TO: ALL HOLDERS OF FORWARD ENTRY DOOR BODY SIDE TORQUE TUBE BUILDUP OVERHAUL MANUAL, 52-46-11

REVISION NO. 4, DATED MAR 1/04

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
Added clarifications and updated callouts	X			X	X	X						X	
Incorporated SB 737-52-1044, which examines or replaces spigots 65-29996-1, -3				X								X	

FORWARD ENTRY DOOR BODY SIDE TORQUE TUBE BUILDUP

52-46-11

BOEING P/N NO ASSIGNED PART NUMBER

AIRLINE P/N

THE FOLLOWING DIRECTIVES APPLY TO THIS SUBJECT:

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVES	DATE DIRECTIVE INCORPORATED INTO TEXT
737-52-1044		AD 73-9-4	Mar 1/04

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
52-46-11						
*	T-1	Mar 1/04				
	T-2	BLANK				
*	LEP-1	Mar 1/04				
	LEP-2	BLANK				
*	T/C-1	Mar 1/04				
	T/C-2	BLANK				
*	1	Mar 1/04				
*	2	Mar 1/04				
*	3	Mar 1/04				
*	4	Mar 1/04				
*	5	Mar 1/04				
*	6	Mar 1/04				
*	7	Mar 1/04				
*	8	Mar 1/04				
*	9	Mar 1/04				
*	10	Mar 1/04				
	11	Nov 1/00				
	12	Nov 1/00				
	13	BLANK				
	14	Nov 1/00				
*	15	Mar 1/04				
	16	Nov 1/00				
*	17	Mar 1/04				
	18	Nov 1/00				
*	19	Mar 1/04				
	20	BLANK				

TABLE OF CONTENTS

*[1] Special instructions are not necessary. Use standard industry practices.
*[2] Also use the instructions in SOPM 20-30-03.
*[3] Also use the instructions in SOPM 20-44-02 and 20-70-01.

FORWARD ENTRY DOOR BODY SIDE TORQUE TUBE BUILDUP

1. DESCRIPTION AND OPERATION

A. Description

(1) The forward entry door body side torque tube buildup has three configurations (IPL Fig. 3, 4, 5). These can include a torque tube or shaft, extensions, upper and lower spigots, a sleeve, and associated fasteners.

B. Operation

(1) The forward entry door body side torque tube buildup is located in the fuselage of the airplane and is part of the linkage that opens and closes the forward entry door.

C. Leading Particulars (approximate)

(1) Length -- 26 inches

(2) Diameter -- 3 inches

(3) Weight -- 5 pounds

2. DISASSEMBLY

A. Torque tube buildup (Fig. 4)

(1) Remove the spigot (14).

(2) Remove the bolt (9), washers (10,12), spacer (11), nut (13), and spigot (8).

(3) Remove the bolt (3), washers (4,6), spacer (5), nut (7), and sleeve (2).

B. Torque Tube Buildup (Fig. 5)

(1) Remove the spigot (7).

(2) Remove the bolt (9), washers (10,12), spacer (11), nut (13), and lower torque shaft extension (8).

(3) Remove the bolt (16), washer (17,19), spacer (18), nut (20), and spigot (15).

(4) Remove the bolt (2), washers (3,5), spacer (4), nut (6), sleeve (1), and torque shaft extension (14).

C. Torque tube buildup (Fig. 6)

(1) Remove the bolts (5), washers (15, 25), nuts (45), and bushings (55).

(2) Remove the upper spigot (65) and the lower spigot (70).

(3) Remove the bolt (10), washers (20, 35, 40), nut (50), and bushing (60).

(4) Remove the upper shaft tube (75).

3. INSPECTION/CHECK

A. Examine all parts for defects by standard industry practices.

B. Magnetic particle check, Class B, per SOPM 20-20-01 -- Spigots (8, 14, Fig. 4), (7, 15, Fig. 5), (65, 70, Fig. 6). Shaft tubes (75, 80, Fig. 6).

C. Examine spigots 65-29996-1, -3 as specified in SB 737-52-1044.

4. REPAIR

A. Repair

(1) Use standard industry practices for repair of these components.

B. Refinish (Fig. 1)

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

(1) Torque tube (1, Fig. 4) -- Chemical treat and apply BMS 10-11, Type 1 primer (SRF-2.901) on all interior and exterior surfaces. No primer on surfaces faying with spigots (8,14). Apply BMS 10-86, Type 1 or 2 white coating (F-14.9624, which replaces SRF 14.9624) on exterior surfaces but not on holes or ends of tube. Material: Al alloy.

(2) Spigot (8, 14, Fig. 4; 7, 15, Fig. 5; 65, 70, Fig. 6) (Fig. 1)

(a) 65-29996-1, -3, -4 -- Nickel plate (0.0015-inch minimum thickness) (F-1.913) all surfaces unless shown differently. Chrome plate (0.003-inch minimum thickness) (F-1.842) as shown on interior surfaces. Apply MIL-C-11796, class 1 corrosion preventive compound (F-1.73) as shown. Material: 4340 steel, 160-180 ksi.

(b) 65-86207-4 thru -9 -- Passivate (F-8.07). Cadmium plate (0.0002-0.0004 inch) (F-15.25) as shown. Material: 15-5PH CRES, 160-180 ksi.

(c) 141A6271-1, -2 -- Passivate (F-17.25). Material: 15-5PH CRES, 180-200 ksi.

(3) Lower torque shaft extension (8, Fig. 5) -- Chemical treat and apply BMS 10-11, Type 1 primer (SRF-2.901) on all exterior surfaces. No primer on 0.999 inch ID or on internal splines. Material: Al alloy.

(4) Torque shaft extension (14, Fig. 5), torque shaft (21, Fig. 5) -- Chemical treat and apply BMS 10-11, Type 1 primer on all interior and exterior surfaces (SRF-2.901), unless shown. Apply BMS 10-86, Type 1 white coating (F-14.9624, which replaces SRF-14.9624), as shown. Material: Al alloy.

(5) Shaft tubes (75, 80, Fig. 6) -- Passivate (F-17.25). Material: 15-5PH CRES, 180-200 ksi.

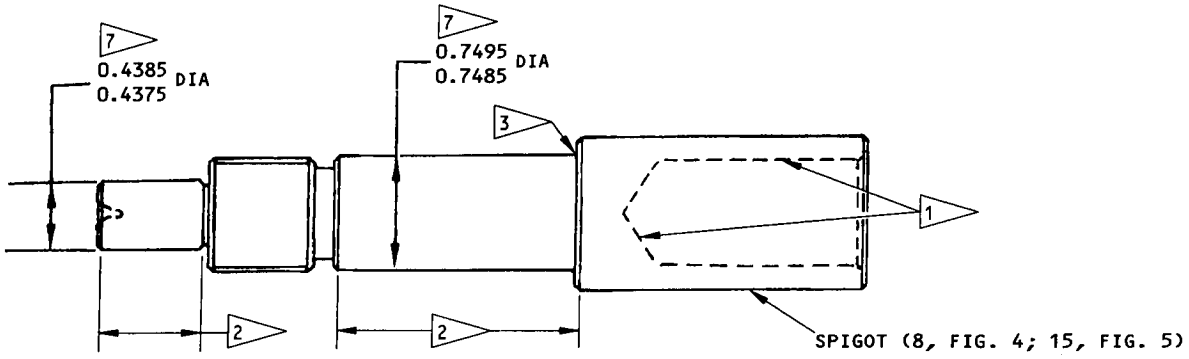
C. Materials

NOTE: Equivalent substitutes can be used.

(1) Coating, teflon filled -- BMS 10-86, Type 1, white (SOPM 20-60-02)

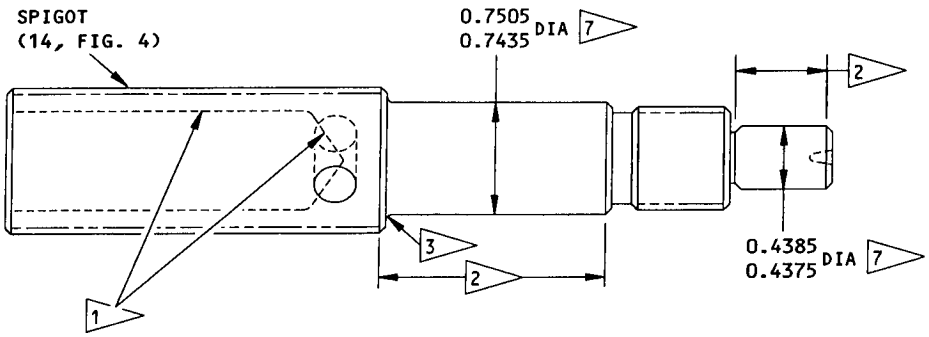
(2) Compound, corrosion preventive -- MIL-C-11796, class 1 (SOPM 20-60-02)

(3) Primer -- BMS 10-11, Type 1 (SOPM 20-60-02)

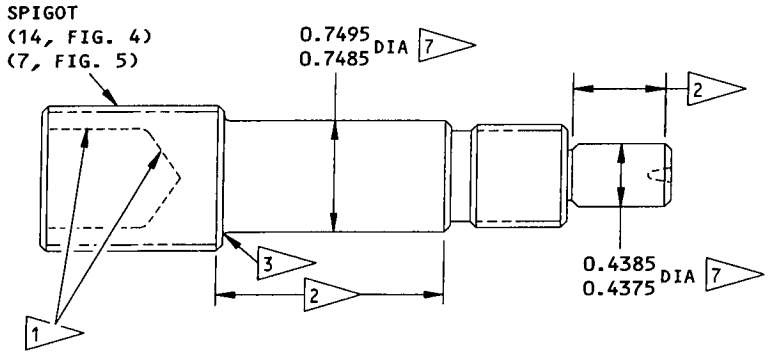


65-29996-1

Refinish Diagram
Figure 1 (Sheet 1)

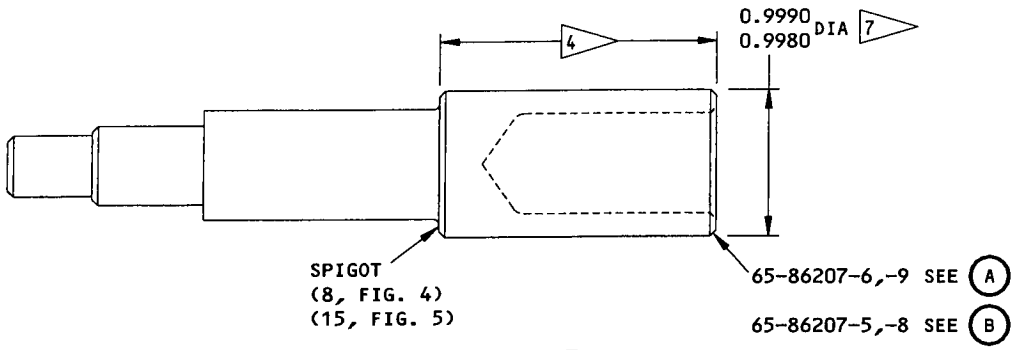


65-29996-3

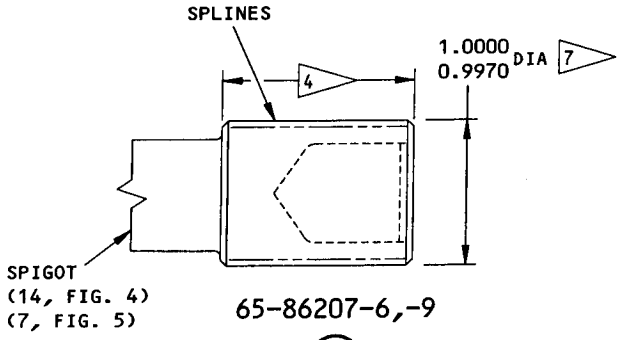


65-29996-4

Refinish Diagram
Figure 1 (Sheet 2)

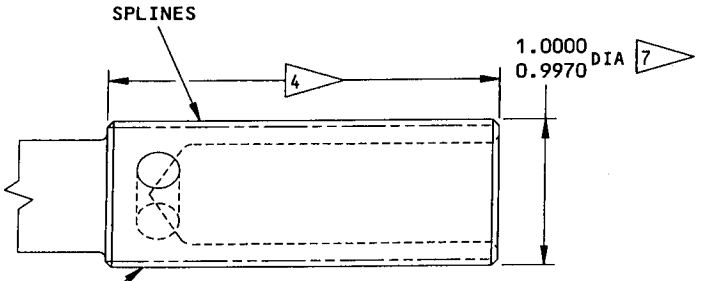


65-86207-4,-7 SHOWN



65-86207-6,-9

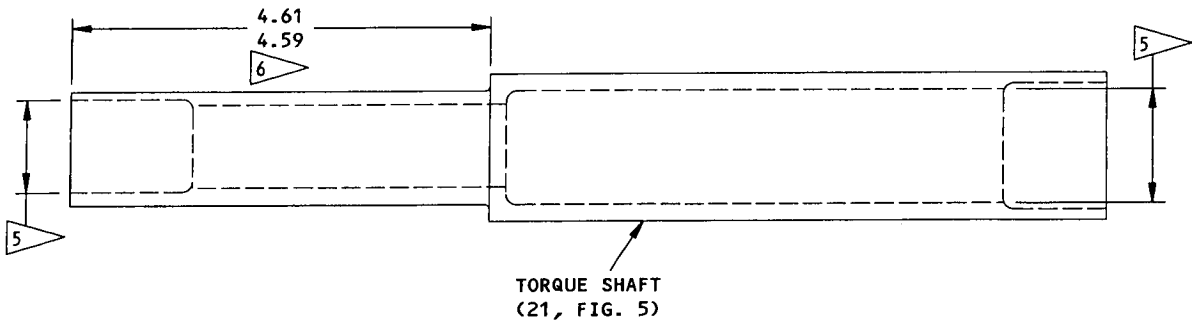
A



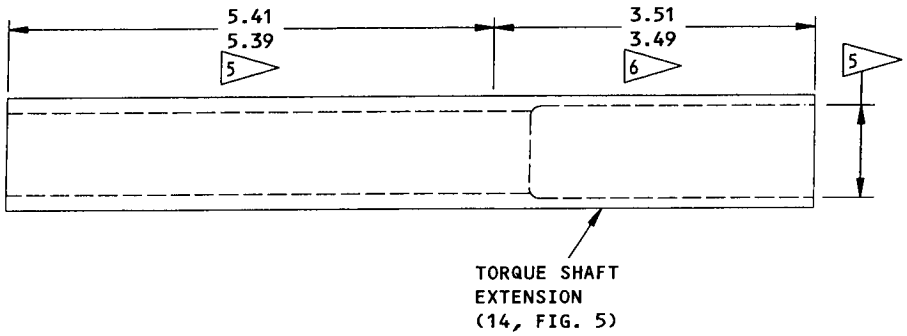
65-86207-5,-8

B

Refinish Diagram
Figure 1 (Sheet 3)



69-45286-1



69-45517-1

ALL DIMENSIONS ARE IN INCHES

1> APPLY MIL-C-11796, CLASS 1 CORROSION PREVENTIVE COMPOUND.
2> CHROME PLATE THIS SURFACE
3> CHROME THINNING PERMITTED IN RADIUS
4> CADMIUM PLATE THIS SURFACE
5> NO PRIMER ON THIS SURFACE
6> APPLY BMS 10-86 COATING TO THIS SURFACE
7> DIMENSION AFTER PLATING

Refinish Diagram
Figure 1 (Sheet 4)

5. ASSEMBLY

A. Torque tube buildup (Fig. 4).

(1) Assemble to dimensions shown in Fig. 2.

(2) Apply a thin layer of BMS 3-33 or MIL-G-23827 grease to mating surfaces between spigots (8,14) and torque tube (1). Then install the spigots. Attach spigot (8) to torque tube with fasteners (9 thru 13).

(3) Install sleeve (2) with fasteners (3 thru 7).

(4) Align a tooth in spigot (14) with a space in shaft (1), and turn these parts to the angle shown.

B. Torque tube buildup (Fig. 5).

(1) Assemble to dimension shown in Fig. 3.

(2) Install torque shaft extension (14) and sleeve (1) with fasteners (2 thru 6).

(3) Install lower torque shaft extension (8) with fasteners (9 thru 13).

(4) Apply a thin layer of MIL-C-16173, grade 2 corrosion preventive compound to mating surfaces between spigot (15) and torque shaft (21) and between spigot (7) and lower torque shaft extension (8).

(5) Align a tooth in the lower spigot (7) with a space in the lower torque shaft extension (8), and turn these parts to the angle shown.

(6) Attach spigot (15) with fasteners (16 thru 20).

C. Torque Tube Buildup (Fig. 6)

(1) Assemble components to dimensions shown in Fig. 3A.

(2) Install the lower shaft tube (80) onto the lower spigot (70) with a thin layer of BMS 3-33 grease.

(3) If you replaced the lower shaft tube (80) and/or the lower spigot (70), drill a 0.3120-0.3160 inch hole through the replacement lower shaft tube (80) and/or the lower spigot (70) as shown in Fig. 3A, section A-A.

(4) Install the bushing (55), bolt (5), washers (15, 25) and nut (45) with a thin layer of BMS 3-33 grease. Tighten bolt (5) to 70-90 pound-inches. Make sure there is partial clamp-up (the bolt does not turn).

(5) Install the upper shaft tube (75) onto the lower shaft tube (80) with a thin layer of BMS 3-33 grease.

(6) If you replaced the upper shaft (75) and/or the lower shaft tube (80), drill a 0.3750-0.3790 inch hole through the replacement upper shaft tube (75) and/or the lower shaft tube (80) as shown in Fig. 3A, section B-B.

(7) Install the bushing (60), bolt (10), washers (20, 35, 40) and nut (50) with a thin layer of BMS 3-33 grease. Tighten the bolt (10) to 70-90 pound-inches. Make sure there is partial clamp-up (the bolt does not turn).

(8) Install the upper spigot (65) onto the upper shaft tube (75) with a thin layer of BMS 3-33 grease.

(9) If you replaced the upper shaft tube (75) and/or the upper spigot (65), drill a 0.3120-0.3160 inch hole through the replacement upper shaft tube (75) and/or the upper spigot (65) as shown in Fig. 3A, section C-C.

(10) Install the bushing (55), bolt (5), washers (15, 25) and nut (45) with a thin layer of BMS 3-33 grease. Tighten the bolt (5) to 70-90 pound-inches. Make sure there is partial clamp-up (the bolt does not turn).

D. Materials

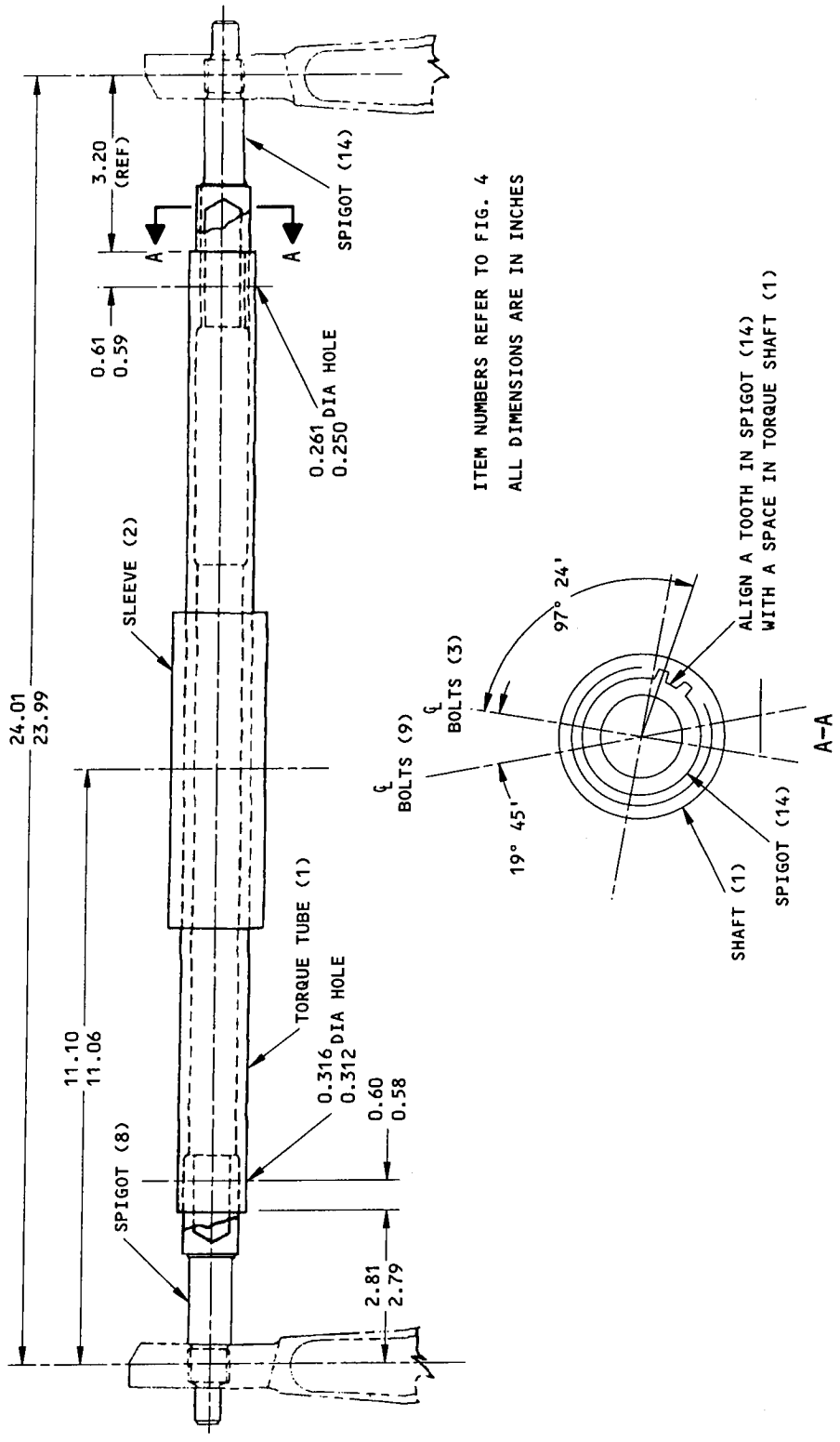
NOTE: Equivalent substitutes can be used.

(1) Grease -- MIL-G-23827 (SOPM 20-60-03)

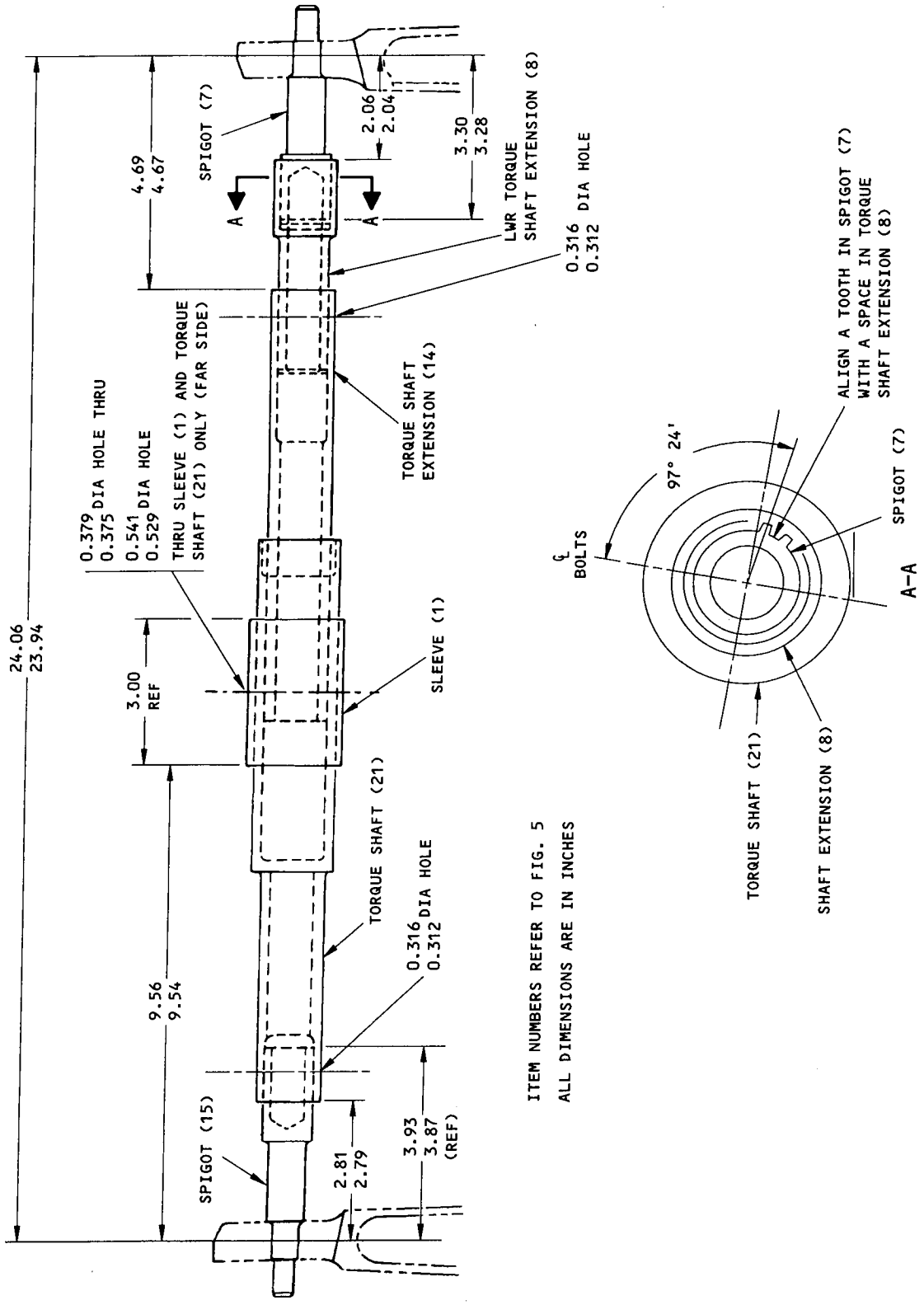
(2) Compound, corrosion preventive -- MIL-C-16173, grade 2 (SOPM 20-60-02)

(3) Solid Film Lubricant -- BMS 3-8, Type 8 (SOPM 20-50-08)

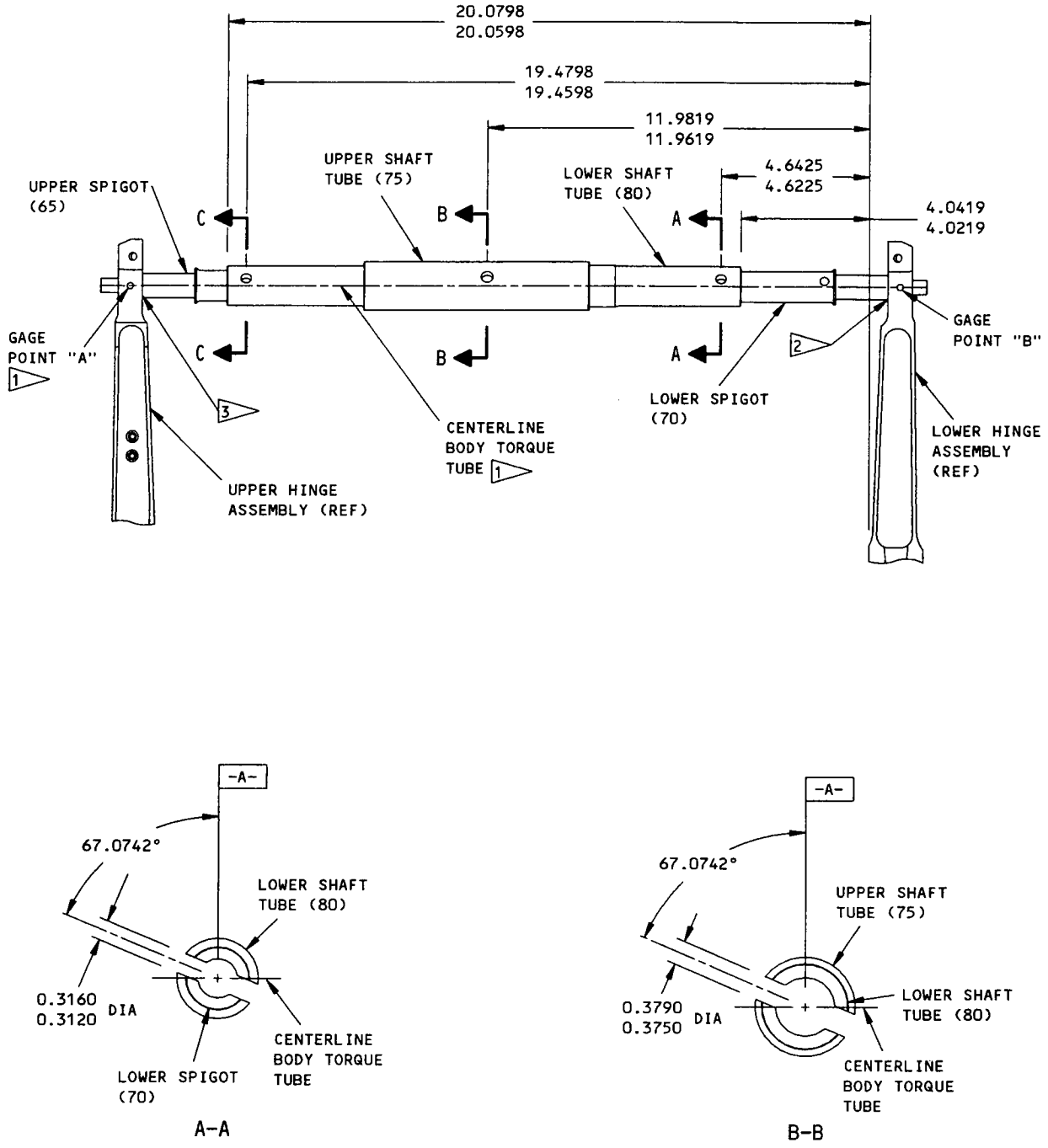
(4) Grease -- BMS 3-33 (SOPM 20-60-03)



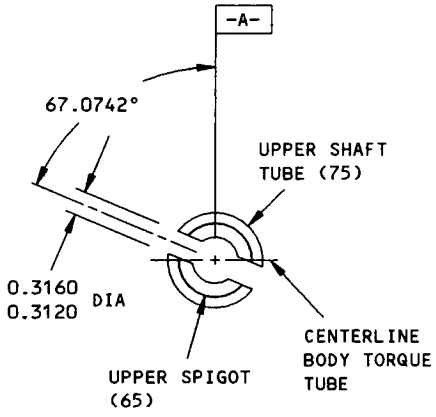
Assembly of Torque Tube Buildup
Figure 2



Assembly of Torque Tube Buildup
Figure 3



Torque Tube Buildup Assembly
Figure 3A (Sheet 1)



C-C

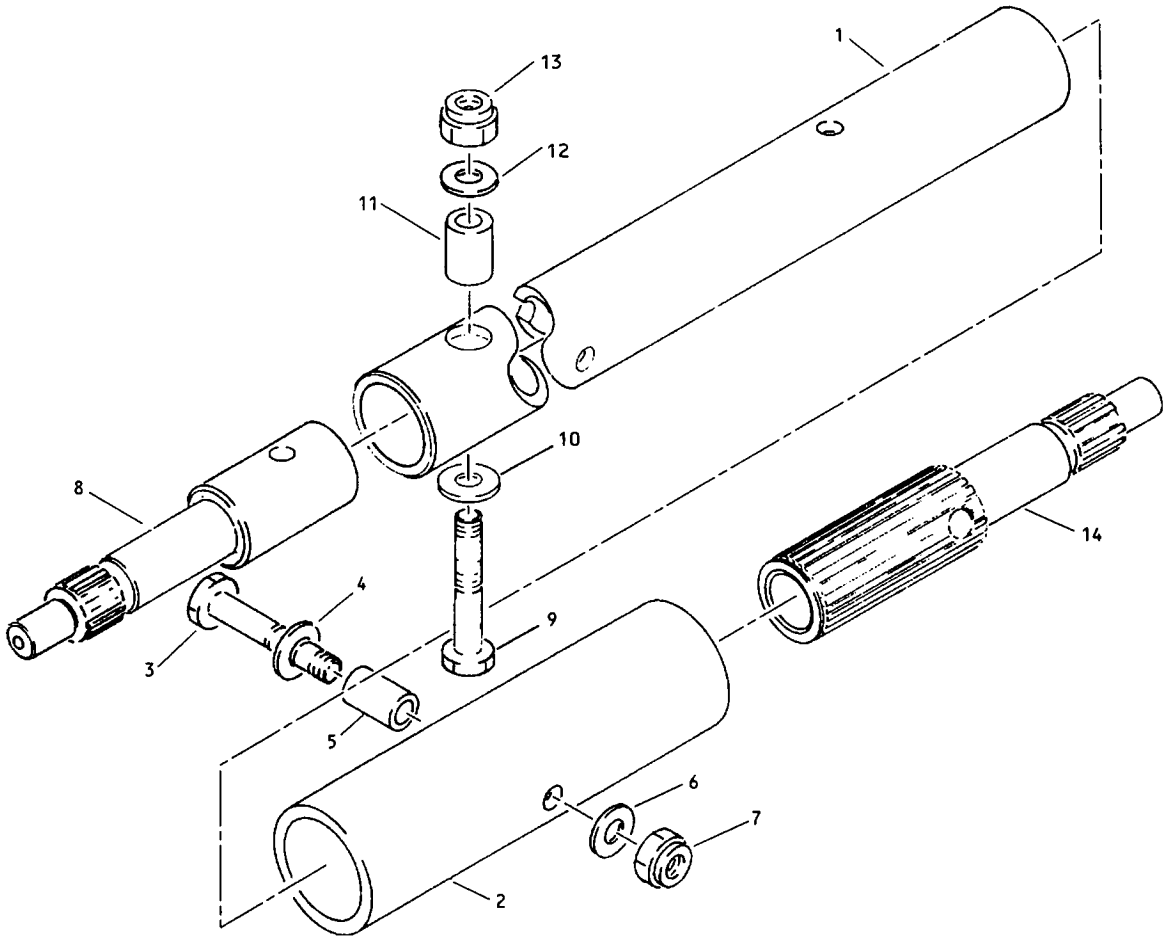
1. REFER TO DRAWING NUMBER 65-86784 FOR GAGE POINTS. TORQUE TUBE CENTERLINES MUST BE PARALLEL TO WITHIN 0.0100 INCH.
2. INSTALL THE LOWER SPIGOT (70) FLUSH AGAINST THE LOWER HINGE ASSEMBLY.
3. INSTALL THE UPPER SPIGOT FLUSH AGAINST THE UPPER HINGE ASSEMBLY.

ITEM NUMBERS REFER TO IPL FIG. 6

ALL DIMENSIONS ARE IN INCHES

Torque Tube Buildup Assembly
Figure 3A (Sheet 2)

6. ILLUSTRATED PARTS LIST

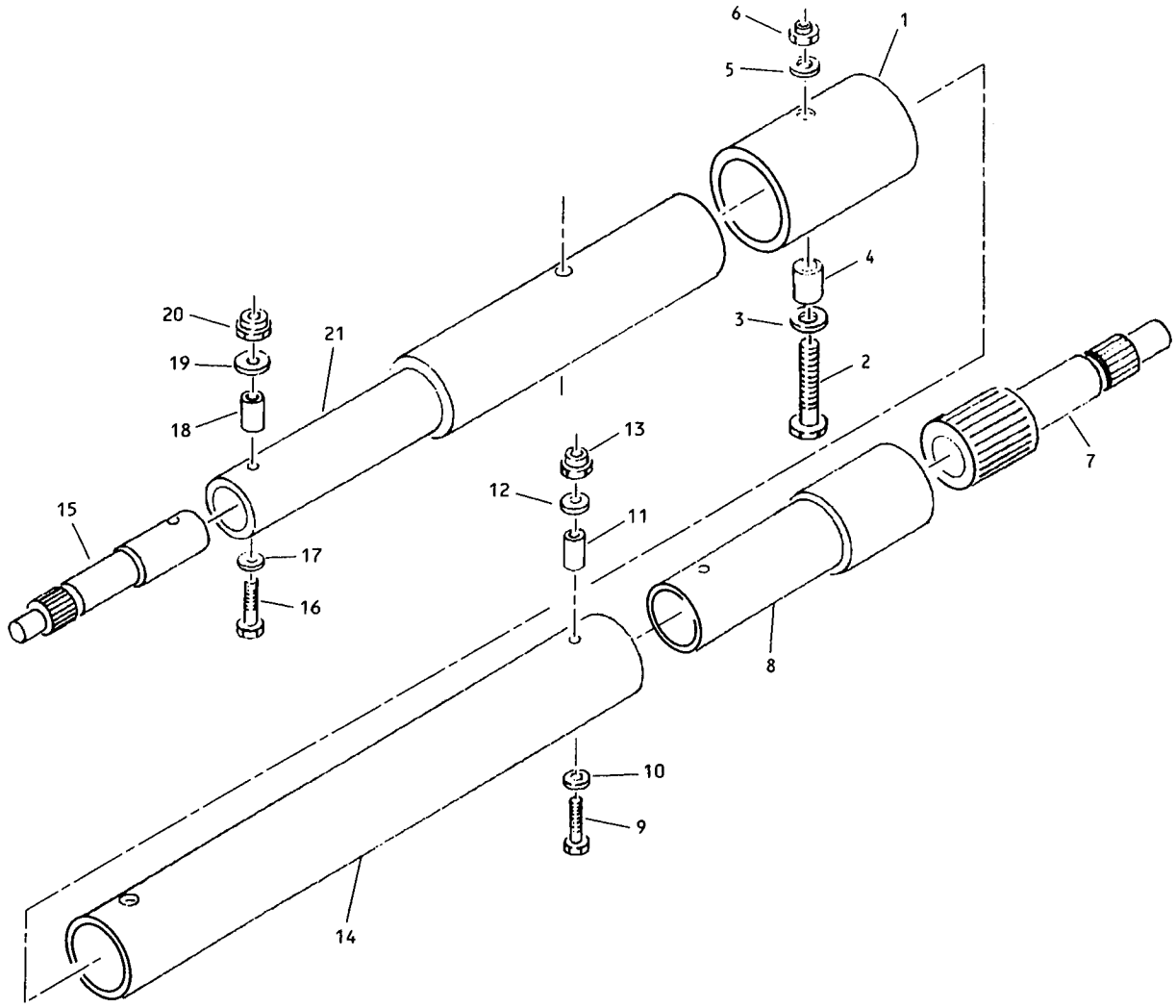


Forward Entry Door Body Side Torque Tube Buildup
Figure 4

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
4-			BODY SIDE TORQUE TUBE BUILDUP - FWD ENTRY DOOR *[1]		RF
1	65-29992-3		. TUBE, TORQUE		1
2	69-24247-3		. SLEEVE		1
3	NAS1105-36		. BOLT		1
4	BACW10P94D		. WASHER		1
5	NAS43DD5-42		. SPACER		1
6	AN960PD516		. WASHER		1
7	NAS679A5		. NUT		1
8	65-29996-1		. SPIGOT, UPR *[2]		1
8	65-86207-7		. SPIGOT, UPR *[2]		1
8	65-86207-4		. SPIGOT, UPR (OPT TO 65-86207-7) *[2]		1
9	NAS1105-29		. BOLT		1
10	AN960PD516		. WASHER		1
11	NAS43DD5-29		. SPACER		1
12	BACW10P94D		. WASHER		1
13	NAS679-A5		. NUT		1
14	65-29996-3		. SPIGOT, LWR *[2] (PRE SB 737-52-1044)		1
14	65-29996-4		. SPIGOT, LWR *[2]		1
14	65-86207-9		. SPIGOT *[2]		1
14	65-86207-8		. SPIGOT, LWR *[2] (POST SB 737-52-1044)		1
14	65-86207-5		. SPIGOT, LWR (OPT TO 65-86207-8) *[2]		1

*[1] USED WITH DOOR ASSEMBLIES 50-7945-105, -119, -138, -155, -159, -178 *[2], -196, -197, -264, -272, -299 *[2]

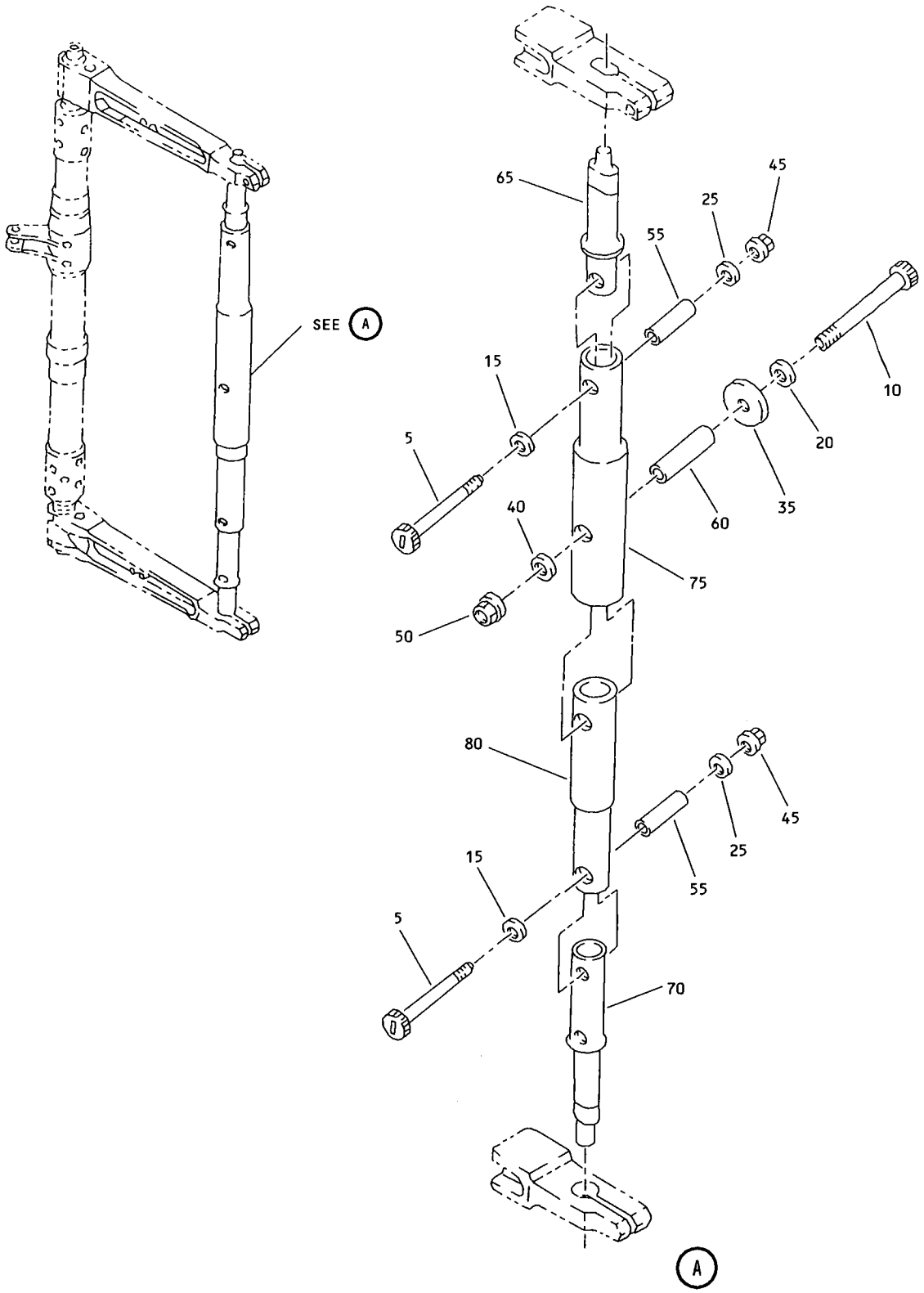
*[2] LIMITED



Forward Entry Door Body Side Torque Tube Buildup
Figure 5

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
5-			BODY SIDE TORQUE TUBE BUILDUP - FWD ENTRY DOOR *[1]		RF
1	69-47344-1		. SLEEVE *[2]		1
1	69-47344-2		. SLEEVE *[2]		1
2	69-45634-1		. BOLT		1
3	BACW10P49AL		. WASHER		1
4	NAS43DD6-44		. SPACER		1
5	AN960PD616		. WASHER		1
6	NAS679A6		. NUT *[2]		1
6	BACN10JC6		. NUT *[2]		1
7	65-29996-4		. SPIGOT, LWR *[2]		1
7	65-86207-9		. SPIGOT, LWR *[2]		1
7	65-86207-6		. SPIGOT, LWR (OPT TO 65-86207-6) *[2]		1
7	65-86207-8		. SPIGOT, LWR *[2]		1
7	65-86207-5		. SPIGOT, LWR (OPT TO 65-86207-8) *[2]		1
8	69-45230-1		. EXTENSION, LWR TORQUE SHAFT		1
9	NAS1105-29		. BOLT		1
10	AN960PD516		. WASHER *[2]		1
11	NAS43DD5-29		. SPACER		1
12	BACW10P95D		. WASHER		1
13	NAS679A5		. NUT *[2]		1
13	BACN10JC5		. NUT *[2]		1
14	69-45517-1		. EXTENSION, TORQUE SHAFT		1
15	65-29996-1		. SPIGOT, UPR *[2] (PRE SB 737-52-1044)		1
15	65-86207-7		. SPIGOT, UPR *[2] (POST SB 737-52-1044)		1
15	65-86207-4		. SPIGOT, UPR (OPT TO 65-86207-7) *[2]		1
16	NAS1105-29		. BOLT		1
17	AN960PD516		. WASHER *[2]		1
18	NAS43DD5-29		. SPACER		1
19	BACW10P94D		. WASHER		1
20	NAS679A5		. NUT *[2]		1
20	BACN10JC5		. NUT *[2]		1
21	69-45286-1		. SHAFT, TORQUE		1

*[1] USED WITH DOOR ASSEMBLIES 50-7945-114, -152, -177, -178 *[2], -194
*[2] LIMITED



Forward Entry Door Body Side Torque Tube Buildup
Figure 6

FIG. & ITEM NO.	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USE CODE	QTY PER ASSY
6-			BODY SIDE TORQUE TUBE BUILDUP - FWD ENTRY DOOR *[1]		
5	BACB30LT5U31		. BOLT		2
10	BACB30LT6U40		. BOLT		1
15	BACW10BP5ACU		. WASHER		2
20	BACW10BP6ACU		. WASHER		1
25	NAS1149C0563R		. WASHER		2
35	AN970-6		. WASHER		1
40	NAS1149C0663R		. WASHER		1
45	H52732-5CM		. NUT (V15653) (SPEC BACN10YR5CM) (OPT PLH55CM (V62554))		2
50	H52732-6CM		. NUT (V15653) (SPEC BACN10YR6CM) (OPT PLH56CM (V62554))		1
55	BACB28Z5-063		. BUSHING		2
60	BACB28Z6-075		. BUSHING		1
65	141A6271-1		. SPIGOT - UPR *[3]		1
70	141A6271-2		. SPIGOT - LWR *[3]		1
75	141A6272-1		. TUBE - UPR SHAFT *[3]		1
80	141A6272-2		. TUBE - LWR SHAFT *[3]		1

*[1] USED WITH ASSEMBLY 50-7945-299 *[2]

*[2] LIMITED

*[3] THE 65C37782-1 HINGE ASSEMBLY IS A MATCHED DRILLED ASSEMBLY. SOME OF THE COMPONENTS OF THE 65C37782-1 HINGE ASSEMBLY ARE USED IN THE BODY OF THE AIRPLANE AND SOME ARE USED IN THE FORWARD ENTRY DOOR ASSEMBLY. THE COMPONENTS INSTALLED IN THE FORWARD ENTRY DOOR CAN BE FOUND IN OHM 52-16-01. THIS OHM (52-46-11) IDENTIFIES THE COMPONENTS INSTALLED IN THE BODY OF THE AIRPLANE.