TO: ALL HOLDERS OF AFT ENTRY/GALLEY DOOR TORQUE TUBE ASSEMBLY OVERHAUL MANUAL, 52-46-21

REVISION NO. 4, DATED JUL 1/03

HIGHLIGHTS

DESCRIPTION OF CHANGE	TOPICS AFFECTED												
	D&O	D/Assy	Cleaning	Insp/Chk	Repair	Assy	F/C	Test	T/Shooting	S/Tools	Storage	IPL	L/Overhaul
Added optional bolts						X						X	
Added optional hinge link pins												X	

AFT ENTRY/GALLEY DOOR TORQUE TUBE ASSEMBLY

52-46-21

BOEING P/N 65-45849-91, -139, -160, -178
65-52873-91, -156, -157, -169, -195, -528

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT
52-1094		PRR 34272	Jun 5/88

LIST OF EFFECTIVE PAGES

* Indicates pages revised, added or deleted in latest revision
F Indicates foldout pages - print one side only

	PAGE	DATE	PAGE	DATE	PAGE	DATE
	52-46-21					
	T-1	Jul 1/02				
	T-2	BLANK				
*	LEP-1	Jul 1/03				
	LEP-2	BLANK				
*	T/C-1	Jul 1/03				
	T/C-2	BLANK				
	1	Jun 5/88				
	2	Nov 1/98				
	3	Jun 5/88				
*	4	Jul 1/03				
*	5	Jul 1/03				
*	6	Jul 1/03				
*	7	BLANK				
*	8	Jul 1/03				
*	9	Jul 1/03				
*	10	Jul 1/03				

TABLE OF CONTENTS

*[1] Special instructions not required. Use standard industry practices.

*[2] Use applicable procedures contained in SOPM 20-70-01 and standard industry practices.

AFT ENTRY/GALLEY DOOR TORQUE TUBE ASSEMBLY

1. DESCRIPTION AND OPERATION

A. Description

(1) The aft entry/galley door torque tube assembly is located in the fuselage of the airplane. Each torque tube assembly comprises: a torque tube, two hinge link pins, two sleeves, and associated fasteners.

B. Operation

(1) The torque tube assembly assists in the opening and closing of the aft entry/galley door.

C. Leading Particulars (approx)

(1) Length -- 25 inches

(2) Diameter -- 1 3/16 inches

(3) Weight -- 5 pounds

2. DISASSEMBLY

A. Remove bolt (2), washer (3), nut (4), and pin (1).

B. Remove bolt (6), washer (7), nut (8), and sleeve (5).

C. Remove bolt (10), washer (11), nut (12), and pin (9).

D. Remove bolt (14), washer (15), nut (16), and sleeve (13).

3. INSPECTION/CHECK

A. Check all parts for obvious defects in accordance with standard industry practices.

B. Magnetic particle check per 20-20-01 -- hinge link pins (1, 9), sleeves (5, 13), and torque tube (17).

4. REPAIR

A. Repair

(1) Use standard industry practices for repair of these components.

B. Refinish (Fig. 3)

NOTE: Refer to 20-30-02 for stripping of protective finishes and 20-41-01 for explanation of F and SRF finish codes.

(1) Hinge link pin (1)

(a) 66-14525-1 -- Cadmium plate (0.0002 - 0.0004 inch). Bake 3 hours minimum at 375 ±25°F (F-1.913). Plate per Fig. 1. On inside diameter apply two coats BMS 10-11, Type 1 primer (SRF-12.206). Material: 4340 steel, 125-145 ksi.

(b) 66-14525-2 -- Cadmium plate, type 3, class 2 and bake 3 hours minimum at 350-400 F (F-16.04). Plate per Fig. 1. On inside diameter apply phosphate coating (F-14.14) and apply two coats BMS 10-11, Type 1 primer (F-20.03). Material: 4340 steel, 125-145 ksi.

(c) 66-14525-3, -4 -- Cadmium plate (0.0002-0.0004 inch) (F-15.02). Plate per Fig. 1. Material: 15-5PH CRES (150-170 ksi).

(2) Hinge link pin (9)

(a) 66-14526-2 -- Cadmium plate (0.0002 - 0.0003 inch). Bake 3 hours minimum at 375 ±25°F (F-1.913). Plate per Fig. 1. On inside diameter apply two coats BMS 10-11, type 1 primer (SRF-12.206). Material: 4340 steel, 125-145 ksi.

(b) 66-14526-4 -- Cadmium plate, type 3, class 2 and bake 3 hours minimum at 350-400 F (F-16.04). Plate per Fig. 1. On inside diameter apply phosphate coating (F-14.14) and apply two coats BMS 10-11, type 1 primer (F-20.03). Materia: l4340 steel, 125-145 ksi.

(c) 66-14526-6 -- Cadmium plate (F-15.06) outer surfaces. Cadmium throw in allowed. Plate per Fig. 1. Material: 15-5PH CRES (150-170 ksi).

(3) Sleeves (5,13)

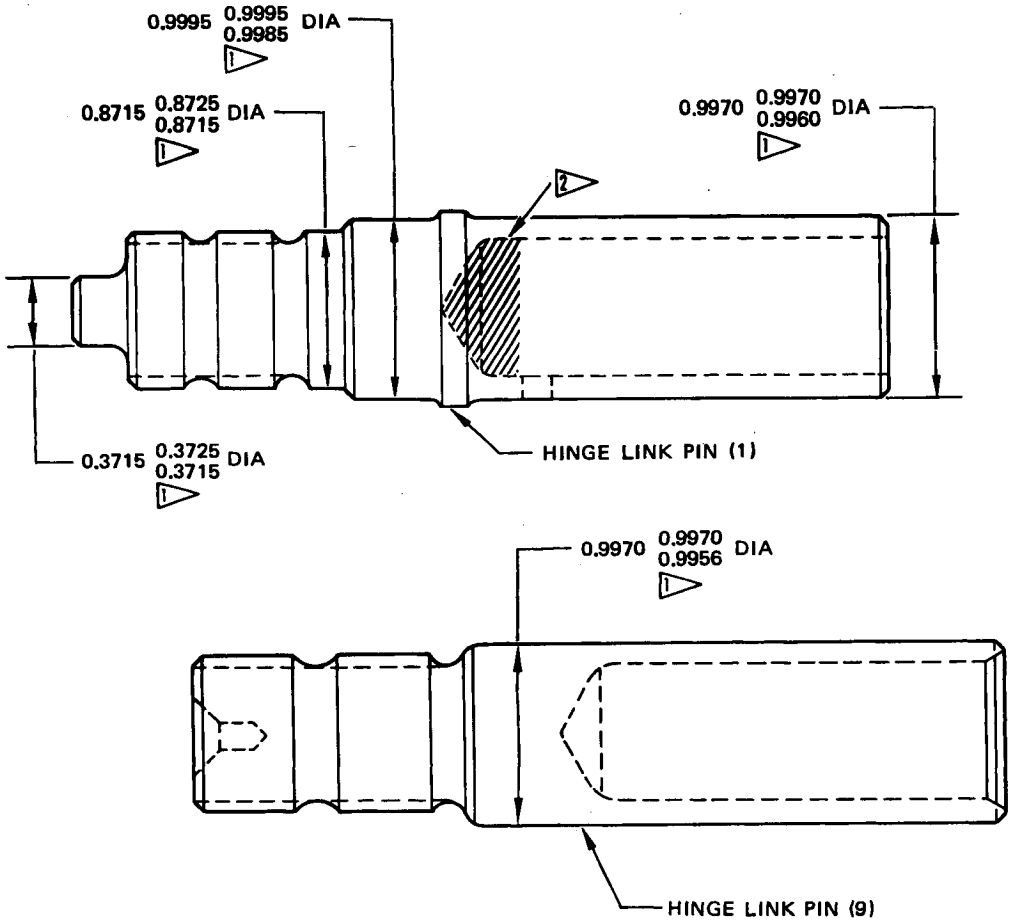
(a) 66-23571-1, -4 -- Exterior: Cadmium plate (0.0002-0.0004 inch) with post-plate chromate treatment, and bake 3 hours at 375 ±25°F (F-1.1923). Material: 4340 steel, 150-170 ksi.

(b) 66-23571-7, -9 -- Exterior: Cadmium plate, type 3, class 2 and bake 3 hours minimum at 350-400°F (F-16.04). Inside diameter: Apply phosphate coating (F-14.14) and apply two coats BMS 10-11, type 1 primer (0.0008 inch maximum) (F-20.03). Material: 4340 steel, 150-170 ksi.

(c) 66-23571-13, -15 -- Cadmium plate (F-15.06) OD. Cadmium throw in allowed. Material: CRES (150-170 ksi).

(4) Torque Tube (17)

(a) 66-14537-3 -- Exterior: Cadmium plate (0.0003 inch) with post-plate chromate treatment, and bake as required. Plate to an outside diameter of 0.9970 +0.0000/-0.0014 inch. Dimension applies to entire length of tube. Tube to be straight to within 0.002 inch per linear foot. Interior: Apply two coats BMS 10-11, type 1 primer (SRF-1.611). Material: 4130 steel, 150-170 ksi.



NOTE: ALL DIMENSIONS ARE IN INCHES

1 DIMENSION AFTER PLATING

2 FILL WITH LEVELING COMPOUND BMS 5-28, TYPE I EVEN WITH DRAIN HOLE.

Refinish Diagram
Figure 1

(b) 66-14537-9 -- Exterior: Cadmium plate, Type 3, class 2 and bake 3 hours minimum at 350-400°F (F-16.04). Plate to an outside diameter of 0.9970 +0.0000/-0.0014 inch. Dimension applies to entire length of tube. Tube to be straight to within 0.002 inch per linear foot. Inside diameter: Apply phosphate coating (F-14.14) and apply two coats BMS 10-11, Type 1 primer (F-20.03). Material: 4130 steel, 150-170 ksi.

(c) 66-14537-14 -- Cadmium plate (0.0002-0.0004 inch)(F-15.02). Material: CRES (150-170 ksi).

C. Materials

NOTE: Equivalent substitutes may be used.

(1) Primer -- BMS 1 (Ref 10-11, Type 1 SOPM 20-60-02)

(2) Compound, Potting -- BMS 5-28, Type 1 (/SOPM 20-60-04)

5. ASSEMBLY

A. Use standard industry practices for assembly of this component and the procedures that follow.

B. Assemble to the dimensions shown in Fig. 2. On the assemblies modified with SB 52-1094, install the bolts, washers, and nuts with wet corrosion preventive compound.

C. Apply a thin coat of MIL-C-16173, grade 2 corrosion preventive compound to the mating surfaces of the sleeve (13) and torque tube (17). Install the sleeve (13) with bolt (14), washer (15), and nut (16). Tighten the nut (16) on the bolt (14) to a running torque of 30-40 pound-inches.

NOTE: For bolt (14), the bolt direction is important to prevent interference and threads in bearing. The nut (16) is intended to bottom out on the bolt threads in order to prevent clamp up. The maximum gap permitted between the sleeve (13) and the washers (15) is 0.016 inch. If a large gap occurs, install more washers (15) as necessary. Substitution of the bolt (14) grip length is not permitted.

D. Apply a thin coat of MIL-C 16173, grade 2 corrosion preventive compound to the mating surfaces of the hinge link pin (9) and sleeve (13). Install the hinge link pin (9) with bolt (10), washer (11), and nut (12). Tighten the nut (12) on the bolt (10) to a running torque of 30-40 pound-inches.

NOTE: For bolt (10), the bolt direction is important to prevent interference and threads in bearing. The nut (12) is intended to bottom out on the bolt threads in order to prevent clamp up. The maximum gap permitted between the sleeve (13) and the washers (11) is 0.016 inch. If a large gap occurs, install more washers (11) as necessary. Substitution of the bolt (10) grip length is not permitted.

E. Apply a thin coat of MIL-C-16173, grade 2 corrosion preventive compound to the mating surfaces of the sleeve (5) and torque tube (17). Install the sleeve (5) with bolt (6), washer (7), and nut (8). Tighten the nut (8) on the bolt (6) to a running torque of 30-40 pound-inches.

NOTE: For bolt (6), the bolt direction is important to prevent interference and threads in bearing. The nut (8) is intended to bottom out on the bolt threads in order to prevent clamp up. The maximum gap permitted between the sleeve (5) and the washers (7) is 0.016 inch. If a large gap occurs, install more washers (7) as necessary. Substitution of the bolt (6) grip length is not permitted.

F. Apply a thin coat of MIL-C-16173, grade 2 corrosion preventive compound to the mating surfaces of the hinge link pin (1) and sleeve (5). Install the hinge link pin (1) with bolt (2), washer (3), and nut (4). Tighten the nut (4) on the bolt (2) to a running torque of 30-40 pound-inches.

NOTE: For bolt (2), the bolt direction is important to prevent interference and threads in bearing. The nut (4) is intended to bottom out on the bolt threads in order to prevent clamp up. The maximum gap permitted between the sleeve (5) and the washers (3) is 0.016 inch. If a large gap occurs, install more washers (3) as necessary. Substitution of the bolt (2) grip length is not permitted.

G. Apply a thin coat of MIL-C-16173, grade 2 corrosion preventive compound to the surfaces of the mating threads on pins (1, 9).

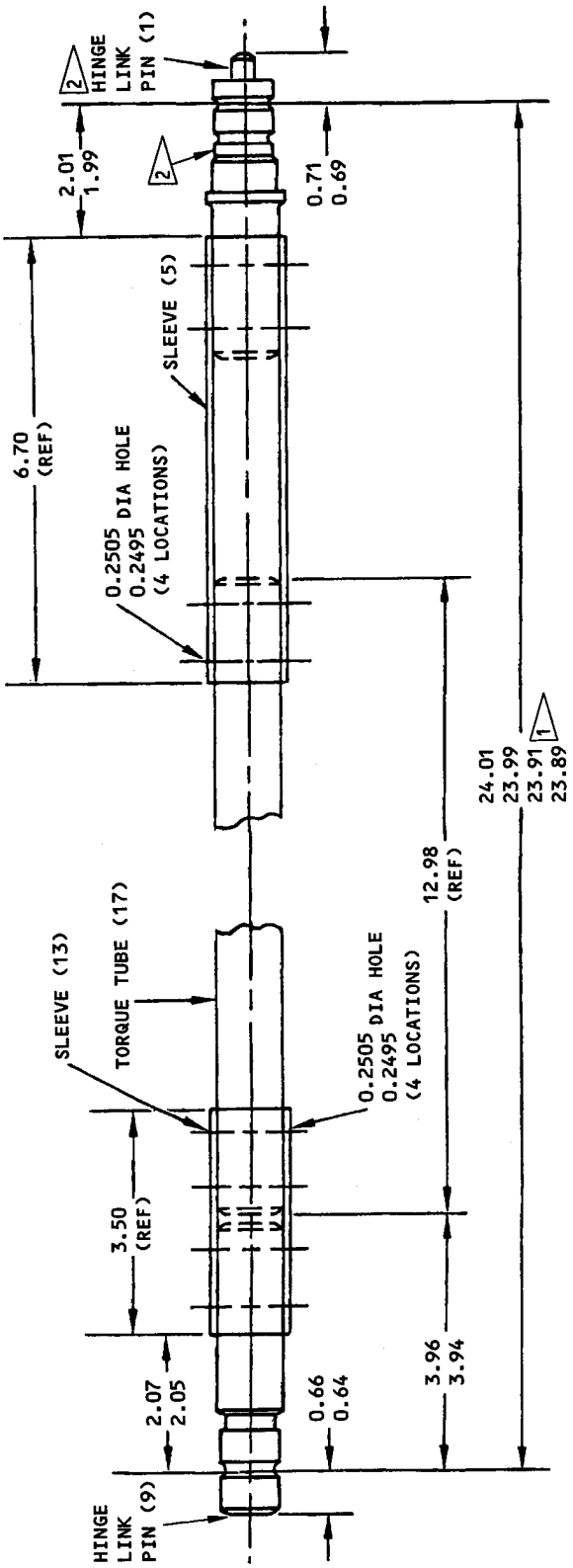
H. Apply a light film of MIL-G-23827 grease as specified in SOPM 20-50-07 to the surfaces identified in Fig. 2.

I. Materials

NOTE: Equivalent substitutes can be used.

(1) Compound, corrosion preventive -- MIL-C-16173, grade 2 (SOPM 20-60-04)

(2) Grease -- MIL-C-23827 (SOPM 20-60-03)



ITEM NUMBERS REFER TO FIG. 3

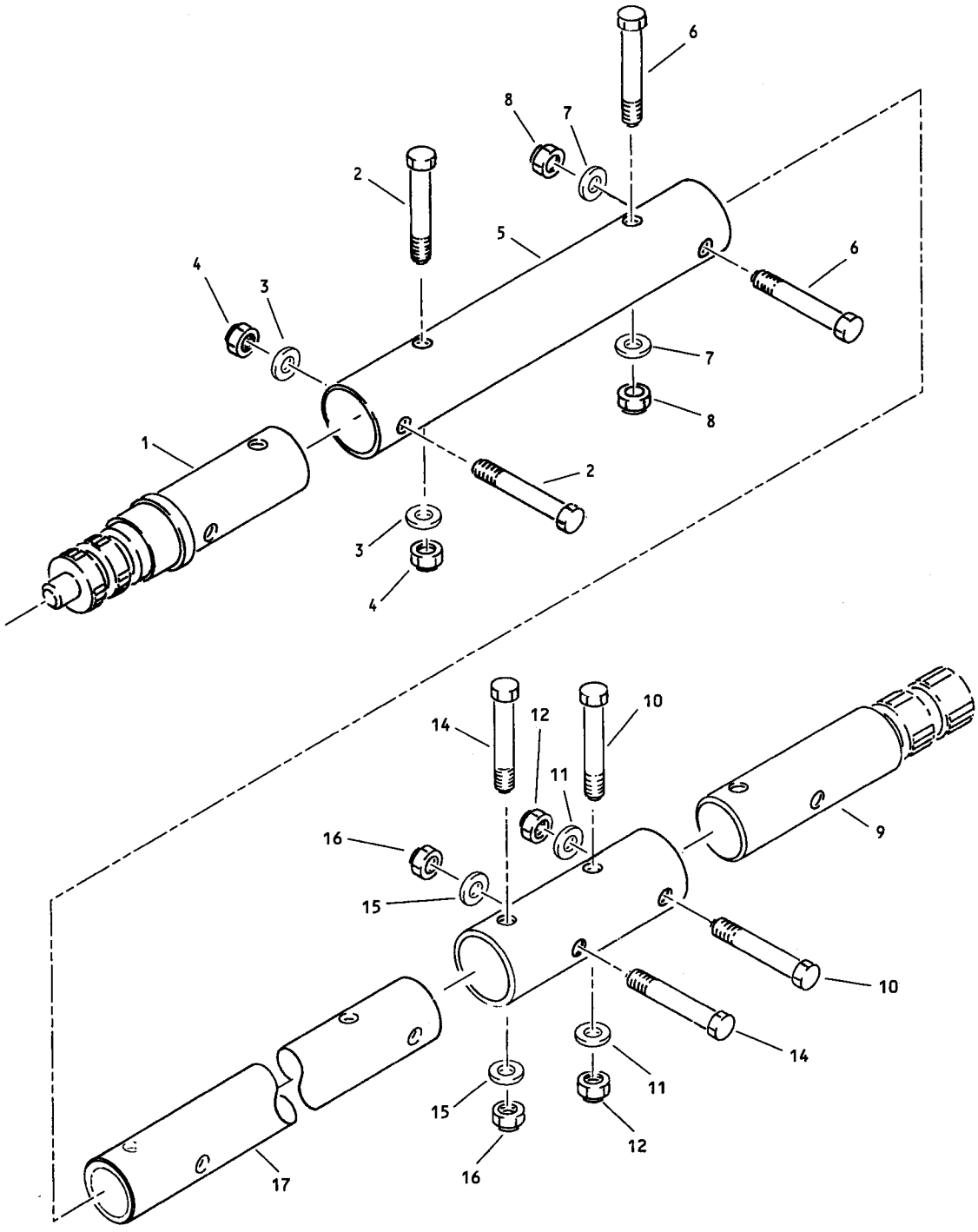
ALL DIMENSIONS ARE IN INCHES

1 65-52873-157, -528 ONLY

2 APPLY A LIGHT FILM OF MIL-G-23827 GREASE AS SPECIFIED IN SOPM 20-50-07 TO THESE SURFACES

Assembly of Torque Tube Assembly
Figure 2

6. ILLUSTRATED PARTS LIST



Aft Entry/Galley Door Torque Tube Assembly
Figure 3

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
3-					
	65-52873-156		TORQUE TUBE ASSY, AFT ENTRY DOOR	A	RF
	65-52873-157		TORQUE TUBE ASSY, AFT ENTRY DOOR	B	RF
	65-52873-91		TORQUE TUBE ASSY, AFT ENTRY DOOR	C	RF
	65-52873-528		TORQUE TUBE ASSY, AFT ENTRY DOOR	D	RF
	65-52873-169		TORQUE TUBE ASSY, AFT ENTRY DOOR (SB 52-1094)	G	RF
	65-52873-195		TORQUE TUBE ASSY, AFT ENTRY DOOR	I	RF
	65-45849-139		TORQUE TUBE ASSY, AFT GALLEY DOOR	E	RF
	65-45849-91		TORQUE TUBE ASSY, AFT GALLEY DOOR	F	RF
	65-45849-160		TORQUE TUBE ASSY, AFT GALLEY DOOR (SB 52-1094)	H	RF
	65-45849-178		TORQUE TUBE ASSY, AFT GALLEY DOOR	J	RF
1	66-14525-2		. PIN, HINGE LINK (REPLD BY 66-14525-4)	ABE	1
1	66-14525-1		. PIN, HINGE LINK (REPLD BY 66-14525-4)	CDF	1
1	66-14525-3		. PIN, HINGE LINK (REPLD BY 66-14525-4)	GH	1
1	66-14525-4		. PIN, HINGE LINK (REPLS 66-14525-1, -2, -3)	A-H	1
1	66-14525-4		. PIN, HINGE LINK	IJ	1
2	NAS1104-18		. BOLT	A-F	2
2	BACB30NM4K19		. BOLT *[1]	GI	2
2	BACB30NM4K19		. BOLT (OPT) *[1]	HJ	2
2	BACB30NR4K19		. BOLT (OPT) *[1]	HJ	2
3	AN960PD416L		. WASHER	A-F	2
3	AN960C416L		. WASHER	G-J	2
4	NAS679A4W		. NUT	A-F	2
4	BACN10YR4CD		. NUT	G-J	2
5	66-23571-7		. SLEEVE	ABE	1
5	66-23571-1		. SLEEVE	CDF	1
5	66-23571-13		. SLEEVE	G-J	1
6	NAS1104-18		. BOLT	A-F	2
6	BACB30NM4K19		. BOLT *[1]	GI	2
6	BACB30NM4K19		. BOLT (OPT) *[1]	HJ	2
6	BACB30NR4K19		. BOLT (OPT) *[1]	HJ	2
7	AN960PD416L		. WASHER	A-F	2
7	AN960C416L		. WASHER	G-J	2
8	NAS679A4W		. NUT	A-F	2
8	BACN10YR4CD		. NUT	G-J	2
9	66-14526-4		. PIN, HINGE LINK	ABE	1
9	66-14526-2		. PIN, HINGE LINK	CDF	1
9	66-14526-6		. PIN, HINGE LINK	G-J	1
10	NAS1104-18		. BOLT	A-F	2
10	BACB30NM4K19		. BOLT *[1]	GI	2
10	BACB30NM4K19		. BOLT (OPT) *[1]	HJ	2
10	BACB30NR4K19		. BOLT (OPT) *[1]	HJ	2
11	AN960PD416L		. WASHER	A-F	2
11	AN960C416L		. WASHER	G-J	2

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
3-					
12	NAS679A4W		. NUT	A-F	2
12	BACN10YR4CD		. NUT	G-J	2
13	66-23571-9		. SLEEVE	ABE	1
13	66-23571-4		. SLEEVE	CDF	1
13	66-23571-15		. SLEEVE	G-J	1
14	NAS1104-18		. BOLT	A-F	2
14	BACB30NM4K19		. BOLT *[1]	GI	2
14	BACB30NM4K19		. BOLT (OPT) *[1]	HJ	2
14	BACB30NR4K19		. BOLT (OPT) *[1]	HJ	2
15	AN960PD416L		. WASHER	A-F	2
15	AN960C416L		. WASHER	G-J	2
16	NAS679A4W		. NUT	A-F	2
16	BACN10YR4CD		. NUT	G-J	2
17	66-14537-9		. TUBE, TORQUE	ABE	1
17	66-14537-3		. TUBE, TORQUE	CDF	1
17	66-14537-14		. TUBE, TORQUE	G-J	1

*[1] DO NOT USE BOLTS WITH A DIFFERENT GRIP LENGTH.