

OVERHAUL MANUAL

TO: ALL HOLDERS OF SHUTOFF VALVE MODULAR PACKAGE ASSEMBLY OVERHAUL MANUAL,
 32-43-22

REVISION NO. 6, DATED MAR 5/91

HIGHLIGHTS

DESCRIPTION OF CHANGE	TOPICS AFFECTED												
	D & O	D / A s s y	C l e a n i n g	I n s p / C h k	R e p a i r	A s s y	F / C	T e s t	T / S h o o t i n g	S / T o o l s	S t o r a g e	I P L	L / O v e r h a u l
Changed Figure 3, Item 3 part number from 101234 to 1U1234												X	

SHUTOFF VALVE MODULAR PACKAGE ASSEMBLY

32-43-22

BOEING P/N 65-44581-1 thru -7
65-44896-2, -4 thru -7, -9, -10, -11

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT
		PRR 30638	Aug 15/69
		PRR 30936	Aug 25/69
		PRR 32032	Mar 10/72
		PRR 32157	Sep 10/72
		PRR 33599	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

PAGE	DATE	PAGE	DATE	PAGE	DATE
32-43-22					
T-1	Jun 5/86				
T-2	BLANK				
* LEP-1	Mar 5/91				
LEP-2	BLANK				
T/C-1	Jan 5/83				
T/C-2	BLANK				
1	Jan 5/83				
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* 9	Mar 5/91				
10	Jan 5/83				
11	Sep 5/84				
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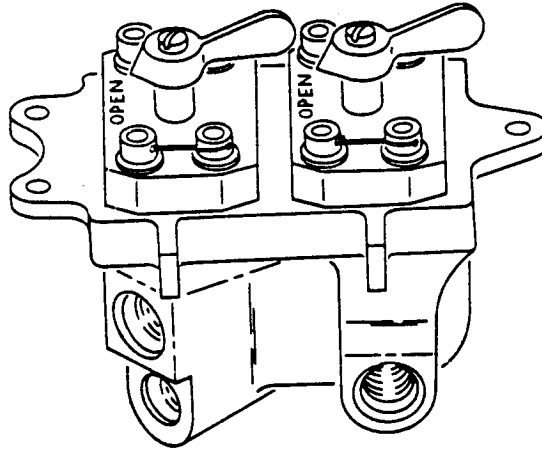
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| *[1] Special instructions not required. Use standard industry practices and the information contained in 20-30-03.

| *[2] Ref TESTING

SHUTOFF VALVE MODULAR PACKAGE ASSEMBLY



Shutoff Valve Modular Package Assembly
Figure 1

1. DESCRIPTION AND OPERATION

A. The shutoff valve modular package assembly consists of two manual shutoff valves mounted in a housing. Hydraulic fluid enters the shutoff valve modular package assembly through port 1 and is distributed to, or shut off from any of ports 2 and 3 by manual shutoff valves.

B. Leading Particulars

Height -- 4.7 inches
Length -- 5.7 inches
Width -- 3.4 inches
Weight -- 2.2 pounds
Operating Medium -- BMS 3-11 Hydraulic Fluid
Operating Pressure -- 3000 psi
Proof Pressure -- 5400 psi
Port Sizes
Port 1 -- per MS33649-8
Ports 2 and 3 -- per MS33649-6

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2. DISASSEMBLY (Fig. 3)

- A. If necessary, remove unions (1, 3), reducer (1A) and O-rings (2, 4) (Fig. 4).
- B. Cut and remove all lockwire.
- C. Remove bolts (1), washers (2), shutoff valves (3), backup rings (4, 6) and O-ring packings (5, 7). Refer to appropriate manufacturer's instructions for overhaul of valves (3).

NOTE: Do not remove screws (8), nameplate (9) or inserts (11) unless repair or replacement is necessary.

3. INSPECTION/CHECK

- A. Check all parts for obvious defects in accordance with standard industry practices.
- B. Penetrant check housing (12) per 20-20-02.

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4. REPAIR

- A. Repair minor defects using standard industry practices.
- 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) Housing (12) -- Chromic acid anodize (F-2.26) all over. Material: Al alloy.
- (2) Plate (13) -- Cadmium plate (F-1.1923) all over. Material: 4130 Steel, 125-145 ksi.

C. Replacement

- (1) Replace backup rings (4 and 6) and O-ring packings (5 and 7).
- (2) Nameplate (9) -- Steel stamp serial number and dash number prior to installation.
- (3) Inserts (11) -- Remove damaged insert. Clean bore, and apply primer BMS 10-11, type 1, to faying surfaces of new insert and bore. While primer is still wet, install insert with top coil 3/4 to 1-1/2 turns below top surface of bore. Remove tang.

5. ASSEMBLY

- A. Lightly lubricate backup rings and O-ring packings with Hydraulic Fluid BMS 3-11 or Assembly Lube MCS 352 prior to installation.
- B. Place O-ring packings (5, 7) and backup rings (4, 6) on shutoff valve (3) and install in housing (10).

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- C. Install washers (2) and bolts (1).
- D. After testing is completed, lockwire bolts (1) together in pairs per 20-50-02 (Fig. 1).
- E. Materials
 - (1) Hydraulic Fluid -- BMS 3-11 (Ref 20-60-03)
 - (2) Assembly Lube -- MCS 352 (Ref 20-60-03)

6. TESTING

A. Test Equipment

- (1) Hydraulic test stand providing hydraulic fluid flow of 6 gpm at room temperature and capable of controlled pressure from 0 to 5400 psi
- (2) Calibrated pressure gages 0 to 100 psi and 0 to 6000 psi ranges
- (3) Test Fluid - Hydraulic Fluid BMS 3-11 (Skydrol 7000 optional)

B. Preparation for Test

- (1) Lightly lubricate O-ring packings (2, 4) and threads of unions (1, 3) and reducer (1A) with Hydraulic Fluid BMS 3-11 or Assembly Lube MCS 352 and install per Fig. 4.
- (2) Connect hydraulic pressure source to port 1.

WARNING: DO NOT APPLY COMPRESSED AIR TO PORTS OF UNIT AT ANY TIME.

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C. Functional Tests (Fig. 3, 4).

NOTE: Flow from any open port 2 or 3 is not to be considered as external leakage.

(1) Proof Pressure Test

CAUTION: TO PREVENT POSSIBLE DAMAGE OF VALVES (3), DO NOT OPERATE THEM AT PROOF PRESSURE.

- (a) Close ports 2 and 3. Open both valves (3).
- (b) Gradually apply 5400 psi hydraulic fluid pressure to port 1. Hold for 3 minutes. Check that there is no external leakage.
- (c) Repeat steps (a) and (b) except apply 2 psi. Check that there is no external leakage.

(2) Perform Internal Leakage Test

- (a) Open ports 2 and 3. Apply 2-5 psi hydraulic fluid pressure at port 1.
- (b) Actuate both valves (3) several times, then return to CLOSED position. Hold for 3 minutes. Check that leakage from ports 2 and 3 does not exceed 1 drop per minute at each port.
- (c) Repeat steps (a) and (b) except apply 3000 psi. Check that leakage at ports 2 and 3 does not exceed 1 drop per minute from each port.

(3) Actuation Test -- Close ports 2 and 3. Apply 3000 psi hydraulic fluid pressure at port 1. Actuate valves (3) several times between OPEN and CLOSED positions. Check that there is no evidence of sticking or binding.

(4) Flow Test -- Open valves (3). Apply 100 psi hydraulic fluid pressure at port 1. Check that there is a flow of 3 gpm or more from each of ports 2 and 3.

D. After testing is completed, lockwire bolts (1) together in pairs per ASSEMBLY par. 5.D.

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7. TROUBLE SHOOTING

A. Trouble during test after overhaul. (Fig. 3).

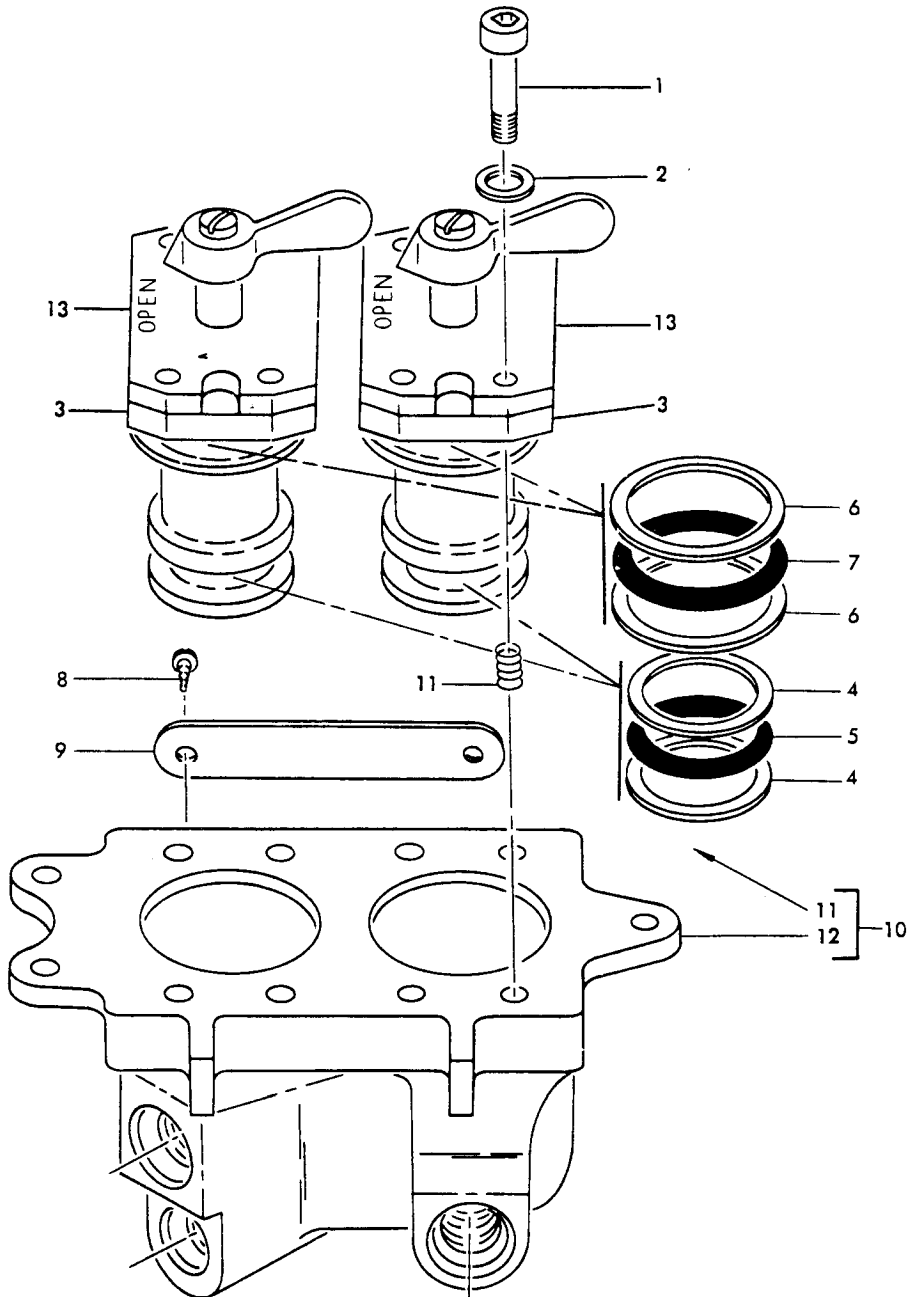
<u>Trouble</u>	<u>Possible Cause</u>	<u>Correction</u>
(1) External leakage	Defective O-ring (7) or backup rings (6)	Replace O-ring (7) or backup rings (6)
	Defective valve (3)	Test valve (3) per manufacturer's overhaul instructions and replace if necessary
(2) Excessive leakage from port 2 or 3	Defective backup rings (4) or O-rings (5)	Replace backup rings (4) or O-ring (5)
	Defective valve (3)	Test valve (3) per manufacturer's overhaul instructions and replace if necessary
(3) Valve (3) sticks or binds when actuated	Defective valve (3)	Test valve (3) per manufacturer's overhaul instructions and replace if necessary
(4) Insufficient flow from ports 2 or 3	Foreign material in internal passages	Check and clean as necessary
	Defective valve (3)	Test valve (3) per manufacturer's overhaul instructions and replace if necessary

8. STORAGE INSTRUCTIONS

- A. If unit was tested with Skydrol 7000, drain thoroughly and partially fill with hydraulic fluid BMS 3-11.
- B. Cap or plug ports with BMS 3-11 resistant caps or plugs and O-rings.
- C. Protect and store unit in accordance with standard industry practices.

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9. ILLUSTRATED PARTS LIST



Shutoff Valve Modular Package Assembly
Figure 3

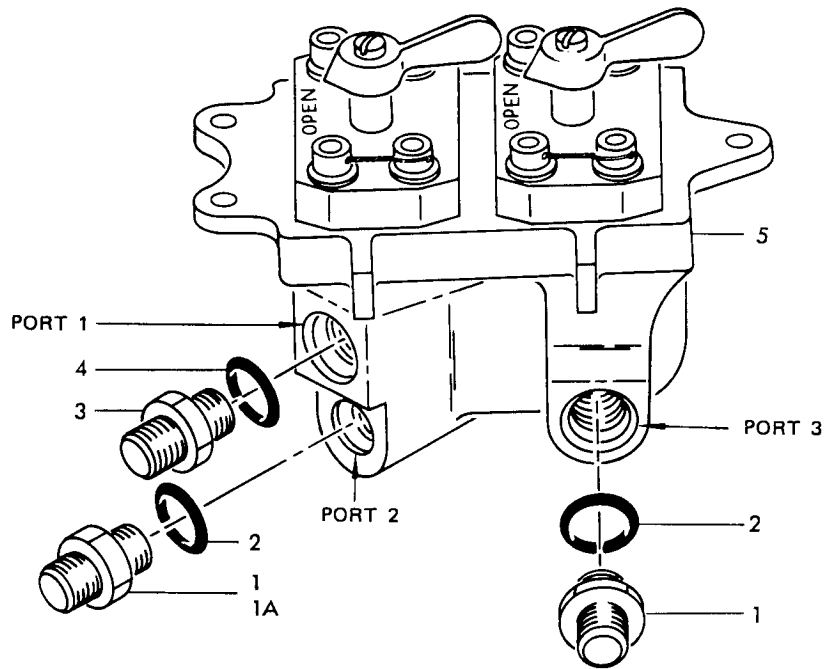
65-44581
65-44896



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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-	65-44581-1		SHUTOFF	VALVE	MODULAR	PACKAGE	ASSY			A	RF
	65-44581-2		SHUTOFF	VALVE	MODULAR	PACKAGE	ASSY			B	RF
	65-44581-3		SHUTOFF	VALVE	MODULAR	PACKAGE	ASSY			C	RF
	65-44581-4		SHUTOFF	VALVE	MODULAR	PACKAGE	ASSY			D	RF
	65-44581-5		SHUTOFF	VALVE	MODULAR	PACKAGE	ASSY			E	RF
	65-44581-6		SHUTOFF	VALVE	MODULAR	PACKAGE	ASSY			F	RF
	65-44581-7		SHUTOFF	VALVE	MODULAR	PACKAGE	ASSY			G	RF
1	MS24678-23		. BOLT							AB	8
1	BACB30MT4HT11		. BOLT							C	8
1	MS9218-17		. BOLT (OPT)							C	8
1	BACB30MT4HT7		. BOLT							D-G	8
2	NAS620-416L		. WASHER							AB	8
2	BACW10BP4ACU		. WASHER							D-G	8
3	146435-1		. VALVE, SHUTOFF, V79318 (BOEING 10-60557-2)							ABC	2
3	146435		. VALVE, SHUTOFF, V79318 (BOEING 10-60557-1) (OPT)							AB	2
3	149455		. VALVE, SHUTOFF, V79318 (BOEING 10-60557-3)							D-G	2
3	1U1234		. VALVE, SHUTOFF, V94641 (BOEING 10-60557-3)							D-G	2
4	MS28782-19		. RING, BACKUP								4
5	NAS1611-214		. PACKING, O-RING								2
6	MS28782-23		. RING, BACKUP								4
7	NAS1611-218		. PACKING, O-RING								2
8	MS21318-21		. SCREW								2
9	BAC27DHY0268		. NAMEPLATE								1
9	BAC27DHY100		. NAMEPLATE (OPT)								1
10	65-44582-1		. HOUSING ASSY							A	1
10	65-44582-7		. HOUSING ASSY							BCD	1
10	65-44582-11		. HOUSING ASSY							E	1
10	65-44582-12		. HOUSING ASSY							FG	1
10	65-44581-8		. HOUSING ASSY (REWORKED FROM 65-44582-11)							G	1
11	MS21209F4-15		. . INSERT								8
12	65-44582-2		. . HOUSING (USED ON 65-44582-1)								1
12	65-44582-8		. . HOUSING (USED ON 65-44582-7)								1
12	65-44582-10		. . HOUSING (USED ON 65-44582-11)								1
12	65-44582-13		. . HOUSING (USED ON 65-44582-12)								1
12	*[1]		. . HOUSING (USED ON 65-44581-8)								1
13	69-54732-1		. PLATE							C	2
13	1151-101		. PLATE, V94641 (OPT)							C	2

*[1] MADE FROM 65-44582-10 BY ENLARGING 0.35 DIA PASSAGE BY 0.002-0.050 INCH.



65-44581
65-44896

BOEING 
COMMERCIAL JET
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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		
4-	65-44896-2		SHUTOFF VALVE MODULAR PACKAGE ASSY							A	RF
	65-44896-4		SHUTOFF VALVE MODULAR PACKAGE ASSY							B	RF
	65-44896-5		SHUTOFF VALVE MODULAR PACKAGE ASSY							C	RF
	65-44896-6		SHUTOFF VALVE MODULAR PACKAGE ASSY							D	RF
	65-44896-7		SHUTOFF VALVE MODULAR PACKAGE ASSY							E	RF
	65-44896-9		SHUTOFF VALVE MODULAR PACKAGE ASSY							F	RF
	65-44896-10		SHUTOFF VALVE MODULAR PACKAGE ASSY							G	RF
	65-44896-11		SHUTOFF VALVE MODULAR PACKAGE ASSY							H	RF
1	MS21902-6		. UNION							A-EG	2
1	MS21902-6		. UNION							FH	1
1A	MS21916-8-6		. REDUCER							FH	1
1	MS21902-6		. UNION								2
2	NAS1612-6		. PACKING, O-RING								2
3	MS21902-8		. UNION								1
4	NAS1612-8		. PACKING, O-RING								1
5	65-44581-1		. MODULAR PACKAGE ASSY (FIG. 3)							A	1
5	65-44581-2		. MODULAR PACKAGE ASSY (FIG. 3)							B	1
5	65-44581-3		. MODULAR PACKAGE ASSY (FIG. 3)							C	1
5	65-44581-4		. MODULAR PACKAGE ASSY (FIG. 3)							D	1
5	65-44581-5		. MODULAR PACKAGE ASSY (FIG. 3)							EF	1
5	65-44581-6		. MODULAR PACKAGE ASSY (FIG. 3)							GH	1

VENDORS

- V79318 WHITTAKER CORPORATION, WHITTAKER CONTROLS DIV., 12838 SATICOY ST., N. HOLLYWOOD, CALIFORNIA 91605
- V94641 RONSON HYDRAULIC UNITS CORP., 1500 RONSON ROAD, DUARTE, CALIFORNIA 91010