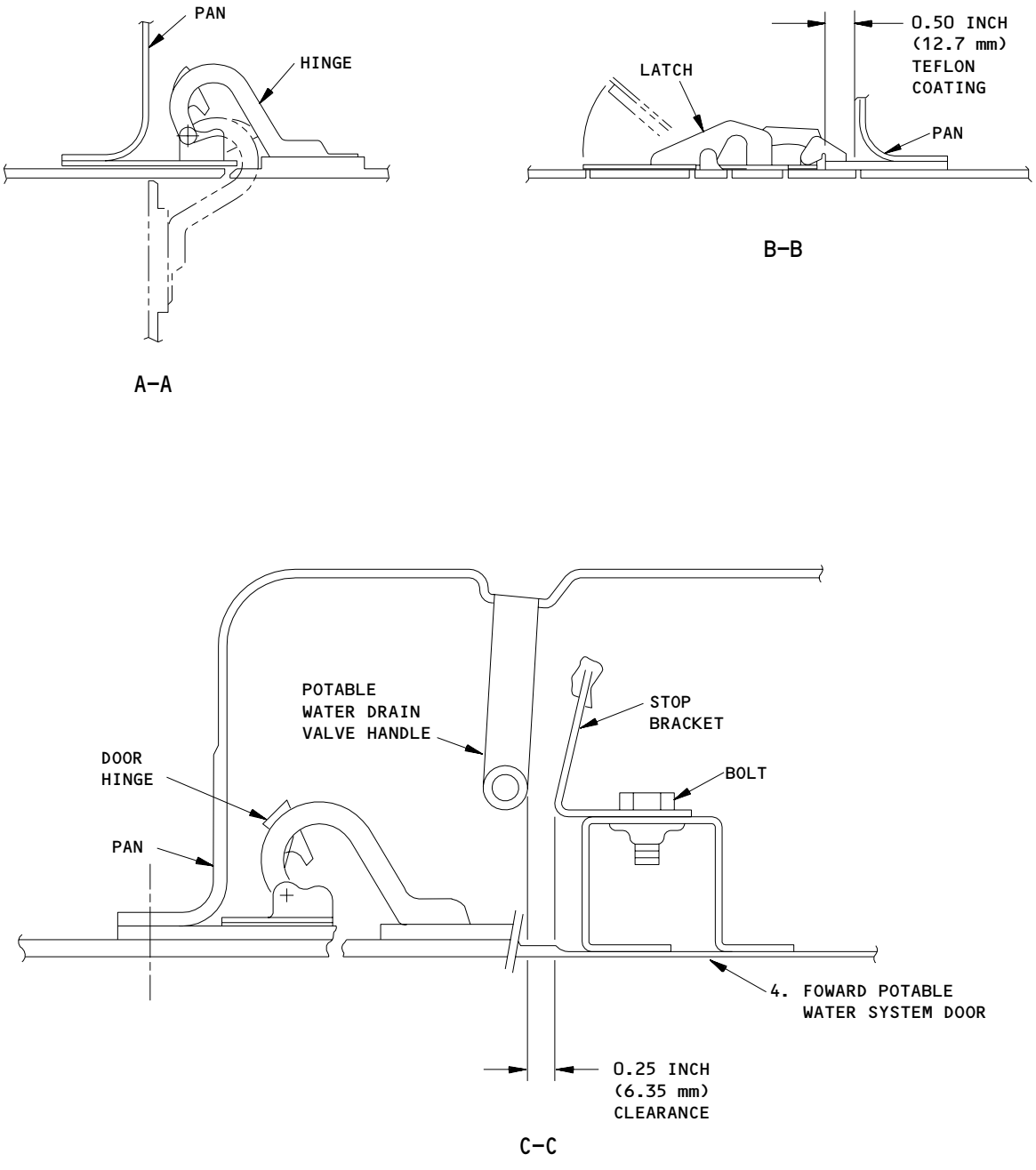

Forward Potable Water System Door
Figure 401 (Sheet 2)

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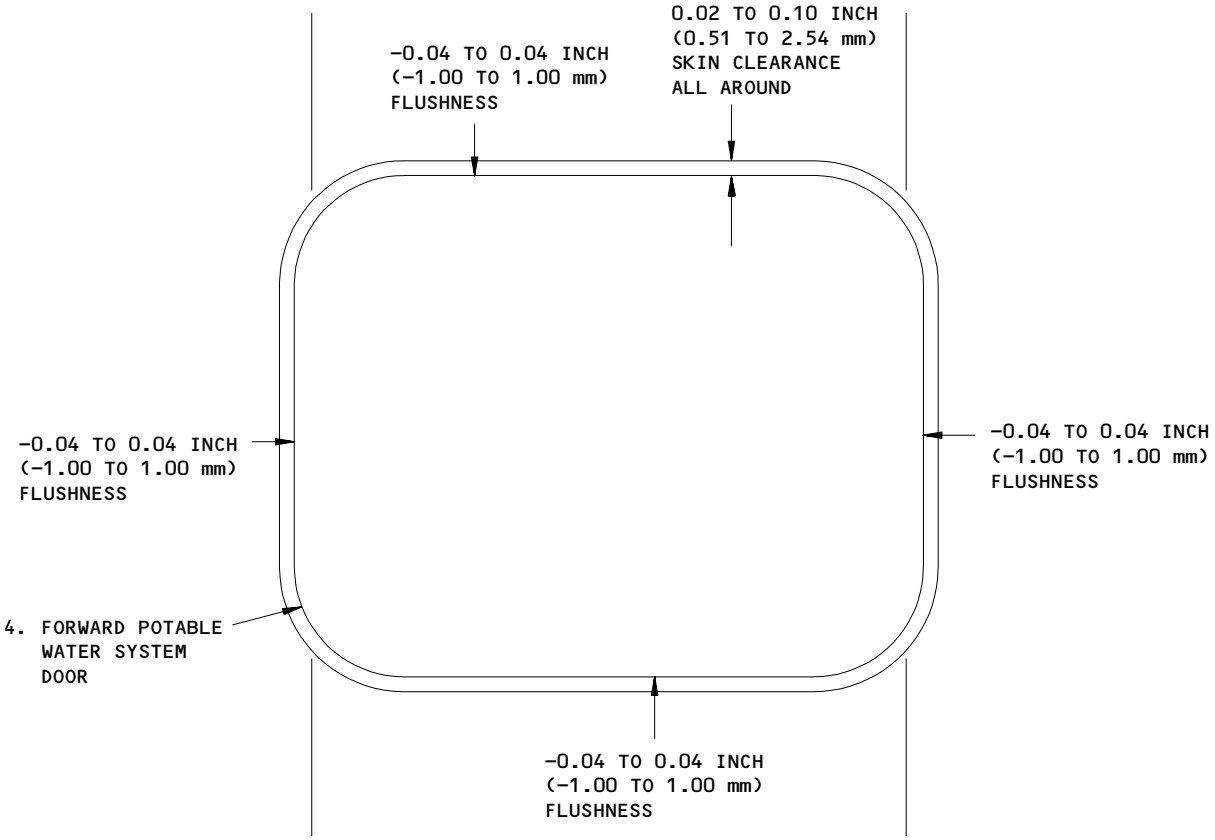

SKIN CLEARANCE AND FLUSHNESS

Forward Potable Water System Door
Figure 401 (Sheet 3)

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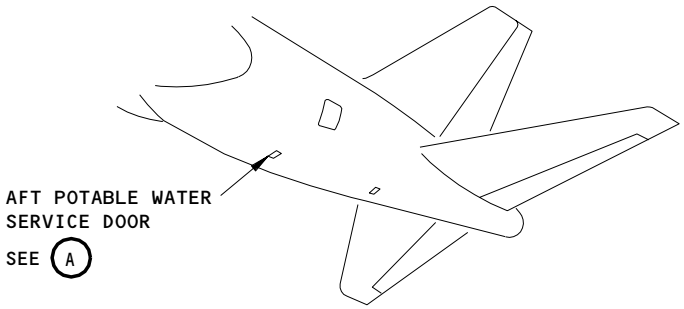

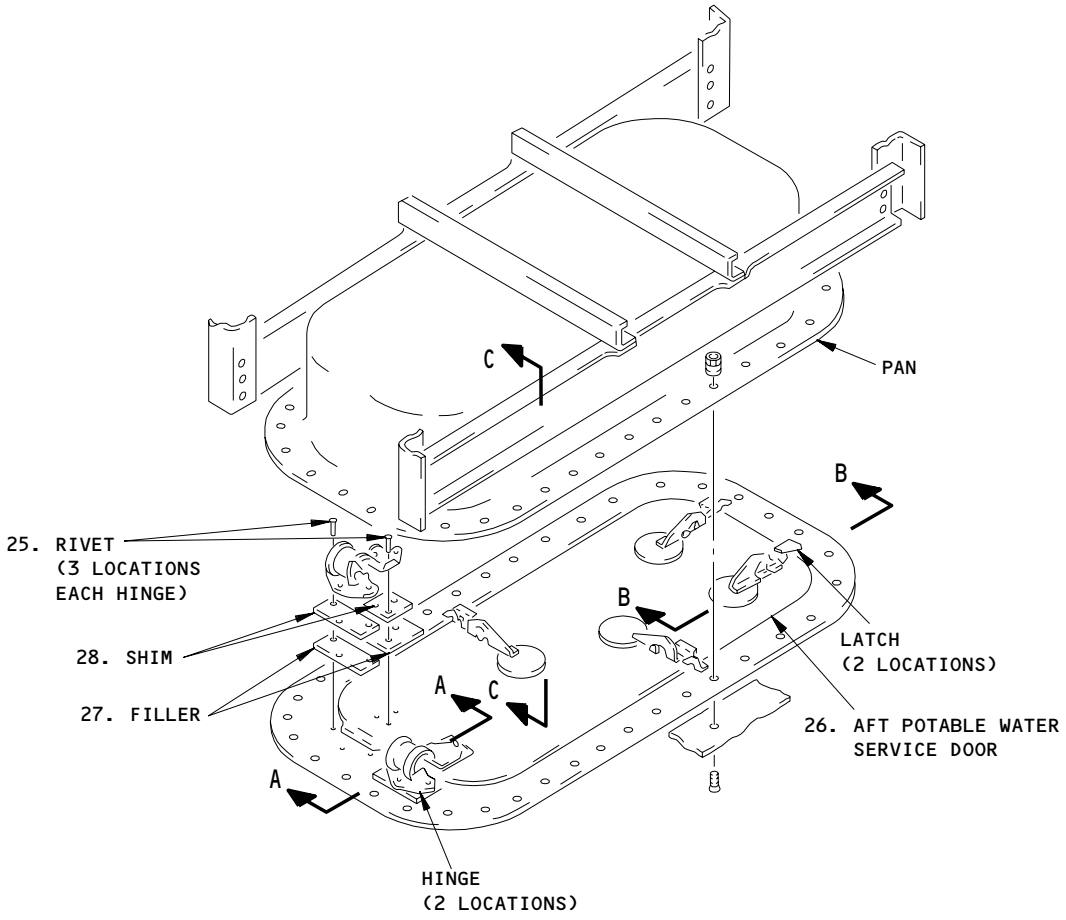

AFT POTABLE WATER SERVICE DOOR
(A)

Aft Potable Water Service Door
Figure 402 (Sheet 1)

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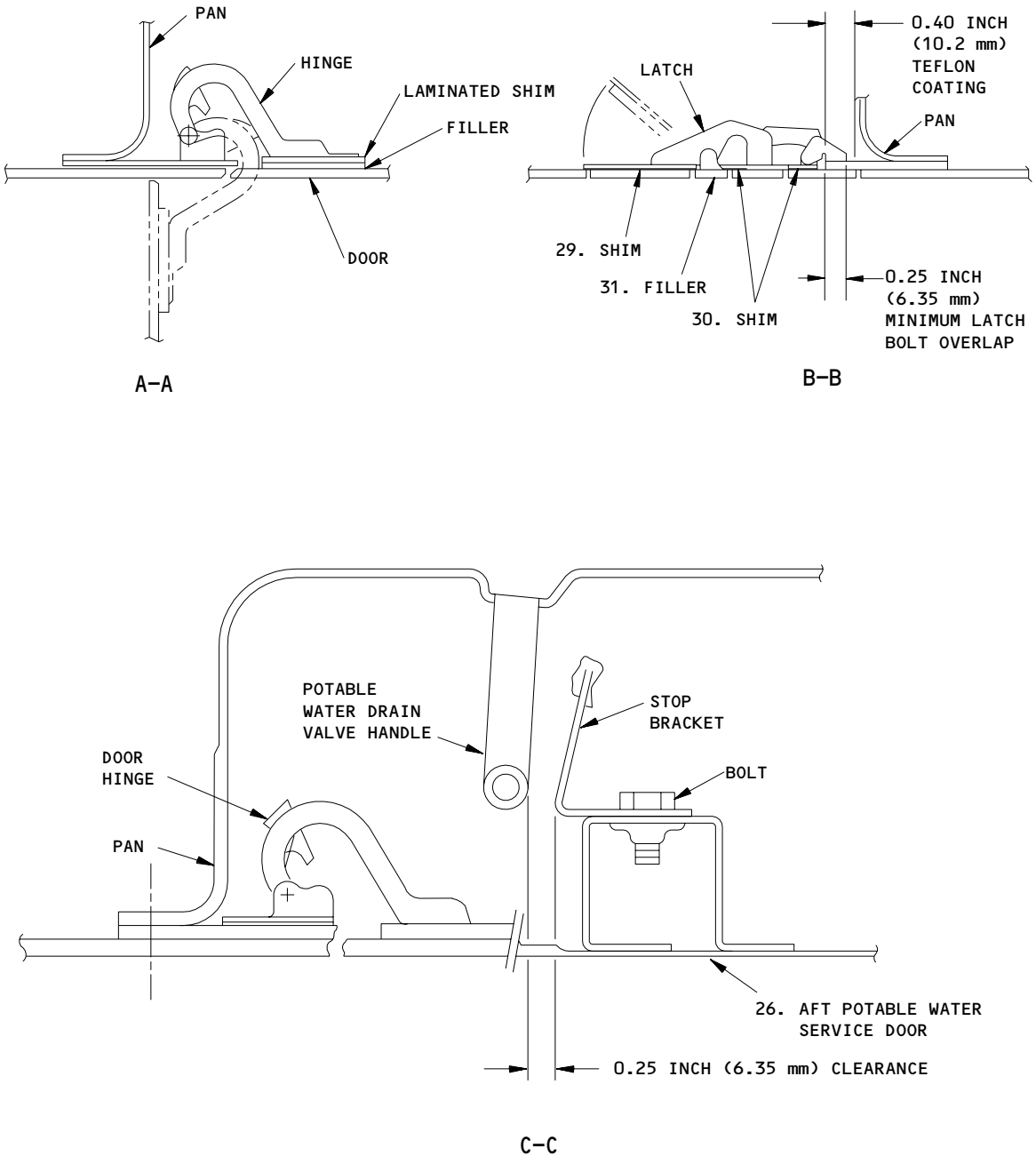

Aft Potable Water Service Door
Figure 402 (Sheet 2)

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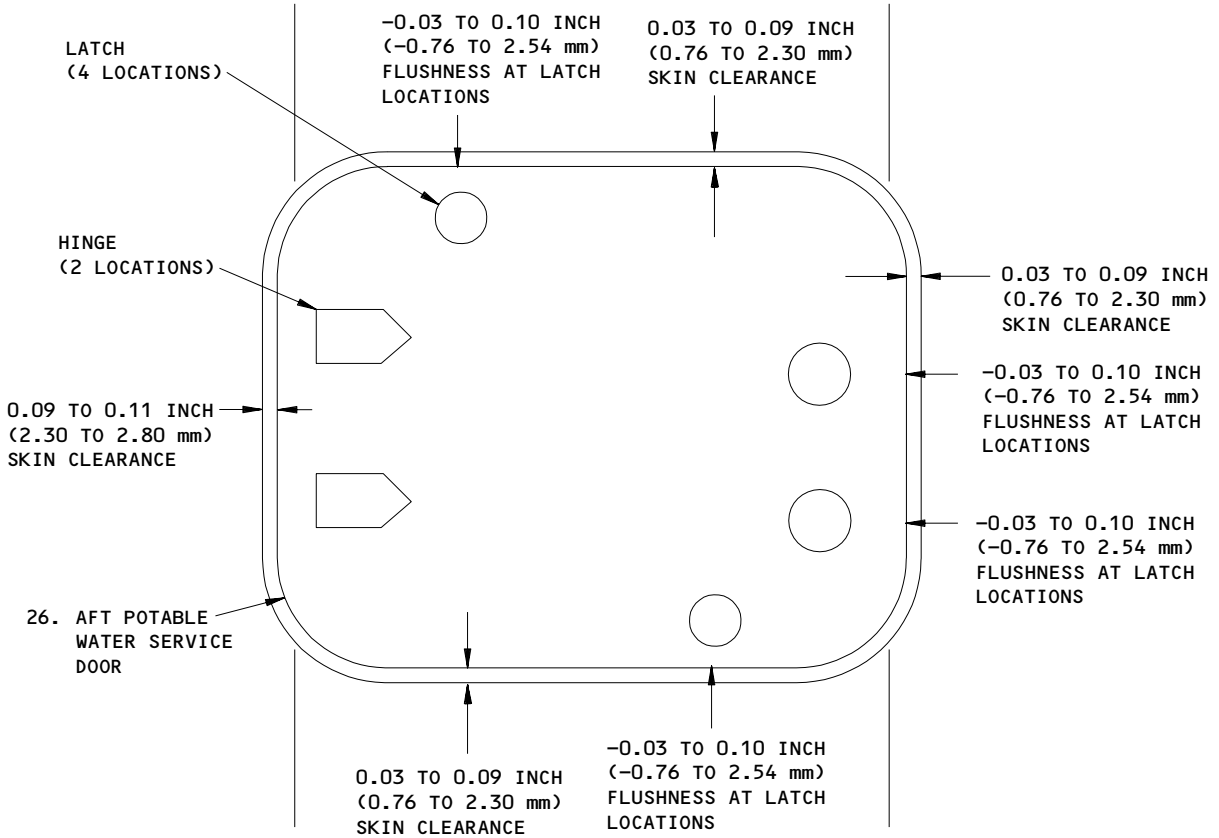

SKIN CLEARANCE AND FLUSHNESS

Aft Potable Water Service Door
Figure 402 (Sheet 3)

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FUELING STATION DOOR - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first is the removal of the access door for the fueling station. The second is the installation of the access door for the fueling station.

TASK 52-49-04-004-001

2. Remove the Fueling Station Door (Fig. 401)
   A. Access
      (1) Location Zone
          600 Left Wing

      (2) Access Panel
          621QB Fueling Station Door

   B. Procedure

      S 014-002
      (1) Open the fueling station door.

      S 024-003
      (2) Disconnect the bonding jumper from the fueling station door (View A, Fig. 401).

      S 024-005
      (3) Remove the 24 bolts that hold the hinge assembly to the wing structure.

      S 024-020
      (4) Remove the fueling station door.

      S 934-004
      (5) Make a note of the bolt locations on the hinge retainer to help the installation of the replacement door.

TASK 52-49-04-404-006

3. Install the Fueling Station Door (Fig. 401)
   A. Equipment
      (1) Bonding Meter - Microhm Bridge, Type 2 Bonding Meter Avtron Model T477W, Avtron Manufacturing Inc., Cleveland, Ohio

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B. Consumable Materials
   (1) A00247 Sealant - BMS 5-95
   (2) C00259 Primer - BMS 10-11, Type I
C. References
   (1) 20-10-22/701, Metal Surface Cleaning
   (2) 20-10-21/401, Bonding Jumpers and Ground Leads
D. Access
   (1) Location Zone
       600 Left Wing

   (2) Access Panel
       621QB Fueling Station Door

E. Procedure

S 024-007
(1) Remove the parts from the old fueling station door that are not supplied with the replacement door.

S 424-008
(2) Install the parts on the replacement door.

S 424-009
(3) Put the fueling station door in the correct position in the cutout as follows:
   (a) With the filler in the correct position, align the door hinge with the 24 bolt locations.
   (b) Align the air seal with the bolt locations on the hinge.
   (c) Put the air seal along the length of the hinge.
   (d) Put the hinge retainer and the seal retainer in the correct position along the hinge at the bolt locations.
   (e) Install the bolts wet with the sealant.
   (f) Install the hinge with the bolts, nuts, and washers.

S 214-021
(4) Do a check to make sure you get the permitted flushness between the door and the wing structure (View E-E, Fig. 401).

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S 824-022
(5) If the flushness is not correct, do these steps:
(a) Adjust the shim laminations.
(b) Apply primer to the bare shim surface.

S 144-013
(6) Clean the conductive surface for the bonding jumper if it is necessary (Ref 20-10-22).

S 284-014

WARNING: MAKE SURE THE DANGEROUS GAS CONTENT OF THE AIR IS LESS THAN 20 PERCENT OF THE LOWER EXPLOSIVE LIMIT IF THE METER USED IS NOT EXPLOSION PROOF. AN EXPLOSION CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(7) Measure the resistance between the door and the cutout on the wing structure (Ref 20-10-21).

S 424-012
(8) Attach the bonding jumpers with the wet sealant.

S 864-010
(9) Close and latch the fueling station door.

S 214-015
(10) Do a check to make sure the door latch touches the latch plate (View B-B, Fig. 401).

NOTE: No clearance or free play is permitted.

S 824-023
(11) If the latch does not touch the latch plate, do the adjustment that follows:
(a) Adjust the shim laminations.
(b) Apply primer to the bare shim surface.

S 214-025
(12) Do a check to make sure you get the permitted clearance between the door and the wing structure (View E-E, Fig. 401).

S 824-024
(13) If you installed the same door and did not get the correct clearance, do these steps:
(a) Loosen the bolts along the hinge.
(b) Adjust the position of the door.
(c) Tighten the bolts.

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S 824-026

(14) If you installed a replacement door and did not get the correct clearance, do these steps:
(a) Remove the unwanted skin around the edges of the door.

S 824-019

(15) Adjust the switch striker ramps to make sure the FUEL and DEFUEL VALVE switches on the fueling control panel are in the OFF position when the door is closed.

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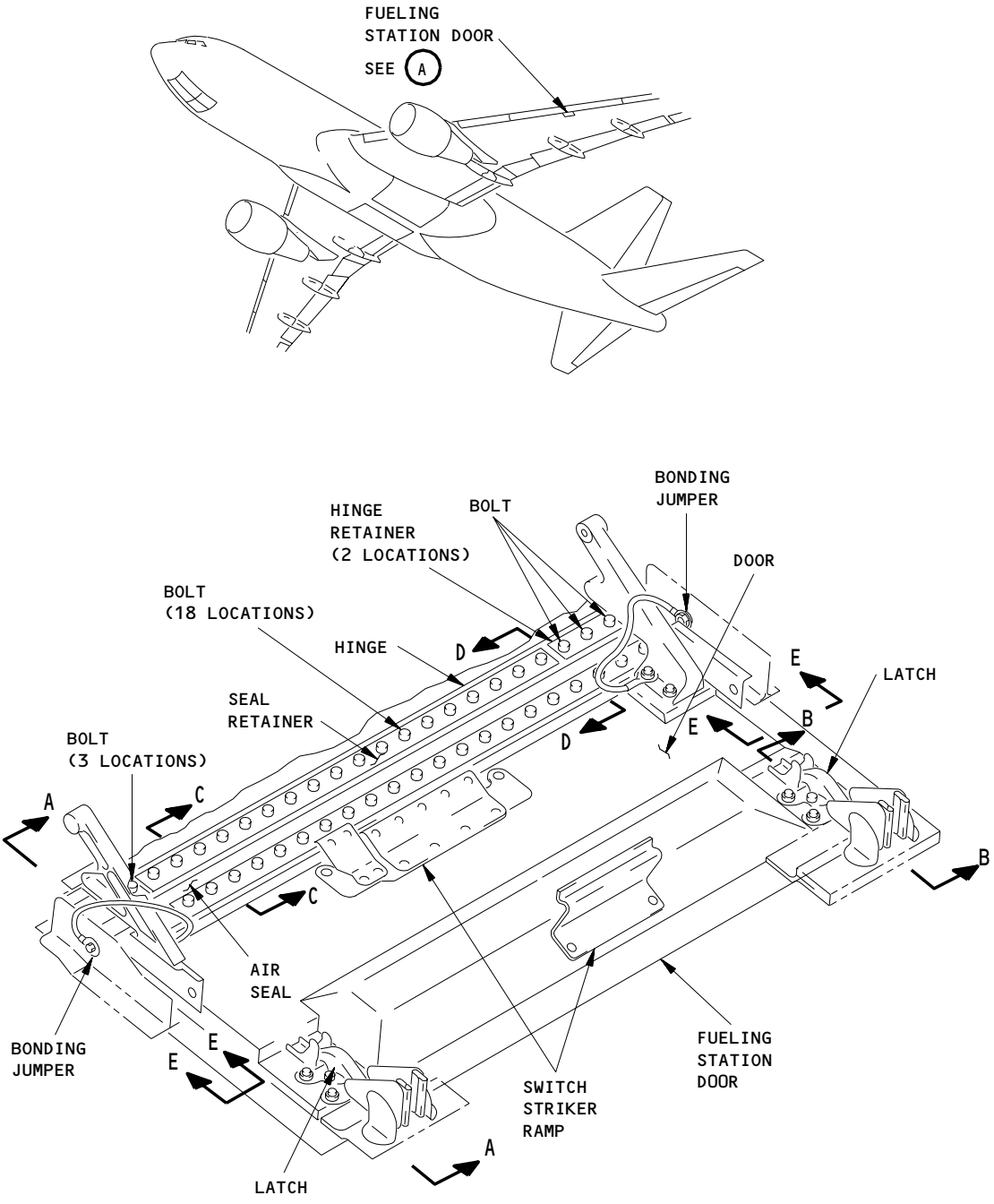

FUELING STATION DOOR
A

Fueling Station Door
Figure 401 (Sheet 1)

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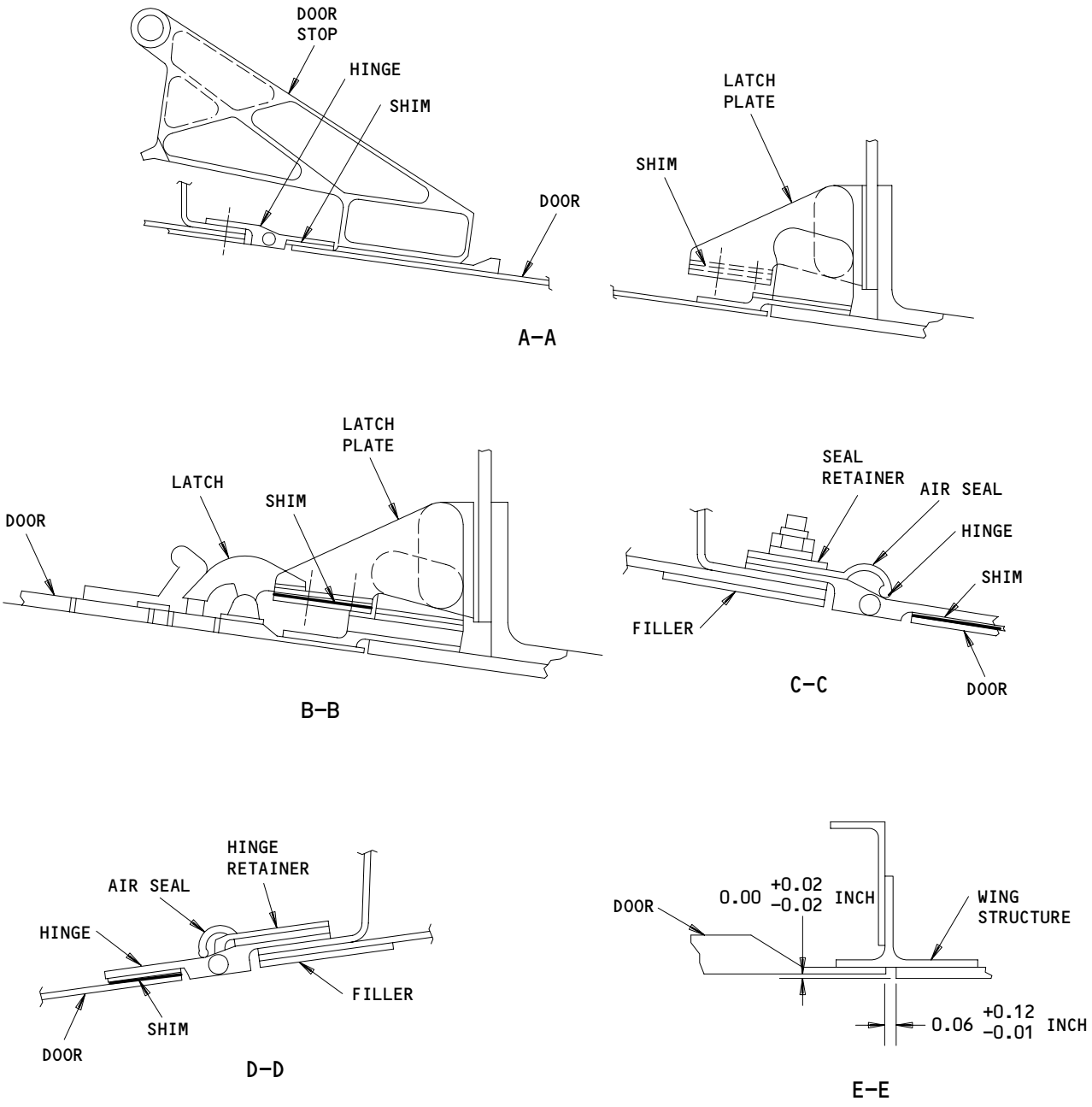

Fueling Station Door
Figure 401 (Sheet 2)

48559
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WASTE WATER SERVICE PANEL - MAINTENANCE PRACTICES

1. General
   A. This procedure contains the task to apply corrosion prevention treatment to the waste water service panel area.

TASK 52-49-07-622-001

2. Corrosion Prevention Treatment (Fig. 201)
   A. General
      (1) PASSENGER AIRPLANES;
      The waste water service panel is located at BS 1572.
      (2) The area adjacent to and aft of the lavatory service panel and the door are susceptible to staining and corrosion due to leakage from the lavatory drain.
      (3) Following cleaning of suspected areas (Ref AMM 51-21-03/701), a full inspection is effective to make sure that protective finishes provided during manufacture stay intact. For details on the application of corrosion preventive compound, refer to AMM 51-24-09/701.
      (4) Corrosion may show as noticeable bulges of the skin or white deposits of corrosion products at fastener heads or joint edges.
      (5) For minor corrosion, to keep the airplane downtime to a minimum, the corrosion products should be cleaned off, followed by the application of a corrosion preventive compound into the affected area to decrease the corrosion process (Ref AMM 51-24-09/701). The finish system should be repaired at the first opportunity consistent with the maintenance schedule.
      (6) Frequency of Application
         (a) Periodic inspection is required in areas that can get corrosion and should be consistent to the schedules specified in the Maintenance Planning Document. Operators must be aware of reported problems and areas of occurrences.
         (b) Periodic application of BMS 3-23 compounds is necessary on areas identified and should be consistent to the schedule specified in the Maintenance Planning Document.
      (7) Obey the precautions that follow when you apply the corrosion preventive compound:
         (a) Do not apply corrosion preventive compounds on grease joints or sealed bearings. These compounds dissolve grease and other lubricants. They are penetrating compounds and can get around the seals and into the bearings.

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(b) Do not apply corrosion preventive compounds on interior materials such as liners. The compounds can change the flammable quality of these materials.

B. Consumable Materials
(1) G00009 Compound, Organic Corrosion Preventive - BMS3-23, Type II

C. Access
(1) Location Zone
163 Area below bulk cargo compartment (Left)

(2) Access Panel
163AL Waste Water Service Panel

D. Corrosion Prevention

S 172-002
(1) After you service the toilet tank, do this step:
(a) Flush the waster water service panel area with clean water.

S 212-003
(2) Examine the waste water service panel and fuselage skin aft of panel for damaged finish and corrosion.

S 622-004
(3) Apply corrosion preventive compound BMS 3-23, Type II, to the panel edges and fastener heads.

S 412-005
(4) Close and latch the waste water service panel.

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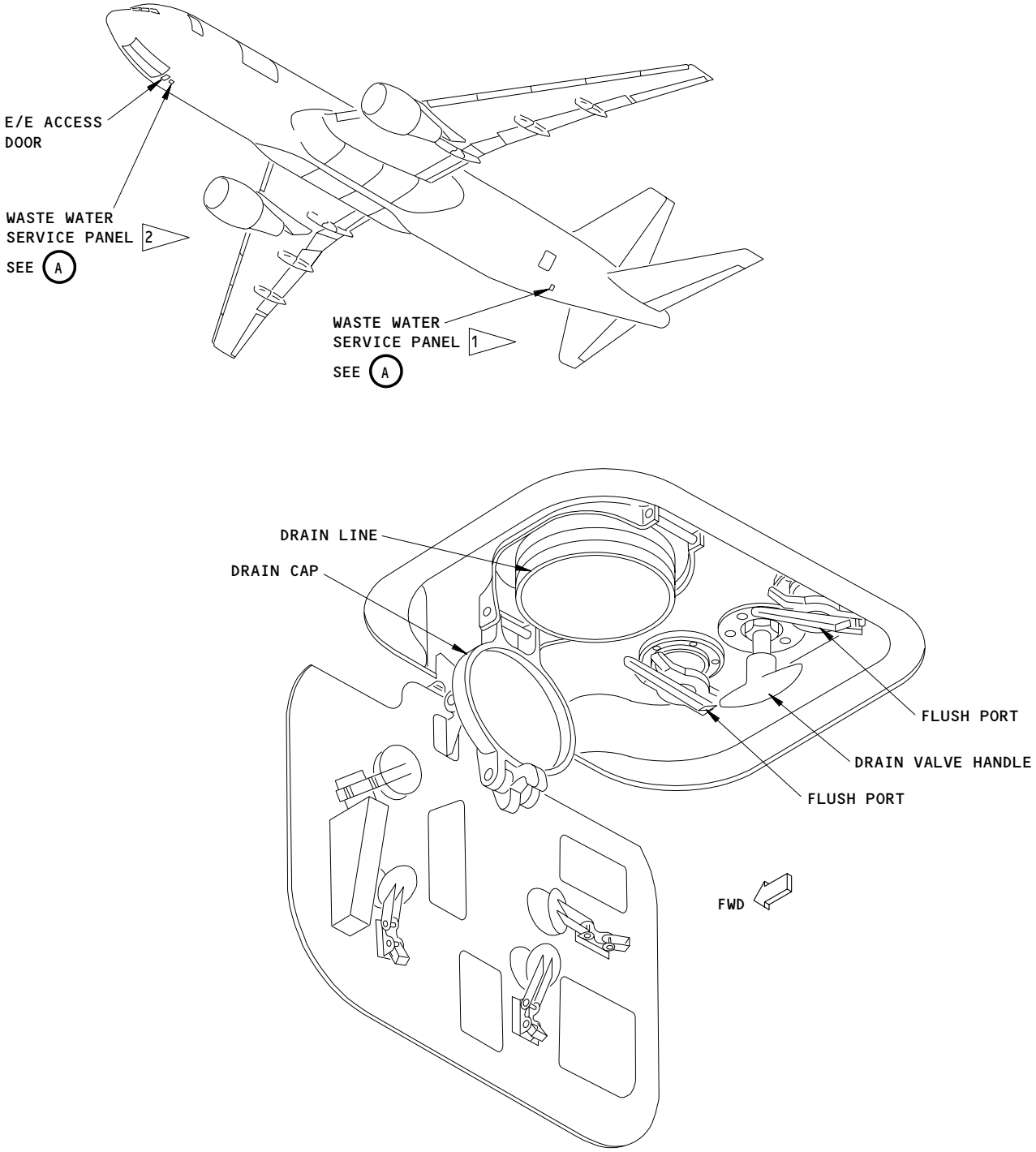

WASTE WATER SERVICE PANEL
A

Waste Water Service Panel
Figure 201

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WASTE WATER SERVICE PANEL - REMOVAL/INSTALLATION

TASK 52-49-07-004-001

1. Remove The Waste Water Service Panel (Fig. 401)
   A. Access
      (1) Location Zone
          163 Area below bulk cargo compartment (Left)

      (2) Access Panel
          163AL Waste Water Service Panel

   B. Procedure

      S 014-002
      (1) Release the latch and open the service panel.

      S 034-003
      (2) Remove the bolts that hold the hinge arm to the service panel (View B, Fig. 401).

      S 024-004
      (3) Remove the service panel.

TASK 52-49-07-404-005

2. Install The Waste Water Service Panel (Fig. 401)
   A. Consumable Materials
      (1) C00259 Primer - BMS 10-11, Type I
      (2) D00091 Oil - MIL-L-7870
      (3) C00308 Corrosion Preventive Compound - MIL-C-11796, Class 3
      (4) C00304 Teflon Filled Coating - BMS 10-86, Type I or Type II
   B. Access
      (1) Location Zone
          163 Area below bulk cargo compartment (Left)

      (2) Access Panel
          163AL Waste Water Service Panel

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C. Procedure

S 424-006
(1) Install the service panel to the hinge arms with the bolts, nuts, and washers.

S 824-007
(2) Adjust the shim below each hinge arm if it is necessary to align the hinges (View B, Fig. 401).

NOTE: The maximum permitted clearance is less than 0.010 inch after the delamination procedure.

(a) Apply primer to the bare shim surface.

S 434-009
(3) If you disassembled the hinges at the pivot bolts, install the pivot bolt as follows (View B-B, Fig. 401):
(a) Lubricate the washers with the oil.
(b) Clean and apply the primer to the mating surfaces for the bolts.
(c) Let the primer dry before the bolt installation.
(d) Apply a compound to the surfaces to prevent corrosion.
(e) Install the bolt.

S 864-010
(4) Close the service panel.

S 214-011
(5) Examine the latch installation as follows:
(a) Make sure the flushness between the latch button and the service panel is 0.02 inch or less.
(b) If the flushness is more than 0.02 inch, adjust the shim laminations to get the correct flushness.
(c) Do the steps that follow if you did not get the correct flushness after the shim adjustment:
1) Remove the rivets from the latch button.
2) Machine a maximum of 0.05 inch from the unlettered surface of the button.
3) Apply a finish to the machined surface.

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4) Install the latch button.

(d) If the latch buttons make a recess more than 0.02 inch, follow the steps below:
1) Remove the rivet from the latch button.
2) Install a 1.45 inch diameter shim of the necessary thickness between the latch and the rubber seal.
3) Alternatively, bond a 0.77-inch diameter aluminum filler on the latch button as follows:
a) Clean all the mating surfaces.
b) Apply the finish to the machined surface.
c) Install the latch button.

(e) Make sure that the door latch overlap with the fuselage is more than 0.04 inch (View A-A, Fig. 401).

S 864-012

(6) Push the service panel to its fit and fair position.

S 214-015

(7) Examine the free play of the latch when there is a load from the latch spring.
(a) Make sure the free play of the latch is 0.01 inch to 0.03 inch at the center of the latch button.
(b) If you did not get the correct free play, adjust the thickness of the teflon filled coating on the strap.

NOTE: The maximum permitted thickness is 0.05 inch and the minimum permitted thickness is 0.01 inch.

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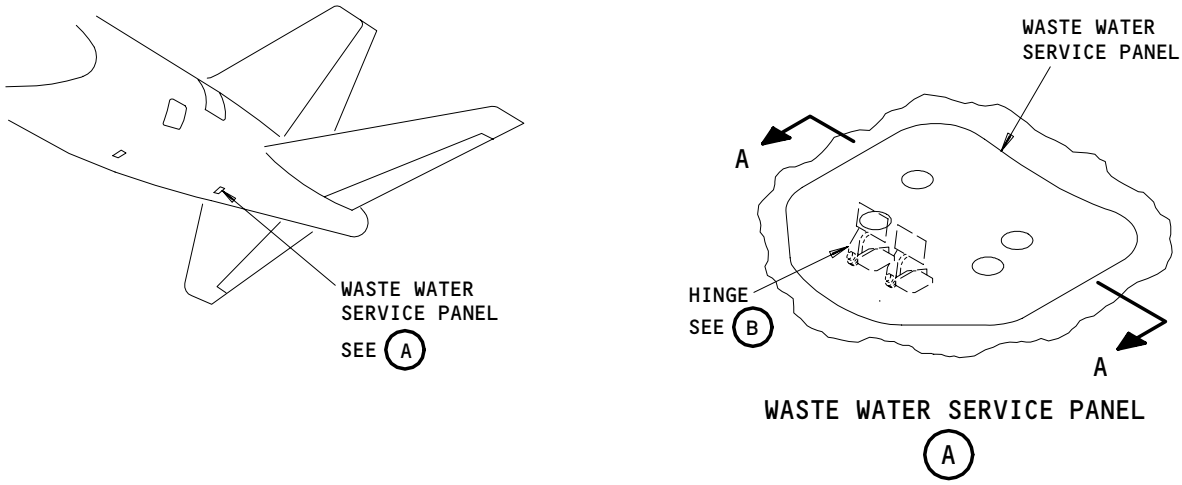

Waste Water Service Panel
Figure 401

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HYDRAULIC RESERVOIR FILL ACCESS DOOR - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the access door for the hydraulic reservoir. The second task is the installation of the access door for the hydraulic reservoir.

TASK 52-49-12-004-001

2. Remove the Hydraulic Reservoir Fill Access Door (Fig. 401)
   A. Access
      (1) Location Zone
          198 Wing to body - aft lower half (Right)

      (2) Access Panel
          198CR Hydraulic Reservoir Fill Access Door

   B. Procedure

      S 014-002
      (1) Release the latch and open the door.

      S 024-003
      (2) Remove the bolt, nut, and washer to disconnect the hold-open strut at the door attach point.

      S 024-004
      (3) Remove the bolts, nuts, shims, and washers to disconnect the hinges from the access door (View A, Fig. 401).

      S 024-016
      (4) Remove the bonding jumper.

      S 934-006
      (5) Make a note of the bonding jumper location and the washer configuration to make the installation procedure easier.

      S 024-005
      (6) Remove the access door.

TASK 52-49-12-404-007

3. Install the Hydraulic Reservoir Fill Access Door (Fig. 401)
   A. Consumable Materials
      (1) A00247 Sealant, BMS5-95
      (2) C00259 Primer, BMS10-11, Type 1, Wet
   B. References
      (1) 20-30-01/201, Grounding and Bonding
   C. Access
      (1) Location Zone
          198 Wing to body - aft lower half (Right)

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(2) Access Panel
198CR Hydraulic Reservoir Fill Access Door

D. Procedure

S 424-008
(1) Put the access door in the opening on the aft fairing.

S 424-009
(2) Attach the access door to the aft fairing as follows (View C, Fig. 401):
(a) Put the shims between the hinge and the access door.
(b) Install and tighten the two forward bolts on each hinge with wet sealant.
(c) Install and tighten the aft bolt on each hinge with the bonding jumper and washers between the bolt head and the hinge (Ref 20-30-01).

S 434-010
(3) Connect the hold-open strut to the attach fitting on the access door as follows (View B, Fig. 401):
(a) Apply wet primer to the inner surface of the bushing.
(b) Install the bushing.
(c) Ream the bushing.
(d) Install and tighten the bolt, washer, and nut.

S 214-015
(4) Examine the latch installation as follows:
(a) With the latches open, make sure the flushness between the access door and the fairing structure is +0.10 to -0.03 inch at each latch location.
(b) Make sure the latches operate freely when the access door is closed.
(c) Do the check that follows for the correct free play (View A-A, Fig. 401):
1) Lock the latch.
2) Push the edge of the latch bolt that makes an overlap with the fairing structure.
3) Make sure the free play for the latch is between 0.00 and 0.01 inch.

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4) If you did not get the correct free play, do the steps that follow:
   a) Loosen the latch bolt.
   b) Adjust the shims.
   c) Apply primer to the bare shim surface.
   d) Tighten the latch bolt.
   e) Do the check for the correct free play again.

(d) Make sure the latch overlap is a minimum of 0.35 inch (View A-A, Fig. 401).

S 214-017

(5) Make sure the flushness between the door edges and the fairing structure is 0.03 inch or less.

S 824-018

(6) If you did not get the correct flushness, do the steps that follow:
   (a) Loosen the bolts that attach the hinge to the access door.
   (b) Adjust the shims between the hinge and the access door.
   (c) Apply primer to the bare shim surface.
   (d) Tighten the bolts.
   (e) Do a check for the correct flushness again.

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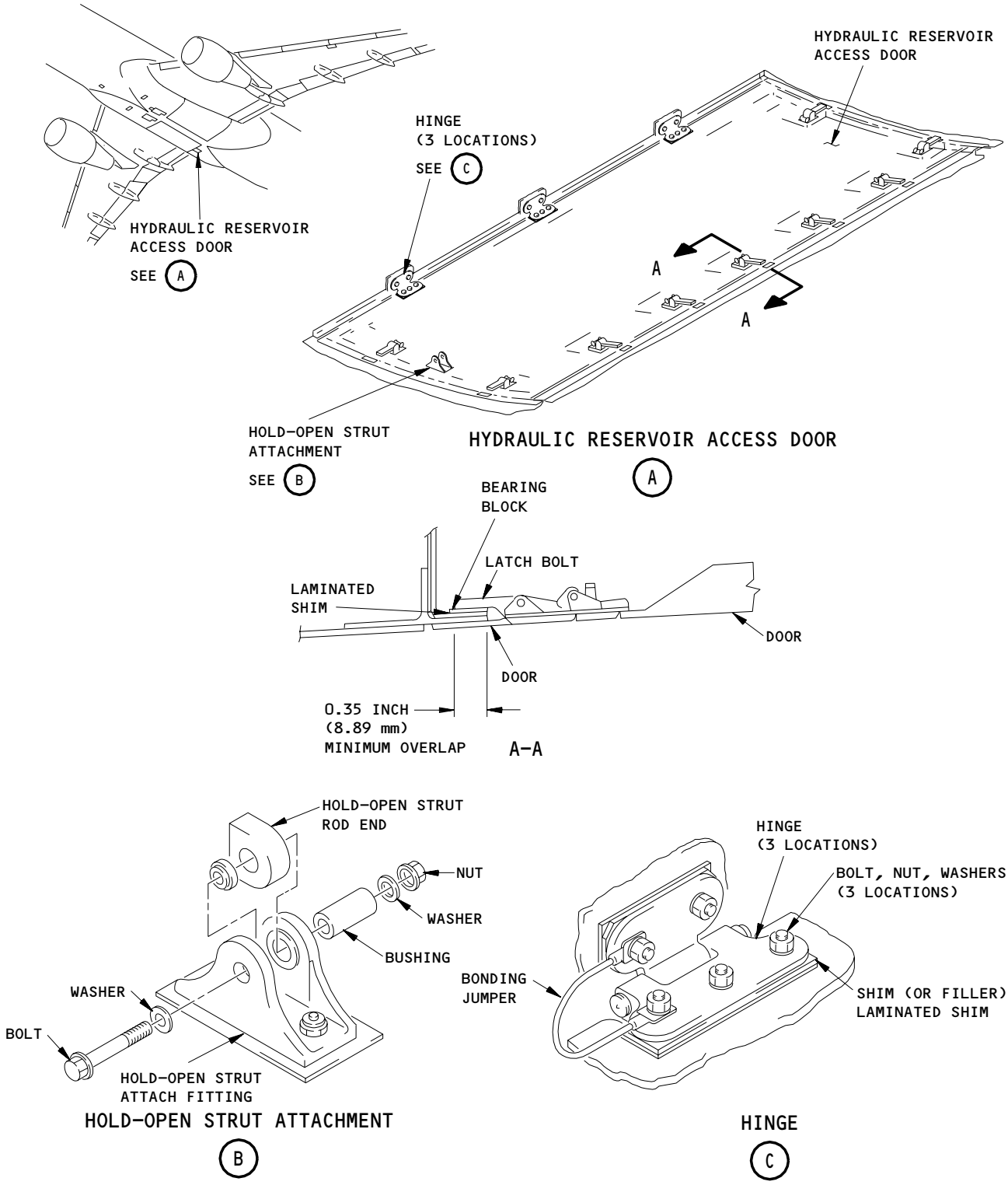

Hydraulic Reservoir Access Door
Figure 401

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PRESSURE RELIEF PANEL - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the pressure relief panel. The second task is the installation of the pressure relief panel.
   B. The pressure relief panel gives an access to the environmental control system compartments. The panel has spring flush latches that attach to a hanger assembly. Overpressurization in the compartment will break the rivets and the latches will disengage. A cable is connected between the panel and the structure to hold the panel if it is blown open.

TASK 52-49-17-004-001

2. Remove the Pressure Relief Panel (Fig. 401)
   A. Access
      (1) Location Zones
          193/194 Wing to body - forward lower half

      (2) Access Panels
          193GL Pressure Relief Panel (Left)
          194HR Pressure Relief Panel (Right)

   B. Procedure

      S 014-002
      (1) Release the latches and open the pressure relief panel.

      S 024-003
      (2) Disconnect the cable from the panel.

      S 024-004
      (3) Remove the bolts, nuts, and washers that hold the hinges to the panel.

      S 024-005
      (4) Remove the panel.

      S 934-006
      (5) Tag the parts for the installation procedure because of the different dimensions in the bolts, nuts, and washers.

TASK 52-49-17-404-007

3. Install the Pressure Relief Panel (Fig. 401)
   A. Equipment
      (1) Bonding Meter - Microhm Bridge, Type 2 Bonding Meter Avtron Model T477W, Avtron Manufacturing Inc., Cleveland, Ohio.
   B. Consumable Materials
      (1) C00259 Primer - BMS 10-11, Type I

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(2) D00633 Grease - BMS 3-33 (Preferred)
(3) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)
(4) A00247 Sealant - BMS 5-95

C. References
(1) 20-10-22/701, Metal Surface Cleaning
(2) 20-10-21/401, Bonding Jumpers and Ground Leads

D. Access
(1) Location Zones
193/194 Wing to body - forward lower half

(2) Access Panels
193GL Pressure Relief Panel (Left)
194HR Pressure Relief Panel (Right)

E. Procedure

S 964-008

CAUTION: DO NOT REPLACE THE RIVET MATERIAL OR CHANGE THE DIAMETER OF THE RIVET HOLE. REPLACEMENT OF THE RIVET MATERIAL OR A CHANGE IN THE HOLE DIAMETER CAN CAUSE DAMAGE IF THE PANEL IS BLOWN OPEN.

(1) Replace the shear rivets if they broke when they released (View C, Fig. 401).

S 424-009
(2) Put the pressure relief panel in the opening on the fairing and align the hinge halves.

S 434-010
(3) Attach the pressure relief panel to the hinge halves with the bolts, nuts, tapered fillers, and washers (View B, Fig. 401).

NOTE: Make sure you use the bolts with the correct dimensions.

S 144-014
(4) Clean the mating surface of the bonding jumper if it is necessary (Ref 20-10-22).

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S 434-000
(5) Connect the bonding jumper at the center bolt location on the two hinges.

S 284-012

WARNING: MAKE SURE THE DANGEROUS GAS CONTENT OF THE AIR IS LESS THAN 20 PERCENT OF THE LOWER EXPLOSIVE LIMIT IF THE METER USED IS NOT EXPLOSION PROOF. AN EXPLOSION CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(6) Do a check to make sure the resistance between the pressure relief panel and the fairing is permitted (Ref 20-10-21).

S 434-015
(7) Connect the cable to the pressure relief panel as follows:
(a) Apply grease to the bolt.
(b) Install the bolt through the cable terminal and attach the bracket clevis.
(c) Tighten the nut so that the bolt turns without axial movement.

S 864-016
(8) Close and latch the pressure relief panel.

S 214-017
(9) Make sure the clearances for the latch installation are correct (View A-A, Fig. 401).

S 824-023
(10) If the clearances are not correct, do these steps:
(a) Adjust the shims.
(b) Apply primer to the bare shim surface.

S 214-020
(11) Make sure the clearances between the pressure relief panel and the fairing are correct (View B-B thru E-E, Fig. 401).

S 214-021
(12) Make sure the flushness between the panel edges is 0.03 inch or less.

S 214-022
(13) Open and close the pressure relief panel to make sure it operates smoothly and latches correctly.

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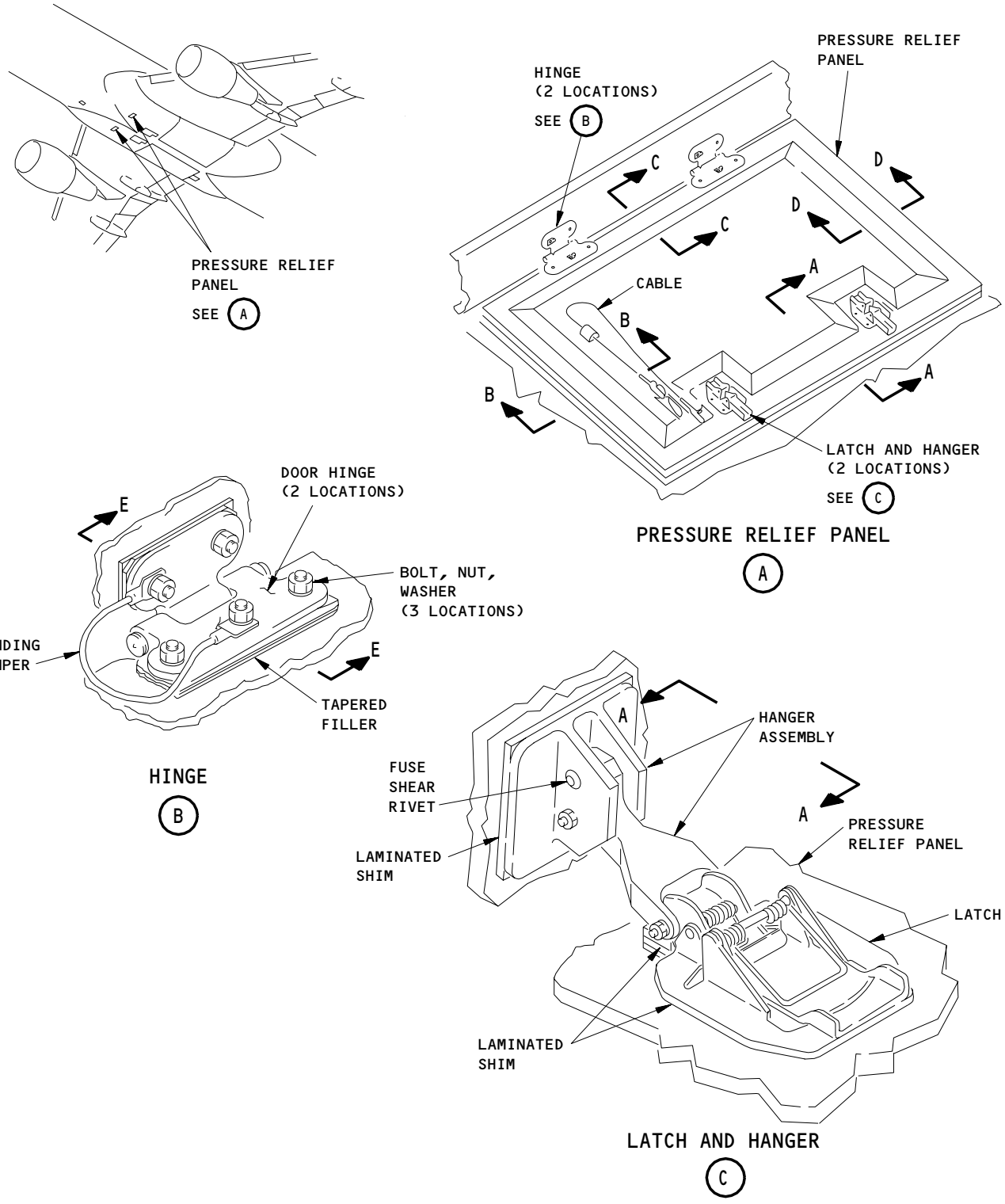

Pressure Relief Panel
Figure 401 (Sheet 1)

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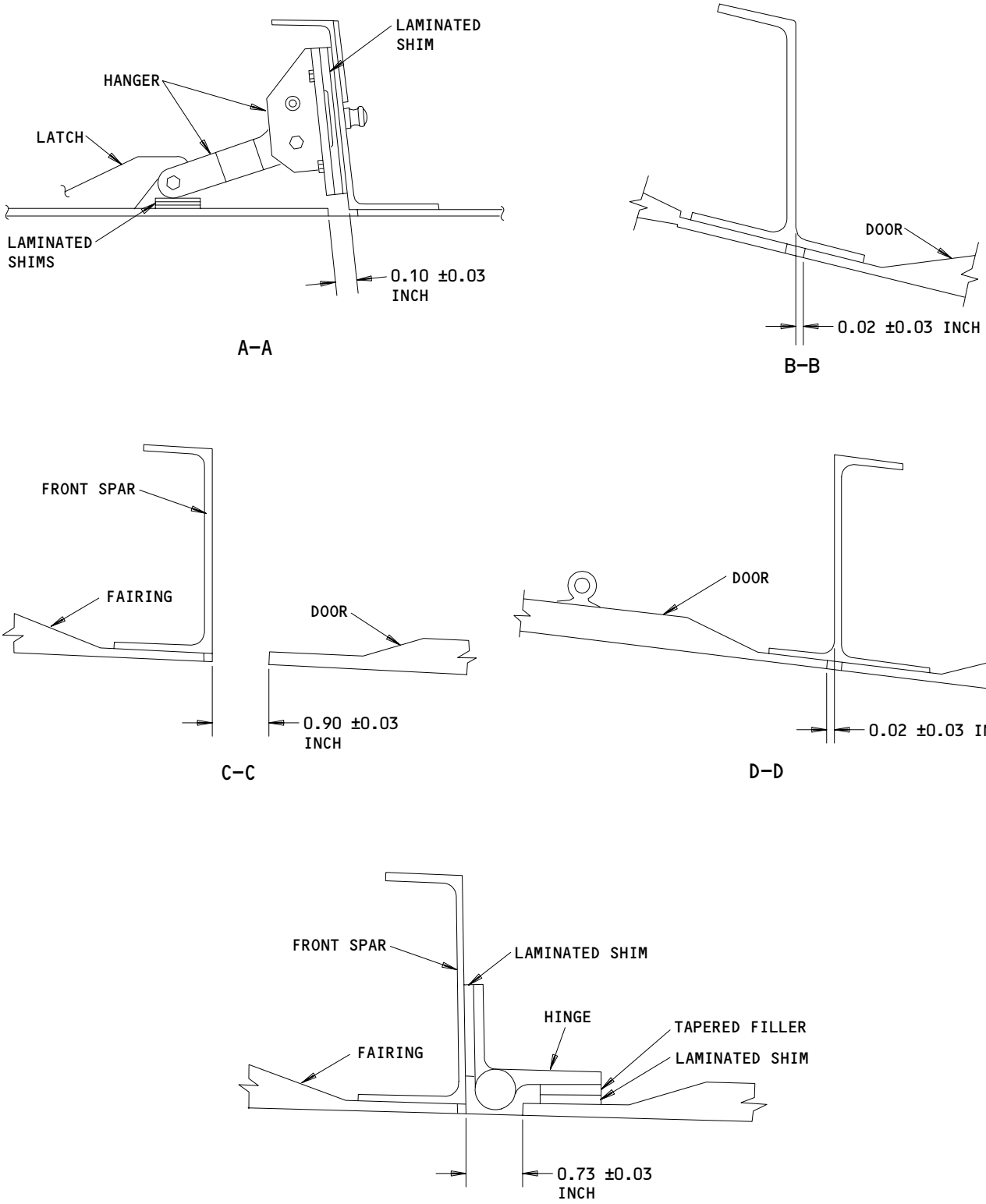

Pressure Relief Panel
Figure 401 (Sheet 2)

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GROUND AIR SUPPLY ACCESS DOOR - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the access door for the ground air supply. The second task is the installation of the access door for the ground air supply.

TASK 52-49-20-004-001

2. Remove the Ground Air Supply Access Door (Fig. 401)
   A. Access
      (1) Location Zone
          193 Wing to body - forward lower half (Left)

      (2) Access Panel
          193LL Ground Air Supply Access Door

   B. Procedure

      S 014-002
      (1) Release the latches and open the access door.

      S 024-003
      (2) Disconnect the cable from the fairing structure.

      S 024-004
      (3) Remove the bolts, nuts, and washers that hold the hinges to the access door.

      S 024-005
      (4) Remove the access door.

      S 934-006
      (5) Tag the parts for the installation procedure because of the different dimensions in the bolts, nuts, and washers.

TASK 52-49-20-404-007

3. Install the Ground Air Supply Access Door (Fig. 401)
   A. Equipment
      (1) Bonding Meter - Microhm Bridge, Type 2 Bonding Meter Avtron Model T477W, Avtron Manufacturing Inc., Cleveland, Ohio
   B. Consumable Materials
      (1) C00259 Primer - BMS 10-11, Type I

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(2) D00633 Grease - BMS 3-33 (Preferred)
(3) D00013 Grease - MIL-PRF-23827 (Supersedes MIL-G-23827) (Alternate)

C. References
(1) 20-10-22/701, Metal Surface Cleaning
(2) 20-10-21/401, Bonding Jumpers and Ground Leads

D. Access
(1) Location Zone
193 Wing to body - forward lower half (Left)

(2) Access Panel
193LL Ground Air Supply Access Door

E. Procedure

S 414-008
(1) Put the access door in the opening on the fairing and align the hinge halves.

S 414-009
(2) Connect the access door to the hinge halves with the bolts, nut, and washers.

S 144-012
(3) Clean the conductive surface for the bonding jumper if it is necessary (Ref 20-10-22).

S 424-011
(4) Connect the bonding jumper at the forward bolt location on the forward and the aft hinges.

S 284-010

WARNING: MAKE SURE THE DANGEROUS GAS CONTENT OF THE AIR IS LESS THAN 20 PERCENT OF THE LOWER EXPLOSIVE LIMIT IF THE METER USED IS NOT EXPLOSION PROOF. AN EXPLOSION CAN CAUSE INJURY TO PERSONS OR DAMAGE TO EQUIPMENT.

(5) Make sure the resistance between the access door and the fairing opening is in the permitted limits (Ref 20-10-21).

S 434-013
(6) Connect the cable to the access door as follows:
(a) Apply grease to the bolt.
(b) Install the bolt through the cable terminal and attach the bracket clevis.
(c) Tighten the nut by hand.

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(d) Install the cotter pin.

S 214-014

(7) Examine the latch installation as follows:
  (a) With the latches open, make sure the flushness between the access door and the fairing structure is +0.03 to -0.03 inch at each latch location.
  (b) Do the check that follows for the correct free play (View A-A, Fig. 401):
    1) Lock the latch.
    2) Push the edge of the latch bolt that makes an overlap with the fairing structure (View A-A, Fig. 401).
    3) Make sure the free play for the latch is between 0.00 and 0.01 inch.
    4) If you did not get the correct free play, do the steps that follow (View A-A, Fig. 401):
      a) Loosen the latch bolt.
      b) Adjust the shim.
      c) Apply primer to the bare shim surface.
      d) Tighten the latch bolt.
      e) Do the check for the correct free play again.
    5) Make sure that the latch overlap is a minimum of 0.35 inch (View A-A, Fig. 401).
  (c) Open and close the door to make sure the access door operates smoothly and latches correctly.
  (d) Make sure the flushness between the door edges is 0.03 inch or less.
  (e) If you did not get the correct flushness, do the steps that follow:
    1) Loosen the bolts that attach the hinge to the access door.
    2) Adjust the shim between the hinge and the door.
    3) Apply primer to the bare shim surface.
    4) Tighten the bolts that attach the hinge to the access door.
    5) Do a check for the correct flushness again.

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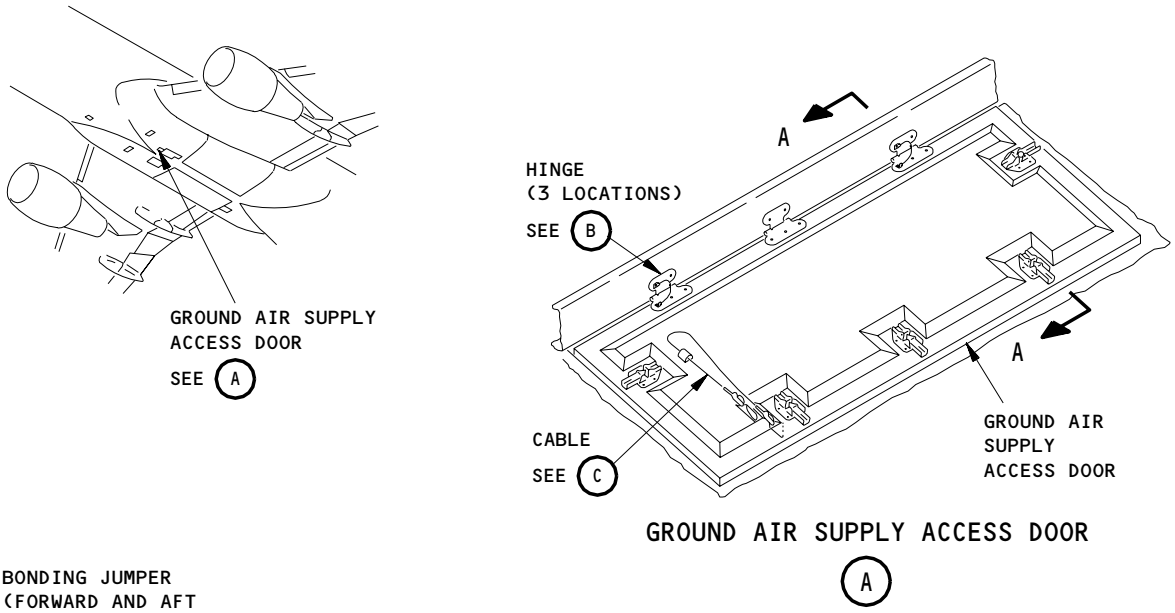
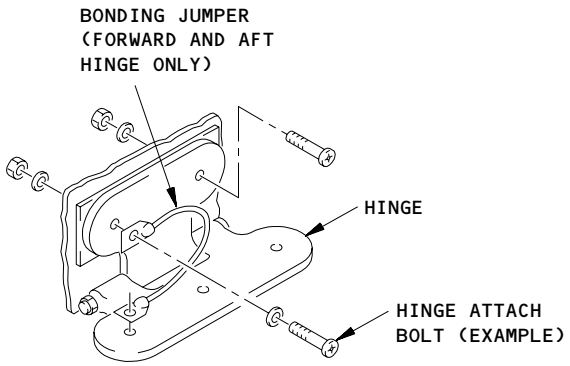


GROUND AIR SUPPLY ACCESS DOOR

A



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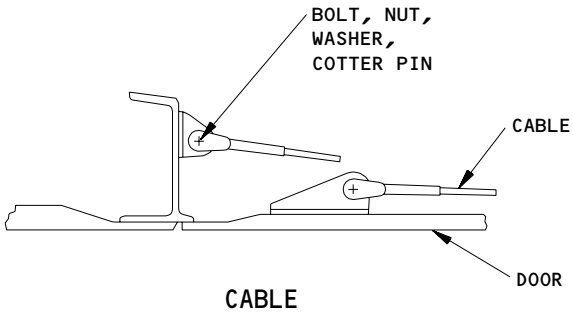
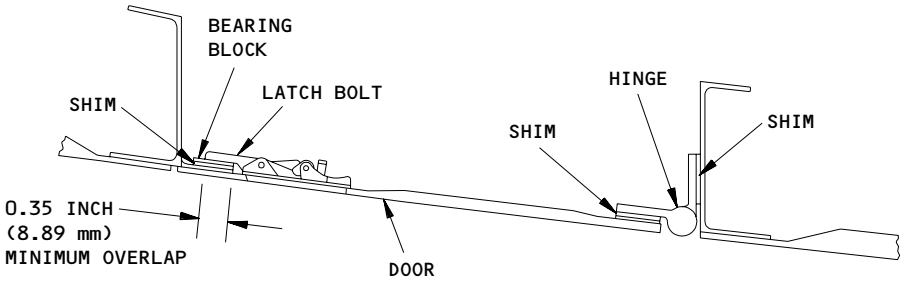
B



CABLE

C



A-A

Ground Air Supply Access Door
Figure 401

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FLIGHT COMPARTMENT DOOR - DESCRIPTION AND OPERATION

1. General (Fig. 1)
   A. The flight compartment door provides selective entry to the flight compartment. The door is always locked when the door is closed with power on the airplane. The door can be unlocked electrically from inside the flight compartment. The door can be unlocked with a key from outside the flight compartment. An Observ-O-Scope in the door allows flight crew members to see into the passenger compartment.
   B. The flight compartment door lock unit is mounted on the door jamb. The door lock unit has a solenoid, a fuse pin, a door strike, and a door stop. The door lock unit operates on 28 V DC.
   C. For more details on the Flight Compartment Door system, refer to these wiring diagrams and functional schematics:
      SSM 52-51-01: FLIGHT DECK DOOR
      WDM 52-51-11: DOOR LOCK - FLIGHT COMPARTMENT
2. Flight Compartment Door (Fig. 2)
   A. The flight compartment door has an upper and a lower section. The two sections open and close together during normal operation.
   B. The door opens about hinges mounted on the flight deck partition. The hinges are attached to the partition with screws. Hinge pins on the door are spring-loaded for each removal/installation of the door.
   C. A light shield on the bottom edge of the door prevents incidental light from entering the flight compartment. This is to allow low level lighting on instrument panels.
   D. The door latch is released from the aft side by a key. The latch can be unlocked from the forward side by turning the door knob or by pressing a switch. The latch is released when the FLT DK DOOR switch on overhead panel P5 is pressed, which removes power from the latch solenoid. The latch is also opened when power is removed from the airplane. A fuse pin in the latch will shear to allow for pressure equalization during a rapid decompression.
3. Operation (Fig. 3)
   A. Functional Description
      (1) With the flight compartment door closed, electrical power from the 28 V DC left main bus operates the door lock unit to lock the door. Power comes from the left bus through the DOORS FLT DK LOCK circuit breaker on pilots' overhead circuit breaker panel P11.
      (2) The FLT DK DOOR switch, when pressed, interrupts power to the door lock unit solenoid. WHen power to the solenoid is interrupted, the fuse pin retracts to unlock the door. When the DOOR RELEASE switch is released, power is applied to the solenoid to extend the fuse pin and lock the door.
      (3) The flight compartment door is unlocked when there is no 28 V DC power on the airplane.
      (4) To unlock the flight compartment door, press the FLT DK DOOR switch on the pilots' overhead panel P5.
      (5) To unlock the flight compartment door from the passenger compartment, use a key.

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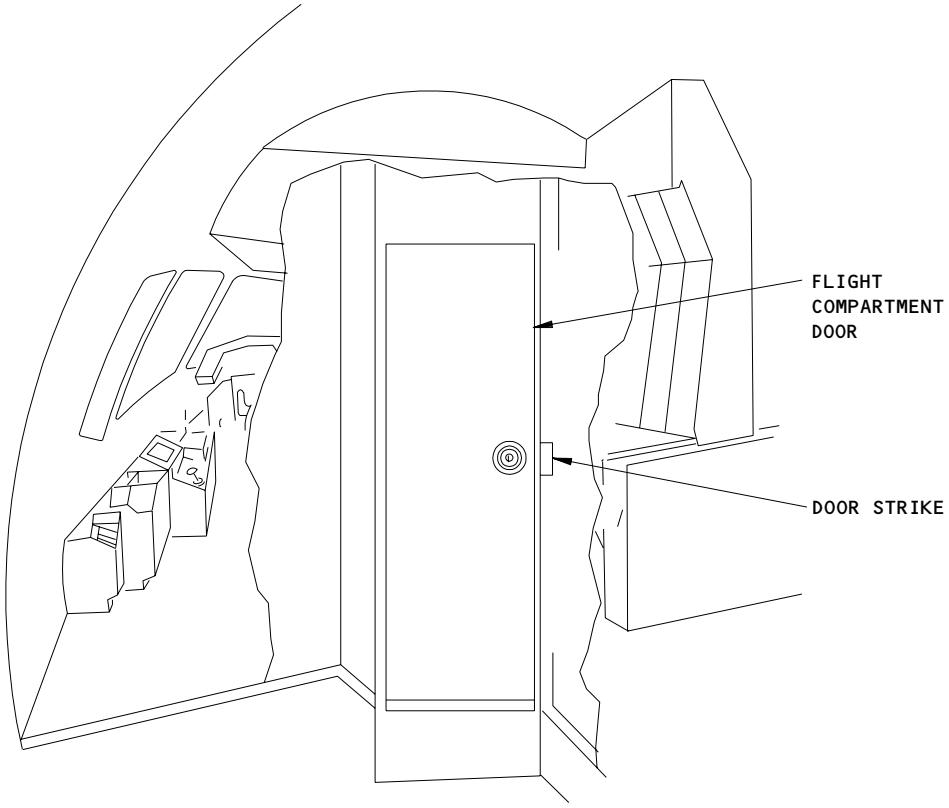

(VIEW IN THE FORWARD DIRECTION)

Flight Compartment Door
Figure 1

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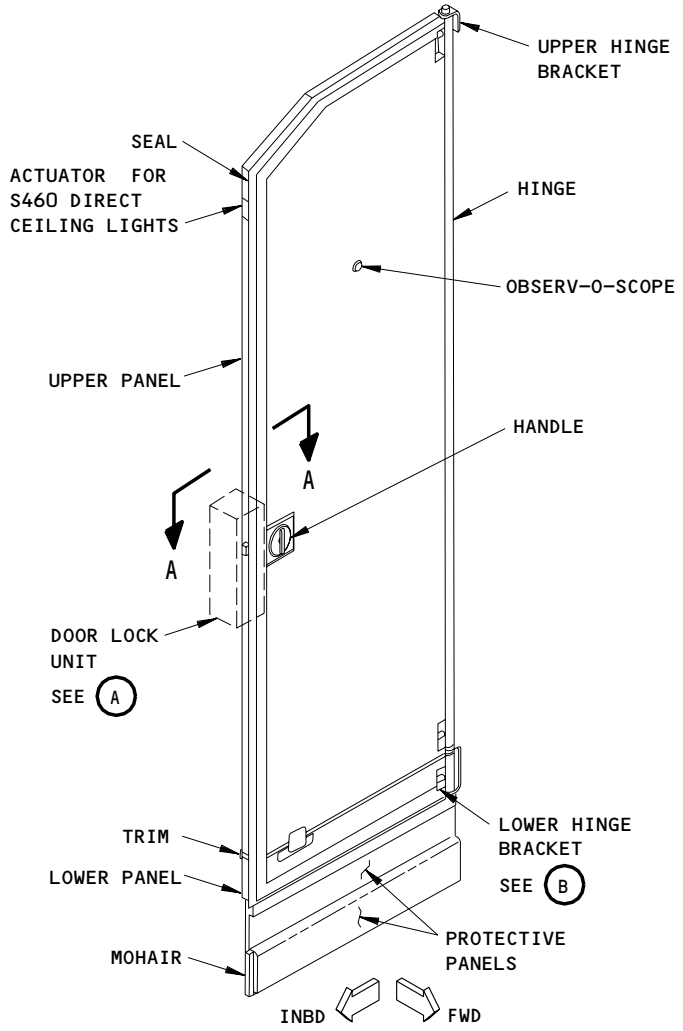
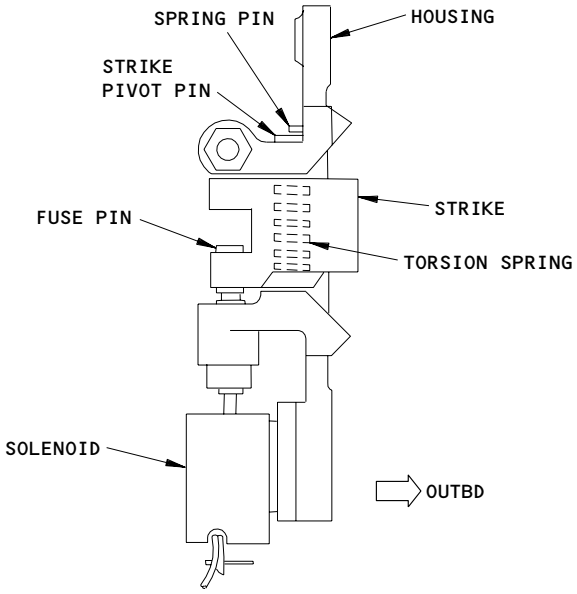
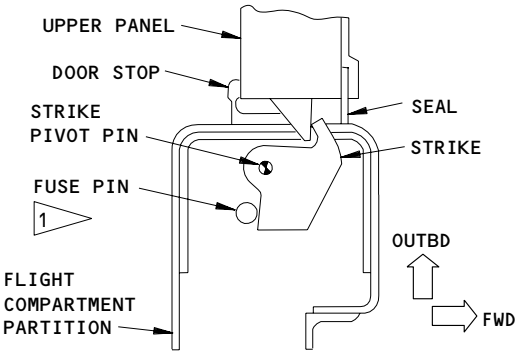


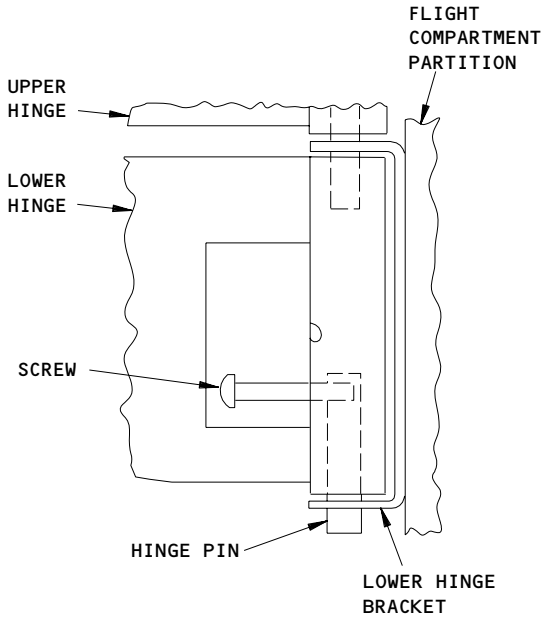
FLIGHT COMPARTMENT DOOR



DOOR LOCK UNIT
A



A-A



LOWER HINGE BRACKET
B

1 FUSE PIN RETRACTS WHEN SOLENOID IS DE-ENERGIZED.

Flight Compartment Door Latch and Hinge
Figure 2

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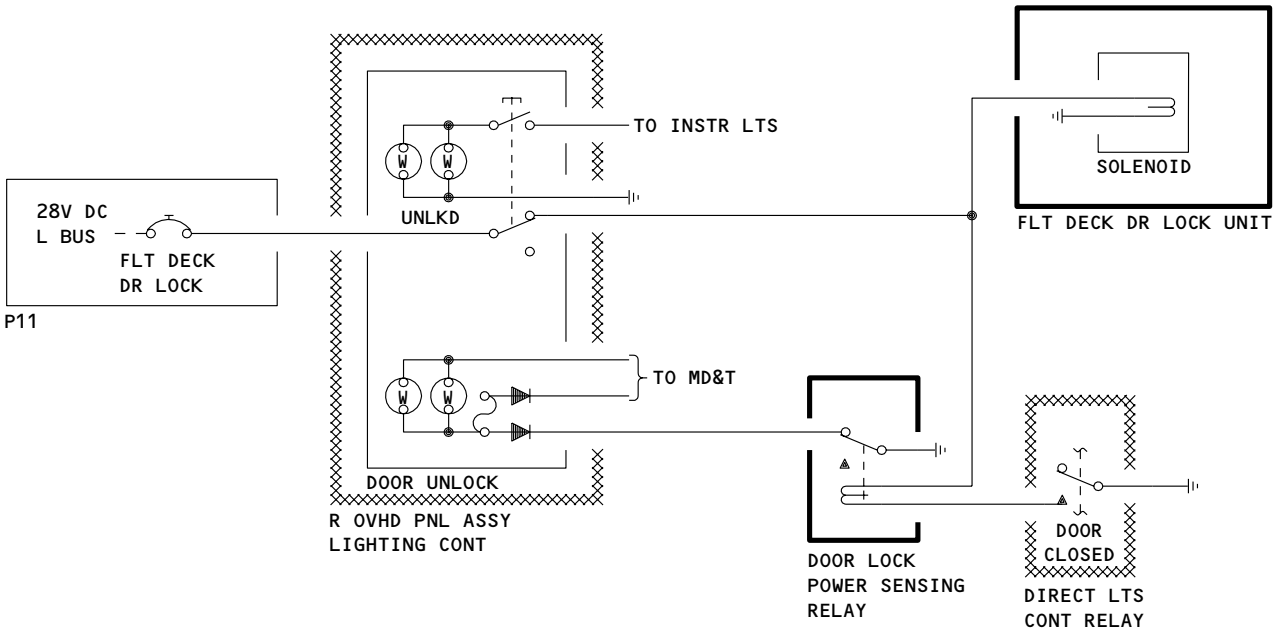

Flight Compartment Door Schematic
Figure 3

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FLIGHT COMPARTMENT DOOR - DESCRIPTION AND OPERATION

1. General (Fig. 1)
   A. The flight compartment door provides selective entry to the flight compartment.
   B. Access is provided by the use of a Keypad Access System which consists of a numeric keypad outside the flight compartment area and a chime module and electric strike that is not accessible from outside the flight compartment.
   C. The chime module provides an audible alert to the flight crew that the correct code has been entered into the keypad. There is also an indicator light in the flight compartment and an LED on the keypad that indicates that the correct code has been entered.
   D. The flight crew has a 3-position switch by which they can open the door lock, close the door lock, or permanently lock the door for a specified amount of time to prevent access by anyone regardless if the correct code is entered into the keypad.
   E. The door has blowout panels that will open in the event of a rapid decompression of the passenger compartment.
   F. A pressure sensor controls the electric strike and allows the door to open inward in the event of a rapid decompression in the flight compartment.
   G. All access to system door control/wiring is protected such that they cannot be reached from outside the flight deck area, even after forced removal of the numeric keypad.
   H. The door latch solenoid controls the electric strike.
   I. For more details on the Flight Compartment Door system, refer to these wiring diagrams and functional schematics:
      SSM 52-51-01: FLIGHT DECK DOOR
      WDM 52-51-11: DOOR LOCK - FLIGHT COMPARTMENT
2. Flight Compartment Door (Fig. 1)
   A. The flight compartment door consists of an upper section with a lower breakaway panel, two decompression blowout panels, a lock assembly, and a deadbolt.
   B. The door opens about a piano hinge mounted on the flight compartment partition. The hinge is attached to the partition with screws.
   C. A light shield on the bottom edge of the door prevents incidental light from entering the flight compartment. This is to allow low level lighting on instrument panels.
   D. An Observ-O-Scope in the door allows flight crew members to see into the passenger compartment.
   E. The door has blowout panels installed that will open aft in the event of a decompression in the passenger cabin.
3. Electric Strike (Fig. 1)
   A. The electric strike consists of a solenoid, a spring mounted strike, and a pin which prevents the strike from rotating.
   B. The solenoid acts to lock the flight compartment door. When 28VDC is applied to the solenoid it closes, extending a pin to prevent the strike from rotating. This prevents the door from being opened from the aft (passenger) side.

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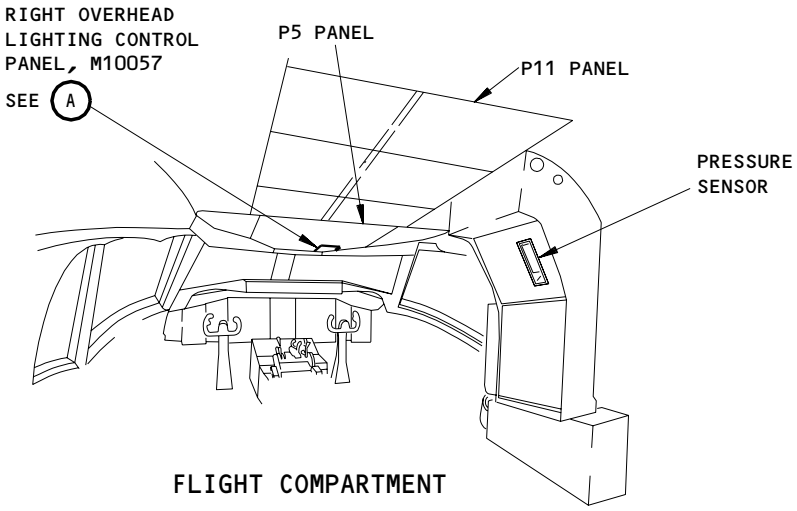
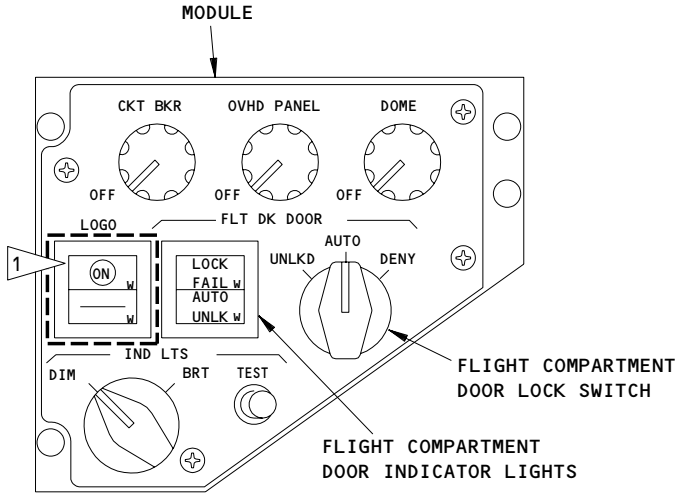


FLIGHT COMPARTMENT



RIGHT OVERHEAD LIGHTING
CONTROL PANEL, M10057

A

1 NOT INSTALLED ON ALL AIRPLANES

Flight Compartment Door - Component Location
Figure 1 (Sheet 1)

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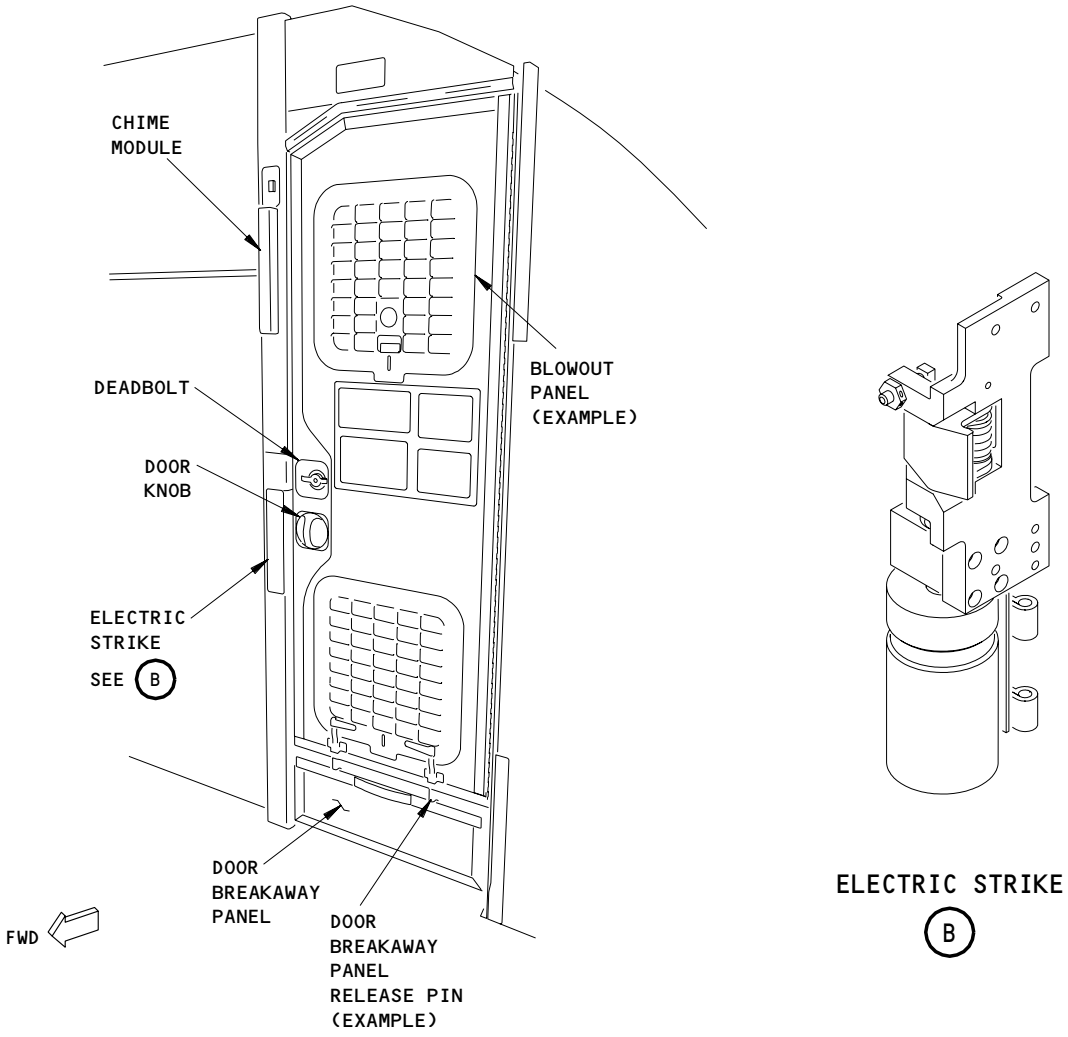

FLIGHT COMPARTMENT DOOR

Flight Compartment Door – Component Location
Figure 1 (Sheet 2)

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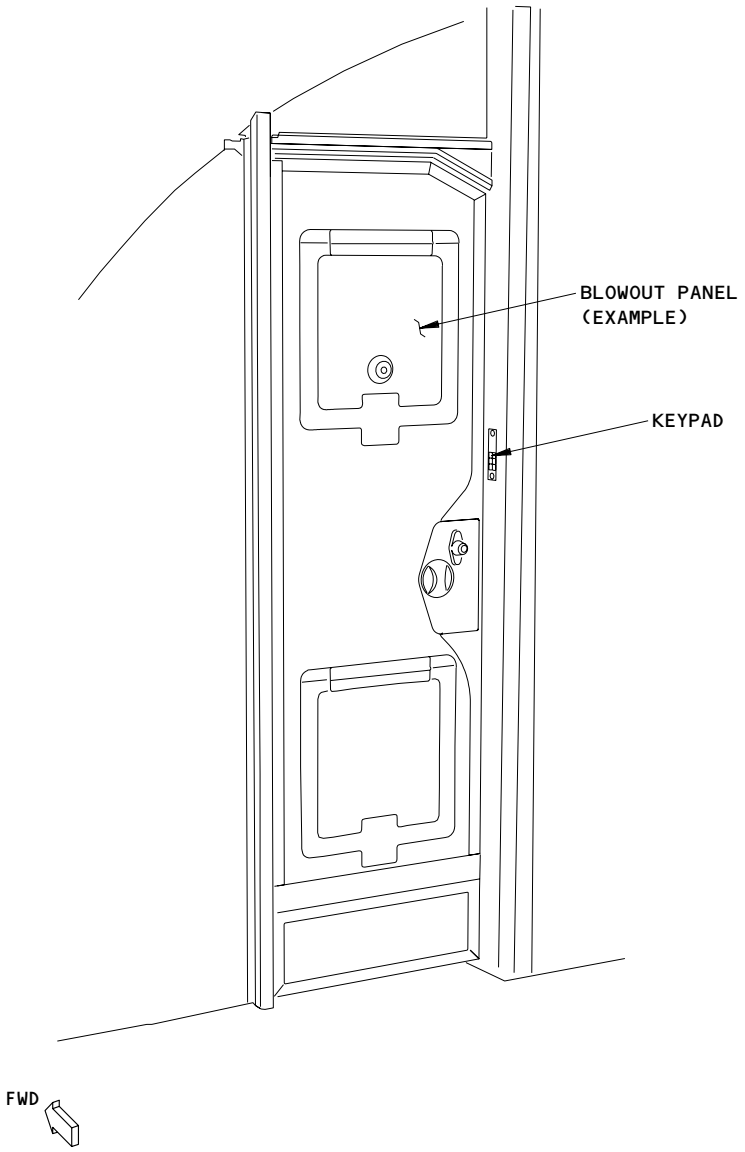

FLIGHT COMPARTMENT DOOR

Flight Compartment Door - Component Location
Figure 1 (Sheet 3)

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C. When the solenoid is de-energized, the pin retracts and allows the strike to rotate when sufficient force is applied to the door to overcome the spring pressure.

4. Keypad (Fig. 1)
   A. The keypad is mounted on the passenger side of the right hand door post.
   B. The keypad contains numbers one through five, an ENTER button, and 3 LED's.
   C. The numbers are used by the crew to enter a preprogrammed code to allow entry to the flight compartment.
   D. The LED's are amber, red, and green, and indicate whether a correct code has been entered, and whether the door strike in in the locked or unlocked position, respectively.
5. Chime Module (Fig. 1)
   A. The chime module is mounted on the right hand door post inside the flight compartment.
   B. The chime module controls the functions of the access system.
   C. A removable cover on the chime module allows access to two switches that must be pressed to program the various time delays and items of the access system.
   D. The programmable items are the Access Time Delay, the Deny Time Delay, Time of Continuous Chime, the Doorbell enable, and Access Code.
   E. A guarded power cut off switch is installed on the chime module to allow normal maintenance and preflight access to the flight compartment when the airplane has electrical power.
   F. When the switch is in the Up (guard extended) position, power is removed from the chime module and strike solenoid, which unlocks the door.
6. Pressure Sensor (Fig. 1)
   A. A pressure sensor is mounted on the ceiling forward of the flight compartment door.
   B. The pressure sensor contains an internal dual channel solid state pressure sensor.
   C. Either redundant channel in the pressure sensor will open a switch that removes the ground path to the electric strike and allows the door to open.
   D. The pressure sensor is a normally closed switch that will open when a rapid decompression event in the flight compartment occurs.
   E. When a rapid decompression event occurs, the pressure switch senses the change and causes the power to the solenoid to be removed which will release the door latch, allowing the door to open inward.

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7. Three Position Rotary Switch (Fig. 1)
   A. The three position rotary switch is located in the M10057 Right Overhead Panel Assembly Lighting Control on the overhead P5 pilot's overhead panel.
   B. The switch has three positions: UNLKD, AUTO, and DENY.
      (1) The UNLKD position is a push-to-rotate, momentary switch position that unlocks the door.
      (2) The door will only be unlocked while the switch is held in the UNLKD position.
      (3) The UNLKD position resets the DENY function.
      (4) The AUTO position locks the door and enables the door to be unlocked after a correct code is entered in the keypad after a programed time delay.
      (5) The DENY position is a momentary switch position that rejects a correct door entry request and prevents further keypad entry for a programmed time period (Deny Time Delay).
8. Flight Compartment Door Indicator Lights (Fig. 1)
   A. The Flight Compartment Indicator lights are located in the M10057 Right Overhead Panel Assembly Lighting Control on the overhead P5 pilot's overhead panel.
   B. The lights consist of AUTO UNLK and LOCK FAIL
      (1) The AUTO UNLK light indicats that a correct keypad code has been entered and that the door will unlock automatically after a programmed period of time unless the crew takes action.
      (2) The LOCK FAIL light indicates that the three position switch is in the AUTO position and the solenoid is not in the locked position.
9. Operation (Fig. 2)
   A. Functional Description
      (1) When personel wish to enter the flight compartment they must first enter the correct code in the keypad.
         (a) If the correct code is entered, the system will immediately indicate correct code entry with an amber LED on the numeric keypad.
         (b) The chime module will sound and the AUTO UNLK light in the flight compartment will come on to notify the flight crew of a requested entry.

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(c) If the flight crew takes no action, the door entry system will unlock the door after the Access Time Delay expires.
(d) Before the Access Time Delay expires, the flight crew has the option of manually unlocking the door overriding the automatic unlock by placing the three position rotary switch in the UNLKD position.
(e) The flight crew can also choose to deny access and any further keypad entry request by selecting DENY on the three position switch.
(f) Selecting DENY will prevent unlocking of the door and further keypad entry for the duration of the Deny Time Delay.
(g) When the Deny Time Delay has expired, the system will reset and return to the normal automatic mode.

(2) The access system can be set to Doorbell Mode.
(a) In the doorbell mode, "1" and "ENT" is entered in the keypad.
(b) The chime module will sound but the door will not unlock and there will not be any other flight deck effects.

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FLIGHT COMPARTMENT DOOR - DESCRIPTION AND OPERATION

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   A. The flight compartment door provides selective entry to the flight compartment.
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   E. The door has blowout panels that will open in the event of a rapid decompression of the passenger compartment.
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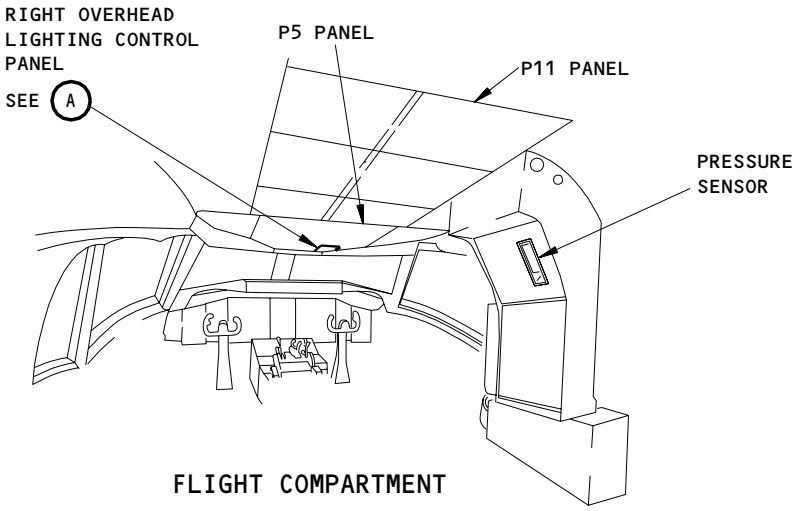
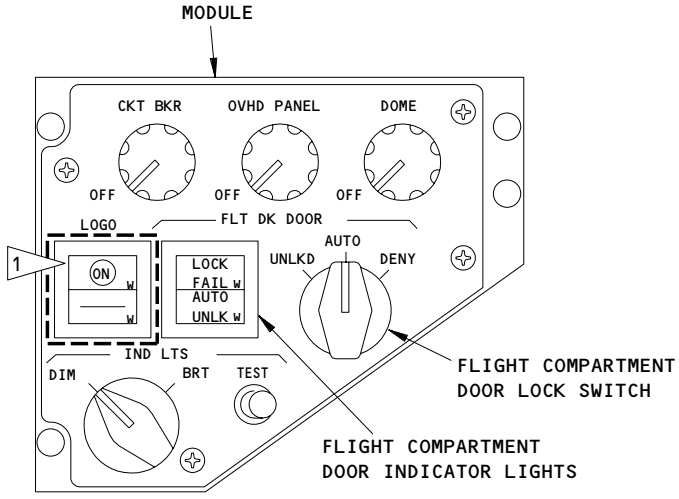


FLIGHT COMPARTMENT



RIGHT OVERHEAD LIGHTING
CONTROL PANEL

A

1 NOT INSTALLED ON ALL AIRPLANES

Flight Compartment Door – Component Location
Figure 1 (Sheet 1)

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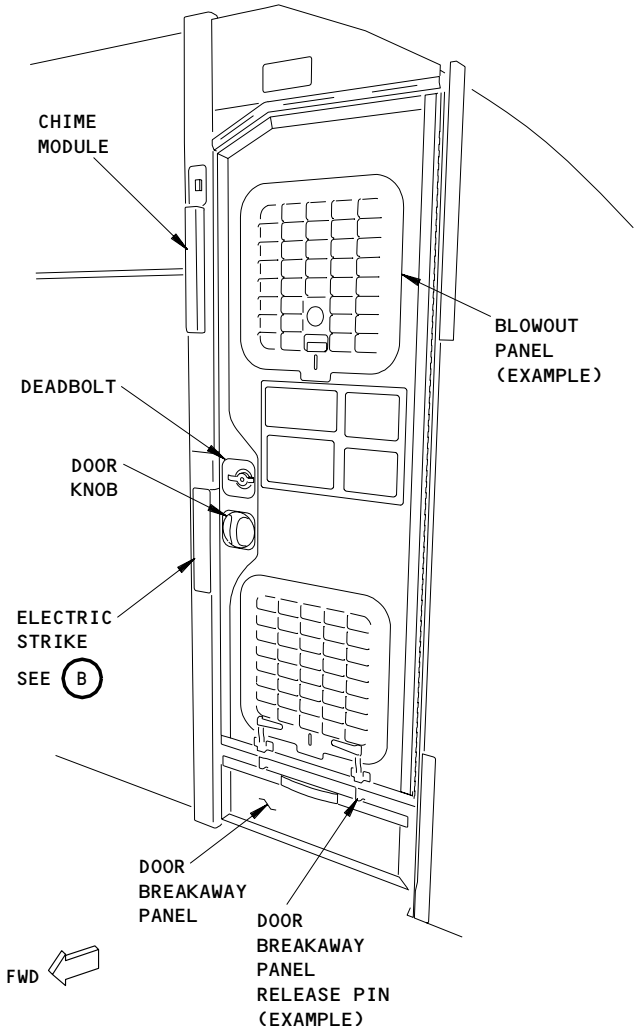
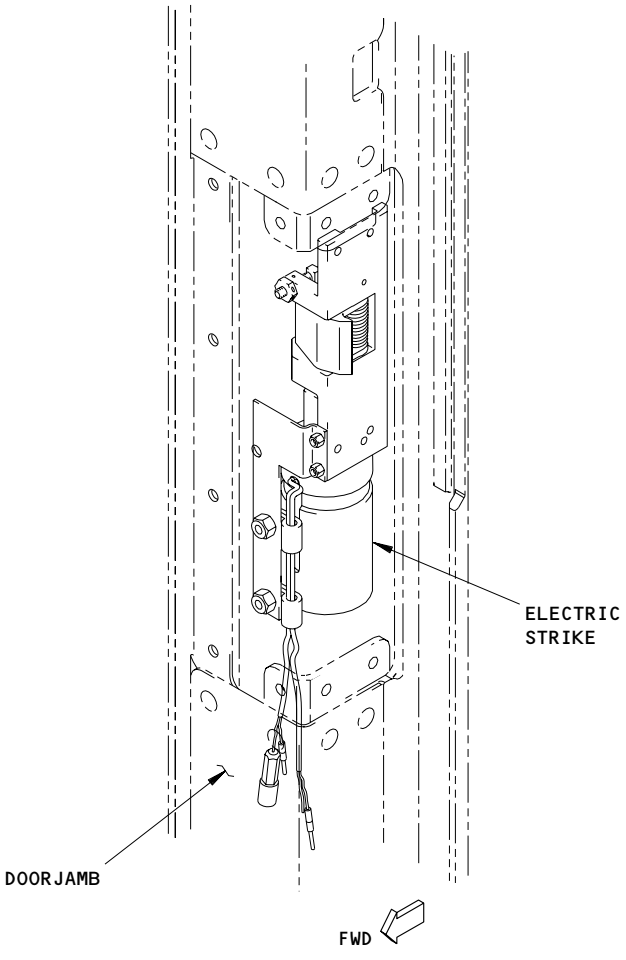


FLIGHT COMPARTMENT DOOR



ELECTRIC STRIKE

B

Flight Compartment Door – Component Location
Figure 1 (Sheet 2)

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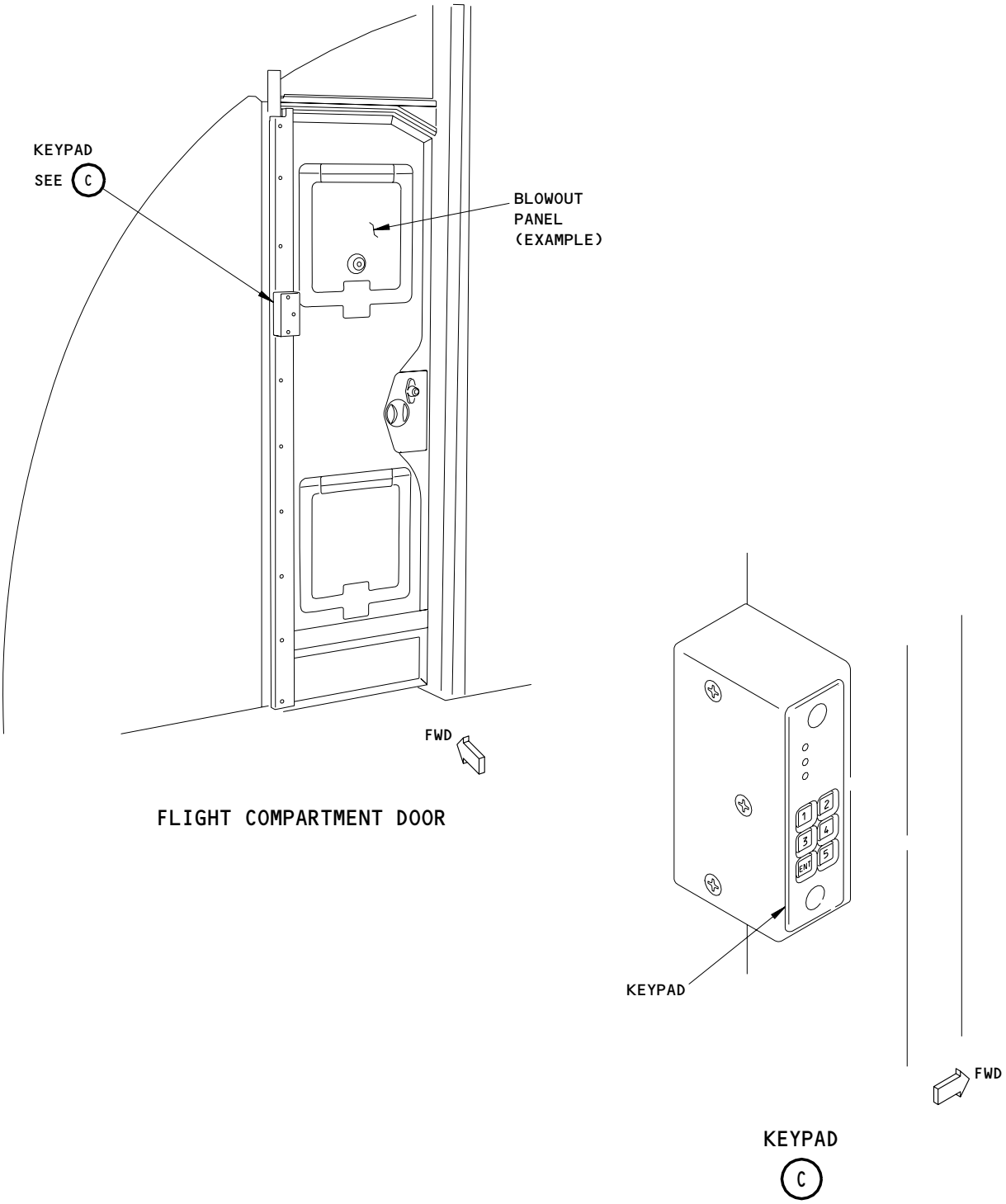

Flight Compartment Door – Component Location
Figure 1 (Sheet 3)

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(c) If the flight crew takes no action, the door entry system will unlock the door after the Access Time Delay expires.
(d) Before the Access Time Delay expires, the flight crew has the option of manually unlocking the door overriding the automatic unlock by placing the three position rotary switch in the UNLKD position.
(e) The flight crew can also choose to deny access and any further keypad entry request by selecting DENY on the three position switch.
(f) Selecting DENY will prevent unlocking of the door and further keypad entry for the duration of the Deny Time Delay.
(g) When the Deny Time Delay has expired, the system will reset and return to the normal automatic mode.

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FLIGHT COMPARTMENT DOOR

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
CIRCUIT BREAKER –	1		FLIGHT COMPARTMENT, P11	
FLIGHT DECK DOOR LOCK, C1400		1	11T5	*
DOOR – FLIGHT COMPARTMENT	1	1	FLIGHT COMPARTMENT	52-51-01
DOOR LOCK UNIT – FLIGHT COMPARTMENT, M635	1	1	FLIGHT COMPARTMENT DOORJAMB	52-51-01
PANEL – (FIM 33-11-00/101)				
RIGHT OVERHEAD LIGHTING CONTROL, M10057				
RELAY – (FIM 33-22-00/101)				
DIRECT LIGHTS CONTROL, K358				
DOOR LOCK POWER SENSING, K642				
SWITCH – (FIM 33-22-00/101)				
FLIGHT DECK DOOR, S460				
SWITCH – FLIGHT DECK DOOR LOCK/UNLOCK, YCXS1	2	1	FLIGHT COMPARTMENT, P5, RIGHT OVERHEAD LIGHTING CONTROL PANEL, M10057	*

* SEE THE WDM EQUIPMENT LIST

Flight Compartment Door – Component Index
Figure 101

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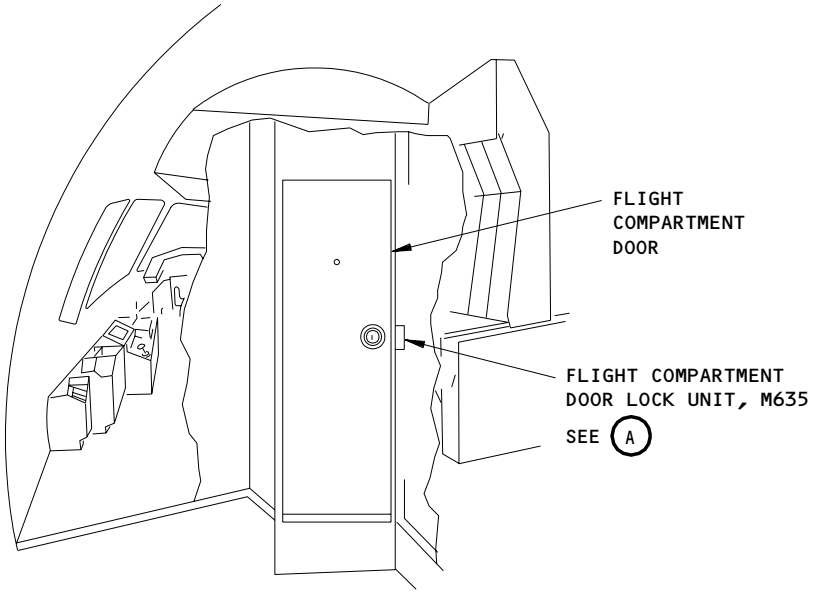
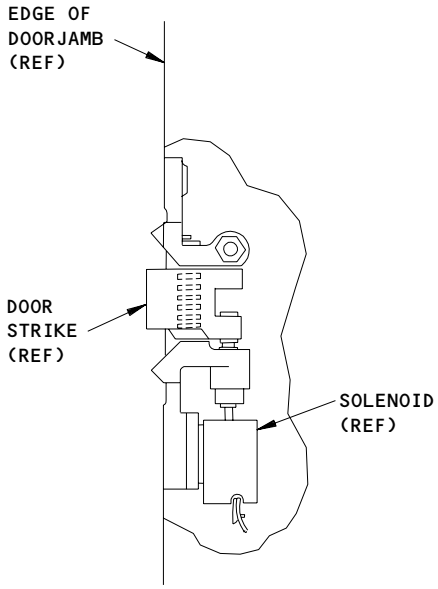


FLIGHT COMPARTMENT
(VIEW IN THE FORWARD DIRECTION)



FLIGHT COMPARTMENT
DOOR LOCK UNIT, M635
A

Flight Compartment Door - Component Location
Figure 102 (Sheet 1)

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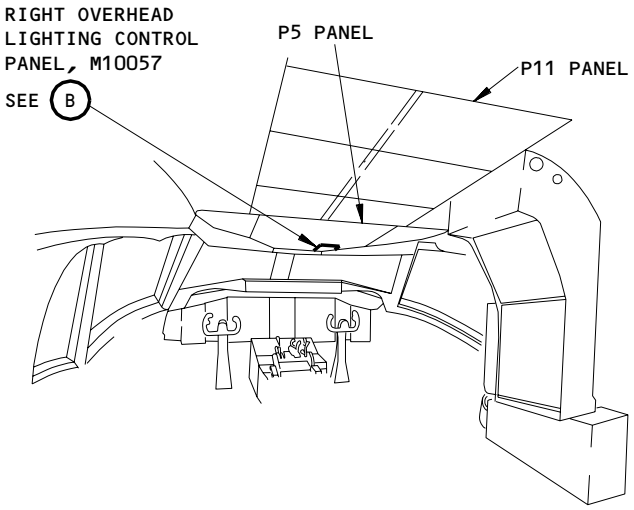
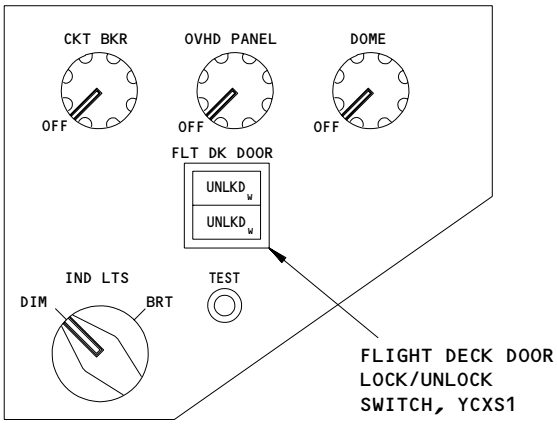


FLIGHT COMPARTMENT



RIGHT OVERHEAD LIGHTING
CONTROL PANEL, M10057

B

Flight Compartment Door - Component Location
Figure 102 (Sheet 2)

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FLIGHT COMPARTMENT DOOR

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
CHIME MODULE, M12093	1	1	FLIGHT COMPARTMENT DOORJAMB	52-51-10
CIRCUIT BREAKER -				
FLT DECK DR LOCK, C01400		1	FLIGHT COMPARTMENT, P11 11T5	*
DIRECT LIGHTS CONTROL RELAY, K359		1	FLIGHT COMPARTMENT, P19	
DOOR - FLIGHT COMPARTMENT	1, 3	1	FLIGHT COMPARTMENT	52-51-05
DOOR LOCK POWER SENSING RELAY, K642		1	FLIGHT COMPARTMENT, P19	
DOOR LOCK UNIT - FLIGHT COMPARTMENT, M10295	2	1	FLIGHT COMPARTMENT DOORJAMB	52-51-07
KEYPAD, M10294	3	1	FLIGHT COMPARTMENT DOORJAMB	52-51-09
PANEL - RIGHT OVERHEAD LIGHTING CONTROL, M10057	4	1	FLIGHT COMPARTMENT	
PRESSURE SENSOR, M12096	1	1	FLIGHT COMPARTMENT DOORJAMB	52-51-11
SWITCH - FLIGHT DECK DOOR, S1	4	1	FLIGHT COMPARTMENT	*

* SEE THE WDM EQUIPMENT LIST

Flight Compartment Door - Component Index
Figure 101

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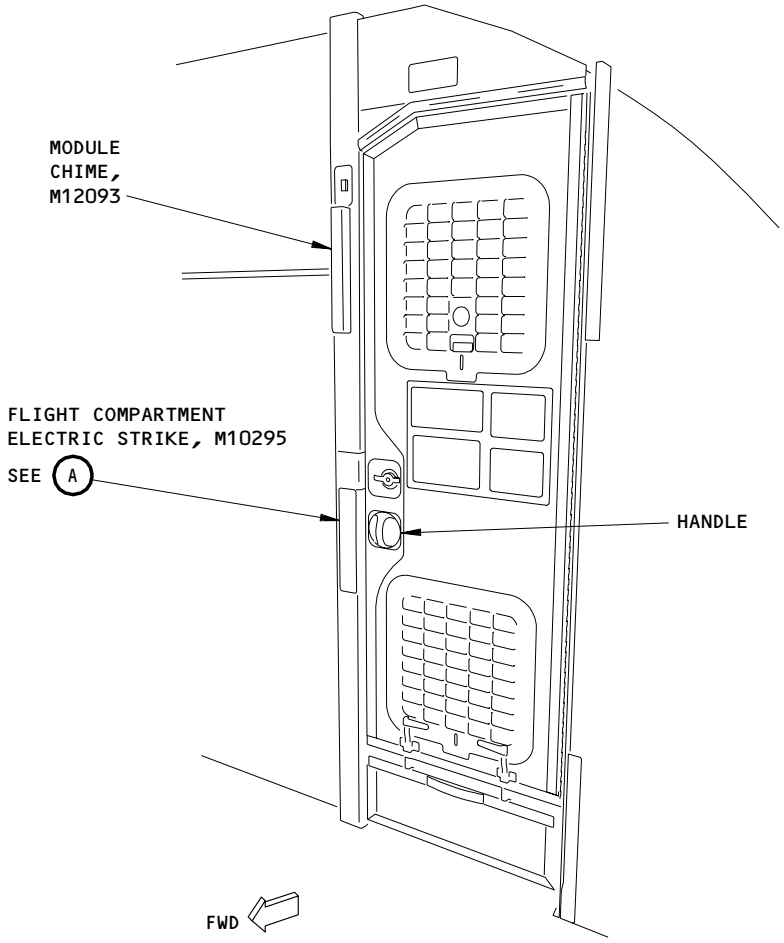

FLIGHT COMPARTMENT DOOR

Flight Compartment Door - Component Location
Figure 102 (Sheet 1)

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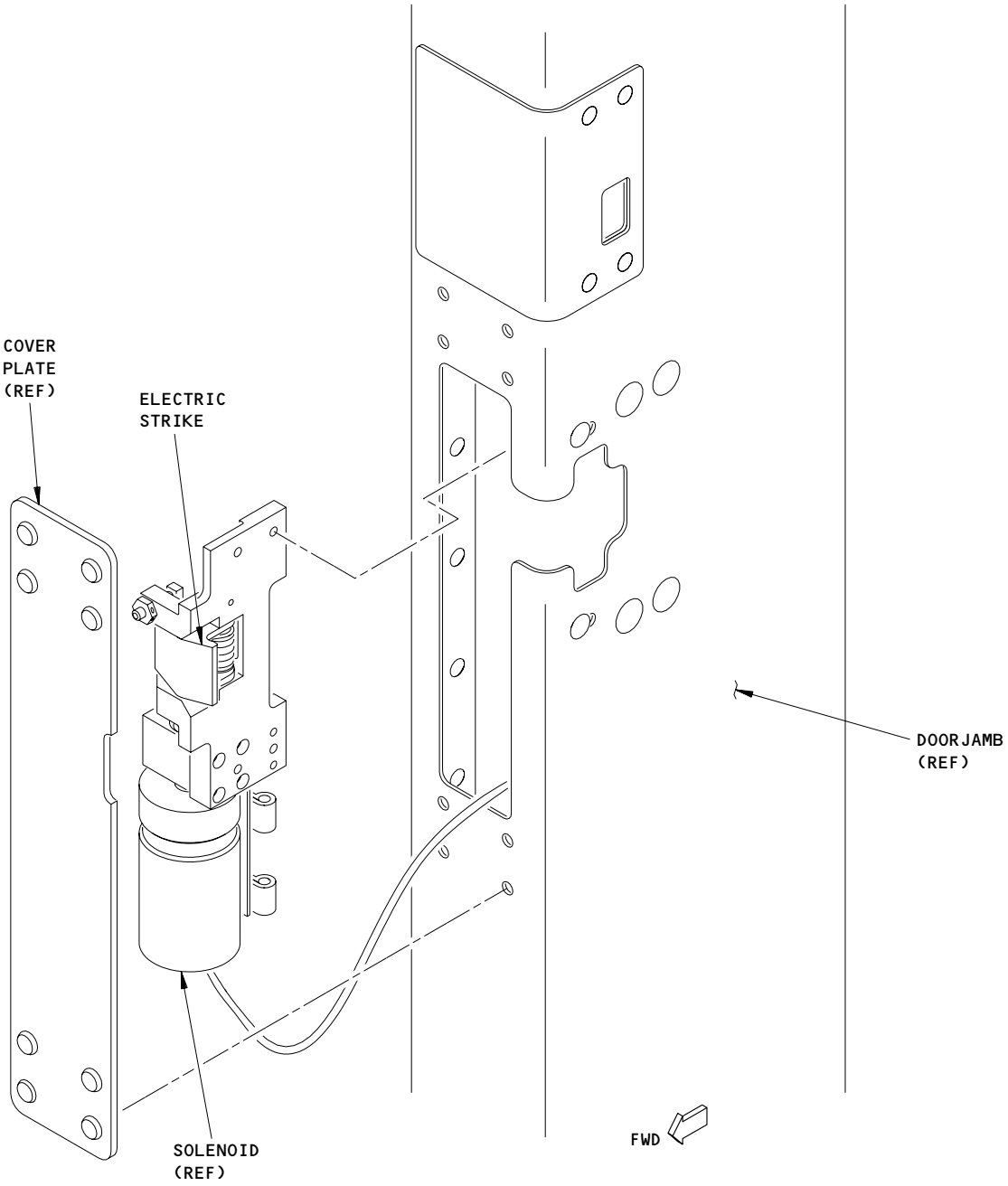

FLIGHT COMPARTMENT
ELECTRIC STRIKE, M10295
A

Flight Compartment Door - Component Location
Figure 102 (Sheet 2)

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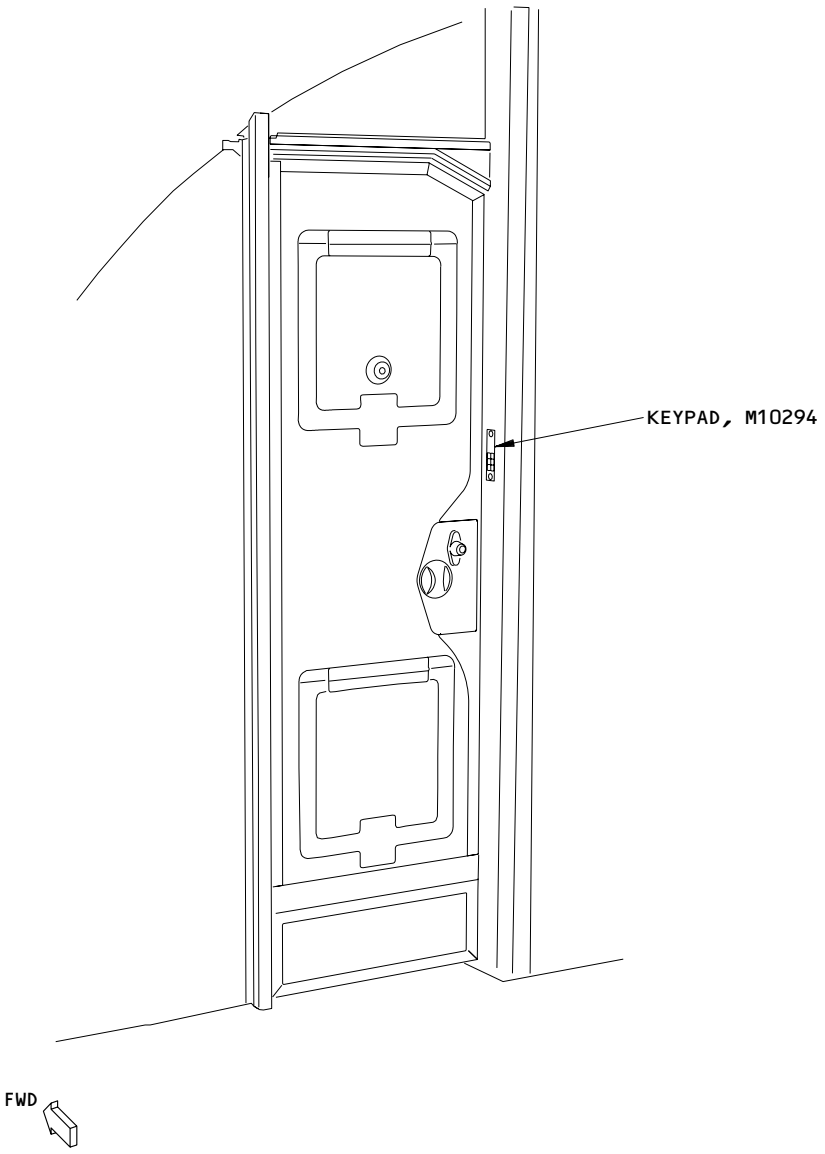

FLIGHT COMPARTMENT DOOR

Flight Compartment Door - Component Location
Figure 102 (Sheet 3)

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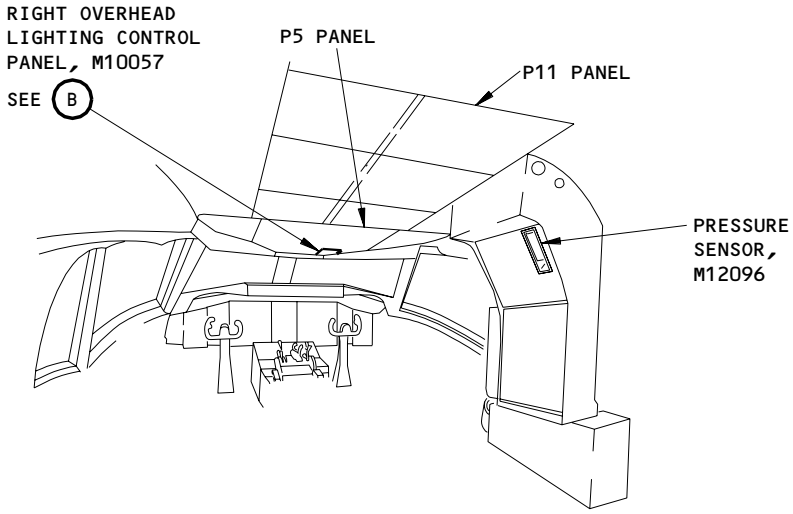
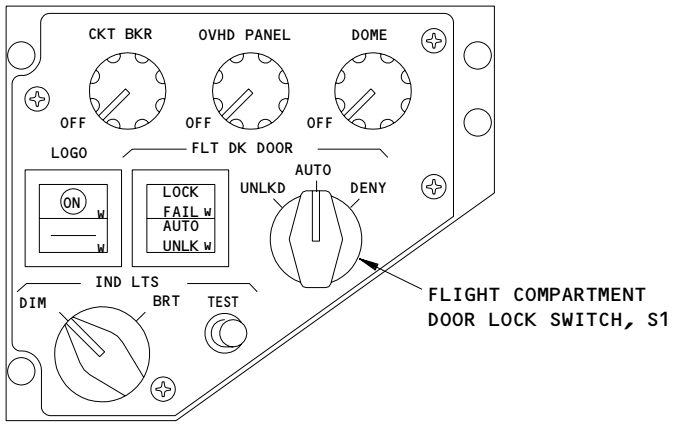


FLIGHT COMPARTMENT



RIGHT OVERHEAD LIGHTING
CONTROL PANEL, M10057
(B)

Flight Compartment Door - Component Location
Figure 102 (Sheet 4)

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FLIGHT COMPARTMENT DOOR

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
CHIME MODULE, M12093	1	1	FLIGHT COMPARTMENT DOORJAMB	52-51-10
CIRCUIT BREAKER -				
FLT DECK DR LOCK, C01400		1	FLIGHT COMPARTMENT, P11 11T5	*
DIRECT LIGHTS CONTROL RELAY, K359		1	FLIGHT COMPARTMENT, P19	
DOOR - FLIGHT COMPARTMENT	1, 3	1	FLIGHT COMPARTMENT	52-51-05
DOOR LOCK POWER SENSING RELAY, K642		1	FLIGHT COMPARTMENT, P19	
DOOR LOCK UNIT - FLIGHT COMPARTMENT, M10295	2	1	FLIGHT COMPARTMENT DOORJAMB	52-51-07
KEYPAD, M10294	3	1	FLIGHT COMPARTMENT DOORJAMB	52-51-09
PANEL - RIGHT OVERHEAD LIGHTING CONTROL, M10057	4	1	FLIGHT COMPARTMENT	
PRESSURE SENSOR, M12096	1	1	FLIGHT COMPARTMENT DOORJAMB	52-51-11
SWITCH - FLIGHT DECK DOOR, S1	4	1	FLIGHT COMPARTMENT	*

* SEE THE WDM EQUIPMENT LIST

Flight Compartment Door - Component Index
Figure 101

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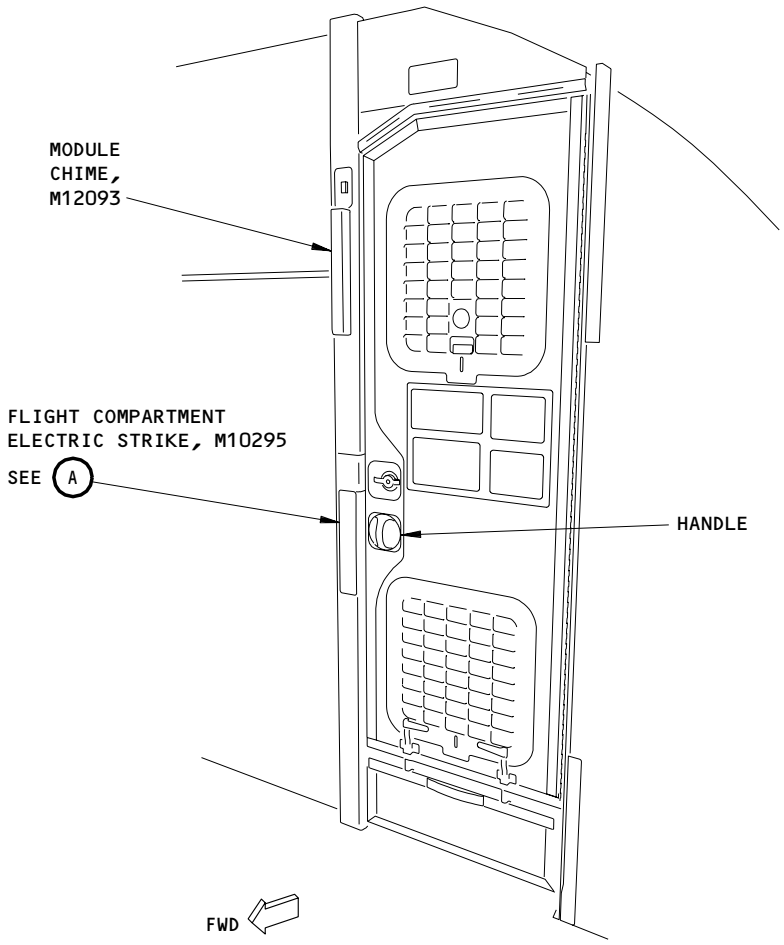

FLIGHT COMPARTMENT DOOR

Flight Compartment Door - Component Location
Figure 102 (Sheet 1)

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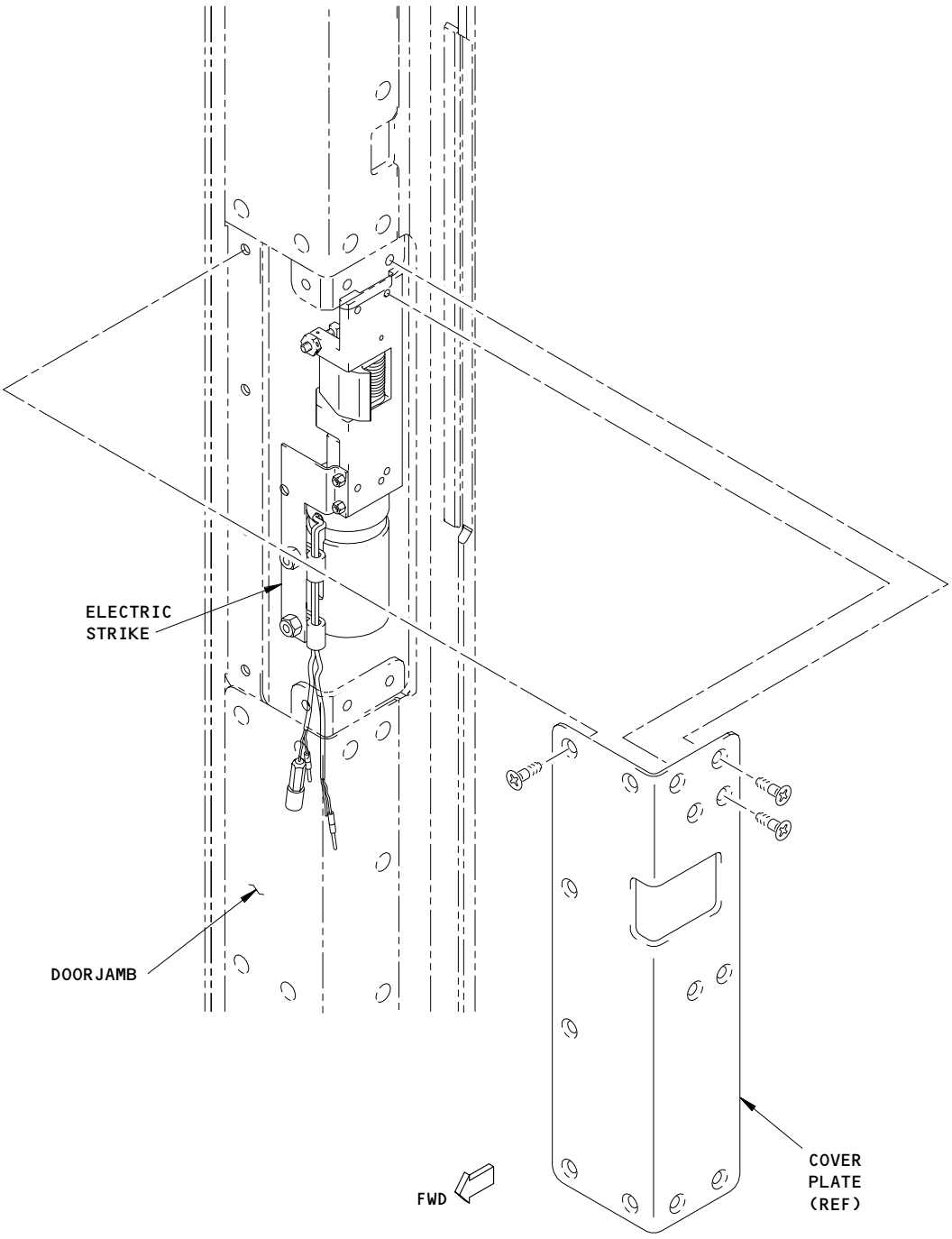

FLIGHT COMPARTMENT
ELECTRIC STRIKE, M10295
A

Flight Compartment Door - Component Location
Figure 102 (Sheet 2)

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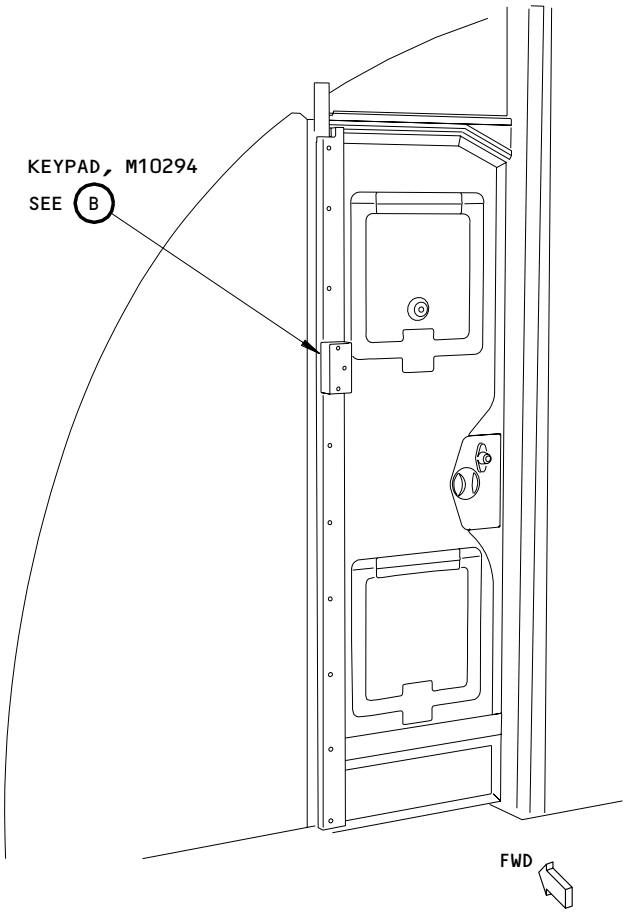
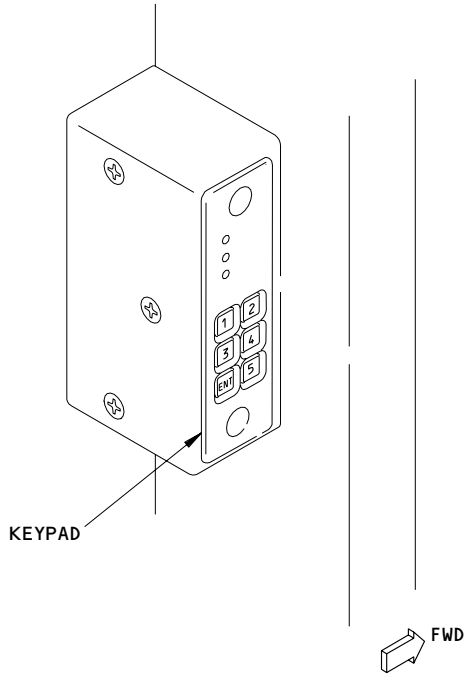


FLIGHT COMPARTMENT DOOR



KEYPAD, M10294
B

Flight Compartment Door – Component Location
Figure 102 (Sheet 3)

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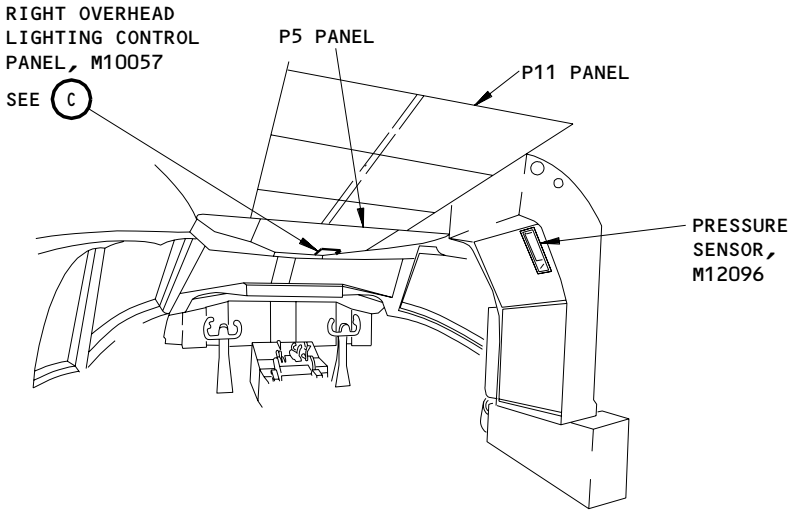
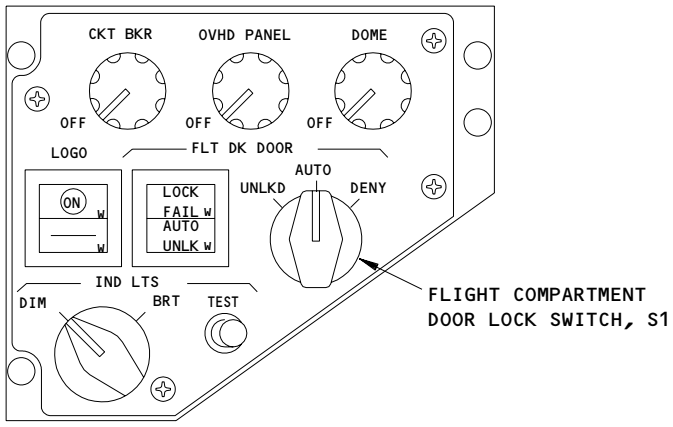


FLIGHT COMPARTMENT



RIGHT OVERHEAD LIGHTING
CONTROL PANEL, M10057
C

Flight Compartment Door - Component Location
Figure 102 (Sheet 4)

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FLIGHT COMPARTMENT DOOR - MAINTENANCE PRACTICES

1. General

A. This procedure contains five tasks. The first task is the removal and the installation of the flight compartment door. The second task is the removal and the installation of the electric strike for the flight compartment door. The third task is the adjustment and the test of the electric strike. The fourth task has the instructions to get into the flight compartment when the flight compartment door is locked. The fifth task is the removal and the installation of the fuse pin.

TASK 52-51-00-902-001-001

2. Remove and Install the Flight Compartment Door

A. Access

(1) Location Zones

211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

B. Procedure

S 022-002-001

(1) Remove the flight compartment door.
(a) Open the flight compartment door.
(b) Disengage the hinge pins at the top and bottom corners of the door (View A, Fig. 201).
(c) Remove the flight compartment door.

S 422-003-001

(2) Install the flight compartment door.
(a) With the hinge pins disengaged, hold the flight compartment door in the correct position in the doorway.
(b) Release the hinge pins.

S 822-004-001

(3) Adjust the door as follows:
(a) Refer to Adjustment and Test of the Electric Strike to do a test of the electric strike (1).
(b) Make sure the actuator (S460) is installed correctly on the top of the door as follows:
1) Make sure the strongest magnetic side is up.

NOTE: You can use steel scaler or equivalent to find strongest magnetic side.

2) Make sure the actuator is 0.08 inch above the door.

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TASK 52-51-00-902-005-001

3. Remove and Install the Electric Strike

A. Access

(1) Location Zones

211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

B. Procedure

S 022-006-001

(1) Remove the electric strike (1).
(a) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:
1) 11T5, DOORS FLT DK LOCK
(b) Remove the bolts (8).
(c) Pull the electric strike (1) out of its recess.
(d) Disconnect the electrical wires at the ground and the splice.
(e) Remove the electric strike (1).

S 422-007-001

(2) Install the electric strike (1).
(a) Hold the electric strike (1) and connect the electrical wires to the ground and the splice.
(b) Install the bolts (8) and the washers (9) to attach the electric strike (1) to the inboard door post.
(c) Make sure the strike overlap dimension is as shown in figure 201.
(d) Make sure the clearance between the door and the door stop is 0.02 inch maximum.
(e) Install the access panel on the inboard door post.
(f) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
1) 11T5, DOORS FLT DK LOCK
(g) Refer to Adjustment and Test of the Electric Strike to do a test of the electric strike (1).

TASK 52-51-00-702-008-001

4. Adjustment and Test of the Electric Strike

A. Consumable Materials

(1) G00347 Tape - Double Back

B. References

(1) 24-22-00/201, Electrical Power - Control

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C. Access

(1) Location Zones

211 Control cabin - Section 41 (Left)

221 Passenger cabin - Section 41 (Left)

D. Procedure

S 822-009-001

(1) Adjust the electric strike (1).

(a) Open this circuit breaker on the overhead circuit breaker panel, P11, and attach a DO-NOT-CLOSE tag:

1) 11T5, DOORS FLT DK LOCK

(b) Close the flight compartment door.

(c) Make a mark on the door bolt to show the overlap of the strike (View A-A, Fig. 201).

(d) Open the door.

(e) Measure the overlap on the door bolt (View A-A, Fig. 201).

(f) If the overlap is correct, then no adjustment is necessary.

(g) If the overlap is too large, then do these steps to adjust the strike (1):

1) Remove the bolts (8).

2) Pull the electric strike (1) out of its recess. Do not disconnect the wires.

3) Install one or more shims to get the correct overlap (View A-A, Fig. 201). Use the double-backed adhesive tape to hold the shims in position (View D, Fig. 201).

4) Install the bolts (8) and the washers (9) to attach the electric strike (1) to the inboard door post.

5) Install the access panel on the inboard door post.

(h) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:

1) 11T5, DOORS FLT DK LOCK

S 712-010-001

(2) Do a test of the electric strike (1).

(a) Supply 28v dc electric power to the left main bus (Ref 24-22-00).

(b) Make sure the FLT DK DOOR switch on the overhead panel, P5, is off.

(c) Make sure the solenoid actuated pin is fully actuated. The strike (1) will not turn if the pin is fully actuated.

NOTE: The strike is spring-loaded to the closed position.

(d) Close the flight compartment door.

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(e) Make sure you cannot open the door manually from the passenger compartment without a key.
(f) Turn the door knob to make sure you can open the door from the flight compartment.
(g) Push the FLT DK DOOR switch on the overhead panel, P5. Make sure the switch light comes on.
(h) Make sure the solenoid actuated pin is fully disengaged from the strike (1).
(i) Make sure you can push or pull the door open without turning the door knob.
(j) Deactuate the FLT DK DOOR switch. Make sure the switch light goes off.
(k) Make sure the solenoid actuated pin goes back to the fully engaged position.
(l) Remove electrical power if it is not necessary (Ref 24-22-00).

S 712-011-001
(3) Do a test of the force necessary to open the flight compartment door.
(a) Supply 28v dc electric power to the left main bus (Ref 24-22-00).
(b) Make sure this circuit breaker on the overhead circuit breaker panel, P11, is closed:
1) 11T5, DOORS FLT DK LOCK
(c) Push the FLT DK DOOR switch on the P5 panel.
(d) Make sure the force necessary to open the door is 25 pounds or less.
(e) Remove electrical power if it is not necessary (Ref 24-22-00).

TASK 52-51-00-002-012-001
5. Get Into the Flight Compartment When the Flight Compartment Door is Locked

NOTE: This procedure will minimize fuse pin breakage.

A. Access
(1) Location Zones
211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

B. Procedure

S 862-013-001
(1) Knock to get into the flight compartment. Do not push against the door.

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S 862-014-001
(2) Listen for the sound of the solenoid actuating fuse pin to unlock the door.

S 012-015-001
(3) Open the door after you hear the solenoid.

TASK 52-51-00-902-016-001

6. Remove and Install the Fuse Pin

A. Parts

AMM		NOMENCLATURE	AIPC		
FIG	ITEM		SUBJECT	FIG	ITEM
202	3	Fuse Pin	52-51-53	01	80

B. Access

(1) Location Zones
211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

C. Procedure

S 022-017-001
(1) Remove the fuse pin (3).
(a) Remove the electric strike (1) (Refer to Remove and Install the Electric Strike).
(b) Remove the four screws (4, 5).
(c) Remove the solenoid (2). Lower the solenoid until the fuse pin (3) is clear.
(d) Remove the cotter pin (6) and the washers (7).
(e) Remove the fuse pin (3) from the solenoid (2).

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S 422-018-001

(2) Install the fuse pin (3).
   (a) Hold the fuse pin (3) on the solenoid (2) and install the cotter pin (6) and the washers (7).
   (b) Install the fuse pin (3) through the guide hole and attach the solenoid (2) with the four screws (4, 5).
   (c) Install the electric strike (1) (Refer to Remove and Install the Electric Strike).

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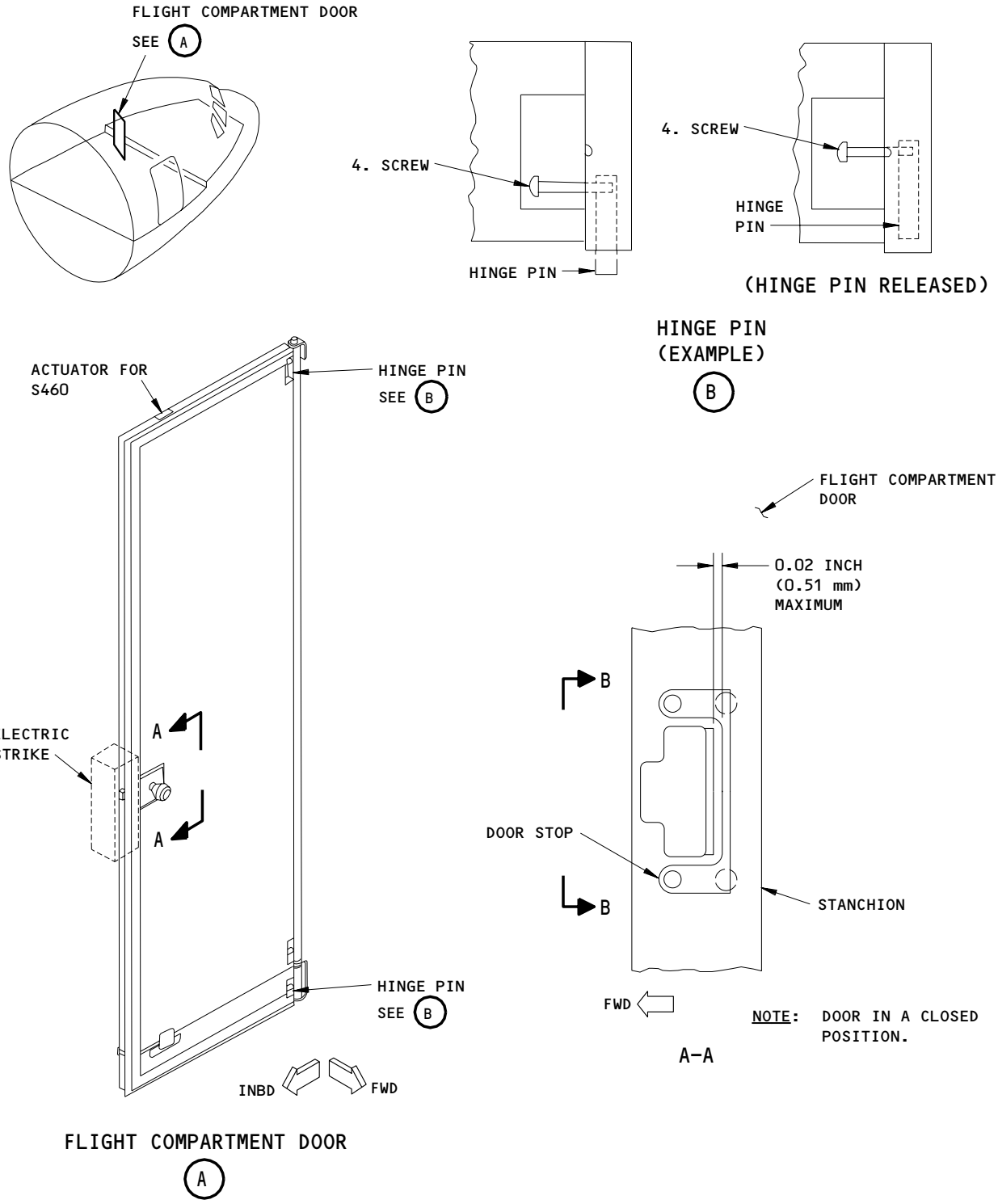

Flight Compartment Door Maintenance Practices
Figure 201 (Sheet 1)

EFFECTIVITY
SAS 050, 051, 156,162-167 PRE-SB 25-325;
154 PRE-SB 25-332

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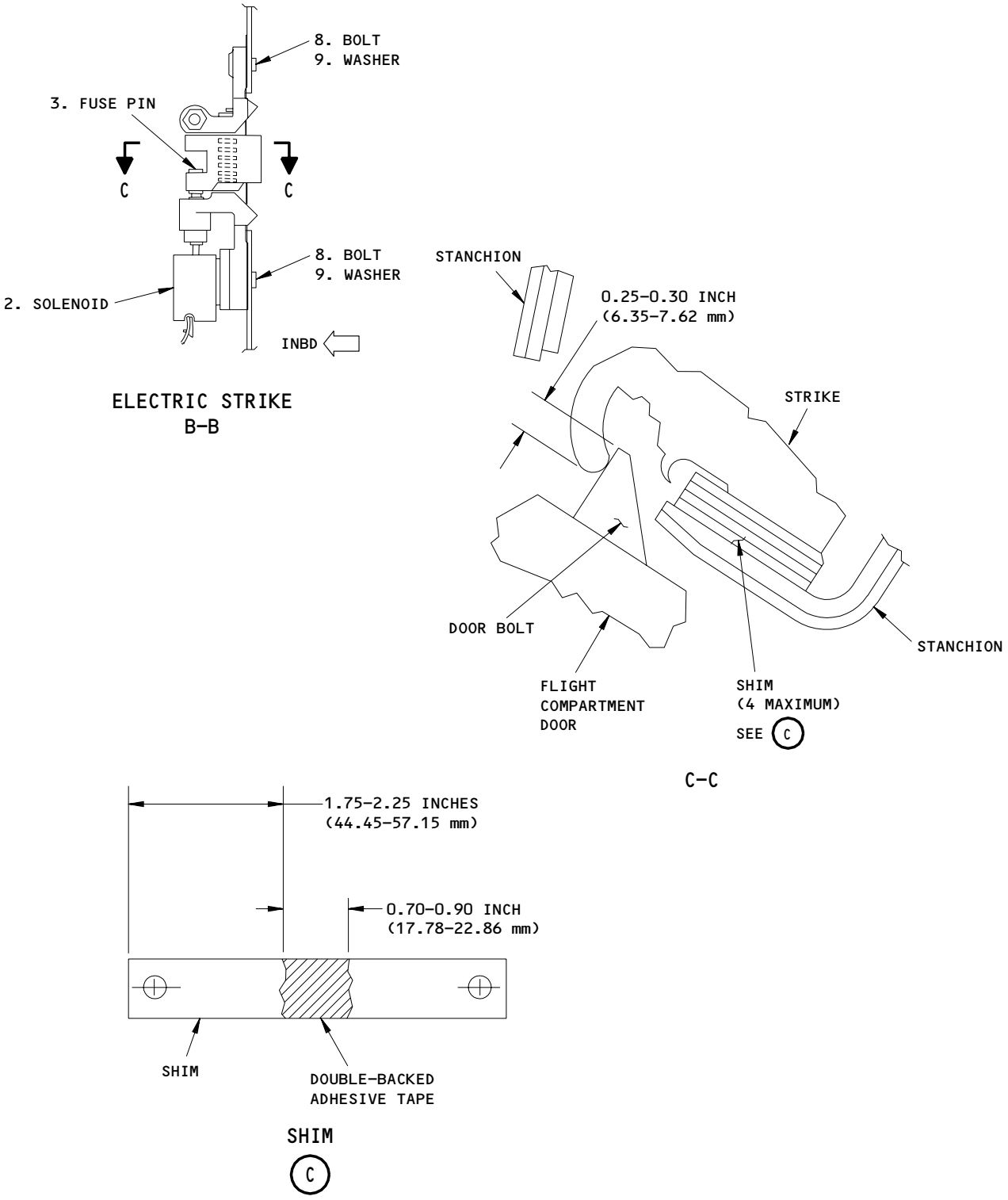

Flight Compartment Door Maintenance Practices
Figure 201 (Sheet 2)

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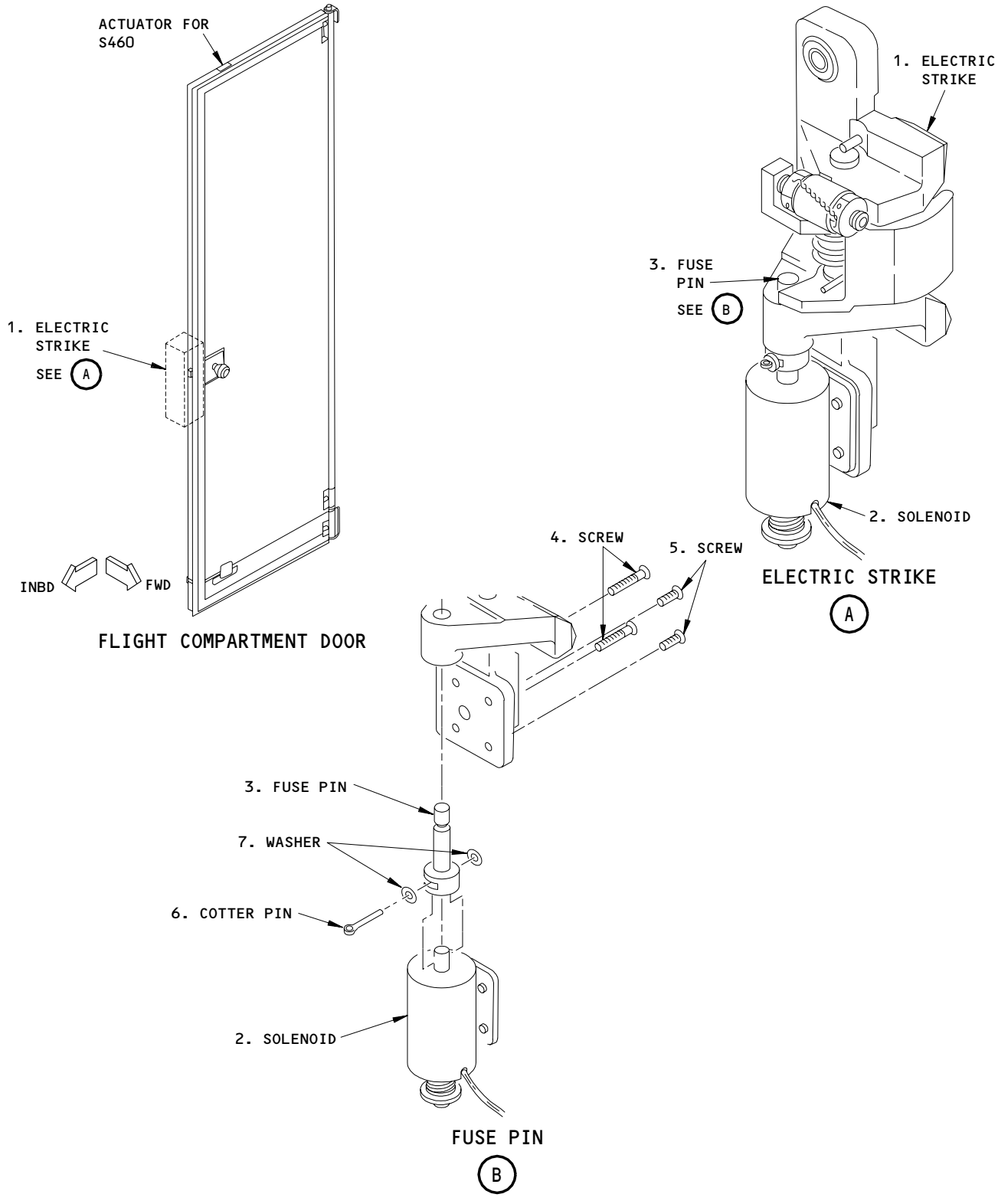

Electric Strike Maintenance Practices
Figure 202

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FLIGHT COMPARTMENT DOOR - MAINTENANCE PRACTICES

1. General
   A. This procedure contains these tasks:
      (1) Program the Access Code
      (2) Program Time Delays and DOOR BELL Enable
   B. In the program mode, if the time gap between two of the inputs, including the ENT key, is more than 30 seconds the system will:
      (1) Ignore keypad inputs made before the program button was pushed.
      (2) Retain the access, time delay and doorbell enable codes before the program button was pushed.
      (3) Exit the program mode.
   C. If the system is in the program mode for more than 3 minutes, it will exit the program mode.
   D. The door is unlocked while the system is in the program mode.

TASK 52-51-00-902-001-002

2. Program the Access Code

   A. General
      (1) The access code must be 3 to 8 characters long.
      (2) The amber LED on the keypad will blink continuously while the system is in the program mode.
      (3) The access code is set to 12345 at the factory.
   B. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   C. Procedure

      S 852-002-002
      (1) Do this procedure to program the access code:

      NOTE: To program the chime module make sure that the chime module switch is in the normal (guard closed) position.

      (a) Remove the access cover from the chime module, (Fig. 201).
      (b) Press and release the ACCESS switch on the chime module.
      (c) Enter the new 3 to 8 digit access code on the keypad.

          NOTE: Make sure the access code number is consistant with airline operational requirements.

      (d) Press the ENT button on the keypad.
      (e) Use the new access code to make sure the door will unlock.
      (f) Install the access cover on the chime module.

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TASK 52-51-00-902-003-002

3. Program Time Delays and DOOR BELL Enable

A. General
(1) Programming steps for the DENY and AUTO UNLOCK time delays are all the same.
(2) The green LED on the keypad will blink continuously while the system is in the program mode.
(3) The DOOR BELL ENABLE code will toggle the door bell enable.
(4) To program more than one time delay or door bell enable, the program mode must be re-entered each time.
(5) The keypad code to sound the door bell is 1, ENT.
(6) The access time delay is set to 60 seconds at the factory.
(7) The deny time delay set to 5 minutes at the factory.
(8) The door bell function is set to DISABLE at the factory.

B. Access
(1) Location Zones
211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

C. Procedure

S 852-004-002
(1) Do these steps to program the time delays and door bell enable:
(a) Remove the access cover from the chime module (Fig. 201).
(b) Press and release the TIMERS switch on the chime module.
(c) Enter the 3 digit time delay or doorbell enable code on the keypad (Table 201).

NOTE: The Access Time Delay must only be set to 30, 45, or 60 seconds. If the door bell mode is enabled then the Continuous Chime Time Delay must be set to 0 seconds (code 311).

(d) Press the ENT button on the keypad.
(e) Enter the 3 digit time delay or doorbell enable code a second time on the keypad (Table 201).
(f) Press the ENT button on the keypad.

NOTE: The green LED will come on for five seconds when the new code has been accepted by the chime module. The green LED will then go off and the red LED will come on. If the two codes that you entered do not match the chime module will exit the programming mode.

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(g) Use the access code to unlock the door in the AUTO mode.
(h) Make sure the time delays for the CONTINUOUS CHIME, AUTO UNLOCK or DENY are correct.
(i) Enter 1 and ENT on the keypad to make sure the DOOR BELL ENABLE mode operates, if the DOOR BELL mode has been enabled.
(j) Install the access cover on the chime module.

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TABLE 201 TIME DELAY AND DOOR BELL ENABLE CODES

CODE	TIME	NOMENCLATURE
112	30 Seconds	Access Time Delay
113	45 Seconds	Access Time Delay
114	60 Seconds	Access Time Delay
211	5 Minutes	Deny Access Time Delay
212	10 Minutes	Deny Access Time Delay
213	15 Minutes	Deny Access Time Delay
214	20 Minutes	Deny Access Time Delay
215	25 Minutes	Deny Access Time Delay
221	30 Minutes	Deny Access Time Delay
311	0 Seconds	Continuous Chime Time Delay
312	5 Seconds	Continuous Chime Time Delay
313	10 Seconds	Continuous Chime Time Delay
314	15 Seconds	Continuous Chime Time Delay
315	20 Seconds	Continuous Chime Time Delay
321	25 Seconds	Continuous Chime Time Delay
322	30 Seconds	Continuous Chime Time Delay
323	35 Seconds	Continuous Chime Time Delay
324	40 Seconds	Continuous Chime Time Delay
325	45 Seconds	Continuous Chime Time Delay
331	50 Seconds	Continuous Chime Time Delay
555	N/A	* Toggles Door Bell Mode On or Off * If Door Bell Mode is enabled then the Continous Chime Time Delay must be set to 0 seconds (Code 311)

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TABLE 201 TIME DELAY AND DOOR BELL ENABLE CODES			
NOTE	CODE	TIME	NOMENCLATURE
*(1)	112	30 Seconds	Access Time Delay
*(2)	113	45 Seconds	Access Time Delay
*(2)	114	60 Seconds	Access Time Delay
	211	5 Minutes	Deny Access Time Delay
	212	10 Minutes	Deny Access Time Delay
	213	15 Minutes	Deny Access Time Delay
	214	20 Minutes	Deny Access Time Delay
	215	25 Minutes	Deny Access Time Delay
	221	30 Minutes	Deny Access Time Delay
	311	0 Seconds	Continuous Chime Time Delay
	312	5 Seconds	Continuous Chime Time Delay
	313	10 Seconds	Continuous Chime Time Delay
	314	15 Seconds	Continuous Chime Time Delay
	315	20 Seconds	Continuous Chime Time Delay
*(2)	321	25 Seconds	Continuous Chime Time Delay
*(2)	322	30 Seconds	Continuous Chime Time Delay
*(2)	323	35 Seconds	Continuous Chime Time Delay
*(2)	324	40 Seconds	Continuous Chime Time Delay
*(2)	325	45 Seconds	Continuous Chime Time Delay
*(2)	331	50 Seconds	Continuous Chime Time Delay

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TABLE 201 TIME DELAY AND DOOR BELL ENABLE CODES

NOTE	CODE	TIME	NOMENCLATURE
*(3)	555	N/A	Toggles Door Bell Mode On or Off

*(1) 30-second Access Time Delay is required for airplanes that are registered in a JAA member country

*(2) Not a valid code for ariplanes that are registered in a JAA member country

*(3) If Door Bell Mode is enabled then the Continuous Chime Time Delay must be set to 0 second (Code 311)

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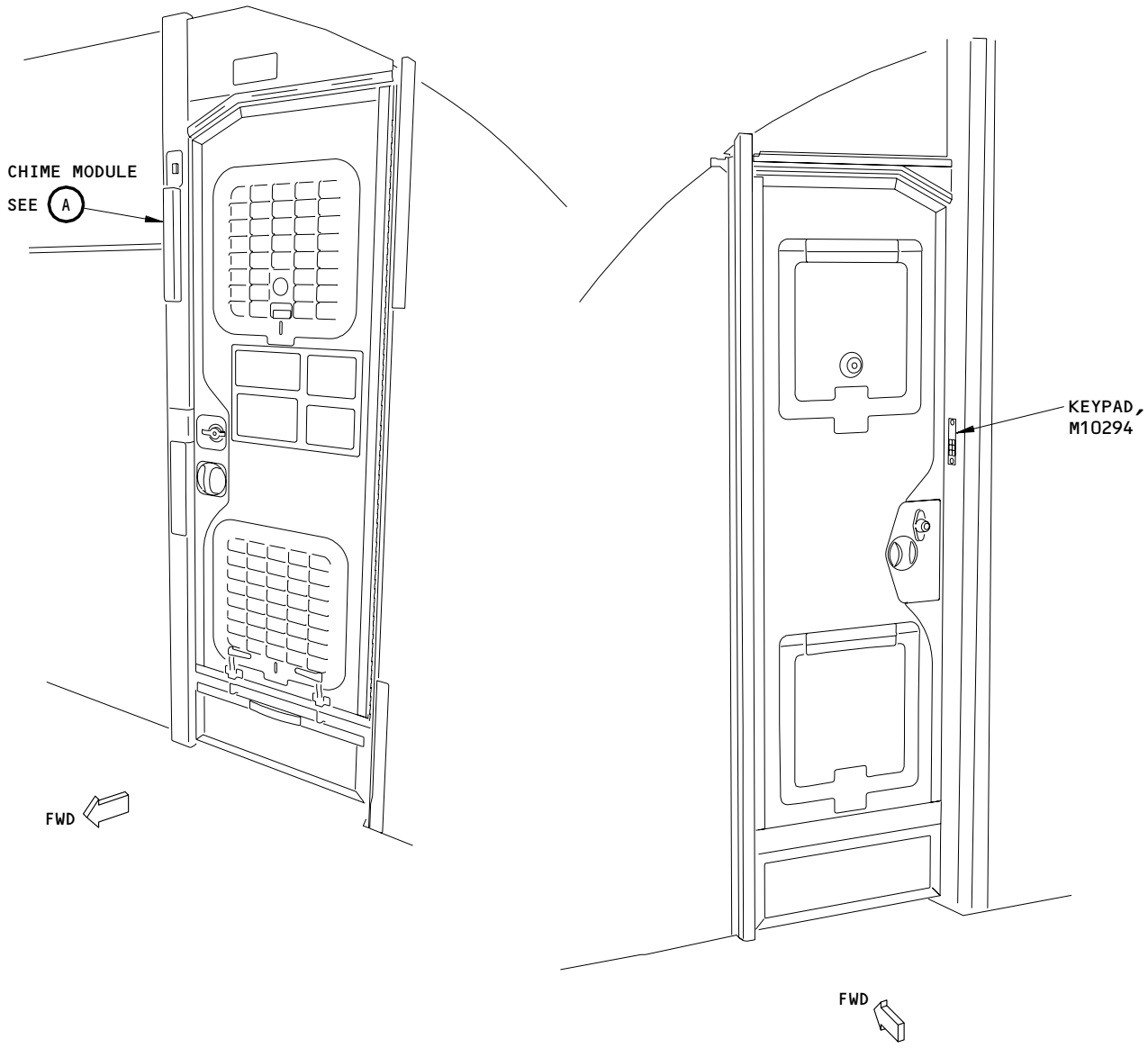

FLIGHT COMPARTMENT DOOR

Flight Compartment Door Maintenance Practices
Figure 201 (Sheet 1)

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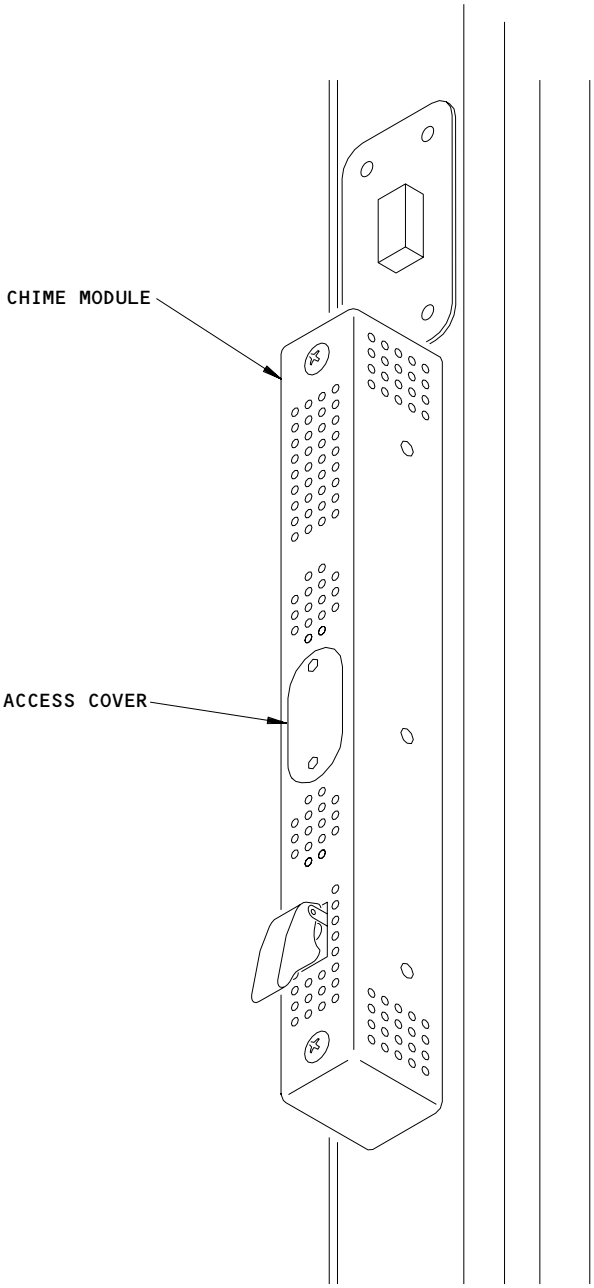

CHIME MODULE
A

Flight Compartment Door Maintenance Practices
Figure 201 (Sheet 2)

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FLIGHT COMPARTMENT DOOR - MAINTENANCE PRACTICES

1. General
   A. This procedure contains these tasks:
      (1) Program the Access Code
      (2) Program Time Delays and DOOR BELL Enable
   B. In the program mode, if the time gap between two of the inputs, including the ENT key, is more than 30 seconds the system will:
      (1) Ignore keypad inputs made before the program button was pushed.
      (2) Retain the access, time delay and doorbell enable codes before the program button was pushed.
      (3) Exit the program mode.
   C. If the system is in the program mode for more than 3 minutes, it will exit the program mode.
   D. The door is unlocked while the system is in the program mode.

   TASK 52-51-00-902-001-004

2. Program the Access Code

   A. General
      (1) The access code must be 3 to 8 characters long.
      (2) The amber LED on the keypad will blink continuously while the system is in the program mode.
      (3) The access code is set to 12345 at the factory.
   B. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   C. Procedure

      S 852-002-004
      (1) Do this procedure to program the access code:

      NOTE: To program the chime module, make sure that the chime module switch is in the normal (guard closed) position.

      (a) Remove the access cover from the chime module, (Fig. 201).
      (b) Press and release the ACCESS switch on the chime module.
      (c) Enter the new 3 to 8 digit access code on the keypad.

          NOTE: Make sure the access code number is consistant with airline operational requirements.

      (d) Press the ENT button on the keypad.
      (e) Use the new access code to make sure the door will unlock.
      (f) Install the access cover on the chime module.

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TASK 52-51-00-902-003-004

3. Program Time Delays and DOOR BELL Enable

A. General
(1) Programming steps for the DENY and AUTO UNLOCK time delays are all the same.
(2) The green LED on the keypad will blink continuously while the system is in the program mode.
(3) The DOOR BELL ENABLE code will toggle the door bell enable.
(4) To program more than one time delay or door bell enable, the program mode must be re-entered each time.
(5) The keypad code to sound the door bell is 1, ENT.
(6) The access time delay is set to 60 seconds at the factory.
(7) The deny time delay set to 5 minutes at the factory.
(8) The door bell function is set to DISABLE at the factory.

B. Access
(1) Location Zones
211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

C. Procedure

S 852-004-004
(1) Do these steps to program the time delays and door bell enable:
(a) Remove the access cover from the chime module (Fig. 201).
(b) Press and release the TIMERS switch on the chime module.
(c) Enter the 3 digit time delay or doorbell enable code on the keypad (Table 201).

NOTE: The Access Time Delay must only be set to 30, 45, or 60 seconds. If the door bell mode is enabled then the Continuous Chime Time Delay must be set to 0 seconds (code 311).

(d) Press the ENT button on the keypad.
(e) Enter the 3 digit time delay or doorbell enable code a second time on the keypad (Table 201).
(f) Press the ENT button on the keypad.

NOTE: The green LED will come on for five seconds when the new code has been accepted by the chime module. The green LED will then go off and the red LED will come on. If the two codes that you entered do not match the chime module will exit the programming mode.

(g) Use the access code to unlock the door in the AUTO mode.
(h) Make sure the time delays for the CONTINUOUS CHIME, AUTO UNLOCK or DENY are correct.
(i) Enter 1 and ENT on the keypad to make sure the DOOR BELL ENABLE mode operates, if the DOOR BELL mode has been enabled.

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(j) Install the access cover on the chime module.

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TABLE 201 TIME DELAY AND DOOR BELL ENABLE CODES			
NOTE	CODE	TIME	NOMENCLATURE
*(1)	112	30 Seconds	Access Time Delay
*(2)	113	45 Seconds	Access Time Delay
*(2)	114	60 Seconds	Access Time Delay
	211	5 Minutes	Deny Access Time Delay
	212	10 Minutes	Deny Access Time Delay
	213	15 Minutes	Deny Access Time Delay
	214	20 Minutes	Deny Access Time Delay
	215	25 Minutes	Deny Access Time Delay
	221	30 Minutes	Deny Access Time Delay
	311	0 Seconds	Continuous Chime Time Delay
	312	5 Seconds	Continuous Chime Time Delay
	313	10 Seconds	Continuous Chime Time Delay
	314	15 Seconds	Continuous Chime Time Delay
	315	20 Seconds	Continuous Chime Time Delay
*(2)	321	25 Seconds	Continuous Chime Time Delay
*(2)	322	30 Seconds	Continuous Chime Time Delay
*(2)	323	35 Seconds	Continuous Chime Time Delay
*(2)	324	40 Seconds	Continuous Chime Time Delay
*(2)	325	45 Seconds	Continuous Chime Time Delay
*(2)	331	50 Seconds	Continuous Chime Time Delay
*(3)	555	N/A	Toggles Door Bell Mode On or Off

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TABLE 201 TIME DELAY AND DOOR BELL ENABLE CODES

NOTE	CODE	TIME	NOMENCLATURE
*(1)			30-second Access Time Delay is required for airplanes that are registered in a JAA member country
*(2)			Not a valid code for ariplanes that are registered in a JAA member country
*(3)			If Door Bell Mode is enabled then the Continuous Chime Time Delay must be set to 0 second (Code 311)

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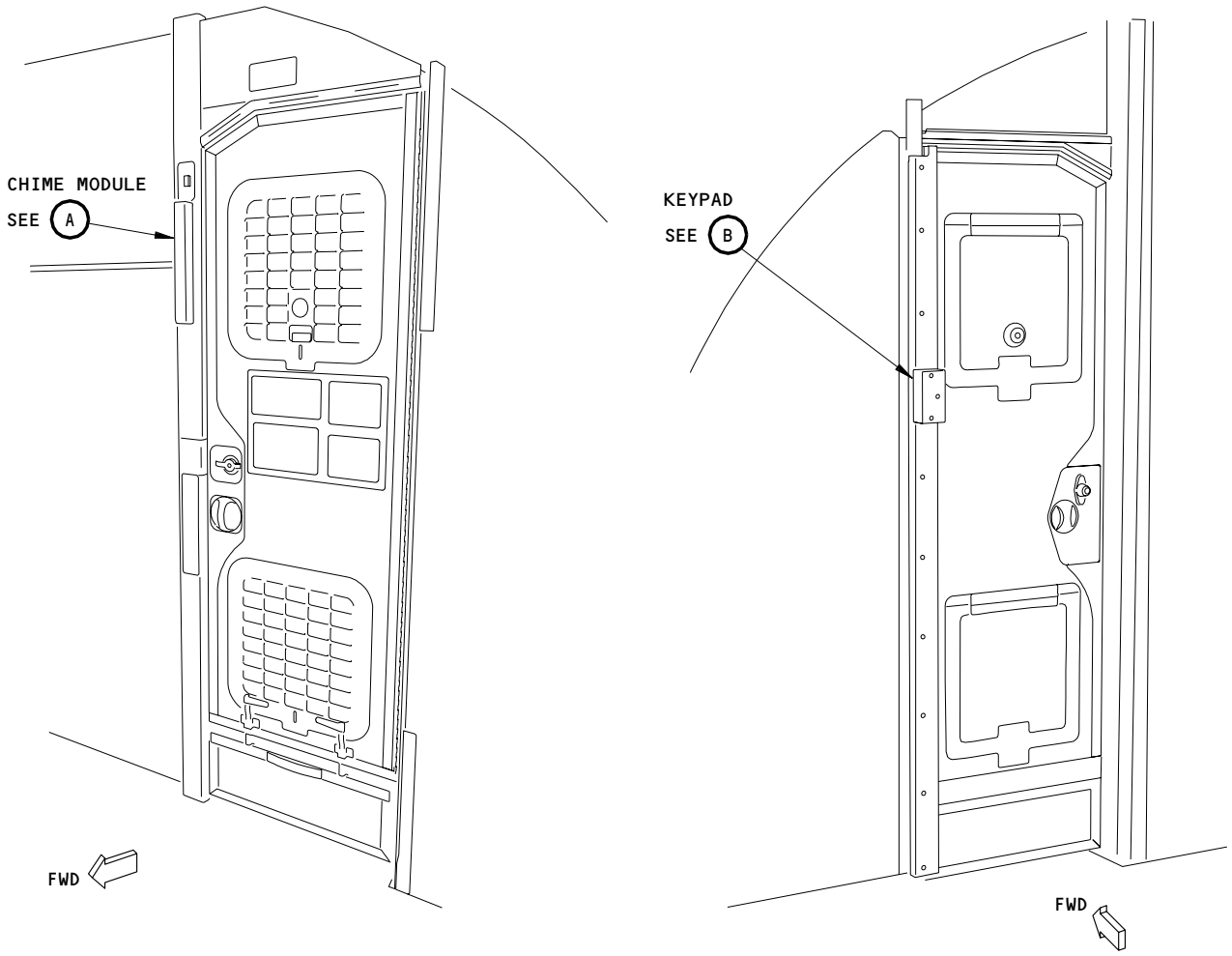

FLIGHT COMPARTMENT DOOR

Flight Compartment Door Maintenance Practices
Figure 201 (Sheet 1)

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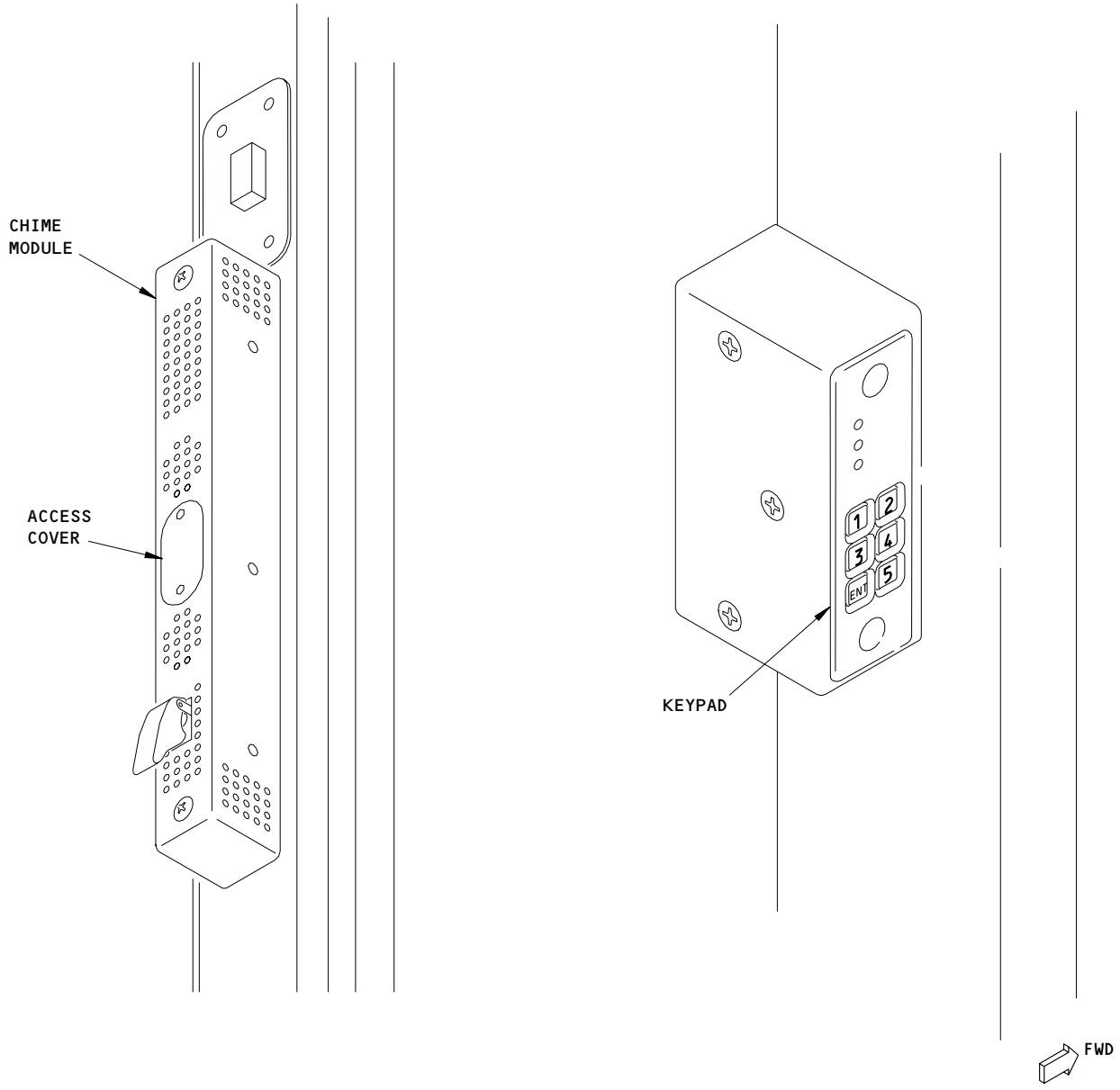

CHIME MODULE
A

KEYPAD
B

Flight Compartment Door Maintenance Practices
Figure 201 (Sheet 2)

EFFECTIVITY
SAS 150-153, 275; 154 POST-SB 25-332

383060

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FLIGHT COMPARTMENT DOOR - ADJUSTMENT/TEST

1. General
   A. This procedure has these tasks:
      (1) Flight Compartment Security Door Access System Test
      (2) Functional Check of the DENY Function of the Flight Compartment Security Access System (Scheduled Maintenance Task)
      (3) Pressure Sensor Decompression Operational Test
      (4) Operational Check of the Flight Compartment Access System

TASK 52-51-00-705-001-001

2. Flight Compartment Security Door Access System Test (Fig. 501)
   A. General
      (1) This task is performed with the door in the open position. With the door in the open position, one mechanic can turn the FLT DK DOOR rotary switch, enter kepad numbers and and see the position of the strike at the same time. This allows the test to be performed with one mechanic.
      (2) This task does a test of the following functions of the flight compartment security door access system:
         (a) AUTO Mode
         (b) UNLOCK Mode
         (c) DENY Mode
         (d) Power on Solenoid Deactivation
         (e) Doorbell Function
   B. References
      (1) AMM 24-22-00/201, Electrical Power - Control
      (2) AMM 52-51-00/201, Flight Compartment Door Maintenance Practices
   C. Access
      (1) Location Zones
         211 Control cabin - Section 41 (Left)
         221 Passenger cabin - Section 41 (Left)

   D. Prepare for the Test

      S 755-002-001
      (1) Obtain the following information:

         NOTE: These items are programable. You need to obtain the access code and times currently in use by the flight crew.

         (a) Access Code
         (b) Access Time Delay
         (c) Deny Time Delay
         (d) Time of Continuous Chime

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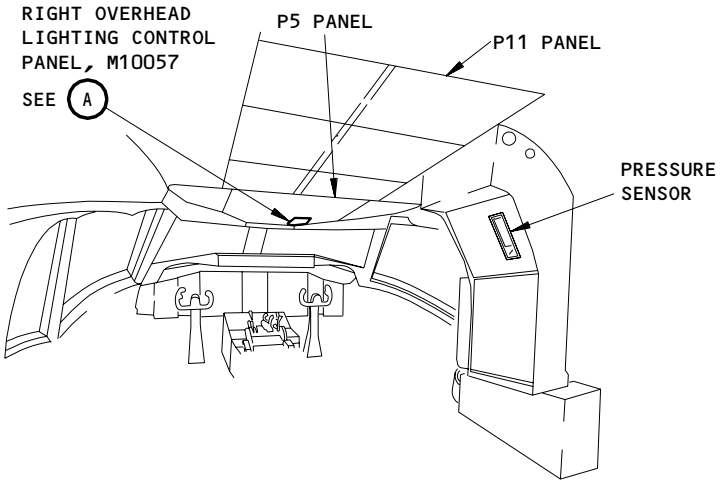
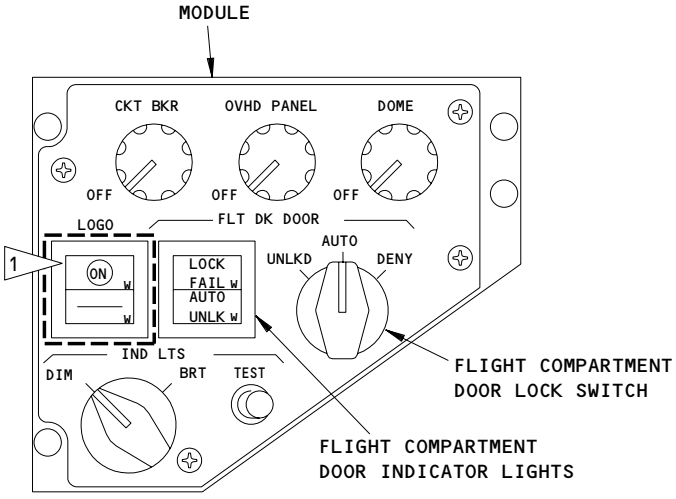


FLIGHT COMPARTMENT



RIGHT OVERHEAD LIGHTING
CONTROL PANEL, M10057

A

1 NOT INSTALLED ON ALL AIRPLANES

Flight Compartment Door Adjustment/Test
Figure 501 (Sheet 1)

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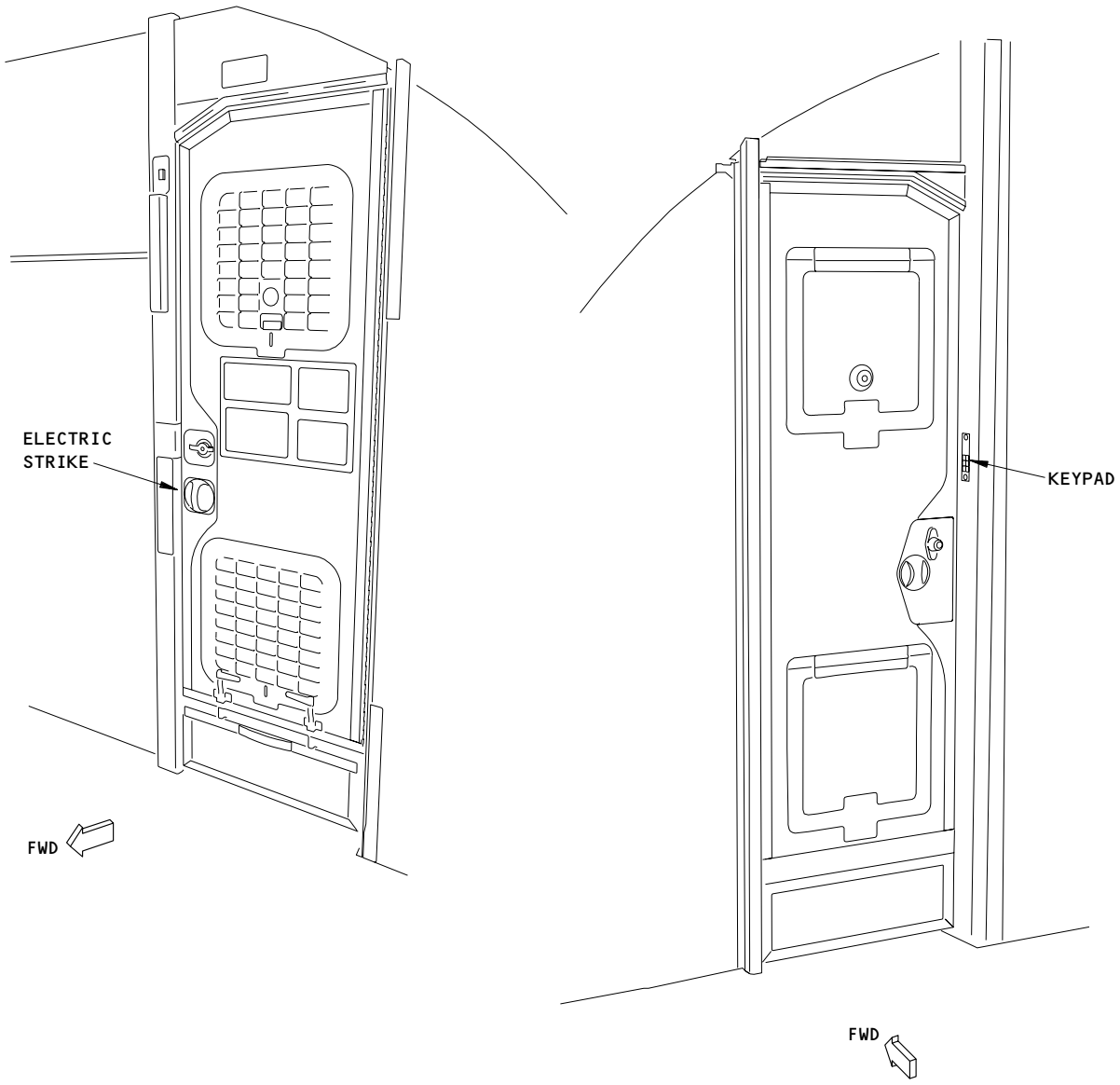

FLIGHT COMPARTMENT DOOR

Flight Compartment Door Adjustment/Test
Figure 501 (Sheet 2)

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S 865-003-001
(2) Supply electrical power (AMM 24-22-00/201).

S 865-005-001
(3) Make sure the Flight Deck Access System switch on the Chime Module is in the NORM position (guard closed).

S 865-006-001
(4) Make sure the flight compartment door is open.

E. AUTO Mode Test

S 715-007-001
(1) Do these steps to make sure the AUTO Mode operates:
(a) Make sure the FLT DK DOOR rotary switch on the M10057 Lighting Control Module is in the AUTO position.
(b) Make sure the red LED on the keypad is on.
(c) Make sure the electric strike is in the locked position.

NOTE: The Solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

(d) Enter the access code in the keypad and press the ENT key.

NOTE: You must keep track of the time elapsed from when you press the ENT key.

(e) Do these steps immediately after the correct access code is entered:
1) Make sure that the amber LED on the keypad comes on and the red LED goes off.
2) Make sure that the chime module sounds a half second tone two times.

NOTE: If the Continuous Chime Time Delay is set to 0 (zero) seconds (Code 311), then a continuous chime will occur and not the half second tones.

3) Make sure the AUTO UNLK light comes on.

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(f) Do this step when one third of the Access Time Delay has elapsed:

NOTE: If the Time of Continuous Chime is programmed to occur at one third or less of the Access Time Delay, then the two half second tones in the step below will not sound.

1) Make sure the chime sounds two half second tones again.

(g) Do these steps when the Time of Continuous Chime has elapsed:

NOTE: If the Time of Continuous Chime is set to occur 5 seconds or less before the Access Time Delay, the Time of Continuous Chime will occur 10 seconds before the Access Time Delay.

1) Make sure the AUTO UNLK light flashes.
2) Make sure the chime module sounds continuously.

(h) Do these steps when the Access Time Delay has expired:
1) Make sure the electric strike is in the unlocked position.

NOTE: The Solenoid pin in the electric strike will retract down such that you can rotate the strike.

2) Make sure the green LED on the keypad comes on and the amber LED goes off.
3) Make sure the chime module does not sound.
4) Make sure the AUTO UNLK light goes off.

(i) Do these steps five seconds after the electric strike goes to the unlocked position:
1) Make sure the electric strike is in the locked position.
2) Make sure the green LED goes off and the red LED comes on.

F. UNLOCK Mode Test

S 715-008-001

(1) Do these steps to make sure the UNLOCK Mode operates:
(a) Make sure the FLT DK DOOR rotary switch on the M10057 Lighting Control Module is in the AUTO position.
(b) Make sure the red LED on the keypad is on.
(c) Make sure the electric strike is in the locked position.

NOTE: The Solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

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(d) Put and hold the FLT DK DOOR switch to the UNLKD position.
1) Make sure that the green LED on the keypad comes on and the red LED goes off.
2) Make sure the electric strike is in the unlocked position.

NOTE: The Solenoid pin in the electric strike will retract down such that you can rotate the strike.

(e) Put the FLT DK DOOR switch back to the AUTO position.

G. DENY Mode Test

S 715-009-001

(1) Do these steps to make sure the DENY Mode operates:
(a) Make sure the red LED on the keypad is on.
(b) Make sure the electric strike is in the locked position.

NOTE: The Solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

(c) Enter the access code in the keypad and press the ENT key.
1) Make sure that the amber LED on the keypad comes on and the red LED goes off.
2) Make sure that the chime module sounds a half second tone two times.

NOTE: If the Continuous Chime Time Delay is set to 0 (zero) seconds (Code 311), then a continuous chime will occur and not the half second tones.

3) Make sure the AUTO UNLK light on the lighting control panel comes on.
(d) Put and momentarily hold the FLT DK DOOR switch in the DENY position.

NOTE: You must keep track of the time elapsed from when you put the switch in the DENY position.

1) Make sure the electric strike is in the locked position.

NOTE: The Solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

2) Make sure that the amber LED on the keypad goes off and the red LED comes on.
3) Make sure the AUTO UNLK light on the lighting control panel goes off.
(e) Do these steps before the DENY Time Delay has expired:
1) Enter the access code in the keypad and press the ENT key.
a) Make sure that the red LED on the keypad stays on.
b) Make sure the chime module does not sound.

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c) Make sure the AUTO UNLK light on the lighting control panel stays off.

(f) Do these steps after the Deny Time Delay has expired:

1) Enter the access code on the keypad and press the ENT key.

a) Make sure that the amber LED on the keypad comes on and the red LED goes off.

b) Make sure that the chime module sounds a half second tone two times.

NOTE: If the Continuous Chime Time Delay is set to 0 (zero) seconds (Code 311), then a continuous chime will occur and not the half second tones.

c) Make sure the AUTO UNLK light on the lighting control panel comes on.

(g) Put and hold the FLT DK DOOR switch to the UNLKD position.

1) Make sure that the green LED on the keypad comes on and the red LED goes off.

2) Make sure the electric strike is in the unlocked position.

NOTE: The Solenoid pin in the electric strike will retract down such that you can rotate the strike.

(h) Put the FLT DK DOOR switch back to the AUTO position.

1) Make sure the red LED on the keypad comes on and the green LED goes off.

2) Make sure the electric strike is in the locked position.

NOTE: The solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

H. Power On Solenoid Deactivation Test

S 715-010-001

(1) Do these steps to make sure the Flight Deck Access System switch operates:

(a) Open the switch guard on the bottom of the chime module and put the toggle switch to the OFF position.

(b) Make sure the electric strike is in the unlocked position.

NOTE: The Solenoid pin in the electric strike will retract down such that you can rotate the strike.

(c) Make sure the LOCK FAIL light on the lighting control module comes ON.

(d) Put the toggle switch back to the NORM position and close the guard.

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(e) Make sure the electric strike is in the locked position.

NOTE: The Solenoid pin in the electric strike will extend such that you can not rotate the strike.

(f) Make sure the LOCK FAIL light goes off.

I. Doorbell Function Test

S 715-011-001

(1) Do these steps to make sure the Doorbell Function operates:

NOTE: The Doorbell function must be enabled.

(a) Enter 1 in the keypad and then ENT.
(b) Make sure that the chime module sounds a 2 cycle tone.
(c) Make sure the red LED stays on.

TASK 52-51-00-705-012-001

3. Functional Check of the DENY Function of the Flight Deck Access System

A. General

(1) This task is for scheduled maintenance.
(2) This task does a test of the Deny function of the flight compartment security door access system.

B. References

(1) AMM 24-22-00/201, Electrical Power - Control
(2) AMM 52-51-00/201, Flight Compartment Door Maintenance Practices

C. Access

(1) Location Zones
211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

D. Procedure

S 755-013-001

(1) Obtain the following information:

NOTE: These items are programable. You need to obtain the access code and times currently in use by the flight crew.

(a) Access Code
(b) Deny Time Delay

S 865-014-001

(2) Supply electrical power (AMM 24-22-00/201).

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S 865-016-001

(3) Make sure the Flight Deck Access System switch on the Chime Module is in the NORM position (guard closed).

S 865-017-001

(4) Make sure the flight compartment door is open.

E. DENY Mode Test

S 715-018-001

(1) Do these steps to make sure the DENY Mode operates:

(a) Make sure the red LED on the keypad is on.

(b) Make sure the electric strike is in the locked position.

NOTE: The Solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

(c) Enter the access code in the keypad and press the ENT key.

1) Make sure that the amber LED on the keypad comes on and the red LED goes off.

2) Make sure that the chime module sounds a half second tone two times.

NOTE: If the Continuous Chime Time Delay is set to 0 (zero) seconds (Code 311), then a continuous chime will occur and not the half second tones.

3) Make sure the AUTO UNLK light on the lighting control panel comes on.

(d) Put and momentarily hold the FLT DK DOOR switch in the DENY position.

NOTE: You must keep track of the time elapsed from when you put the switch in the DENY position.

1) Make sure the electric strike is in the locked position.

NOTE: The Solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

2) Make sure that the amber LED on the keypad goes off and the red LED comes on.

3) Make sure the AUTO UNLK light on the lighting control panel goes off.

4) Make sure the chime module does not sound.

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(e) Do these steps before the DENY Time Delay has expired:
1) Enter the access code in the keypad and press the ENT key.
a) Make sure that the red LED on the keypad stays on.
b) Make sure the chime module does not sound.
c) Make sure the AUTO UNLK light on the lighting control panel stays off.

(f) Do these steps once the Deny Time Delay has expired:
1) Enter the access code on the keypad and press the ENT key.
a) Make sure that the amber LED on the keypad comes on and the red LED goes off.
b) Make sure that the chime module sounds a half second tone two times.

NOTE: If the Continuous Chime Time Delay is set to 0 (zero) seconds (Code 311), then a continuous chime will occur and not the half second tones.

c) Make sure the AUTO UNLK light on the lighting control panel comes on.

(g) Put and hold the FLT DK DOOR switch to the UNLKD position.
1) Make sure that the green LED on the keypad comes on and the red LED goes off.
2) Make sure the electric strike is in the unlocked position.

NOTE: The Solenoid pin in the electric strike will retract down such that you can rotate the strike.

(h) Put the FLT DK DOOR switch back to the AUTO position.
1) Make sure the red LED on the keypad comes on and the green LED goes off.
2) Make sure the electric strike is in the locked position.

NOTE: The solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

F. Put the Airplane Back to its Usual Condition

S 865-019-001
(1) Remove the electrical power if it is not necessary (AMM 24-22-00/201).

TASK 52-51-00-715-020-001

4. Pressure Sensor Decompression Operational Test

A. Special Tools and Equipment

(1) 37N00001-3, Decompression Simulator (1HEC6)
Northwest Aerospace Technologies, Inc.
2210 Hewitt Aveenue, Suite 300
Everett, WA 98201
(425) 257-2044

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B. General
   (1) This task does a test of the Pressure Sensor to determine proper operation during a decompression event.
   (2) The pressure sensor has two decompression ports. You need to perform this test on the two ports.
   (3) You will need two people to perform this test.

C. References
   (1) AMM 24-22-00/201, Electrical Power - Control

D. Access
   (1) Location Zones
       211 Control cabin - Section 41 (Left)
       221 Passenger cabin - Section 41 (Left)

E. Prepare for the Test

   S 865-021-001
   (1) Supply electrical power (AMM 24-22-00/201).

   S 865-023-001
   (2) Make sure the Flight Deck Access System switch on the Chime Module is in the NORM position (guard closed).

   S 865-024-001
   (3) Make sure the FLT DK DOOR switch is in the AUTO position.

   S 865-025-001
   (4) Make sure the flight deck door is closed and locked.

   NOTE: Do not lock the deadbolt lock or this test will not work.

F. Procedure

   S 865-026-001

   CAUTION: MAKE SURE YOU PUSH THE END TAB DOWN ON THE DECOMPRESSION SIMULATOR BEFORE YOU INSERT IT INTO ONE OF THE DECOMPRESSION PORTS ON THE PRESSURE SENSOR. IF YOU DO NOT PUSH THE END TAB DOWN BEFORE YOU INSERT IT INTO THE DECOMPRESSION PORTS, DAMAGE TO THE PRESSURE SENSOR CAN OCCUR.

   (1) Push the end tab down on the decompression simulator to prepare the simulator for the test.

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S 865-027-001
(2) Put the tube of the decompression simulator into one of the two decompression ports on the pressure sensor.

S 865-028-001
(3) Make sure a second person stands on the passenger compartment side of the flight compartment door and applies pressure on the door.

S 715-029-001
(4) With the second person applying presure on the door, push the trigger on the decompression simulator.

S 715-030-001
(5) Make sure the door unlocks and the door opens.

S 715-031-001
(6) Repeat this test for the other decompresson port on the pressure sensor.

G. Put the Airplane Back to its Usual Condition

S 865-032-001
(1) Remove the electrical power if it is not necessary (AMM 24-22-00/201).

TASK 52-51-00-715-033-001

5. Operational Check of the Flight Compartment Access System

A. General
(1) This task does a test of the chime module to make sure you can hear the chime and that the other parts of the access system operate.

B. References
(1) AMM 24-22-00/201, Electrical Power - Control

C. Access
(1) Location Zones
211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

D. Prepare for the Test

S 865-034-001
(1) Obtain the access code for the flight deck door.

S 865-035-001
(2) Supply electrical power (AMM 24-22-00/201).

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S 865-037-001

(3) Make sure the Flight Deck Access System switch on the Chime Module is in the NORM position (guard closed).

S 865-038-001

(4) Make sure the flight compartment door is open.

E. Procedure

S 715-039-001

(1) Do these steps to make sure flight compartment access system operates:
   (a) Make sure the FLT DK DOOR switch is in the AUTO position.
   (b) Enter the access code in the keypad and press the ENT key.
   (c) Make sure the chime module sounds.
   (d) Make sure the AUTO UNLK light comes on.
   (e) Put the FLT DK DOOR switch to the DENY position.
   (f) Make sure the AUTO UNLK light goes off.
   (g) Put the FLT DK DOOR switch to the UNLKD position and hold.
   (h) Put the Flight Deck Access System switch on the chime module to the OFF position.
   (i) Release the Flight Deck Access System switch to the AUTO position.
   (j) Make sure the LOCK FAIL Light comes on.
   (k) Put the Flight Deck Access System switch to the NORM position.

F. Put the Airplane Back to its Usual Condition

S 865-040-001

(1) Remove the electrical power if it is not necessary (AMM 24-22-00/201).

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FLIGHT COMPARTMENT DOOR - ADJUSTMENT/TEST

1. General
   A. This procedure has these tasks:
      (1) Flight Compartment Security Door Access System Test
      (2) Functional Check of the DENY Function of the Flight Compartment Security Access System (Scheduled Maintenance Task)
      (3) Pressure Sensor Decompression Operational Test
      (4) Daily Check of the Flight Compartment Access System.

TASK 52-51-00-705-001-003

2. Flight Compartment Security Door Access System Test (Fig. 501)
   A. General
      (1) This task is performed with the door in the open position. With the door in the open position, one mechanic can turn the FLT DK DOOR rotary switch, enter kepad numbers and and see the position of the strike at the same time. This allows the test to be performed with one mechanic.
      (2) This task does a test of the following functions of the flight compartment security door access system:
         (a) AUTO Mode
         (b) UNLOCK Mode
         (c) DENY Mode
         (d) Power on Solenoid Deactivation
         (e) Doorbell Function
   B. References
      (1) AMM 24-22-00/201, Electrical Power - Control
      (2) AMM 52-51-00/201, Flight Compartment Door Maintenance Practices
   C. Access
      (1) Location Zones
         211 Control cabin - Section 41 (Left)
         221 Passenger cabin - Section 41 (Left)

   D. Prepare for the Test

      S 755-002-003
      (1) Obtain the following information:

      NOTE: These items are programable. You need to obtain the access code and times currently in use by the flight crew.

         (a) Access Code
         (b) Access Time Delay
         (c) Deny Time Delay
         (d) Time of Continuous Chime

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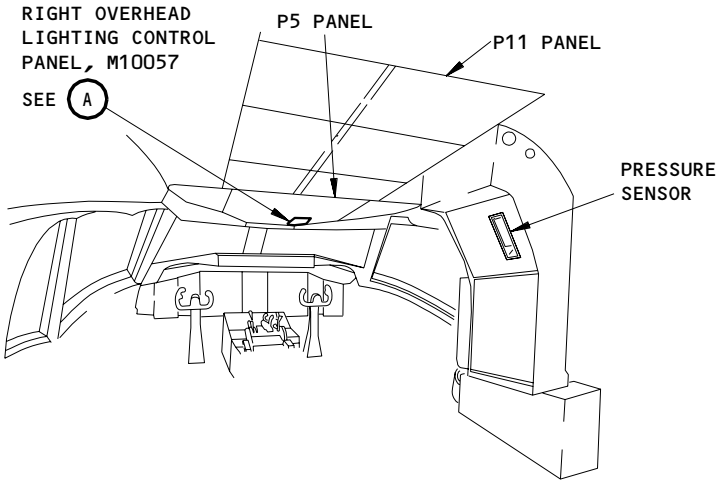
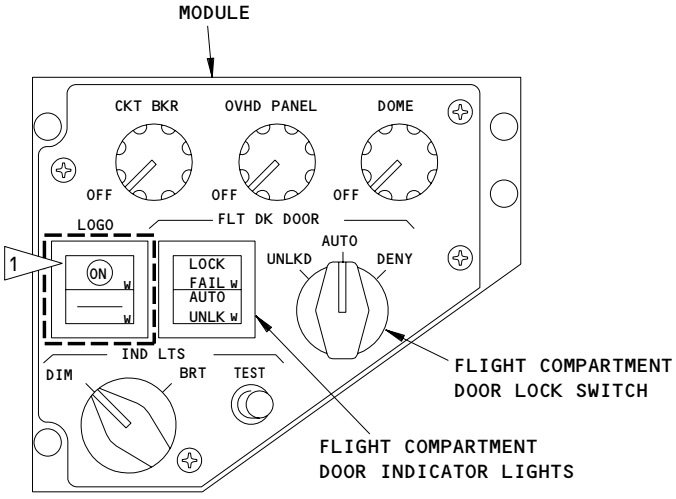


FLIGHT COMPARTMENT



RIGHT OVERHEAD LIGHTING
CONTROL PANEL, M10057

A

1 NOT INSTALLED ON ALL AIRPLANES

Flight Compartment Door Adjustment/Test
Figure 501 (Sheet 1)

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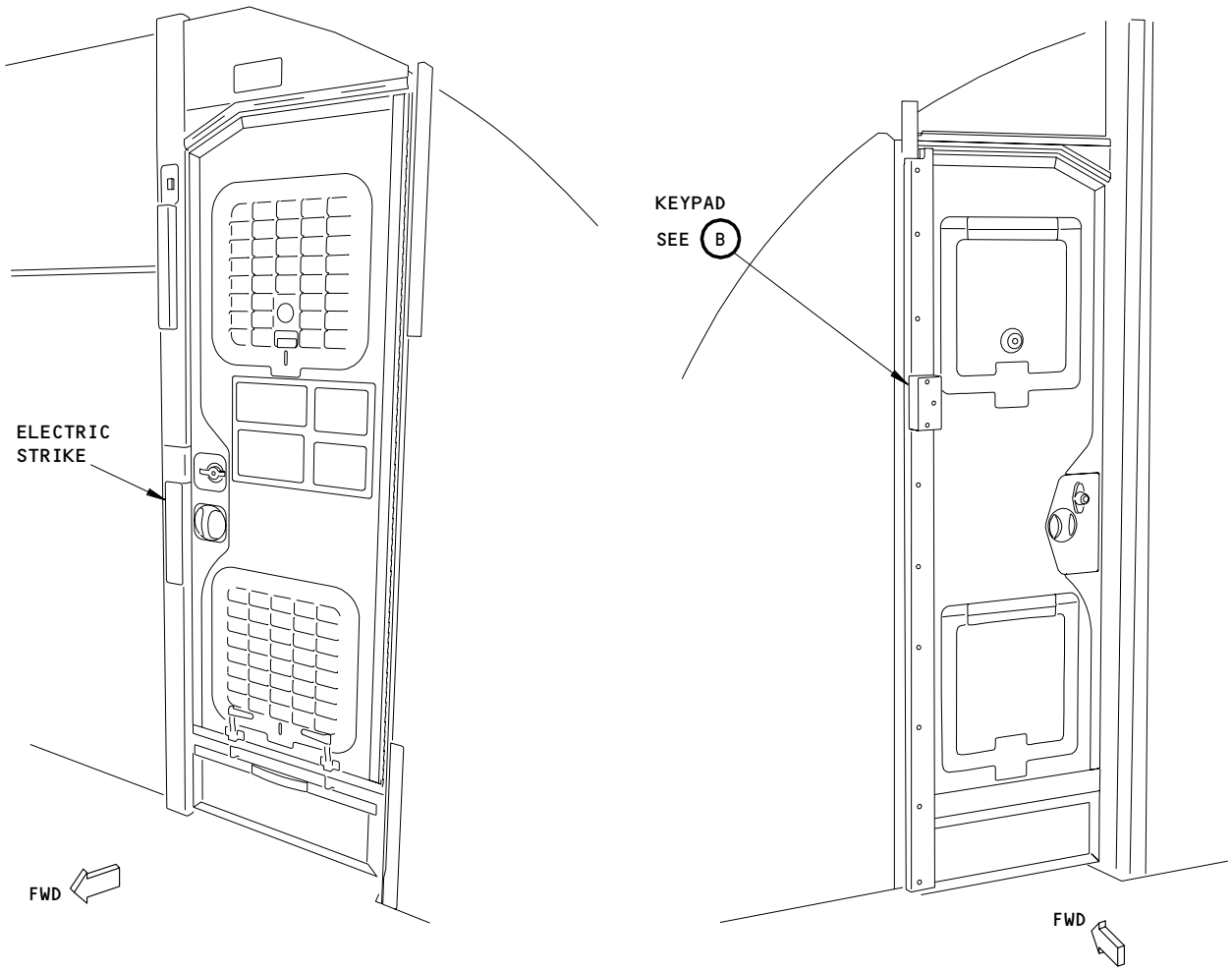

FLIGHT COMPARTMENT DOOR

Flight Compartment Door Adjustment/Test
Figure 501 (Sheet 2)

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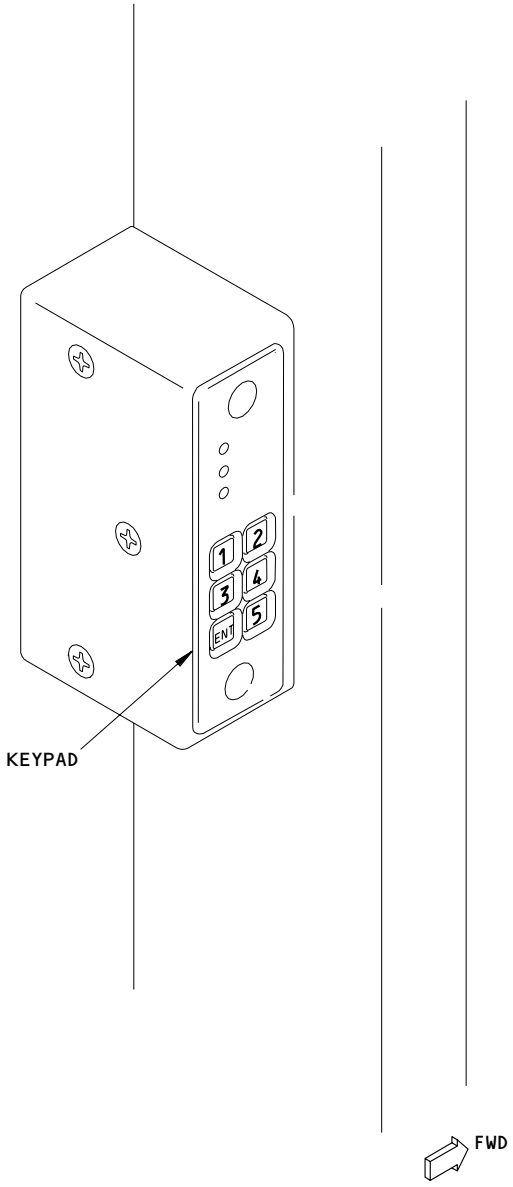

KEYPAD
B

Flight Compartment Door Adjustment/Test
Figure 501 (Sheet 3)

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S 865-003-003
(2) Supply electrical power (AMM 24-22-00/201).

S 865-005-003
(3) Make sure the Flight Deck Access System switch on the Chime Module is in the NORM position (guard closed).

S 865-006-003
(4) Make sure the flight compartment door is open.

E. AUTO Mode Test

S 715-007-003
(1) Do these steps to make sure the AUTO Mode operates:
(a) Make sure the FLT DK DOOR rotary switch on the M10057 Lighting Control Module is in the AUTO position.
(b) Make sure the red LED on the keypad is on.
(c) Make sure the electric strike is in the locked position.

NOTE: The Solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

(d) Enter the access code in the keypad and press the ENT key.

NOTE: You must keep track of the time elapsed from when you press the ENT key.

(e) Do these steps immediately after the correct access code is entered:
1) Make sure that the amber LED on the keypad comes on and the red LED goes off.
2) Make sure that the chime module sounds a half second tone two times.

NOTE: If the Continuous Chime Time Delay is set to 0 (zero) seconds (Code 311), then a continuous chime will occur and not the half second tones.

3) Make sure the AUTO UNLK light comes on.

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(f) Do this step when one third of the Access Time Delay has elapsed:

NOTE: If the Time of Continuous Chime is programmed to occur at one third or less of the Access Time Delay, then the two half second tones in the step below will not sound.

1) Make sure the chime sounds two half second tones again.

(g) Do these steps when the Time of Continuous Chime has elapsed:

NOTE: If the Time of Continuous Chime is set to occur 5 seconds or less before the Access Time Delay, the Time of Continuous Chime will occur 10 seconds before the Access Time Delay.

1) Make sure the AUTO UNLK light flashes.
2) Make sure the chime module sounds continuously.

(h) Do these steps when the Access Time Delay has expired:
1) Make sure the electric strike is in the unlocked position.

NOTE: The Solenoid pin in the electric strike will retract down such that you can rotate the strike.

2) Make sure the green LED on the keypad comes on and the amber LED goes off.
3) Make sure the chime module does not sound.
4) Make sure the AUTO UNLK light goes off.

(i) Do these steps five seconds after the electric strike goes to the unlocked position:
1) Make sure the electric strike is in the locked position.
2) Make sure the green LED goes off and the red LED comes on.

F. UNLOCK Mode Test

S 715-008-003

(1) Do these steps to make sure the UNLOCK Mode operates:
(a) Make sure the FLT DK DOOR rotary switch on the M10057 Lighting Control Module is in the AUTO position.
(b) Make sure the red LED on the keypad is on.
(c) Make sure the electric strike is in the locked position.

NOTE: The Solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

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(d) Put and hold the FLT DK DOOR switch to the UNLKD position.
1) Make sure that the green LED on the keypad comes on and the red LED goes off.
2) Make sure the electric strike is in the unlocked position.

NOTE: The Solenoid pin in the electric strike will retract down such that you can rotate the strike.

(e) Put the FLT DK DOOR switch back to the AUTO position.

G. DENY Mode Test

S 715-009-003

(1) Do these steps to make sure the DENY Mode operates:
(a) Make sure the red LED on the keypad is on.
(b) Make sure the electric strike is in the locked position.

NOTE: The Solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

(c) Enter the access code in the keypad and press the ENT key.
1) Make sure that the amber LED on the keypad comes on and the red LED goes off.
2) Make sure that the chime module sounds a half second tone two times.

NOTE: If the Continuous Chime Time Delay is set to 0 (zero) seconds (Code 311), then a continuous chime will occur and not the half second tones.

3) Make sure the AUTO UNLK light on the lighting control panel comes on.
(d) Put and momentarily hold the FLT DK DOOR switch in the DENY position.

NOTE: You must keep track of the time elapsed from when you put the switch in the DENY position.

1) Make sure the electric strike is in the locked position.

NOTE: The Solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

2) Make sure that the amber LED on the keypad goes off and the red LED comes on.
3) Make sure the AUTO UNLK light on the lighting control panel goes off.
(e) Do these steps before the DENY Time Delay has expired:
1) Enter the access code in the keypad and press the ENT key.
a) Make sure that the red LED on the keypad stays on.
b) Make sure the chime module does not sound.

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c) Make sure the AUTO UNLK light on the lighting control panel stays off.

(f) Do these steps after the Deny Time Delay has expired:

1) Enter the access code on the keypad and press the ENT key.

a) Make sure that the amber LED on the keypad comes on and the red LED goes off.

b) Make sure that the chime module sounds a half second tone two times.

NOTE: If the Continuous Chime Time Delay is set to 0 (zero) seconds (Code 311), then a continuous chime will occur and not the half second tones.

c) Make sure the AUTO UNLK light on the lighting control panel comes on.

(g) Put and hold the FLT DK DOOR switch to the UNLKD position.

1) Make sure that the green LED on the keypad comes on and the red LED goes off.

2) Make sure the electric strike is in the unlocked position.

NOTE: The Solenoid pin in the electric strike will retract down such that you can rotate the strike.

(h) Put the FLT DK DOOR switch back to the AUTO position.

1) Make sure the red LED on the keypad comes on and the green LED goes off.

2) Make sure the electric strike is in the locked position.

NOTE: The solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

H. Power On Solenoid Deactivation Test

S 715-010-003

(1) Do these steps to make sure the Flight Deck Access System switch operates:

(a) Open the switch guard on the bottom of the chime module and put the toggle switch to the OFF position.

(b) Make sure the electric strike is in the unlocked position.

NOTE: The Solenoid pin in the electric strike will retract down such that you can rotate the strike.

(c) Make sure the LOCK FAIL light on the lighting control module comes ON.

(d) Put the toggle switch back to the NORM position and close the guard.

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(e) Make sure the electric strike is in the locked position.

NOTE: The Solenoid pin in the electric strike will extend such that you can not rotate the strike.

(f) Make sure the LOCK FAIL light goes off.

I. Doorbell Function Test

S 715-011-003

(1) Do these steps to make sure the Doorbell Function operates:

NOTE: The Doorbell function must be enabled.

(a) Enter 1 in the keypad and then ENT.
(b) Make sure that the chime module sounds a 2 cycle tone.
(c) Make sure the red LED stays on.

TASK 52-51-00-705-012-003

3. Functional Check of the DENY Function of the Flight Deck Access System

A. General

(1) This task is for scheduled maintenance.
(2) This task does a test of the Deny function of the flight compartment security door access system.

B. References

(1) AMM 24-22-00/201, Electrical Power - Control
(2) AMM 52-51-00/201, Flight Compartment Door Maintenance Practices

C. Access

(1) Location Zones
211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

D. Procedure

S 755-013-003

(1) Obtain the following information:

NOTE: These items are programable. You need to obtain the access code and times currently in use by the flight crew.

(a) Access Code
(b) Deny Time Delay

S 865-014-003

(2) Supply electrical power (AMM 24-22-00/201).

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S 865-016-003

(3) Make sure the Flight Deck Access System switch on the Chime Module is in the NORM position (guard closed).

S 865-017-003

(4) Make sure the flight compartment door is open.

E. DENY Mode Test

S 715-018-003

(1) Do these steps to make sure the DENY Mode operates:

(a) Make sure the red LED on the keypad is on.

(b) Make sure the electric strike is in the locked position.

NOTE: The Solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

(c) Enter the access code in the keypad and press the ENT key.

1) Make sure that the amber LED on the keypad comes on and the red LED goes off.

2) Make sure that the chime module sounds a half second tone two times.

NOTE: If the Continuous Chime Time Delay is set to 0 (zero) seconds (Code 311), then a continuous chime will occur and not the half second tones.

3) Make sure the AUTO UNLK light on the lighting control panel comes on.

(d) Put and momentarily hold the FLT DK DOOR switch in the DENY position.

NOTE: You must keep track of the time elapsed from when you put the switch in the DENY position.

1) Make sure the electric strike is in the locked position.

NOTE: The Solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

2) Make sure that the amber LED on the keypad goes off and the red LED comes on.

3) Make sure the AUTO UNLK light on the lighting control panel goes off.

4) Make sure the chime module does not sound.

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(e) Do these steps before the DENY Time Delay has expired:
1) Enter the access code in the keypad and press the ENT key.
a) Make sure that the red LED on the keypad stays on.
b) Make sure the chime module does not sound.
c) Make sure the AUTO UNLK light on the lighting control panel stays off.

(f) Do these steps once the Deny Time Delay has expired:
1) Enter the access code on the keypad and press the ENT key.
a) Make sure that the amber LED on the keypad comes on and the red LED goes off.
b) Make sure that the chime module sounds a half second tone two times.

NOTE: If the Continuous Chime Time Delay is set to 0 (zero) seconds (Code 311), then a continuous chime will occur and not the half second tones.

c) Make sure the AUTO UNLK light on the lighting control panel comes on.

(g) Put and hold the FLT DK DOOR switch to the UNLKD position.
1) Make sure that the green LED on the keypad comes on and the red LED goes off.
2) Make sure the electric strike is in the unlocked position.

NOTE: The Solenoid pin in the electric strike will retract down such that you can rotate the strike.

(h) Put the FLT DK DOOR switch back to the AUTO position.
1) Make sure the red LED on the keypad comes on and the green LED goes off.
2) Make sure the electric strike is in the locked position.

NOTE: The solenoid pin in the electric strike will be extended up such that you can not rotate the strike.

F. Put the Airplane Back to its Usual Condition

S 865-019-003
(1) Remove the electrical power if it is not necessary (AMM 24-22-00/201).

TASK 52-51-00-715-020-003

4. Pressure Sensor Decompression Operational Test

A. Special Tools and Equipment
(1) 37N00001-3, Decompression Simulator (1HEC6)
Northwest Aerospace Technologies, Inc.
2210 Hewitt Aveenue, Suite 300
Everett, WA 98201
(425) 257-2044

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B. General
   (1) This task does a test of the Pressure Sensor to determine proper operation during a decompression event.
   (2) The pressure sensor has two decompression ports. You need to perform this test on the two ports.
   (3) You will need two people to perform this test.

C. References
   (1) AMM 24-22-00/201, Electrical Power - Control

D. Access
   (1) Location Zones
       211 Control cabin - Section 41 (Left)
       221 Passenger cabin - Section 41 (Left)

E. Prepare for the Test

   S 865-021-003
   (1) Supply electrical power (AMM 24-22-00/201).

   S 865-023-003
   (2) Make sure the Flight Deck Access System switch on the Chime Module is in the NORM position (guard closed).

   S 865-024-003
   (3) Make sure the FLT DK DOOR switch is in the AUTO position.

   S 865-025-003
   (4) Make sure the flight deck door is closed and locked.

   NOTE: Do not lock the deadbolt lock or this test will not work.

F. Procedure

   S 865-026-003

   CAUTION: MAKE SURE YOU PUSH THE END TAB DOWN ON THE DECOMPRESSION SIMULATOR BEFORE YOU INSERT IT INTO ONE OF THE DECOMPRESSION PORTS ON THE PRESSURE SENSOR. IF YOU DO NOT PUSH THE END TAB DOWN BEFORE YOU INSERT IT INTO THE DECOMPRESSION PORTS, DAMAGE TO THE PRESSURE SENSOR CAN OCCUR.

   (1) Push the end tab down on the decompression simulator to prepare the simulator for the test.

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S 865-027-003
(2) Put the tube of the decompression simulator into one of the two decompression ports on the pressure sensor.

S 865-028-003
(3) Make sure a second person stands on the passenger compartment side of the flight compartment door and applies pressure on the door.

S 715-029-003
(4) With the second person applying presure on the door, push the trigger on the decompression simulator.

S 715-030-003
(5) Make sure the door unlocks and the door opens.

S 715-031-003
(6) Repeat this test for the other decompresson port on the pressure sensor.

G. Put the Airplane Back to its Usual Condition

S 865-032-003
(1) Remove the electrical power if it is not necessary (AMM 24-22-00/201).

TASK 52-51-00-715-033-003

5. Operational Check of the Flight Compartment Access System

A. General
(1) This task does a test of the chime module to make sure you can hear the chime and that the other parts of the access system operate.

B. References
(1) AMM 24-22-00/201, Electrical Power - Control

C. Access
(1) Location Zones
211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

D. Prepare for the Test

S 865-034-003
(1) Obtain the access code for the flight deck door.

S 865-035-003
(2) Supply electrical power (AMM 24-22-00/201).

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S 865-037-003

(3) Make sure the Flight Deck Access System switch on the Chime Module is in the NORM position (guard closed).

S 865-038-003

(4) Make sure the flight compartment door is open.

E. Procedure

S 715-039-003

(1) Do these steps to make sure the flight compartment access system operates:
   (a) Make sure the FLT DK DOOR switch is in the AUTO position.
   (b) Enter the access code in the keypad and press the ENT key.
   (c) Make sure the chime module sounds.
   (d) Make sure the AUTO UNLK light comes on.
   (e) Put the FLT DK DOOR switch to the DENY position.
   (f) Make sure the AUTO UNLK light goes off.
   (g) Put the FLT DK DOOR switch to the UNLKD position and hold.
   (h) Put the Flight Deck Access System switch on the chime module to the OFF position.
   (i) Release the Flight Deck Access System switch to the AUTO position.
   (j) Make sure the LOCK FAIL Light comes on.
   (k) Put the Flight Deck Access System switch to the NORM position.

F. Put the Airplane Back to its Usual Condition

S 865-040-003

(1) Remove the electrical power if it is not necessary (AMM 24-22-00/201).

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FLIGHT COMPARTMENT DOOR LOCK - REMOVAL/INSTALLATION

1. General
   A. This procedure contains two tasks. The first task is the removal of the lock on the flight compartment door. The second task is the installation of the lock.

TASK 52-51-02-004-001-001

2. Remove the Lock
   A. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   B. Procedure

S 014-024-001
(1) Open the flight compartment door.

S 014-025-001
(2) Push the button (14), and turn the collar (15) until the access hole is above the screw (16).

S 014-026-001
(3) Remove the screw (16).

S 014-027-001
(4) Turn the collar (15) until the access hole is above the screw (18).

S 014-028-001
(5) Remove the screw (18).

S 014-029-001
(6) Pull the knob (17) and the collar (15) away from the lock assembly (10).

S 014-030-001
(7) Remove the collar (15) from the knob (17). When you remove the collar (15), hold the button (14). The button (14) has a spring behind it.

S 014-031-001
(8) Remove the screws (1), the escutcheon (13), and the bushing (12).

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S 014-032-001
(9) Remove the screw (11), and pull the handle (4) away from the lock assembly (10).

S 014-033-001
(10) Remove the trim nut (5) and the escutcheon (6).

S 014-034-001
(11) Remove the screws (2) and the bushing (7).

S 014-035-001
(12) Remove the screws (8), and pull the lock assembly (10) out of the door.

TASK 52-51-02-404-036-001

3. Install the Lock

A. Consumable Materials
(1) A00424 - Sealant, Thread Locking - Locktite 222

B. Access
(1) Location Zones
211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

C. Procedure

S 844-073-001
(1) Open the flight compartment door.

S 414-074-001
(2) Install the lock assembly (10) into the door, and install the screws (8). Make sure the beveled side of the bolt (9) is on the aft side of the door.

S 414-075-001
(3) Hold the bushing (7) on the forward side of the door, and install the screws (2).

S 414-076-001
(4) Hold the escutcheon (6) in position on the bushing (7), and install the trim nut (5).

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S 414-077-001
(5) Engage the lock shaft, which is on the handle (4), into the lock assembly (10) on the forward side of the door. Make sure the D-ring (3) is on the side of the door with the hinge. Also make sure the D-ring (3) is spring-loaded with the button against the door.

S 414-078-001
(6) Apply Locktite to the screw (11).

S 414-079-001
(7) Install the screw (11).

S 414-080-001
(8) Tighten the screw (11).

S 414-081-001
(9) Loosen the screw (11) until the handle (4) turns freely.

S 414-082-001
(10) Hold the bushing (12) and the escutcheon (13) on the aft side of the door, and install the screws (1).

S 414-083-001
(11) Install the spring for the button (14) into its hole. Push the button (14) and move the collar (15) on the knob (17) until the access hole is above the hole for the screw (16).

S 414-084-001
(12) Engage the lock shaft, which is on the knob (17), into the lock assembly (10) on the aft side of the door. Push the knob (17) and the collar (15) on the bushing (12) until the hole for the screw is above the hole in the bushing (12). Make sure the knob (17) is in the position to install the key with its teeth up.

S 414-085-001
(13) Install the screw (16).

S 414-086-001
(14) Turn the collar (15) until the access hole is above the hole for the screw (18), and install the screw (18).

S 414-087-001
(15) Turn the collar (15) until the button (14) engages the access hole.

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S 414-088-001
(16) Make sure the knob (17) does not turn.

S 414-089-001
(17) Turn the handle (4). Make sure the bolt (9) retracts into the lock assembly (10).

S 414-090-001
(18) Release the knob (17). Make sure the bolt (9) extends out of the lock assembly (10).

S 414-091-001
(19) Turn the key. Make sure the bolt (9) retracts into the lock assembly (10).

S 414-092-001
(20) Release the key. Make sure the bolt (9) extends out of the lock assembly (10).

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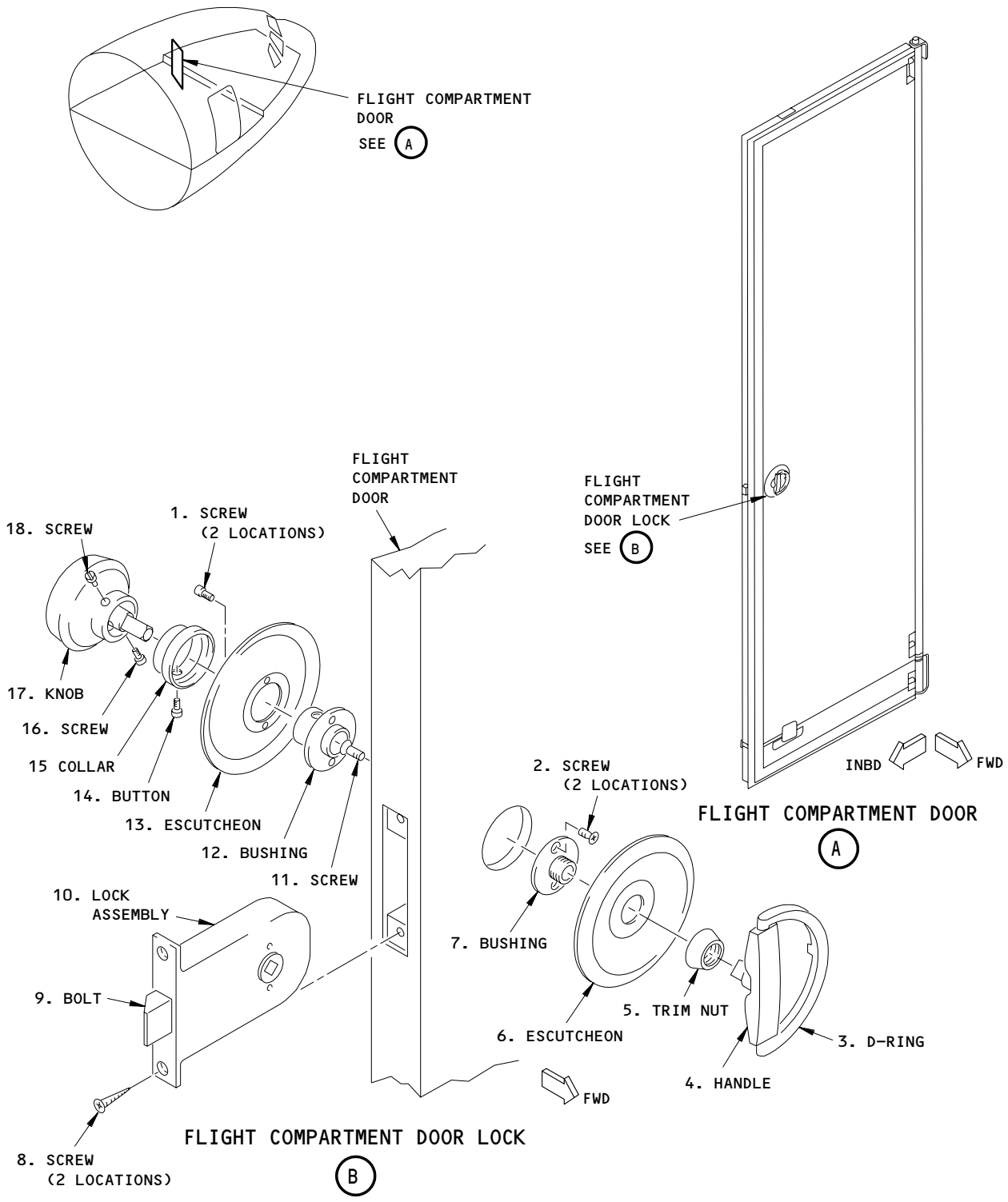

Flight Compartment Door Lock
Figure 401

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FLIGHT COMPARTMENT DOOR - REMOVAL/INSTALLATION

1. General
   A. This Procedure has these tasks:
      (1) A removal of the flight compartment door.
      (2) An installation of the flight compartment door.

   TASK 52-51-05-004-001-001
2. Flight Compartment Door Removal (Fig. 401)
   A. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   B. Flight Compartment Door Removal

      S 014-002-001
      (1) Open the flight compartment door.

      S 024-003-001
      (2) Remove the screws (3) that attach the hinge to the left hand door post.

      S 024-004-001
      (3) Remove the flight compartment door.

      S 024-005-001
      (4) Remove the bolts (1) and nuts (2) that attach the hinge (4) to the door.

      S 024-006-001
      (5) Remove the hinge (4).

   TASK 52-51-05-404-007-001
3. Flight Compartment Door Installation (Fig. 401)
   A. References
      (1) AMM 52-51-05/601, Flight Compartment Door
   B. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   C. Flight Compartment Door Installation

      S 424-008-001
      (1) Install the hinge (4) on the door with the bolts (1) and the nuts (2).

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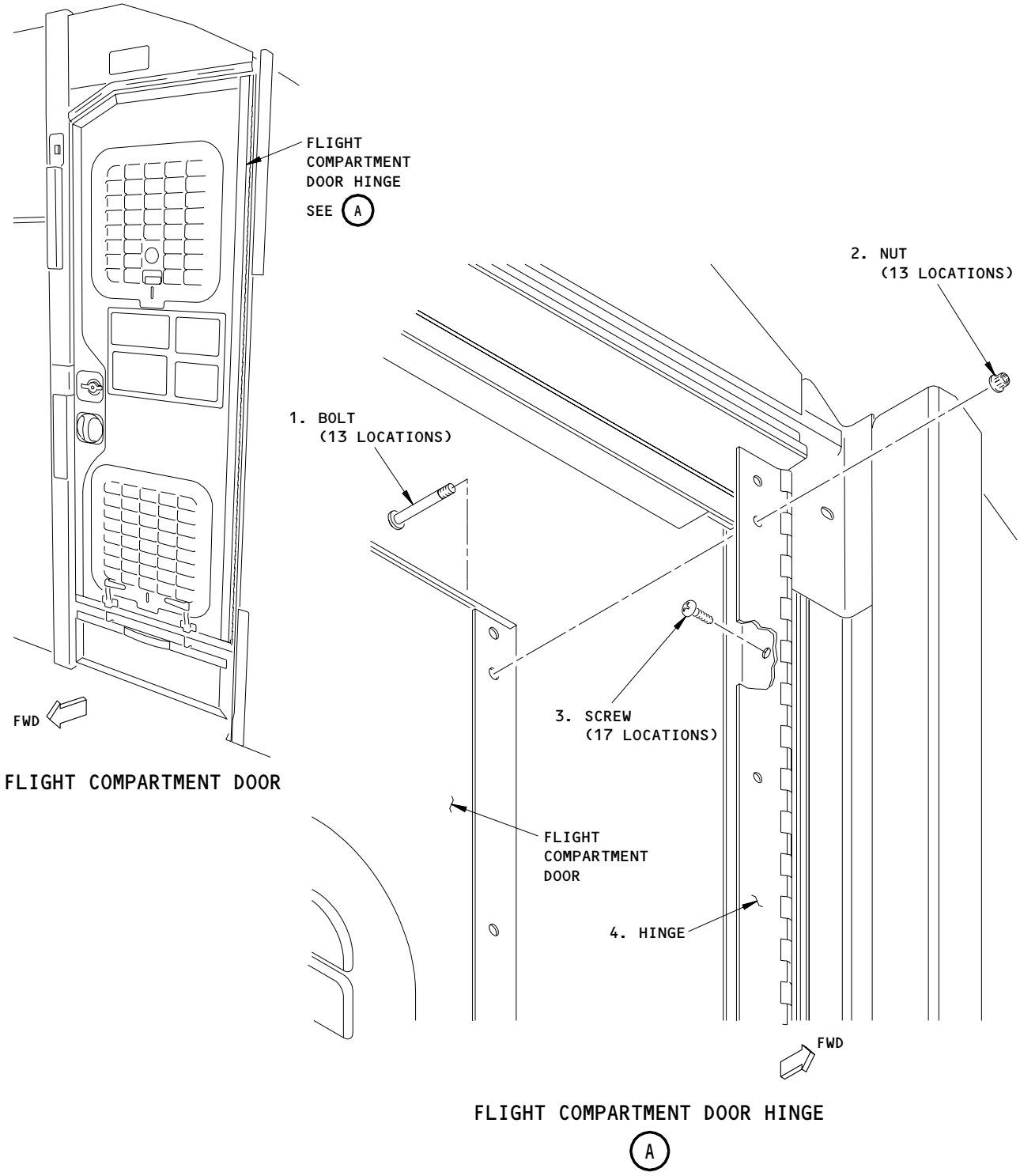

Flight Compartment Door Installation
Figure 401

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S 424-009-001
(2) Put the door in its position and install the screws (3).

S 724-010-001
(3) Do the Pre-Load Verification Test
(AMM 52-51-05/601, Flight Compartment Door - Inspection/Check).

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FLIGHT COMPARTMENT DOOR - INSPECTION/CHECK

1. General
   A. This procedure contains these tasks:
      (1) Breakaway Panel Release Pins Inspection
      (2) Flight Compartment Door Seal Check
      (3) Flight Compartment Door Breakaway Panel Seal Check
      (4) Flight Compartment Door Pre-Load Verification Test

TASK 52-51-05-216-001-001

2. Breakaway Panel Release Pins Inspection

   A. General
      (1) This procedure checks the condition and security of the flight compartment door breakaway panel release pins.
      (2) This procedure ensures the breakaway panel will aid in intrusion resistance to the flight compartment.
   B. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   C. Procedure

      S 216-002-001
      (1) Do these steps to check the release pins:
          (a) Remove the release pins from the breakaway panel (Fig. 601).
          (b) Inspect the release pins for these abnormal conditions:
              1) Cracks
              2) Notches
              3) Unusual wear
              4) Corrosion
              5) Deformation
          (c) Install the release pins in the breakaway panel (Fig. 601).

TASK 52-51-05-216-003-001

3. Flight Compartment Door Seal Check

   A. General
      (1) This procedure checks the condition and security of the flight compartment door seal.
      (2) This procedure ensures the flight compartment door seal will aid in the removal of smoke from the flight compartment.

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B. Access
(1) Location Zones
211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

C. Procedure

S 216-004-001
(1) Do these steps to check the door seal:
(a) Open the flight compartment door.
(b) Check the door seal on the top and sides of the door frame for these abnormal conditions:
1) Cracks
2) Notches
3) Unusual wear
4) Tears
5) Splits

TASK 52-51-05-216-005-001

4. Flight Compartment Door Breakaway Panel Seal Check

A. General
(1) This procedure checks the condition and security of the flight compartment door breakaway panel seal.
(2) This procedure ensures the flight compartment door breakaway panel seal will aid in the removal of smoke from the flight compartment.
B. Access
(1) Location Zones
211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

C. Procedure

S 216-006-001
(1) Do these steps to check the breakaway panel seal:
(a) Open the flight compartment door.
(b) Check the breakaway panel seal located on the bottom edge of the breakaway panel, for these abnormal conditions:
1) Improper installation
2) Notches
3) Unusual wear
4) Tears
5) Splits

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TASK 52-51-05-726-016-001

5. Flight Compartment Door Pre-Load Verification Test

A. General

(1) This procedure will make sure that the LOCK FAIL light will operate correctly.

B. References

(1) AMM 24-22-00/201, Electrical Power - Control

C. Access

(1) Location Zones

211 Control cabin - Section 41 (Left)

221 Passenger cabin - Section 41 (Left)

D. Procedure

S 736-007-001

(1) Supply electrical power (AMM 24-22-00/201).

S 726-017-001

(2) Move the power switch on the Chime Module to the OFF position. Remove power from the Strike Assembly.

S 716-018-001

(3) Make sure that the LOCK FAIL light comes on.

S 726-010-001

(4) Close the door.

S 726-019-001

(5) From the flight deck side, pull the door handle. Do not turn (the pin must stay fully extended) to the point that the strike latch arm has twisted and is about to release the latch.

S 726-020-001

(6) Release the door handle carefully. Be sure not to turn the handle while you release it (again, the pin must stay fully extended during this procedure).

S 726-021-001

(7) Move the power switch on the Chime Module to the ON position. Apply power again to the Strike Assembly.

S 716-022-001

(8) Make sure that the LOCK FAIL light is not on. If the LOCK FAIL light is on, the pressure on the door is more than the strike can override. This condition can cause the door strike to become too hot. Make sure that you complete all of the instructions to this point.

Tell BOEING if the LOCK FAIL light stays on.

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S 726-023-001

(9) Do this procedure three different times.

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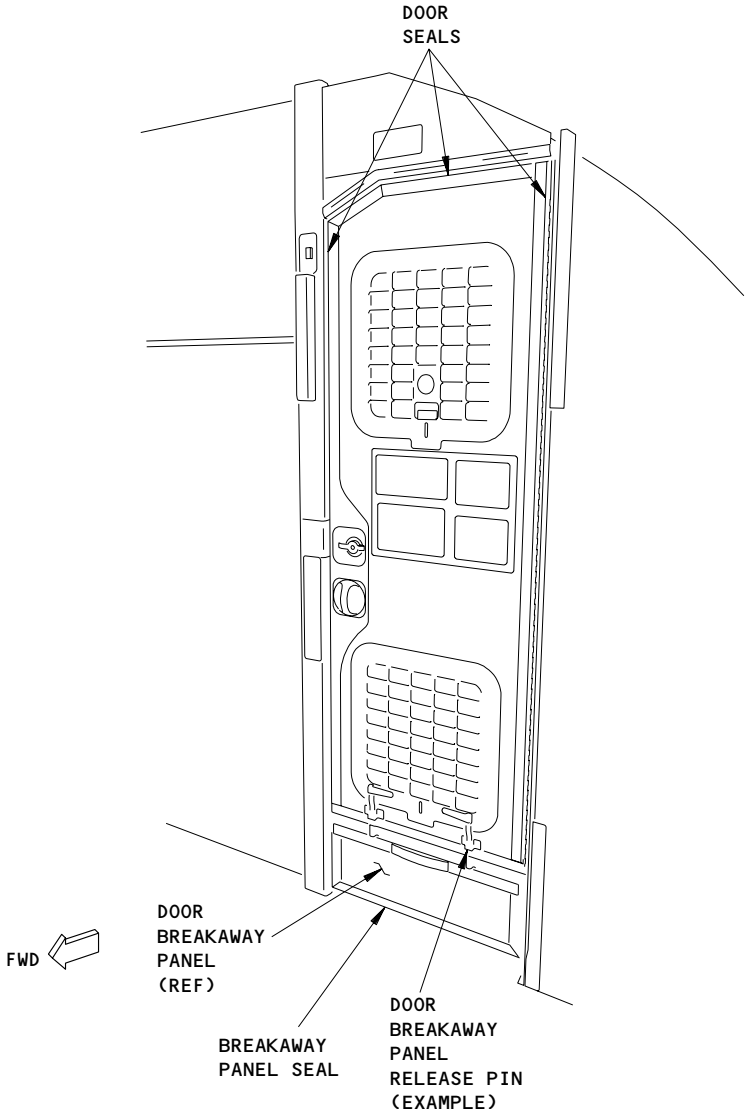

FLIGHT COMPARTMENT DOOR

Flight Compartment Door Inspection
Figure 601

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FLIGHT COMPARTMENT DOOR LOCK - REMOVAL/INSTALLATION

1. General
   A. This Procedure has these tasks:
      (1) A removal of the flight compartment door lock.
      (2) An installation of the flight compartment door lock.

   TASK 52-51-06-004-001-001

2. Flight Compartment Door lock Removal (Fig. 401)
   A. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   B. Flight Compartment Door Lock Removal

      S 024-002-001
      (1) Do these steps to remove the door knob assembly:
          (a) Remove the screw (1) that attaches the door knob (2) to the lock assembly (19).
          (b) Remove the door knob (2).
          (c) Remove the escutcheon (3).
          (d) Remove any remaining sealant from under the escutcheon (3).

      S 024-003-001
      (2) Do these steps to remove the deadbolt lock handle assembly:
          (a) Make sure the deadbolt lock is retracted.
          (b) Remove the screw (17) that attaches the lock handle (16) to the deadbolt assembly (9).
          (c) Remove the lockout handle (15).
          (d) Remove the two spring pins (14) which hold the cam (13) on the deadbolt assembly (9).
          (e) Remove the cam (13).
          (f) Remove the escutcheon (12).
          (g) Remove any remaining sealant from under the escutcheon (12).

      S 024-004-001
      (3) Do these steps to remove the lock escutcheon (18) from the door cover plate (20).
          (a) Remove the two screws (8) and two screws (22).
          (b) Remove the lock escutcheon (18).
          (c) Remove the plate (21).

      S 024-005-001
      (4) Do these steps to remove the door cover plate (20).
          (a) Remove the six screws (4) and (5).

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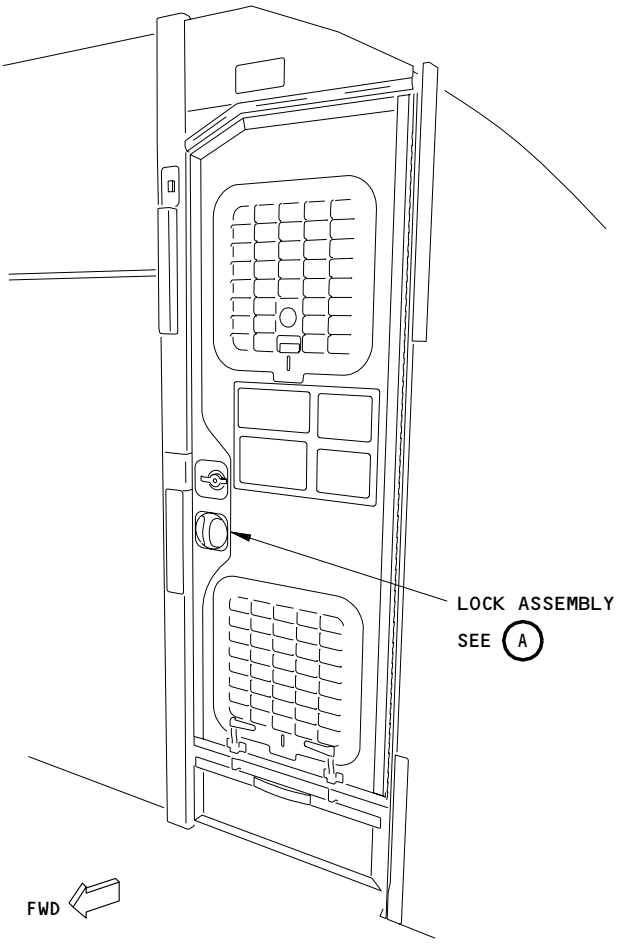

FLIGHT COMPARTMENT DOOR

Door Lock Installation
Figure 401 (Sheet 1)

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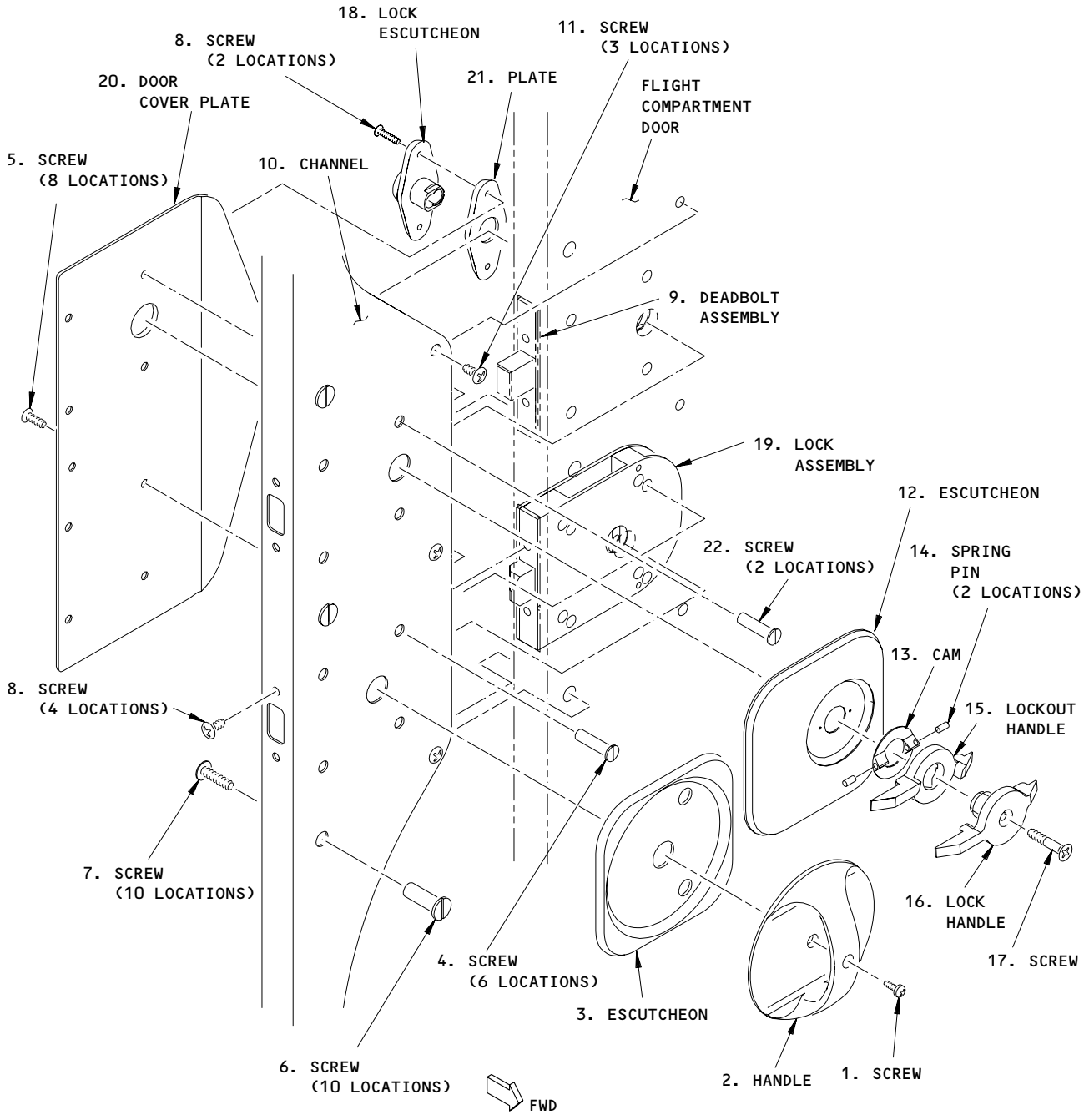

LOCK ASSEMBLY

A

Door Lock Installation
Figure 401 (Sheet 2)

EFFECTIVITY
SAS 150-153, 155, 157, 275-278, 280;
050, 051, 156, 162-167 POST-SB 25-325;
154 POST-SB 25-332

382920

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(b) Remove the door cover plate (20).

S 024-006-001

(5) Do these steps to remove the channel (5) from the door:
(a) Remove the four screws (8).
(b) Remove the three screws (11).
(c) Remove the ten screws (6) and (7).
(d) Remove the channel (10).

S 024-007-001

(6) Remove the lock assembly (19).

TASK 52-51-06-404-008-001

3. Flight Compartment Door Lock Installation

A. Consumable Materials
(1) A50011 Sealant - Silicone, Aluminum Color (RTV 109)

B. Access
(1) Location Zones
211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

C. Flight Compartment Door Lock Installation

S 424-009-001

(1) Install the lock assembly (19) in the door.

S 424-010-001

(2) Do these steps to install the channel (10) on the door:
(a) Put the channel (10) in the correct position.
(b) Install the four screws (8).
(c) Install the three screws (11).
(d) Install the ten screws (6) and (7) as follows:
1) Add 15 to 20 inch-pounds to the self locking torque to get the total torque value.

S 424-011-001

(3) Do these steps to install the door cover plate (20):
(a) Put the door cover plate (20) in the correct position.
(b) Install the six screws (4) and (5).

S 424-012-001

(4) Do these steps to install the lock escutcheon (18) on the door cover plate (20).
(a) Put the plate (21) in the correct position on the door cover plate (20).

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(b) Put the lock escutcheon (18) on the plate (21) with the keyhole pointed toward the latch side of the door.
(c) Install the two screws (8) and (22).

S 424-013-001
(5) Do these steps to install the deadbolt lock handle assembly:
(a) Use the A50011 sealant to attach the escutcheon (12) to the door.
(b) Put the cam (13) on the deadbolt lock handle assembly and install the two spring pins (14).
(c) Install the lockout handle (15) with the long arm pointed in the up direction.
(d) Install the lock handle (16) with the long arm pointed in the up direction.
(e) Install the screw (17) that attaches the lock handle to the deadbolt lock.

S 424-014-001
(6) Do these steps to install the door knob assembly:
(a) Use the A50011 sealant to attach the escutcheon (3) to the door.
(b) Put the door knob (2) into the correct position.
(c) Install the screw (1).

D. Do a Post Installation Test of the Door Lock and Deadbolt

S 714-015-001
(1) Turn the lockout handle (16) and make sure the deadbolt extends and retracts properly.

S 714-016-001
(2) Turn the door knob (2) and make sure the latch retracts into the lock assembly (19).

S 714-017-001
(3) Release the handle and make sure the latch extends out of the lock assembly (19).

S 714-018-001
(4) Close the door and make sure the door latch engages the strike and the deadbolt correctly engages.

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ELECTRIC STRIKE - REMOVAL/INSTALLATION

1. General
   A. This Procedure has these tasks:
      (1) A removal of the electric strike.
      (2) An installation of the electric strike.

   TASK 52-51-07-004-001-001

2. Electric Strike Removal (Fig. 401)
   A. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   B. Prepare for the Removal

      S 864-002-001
      (1) Open this circuit breaker on the P11 panel and attach a DO-NOT-CLOSE tag:
          (a) 11T5, FLT DOOR DR LOCK

      S 014-003-001
      (2) Open the flight compartment door.

   C. Electric Strike Removal

      S 024-004-001
      (1) Remove the screws (5) that attach the access cover plate (1) to the right hand door post.

      S 024-005-001
      (2) Remove the access cover plate (1).

      S 024-006-001
      (3) Remove the screws (4) and the washers (3) that attach the electric strike (2) to the door post.

      S 024-007-001
      (4) Carefully pull the electric strike (2) out of the door post.

      S 024-008-001
      (5) Remove the filler shim(s) (6).

      S 024-009-001
      (6) Disconnect the electrical connector from the strike.

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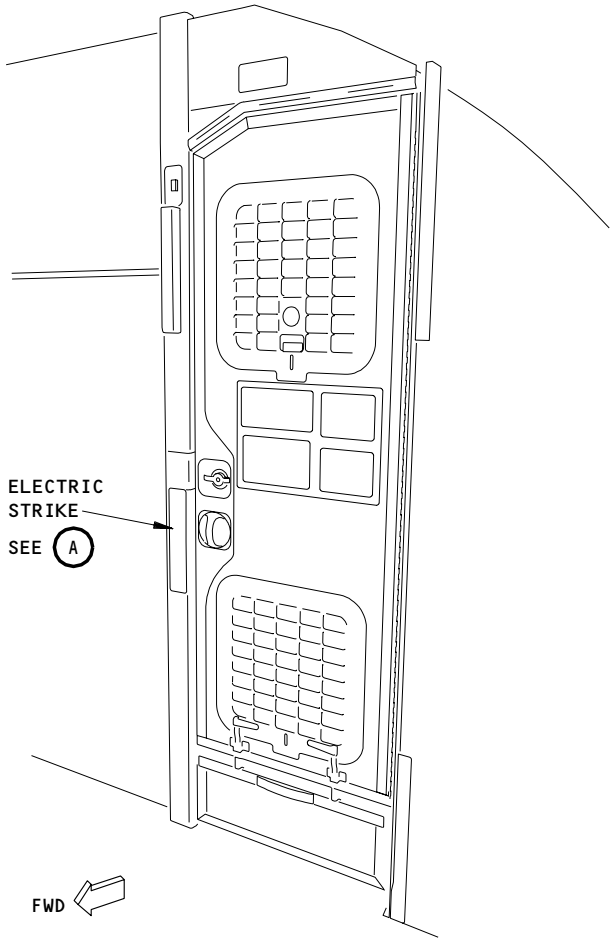

FLIGHT COMPARTMENT DOOR

Electric Strike Installation
Figure 401 (Sheet 1)

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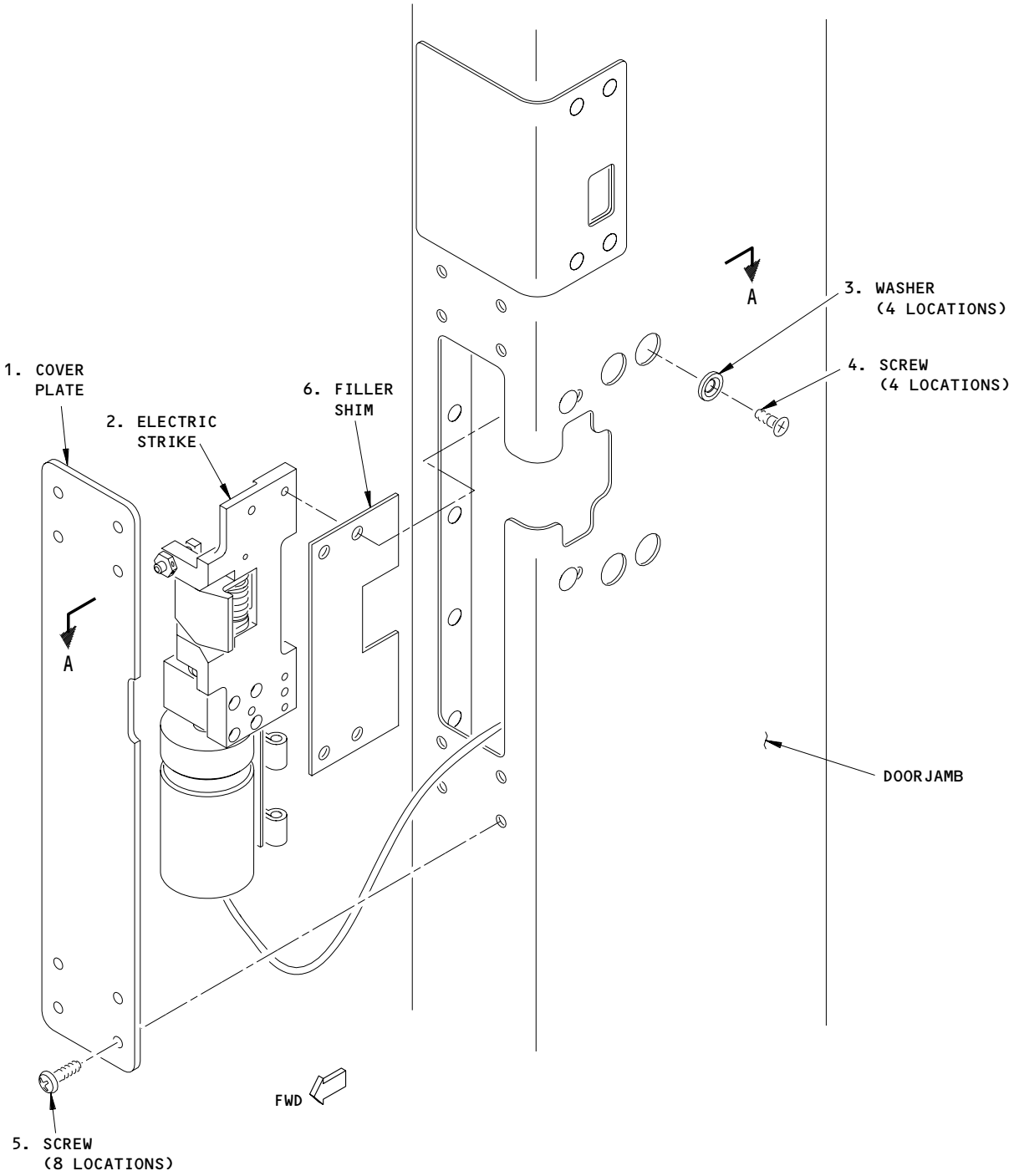

ELECTRIC STRIKE

(A)

Electric Strike Installation
Figure 401 (Sheet 2)

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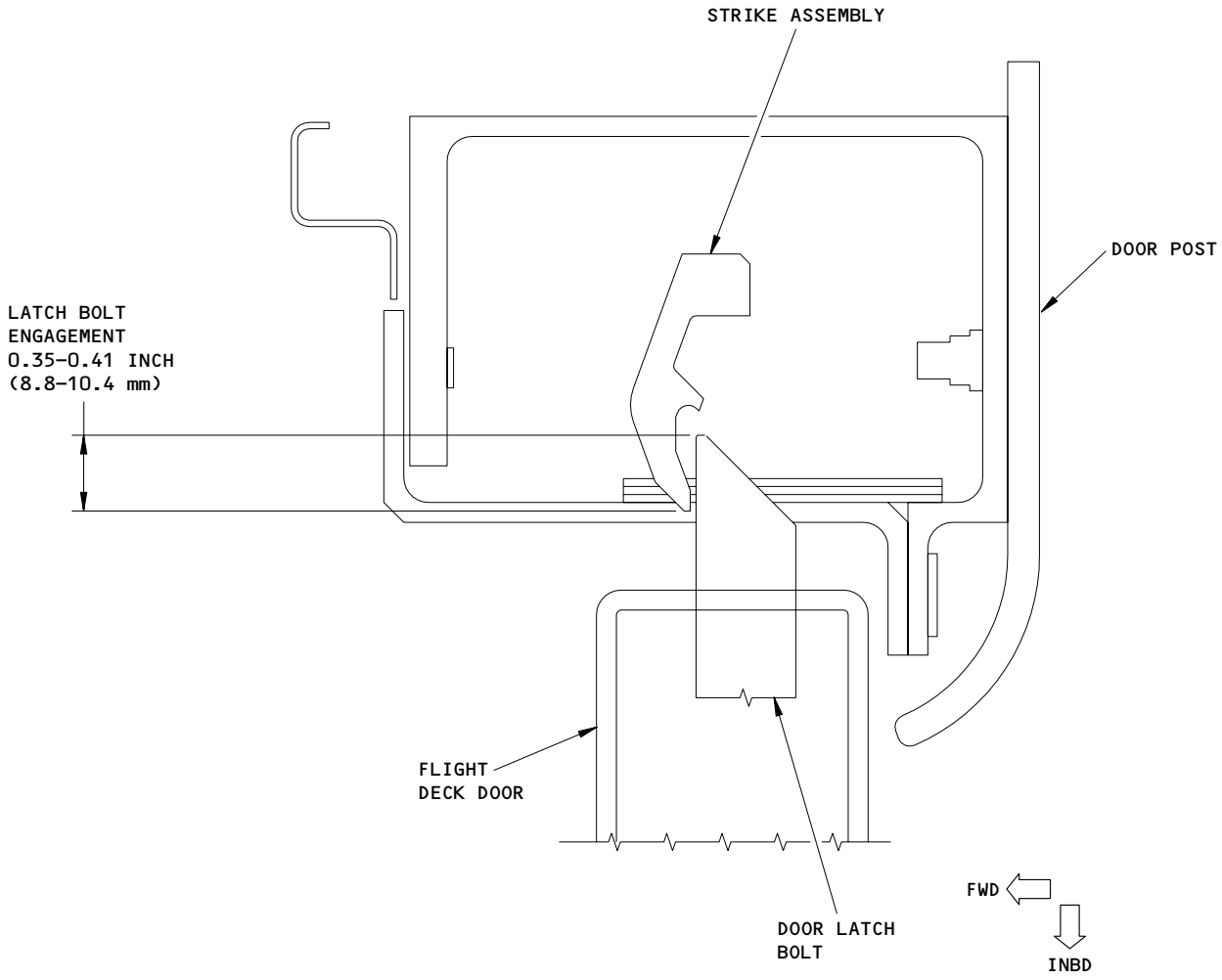

A-A

Electric Strike Installation
Figure 401 (Sheet 3)

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S 024-010-001
(7) Remove the electric strike (2).

TASK 52-51-07-404-011-001

3. Electric Strike Installation (Fig. 401)

A. References
(1) AMM 24-22-00/201, Electric Power - Control

B. Access
(1) Location Zones
211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

C. Electric Strike Installation

S 644-028-001
(1) Prevent contamination of the door electric strike assembly with lubricants.

S 424-012-001
(2) Connect the electrical connector to the electric strike (2).

S 424-013-001
(3) Put the filler shim(s) (6) in their position.

S 424-014-001
(4) Carefully insert the electric strike (2) into the door post opening and put it in its position.

S 424-015-001
(5) Install the screws (4) and the washers (3) that attach the electric strike (2) to the door post.

S 824-016-001
(6) Make sure the strike to door latch overlap dimension is 0.35-0.41 inches (8.9-10.4 mm).

S 824-017-001
(7) If the strike to door latch overlap dimension is not correct, do these steps:
(a) Remove the screws (4) and washers (3) that attach the electric strike (2) to the door post.
(b) Remove the electric strike (2) from the door post.

NOTE: Do not disconnect the electrical connector.

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(c) Install or remove one or more of the filler shims (6) to get the correct overlap dimension.

NOTE: You will need to reinstall the electric strike to determine the overlap dimension.
The 232T2076-159 shim is .020 inch thick.
The 232T2076-104 shim is .040 inch thick.
The combination of shims used must not be more than .12 inch thick maximum.

S 424-018-001
(8) Put the access cover plate (1) in its position.

S 424-019-001
(9) Install the screws (5) that attach the access cover plate (1) to the door post.

D. Do a Post Installation Test of the Electric Strike

S 864-020-001
(1) Supply electrical power (AMM 24-22-00/201).

S 714-021-001
(2) Make sure the electric strike solenoid is in the de-energized postion.

NOTE: The solenoid is de-energized when the pin is retracted such that the strike can rotate.

S 714-022-001
(3) Close the door.

S 714-023-001
(4) Make sure you can open the door from the passenger side by pushing on the door handle.

S 714-024-001
(5) Remove the "DO-NOT-CLOSE" tag and close this circuit breaker:
(a) 11T5, FLT DECK DR LOCK

S 714-025-001
(6) Make sure the FLT DK DOOR three position switch on the M10057 lighting control panel is in the AUTO position.

S 714-026-001
(7) Make sure the electric strike solenoid engergizes.

NOTE: The pin will extend preventing the strike from rotating.

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E. Put the Airplane Back to its Usual Condition

S 864-027-001

(1) Remove the electrical power if it is not necessary (AMM 24-22-00/201).

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ELECTRIC STRIKE - REMOVAL/INSTALLATION

1. General
   A. This Procedure has these tasks:
      (1) A removal of the electric strike.
      (2) An installation of the electric strike.

   TASK 52-51-07-004-001-003

2. Electric Strike Removal (Fig. 401)
   A. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   B. Prepare for the Removal

      S 864-002-003
      (1) Open this circuit breaker on the P11 panel and attach a DO-NOT-CLOSE tag:
          (a) 11T5, FLT DOOR DR LOCK

      S 014-003-003
      (2) Open the flight compartment door.

   C. Electric Strike Removal

      S 024-004-003
      (1) Remove the screws (3) that attach the cover plate (1) to the right hand door post.

      S 024-005-003
      (2) Carefully pull the electric strike (2) and the cover plate (1) out of the door post.

      S 024-006-003
      (3) Disconnect the electrical connector from the strike.

      S 024-007-003
      (4) Remove the screws (4) that attach the electric strike (2) to the cover plate (1).

      S 024-008-003
      (5) Remove the filler shim(s) (5).

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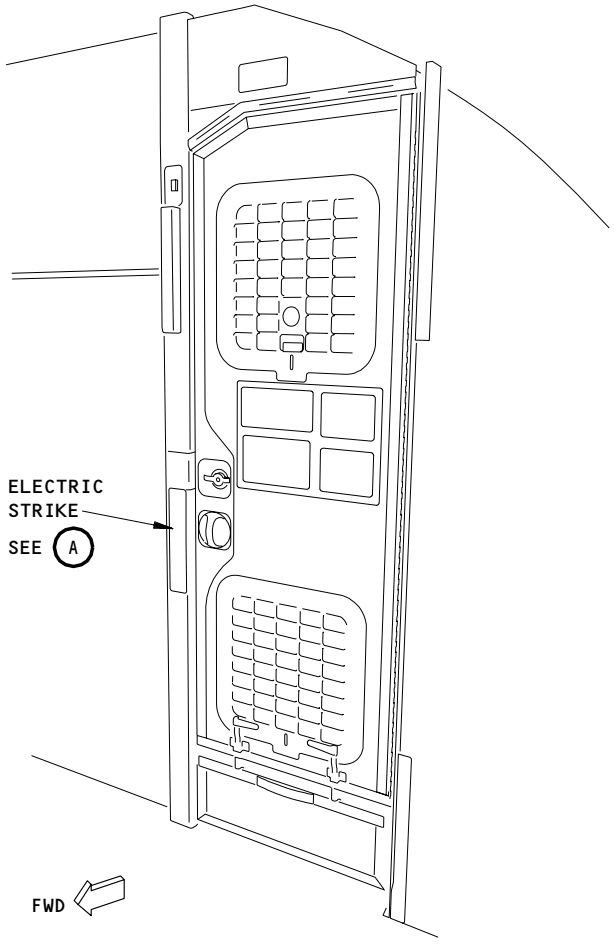

FLIGHT COMPARTMENT DOOR

Electric Strike Installation
Figure 401 (Sheet 1)

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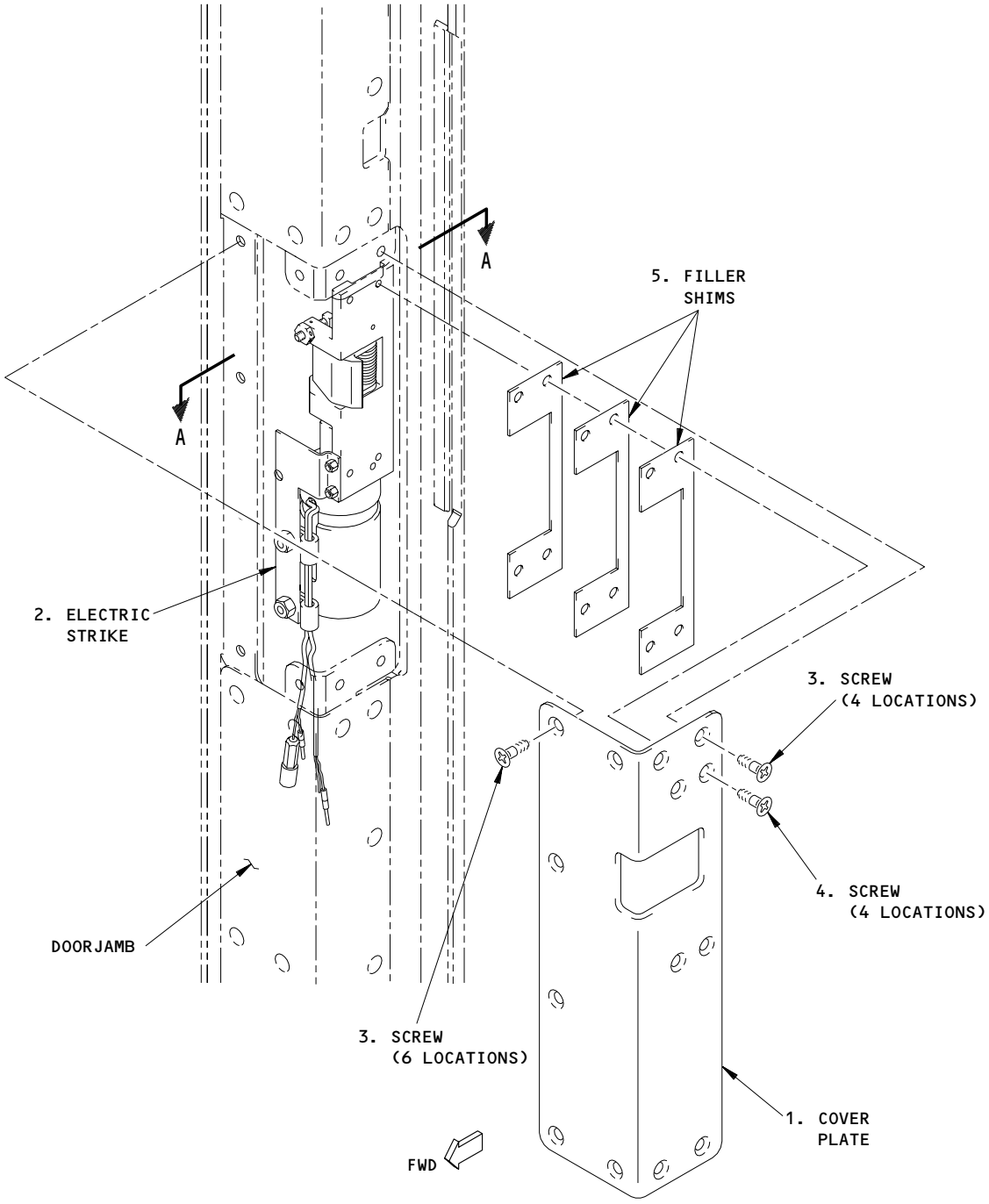

ELECTRIC STRIKE
(A)

Electric Strike Installation
Figure 401 (Sheet 2)

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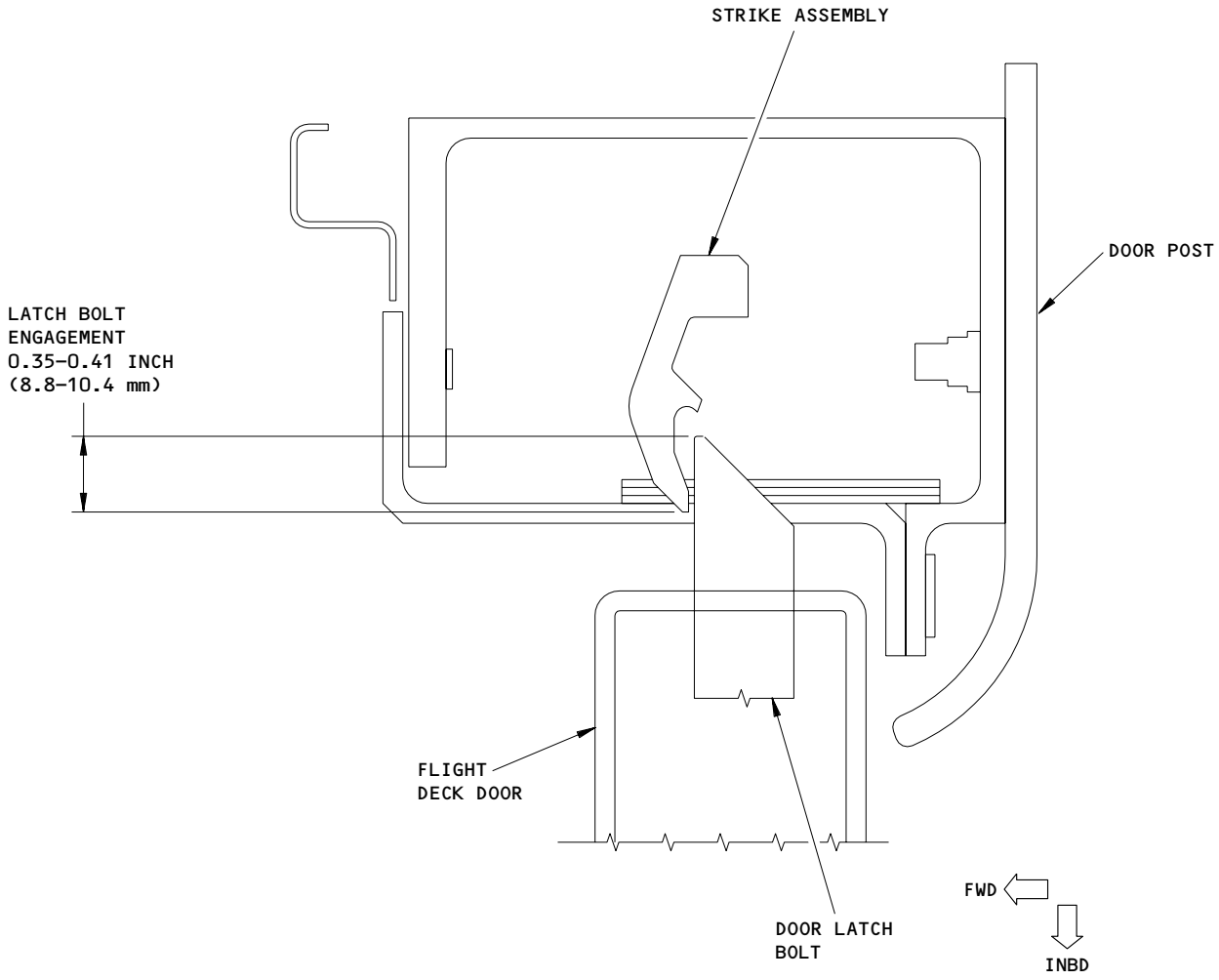

A–A

Electric Strike Installation
Figure 401 (Sheet 3)

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TASK 52-51-07-404-009-003

3. Electric Strike Installation (Fig. 401)

A. Consumable Materials

(1) A00270 - Loctite 222

(2) A00247 - BMS 5-95 Type I, Class B-1/2 or B-2

B. References

(1) AMM 24-22-00/201, Electric Power - Control

C. Access

(1) Location Zones

211 Control cabin - Section 41 (Left)

221 Passenger cabin - Section 41 (Left)

D. Electric Strike Installation

S 424-010-003

(1) Apply the BMS 5-95 sealant to any surfaces in between the electric strike and the shims or the cover plate.

S 424-011-003

(2) Put the filler shim(s) (5) in their position.

S 424-012-003

(3) Install locktite 222 on the screw (4) threads.

S 424-013-003

(4) Install the screws (4) that attach the the electric strike (2) to the cover plate (1).

S 424-014-003

(5) Connect the electrical connector to the electric strike (2).

S 424-015-003

(6) Carefully insert the electric strike (2) into the door post opening and put it in its position.

S 414-016-003

(7) Install the screws (3) that attach the cover plate (1) to the door post.

S 824-017-003

(8) Make sure the latch bolt is centered vertically in the strike arm.

S 824-018-003

(9) Make sure the strike to door latch overlap dimension is 0.35-0.41 inches (8.9-10.4 mm).

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S 824-019-003
(10) If the strike to door latch overlap dimension is not correct, do these steps:
(a) Remove the screws (3) that attach the cover plate (1) to the door post.
(b) Remove the electric strike (2) and cover plate (1) from the door post.

NOTE: Do not disconnect the electrical connector.

(c) Install or remove one or more of the filler shims (5) to get the correct overlap dimension.

NOTE: You will need to reinstall the electric strike to determine the overlap dimension. If necessary, you can use a maximum of seven filler shims (232T2025-54) to get a maximum thickness of .280 inch.

S 424-020-003
(11) Put the access cover plate (1) in its position.

S 424-021-003
(12) Install the screws (3) that attach the access cover plate (1) to the door post.

E. Do a Post Installation Test of the Electric Strike

S 864-022-003
(1) Supply electrical power (AMM 24-22-00/201).

S 714-023-003
(2) Make sure the electric strike solenoid is in the de-energized postion.

NOTE: The solenoid is de-energized when the pin is retracted such that the strike can rotate.

S 714-024-003
(3) Close the door.

S 714-025-003
(4) Make sure you can open the door from the passenger side by pushing on the door handle.

S 714-026-003
(5) Remove the "DO-NOT-CLOSE" tag and close this circuit breaker:
(a) 11T5, FLT DECK DR LOCK

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S 714-027-003

(6) Make sure the FLT DK DOOR three position switch on the M10057 lighting control panel is in the AUTO position.

S 714-028-003

(7) Make sure the electric strike solenoid engergizes.

NOTE: The pin will extend preventing the strike from rotating.

F. Put the Airplane Back to its Usual Condition

S 864-029-003

(1) Remove the electrical power if it is not necessary (AMM 24-22-00/201).

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FLIGHT COMPARTMENT DEADBOLT - REMOVAL/INSTALLATION

1. General
   A. This Procedure has these tasks:
      (1) A removal of the flight compartment door deadbolt.
      (2) An installation of the flight compartment door deadbolt.

   TASK 52-51-08-004-001-001

2. Flight Compartment Door Deadbolt Removal (Fig. 401)
   A. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   B. Flight Compartment Deadbolt Removal

      S 024-002-001
      (1) Do these steps to remove the door knob assembly:
          (a) Remove the screw (1) that attaches the door knob (2) to the lock assembly (19).
          (b) Remove the door knob (2).
          (c) Remove the escutcheon (3).
          (d) Remove any remaining sealant from under the escutcheon (3).

      S 024-003-001
      (2) Do these steps to remove the deadbolt lock handle assembly:
          (a) Make sure the deadbolt lock is retracted.
          (b) Remove the screw (17) that attaches the lock handle (16) to the deadbolt assembly (9).
          (c) Remove the lockout handle (15).
          (d) Remove the two spring pins (14) which hold the cam (13) on the deadbolt assembly (9).
          (e) Remove the cam (13).
          (f) Remove the escutcheon (12).
          (g) Remove any remaining sealant from under the escutcheon (12).

      S 024-004-001
      (3) Do these steps to remove the lock escutcheon (18) from the door cover plate (20).
          (a) Remove the two screws (8) and two screws (22).
          (b) Remove the lock escutcheon (18).
          (c) Remove the plate (21).

      S 024-005-001
      (4) Do these steps to remove the door cover plate (20).
          (a) Remove the six screws (4) and (5).

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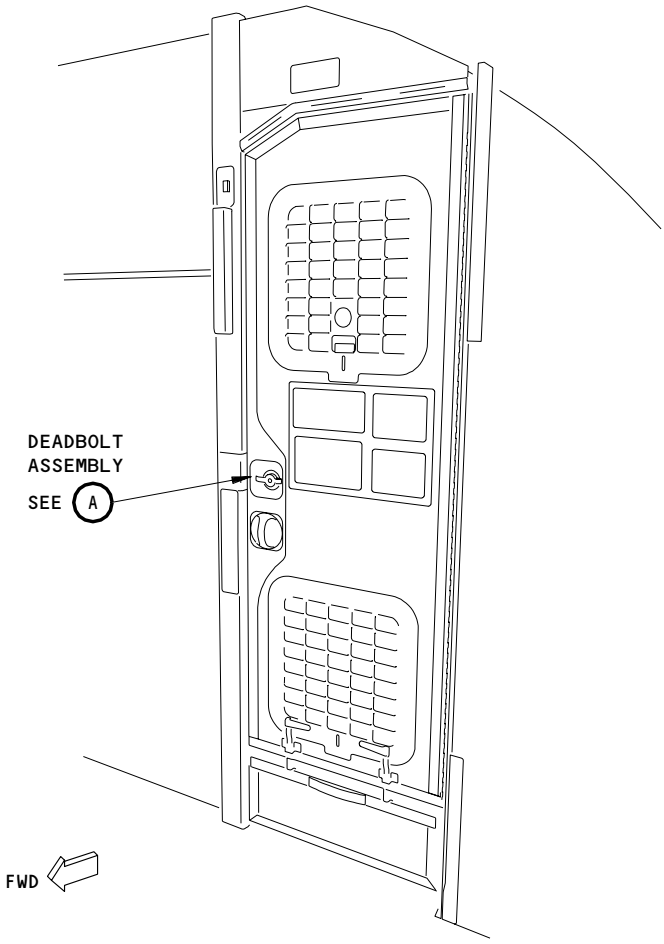

FLIGHT COMPARTMENT DOOR

Deadbolt Installation
Figure 401 (Sheet 1)

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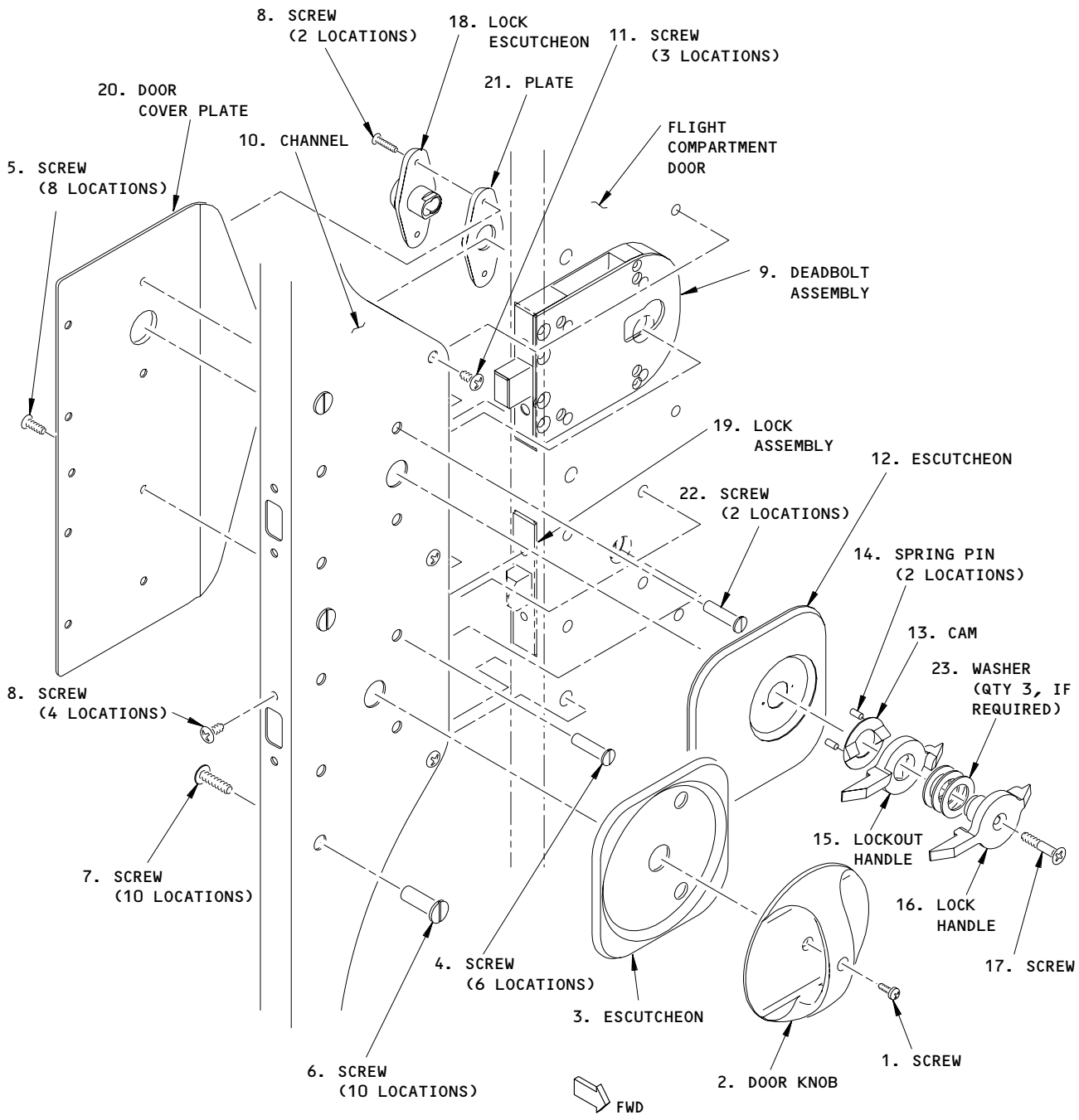

DEADBOLT ASSEMBLY

(A)

Deadbolt Installation
Figure 401 (Sheet 2)

EFFECTIVITY
SAS 150-153, 155, 157, 275-278, 280;
050, 051, 156, 162-167 POST-SB 25-325;
154 POST-SB 25-332

382980

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(b) Remove the door cover plate (20).

S 024-006-001

(5) Do these steps to remove the channel (5) from the door:
(a) Remove the four screws (8).
(b) Remove the three screws (11).
(c) Remove the ten screws (6) and (7).
(d) Remove the channel (10).

S 024-007-001

(6) Remove the deadbolt assembly (9).

TASK 52-51-08-404-008-001

3. Flight Compartment Deadbolt Installation

A. Consumable Materials
(1) A50011 Sealant - Silicone, Aluminum Color (RTV 109)

B. Access
(1) Location Zones
211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

C. Flight Compartment Deadbolt Installation

S 424-009-001

(1) Install the deadbolt assembly (9) in the door.

NOTE: Make sure the deadbolt is in the retracted position and the lock driver slot is in the up direction.

S 424-010-001

(2) Do these steps to install the channel (10) on the door:
(a) Put the channel (10) in the correct position.
(b) Install the four screws (8).
(c) Install the three screws (11).
(d) Install the ten screws (6) and (7) as follows:
1) Add 15 to 20 inch-pounds to the self locking torque to get the total torque value.

S 424-011-001

(3) Do these steps to install the door cover plate (20):
(a) Put the door cover plate (20) in the correct position.
(b) Install the six screws (4) and (5).

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S 424-012-001

(4) Do these steps to install the lock escutcheon (18) on the door cover plate (20).
   (a) Put the plate (21) in the correct position on the door cover plate (20).
   (b) Put the lock escutcheon (18) on the plate (21) with the keyhole pointed toward the latch side of the door.
   (c) Install the two screws (8) and (22).

S 424-013-001

(5) Do these steps to install the deadbolt lock handle assembly:
   (a) Use the A50011 sealant to attach the escutcheon (12) to the door.
   (b) Put the cam (13) on the deadbolt lock handle assembly and install the two spring pins (14).
   (c) Install the lockout handle (15) with the long arm pointed in the up direction.
   (d) Install the lock handle (16) with the long arm pointed in the up direction.
   (e) Install the screw (17) that attaches the lock handle to the deadbolt lock.

S 424-014-001

(6) Do these steps to install the door knob assembly:
   (a) Use the A50011 sealant to attach the escutcheon (3) to the door.
   (b) Put the door knob (2) into the correct position.
   (c) Install the screw (1).

D. Do a Post Installation Test of the Door Lock and Deadbolt

S 714-015-001

(1) Turn the lockout handle (16) and make sure the deadbolt extends and retracts properly.

S 714-016-001

(2) Turn the door knob (2) and make sure the latch retracts into the lock assembly (19).

S 714-017-001

(3) Release the handle and make sure the latch extends out of the lock assembly (19).

S 714-018-001

(4) Close the door and make sure the door latch engages the strike and the deadbolt correctly engages.

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KEYPAD - REMOVAL/INSTALLATION

1. General
   A. This Procedure has these tasks:
      (1) A removal of the keypad.
      (2) An installation of the keypad.

   TASK 52-51-09-004-001-001
2. Keypad Removal (Fig. 401)
   A. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   B. Prepare for the Removal

      S 864-002-001
      (1) Open this circuit breaker on the P11 panel and attach a DO-NOT-CLOSE tag:
          (a) 11T5, FLT DECK DR LOCK
   C. Keypad Removal

      S 024-003-001
      (1) Remove the screw covers (1) on the top and the bottom of the keypad (3).

      S 024-004-001
      (2) Remove the screws (2) that attach the keypad (3) to the right hand door post.

      S 024-005-001
      (3) Disconnect the electrical connector.

      S 024-006-001
      (4) Remove the keypad (3).

   TASK 52-51-09-404-007-001
3. Keypad Installation (Fig. 401)
   A. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

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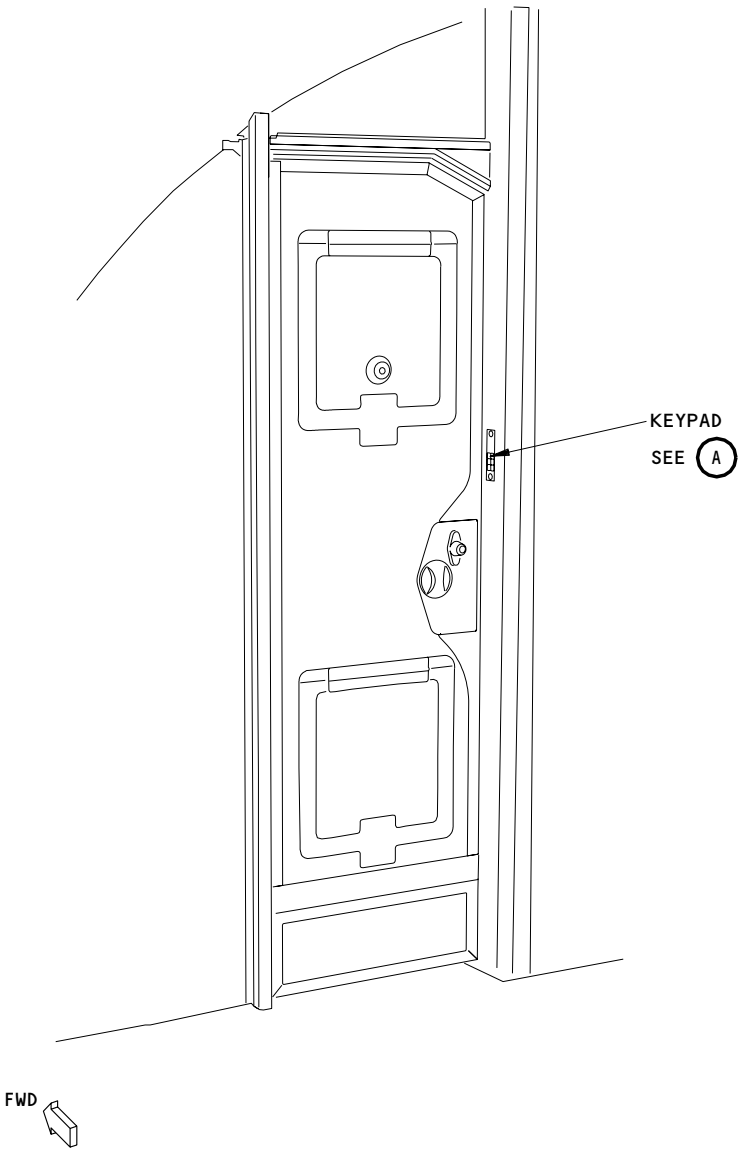

FLIGHT COMPARTMENT DOOR

Keypad Installation
Figure 401 (Sheet 1)

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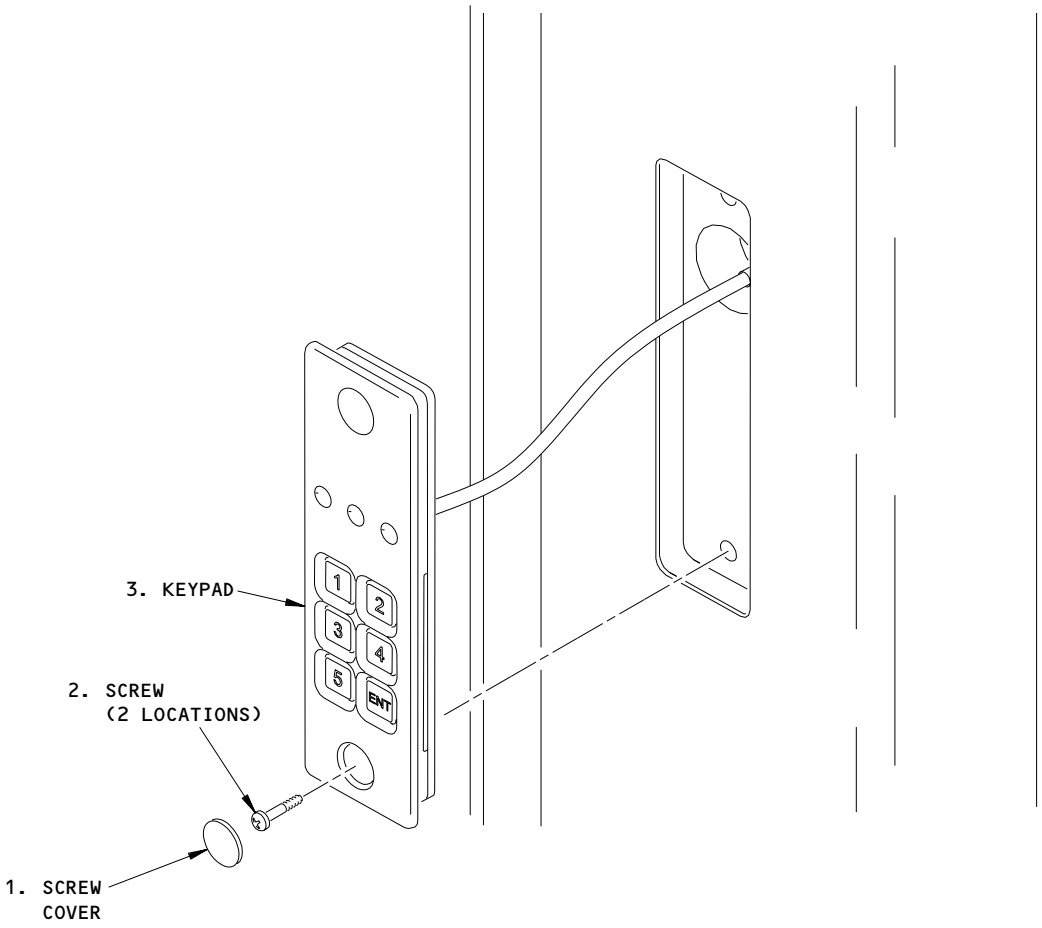

KEYPAD
A

Keypad Installation
Figure 401 (Sheet 2)

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B. Keypad Installation

S 424-008-001
(1) Put the keypad (3) in its position.

S 424-009-001
(2) Install the electrical connector.

S 424-010-001
(3) Install the screws (2).

S 424-011-001
(4) Install the screw covers (1).

S 864-012-001
(5) Remove the "DO-NOT-CLOSE" tag and close this circuit breaker:
(a) 11T5, FLT DECK DR LOCK

C. Do a Post Installation Test of the Keypad

S 734-013-001
(1) Do the system test of the flight compartment security door access system (AMM 52-51-00/501).

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KEYPAD - REMOVAL/INSTALLATION

1. General
   A. This Procedure has these tasks:
      (1) A removal of the keypad.
      (2) An installation of the keypad.

   TASK 52-51-09-004-001-003
2. Keypad Removal (Fig. 401)
   A. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   B. Prepare for the Removal

      S 864-002-003
      (1) Open this circuit breaker on the P11 panel and attach a DO-NOT-CLOSE tag:
          (a) 11T5, FLT DECK DR LOCK
   C. Keypad Removal

      S 024-003-003
      (1) Remove the screw covers (1) on the top and the bottom of the keypad (3).

      S 024-004-003
      (2) Remove the screws (2) that attach the keypad (3) to the keypad box on the left hand door post.

      S 024-005-003
      (3) Disconnect the electrical connector.

      S 024-006-003
      (4) Remove the keypad (3).

   TASK 52-51-09-404-007-003
3. Keypad Installation (Fig. 401)
   A. Consumable Materials
      (1) A00270 - Loctite 222
   B. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

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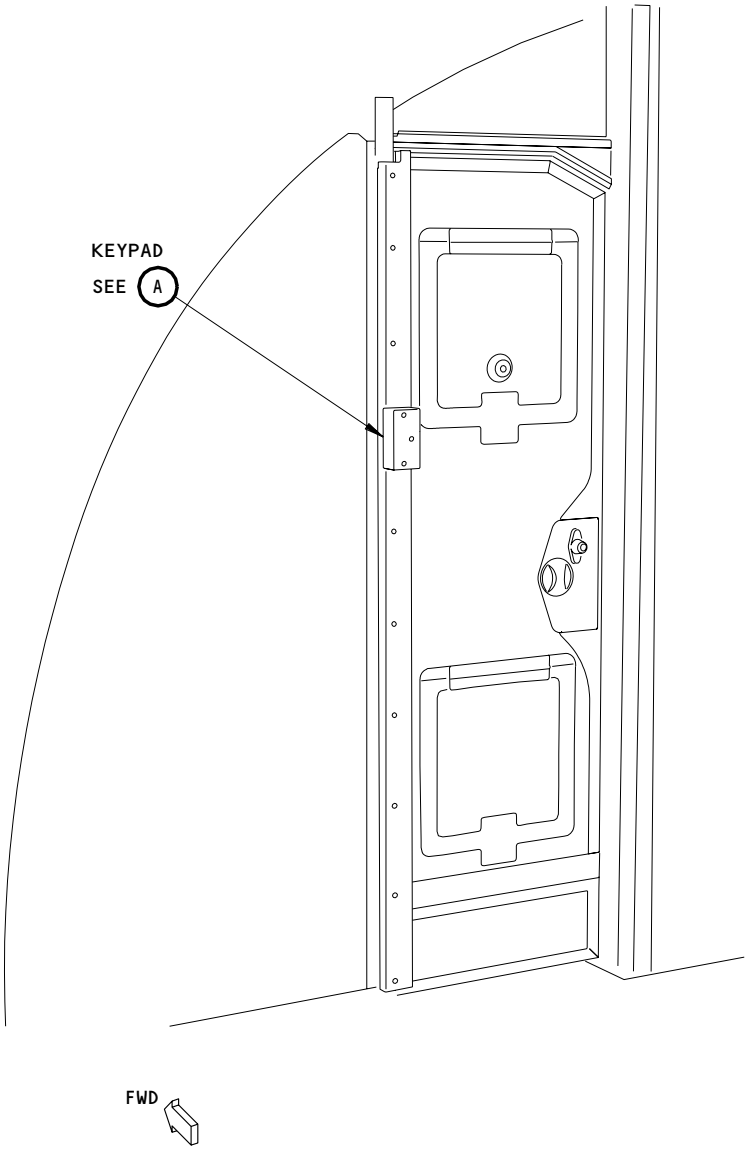

FLIGHT COMPARTMENT DOOR

Keypad Installation
Figure 401 (Sheet 1)

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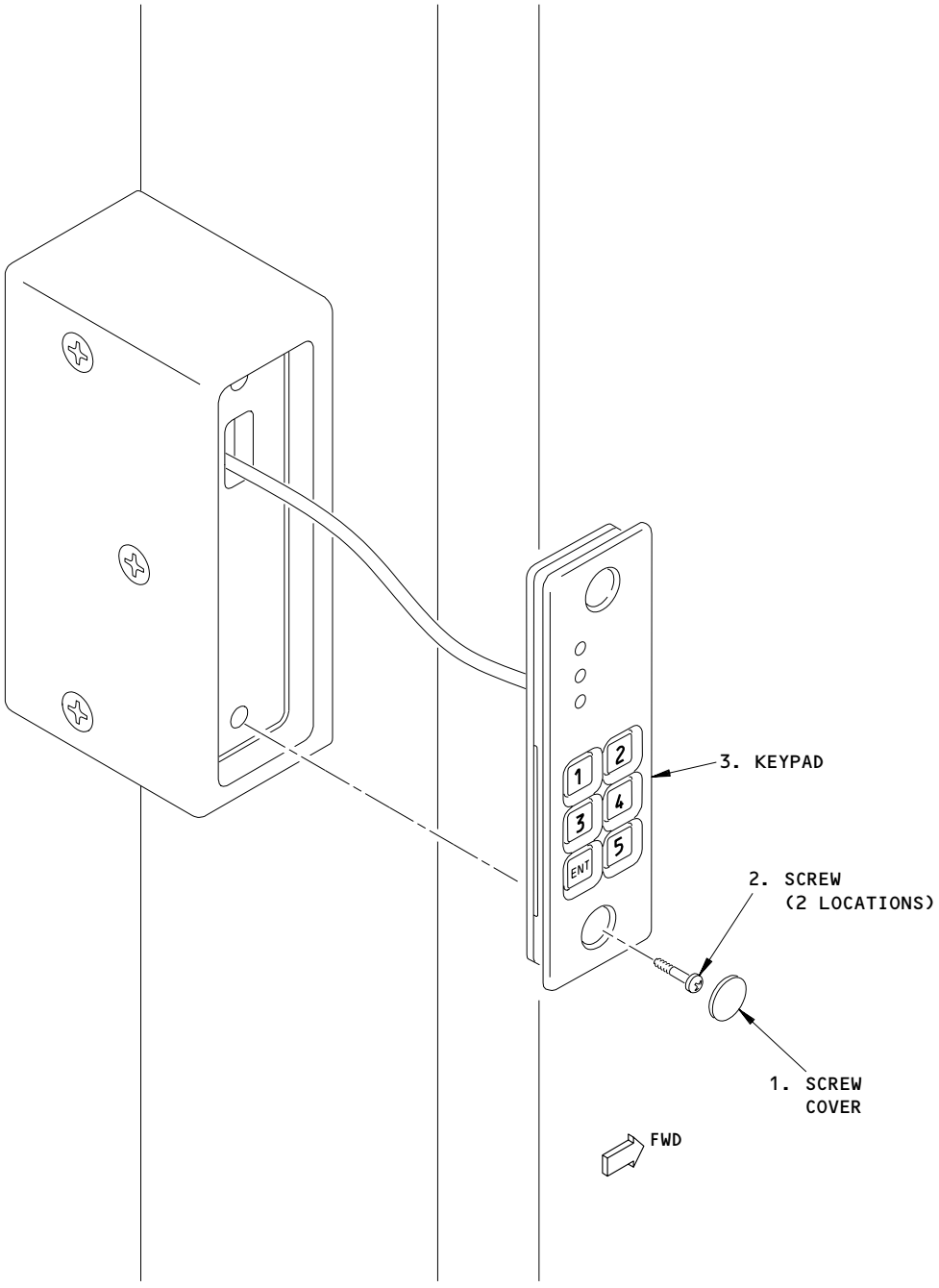

KEYPAD
A

Keypad Installation
Figure 401 (Sheet 2)

EFFECTIVITY
SAS 150-153, 275; 154 POST-SB 25-332

383014

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C. Keypad Installation

S 424-008-003
(1) Install the electrical connector on the keypad (3).

S 424-009-003
(2) Put the keypad (3) in its position in the keypad box.

S 424-010-003
(3) Put locktite 222 on the screw threads (2).

S 424-011-003
(4) Install the screws (2).

S 424-012-003
(5) Install the screw covers (1).

S 864-013-003
(6) Remove the "DO-NOT-CLOSE" tag and close this circuit breaker:
(a) 11T5, FLT DECK DR LOCK

D. Do a Post Installation Test of the Keypad

S 734-014-003
(1) Do the system test of the flight compartment security door access system (AMM 52-51-00/501).

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CHIME MODULE - REMOVAL/INSTALLATION

1. General
   A. This Procedure has these tasks:
      (1) A removal of the chime module.
      (2) An installation of the chime module.

   TASK 52-51-10-004-001-001
2. Chime Module Removal (Fig. 401)
   A. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   B. Prepare for the Removal

      S 864-002-001
      (1) Open this circuit breaker on the P11 panel and attach a DO-NOT-CLOSE tag:
          (a) 11T5, FLT DECK DR LOCK
   C. Chime Module Removal

      S 024-003-001
      (1) Remove the screws (1) that attach the chime module (2) to the right hand door post.

      S 024-004-001
      (2) Disconnect the electrical connector.

      S 024-005-001
      (3) Remove the chime module (2).

   TASK 52-51-10-404-006-001
3. Chime Module Installation (Fig. 401)
   A. References
      (1) 24-22-00/201, Electrical Power - Control
   B. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   C. Chime Module Installation

      S 424-007-001
      (1) Put the chime module (2) in it's position.

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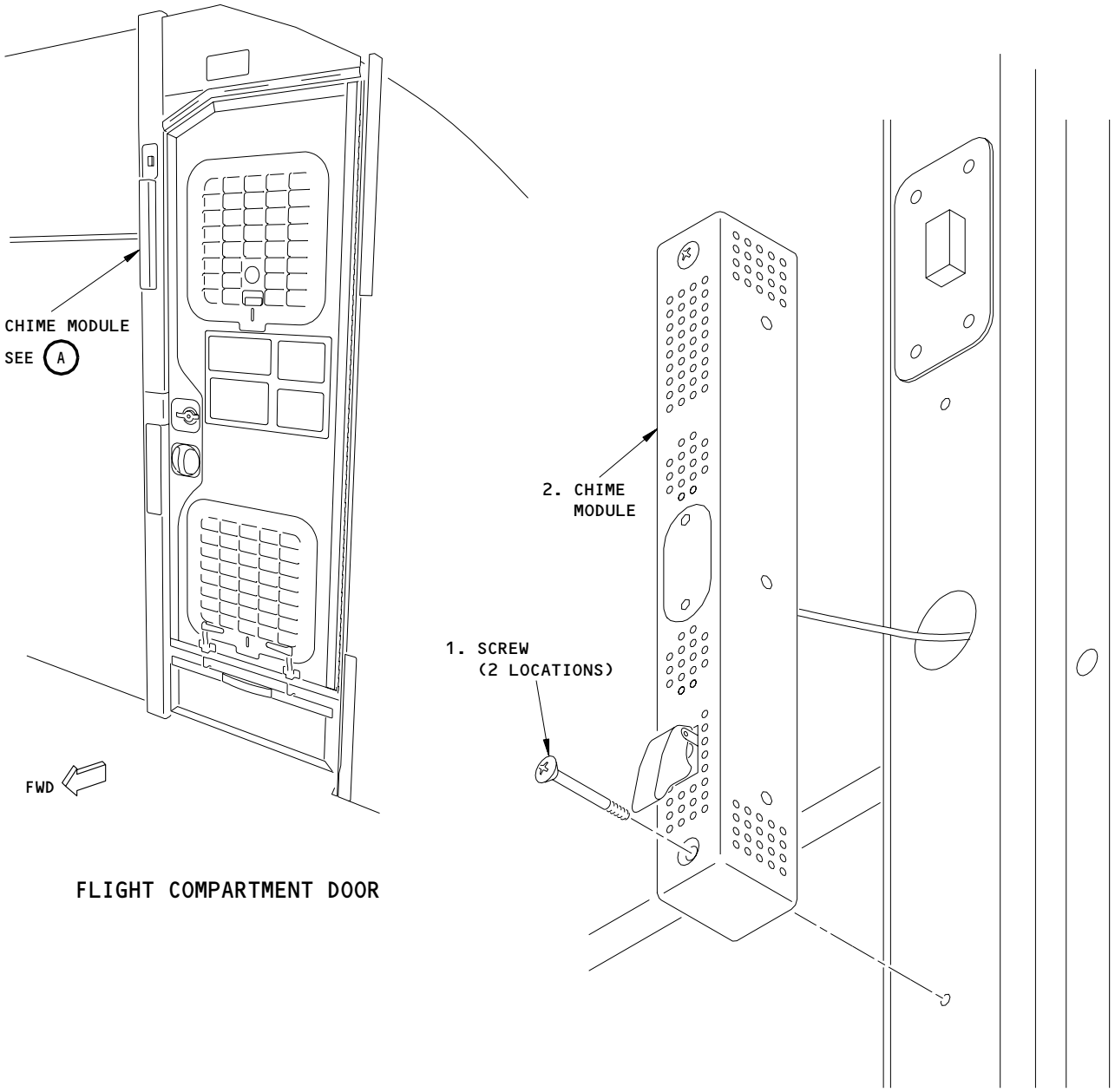

Chime Module Installation
Figure 401

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S 424-008-001
(2) Install the electrical connector.

S 424-009-001
(3) Install the screws (1).

S 864-010-001
(4) Remove the "DO-NOT-CLOSE" tag and close this circuit breaker:
(a) 11T5, FLT DECK DR LOCK

D. Do a Post Installation Test of the Logic Controller

S 474-012-001
(1) Program the chime module (AMM 52-51-00/201).

S 734-011-001
(2) Do the system test of the flight compartment security door access system (AMM 52-51-00/501).

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CHIME MODULE - CLEANING

1. General
   A. This Procedure has a task to clean the chime module.

   TASK 52-51-10-007-001

2. Chime Module Cleaning
   A. Consumable Materials
      (1) Cloth, lint free
      (2) B01001 Solvent - General Cleaning of All Organic Coatings (Series 81) (AMM 20-30-82/201) or SOPM 20-30-82
   B. References
      (1) 20-30-81/201, Airplane Structure Cleaning Solvents
   C. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   D. Chime Module Cleaning

      S 167-014

      WARNING: DO NOT GET SOLVENTS IN YOUR MOUTH, OR YOUR EYES, OR ON YOUR SKIN. DO NOT BREATHE THE FUMES FROM SOLVENTS. SOLVENTS ARE HAZARDOUS MATERIALS. SOLVENTS MAY BE FLAMMABLE OR HARMFUL TO THE ENVIRONMENT. REFER TO PRODUCT MATERIAL SAFETY DATA SHEETS (MSDS) AND LOCAL REQUIREMENTS FOR PROPER HANDLING PROCEDURES.

      CAUTION: MAKE SURE YOU DO NOT SPRAY THE CHIME MODULE DIRECTLY WITH THE CLEANING SOLUTION. IF YOU SPRAY THE CHIME MODULE DIRECTLY WITH THE CLEANING SOLUTION, DAMAGE TO THE CHIME MODULE CAN OCCUR.

      (1) Do these steps to clean the chime module:
          (a) Moisten the cloth with the solvent, Series 81 (AMM 20-30-81/201 or SOPM 20-30-91).
          (b) Use the cloth to clean the exterior surface of the chime module.
          (c) Dry the chime module with a clean cloth.

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PRESSURE SENSOR - REMOVAL/INSTALLATION

1. General
   A. This Procedure has these tasks:
      (1) A removal of the pressure sensor.
      (2) An installation of the pressure sensor.

   TASK 52-51-11-004-008

2. Pressure Switch Removal (Fig. 401)
   A. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   B. Prepare for the Removal

      S 864-001
      (1) Open this circuit breaker on the P11 panel and attach a DO-NOT-CLOSE tag:
          (a) 11T5, FLT DECK DR LOCK

   C. Pressure Sensor Removal

      S 024-002
      (1) Remove the screws (1) and the washers (2) that attach the pressure sensor (3) to the P61 panel.

      S 024-003
      (2) Remove the pressure sensor (3).

   TASK 52-51-11-404-009

3. Pressure Sensor Installation (Fig. 401)
   A. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   B. Pressure Sensor Installation

      S 424-004
      (1) Put the pressure sensor (3) in its position.

          NOTE: The vent holes in the pressure sensor should be on the bottom.

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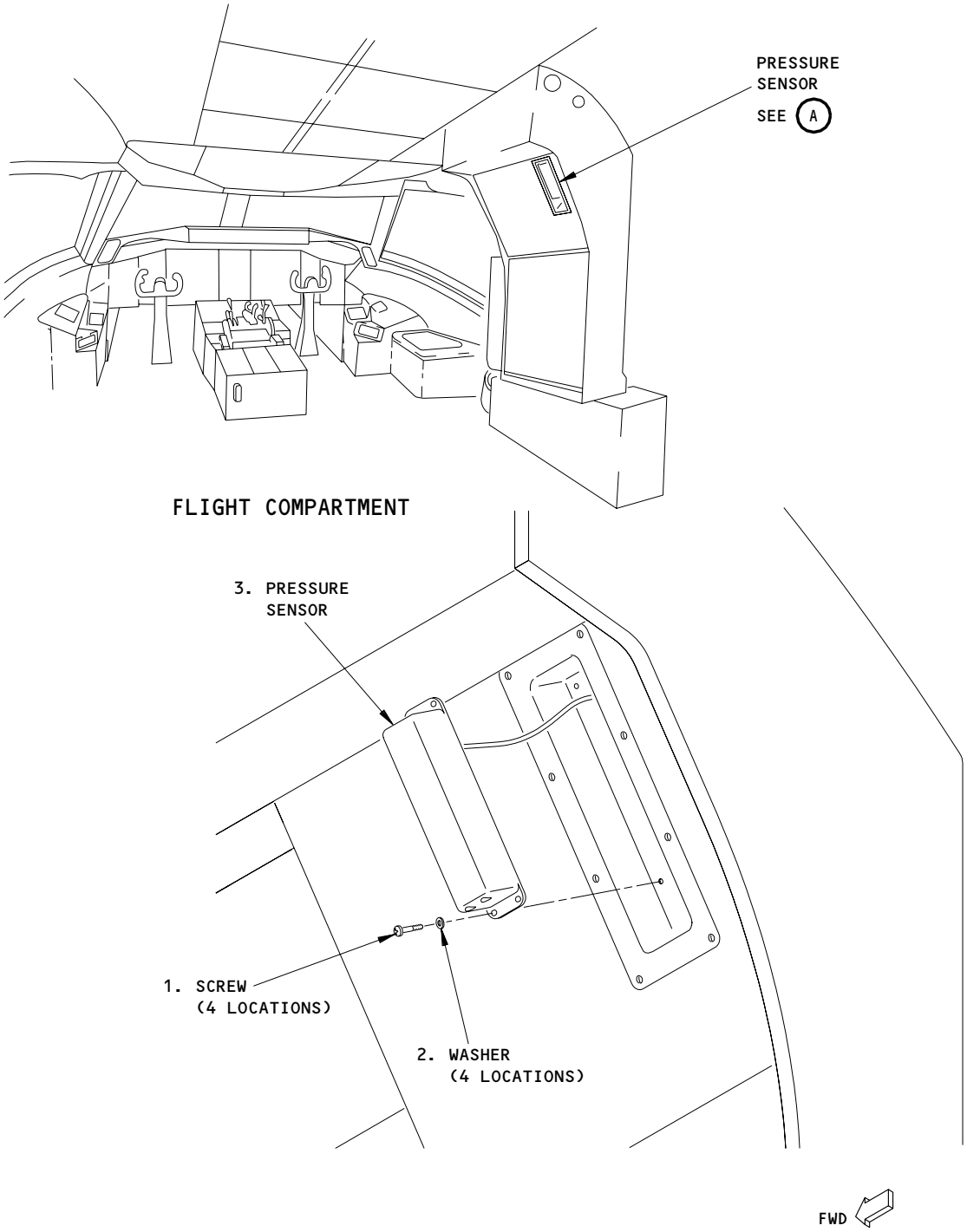

Pressure Sensor Installation
Figure 401

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S 424-010
(2) Install the electrical connector.

S 424-005
(3) Install the screws (1) and the washers (2).

C. Put the Airplane Back to its Usual Condition

S 864-011
(1) Remove the DO-NOT-CLOSE tag and close this circuit breaker:
(a) 11T5, FLT DECK DR LOCK

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RIGHT OVERHEAD LIGHTING CONTROL PANEL - REMOVAL/INSTALLATION

1. General
   A. This Procedure has these tasks:
      (1) A removal of the right overhead lighting control panel.
      (2) An installation of the right overhead lighting control panel.

TASK 52-51-13-024-003

2. Overhead Lighting Control Panel Removal (Fig. 401)
   A. References
      (1) AMM 24-22-00/201, Electrical Power - Control
   B. Access
      (1) Location Zones
          212 Control cabin - Section 41 (Right)
   C. Overhead Lighting Control Panel Removal

      S 024-001
      (1) Do these steps to remove the Overhead Lighting Control Panel from the Forward Overhead Panel, P5:
          (a) Open these circuit breakers and attach DO-NOT-CLOSE tags:
              1) Overhead Equipment Panel, P11:
                 a) 11T5, FLT DECK DR LOCK
                 b) 11P3, OVHD INSTR & PNL LTS
                 c) 11P31, MAP LIGHTS
                 d) 11R5, DIM CONT, IND LIGHTS
                 e) 11A32, TEST, IND LTS
              2) MISC ELEC PNL, P33
                 a) 33K7, LIGHTS, FLIGHT DECK DOME
          (b) Turn the four quarter turn fasteners (1) which hold the Overhead Lighting Control Panel (2) to the Forward Overhead Panel, P5.
          (c) Carefully lower the Overhead Lighting Conrtrol Panel (2) out of the Forward Overhead Panel, P5.
          (d) Disconnect the electrical connector (3).
          (e) Disconnect the electrical connector (4).
          (f) Disconnect the electrical connector (5).
          (g) Remove the Overhead Control Panel (2).

TASK 52-51-13-424-004

3. Overhead Lighting Control Panel Installation (Fig. 401)
   A. References
      (1) AMM 24-22-00/201, Electrical Power - Control
   B. Access
      (1) Location Zones
          212 Control cabin - Section 41 (Right)

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C. Overhead Lighting Control Panel Installation

S 424-002

(1) Do these steps to install the Overhead Lighting Control Panel into the Forward Overhead Panel, P5:
   (a) Reconnect the electrical connector (5).
   (b) Reconnect the elecrrical connector (4).
   (c) Reconnect the electrical connector (3).
   (d) Carefully put the Overhead Lighting Control Panel (2) into the Forward Overhead Panel, P5.
   (e) Turn the four quarter turn fasteners (1).
   (f) Close these circuit breakers and remove the DO-NOT-CLOSE tags:
      1) Overhead Equipment Panel, P11:
         a) 11T5, FLT DECK DOOR LOCK
         b) 11P3, OVHD INSTR & PNL LIGHT
         c) 11P31, MAP LIGHTS
         d) 11R5, DIM CONT, IND LIGHTS
         e) 11A32, TEST, IND LTS
      2) MISC ELEC PNL, P33
         a) 33K7, LIGHTS, FLIGHT DECK DOME

S 714-005

(2) Do a post installation test of the flight deck door. To do a post installation test, do this task:
   (a) Flight Compartment Security Door Access System Test (AMM 52-51-00/501).

S 844-007

(3) Put the Airplane Back to It's Usual Condition.

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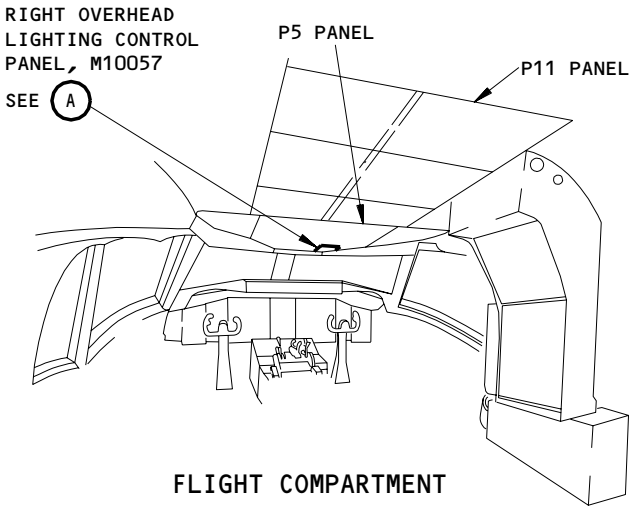
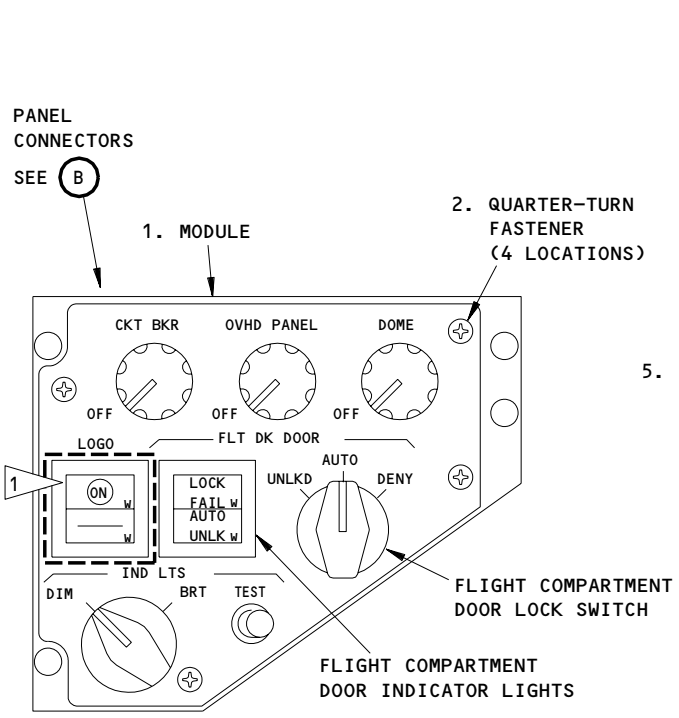
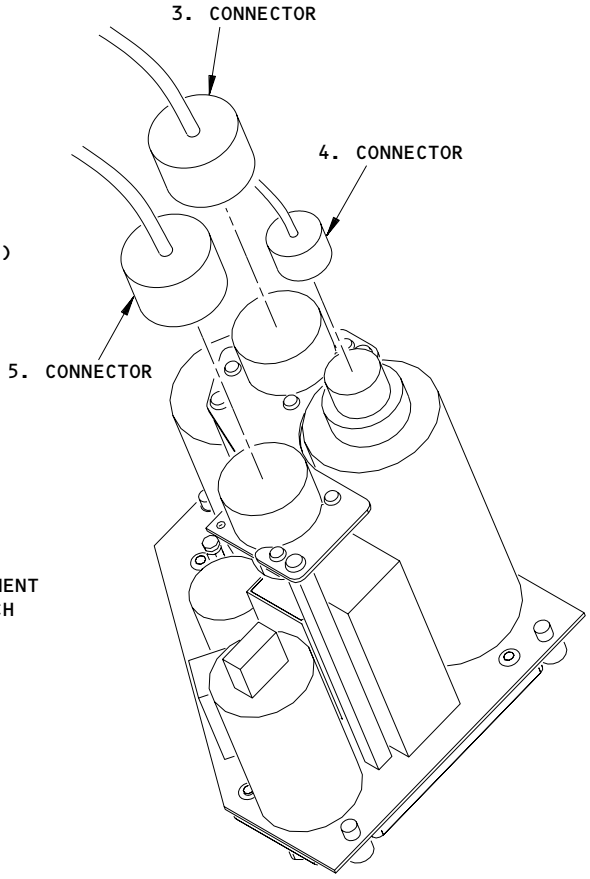


FLIGHT COMPARTMENT



RIGHT OVERHEAD LIGHTING
CONTROL PANEL, M10057

A



PANEL CONNECTORS

B

1 NOT INSTALLED ON ALL AIRPLANES

Right Overhead Lighting Control Panel Installation
Figure 401

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BLOWOUT PANEL - REMOVAL/INSTALLAION

1. General
   A. This Procedure has these tasks:
      (1) A removal of the blowout panels
      (2) An installation of the blowout panels.
      (3) There are two blowout panels on the door. The removal and installation steps are almost the same for both blowout panels.

TASK 52-51-14-004-001-001

2. Blowout Panel Removal (Fig. 401)
   A. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   B. Blowout Panel Removal

      S 024-002-001
      (1) Do these steps to remove the blowout panel:
          (a) Disengage the lower door release pin handles from the clips on the bottom blowout panel grill.
          (b) Remove the screws that attach the grill to the flight compartment door.
          (c) Remove the release pin clips from the lower blowout panel grill.
          (d) Remove the grill.
          (e) Remove the screws and the nuts that attach the hinge to the door.
          (f) Remove the blowout panel.

      S 024-003-001
      (2) Do these steps to remove the latch:
          (a) Remove the screws and washers that attach the latch to the door.
          (b) Remove the latch.

TASK 52-51-14-404-004-001

3. Blowout Panel Installation (Fig. 401)
   A. Consumable Materials
      (1) G02186 - BMS 1-68 Tape, 0.125 inch thick by 0.5 inch wide.
   B. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

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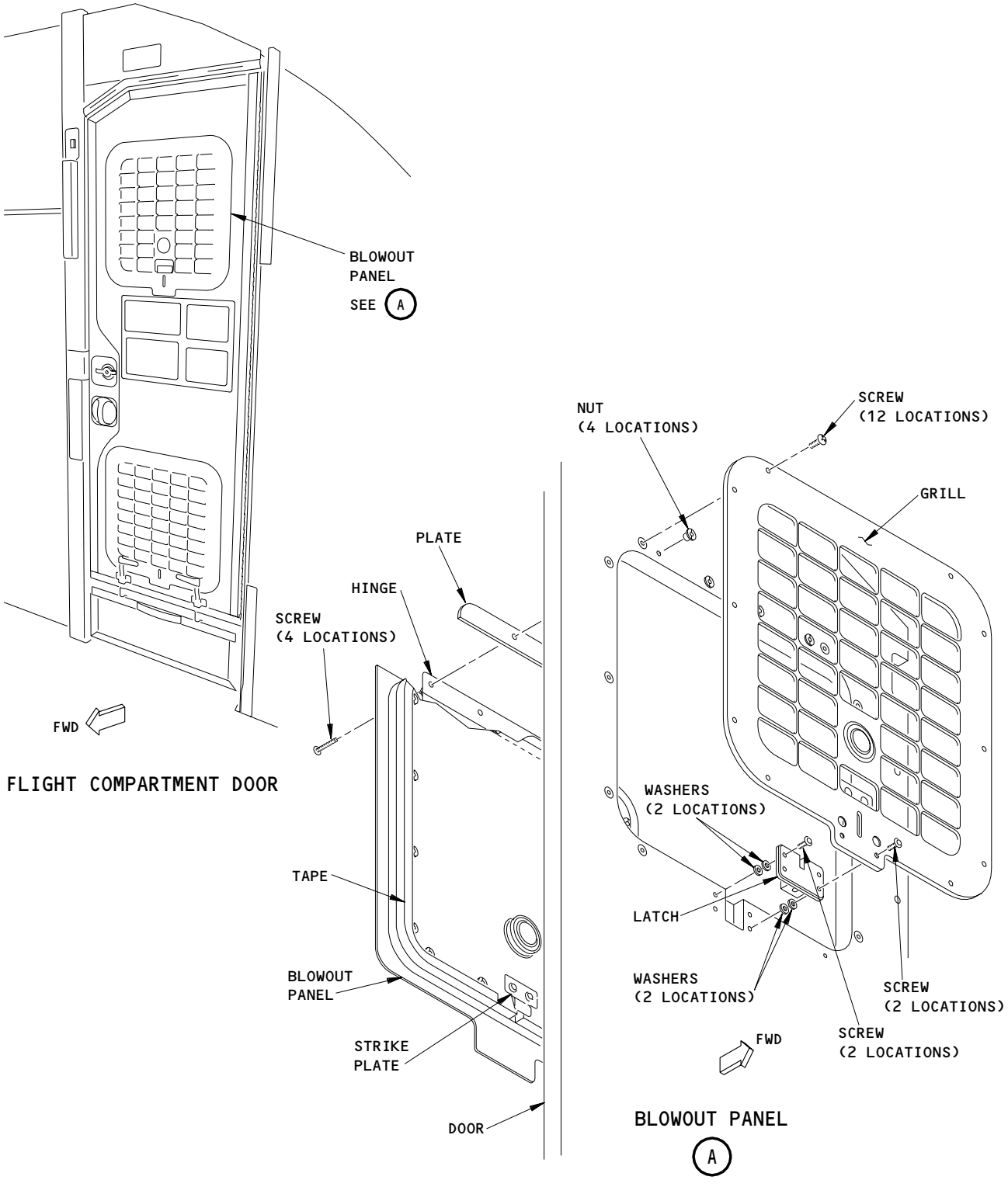

Blowout Panel Installation
Figure 401

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C. Blowout Panel Installation

S 424-005-001

(1) Do these steps to install the latch:
  (a) Put the latch in its position.
  (b) Install the two sets of screws and washers on the top side of the latch.

    NOTE: Put the washers under the latch cover.

  (c) Install the two sets of washers on the bottom side of the latch.

    NOTE: Put the washers under the latch cover.

S 424-006-001

(2) Do these steps to install the blowout panel:
  (a) Put the blowout panel in its position.
  (b) Install the screws and the nuts that attach the hinge to the door.
  (c) Make a note of the location of the tape on the old blowout panel.
  (d) Install new tape around the edge of the new blowout panel door so it seals against the door assembly and the edge of the tape is 0.95 to 1.15 inches (24.1 to 29.2 mm) from the outside edge of the grill when the grill is installed.

    NOTE: Trim the tape as necessary.

S 824-007-001

(3) Do these steps to adjust the latch:
  (a) Loosen the screws that attach the strike plate to the blowout panel.
  (b) Put the blowout panel in the closed position.
  (c) Make sure the blowout panel strike plate/latch overlap dimension is a minimum of 0.15 inches (3.8 mm).
  (d) If necessary, adjust the strike plate to obtain the proper dimension.
  (e) Tighen the screws on that attach the strike plate to the blowout panel.

S 424-008-001

(4) Do these steps to install the grill:
  (a) Put the grill in its position.

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(b) Put the two release pin clips in their position on the lower blowout panel.
(c) Install the screws that attach the grill to the door.
(d) Engage the release lower door release pin handles on the clips of the lower blowout panel grill.

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BLOWOUT PANEL - INSPECTION/CHECK

1. General
   A. This procedure contains these tasks:
      (1) Decompression Panel Hinges and Latches Inspection
      (2) Decompression Panel Trim Ring Seal inspection.

TASK 52-51-14-216-001-001

2. Decompression Panel Hinges and Latches Inspection

   A. General
      (1) This procedure checks the condition and security of the flight compartment door decompression panel hinges and latches.
      (2) These checks ensure that the decompression panels will open if there is a rapid decompression of the aft cabin.
      (3) You must do the inspections on both the top and the bottom blowout panels.
   B. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   C. Procedure

      S 216-005-001
      (1) Do these steps to check the decompression panel hinges and latches:
          (a) Remove the screws that attach the strike plate to the blowout panel.

              NOTE: You can access the screws through the holes in the grill.

          (b) Remove the strike plate and the shim.
          (c) Open the blowout panel.
          (d) Make sure the tongue on the latch is in the vertical position and is not loose.
          (e) Inspect the hinge, strike plate, and latch for the following abnormal conditions:
              1) Deformation
              2) Cracks
              3) Notches
              4) Unusual wear
              5) Corrosion

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(f) Put the blowout panel in the closed postion.
(g) Put the shim and the strike plate in its position.
(h) Install the screws that attach the strike plate to the blowout panel.

TASK 52-51-14-216-003-001

3. Decompression Panel Trim Ring Seal Inspection

A. General
(1) This procedure checks the condition and security of the flight compartment door inner trim ring seals.
(2) This procedure ensures there is an adequate air seal on the blowout panels to aid in the removal of smoke from the flight compartment.
(3) You must do the inspection on both the top and the bottom blowout panels.

B. Access
(1) Location Zones
211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

C. Procedure

S 216-006-001
(1) Do these steps to inspect the inner trim ring seals:
(a) Disconnect the lower door panel hinge pin levers from the bottom blowout panel grill.
(b) Remove the screws that attach the grill to the blowout panel.
(c) Remove the grill.
(d) Inspect the inner trim ring seal for these abnormal conditions:
1) Deformation
2) Cracks
3) Notches
4) Unusual wear
(e) Put the grill in its position.
(f) Install the screws tht attach the grill to the blowout panel.

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(g) Connect the lower door panel hinge pin levers to the bottom blowout panel grill.

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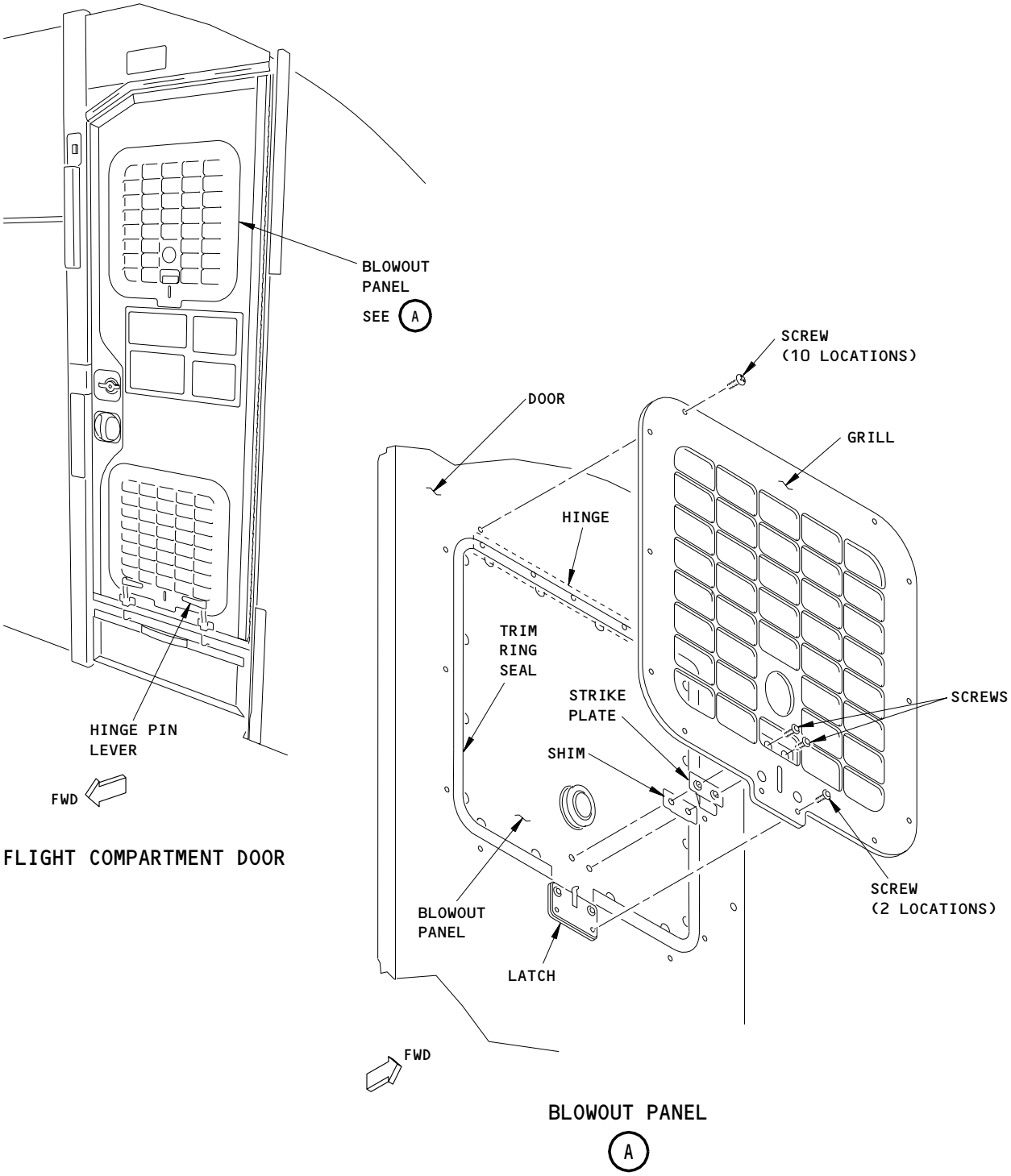

Blowout Panel Inspection
Figure 601

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FLIGHT COMPARTMENT DOOR ARMOR - REMOVAL/INSTALLATION

1. General
   A. This Procedure has these tasks:
      (1) A removal of the flight compartment door armor.
      (2) An installation of the flight compartment door armor.
   B. You must remove the door armor when to remove the flight compartment seats.

TASK 52-51-20-004-001-001

2. Flight Compartment Door Armor Removal (Fig. 401)
   A. References
      (1) AMM 52-51-05/401, Flight Compartment Door Removal/Installation
   B. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   C. Flight Compartment Door Armor Removal

      S 024-002-001
      (1) Remove the flight compartment door if it is necessary (AMM 52-51-05/401).

      S 024-003-001
      (2) Do these steps to remove the hinge side armor (7):
          (a) Remove the fairing screws (6).
          (b) Remove the hinge side armor (7).

      S 024-004-001
      (3) Do these steps to remove the post side armor:
          (a) Remove the fairing screws (1) from the top post side armor angle (2).
          (b) Remove the top post side armor angle (2)
          (c) Remove the fairing screws (1) from the middle post side armor angle (4).
          (d) Remove the middle post side armor angle (4).
          (e) Remove the fairing screws (1) from the bottom post side armor angle (5).
          (f) Remove the bottom post side armor angle (5).

TASK 52-51-20-404-005-001

3. Flight Compartment Door Armor Installation (Fig. 401)
   A. References
      (1) AMM 52-51-05/401, Flight Compartment Door Removal/Installation

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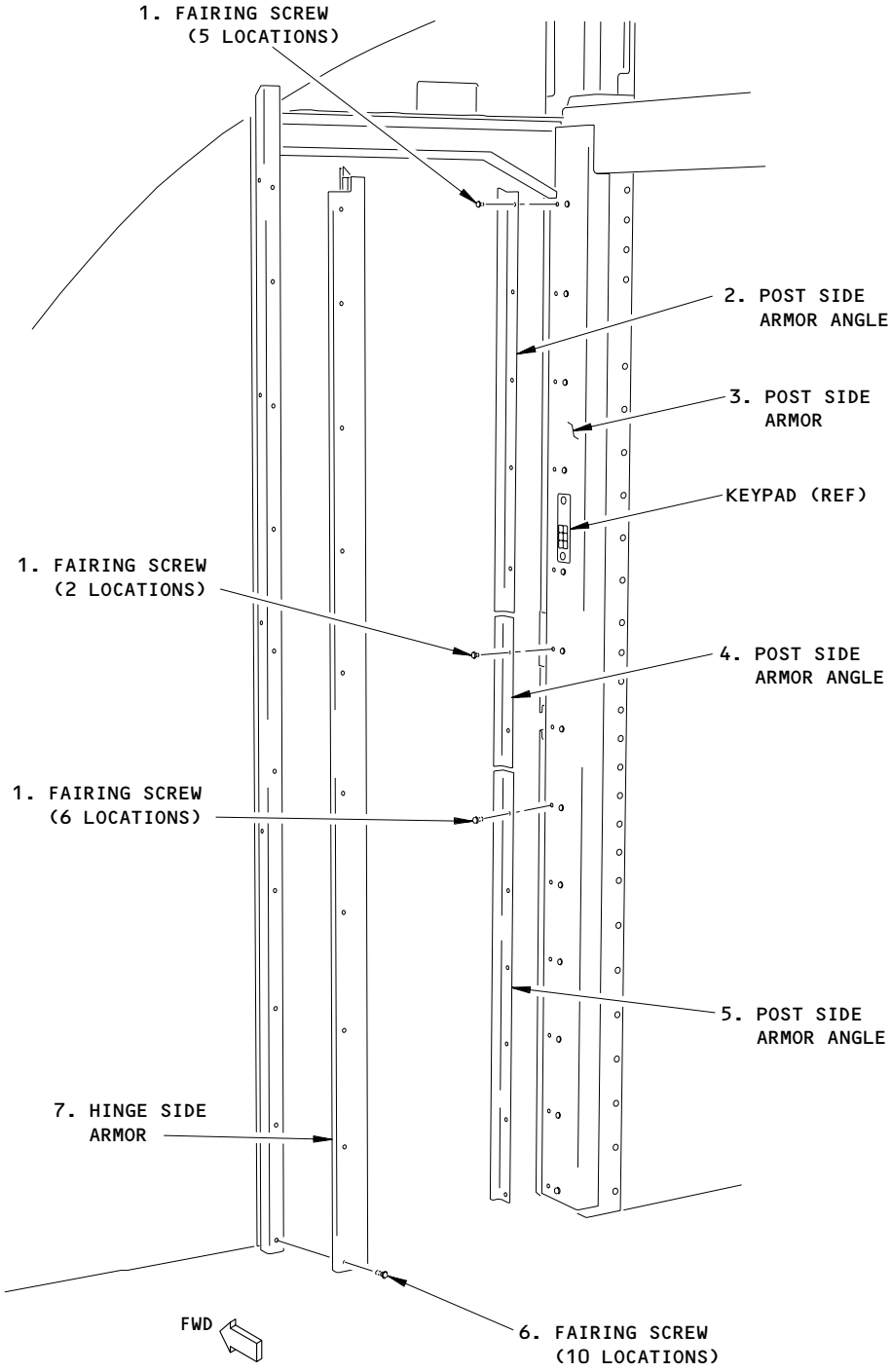

FLIGHT COMPARTMENT DOOR ARMOR
(DOOR NOT SHOWN)

Flight Compartment Door Armor Installation
Figure 401

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B. Access
(1) Location Zones
211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

C. Flight Compartment Door Armor Installation

S 424-006-001
(1) Do these steps to install the hinge side armor (7):
(a) Put the hinge side armor (7) in its position.
(b) Install the fairing screws (6).

S 424-007-001
(2) Do these steps to install the post side armor:
(a) Put the bottom post side armor angle (5) in its position.
(b) Install but do not fully tighten the fairing screws (1).
(c) Put the middle post side armor angle (4) in its position.
(d) Install but do not fully tighten the fairing screws (1).
(e) Put the top post side armor angle (2) in its position.
(f) Install but do not fully tighten the fairing screws (1).

S 424-008-001
(3) Install the flight compartment door if you removed it (AMM 52-51-05/401).

S 824-009-001
(4) If you did not remove the flight compartment door, adjust the latch side door armor (AMM 52-51-05/401).

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FLIGHT COMPARTMENT DOOR ARMOR - REMOVAL/INSTALLATION

1. General
   A. This Procedure has these tasks:
      (1) A removal of the flight compartment door armor.
      (2) An installation of the flight compartment door armor.
   B. You must remove the door armor to remove the flight compartment seats.

TASK 52-51-20-004-001-002

2. Flight Compartment Door Armor Removal (Fig. 401)
   A. References
      (1) AMM 52-51-05/401, Flight Compartment Door Removal/Installation
   B. Access
      (1) Location Zones
          211 Control cabin - Section 41 (Left)
          221 Passenger cabin - Section 41 (Left)

   C. Flight Compartment Door Armor Removal

      S 024-002-002
      (1) Remove the flight compartment door if it is necessary (AMM 52-51-05/401).

      S 024-003-002
      (2) Do these steps to remove the hinge side armor (4):
          (a) Remove the screws (3) that attach the keypad box (1) to the hinge side armor (4) (AMM 52-51-09).
          (b) Carefully remove the keypad box (1) from the hinge side armor so you can access the screws (3).
          (c) Remove the screws that attach the hinge side armor (4) to the left side door post.
          (d) Remove the hinge side armor (4).

      S 024-004-002
      (3) Do these steps to remove the post side armor if it is necessary:

          NOTE: You many not need to remove the post side armor to remove the flight compartment seats. Do not remove the post side armor if it is not necessary.
          (a) Remove the screws (12), (14), and (15) at the bottom of the post side armor (6).
          (b) Lift the bottom of the seal that covers the screws (13) at the bottom of the post side armor (6).
          (c) Remove the screws (13).
          (d) Remove the screws (11) on the passenger side of the post side armor (6).

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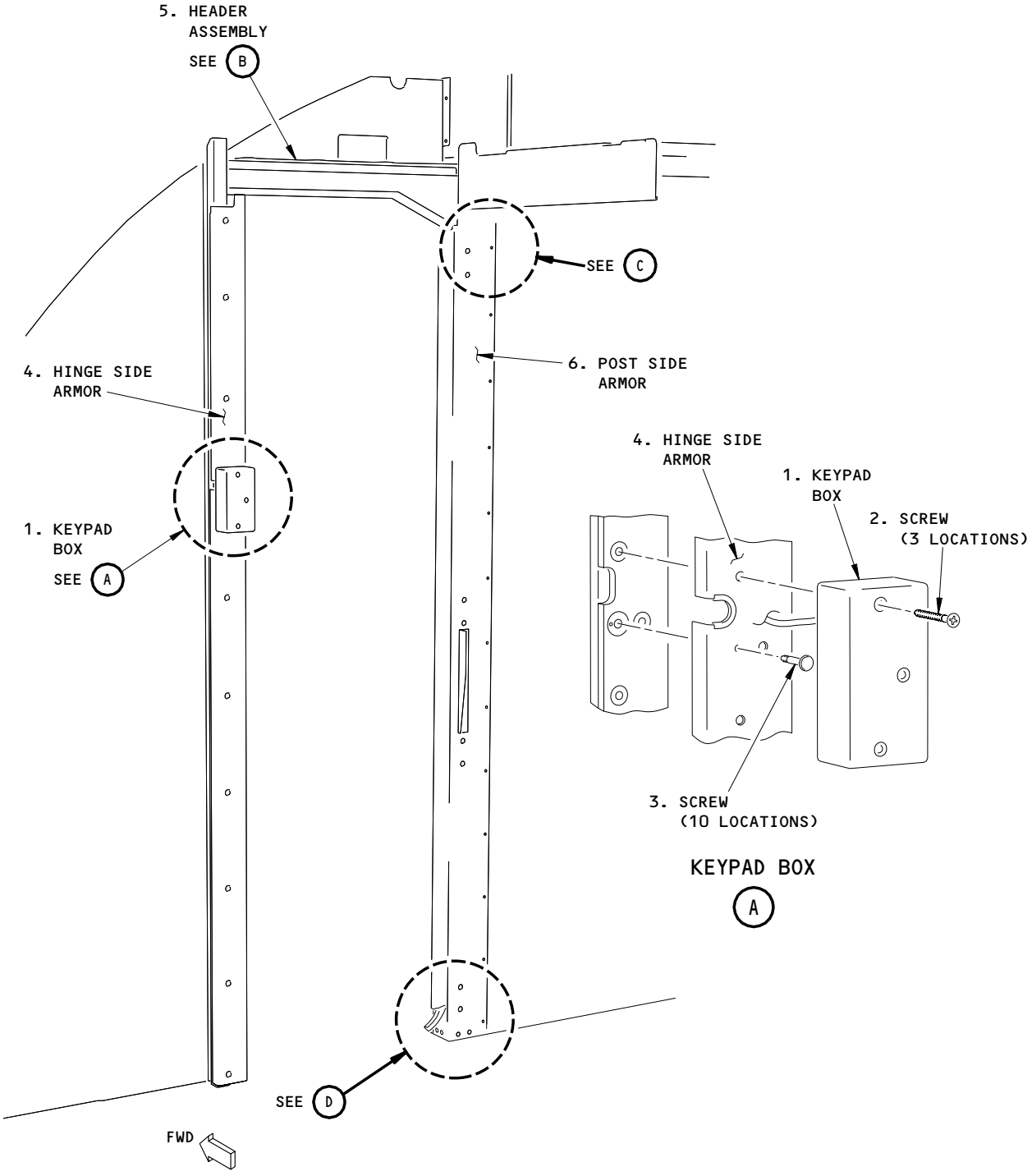

FLIGHT COMPARTMENT DOOR ARMOR
(DOOR NOT SHOWN)

Flight Compartment Door Armor Installation
Figure 401 (Sheet 1)

N97316

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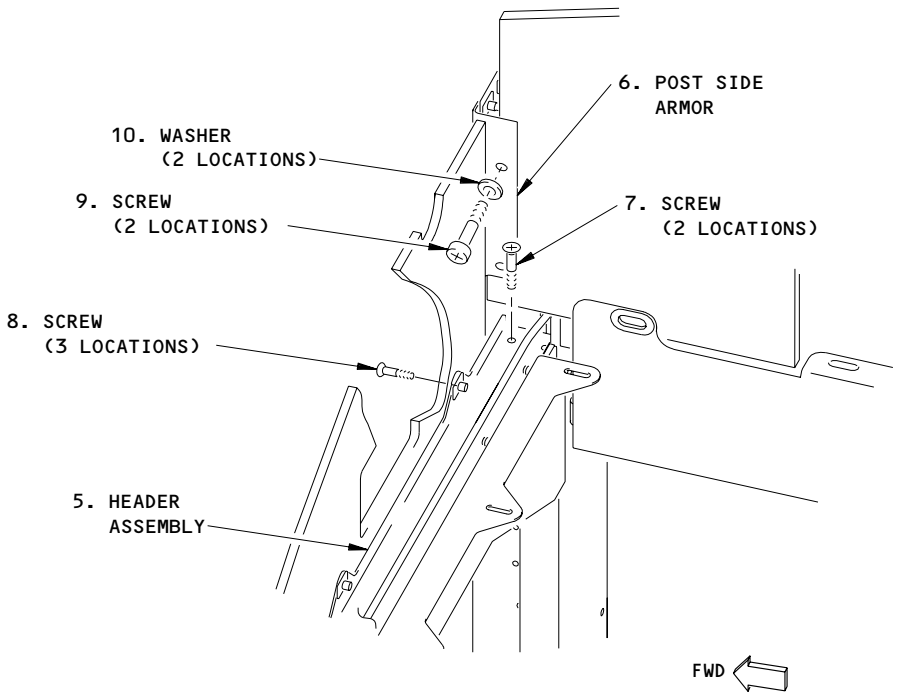
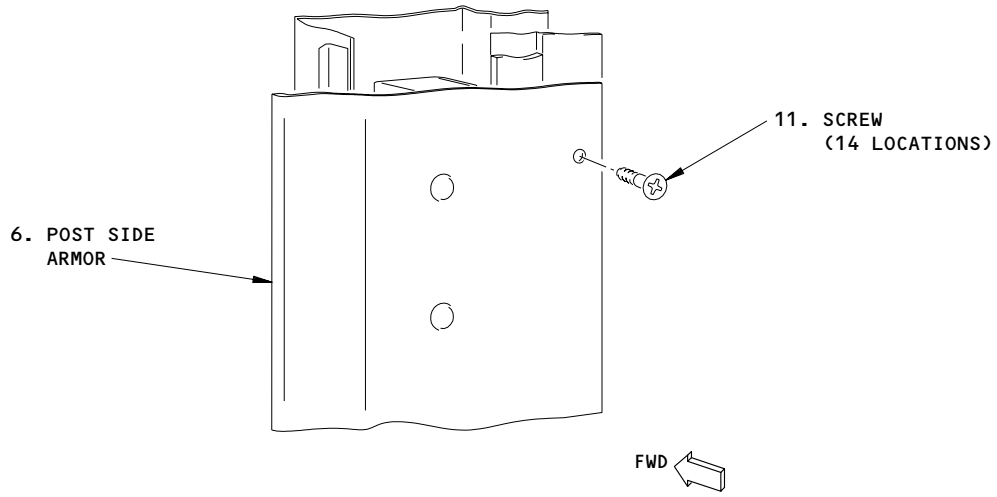


HEADER ASSEMBLY

B



(PASSENGER SIDE)

C

Flight Compartment Door Armor Installation
Figure 401 (Sheet 2)

N97445

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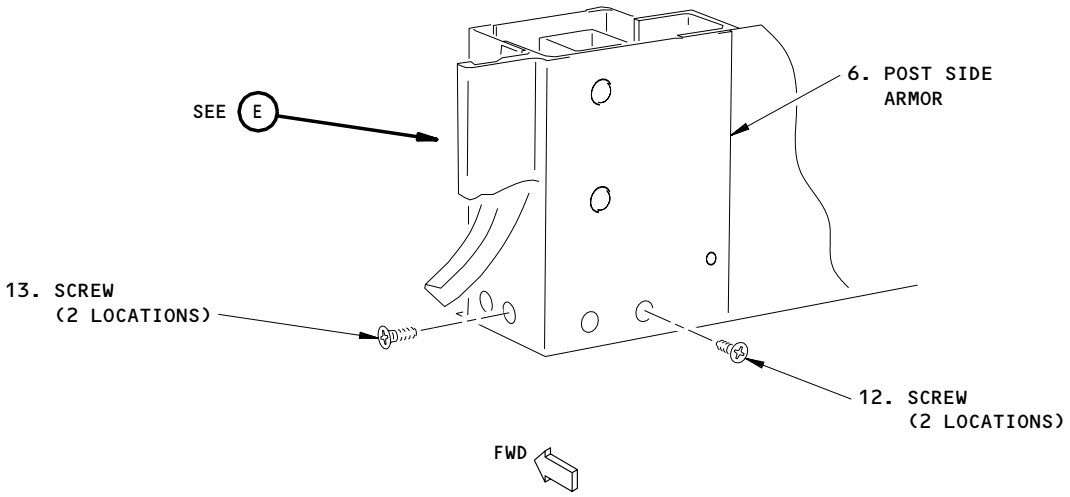
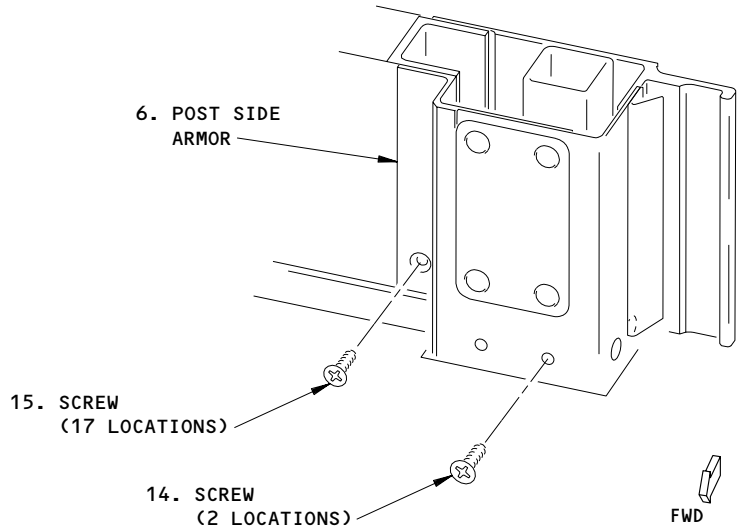


(PASSENGER SIDE)

D



(FLIGHT DECK SIDE)

E

Flight Compartment Door Armor Installation
Figure 401 (Sheet 3)

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(e) Remove any ceiling liners as necessary to get access to the fasteners on the header assembly (5).
(f) Remove the screws (7) and (8) from the header assembly (5).
(g) Remove the screws (9) and washers (10) from the post side armor (6).
(h) Carefully lift the header assembly so that you can remove the top of the post side armor (6) from the header assemby (5).
(i) Carefully move and rotate the post side armor as necessary.

NOTE: You only need to move the armor as necessary to remove the flight compartment seat.

TASK 52-51-20-404-005-002

3. Flight Compartment Door Armor Installation (Fig. 401)

A. Consumable Materials
(1) A00027 - Adhesive, BAC5010 Type 60

B. References
(1) AMM 52-51-05/401, Flight Compartment Door Removal/Installation

C. Access
(1) Location Zones
211 Control cabin - Section 41 (Left)
221 Passenger cabin - Section 41 (Left)

D. Flight Compartment Door Armor Installation

S 424-006-002
(1) Do these steps to install the hinge side armor (4):
(a) Put the hinge side armor (4) in its position.
(b) Install the screws (3).
(c) Put the keypad box (1) in its position on the hinge side armor (4) (AMM 52-51-09).
(d) Install the screws (2).

S 424-007-002
(2) Do these steps to install the post side armor if you removed it:
(a) Put the post side armor (6) in its position.
(b) Install the screws (9) and washers (10) in the post side armor (6).
(c) Install the screws (7) and (8) in the header assembly (5).
(d) Install the screws (11) on the passenger side of the post side armor (6).
(e) Install the screws (12), (13), (14), and (15) at the bottom of the post side armor (6).

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(f) Bond the bottom of the seal to the post side armor (6) with the BAC5010 type 60 adhesive.

NOTE: Make sure you do not apply the adhesive to the heads of the screws (13).

S 424-008-002

(3) Install the flight compartment door if you removed it (AMM 52-51-05/401).

S 824-009-002

(4) If you did not remove the flight compartment door, adjust the latch side door armor (AMM 52-51-05/401).

E. Do a Post Installation Test of the Keypad.

S 714-010-002

(1) Do the System Test of the Flight Compartment Security Door Access System (AMM 52-51-00/510).

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DOOR WARNING SYSTEM - DESCRIPTION AND OPERATION

1. General (Fig. 1)
   A. The door warning system provides the flight crew with a visual warning if doors to pressurized compartments are open or unlatched. The system also warns when the Offwing Escape Slide Compartment Doors (which are not pressurized) are open. The system consists of sensors, indicator lights, EICAS (Engine Indication and Crew Alerting System) messages, and logic through the PSEU (Proximity Switch Electronics Unit).
   B. All doors providing access to pressurized compartments are included in the system. Each door has at least one sensor, a discrete EICAS message on the pilots' center instrument panel P2, and a general warning light on the P5 annunciator panel. The message and light come on to show that door is unlatched or open.
2. Component Details
   A. Door Warning Sensors (Fig. 1)
      (1) The door warning proximity sensors are two wire, magnetic field producing coil core combinations, contained in non magnetic stainless steel cases.
      (2) When a sensor face is brought near or moved away from a steel target, the sensor inductance increases or decreases. The inductance change provides a low or high output signal to the PSEU (Proximity Switch Electronics Unit).
3. Operation
   A. Functional Indication (Fig. 2)
      (1) Sensors, located on the door or the door sill, sense door position. If the sensor target is near the inductance of the sensor circuit increases, providing a low output signal to the PSEU.
      (2) The PSEU processes the sensor signals in three stages.
         (a) The proximity card supplies a pulse to the sensor, and inputs the inductance of the pulse coming back from the sensor to the logic card.
         (b) The logic card converts the signals from the proximity cards into a high or low output. The logic card output then drives a particular gate in the driver card.
         (c) The driver card provides an open circuit or ground for indicator lights and the EICAS computers. Table 1 shows indicator lights and their individual and combination EICAS messages.

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(d) With the forward cargo door open, an aural tone will sound and the master caution light, located on glareshield, will illuminate. This is in addition to the indication light (CARGO DOORS) and EICAS messages.

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Table 1		
Indication Light	EICAS Message	
	Individual	Combination
ENTRY DOORS	L FWD ENT DOOR *[1]	
ENTRY DOORS	L AFT ENT DOOR *[1]	L ENTRY DOORS *[1]
ENTRY DOORS	R FWD ENT DOOR *[2]	
ENTRY DOORS	R AFT ENT DOOR *[2]	R ENTRY DOORS *[2]
CARGO DOORS	FWD CARGO DOOR *[3]	
CARGO DOORS	AFT CARGO DOOR *[3]	CARGO DOORS *[3]
CARGO DOORS	BULK CARGO DOOR *[3]	
ACCESS DOORS	FWD ACCESS DOOR *[4]	
ACCESS DOORS	E/E ACCESS DOOR *[4]	ACCESS DOORS *[4]
EMER DOORS	L WING SLIDE *[5]	
EMER DOORS	R WING SLIDE *[5]	

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EMER DOORS	L EMER DOOR *[5] *[6]	
EMER DOORS	R EMER DOOR *[5] *[6]	
EMER DOORS	L FWD EMER DOOR *[5] *[7]	EMER DOORS *[5]
EMER DOORS	L AFT EMER DOOR *[5] *[7]	
EMER DOORS	R FWD EMER DOOR *[5] *[7]	
EMER DOORS	R AFT EMER DOOR *[5] *[7]	

*[1] If two or more of these doors are open, individual messages are replaced with a single message: L ENTRY DOORS.

*[2] If two or more of these doors are open, individual messages are replaced with a single message: R ENTRY DOORS.

*[3] If two or more of these doors are open, individual message are replaced with a single message: CARGO DOORS.

*[4] If two or more of these doors are open, individual messages are replaced with a single message: ACCESS DOORS.

*[5] If two or more of these doors are open, individual messages are replaced with a single message: EMER DOORS.

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*[6] AIRPLANES WITH ONE OVERWING EMERGENCY EXIT HATCH OVER EACH WING

*[7] AIRPLANES WITH TWO OVERWING EMERGENCY EXIT HATCHES OVER EACH WING

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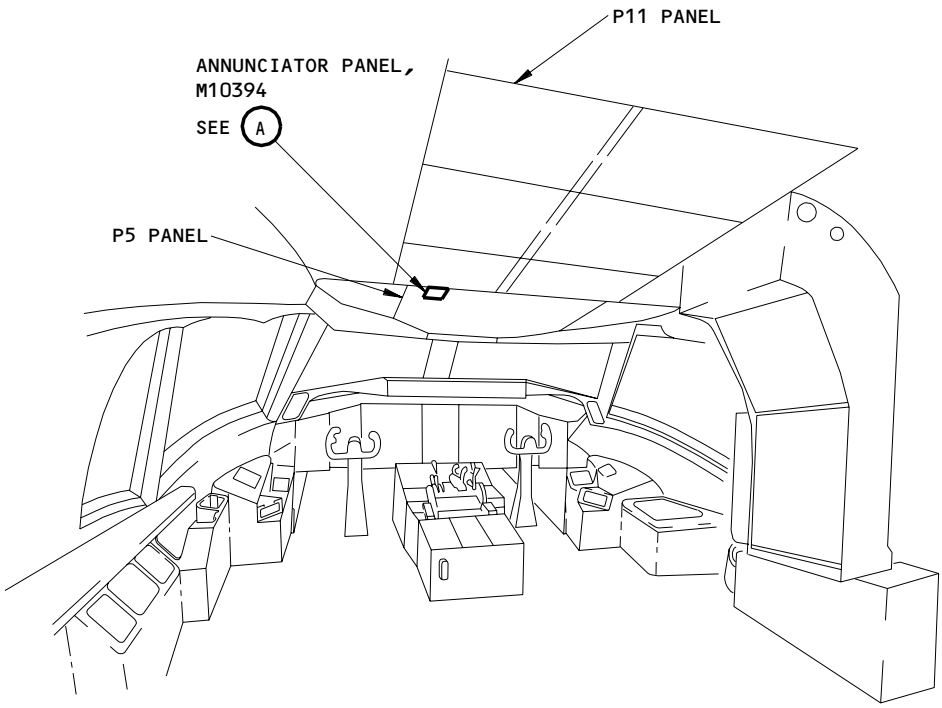
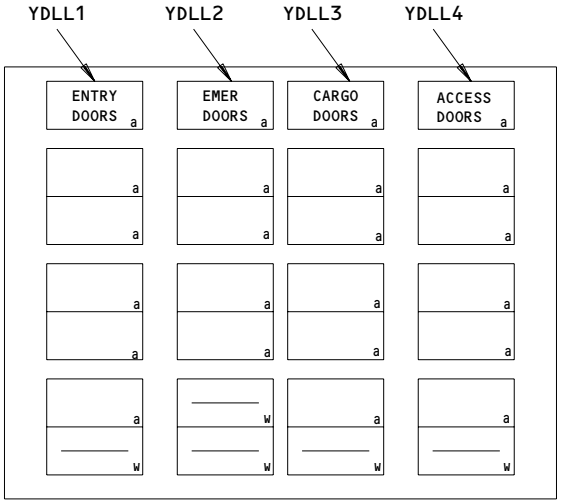


FLIGHT COMPARTMENT



ANNUNCIATOR PANEL, M10394

A

Door Warning System – Component Location
Figure 1

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DOOR WARNING SYSTEM

COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	REFERENCE
CIRCUIT BREAKER –				
DOOR IND, C1406		1	FLIGHT COMPARTMENT, P11, 11T33	
COMPUTERS – (31-41-00/101)				
LEFT EICAS, M10181				
RIGHT EICAS, M10182				
LIGHT – ACCESS DOORS INDICATOR, YDLL4			FLIGHT COMPARTMENT, P5, M10394	*
LIGHT – CARGO DOORS INDICATOR, YDLL3			FLIGHT COMPARTMENT, P5, M10394	*
LIGHT – EMER DOORS INDICATOR, YDLL2			FLIGHT COMPARTMENT, P5, M10394	*
LIGHT – ENTRY DOORS INDICATOR, YDLL1			FLIGHT COMPARTMENT, P5, M10394	*
PANEL – (30-31-00/101)				
ANNUNCIATOR, M10394				
PROXIMITY SWITCH ELECTRONICS UNIT, M162 (32-09-00/101)				
SENSORS – ACCESS DOORS				
ELECTRONICS ACCESS DOOR CLOSED, S201	4	1	119AL, DOOR FORWARD FRAME	52-71-01
FORWARD ACCESS DOOR CLOSED, S200	3	1	113AL, DOOR FORWARD FRAME	52-71-01
SENSORS – CARGO DOORS				
AFT CARGO DOOR CLOSED, S209	7	1	822, FLOOR BEAM ADJACENT TO HINGE ARM	52-71-01
AFT CARGO DOOR LOCKED, S208	7	1	822, DOOR FORWARD FRAME	52-71-01
BULK CARGO DOOR LATCHED, S211	5	1	811, DOOR AFT FRAME	52-71-01
FORWARD CARGO DOOR CLOSED, S215	6	1	821, DOOR LOWER EDGE	52-71-01
FORWARD CARGO DOOR LOCKED, S214	6	1	821, DOOR LOWER FRAME	52-71-01
SENSORS – ENTRY/SERVICE DOORS				
AFT ENTRY DOOR CLOSED, S204	2	1	833, UPPER DOOR FRAME	52-71-01
AFT ENTRY DOOR LOCKED, S205	2	1	833, UPPER DOOR FRAME	52-71-01
AFT ENTRY GIRT BAR ACTIVATE, S212	2	1	833, DOOR AFT FRAME	52-71-01
AFT SERVICE DOOR CLOSED, S206	2	1	843, UPPER DOOR FRAME	52-71-01
AFT SERVICE DOOR LOCKED, S207	2	1	843, UPPER DOOR FRAME	52-71-01
AFT SERVICE GIRT BAR ACTIVATE, S213	2	1	843, DOOR AFT FRAME	52-71-01
FORWARD ENTRY DOOR CLOSED, S194	2	1	831, UPPER DOOR FRAME	52-71-01
FORWARD ENTRY DOOR LOCKED, S195	2	1	831, UPPER DOOR FRAME	52-71-01
FORWARD ENTRY GIRT BAR ACTIVATE, S202	2	1	831, DOOR AFT FRAME	52-71-01
FORWARD SERVICE DOOR CLOSED, S196	2	1	841, UPPER DOOR FRAME	52-71-01
FORWARD SERVICE DOOR LOCKED, S197	2	1	841, UPPER DOOR FRAME	52-71-01
FORWARD SERVICE GIRT BAR ACTIVATE, S203	2	1	841, DOOR AFT FRAME	52-71-01

* SEE THE WDM EQUIPMENT LIST

Door Warning System – Component Index
Figure 101 (Sheet 1)

294915

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COMPONENT	FIG. 102 SHT	QTY	ACCESS/AREA	AMM REFERENCE
SENSOR – OFF–WING ESCAPE SYSTEM				
AFT/LEFT OVERWING EMERGENCY EXIT HATCH CLOSED, S216 [1]	8	1	834, HATCH FORWARD FRAME	52–71–01
AFT/RIGHT OVERWING EMERGENCY EXIT HATCH CLOSED, S217 [1]	8	1	844, HATCH FORWARD FRAME	52–71–01
FORWARD/LEFT OVERWING EMERGENCY EXIT HATCH CLOSED, S192 [1]	8	1	832, HATCH FORWARD FRAME	52–71–01
FORWARD/RIGHT OVERWING EMERGENCY EXIT HATCH CLOSED, S193 [1]	8	1	842, HATCH FORWARD FRAME	52–71–01
LEFT OVERWING EMERGENCY EXIT HATCH CLOSED, S192 [2]	8	1	832, HATCH FORWARD FRAME	52–71–01
LEFT SLIDE COMPARTMENT DOOR CLOSED, S218	9	1	195EL, DOOR UPPER FRAME	52–71–01
LEFT SLIDE COMPARTMENT DOOR LOCKED, S198	10	1	195EL, DOOR UPPER FRAME	52–71–01
RIGHT OVERWING EMERGENCY EXIT HATCH CLOSED, S193 [2]	8	1	842, HATCH FORWARD FRAME	52–71–01
RIGHT SLIDE COMPARTMENT DOOR CLOSED, S219	9	1	195ER, DOOR UPPER FRAME	52–71–01
RIGHT SLIDE COMPARTMENT DOOR LOCKED, S199	10	1	195ER, DOOR UPPER FRAME	52–71–01

[1] AIRPLANES WITH TWO HATCHES OVER EACH WING

[2] AIRPLANES WITH ONE HATCH OVER EACH WING

Door Warning System – Component Index
Figure 101 (Sheet 2)

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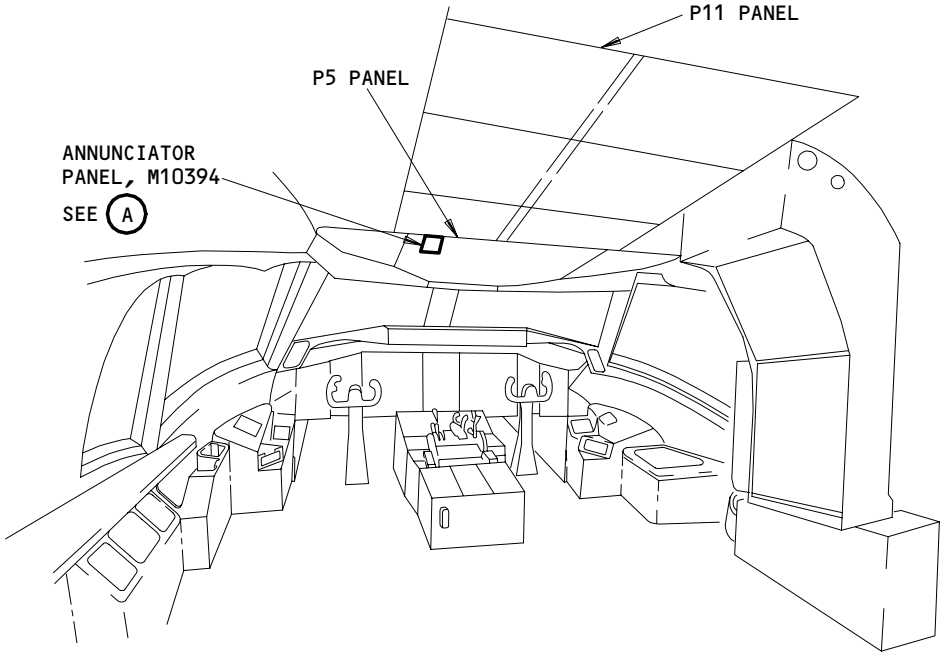
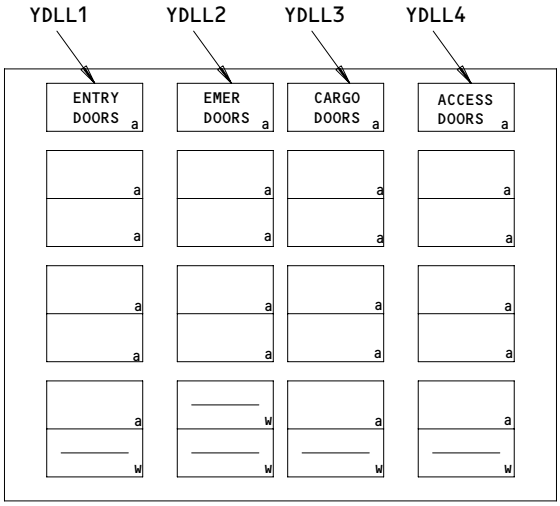


FLIGHT COMPARTMENT



ANNUNCIATOR PANEL, M10394

A

Door Warning System - Component Location
Figure 102 (Sheet 1)

94352

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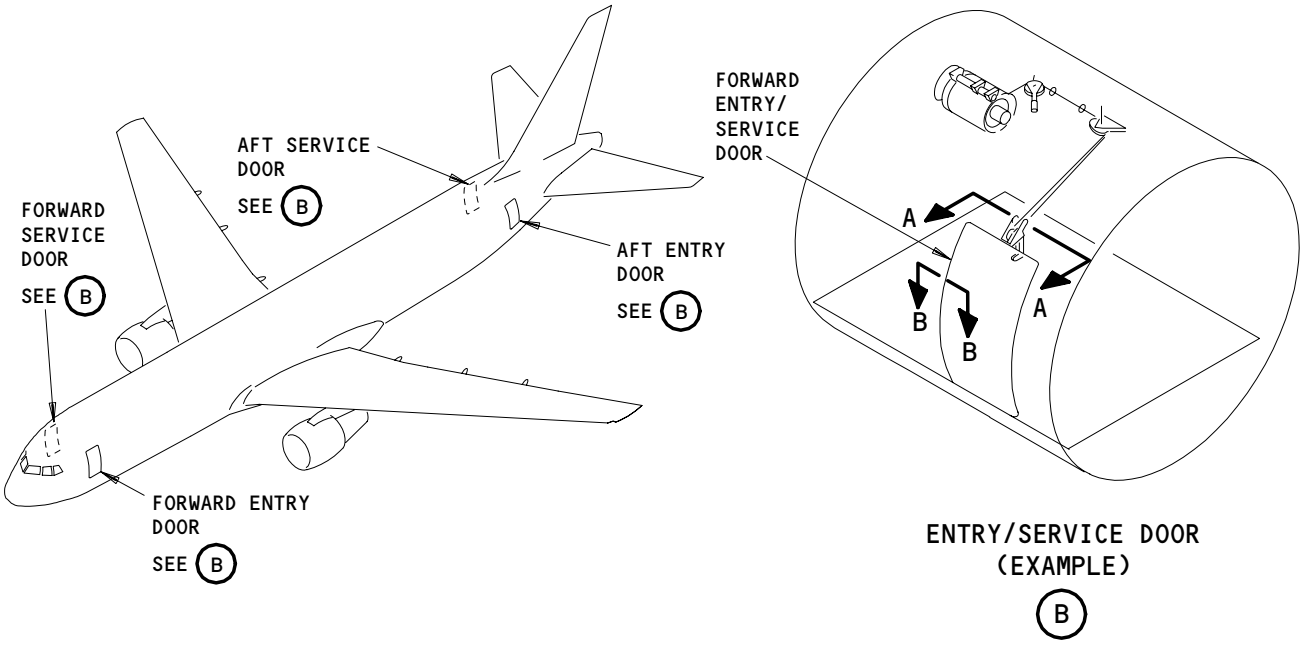

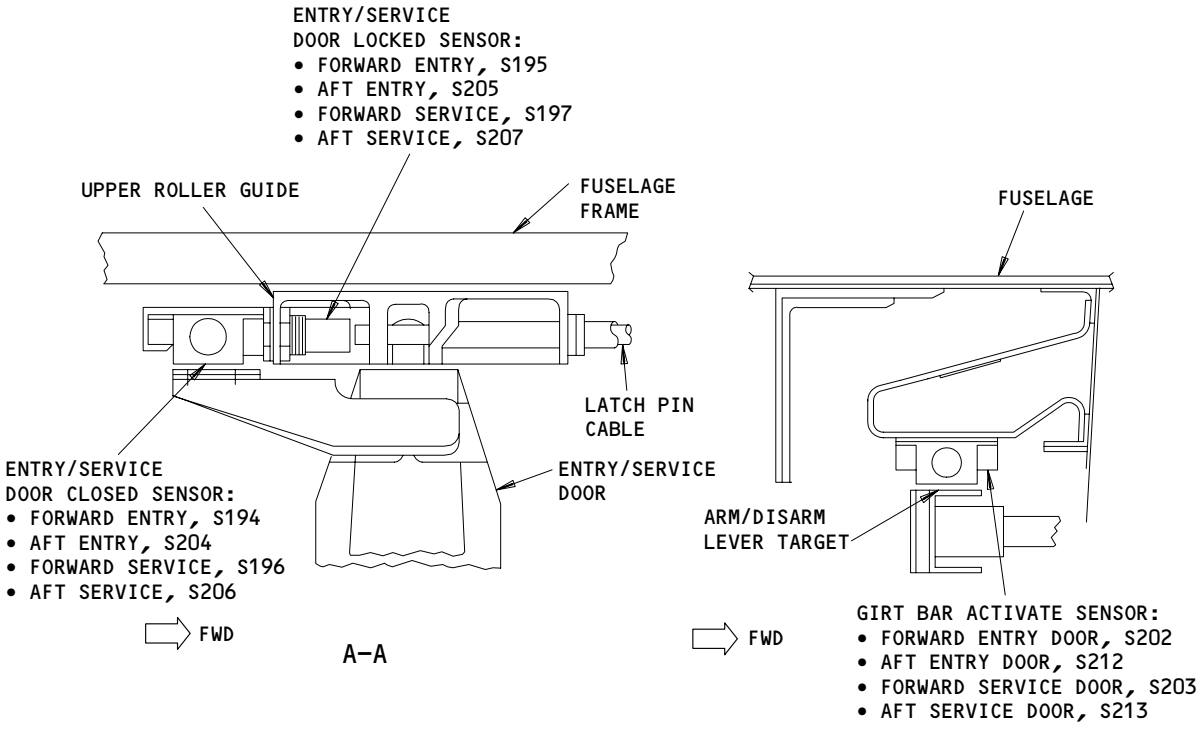

Door Warning System - Component Location
Figure 102 (Sheet 2)

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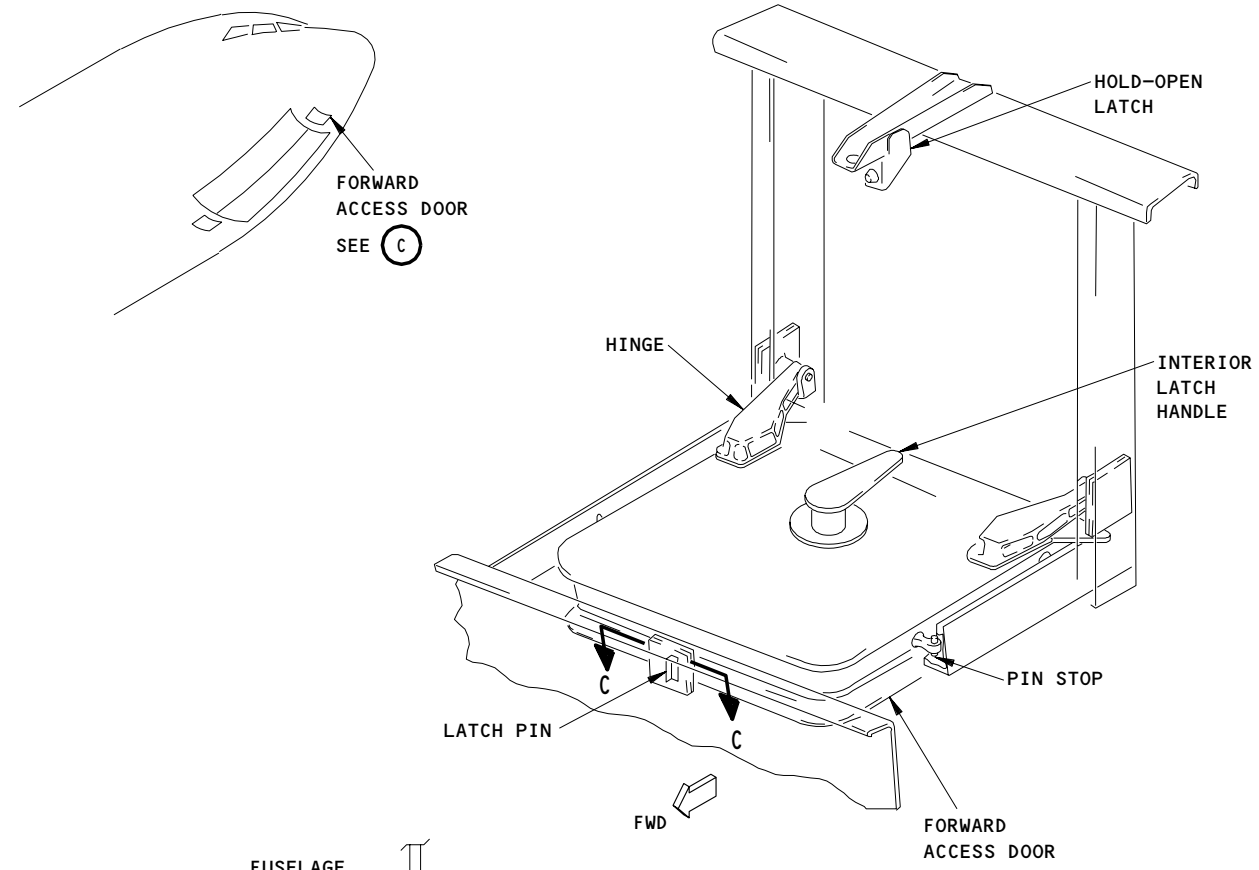
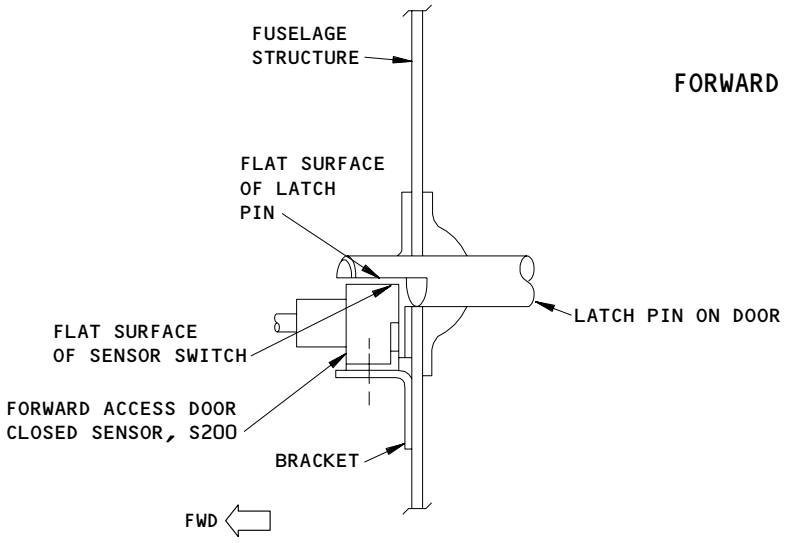


FORWARD ACCESS DOOR

C



C-C

Door Warning System - Component Location
Figure 102 (Sheet 3)

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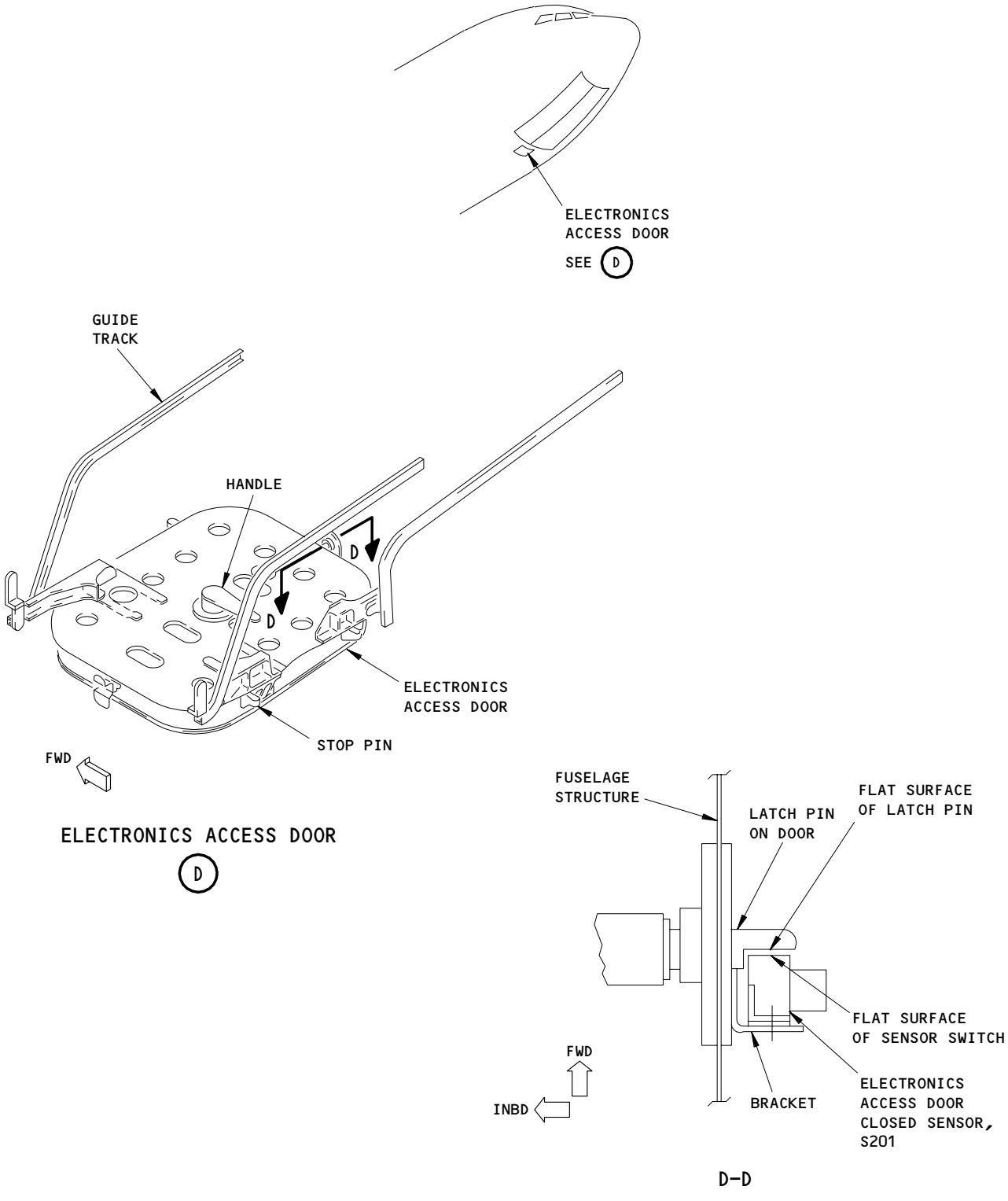

Door Warning System - Component Location
Figure 102 (Sheet 4)

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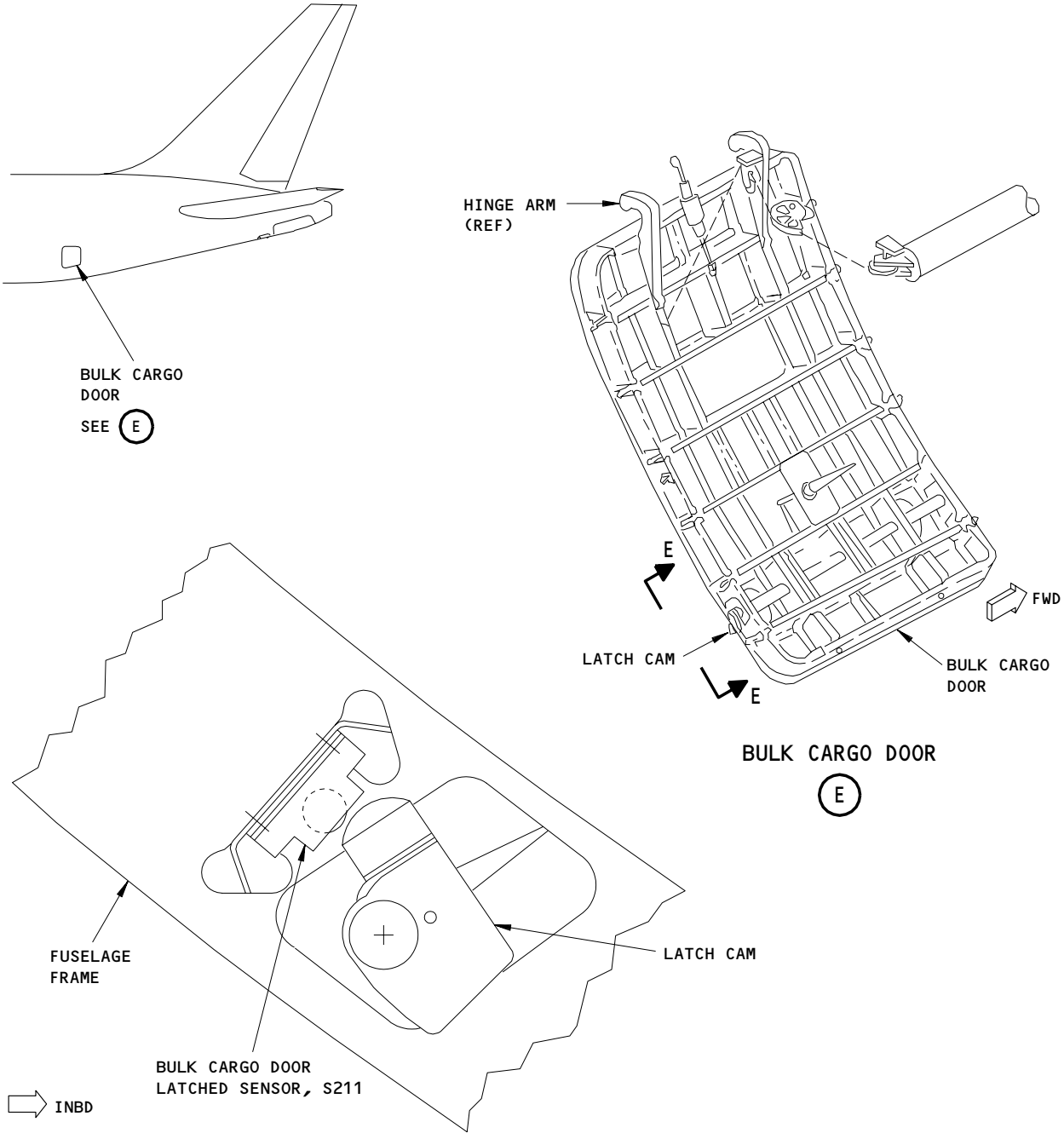

Door Warning System – Component Location
Figure 102 (Sheet 5)

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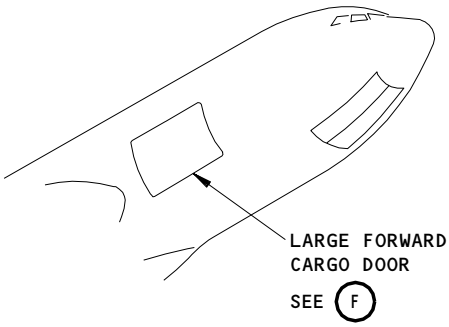
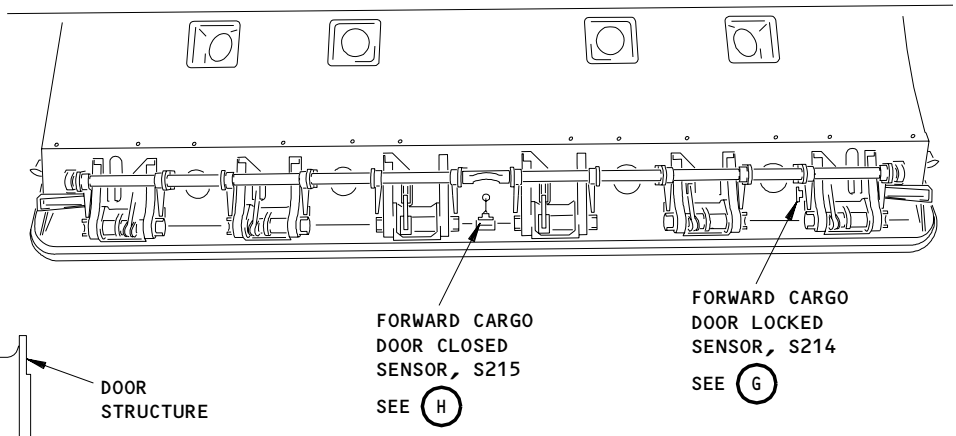
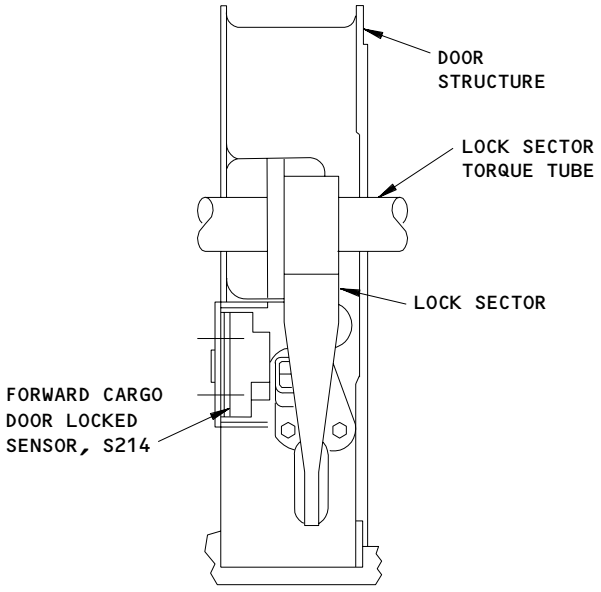




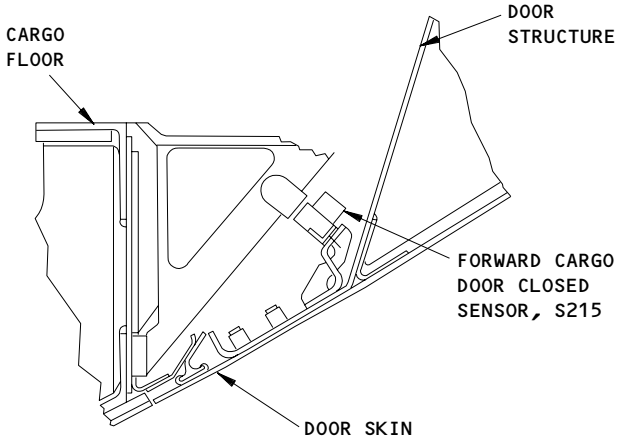
LARGE FORWARD CARGO DOOR
(OPEN POSITION, INTERNAL VIEW)

F



FORWARD CARGO DOOR
LOCKED SENSOR, S214

G



FORWARD CARGO DOOR CLOSED SENSOR, S215

H

Door Warning System – Component Location
Figure 102 (Sheet 6)

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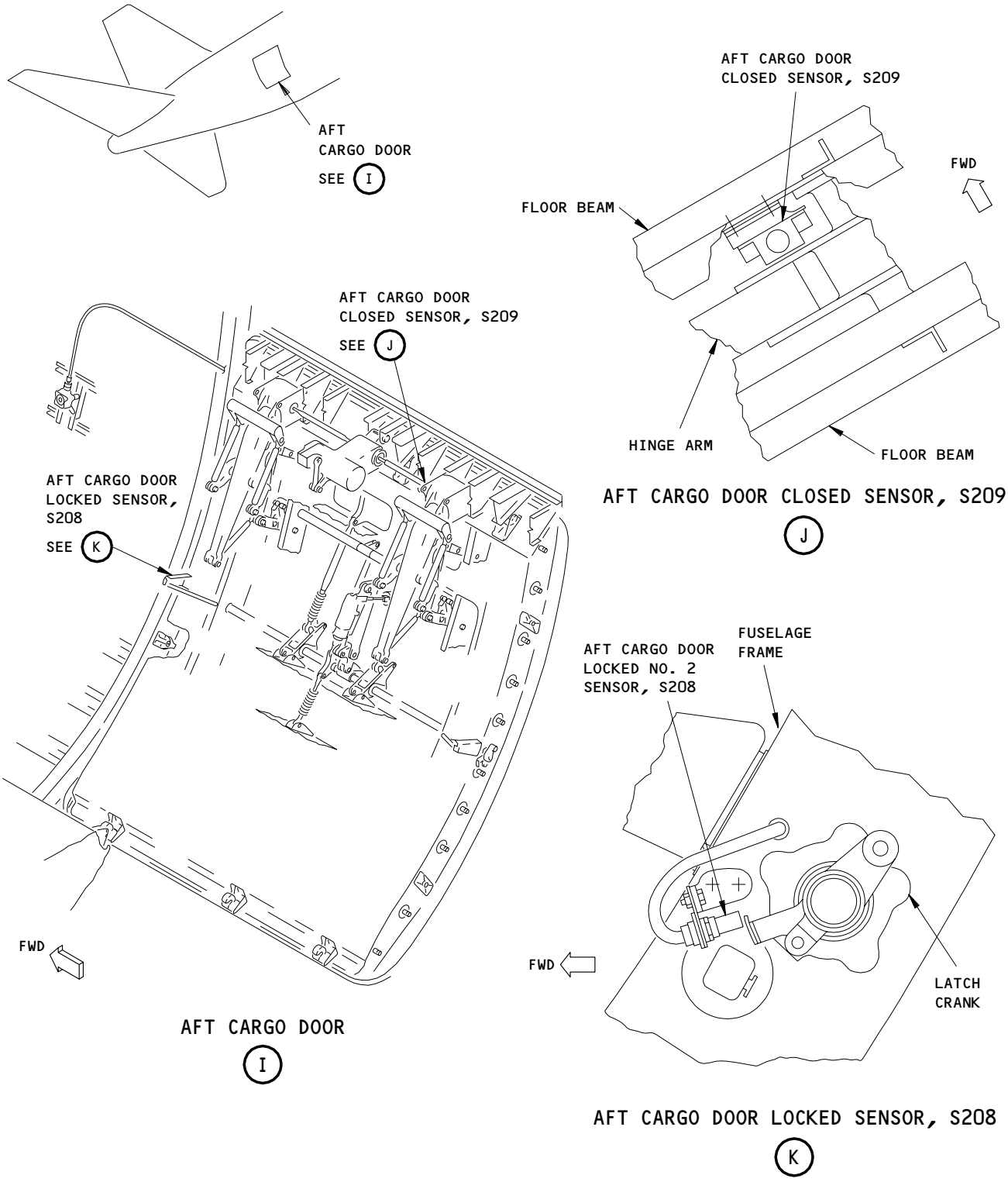

Door Warning System – Component Location
Figure 102 (Sheet 7)

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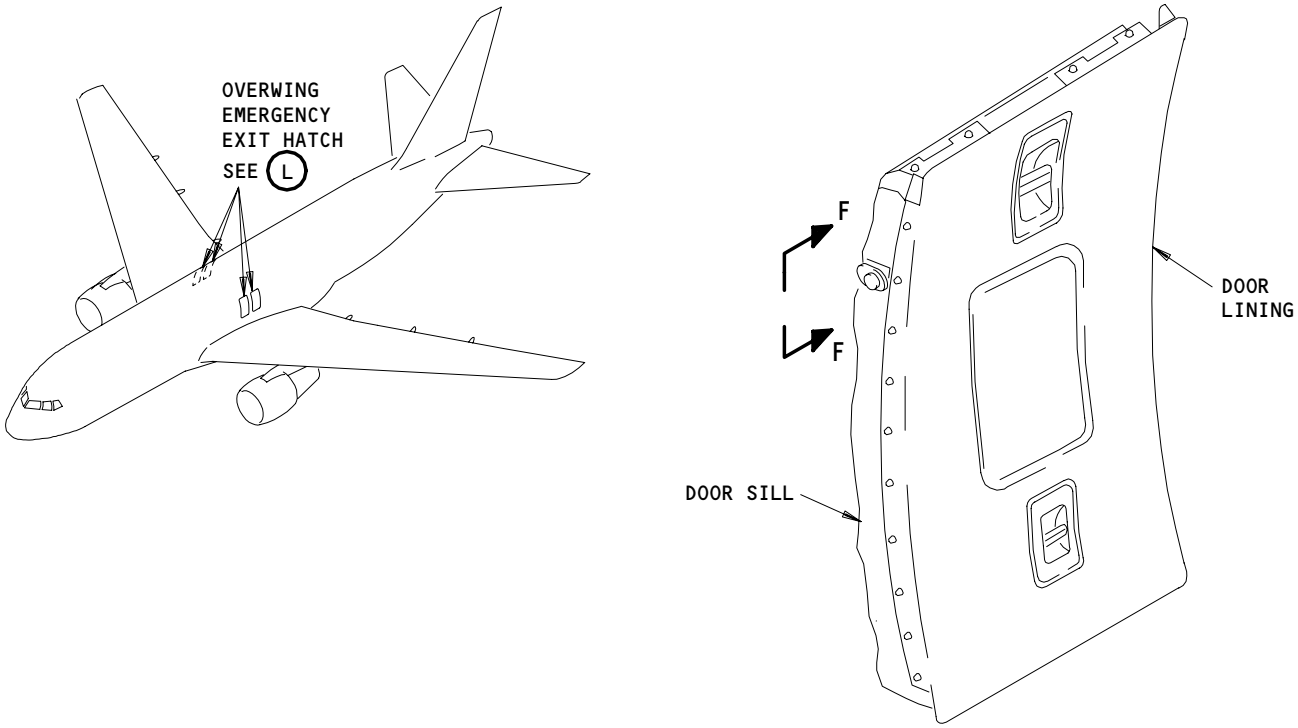

OVERWING EMERGENCY EXIT HATCH
(EXAMPLE)
L

F–F

1 AIRPLANES WITH ONE HATCH OVER EACH WING
2 AIRPLANES WITH TWO HATCHES OVER EACH WING

Door Warning System – Component Location
Figure 102 (Sheet 8)

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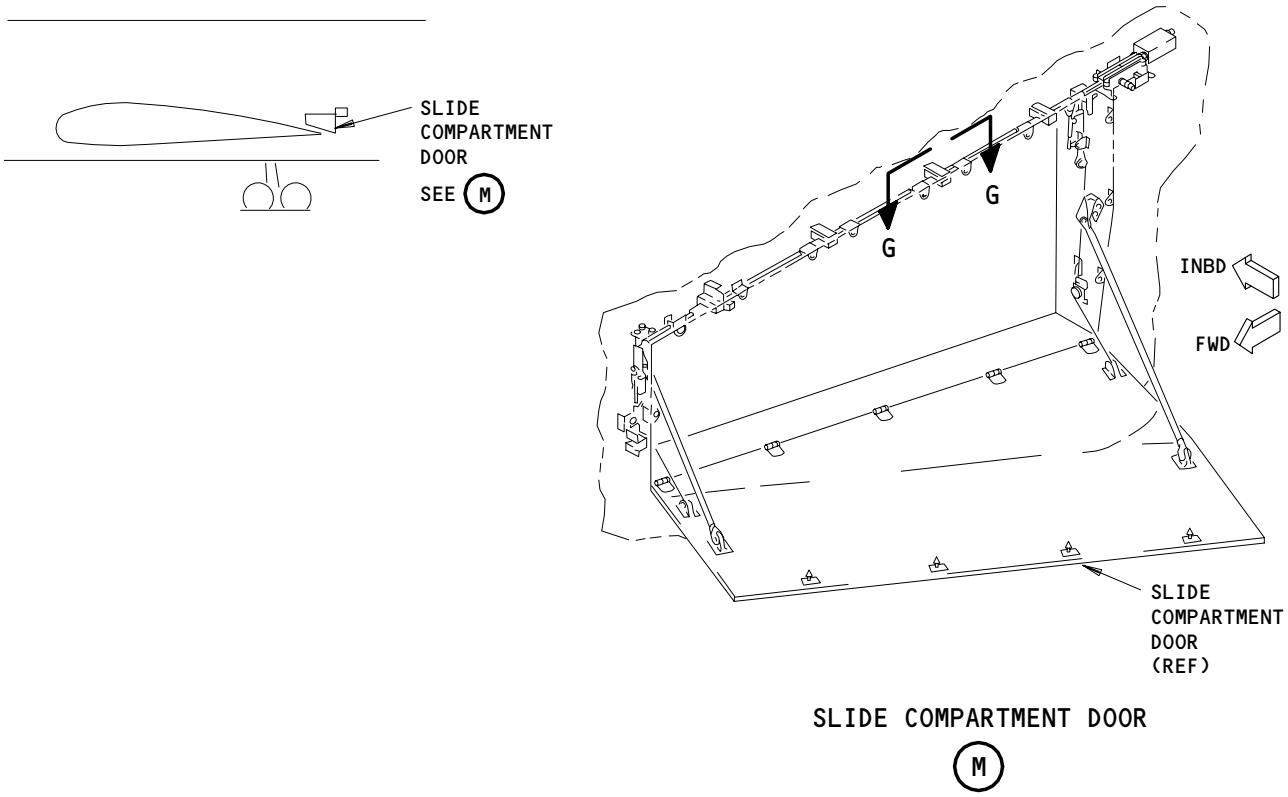
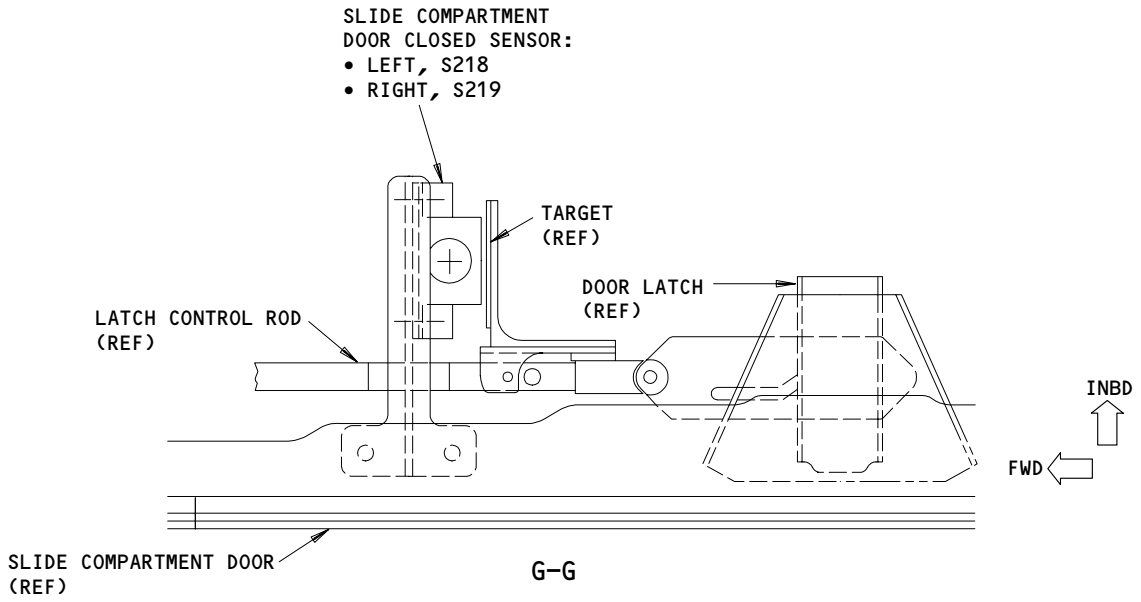


SLIDE COMPARTMENT DOOR
M



G-G

Door Warning System - Component Location
Figure 102 (Sheet 9)

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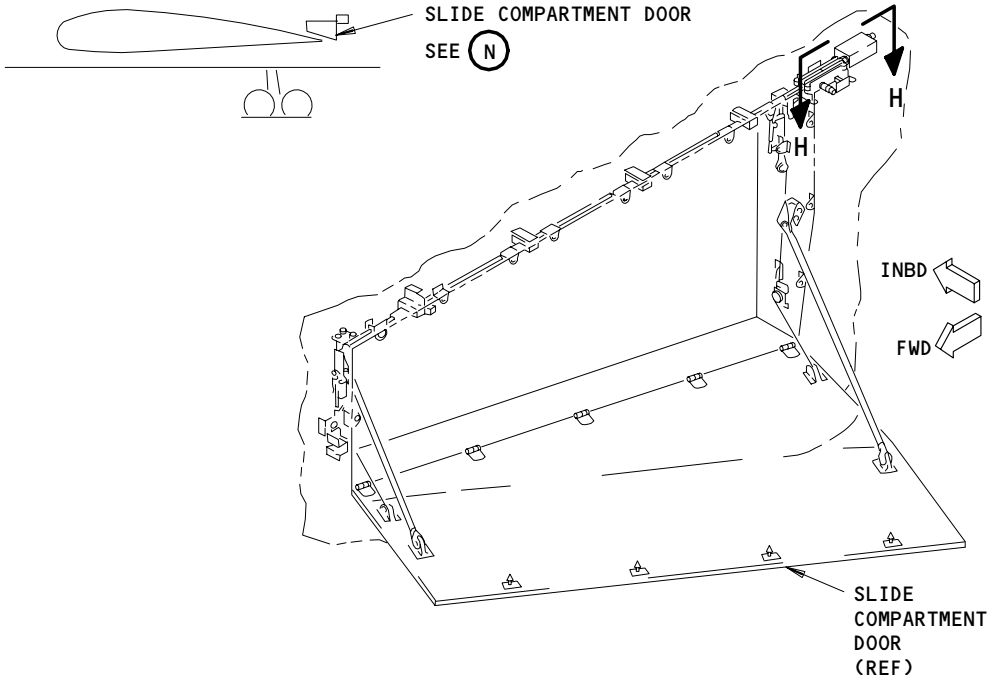
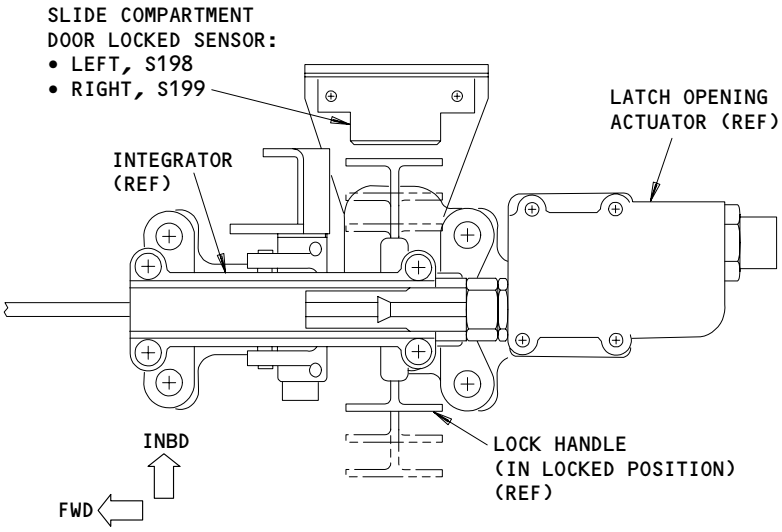


SLIDE COMPARTMENT DOOR

N



H-H

Door Warning System - Component Location
Figure 102 (Sheet 10)

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DOOR WARNING SYSTEM PROXIMITY SENSORS - ADJUSTMENT/TEST

1. General
   A. This procedure has these tasks:
      (1) Adjust the sensor for the forward or aft entry/service door.
      (2) Adjustment of the sensor for the forward access door.
      (3) Adjustment of the sensor for the electronics access door.
      (4) Adjustment of the sensor for the bulk cargo door.
      (5) Adjustment of the sensors for the aft cargo door.
      (6) Adjustment of the sensor for the overwing emergency exit hatch.
      (7) Adjustment of the sensors for the slide compartment door.
      (8) A full test of the door warning system.
      (9) A test of the door warning system for the bulk cargo door, forward access door, and electronics access door. This task is included in the full test of the door warning system. Thus, if you do the full test of the door warning system, then it is not necessary to do this task.
   B. The proximity sensors supply logic signals to the Proximity Switch Electronics Unit (PSEU). The PSEU sends signals to the Engine Indication and Crew Alerting System (EICAS) and to the warning lights on the P5 annunciator panel.
   C. The door warning system includes these doors:
      (1) Forward and Aft Entry/Service Doors
      (2) Overwing Emergency Exit Hatches
      (3) Slide Compartment Doors
      (4) Large Forward Cargo Door
      (5) Aft Cargo Door
      (6) Bulk Cargo Door
      (7) Forward Access Door
      (8) Electronics Access Door
   D. The removal, installation, and adjustment of the door warning sensors for the large forward cargo door is located in AMM 52-71-02/201.

TASK 52-71-00-825-001

2. Adjust the Sensor for the Forward or Aft Entry/Service Door (Fig. 501)
   A. General
      (1) The sensor installation for each entry/service door is almost the same. The door closed sensor and the door locked sensor are installed at the top of the fuselage frame. The girt bar activate sensor is installed on the side of the fuselage frame adjacent to the door.
      (2) The door closed sensor uses a flat plate on the top edge of the door as a target. To adjust the clearance between the sensor and the target, add or remove the laminations of shim from the target.
      (3) The door locked sensor uses the end fitting of the latch pin cable as a target. You cannot adjust the door locked sensor. To adjust the clearance between the sensor and the target, adjust the latch mechanism and the latch pin cable (Ref 52-11-00).

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(4) The girt bar activate sensor uses a fitting on the girt bar engagement mechanism as a target. To adjust the clearance between the sensor and the target, add or remove the laminations of shim from the sensor.

NOTE: The function of the sensor is to operate the emergency lights (Ref 33-51-00) when the door is opened and the girt bar is engaged.

B. Consumable Materials
(1) A00250 Adhesive, BMS 5-26, CLB-1/2

C. References
(1) 52-11-00/501, Entry/Service Doors
(2) 52-11-02/401, Entry/Service Door Lining

D. Access
(1) Location Zones
831 Forward Entry Door
833 Aft Entry Door
841 Forward Service Door
843 Aft Service Door

E. Procedure

S 215-003
(1) Make sure the door is correctly adjusted (52-11-00).

S 015-004
(2) Open the movable ceiling panels as follows:
(a) Close the door. Do not latch the door.
(b) Open the access door in the upper door liner to get access to the hinge pin release buttons.
(c) Pull the buttons together to release the hinge pins.
(d) Do these steps:
1) Open this circuit breaker on the overhead panel, P11, and attach a DO-NOT-CLOSE tag:
a) 11U32, DOOR WINDOW HEATER
2) Let the liner move down as far as the lanyard will permit.
3) Disconnect the electrical connector adjacent to the lanyard.
4) Pull the liner up sufficiently to make the lanyard loose.
5) Release the ball-lock pin on the lanyard to disconnect the lanyard from the bracket on the liner.
(e) Let the upper door liner move down into the door bustle. Do not let the liner fall freely.
(f) Fold the movable ceiling panels up and inboard into the area above the lowered ceiling.

S 225-005
(3) Make sure the clearance between the door closed sensor and the target is correct (View A-A).

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S 825-006
(4) If the clearance is not correct, do the steps that follow to adjust (View A-A):
  (a) Remove the two fasteners that hold the target and the shim to the door.
  (b) Remove the target and the shim.
  (c) Put the target in the correct position. Add or remove the laminations of shim to get the correct clearance.
  (d) Bond the shim in the correct position with the adhesive.
  (e) Install the target with the two fasteners.

S 225-007
(5) Make sure the distance between the upper roller guide and the end of the latch pin cable is correct (View A-A).

S 825-008
(6) If the distance is not correct, adjust the latch mechanism and the latch pin cable (Ref 52-11-00).

S 415-009
(7) Close the movable ceiling panels as follows:
  (a) Close the entry/service door. Do not latch the door.
  (b) Open the movable ceiling panels down and outboard to the closed position.
  (c) Pull the door liner up and out of the door to meet the movable ceiling panel.
  (d) Do these steps:
    1) Let the liner move down sufficiently to attach the lanyard ball-lock pin to the bracket on the liner, and attach the ball-lock pin to the bracket.
    2) Let the liner move down as far as the lanyard will permit.
    3) Connect the electrical connector on the electrical wiring between the liner and the movable ceiling panel.
    4) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
      a) 11U32, DOOR WINDOW HEATER
    5) Pull the liner up to meet the movable ceiling panel.
  (e) If it is not open, then open the access door in the upper door liner to get access to the hinge pin release buttons.
  (f) Pull the buttons together and engage the hinge pins.
  (g) Release the buttons.
  (h) Close the access door.

S 015-010
(8) Remove the doorway lining to get access to the girt bar activate sensor (Ref 52-11-02).

S 225-011
(9) Make sure the clearance between the girt bar activate sensor and the target is correct (View B-B).

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S 825-012

(10) If the clearance is not correct, do the steps that follow to adjust (View B-B):

(a) Remove the two fasteners that hold the sensor and the shim to the fuselage frame.

(b) Remove the sensor and the shim.

(c) Put the sensor in the correct position. Add or remove the laminations of shim to get the correct clearance.

(d) Bond the shim in the correct position with the adhesive.

(e) Install the sensor with the two fasteners.

S 415-013

(11) Install the doorway lining (Ref 52-11-02).

TASK 52-71-00-825-014

3. Adjust the Sensor for the Forward Access Door (Fig. 502)

A. General

(1) The forward access door closed sensor, S200, is installed on the fuselage frame of the forward access door in the same line as the latch pin.

(2) When the door is closed and latched, the flat surface of the latch pin on the door operates as a target for the sensor. To adjust the clearance between the sensor and the latch pin, add or remove the laminations of shim from the sensor.

B. Consumable Materials

(1) C00579 Chemical Treat (Colored Film), MIL-C-5541

C. References

(1) 52-48-01/401, Forward Access Door

D. Access

(1) Location Zone

113 Area Forward of NLG Wheel Well (Left)

(2) Access Panel

113AL Forward Access Door

E. Procedure

S 215-015

(1) Make sure the door is correctly adjusted (Ref 52-48-01).

S 225-016

(2) Make sure the clearance between the sensor and the latch pin is correct with the door closed and latched (View A-A).

NOTE: Push the door to the left when you set the clearance to make sure the clearance will note decrease.

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S 825-017

(3) If the clearance is not correct, do the steps that follow to adjust (View A-A):
   (a) Remove the fasteners that hold the sensor to the bracket.
   (b) Remove the sensor and the shim.
   (c) Put the sensor in the correct position. Remove the laminations of shim to get the correct clearance.
   (d) Apply MIL-C-5541 to the shim.
   (e) Install the sensor with the two fasteners.
   (f) Make sure the flat surface of the latch pin and the flat surface of the sensor are parallel to 4 degrees.

TASK 52-71-00-825-018

4. Adjust the Sensor for the Electronics Access Door (Fig. 503)

A. General
   (1) The electronics access door closed sensor, S201, is installed on the fuselage frame of the electronics access door in the same line as the latch pin.
   (2) When the door is closed and latched, the flat surface of the latch pin on the door operates as a target for the sensor. To adjust the clearance between the sensor and the latch pin, add or remove the laminations of shim from the sensor.

B. Consumable Materials
   (1) A00247 Sealant - BMS 5-95
   (2) C00579 Chemical Treat (Colored film) MIL-C-5541

C. References
   (1) 52-48-04/401, Electronics Access Door

D. Access
   (1) Location Zone
      119 Main Equipment Center (Left)

   (2) Access Panel
      119AL Electronics Access Door

E. Procedure

S 215-167

(1) Make sure the door is correctly adjusted (AMM 52-48-04/201).

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S 865-176
(2) Close and latch the door.

S 865-177
(3) Push the door as far aft as possible.

NOTE: The latch pin in its body side bushing or the door rollers in their tracks will bottom out to limit aftward travel.

S 865-178
(4) Hold the door in place.

S 825-168
(5) Remove 0.002 lamination from the shim to adjust the sensor to the latch pin clearance to 0.025 plus or minus 0.005 inch.

S 625-169
(6) Apply MIL-C-5541 to the shim.

S 625-170
(7) Install the shim with the BMS 5-95 applied to the mating surface.

S 865-179
(8) Push the door in the body cut out as far right as possible.

NOTE: The door rollers in their tracks will bottom out to limit teavel to the right.

S 865-180
(9) Hold the door in place.

S 225-171
(10) Make sure the clearance of 0.030 plus or minus 0.010 exist between the sensor and the latch pin.

S 825-172
(11) If it is necessary, adjust the latch pin position to get the clearance.

S 225-174
(12) Make sure the flat surface of the latch pin and the flat surface of the sensor are parallel to 4 degrees.

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TASK 52-71-00-825-022

5. Adjust the Sensor for the Bulk Cargo Door (Fig. 504)
   A. General
      (1) The bulk cargo door latched sensor, S211, is installed on the aft fuselage frame of the bulk cargo door.
      (2) When the door is in the fully latched position, the latch cam operates as a target for the sensor.
      (3) Do a check on the clearance between the sensor and the target from the cargo compartment with the door closed and latched.
   B. Equipment
      (1) A52021-1 WRENCH (Optional)
   C. Consumable Materials
      (1) A00250 Adhesive, BMS 5-26, CLB-1/2
   D. References
      (1) 52-36-01/401, Bulk Cargo Door
   E. Access
      (1) Location Zone
          811 Bulk Cargo Door
   F. Procedure

      S 215-023
      (1) Make sure the door is correctly adjusted (Ref 52-36-01).

      S 225-024
      (2) Make sure the clearance between the sensor and the latch cam surface is correct with the door closed and latched (View A-A).

      S 825-025
      (3) If the clearance is not correct, do the steps that follow to adjust (View A-A).
         (a) Remove the two fasteners that hold the sensor to the bracket.
         (b) Remove the sensor and the shim.
         (c) Put the sensor in the correct position. Add or remove the laminations of shim to get the correct clearance.
         (d) Bond the shim in the correct position with the adhesive.
         (e) Install the sensor with the two fasteners.

TASK 52-71-00-825-039

6. Adjust the Sensor for the standard Aft Cargo Door (Fig. 505)
   A. General
      (1) Two sensors are installed on the fuselage frame of the aft cargo door.
      (2) When the door is closed and latched, the hinge arm operates as a target for the aft door closed sensor, S209, and the surface of the latch crank operates as a target for the aft door locked sensor, S208.
      (3) Do a check on the clearances between the sensors and the targets from the cargo compartment with the door closed and latched.

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B. Consumable Materials
(1) A00250 Adhesive, BMS 5-26, CLB-1/2
(2) C00308 Corrosion Preventive Compound, MIL-C-11796, Class 3
C. References
(1) 52-35-00/501, Aft Cargo Door
D. Access
(1) Location Zone
822 Aft Cargo Door

E. Procedure

S 215-040
(1) Make sure the door is correctly adjusted (Ref 52-35-00).

S 225-041
(2) Make sure the clearance between the aft door closed sensor, S209, and the hinge arm is correct (View B).

S 825-042
(3) If the clearance is not correct, do the steps that follow to adjust (View B):
(a) Remove the two fasteners that hold the sensor and shim to the bracket on the door.
(b) Remove the sensor and the shim.
(c) Put the sensor in the correct position. Add or remove the laminations of shim to get the correct clearance.
(d) Bond the shim in the correct position with the adhesive.
(e) Install the sensor with the two fasteners.

S 225-043
(4) Make sure the clearance between the aft door locked sensor, S208, and the target is correct (View D).

S 825-044
(5) If the clearance is not correct, do the steps that follow to adjust (Views C and D):
(a) Remove the outboard locknut, shim, and sensor from the bracket.
(b) Put the sensor in the correct position. Add or remove the laminations of shim to get the correct clearance.
(c) Apply a layer of the corrosion preventive compound to the mating surfaces.
(d) Install the sensor and shim to the bracket with the locknut.
(e) Make sure the final adjustment of the sensor is correct. Do the "Adjust the Door Warning Sensors" procedure (Ref 52-35-00).

TASK 52-71-00-825-050
7. Adjust the Sensor for the Overwing Emergency Exit Hatch (Fig. 506)
A. General
(1) The sensor is installed on the fuselage frame of the hatch.
(2) When the hatch is in the locked position, the latch cam operates as a target for the sensor.

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(3) Do a check on the clearance between the sensor and the target with the hatch closed and latched.

B. Consumable Materials

(1) AOO250 Adhesive, BMS 5-26, CLB-1/2

C. References

(1) 52-21-01/201, Overwing Emergency Exit Hatch

(2) 52-21-02/201, Overwing Emergency Exit Hatch Lining

D. Access

(1) Location Zones

832 Overwing Emergency Exit Hatch (Left) *[1]
832 Overwing Emergency Exit Hatch (Forward/Left) *[2]
834 Overwing Emergency Exit Hatch (Aft/Left) *[2]
842 Overwing Emergency Exit Hatch (Right) *[1]
842 Overwing Emergency Exit Hatch (Forward/Right) *[2]
844 Overwing Emergency Exit Hatch (Aft/Right) *[2]

*[1] AIRPLANES WITH ONE HATCH OVER EACH WING.
*[2] AIRPLANES WITH TWO HATCHES OVER EACH WING.

E. Procedure

S 215-052

(1) Make sure the hatch is correctly adjusted (Ref 52-21-01).

S 015-053

(2) Remove the hatch lining to get access to the sensor (Ref 52-21-02).

S 225-054

(3) Make sure the clearance between the sensor and the latch cam is correct with the hatch closed and latched (View A-A).

S 825-055

(4) If the clearance is not correct, do the steps that follow to adjust (View A-A):

(a) Remove the two fasteners that hold the sensor and the shim to the bracket.
(b) Remove the sensor and the shim.
(c) Put the sensor in the correct position. Add or remove the laminations of shim to get the correct clearance.
(d) Bond the shim in the correct position with the adhesive.
(e) Install the sensor with the two fasteners.

S 415-056

(5) Install the hatch lining.

TASK 52-71-00-825-057

8. Adjust the Sensor for the Slide Compartment Door (Fig. 507)

A. General

(1) The door locked sensor is installed inboard of the lock handle on the integrator. When the door is in the locked position, the integrator lock handle operates as a target for the sensor.

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(2) The door closed sensor is installed on the top of the fuselage frame for the door. A target is installed on the latch control rod for the sensor.

B. Consumable Materials
(1) A00250 Adhesive, BMS 5-26, CLB-1/2
(2) C00308 Corrosion Preventive Compound, MIL-C-11796, Class 3

C. References
(1) 25-65-00/201, Off-Wing Escape System
(2) 25-65-07/601, Integrator Access Door
(3) 25-65-08/201, Slide Compartment Door

D. Access
(1) Location Zones
195 Wing to Body - Aft Upper Half (Left)
196 Wing to Body - Aft Upper Half (Right)

E. Procedure

S 215-058
(1) Make sure the door is correctly adjusted and has the correct flushness with the fuselage (Ref 25-65-00).

S 865-059
(2) Disarm the off-wing escape system (Ref 25-65-00).

S 825-060
(3) Adjust the door closed sensor:
(a) Make sure the clearance between the door closed sensor and the target is correct (View A-A).

NOTE: Make sure the latch control rod is fully forward so that the target is as near as possible to the sensor to measure the clearance.

1) Make sure the target does not touch the sensor when you move the door latches to the open and closed positions.

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(b) If the clearance is not correct, do the steps that follow to adjust (View A-A):
1) Make sure the integrator is in the locked position.
2) Make sure the door latches are in the closed position.
3) Pull the latch control rod fully forward.
4) Make sure the surface of the sensor and the surface of the target are parallel.
5) Remove or add washers to get the correct clearance between the sensor and the target.

S 825-069
(4) Adjust the door locked sensor:
(a) Make sure the integrator lock handle is pushed fully inboard into the LOCKED position (View A-A).
(b) Make sure the clearance between the door locked sensor and the inboard end of the integrator lock handle is correct (View A-A).
(c) If the clearance is not correct, do the steps that follow to adjust:
1) Remove the two fasteners that hold the sensor and the shim to the bracket.
2) Remove the sensor and the shim.
3) Add or remove the laminations of shim to get the correct clearance (View B-B).
4) Bond the shim in the correct position with the adhesive.
5) Install the sensor with the two fasteners.

S 205-071
(5) Do the integrator access door inspection to make sure the offwing slide system is correctly installed and adjusted (Ref 25-65-07).

TASK 52-71-00-735-072
9. Do a Test of the Door Warning Sensors
A. General
(1) The test of the door warning sensors is almost the same for each door. First, the door is opened to make sure that the annunciator light and EICAS message come on. Second, the door is closed to make sure the light and EICAS message do not come on.

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B. References
(1) 25-65-08/201, Slide Compartment Door
(2) 52-11-00/201, Entry/Service Doors
(3) 52-21-01/201, Overwing Emergency Exit Hatch
(4) 24-22-00/201, Electric Power - Control

C. Access
(1) Location Zones
113 Area Forward of NLG Wheel Well (Left)
119 Main Equipment Center
195 Wing to Body - Upper Half (Left)
196 Wing to Body - Upper Half (Right)
811 Bulk Cargo Door
821 Forward Cargo Door
822 Aft Cargo Door
831 Forward Entry Door
832 Overwing Emergency Exit Hatch (Forward/Left)
833 Aft Entry Door
834 Overwing Emergency Exit Hatch (Aft/Left)
841 Forward Service Door
842 Overwing Emergency Exit Hatch (Forward/Right)
843 Aft Service Door
844 Overwing Emergency Exit Hatch (Aft/Right)

(2) Access Panels
113AL Forward Access Door
119AL Electronics Access Door

D. Prepare to do a Test of the Door Warning System

S 865-090

WARNING: EXAMINE THE DOOR OPERATION INSTRUCTIONS BEFORE YOU OPEN AN OVERWING EMERGENCY EXIT HATCH. THE ESCAPE SLIDE CAN DEPLOY IF THE HATCH IS OPENED BEFORE THE SLIDE IS MADE NOT SERVICEABLE. INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Examine the door operation instructions before you open the slide compartment doors (Ref 25-65-08) or the overwing emergency exit hatches (Ref 52-21-01).

S 865-093

WARNING: EXAMINE THE DOOR OPERATION INSTRUCTIONS BEFORE YOU OPEN AN ENTRY/SERVICE DOOR. THE ESCAPE SLIDE-RAFT WILL DEPLOY IF THE DOOR IS OPENED BEFORE THE SLIDE-RAFT IS MADE NOT SERVICEABLE. INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(2) Examine the door operation instructions before you open the entry/service doors (Ref 52-11-00).

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E. Procedure

S 865-074
(1) Supply electrical power (Ref 24-22-00).

S 865-075
(2) Close and lock all of the doors in the system (Table 501).

S 215-076
(3) Make sure that no EICAS messages show.

S 215-077
(4) Make sure that no annunciator lights are on.

S 735-078
(5) Do a test on each door in the system (Table 501) as follows:

NOTE: When you do the test on each door in the system make sure all of the other doors are closed and locked.

(a) Open the door. Make sure all of the other doors are closed and locked.
(b) Make sure the applicable EICAS message shows (Table 501).
(c) Make sure the applicable annunciator light is on (Table 501).
(d) Close the door.
(e) Make sure the applicable EICAS message does not show.
(f) Make sure the applicable annunciator light is not on.
(g) Do the steps above again for each door in the system (Table 501).

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Table 501			
Door	Sensor	Light	EICAS Message
Forward Entry Door	Closed (S194) Locked (S195)	ENTRY DOORS	L FWD ENT DOOR
Forward Service Door	Closed (S196) Locked (S197)	ENTRY DOORS	R FWD ENT DOOR
Aft Entry Door	Closed (S204) Locked (S205)	ENTRY DOORS	L AFT ENT DOOR
Aft Service Door	Closed (S206) Locked (S207)	ENTRY DOORS	R AFT ENT DOOR
Aft Cargo Door	Locked (S208) Closed (S209)	CARGO DOORS	AFT CARGO DOOR
Bulk Cargo Door	Latched (S211)	CARGO DOORS	BULK CARGO DOOR
Forward Cargo Door	Locked (S214) Closed (S215)	CARGO DOORS	FWD CARGO DOOR
AIRPLANES WITH ONE HATCH OVER EACH WING, Left Overwing Emergency Exit Hatch	Closed (S192)	EMER DOORS	L EMER DOOR
AIRPLANES WITH ONE HATCH OVER EACH WING, Right Overwing Emergency Exit Hatch	Closed (S193)	EMER DOORS	R EMER DOOR

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Table 501			
Door	Sensor	Light	EICAS Message
AIRPLANES WITH TWO HATCHES OVER EACH WING; Left Forward Overwing Emergency Exit Hatch Left Aft Overwing Emergency Exit Hatch	Closed (S192) Closed (S216)	EMER DOORS	L EMER DOOR
AIRPLANES WITH TWO HATCHES OVER EACH WING; Right Forward Overwing Emergency Exit Hatch Right Aft Overwing Emergency Exit Hatch	Closed (S193) Closed (S217)	EMER DOORS	R EMER DOOR
Left Slide Compartment Door	Closed (S218) Locked (S198)	EMER DOORS	L WING SLIDE
Right Slide Compartment Door	Closed (S219) Locked (S199)	EMER DOORS	R WING SLIDE
Forward Access Door	Closed (S200)	ACCESS DOORS	FWD ACCESS DOOR
Electronics Access Door	Closed (S201)	ACCESS DOORS	E/E ACCESS DOOR

S 735-079

(6) Do a test on each group of doors (Table 502). Do the steps that follow:
   (a) Open each group of doors (Table 502).
   (b) Make sure the correct EICAS message shows.
   (c) Do the steps above again for each group of doors (Table 502).

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Table 502

Door	Condition	EICAS Combination Message
Forward Entry Door Aft Entry Door	Open or Unlocked Open or Unlocked	L ENTRY DOORS
Forward Service Door Aft Service Door	Open or Unlocked Open or Unlocked	R ENTRY DOORS
AIRPLANES WITH ONE HATCH OVER EACH WING; Left Overwing Emergency Exit Hatch Right Overwing Emergency Exit Hatch AIRPLANES WITH TWO HATCHES OVER EACH WING; Left Forward Overwing Emergency Exit Hatch Left Aft Overwing Emergency Exit Hatch Right Forward Overwing Emergency Exit Hatch Right Aft Overwing Emergency Exit Hatch Left Slide Compartment Door Right Slide Compartment Door	 Open or Unlatched Open or Unlatched Open or Unlatched Open or Unlatched Open or Unlatched Open or Unlatched Open or Unlocked Open or Unlocked	 EMER DOORS *[1] EMER DOORS *[1]
Forward Access Door Electronics Access Door	Open or Unlatched Open or Unlatched	ACCESS DOORS
Forward Cargo Door Aft Cargo Door Bulk Cargo Door	Open or Unlocked Closed and Locked Unlatched	FWD CARGO DOOR *[3] --- BULK CARGO DOOR

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Table 502		
Door	Condition	EICAS Combination Message
Forward Cargo Door Aft Cargo Door Bulk Cargo Door	Closed and Locked Open or Unlocked Unlatched	--- CARGO DOORS *[2] ---

*[1] If two or more of these doors are open, only the EICAS message, EMER DOORS, shows.
*[2] If the aft cargo door and the bulk cargo door are open, only the EICAS message, CARGO DOORS, shows.
*[3] If the forward cargo door is open, this EICAS message shows even if the other cargo doors are opened.

S 865-080

(7) Remove electrical power if it is not necessary (Ref 24-22-00).

TASK 52-71-00-865-081

10. Do a Test of the Door Warning Sensors for the Bulk Cargo Door, Forward Access Door and Electronics Access Door

NOTE: This is a scheduled maintenance task.

A. References
(1) 24-22-00/201, Electric Power - Control

B. Access
(1) Location Zones
113 Area Forward of NLG Wheel Well (Left)
119 Main Equipment Center
811 Bulk Cargo Door
821 Forward Cargo Door
822 Aft Cargo Door

(2) Access Panels
113AL Forward Access Door
119AL Electronics Access Door

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C. Procedure

S 865-082
(1) Supply electrical power (Ref 24-22-00).

S 215-084
(2) Close and lock all of the doors in the system (Table 503).

S 865-085
(3) Make sure that no EICAS messages show.

S 865-086
(4) Make sure that no annunciator lights are on.

S 735-087
(5) Do a test on each door in the system (Table 503) as follows:

NOTE: When you do the test on each door in the system make sure all of the other doors are closed and locked.

(a) Open the door. Make sure all of the other doors are closed and locked.
(b) Make sure the applicable EICAS message shows (Table 503).
(c) Make sure the applicable annunciator light is on (Table 503).
(d) Close the door.
(e) Make sure the applicable EICAS message does not show.
(f) Make sure the applicable annunciator light is not on.
(g) Do the steps above again for each door in the system (Table 503).

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Table 503			
Door	Sensor	Light	EICAS Message
Bulk Cargo Door	Latched (S211)	CARGO DOORS	BULK CARGO DOOR
Forward Access Door	Closed (S200)	ACCESS DOORS	FWD ACCESS DOOR
Electronics Access Door	Closed (S201)	ACCESS DOORS	E/E ACCESS DOOR

S 735-088

(6) Do a test on each group of doors (Table 504). Do the steps that follow:

(a) Open each group of doors (Table 504).

(b) Make sure the correct EICAS message shows.

(c) Do the steps above again for each group of doors (Table 504).

Table 504		
Door	Condition	EICAS Combination Message
Forward Access Door Electronics Access Door	Open or Unlatched Open or Unlatched	ACCESS DOORS
Forward Cargo Door Aft Cargo Door Bulk Cargo Door	Open or Unlocked Open or Unlocked Unlatched	FWD CARGO DOOR *[2] CARGO DOORS *[1]
Forward Cargo Door Aft Cargo Door Bulk Cargo Door	Open or Unlocked Closed and Locked Unlatched	FWD CARGO DOOR *[2] --- BULK CARGO DOOR
Forward Cargo Door Aft Cargo Door Bulk Cargo Door	Closed and Locked Open or Unlocked Unlatched	--- CARGO DOORS *[1] ---

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*[1] If the aft cargo door and the bulk cargo door are open, only the EICAS message, CARGO DOORS, shows.
*[2] If the forward cargo door is open, this EICAS message shows even if the other cargo doors are opened.

S 865-089

(7) Remove the electrical power if it is not necessary (Ref 24-22-00).

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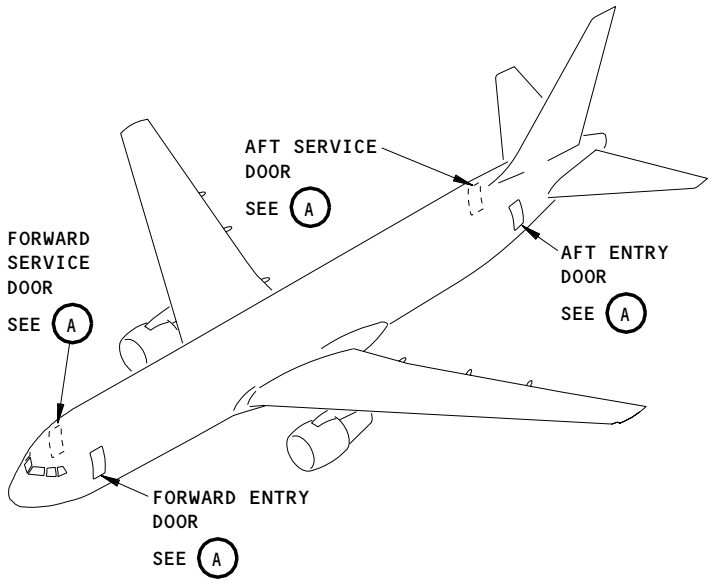

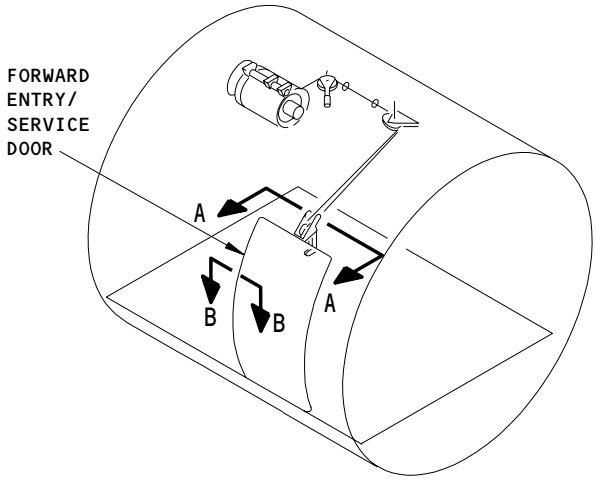

ENTRY/SERVICE DOOR
(EXAMPLE)
A

Door Warning Sensors - Entry/Service Doors
Figure 501 (Sheet 1)

H14623

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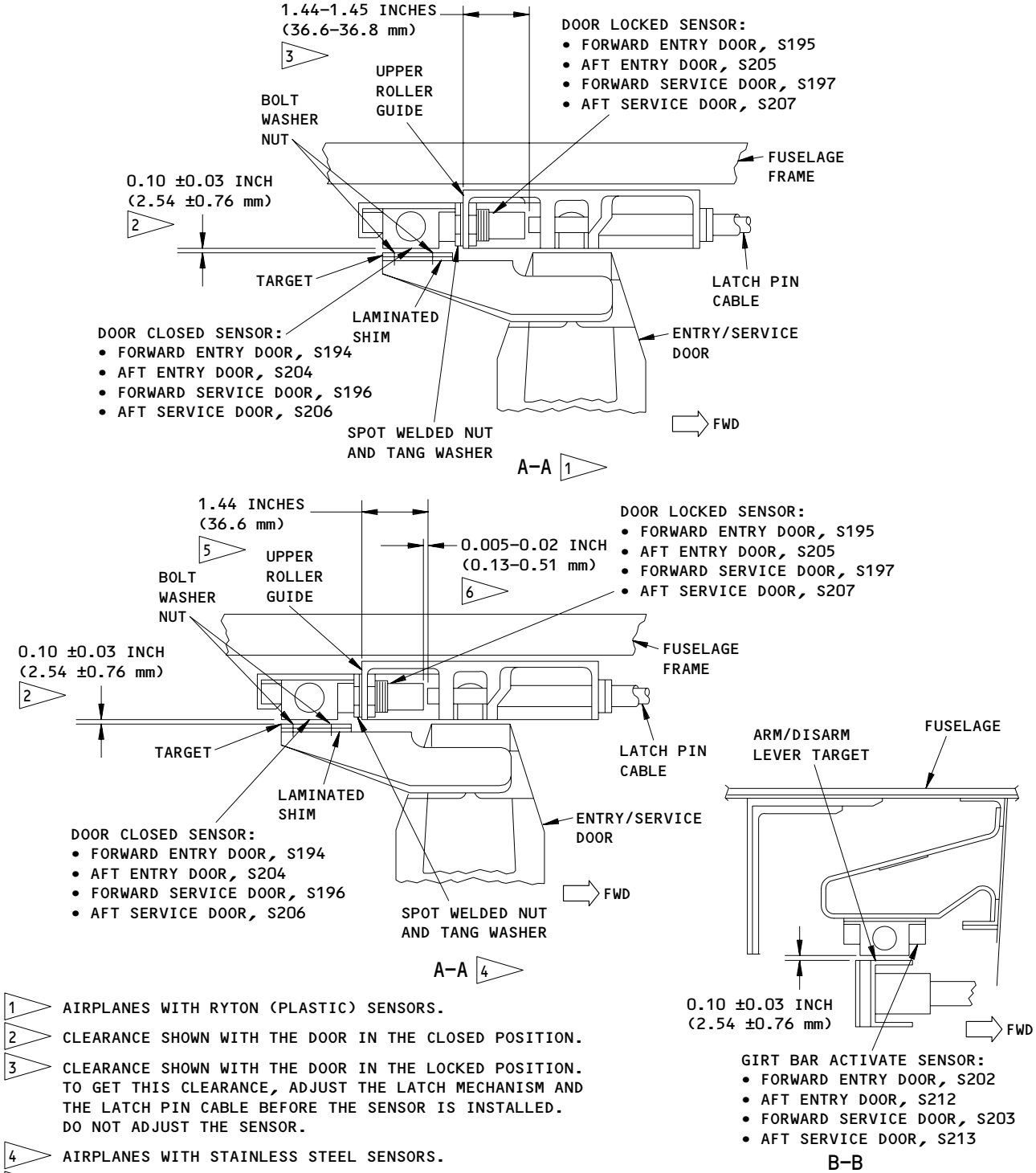

1. AIRPLANES WITH RYTON (PLASTIC) SENSORS.
2. CLEARANCE SHOWN WITH THE DOOR IN THE CLOSED POSITION.
3. CLEARANCE SHOWN WITH THE DOOR IN THE LOCKED POSITION. TO GET THIS CLEARANCE, ADJUST THE LATCH MECHANISM AND THE LATCH PIN CABLE BEFORE THE SENSOR IS INSTALLED. DO NOT ADJUST THE SENSOR.
4. AIRPLANES WITH STAINLESS STEEL SENSORS.
5. INITIAL ADJUSTMENT WITH THE DOOR IN THE LOCKED POSITION.
6. FINAL ADJUSTMENT WITH THE DOOR IN THE LOCKED POSITION.

Door Warning Sensors – Entry/Service Doors
Figure 501 (Sheet 2)

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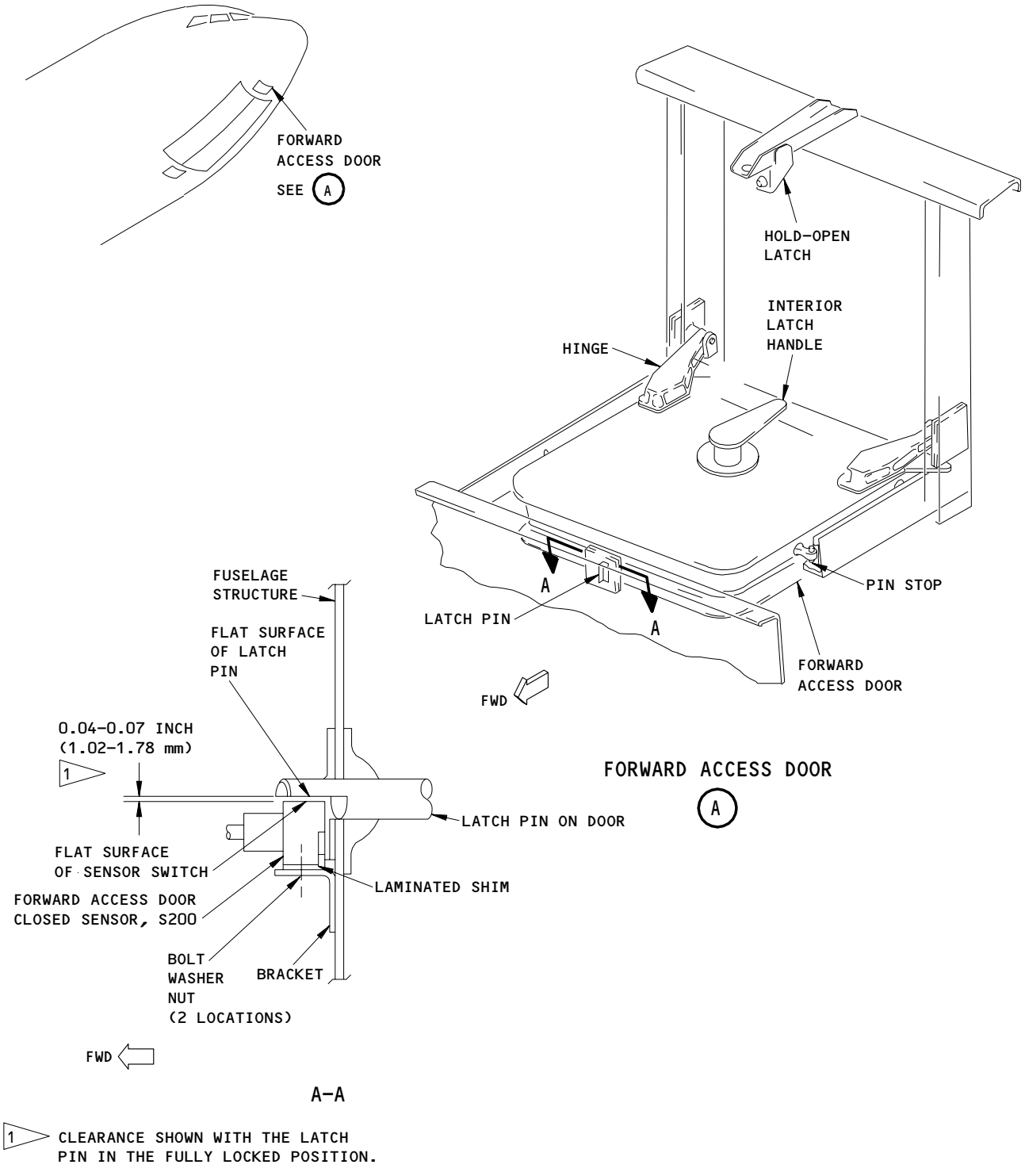

Door Warning Sensor - Forward Access Door
Figure 502

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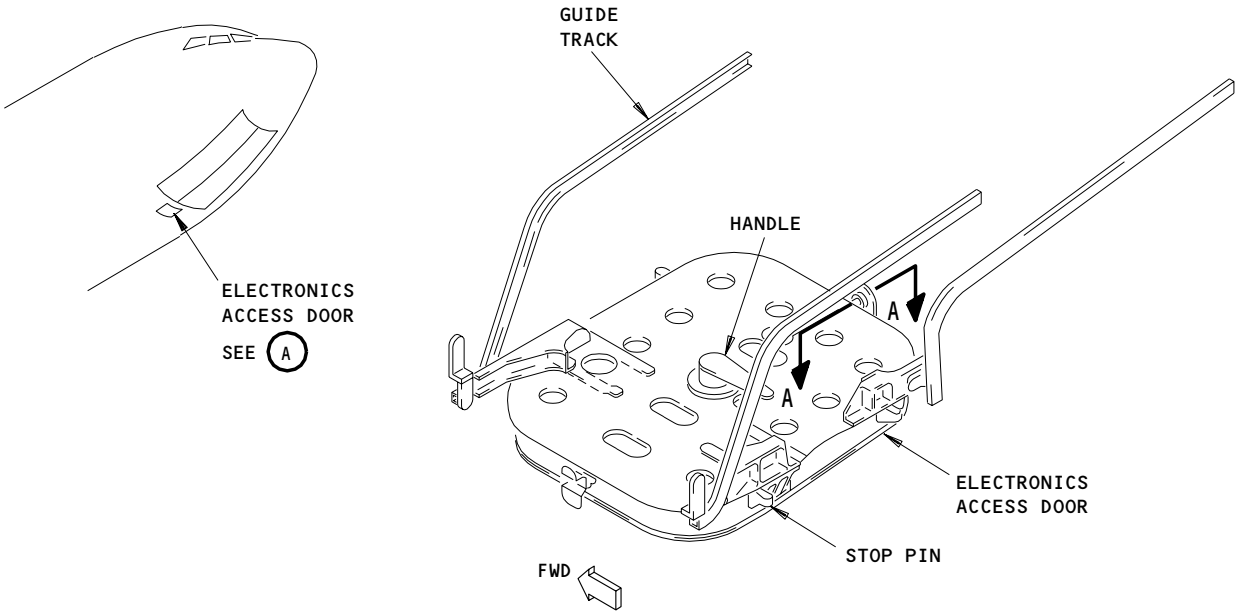
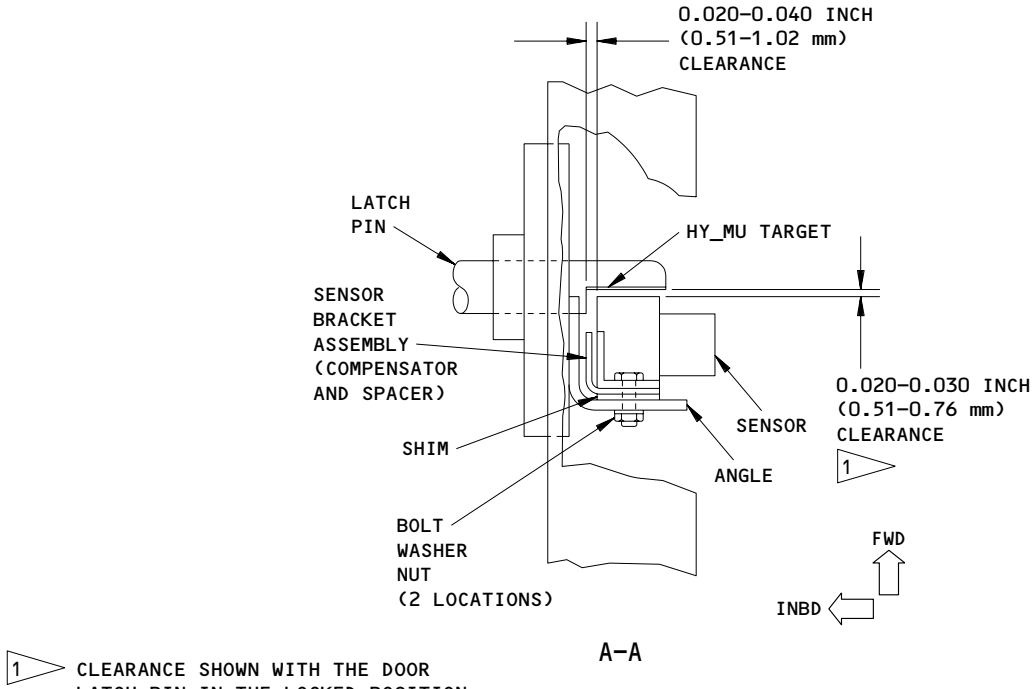


ELECTRONICS ACCESS DOOR
A



A–A

1 CLEARANCE SHOWN WITH THE DOOR LATCH PIN IN THE LOCKED POSITION

Door Warning Sensor – Electronics Access Door
Figure 503

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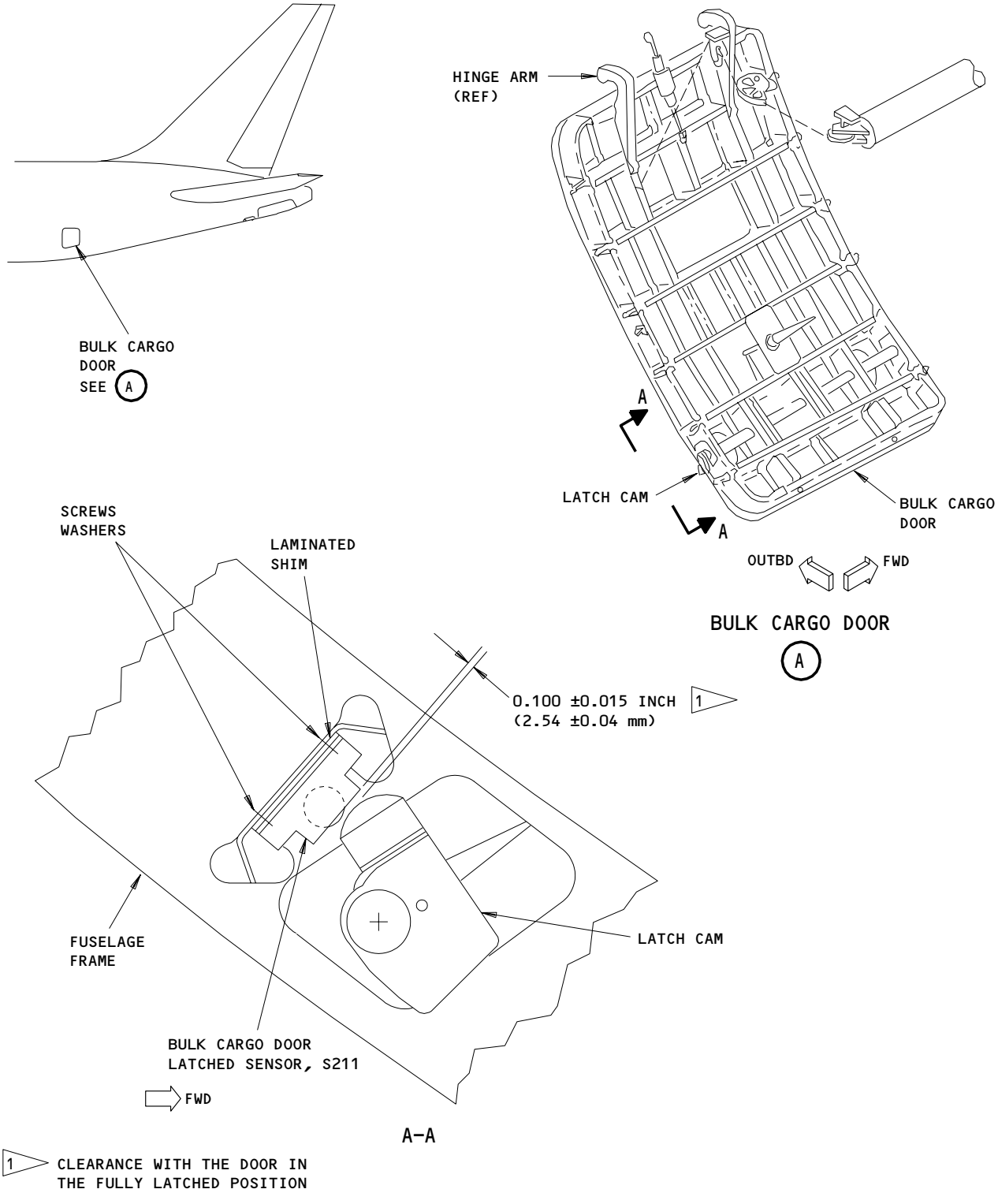

Door Warning Sensor - Bulk Cargo Door
Figure 504

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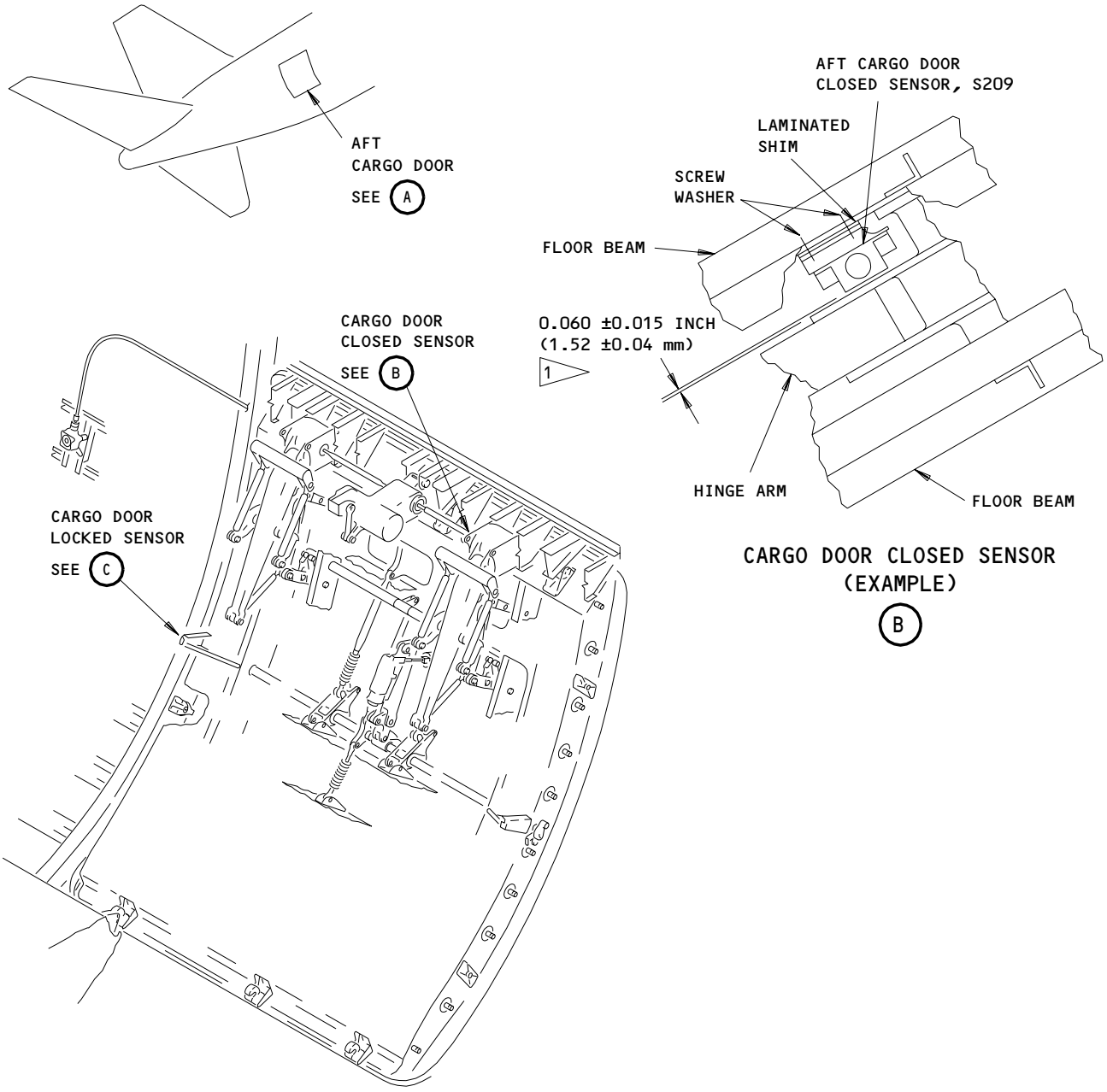

STANDARD AFT CARGO DOOR

A

CARGO DOOR CLOSED SENSOR
(EXAMPLE)

B

1 CLEARANCE SHOWN WITH THE DOOR IN THE CLOSED POSITION

2 CLEARANCE SHOWN WITH THE DOOR IN THE LATCHED POSITION

Door Warning Sensors – Standard Forward and Aft Cargo Doors
Figure 505 (Sheet 1)

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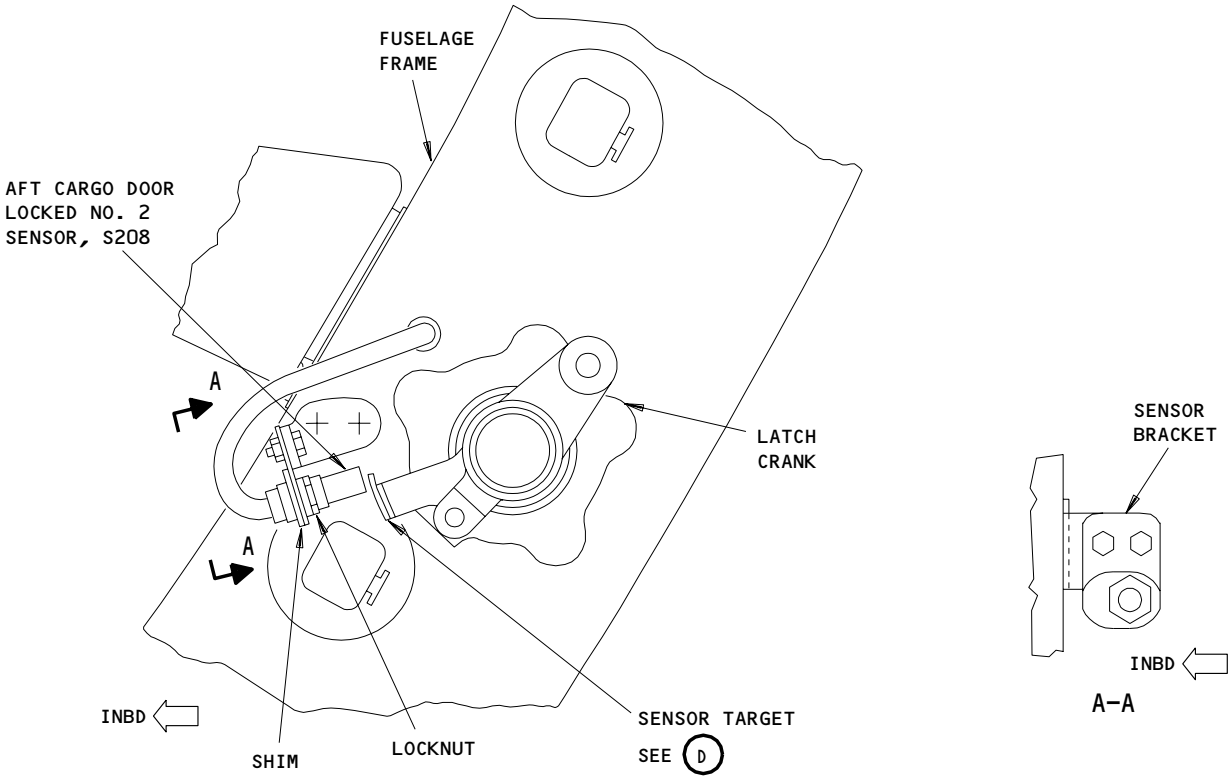
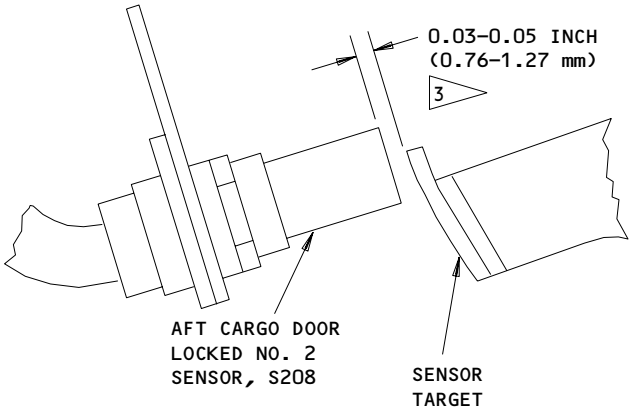


CARGO DOOR LOCKED SENSOR
(EXAMPLE)
C



SENSOR TARGET
D

3 PRELIMINARY ADJUSTMENT ONLY

Door Warning Sensors - Standard Forward and Aft Cargo Doors
Figure 505 (Sheet 2)

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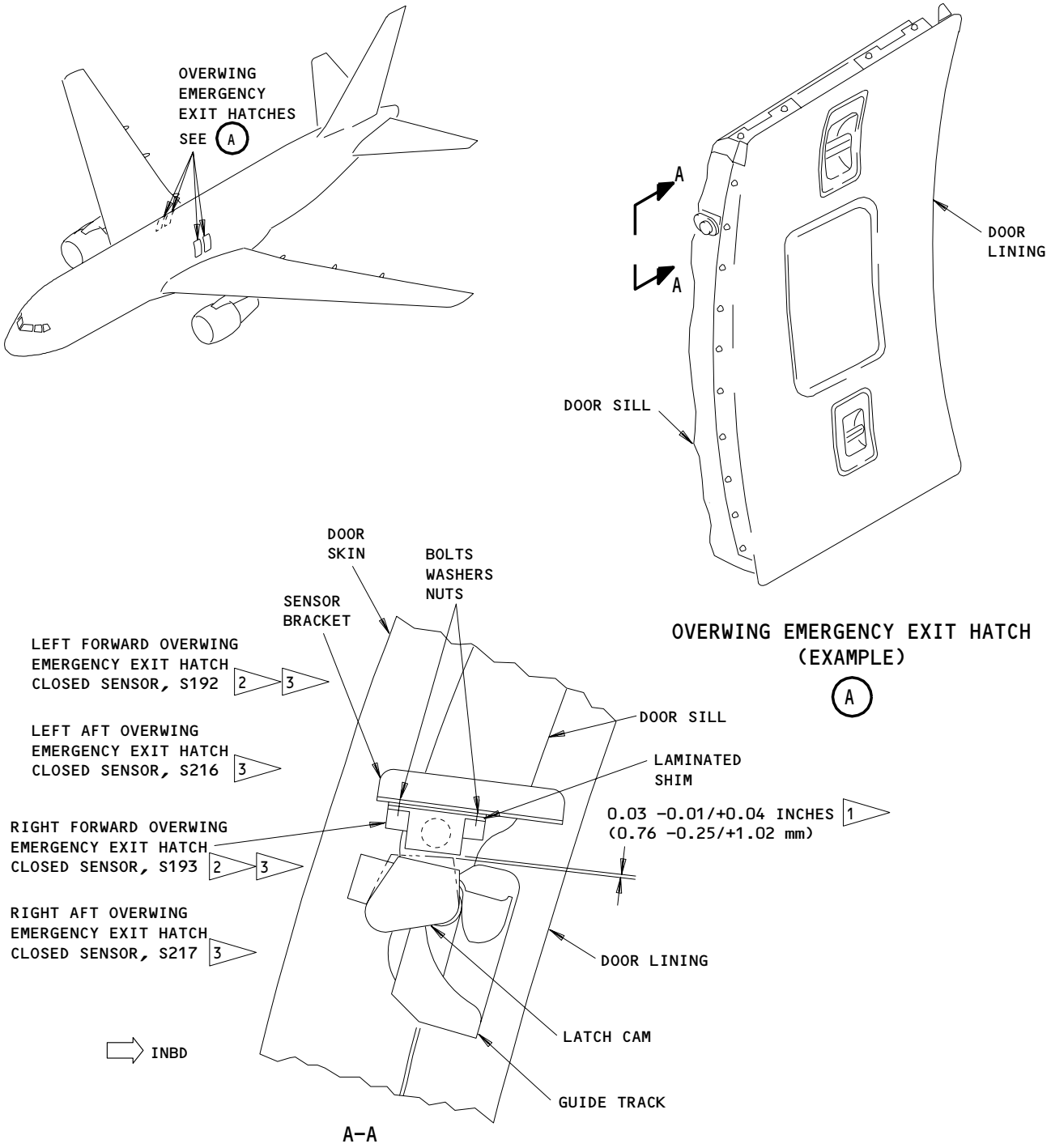

Door Warning Sensors – Overwing Emergency Exit Hatch
Figure 506

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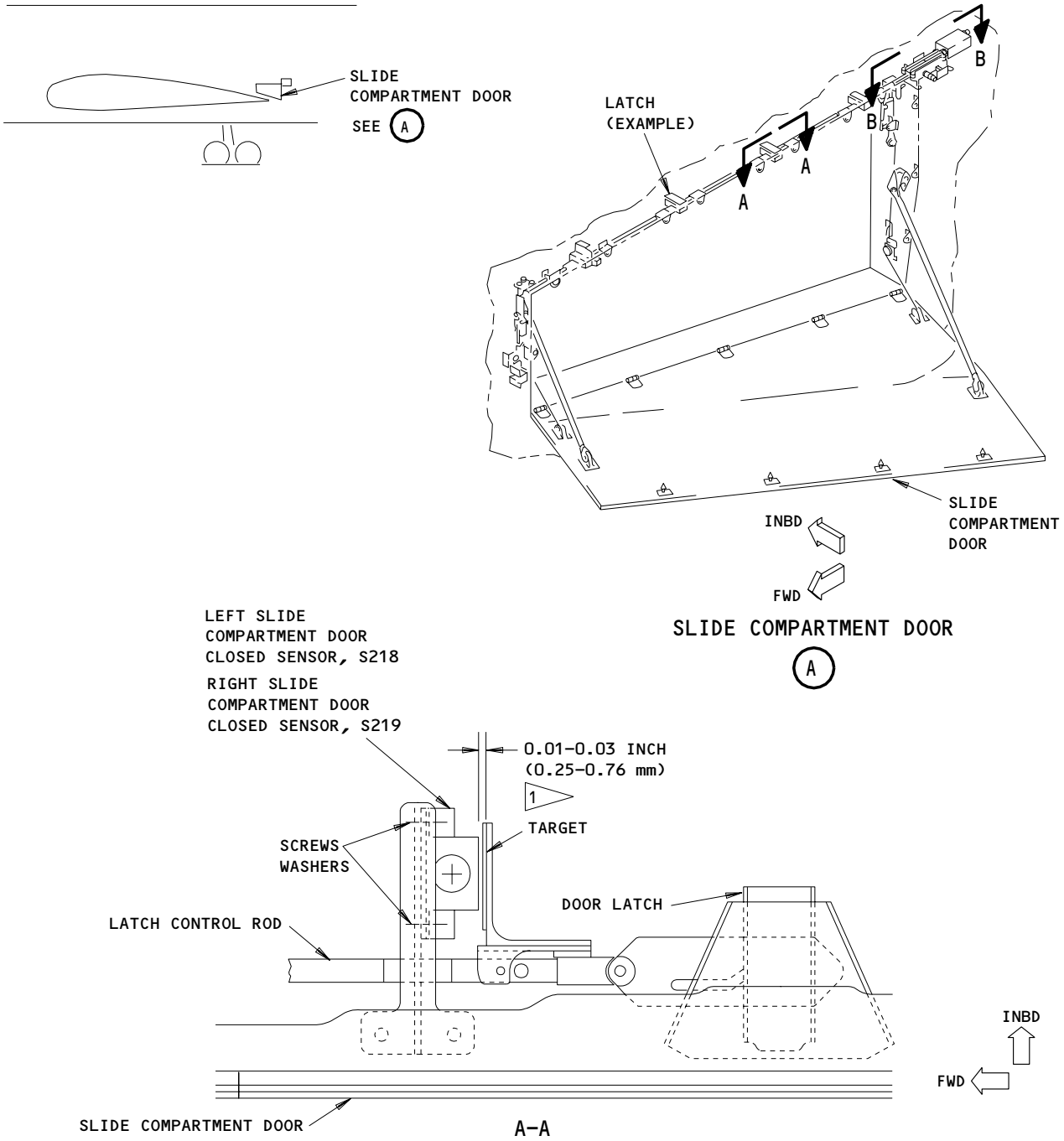

1 CLEARANCE SHOWN WITH THE INTEGRATOR IN THE LOCKED POSITION AND THE DOOR LATCHES IN THE CLOSED POSITION.

Door Warning Sensors - Slide Compartment Door
Figure 507 (Sheet 1)

L96424

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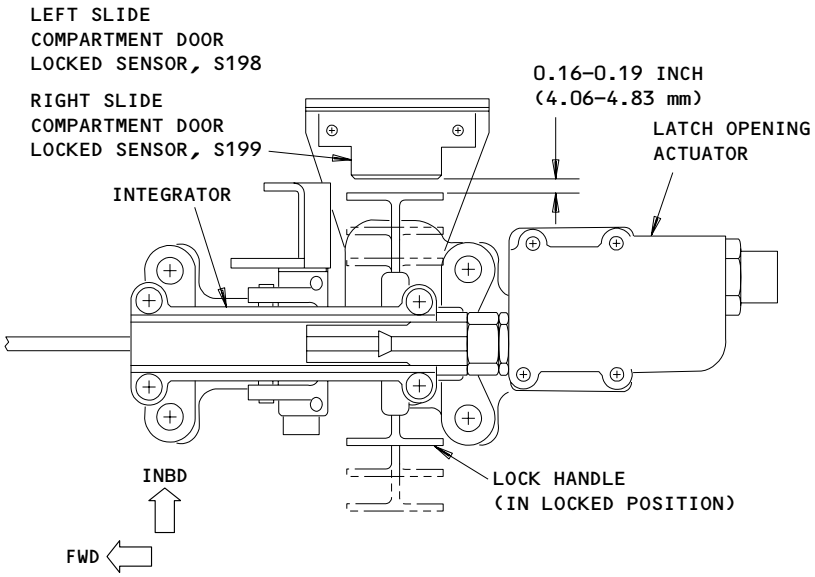

Door Warning Sensors - Slide Compartment Door
Figure 507 (Sheet 2)

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DOOR WARNING SYSTEM PROXIMITY SENSORS - REMOVAL/INSTALLATION

1. General
   A. This procedure has these tasks:
      (1) The removal and installation of the sensor for the forward or aft entry/service door.
      (2) The removal and installation of the sensor for the forward access door.
      (3) The removal and installation of the sensor for the electronics access door.
      (4) The removal and installation of the sensor for the bulk cargo door.
      (5) The removal and installation of the sensors for the aft cargo door.
      (6) The removal and installation of the sensor for the overwing emergency exit hatch.
      (7) The removal and installation of the sensors for the slide compartment door.
   B. The removal and installation of the door warning sensors for the large forward cargo door is located in AMM 52-71-02/201.

TASK 52-71-01-964-001

2. Remove/Install the Sensor for the Forward or Aft Entry/Service Door (Fig. 401)
   A. References
      (1) 52-11-00/501, Entry/Service Doors
      (2) 52-11-02/401, Entry/Service Door Lining
      (3) 52-11-13/201, Entry/Service Door Ground Lock
      (4) 52-71-00/501, Door Warning System Proximity Sensors
   B. Access
      (1) Location Zones
          831 Forward Entry Door
          833 Aft Entry Door
          841 Forward Service Door
          843 Aft Service Door

   C. Prepare to Remove the Sensor

      S 864-003
      (1) Open this circuit breaker on the overhead panel, P11, and attach a DO-NOT-CLOSE tag:
          (a) 11T33, DOOR IND

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D. Remove the Door Locked or Door Closed Sensor

S 494-004
(1) Install the entry/service door ground lock (Ref 52-11-13).

S 494-005
(2) If you remove the door locked and door closed sensors at the same time, put tags on the ends of the electrical wire to identify and prevent the incorrect installation (cross-wiring).

S 034-006
(3) Disconnect the sensor leads at the splice area.

S 034-007
(4) Attach a line to the sensor leads to make the subsequent installation easier.

S 024-008
(5) Remove the door locked sensor. Do the steps that follow:

CAUTION: DO NOT CAUSE DAMAGE TO THE SPOT WELDED NUT ON THE DOOR CLOSED SENSOR. IF THE SPOT WELD IS DAMAGED (SHEARED), THE SENSOR WILL NOT OPERATE CORRECTLY AND REPLACEMENT OF THE SENSOR WILL BE NECESSARY.

(a) Remove the locknut. Be careful and do not cause damage to the spot welded nut (View A-A).

NOTE: If the latch pin is correctly adjusted, the spot welded location of the nut makes sure the sensor operates correctly.

(b) Pull the sensor leads from the conduit. Do not pull the line attached to the sensor leads fully out.
(c) Remove the door locked sensor.

S 024-009
(6) Remove the door closed sensor. Do the steps that follow:
(a) Remove the bolts, washers, and nuts that attach the sensor (View A-A).

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(b) Pull the sensor leads from the conduit. Do not pull the line attached to the sensor leads fully out.
(c) Remove the door closed sensor.

E. Install the Door Locked or Door Closed Sensor

S 434-010
(1) Twist the leads to the sensor, attach a line to the end and put through the conduit.

S 424-011

CAUTION: MAKE SURE THE LATCH MECHANISM FOR THE DOOR IS ADJUSTED CORRECTLY BEFORE YOU INSTALL THE SENSOR. IF THE SENSOR IS INSTALLED BEFORE THE LATCH PIN MECHANISM IS ADJUSTED, DAMAGE TO THE SENSOR CAN OCCUR.

(2) Install the door locked sensor. Do the steps that follow:
(a) Identify the spot welded nut, tang washer, and locknut (View A-A).
(b) To install the sensor, turn the sensor until the tang tabs are pushed into the holes in the upper roller guide.

NOTE: The spot welded nut and tang washer fit in a groove in the body of the sensor. The tang washer has two tabs that fit into the installation holes in the mounting upper roller guide.

(c) Carefully tighten the locknut. Make sure not to cause damage to (shear) the spot welded nut.

S 224-012
(3) Make sure the distance between the door upper roller guide and the end of the latch pin cable is correct (View A-A).

S 824-013
(4) If the distance is not correct, adjust the latch mechanism and the latch pin cable (Ref 52-11-00). Do not adjust the sensor.

S 424-014
(5) Install the door closed sensor. Do the step that follows:
(a) Install the sensor with the bolts, washers, and nuts (View A-A).

S 224-015
(6) Make sure the clearance between the door closed sensor and the target is correct (View A-A).

S 824-016
(7) If the clearance is not correct between the sensor and the target, adjust the target (Ref 52-71-00).

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S 434-017
(8) Connect the sensor leads to the airplane wiring at the splice area.

S 094-018
(9) If you install the door locked and door closed sensors at the same time, make sure that the electrical wire connections are correct at the locations identified with the tags.

S 094-019
(10) Remove the entry/service door ground lock (Ref 52-11-13).

S 714-020
(11) If you will not remove or install other sensors, do the "Do a Test of the Door Warning Sensors" procedure for the entry/service door (Ref 52-71-00).

F. Remove the Girt Bar Activate Sensor

S 014-021
(1) Remove the doorway lining as necessary to get access to the sensor and the wiring (Ref 52-11-02).

S 034-022
(2) Disconnect the sensor leads at the splice area

S 034-023
(3) Loosen the wire clamp on the sensor leads.

S 034-024
(4) Remove the bolts, washers, and nuts that attach the sensor (View B-B).

S 024-025
(5) Remove the girt bar activate sensor.

G. Install the Girt Bar Activate Sensor

S 424-026
(1) Install the sensor with the bolts, washers, and nuts (View B-B).

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S 434-027
(2) Connect the sensor leads to the airplane wiring at the splice area.

S 434-028
(3) Tighten the wire clamp on the sensor leads.

S 224-029
(4) Make sure the clearance between the girt bar activate sensor and the target is correct (View B-B).

S 824-030
(5) If the clearance between the sensor and the target is not correct, adjust the sensor (Ref 52-71-00).

S 414-031
(6) Install the doorway lining (Ref 52-11-02).

S 714-032
(7) If you will not remove or install other sensors, do the "Do a Test of the Door Warning Sensors" procedure for the entry/service door (Ref 52-71-00).

H. Put the Airplane Back to Its Usual Condition

S 864-033
(1) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
(a) 11T33, DOOR IND

TASK 52-71-01-964-034

3. Remove/Install the Sensor for the Forward Access Door (Fig. 402)

A. References
(1) 52-71-00/501, Door Warning System Proximity Sensors

B. Access
(1) Location Zone
113 Area Forward of NLG Wheel Well (Left)

(2) Access Panel
113AL Forward Access Door

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C. Prepare to Remove the Sensor

S 864-035
(1) Open this circuit breaker on the overhead panel, P11, and attach a DO-NOT-CLOSE tag:
(a) 11T33, DOOR IND

D. Remove the Sensor for the Forward Access Door

S 014-036
(1) Open the forward access door.

S 034-037
(2) Remove the V-bands that attach the air condition duct section and move the air condition duct section as necessary to get access to the sensor and the leads.

S 034-038
(3) Disconnect the sensor leads at the splice area.

S 034-039
(4) Loosen the wire clamp on the sensor leads.

S 034-040
(5) Remove the bolts, washers, and nuts that attach the sensor to the bracket (View A-A).

S 024-041
(6) Remove the sensor.

E. Install the Sensor for the Forward Access Door

S 424-042
(1) Install the sensor with the bolts, washers, and nuts (View A-A).

S 434-043
(2) Connect the sensor leads to the airplane wiring at the splice area.

S 434-044
(3) Tighten the wire clamp on the sensor leads.

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S 864-045
(4) Close the forward access door.

S 224-046
(5) Make sure the clearance between the sensor and the latch pin is correct with the door closed and latched (View A-A).

S 824-047
(6) If the clearance between the sensor and the target is not correct, adjust the sensor (Ref 52-71-00).

S 434-048
(7) Install the air condition distribution duct section with the attached V-bands.

S 864-049
(8) Close the forward access door if it is open.

S 714-050
(9) If you will not remove or install other sensors, do the "Do a Test of the Door Warning Sensors" procedure for the forward access door (Ref 52-71-00).

F. Put the Airplane Back to Its Usual Condition

S 864-051
(1) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
(a) 11T33, DOOR IND

TASK 52-71-01-964-052

4. Remove/Install the Sensor for the Electronics Access Door (Fig. 403)

A. References
(1) 52-71-00/501, Door Warning System Proximity Sensors

B. Access
(1) Location Zone
119 Main Equipment Center (Left)

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(2) Access Panel
119AL Electronics Access Door

C. Prepare to Remove the Sensor

S 864-053
(1) Open this circuit breaker on the overhead panel, P11, and attach a DO-NOT-CLOSE tag:
(a) 11T33, DOOR IND

D. Remove the Sensor for the Electronics Access Door

S 014-054
(1) Open the electronics access door.

S 034-055
(2) Disconnect the sensor leads at the splice area.

S 024-230
(3) Remove the bolts, washers, shim, and nuts that attach the sensor to the bracket assembly (View A-A).

S 024-231
(4) Remove the bracket assembly and the sensor.

E. Install the Sensor for the Electronics Access Door

S 424-234
(1) Install the sensor and the bracket assembly with the bolts, washers, shim, and nuts (View A-A).

S 434-059
(2) Connect the sensor leads to the airplane wiring at the splice area.

S 864-060
(3) Close the electronics access door.

S 224-061
(4) Make sure the clearance between the sensor and the latch pin is correct with the door closed and latched (View A-A).

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S 824-062
(5) If the clearance is not correct between the sensor and the target, adjust the sensor (Ref 52-71-00).

S 864-063
(6) Close the electronics access door.

S 714-064
(7) If you will not remove or install other sensors, do the "Do a Test of the Door Warning Sensors" procedure for the electronics access door (Ref 52-71-00).

F. Put the Airplane Back to Its Usual Condition

S 864-065
(1) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
(a) 11T33, DOOR IND

TASK 52-71-01-964-066

5. Remove/Install the Sensor for the Bulk Cargo Door (Fig. 404)

A. Equipment
(1) A52021-1 WRENCH (Optional)

B. References
(1) 25-52-01/401, Containerized Cargo Compartment Sidewall Lining
(2) 25-52-03/401, Cargo Compartment Insulation
(3) 52-71-00/501, Door Warning System Proximity Sensors

C. Access
(1) Location Zone
811 Bulk Cargo Door

D. Prepare to Remove the Sensor

S 864-067
(1) Open this circuit breaker on the overhead panel, P11, and attach a DO-NOT-CLOSE tag:
(a) 11T33, DOOR IND

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E. Remove the Sensor for the Bulk Cargo Door

S 014-068
(1) Remove the sidewall lining (Ref 25-52-01) and the insulation blanket (Ref 25-52-03) as necessary to get access to the sensor wiring.

S 034-069
(2) Disconnect the sensor leads at the splice area.

S 034-070
(3) Remove the nuts, washers, and screws that attach the sensor (View A-A).

S 024-071
(4) Remove the sensor.

F. Install the Sensor for the Bulk Cargo Door

S 424-072
(1) Install the sensor with the screws, washers, and nuts (View A-A).

S 434-073
(2) Connect the sensor leads to the airplane wiring at the splice area.

S 864-074
(3) Close the bulk cargo door.

S 224-075
(4) Make sure the clearance between the sensor and the latch cam surface is correct with the door closed and latched (View A-A).

S 824-076
(5) If the clearance is not correct between the sensor and the target, adjust the sensor (Ref 52-71-00).

S 414-077
(6) Install the sidewall lining (Ref 25-52-01) and the insulation blanket (Ref 25-52-03).

S 714-078
(7) If you will not remove or install other sensors, do the "Do a Test of the Door Warning Sensors" procedure for the bulk cargo door (Ref 52-71-00).

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G. Put the Airplane Back to Its Usual Condition

S 864-079
(1) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
(a) 11T33, DOOR IND

TASK 52-71-01-964-082

6. Remove/Install the Sensor for the Aft Cargo Door (Fig. 405)

A. References
(1) 25-52-02/401, Ceiling Panel
(2) 52-71-00/501, Door Warning System Proximity Sensors

B. Access
(1) Location Zone
822 Aft Cargo Door

C. Prepare to Remove the Sensor

S 864-083
(1) Open this circuit breaker on the overhead panel, P11, and attach a DO-NOT-CLOSE tag:
(a) 11T33, DOOR IND

D. Remove the Door Locked or Door Closed Sensor

S 024-084
(1) Remove the door locked sensor. Do the steps that follow:
(a) Remove the door lining and the insulation blanket as necessary to get access to the sensor and the wiring.
(b) Disconnect the sensor leads at the splice area.
(c) Loosen the wire clamps on the sensor leads.
(d) Remove the locknut and the shim on the sensor.
(e) Remove the door locked sensor.

S 024-085
(2) Remove the door closed sensor. Do the steps that follow:
(a) Remove the ceiling panel (Ref 25-52-02) to get access to the sensor wiring.
(b) Disconnect the sensor leads at the splice area.
(c) Loosen the wire clamps on the sensor leads.
(d) Remove the two fasteners and the shim on the sensor.
(e) Remove the door closed sensor.

E. Install the Door Locked or Door Closed Sensor

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S 424-210

CAUTION: WHEN YOU INSTALL THE SENSORS, MAKE SURE THE WIRES FOR THE SENSORS DO NOT TOUCH THE PARTS OF THE DOOR THAT MOVE. IF THE WIRES ARE NOT CLEAR OF THE PARTS THAT MOVE, DAMAGE TO THE EQUIPMENT CAN OCCUR.

(1) Install the door locked sensor. Do the steps that follow:
   (a) Install the shim on the sensor.
   (b) Install the sensor with the locknut.
   (c) Connect the sensor leads to the airplane wiring at the splice area.
   (d) Tighten the wire clamps on the sensor leads.

S 424-087
(2) Make sure the clearance between the sensor and the target is correct.

S 824-088
(3) If the clearance is not correct between the sensor and the target, adjust the sensor (Ref 52-71-00).

S 424-089
(4) Install the door closed sensor. Do the steps that follow:
   (a) Install the sensor with the two fasteners.
   (b) Connect the sensor leads to the airplane wiring at the splice area.
   (c) Tighten the wire clamps on the sensor leads.

S 224-090
(5) Make sure the clearance between the sensor and the target is correct.

S 824-091
(6) If the clearance between the sensor and the target is not correct, adjust the sensor (Ref 52-71-00).

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S 434-092
(7) Install the door lining, insulation blanket, or ceiling panel (Ref 25-52-02) if it is necessary.

S 714-093
(8) If you will not remove or install other sensors, do the "Do a Test of the Door Warning Sensors" procedure for the cargo door (Ref 52-71-00).

F. Put the Airplane Back to Its Usual Condition

S 864-094
(1) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
(a) 11T33, DOOR IND

TASK 52-71-01-964-095

7. Remove/Install the Sensor for the Overwing Emergency Exit Hatch (Fig. 406)

A. References
(1) 25-21-01/401, Sidewall Panels
(2) 52-21-01/201, Overwing Emergency Exit Hatch
(3) 52-21-02/201, Overwing Emergency Exit Hatch Lining
(4) 52-71-00/501, Door Warning System Proximity Sensors

B. Access
(1) Location Zones

832	Overwing Emergency Exit Hatch (Left) *[1]
832	Overwing Emergency Exit Hatch (Forward/Left) *[2]
834	Overwing Emergency Exit Hatch (Aft/Left) *[2]
842	Overwing Emergency Exit Hatch (Right) *[1]
842	Overwing Emergency Exit Hatch (Forward/Right) *[2]
844	Overwing Emergency Exit Hatch (Aft/Right) *[2]

*[1] AIRPLANES WITH ONE HATCH OVER EACH WING.
*[2] AIRPLANES WITH TWO HATCHES OVER EACH WING.

C. Prepare to Remove the Sensor

S 864-096
(1) Open this circuit breaker on the overhead panel, P11, and attach a DO-NOT-CLOSE tag:
(a) 11T33, DOOR IND

D. Remove the Sensor for the Overwing Emergency Exit Hatch

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S 014-097

WARNING: EXAMINE THE DOOR OPERATION INSTRUCTIONS BEFORE YOU OPEN AN OVERWING EMERGENCY EXIT HATCH. THE ESCAPE SLIDE CAN DEPLOY IF THE HATCH IS OPENED BEFORE THE SLIDE IS MADE NOT SERVICEABLE. INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) Open the overwing emergency exit hatch (Ref 52-21-01).

S 014-098

(2) Remove the sidewall linings (Ref 25-21-01) and insulation blanket as necessary to get access to the sensor wiring.

S 034-099

(3) Disconnect the sensor leads at the splice area.

S 034-100

(4) Remove the bolts, washers, and nuts that attach the sensor (View A-A).

S 024-101

(5) Remove the sensor.

E. Install the Sensor for the Overwing Emergency Exit Hatch

S 424-102

(1) Install the sensor with the bolts, washers, and nuts (View A-A).

S 434-103

(2) Connect the sensor leads to the airplane wiring at the splice area.

S 014-104

(3) Remove the hatch lining (Ref 52-21-02).

S 864-105

WARNING: EXAMINE THE DOOR OPERATION INSTRUCTIONS BEFORE YOU CLOSE AN OVERWING EMERGENCY EXIT HATCH. THE ESCAPE SLIDE CAN DEPLOY IF THE HATCH IS CLOSED INCORRECTLY. INJURY TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(4) Close the overwing emergency exit hatch (Ref 52-21-01).

S 214-106

(5) Make sure the clearance between the sensor and the latch cam is correct with the hatch closed and latched (View A-A).

NOTE: The sensor uses a surface of the latch cam as a target when the latch mechanism is in the locked position.

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S 824-107
(6) If the clearance is not correct between the sensor and the target, adjust the sensor (Ref 52-71-00).

S 414-108
(7) Install the sidewall lining (Ref 25-52-01) and insulation blanket.

S 864-109
(8) Open the overwing emergency exit hatch (Ref 52-21-01).

S 414-110
(9) Install the hatch lining (Ref 52-21-02).

S 864-111
(10) Close the overwing emergency exit hatch (Ref 52-21-01).

S 714-112
(11) If you will not remove or install other sensors, do the "Do a Test of the Door Warning Sensors" procedure for the overwing emergency exit hatch (Ref 52-71-00).

F. Put the Airplane Back to Its Usual Condition

S 864-113
(1) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:
(a) 11T33, DOOR IND

TASK 52-71-01-964-114

8. Remove/Install the Sensor for the Slide Compartment Door (Fig. 407)

A. References
(1) 25-65-08/201, Off-Wing Slide Compartment Door
(2) 52-71-00/501, Door Warning System Proximity Sensors

B. Access
(1) Location Zones
195 Wing to Body - Aft Upper Half (Left)
196 Wing to Body - Aft Upper Half (Right)

C. Prepare to Remove the Sensor

S 864-115
(1) Open this circuit breaker on the overhead panel, P11, and attach a DO-NOT-CLOSE tag:
(a) 11T33, DOOR IND

D. Remove the Door Locked or Door Closed Sensor

S 014-116
(1) Open the slide compartment door (Ref 25-65-08).

S 034-117
(2) Disconnect the sensor leads at the splice area.

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S 034-118
(3) Loosen the wire clamps on the sensor leads.

S 034-119
(4) Remove the screws and washers that attach the sensor.

S 024-120
(5) Remove the sensor.

E. Install the Door Locked or Door Closed Sensor

S 424-121
(1) Install the screws and washers to install the sensor.

S 434-122
(2) Connect the sensor leads to the airplane wiring at the splice area.

S 224-123
(3) For the door closed sensor, do these steps:
(a) Make sure the clearance between the sensor and the target is correct.

NOTE: Make sure the latch control rod is fully forward so that the target is as near as possible to the sensor to measure the clearance.

1) Make sure the target does not touch the sensor when you move the door latches to the open and closed positions.
(b) If the clearance is not correct between the sensor and the target, adjust the sensor (Ref 52-71-00).

S 224-132
(4) For the door locked sensor, do these steps:
(a) Make sure the clearance between the sensor and the inboard end of the integrator lock handle is correct.
(b) If the clearance is not correct, adjust the sensor (Ref 52-71-00).

S 864-135
(5) Close the slide compartment door (Ref 25-65-08).

S 714-136
(6) If you will not remove or install other sensors, do the "Do a Test of the Door Warning Sensors" procedure for the slide compartment door (Ref 52-71-00).

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F. Put the Airplane Back to Its Usual Condition

S 864-137

(1) Remove the DO-NOT-CLOSE tag and close this circuit breaker on the P11 panel:

(a) 11T33, DOOR IND

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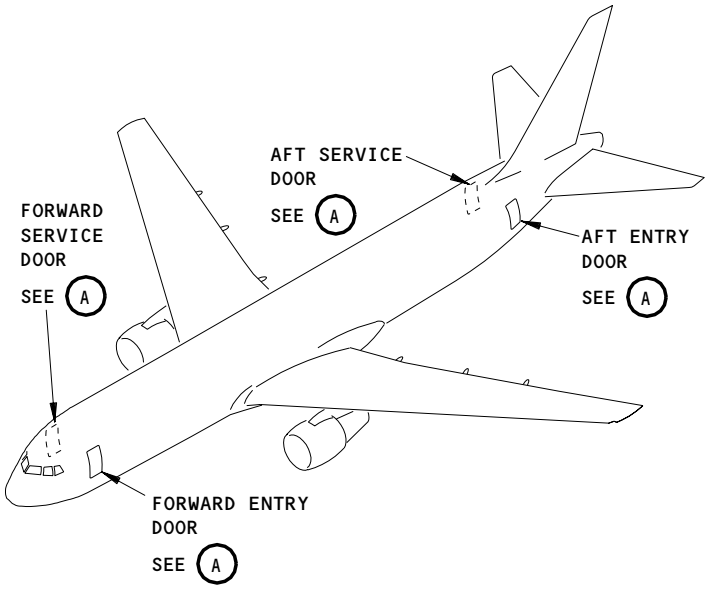

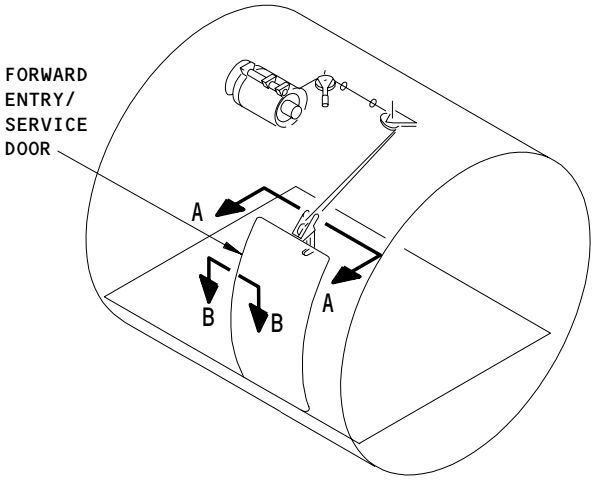

ENTRY/SERVICE DOOR
(EXAMPLE)

A

Door Warning Sensors - Entry/Service Doors
Figure 401 (Sheet 1)

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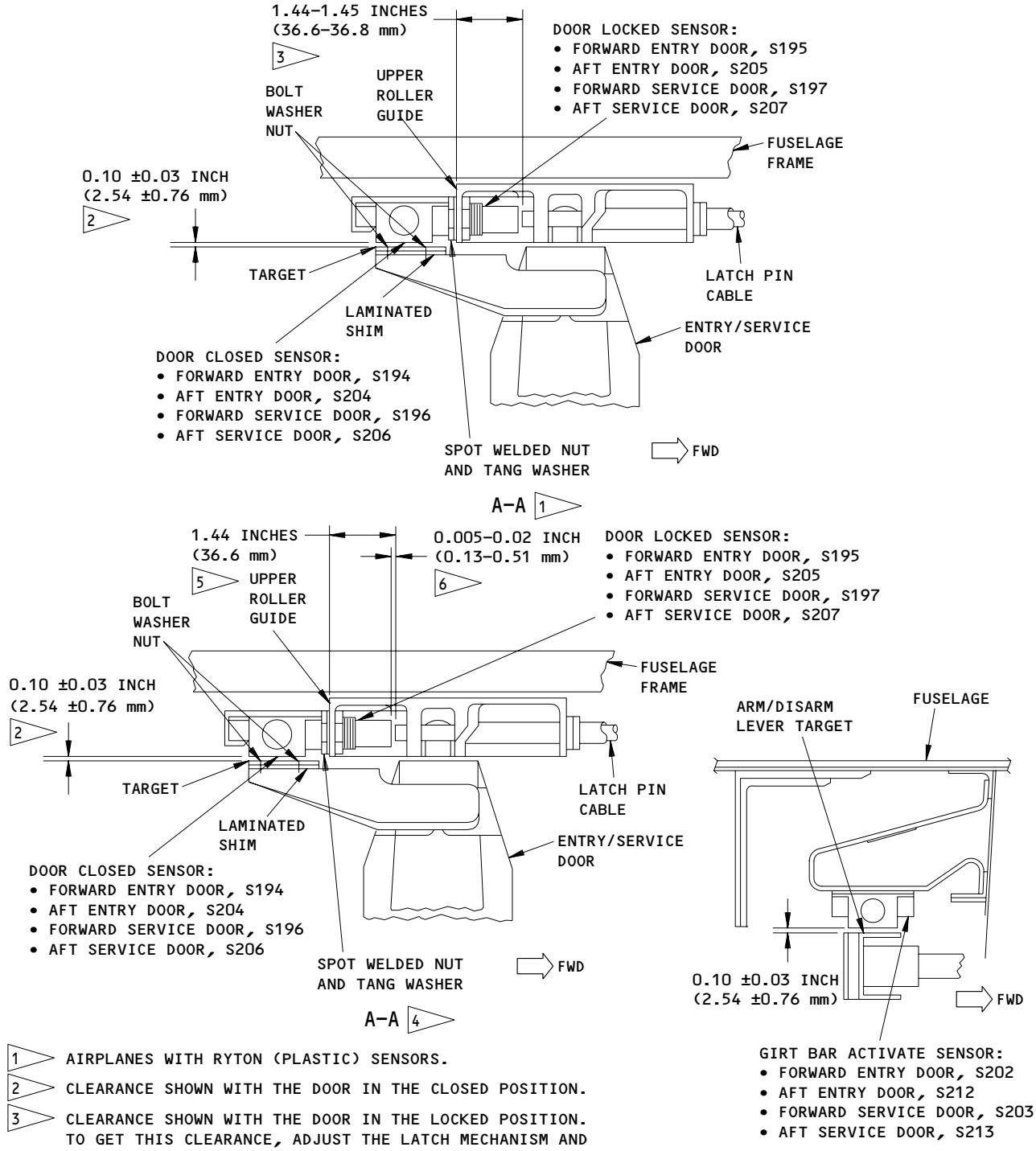

1 AIRPLANES WITH RYTON (PLASTIC) SENSORS.

2 CLEARANCE SHOWN WITH THE DOOR IN THE CLOSED POSITION.

3 CLEARANCE SHOWN WITH THE DOOR IN THE LOCKED POSITION. TO GET THIS CLEARANCE, ADJUST THE LATCH MECHANISM AND THE LATCH PIN CABLE BEFORE THE SENSOR IS INSTALLED. DO NOT ADJUST THE SENSOR.

4 AIRPLANES WITH STAINLESS STEEL SENSORS.

5 INITIAL ADJUSTMENT WITH THE DOOR IN THE LOCKED POSITION.

6 FINAL ADJUSTMENT WITH THE DOOR IN THE LOCKED POSITION.

Door Warning Sensors – Entry/Service Doors
Figure 401 (Sheet 2)

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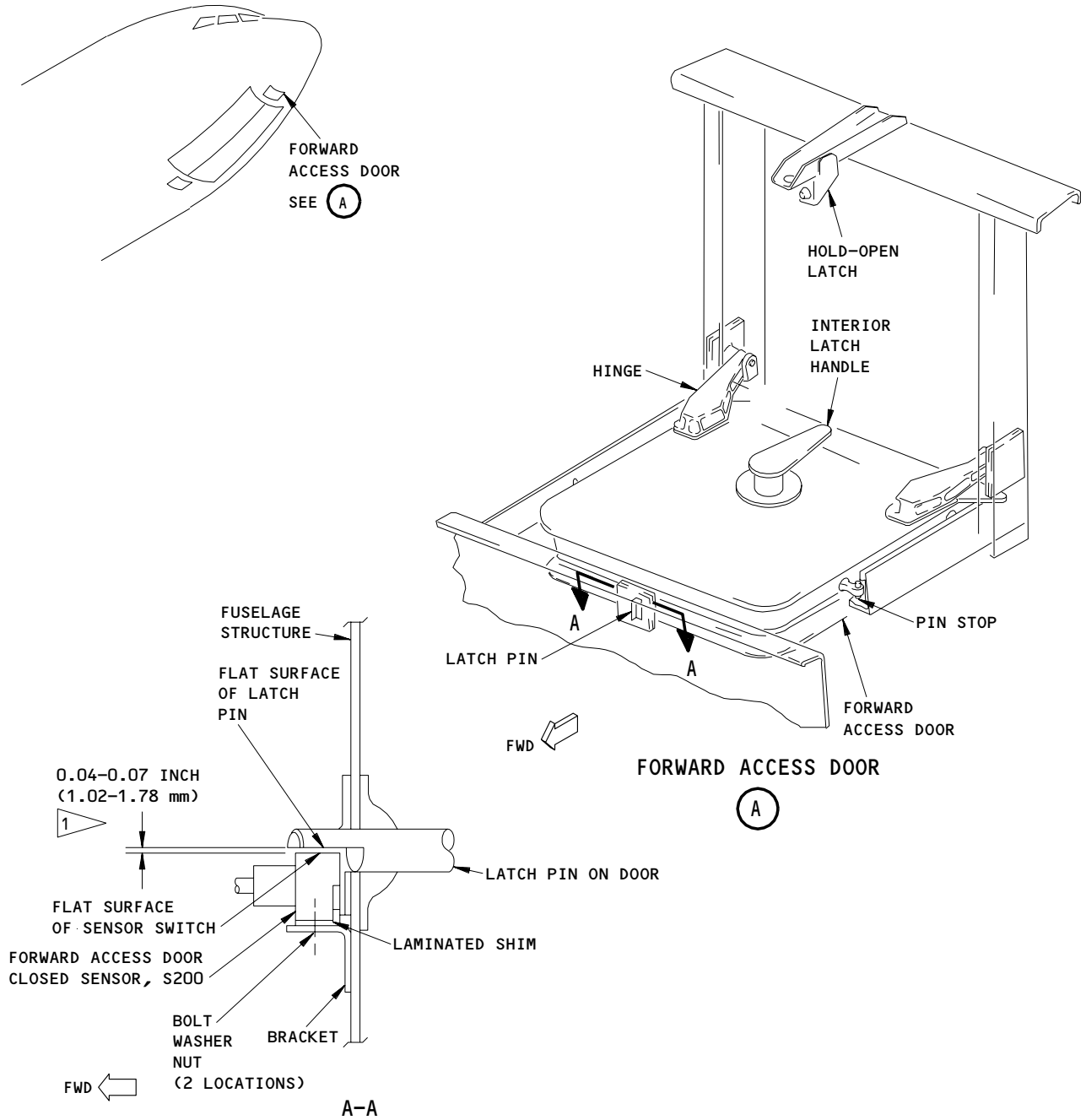

Door Warning Sensor – Forward Access Door
Figure 402

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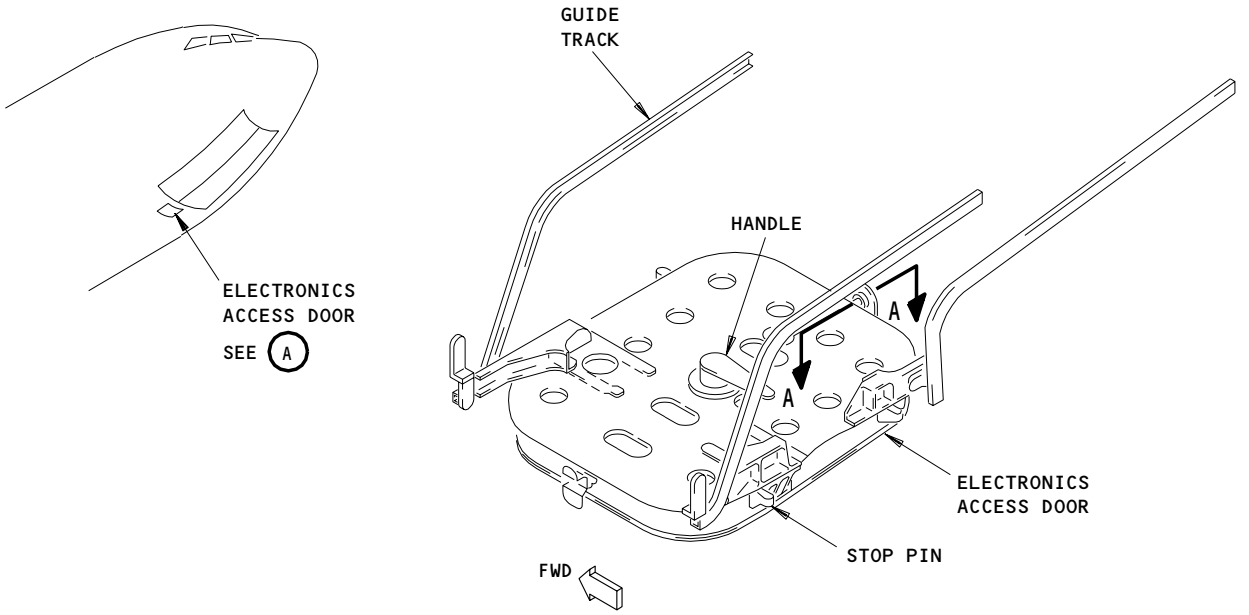
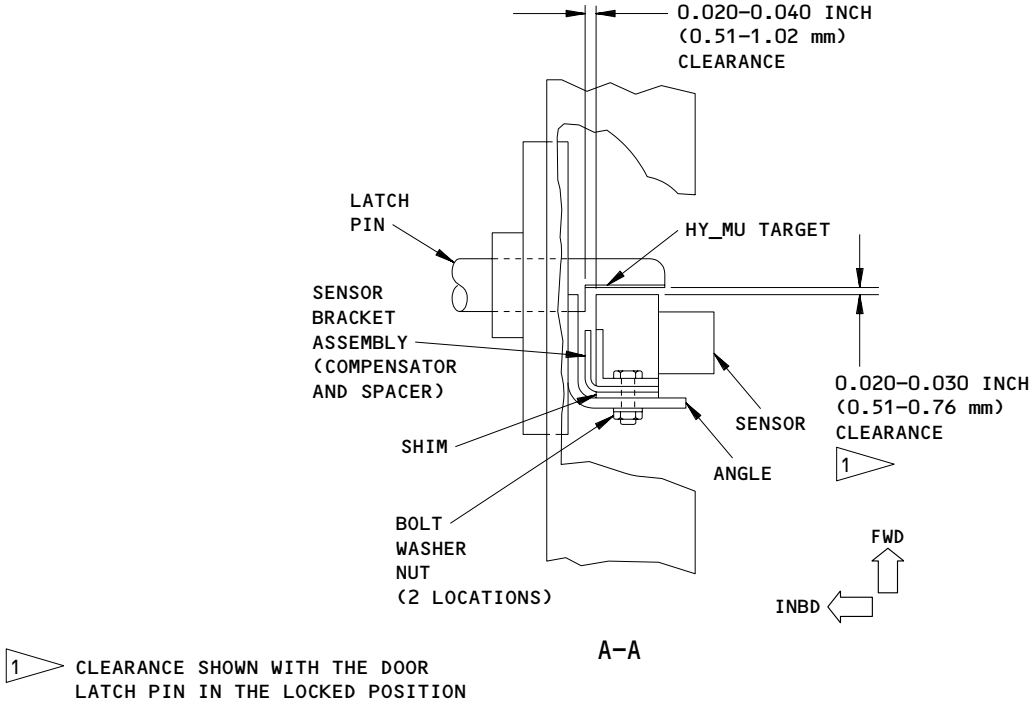


ELECTRONICS ACCESS DOOR
A



A–A

1 CLEARANCE SHOWN WITH THE DOOR LATCH PIN IN THE LOCKED POSITION

Door Warning Sensor – Electronics Access Door
Figure 403

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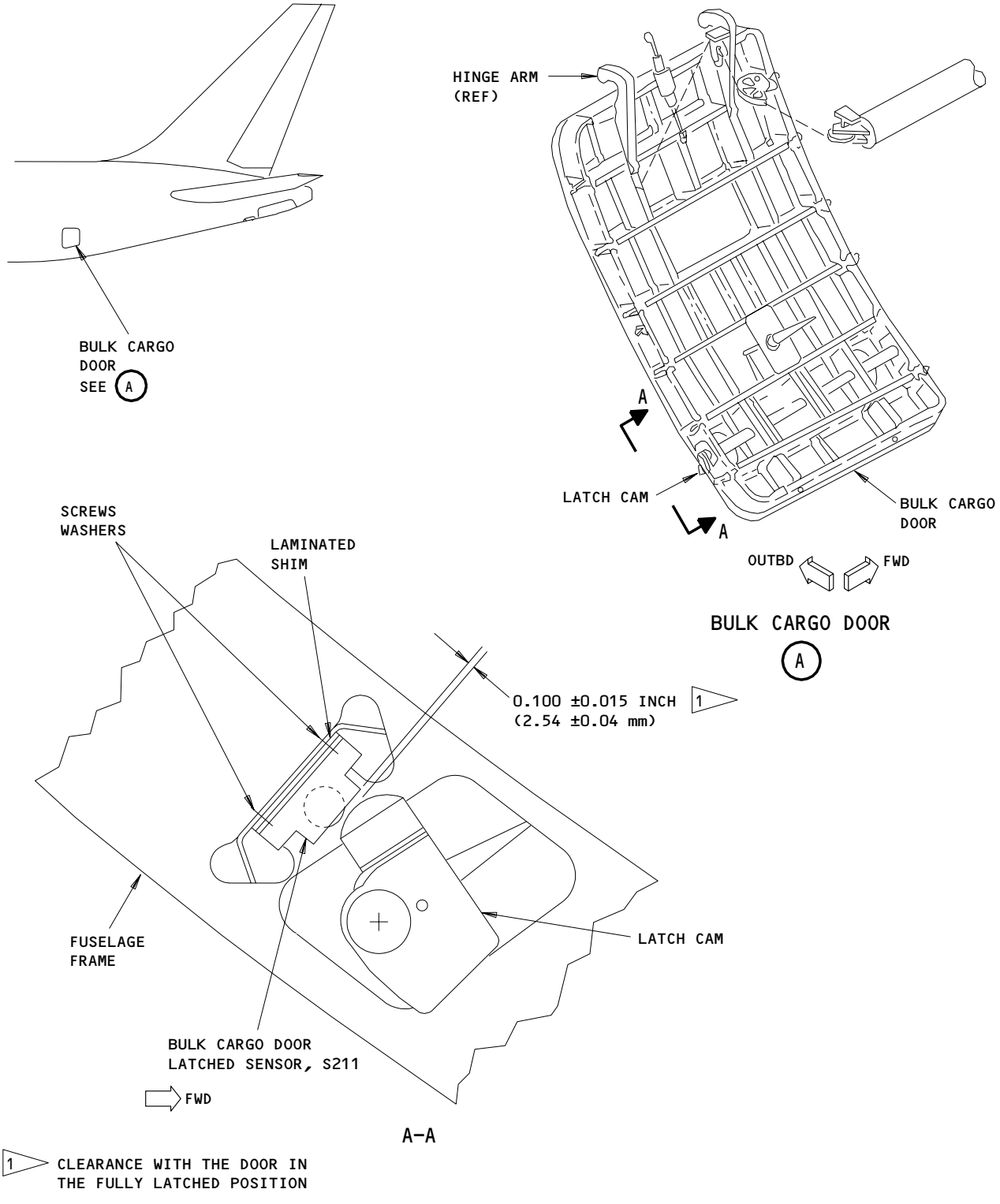

Door Warning Sensor - Bulk Cargo Door
Figure 404

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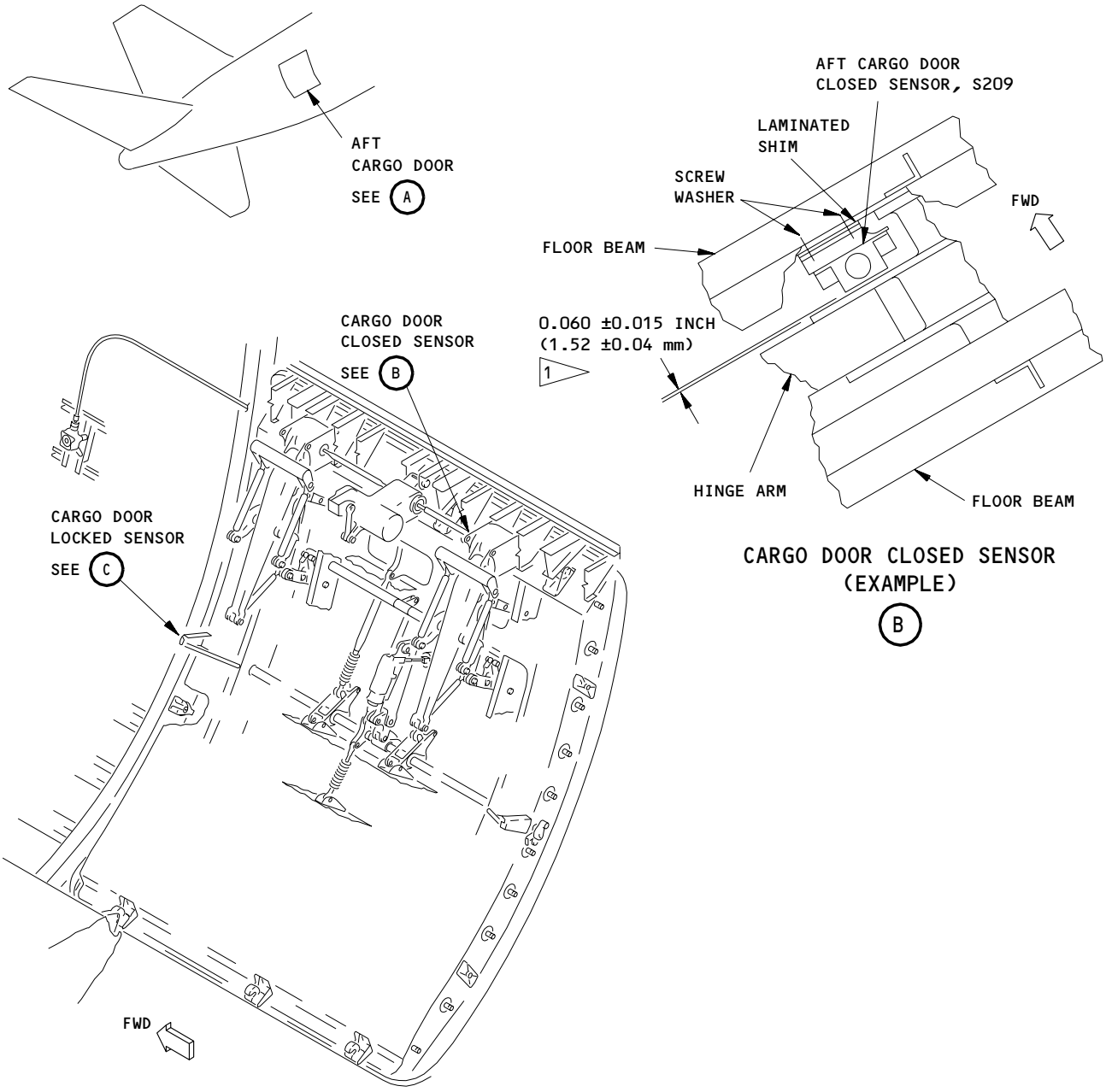

CARGO DOOR CLOSED SENSOR
(EXAMPLE)
B

STANDARD AFT CARGO DOOR
A

1 CLEARANCE SHOWN WITH THE DOOR IN THE CLOSED POSITION
2 CLEARANCE SHOWN WITH THE DOOR IN THE LATCHED POSITION

Door Warning Sensors – Standard Forward and Aft Cargo Doors
Figure 405 (Sheet 1)

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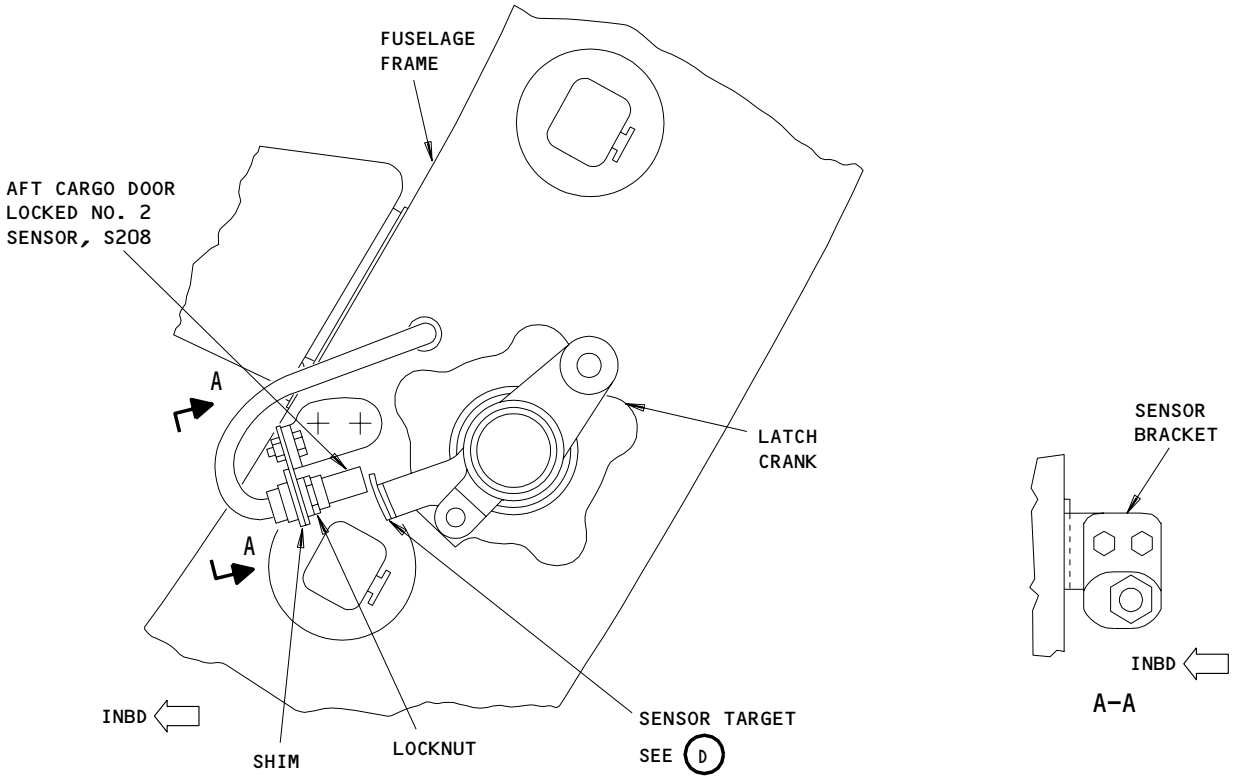
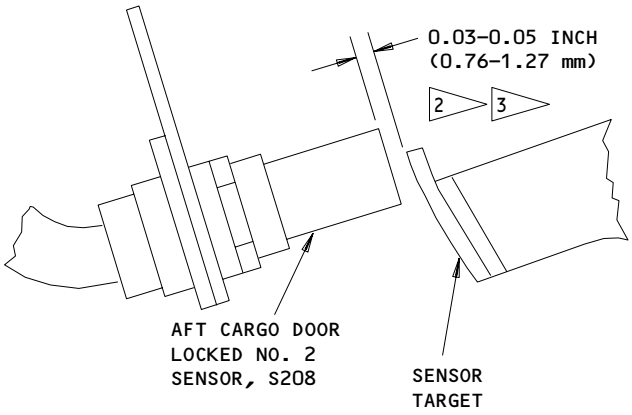


CARGO DOOR LOCKED SENSOR
(EXAMPLE)
C



SENSOR TARGET
D

3 PRELIMINARY ADJUSTMENT ONLY

Door Warning Sensors – Standard Forward and Aft Cargo Doors
Figure 405 (Sheet 2)

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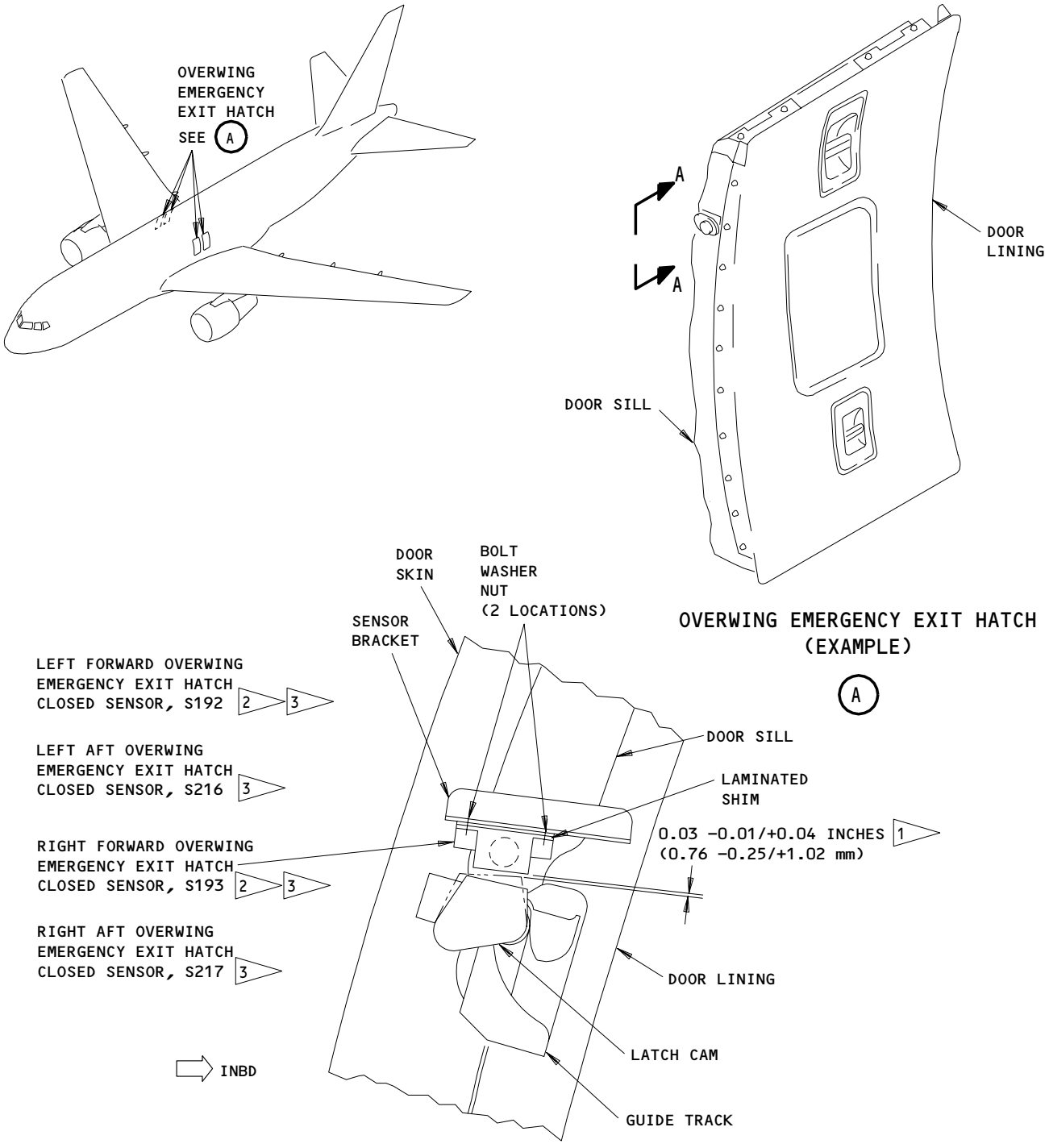

OVERWING EMERGENCY EXIT HATCH
(EXAMPLE)

A

A-A

1 CLEARANCE SHOWN WITH THE DOOR IN THE FULLY LATCHED POSITION

2 AIRPLANES WITH ONE HATCH OVER EACH WING

3 AIRPLANES WITH TWO HATCHES OVER EACH WING

Door Warning Sensors Installation - Overwing Emergency Exit Hatch
Figure 406

E13189

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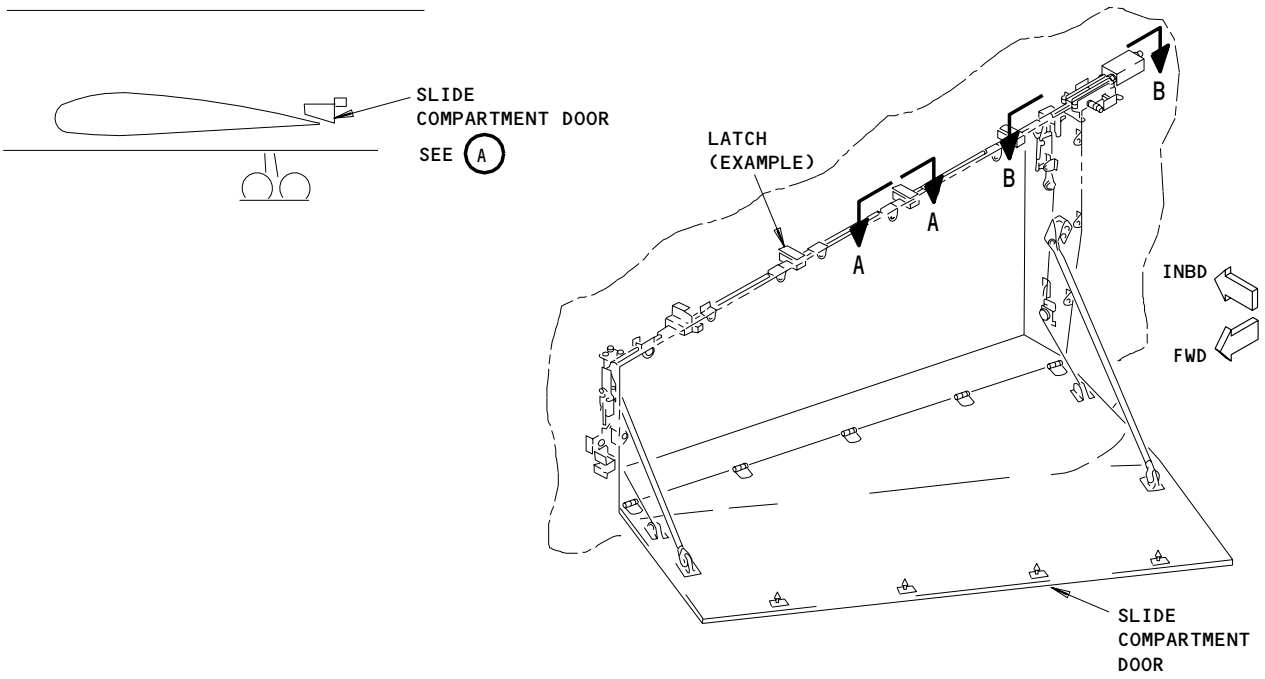
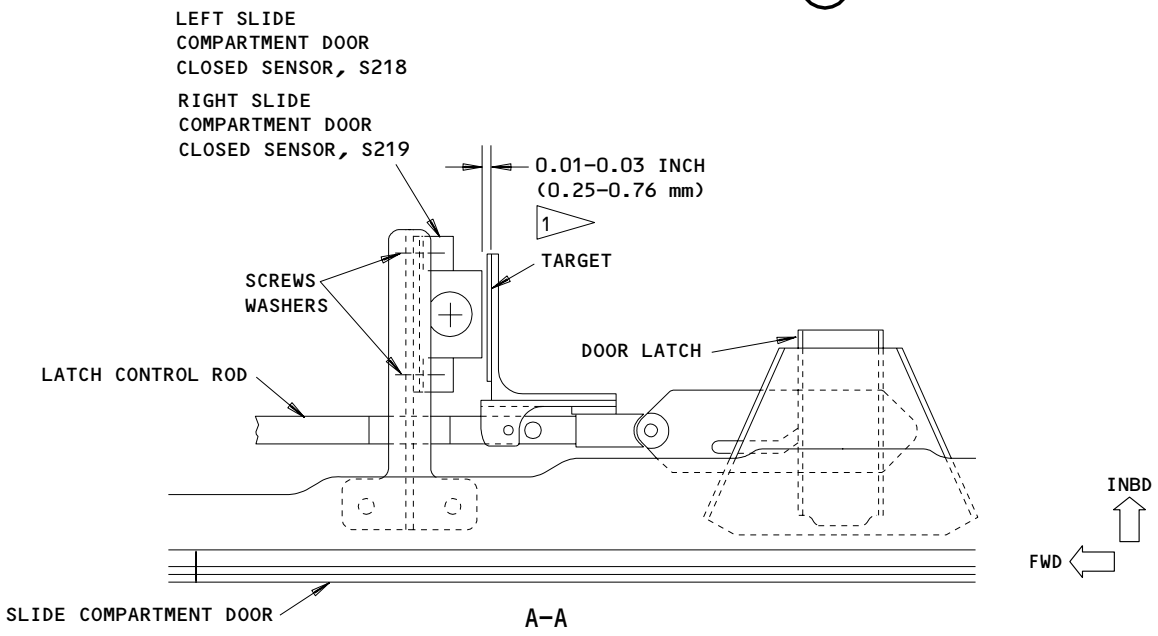


SLIDE COMPARTMENT DOOR

A



A–A

1 CLEARANCE SHOWN WITH THE INTEGRATOR IN THE LOCKED POSITION AND THE DOOR LATCHES IN THE CLOSED POSITION.

Door Warning Sensors – Slide Compartment Door
Figure 407 (Sheet 1)

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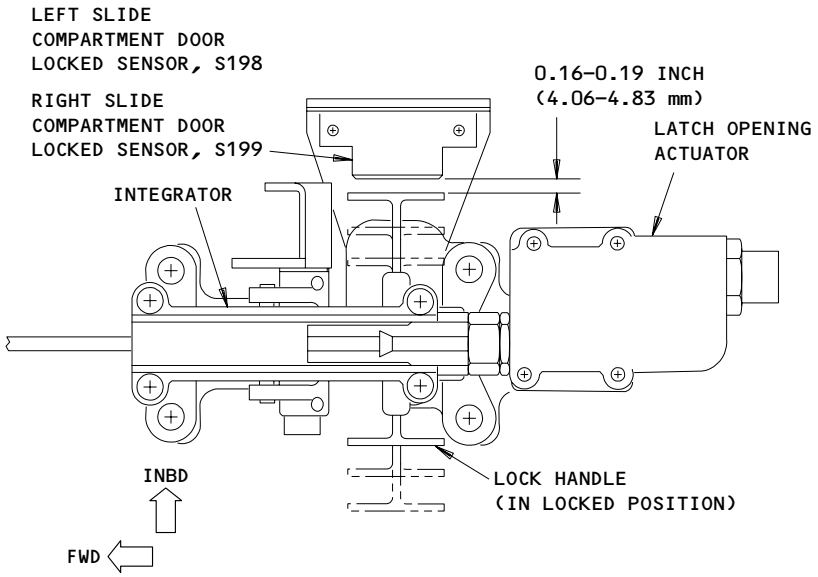

Door Warning Sensors – Slide Compartment Door
Figure 407 (Sheet 2)

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LARGE FORWARD CARGO DOOR WARNING SYSTEM - MAINTENANCE PRACTICES

1. General

A. This procedure has the tasks that follow:

(1) The removal of the door locked warning sensor (S214) on the large forward cargo door.

(2) The installation of the door locked warning sensor (S214) on the large forward cargo door.

(3) The adjustment of the door locked sensor warning sensor (S214) on the large forward cargo door.

(4) The removal of the door closed warning sensor (S215) on the large forward cargo door.

(5) The installation of the door closed warning sensor (S215) on the large forward cargo door.

(6) The adjustment of the door closed warning sensor (S215) on the large forward cargo door.

(7) The test for the forward large cargo door warning sensors.

B. The large forward cargo door warning sensors are as follows:

(1) S214 LOCKED

(2) S215 CLOSED

TASK 52-71-02-002-032

2. Large Forward Cargo Door Locked Sensor (S214) - Removal (Fig. 201)

A. Access

(1) Location Zone

821 Forward Cargo Door

B. Prepare to Remove the Sensor

S 862-033

(1) Open this circuit breaker and attach a DO-NOT-CLOSE tag:

(a) On the overhead circuit breaker panel P11:

1) 11T33, DOOR IND

C. Remove the Door Locked Sensor

S 022-034

(1) To remove the door locked sensor (20), do the steps that follow:

(a) Remove the door lining and the insulation blanket as necessary to get access to the sensor and the wiring.

(b) Disconnect the sensor leads at the splice area.

(c) Loosen the wire clamps on the sensor leads.

(d) Remove the fasteners (21), washers (22), and nuts (23) on the sensor.

(e) Remove the door locked sensor (20).

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TASK 52-71-02-402-035

3. Large Forward Cargo Door Locked Sensor (S214) - Installation (Fig. 201)

A. References

(1) AMM 25-52-02/401, Ceiling Panel

B. Access

(1) Location Zone

821 Forward Cargo Door

C. Install the Door Locked Sensor

S 422-036

(1) To install the door locked sensor (20), do the steps that follow:

CAUTION: WHEN YOU INSTALL THE SENSORS, MAKE SURE THE WIRES FOR THE SENSORS DO NOT TOUCH THE PARTS OF THE DOOR THAT MOVE. IF THE WIRES ARE NOT CLEAR OF THE PARTS THAT MOVE, DAMAGE TO THE EQUIPMENT CAN OCCUR.

(a) Install the sensor (20) with the fasteners (21), washers (22), and nuts (23).

(b) Connect the sensor leads to the airplane wiring at the splice area.

(c) Tighten the wire clamps on the sensor leads.

S 832-038

(2) Do this task: Large Forward Cargo Door Locked Sensor (S214) - Adjustment.

S 702-039

(3) If you will not remove or install other sensors, do this task: Forward Large Cargo Door Warning Sensors - Test.

S 412-037

(4) Install the door lining, insulation blanket, or ceiling panel (AMM 25-52-02/401) if it is necessary.

D. Put the Airplane Back to Its Usual Condition

S 862-040

(1) Remove the DO-NOT-CLOSE tag and close this circuit breaker:

(a) On the overhead circuit breaker panel P11:

1) 11T33, DOOR IND

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TASK 52-71-02-822-024

4. Large Forward Cargo Door Locked Sensor (S214) - Adjustment (Fig. 201)

A. Consumable Materials

(1) A00251, Compound - Sealing, BMS 5-26, Class B-2

B. References

(1) AMM 52-33-00/501, Large Forward Cargo Door
(2) AMM 24-22-00/201, Control
(3) AMM 25-52-02/401, Ceiling Panel

C. Access

(1) Location Zone
821 Forward Cargo Door

D. Prepare for sensor adjustment

S 222-025

(1) Make sure the door is correctly adjusted and has the correct flushness with the fuselage (AMM 52-33-00/501).

S 862-041

(2) Supply electrical power (AMM 24-22-00/201).

S 412-072

(3) Close, latch, and lock the aft lower lobe cargo door and bulk cargo door.

S 862-042

(4) Make sure this circuit breaker is closed:
(a) On the overhead circuit breaker panel P11:
1) 11T33, DOOR IND

E. Adjust the door locked sensor

S 822-043

(1) To adjust the door locked sensor (20), do the steps that follow:
(a) Make sure the clearance between the door locked sensor (20) and the target is as shown (View B, Fig. 201).

NOTE: This is an initial clearance. It is possible the final dimension will be different from this clearance when you do the final adjustment of the sensor.

(b) If the clearance between the sensor and the target is not correct, do the steps that follow:
1) Remove the fasteners (21), washers (22), and nuts (23) and remove the sensor (20).
2) Add or remove laminations of shim (24) as necessary to get the correct dimension.

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3) Install the sensor (20) with the fasteners (21), washers (22), and nuts (23).

(c) Close and latch the door.

(d) Slowly close the latch lock handle until the CARGO DOORS indicator light on the annunciator panel goes off.

(e) Measure the distance from the inboard side of the stop plate to the inboard, top corner of the lock sector at the main latch cam No. 11 (View A-A, Fig. 201).

NOTE: Measure the distance at a 90 degree angle to the stop plate surface.

1) Make sure dimension A (View A-A, Fig. 201) is 2.92 to 3.16 inches.

(f) If adjustment between sensor (20) and target is required, add or remove shim (24) under sensor target to adjust gap for proper indicator light function.

NOTE: Minimum gap between sensor and target must not be less that 0.030 inches.

(g) After final adjustment of the door locked sensor (20), bond the shim (24) to the sensor support bracket with the sealing compound.

S 412-044

(2) Install the door lining, insulation blanket, or ceiling panel (AMM 25-52-02/401) if it is necessary.

TASK 52-71-02-002-045

5. Large Forward Cargo Door Closed Sensor (S215) - Removal (Fig. 201)

A. References

(1) AMM 25-52-02/401, Ceiling Panel

B. Access

(1) Location Zone

821 Forward Cargo Door

C. Prepare to Remove the Sensor

S 862-046

(1) Open this circuit breaker and attach a DO-NOT-CLOSE tag:

(a) On the overhead circuit breaker panel P11:

1) 11T33, DOOR IND

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D. Remove the Door Closed Sensor

S 022-047
(1) To remove the door closed sensor (1), do the steps that follow:
(a) Remove the ceiling panel (AMM 25-52-02/401) to get access to the sensor wiring.
(b) Disconnect the sensor leads at the splice area.
(c) Loosen the wire clamps on the sensor leads.
(d) Remove the two fasteners (2) on the sensor.
(e) Remove the door closed sensor (1).

TASK 52-71-02-402-048

6. Large Forward Cargo Door Closed Sensor (S215) - Installation (Fig. 201)

A. References
(1) AMM 25-52-02/401, Ceiling Panel

B. Access
(1) Location Zone
821 Forward Cargo Door

C. Install the Door Closed Sensor

S 422-049
(1) To install the door closed sensor (1), do the steps that follow:

CAUTION: WHEN YOU INSTALL THE SENSORS, MAKE SURE THE WIRES FOR THE SENSORS DO NOT TOUCH THE PARTS OF THE DOOR THAT MOVE. IF THE WIRES ARE NOT CLEAR OF THE PARTS THAT MOVE, DAMAGE TO THE EQUIPMENT CAN OCCUR.

(a) Install the sensor (1) with the two fasteners (2).
(b) Connect the sensor leads to the airplane wiring at the splice area.
(c) Tighten the wire clamps on the sensor leads.

S 832-050
(2) Do this task: Large Forward Cargo Door Closed Sensor (S215) - Adjustment.

S 702-051
(3) If you will not remove or install other sensors do this task: Forward Large Cargo Door Warning Sensors - Test.

S 412-052
(4) Install the door lining, insulation blanket, or ceiling panel (AMM 25-52-02/401) if it is necessary.

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D. Put the Airplane Back to Its Usual Condition

S 862-053
(1) Remove the DO-NOT-CLOSE tag and close this circuit breaker:
(a) On the overhead circuit breaker panel P11:
1) 11T33, DOOR IND

TASK 52-71-02-822-026

7. Large Forward Cargo Door Closed Sensor (S215) - Adjustment (Fig. 201)

A. Equipment
(1) A27092-61 Actuator/Deactuator Set - Proximity Sensor

B. Consumable Materials
(1) A00251, Compound - Sealing, BMS 5-26, Class B-2

C. References
(1) AMM 52-33-00/501, Large Forward Cargo Door
(2) AMM 24-22-00/201, Control
(3) AMM 25-52-02/401, Ceiling Panel

D. Access
(1) Location Zone
821 Forward Cargo Door

E. Prepare for sensor adjustment

S 222-027
(1) Make sure the door is correctly adjusted and has the correct flushness with the fuselage (AMM 52-33-00/501).

S 862-054
(2) Supply electrical power (AMM 24-22-00/201).

S 412-074
(3) Close, latch, and lock the aft lower lobe cargo door and bulk cargo door.

S 862-055
(4) Make sure this circuit breaker is closed:
(a) On the overhead circuit breaker panel P11:
1) 11T33, DOOR IND

F. Adjust the door closed sensor

S 822-056
(1) To adjust the door closed sensor (1), do the steps that follow:
(a) Install a proximity sensor actuator on the cargo door locked sensor (20).
(b) Close and fully latch the door.
(c) Make sure the clearance between the door closed sensor (1) and the target is as shown (View A, Fig. 201).

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(d) If the clearance between the sensor and the target is not correct, do the steps that follow:
1) Remove the two fasteners (2) and remove the sensor (1).
2) Add or remove laminations of shim (3) as necessary to get the correct dimension.
3) Install the sensor (1) with the two fasteners (2).
(e) Manually unlatch the cargo door.
(f) Make sure the CARGO DOORS indicator light on the annunciator panel does not turn on until the cargo door moves open a minimum of 0.07 inch.

NOTE: The movement of the cargo door is measured at 90 degrees to the fuselage skin at the lower edge of the door.

(g) After final adjustment of the door closed sensor (1), bond the shim (3) to the sensor support bracket with the sealing compound.
(h) Remove the proximity sensor actuator from the door locked sensor (20).

S 412-057
(2) Install the door lining, insulation blanket, or ceiling panel (AMM 25-52-02/401) if it is necessary.

TASK 52-71-02-702-071

8. Forward Large Cargo Door Warning Sensors - Test (Fig. 201)
A. General
(1) The cargo door warning indicator light is on the annunciator panel on the overhead panel, P5.
B. Equipment
(1) A27092-61 Actuator/Deactuator Set - Proximity Sensor
C. References
(1) AMM 24-22-00/201, Control
D. Access
(1) Location Zone
821 Forward Cargo Door

E. Prepare for the System Test

S 862-028
(1) Supply electrical power (AMM 24-22-00/201).

S 412-076
(2) Close, latch, and lock the aft lower lobe cargo door and bulk cargo door.

S 862-029
(3) Make sure that the large forward cargo door is in the CLOSED, LATCHED, and LOCKED condition.

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S 862-007

(4) Open these circuit breakers and attach the DO-NOT-CLOSE tags:
  (a) On the APU external power panel P34:
    1) 34J4, CARGO DOOR CONTROL
    2) 34J7, CARGO DOOR

S 862-015

(5) Make sure this circuit breaker is closed:
  (a) On the overhead circuit breaker panel P11:
    1) 11T33, DOOR IND

S 022-099

(6) Remove the door lining and insulation to get access to the door latched sensor.

F. Procedure

S 222-031

(1) Do the steps that follow to do a check of the forward large cargo door warning sensors:
  (a) Make sure the CARGO DOORS indicator light on the annunciator panel is off.
  (b) Make sure the FWD CARGO DOOR message does not show on the EICAS display.
  (c) Push the latch lock handle release button on the large forward cargo door and slowly release with your hand the latch lock handle until the CARGO DOORS indicator light on the annunciator panel is on.
  (d) Measure the distance from the inboard side of the stop plate to the inboard, top corner of the lock sector at the main latch cam No. 11 (View A-A, Fig. 201).

    NOTE: Measure the distance at a 90 degree angle to the stop plate surface.

  (e) Make sure dimension A (View A-A, Fig. 201) is not less than 2.8 inches.
  (f) Move the latch lock handle to the fully unlocked position.
  (g) Install a proximity sensor actuator on the cargo door locked sensor.
  (h) Make sure the CARGO DOORS indicator light on the annunciator panel is off.
  (i) Make sure the FWD CARGO DOOR message does not show on the EICAS display.

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(j) Operate the manual drive of the latch/hook actuator to unlatch the cargo door.
1) Make sure the CARGO DOORS indicator light does not come on until the door moves a minimum of 0.07 inch in the open direction and make sure the CARGO DOORS indicator light comes on before the door moves 0.50 inch in the open direction.

NOTE: The door movement is measured at an angle of 90 degrees to the fuselage skin at the center of the lower edge of the door.

(k) Remove the proximity sensor actuator from the door locked sensor.
(l) Remove the DO-NOT-CLOSE tags and close these circuit breakers:
1) On the P34 panel:
a) 34J4, CARGO DOOR CONTROL
b) 34J7, FWD CARGO DOOR

G. Put the Airplane Back to Its Usual Condition

S 422-100
(1) Install the door insulation and lining as necessary.

S 862-101
(2) Remove the DO-NOT-CLOSE tags and close these circuit breakers:
(a) On the APU external panel P34:
1) 34J4, CARGO DOOR CONTROL
2) 34J7, CARGO DOOR

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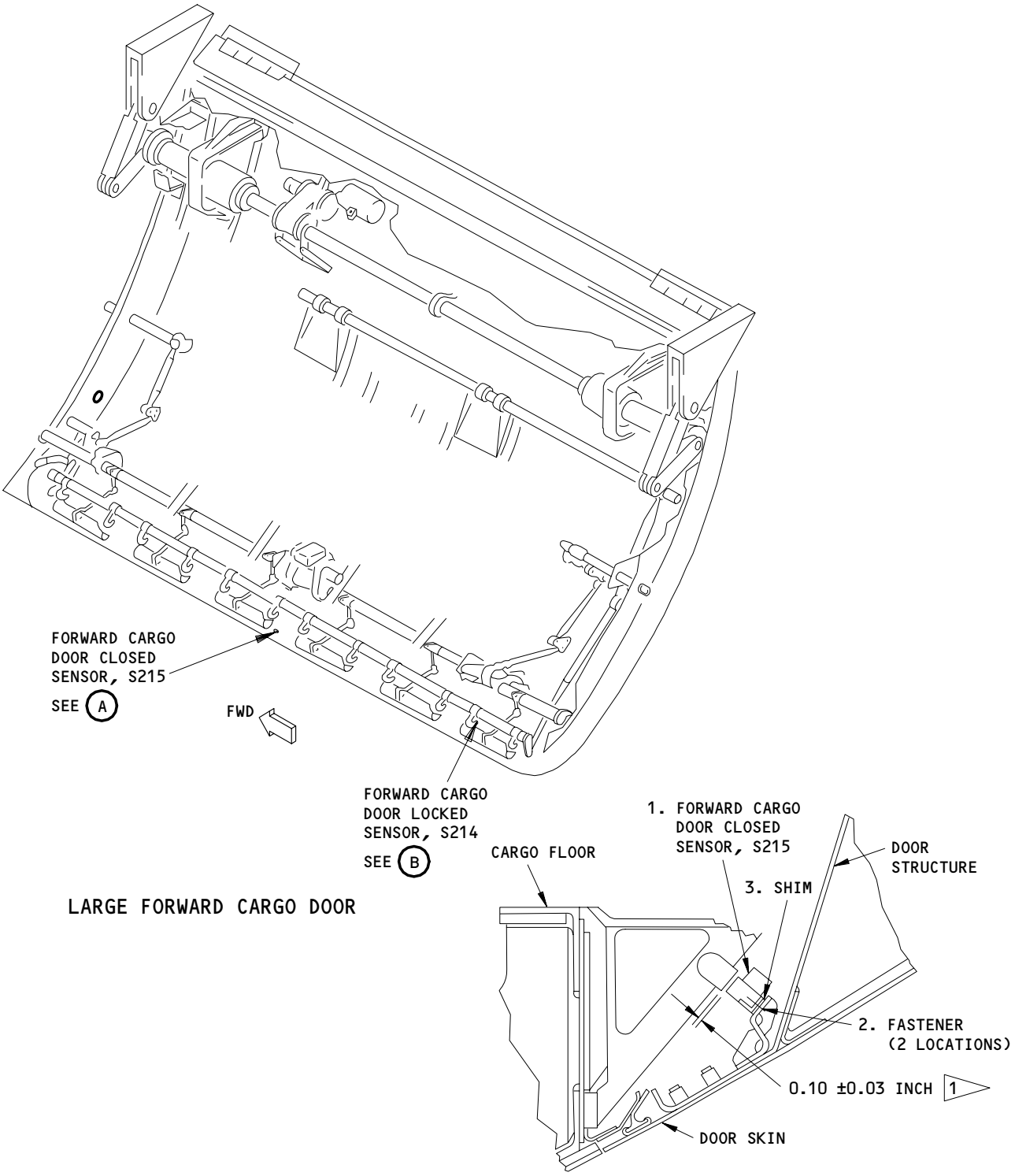

Large Forward Cargo Door Warning Sensors
Figure 201 (Sheet 1)

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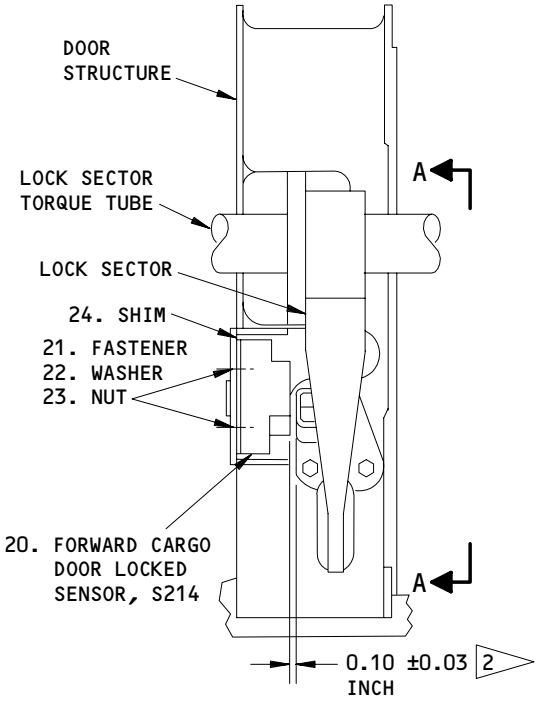
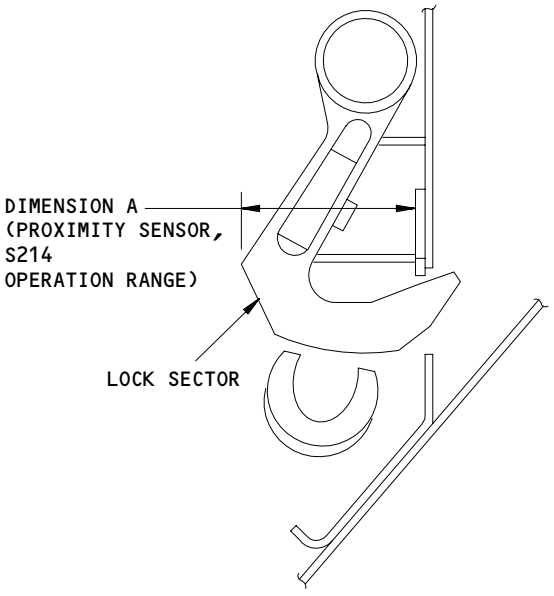


FORWARD CARGO DOOR
LOCKED SENSOR, S214

B



A-A

2 CLEARANCE SHOWN WITH THE DOOR
IN THE LOCKED POSITION

Large Forward Cargo Door Warning Sensors
Figure 201 (Sheet 2)

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