


OVERHAUL MANUAL

TO: ALL HOLDERS OF QC CARGO SYSTEM SIDE RESTRAINT ASSEMBLY OVERHAUL MANUAL,
25-56-09

REVISION NO. 1, DATED MAY 10/77

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
<p>Beginning with this revision separate consecutively numbered highlight sheets will be provided whenever this subject is revised.</p> <p>Updated refinish section</p>					X							

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QC CARGO SYSTEM SIDE RESTRAINT ASSEMBLY
25-56-09

BOEING P/N 65-49140-1 thru -32

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT
		PRR 23158-67 PRR 32070-1	Feb 10/72 Feb 10/72

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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					
PAGE	DATE	PAGE	DATE	PAGE	DATE
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T-1	Feb 10/72				
T-2	BLANK				
* LEP-1	May 10/77				
LEP-2	BLANK				
T/C-1	Feb 10/72				
T/C-2	BLANK				
1	Feb 10/72				
2	Feb 10/72				
* 3	May 10/77				
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QC CARGO SYSTEM SIDE RESTRAINT ASSEMBLY

Boeing Part Numbers: 65-49140-1 through -32

1. DESCRIPTION AND OPERATION

A. Description

- (1) The QC cargo system side restraint assembly consists of a housing, two roller or spring-loaded ball unit assemblies, seat track stud attachments, and associated parts.

B. Operation

- (1) The QC cargo system side restraint assembly restrains containerized/palletized cargo in an outboard direction while allowing the containerized/palletized cargo to move longitudinally in the airplane.

C. Leading Particulars

Width -- 6.75 inches

Length -- 7.00 inches (65-49140-1 thru -3, -5, -6, -10, -12 thru -19, -21, -22, -26, -28 thru -32)

-- 8.50 inches (65-49140-4, -7 thru -9, -11, -20, -23, -24, -25, -27)

Height -- 2.75 inches

Weight -- 2.0 pounds (65-49140-1 thru -3, -5, -6, -10, -16 thru -19, -21, -22, -26, -32)

-- 1.9 pounds (65-49140-7, -8, -12, -13 thru -15, -23, -24, -28 thru -31)

-- 2.4 pounds (65-49140-4, -11, -20, -27)

-- 1.7 pounds (65-49140-9, -25)

NOTE: Special instructions for cleaning, assembly, fits and clearances, special tools, and storage are not required. Standard aircraft shop practices are sufficient for overhaul of this assembly.

2. DISASSEMBLY

- A. Use standard aircraft shop practices for disassembly of parts.

WARNING: BALL UNIT ASSEMBLIES (185) ARE SPRING LOADED. TO AVOID POSSIBLE INJURY TO PERSONNEL, RESTRAIN RETAINERS (190) WHEN RELEASING PRESSURE.

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3. INSPECTION/CHECK

A. Visual Checks

- (1) Examine all metal parts for pits, scratches, cracks, corrosion and damage, using strong light and minimum of 10-power magnification.
- (2) Examine all plated or painted surfaces for blisters and flaking.

B. Special Checks (See figure 2.)

- (1) If visual examination discloses evidence of defects in any of the parts listed, perform the following checks:
 - (a) Dye penetrant check -- studs (85, 90, and 95) and housings (230, 235, 240, 245, 250, 255, 260, 265, 267, 270, 275, 280, 285, 290, 295, 300, 305, and 310).
 - (b) Magnetic particle check -- studs (10, 15, 20, 25, 30, and 100) and pin (155).

C. Spring Checks (See figure 2.)

- (1) Check spring (210) for free length and loads shown in figure 1.

Item No. Fig. 2	Test Length (inches)	Allowable Load Limits (pounds)
210	0.64 1.02 (free length)	48 to 58 -5 to +5

Spring Check Data
Figure 1

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4. REPAIR

A. Refinish (Fig. 2)

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) Stud (10, 15, 20, 25, 30, 100) -- Cadmium plate (F-1.1913) all over. Material: 4140, 4340 or 8740 steel, 160-180 ksi.
- (2) Stud (85, 90, 95) -- Chromic acid anodize (F-2.26) all over. Material: Alum alloy.
- (3) Pin (120) -- Passivate (F-8.07) all over. Material: 303 CRES.
- (4) Support (132), roller (175), housing (230 thru 310) -- Chromic acid anodize (F-2.20) all over. Material: Alum alloy.
- (5) Pin (155) -- Cadmium plate with post-plate chromate treatment (F-1.1923) all over. Material: 4140, 4037 or 8740 steel, 160-180 ksi.
- (6) Plate (190) -- Alodize or chromic acid anodize and apply one coat primer EMS 10-11, type 1 (SRF-2.30) all over. Material: Alum alloy.
- (7) Spring (210) -- Cadmium plate with post-plate chromate treatment (F-1.1923) all over. Material: Music wire, tempered.

B. Replacement

- (1) Replace unserviceable parts using standard aircraft shop practices.
- (2) If foil markers (5) require replacement, install markers according to procedures in 20-50-05 and apply (1) coat of EMS 3-11 resistant clear topcoating over marker plus 1/8 to 1/4 inch of the surrounding area.
- (3) If studs (85, 90, and 95) require replacement, lubricate threads with MIL-G-25827 grease according to procedures in 20-50-07.

5. TESTING

- A. Rotate roller (175). Roller should rotate freely.
- B. Rotate ball unit assembly (215). Ball unit assembly should rotate freely in retainer (225).
- C. Check springs (210) for positive action.

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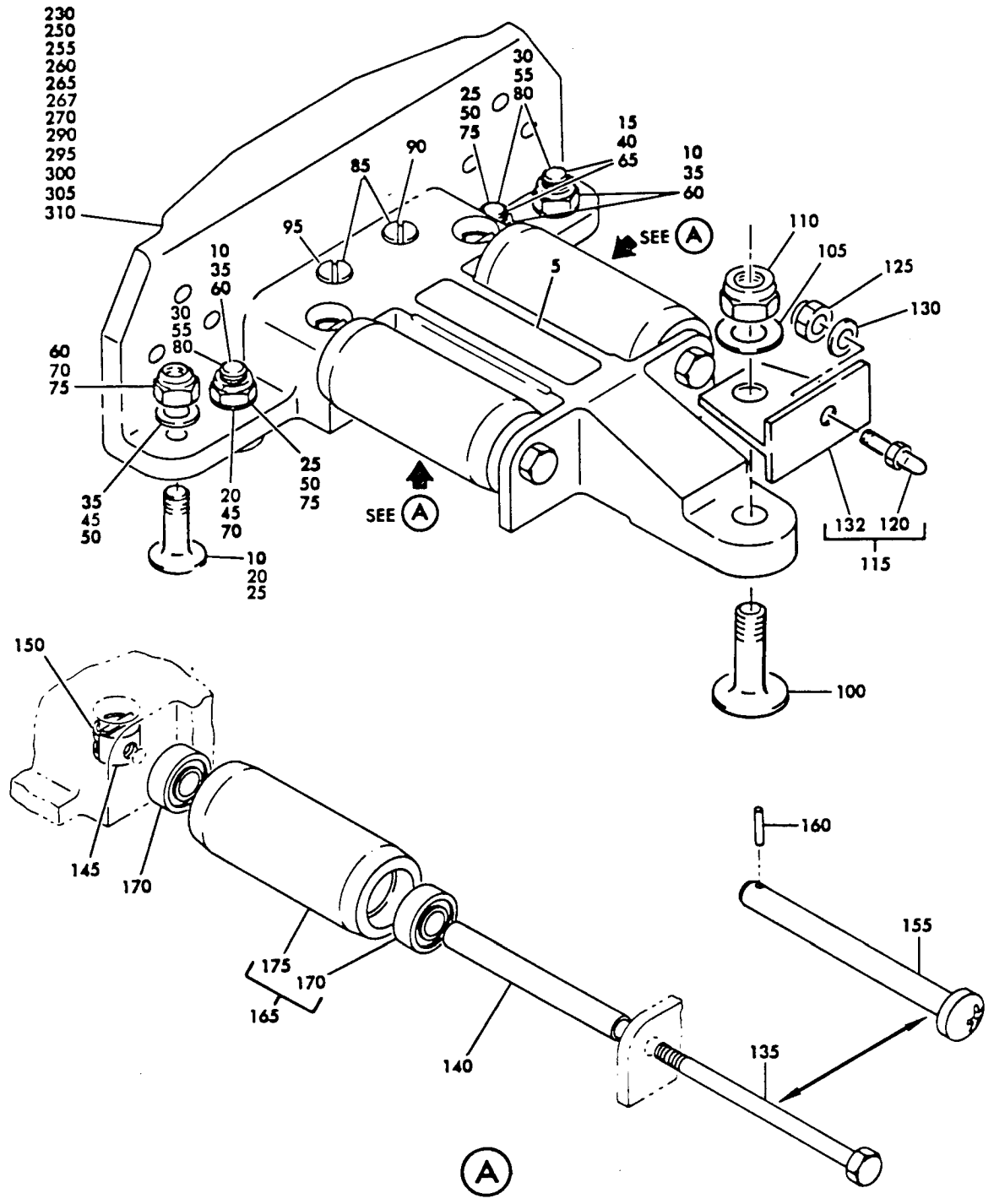
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6. TROUBLE SHOOTING

NOTE: Trouble shooting is keyed to individual steps of the test procedure. Referenced paragraphs show test procedure in which the noted trouble would appear.

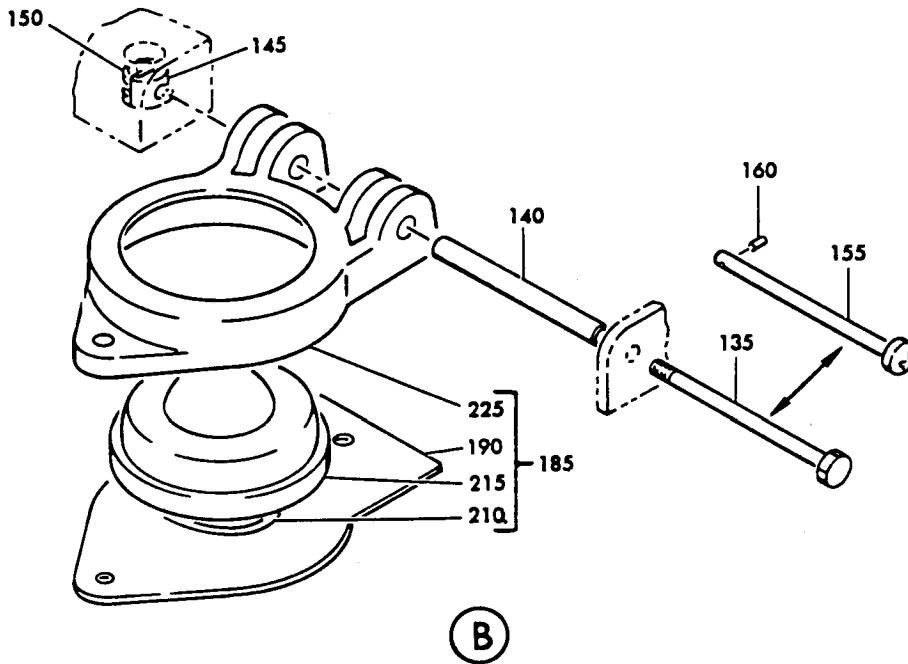
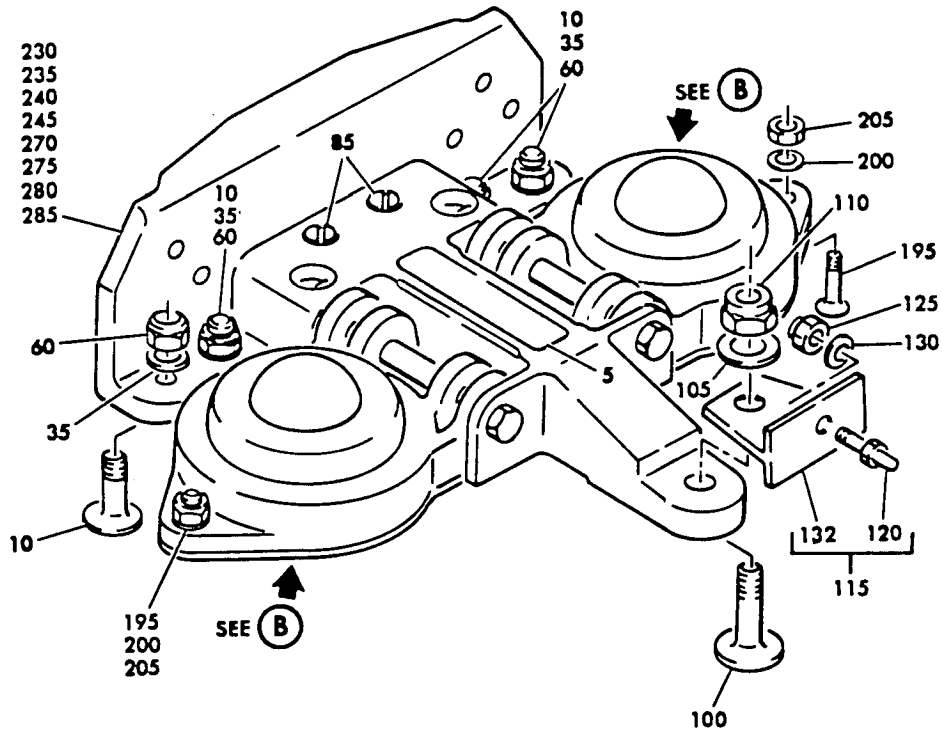
<u>Trouble</u>	<u>Possible Cause</u>	<u>Correction</u>
A. Roller (175) does not rotate freely	Foreign matter accumulation in bearings (170)	Disassemble and clean
	Bearings (170) defective	Replace bearings (170)
B. Ball (215) does not rotate freely	Foreign matter in ball cup	Remove and reinstall
	Ball unit defective	Replace ball unit
C. Spring (210) does not have positive action	Ball unit improperly installed	Remove and reinstall
	Spring defective	Replace spring

7. ILLUSTRATED PARTS LIST



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QC Cargo System Side Restraint Assembly
 Figure 2 (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		
2-	65-49140-1		SIDE	RE	ST	RA	IN	TA	IN	A	REF
	65-49140-2		SIDE	RE	ST	RA	IN	TA	IN	B	REF
	65-49140-3		SIDE	RE	ST	RA	IN	TA	IN	C	REF
	65-49140-4		SIDE	RE	ST	RA	IN	TA	IN	D	REF
	65-49140-5		SIDE	RE	ST	RA	IN	TA	IN	E	REF
	65-49140-6		SIDE	RE	ST	RA	IN	TA	IN	F	REF
	65-49140-7		SIDE	RE	ST	RA	IN	TA	IN	G	REF
	65-49140-8		SIDE	RE	ST	RA	IN	TA	IN	H	REF
	65-49140-9		SIDE	RE	ST	RA	IN	TA	IN	I	REF
	65-49140-10		SIDE	RE	ST	RA	IN	TA	IN	J	REF
	65-49140-11		SIDE	RE	ST	RA	IN	TA	IN	K	REF
	65-49140-12		SIDE	RE	ST	RA	IN	TA	IN	L	REF
	65-49140-13		SIDE	RE	ST	RA	IN	TA	IN	M	REF
	65-49140-14		SIDE	RE	ST	RA	IN	TA	IN	N	REF
	65-49140-15		SIDE	RE	ST	RA	IN	TA	IN	O	REF
	65-49140-16		SIDE	RE	ST	RA	IN	TA	IN	P	REF
	65-49140-17		SIDE	RE	ST	RA	IN	TA	IN	Q	REF
	65-49140-18		SIDE	RE	ST	RA	IN	TA	IN	R	REF
	65-49140-19		SIDE	RE	ST	RA	IN	TA	IN	S	REF
	65-49140-20		SIDE	RE	ST	RA	IN	TA	IN	T	REF
	65-49140-21		SIDE	RE	ST	RA	IN	TA	IN	U	REF
	65-49140-22		SIDE	RE	ST	RA	IN	TA	IN	V	REF
	65-49140-23		SIDE	RE	ST	RA	IN	TA	IN	W	REF
	65-49140-24		SIDE	RE	ST	RA	IN	TA	IN	X	REF
	65-49140-25		SIDE	RE	ST	RA	IN	TA	IN	Y	REF
	65-49140-26		SIDE	RE	ST	RA	IN	TA	IN	Z	REF
	65-49140-27		SIDE	RE	ST	RA	IN	TA	IN	AA	REF
	65-49140-28		SIDE	RE	ST	RA	IN	TA	IN	BA	REF
	65-49140-29		SIDE	RE	ST	RA	IN	TA	IN	CA	REF
	65-49140-30		SIDE	RE	ST	RA	IN	TA	IN	DA	REF
	65-49140-31		SIDE	RE	ST	RA	IN	TA	IN	EA	REF
	65-49140-32		SIDE	RE	ST	RA	IN	TA	IN	FA	REF
5	BACMLON2EMH		.	MA	R	K	E	R		A	1
5	BACMLON2EMJ		.	MA	R	K	E	R		B	1
5	BACMLON2EMK		.	MA	R	K	E	R		C	1
5	BACMLON2EML		.	MA	R	K	E	R		D	1
5	BACMLON2EMM		.	MA	R	K	E	R		E	1
5	BACMLON2EMN		.	MA	R	K	E	R		F	1
5	BACMLON2EMP		.	MA	R	K	E	R		G	1
5	BACMLON2EMR		.	MA	R	K	E	R		H	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			
2-												
5	BACMLON2EMS									. MARKER, Foil	I	1
5	BACMLON2EMT									. MARKER, Foil	J	1
5	BACMLON2EMU									. MARKER, Foil	K	1
5	BACMLON2EPW									. MARKER, Foil	L	1
5	BACMLON2EPX									. MARKER, Foil	M	1
5	BACMLON2EUP									. MARKER, Foil	N	1
5	BACMLON2EUR									. MARKER, Foil	O	1
5	BAC27DCA94									. MARKER, Foil	P	1
5	BAC27DQC195									. MARKER, Foil	Q	1
5	BAC27DQC196									. MARKER, Foil	R	1
5	BAC27DQC197									. MARKER, Foil	S	1
5	BAC27DQC198									. MARKER, Foil	T	1
5	BAC27DQC199									. MARKER, Foil	U	1
5	BAC27DQC200									. MARKER, Foil	V	1
5	BAC27DQC201									. MARKER, Foil	W	1
5	BAC27DQC202									. MARKER, Foil	X	1
5	BAC27DQC203									. MARKER, Foil	Y	1
5	BAC27DQC204									. MARKER, Foil	Z	1
5	BAC27DQC205									. MARKER, Foil	AA	1
5	BAC27DQC206									. MARKER, Foil	BA	1
5	BAC27DQC207									. MARKER, Foil	CA	1
5	BAC27DQC208									. MARKER, Foil	DA	1
5	BAC27DCA314									. MARKER, Foil	EA	1
5	BAC27DCA315									. MARKER, Foil	FA	1
10	69-29644-4									. STUD	A-K	4
											P-AA	
											FA	
15	69-29644-4									. STUD	LBA	2
20	69-29644-4									. STUD	MCA	2
25	69-29644-4									. STUD	NDA	3
30	69-29644-4									. STUD	OEA	3
35	AN960PD416									. WASHER	A-K	4
											P-AA	
											FA	
40	AN960PD416									. WASHER	LBA	2
45	AN960PD416									. WASHER	MCA	2
50	AN960PD416									. WASHER	NDA	3
55	AN960PD416									. WASHER	OEA	3
60	NAS679A4W									. NUT	A-K	4
											P-AA	
											FA	

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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		
2-65	NAS679A4W		.	N	U	T				LBA	2
70	NAS679A4W		.	N	U	T				MCA	2
75	NAS679A4W		.	N	U	T				NDA	3
80	NAS679A4W		.	N	U	T				OEA	3
85	66-23602-1		.	S	T	U	D			A-K	2
										N-AA	
										DAEA	
										FA	
90	66-23602-1		.	S	T	U	D			LBA	1
95	66-23602-1		.	S	T	U	D			MCA	1
100	69-29645-3		.	S	T	U	D			A-FA	1
105	AN960PD516		.	W	A	S	H	E	R	A-FA	1
110	NAS679A5		.	N	U	T				A-FA	1
115	69-38416-1		.	A	T	T	A	C	H	G I J K W	1
										Y Z A A	
120	66-23617-1		.	.	P	I	N				1
125	NAS679A3W		.	.	N	U	T				1
130	AN960PD10		.	.	W	A	S	H	E	R	1
132	69-38417-1		.	.	S	U	P	P	O	R	1
135	AN4-26A		.	B	O	L	T	(	u	s	e
140	69-34578-4		.	S	P	A	C	E	R	(	u
											2
											2
145	BACN10CP4L		.	N	U	T	(	u	s	e	A-O
150	BACR10V4		.	R	E	T	A	I	N	E	A
											2
											2
155	69-43632-1		.	P	I	N	(	u	s	e	A-O
155	69-43632-1		.	P	I	N				P-FA	2
160	MS16562-223		.	P	I	N	(	u	s	e	A-O
160	MS16562-223		.	P	I	N				P-FA	2
165	69-36905-2		.	R	O	L	L	E	R	A	2
										A B C F E	
										J L - S U	
										V Z	
										B A - F A	
170	594		.	.	B	E	A	R	I	N	2
175	69-36904-2		.	.	R	O	L	L	E	R	1
185	69-39378-1		.	B	A	L	L	U	N	I	2
										D G H I K	
										T W X Y	
										A A	
190	66-23620-1		.	.	P	L	A	T	E		1
195	NAS517-3-2		.	.	S	C	R	E	W		2
200	AN960PD10L		.	.	W	A	S	H	E	R	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		
2-											
205	NAS679A3W		.	.	NUT						2
210	66-23600-1		.	.	SPRING						1
215	875000		.	.	BALL UNIT ASSY, V06710						1
215	9106		.	.	BALL UNIT ASSY (optional to 875000), Vendor *[1]						1
225	69-38409-1		.	.	RETAINER						1
230	69-49146-1		.		HOUSING				AD		1
									J-O		
230	69-49146-9		.		HOUSING (optional to 69-49146-1)				AD		1
									J-O		
235	69-49146-2		.		HOUSING				I		1
235	69-49146-10		.		HOUSING (optional to 69-49146-2)				I		1
240	69-49146-3		.		HOUSING				G		1
240	69-49146-11		.		HOUSING (optional to 69-49146-3)				G		1
245	69-49146-4		.		HOUSING				H		1
245	69-49146-12		.		HOUSING (optional to 69-49146-4)				H		1
250	69-49146-5		.		HOUSING				E		1
250	69-49146-13		.		HOUSING (optional to 69-49146-5)				E		1
255	69-49146-6		.		HOUSING				F		1
255	69-49146-14		.		HOUSING (optional to 69-49146-6)				F		1
260	69-49146-7		.		HOUSING				B		1
260	69-49146-15		.		HOUSING (optional to 69-49146-7)				B		1
265	69-49146-8		.		HOUSING				C		1
265	69-49146-16		.		HOUSING (optional to 69-49146-8)				C		1
267	69-49146-17		.		HOUSING				P		1
270	69-49146-27		.		HOUSING				QT		1
									Z-EA		
275	69-49146-28		.		HOUSING				Y		1
280	69-49146-29		.		HOUSING				W		1
285	69-49146-30		.		HOUSING				X		1
290	69-49146-31		.		HOUSING				U		1
295	69-49146-32		.		HOUSING				V		1
300	69-49146-33		.		HOUSING				R		1
305	69-49146-34		.		HOUSING				S		1
310	69-49146-35		.		HOUSING				FA		1

VENDORS

- V06710 Valleytodeco Inc., 12975 Bradley Ave., Sylmar, Calif. 91342
- V73134 Heim Universal Division of the North American Rockwell Corp., 60 Round Hill Rd, Fairfield, Conn. 06430
- *[1] Bearing Seals and Gears Inc., 6847 - 84th Ave SE, Mercer Island, Wash 98040