TO: ALL HOLDERS OF AUXILIARY POWER UNIT COOLING AIR VALVE ASSEMBLY OVERHAUL MANUAL, 49-50-03

REVISION NO. 4, DATED MAR 5/89

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
Changed MS24655-153 (Fig. 2, Item 3) to MS24665-153												X	

BOEING COMMERCIAL JET

OVERHAUL MANUAL

AUXILIARY POWER UNIT COOLING AIR VALVE ASSEMBLY

49-50-03

BOEING P/N 65-66218-1, -2, -3

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT
		PRR 30582	Dec 25/72
49-1012		PRR 31846	Dec 25/72
		PRR 31846-1	Dec 25/72
		PRR 31846-2	Dec 25/72
49-1036		PRR 32730 R	Jan 5/79

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
	49-50-03					
	T-1	Jan 5/79				
	T-2	BLANK				
*	LEP-1	Mar 5/89				
	LEP-2	BLANK				
	T/C-1	Jul 5/79				
	T/C-2	BLANK				
	1	Jul 5/79				
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	3	Dec 25/72				
	4	Dec 25/72				
*	5	Mar 5/89				
	6	Jun 5/84				

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

AUXILIARY POWER UNIT COOLING AIR VALVE ASSEMBLY

1. DESCRIPTION AND OPERATION

A. The APU cooling air valve consists of a housing, movable vane, and related linkage. A pneumatically operated actuator is linked to the vane to position the valve in open or closed position. When there is no air pressure present, a spring within the actuator holds the vane in a closed position.

2. REPAIR

A. Use standard industry practices for repair of this component and the following additional procedures.

B. Bearing surfaces of shaft (37, Fig. 2)

(1) Machine as required to remove defects. Do not exceed minimum diameters of 0.363 inch for diameter mating with bushing (57), or 0.238 inch for diameter mating with bushing (55). Material: CRES.

(2) Shot-peen per 20-10-03 using 0.046-0.078 size shot and 0.009-0.015 A2 intensity.

(3) Build up machined surface with chrome plate per 20-42-03. Observe 0.06-inch plating runout at edges.

(4) Machine to design dimensions and 32 microinch finish (Fig. 1).

C. Refinish

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

(1) Link (15, 69-50886-3), nut (17), bolt (31, 69-56449-1), vane (39) -- Passivate (F-8.07) all over. Material: CRES.

D. Replacement (Fig. 2)

(1) Bushings (55, 57) -- Install per 20-50-03. Machine, in line, to design dimensions and to 63-microinch finish (Fig. 1).

CAUTION: BUSHINGS MUST NOT PROTRUDE INTO ID OF SADDLE (59) OR CONTACT WITH VANE (45) MAY OCCUR.

3. ASSEMBLY (Fig. 2)

A. Use standard industry practices to assemble parts, observing the following additional requirements.

B. Install vane (39) in valve body (51) as shown, with beveled upper surface of vane parallel to inner surface of body when vane is approximately 30° from closed.

C. If positioning rivet (53) is replaced, finished driven head must be 0.05 - 0.15-inch diameter.

D. On APU cooling air valve assembly 65-66218-3, install bolt (31, 69-56449-1 or BACB30LM3-11X), whichever provides the closest fit.

E. Lockwire nuts (17, 21) to actuator (25) by double-twist method.

4. FITS AND CLEARANCES

A. The fits and clearances table lists design dimensions and service wear limits for close tolerance parts of the assembly that are subject to wear or corrosion. Unless otherwise specified, parts should be returned to the design dimensions whenever rework is accomplished.

B. Clearances are given to aid assembly of the components. The values given in the Maximum Allowable Clearance column are the maximum permitted to ensure proper functioning of the unit. If assembled parts fail to meet this requirement, one or more of the parts must be rejected. Parts that are rejected should be reworked if within the rework limits given in the Repair procedure; if not within rework limits, the parts should be scrapped. It is recommended that the design clearances be used as the guiding assembly criteria when newly reworked parts are assembled.

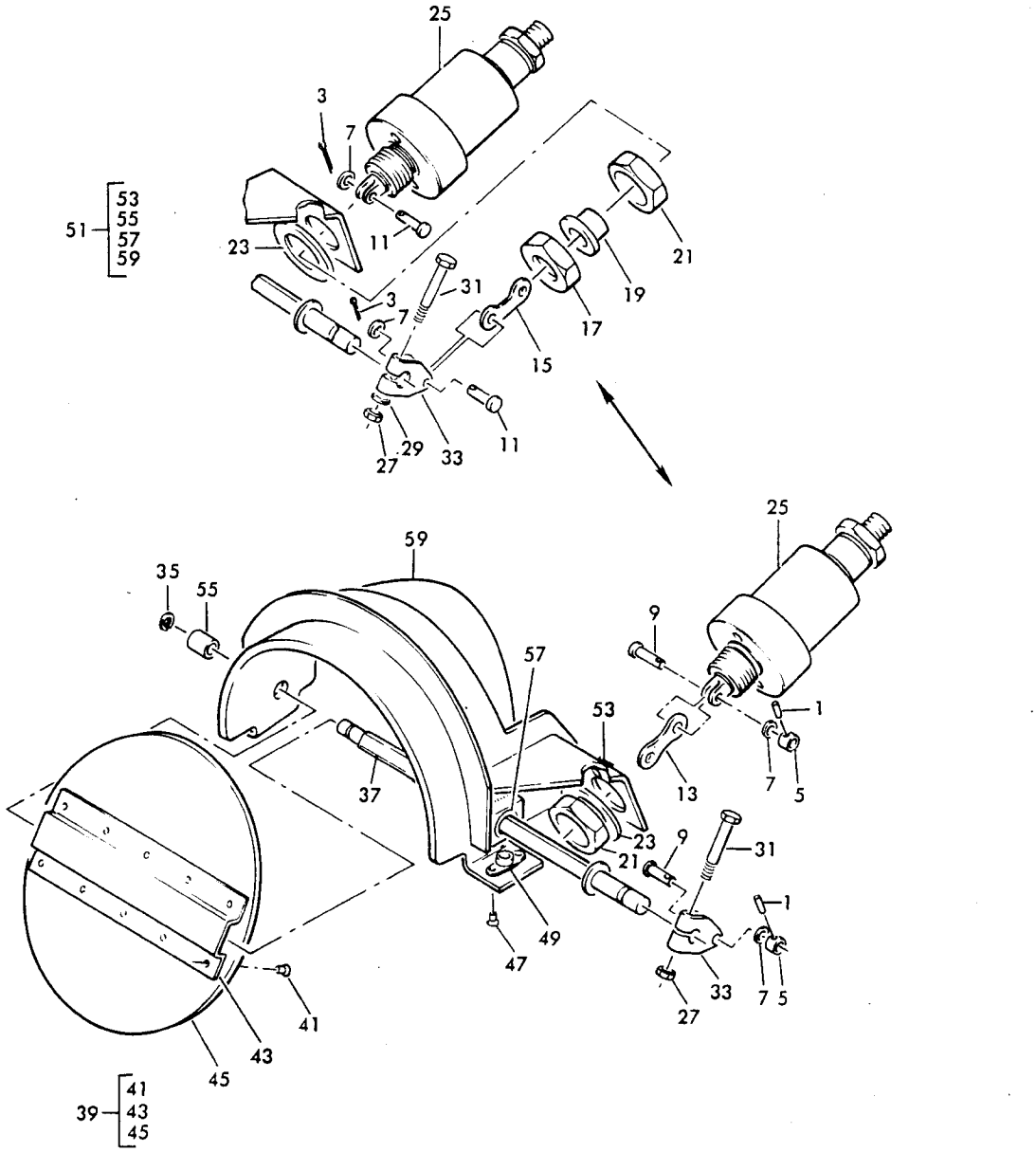
		Design Dimensions				Service Wear Limits		
Ref Letter Fig.	Mating Item No. Fig. 2	Dimensions (inches)		Assembly Clearance (inch)		Dimension Limits (inches)		Maximum Allowable Clearance (inch)
		Min	Max	Min	Max	Min	Max	
	ID 57 OD 37	0.376 0.373	0.380 0.375	0.001	0.007	0.361	0.390	0.015
	ID 55 OD 37	0.251 0.248	0.255 0.250	0.001	0.007	0.236	0.265	0.015
	ID 13,15 25, 33 OD 11, 9	0.127 0.122	0.132 0.124	0.003	0.010	0.112	0.139	0.015

Fits and Clearances
Figure 1

5. TESTING

A. Apply 7 psi air pressure to actuator port and check that valve moves to full open position without binding. Remove pressure and check that valve moves to full closed position.

6. ILLUSTRATED PARTS LIST



APU Cooling Air Valve Assembly
Figure 2

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
2-	65-66218-1		APU COOLING AIR VALVE ASSY	A	RF
	65-66218-2		APU COOLING AIR VALVE ASSY	B	RF
	65-66218-3		APU COOLING AIR VALVE ASSY (SB 49-1012)	C	RF
1	MS16562-191		. PIN	A	2
3	MS24665-153		. PIN	BC	2
5	69-47556-1		. RETAINER	A	2
7	AN960-4L		. WASHER		2
9	MS20392-1C13		. PIN	A	2
11	MS20392-1C11		. PIN	BC	2
13	69-50886-1		. LINK	A	1
15	69-50886-2		. LINK	B	1
15	69-50886-3		. LINK	C	1
17	69-61702-1		. NUT (SB 49-1012)	BC	1
19	69-61701-2		. BUSHING (SB 49-1012)	BC	1
21	BACN10DR8J		. NUT		1
23	AN960C1216L		. WASHER		1
25	65-50949-3		. ACTUATOR ASSY (REF 49-50-01)		1
27	NAS679C3W		. NUT		1
29	AN960C10		. WASHER	C	1
31	NAS1303-10D		. BOLT	AB	1
31	69-56449-1		. BOLT *[1]	C	1
31	BACB30LM3-11X		DELETED		
31	BACB30LM3-11		. BOLT *[1] *[2]	C	1
31	BACB30NE3-11		. BOLT *[2]	C	1
33	69-50866-1		. CRANK		1
35	MS16624-4025		. SNAP RING		1
37	6-55100-1		. SHAFT		1
39	69-55107-2		. VANE ASSY		1
41	BACR15CE4M		. . RIVET		10
43	69-55107-4		. . HAT		1
45	69-55107-3		. . VANE		1
47	BACR15CE3M		. RIVET (DELETED BY SB 49-1036)		4
49	NAS1068A4		. NUTPLATE (DELETED BY SB 49-1036)		2
51	65-66220-1		. VALVE BODY ASSY		1
53	BACR15CE4		. . RIVET, POSITIONING		1
55	B46-3		. . BUSHING, V71041		1
57	B68-3		. . BUSHING, V71041		1
59	65-66220-2		. . SADDLE		1

*[1] EITHER 69-56449-1 OR BACB30LM3-11 MAY BE USED AS REQUIRED FOR CLOSE FIT
*[2] BACB30LM3-11 OPTIONAL TO BACB30NE3-11

VENDORS

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