COMPONENT MAINTENANCE MANUAL WITH ILLUSTRATED PARTS LIST

LANDING GEAR BRAKE METERING QUADRANT AND SHAFT ASSEMBLY

PART NUMBER 274A2813–1, –2, –3, –4

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COMPONENT MAINTENANCE MANUAL

Revision No. 9
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To: All holders of LANDING GEAR BRAKE METERING QUADRANT AND SHAFT ASSEMBLY 32-41-16.

Attached is the current revision to this COMPONENT MAINTENANCE MANUAL

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Location of Change	Description of Change
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COMPONENT MAINTENANCE MANUAL

TEMPORARY REVISION AND SERVICE BULLETIN RECORD

BOEING SERVICE BULLETIN	BOEING TEMPORARY REVISION	OTHER DIRECTIVE	DATE OF INCORPORATION INTO MANUAL
		PRR 38029	MAR 01/99

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

Revision		Filed	
Number	Date	Date	Initials

Revision		Filed	
Number	Date	Date	Initials

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When the temporary revision is incorporated or cancelled, and the pages are removed, enter the date the pages are removed and the initials of the person who removed the temporary revision.

Temporary Revision		Inserted		Removed	
Number	Date	Date	Initials	Date	Initials

Temporary Revision		Inserted		Removed	
Date	Initials	Number	Date	Date	Initials

Temporary Revision		Inserted		Removed	
Number	Date	Date	Initials	Date	Initials

Temporary Revision		Inserted		Removed	
Date	Initials	Number	Date	Date	Initials

INTRODUCTION

1. General

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

B. This manual is divided into different parts:

(1) Title Page

(2) Transmittal Letter

(3) Highlights

(4) List of Effective Pages

(5) Table of Contents

(6) Temporary Revision & Service Bulletin Record

(7) Record of Revisions

(8) Record of Temporary Revisions

(9) Introduction

(10) Procedures & IPL Sections

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

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

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

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

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

LANDING GEAR BRAKE METERING QUADRANT AND SHAFT ASSEMBLY - DESCRIPTION AND OPERATION

1. Description

A. The landing gear brake metering quadrant and shaft assembly includes an aluminum quadrant and a steel shaft, a support and a crank.

2. Operation

A. The quadrant and shaft assembly is part of the landing gear brake metering valve control installation. When a force is applied at the brake pedals, the connecting brake control cables turn the quadrant, shaft, and crank. A control rod assembly between the crank and the brake metering valve transfers the pedal command to meter the brake pressure applied to the brakes.

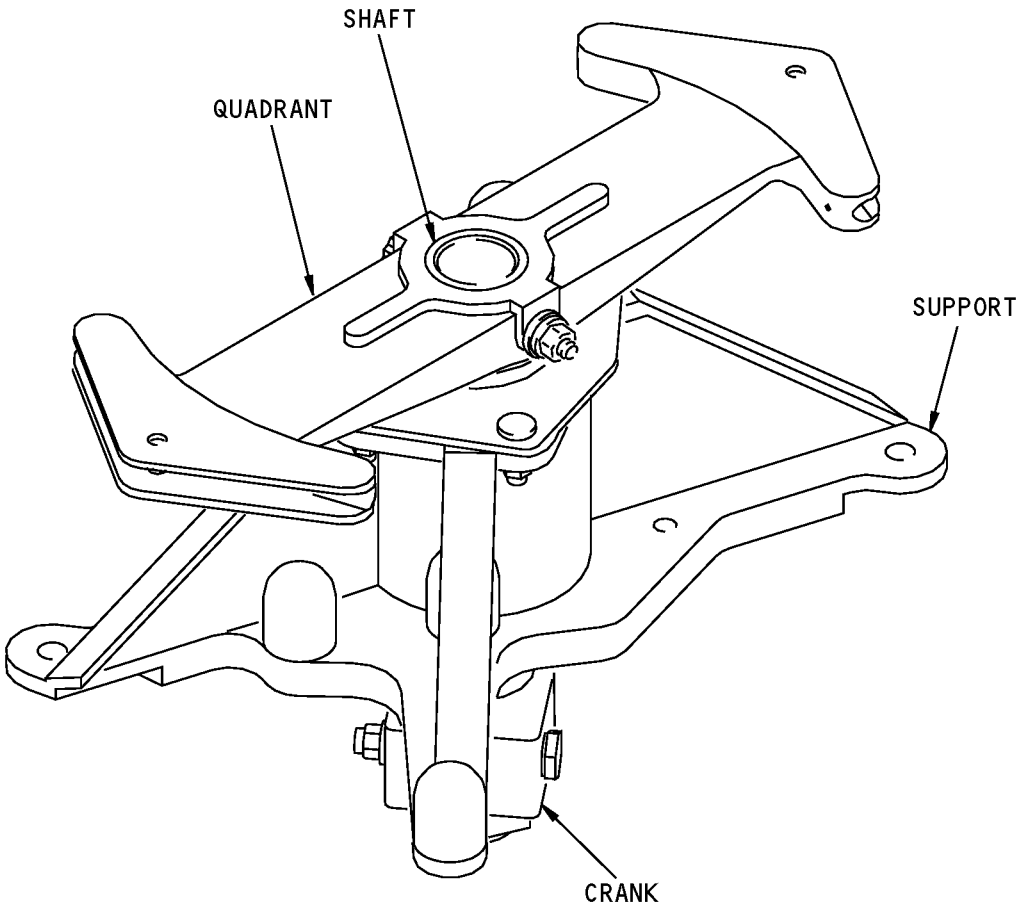
3. Leading Particulars (Approximate)

A. Length – 6 inches

B. Width – 10 inches

C. Height – 7 inches

D. Weight – 4 pounds



Landing Gear Brake Metering Quadrant and Shaft Assembly
Figure 1

(NOT APPLICABLE)

(NOT APPLICABLE)

(NOT APPLICABLE)

CHECK

1. General

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

B. Refer to FITS AND CLEARANCES for 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 think there is damage on the parts listed below:

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

(a) Shaft (135)

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

(a) Crank (110)

(b) Support (75, 80)

(c) Sleeve (25)

(d) Quadrant (20, 20A)

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

2. Dimensioning Symbols

A. Procedure

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

—	STRAIGHTNESS
▱	FLATNESS
⊥	PERPENDICULARITY (OR SQUARENESS)
//	PARALLELISM
○	ROUNDNESS
⌭	CYLINDRICITY
⌒	PROFILE OF A LINE
⌓	PROFILE OF A SURFACE
◎	CONCENTRICITY
⌯	SYMMETRY
∠	ANGULARITY
↗	RUNOUT
↗↗	TOTAL RUNOUT
⌴	COUNTERBORE OR SPOTFACE
∨	COUNTERSINK
⌖	THEORETICAL EXACT POSITION OF A FEATURE (TRUE POSITION)
Ø	DIAMETER
S Ø	SPHERICAL DIAMETER
R	RADIUS
SR	SPHERICAL RADIUS
()	REFERENCE
BASIC (BSC) OR [DIM]	A THEORETICALLY EXACT DIMENSION USED TO DESCRIBE SIZE, SHAPE OR LOCATION OF A FEATURE. FROM THIS FEATURE PERMISSIBLE VARIATIONS ARE ESTABLISHED BY TOLERANCES ON OTHER DIMENSIONS OR NOTES.
[-A-]	DATUM
Ⓜ	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
◎ | Ø 0.0005 | C	CONCENTRIC TO DATUM C WITHIN 0.0005 DIAMETER
⌯ | 0.010 | A	SYMMETRICAL WITH DATUM A WITHIN 0.010
∠ | 0.005 | A	ANGULAR TOLERANCE 0.005 WITH DATUM A
⌖ | Ø 0.002 Ⓢ | B	LOCATED AT TRUE POSITION WITHIN 0.002 DIA RELATIVE TO DATUM B, REGARDLESS OF FEATURE SIZE
⊥ | Ø 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 REPAIR-GENERAL, Figure 601 for the True Position Dimensioning Symbols used in the repair.

D. 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
C00260	Coating - Chemical And Solvent Resistant Finish, Epoxy Resin Enamel	BMS10-11, Type II

B. References

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

C. Procedure REPAIR 1-1, Figure 601 thru REPAIR 1-1, Figure 604

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

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

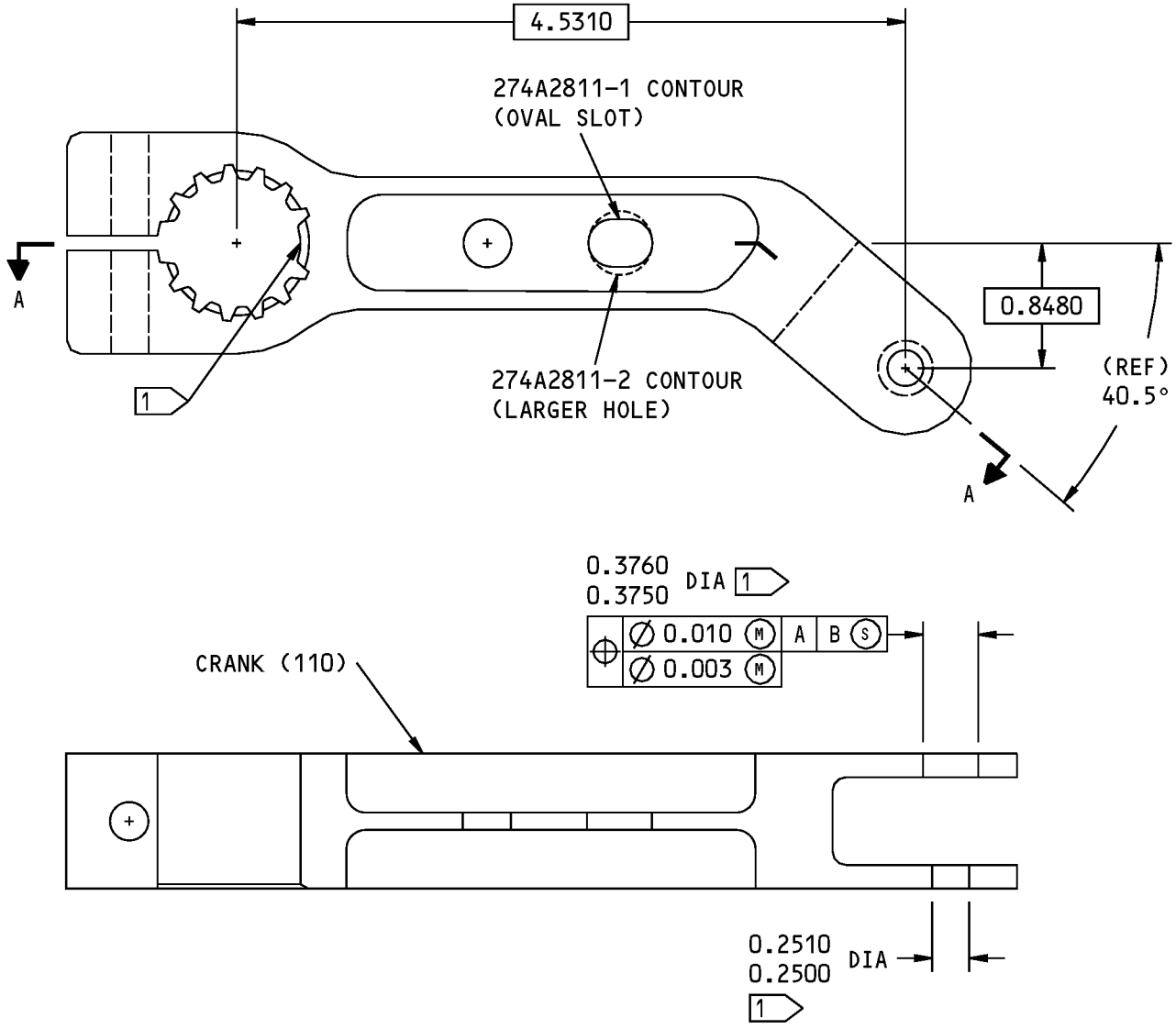
(2) Refer to REPAIR 1-1, Table 601 for the refinish details.

Table 601: Refinish Details

IPL FIG. & ITEM	MATERIAL	FINISH
IPL Fig. 1		
Crank (110)	Aluminum alloy	(F-17.31) + primer, C00259 (F-20.03) unless noted in REPAIR 1-1, Figure 601.
Sleeve (90)	Aluminum alloy	(F-17.31) + primer, C00259 (F-20.03)
Retainer (45)	Aluminum alloy	(F-17.07) + primer, C00259 (F-20.02)

Table 601: Refinish Details (Continued)

IPL FIG. & ITEM	MATERIAL	FINISH
Support (75,80)	Aluminum alloy	(F-17.05) + primer, C00259 (F-20.02) + enamel coating, C00260 (F-21.03) as noted in REPAIR 1-1, Figure 602.
Sleeve (25)	Aluminum alloy	primer, C00259 (F-18.07)
Spacer (85)	Aluminum alloy	(F-17.25, which replaces F-17.09).
Shaft (135)	Steel	(F-17.25) + (F-16.06) on exterior surfaces. Make the plating thickness 0.0002-0.0003 inch. Obey flagnotes in REPAIR 1-1, Figure 603.
Quadrant (20,20A)	Aluminum alloy	(F-17.31) + primer, C00259 (F-20.03) and notes in REPAIR 1-1, Figure 604.



A–A

1 DO NOT APPLY PRIMER OR PAINT ON THIS SURFACE.

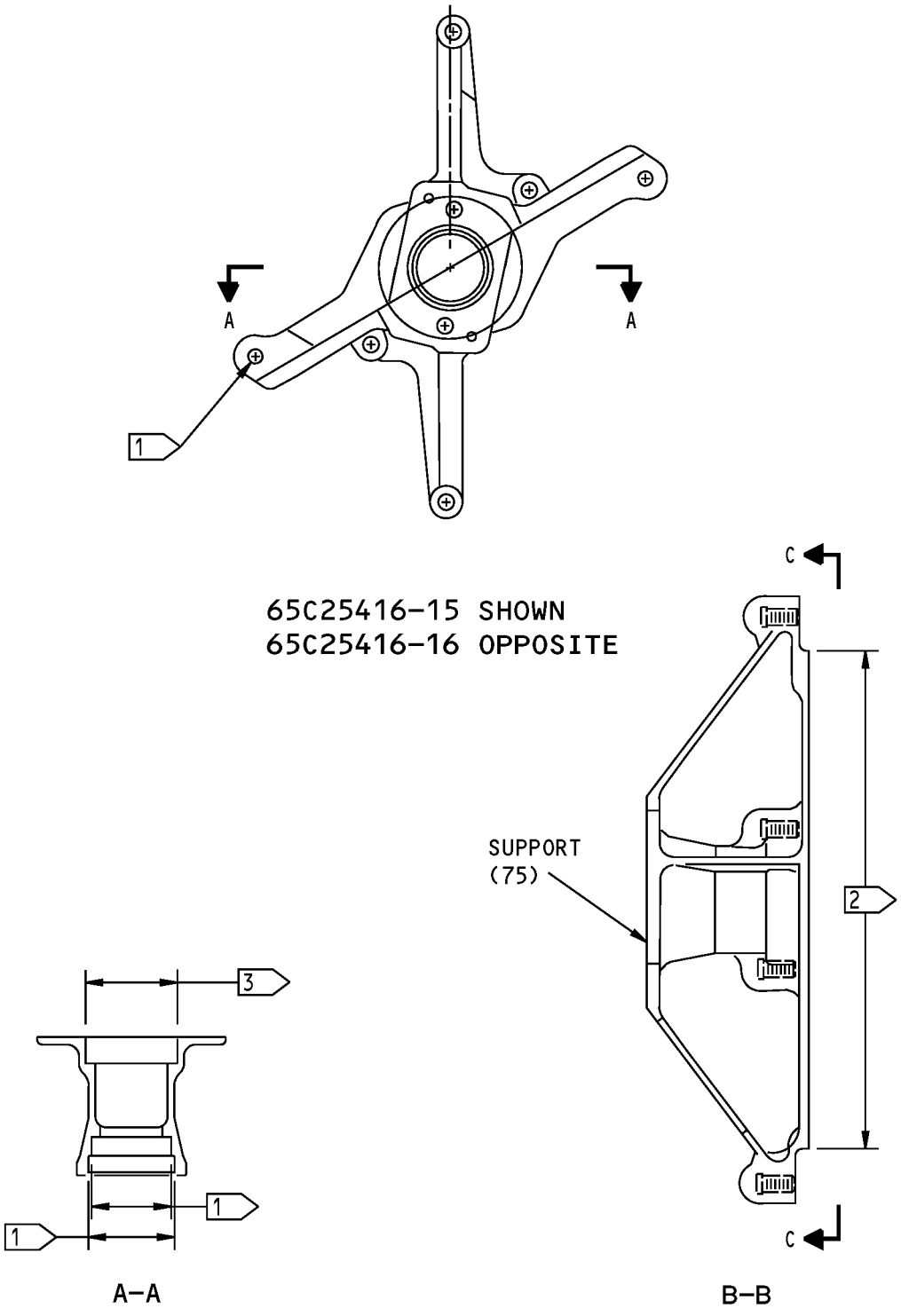
125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

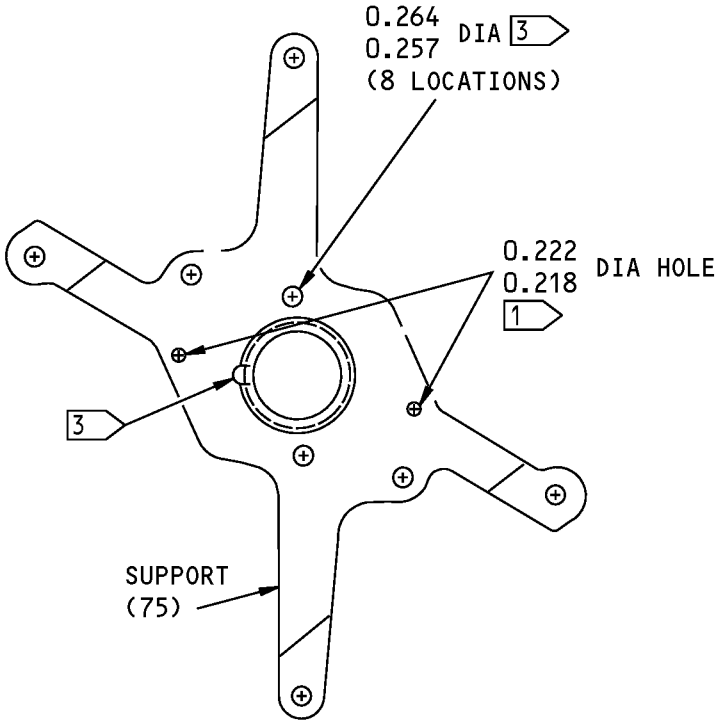
ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

274A2811-1,-2 Crank Refinish
Figure 601



65C25416-15,-16 Support Refinish
Figure 602 (Sheet 1 of 2)



C–C

1 DO NOT APPLY PRIMER ON THIS SURFACE.

2 APPLY BMS 10-11 TYPE 2 WHITE ENAMEL (F-21.03) ON THIS SURFACE, OVERSPRAY IS PERMITTED UNLESS NOTED BY 1 3

3 DO NOT APPLY PAINT OR PRIMER ON THIS SURFACE.

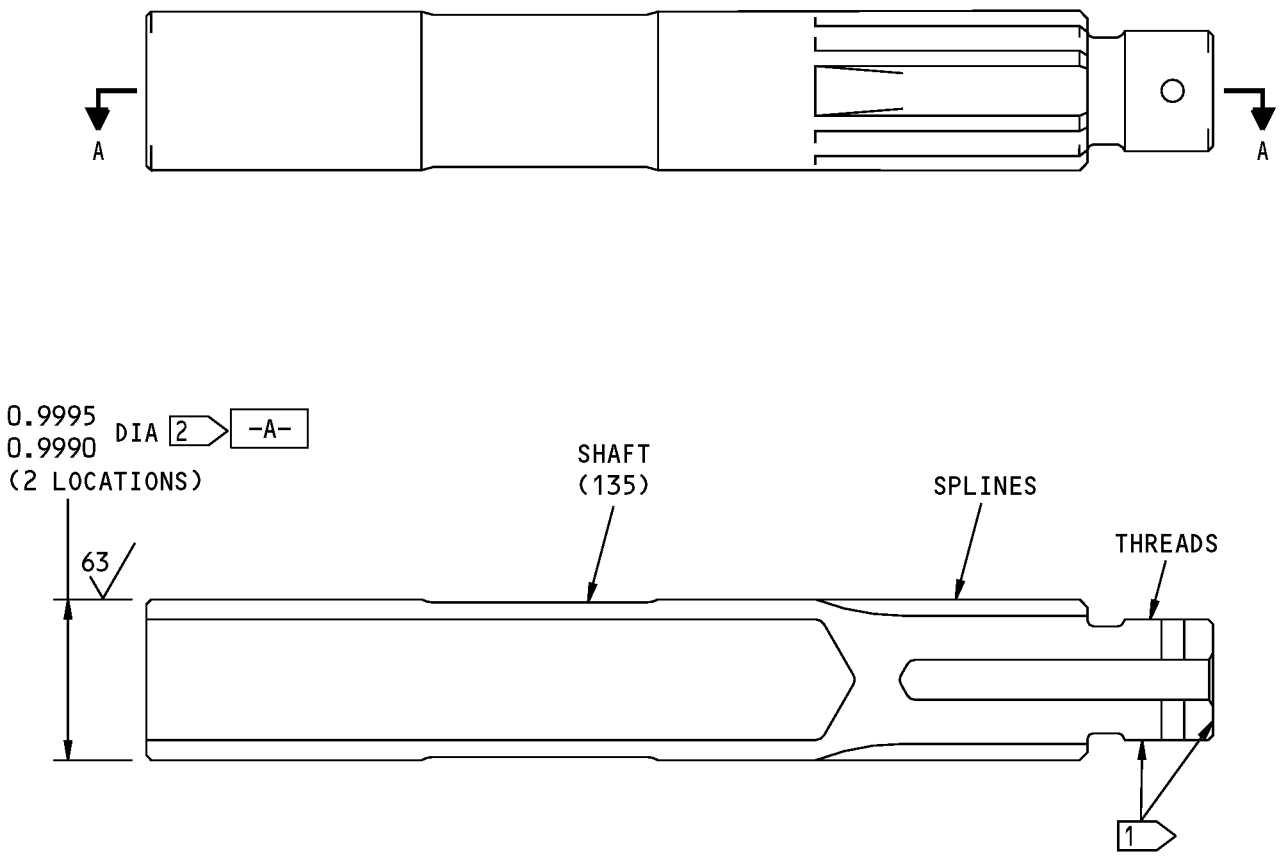
125 ALL MACHINED SURFACES UNLESS SHOWN DIFFERENTLY

BREAK ALL SHARP EDGES

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

65C25416-15,-16 Support Refinish
Figure 602 (Sheet 2 of 2)



A–A

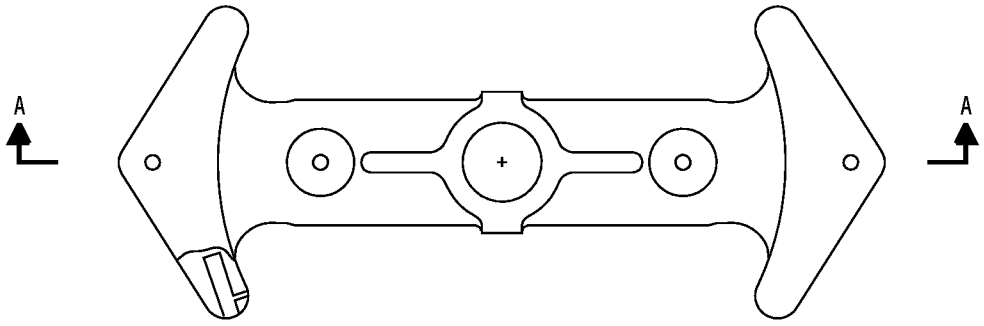
1 DO NOT APPLY PLATING ON THIS SURFACE OR ON THREADS.

2 THIS DIMENSION APPLIES AFTER PLATING.

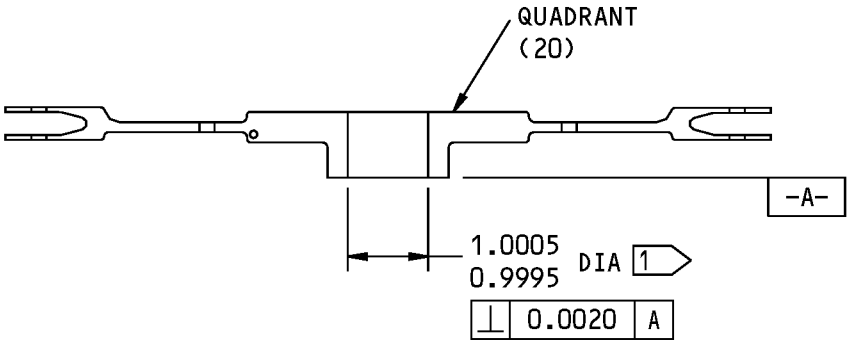
ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

274A2815-1 Shaft Refinish
Figure 603



65-49954-8 SHOWN
65-49954-7 SIMILAR



A-A

1 DO NOT APPLY PRIMER ON THIS SURFACE.

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

65-49954-7,-8 Quadrant Refinish
Figure 604

ASSEMBLY

1. General

A. This procedure has the data necessary to assemble the landing gear brake metering quadrant and shaft 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. Assembly

A. Consumable Materials

NOTE: Equivalent substitutes may be used.

Reference	Description	Specification
A50001	compound - corrosion inhibiting - ZC-027L	ZC-027L
C00259	Primer - Chemical And Solvent Resistant Finish, Epoxy Resin	BMS10-11, Type I
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)
D00633	Grease - Aircraft General Purpose	BMS3-33

B. References

Reference	Title
SOPM 20-41-01	DECODING TABLE FOR BOEING FINISH CODES
SOPM 20-50-01	BOLT AND NUT INSTALLATION
SOPM 20-60-02	FINISHING MATERIALS
SOPM 20-60-03	LUBRICANTS
SOPM 20-60-04	MISCELLANEOUS MATERIALS

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

NOTE: For decoding table for Boeing finish codes, refer to SOPM 20-41-01. For bolt and nut installation, refer to SOPM 20-50-01. For finishing materials, refer to SOPM 20-60-02. For lubricants, refer to SOPM 20-60-03. For miscellaneous materials, refer to SOPM 20-60-04.

(1) Use standard industry procedures and these steps.

(a) Install the quadrants on the shaft with primer, C00259 or corrosion inhibitiing compound - ZC-027L, A50001 as indicated by flagnote 1.

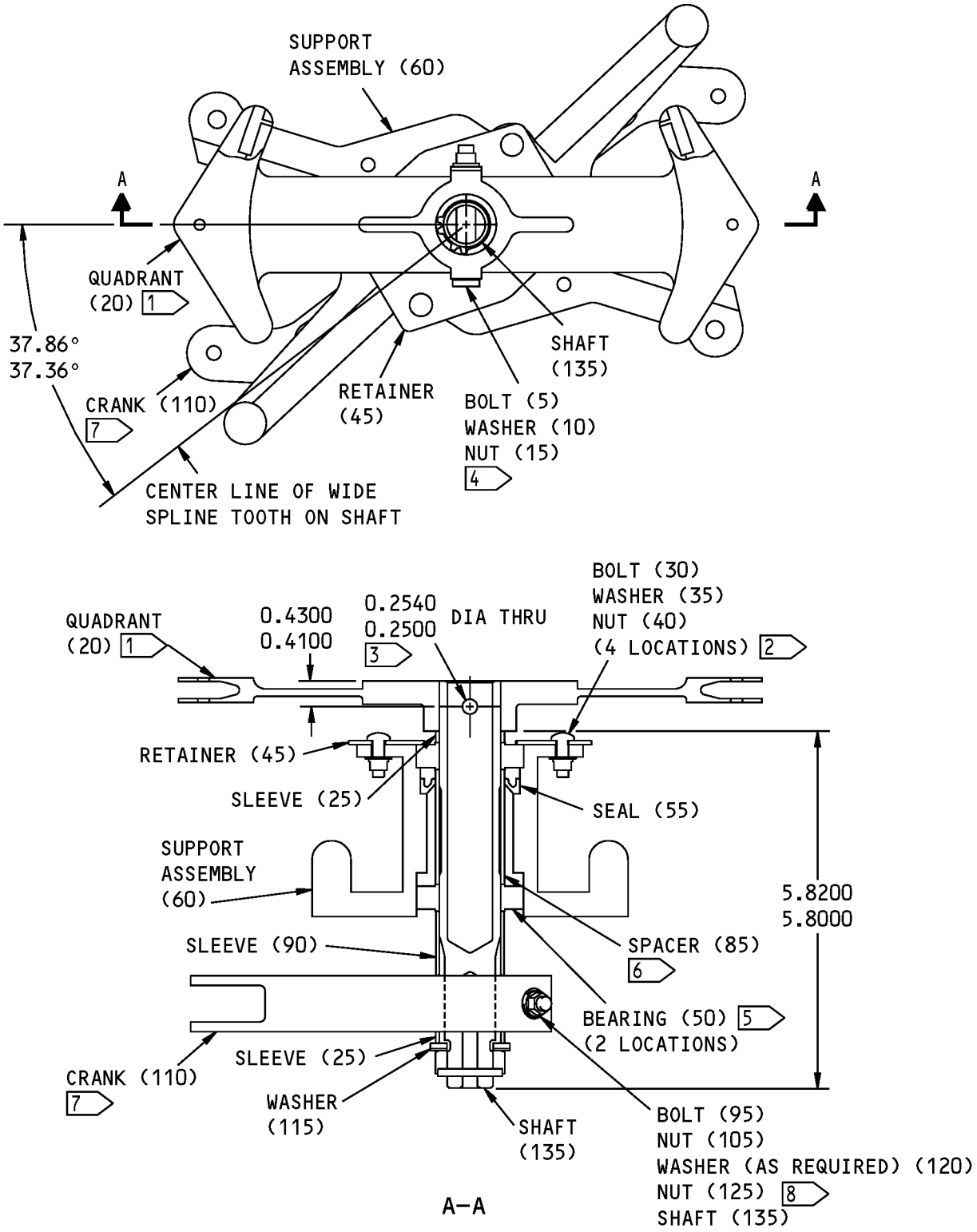
(b) Install the fasteners (30, 35, 40) with compound, C00913 or corrosion inhibitiing compound - ZC-027L, A50001 as indicated by flagnote 2.

(c) Turn the shaft and quadrant as shown. Chemical treat the hole in the quadrant as indicated by flagnote 3. Do not apply primer.

(d) Install the bolt, washer and nut (5, 10, 15) with primer, C00259 or corrosion inhibitiing compound - ZC-027L, A50001 and tighten it as indicated by flagnote 4.

(e) Be sure to apply grease, D00013, grease, D00015, or grease, D00633 to the spacer outer diameter where it touches the seal.

(f) Be sure to install the crank with the chamfer side of the spline towards the sleeve.



274A2813-1,-3 Quadrant and Shaft Assembly
Figure 701 (Sheet 1 of 2)

1 INSTALL THE QUADRANTS ON THE SHAFT WITH WET PRIMER (F-20.06) (274A2813-1) OR BMS 3-38 COMPOUND (274A2813-3)

2 INSTALL THE FASTENERS WITH BMS 3-27 CORROSION PREVENTIVE COMPOUND (274A2813-1) OR BMS 3-38 COMPOUND (274A2813-3)

3 TURN THE SHAFT AND QUADRANT AS SHOWN. CHEMICAL TREAT (F-17.10) THE HOLE IN THE QUADRANT

4 APPLY BMS 10-11, TYPE 1 PRIMER (274A2813-1) OR BMS 3-38 COMPOUND (274A2813-3) TO ALL AREAS OF THE HOLE AND IMMEDIATELY INSTALL THE BOLT, WASHER AND NUT. TIGHTEN THE NUT TO 20 INCH-LBS TORQUE ABOVE THE RUNNING TORQUE

5 INSTALL THE BEARING AS SHOWN IN SOPM 20-50-03 WITH GREASE

6 APPLY GREASE TO THE SPACER OUTER DIAMETER WHERE IT TOUCHES THE SEAL

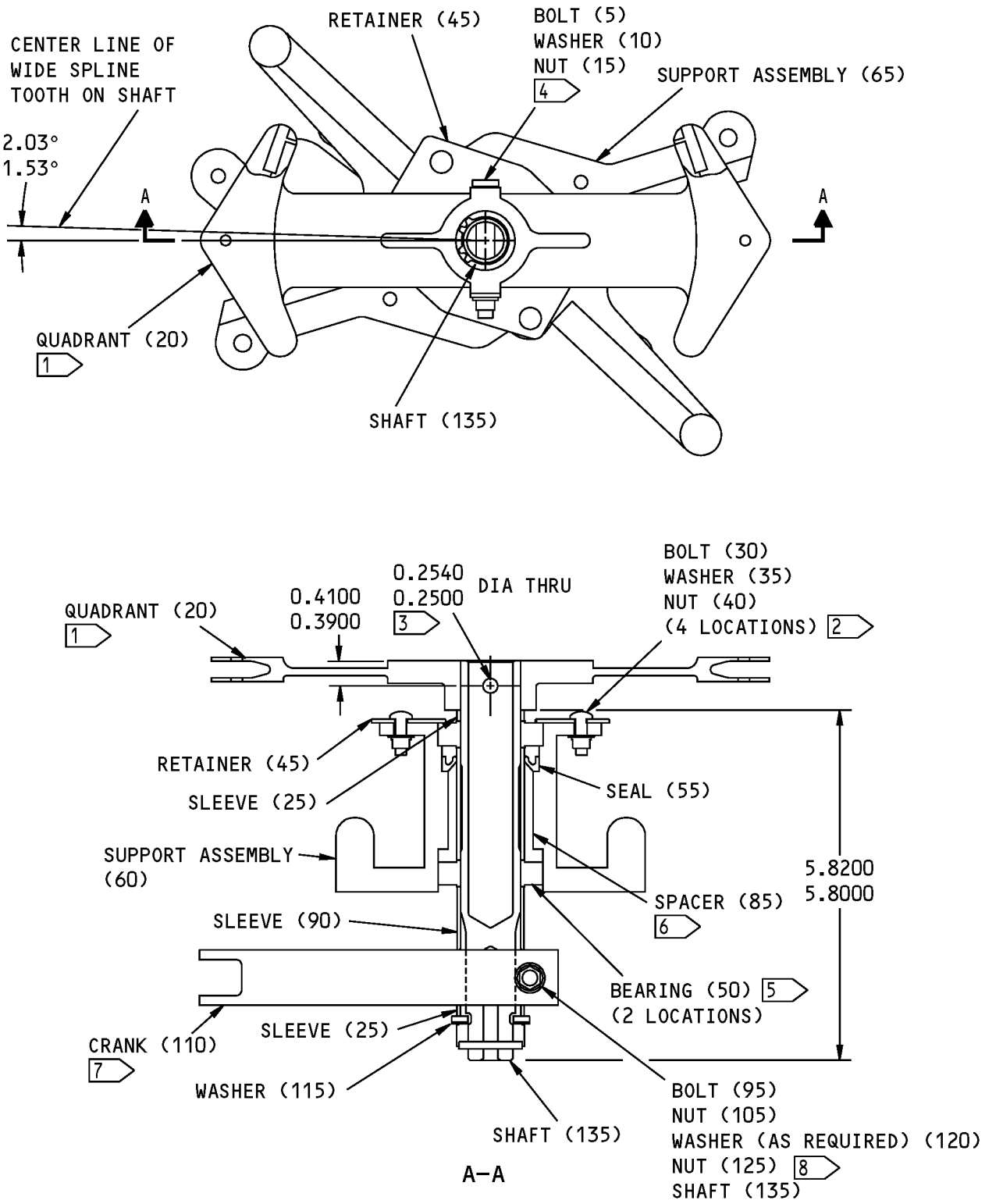
7 INSTALL THE CRANK WITH THE CHAMFER SIDE OF THE SPLINE TOWARDS THE SLEEVE. ON 274A2813-3 UNITS APPLY BMS 3-38 COMPOUND TO THE MATING SURFACES OF THE CRANK AND SHAFT

8 TIGHTEN THE NUT TO 5-10 INCH-POUNDS TORQUE ONLY TO CLAMP UP THE BEARINGS, SLEEVES AND CRANK ARM. THE FINAL TORQUE WILL BE APPLIED AT INSTALLATION

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

274A2813-1,-3 Quadrant and Shaft Assembly
Figure 701 (Sheet 2 of 2)



274A2813-2,-4 Quadrant and Shaft Assembly
Figure 702 (Sheet 1 of 2)

1 INSTALL THE QUADRANTS ON THE SHAFT WITH WET PRIMER (F-20.06) (274A2813-2) OR BMS 3-38 COMPOUND (274A2813-4)

2 INSTALL THE FASTENERS WITH BMS 3-27 CORROSION PREVENTIVE COMPOUND (274A2813-2) OR BMS 3-38 COMPOUND (274A2813-4)

3 TURN THE SHAFT AND QUADRANT AS SHOWN. CHEMICAL TREAT (F-17.10) THE HOLE IN THE QUADRANT

4 APPLY BMS 10-11, TYPE 1 PRIMER (274A2813-2) OR BMS 3-38 COMPOUND (274A2813-4) TO ALL AREAS OF THE HOLE AND IMMEDIATELY INSTALL THE BOLT, WASHER AND NUT. TIGHTEN THE NUT TO 20 INCH-LBS TORQUE ABOVE THE RUNNING TORQUE

5 INSTALL THE BEARING AS SHOWN IN SOPM 20-50-03 WITH GREASE

6 APPLY GREASE TO THE SPACER OUTER DIAMETER WHERE IT TOUCHES THE SEAL

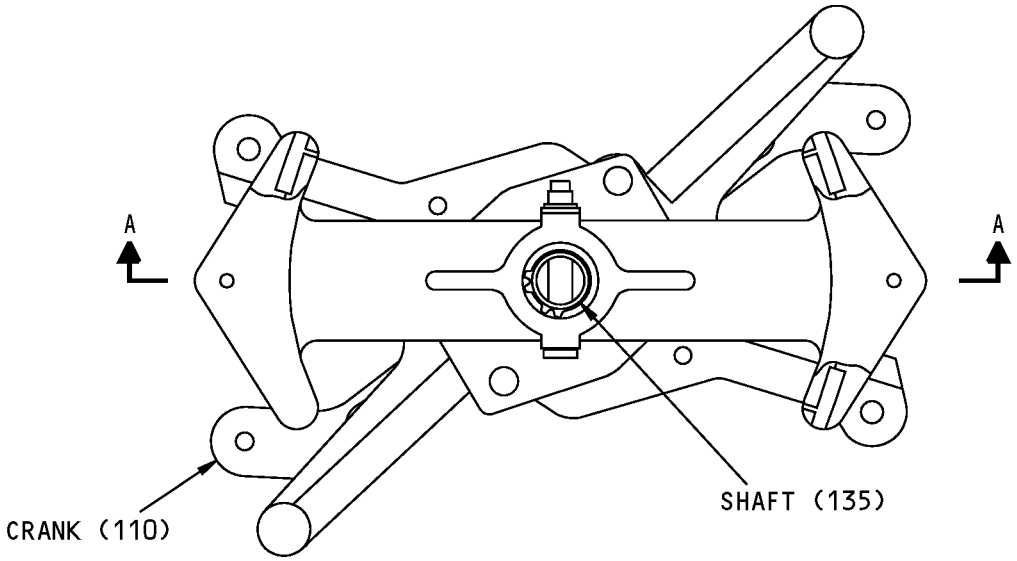
7 INSTALL THE CRANK WITH THE CHAMFER SIDE OF THE SPLINE TOWARDS THE SLEEVE. ON 274A2813-4 UNITS APPLY BMS 3-38 COMPOUND TO THE MATING SURFACES OF THE CRANK AND SHAFT

8 TIGHTEN THE NUT TO 5-10 INCH-POUNDS TORQUE ONLY TO CLAMP UP THE BEARINGS, SLEEVES AND CRANK ARM. THE FINAL TORQUE WILL BE APPLIED AT INSTALLATION

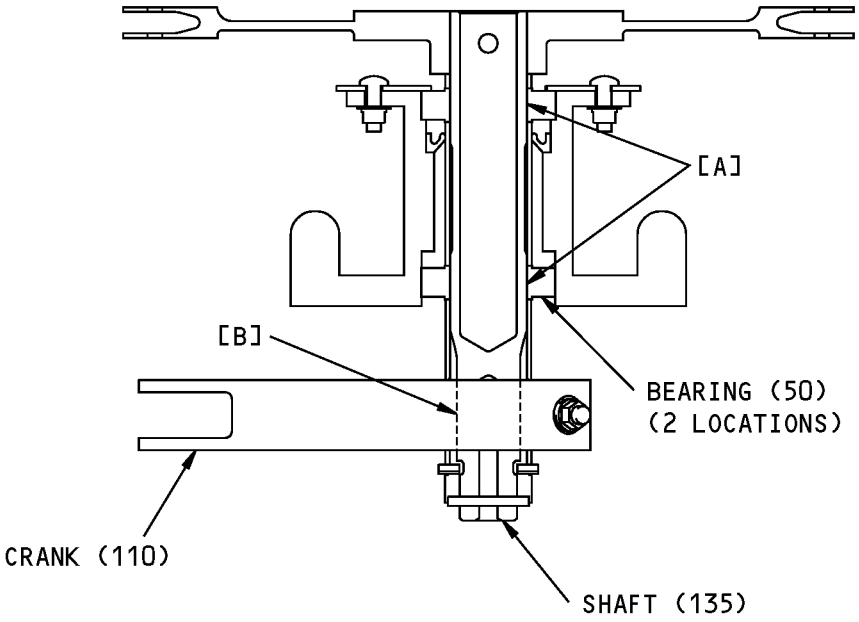
ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

274A2813-2,-4 Quadrant and Shaft Assembly
Figure 702 (Sheet 2 of 2)



274A2813-1,-3 SHOWN
274A2813-2,-4 SIMILAR



A-A

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*		DIMENSION		MAXIMUM CLEARANCE
		MIN	MAX	MIN	MAX	MIN	MAX	
[A]	ID 50 OD 135	0.9990 0.9990	1.0000 0.9995	-0.0005	0.0010	0.9980	1.0005	0.0025
[B]	ID 110 OD 135	--	--	--	--	--	--	0.005 <1>

* NEGATIVE VALUES ARE AN INTERFERENCE FIT

<1> SPLINE BACKLASH, MEASURED AT THE PITCH DIAMETER OF THE SPLINE

ITEM NUMBERS REFER TO IPL FIG. 1

ALL DIMENSIONS ARE IN INCHES

Fits and Clearances
Figure 801 (Sheet 2 of 2)

(NOT APPLICABLE)

ILLUSTRATED PARTS LIST

1. Introduction

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

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

1 2 3 4 5 6 7

. Assembly

. Attaching parts for assembly

. . Detail parts for assembly

. . Subassembly

. . Attaching parts for subassembly

. . . Detail parts for subassembly

. . . Sub-subassembly

. . . Attaching parts for subassembly

. . . . . Details parts for sub-subassembly

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

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

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

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

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

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

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

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

H. Interchangeable Parts

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

VENDOR CODES

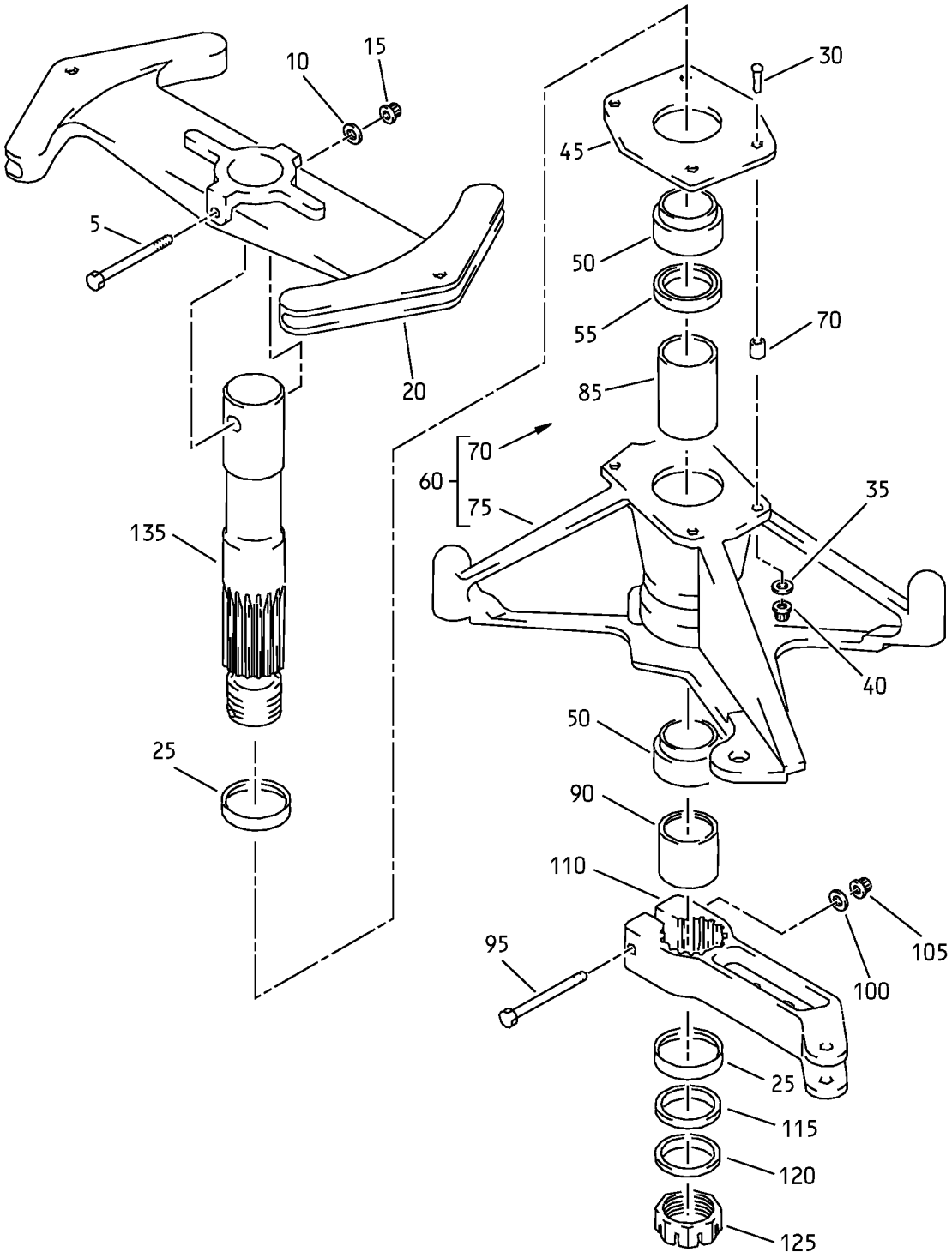
Code	Name
06144	INDUSTRIAL TECTONICS BEARING CORP 18301 SOUTH SANTA FE AVENUE RANCHO DOMINGUEZ, CALIFORNIA 90221 FORMERLY IN COMPTON, CALIFORNIA
15653	ALCOA GLOBAL FASTENERS INC DIV KAYNAR PRODUCTS 800 S STATE COLLEGE BLVD FULLERTON, CALIFORNIA 92831-3001 FORMERLY VK6405 MICRODOT AEROSP LTD; FORMERLY 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
30163	VALENTEC DAYRON INC 333 MAGUIRE BLVD PO BOX 140394 ORLANDO, FLORIDA 32814-0394
38443	MRC BEARINGS 402 CHANDLER STREET JAMESTOWN, NEW YORK 14701-3802 FORMERLY MARLIN-ROCKWELL CORP DIV TRW AND TRW INC

Code	Name
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
62554	SIMMONDS MECAERO FASTENERS INC 1734 SEQUOIA AVENUE ORANGE, CALIFORNIA 92668
83086	NEW HAMPSHIRE BALL BEARING, INC HITECH DIVISION 172 JAFFREY ROAD PETERBOROUGH, NEW HAMPSHIRE 03458

NUMERICAL INDEX

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
21923-0351		1	55	1
21959-0351		1	55A	1
274A2811-1		1	110	1
274A2811-2		1	110A	1
274A2813-1		1	1A	RF
274A2813-2		1	1B	RF
274A2813-3		1	1C	RF
274A2813-4		1	1D	RF
274A2814-1		1	90	1
274A2815-1		1	135	1
274A2816-1		1	45	1
65-49954-7		1	20A	1
65-49954-8		1	20	1
65C25416-13		1	60	1
65C25416-14		1	65	1
65C25416-15		1	75	1
65C25416-16		1	80	1
66-24188-3		1	25	2
69-74412-1		1	85	1
AMKP16JBNJC		1	50A	2
BACB10BW16		1	50	2
BACB10FR16J		1	50A	2
BACB30LT4D28		1	5	1
BACB30NR4K23		1	95	1
BACB30NT3K4		1	30	4
BACN10JD112AU		1	125	1
BACN10YR3CD		1	40	4
BACN10YR4CD		1	15	1
BACN10YR4CM		1	105	1
H52732-3CD		1	40	4
H52732-4CD		1	15	1
H52732-4CM		1	105	1
KP16B		1	50	2
KP16B2TS		1	50	2

PART NUMBER	AIRLINE PART NUMBER	FIGURE	ITEM	UNITS PER ASSEMBLY
KP16BFS428		1	50	2
KP16BG27		1	50	2
KP16BLY196		1	50	2
KP16BSD610		1	50	2
LLKP16B		1	50	2
MS21209F4-20P		1	70	4
NAS1149C1232R		1	120	AR
NAS1149C1290R		1	115	1
NAS1149D0332J		1	35	4
NAS1149D0416J		1	100	1
NAS1149D0463J		1	10	1
PACMKP16BFS428		1	50A	2
PLH53CD		1	40	4
PLH54CD		1	15	1
PLH54CM		1	105	1



Landing Gear Brake Metering Quadrant and Shaft Assembly
IPL Figure 1

FIG/ ITEM	PART NUMBER	AIRLINE PART NUMBER	NOMENCLATURE 1 2 3 4 5 6 7	USAGE CODE	UNITS PER ASSY
1–					
–1A	274A2813-1		QUADRANT AND SHAFT ASSY-LG BREAK METERING	A	RF
–1B	274A2813-2		QUADRANT AND SHAFT ASSY-LG BREAK METERING	B	RF
–1C	274A2813-3		QUADRANT AND SHAFT ASSY-LG BREAK METERING	C	RF
–1D	274A2813-4		QUADRANT AND SHAFT ASSY-LG BREAK METERING	D	RF
5	BACB30LT4D28		. BOLT		1
10	NAS1149D0463J		. WASHER		1
15	H52732-4CD		. NUT (V15653) (SPEC BACN10YR4CD) (OPT PLH54CD (V62554))		1
20	65-49954-8		. QUADRANT (OPT ITEM 20A)		1
–20A	65-49954-7		. QUADRANT (OPT ITEM 20)		1
25	66-24188-3		. SLEEVE		2
30	BACB30NT3K4		. BOLT		4
35	NAS1149D0332J		. WASHER		4
40	H52732-3CD		. NUT (V15653) (SPEC BACN10YR3CD) (OPT PLH53CD (V62554))		4
45	274A2816-1		. RETAINER		1
50	KP16BSD610		. BEARING (V83086) (SPEC BACB10BW16) (OPT KP16B2TS (V43991)) (OPT KP16B (V38443)) (OPT LLKP16B (V38443)) (OPT KP16BG27 (V30163)) (OPT KP16BFS428 (V21335)) (OPT KP16BLY196 (V40920))	A, B	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–					
–50A	PACMKP16BFS428		. BEARING (V21335) (SPEC BACB10FR16J) (OPT AMKP16JBNJC (V06144))	C, D	2
55	21923-0351		. SEAL (OPT ITEM 55A)		1
–55A	21959-0351		. SEAL (OPT ITEM 55)		1
60	65C25416-13		. SUPPORT ASSY	A, C	1
–65	65C25416-14		. SUPPORT ASSY	B, D	1
70	MS21209F4-20P		. . INSERT		4
75	65C25416-15		. . SUPPORT	A, C	1
–80	65C25416-16		. . SUPPORT	B, D	1
85	69-74412-1		. SPACER		1
90	274A2814-1		. SLEEVE		1
95	BACB30NR4K23		. BOLT		1
100	NAS1149D0416J		. WASHER		1
105	H52732-4CM		. NUT (V15653) (SPEC BACN10YR4CM) (OPT PLH54CM (V62554))		1
110	274A2811-1		. CRANK	A, B	1
–110A	274A2811-2		. CRANK	C, D	1
115	NAS1149C1290R		. WASHER		1
120	NAS1149C1232R		. WASHER		AR
125	BACN10JD112AU		. NUT		1
130	BACP18BC04C12P		DELETED		
135	274A2815-1		. SHAFT		1

–Item not Illustrated