



OVERHAUL MANUAL

TO: ALL HOLDERS OF PALLETIZED CARGO SYSTEM SIDE RESTRAINT ASSEMBLY OVERHAUL MANUAL, 25-56-38

REVISION NO. 2, DATED DEC 5/91

HIGHLIGHTS

DESCRIPTION OF CHANGE	TOPICS AFFECTED												
	D & O	D / Assy	Cleaning	Insp / Chk	Repair	Assy	F / C	Test	T / Shooting	S / Tools	Storage	I P L	L / Overhaul
Changed latch part number to 66-23611-1 to correspond to production parts												X	

PALLETIZED CARGO SYSTEM SIDE RESTRAINT ASSEMBLY

25-56-38

BOEING P/N 65-51705-1 THRU -16

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT
		PRR 33237	Sep 5/84

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LIST OF EFFECTIVE PAGES

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

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25-56-38					
T-1	Sep 5/84				
T-2	BLANK				
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LEP-2	BLANK				
T/C-1	Sep 5/84				
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*[1] Use applicable procedures contained in 20-70-01 and standard industry practices

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COMMERCIAL JET
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PALLETIZED CARGO SYSTEM SIDE RESTRAINT ASSEMBLY

1. DESCRIPTION AND OPERATION

A. Description

The palletized cargo system side restraint assembly consists mainly of a roller assembly or ball unit assembly and a housing assembly. Side restraints are installed in floor tracks number 1 and 7. Each side restraint provides support for the guide rail installation.

B. Operation

The side restraint assemblies are secured on the inboard side by single studs which engage keyhole-slotted anchors or plates in the cabin floor. Lifting the latch will allow the vertical restraint lip to fall to the retracted position so it will be out of the way during loading. To extend vertical restraint, lift restraint lip up. The guide rail, together with the fixed side restraints, provide lateral guidance and restraint for the passenger pallets and the 125 inch cargo pallets.

C. Leading Particulars (Approximate)

Length (65-51705-1, -2, -3, -4, -5 -- 7.4 ins
-6, -7, -8, -11, -12, -13, -14, and -15)
Length (65-51-105-9, -10) -- 7.2 ins.
Length (65-51705-16) -- 8.20 ins
Weight 2.5 to 4.0 lbs.

Figure 1. Deleted

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2. DISASSEMBLY (Fig. 3)

A. Remove nut (1), washer (2), stud (3) and parts (4 through 8) from housing assembly (34).

B. (1) 65-51705-1 thru -8, -11, -12 and -16

(a) Remove nut (9), washer (10), bolt (11), spacer (12), and roller assembly (13) from housing assembly (34).

NOTE: Do not remove bearings (14) from roller (15) unless bearings are damaged and need to be replaced.

(2) 65-51705-9, -10, -13, -14, and -15

(a) Remove nut (9), washer (10), bolt (11), spacer (12), and ball assembly (15A) from housing assembly (34).

(b) Disassemble ball assembly (15A) by removing nuts (15B), washers (15C), screws (15D), retainer (15E), spring (15D), ball assembly (15F), and base plate (15G).

C. Remove right and left-hand studs (16 and 17) from housing assembly (34).

D. Remove pin springs (18 and 21), plungers (19 and 22), and springs (20 and 23).

NOTE: Working force for compression springs (20 and 23) is approximately 5 pounds.

E. Remove rivet (24), nutplate (25), and shim (26) from housing assembly (34).

F. Remove cotter pins (27), pins (28 and 29), latch (30) and vertical restraint assembly (31).

NOTE: Do not remove bushing (32) from vertical restraint (33) unless bushing is damaged and needs to be replaced.

G. Metal-cal (35) should not be removed from housing assembly (34) unless replacement is necessary.

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3. CLEANING (Fig. 3)

A. General

- (1) Wash all metal parts with dry cleaning solvent, Specification P-D-680 or equivalent. Use a stiff bristle brush to remove stubborn accumulations of foreign matter.
- (2) Drain and dry thoroughly all parts with a clean, lint-free cloth or with clean, moisture-free air.

B. Bearings

- (1) Wipe bearings (14) with a lint-free cloth moistened with dry cleaning solvent, Specification P-D-680 or equivalent.
- (2) For additional information refer to 20-30-01.

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4. INSPECTION/CHECK (Fig. 3)

- A. Examine all metal parts for cracks, burrs and corrosion using strong light and ten-power magnification.
- B. Examine internal and external threads for cross-threading and stripping.
- C. Examine painted and plated surfaces for blisters, chipping or flaking.
- D. Visually examine bearings (14) or ball assembly (15A) for roughness, binding or excessive radial or axial play.
- E. Examine springs (15D, 20, and 23) by rolling on a flat surface. There must be no wobble. Check springs (15D, 20, and 23) in accordance with Table I.

SPRING CHECK DATA			
Index No. Fig. 3	Free Length (Inches)	Test Deflection (Inches)	Required Load Limits (Pounds)
20 and 23	0.62	0.316 to 0.386	4.18 to 5.11
15D	1.02	0.64	48-58 lbs

Table I

- F. Perform a penetrant check on the following parts: roller (15), and studs (16 and 17).
- G. Perform a magnetic particle examination on the following parts: vertical spring (15D), restraint (33), and housing assembly (34).
- H. Check bolt holes on housing assembly (34) for elongation.
- I. Check marker (35) for legibility and security of mounting.

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5. REPAIR (Fig. 3)

A. Use standard industry practices for repair of this component.

B. Refinish

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

- (1) Studs (3, 16, 17) -- Cadmium plate (F-1.1913) all over. Material: 4140 steel, 160-180 ksi.
- (2) Support (8) -- Chromic acid anodize (F-2.20) all over. Material: Alum alloy.
- (3) Roller (15) -- Chromic acid anodize (F-2.26) all over. Material: Alum alloy.
- (4) Spring (15D) -- Cadmium plate (F-1.1923) all over. Material: Music wire
- (5) Base plate (15G) -- Alodize and apply one coat of BMS 10-11, type 1 primer (F-2.30). Material: Al alloy
- (6) Shim (26) -- Alodize or chromic acid anodize (SRF-2.30) all over. Material: Alum alloy.
- (7) Pin (28) -- Hard chrome plate (F-1.842) all over. Material: 4140 steel, 180-200 ksi.
- (8) Restraint (33) -- Passivate (F-8.07) all over. Apply red epoxy enamel BMS 10-11, type 2 (SRF-14.905-101) to area shown on Fig. 2. Material: 17-4PH CRES, 180-200 ksi.
- (9) Housing (34) -- Passivate (F-8.07) all over. Apply BMS 10-86, type 1, color gray (SRF-14.9625) to surface in contact with seat track only. Material: 17-4PH CRES, 180-200 ksi.

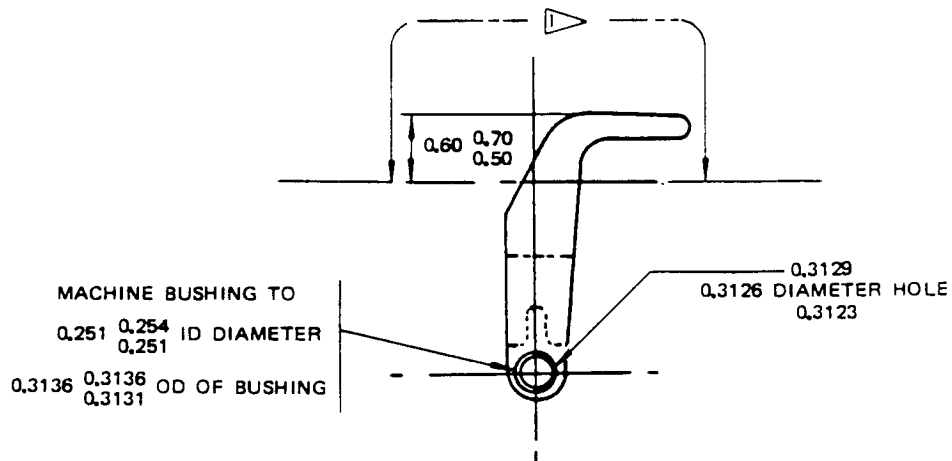
C. Replacement

- (1) Replace pin spring (18, 21), rivet (2), cotter pins (27) and all parts damaged beyond simple repair.
- (2) If necessary to replace bearing (14), press bearing into roller (15). Overall length of roller assembly (13) shall be in accordance with dimensions indicated in Fig. 2. Sleeve stake bearing in roller (15) in accordance with 20-50-03.

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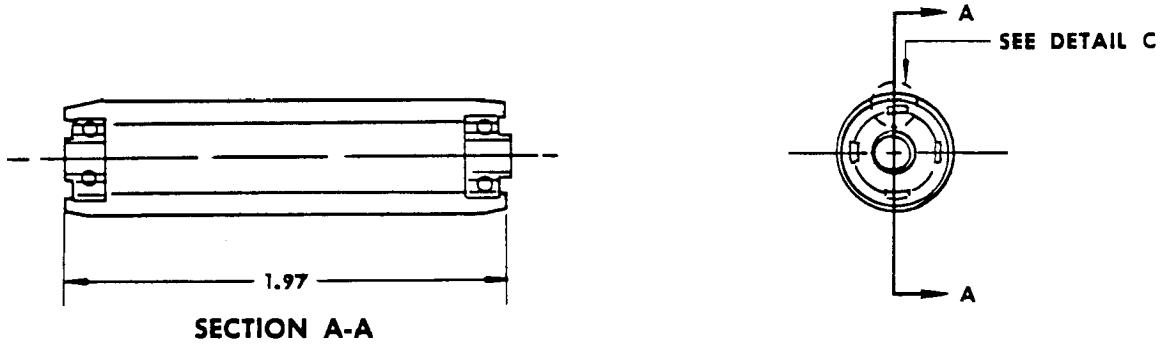
- (3) If necessary to replace bushing (32) in vertical restraint (33), proceed as follows:
- (a) Press bushing into vertical restraint with wet BMS 10-11, type 1, primer on OD.
 - (b) Machine bushing bore to 0.251 to 0.254 inch in diameter.
 - (c) Apply one coat of BMS 10-11 type 1 in bushings ID after reaming.
- (4) If replacement of marker (35) is necessary, replace in accordance with 20-50-05.

 APPLY RED EPOXY ENAMEL
PER SRF 14.905-010

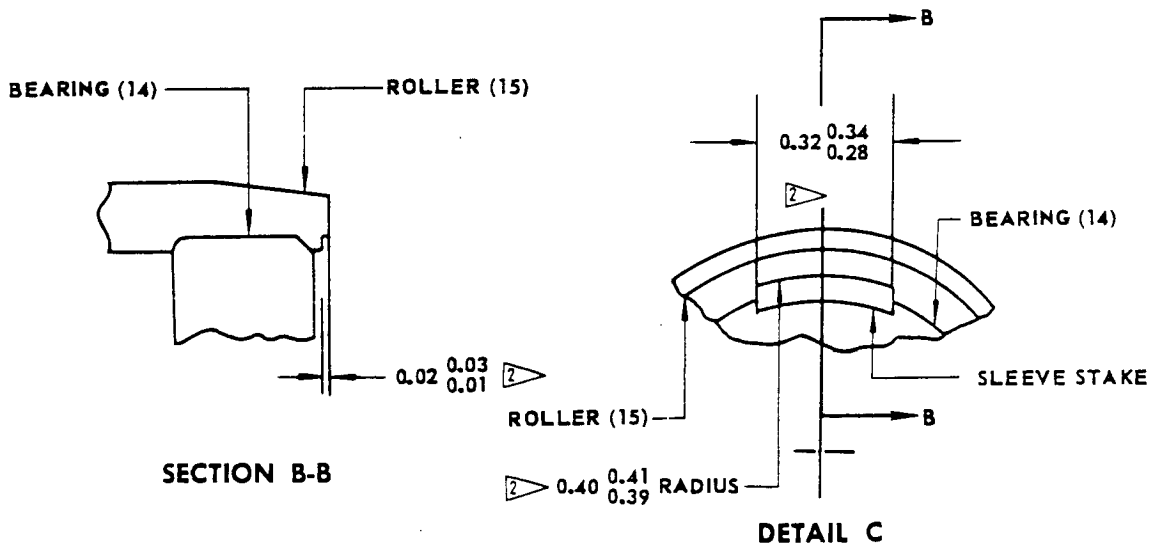


NOTE: ALL DIMENSIONS IN INCHES

VERTICAL RESTRAINT ASSY. (31)



NOTE: ALL DIMENSIONS ARE IN INCHES.



 STAKING DIMENSION ONLY.

ROLLER ASSY (13)

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6. ASSEMBLY (Fig. 3)

- A. Install marker (35) on housing assembly (34).
- B. Position vertical restraining assembly (31) in housing assembly (37) and secure with pin (28) and cotter pin (27). Position latch (30) through vertical restraint-slotted hole and secure with pin (29).
- C. Position shim (26) on housing assembly (34) by aligning holes of shim (26) with holes in housing assembly (34) and secure shim (26) with nutplate (25) and rivet (24).

NOTE: Nutplate (25) must be located so nut element will allow maximum float of number 10 screw in 0.266 to 0.270 diameter hole in housing assembly (36).

- D. Install spring (23 or 20) and plungers (22 and 19) and secure with pins (21 and 18).
- E. Install studs (16 and 17).
- F. (1) 65-51705-1 thru -8, -11, and -16
 - (a) Install roller assembly (13) with spacer (12), bolt (11), washer (10) and tighten with nut (9).
- (2) 65-51705-9, -10, -13, -14 and -15
 - (a) Assemble ball assembly (15A) by installing spring (15D), ball assembly (15F), and retainer (15E) into the base plate (15G). Install screws (15D), washers (15C) and nuts (15C). Tighten nut.
 - (b) Install ball assembly (15A) into housing assembly (34) with spacer (12), bolt (11), washer (10), and nut (9). Tighten nut.
- G. Install tie down (4) and parts (5 thru 8).
- H. Install stud (3), washer (2) and tighten with nut (1).

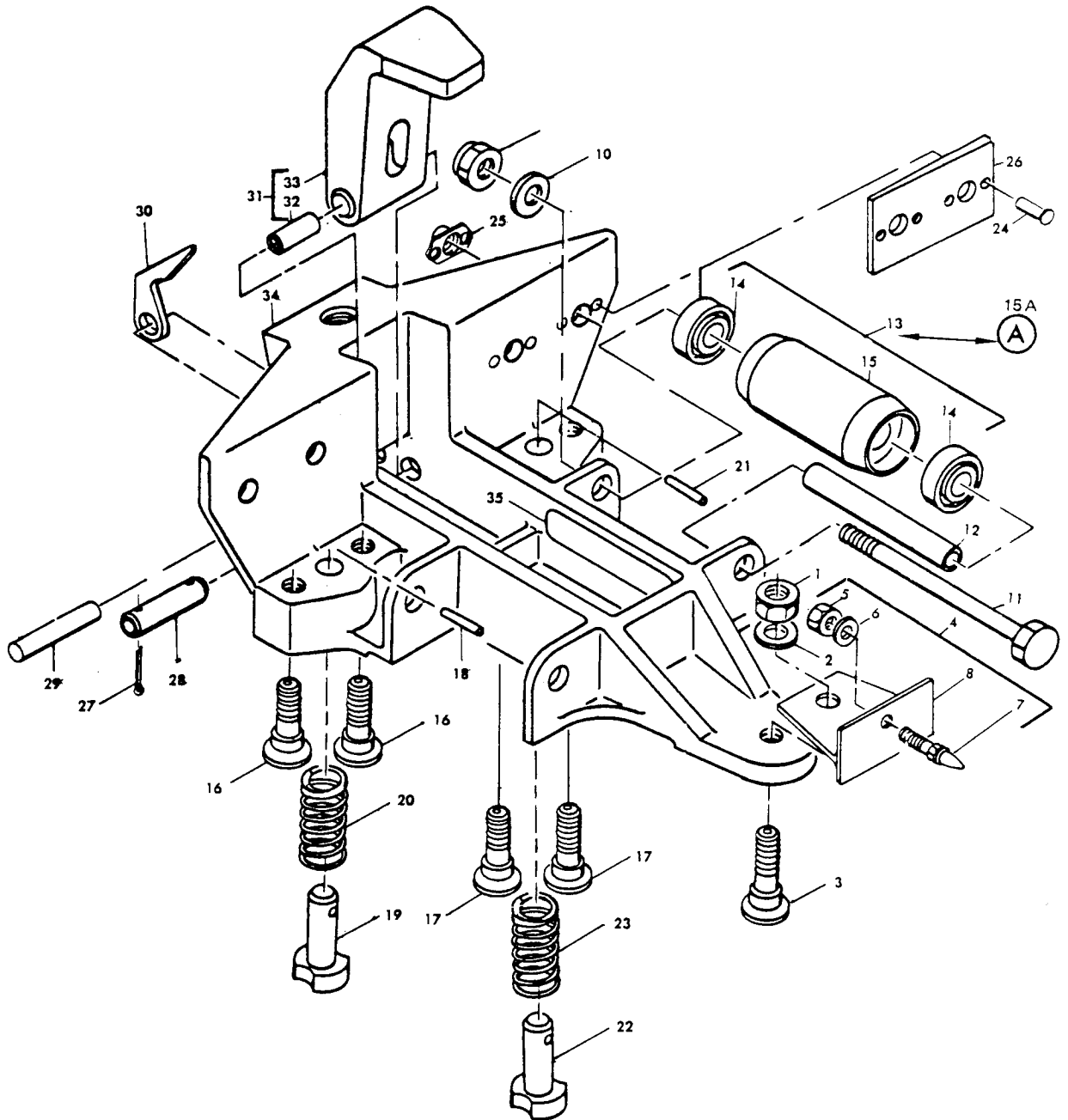
7. TESTING (Fig. 3)

A. Run-in Procedure

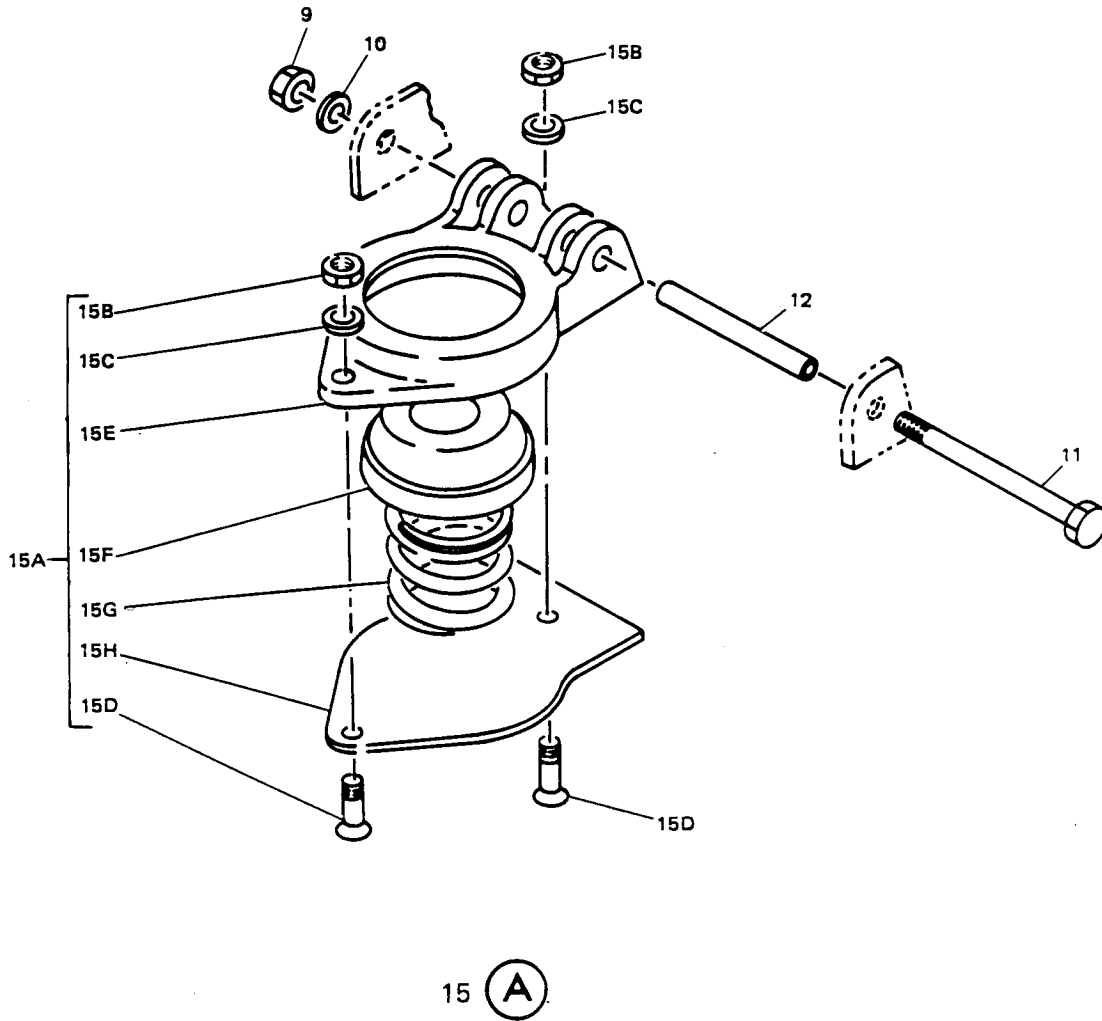
- (1) Check roller assembly (13) or ball assembly (15A) for smooth rotation.
- (2) Check shear studs (16 and 17) and plungers (19 and 22) for smooth operation and positive spring action.

8. TROUBLE SHOOTING (Fig. 3)

<u>TROUBLE</u>	<u>POSSIBLE CAUSE</u>	<u>CORRECTION</u>
A. Roller assembly (13) binding	Foreign matter accumulation in bearings (14). Bearing (14) defective. Bolt (11) broken or bolt holes elongated	Disassemble and clean Replace bearing (14) Replace bolt (11)
B. Shear stud (3) binding	Foreign matter accumulation in housing assembly (34)	Disassemble, clean and inspect stud (3)
C. Plungers (19 and 22) binding	Foreign matter accumulation in housing assembly (34). Spring (20 or 23) weak or broken	Disassemble, clean and inspect plungers Replace spring (20 or 23)

9. ILLUSTRATED PARTS LIST

Palletized Cargo System Side Restraint Assembly
 Figure 3 (Sheet 1)



Palletized Cargo System Side Restraint Assembly
Figure 3 (Sheet 2)

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FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	N O M E N C L A T U R E							USE CODE	QTY PER ASSY
			1	2	3	4	5	6	7		
3-	65-51705-1		SIDE RESTRAINT ASSEMBLY, PALLETIZED CARGO SYSTEM							A	RF
	65-51705-2		SIDE RESTRAINT ASSEMBLY, PALLETIZED CARGO SYSTEM							B	RF
	65-51705-3		SIDE RESTRAINT ASSEMBLY, PALLETIZED CARGO SYSTEM							C	RF
	65-51705-4		SIDE RESTRAINT ASSEMBLY, PALLETIZED CARGO SYSTEM							D	RF
	65-51705-5		SIDE RESTRAINT ASSEMBLY, PALLETIZED CARGO SYSTEM							E	RF
	65-51705-6		SIDE RESTRAINT ASSEMBLY, PALLETIZED CARGO SYSTEM							F	RF
	65-51705-7		SIDE RESTRAINT ASSEMBLY, PALLETIZED CARGO SYSTEM							G	rf
	65-51705-8		SIDE RESTRAINT ASSEMBLY, PALLETIZED CARGO SYSTEM							H	RF
	65-51705-11		SIDE RESTRAINT ASSEMBLY, PALLETIZED CARGO SYSTEM							J	RF
	65-51705-12		SIDE RESTRAINT ASSEMBLY, PALLETIZED CARGO SYSTEM							K	RF
	65-51705-16		SIDE RESTRAINT ASSEMBLY, PALLETIZED CARGO SYSTEM							L	RF
	65-51705-9		SIDE RESTRAINT ASSEMBLY, PALLETIZED CARGO SYSTEM							M	RF
	65-51705-10		SIDE RESTRAINT ASSEMBLY, PALLETIZED CARGO SYSTEM							N	RF
	65-51705-13		SIDE RESTRAINT ASSEMBLY, PALLETIZED CARGO SYSTEM							O	RF
	65-51705-14		SIDE RESTRAINT ASSEMBLY, PALLETIZED CARGO SYSTEM							P	RF
65-51705-15		SIDE RESTRAINT ASSEMBLY, PALLETIZED CARGO SYSTEM							Q	RF	
1	NAS679A5		. NUT								1
2	AN960C516		. WASHER								1
3	69-29645-4		. STUD								1
4	69-38416-2		. TIE DOWN ASSEMBLY							LMQ	1
5	NAS679A3W		. . NUT								1
6	AN960PD10		. . WASHER								1
7	66-23617-1		. . PIN								1

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FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	N O M E N C L A T U R E							USE CODE	QTY PER ASSY
			1	2	3	4	5	6	7		
3-8	69-38417-2		.	.	SUPPORT						1
9	NAS679A4W		.		NUT						2
10	AN960416L		.		WASHER						2
11	NAS1104-36		.		BOLT.						2
12	69-34578-4		.		SPACER						2
13	69-36905-2		.		ROLLER ASSEMBLY				A-HJKL		2
14	594		.	.	BEARING V73134						2
15	69-36904-2		.	.	ROLLER						1
15A	69-39378-1		.		BALL UNIT ASSEMBLY				M-Q		2
15B	NAS679A3W		.	.	NUT						2
15C	AN960PD10L		.	.	WASHER						2
15D	NAS517-3-2		.	.	SCREW						2
15E	69-38409-1		.	.	RETAINER						1
15F	66-23600-1		.	.	SPRING						1
15G	875000		.	.	BALL ASSEMBLY V06710						1
15H	66-23620-1		.	.	PLATE, BASE						1
16	69-29644-2		.		STUD				ABCDF		2
17	69-29644-2		.		STUD				J-Q		2
18	MS16562-225		.		PIN, SPRING				ABCDF		1
18	MS16562-224		.		PIN, SPRING				J-Q		1
19	66-23619-1		.		PLUNGER				AC-H		1
19	66-23619-2		.		PLUNGER				J-N		1
20	MS24585C331		.		SPRING				BCD		1
21	MS16562-225		.		PIN, SPRING				OPQ		1
21	MS16562-224		.		PIN, SPRING				ACD-H		1
22	66-23619-1		.		PLUNGER				J-P		1
22	66-23619-2		.		PLUNGER				OPQ		1
23	MS24585C331		.		SPRING				A-H		1
24	MS20426D3		.		RIVET				J-Q		8
25	NAS686A3		.		NUTPLATE				AGH		1
25	NAS686A3		.		NUTPLATE				J-N		1
25	NAS11068A3M		.		NUTPLATE				BQ		1
25	NAS11068A3M		.		NUTPLATE				AGHJK		1
26	69-39370-2		.		SHIM				LMN		1
27	MS24665-151		.		PIN, -COTTER				BQ		1
28	66-23612-1		.		PIN, PIVOT				A-DGH		1
			.						J-Q		1

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FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	N O M E N C L A T U R E							USE CODE	QTY PER ASSY						
			1	2	3	4	5	6	7								
3- 29	MS16562-240		.	P	I	N	,	S	P	R	A	C	D	E	F	1	
30	66-23611-1		.	L	A	T	C	H				A	C	D	E	F	
31	69-38406-1		.	V	E	R	T	I	C	A	L	R	E	S	T	R	A
32	NAS537B-3-96		.	.	B	U	S	H	I	N	G						1
33	69-38406-2		.	.	R	E	S	T	R	A	I	N	T	,	V	E	R
34	65-49134-1		.	H	O	U	S	I	N	G		A	E	F	J	K	1
34	65-49134-3		.	H	O	U	S	I	N	G		L					1
34	65-49143-1		.	H	O	U	S	I	N	G		M	N				1
34	65-49143-2		.	H	O	U	S	I	N	G		G					1
34	65-49147-1		.	H	O	U	S	I	N	G		H					1
34	65-49147-2		.	H	O	U	S	I	N	G		C					1
34	65-49147-3		.	H	O	U	S	I	N	G		D					1
34	65-49147-4		.	H	O	U	S	I	N	G		B					1
34	65-49147-5		.	H	O	U	S	I	N	G		Q					1
34	65-49147-6		.	H	O	U	S	I	N	G		P					1
35	BACM10N2PY		.	M	A	R	K	E	R		O						1
35	BACM10N2PZ		.	M	A	R	K	E	R		A						1
35	BACM10N2RA		.	M	A	R	K	E	R		B						1
35	BACM10N2RB		.	M	A	R	K	E	R		C						1
35	BACM10N2RC		.	M	A	R	K	E	R		D						1
35	BACM10N2RD		.	M	A	R	K	E	R		E						1
35	BACM10N2RE		.	M	A	R	K	E	R		F						1
35	BACM10N2RF		.	M	A	R	K	E	R		G						1
35	BACM10N2EVJ		.	M	A	R	K	E	R		H						1
35	BACM10N2EVK		.	M	A	R	K	E	R		J						1
35	BAC27DQC-80		.	M	A	R	K	E	R		K						1
35	BACM10N2RG		.	M	A	R	K	E	R		L						1
35	BACM10N2RN		.	M	A	R	K	E	R		M						1
35	BAC27DQC-77		.	M	A	R	K	E	R		N						1
35	BAC27DQC-78		.	M	A	R	K	E	R		O						1
35	BAC27DQC-79		.	M	A	R	K	E	R		P						1
			.	M	A	R	K	E	R		Q						1