COMPONENT MAINTENANCE MANUAL WITH ILLUSTRATED PARTS LIST

STABILIZER TRIM COLUMN ACTUATED CUTOUT SWITCH ASSEMBLY

PART NUMBER 251A4430–1, –2, –4

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To: All holders of STABILIZER TRIM COLUMN ACTUATED CUTOUT SWITCH ASSEMBLY 27-41-95.

Attached is the current revision to this COMPONENT MAINTENANCE MANUAL

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TEMPORARY REVISION AND SERVICE BULLETIN RECORD

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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.

STABILIZER CONTROL COLUMN CUTOUT SWITCH ASSEMBLY - DESCRIPTION AND OPERATION

1. Description

A. The stabilizer control column cutout switch assembly has 12 switches and 4 relays mounted with their wire bundle in a housing assembly. An input lever assembly attaches to a gear which drives a pinion shaft assembly in the housing assembly. A cam in the pinion shaft assembly operates the switches. A position transmitter is connected to the pinion shaft with a flexible coupling.

NOTE: The stabilizer control column cutout switch assembly will be referred to as the column cutout switch assembly in the remaining part of this manual.

B. The input lever assembly has a shearout joint which permits control column movement if there is a jam in the column cutout switch assembly.

2. Operation

A. The column cutout switch assembly is installed under the cockpit floor near the first officer's control column. The assembly is operated by forward or aft movement of either the captain's or the first officer's control column.

B. The column cutout switch assembly stops the stabilizer trim motor when the control column is moved in a direction opposite to the trim command. The assembly also gives a signal to the flight control computer A and B modules when the switches operate.

C. The position transmitter gives an electrical signal which is in proportion to the amount that the pinion shaft turns. Through the linkage with the lever assembly, the transmitter shows the position of the control columns.

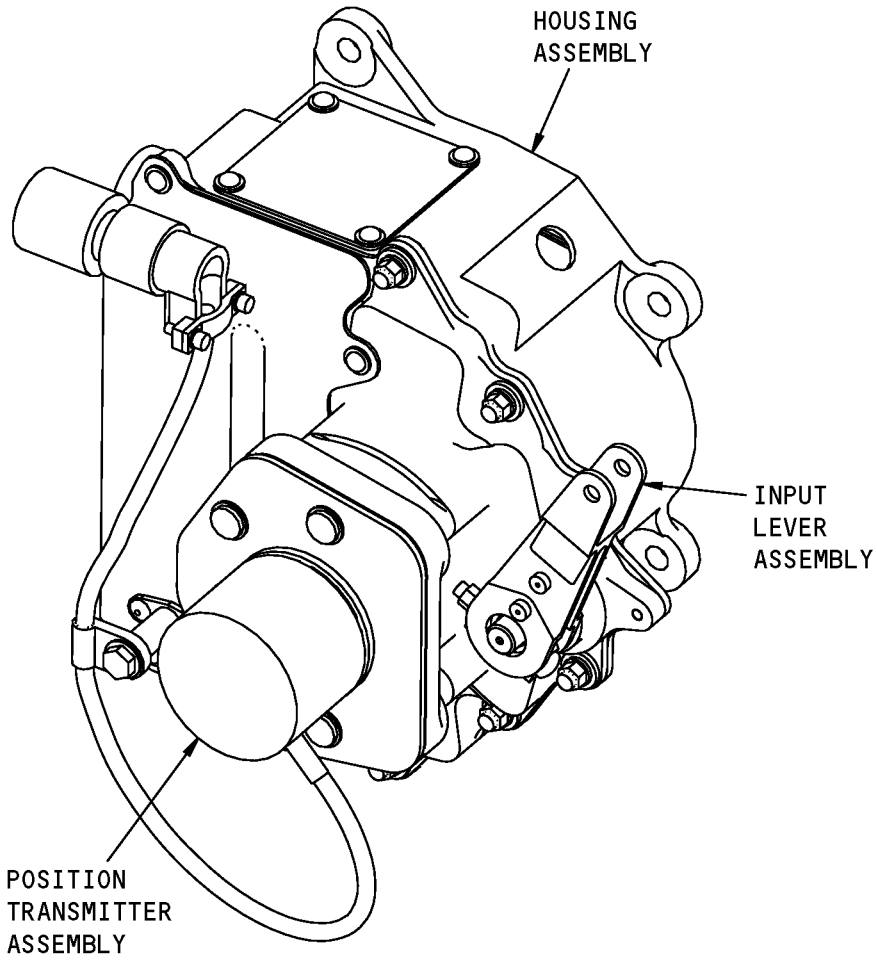
3. Leading Particulars (Approximate)

A. Length – 7 inches

B. Width – 3 inches

C. Height – 6 inches

D. Weight – 4 pounds



Stabilizer Control Column Cutout Switch Assembly
Figure 1

TESTING AND FAULT ISOLATION

1. General

A. This procedure has the data necessary to do a test of the mechanism after an overhaul or for fault isolation.

B. There are four procedures:

(1) Do a check of the mechanical operation.

(2) Adjust the transmitter assembly

(3) Do a check of the range of travel.

(4) Do a check of the operation of the switches (340).

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

D. Refer to IPL Figure 1 for item numbers.

2. Procedure

A. Tools/Equipment

NOTE: Equivalent substitutes may be used.

Reference	Description
COM-1688	Indicator - Angle Position (Part #: 2623CC-44HCL/488-26, Supplier: 17755) (Part #: 8810-S3128, Supplier: 0VGU1) (Part #: 8810-S3204, Supplier: 0VGU1) (Part #: 8810A, Supplier: 0VGU1)
SPL-5372	Test Equipment - Stabilizer Trim Control Cutout Switch (Part #: C27006-48, Supplier: 81205)
SPL-5373	Adapter Cable Assembly (C27006-35 included in C27006-48) (Part #: C27006-48, Supplier: 81205)
SPL-5374	Test Equipment - Stabilizer Trim Control Cutout Switch (Part #: C27006-42, Supplier: 81205)
SPL-5455	Rig Pin, 0.1840 - 0.1860 in. dia, 5.50 in. minimum length (Part #: MS20392-2P176, Supplier: 81205)
SPL-6044	Test Fixture Assembly (C27006-24 included in C27006-47 & C27006-48) (Part #: C27006-48, Supplier: 81205) (Opt Part #: C27006-47, Supplier: 81205)
SPL-6047	Test Box Assembly (C27006-43 included in C27006-47 and C27006-48) (Part #: C27006-48, Supplier: 81205) (Opt Part #: C27006-47, Supplier: 81205)

B. Do a check of the mechanical operation.

(1) Install the column cutout switch assembly (1A) in an applicable holding fixture.

NOTE: The C27006-24 test fixture assembly, SPL-6044 can be used to hold the assembly. The C27006-24 test fixture assembly, SPL-6044 is included in C27006-42, stabilizer trim control cutout switch, SPL-5374 or C27006-48 test equipment, SPL-5372. If the C27006-24 test fixture assembly, SPL-6044 is used, do not install the test fixture pointer assembly on the lever assembly (135). The angle position indicator, COM-1688 shows the lever positions in the test procedures, and not the pointer and the angle marks on the fixture.

NOTE: C27006-48 test equipment, SPL-5372 – Stabilizer Trim Control Cutout Switch. This equipment can be used for the 251A4430-1 and -2. This equipment includes a C27006-35 adapter cable assembly, SPL-5373 for use on 251A4430-2, -4 for connecting the C27006-43 test box assembly, SPL-6047 to connector (320A) (Ref: DII 737-27-326).

(2) Make sure that the input lever moves freely and smoothly through its full range of travel.

(3) Turn the input lever as necessary to install the rig pin, SPL-5455 (or equivalent steel, aluminum, CRES, or titanium pin, 0.1840-0.1860 inch diameter, 5.50 inches minimum length) as shown in TESTING AND FAULT ISOLATION, Figure 101. Make sure that the distance between the clevis hole in the input lever and the bolt hole in the housing is 3.350-3.440 inches, as shown in the TESTING AND FAULT ISOLATION, Figure 101.

C. Adjust the transmitter assembly (25).

(1) Connect the transmitter assembly (50) to the 26 v ac power supply (400 Hz, adjustable, stabilized, 5-10 W output) and to the angle position indicator, COM-1688 (API), as shown in TESTING AND FAULT ISOLATION, Figure 102.

(2) With the rig pin, SPL-5455 installed, loosen the three clamp bolts (5) and turn the transmitter until the API shows 0.00 +/- 0.25 degrees. Tighten the bolts to hold the transmitter in position. Make sure the API still shows 0.00 +/- 0.25 degrees.

NOTE: The above is used to rig the transmitter and not for functional testing. With the rig pin, SPL-5455 installed, the functional requirement is that if the input lever can be swept within the slop of the rigging pin so that the API shows at least one reading within 0.00 +/- 0.25 degrees. The transmitter is properly rigged.

(3) Remove the rig pin, SPL-5455.

D. Do a check of the range of travel.

NOTE: The clockwise and counterclockwise movement of the lever assembly (135) is measured from the transmitter (60) side of the column cutout switch assembly (1A).

(1) Turn the lever assembly (135) clockwise until the input mechanism touches the internal stop. Make sure that the API indication is between -135 and -150 degrees.

(2) Turn the lever assembly (135) counterclockwise until the input mechanism touches the internal stop. Make sure that the API indication is between 135 and 150 degrees.

E. Do a check of the operation of the switches (340).

NOTE: If the C27006-43 test box assembly, SPL-6047 is not available, the alternative procedure of TESTING AND FAULT ISOLATION, Paragraph 5. can be used.

(1) Preparation.

(a) Connect the transmitter assembly (50) to the 26v ac (400 MHz) power supply and to the angle position indicator, COM-1688 (API), as shown in TESTING AND FAULT ISOLATION, Figure 102.

(b) Connect the column cutout switch assembly (1A) to the C27006-43 test box assembly, SPL-6047. Refer to TESTING AND FAULT ISOLATION, Figure 103.

1) For cutout switch 251A4430-2, -4 use the adapter – C27006-35 adapter cable assembly, SPL-5373 to connect the C27006-43 test box assembly, SPL-6047 to the connector (320A).

NOTE: In the procedures that follow, the switch identifications (in capital letters) refer to the switches on the test box.

(c) Remove rig pin, SPL-5455, if installed.

(d) Set all of the test box switches to OFF.

(e) Set the POWER switch to ON. The POWER light will come on. All of the other lights will be off.

NOTE: The POWER light will stay on for the remaining part of the test.

(2) Do a check of the main-stab-trim clutch-cutout switch.

(a) Set the MAIN STAB TRIM - CLUTCH CUTOUT switch to ON. The MAIN STAB TRIM - CLUTCH AFT, CLUTCH FWD, and CLUTCH CUTOUT lights will come on.

(b) Turn the lever assembly (135) counterclockwise until the MAIN STAB TRIM - CLUTCH AFT light goes off. The CLUTCH FWD light will stay on. Make sure that the API indication is 26.68 to 33.10 degrees.

(c) Turn the lever assembly (135) clockwise until the MAIN STAB TRIM - CLUTCH FWD light goes off. The CLUTCH AFT light will stay on. Make sure that the API indication is -23.42 to -29.84 degrees.

(d) Set the MAIN STAB TRIM - CLUTCH CUTOUT switch to OFF.

(3) Do a check of the main-stab-trim motor-cutout switch.

(a) Set the MAIN STAB TRIM - MOTOR CUTOUT switch to ON. The MAIN STAB TRIM - MOTOR and MOTOR CUTOUT lights will come on.

(b) Turn the lever assembly (135) counterclockwise until the MAIN STAB TRIM - MOTOR light goes off. Make sure that the API indication is 26.68 to 33.10 degrees.

(c) Turn the lever assembly (135) clockwise until the MAIN STAB TRIM - MOTOR light goes off. Make sure that the API indication is -23.42 to -29.84 degrees.

(d) Set the MAIN STAB TRIM - MOTOR CUTOUT switch to OFF.

(4) Do a check of the main-stab normal-trim relay.

(a) Set the MAIN STAB TRIM - RELAY switch to ON. The MAIN STAB TRIM - CLUTCH AFT, CLUTCH FWD, MOTOR, CLUTCH CUTOUT, and RELAY lights will come on.

(b) Turn the lever assembly (135) counterclockwise to full travel. Make sure that the MAIN STAB TRIM - CLUTCH AFT, CLUTCH FWD, MOTOR, and RELAY lights stay on, and that the CLUTCH CUTOUT light goes off.

(c) Turn the lever assembly (135) clockwise to full travel. Make sure that the MAIN STAB TRIM - CLUTCH AFT, CLUTCH FWD, MOTOR, and RELAY lights stay on, and that the CLUTCH CUTOUT light comes on.

(d) Set the MAIN STAB TRIM - RELAY switch to OFF.

(5) Do a continuity check of the main-stab-trim ground.

(a) Make sure that there is continuity between P2-7 and ground on the test box.

(6) Do a check of the main-stab-trim autopilot override.

(a) Set the AUTOPILOT STAB TRIM - RELAY switch to ON. The AUTOPILOT STAB TRIM - CLUTCH and RELAY lights will come on.

(b) Set the MAIN STAB TRIM - CLUTCH CUTOUT switch to ON. The MAIN STAB TRIM - CLUTCH AFT, CLUTCH FWD, and CLUTCH CUTOUT lights will come on. The AUTOPILOT STAB TRIM - CLUTCH light will go off.

(c) Turn the lever assembly (135) counterclockwise to full travel. Make sure that the MAIN STAB TRIM - CLUTCH FWD, CLUTCH CUTOUT, and AUTOPILOT STAB TRIM - RELAY lights stay on, and the AUTOPILOT STAB TRIM - MOTOR AFT and MOTOR FWD lights come on. Make sure that the MAIN STAB TRIM - CLUTCH AFT light goes off and the AUTOPILOT STAB TRIM - CLUTCH light stays OFF.

(d) Turn the lever assembly (135) clockwise to full travel. Make sure that the MAIN STAB TRIM - CLUTCH CUTOUT and the AUTOPILOT STAB TRIM - MOTOR AFT, MOTOR FWD, and RELAY lights stay on, and the MAIN STAB TRIM - CLUTCH AFT light comes on. Make sure that the MAIN STAB TRIM - CLUTCH FWD goes off and the AUTOPILOT STAB TRIM - CLUTCH light stays off.

(e) Set the MAIN STAB TRIM - CLUTCH CUTOUT switch and the AUTOPILOT STAB TRIM - RELAY switch to OFF.

(7) Do a check of the autopilot-stab-trim clutch-cutout switch.

(a) Set the AUTOPILOT STAB TRIM - CLUTCH CUTOUT switch to ON. The AUTOPILOT STAB TRIM - CLUTCH and CLUTCH CUTOUT lights will come on.

(b) Turn the lever assembly (135) counterclockwise until the AUTOPILOT STAB TRIM - CLUTCH light goes off. Make sure that the API indication for 251A4430-1 is 26.68 to 33.10 degrees or for 251A4430-2, -4 is 40.96 to 47.38 degrees.

(c) Turn the lever assembly (135) clockwise until the AUTOPILOT STAB TRIM - CLUTCH light goes off. Make sure that the API indication is -23.42 to -29.84 degrees.

(d) Set the AUTOPILOT STAB TRIM - CLUTCH CUTOUT switch to OFF.

(8) Do a check of the autopilot stab trim - motor cutout switch.

(a) Set the AUTOPILOT STAB TRIM - MOTOR CUTOUT switch to ON. The AUTOPILOT STAB TRIM - MOTOR AFT, MOTOR FWD, and MOTOR CUTOUT lights will come on.

(b) Turn the lever assembly (135) counterclockwise until the AUTOPILOT STAB TRIM - MOTOR AFT light goes off. The MOTOR FWD light will stay on. Make sure that the API indication for 251A4430-1 is 26.68 to 33.10 degrees or for 251A4430-2, -4 is 40.96 to 47.38 degrees.

(c) Turn the lever assembly (135) clockwise until the AUTOPILOT STAB TRIM - MOTOR FWD light goes off. The MOTOR AFT light will stay on. Make sure that the API indication is -23.42 to -29.84 degrees.

(d) Set the AUTOPILOT STAB TRIM - MOTOR CUTOUT switch to OFF.

(9) Do a check of the autopilot-stab normal-trim relay.

(a) Set the AUTOPILOT STAB TRIM - RELAY switch to ON. The AUTOPILOT STAB TRIM - CLUTCH and RELAY lights will come on.

(b) Turn the lever assembly (135) counterclockwise until the AUTOPILOT STAB TRIM - MOTOR AFT and MOTOR FWD lights come on. The AUTOPILOT STAB TRIM - CLUTCH light will stay on. Make sure that the API indication for 251A4430-1 is 26.68 to 33.10 degrees or for 251A4430-2, -4 is 40.96 to 47.38 degrees.

(c) Turn the lever assembly (135) clockwise until the AUTOPILOT STAB TRIM - MOTOR AFT AND MOTOR FWD light come on. The AUTOPILOT STAB TRIM - CLUTCH light will stay on. Make sure that the API indication is -23.42 to -29.84 degrees.

(d) Set the AUTOPILOT STAB TRIM - RELAY switch to OFF.

(10) Do a continuity check of the autopilot-stab-trim ground.

(a) Make sure that there is continuity between P1-9 and ground on the test box.

(11) Do a check of the input to Flight Control Computer A (FCC A).

(a) Set the FCC A INPUT switch to ON. The FCC A AFT, FCC A FWD, and FCC A INPUT lights will come on.

(b) Turn the lever assembly (135) counterclockwise until the FCC A AFT light goes off. The FCC A FWD light will stay on. Make sure that the API indication for 251A4430-1 is 26.68 to 33.10 or for 251A4430-2, -4 is 40.96 to 47.38 degrees.

(c) Turn the lever assembly (135) clockwise until the FCC A FWD light goes off. The FCC A AFT light will stay on. Make sure that the API indication is -23.42 to -29.84 degrees.

(d) Set the FCC A INPUT switch to OFF.

(12) Do a check of the input to Flight Control Computer B (FCC B).

(a) Set the FCC B INPUT switch to ON. The FCC B AFT, FCC B FWD, and FCC B INPUT lights will come on.

(b) Turn the lever assembly (135) counterclockwise until the FCC B AFT light goes off. The FCC B FWD light will stay on. Make sure that the API indication for 251A4430-1 is 26.68 to 33.10 or for 251A4430-2, -4 is 40.96 to 47.38 degrees.

(c) Turn the lever assembly (135) clockwise until the FCC B FWD light goes off. The FCC B AFT light will stay on. Make sure that the API indication is -23.42 to -29.84 degrees.

(d) Set the FCC B INPUT switch to OFF.

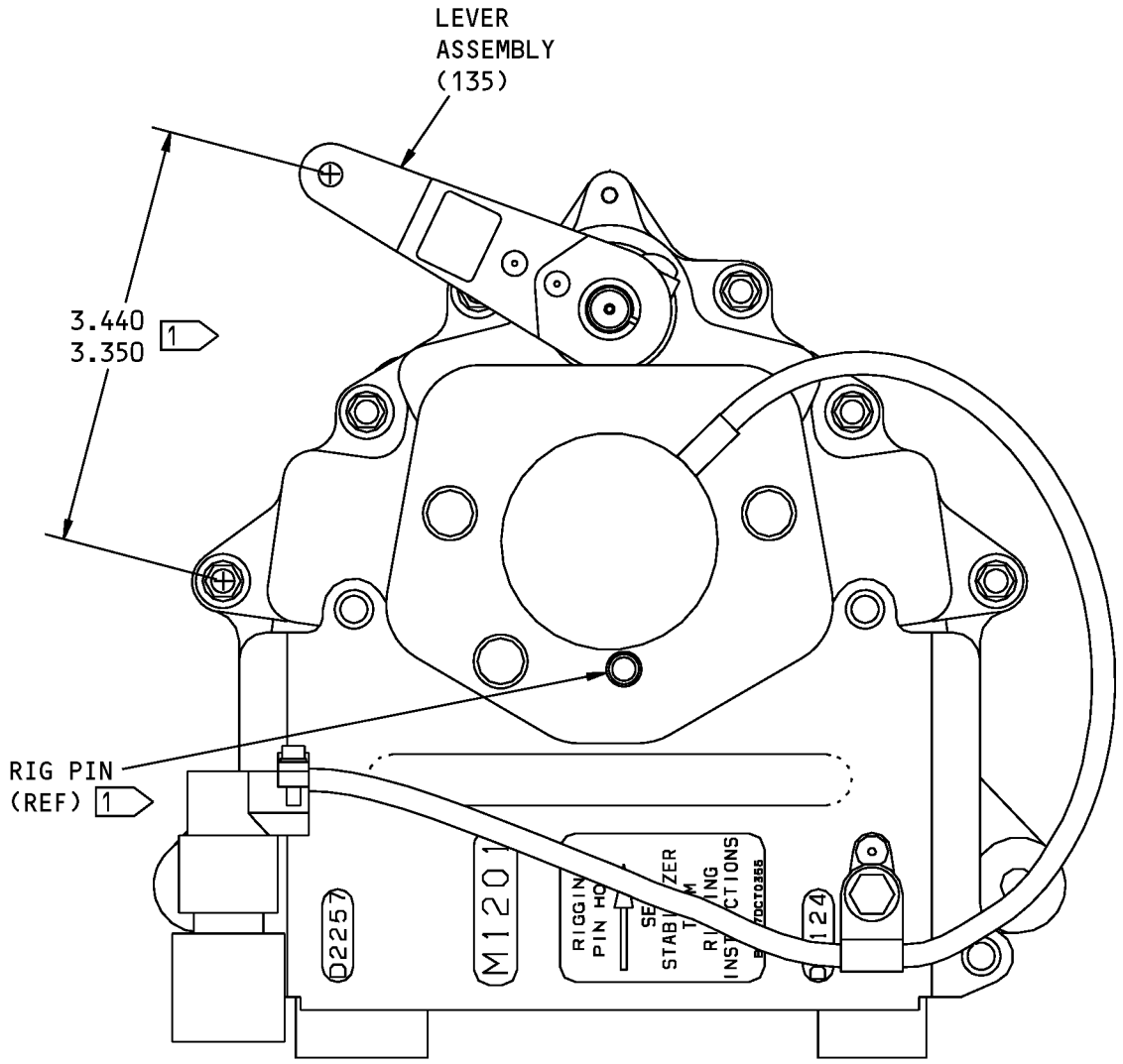
F. Post-Test Procedure

(1) Set all of the test box switches to OFF.

(2) Disconnect the C27006-43 test box assembly, SPL-6047 from the switch assembly (1A).

(3) Disconnect the 28 v ac power supply and the API from the transmitter assembly (50).

(4) Remove the switch assembly (1A) from the C27006-24 test fixture assembly, SPL-6044

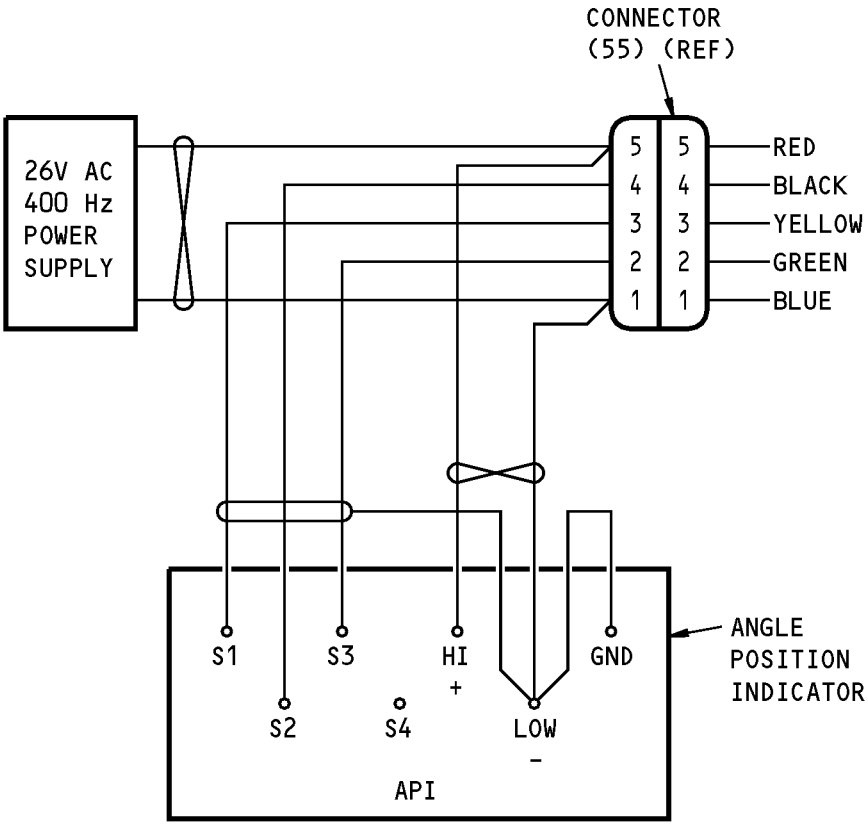


1 DIMENSION APPLIES WITH RIG PIN INSTALLED.

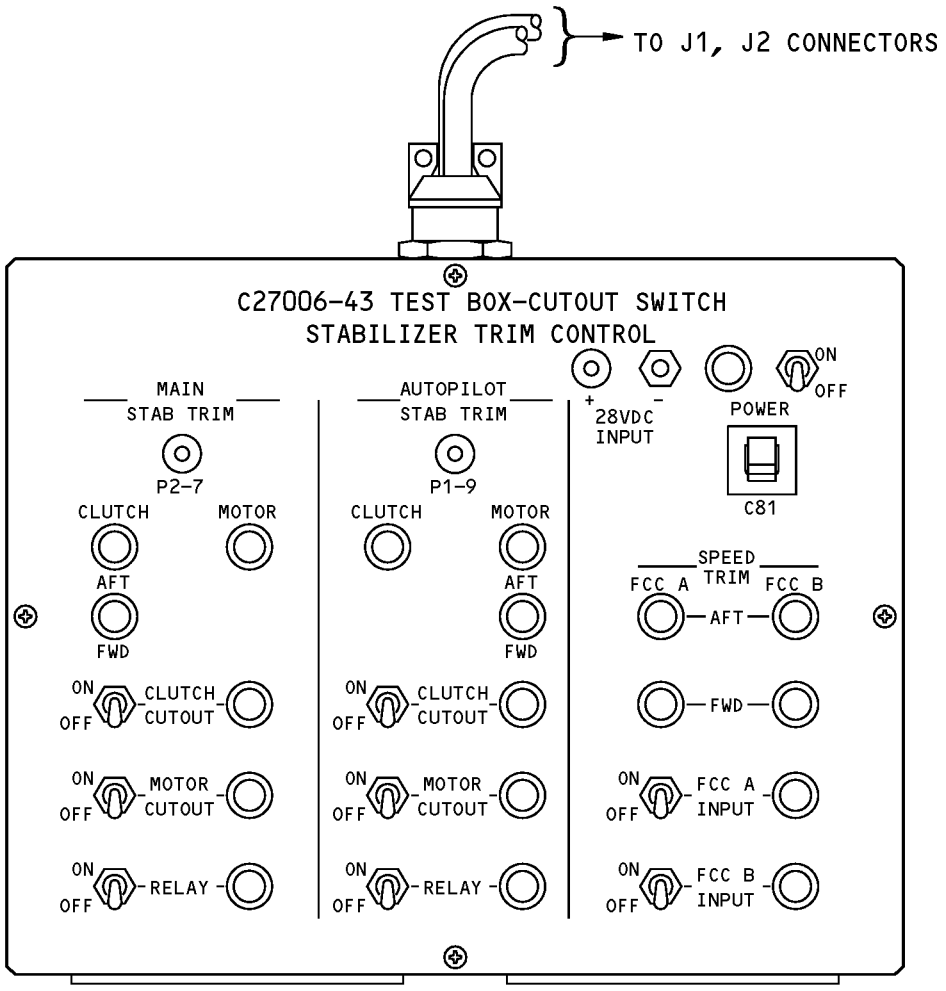
ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

Check of the Rig Position
Figure 101



Angle Position Indicator Electrical Connections
Figure 102



C27006-43 Test Box
Figure 103

3. **Fault Isolation**

A. The trouble shooting procedures refer to the test steps of TESTING AND FAULT ISOLATION, Paragraph 2.. Refer to TESTING AND FAULT ISOLATION, Figure 104 to identify the defective switches (340), relays (175), and sockets (180) in the trouble shooting steps that follow.

Table 101: Trouble Shooting Chart

TROUBLE	PROBABLE CAUSE	CORRECTION
TESTING AND FAULT ISOLATION, Paragraph 2.B.(2)	Defective gear (250), pinion shaft assy (270), or bearings (245,255,260)	Disassemble and replace defective part
TESTING AND FAULT ISOLATION, Paragraph 2.E.(2)(b)	Defective switch S10	Replace defective switch
TESTING AND FAULT ISOLATION, Paragraph 2.E.(2)(c)	Defective switch S4	Replace defective switch
TESTING AND FAULT ISOLATION, Paragraph 2.E.(3)(b)	Defective switch S8	Replace defective switch
TESTING AND FAULT ISOLATION, Paragraph 2.E.(3)(c)	Defective switch S2	Replace defective switch
TESTING AND FAULT ISOLATION, Paragraph 2.E.(4)(b)	Defective relay K4 or socket XK4	Replace defective part
TESTING AND FAULT ISOLATION, Paragraph 2.E.(4)(c)	Defective relay K3 or socket XK3	Replace defective part
TESTING AND FAULT ISOLATION, Paragraph 2.E.(6)(b)	Defective relay K3,K4 or socket XK3,XK4	Replace defective part
TESTING AND FAULT ISOLATION, Paragraph 2.E.(6)(c)	Defective relay K3 or socket XK3	Replace defective part
TESTING AND FAULT ISOLATION, Paragraph 2.E.(6)(d)	Defective relay K4 or socket XK4	Replace defective part
TESTING AND FAULT ISOLATION, Paragraph 2.E.(7)(b)	Defective switch S11	Replace defective switch
TESTING AND FAULT ISOLATION, Paragraph 2.E.(7)(c)	Defective switch S5	Replace defective switch

Table 101: Trouble Shooting Chart (Continued)

TROUBLE	PROBABLE CAUSE	CORRECTION
TESTING AND FAULT ISOLATION, Paragraph 2.E.(8)(b)	Defective switch S9	Replace defective switch
TESTING AND FAULT ISOLATION, Paragraph 2.E.(8)(c)	Defective switch S3	Replace defective switch
TESTING AND FAULT ISOLATION, Paragraph 2.E.(9)(b)	Defective relay K2 or socket XK2	Replace defective part
TESTING AND FAULT ISOLATION, Paragraph 2.E.(9)(c)	Defective relay K1 or socket XK1	Replace defective part
TESTING AND FAULT ISOLATION, Paragraph 2.E.(11)(b)	Defective switch S7	Replace defective switch
TESTING AND FAULT ISOLATION, Paragraph 2.E.(11)(c)	Defective switch S1	Replace defective switch
TESTING AND FAULT ISOLATION, Paragraph 2.E.(12)(b)	Defective switch S12	Replace defective switch
TESTING AND FAULT ISOLATION, Paragraph 2.E.(12)(c)	Defective switch S6	Replace defective switch

4. Fault Correction

A. Procedure

(1) Disassemble the column cutout switch assembly (1A) (DISASSEMBLY).

(2) Replace the defective parts. Refer to TESTING AND FAULT ISOLATION, Figure 104 for the wiring diagram.

(3) Assemble the column cutout switch assembly (1A) (ASSEMBLY).

(4) Do the test on the unit again.

5. Alternative Procedure

A. Tools/Equipment

NOTE: Equivalent substitutes may be used.

Reference	Description
COM-1688	Indicator - Angle Position (Part #: 2623CC-44HCL/488-26, Supplier: 17755) (Part #: 8810-S3128, Supplier: 0VGU1) (Part #: 8810-S3204, Supplier: 0VGU1) (Part #: 8810A, Supplier: 0VGU1)
SPL-5455	Rig Pin, 0.1840 - 0.1860 in. dia, 5.50 in. minimum length (Part #: MS20392-2P176, Supplier: 81205)
SPL-6044	Test Fixture Assembly (C27006-24 included in C27006-47 & C27006-48) (Part #: C27006-48, Supplier: 81205) (Opt Part #: C27006-47, Supplier: 81205)

B. Preparation

NOTE: This procedure can be used to do a check of the switches (340) and the relays (175) if the C27006-24 test fixture assembly, SPL-6044 is not available.

(1) Connect the transmitter assembly (50) to the 26 v ac power supply and to the angle position indicator, COM-1688 (API), as shown in TESTING AND FAULT ISOLATION, Figure 102.

(2) Remove the rig pin, SPL-5455, if it is installed.

(3) Refer to TESTING AND FAULT ISOLATION, Figure 104 for identification of the pins in the connectors (315, 320, 320A).

C. Do a check of the operation of the switches (340).

(1) For 251A4430-1, J1 connector:

(a) Turn the lever assembly (135) until the API indication is 0.00 ±0.25 degree. Make sure that the circuit conditions between the pins in the J1 connector (320) are as shown in TESTING AND FAULT ISOLATION, Figure 105.

(b) Turn the lever assembly (135) clockwise until the API indication is -23.42 to -29.84 degrees. Make sure that the circuit conditions between the pins in the J1 connector (320) are as shown in TESTING AND FAULT ISOLATION, Figure 105.

(c) Continue to turn the lever assembly (135) clockwise until the internal stop is touched. Make sure that the circuit conditions do not change.

(d) Turn the lever assembly (135) counterclockwise until the API indication is 26.68 to 33.10 degrees. Make sure that the circuit conditions between the pins in the J1 connector (320) are as shown in TESTING AND FAULT ISOLATION, Figure 105.

(e) Continue to turn the lever assembly (135) counterclockwise until the internal stop is touched. Make sure that the circuit conditions do not change.

(2) For 251A4430-2, -4, J1 connector:

(a) Turn the lever assembly (135) until the API indication is -23.42 to 26.68 degrees. Make sure that the circuit conditions between the pins in the J1 connector (320A) are as shown in TESTING AND FAULT ISOLATION, Figure 106.

(b) Turn the lever assembly (135) until the API indication is -29.84 to -135.00 degrees. make sure that the circuit conditions between the pins in the J1 connector (320A) are as shown in TESTING AND FAULT ISOLATION, Figure 106.

(c) Turn the lever assembly (135) until the API indication is 47.38 to 135.00 degrees. Make sure that the circuit conditions between the pins in the J1 connector (320A) are as shown in TESTING AND FAULT ISOLATION, Figure 106.

(3) For 251A4430-1, J2 connectors:

(a) Turn the lever assembly (135) until the API indication is 0.00 ±0.25 degree. Make sure that the circuit conditions between the pins in the J2 connector (315) are as shown in TESTING AND FAULT ISOLATION, Figure 107.

(b) Turn the lever assembly (135) clockwise until the API indication is -23.42 to -29.84 degrees. Make sure that the circuit conditions between the pins in the J2 connector (315) are as shown in TESTING AND FAULT ISOLATION, Figure 107.

(c) Continue to turn the lever assembly (135) clockwise until the internal stop is touched. Make sure that the circuit conditions do not change.

(d) Turn the lever assembly (135) counterclockwise until the API indication is 26.68 to 33.10 degrees. Make sure that the circuit conditions between the pins in the J2 connector (315) are as shown in TESTING AND FAULT ISOLATION, Figure 107.

(e) Continue to turn the lever assembly (135) counterclockwise until the internal stop is touched. Make sure that the circuit conditions do not change.

(4) For 251A4430-2, -4, J2 connector:

(a) Turn the lever assembly (135) until the API indication is -23.42 to 26.86 degrees. Make sure that the circuit conditions between the pins in the J2 connector (315) are as shown in TESTING AND FAULT ISOLATION, Figure 108.

(b) Turn the lever assembly (135) until the API indication is -29.84 to -135.00 degrees. Make sure that the circuit conditions between the pins in the J2 connector (315) are as shown in TESTING AND FAULT ISOLATION, Figure 108.

(c) Turn the lever assembly (135) until the API indication is 33.10 to 135.00 degrees. Make sure that the circuit conditions between the pins in the J2 connector (315) are as shown in TESTING AND FAULT ISOLATION, Figure 108.

D. Do a check of the operation of the relays (175).

(1) For 251A4430-1:

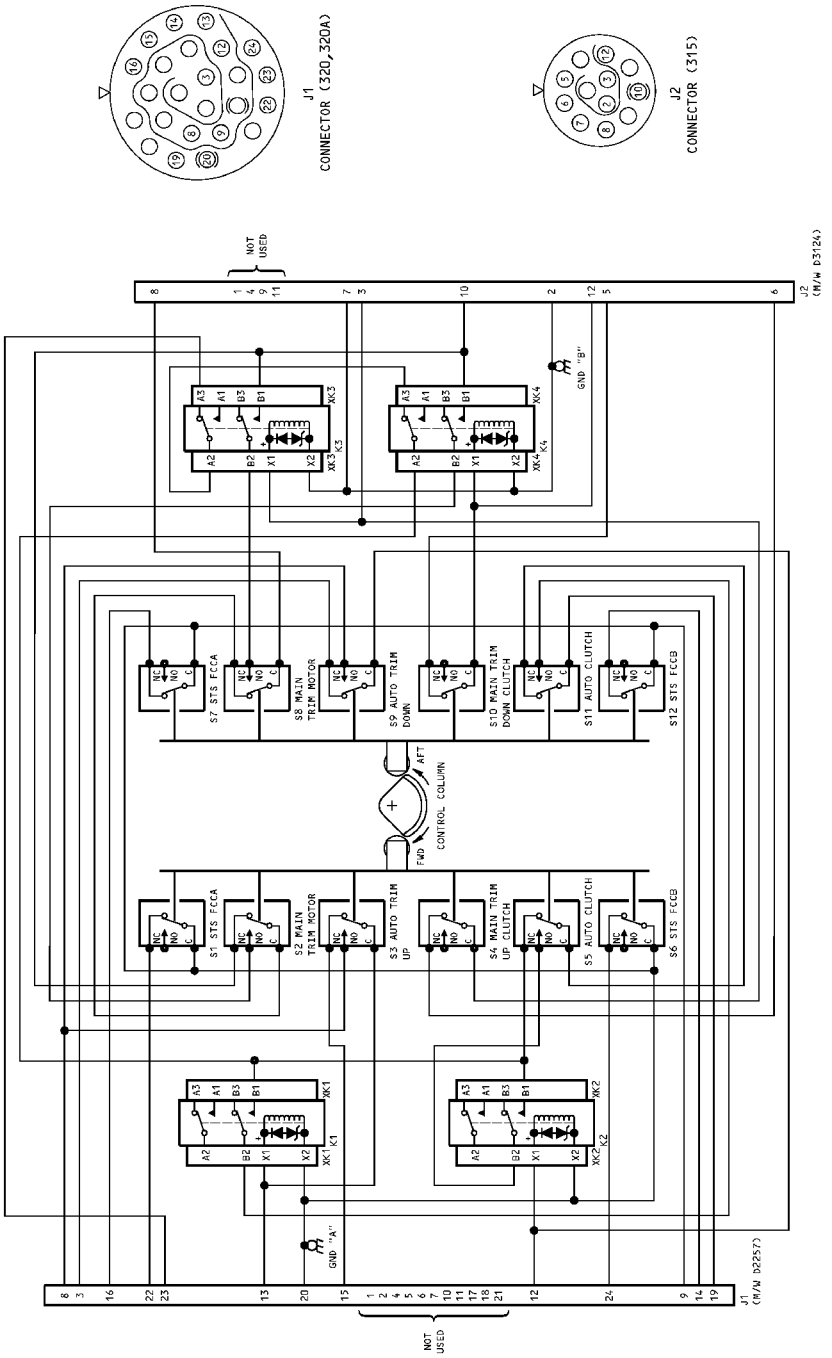
(a) Apply 18-28v dc (110 mA minimum current output) to the specified pins on the applicable connector as shown in TESTING AND FAULT ISOLATION, Figure 109. Connect the specified pins to ground.

(b) Turn the lever assembly (135) until the API indications are as shown in TESTING AND FAULT ISOLATION, Figure 109. Make sure that the circuit conditions between the specified pins on the applicable connector are as shown in the TESTING AND FAULT ISOLATION, Figure 109.

(2) For 251A4430-2, -4:

(a) Apply 18-28v dc (110 mA minimum current output) to the specified pins on the applicable connector as shown in TESTING AND FAULT ISOLATION, Figure 110. Connect the specified pins to ground.

(b) Turn the lever assembly (135) until the API indications are as shown in TESTING AND FAULT ISOLATION, Figure 110. Make sure that the circuit conditions between the specified pins on the applicable connector are as shown in TESTING AND FAULT ISOLATION, Figure 110.



Wire Bundle Details
Figure 104

PINS 1 2	CIRCUIT CONDITION 1			SWITCH/RELAY (REF)
	0.00 ±0.25	-23.42 TO -29.84	26.68 TO 33.10	
8,13	OPEN	CLOSED	OPEN 3	S3
8,12	OPEN	OPEN 3	CLOSED	S9
3,12	CLOSED	CLOSED	OPEN	S9
15,13	CLOSED	OPEN	CLOSED	S3
23,19	------	OPEN	OPEN	S11,S5,K1-K4
23,19	CLOSED	----	----	S11,S5,K3,K4
16,22	CLOSED	OPEN	OPEN	S7,S1
16,24	CLOSED	OPEN	OPEN	S7,S6
16,20	CLOSED	CLOSED	OPEN	S7,K2
16,14	CLOSED	CLOSED	OPEN	S7,S12
16,9	CLOSED	CLOSED	OPEN	S7
22,14	CLOSED	OPEN	OPEN	S1,S12
22,9	CLOSED	OPEN	CLOSED	S1
22,24	CLOSED	OPEN	CLOSED	S1,S6
22,20	CLOSED	OPEN	CLOSED	S1
20,14	CLOSED	CLOSED	OPEN	S12
20,24	CLOSED	OPEN	CLOSED	S6
20,9	CLOSED	CLOSED	CLOSED	--
24,14	CLOSED	OPEN	OPEN	S6,S12
24,9	CLOSED	OPEN	CLOSED	S6
9,14	CLOSED	CLOSED	OPEN	S12

1 CONDITION OF THE CIRCUIT BETWEEN THE PINS AT THE API INDICATIONS (DEG) SHOWN

2 REFER TO WIRE BUNDLE DETAILS TO IDENTIFY PINS IN THE J1 (320) CONNECTOR

3 OPEN CIRCUIT WITH RESISTANCE OF 506 TO 774 OHMS

ITEM NUMBERS REFER TO IPL FIG. 1

251A4430-1 Check of Switch Operation
Figure 105

PINS 1 2	CIRCUIT CONDITION 1			SWITCH/RELAY (REF)
	-23.42 TO 26.68	-29.84 TO -135.00	47.38 TO 135.00	
8,13	OPEN	CLOSED	OPEN 3	S3
8,12	OPEN	OPEN 3	CLOSED	S9
3,12	CLOSED	CLOSED	OPEN	S9
15,13	CLOSED	OPEN	CLOSED	S3
23,19	------	OPEN	OPEN	S11,S5,K1-K4
23,19	CLOSED	----	----	S11,S5,K3,K4
16,22	CLOSED	OPEN	OPEN	S7,S1
16,24	CLOSED	OPEN	OPEN	S7,S6
16,20	------	CLOSED	OPEN	S7,K2
16,20	CLOSED	------	----	S7
16,14	CLOSED	CLOSED	OPEN	S7,S12
16,9	CLOSED	CLOSED	OPEN	S7
22,14	CLOSED	OPEN	OPEN	S1,S12
22,9	CLOSED	OPEN	CLOSED	S1
22,24	CLOSED	OPEN	CLOSED	S1,S6
22,20	CLOSED	OPEN	CLOSED	S1
20,14	CLOSED	CLOSED	OPEN	S12
20,24	CLOSED	OPEN	CLOSED	S6
20,9	CLOSED	CLOSED	CLOSED	--
24,14	CLOSED	OPEN	OPEN	S6,S12
24,9	CLOSED	OPEN	CLOSED	S6
9,14	CLOSED	CLOSED	OPEN	S12

1 CONDITION OF THE CIRCUIT BETWEEN THE PINS AT THE API INDICATIONS (DEG) SHOWN

ITEM NUMBERS REFER TO IPL FIG. 1

2 REFER TO WIRE BUNDLE DETAILS TO IDENTIFY PINS IN THE J1 (320) CONNECTOR

3 OPEN CIRCUIT WITH RESISTANCE OF 506 TO 774 OHMS

251A4430-2, -4 Check of Switch Operation
Figure 106

PINS 1 2	CIRCUIT CONDITION 1			SWITCH/RELAY (REF)
	0.00 ±0.25	-23.42 TO -29.84	26.68 TO 33.10	
3,6	CLOSED	OPEN	CLOSED	S4
5,12	CLOSED	CLOSED	OPEN	S10
8,10	CLOSED			S8,S2
8,10		OPEN		S8,S2,K4
8,10			OPEN	S8,K3

1 CONDITION OF THE CIRCUIT BETWEEN THE PINS AT THE API INDICATIONS (DEG) SHOWN

ITEM NUMBERS REFER TO IPL FIG. 1

2 REFER TO WIRE BUNDLE DETAILS TO IDENTIFY PINS IN THE J2 (315) CONNECTOR

251A4430-1 Check of Switch Operation
Figure 107

PINS 1 2	CIRCUIT CONDITION 1			SWITCH/RELAY (REF)
	-23.42 TO 26.86	-29.94 TO -135.00	33.10 TO 135.00	
3,6	CLOSED	OPEN	CLOSED	S4
5,12	CLOSED	CLOSED	OPEN	S10
8,10	CLOSED	OPEN	OPEN	S8,S2

1 CONDITION OF THE CIRCUIT BETWEEN THE PINS AT THE API INDICATIONS (DEG) SHOWN

ITEM NUMBERS REFER TO IPL FIG. 1

2 REFER TO WIRE BUNDLE DETAILS TO IDENTIFY PINS IN THE J2 (315) CONNECTOR

251A4430-2, -4 Check of Switch Operation
Figure 108

28V DC AT PINS [2]	GROUND AT PINS [2]	PINS [1] [2]	CIRCUIT CONDITION [1]			RELAY
			0.00 ±0.25	-23.42 TO -29.84	26.68 TO 33.10	
5,6 (J2)	7 OR 2 (J2)	8,10 (J2)		CLOSED		K4
5,6 (J2)	7 OR 2 (J2)	8,10 (J2)			CLOSED	K3
3,15 (J1)	9 OR 20 (J1)	19,23 (J1)		CLOSED		K2
3,15 (J1)	9 OR 20 (J1)	19,23 (J1)			CLOSED	K1
3 (J2)	7 OR 2 (J2)	19,23 (J1)	OPEN			K3
12 (J2)	7 OR 2 (J2)	19,23 (J1)	OPEN			K4

[1] CONDITION OF THE CIRCUIT BETWEEN THE PINS AT THE API INDICATIONS (DEG) SHOWN

ITEM NUMBERS REFER TO IPL FIG. 1

[2] REFER TO WIRE BUNDLE DETAILS TO IDENTIFY PINS IN THE J1 (320) AND J2 (315) CONNECTORS

251A4430-1 Check of Relay Operation
Figure 109

28V DC AT PINS [2]	GROUND AT PINS [2]	PINS [1] [2]	CIRCUIT CONDITION [1]				RELAY
			0.00 ±0.25	-135.00 TO -29.84	33.10 TO 135.00	47.38 TO 135.10	
5,6 (J2)	7 OR 2 (J2)	8,10 (J2)		CLOSED			K4
5,6 (J2)	7 OR 2 (J2)	8,10 (J2)			CLOSED		K3
3,15 (J1)	9 OR 20 (J1)	19,23 (J1)		CLOSED			K2
3,15 (J1)	9 OR 20 (J1)	19,23 (J1)				CLOSED	K1
3 (J2)	7 OR 2 (J2)	19,23 (J1)	OPEN				K3
12 (J2)	7 OR 2 (J2)	19,23 (J1)	OPEN				K4

[1] CONDITION OF THE CIRCUIT BETWEEN THE PINS AT THE API INDICATIONS (DEG) SHOWN

ITEM NUMBERS REFER TO IPL FIG. 1

[2] REFER TO WIRE BUNDLE DETAILS TO IDENTIFY PINS IN THE J1 (320A) AND J2 (315) CONNECTORS

251A4430-2, -4 Check of Relay Operation
Figure 110

DISASSEMBLY

1. General

A. This procedure has the data necessary to disassemble the column cutout switch assembly (1A).

B. Disassemble this component sufficiently to isolate the defects, do the necessary repairs, and put the component back to a serviceable condition.

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

D. Refer to IPL Figure 1 for item numbers.

2. Disassembly

A. References

Reference	Title
SOPM 20-50-03	BEARING AND BUSHING REPLACEMENT

B. Procedure

(1) Remove the transmitter assembly (25).

(a) Loosen the screws on the flex coupling (165).

(b) Remove the bolts (5), screw (10), washers (15), and clamp (20), then remove the transmitter assembly (25) from the column cutout switch assembly (1A).

(c) Remove the flex coupling (165) if it is attached to the transmitter shaft.

(d) Remove the screws (30), washers (35), and the plate (40), then remove the transmitter assembly (50) from the coverplate (45).

NOTE: Do not remove the connector (55) from the transmitter (60) unless necessary for repair or replacement.

(2) Remove the bolts (95), washers (100), and the support assembly (105).

NOTE: Do not remove the inserts (110) from the support assembly unless necessary for repair or replacement.

(3) Remove the bolts (65), washers (70), and the cover assembly (75). from the housing assembly (385).

NOTE: Do not remove the rivets (80) and nutplate (85) from the cover assembly (75) unless necessary for repair or replacement.

(4) Remove the bolts (355), washers (360), and covers (365).

(5) Remove the bolt (120), washer (125), nut (130), and lever assembly (135).

NOTE: Do not disassemble the lever assembly unless necessary for repair or replacement.

(6) Remove the screws (200), washers (205), nuts (210), and the cover assembly (215).

NOTE: Do not remove the inserts (220, 225) or the pins (230, 235) from the cover assembly unless necessary for repair or replacement.

(7) Remove the bearings (245, 260) from the cover assembly (215) (SOPM 20-50-03).

(8) Remove the gear (250) and the pinion shaft assembly (270) from the housing assembly (385).

(9) Remove the flex coupling (165) if it is attached to the pinion shaft (290).

(10) Remove the bushing (265) from the pinion shaft assembly (270).

NOTE: Do not remove the pinion (280) or the cam (295) from the pinion shaft (290) unless necessary for repair or replacement.

(11) Remove the screws (325) and the covers (330) from the housing assembly (385).

(12) Remove the switches (340), covers (345), pins (335), and springs (350) from the housing assembly (385). Do not disconnect the switches from the wire bundle assembly (310).

(13) Remove the bolts (185) and washers (190), then remove the relay mount (195) with the relays (175) and relay sockets (180). Do not disconnect the relay sockets from the wire bundle assembly (310).

NOTE: Do not disassemble the relays, relay sockets, and relay mount unless necessary for repair or replacement.

(14) Remove the screws (370), washers (375), and nuts (380), to remove the ground wire connections to the housing assembly (385).

(15) Remove the bolts (300) which attach the connectors (315, 320) to the housing assembly (385). Remove the wire bundle assembly (310) with the attached switches (340), relays (175), and connectors from the housing assembly.

NOTE: Do not disconnect the switches, relay sockets, or connectors from the wire bundle unless necessary for repair or replacement.

(16) Remove the bearings (255) from the housing assembly (385) (SOPM 20-50-03).

NOTE: Do not remove the nutplates (395), inserts (400, 405), decals (415, 420, 430, 435, 440, 440A), or marker (425) from the housing assembly unless necessary for repair or replacement.

CLEANING

1. General

A. This procedure has the data necessary to clean the column cutout switch assembly (1A).

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

C. Refer to IPL Figure 1 for item numbers.

2. Cleaning

A. References

Reference	Title
SOPM 20-30-01	CLEANING AND RELUBRICATING BEARINGS
SOPM 20-30-03	GENERAL CLEANING PROCEDURES

B. Procedure

(1) Clean the bearings (245, 255, 260) as specified in SOPM 20-30-01.

(2) Use standard industry procedures and refer to SOPM 20-30-03 to clean other parts.

CHECK

1. General

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

B. Refer to FITS AND CLEARANCES for the design dimension and wear limits.

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

D. Refer to IPL Figure 1 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. Procedure

(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) Arm (150)

(b) Fitting (155)

(c) Gear (250)

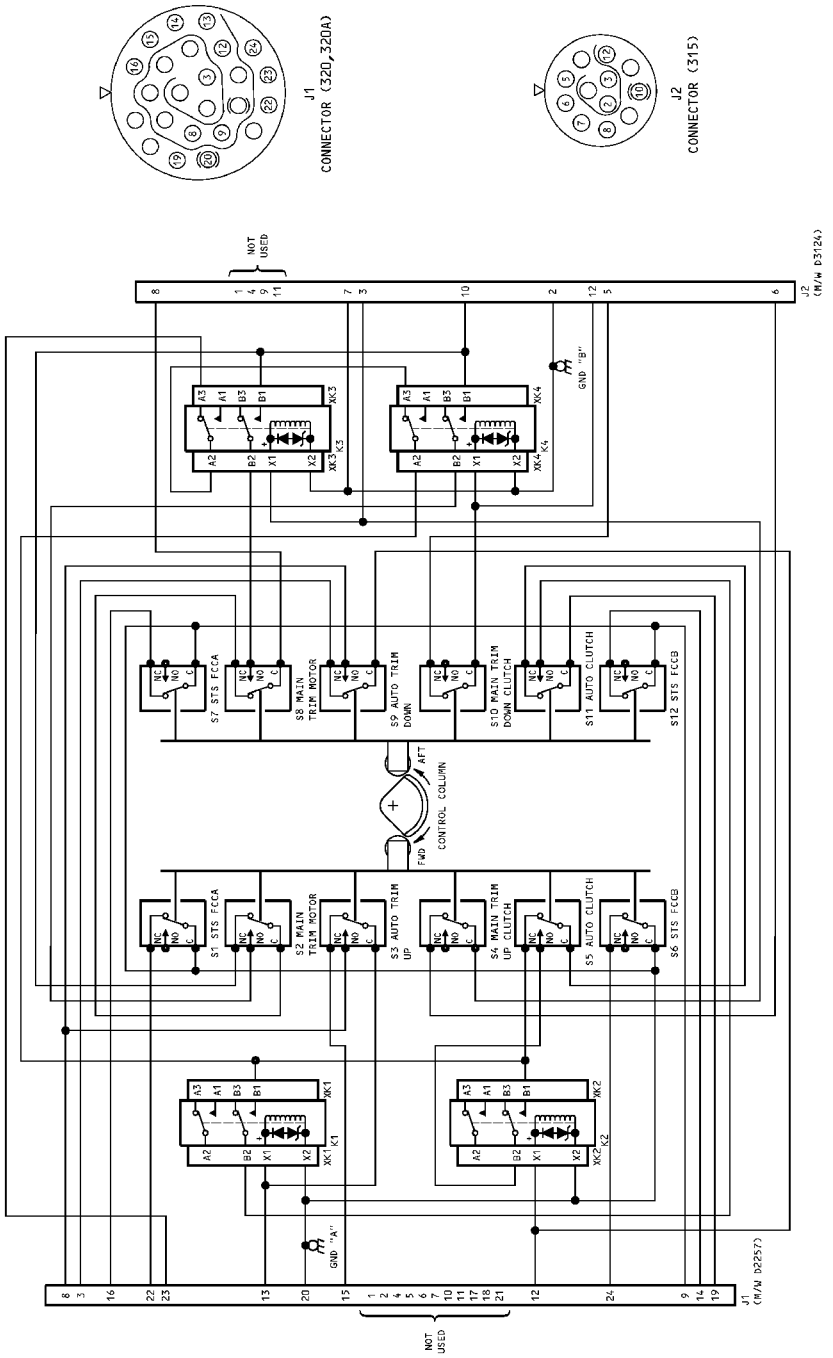
(d) Pinion shaft (290)

(3) Do a penetrant check (SOPM 20-20-02) of these parts:

(a) Cam (295)

(b) Housing (410)

(4) Do a continuity check of the wire bundle assembly (310). Refer to CHECK, Figure 501.



Wire Bundle Details
Figure 501

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
251A4436	SHAFT ASSEMBLY, PINION	2-1
65C25540	HOUSING	3-1
65C31205	MOUNT, RELAY	4-1
69-73309	LEVER ASSEMBLY	5-1
69-73314	PIN	6-1
BAC27DCT0351	DECAL	7-1
BAC27DCT0352	DECAL	
BAC27DCT0355	MARKER	
BAC27DCT0558	DECAL	
BAC27DCT630	DECAL	
BAC27DCT631	DECAL	
BAC27DCT632	DECAL	

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)
∅	DIAMETER
S ∅	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
Ⓜ	MAXIMUM MATERIAL CONDITION (MMC)
Ⓛ	LEAST MATERIAL CONDITION (LMC)
Ⓢ	REGARDLESS OF FEATURE SIZE (RFS)
Ⓟ	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
◎ | ∅ 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
⌖ | ∅ 0.002 Ⓢ | B	LOCATED AT TRUE POSITION WITHIN 0.002 DIA RELATIVE TO DATUM B, REGARDLESS OF FEATURE SIZE
⊥ | ∅ 0.010 Ⓜ | A 0.510 Ⓟ	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 Practices Manual (SOPM) for the SOPM subjects identified in this procedure.

C. Refer to IPL Figure 1 for item numbers.

2. Refinish of Other Parts

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 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure

NOTE: For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02.

(1) Repair of parts listed in REPAIR 1-1, Table 601 consists of restoration of the original finish.

Table 601: Refinish Details

IPL FIG. & ITEM	MATERIAL	FINISH
Fig. 1		
Plate (40), cover- plate (45), cover (90)	Aluminum alloy	Anodize (F-17.31) and apply primer, C00259 (F-20.02).
Support (115)	Aluminum alloy	Anodize (F-17.31) and apply primer, C00259 (F-20.02), but do not apply primer in the insert holes.
Arm (150), fitting (155)	CRES, 150-170 ksi	Passivate (F-17.09)
Cover (240)	Aluminum alloy	Anodize (F-17.31) and apply primer, C00259 (F-20.02), but do not apply primer in the bearing bores, or in the holes for the rig pin and index pins. Do not apply primer in the insert holes.
Gear (250)	CRES, 180 ksi minimum	Passivate (F-17.25).
Cover (365)	Aluminum alloy	Chemical treat and apply primer, C00259 (F-18.06).

BOEING®

COMPONENT MAINTENANCE MANUAL

PINION SHAFT ASSEMBLY - REPAIR 2-1

251A4436–1, –3

1. General

A. This procedure has the data necessary to disassemble and assemble the pinion shaft assembly (270, 270A), and to replace parts on the assembly.

B. Refer to the Standard Overhaul Practices 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 the item numbers.

2. Replacement of Parts

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A50009	Sealant - Low Density, Chromate Type Synthetic Rubber	BMS5-142, Class B-1/2
G01048	Lockwire - Corrosion Resistant Steel (0.032 In. Dia.)	NASM20995˜ C32

B. References

Reference	Title
SOPM 20-10-02	MACHINING OF ALLOY STEEL
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-50-02	INSTALLATION OF SAFETYING DEVICES
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 SOPM 20-30-02. For the 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) Disassemble the pinion shaft assembly (270, 270A) (REPAIR 2-1, Figure 601).

NOTE: If replacement of the pionion (280) or the cam (295) is necessary, we recommend that you replace the pinion shaft (290) at the same time. This is to make sure that the holes for the rivets (275, 285, 285A), or pin (277) and bolt (287), will be aligned after they are machined.

(a) For pinion shaft assembly (270) remove the rivet (275), then remove the pinion (280) from the pinion shaft (290).

(b) For pinion shaft assembly (270A) remove the pin (277) and lockwire, then remove the pinion (280) from the pinion shaft (290).

(c) Remove the rivets (285, 285A), or collar (289), washer (288A) and bolt (287), then remove the cam (295) from the pinion shaft (290).

(2) Assemble the pinion shaft assembly (270, 270A) (REPAIR 2-1, Figure 601, REPAIR 2-1, Figure 602).

(a) If new parts are used, install the pinion (280) or the cam (295) on the pinion shaft (290) and machine the holes for the rivets (275, 285, 285A), or pin (277) and bolt (287), as shown in REPAIR 2-1, Figure 601 and REPAIR 2-1, Figure 602 (SOPM 20-10-02). Make sure that the cam and the pinion are in the correct relation to the pinion shaft before the holes are machined. Remove the parts from the pinion shaft.

NOTE: The angular position of the hole for the rivet (275), or pin (277), is not controlled.

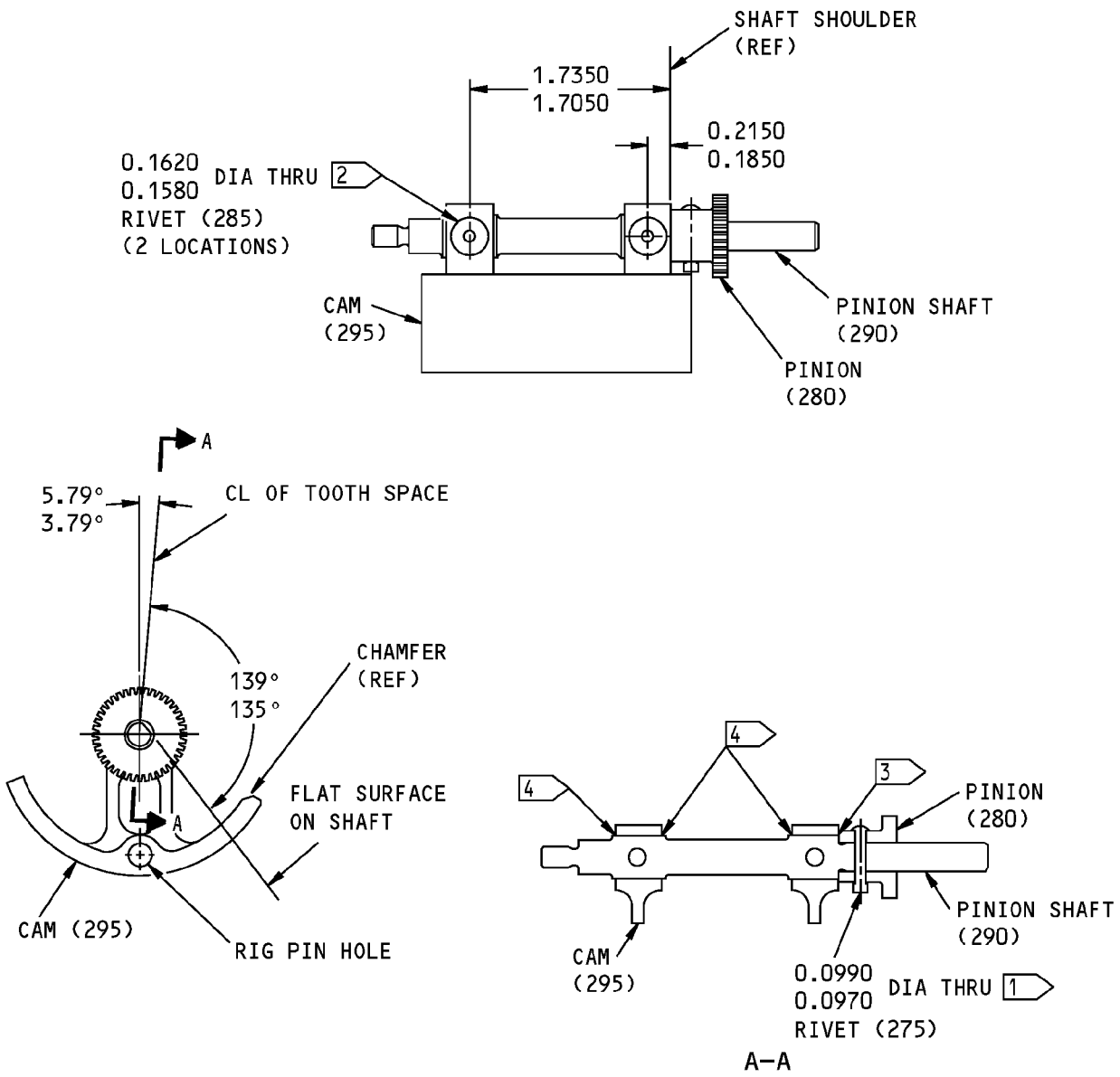
(b) Chemical treat (F-17.10) the rivet holes in the cam (295).

(c) Install the pinion (280) on the pinion shaft (290), then install the rivet (275), or the pin (277) and lockwire, G01048; make sure to install the lockwire as shown in REPAIR 2-1, Figure 601 and as shown in SOPM 20-50-02.

(d) Apply sealant, A50009, as shown in REPAIR 2-1, Figure 601 and REPAIR 2-1, Figure 602 (SOPM 20-50-12), to the faying surfaces of the pinion (280) and the cam (295), then install the cam on the pinion shaft (290). Install the rivets (285, 285A) for bolts (287), washers (288A) and collar (289).

NOTE: Make sure that the cam is installed with the chamfered edge on the same side as the flat surface on the shaft as shown in REPAIR 2-1, Figure 601 and REPAIR 2-1, Figure 602.

(e) Apply a fillet seal of sealant, A50009 to the joints between the cam (295) and the pinion shaft (290) as shown in REPAIR 2-1, Figure 601 and REPAIR 2-1, Figure 602flagnote 4 (SOPM 20-50-12).



1 ANGULAR POSITION OF THIS HOLE IS NOT CONTROLLED

2 CHEMICAL TREAT (F-17.10) THE HOLES IN THE CAM

3 APPLY FAY SURFACE SEAL WITH BMS 5-142

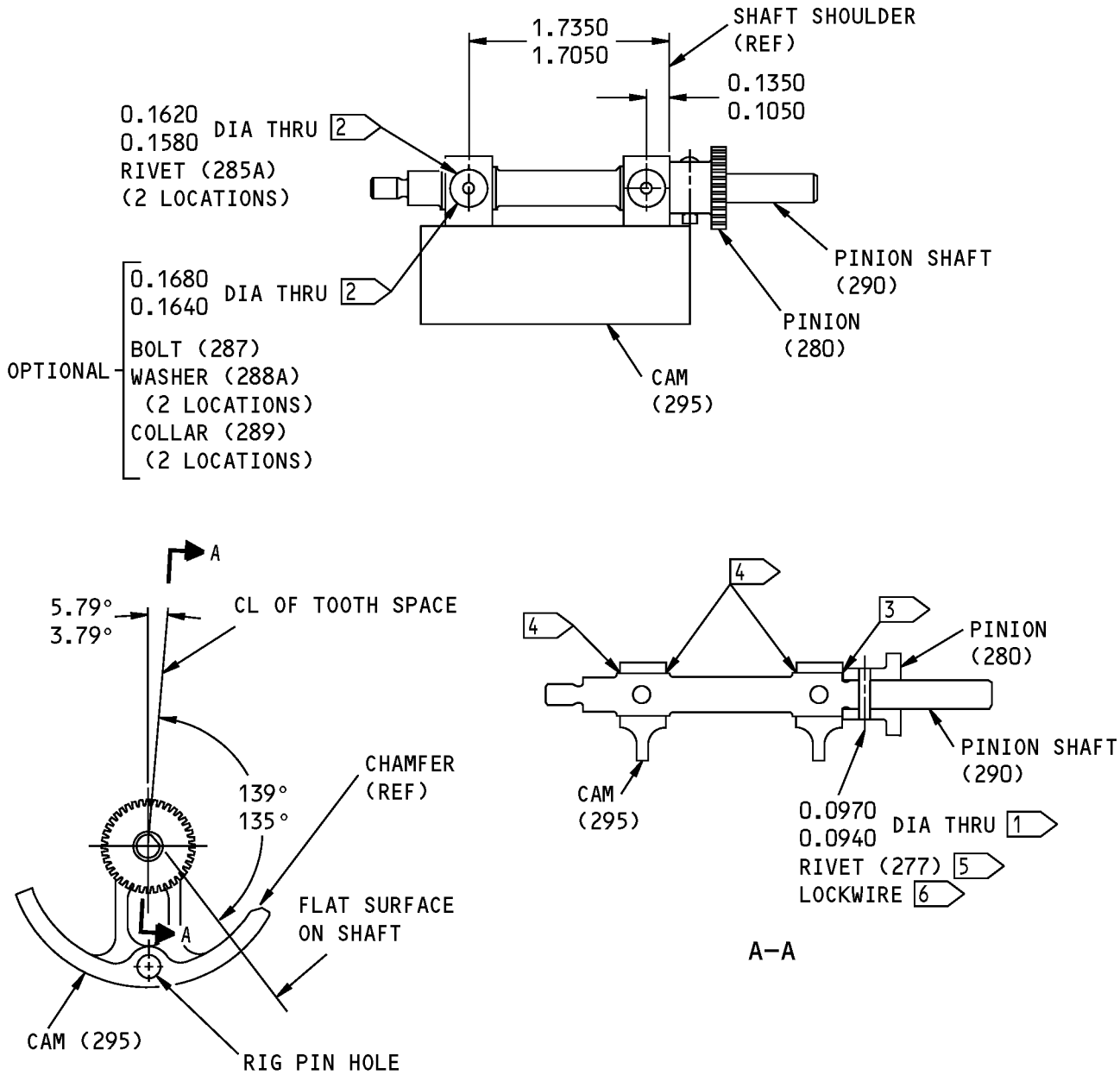
4 APPLY FILLET SEAL WITH BMS 5-142

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

251A4436-1 Pinion Shaft Assembly - Parts Replacement
Figure 601



1. ANGULAR POSITION OF THIS HOLE IS NOT CONTROLLED
2. CHEMICAL TREAT (F-17.10) THE HOLES IN THE CAM
3. APPLY FAY SURFACE SEAL WITH BMS 5-95
4. APPLY FILLET SEAL WITH BMS 5-95
5. ENDS OF PIN MUST BE FLUSH WITH PINION HUB ±0.030 INCH
6. MS20995C32 SINGLE TWIST METHOD

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

251A4436-3 Pinion Shaft Assembly - Parts Replacement
Figure 602

PINION SHAFT ASSEMBLY - REPAIR 2-2

251A4436–1

1. General

A. This procedure has the data necessary to refinish the parts of the pinion shaft assembly (270).

B. Refer to the Standard Overhaul Practices 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. Refinish

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

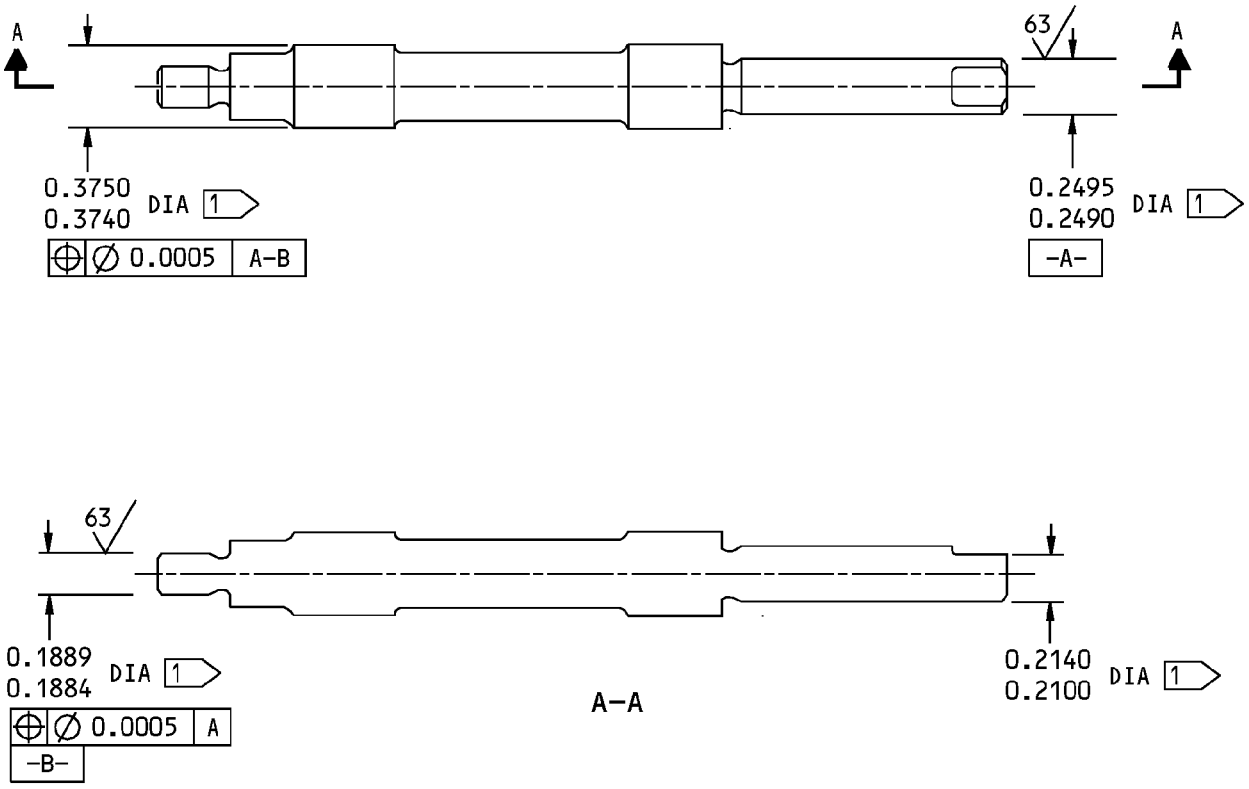
Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure

NOTE: For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02.

(1) Cam (295) – Anodize (F-17.31) and apply primer, C00259 (F-20.02), but do not apply primer in the holes for the pinion shaft and the rig pin. Material: Aluminum alloy.

(2) Pinion shaft (290) – Cadmium plate (F-16.06). See REPAIR 2-2, Figure 601. Material: CRES, 180-200 ksi.



1 DIMENSIONS APPLY AFTER PLATING

125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

251A4437-1 Pinion Shaft Refinish
Figure 601

HOUSING - REPAIR 3-1

65C25540–15

1. General

A. This procedure has the data necessary to refinish the housing (410).

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

C. Refer to IPL Figure 1 for item numbers.

2. Refinish

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
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 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-50-10	APPLICATION OF STENCILS, INSIGNIA, SILK SCREEN, PART NUMBERING AND IDENTIFICATION MARKINGS
SOPM 20-60-02	FINISHING MATERIALS

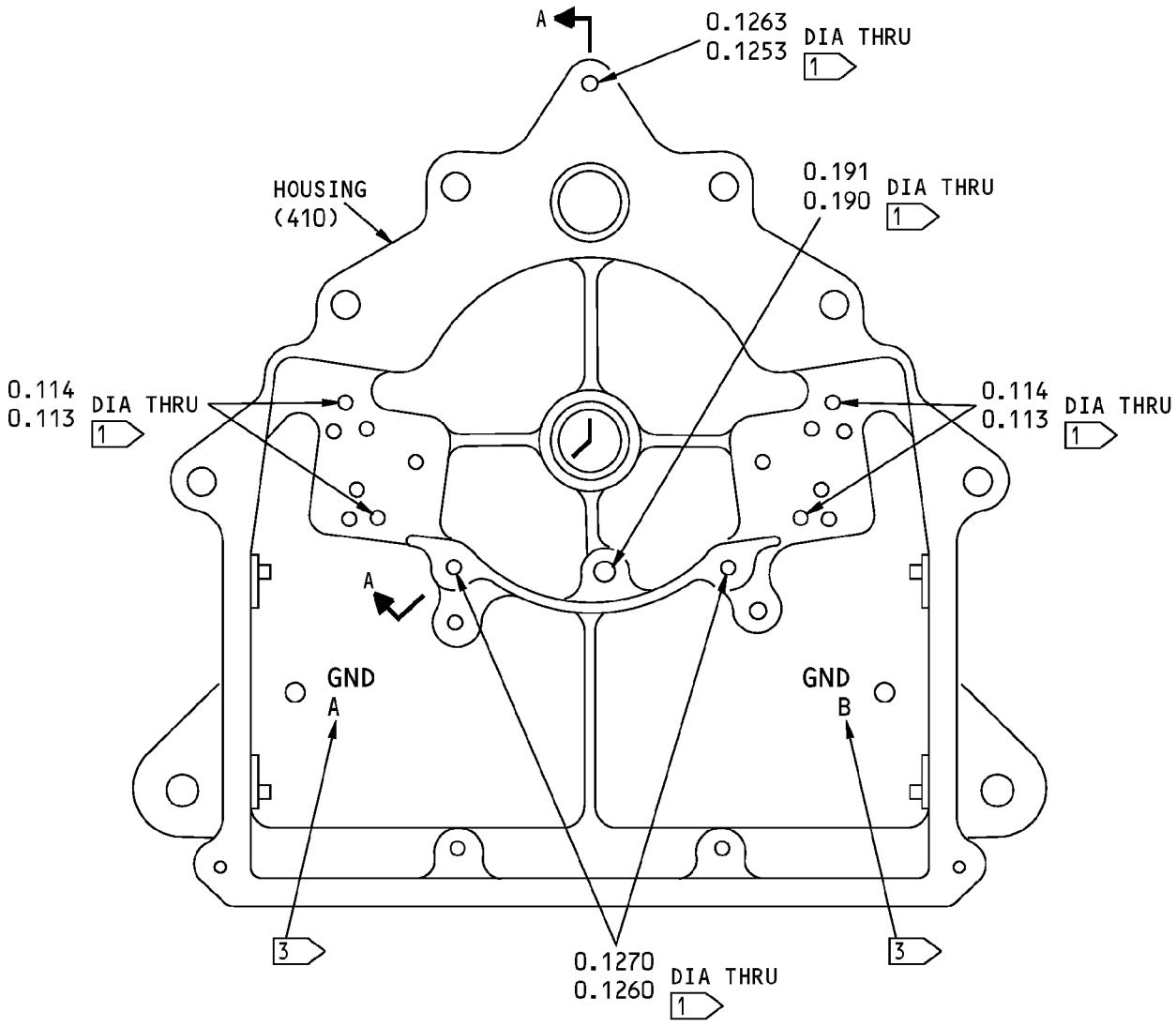
C. Procedure

NOTE: For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02.

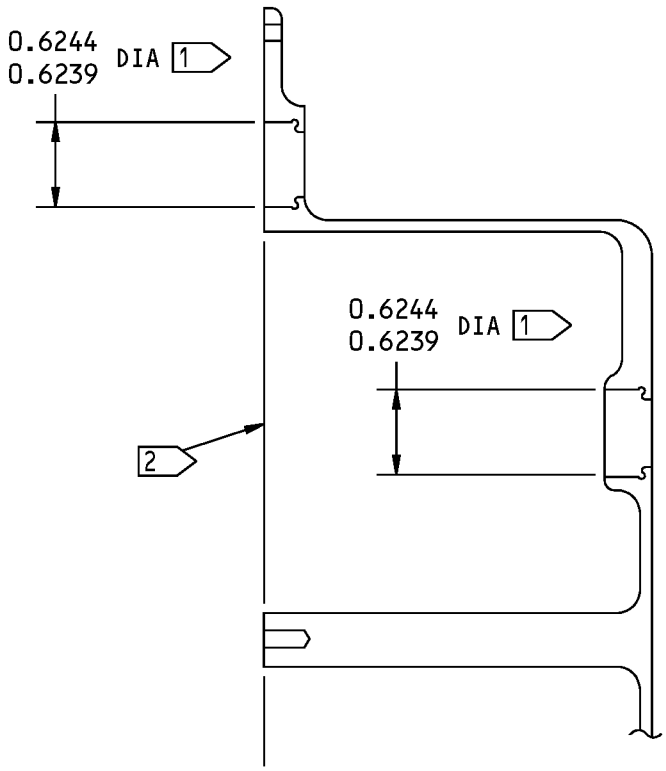
(1) Anodize and apply primer, C00259 (F-18.13), but do not apply primer in the holes shown in REPAIR 3-1, Figure 601. Apply enamel coating, C00260 (F-21.03) to the external surfaces, but do not apply enamel in the holes or on the surface shown in REPAIR 3-1, Figure 601.

(2) Use a rubber stamp or silk screen to identify the location of the electrical grounds, as shown in REPAIR 3-1, Figure 601 (SOPM 20-50-10).

(3) Material: Aluminum alloy



65C25540-15 Housing Refinish
Figure 601 (Sheet 1 of 2)



A–A

1 DO NOT APPLY PRIMER TO THESE HOLES.

2 DO NOT APPLY ENAMEL TO THIS SURFACE.

3 USE A RUBBER STAMP OR SILK SCREEN TO IDENTIFY THE ELECTRICAL GROUNDS.

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

65C25540-15 Housing Refinish
Figure 601 (Sheet 2 of 2)

RELAY MOUNT - REPAIR 4-1

65C31205–5

1. General

A. This procedure has the data necessary to refinish the relay mount (195).

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

C. Refer to IPL Figure 1 for item numbers.

2. Refinish

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 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-60-02	FINISHING MATERIALS

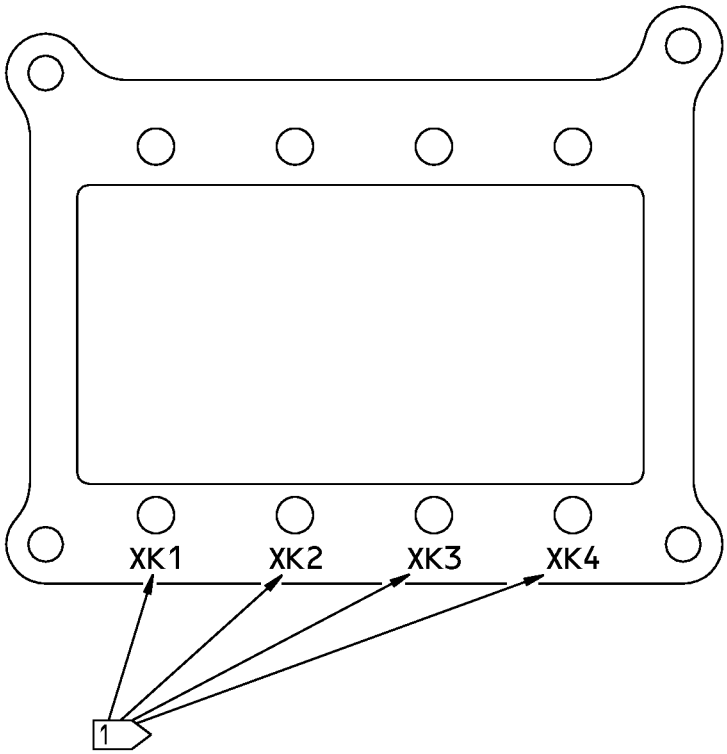
C. Procedure

NOTE: For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01. For finishing materials, refer to SOPM 20-60-02.

(1) Anodize (F-17.05) and apply primer, C00259 (F-20.02).

(2) Silk screen the reference designations as shown in REPAIR 4-1, Figure 601.

(3) Material: Aluminum alloy



1 SILK SCREEN THE REFERENCE DESIG-
NATIONS AS SHOWN, IN 0.08-INCH
BLACK CHARACTERS (SOPM 20-50-10).

65C31205-5 Relay Mount Refinish
Figure 601

LEVER ASSEMBLY - REPAIR 5-1

69-73309–1

1. General

A. This procedure has the data necessary to disassemble and assemble the lever assembly (135), and to replace parts on the assembly.

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

C. Refer to IPL Figure 1 for item numbers.

2. Replacement of Parts

A. References

Reference	Title
SOPM 20-10-02	MACHINING OF ALLOY STEEL

B. Procedure

(1) Disassemble the lever assembly (135).

(a) Remove the rivets (140A, 145A).

(b) Remove the fitting (155) from the arm (150).

NOTE: Do not remove the marker (160) from the arm unless replacement is necessary.

(2) Assemble the lever assembly (135). See REPAIR 5-1, Figure 601.

(a) Install the fitting (155) in the arm (150) as shown in REPAIR 5-1, Figure 601. If new parts are used, machine the 0.158-0.159 inch diameter holes for the rivets as shown in the figure (SOPM 20-10-02).

(b) Install the rivets (140A, 145A). The driven heads of the rivets must be 0.185 inch in diameter, or larger.

(c) Clean out the center hole in the rivets to the initial 0.040-0.046 inch diameter.

3. Marker Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
B00571	Coating - Clear Hydraulic Fluid Resistant Topcoat	BAC5710, Type 41

B. References

Reference	Title
SOPM 20-30-03	GENERAL CLEANING PROCEDURES
SOPM 20-44-01	APPLICATION OF SPECIAL PURPOSE COATINGS AND FINISHES
SOPM 20-50-05	APPLICATION OF ALUMINUM FOIL AND OTHER MARKERS
SOPM 20-60-02	FINISHING MATERIALS

C. Procedure

NOTE: For finishing materials, refer to SOPM 20-60-02.

(1) Remove the marker (160).

(2) Clean the surface of the arm (150) (SOPM 20-30-03).

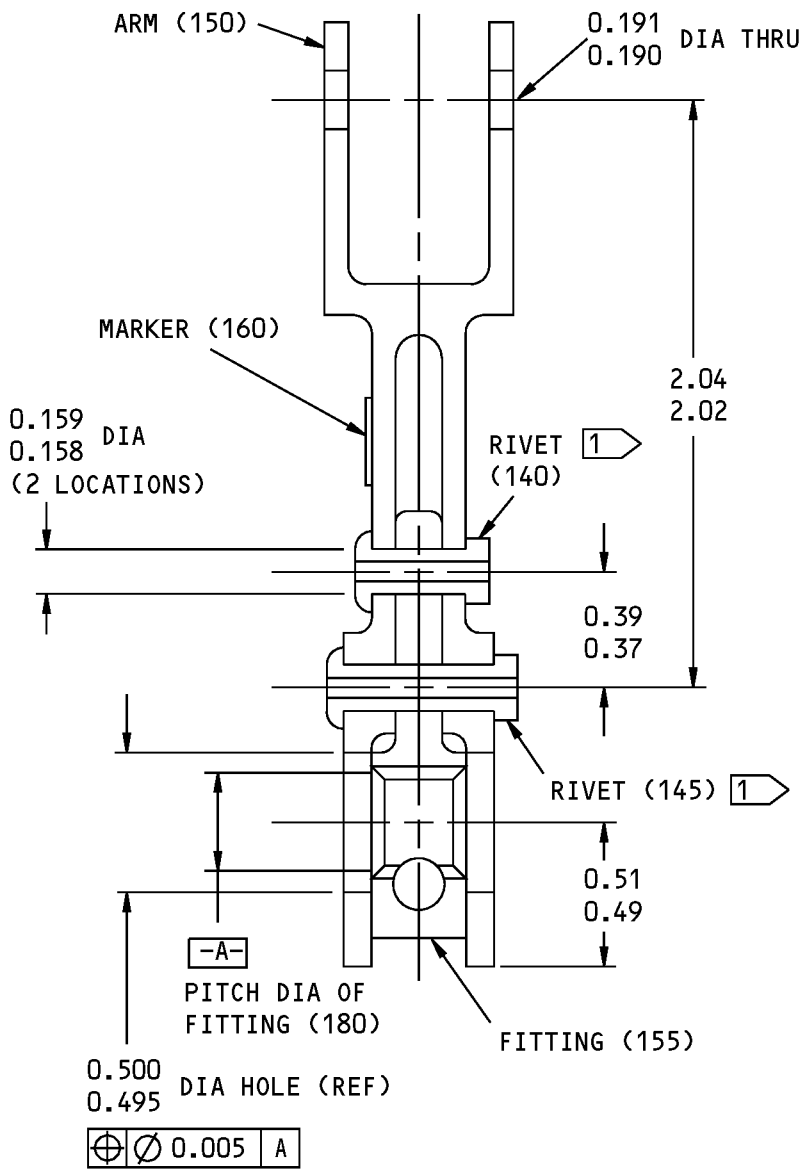
(3) Install the marker (160) on the arm (150) as shown in REPAIR 5-1, Figure 601 (SOPM 20-50-05).

(4) Apply Type 41 coating, B00571 to the edges of the marker (SOPM 20-44-01).

4. Refinish

A. Procedures

(1) Refinish the arm (150) and the fitting (155) as necessary. Refer to REPAIR 1-1.



1 CLEAN OUT THE CENTER HOLE IN THE RIVET TO 0.040–0.046 DIA AFTER INSTALLATION

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

69-73309-1 Lever Assembly - Parts Replacement
Figure 601

PIN - REPAIR 6-1

69-73314–1

1. General

A. This procedure has the data necessary to refinish the pin (335).

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

C. Refer to IPL Figure 1 for item numbers.

2. Refinish

A. References

Reference	Title
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES

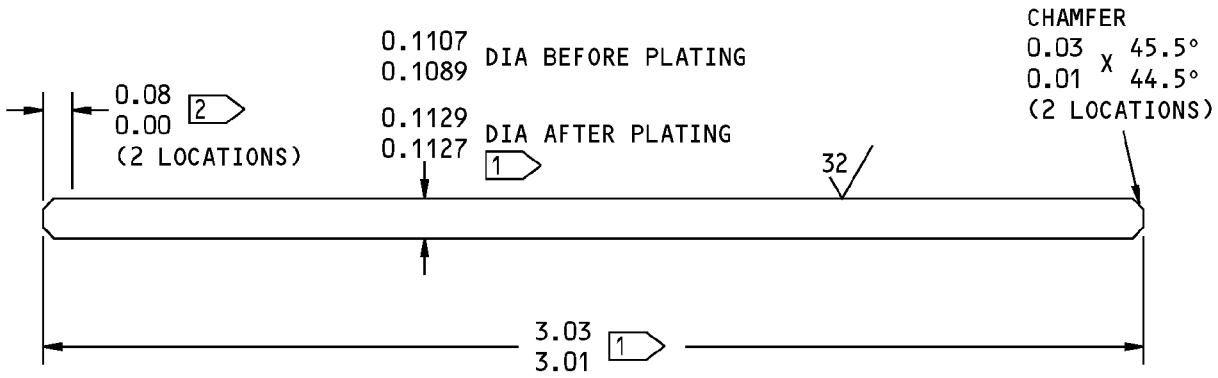
B. Procedure

NOTE: For stripping of protective finishes, refer to SOPM 20-30-02. For the decoding table for Boeing finish codes, refer to SOPM 20-41-01.

(1) Passivate (F-17.09) all surfaces which are not chrome-plated.

(2) Apply chrome plate (F-15.03) to 0.001-0.002 inch thickness, as shown in REPAIR 6-1, Figure 601.

(3) Material: CRES, 180-200 ksi.



1 APPLY CHROME PLATE (F-15.03), 0.001-0.002 THICK ON THIS SURFACE.

2 CHROME PLATE RUNOUT IN THIS AREA.

ALL DIMENSIONS ARE IN INCHES

69-73314-1 Pin Refinish
Figure 601

DECAL OR MARKER - REPAIR 7-1

BAC27DCT0351, BAC27DCT0352, BAC27DCT0355, BAC27DCT0558, BAC27DCT630, BAC27DCT631, BAC27DCT632

1. General

A. This procedure has the data necessary to replace the vinyl decals (415, 420, 430, 435, 440) or the aluminum foil marker (425).

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

C. Refer to IPL Figure 1 for the item numbers.

2. Decal (415, 420, 430, 435, 440, 440A) Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
B00571	Coating - Clear Hydraulic Fluid Resistant Topcoat	BAC5710, Type 41

B. References

Reference	Title
SOPM 20-30-03	GENERAL CLEANING PROCEDURES
SOPM 20-44-01	APPLICATION OF SPECIAL PURPOSE COATINGS AND FINISHES
SOPM 20-50-05	APPLICATION OF ALUMINUM FOIL AND OTHER MARKERS
SOPM 20-50-10	APPLICATION OF STENCILS, INSIGNIA, SILK SCREEN, PART NUMBERING AND IDENTIFICATION MARKINGS
SOPM 20-60-02	FINISHING MATERIALS

C. Procedures

NOTE: For finishing materials, refer to SOPM 20-60-02.

NOTE: As an alternative to the decals, you can use a rubber stamp at the applicable locations (SOPM 20-50-10).

(1) Remove the damaged or defective decal (415, 420, 430, 435, 440, 440A).

(2) Clean the surface of the housing (410) (SOPM 20-30-03).

(3) Install the decal approximately in the location shown in REPAIR 7-1, Figure 601 (SOPM 20-50-05).

(4) Apply Type 41 coating, B00571 to the edges of the decal (SOPM 20-44-01).

3. Marker (425) Replacement

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
B00571	Coating - Clear Hydraulic Fluid Resistant Topcoat	BAC5710, Type 41

B. References

Reference	Title
SOPM 20-30-03	GENERAL CLEANING PROCEDURES
SOPM 20-44-01	APPLICATION OF SPECIAL PURPOSE COATINGS AND FINISHES
SOPM 20-50-05	APPLICATION OF ALUMINUM FOIL AND OTHER MARKERS
SOPM 20-60-02	FINISHING MATERIALS

C. Procedures

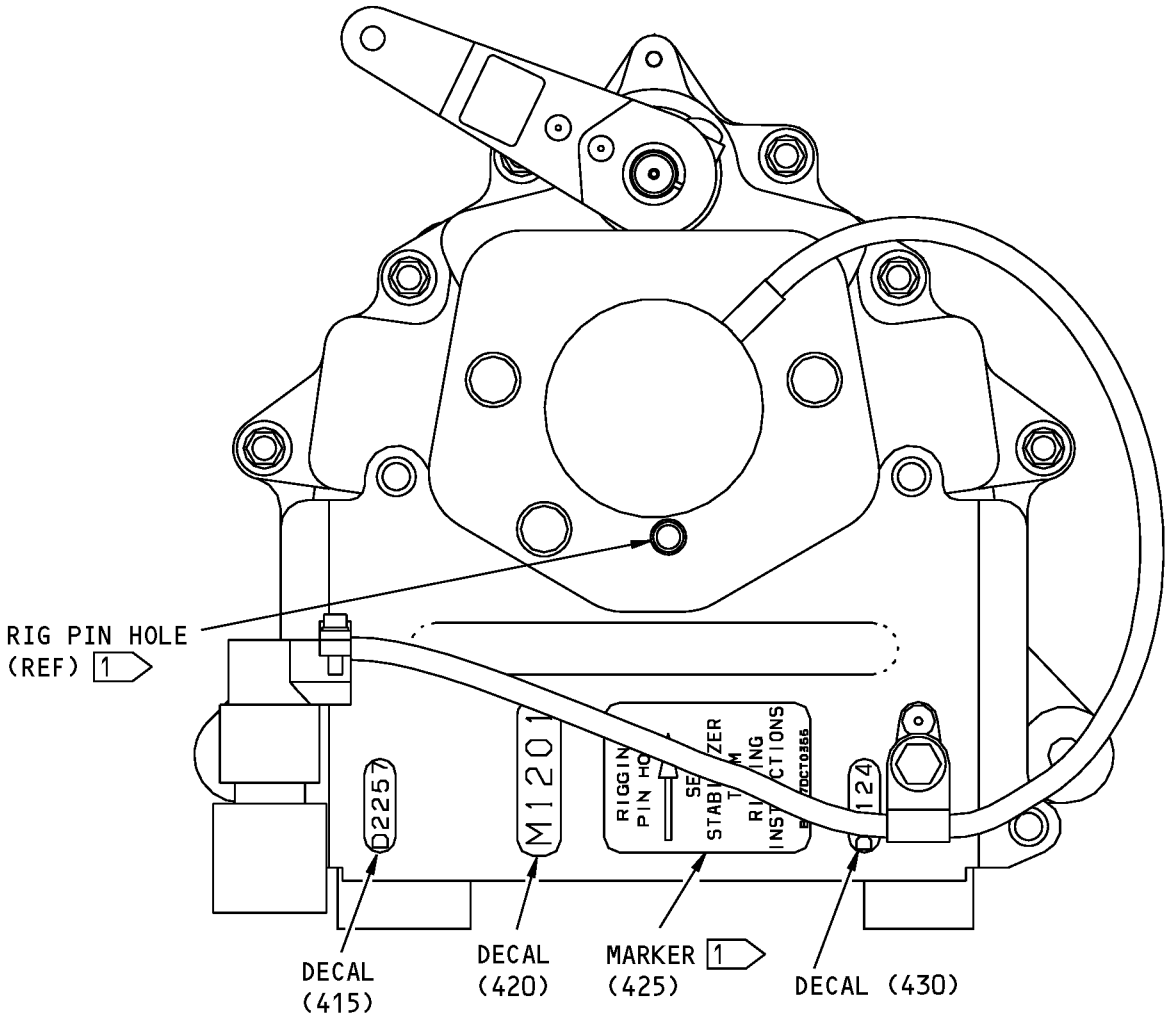
NOTE: For finishing materials, refer to SOPM 20-60-02.

(1) Remove the damaged or defective marker (425).

(2) Clean the surface of the housing (410) (SOPM 20-30-03).

(3) Install the marker approximately in the location shown in REPAIR 7-1, Figure 601 (SOPM 20-50-05). Align the arrow on the marker with the rig pin hole.

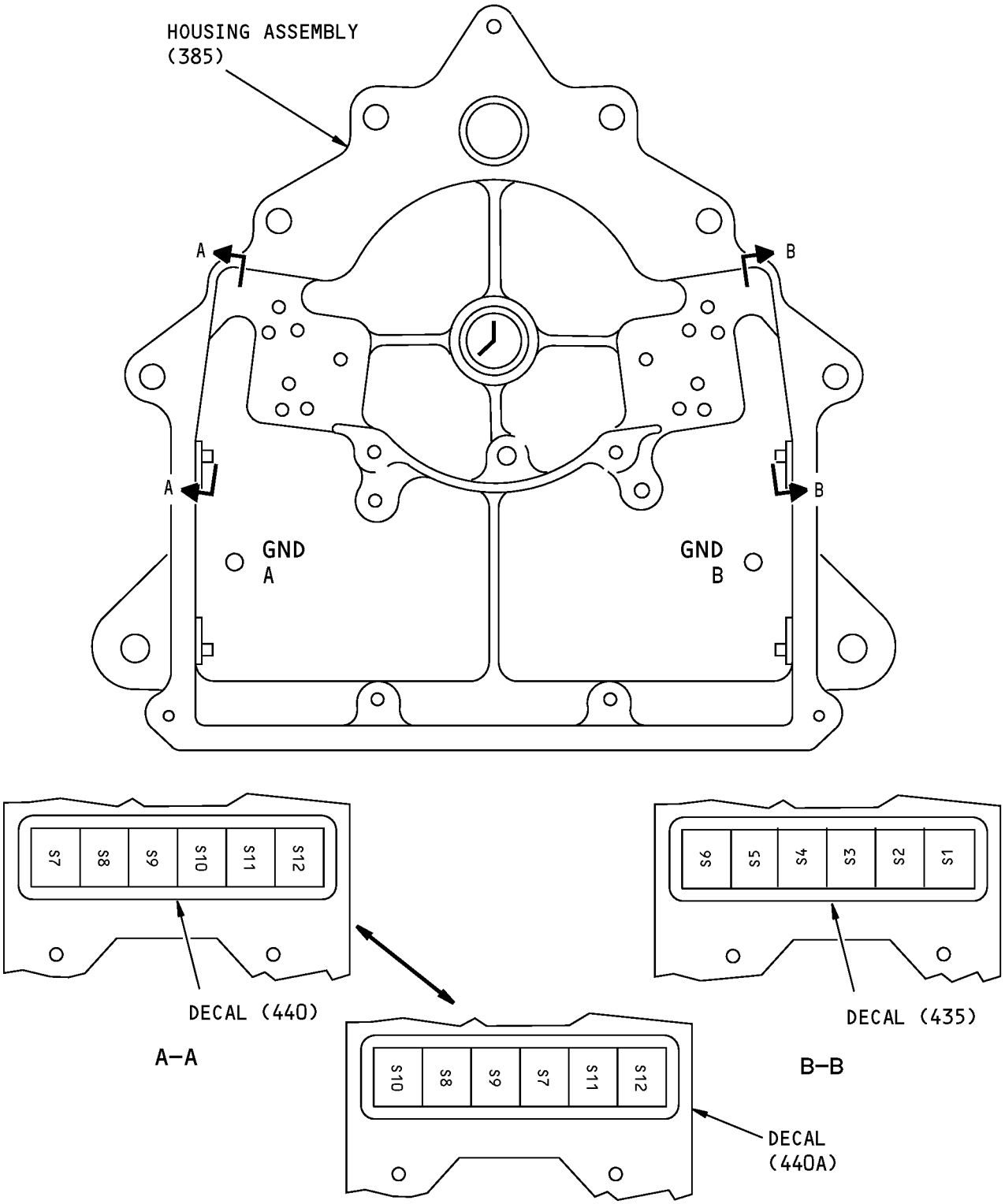
(4) Apply Type 41 coating, B00571 to the edges of the marker (SOPM 20-44-01).



1 ALIGN ARROW ON THE MARKER WITH THE RIG PIN HOLE

ITEM NUMBERS REFER TO IPL FIG. 1

BAC27DCT0351, BAC27DCT0352, BAC27DCT0355, BAC27DCT0558, BAC27DCT630, BAC27DCT631, BAC27DCT632 Decal and Marker Replacement
Figure 601 (Sheet 1 of 2)



BAC27DCT0351, BAC27DCT0352, BAC27DCT0355, BAC27DCT0558, BAC27DCT630, BAC27DCT631, BAC27DCT632 Decal and Marker Replacement
Figure 601 (Sheet 2 of 2)

ASSEMBLY

1. General

A. This procedure has the data necessary to assemble the column cutout switch assembly (1A). There are two parts:

(1) Assembly of the column cutout switch assembly (1A)

(2) Storage

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

C. Refer to IPL Figure 1 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
A50009	Sealant - Low Density, Chromate Type Synthetic Rubber	BMS5-142, Class B-1/2
C00913	Compound - Corrosion Inhibiting Material, Nondrying Resin Mix	BMS 3-27
D00013	Grease - Aircraft And Instrument Grease	MIL-PRF-23827 (NATO G-354) (Supersedes MIL-G-23827)
D00015	Grease - Aircraft Bearing (Use BMS 3-24 until existing stocks are depleted, BMS 3-33 supersedes BMS 3-24)	BMS3-24 (Superseded by BMS 3-33)

B. References

Reference	Title
SOPM 20-11-03	REPAIR OF ELECTRICAL TERMINATIONS AND ELECTRICAL BONDING AREAS
SOPM 20-30-02	STRIPPING OF PROTECTIVE FINISHES
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-50-03	BEARING AND BUSHING REPLACEMENT
SOPM 20-50-12	APPLICATION OF ADHESIVES
SOPM 20-60-03	LUBRICANTS
SOPM 20-60-04	MISCELLANEOUS MATERIALS

C. Procedure (ASSEMBLY, Figure 701 and ASSEMBLY, Figure 702)

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

(1) Install the bearings (255) in the housing assembly (385) with sealant, A00247 (SOPM 20-50-03).

(2) Install the bearings (245, 260) in the cover assembly (215) with sealant, A00247 (SOPM 20-50-03).

(3) Install the gear (250) and pinion shaft assembly (270).

(a) Apply a layer of grease, D00015 or grease, D00013 to the short end of the shaft of the pinion shaft assembly (270). Apply a layer of the grease to the ID of the applicable bearing (255) in the housing assembly (385). Install the pinion shaft assembly into the bearing in the housing.

(b) Install the rig pin in the cam (295) and the housing assembly (385).

(c) Apply a layer of grease, D00015 or grease, D00013 to the short shaft on the gear (250), and to the ID of the applicable bearing (255) in the housing assembly (385). Install the gear into the bearing in the housing.

(4) Remove the backlash between the gear (250) and the pinion (280).

(a) Make a record of where the gear (250) engages the pinion (280).

(b) Pull the gear (250) out and turn the floating part of the pinion (280) 2 to 4 teeth.

(c) Install the gear (250) again so that the gear teeth engage the fixed part of the pinion (280) in the same location as before.

NOTE: The spring load on the floating part of the pinion removes the backlash between the gear and the pinion.

(5) Install the switches (340).

(a) Put the switches (340) in the correct sequence (S1 thru S6 and S7 thru S12), then install the pins (335) through the switches and the covers (345).

(b) Install the springs (350) in the housing assembly (385).

(c) Install the switches (340) in the housing assembly (385). Make sure that the pins go into the applicable holes in the housing, and that the springs (350) are against the covers (345).

(d) Install the covers (330) on the housing assembly (385) with the screws (325).

NOTE: The painted surface of the covers must face outside, away from the housing.

(6) Install the cover assembly (215).

(a) Install the bushing (265) on the pinion shaft assembly (270).

(b) Apply a layer of grease, D00015 or grease, D00013 to the shaft on the gear (250), and to the end of the pinion shaft assembly (270). Apply the grease to the ID of the bearings (245, 260) in the cover assembly (215).

(c) Install the cover assembly (215) on the housing assembly (385) with the screws (200), washers (205), and nuts (210). Make sure that the pins (335) go into the applicable holes in the cover assembly.

(7) Install the lever assembly (135).

(a) Install the lever assembly (135) with the marker (160) on the front side as shown in ASSEMBLY, Figure 701. Install the bolt (120), washer (125), and nut (130) to hold the lever assembly to the gear (250).

(b) With the rig pin installed, measure the distance between the clevis hole in the input lever assembly (135) and the applicable bolthole in the housing (410). Make sure that the distance is 3.350-3.440 inches.

(c) If the distance is not correct, remove the lever assembly (135) and the cover assembly (215), and adjust the position of the gear (250) as necessary. Install the cover assembly and lever assembly, and measure the distance again.

(8) Install the electrical ground connections (SOPM 20-11-03).

(a) Clean the area around the screw (370) holes on the inside of the housing assembly (385) to prepare for the electrical bonding.

(b) Install the screws (370), washers (375), and nuts (380) to attach the ground terminals on the wire bundle assembly (310) to the housing assembly (385).

(c) Measure the resistance between the ground terminal and the housing (410). Make sure the resistance is not more than 0.001 ohm.

(d) Apply a fillet seal of BMS 5-142 sealant, A50009 at the edges of the joints between the electrical faying surfaces (SOPM 20-50-12).

(e) Refinish the housing (410), as necessary, on the surfaces not covered by the electrical ground connections. Refer to REPAIR 3-1.

NOTE: You can chemical treat (F-17.10) the bare metal as an alternative to the anodize.

(9) Install the relay mount (195), relays (175), and relay sockets (180) with the bolts (185) and washers (190). Make sure that the polarizing pins on the relays are located as shown in ASSEMBLY, Figure 701.

(10) Install the connectors (315, 320) with the bolts (300) and nuts (305). Make sure that the master keyway on the connectors is located as shown in ASSEMBLY, Figure 701.

(11) Install the cover assembly (75) with the bolts (65) and washers (70).

(12) Install the covers (365) with the bolts (355) and washers (360).

(13) Install the flex coupling (165) on the pinion shaft assembly (270).

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES, AND A SMALL AMOUNT OF BOUND ASBESTOS. CONSULT THE APPLICABLE SAFETY STANDARDS FOR APPROVED HANDLING PROCEDURES.

CAUTION: BMS 3-27 COMPOUND IS USED ONLY IN STATIC JOINTS WHERE GREASE CANNOT BE APPLIED. BMS 3-27 COMPOUND IN DYNAMIC JOINTS WILL NOT LET THEM MOVE FREELY.

(a) Apply corrosion inhibiting compound, C00913 to the end of the pinion shaft assembly (270). Put the pinion shaft into the smaller "D" hole in the flex coupling.

NOTE: When you look at the clamping slots in the flex coupling from the side and with the screw heads up, the smaller "D" hole is on the right end.

(b) Push the flex coupling (165) fully against the pinion shaft (290), then tighten the applicable clamping screw on the flex coupling to 12-15 pound-inches.

(14) Install the support assembly (105) with the bolts (95) and washers (100).

(15) Install the transmitter assembly (25).

(a) Attach the transmitter assembly (50) to the coverplate (45) with the plate (40), screws (30), and washers (35).

WARNING: BMS 3-27 CORROSION INHIBITING COMPOUND CONTAINS SOLVENTS, CHROMATES, AND A SMALL AMOUNT OF BOUND ASBESTOS. CONSULT THE APPLICABLE SAFETY STANDARDS FOR APPROVED HANDLING PROCEDURES.

CAUTION: BMS 3-27 COMPOUND IS USED ONLY IN STATIC JOINTS WHERE GREASE CANNOT BE APPLIED. BMS 3-27 COMPOUND IN DYNAMIC JOINTS WILL NOT LET THEM MOVE FREELY.

(b) Apply corrosion inhibiting compound, C00913 to the shaft of the transmitter (60). Put the transmitter shaft into the larger "D" hole in the flex coupling. Turn the transmitter body until the transmitter cable is aligned approximately as shown in ASSEMBLY, Figure 702, then install the bolts (5) and washers (10).

(c) Push the flex coupling (165) and the pinion shaft (290) until the shoulder of the pinion shaft is against the bearing (255) in the housing assembly (385). Hold the flex coupling in this position and tighten the applicable clamping screw to 12-15 pound-inches to attach the transmitter shaft.

(d) Install the clamp (20) on the transmitter cable with the screw (10) and washer (15).

(16) Rig the column cutout switch assembly and do the functional test of the unit (TESTING AND FAULT ISOLATION).

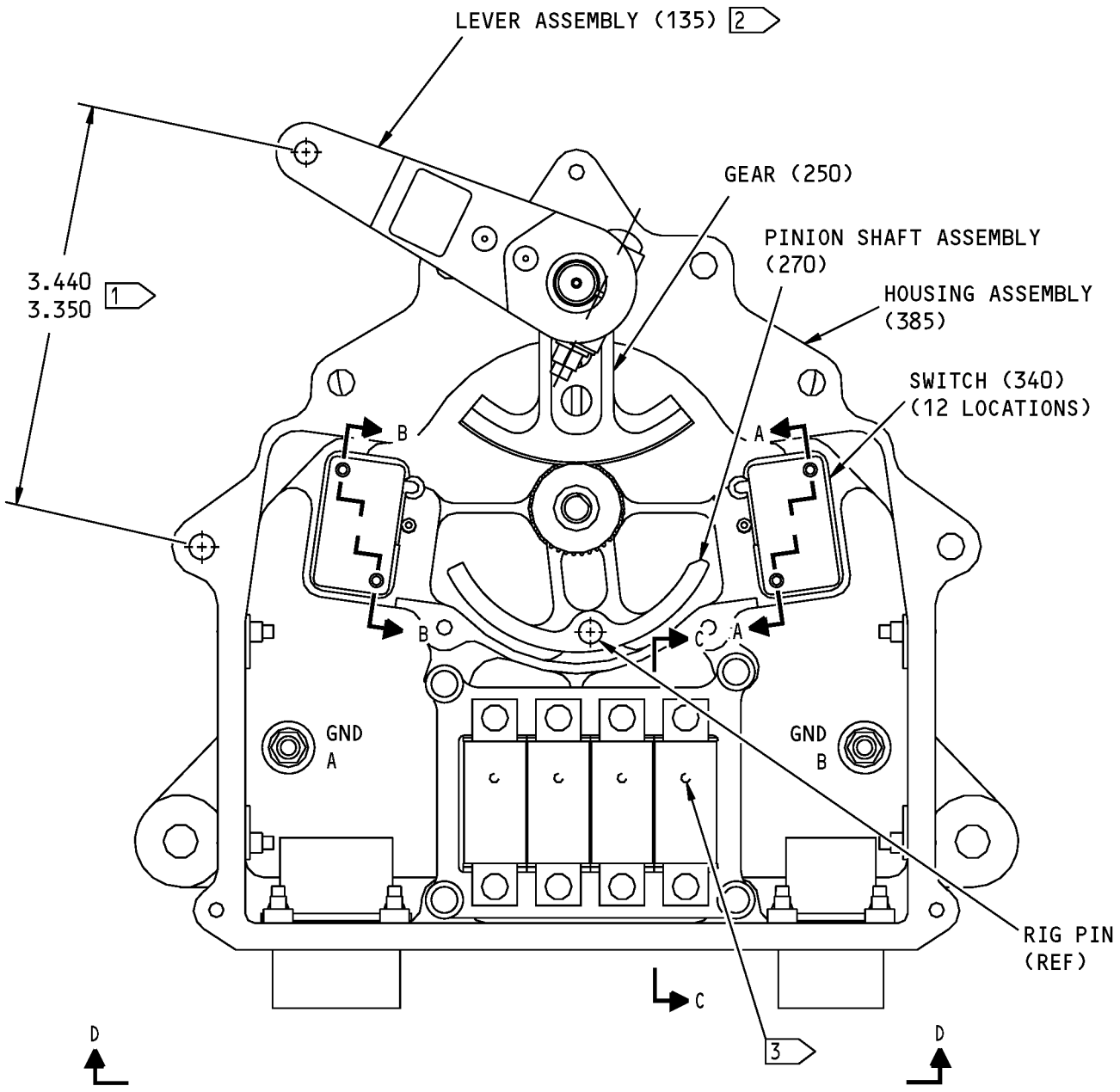
3. Storage

A. References

Reference	Title
SOPM 20-44-02	TEMPORARY PROTECTIVE COATINGS

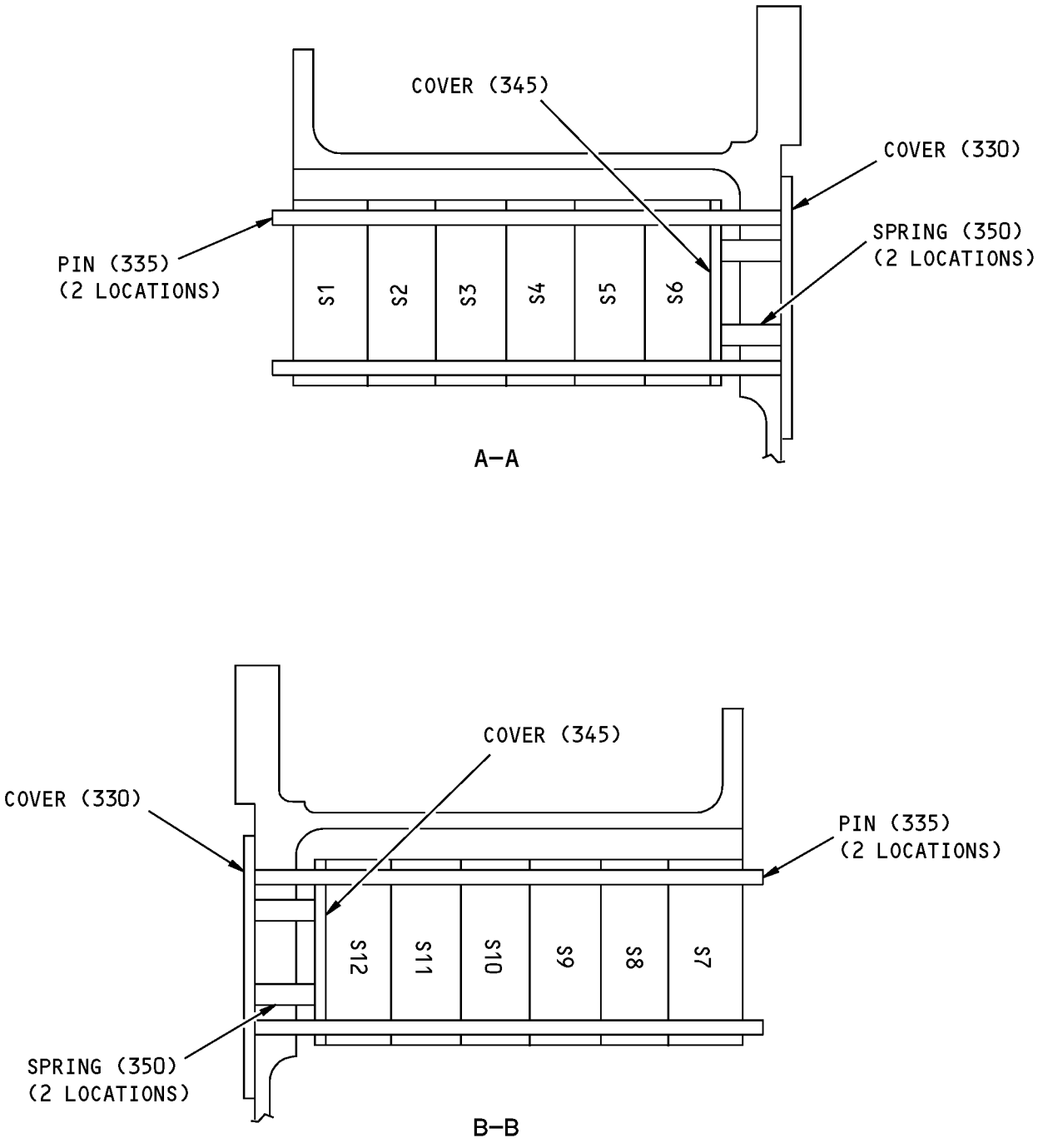
B. Procedure

(1) Use standard industry procedures to store this component. Refer to SOPM 20-44-02 for more data.

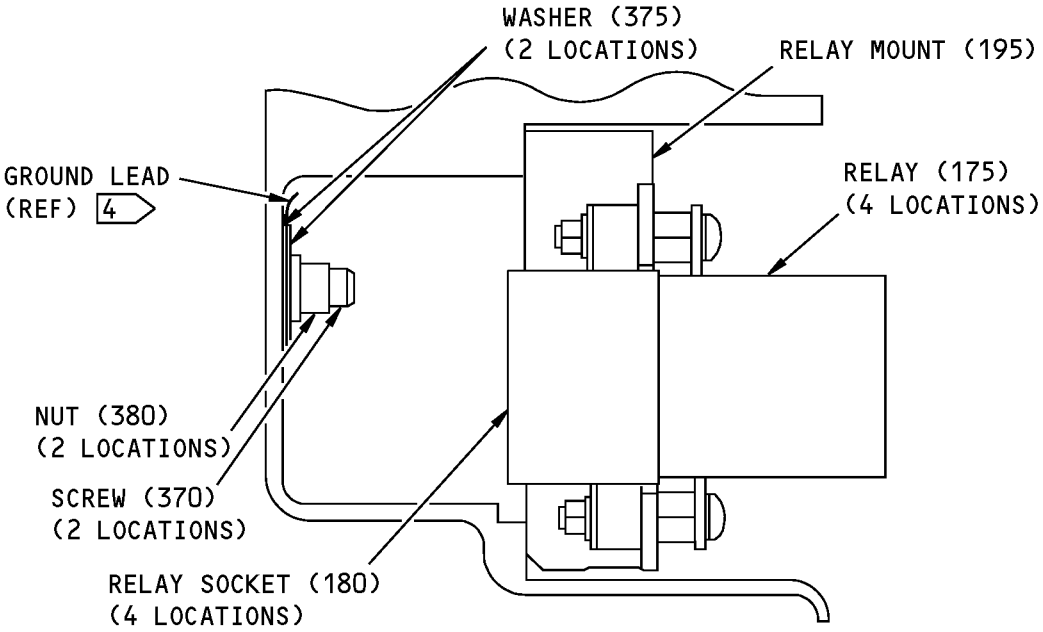


NOTE: THE TRANSMITTER ASSEMBLY (25), COVER ASSEMBLIES (75,215), SUPPORT ASSEMBLY (105), AND FLEX COUPLING (165) ARE NOT SHOWN

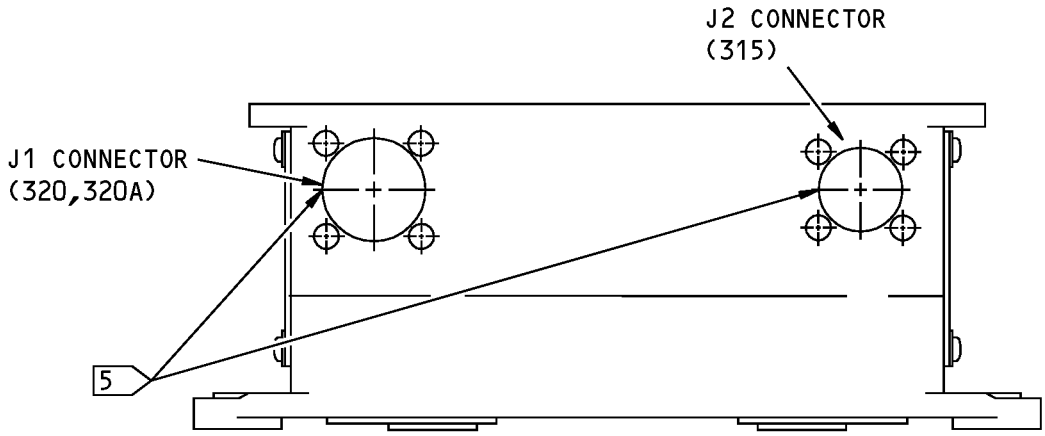
Assembly Details
Figure 701 (Sheet 1 of 3)



Assembly Details
Figure 701 (Sheet 2 of 3)



C–C



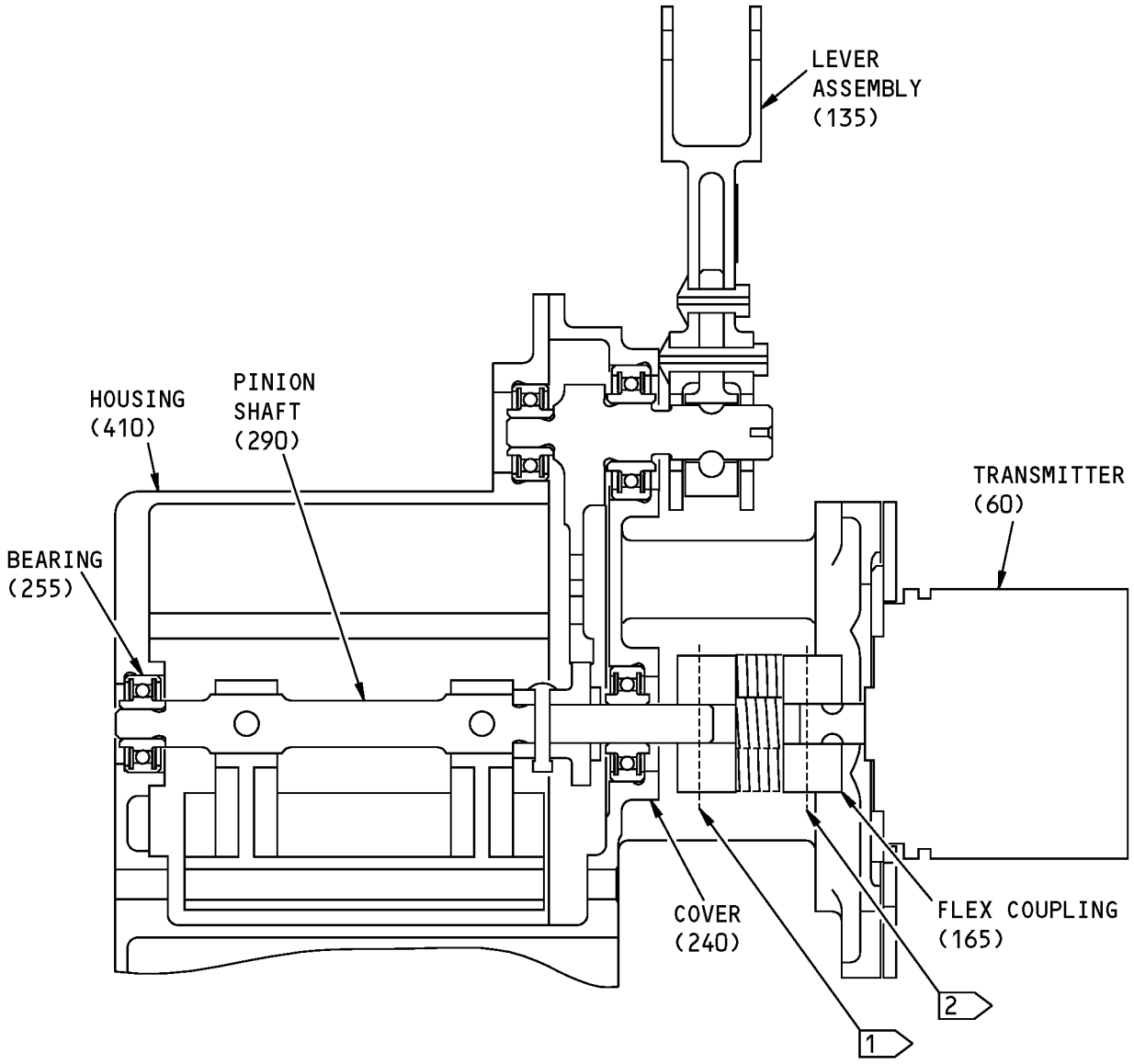
D–D

1. MEASURE THIS DIMENSION WITH THE RIG PIN INSTALLED
2. INSTALL THE LEAVER ASSEMBLY WITH THE MARKER (160) ON THE FRONT FACE AS SHOWN
3. INSTALL THE RELAYS WITH THE POLARIZING PINS IN THE LOCATIONS SHOWN
4. 0.001 OHM MAXIMUM RESISTANCE BETWEEN THE GROUND LEAD AND HOUSING ASSEMBLY (385). REFER TO SOPM 20-50-03. FILLET SEAL WITH BMS 5-142
5. MASTER KEYWAY ON THE CONNECTOR POINTS IN THIS DIRECTION

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

Assembly Details
Figure 701 (Sheet 3 of 3)

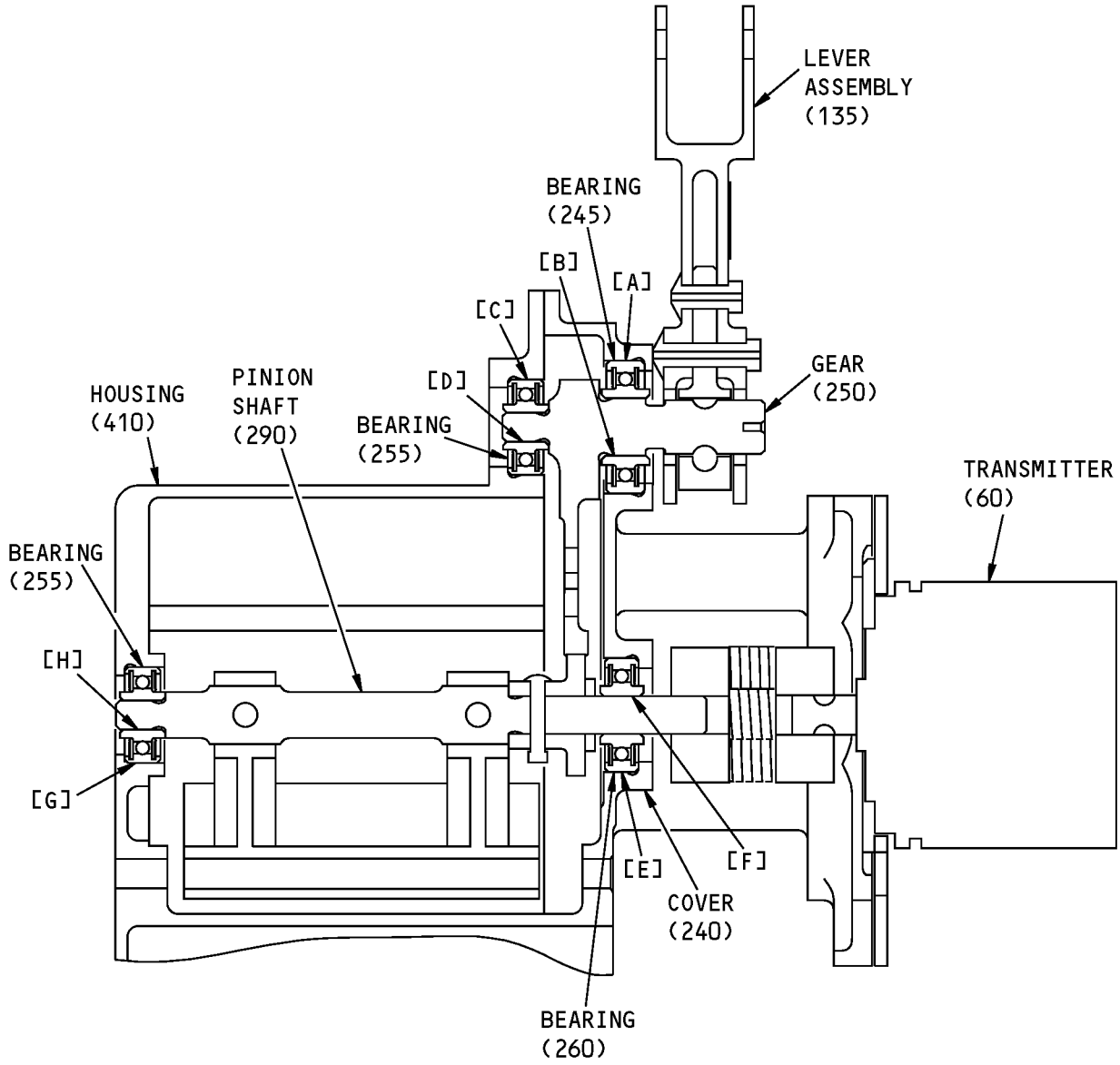


1 PUSH THE FLEX COUPLING FULLY AGAINST THE PINION SHAFT BEFORE YOU TIGHTEN THE SCREW AT THIS LOCATION

2 PUSH THE PINION SHAFT FULLY AGAINST THE BEARING (255) BEFORE YOU TIGHTEN THE SCREW AT THIS LOCATION

ITEM NUMBERS REFER TO IPL FIG. 1

Assembly Details
Figure 702



Fits and Clearances
Figure 801 (Sheet 1 of 2)

REF LETTER	REF IPL FIG. 1, MATING ITEM NO.	DESIGN DIMENSION*				SERVICE WEAR LIMIT*		
		DIMENSION		ASSEMBLY CLEARANCE 1		DIMENSION		MAXIMUM CLEARANCE
		MIN	MAX	MIN	MAX	MIN	MAX	
[A]	ID 240	0.8730	0.8743	-0.0020	-0.0003			
	OD 245	0.8746	0.8750					
[B]	ID 245	0.3746	0.3750	-0.0001	0.0008			
	OD 250	0.3742	0.3747					
[C]	ID 410	0.6239	0.6244	-0.0011	-0.0002			
	OD 255	0.6246	0.6250					
[D]	ID 255	0.1897	0.1900	0.0000	0.0008			
	OD 250	0.1892	0.1897					
[E]	ID 240	0.7488	0.7493	-0.0012	-0.0003			
	OD 260	0.7496	0.7500					
[F]	ID 260	0.2497	0.2500	0.0002	0.0010			
	OD 290	0.2490	0.2495					
[G]	ID 410	0.6239	0.6244	-0.0011	-0.0002			
	OD 255	0.6246	0.6250					
[H]	ID 255	0.1897	0.1900	0.0008	0.0016			
	OD 290	0.1884	0.1889					

* ALL DIMENSIONS ARE IN INCHES

1 NEGATIVE VALUES ARE FOR INTERFERENCE FIT.

Fits and Clearances
Figure 801 (Sheet 2 of 2)

REF IPL		NAME	TORQUE*	
FIG. NO.	ITEM NO.		POUND-INCHES	POUND-FEET
1	165	Screw 1	12-15	

* REFER TO SOPM 20-50-01 FOR TORQUE VALUES OF STANDARD FASTENERS.

1 THESE SCREWS ARE PART OF THE FLEX COUPLING (165)

Torque Table
Figure 802

SPECIAL TOOLS, FIXTURES, AND EQUIPMENT

1. General

A. This section lists the special tools, fixtures, and equipment necessary for maintenance.

NOTE: Equivalent substitutes may be used.

Special Tools

Reference	Description	Part Number	Supplier
SPL-5372	Test Equipment - Stabilizer Trim Control Cutout Switch	C27006-48	81205
SPL-5373	Adapter Cable Assembly (C27006-35 included in C27006-48)	C27006-48	81205
SPL-5374	Test Equipment - Stabilizer Trim Control Cutout Switch	C27006-42	81205
SPL-5455	Rig Pin, 0.1840 - 0.1860 in. dia, 5.50 in. minimum length	MS20392-2P176	81205
SPL-6044	Test Fixture Assembly (C27006-24 included in C27006-47 & C27006-48)	C27006-48 Opt: C27006-47	81205 81205
SPL-6047	Test Box Assembly (C27006-43 included in C27006-47 and C27006-48)	C27006-48 Opt: C27006-47	81205 81205

Commercial Tools

Reference	Description	Part Number	Supplier
COM-1688	Indicator - Angle Position	2623CC-44HCL/488-26 8810-S3128 8810-S3204 8810A	17755 0VGU1 0VGU1 0VGU1

Tool Supplier Information

CAGE Code	Supplier Name	Supplier Address
0VGU1	NORTH ATLANTIC INDUSTRIES, INC.	170 WILBUR PLACE BOHEMIA, NY 11716 Telephone: (631) 567-1100 Facsimile: (516) 567-1823 www.naii.com

Tool Supplier Information (Continued)

CAGE Code	Supplier Name	Supplier Address
17755	TRANSMAGNETICS, INC.	170 WILBUR PLACE (MOVED FROM FARMINGDALE) BOHEMIA, NY 11716 Telephone: (516) 567-1100 Facsimile: (516) 567-1823
81205	THE BOEING COMPANY	17930 INTERNATIONAL BLVD. SOUTH SEATAC, WA 98188-4321 Telephone: 206-662-6650 Facsimile: 206-662-7145

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
04169	WESTERN SKY INDUSTRIES A DIVISION OF ATLAS CORPORATION 1280 SAN LUIS OBISPO STREET HAYWARD, CALIFORNIA 94544-7916 FORMERLY WESTERN SKY IND VB0008
05574	VIKING ELECTRONICS INC. 5455 ENDEAVOUR CT MOORPARK, CALIFORNIA 93021 FORMERLY VIKING IND DATACON DIV; VIKING SPECIAL PROD V53156; FORMERLY VIKING CONN SUB OF CRITON CORP; ARIZONA INTEGRATED ELEC V0P9C6; FORMERLY IN CHATSWORTH, CA
06144	INDUSTRIAL TECTONICS BEARING CORP 18301 SOUTH SANTA FE AVENUE RANCHO DOMINGUEZ, CALIFORNIA 90221 FORMERLY IN COMPTON, CALIFORNIA
06950	SCREWCORP VSI AEROSPACE PRODUCTS DIV FAIRCHILD IND DIV 13001 EAST TEMPLE AVENUE PO BOX 730 CITY OF INDUSTRY, CALIFORNIA 91746-1417 FORMERLY VB0096 AND VSI CORP SCREWCORP DIV FORMERLY IN CULVER CITY, CALIFORNIA SCREW CORP SEE V.S.I. CORP SCREWCORP DIVISION
09922	SOURIAU USA INC 25 GRUMBACHER DR YORK, PENNSYLVANNIA 17402-9417 FORMERLY FRAMATOME CONNECTORS FRANCE FORMERLY V59610 IIIN VALENCIA, CALIFORNIA

Code	Name
11815	CHERRY AEROSPACE FASTENERS DIV OF TEXTRON 1224 EAST WARNER AVENUE PO BOX 2157 SANTA ANA, CALIFORNIA 92707-0157 FORMERLY IN LOS ANGELES, CALIF , FORMERLY CHERRY FASTENERS TOWNSEND DIV OF TEXTRON INC V71087
13201	HELICAL PRODUCT CO 901 WEST MCCOY LANE PO BOX 1069 SANTA MARIA, CALIFORNIA 93456
15653	ALCOA GLOBAL FASTENERS INC DIV KAYNAR PRODUCTS 800 S STATE COLLEGE BLVD FULLERTON, CALIFORNIA 92831-3001 FORMERLY VK6405 MICRODOT AEROSP LTD; FORMERLY KAYNAR TECH FORMERLY FAIRCHILD FASTENERS KAYNAR DIV
21335	TIMKEN US CORPORATION DIV FAFNIR 336 MECHANIC STREET LEBANON, NH 03766-0267 FORMERLY FAFNIR BRG AND TEXTRON INC FAFNIR DIV IN NEW BRITAIN, CONNECTICUT ; FORMERLY TORRINGTON CO THE SPECIAL PRODUCTS DIV SUB OF THE INGERSOLL-RAND CO V8D210 FORMERLY TORRINGTON CO FAFNIR BEARING DIV IN TORRINGTON, CT
29440	WINFRED M BERG INC 499 OCEAN AVENUE EAST ROCKAWAY, L.I. NEW YORK 11518-1226
29964	ALLIED DEVICES CORP 2365 MILBURN AVENUE PO DRAWER E BALDWIN, NEW YORK 11510-3321
35344	Replaced: [V35344] LEACH CORP RELAY DIV SEE LEACH CORP CONTROL PROD DIV V58657 by Code: Name and Address below 58657: LEACH INTERNATIONAL OF NORTH AMERICA 6900 ORANGETHORPE AVE PO BOX 5032 BUENA PARK, CALIFORNIA 90622-5032 FORMERLY LEACH CORP V35344 AND V00614 FORMERLY LEACH CORP

Code	Name
38443	MRC BEARINGS 402 CHANDLER STREET JAMESTOWN, NEW YORK 14701-3802 FORMERLY MARLIN-ROCKWELL CORP DIV TRW AND TRW INC
40920	MPB MINIATURE PRECISION BEARING DIV PRECISION PARK PO BOX 547 KEENE, NEW HAMPSHIRE 03431 FORMERLY MPB CORP AND MINIATURE BRG DIV MPB CORP
43991	FAG BEARING INCORPORATED 118 HAMILTON AVENUE STAMFORD, CONNECTICUT 06904 FORMERLY NORMA-HOFFMAN BEARING CORPORATION FORMERLY NORMA FAG BEARINGS CORPORATION
52828	REPUBLIC FASTENER MFG CORP 1300 RANCHO CONEJO BLVD NEWBURY PARK, CALIFORNIA 91320-1405 FORMERLY IN SYLMAR, CALIFORNIA
56623	BABCOCK INC 14930 E ALONDRA BLVD LA MIRADA, CALIFORNIA 90638-5752 FORMERLY IN COSTS MESA, CA & IN ORANGE, CA
56878	SPS TECHNOLOGIES INC AEROSPACE AND INDUSTRIAL PRODUCTS DIV 301 HIGHLAND AVE JENKINTOWN, PENNSYLVANIA 19046 FORMERLY STANDARD PRESSED STEEL FORMERLY IN SALT LAKE, UTAH
58982	PRECISION CONNECTOR DESIGNS INC CENTENNIAL PARK 2 TECHNOLOGY DRIVE PEABODY, MASSACHUSETTS 01960 FORMERLY IN WINCHESTER, MASSACHUSETTS
5M902	ALCOA GLOBAL FASTENERS INC, DIV OF VOI-SHAN PRODUCTS 3000 W LOMITA BLVD TORRANCE, CALIFORNIA 90505-5103 FORMERLY FAIRCHILD INC INC FAIRCHILD AEROSPACE FASTENERS DIV

Code	Name
60119	MONADNOCK CO THE 18301 ARENTH AVENUE ROWLAND HEIGHTS, CALIFORNIA 91748-1288 FORMERLY UNITED CARR FASTENER CORP VB0051 VB0056 VB0076 FORMERLY TRW ELECTRONIC COMPONENTS CINCH-MONADNOCK DIV FORMERLY CINCH-MONADNOCK DIV OF TRW INC V76530 FORMERLY IN CITY OF INDUSTRY, CALIFORNIA
62554	SIMMONDS MECAERO FASTENERS INC 1734 SEQUOIA AVENUE ORANGE, CALIFORNIA 92668
72962	HARVARD INDUSTRIES INC 3 WERNER WAY SUITE 210 LEBANON, NEW JERSEY 08833 FORMERLY ESNA V7A079 FORMERLY ELASTIC STOP NUT IN UNION, NJ
73197	HI-SHEAR TECHNOLOGY CORP 2600 SKYPARK DRIVE TORRANCE, CALIFORNIA 90509
78290	STRUTHERS-DUNN INC SOUTH WINDSOR, CONNECTICUT 06074 OBSOLETE - SEE V00213
80539	SPS TECHNOLOGIES INC DIV AERPSOACE - SANTA ANA 2701 SOUTH HARBOR BOULEVARD SANTA ANA, CALIFORNIA 92704-5803 FORMERLY NUTT-SHEL DIV OF SPC WESTERN CO V80539 AND STANDARD PRESSED STEEL WESTERN DIV V17279
82686	HORIZON AEROSPACE LLC DBA TRANSICOIL 2560 GENERAL ARMISTEAD AVE NORRISTOWN, PENNSYLVANIA 19403-5214 FORMERLY TRANSCOIL INC. COMPONENTS & CONTROLS
83086	NEW HAMPSHIRE BALL BEARING, INC HITECH DIVISION 172 JAFFREY ROAD PETERBOROUGH, NEW HAMPSHIRE 03458

Code	Name
91929	HONEYWELL INC MICRO SWITCH DIV 11 WEST SPRING STREET FREEPORT, ILLINOIS 61032 FORMERLY MICRO SWITCH A DIV OF HONEYWELL FORMERLY V74059 AND V40228
92215	FAIRCHILD IND INC FAIRCHILD AEROSPACE FASTENER DIV 3010 W LOMITA BLVD TORRANCE, CALIFORNIA 90505-5102 FORMERLY VOI-SHAN IN CULVER CITY, CALIF
97928	Replaced: [V97928] SEE V17446 HUCK INTL by Code: Name and Address below 17446: HUCK INTL INC AEROSPACE FASTENER DIV 900 WATSON CENTER ROAD CARSON, CALIFORNIA 90745-4201 FORMERLY V32134 REXNORD INC; FORMERLY V97928 HUCK INTL
98927	ELECSPEC CORP ELECTRONIC SPECIALITY DIV 14511 NORTHEAST 13TH AVENUE PO BOX 3501 VANCOUVER, WASHINTON 98668-3501 FORMERLY ELECTRONIC SPECIALTY CO PROTLAND ELECTRONCI DIV FORMERLY DATRON SYSTEMS INC ELECTRONIC SPECIALITY DIV FORMERLY IN PORTLAND, OREGON
99699	DEUTSCH RELAYS INC 55 ENGINEERS RD HAUPPAUGE, NEW YORK 11788 FORMERLY DEUTSCH CO ELECTRONIC COMPONENTS DIV DEUTSCH RELAY
9N513	VOI SHAN/CHATSWORTH DIV OF VSI CORP SUB OF FAIRCHILD IND CHATSWORTH, CALIFORNIA 91311-5013 COMPANY NO LONGER WISHES TO BE CONSIDERED FOR FED CONTRCTG
K8455	RHP BEARINGS PLC RHP AEROSPACE OLDENDS LANE STONEHOUSE GL10 3RM UK

REFERENCE DESIGNATOR INDEX

REFERENCE DESIGNATOR	PART NUMBER	FIG-ITEM
J1	BACC45FN16-24P	1-320
J1	BACC45FN16-24P6	1-320A
J2	BACC45FN12-12P	1-315

NUMERICAL INDEX

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
000300-1538		1	180	4
102-006-1		1	180	4
109F9201M40		1	395A	8
251A4411-1		1	295	1
251A4411-6		1	295B	1
251A4430-1		1	1A	RF
251A4430-2		1	1B	RF
251A4430-4		1	1C	RF
251A4431-1		1	25	1
251A4432-1		1	215A	1
251A4432-2		1	240A	1
251A4432-3		1	215	1
251A4432-4		1	240	1
251A4433-1		1	105	1
251A4433-2		1	115	1
251A4434-1		1	45	1
251A4435-1		1	40	1
251A4436-1		1	270	1
251A4436-3		1	270A	1
251A4436-4		1	286	2
251A4437-1		1	290	1
251A4438-1		1	75	1
251A4438-2		1	90	1
253T4015-7		1	50	1
293162		1	305	8
61GB2319-1A320		1	175	4
65C25529-10		1	310	1
65C25529-28		1	310A	1
65C25540-13		1	385	1
65C25540-15		1	410	1
65C25548-3		1	250	1
		1	250A	1
65C25548-4		1	250B	1
65C31205-5		1	195	1

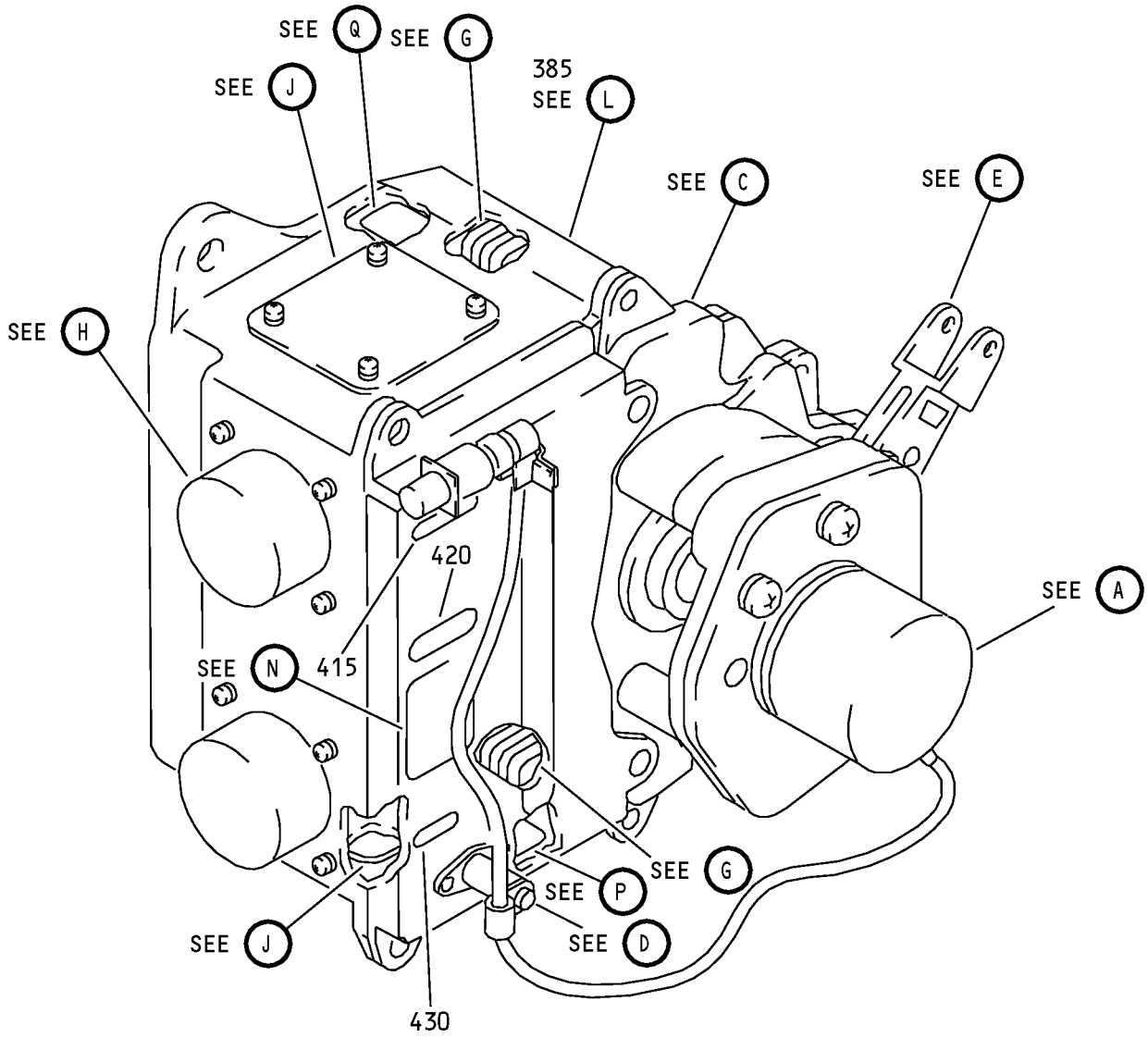
PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
66-25992-1		1	145B	1
66-25992-2		1	140B	1
69-73307-1		1	155	1
69-73308-1		1	150	1
69-73309-1		1	135	1
69-73314-1		1	335	4
69-73314-2		1	335B	4
69-73316-1		1	365	2
69-73316-2		1	345	2
69-73316-4		1	330	2
7384-667MM634MM		1	165	1
AP48KS36		1	280A	1
BAC27DCT0351		1	435	1
BAC27DCT0352		1	440	1
BAC27DCT0355		1	425	1
BAC27DCT0391		1	160	1
BAC27DCT558		1	445	1
BAC27DCT630		1	420	1
BAC27DCT631		1	415	1
BAC27DCT632		1	430	1
BACB10AP03		1	255A	2
BACB10AP04		1	260A	1
BACB10AP06		1	245A	1
BACB28Z4-008		1	265	1
BACB30LK04-1		1	65	4
		1	65A	4
BACB30LK04-10		1	185	4
BACB30LK04-2		1	300	8
		1	355	8
BACB30LK04K1		1	65B	4
BACB30LK2-14		1	120	1
BACB30NT3K10		1	95	4
BACB30NT3K2		1	5	3
BACB30VT5HK10		1	287A	1
BACC10DK2		1	20	1

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
BACC10DK3		1	20A	1
BACC30BL5		1	289	1
BACC45FN12-12P		1	315	1
BACC45FN16-24P		1	320	1
BACC45FN16-24P6		1	320A	1
BACC63BN10B5P		1	55	1
BACN10JN04CM		1	395A	8
BACN10JP04CCD		1	395	8
BACN10NW1		1	305	8
BACN10TL3A8		1	85	1
BACN10YR08CD		1	130	1
BACN10YR3CD		1	210	6
		1	380	2
BACR13CF2AB		1	175	4
BACR15BB4D4C		1	80	2
BACR15BB5D12C		1	285	2
		1	285A	2
BACR15CE3D		1	390	16
BACS12BG04AP4		1	30	4
BACS12GU3K12		1	10A	1
BACS12GU3K9		1	10	1
BACS16X1A		1	180	4
BR246S0111		1	175	4
BR64S105		1	175	4
BRFM20C04LM		1	395A	8
DP701T36		1	280	1
ES210-1632		1	175	4
FCA210-71		1	175	4
H52732-08CD		1	130	1
H52732-3CD		1	210	6
		1	380	2
HST79-5		1	289	1
HST79CY5		1	289	1
		1	289	1
		1	289	1

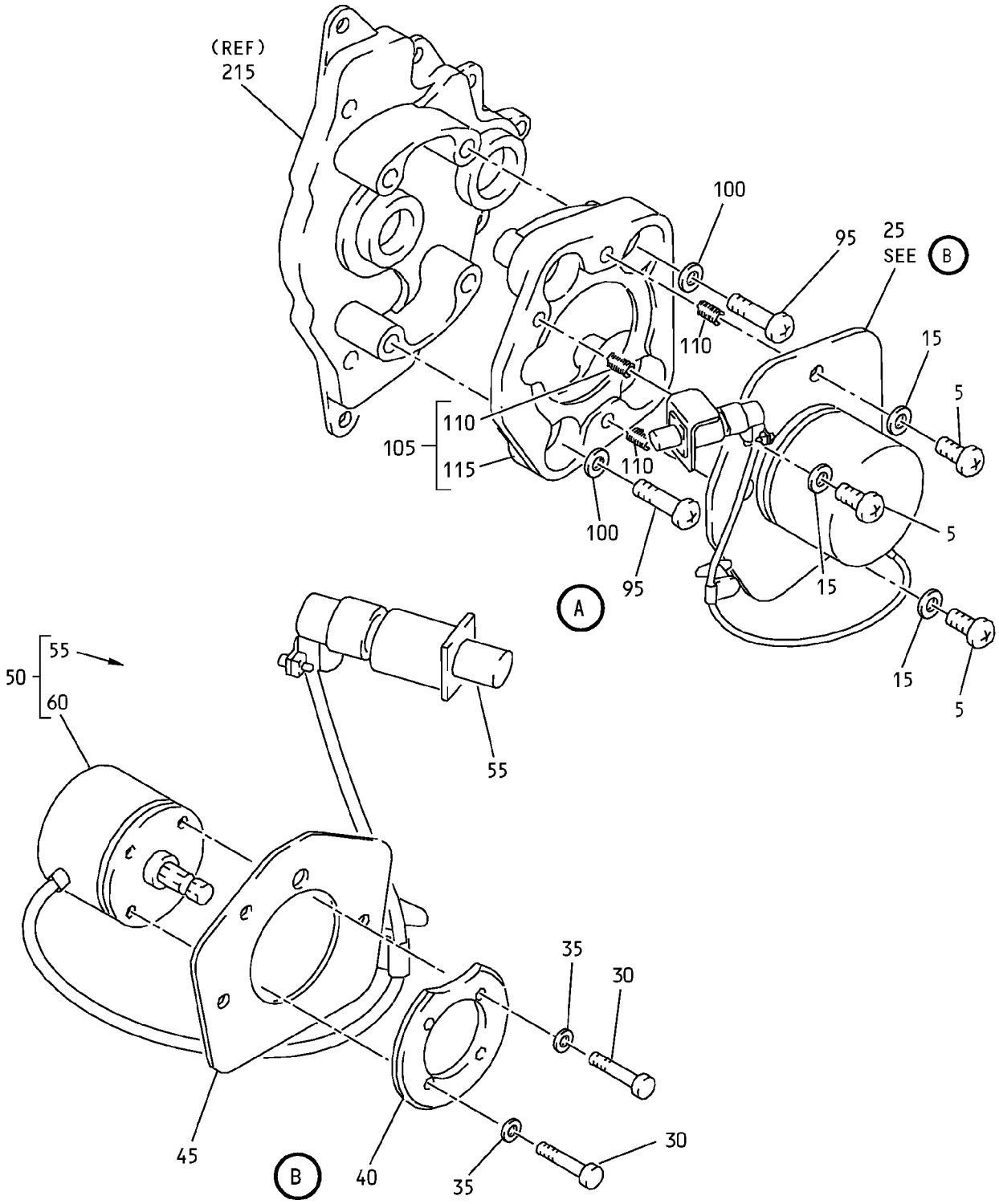
PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
JD4L018		1	175	4
JD4L031		1	175	4
K19798-04		1	305	8
LLMKP03A		1	255A	2
LLMKP04A		1	260A	1
LLMKP06A		1	245A	1
MCS203E		1	255A	2
MCS204E		1	260A	1
MCS206E		1	245A	1
MF1001-04BAC		1	395A	8
MF53050-04DL		1	395A	8
MKP03A		1	255A	2
MKP03A2TS		1	255A	2
MKP03AFS428		1	255A	2
MKP03AG20		1	255A	2
MKP03ALY196		1	255A	2
MKP03ANJC		1	255A	2
MKP03ASD610		1	255A	2
MKP03ATT		1	255A	2
MKP03E6531		1	255A	2
MKP04A		1	260A	1
MKP04A2TS		1	260A	1
MKP04AFS428		1	260A	1
MKP04AG20		1	260A	1
MKP04ALY196		1	260A	1
MKP04ANJC		1	260A	1
MKP04ASD610		1	260A	1
MKP04ATT		1	260A	1
MKP04E6531		1	260A	1
MKP05ALY196		1	245A	1
MKP06A		1	245A	1
MKP06A2TS		1	245A	1
MKP06AFS428		1	245A	1
MKP06AG20		1	245A	1
MKP06ANJC		1	245A	1

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
MKP06ASD610		1	245A	1
MKP06ATT		1	245A	1
MKP06E6531		1	245A	1
MS16562-213		1	277	1
MS20615-3M10		1	275	1
MS21209C0410		1	400	4
MS21209C0415		1	405	8
MS21209C0415P		1	220	2
MS21209F1-15P		1	110	3
		1	225	4
MS24585-1005		1	350	4
NAS1149D0316H		1	375A	4
NAS1149D0316J		1	375	4
NAS1149D0332J		1	15	4
		1	100	4
NAS1149D0363J		1	205	6
NAS1149DN432J		1	35	4
		1	70	4
		1	190	4
		1	360	8
NAS1149DN832J		1	125A	1
		1	288A	1
NAS514P1032-7		1	370	2
NAS514P440-5		1	325	6
NAS607-2-3P		1	230	1
NAS607-2-5P		1	235	2
NAS620C416		1	265A	1
NAS623-3-4		1	200	6
NAS8200AP4		1	30A	4
NS103218SE40		1	395A	8
PLH508CD		1	130	1
PLH53CD		1	210	6
		1	380	2
RMA4812-160-40		1	305	8
RSF116200		1	180	4

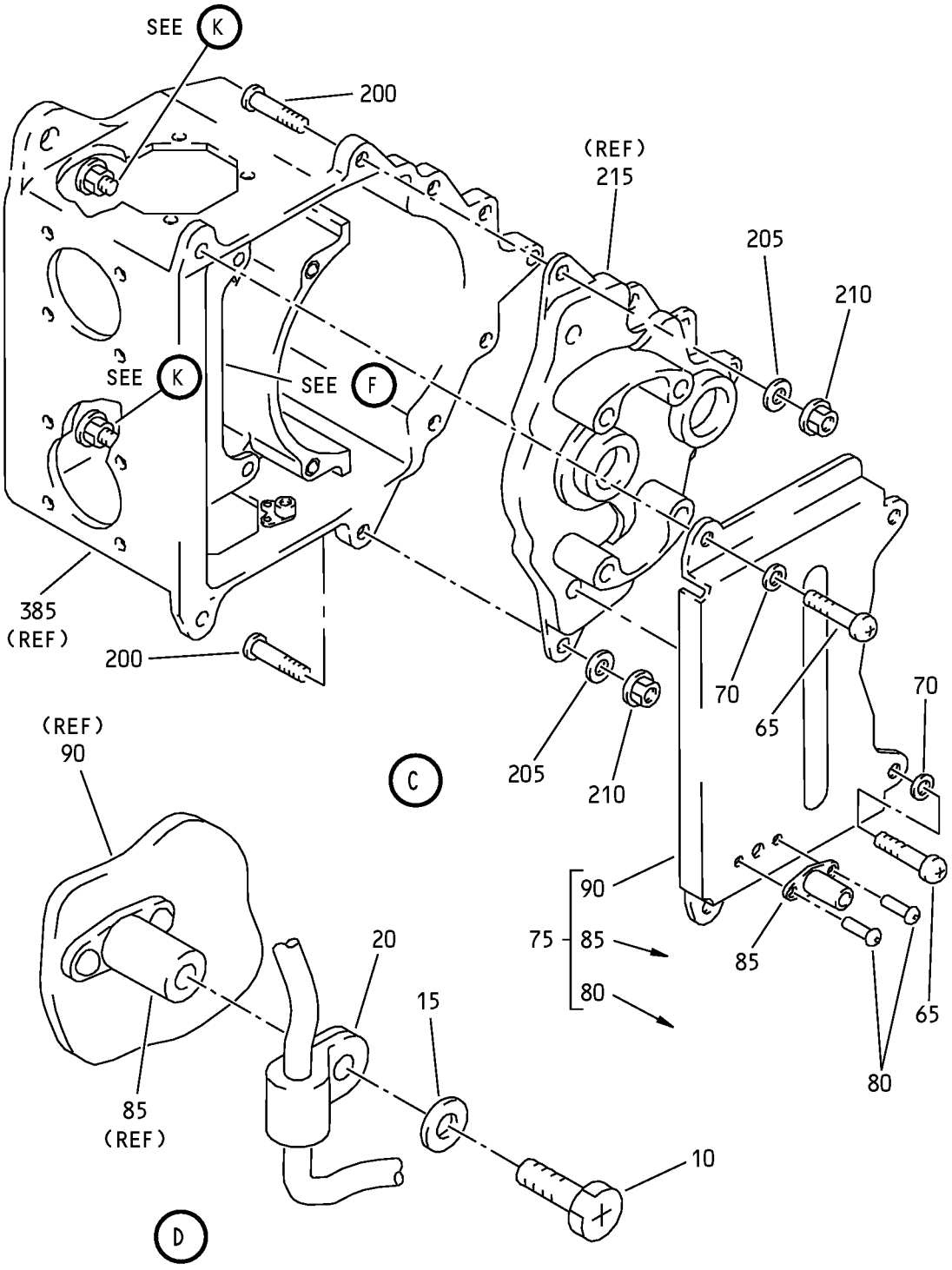
PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
T8125C04C		1	395A	8
U221557		1	60	1
V3L2228		1	340	12
VL310AG5-10		1	287A	1
		1	287A	1
		1	287A	1
VN2520D40L		1	395A	8
WSI4A8		1	85	1



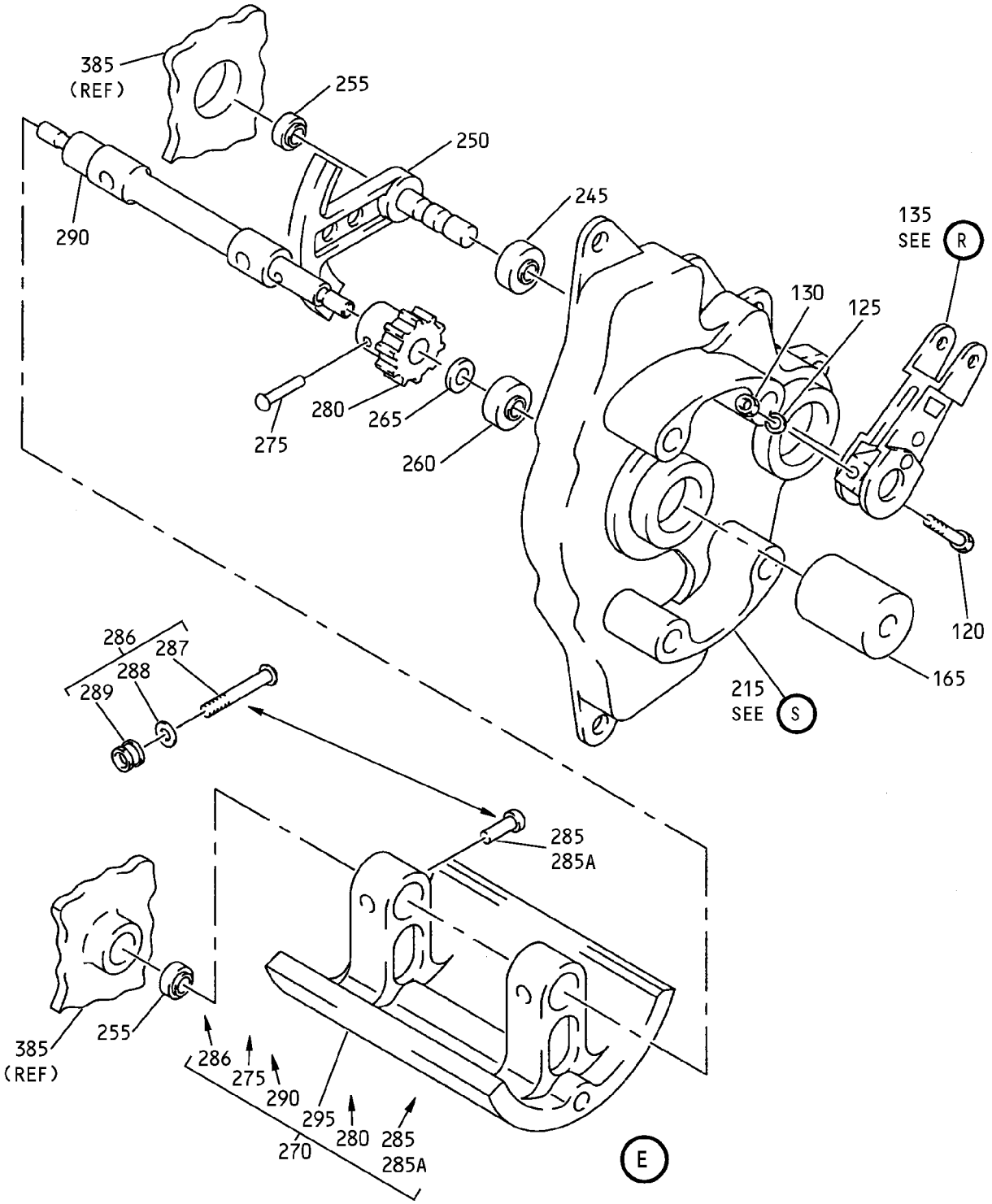
Stabilizer Control Column Cutout Switch Assembly
IPL Figure 1 (Sheet 1 of 9)



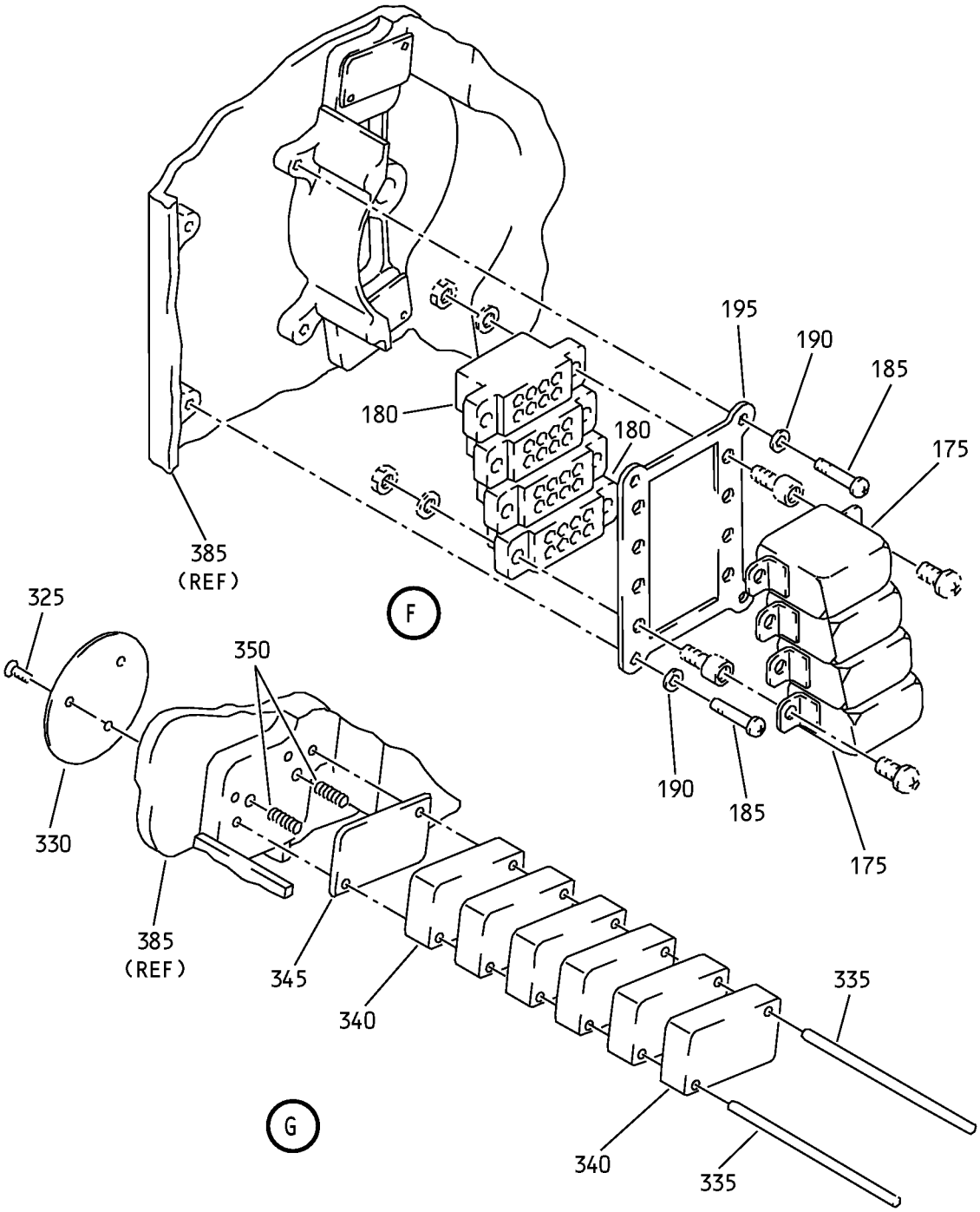
Stabilizer Control Column Cutout Switch Assembly
IPL Figure 1 (Sheet 2 of 9)



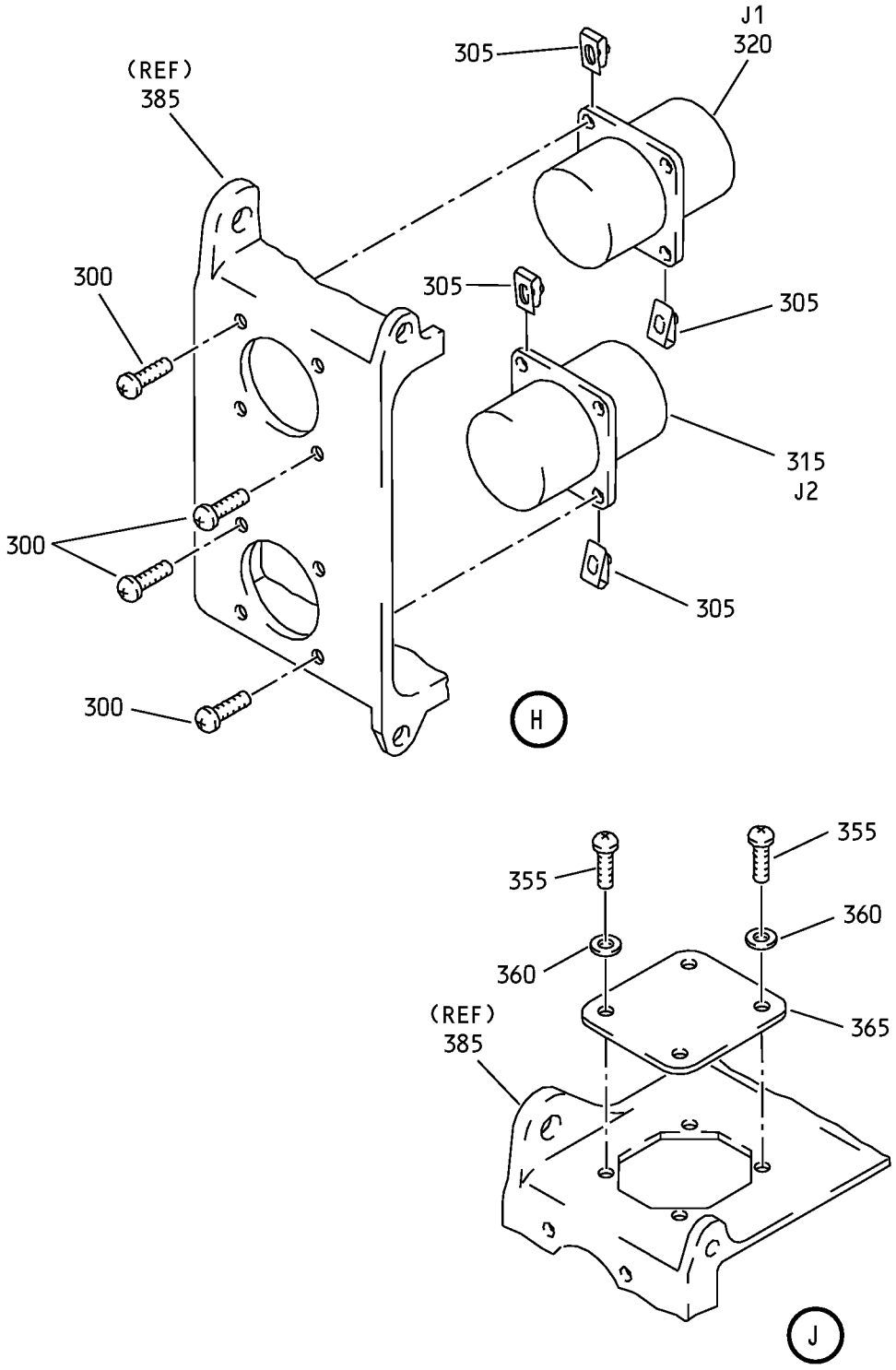
Stabilizer Control Column Cutout Switch Assembly
IPL Figure 1 (Sheet 3 of 9)



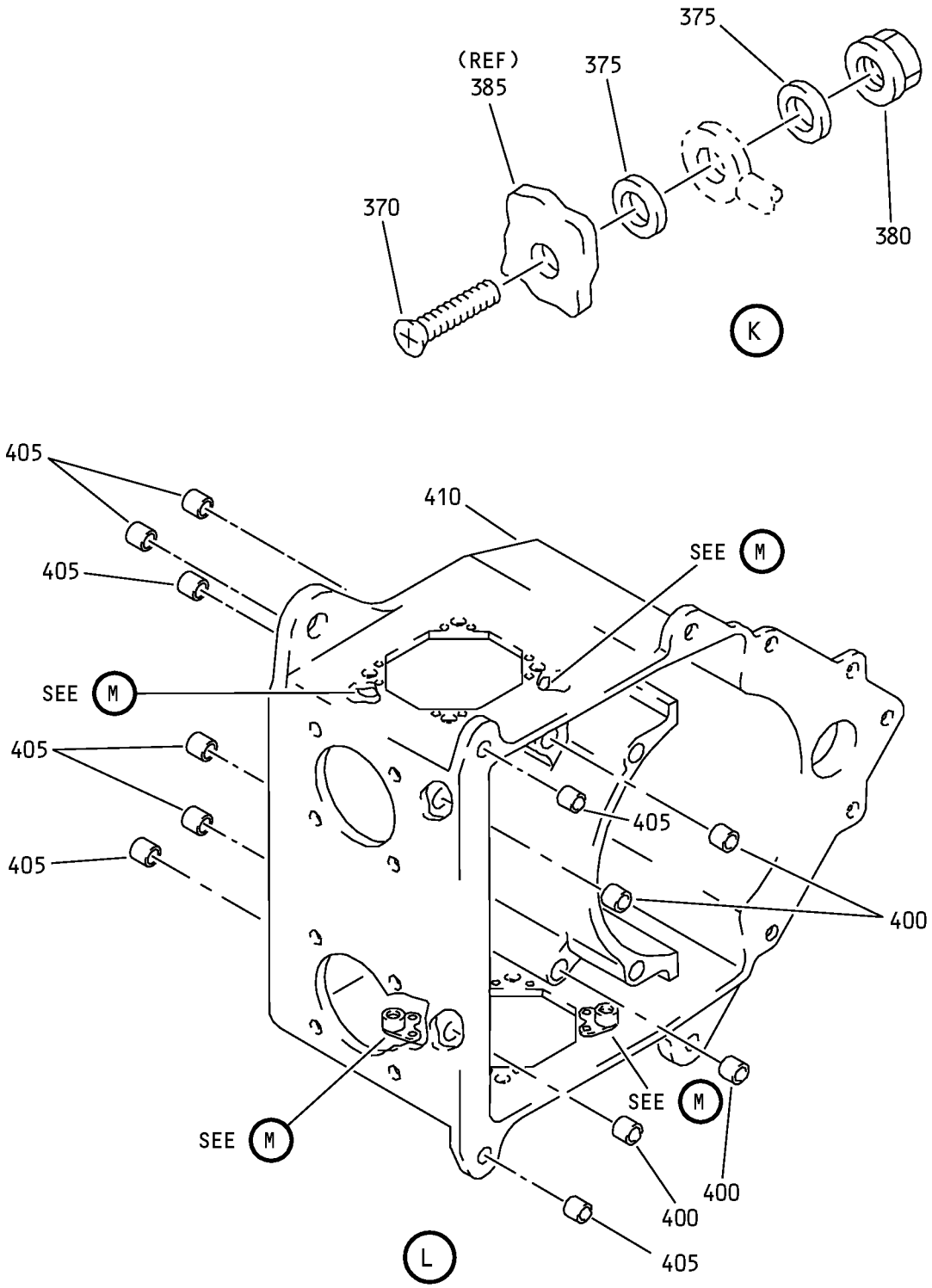
Stabilizer Control Column Cutout Switch Assembly
IPL Figure 1 (Sheet 4 of 9)



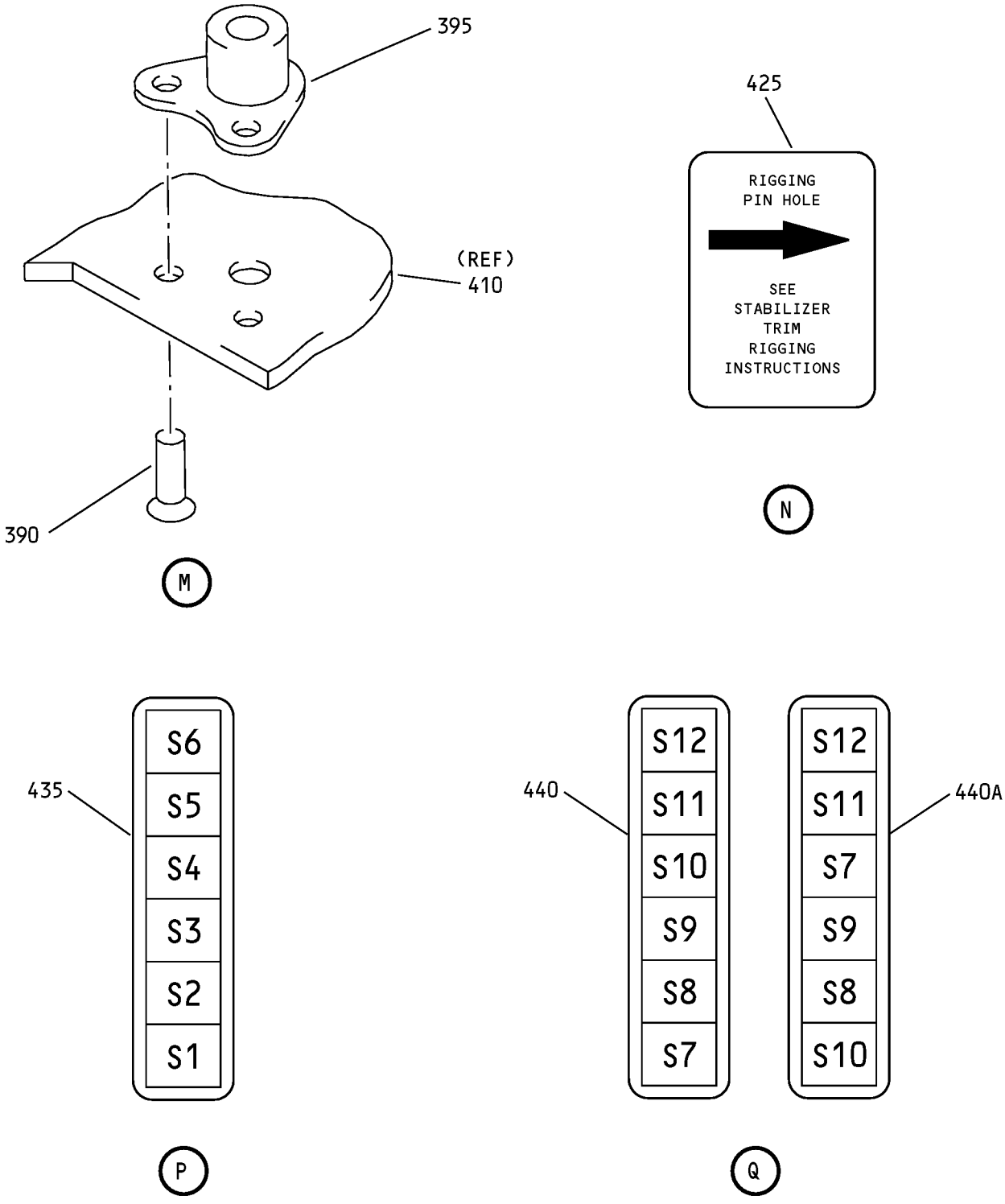
Stabilizer Control Column Cutout Switch Assembly
IPL Figure 1 (Sheet 5 of 9)



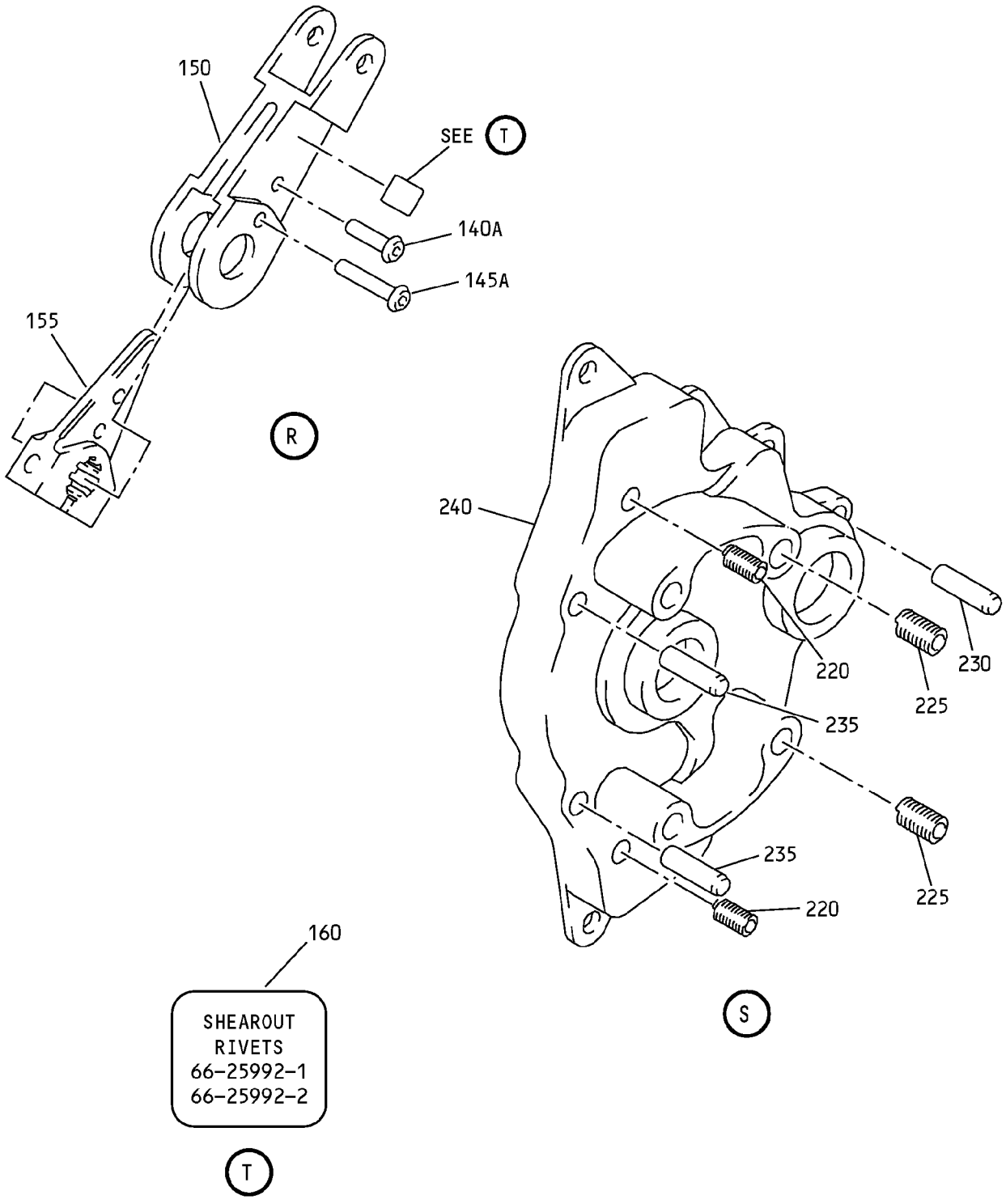
Stabilizer Control Column Cutout Switch Assembly
IPL Figure 1 (Sheet 6 of 9)



Stabilizer Control Column Cutout Switch Assembly
IPL Figure 1 (Sheet 7 of 9)



Stabilizer Control Column Cutout Switch Assembly
IPL Figure 1 (Sheet 8 of 9)



Stabilizer Control Column Cutout Switch Assembly
IPL Figure 1 (Sheet 9 of 9)

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
–1A	251A4430-1		COLUMN CUTOUT SWITCH ASSY-STAB CONT (PRE SB 737-27-1220)	A	RF
–1B	251A4430-2		COLUMN CUTOUT SWITCH ASSY-STAB CONT (POST SB 737-27-1220)	B	RF
–1C	251A4430-4		COLUMN CUTOUT SWITCH ASSY-STUB CONT	C	RF
5	BACB30NT3K2		. BOLT		3
10	BACS12GU3K9		. SCREW	A	1
–10A	BACS12GU3K12		. SCREW	B, C	1
15	NAS1149D0332J		. WASHER		4
20	BACC10DK2		. CLAMP	A, B	1
–20A	BACC10DK3		. CLAMP	C	1
25	251A4431-1		. TRANSMITTER ASSY		1
30	BACS12BG04AP4		. . SCREW (OPT ITEM 30A)		4
–30A	NAS8200AP4		. . SCREW (OPT ITEM 30)		4
35	NAS1149DN432J		. . WASHER		4
40	251A4435-1		. . PLATE		1
45	251A4434-1		. . COVERPLATE		1
50	253T4015-7		. . TRANSMITTER ASSY		1
55	BACC63BN10B5P		. . . CONNECTOR		1
60	U221557		. . . TRANSMNITTER (V82686)		1
65	BACB30LK04-1		. BOLT	A	4
–65A	BACB30LK04-1		. BOLT (OPT ITEM 065)	B, C	4
–65B	BACB30LK04K1		. BOLT (OPT ITEM 065A)	B, C	4
70	NAS1149DN432J		. WASHER		4
75	251A4438-1		. COVER ASSY		1
80	BACR15BB4D4C		. . RIVET		2

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
85	WSI4A8		. . NUTPLATE (V04169) (SPEC BACN10TL3A8)		1
90	251A4438-2		. . COVER		1
95	BACB30NT3K10		. BOLT		4
100	NAS1149D0332J		. WASHER		4
105	251A4433-1		. SUPPORT ASSY		1
110	MS21209F1-15P		. . INSERT		3
115	251A4433-2		. . SUPPORT		1
120	BACB30LK2-14		. BOLT		1
125	NAS1149CN832R		DELETED		
125A	NAS1149DN832J		. WASHER		1
130	H52732-08CD		. NUT (V15653) (SPEC BACN10YR08CD) (OPT PLH508CD (V62554))		1
135	69-73309-1		. LEVER ASSY		1
140	66-25591-2		DELETED		
140A	66-25592-2		DELETED		
140B	66-25992-2		. . RIVET		1
145	66-25591-1		DELETED		
145A	66-25592-1		DELETED		
145B	66-25992-1		. . RIVET		1
150	69-73308-1		. . ARM		1
155	69-73307-1		. . FITTING		1
160	BAC27DCT0391		. . MARKER		1
165	7384-667MM634MM		. COUPLING-FLEX (V13201)		1
170	69-73316-2		DELETED		

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
175	61GB2319-1A320		. RELAY (V98927) (SPEC BACR13CF2AB) (OPT FCA210-71 (V78290)) (OPT BR64S105 (V56623)) (OPT JD4L018 (V35344)) (OPT JD4L031 (V35344)) (OPT BR246S0111 (V56623)) (OPT ES210-1632 (V99699))		4
180	000300-1538		. SOCKET-RELAY (V05574) (SPEC BACS16X1A) (OPT 102-006-1 (V09922)) (OPT RSF116200 (V58982))		4
185	BACB30LK04-10		. BOLT		4
190	NAS1149DN432J		. WASHER		4
195	65C31205-5		. MOUNT-RELAY		1
200	NAS623-3-4		. SCREW		6
205	NAS1149D0363J		. WASHER		6
210	H52732-3CD		. NUT (V15653) (SPEC BACN10YR3CD) (OPT PLH53CD (V62554))		6
215	251A4432-3		. COVER ASSY (OPT ITEM 215A)		1
–215A	251A4432-1		. COVER ASSY (OPT ITEM 215)		1
220	MS21209C0415P		. . INSERT		2
225	MS21209F1-15P		. . INSERT		4
230	NAS607-2-3P		. . PIN		1
235	NAS607-2-5P		. . PIN		2
240	251A4432-4		. . COVER (USED ON ITEM 215)		1
–240A	251A4432-2		. . COVER (USED ON ITEM 215A)		1
245	MKP6ANJC		DELETED		

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
245A	MKP06ANJC		. BEARING (V06144) (SPEC BACB10AP06) (OPT MKP06ASD610 (V83086)) (OPT MKP05ALY196 (V40920)) (OPT MKP06AG20 (V38443)) (OPT MKP06E6531 (V21335)) (OPT MKP06A2TS (V43991)) (OPT MKP06ATT (V43991)) (OPT MKP06AFS428 (V21335)) (OPT MKP06A (V38443)) (OPT LLMKP06A (V38443)) (OPT MCS206E (VK8455))		1
250	65C25548-3		. GEAR	A, B	1
–250A	65C25548-3		. GEAR (OPT ITEM 250B)	C	1
–250B	65C25548-4		. GEAR (OPT ITEM 250A)	C	1
255	MKP3ANJC		DELETED		
255A	MKP03ANJC		. BEARING (V06144) (SPEC BACB10AP03) (OPT MKP03AG20 (V38443)) (OPT MKP03ALY196 (V40920)) (OPT MKP03ASD610 (V83086)) (OPT MCS203E (VK8455)) (OPT MKP03ATT (V43991)) (OPT MKP03A2TS (V43991)) (OPT MKP03E6531 (V21335)) (OPT MKP03AFS428 (V21335)) (OPT LLMKP03A (V38443)) (OPT MKP03A (V38443))		2
260	MKP4ANJC		DELETED		

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
260A	MKP04ANJC		. BEARING (V06144) (SPEC BACB10AP04) (OPT LLMKP04A (V38443)) (OPT MKP04A (V38443)) (OPT MKP04ATT (V43991)) (OPT MKP04A2TS (V43991)) (OPT MKP04E6531 (V21335)) (OPT MKP04AG20 (V38443)) (OPT MKP04ALY196 (V40920)) (OPT MKP04ASD610 (V83086)) (OPT MCS204E (VK8455)) (OPT MKP04AFS428 (V21335))		1
265	BACB28Z4-008		. BUSHING (OPT ITEM 265A)		1
–265A	NAS620C416		. WASHER (OPT ITEM 265)		1
270	251A4436-1		. SHAFT ASSY-PINION	A	1
–270A	251A4436-3		. SHAFT ASSY-PINION	B, C	1
275	MS20615-3M10		. . RIVET	A	1
–275A	MS16562-213		DELETED		
277	MS16562-213		. . PIN	B, C	1
280	DP701T36		. . PINION (V29964) (OPT ITEM 280A)		1
–280A	AP48KS36		. . PINION (V29440) (OPT ITEM 280)		1
285	BACR15BB5D12C		. . RIVET	A	2
–285A	BACR15BB5D12C		. . RIVET (OPT ITEM 286)	B, C	2
–286	251A4436-4		. . KIT ASSY-SUBSTITUTE (OPT ITEM 285A)	B, C	2
287	BACB30VT5HR10		DELETED		
287A	VL310AG5-10		. . . BOLT (V06950) (SPEC BACB30VT5HK10) (OPT VL310AG5-10 (V9N513)) (OPT VL310AG5-10 (V97928))	B, C	1
288	NAS1149DN816H		DELETED		

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
288A	NAS1149DN832J		. . . WASHER	B, C	1
289	HST79CY5		. . . COLLAR (V73197) (SPEC BACC30BL5) (OPT HST79-5 (V92215)) (OPT HST79CY5 (V56878)) (OPT HST79CY5 (V5M902))	B, C	1
290	251A4437-1		. . SHAFT-PINION		1
295	251A4411-1		. . CAM	A	1
–295A	251A4411-5		DELETED		
–295B	251A4411-6		. . CAM	B, C	1
300	BACB30LK04-2		. BOLT		8
305	K19798-04		. NUT (V15653) (SPEC BACN10NW1) (OPT RMA4812-160-40 (V72962)) (OPT 293162 (V60119))		8
–310	65C25529-10		. WIRE BUNDLE ASSY	A	1
–310A	65C25529-28		. WIRE BUNDLE ASSY	B, C	1
315	BACC45FN12-12P		. . CONNECTOR (J2)		1
320	BACC45FN16-24P		. . CONNECTOR (J1)	A	1
–320A	BACC45FN16-24P6		. . CONNECTOR (J1)	B, C	1
325	NAS514P440-5		. SCREW		6
330	69-73316-4		. COVER		2
335	69-73314-1		. PIN (OPT ITEM 335B)		4
–335A	69-73314-1		DELETED		
–335B	69-73314-2		. PIN (OPT ITEM 335)		4
340	V3L2228		. SWITCH (V91929)		12
345	69-73316-2		. COVER		2
350	MS24585-1005		. SPRING		4

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
355	BACB30LK04-2		. BOLT		8
360	NAS1149DN432J		. WASHER		8
365	69-73316-1		. COVER		2
370	NAS514P1032-7		. SCREW		2
375	NAS1149D0316J		. WASHER (OPT ITEM 375A)		4
–375A	NAS1149D0316H		. WASHER (OPT ITEM 375)		4
380	H52732-3CD		. NUT (V15653) (SPEC BACN10YR3CD) (OPT PLH53CD (V62554))		2
385	65C25540-13		. HOUSING ASSY		1
390	BACR15CE3D		. . RIVET (SIZE DETERMINED ON INST)		16
395	BACN10JP04CCD		. . NUTPLATE (OPT ITEM 395A)		8
–395A	BRFM20C04LM		. . NUTPLATE (V52828) (SPEC BACN10JN04CM) (OPT MF1001-04BAC (V15653)) (OPT NS103218SE40 (V80539)) (OPT VN2520D40L (V92215)) (OPT 109F9201M40 (V72962)) (OPT T8125C04C (V11815)) (OPT MF53050-04DL (V15653)) (OPT ITEM 395)		8
400	MS21209C0410		. . INSERT		4
405	MS21209C0415		. . INSERT		8
410	65C25540-15		. . HOUSING		1
415	BAC27DCT631		. DECAL		1
420	BAC27DCT630		. DECAL		1
425	BAC27DCT0355		. MARKER-ALUMINUM FOIL		1
430	BAC27DCT632		. DECAL		1
435	BAC27DCT0351		. DECAL		1
440	BAC27DCT0352		. DECAL	A	1
440A	BAC27DCT0558		DELETED		

–Item not Illustrated

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1– 445	BAC27DCT558		. DECAL	B, C	1

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