COMPONENT MAINTENANCE MANUAL WITH ILLUSTRATED PARTS LIST

TORQUE TUBE ASSEMBLY

PART NUMBER 256A3710–1, –2, –3, –4, –5, –6, –7, 256A3720–1, –2, –3, –4, –5, –6

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COMPONENT MAINTENANCE MANUAL

Revision No. 7
Jul 01/2009

To: All holders of TORQUE TUBE ASSEMBLY 27-55-76.

Attached is the current revision to this COMPONENT MAINTENANCE MANUAL

The COMPONENT MAINTENANCE MANUAL is furnished either as a printed manual, on microfilm, or digital products, or any combination of the three. This revision replaces all previous microfilm cartridges or digital products. All microfilm and digital products are reissued with all obsolete data deleted and all updated pages added.

For printed manuals, changes are indicated on the List of Effective Pages (LEP). The pages which are revised will be identified on the LEP by an R (Revised), A (Added), O (Overflow, i.e. changes to the document structure and/or page layout), or D (Deleted). Each page in the LEP is identified by Chapter-Section-Subject number, page number and page date.

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Location of Change	Description of Change
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A = Added, R = Revised, D = Deleted, O = Overflow

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TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL

COMPONENT MAINTENANCE MANUAL

All revisions to this manual will be accompanied by transmittal sheet bearing the revision number. Enter the revision number in numerical order, together with the revision date, the date filed and the initials of the person filing.

Revision		Filed	
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Temporary Revision		Inserted		Removed	
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Temporary Revision		Inserted		Removed	
Date	Initials	Number	Date	Date	Initials

Temporary Revision		Inserted		Removed	
Number	Date	Date	Initials	Date	Initials

Temporary Revision		Inserted		Removed	
Date	Initials	Number	Date	Date	Initials

INTRODUCTION

1. General

A. The instructions in this manual supply the data necessary to do the maintenance functions together with the test, fault isolation, repair, and replacement of the defective parts.

B. This manual is divided into different parts:

(1) Title Page

(2) Transmittal Letter

(3) Highlights

(4) List of Effective Pages

(5) Table of Contents

(6) Temporary Revision & Service Bulletin Record

(7) Record of Revisions

(8) Record of Temporary Revisions

(9) Introduction

(10) Procedures & IPL Sections

C. Components that can be repaired have a different repair number for each specified repair. To find the repair number location of a component, look in the Repair-General procedure at the beginning of the REPAIR section. The Repair-General procedure also has an explanation of the True Position Dimension symbols used.

D. All dimensions, measures, quantities and weights included are in English units. When metric equivalents are given they will be in the parentheses that follow the English units.

E. The introduction to the Illustrated Parts List (IPL) shows how the IPL data is used.

F. Design changes, optional parts, configuration differences and Service Bulletin modifications may cause different part numbers. These part numbers are identified in the IPL with an alphabetical letter which is added to the end of the basic item number. This new item number is referred to as an alpha-variant. Throughout the manual, IPL basic item number references also apply to alpha-variants unless shown differently.

G. The tool reference numbers found in the individual procedures and in the Special Tools, Fixtures, and Equipment section are used to identify if a tool is a standard tool (STD-XXXX), a commercial tool (COM-XXXX), or a Special Tool (SPL-XXXX). This reference number is also used to distinguish between tools with similar names in the same procedure. These reference numbers are for use in the documentation only. They are not to be used for ordering tools.

TORQUE TUBE ASSEMBLY - DESCRIPTION AND OPERATION

1. Description

A. The torque tube assemblies are used in the trailing-edge flap system. The torque tube assembly consists of steel end fittings that are riveted to an aluminum tube. Some torque tube assemblies in this manual consist of aluminum tube with welded end fittings. The torque tubes transmit power from the flap power drive unit, through angle gearboxes, to the flap transmissions.

2. Leading Particulars (Approximate)

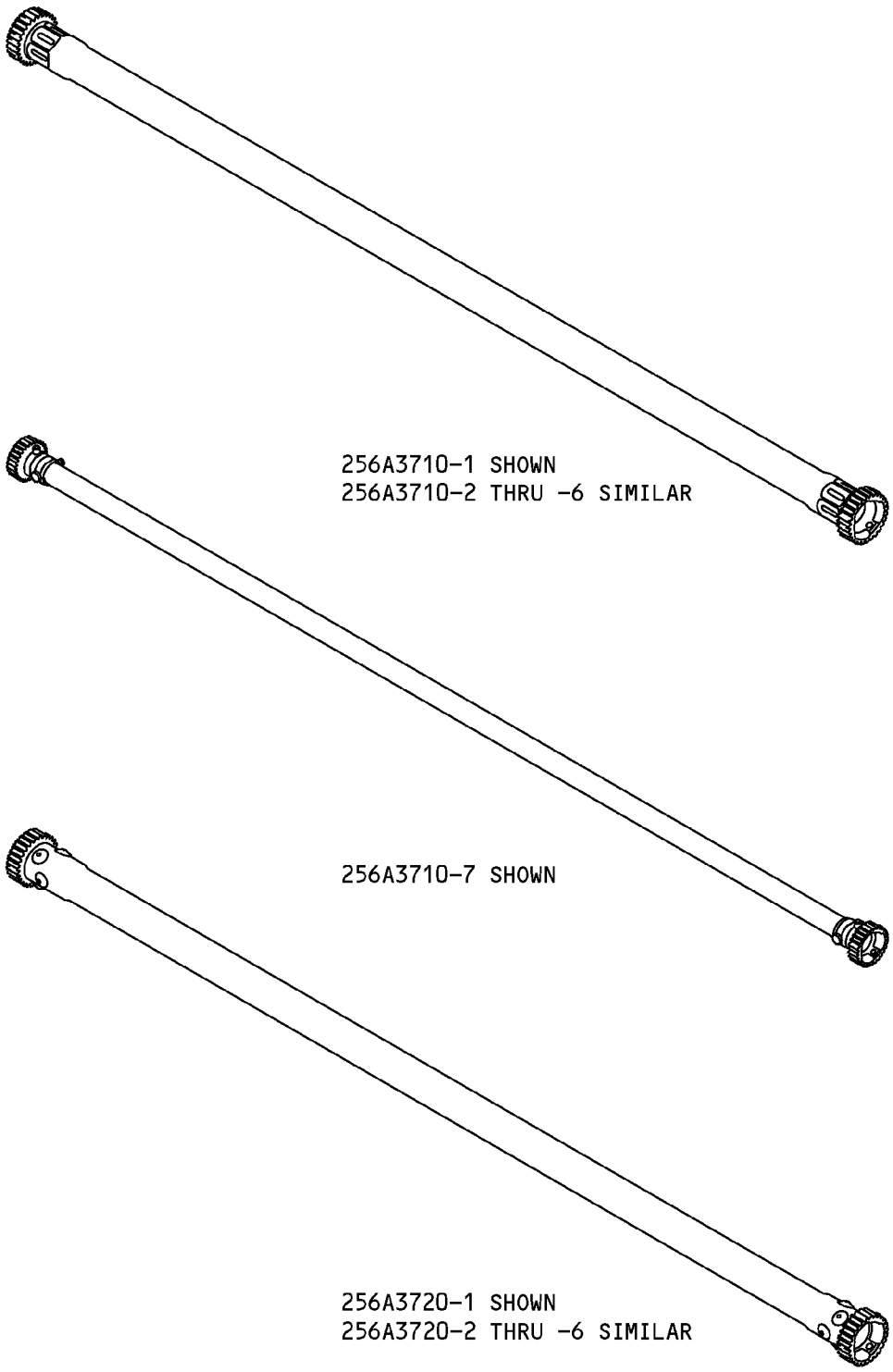
A. Diameter – 1.75 inches

B. Length:

- 256A3710–1 – 35.0 inches
- 256A3710-2 – 46.0 inches
- 256A3710-3 – 37.0 inches
- 256A3710-4 – 38.0 inches
- 256A3710-5 – 12.0 inches
- 256A3710-6 – 68.0 inches
- 256A3710-7 – 47.0 inches
- 256A3720-1 – 35.0 inches
- 256A3720-2 – 46.0 inches
- 256A3720-3 – 37.0 inches
- 256A3720-4 – 38.0 inches
- 256A3720-5 – 12.0 inches
- 256A3720-6 – 68.0 inches

C. Weight:

- 256A3710-1 – 1.52 pounds
- 256A3710-2 – 1.84 pounds
- 256A3710-3 – 1.58 pounds
- 256A3710-4 – 1.62 pounds
- 256A3710-5 – 0.82 pounds
- 256A3710-6 – 2.53 pounds
- 256A3710-7 – 2.30 pounds
- 256A3720-1 – 1.26 pounds
- 256A3720-2 – 1.58 pounds
- 256A3720-3 – 1.32 pounds
- 256A3720-4 – 1.36 pounds
- 256A3720-5 – 0.56 pounds
- 256A3720-6 – 2.27 pounds



Torque Tube Assemblies
Figure 1

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TESTING AND FAULT ISOLATION

(NOT APPLICABLE)

(NOT APPLICABLE)

(NOT APPLICABLE)

CHECK

1. General

A. This procedure has the data necessary to find defects in the material of the specified parts.

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 and IPL Figure 2 for item numbers.

2. Check

A. References

Reference	Title
SOPM 20-20-01	MAGNETIC PARTICLE INSPECTION
SOPM 20-20-02	PENETRANT METHODS OF INSPECTION

B. Procedures

(1) Use standard industry procedures to do a visual check of all the parts for defects. Do the penetrant or magnetic particle check if the visual check shows possible damage or if you suspect possible damage on the parts listed below:

(2) Do a magnetic particle check (SOPM 20-20-01) of these parts:

(a) End Fitting Assembly (IPL Figure 1, 20)

(b) End Fitting Assembly (IPL Figure 2, 10)

(3) Do a penetrant check (SOPM 20-20-02) at the formed section of these parts only:

(a) Torque Tube Assembly (IPL Figure 1, 1A)

REPAIR

1. General

A. Instructions for repair, refinish, and replacement of the specified subassembly parts are included in each REPAIR when applicable:

Table 601:

PART NUMBER	NAME	REPAIR
—	REFINISH OF OTHER PARTS	1-1
256A3710-1 thru -6	TORQUE TUBE ASSEMBLY	2-1
256A3710-7	TORQUE TUBE ASSEMBLY	3-1
256A3742-2 256A3749-1	END FITTING ASSEMBLY	4-1

2. Dimensioning Symbols

A. Standard True Position Dimensioning Symbols used in the applicable repair procedures are shown in REPAIR-GENERAL, Figure 601.

—	STRAIGHTNESS
▱	FLATNESS
⊥	PERPENDICULARITY (OR SQUARENESS)
//	PARALLELISM
○	ROUNDNESS
⌭	CYLINDRICITY
⌒	PROFILE OF A LINE
⌓	PROFILE OF A SURFACE
◎	CONCENTRICITY
⌯	SYMMETRY
∠	ANGULARITY
↗	RUNOUT
↗↗	TOTAL RUNOUT
⌴	COUNTERBORE OR SPOTFACE
∨	COUNTERSINK
⌖	THEORETICAL EXACT POSITION OF A FEATURE (TRUE POSITION)
Ø	DIAMETER
S Ø	SPHERICAL DIAMETER
R	RADIUS
SR	SPHERICAL RADIUS
()	REFERENCE
BASIC (BSC) OR [DIM]	A THEORETICALLY EXACT DIMENSION USED TO DESCRIBE SIZE, SHAPE OR LOCATION OF A FEATURE. FROM THIS FEATURE PERMISSIBLE VARIATIONS ARE ESTABLISHED BY TOLERANCES ON OTHER DIMENSIONS OR NOTES.
[-A-]	DATUM
(M)	MAXIMUM MATERIAL CONDITION (MMC)
(L)	LEAST MATERIAL CONDITION (LMC)
(S)	REGARDLESS OF FEATURE SIZE (RFS)
(P)	PROJECTED TOLERANCE ZONE
FIM	FULL INDICATOR MOVEMENT

EXAMPLES

— | 0.002	STRAIGHT WITHIN 0.002
⊥ | 0.002 | B	PERPENDICULAR TO DATUM B WITHIN 0.002
// | 0.002 | A	PARALLEL TO DATUM A WITHIN 0.002
○ | 0.002	ROUND WITHIN 0.002
⌭ | 0.010	CYLINDRICAL SURFACE MUST LIE BETWEEN TWO CONCENTRIC CYLINDERS, ONE OF WHICH HAS A RADIUS 0.010 INCH GREATER THAN THE OTHER
⌒ | 0.006 | A	EACH LINE ELEMENT OF THE SURFACE AT ANY CROSS SECTION MUST LIE BETWEEN TWO PROFILE BOUNDARIES 0.006 INCH APART RELATIVE TO DATUM A
⌓ | 0.020 | A	SURFACES MUST LIE WITHIN PARALLEL BOUNDARIES 0.020 INCH APART AND EQUALLY DISPOSED ABOUT TRUE PROFILE
◎ | Ø 0.0005 | C	CONCENTRIC TO DATUM C WITHIN 0.0005 DIAMETER
⌯ | 0.010 | A	SYMMETRICAL WITH DATUM A WITHIN 0.010
∠ | 0.005 | A	ANGULAR TOLERANCE 0.005 WITH DATUM A
⌖ | Ø 0.002 (S) | B	LOCATED AT TRUE POSITION WITHIN 0.002 DIA RELATIVE TO DATUM B, REGARDLESS OF FEATURE SIZE
⊥ | Ø 0.010 (M) | A 0.510 (P)	AXIS IS TOTALLY WITHIN A CYLINDER OF 0.010 INCH DIAMETER, PERPENDICULAR TO DATUM A, AND EXTENDING 0.510 INCH ABOVE DATUM A, MAXIMUM MATERIAL CONDITION
2.000 OR 2.000 BSC	THEORETICALLY EXACT DIMENSION IS 2.000

True Position Dimensioning Symbols
Figure 601

REFINISH OF OTHER PARTS - REPAIR 1-1

1. General

A. This procedure has the data necessary to refinish the parts which are not given in the specified repairs.

B. Refer to the Standard Overhaul Practice Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 and IPL Figure 2 for item numbers.

2. Refinish of Other Parts

A. References

Reference	Title
SOPM 20-30-03	GENERAL CLEANING PROCEDURES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES

B. General

(1) Instructions for the repair of the parts listed in REPAIR 1-1, Table 601 is for repair of the initial finish.

C. Procedure

NOTE: For general cleaning procedures, refer to SOPM 20-30-03. For decoding table for Boeing finish codes, refer to SOPM 20-41-01.

(1) Refer to REPAIR 1-1, Table 601 for refinish details.

Table 601: Refinish Details

IPL FIG. & ITEM	MATERIAL	FINISH
Torque tube (Fig. 1, 35)	17-7PH	Passivate (F-17.25) all over.
Torque tube (Fig. 2, 25)	Aluminum Alloy	Apply the chemical finish (F-17.08) all over.

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TORQUE TUBE ASSEMBLY - REPAIR 2-1

256A3710–1, –2, –3, –4, –5, –6

1. General

A. This procedure has the data necessary to repair and refinish the torque tube assembly (IPL Figure 1; 1B thru 1F).

NOTE: The torque tube assemblies (IPL Figure 1; 1B thru 1F) have the torque tubes electromagnetically formed onto the end fitting assemblies. No other repair is allowed except for the repair instructions given below.

B. Refer to the Standard Overhaul Practice Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to REPAIR-GENERAL, Figure 601 for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Figure 1 for item numbers.

2. Procedures

NOTE: For stripping of protective finishes, refer to SOPM 20-30-02. For general cleaning procedures, refer to SOPM 20-30-03. For decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02. For miscellaneous materials, refer to SOPM 20-60-04.

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00028	Adhesive - Modified Epoxy For Rigid PVC, Foam Cored Sandwiches	BAC5010, Type 70 (BMS5-92, Type 1)
A00195	Adhesive - Corrosion Inhibiting Coating, Adhesive Primer	BMS5-89
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I

B. References

Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-30-03	GENERAL CLEANING PROCEDURES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-42-02	LOW HYDROGEN EMBRITTLEMENT CADMIUM - TITANIUM ALLOY PLATING
SOPM 20-42-05	BRIGHT CADMIUM PLATING
SOPM 20-50-12	APPLICATION OF ADHESIVES

Reference	Title
SOPM 20-60-02	FINISHING MATERIALS
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Marker Nameplate Replacement (REPAIR 2-1, Figure 601)

(1) Remove the marker nameplate (40A thru 40F) from the torque tube assembly (IPL Figure 1; 1B thru 1F).

(2) Install the marker nameplate (40A thru 40F) onto the torque tube assembly (IPL Figure 1; 1B thru 1F) withadhesive, A00195 or the optional adhesive, A00028 as shown in SOPM 20-50-12.

D. Insert Replacement

(1) Remove the damaged inserts (25) from the torque tube assembly end fittings.

(2) Install the new inserts (25) as shown in REPAIR 2-1, Figure 601.

(a) Apply wet primer, C00259 (F-20.02) to all areas of the hole, includes any countersink, counterbore, or other recess, and immediately install the insert.

(b) Install the insert at 0.008-0.016 inch below the root of the external spline.

(c) Remove the tang from the insert (25).

E. Torque Tube Assembly Refinish

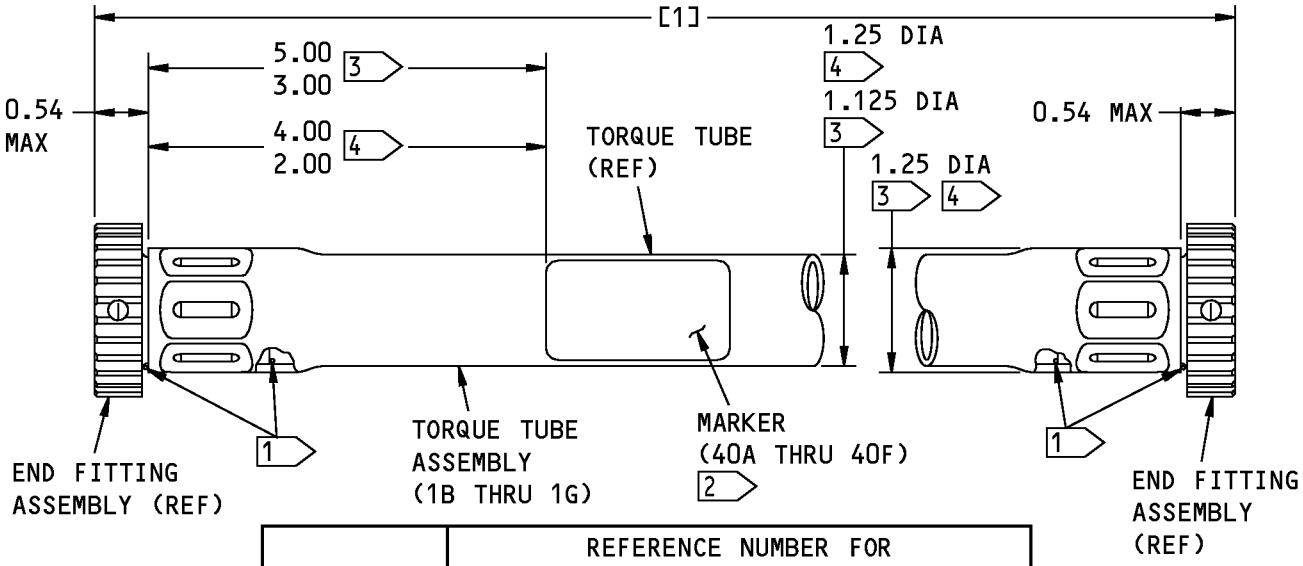
(1) Apply cadmium plating (F-15.36) all over the end fittings as shown in SOPM 20-42-05.

(2) Apply the chemical finish (F-17.08) all over the torque tube (35A thru 35F) as shown in SOPM 20-42-02.

(3) Apply primer, C00259 (F-20.02) on all the torque tube assembly surfaces except the spline teeth and inserts.

NOTE: Use the fill and drain method to apply the primer to the inner side of the torque tube.

(4) Fillet seal all surfaces identified by flagnote 1 with sealant, A00247 as shown in REPAIR 2-1, Figure 601.



PART NUMBER 256A3710	REFERENCE NUMBER FOR DESIGN DIMENSION	
	[1] ±0.025	STRAIGHTNESS REQUIREMENT FIM OVER COMPLETE LENGTH OF TUBE ASSEMBLY
-1	34.82	0.029
-2	45.56	0.038
-3	37.07	0.031
-4	38.25	0.032
-5	12.37	0.010
-6	67.90	0.056

1 FILLET SEAL ALL AROUND WITH BMS 5-95 SEALANT

2 INSTALL MARKER AT THIS LOCATION WITH TYPE 89 ADHESIVE, AS SHOWN IN SOPM 20-50-12 (OPTIONAL TYPE 70 ADHESIVE)

3 256A3710-1 ONLY

4 256A3710-2 THRU -6

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

G38409 S0004994173_V2

256A3710-1 Thru -6 Torque Tube Assembly Repair
Figure 601

TORQUE TUBE ASSEMBLY - REPAIR 3-1

256A3710–7

1. General

A. This procedure has the data necessary to repair and refinish the torque tube assembly (IPL Figure 1), 1A).

B. Refer to the Standard Overhaul Practice Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to REPAIR-GENERAL, Figure 601 for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Figure 1 for item numbers.

2. Marker Nameplate Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00028	Adhesive - Modified Epoxy For Rigid PVC, Foam Cored Sandwiches	BAC5010, Type 70 (BMS5-92, Type 1)
A00195	Adhesive - Corrosion Inhibiting Coating, Adhesive Primer	BMS5-89
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I
C00260	Coating - Chemical And Solvent Resistant Finish, Epoxy Resin Enamel	BMS10-11, Type II

B. References

Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-30-03	GENERAL CLEANING PROCEDURES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-50-12	APPLICATION OF ADHESIVES
SOPM 20-60-02	FINISHING MATERIALS
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure

NOTE: For stripping of protective finishes, refer to finish, refer to SOPM 20-30-02. For general cleaning procedures, refer to SOPM 20-30-03. For decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02. For miscellaneous materials, refer to SOPM 20-60-04.

(1) Remove the marker nameplate (40) from the torque tube assembly (1A).

(2) Install the marker nameplate (40) on the torque tube assembly (1A) with adhesive, A00195 or optional adhesive, A00028 SOPM 20-50-12 and REPAIR 3-1, Figure 601.

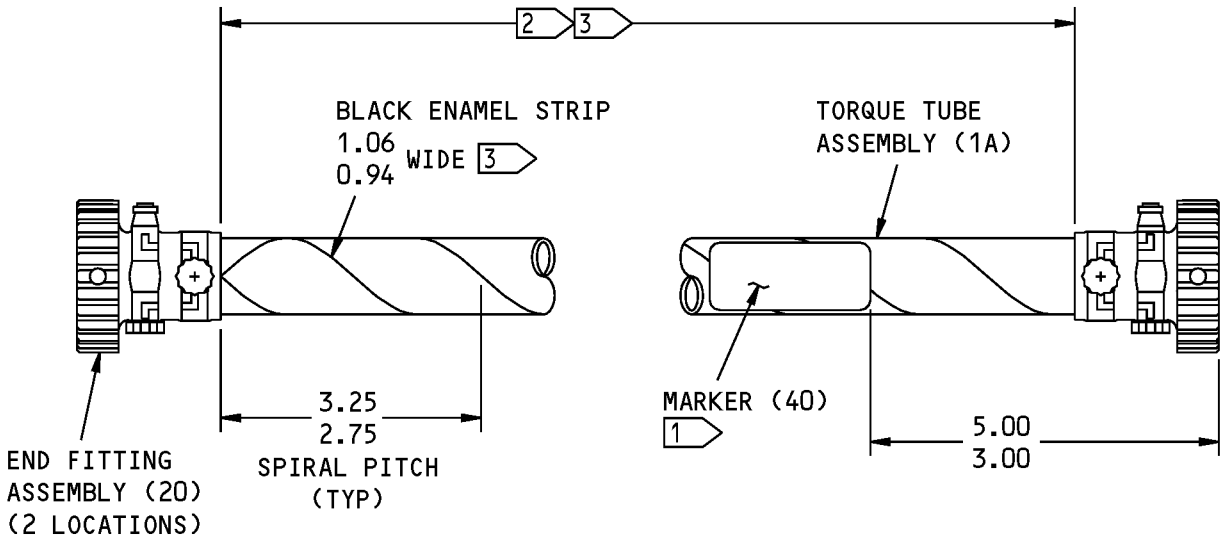
D. Torque Tube Assembly Refinish

(1) Apply primer, C00259 (F-20.02) on all the torque tube assembly surfaces except the spline teeth and inserts.

NOTE: Use the fill and drain method to apply the primer to the inner side of the torque tube.

(2) Apply coating, C00260 (SRF-14.905-2226) as shown in REPAIR 3-1, Figure 601. Obey flagnote 2.

(3) Apply coating, C00260 (SRF-14.905-701) as shown in REPAIR 3-1, Figure 601. Obey flagnote 3.



1 INSTALL MARKER AT THIS LOCATION WITH BMS 5-89E, TYPE 1, GRADE A OR OPTIONAL BAC1050, TYPE 70 ADHESIVE. (SOPM 20-50-12)

2 APPLY ORANGE ENAMEL IN THIS AREA

3 APPLY 0.94-1.06 INCH WIDE BLACK ENAMEL IN CONTINUOUS SPIRAL PATTERN WITH TYPICAL PITCH OF 2.75-3.25 INCHES AT THIS AREA

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

256A3710-7 Torque Tube Assembly Repair
Figure 601

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END FITTING ASSEMBLY - REPAIR 4-1

256A3742–2, 256A3749–1

1. General

A. This procedure has the data necessary to repair the end fitting assembly (IPL Figure 1; 20) (IPL Figure 2; 10).

B. Refer to the Standard Overhaul Practice Manual (SOPM) for the SOPM chapters identified in this procedure.

C. Refer to REPAIR-GENERAL, Figure 601 for the Standard True Position Dimensioning Symbols shown in the repair.

D. Refer to IPL Figure 1 and 2 for item numbers.

2. Procedures

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I

B. References

Reference	Title
SOPM 20-42-05	BRIGHT CADMIUM PLATING

C. Insert Replacement

(1) Remove the damaged inserts (IPL Figure 1; 25) (IPL Figure 2; 15) from the end fittings (IPL Figure 1; 30) (IPL Figure 2; 20).

(2) Install the new inserts (IPL Figure 1; 25) (IPL Figure 2; 15) as shown in REPAIR 2-1, Figure 601 and REPAIR 3-1, Figure 601 .

(a) Apply wet primer, C00259 (F-20.02) to all areas of the hole, includes any countersink, counterbore, or other recess and immediately install the insert (IPL Figure 1; 25) (IPL Figure 2; 15).

(b) Install the insert (1-25, 2-15) at 0.008-0.0016 inch below the root of the external spline.

(c) Remove the tang from the insert.

(3) Apply cadmium plating (F-15.36) all over the end fittings (IPL Figure 1; 30) (IPL Figure 2; 20) as shown in SOPM 20-42-05.

ASSEMBLY

1. General

A. This procedure has the data necessary to assemble the torque tube assemblies.

B. Refer to the Standard Overhaul Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 and IPL Figure 2 for item numbers.

2. Assembly

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A00247	Sealant - Pressure And Environmental - Chromate Type	BMS 5-95
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I

B. References

Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-30-03	GENERAL CLEANING PROCEDURES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure

NOTE: For stripping of protective finishes, refer to finish, refer to SOPM 20-30-02. For general cleaning procedures, refer to SOPM 20-30-03. For decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02. For miscellaneous materials, refer to SOPM 20-60-04.

(1) For torque tube assembly (IPL Figure 1 , 1A), do the following:

NOTE: Make sure the end fitting assemblies are the correct distance from the torque tube as shown in ASSEMBLY, Figure 701.

(a) Install the end fittings assemblies (20) onto the torque tube (35) with the bolts (10) and the collars (15) as shown in ASSEMBLY, Figure 701.

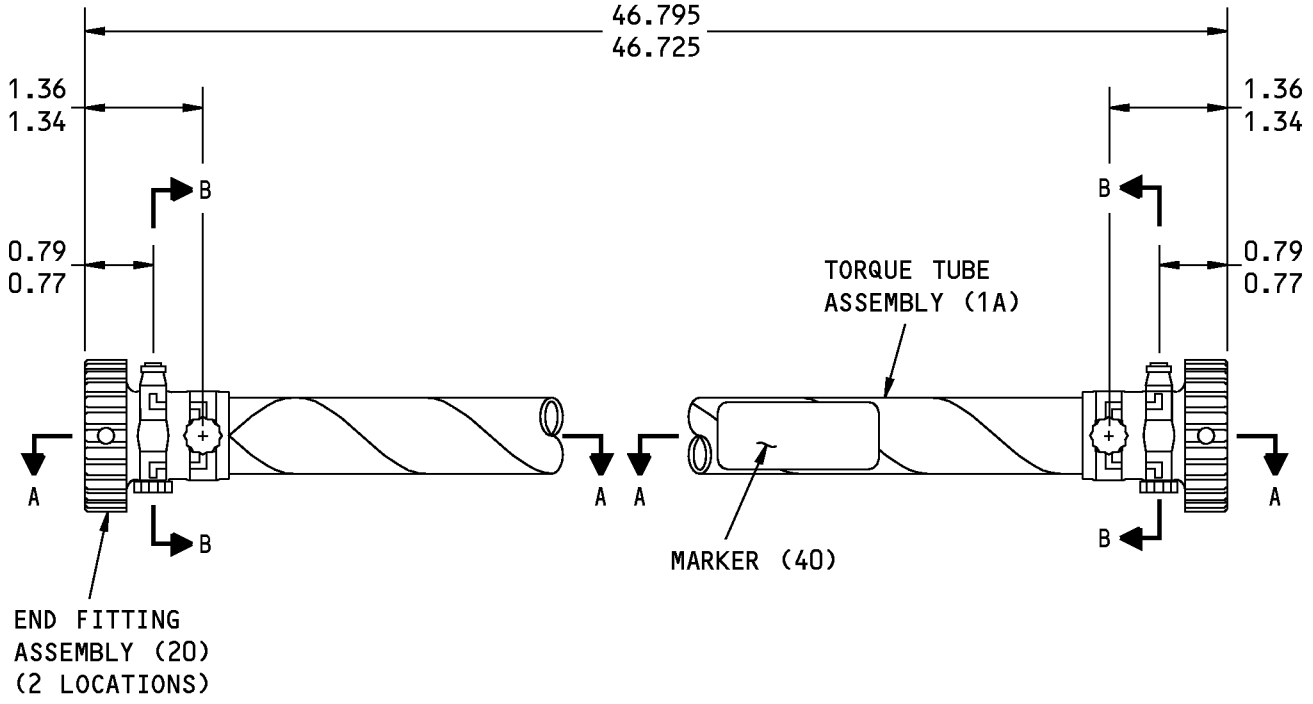
(2) For torque tube assembly (IPL Figure 2, 1), do the following:

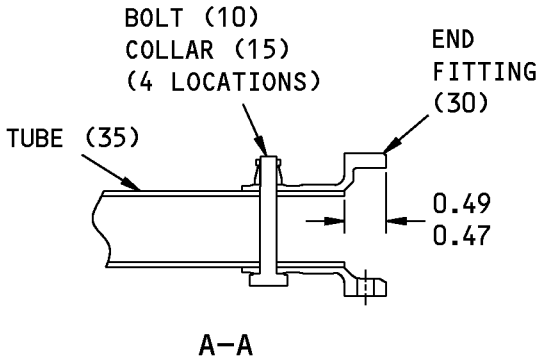
(a) Install the end fitting assemblies (10) onto the torque tube(s) (25) as shown in ASSEMBLY, Figure 702.

(b) Install the rivets (5) with sealant, A00247 (F-19.48) method 2 as shown in ASSEMBLY, Figure 702.

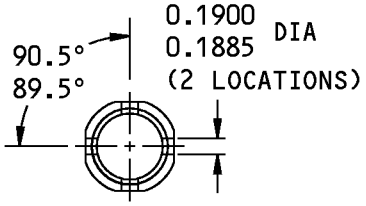
(c) Apply primer, C00259 (F-20.02) to all extension surface as shown in ASSEMBLY, Figure 702.

(d) Fillet seal all surfaces identified by flagnote 2 with sealant, A00247 as shown in ASSEMBLY, Figure 702.





A–A



B–B

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

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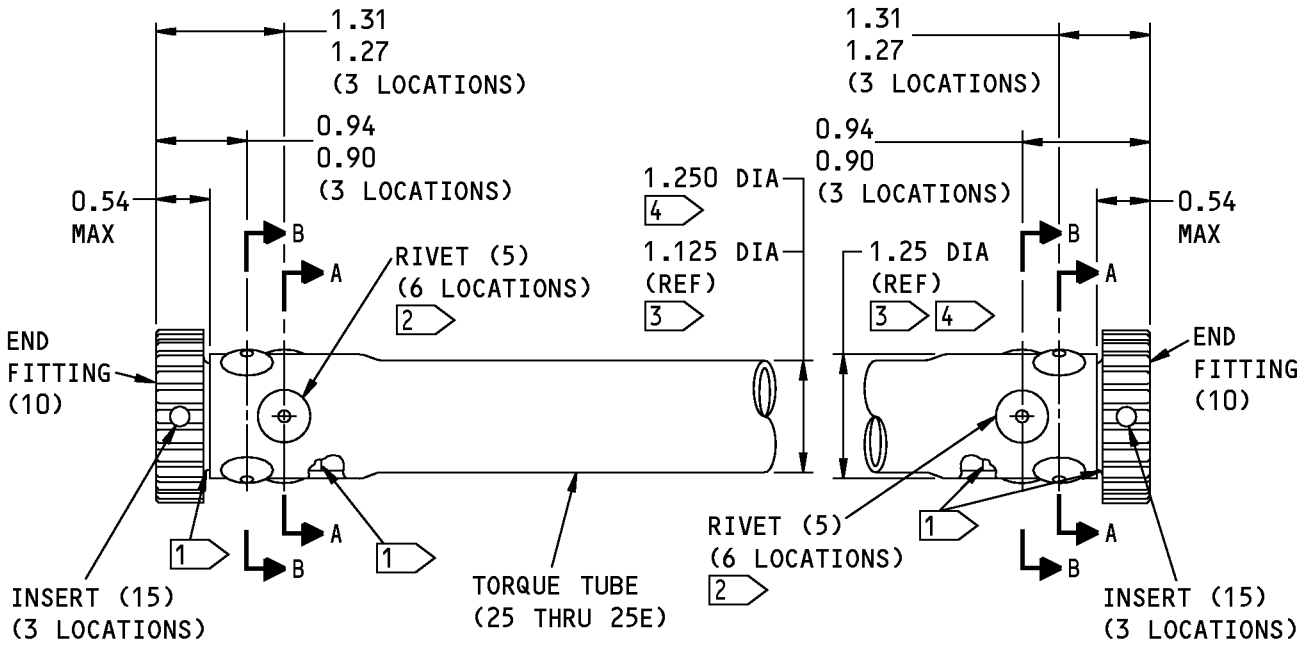
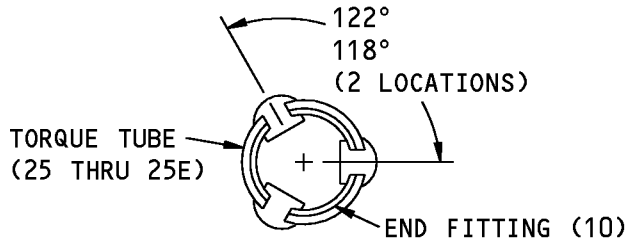
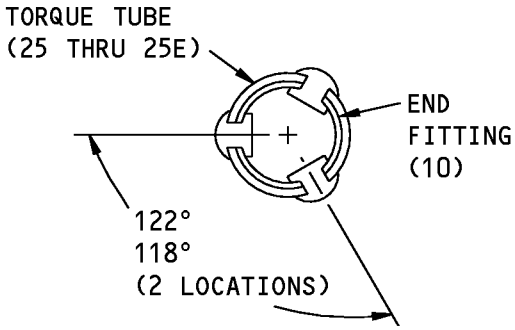
256A3710-7 Torque Tube Assembly
Figure 701



256A3720-1 SHOWN



A–A



B–B

1 FILLET SEAL ALL AROUND WITH BMS 5-95, CLASS B SEALANT AT THIS AREA

2 INSTALL RIVETS WITH BMS 5-95 SEALANT PER BAC5000, METHOD 2

3 256A3720-1

4 256A3720-2 THRU -6

ITEM NUMBERS REFER TO IPL FIG. 2

G78256 S0004994179_V2

256A3720-1 Thru -6 Torque Tube Assembly
Figure 702 (Sheet 1 of 2)

PART NUMBER 256A3710	REFERENCE NUMBER FOR DESIGN DIMENSION	
	[1] ±0.025	STRAIGHTNESS REQUIREMENT FIM OVER COMPLETE LENGTH OF TUBE ASSEMBLY
-1	34.82	0.029
-2	45.56	0.038
-3	37.07	0.031
-4	38.25	0.032
-5	12.37	0.010
-6	67.90	0.056

G78242 S0004994180_V2

256A3720-1 Thru -6 Torque Tube Assembly
Figure 702 (Sheet 2 of 2)

BOEING®

COMPONENT MAINTENANCE MANUAL

FITS AND CLEARANCES

(NOT APPLICABLE)

(NOT APPLICABLE)

ILLUSTRATED PARTS LIST

1. Introduction

A. The Illustrated Parts List (IPL) contains an illustration and a list of component parts you can repair or replace. The Illustrated Parts Catalog (IPC) shows how to use the Boeing part number system.

B. This shows how parts are related: The relation of each item to its next higher assembly (NHA) is shown in the NOMENCLATURE column. Use the indenture system that follows:

1 2 3 4 5 6 7

. Assembly

. Attaching parts for assembly

. . Detail parts for assembly

. . Subassembly

. . Attaching parts for subassembly

. . . Detail parts for subassembly

. . . Sub-subassembly

. . . Attaching parts for subassembly

. . . . . Details parts for sub-subassembly

Detail Installation Parts (Included only if installation parts may be sent to the shop as part of assembly)

C. Each top assembly is given one use code letter (A, B, C, etc.) in the USAGE CODE column. All subsequent component parts in the list can have one or more of the use code letters to show effectivity to top assemblies. A component part without a use code applies to all top assemblies.

D. An alphabetical letter is added after the item number for optional parts, parts changed by a Service Bulletin, configuration differences (except left-handed and right-handed parts), last engineering releases, and parts added between item numbers in a sequence. The alphabetical letter will not be shown on the illustration for equivalent parts of the same part number.

E. Color-coded parts are identified with a single digit alpha following the dash number or with ''SP'' suffix. If the ''SP'' suffix is used, it represents consolidation of all color codes applicable for a given usage which are not separately listed. Orders for color-coded parts should include the registry number of the airplane for which the parts are ordered.

F. If a part number is 15 characters long but will not fit in the part number column, the part number will be displayed with a ''~'' at the end of the line and will be continued on the next line. The ''~'' denotes that the part number continues on the next line.

G. Parts changed by a Service Bulletin are shown by PRE SB XXXX and POST SB XXXX added to the NOMENCLATURE column.

(1) When a new top assembly is added by a Service Bulletin, PRE SB XXXX and POST SB XXXX will be added at the top assembly level only. The configuration differences at the detail part level are shown by use code letters.

(2) When the top assembly part number is not changed by the Service Bulletin, PRE SB XXXX and POST SB XXXX will be added at the detail level.

H. Interchangeable Parts

Optional (OPT)	The part is optional to and interchangeable with other parts that have the same item number.
Replaces, Replaced by and not interchangeable with (REPLACES, REPLACED BY AND NOT INTCHG/W)	The part replaces and is not interchangeable with the initial part.
Replaces, Replaced by (REPLACES, REPLACED BY)	The part replaces and is interchangeable with, or is an alternative to, the initial part.

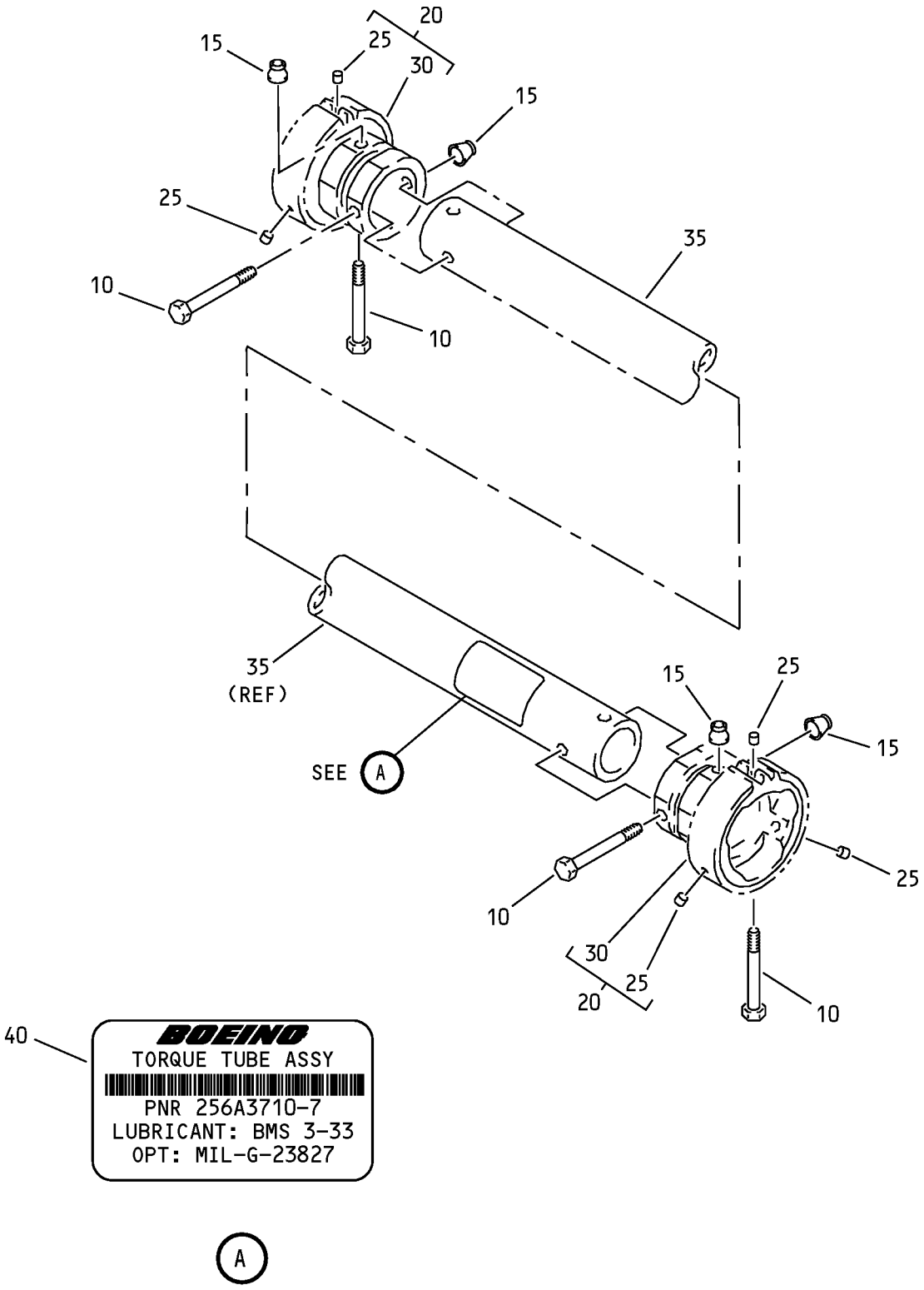
VENDOR CODES

Code	Name
56878	SPS TECHNOLOGIES INC AEROSPACE AND INDUSTRIAL PRODUCTS DIV 301 HIGHLAND AVE JENKINTOWN, PENNSYLVANIA 19046 FORMERLY STANDARD PRESSED STEEL FORMERLY IN SALT LAKE, UTAH
73197	HI-SHEAR TECHNOLOGY CORP 2600 SKYPARK DRIVE TORRANCE, CALIFORNIA 90509
92215	FAIRCHILD IND INC FAIRCHILD AEROSPACE FASTENER DIV 3010 W LOMITA BLVD TORRANCE, CALIFORNIA 90505-5102 FORMERLY VOI-SHAN IN CULVER CITY, CALIF

NUMERICAL INDEX

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
256A3710-1		1	1B	RF
256A3710-2		1	1C	RF
256A3710-3		1	1D	RF
256A3710-4		1	1E	RF
256A3710-5		1	1F	RF
256A3710-6		1	1G	RF
256A3710-7		1	1A	RF
256A3720-1		1	5	RF
		2	1	RF
256A3720-2		1	5A	RF
		2	1A	RF
256A3720-3		1	5B	RF
		2	1B	RF
256A3720-4		1	5C	RF
		2	1C	RF
256A3720-5		1	5D	RF
		2	1D	RF
256A3720-6		1	5E	RF
		2	1E	RF
256A3721-1		1	35A	1
		2	25	1
256A3721-2		1	35B	1
		2	25A	1
256A3721-3		1	35C	1
		2	25B	1
256A3721-4		1	35D	1
		2	25C	1
256A3721-5		1	35E	1
		2	25D	1
256A3721-6		1	35F	1
		2	25E	1
256A3721-7		1	35	1
256A3742-1		1	20A	2
256A3742-2		1	20	2

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
256A3742-3		1	30A	1
256A3742-4		1	30	1
256A3749-1		2	10	2
256A3749-2		2	20	1
BAC27DCT563		1	40B	1
BAC27DCT564		1	40C	1
BAC27DCT565		1	40D	1
BAC27DCT566		1	40E	1
BAC27DCT567		1	40F	1
BAC27DCT568		1	40A	1
BAC27DCT569		1	40	1
BACB30UU3-16		1	10	4
BACC30AB6S		1	15	4
BACR15BB8D6		2	5	12
HL97DU6		1	15	4
		1	15	4
		1	15	4
MS21209F1-10P		1	25	3
		2	15	3



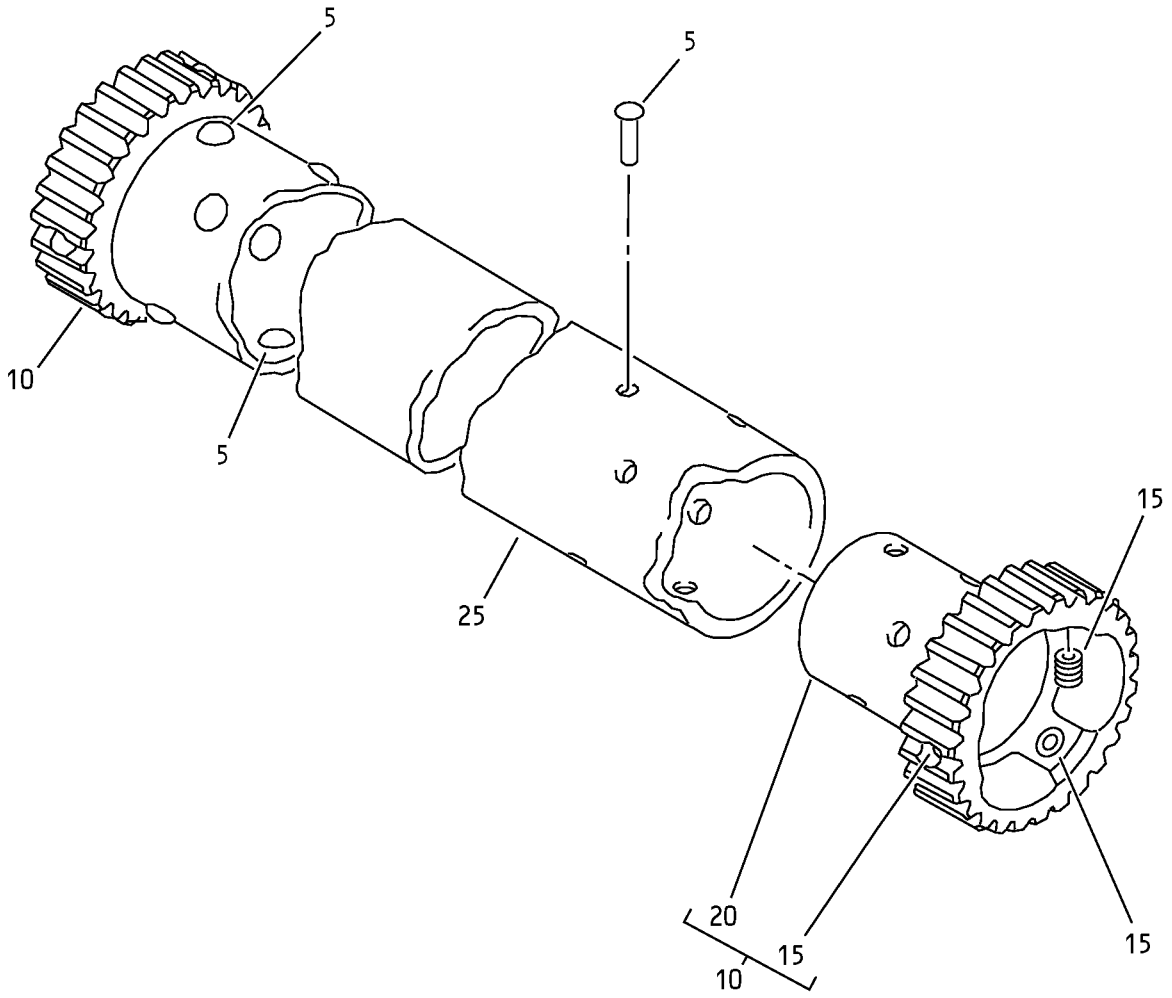
Torque Tube Assembly
IPL Figure 1

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
–1A	256A3710-7		TORQUE TUBE ASSY-FLAP ACTUATION	A	RF
–1B	256A3710-1		TORQUE TUBE ASSY-FLAP ACTUATION	J	RF
–1C	256A3710-2		TORQUE TUBE ASSY-FLAP ACTUATION	K	RF
–1D	256A3710-3		TORQUE TUBE ASSY-FLAP ACTUATION	L	RF
–1E	256A3710-4		TORQUE TUBE ASSY-FLAP ACTUATION	M	RF
–1F	256A3710-5		TORQUE TUBE ASSY-FLAP ACTUATION	N	RF
–1G	256A3710-6		TORQUE TUBE ASSY-FLAP ACTUATION	H	RF
–5	256A3720-1		TORQUE TUBE ASSY-FLAP ACTUATION SPARES ASSY (FOR DETAILS SEE FIG. 2)	B	RF
–5A	256A3720-2		TORQUE TUBE ASSY-FLAP ACTUATION SPARES ASSY (FOR DETAILS SEE FIG. 2)	C	RF
–5B	256A3720-3		TORQUE TUBE ASSY-FLAP ACTUATION SPARES ASSY (FOR DETAILS SEE FIG 2)	D	RF
–5C	256A3720-4		TORQUE TUBE ASSY-FLAP ACTUATION SPARES ASSY (FOR DETAILS SEE FIG 2)	E	RF
–5D	256A3720-5		TORQUE TUBE ASSY-FLAP ACTUATION SPARES ASSY (FOR DETAILS SEE FIG 2)	F	RF
–5E	256A3720-6		TORQUE TUBE ASSY-FLAP ACTUATION SPARES ASSY (FOR DETAILS SEE FIG 2)	G	RF
10	BACB30UU3-16		. BOLT	A	4
15	HL97DU6		. COLLAR (V73197) (SPEC BACC30AB6S) (OPT HL97DU6 (V92215)) (OPT HL97DU6 (V56878))	A	4
20	256A3742-2		. FITTING ASSY-END	A	2
–20A	256A3742-1		. FITTING ASSY-END	H-N	2
25	MS21209F1-10P		. . INSERT	A, H-N	3
30	256A3742-4		. . FITTING	A	1
–30A	256A3742-3		. . FITTING	H-N	1

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
35	256A3721-7		. TUBE	A	1
–35A	256A3721-1		. TUBE	J	1
–35B	256A3721-2		. TUBE	K	1
–35C	256A3721-3		. TUBE	L	1
–35D	256A3721-4		. TUBE	M	1
–35E	256A3721-5		. TUBE	N	1
–35F	256A3721-6		. TUBE	H	1
40	BAC27DCT569		. MARKER-NAMEPLATE	A	1
–40A	BAC27DCT568		. MARKER-NAMEPLATE	H	1
–40B	BAC27DCT563		. MARKER-NAMEPLATE	J	1
–40C	BAC27DCT564		. MARKER-NAMEPLATE	K	1
–40D	BAC27DCT565		. MARKER-NAMEPLATE	L	1
–40E	BAC27DCT566		. MARKER-NAMEPLATE	M	1
–40F	BAC27DCT567		. MARKER-NAMEPLATE	N	1

–Item not Illustrated



Torque Tube Assembly
IPL Figure 2

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
2–					
–1	256A3720-1		TORQUE TUBE ASSY-FLAP ACTUATION SPARES ASSY	B	RF
–1A	256A3720-2		TORQUE TUBE ASSY-FLAP ACTUATION SPARES ASSY	C	RF
–1B	256A3720-3		TORQUE TUBE ASSY-FLAP ACTUATION SPARES ASSY	D	RF
–1C	256A3720-4		TORQUE TUBE ASSY-FLAP ACTUATION SPARES ASSY	E	RF
–1D	256A3720-5		TORQUE TUBE ASSY-FLAP ACTUATION SPARES ASSY	F	RF
–1E	256A3720-6		TORQUE TUBE ASSY-FLAP ACTUATION SPARES ASSY	G	RF
5	BACR15BB8D6		. RIVET	B-G	12
10	256A3749-1		. FITTING ASSY-END	B-G	2
15	MS21209F1-10P		. . INSERT	B-G	3
20	256A3749-2		. . FITTING	B-G	1
25	256A3721-1		. TUBE	B	1
–25A	256A3721-2		. TUBE	C	1
–25B	256A3721-3		. TUBE	D	1
–25C	256A3721-4		. TUBE	E	1
–25D	256A3721-5		. TUBE	F	1
–25E	256A3721-6		. TUBE	G	1

–Item not Illustrated