TO: ALL HOLDERS OF TAB LOCK ACTUATOR ASSEMBLY OVERHAUL MANUAL, 27-30-01

REVISION NO. 7, DATED SEP 1/94

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
Revised seal part number from 7114MT952T-7 to 7114MT-952-T												X	

TAB LOCK ACTUATOR ASSEMBLY

27-30-01

BOEING P/N 65-44751-1, -2, -3
65-45190-4, -9, -10

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT
		PRR 31435	Feb 15/69
		PRR 31941	Sep 10/72
27-1092			Jan 5/80

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
	27-30-01					
	T-1	Jan 5/80				
	T-2	BLANK				
*	LEP-1	Sep 1/94				
	LEP-2	BLANK				
	T/C-1	Dec 5/83				
	T/C-2	BLANK				
	1	Dec 5/83				
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	5	Dec 5/83				
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	12	Dec 5/83				

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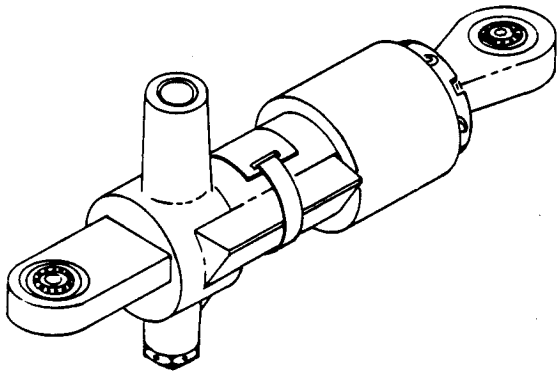
TAB LOCK ACTUATOR ASSEMBLY



Tab Lock Actuator Assembly
Figure 1

1. DESCRIPTION AND OPERATION

A. Description

(1) The tab lock actuator assembly consists of a cylinder with pressure and bleeder port and a piston rod and rod end bearing. The piston rod is supported by a teflon-lined bushing kept in place with a slotted nut.

B. Operation

(1) The tab lock actuator assembly is attached to the rear spar of each elevator of the airplane and through a crank and pushrod mechanism to the elevator tab. When pressurized the actuator changes tab attitude in relation to elevator. When depressurized, the actuator is held bottomed by springs.

C. Leading Particulars (approximate)

Length: piston retracted -- 6.3 inches
piston extended -- 7.5 inches
Height -- 1.5 inches
Width -- 2.5 inches
Weight -- 1.0 pound

2. DISASSEMBLY (Fig. 4)

A. If necessary, remove union (1) and packing (2) from tab lock actuator assembly (3) per figure 5.

B. Cut lockwire. Remove nut (1). Pull piston (9) with bushing (3) and scraper (2) out of cylinder (16).

C. Tap out spring pin (4). Loosen nut (5). Screw out rod end bearing (6). Remove nut (5), seal assembly (7), or packing (7) and backup rings (8).

D. Remove parts (10 through 13) from cylinder assembly (14).

NOTE: Do not remove bearing (15) from cylinder (16) unless repair or replacement makes it necessary.

3. CLEANING (Fig. 4)

A. Clean all parts except bearings using standard industry practices and information contained in 20-30-03.

B. Clean teflon-lined bearings (6, 15) per special method in 20-30-01.

4. INSPECTION/CHECK (Fig. 4)

A. Check all parts for obvious defects in accordance with standard industry practices.

B. Penetrant check cylinder (16) per 20-20-02.

5. REPAIR (Fig. 4)

A. Repair

(1) Repair minor defects using standard industry practices.

(2) Repair actuator piston (9). (Fig. 2.)

(a) Machine lands and/or rod of piston as required to indicated minimum dimensions per 20-10-01.

(b) Stress relieve at 825 to 875°F for 2 hours.

(c) Build up machined areas with hard chrome plate per 20-42-03. Grind to indicated dimensions and surface finish per 20-10-04.

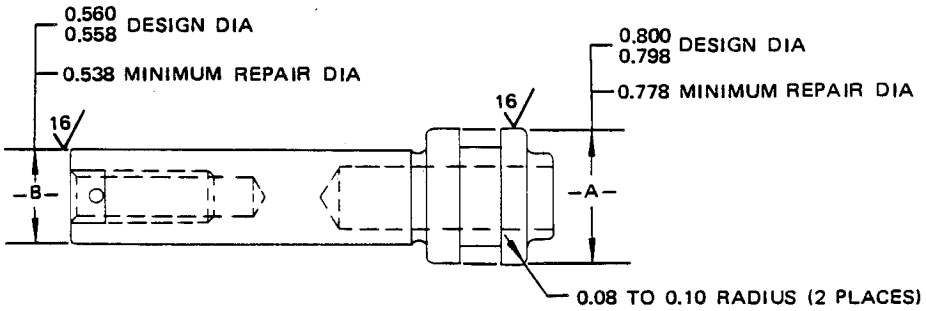
B. Refinish

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

(1) Nut (1) -- Chromic acid anodize (F-2.26) all over. Material: Al alloy.

(2) Cylinder (16) -- Hard anodize (F-2.204) in bore. Flash hard anodize 0.0002 to 0.0003 inch thick and sodium dichromate seal per MIL-A-8625 on exterior surfaces. Material: Al alloy.

(3) Piston (9) -- Fig. 2.



DIA -B- TO BE CONCENTRIC WITH DIA -A- WITHIN 0.001 TIR

REFINISH

PASSIVATE (F-8.07) ALL OVER

MATERIAL: 17-4PH CRES, 180-200 KSI

ALL DIMENSIONS ARE IN INCHES

PISTON (9, FIG. 4)

C. Replacement

(1) Replace packings (7 and 11) at each overhaul.

(2) Bearing (15) -- Install and roller swage per 20-50-03.

6. ASSEMBLY (Fig. 4)

A. Lightly lubricate packings (7, 11) with BMS 3-11 hydraulic fluid or with Skydrol Assembly Lube MCS352 and install per 20-50-06.

B. Position nameplate (13) on cylinder assembly (14). Secure with strap (12).

C. Assemble packing (11) and bleeder (10) on cylinder and lockwire.

D. Install packing (7) and backup rings (8) or seal assembly (7) on piston (9). Insert piston in cylinder bore.

E. Push bushing (3) into cylinder bore until bottomed. Install scraper (2). Screw nut (1) into cylinder and tighten to 600 - 650 pound-inches.

F. Thread nut (5) on rod end bearing (6) and install rod end bearing on piston (9).

G. Adjust distance between centerline of bores of spherical bearings (6, 15) to 6.34-6.36 inches for 65-44751-1, -2 and 6.28-6.30 inches for 65-44751-3 by turning rod end bearing (6) with piston fixed and fully extended. After adjusting, drill 0.062-0.065 inch hole through piston rod and rod end bearing (6) using pilot hole in piston rod and tap spring pin (4) into piston rod through rod end bearing (6). Tighten nut (5) to 25-35 lb-in.

H. Apply sealant per 20-50-12, type 60, to surfaces around nut (1) to prevent moisture from entering thread.

I. Lockwire nut (5) to piston threading wire through spring pin (4). Lockwire nut (1) to cylinder (16).

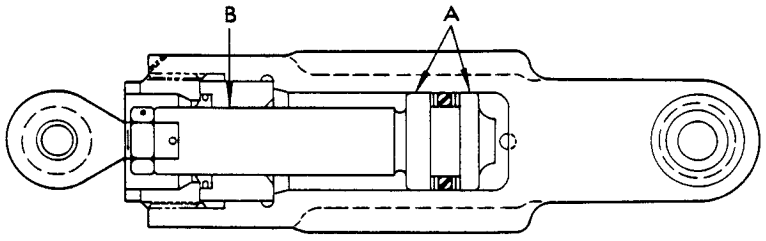
J. Materials

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

(2) Lubricant -- Assembly Lube MCS352 (Ref 20-60-03)

(3) Sealant -- Dow-Corning 30-121 (Ref 20-60-04)

7. FITS AND CLEARANCES



			ORIGINAL DESIGN LIMITS				SERVICE WEAR LIMITS		
Ref. Letter Fig. 3	Mating Index No. Fig. 4		Dimension (inches)		Assembly Clearance (inches)		Dimension Limits (inches)		Maximum Allowable Clearance (inch)
			Min.	Max.	Min.	Max.	Min.	Max.	
A	ID	14	0.802	0.803	0.002	0.005	--	0.804	0.007
	OD	9	0.798	0.800			0.795	--	
B	ID	3	0.561	0.562	0.001	0.004	--	0.566	0.006
	OD	9	0.558	0.560			0.555	--	

Fits and Clearances
Figure 3

8. TESTING

A. Test Equipment

(1) Test bench capable of delivering graduated hydraulic pressure up to 5400 psi.

(2) Spring scale capable of measuring up to 25 pounds.

B. Preparation for Test

(1) Apply hydraulic fluid BMS 3-11 or Skydrol Assembly Lube MCS352 to packing (2) and threads of union (1) and install per figure 5. Connect hydraulic pressure line to union (1).

(2) Tests shall be conducted at room temperature with BMS 3-11 hydraulic fluid (use of Skydrol 7000 is optional).

(3) Tests shall be conducted in the sequence listed below.

C. Test

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

DO NOT CYCLE UNIT AT PROOF PRESSURE.

(1) Cycle unit with low hydraulic pressure until all air is removed.

(2) Proof pressure test.

(a) With the piston fully extended, apply proof pressure of 5400 psi. Hold for 2 minutes. There shall be no external leakage or permanent set.

(b) Decrease pressure to 2 psi. Hold for 2 minutes. There shall be no external leakage.

(3) Cycling test.

(a) Cycle unit at 3000 psi through 25 full cycles. Leakage shall not exceed 2 drops during this period. Until shall operate without sticking or binding.

(b) With unit depressurized, cycle through one complete cycle. Force required to accomplish this shall not exceed 20 pounds.

D. Preparation for Storage

(1) After completion of tests, fill unit partially with BMS 3-11. If Skydrol 7000 was used, unit must be drained throughly before partially filling with BMS 3-11.

(2) Cap or plug port with BMS 3-11 resistant packing and cap or plug.

9. TROUBLE SHOOTING (Fig. 4)

A. Trouble during test after overhaul.

	Trouble	Possible Cause	Correction
(1)	Leakage on piston rod	Faulty or defective packing (7), seal assy (7) or scraper (2)	Disassemble, inspect, replace
(2)	Leakage on bleeder (10)	Faulty or defective packing (11)	Disassemble, inspect, replace

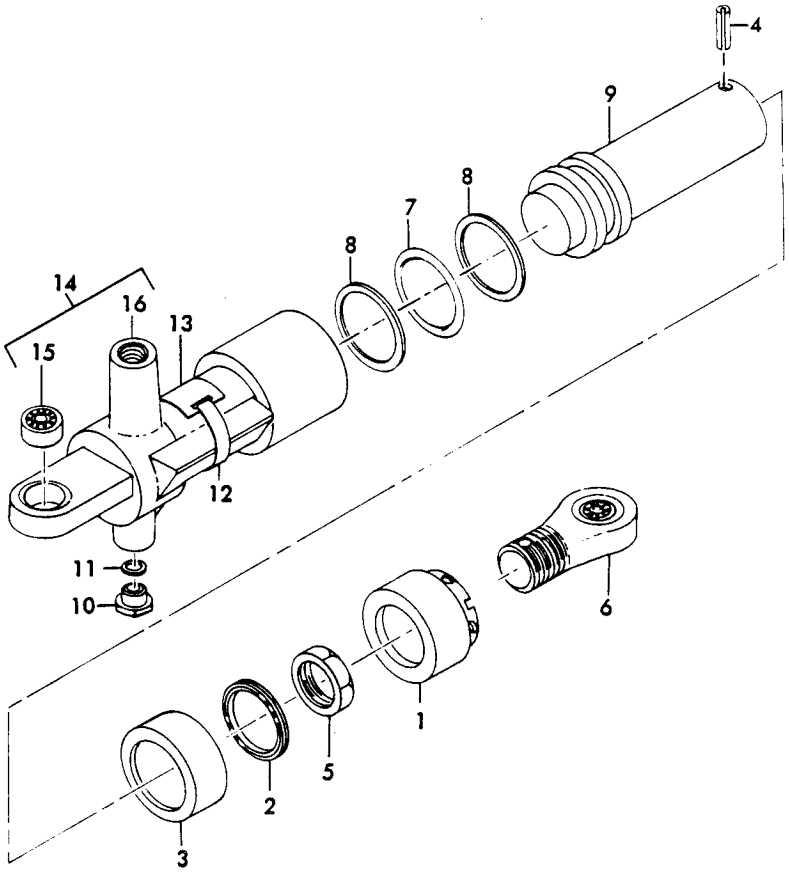
10. STORAGE INSTRUCTIONS

A. Partially fill unit with BMS 3-11 hydraulic fluid. Plug or cap port with Skydrol resistant packing and plug or cap.

B. Wrap unit in vapor barrier paper. Attach tag showing test date and cure date for packings. Tag should carry following information: "This unit contains BMS 3-11 hydraulic fluid."

C. For further information, refer to "Temporary Protective Coatings," Subject 20-44-02.

11. ILLUSTRATED PARTS LIST



Tab Lock Actuator Assembly
Figure 4

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
4-					
	65-44751-1		ACTUATOR ASSY, TAB LOCK	A	RF
	65-44751-2		ACTUATOR ASSY, TAB LOCK	B	RF
	65-44751-3		ACTUATOR ASSY, TAB LOCK *[1]	C	RF
1	69-35682-1		. NUT		1
2	BACS34A2		. SCRAPER		1
3	AJ09A104		. BUSHING, V50294 *[2]		1
3	BJ18TF32S20		. BUSHING, V21335 *[2]		1
3	DBA9-028		. BUSHING, V81376 *[2]		1
3	KJN9-5		. BUSHING, V97613 *[2]		1
3	NH09-206A		. BUSHING, V15860 *[2]		1
3	PBR09A20BA		. BUSHING, V73134 *[2]		1
3	YTS578		. BUSHING, V77896 *[2]		1
3	90592		. BUSHING, V09455 *[2]		1
4	MS16562-195		. PIN, SPRING	AB	1
4	MS16562-193		. PIN, SPRING	C	1
4	MS16562-195		. PIN, SPRING (OPT)	C	1
5	NAS509-5		. NUT		1
5	NAS1423-5		. NUT (OPT)		1
6	ADNE4-223		. BEARING, ROD END, V15860 *[3]		1
6	KR4M07		. BEARING, ROD END, V50632 *[3]		1
6	MSSRR45-14BAY		. BEARING, ROD END, V73134 *[3]		1
6	01-820-04E005		. BEARING, ROD END, V09455 *[3]		1
6	ART4E124		. BEARING, ROD END, V50294 *[4](OPT)		1
6	DREM4-329		. BEARING, ROD END, V81376 *[4](OPT)		1
6	KBNE4-86		. BEARING, ROD END, V97613 *[4](OPT)		1
6	MSSR45-14BAY		. BEARING, ROD END, V73134 *[4](OPT)		1
6	YTM124N		. BEARING, ROD END, V77896 *[4](OPT)		1
6	177179		. BEARING, ROD END, V09455 *[4](OPT)		1
7	7114MT-952-T		. SEAL ASSY, V72902		1
7	NAS1611-114		. O-RING (WITH MS28782-12 OPT TO 7114MT-952-T)		1 1
8	MS28782-12		. RING (WITH NAS1611-114 OPT TO 7114MT-952-T)		2 1
9	69-35680-1		. PISTON		1
10	AN814-2DL		. BLEEDER		1
11	NAS1612-2		. O-RING		1
12	69-35587-1		. STRAP		1
13	BACN12A3MT		. NAMEPLATE		1
14	65-44753-1		. CYLINDER ASSY	A	1
14	65-44753-4		. CYLINDER ASSY	BC	1
15	MS21232-5		DELETED		

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
4-					
15	MS14101-5		. . BEARING, SPHERICAL (REPLS 10-60545-112S)		1
15	SBS10ATC24		. . BEARING, V21335 *[5]		1
15	KSBG5N5		. . BEARING, V97613 *[5]		1
15	YTA119		. . BEARING, V77896 *[5]		1
15	BLFN-5-003		. . BEARING, V81376 *[5]		1
15	03-728-0312		. . BEARING, V09455 *[5]		
16	65-44753-2		. . CYLINDER	A	1
16	65-44753-5		. . CYLINDER	BC	1

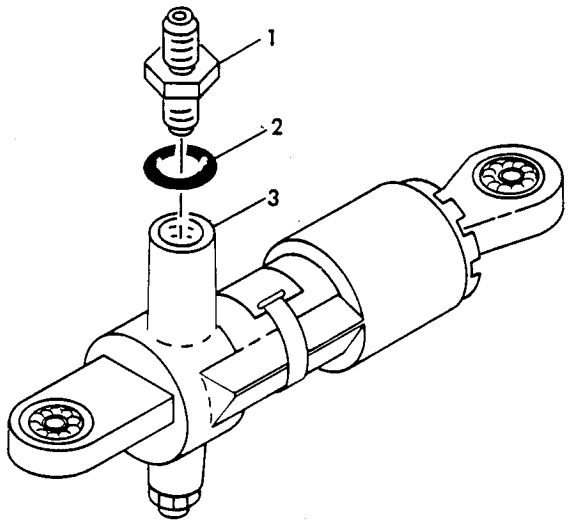
*[1] IDENTICAL TO 65-44751-2 EXCEPT FOR EXTENDED LENGTH

*[2] BOEING 10-60516-249

*[3] BOEING 10-60779-8A

*[4] BOEING 10-60779-8

*[5] BOEING 10-60545-112S (REPLD BY MS14105-5)



Tab Lock Actuator Assembly
Figure 5

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
5-					
	65-45190-4		ACTUATOR ASSY, TAB LOCK	A	RF
	65-45190-9		ACTUATOR ASSY, TAB LOCK	B	RF
	65-45190-10		ACTUATOR ASSY, TAB LOCK	C	RF
1	MS21902-4		. UNION		1
2	NAS1612-4		. PACKING, O-RING		1
3	65-44751-1		. ACTUATOR ASSY	A	1
3	65-44751-2		. ACTUATOR ASSY	B	1
3	65-44751-3		. ACTUATOR ASSY	C	1

VENDORS

V09455 LEAR SIEGLER INCORPORATED, TRANSPORT DYNAMICS DIVISION, 3131 WEST SEGERSTROM AVENUE, SANTA ANA, CALIFORNIA 92702

V15860 NEW HAMPSHIRE BALL BEARINGS, INC., ASTRO DIVISION, 155 LEXINGTON AVENUE, LACONIA, NEW HAMPSHIRE 03246

V21335 THE FAFNIR BEARING COMPANY, DIVISION OF TEXTRON INCORPORATED, 37 BOOTH STREET, NEW BRITAIN, CONNECTICUT 06050

V50294 NMB INC., 9730 INDEPENDENCE AVENUE, CHATSWORTH, CALIFORNIA 91311

V50632 KAMATICS CORP., SUBSIDIARY OF KAMAN CORP., 1335 BLUE HILLS ROAD, BLOOMFIELD, CONNECTICUT 06002

V72902 GREENE, TWEED AND CO., 320 ELM AVENUE, NORTH WALES, PENNSYLVANIA 19454

V73134 HEIM DIVISION, INCOM INTERNATIONAL INC., 60 ROUND HILL ROAD, FAIRFIELD, CONNECTICUT 06430

V77896 REXNORD INCORPORATED, BEARING DIVISION, 2400, CURTISS STREET, DOWNER'S GROVE, ILLINOIS 60515

V81376 SOUTHWEST PRODUCTS COMPANY, 1705 SOUTH MOUNTAIN AVENUE, MONROVIA, CALIFORNIA 91016

V97613 SARGENT INDUSTRIES, KAHR BEARING DIVISION, 3010 NORTH SAN FERNANDO BOULEVARD, BURBANK, CALIFORNIA 91503