TO: ALL HOLDERS OF SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSEMBLY OVERHAUL MANUAL, 29-13-01

REVISION NO. 19, DATED DEC 5/93

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
Provided optional information for 10-60552 pressure switches												X	

SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSEMBLY

29-13-01

BOEING P/N 65-17821-1 thru -12,-14,-15,-17,-19
65-17862-8,-11,-14,-16,-18,-19,-20,-23 thru -26,-28,-29,-33,-34, -37
65-44580-2,-3,-6 thru -11,-14,-16,-18

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT
29-19			Jan 15/67
		PRR 22705	Feb 15/68
		PRR 30824	Feb 15/68
		PRR 22961	Nov 15/68
		PRR 22978	Nov 15/68
29-36		PRR 30265	Nov 15/68
29-1001		PRR 30936	Nov 15/68
		PRR 23158-88	May 10/72
		PRR 32070-10	Jun 25/73
29-21		PRR 23745	Aug 10/74
		PRR 32364	Aug 10/74
29-44			Dec 25/75
		PRR 24535	Jul 5/83
		PRR 33373	Mar 5/84
		PRR 33935	Sep 5/85
29-1062		PRR 34907	Sep 5/91

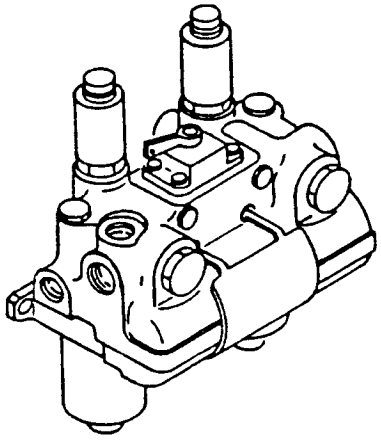
LIST OF EFFECTIVE PAGES

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

	PAGE	DATE	PAGE	DATE	PAGE	DATE
	29-13-01		1113	Dec 5/90		
	T-1	Sep 5/91	1114	BLANK		
	T-2	BLANK				
*	LEP-1	Dec 5/93				
	LEP-2	BLANK				
	T/C-1	Nov 15/68				
	T/C-2	BLANK				
	1	Jun 25/73				
	2	Dec 5/90				
	3	Mar 5/87				
	4	Mar 5/87				
	101	Dec 5/90				
	102	BLANK				
	201	Jan 15/67				
	202	BLANK				
	301	May 10/72				
	302	BLANK				
	401	May 10/72				
	402	BLANK				
	501	Sep 5/86				
	502	Dec 5/91				
	701	Dec 5/91				
	702	Dec 5/91				
	703	Dec 5/91				
	704	Dec 5/91				
	801	Jan 15/67				
	802	BLANK				
	901	May 10/72				
	902	BLANK				
	1001	May 10/77				
	1002	BLANK				
	1101	Mar 5/87				
	1102	Dec 5/90				
	1103	Dec 5/90				
*	1104	Dec 5/93				
*	1104A	Dec 5/93				
*	1104B	Dec 5/93				
	1105	BLANK				
	1106	Dec 5/90				
	1107	Jul 5/83				
	1108	Dec 5/90				
	1109	Dec 5/90				
	1110	Jun 5/92				
	1111	Dec 5/90				
	1112	Dec 5/90				

TABLE OF CONTENTS

SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSEMBLY



System "A" Hydraulic Modular Package Assembly
Figure 1

DESCRIPTION AND OPERATION

1. Description

   A. The system "A" hydraulic modular package assembly consists of a forged aluminum housing in which are installed two filters, two pressure switches, two cartridge-type check valves, one cartridge-type relief valve and, in some assemblies, one manual shutoff (bypass) valve.

   B. External hydraulic fittings provide connections to the aircraft hydraulic system, and internal ports in the housing provide for hydraulic fluid flow to the various components of the unit.

2. Operation

A. Hydraulic pressure from the engine-driven pumps enters the unit through ports 1 and 2 (Fig. 2). It passes through the high pressure filters and the check valves and leaves the modular package through any of three ports. The hydraulic connections to these ports vary for the 727 and 737 models, as shown below.

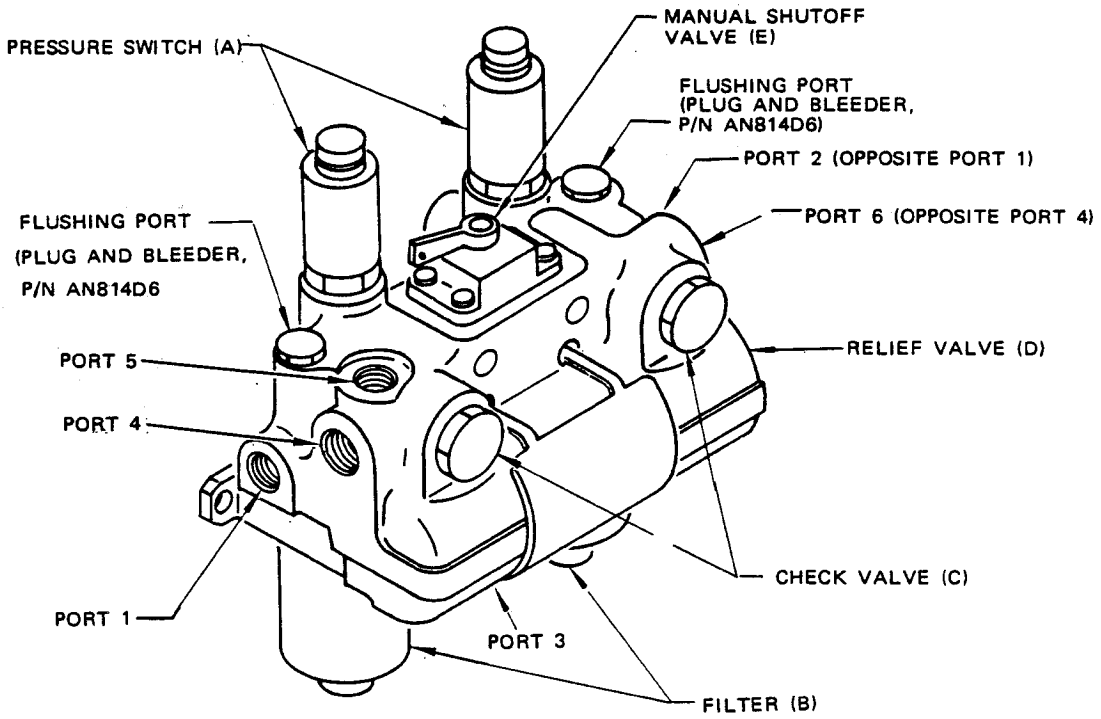
(1) 727 MODEL - Port 4 is connected to various systems operated by system "A" hydraulic pressure. Port 5 connects to a pressure accumulator and to a pressure transmitter to the copilot's panel. Port 6 leads to the other systems operated by system "A" hydraulic pressure.

(2) 737 MODEL - Port 4 is connected to various systems operated by system "A" hydraulic pressure. Port 5 connects to a pressure transmitter to the copilot's panel. Port 6 supplies emergency pressure from hydraulic system "B" to the unit. If system pressure rises above an allowable safe maximum, the relief valve opens and allows the excess fluid to return to the system reservoir through port 3.

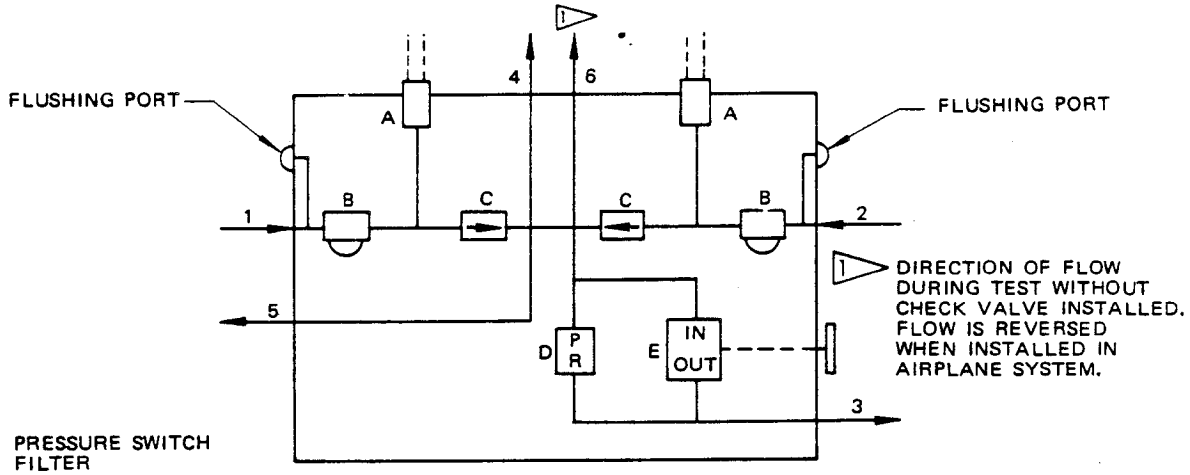
B. Two pressure switches are connected into the high pressure supply in such a manner that if either engine-driven pump loses pressure, the pressure switch will activate a low pressure warning light in the control cabin. A relief valve opens at a higher than normal pressure preventing component damage. Fluid is bypassed through the valve and returned to the reservoir through port 3. On some modular packages a manual shutoff valve and two flushing ports are provided. When the manual shutoff valve is opened, fluid is bypassed through the valve and returned to the reservoir through port 3. The manual shutoff valve is not accessible during flight. Two flushing ports, normally plugged, are provided in the top of the housing to connect an external hydraulic supply source for flushing the hydraulic lines from the modular package back to the engine-driven pumps.

3. Leading Particulars

Size -- 12 x 12 x 6 inches (approximate)
Weight -- 18.7 pounds
Operating Fluid -- Fire resistant hydraulic fluid BMS 3-11.



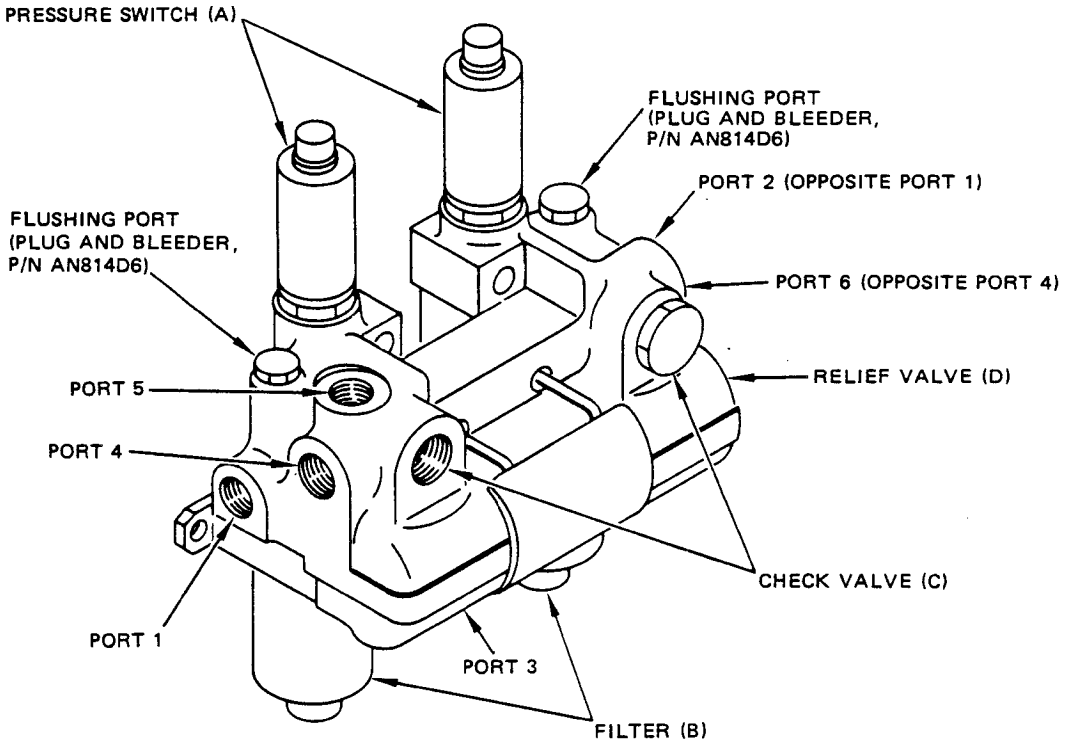
GENERAL ARRANGEMENT



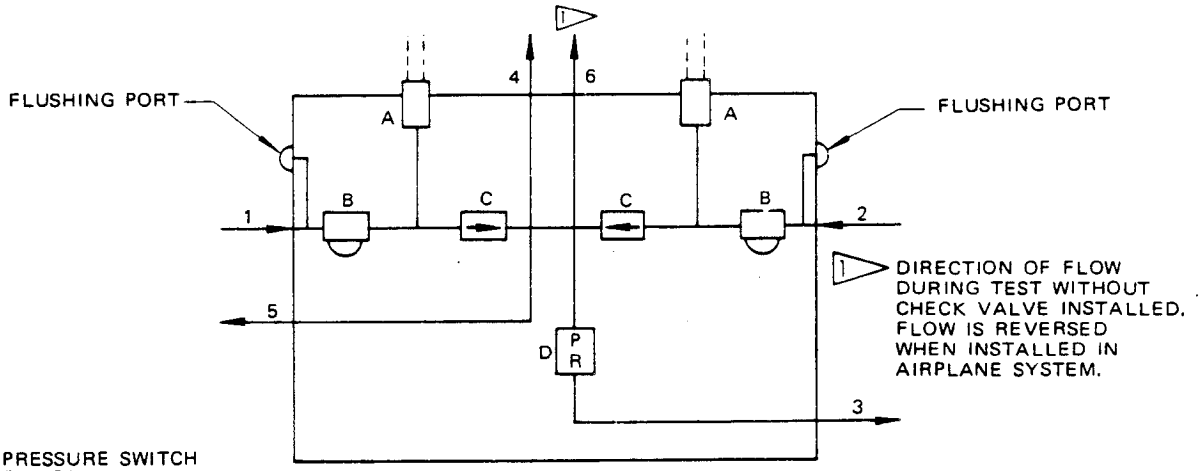
A – PRESSURE SWITCH
B – FILTER
C – CHECK VALVE
D – RELIEF VALVE
E – MANUAL SHUTOFF VALVE
65–17821–1, –2, –3, –5, –7, –10, –12
PLUG 65–17821–8
1.6 – EXTERNAL CONNECTION PORTS

SCHEMATIC DIAGRAM

65–17821–1, –2, –3, –5, –7, –8, –10, –12



GENERAL ARRANGEMENT



A – PRESSURE SWITCH
B – FILTER
C – CHECK VALVE
D – RELIEF VALVE
1-6 – EXTERNAL CONNECTION PORTS

SCHEMATIC DIAGRAM

65–17821–4, –6, –9, –11, –14, –15, –17, –19

DISASSEMBLY

1. If installed, remove unions (1, 4, 7, 7A and 11) or reducers (2, 5 and 8), check valve (9), and packings (3, 6 and 10) from modular package assembly (12) (Fig. 1102).

2. Remove nameplate (1) and all lockwire (Fig. 1101).

3. Remove filters.

   A. Remove filter bowls (2), packings (3), and backup rings (4).

   B. Remove filter elements (5), packings (6) and backup rings (7).

   C. Remove filter fittings (8) and packings (9).

4. Remove pressure switches (10), packings (11) and backup rings (12).

5. If installed, remove screws (13) and washers (14). Remove valve (15) or plug (15A), packings (16 and 18), and backup rings (17 and 19).

6. If installed, remove flushing plugs (20) and packings (21).

7. Remove relief valve (22), packings (23), and backup rings (24).

8. Remove check valves (25), packings (26 and 28), and backup rings (27 and 29).

9. Do not remove inserts (32) unless replacement is required.

   NOTE: After disassembly of the modular package, refer to applicable manufacturer's overhaul manuals for overhaul instructions on pressure switches (10), manual shutoff valve (15), relief valve (22) and check valves (25) and for cleaning instructions for filter elements (5).

CLEANING

1. Clean filter elements (5, figure 1101) per filter manufacturer's instructions.

2. Clean filter bowls (2) and housing assembly (30) by washing thoroughly in cleaning solvent, Specification P-D-680. Check that passages and ports in housing are clean and clear of obstructions. Dry with clean, lint-free cloth or clean moisture-free compressed air.

INSPECTION/CHECK

1. Visually examine housing assembly (30) and filter bowls (2) for cracks, burrs and corrosion using a strong light and 10 power magnification. (See figure 1101.)

2. Check housing ports for damage to threads or seal surfaces that might damage packings.

3. Check thread insert sleeves (32) for damage.

4. Check condition of plated surfaces of housing and filter bowls. Plating must be continuous.

5. Check nameplate for legibility.

6. If visual examination discloses evidence of defects in any of listed parts, perform following check:

   (1) Dye penetrant check -- housing assembly (30), filter bowls (2), and plug (15A).

REPAIR

1. Repair

   A. Remove minor exterior scratches, nicks and corrosion by polishing with abrasive cloth, 220 grit or finer. Refinish as required for corrosion protection.

   B. Chase or file minor thread damage using a small triangular file or thread chaser.

2. Refinish

   NOTE: Refer to 20-41-01 for decoding of F and SRF finish symbols and their BAC equivalents, and to 20-30-02 for stripping of protective finishes.

   A. If plated surfaces are worn or damaged, refinish as indicated below:

      (1) Filter Bowl (2), and Plug (15A) -- Apply F-2.26 all over.

      (2) Filter Fitting (8) -- Apply F-2.26 all over.

      (3) Housing (30) -- Apply F-2.26 all over.

3. Replacement

   A. Replace all packings at each overhaul cycle.

   B. If insert (32) requires replacement, remove existing insert, install new insert 3/4 to 1-1/2 turns below top surface of tapped hole, and remove tang.

   C. If necessary to replace nameplate (1), steel stamp serial number and assembly dash number on nameplate before installation.

ASSEMBLY

1. General Assembly Instructions (Fig. 1101)

   A. Materials

      (1) Fire Resistant Hydraulic Fluid -- BMS 3-11 (Ref 20-60-03)

      (2) Skydrol Assembly Lube -- MCS 352, Monsanto Co. Inc., 800 North Lindbergh Blvd., St. Louis, Missouri 63166

   B. Lubricate all threads and packings lightly prior to assembly. Use BMS 3-11 hydraulic fluid or Skydrol assembly lube, MCS 352.

   C. Overhaul check valves (25), relief valve (22), manual shutoff valve (15), and pressure switches (10) per manufacturer's instructions before installation in housing. Install only new or cleaned filter elements (5).

2. Assemble Unit (Fig. 1101)

   A. Install check valves.

      (1) Install packings (28 and 26) and backup rings (29 and 27) on check valves (25).

      (2) Install check valves in housing assembly (30). Tighten to 350-375 pound-inches for H61C0552 check valve and 200-250 pound-inches for H61C0552M1 check valve.

   B. Install relief valve.

      (1) Install backup rings (24) and packings (23) on relief valve (22).

      (2) Install relief valve in housing assembly. Tighten to 350-375 pound-inches.

   C. Install flushing plugs.

      (1) Install packings (21) on plugs (20).

      (2) Install plugs in flush ports and tighten to 100-125 pound-inches.

   D. Install manual shutoff valve or plug.

      (1) Install packings (18 and 16) and backup rings (19 and 17) on valve (15) or plug (15A).

(2) Install valve (15) or plug (15A) in housing assembly, using washers (14) and screws (13).

NOTE: Install valve so that CLOSED marking on valve is closest to the end of the housing where ports 2 and 6 are located.

E. Install pressure switches.

(1) Install packings (11) and backup rings (12) on pressure switches (10).

(2) Install pressure switches in housing assembly and tighten to 350-375 pound-inches.

F. Install filters.

(1) Install packings (9) on filter fittings (8).

(2) Install filter fittings in housing assembly. Tighten to 300-350 pound-inches.

NOTE: Use care not to dent or scratch seal surface of fitting during installation.

(3) Install backup rings (7) and packings (6) in filter element (5) and install filter element on filter fitting (8).

(4) Install backup rings (4) and packings (3) on filter bowl (2) and install bowl in housing. Tighten to 350-375 pound-inches.

G. Install nameplate (1).

H. Lockwire assembly.

(1) Lockwire check valves (25), pressure switches (10) and filter bowls (2) from component body to housing using double twist method.

NOTE: Relief valve and manual shutoff valve handle are lockwired after unit is tested.

(2) Lockwire screws (13), if used, together in pairs using double twist method.

(3) Lockwire plugs (13) per BAC5018 using the double twist method using MS20995NC32 or MS20995N32 or MS20995C32 lockwire.

3. Test per TESTING

4. Place packing (10) on check valve (9) and install valve in port 6 with free flow arrow pointing to modular package assembly (12).

TESTING

1. Preparation for test

   A. Materials

      (1) Lubricants

         (a) Hydraulic Fluid -- BMS 3-11, source optional

         (b) Skydrol Assembly Lube -- MCS 352, Monsanto Co. Inc., 800 North Lindbergh Blvd., St. Louis, Missouri 63166

      (2) Testing fluid

         (a) Skydrol 7000 -- Monsanto Co. Inc., 800 North Lindbergh Blvd., St. Louis, Missouri 63166

   B. Install hydraulic fittings per Fig. 1102.

      (1) Lightly lubricate O-ring packings (3, 6, 10, and 14) and threads of unions (1, 4, 7, 7A, and 11) or reducers (2, 5 and 8) or plug (13) prior to installation, with BMS 3-11 hydraulic fluid or Skydrol assembly lube, MCS 352.

      (2) Place packings (3) on unions (1) or reducers (2) and install in ports 1 and 2.

      (3) Place packing (6) on union (11) and install in port 3.

      (4) Place packing (6) on union (4) or reducer (5) and install in port 4.

      (5) Place packing (10) on union (7A) or reducer (8) and install in port 5.

      (6) Place packing (10) on union (7) or check valve (9) in port 6. Install check valve (9) in port 6 with free flow arrow pointing into modular package assembly (12).

      (7) If Modular Package Assembly 65-17821-20 is being used install plugs (13) and O-ring packing (14) on remaining ports of 65-17862-34.

   C. Conduct tests at room temperature, using hydraulic fluid, BMS 3-11, or Skydrol 7000 optional.

   D. Ports not specifically mentioned in the following test procedure may be either open or closed.

   E. Flow through any open port is not to be considered as external leakage.

WARNING: BE SURE ALL AIR IS REMOVED FROM UNIT BEFORE CONDUCTING PROOF PRESSURE TEST. DO NOT APPLY COMPRESSED AIR TO PORTS AT ANY TIME. DO NOT CYCLE UNIT AT PROOF PRESSURE.

2. Proof test (Fig. 1101)

   A. Remove relief valve (22) and temporarily replace with Dummy Test Relief Valve F72918-1, or equivalent, which will prevent flow across the relief valve cavity.

   B. With manual shutoff valve (15) closed, if installed, port 3 open and ports 4, 5 and 6 plugged, apply 4500-psi hydraulic pressur e to ports 1 and 2 simultaneously for 2 minutes. There shall be no external leakage or permanent set.

   C. Repeat test above, with 2-psi pressure. There shall be no external leakage.

   D. Remove dummy test relief valve and reinstall regular relief valve (22).

   E. With ports 4, 5 and 6 plugged, apply 900 psi hydraulic pressure to port 3 for 2 minutes. There shall be no external leakage or permanent set.

   F. Repeat test above, with 2-psi pressure. There shall be no external leakage.

3. Pressure switch operation

   A. Attach a continuity tester (ohmmeter, self-powered test light or equivalent) to contacts 2 and 3 on each pressure switch connector.

   B. With ports 4, 5 and 6 plugged and port 3 open, gradually apply hydraulic pressure to ports 1 and 2 simultaneously. The pressure switches should open at a pressure of:

Pressure Switch	Opening Pressure
10-60552-1	950 psi min to 1450 psi max
10-60552-11, -22	1200 psi min to 1500 psi max
10-60552-35	1400 psi min to 1600 psi max

   C. Gradually decrease the pressure. The pressure switches should close 100 psi or more below the pressure at which they opened above. In no case should the pressure reading be less than the following:

Pressure Switch	Minimum Closing Pressure
10-60552-1	700 psi
10-60552-11, -22	1100 psi
10-60552-31, -35	1300 psi

4. Continuity test (Fig. 1101)

   A. Open all ports and manual shutoff valve (15), if installed.

   B. Apply hydraulic pressure to port 1. There shall be free flow from ports 3, 4, 5, and 6 on assemblies with manual shutoff valve (15), and free flow through ports 4, 5 and 6 on assemblies without manual shutoff valve (15).

   C. Apply hydraulic pressure to port 2. There shall be free flow through ports 3, 4, 5 and 6 on assemblies with manual shutoff valve (15) and free flow from ports 4, 5 and 6 on assemblies without manual shutoff valve (15).

   D. Close manual shutoff valve (15), if installed, and apply hydraulic pressure to port 3. There shall be free flow from ports 4, 5 and 6.

5. Relief valve test (Fig. 1101)

   A. Plug ports 2, 4, 5 and 6 and close manual shutoff valve (15), if installed.

   B. Gradually apply hydraulic pressure to port 1. There shall be no flow from port 3 until the relief valve cracks open at a pressure above 3450 psi as indicated by a sudden flow from port 3.

   C. Increase pressure gradually to 3800 to 3900 psi. Flow from port 3 shall increase as the pressure increases.

   D. Decrease pressure gradually until the valve reseats as indicated by flow stopping from port 3. This reseating pressure shall not be less than 3150 psi, except PneuDraulics pressure relief valves part No. 1651, serial No. 806 and on, reseating pressure shall not be less than 3400 psi.

6. Check valve test (Fig. 1101)

   A. Plug ports 4 and 6 and close manual shutoff valve (15), if installed.

   B. Apply 2000-psi hydraulic pressure to port 5.

   C. After an initial valve seating period of 2 minutes, there shall be no leakage from port 1 or 2.

7. Post-test handling

   A. Partially fill unit with hydraulic fluid BMS 3-11. Plug or cap all open ports with Skydrol resistant closures to prevent contamination or leakage during storage.

   B. Lockwire relief valve from valve body cap to housing using double-twist method per 20-50-02.

   C. Lockwire handle of manual shutoff valve (15) in closed position using double-twist method per 20-50-02.

Test Phase	Limit
Proof Test: Apply 4500 psi for 2 minutes to pressure inlet ports, relief valve blocked	No leakage or permanent set
Repeat test with 2 psi pressure	No leakage
Apply 900 psi pressure to return port	No leakage or permanent set
Repeat test with 2 psi pressure	No leakage
Pressure Switch Operation:	
Increase and decrease pressure at inlet pressure ports. Check the point at which switch actuates	Switch opens on increasing pressure between 950 psi min to 1450 psi max (10-60552-1), 1200 psi min to 1500 psi max (10-60552-11, -22) and 1400 psi min to 1600 psi max (10-60552-31, -35). Switch closes on decreasing pressure at least 100 psi below opening pressure, but not below 700 psi (100-60552-1), 1100 psi (10-60552-11, -22) and 1300 psi (10-60552-31, -35)
Continuity: Check flow from outlet ports with pressure applied at inlet port 1. Repeat with pressure applied to port 2	Flow unrestricted, with flow from ports 3, 4, 5 and 6 for assemblies with shutoff valve, and from ports 4, 5 and 6 for assemblies without shutoff valve
Close manual shutoff valve if installed and check reverse flow from outlet ports with pressure applied at port 3	Flow unrestricted, with flow from ports 4, 5 and 6
Relief Valve Test: Increase and decrease pressure at inlet pressure ports. Check cracking and reseat pressure of relief valve	Relief valve cracks on increasing pressure at 3450 to 3550 psi, passes full flow at 3800 to 3900 psi, and reseats at not less than 3150 psi, except PneuDraulics pressure relief valves Part No. 1651, serial No. 806 and on, reseats at not less than 3400 psi
Check Valve Test: Apply reverse-flow pressure to outlet port and check for leakage through check valves and out the inlet ports	No leakage after 2-minute period which is allowed for valve seating

TROUBLE SHOOTING

1. Trouble during test after overhaul (See figure 1101.)

	Trouble	Possible Cause	Correction
A.	Pressure switches (10) relief valve (22), or check valves (25) do not meet test requirements	Units defective or out of adjustment	Remove and check per manufacturer's instructions. Replace
B.	External leakage around any of parts installed in housing	Damaged or defective O-rings	Remove component and replace O-rings as required. Reinstall, using specified torque value

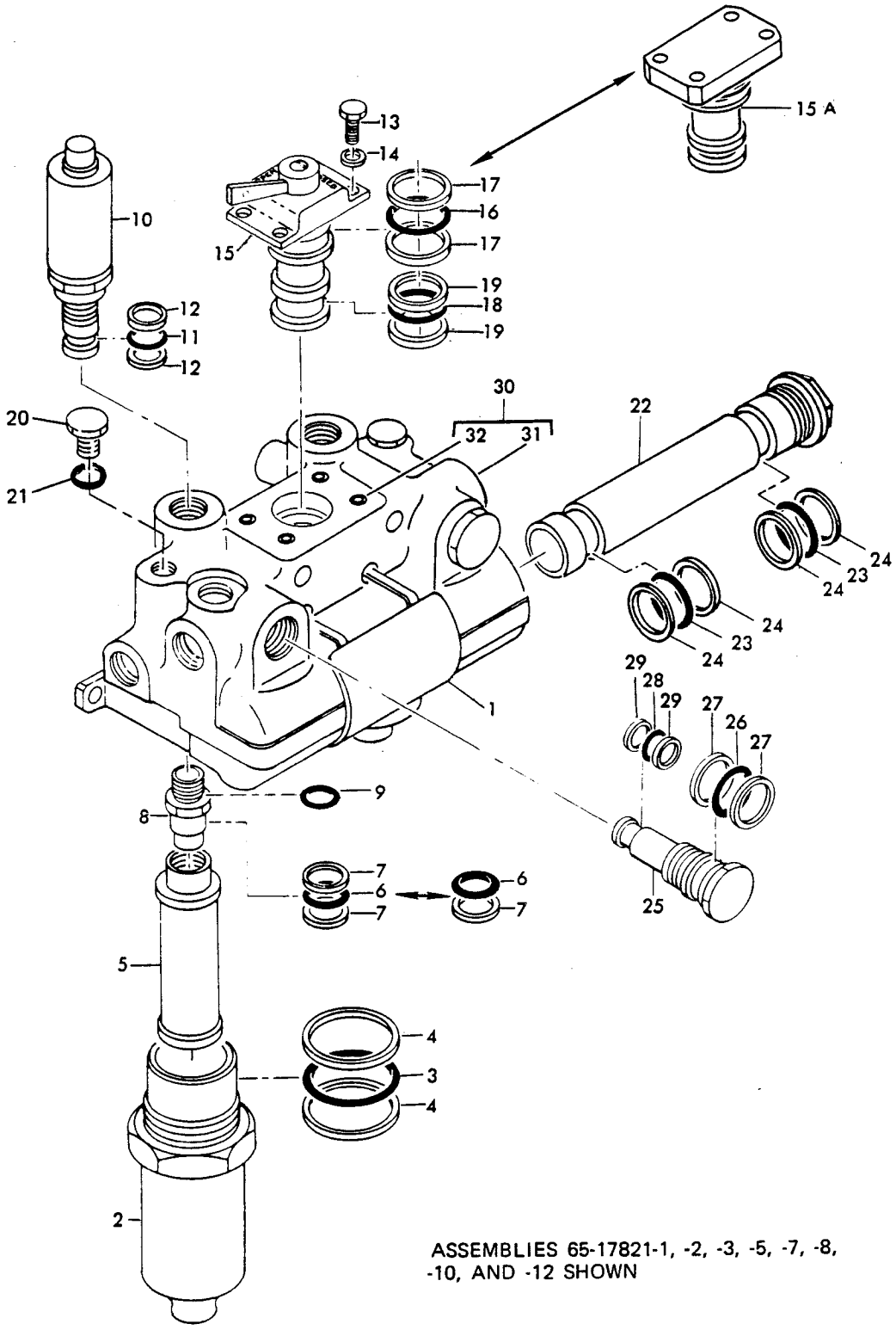
STORAGE INSTRUCTIONS

1. Tag unit with packing cure dates and test date.
2. Wrap entire unit in vapor barrier paper and store.
3. For further information, refer to 20-44-02, Temporary Protective Coatings.

SPECIAL TOOLS, FIXTURES AND EQUIPMENT

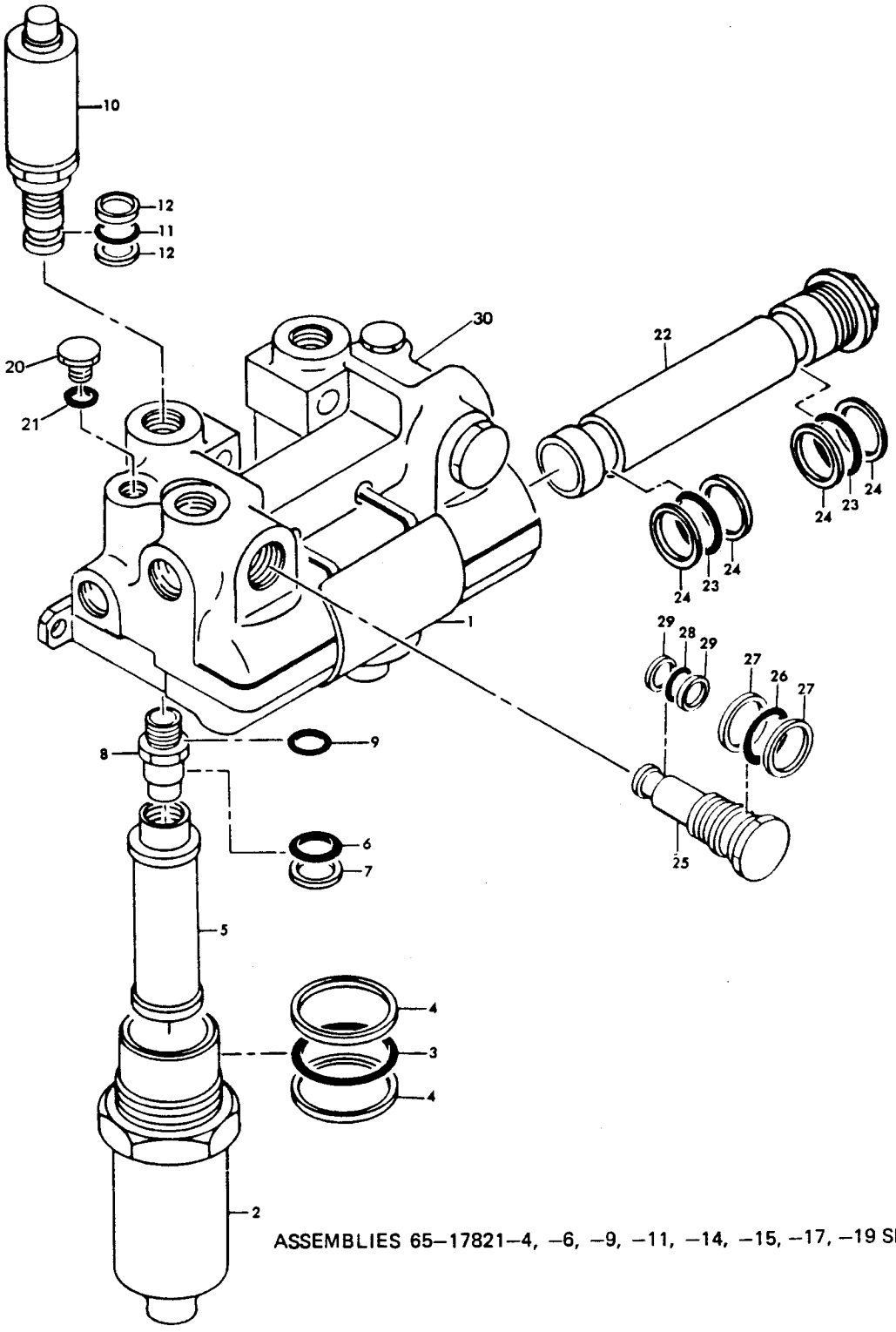
1. F72918-1 - Dummy Test Relief Valve (Repls SE 29-1301)

ILLUSTRATED PARTS LIST



ASSEMBLIES 65-17821-1, -2, -3, -5, -7, -8, -10, AND -12 SHOWN

System "A" Modular Package Assembly
Figure 1101 (Sheet 1)



ASSEMBLIES 65–17821–4, –6, –9, –11, –14, –15, –17, –19 SHOWN

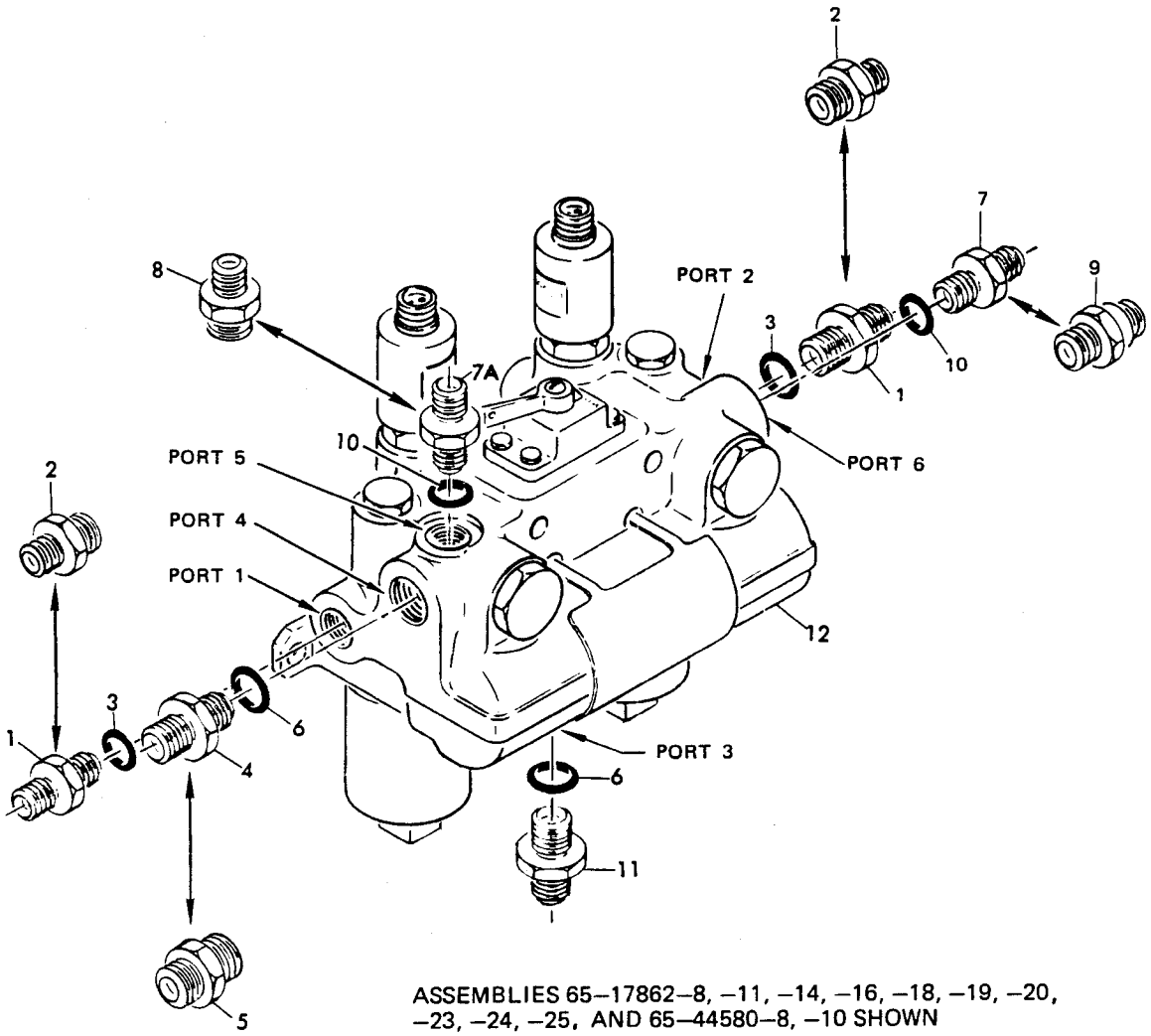
System "A" Modular Package Assembly
Figure 1101 (Sheet 2)

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
	65-17821-1		SYSTEM "A" HYDRAULIC PRESSURE MODULAR PACKAGE ASSY (SB 29-36)	A	RF
	65-17821-2		SYSTEM "A" HYDRAULIC PRESSURE MODULAR PACKAGE ASSY (SB 29-36)	B	RF
	65-17821-3		SYSTEM "A" HYDRAULIC PRESSURE MODULAR PACKAGE ASSY (SB'S 29-36, 29-1001)	C	RF
	65-17821-4		SYSTEM "A" HYDRAULIC PRESSURE MODULAR PACKAGE ASSY (SB 29-1001)	D	RF
	65-17821-5		SYSTEM "A" HYDRAULIC PRESSURE MODULAR PACKAGE ASSY (SB'S 29-36, 29-1001)	E	RF
	65-17821-6		SYSTEM "A" HYDRAULIC PRESSURE MODULAR PACKAGE ASSY (REPLS 65-17821-4 PER SB 29-1001)	F	RF
	65-17821-7		SYSTEM "A" HYDRAULIC PRESSURE MODULAR PACKAGE ASSY	G	RF
	65-17821-8		SYSTEM "A" HYDRAULIC PRESSURE MODULAR PACKAGE ASSY	H	RF
	65-17821-9		SYSTEM "A" HYDRAULIC PRESSURE MODULAR PACKAGE ASSY	I	RF
	65-17821-10		SYSTEM "A" HYDRAULIC PRESSURE MODULAR PACKAGE ASSY	J	RF
	65-17821-11		SYSTEM "A" HYDRAULIC PRESSURE MODULAR ASSY	K	RF
	65-17821-12		SYSTEM "A" HYDRAULIC PRESSURE MODULAR ASSY	L	RF
	65-17821-14		SYSTEM "A" HYDRAULIC PRESSURE MODULAR ASSY	M	RF
	65-17821-15		SYSTEM "A" HYDRAULIC PRESSURE MODULAR PACKAGE ASSY	N	RF
	65-17821-16		DELETED		
	65-17821-17		SYSTEM "A" HYDRAULIC PRESSURE MODULAR PACKAGE ASSY	O	RF
	65-17821-18		DELETED		
	65-17821-19		SYSTEM "A" HYDRAULIC PRESSURE MODULAR PACKAGE ASSY	Q	RF
	65-17821-20		DELETED		
1	BACN12A3KM		. NAMEPLATE	AB	1
1	BACN12A3LV		. NAMEPLATE (OPT)	C-OQ	1
1	BAC27DHY0266		. NAMEPLATE	C-OQ	1
1	BAC27DHY0279		DELETED		

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
2	65-17989-4		. BOWL, FILTER (PRE SB 737-29-1062)	A-J	2
2	65-17989-12		. BOWL, FILTER (POST SB 737-29-1062)	A-J	2
2	65-17989-2		. BOWL, FILTER (OPT)(PRE SB 737-29-1062)	AB	2
2	65-17989-8		. BOWL, FILTER (PRE SB 737-29-1062)	K-OQ	2
2	65-17989-10		. BOWL, FILTER (POST SB 737-29-1062)	K-Q	2
3	NAS1611-228		. PACKING, O-RING		2
4	S12766-228		. RING, BACKUP, V97820 (PREF)	AB	4
4	MS28783-6		. RING, BACKUP (OPT)		4
4	BACR12BM228		. RING, BACKUP	C-OQ	4
4	S12766-228		. RING, BACKUP, V97820 (OPT)	C-OQ	4
5	7500174		. FILTER, V81321 (BOEING 10-60489-2) (SB 29-19)	A	2
5	7513141		. FILTER, V05228 (BOEING 10-60569-1) (SB 29-19)	B	2
5	7513122		. FILTER, V05228 (BOEING 10-60592-1) (SB 29-19)	AB	2
5	AC7681E1		. FILTER, V18350 (BOEING 10-60592-1) (SB 29-19)	AB	2
5	054280		DELETED		
5	7513128		. FILTER, V05228 (BOEING 10-60592-5)		2
5	7513122		. FILTER, V05228 (BOEING 10-60592-1) (OPT)		2
5	AC7681E1		. FILTER, V18350 (BOEING 10-60592-1) (OPT)		2
5	AC7681E1Y2		. FILTER, V18350 (BOEING 10-60592-6) (OPT)		2
5	054280		DELETED		
6	NAS1611-214		. PACKING, O-RING		2
7	MS28782-19		. RING, BACKUP	A	4
7	MS28782-19		. RING, BACKUP	B-OQ	2
8	66-12196-1		. FITTING, FILTER		2
9	NAS1612-10		. PACKING, O-RING		2
10	90G37		. SWITCH, PRESSURE, V09049 (BOEING 10-60552-1)(OPT)	A-L	2
10	90G183		. SWITCH, PRESSURE, V09049 (BOEING 10-60552-11)(OPT)	A-L	2
10	S90G183		. SWITCH, PRESSURE, V09049 (BOEING 10-60552-11)(OPT)	A-L	2
10	1225P6-1		. SWITCH, PRESSURE, V98087 (BOEING 10-60552-22)(PREF)	A-L	2
10	90G183		. SWITCH, PRESSURE, V09049 (BOEING 10-60552-11)(OPT)	M-O	2
10	S90G183		. SWITCH, PRESSURE, V09049 (BOEING 10-60552-11)(OPT)	M-O	2

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
10	1225P6-1		. SWITCH, PRESSURE, V98087 (BOEING 10-60552-22)(OPT)	M-O	2
10	1225P6-2		. SWITCH, PRESSURE, V98087 (BOEING 10-60552-35)(PREF)	M-O	2
10	10-60552-35		DELETED		
10	1225P6-2		. SWITCH, PRESSURE, V98087 (BOEING 10-60552-35)	Q	2
10	10-60552-31		. SWITCH, PRESSURE (OPT)	Q	2
11	NAS1611-113		. PACKING, O-RING		2
12	MS28782-11		. RING, BACKUP		4
13	BACS12AH14F		. SCREW	ABCEGH JL	4
14	NAS620A416		. WASHER	ABCEGH JL	4
15	146435		. VALVE, MANUAL SHUTOFF, V79318 (BOEING 10-60557-1)	ABCE	1
15	1U1234		. VALVE, MANUAL SHUTOFF, V60029 (BOEING 10-60557-3)(PREF)	GJL	1
15	149455		. VALVE, MANUAL SHUTOFF, V79318 (BOEING 10-60557-3)	GJL	1
15	146435-1		. VALVE, MANUAL SHUTOFF, V79318 (BOEING 10-60557-2)(OPT)	GJL	1
15A	69-48336-1		. PLUG	H	1
16	NAS1611-218		. PACKING, O-RING	ABCEGH JL	1
17	MS28782-23		. RING, BACKUP	ABCEGH JL	2
18	NAS1611-214		. PACKING, O-RING	ABCEGH JL	1
19	MS28782-19		. RING, BACKUP	ABCEGH JL	2
20	AN814D6		. PLUG AND BLEEDER	A-OQ	2
21	NAS1612-6		. PACKING, O-RING	A-OQ	2
22	A61499		. VALVE, PRESSURE RELIEF, V81982 (BOEING 10-60551-2)	A-M OQ	1
22	1651		. VALVE PRESSURE RELIEF, V06177 (BOEING 10-60551-2)	A-M OQ	1
22	3314712		. VALVE PRESSURE RELIEF, V77068	N	1
23	NAS1611-327		. PACKING, O-RING		2
24	MS28782-30		. RING, BACKUP		4
25	H61C0552		. VALVE, CHECK, V92003 (BOEING 10-60491-2)(SB 29-36)	ABC	2
25	H61C0552		. VALVE, CHECK, V92003 (BOEING 10-60491-2)(SB 29-1001)	D	2

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1101-					
25	H61C0552M1		. VALVE, CHECK, V92003 (BOEING 10-60491-3)(SB 29-36, 29-1001)	E	2
25	H61C0552M1		. VALVE, CHECK, V92003 (BOEING 10-60491-3)(SB 29-1001)	F	2
25	H61C0552M1		. VALVE, CHECK, V92003 (BOEING 10-60491-3)	G-OQ	2
26	NAS1611-214		. PACKING, O-RING		2
27	MS28782-19		. RING, BACKUP		4
28	NAS1611-115		. PACKING, O-RING		2
29	MS28782-13		. RING, BACKUP		4
30	65-44674-1		. HOUSING (OPT)	DF	1
30	65-44674-3		. HOUSING (OPT)	IKMN	1
30	65-44674-5		DELETED		
30	65-44674-6		. HOUSING (PREF)	DFIKMN	1
30	65-44674-6		. HOUSING	OQ	1
30	65-44674-7		DELETED		
30	65-17987-1		. HOUSING ASSY	ABCEGH	1
30	65-17987-8		. HOUSING ASSY	JL	1
31	65-17987-5		. . HOUSING (PREF)(USED ON 65-17987-1)		1
31	65-17987-2		. . HOUSING (OPT TO 65-17987-5)		1
31	65-17987-9		. . HOUSING (USED ON 65-17987-8)		1
32	MS21209F4-15		. . INSERT (USED ON 65-17987-1,-8)		4



ASSEMBLIES 65–17862–8, –11, –14, –16, –18, –19, –20, –23, –24, –25, AND 65–44580–8, –10 SHOWN

ASSEMBLIES 65–17862–26, –28, –29, –33, –34, –37, AND 65–44580–2, –3, –6, –7, –9, –11, –14, –16, –18 SIMILAR

System "A" Hydraulic Modular Package Assembly
Figure 1102

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1102					
	65-17862-8		SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSY (PREFERRED OVER 65-17862-11 AND -14)	A	REF
	65-17862-11		SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSY (OPT TO 65-17862-8)	B	REF
	65-17862-14		SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSY (OPT TO 65-17862-8)	C	REF
	65-17862-16		SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSY	D	REF
	65-17862-18		SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSY (SB 29-21)	E	REF
	65-17862-19		SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSY (SB 29-21)	F	REF
	65-17862-24		SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSY (PREFERRED OVER 65-17862-20 AND -23)	G	REF
	65-17862-20		SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSY (OPT TO 65-17862-24)	H	REF
	65-17862-23		SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSY (OPT TO 65-17862-24)	I	REF
	65-17862-25		SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSY (OPT TO 65-17862-26)*[1]	J	REF
	65-17862-26		SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSY (PREFERRED OVER 65-17862-25)	K	REF
	65-17862-28		SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSY (OPT TO 65-17862-29)	L	REF
	65-17862-29		SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSY (PREFERRED OVER 65-17862-28)	M	REF
	65-44580-2		SYSTEM "A" PRESSURE MODULAR ASSY	N	REF
	65-44580-3		SYSTEM "A" PRESSURE MODULAR ASSY	O	REF
	65-44580-6		SYSTEM "A" PRESSURE MODULAR ASSY	P	REF
	65-44580-7		SYSTEM "A" PRESSURE MODULAR ASSY	Q	REF
	65-44580-8		SYSTEM "A" PRESSURE MODULAR ASSY	R	REF
	65-44580-9		SYSTEM "A" PRESSURE MODULAR ASSY	S	REF
	65-44580-10		SYSTEM "A" PRESSURE MODULAR ASSY	T	REF
	65-17862-33		SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSY	U	REF
	65-17862-34		SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSY	V	REF
	65-44580-11		SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSY	W	REF
	65-17862-37		SYSTEM "A" HYDRAULIC MODULAR PACKAGE ASSY	X	REF
	65-44580-14		SYSTEM "A" HYDRALIC MODULAR PACKAGE ASSY	Y	REF

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1102-					
	65-44580-15		DELETED		
	65-44580-16		SYSTEM "A" PRESSURE MODULAR ASSY	BA	RF
	65-44580-17		DELETED		
	65-44580-18		SYSTEM "A" PRESSURE MODULAR ASSY	DA	RF
1	BACU24K10		. UNION	A	2
1	BACU24K10		. UNION (PREF)	B	2
1	MS21902-10		. UNION (OPT)	B	2
1	BACU24X10		. UNION (REPLD BY MS21902-10 PER SB 29-21)	CD	2
1	MS21902-10		. UNION	E-MUVX	2
1	MS21902-10		. UNION (REPLS BACU24X10 PER SB 29-21)(PREF)	CD	2
1A	MS21902-10		DELETED		
2	MS21916-10-8		. REDUCER	N-TWY BA DA	2
3	NAS1612-10		. PACKING, O-RING		2
4	BACU24K12		. UNION	A	1
4	BACU24K12		. UNION (PREF)	B	1
4	MS21902-12		. UNION (OPT)	B	1
4	BACU24X12		. UNION (REPLD BY MS21902-12 PER SB 29-21)	CD	1
4	MS21902-12		. UNION	E-MUVX	1
4	MS21902-12		. UNION (REPLS BACU24X12 PER SB 29-21)(PREF)	CD	1
4	MS21902D12		DELETED		
5	MS21916-12-10		. REDUCER	N-TWY BA DA	1
5A	MS21916-10-8		DELETED		
6	NAS1612-12		. PACKING, O-RING		2
7	BACU24K8		. UNION	A	1
7	BACU24K8		. UNION (PREF)	B	1
7	MS21902-8		. UNION (OPT)	B	1
7	BACU24X8		. UNION (REPLD BY MS21902-8 PER SB 29-21)	CD	1
7	MS21902-8		. UNION	E-MUVX	1
7	MS21902-8		. UNION (REPLS BACU24X8 PER SB 29-21)(PREF)	CD	1
7A	BACU24K8		. UNION	A	1
7A	BACU24K8		. UNION (PREF)	B	1

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1102-					
7A	MS21902-8		. UNION (OPT TO BACU24K8)	B	1
7A	BACU24X8		. UNION (REPLD BY MS21902-8 PER SB 29-21)	CD	1
7A	MS21902-8		. UNION	E-KU	1
7A	MS21902-8		. UNION (REPLS BACU24X8 PER SB 29-21)(PREF)	CD	1
8	MS21916-8-4		. REDUCER	L-TV-Y BA DA	1
9	BACV10BT3		. VALVE, CHECK	N-TWY BA DA	1
9	BACV10CE3		DELETED		
9A	MS24391D8L		DELETED		
10	NAS1612-8		. PACKING, O-RING	A-Y BA DA	2
10	NAS1612-8		. PACKING, O-RING	DA	4
11	MS21902D12		. UNION		1
12	65-17821-1		. MODULAR PACKAGE ASSY, SYSTEM "A" HYDRAULIC PRESSURE (SB 29-36)	ABCE	1
12	65-17821-2		. MODULAR PACKAGE ASSY, SYSTEM "A" HYDRAULIC PRESSURE (SB 29-36)	DF	1
12	65-17821-3		. MODULAR PACKAGE ASSY, SYSTEM "A" HYDRAULIC PRESSURE (SB'S 29-36, 29-1001)	H	1
12	65-17821-5		. MODULAR PACKAGE ASSY, SYSTEM "A" HYDRAULIC PRESSURE (SB'S 29-36, 29-1001)	A-FH	1
12	65-17821-5		. MODULAR PACKAGE ASSY, SYSTEM "A" HYDRAULIC PRESSURE	IP	1
12	65-17821-5		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE (PREF)	N	1
12	65-17821-3		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE (SB'S 29-36, 29-1001) (OPT TO 65-17821-5)	N	1
12	65-17821-6		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE (PREF)	O	1
12	65-17821-4		. MODULAR PACKAGE ASSY, SYSTM "A" PRESSURE (SB 29-1001)(OPT TO 65-17821-6)	O	1
12	65-17821-7		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE (PREF)	G	1
12	65-17821-14		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE (OPT TO 65-17821-7)	G	1
12	65-17821-8		. MODULAR PACKAGE ASSY, SYSTEM "A" HYDRAULIC PRESSURE	J	1

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
1102-					
12	65-17821-9		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE (PREF)	KLQ	1
12	65-17821-6		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE (OPT TO 65-17821-9)	Q	1
12	65-17821-10		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE (PREF)	R	1
12	65-17821-7		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE (OPT TO 65-17821-10)	R	1
12	65-17821-11		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE	MSU	1
12	65-17821-12		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE	T	1
12	65-17821-14		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE	W	1
12	65-17821-14		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE (OPT TO 65-17821-19,-20)	V	1
12	65-17821-15		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE	XY	1
12	65-17821-17		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE	BA	1
12	65-17821-18		DELETED		
12	65-17821-19		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE	DA	1
12	65-17821-19		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE (OPT TO 65-17821-14,-20)	V	1
12	65-17821-20		. MODULAR PACKAGE ASSY, SYSTEM "A" PRESSURE (OPT TO 65-17821-14,-19) *[2]	V	1
13	AN814-8DL		. PLUG (USED WITH 65-17821-20)		2
14	NAS1612-8		. PACKING, O-RING (USED WITH 65-17821-20)		2

*[1] LIMITED USE
*[2] 65-17821-20 USED AS AN OPTION ON 727 AIRCRAFT IN THIS APPLICATION, SEE 727 CMM 29-13-04 FOR PARTS LIST

VENDORS

V05228	PTI TECHNOLOGIES, INC., A SUBSIDIARY OF H.R. TEXTRON, INC., P.O. BOX 2000, 950 RANCHO CONEJO BLVD., NEWBURY, CALIFORNIA 91320-1715, FORMERLY PUROLATOR TECHNOLOGIES
V06177	PNEUDRAULICS, INC., 8575 HELMS AVE., RANCHO CUCAMONGA, CALIFORNIA 91730-4519
V09049	CUSTOM CONTROL SENSORS, INC., 21111 PLUMMER STREET, CHATSWORTH, CALIFORNIA 91311-4905
V18350	AIRCRAFT POROUS MEDIA, INC., 6301 49TH ST. N., PINELAS PARK, FLORIDA 33565
V60029	HYDRAULIC UNITS, INC., SUB. OF BOEING COMPANY, 1700 BUSINESS CENTER DRIVE, DUARTE, CALIFORNIA 91010-2859
V77068	BENDIX ELECTRODYNAMICS DIVISION, ALLIED CORPORATION 11600 SHERMAN WAY, NORTH HOLLYWOOD, CALIFORNIA 91605
V79318	WHITTAKER CORP., WHITTAKER CONTROLS DIV., 12838 SATICOY ST., NORTH HOLLYWOOD, CALIFORNIA 91605-3505, FORMERLY DYNASCIENCES CORP., CONTROLS DIV.
V81982	HYDRO-AIRE DIVISION CRANE CO., 3000 WINONA AVE., BURBANK, CALIFORNIA 91502
V92003	PARKER-HANNIFIN CORPORATION, 18321 JAMBOREE BOULEVARD, P.O. BOX C-19510, IRVINE, CALIFORNIA 92713
V97820	W.S. SHAMBAN AND CO., 711 MITCHELL ROAD, NEWBURY PARK, CALIFORNIA 91320
V98087	ITT NEO-DYN, INC., P.O. BOX 3789, 21411 PRAIRIE STREET, CHATSWORTH, CALIFORNIA 91313

Part No.	Fig. and Index No.	Qty per Assy
AC7681E1	1101-5	2
AC7681E1YZ	1101-5	2
A61499	1101-22	1
AN814D6		AR
BAC27DHY0279	1101-1	1
BACN12A3KM	1101-1	1
BACN12A3LV	1101-1	1
BACR12BM228	1101-4	4
BACS12AH14F	1101-13	4
BACU24K10	1102-1	2
BACU24K10	1102-1	2
BACU24K12	1102-4	1
BACU24K8	1102-7	1
BACU24K8	1102-7A	1
BACU24X10	1102-1	2
BACU24X12	1102-4	1
BACU24X8	1102-7	1
BACU24X8	1102-7A	1
BACV10BT3	1102-9	1
H61C0552	1101-25	2
H61C0552M1	1101-25	2
MS21209F4-15		AR
MS21902-10		AR
MS21902-12		AR
MS21902-8		AR
MS21902D12		AR
MS21916-10-8		AR
MS21916-12-10		AR
MS21916-8-4		AR
MS24391D8L		AR
MS28782-11		AR
MS28782-13		AR
MS28782-19		AR
MS28782-30		AR
MS28783-6		AR
NAS1611-113		AR
NAS1611-115		AR
NAS1611-214		AR
NAS1611-218		AR
NAS1611-228		AR
NAS1611-327		AR
NAS1612-10		AR
NAS1612-12		AR
NAS1612-6		AR
NAS1612-8		AR
NAS620A416		AR
S12766-228	1101-4	4
S90G183	1101-10	2
1U1234	1101-15	1
10-60552	1101-10	2
10-60557-2	1101-15	1
10-60557-3	1101-15	1
10-60592-1	1101-5	2
1225P6-1	1101-10	2
1225P6-2	1101-10	2
146435	1101-15	1
146435-1	1101-15	1
149455	1101-15	1
65-17821-1	1101	RF
65-17821-1	1102-12	1
65-17821-10	1101	RF
65-17821-10	1102-12	1
65-17821-11	1101	RF
65-17821-11	1102-12	1
65-17821-12	1101	RF
65-17821-12	1102-12	1
65-17821-14	1101	RF
65-17821-14	1102-12	1
65-17821-15	1101	RF
65-17821-15	1102-12	1
65-17821-16	1101	RF
65-17821-16	1102-12	1
65-17821-17	1101	RF
65-17821-17	1102-12	1
65-17821-19	1101	RF
65-17821-19	1102-12	1
65-17821-2	1101	RF
65-17821-2	1102-12	1
65-17821-3	1101	RF
65-17821-3	1102-12	1
65-17821-4	1101	RF
65-17821-4	1102-12	1
65-17821-5	1101	RF
65-17821-5	1102-12	1
65-17821-6	1101	RF

Part No.	Fig. and Index No.	Qty per Assy
65-17821-6	1102-12	1
65-17821-7	1101	RF
65-17821-7	1102-12	1
65-17821-8	1101	RF
65-17821-8	1102-12	1
65-17821-9	1101	RF
65-17821-9	1102-12	1
65-17862-11	1102	RF
65-17862-14	1102	RF
65-17862-16	1102	RF
65-17862-18	1102	RF
65-17862-19	1102	RF
65-17862-20	1102	RF
65-17862-23	1102	RF
65-17862-24	1102	RF
65-17862-25	1102	RF
65-17862-26	1102	RF
65-17862-28	1102	RF
65-17862-29	1102	RF
65-17862-33	1102	RF
65-17862-34	1102	RF
65-17862-37	1102	RF
65-17862-8	1102	RF
65-17987-1	1101-30	1
65-17987-2	1101-31	1
65-17987-5	1101-31	1
65-17987-8	1101-30	1
65-17987-9	1101-31	1
65-17989-2	1101-2	2
65-17989-4	1101-2	2
65-17989-8	1101-2	1
65-44580-10	1102	RF
65-44580-11	1102	RF
65-44580-14	1102	RF
65-44580-16	1102	RF
65-44580-18	1102	RF
65-44580-2	1102	RF
65-44580-3	1102	RF
65-44580-6	1102	RF
65-44580-7	1102	RF
65-44580-8	1102	RF
65-44580-9	1102	RF
65-44674-1	1101-30	1
65-44674-3	1101-30	1
65-44674-6	1101-30	1
66-12196-1	1101-8	2
69-48336-1	1101-15A	1

Part No.	Fig. and Index No.	Qty per Assy
7500174	1101-5	2
7513122	1101-5	2
7513128	1101-5	2
7513141	1101-5	2
90G183	1101-10	2
90G37	1101-10	2