

STABILIZER TRIM QUADRANT AND CRANK ASSEMBLY

PART NUMBER 251T4201-3, -4

COMPONENT MAINTENANCE MANUAL
WITH
ILLUSTRATED PARTS LIST

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TITLE PAGE

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REVISION RECORD

- Retain this record in front of manual. On receipt of revision, insert revised pages in the manual, and enter revision number, date inserted and initial.

REVISION NUMBER	REVISION DATE	DATE FILED	BY	REVISION NUMBER	REVISION DATE	DATE FILED	BY

TEMPORARY REVISION AND SERVICE BULLETIN RECORD

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

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TR & SB RECORD

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			601	OCT 01/87	01
			602	BLANK	
TITLE PAGE			REPAIR 1-1		
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2	BLANK		602	BLANK	
REVISION RECORD			REPAIR 2-1		
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TR & SB RECORD			ASSEMBLY		
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2	BLANK		702	BLANK	
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* = REVISED, ADDED OR DELETED

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*[1] Special instructions not required. Use standard industry practices.

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INTRODUCTION

The instructions in this manual provide the information necessary to perform maintenance functions ranging from simple checks and replacement to complete shop-type repair.

This manual is divided into separate sections:

- | | |
|--|------------------------------|
| 1. Title Page | 4. List of Effective Pages |
| 2. Record of Revisions | 5. Table of Contents |
| 3. Temporary Revision &
Service Bulletin Record | 6. Introduction |
| | 7. Procedures & IPL Sections |

Refer to the Table of Contents for the page location of applicable sections. An asterisked flagnote *[] in place of the page number indicates that no special instructions are provided since the function can be performed using standard industry practices.

The beginning of the REPAIR section includes a list of the separate repairs, a list of applicable standard Boeing practices, and an explanation of the True Position Dimensioning symbols used.

An explanation of the use of the Illustrated Parts List is provided in the Introduction to that section.

All weights and measurements used in the manual are in English units, unless otherwise stated. When metric equivalents are given they will be in parentheses following the English units.

Design changes, optional parts, configuration differences and Service Bulletin modifications create alternate part numbers. These are identified in the Illustrated Parts List (IPL) by adding an alphabetical character to the basic item number. The resulting item number is called an alpha-variant. Throughout the manual, IPL basic item number references also apply to alpha-variants unless otherwise indicated.

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INTRODUCTION

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STABILIZER TRIM QUADRANT AND CRANK ASSEMBLY

DESCRIPTION AND OPERATION

1. The stabilizer trim quadrant and crank assembly consists of an aluminum quadrant, crank and support, with a steel shaft.
2. The assembly is part of a manual backup to an electrically operated horizontal stabilizer control system. It receives control cable input from the control stand and moves the crank, which is connected by linkages to the control module. Two assemblies are required; one for each stabilizer.

3. Leading Particulars (Approximate)

Length -- 7 inches

Height -- 8 inches

Width -- 3 inches

Weight -- 1 pound

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DESCRIPTION & OPERATION

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DISASSEMBLY

1. Parts Replacement (IPL Fig. 1)

NOTE: The following parts are recommended for replacement. Unless otherwise specified, actual replacement may be based on in-service experience.

A. Cotter pins (5)

2. Disassembly

A. Special instructions not required, use standard industry practices.

NOTE: Do not remove bearings (37, 38) unless repair or replacement makes it necessary.

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DISASSEMBLY

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CLEANING

1. Clean all parts, except bearings (37, 38) using standard industry practices.
(Ref 20-30-03)

CAUTION: BEARINGS (37, 38) HAVE SEALS. CLEAN ONLY PER MANUFACTURER'S INSTRUCTIONS.

2. Clean bearings (37, 38) per manufacturer's instructions.

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CHECK

1. Check all parts for obvious defects in accordance with standard industry practices.
2. Magnetic particle check shaft (50B, 55) per 20-20-01.
3. Penetrant check per 20-20-02 the following listed items:
 - A. Support (39)
 - B. Quadrant (40)
 - C. Crank (45)

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REPAIR – GENERAL1. Content

- A. Repair, refinish and replacement procedures are included in separate repair sections as follows:

<u>P/N</u>	<u>NAME</u>	<u>REPAIR</u>
251T4203-1	SUPPORT	1-1
- -	MISC PARTS	2-1

2. Standard Practices

- A. Refer to the following standard practices, as applicable, for details of procedures in individual repairs.

20-30-02	Stripping of Protective Finishes
20-41-01	Decoding Table for Boeing Finish Codes
20-42-05	Bright Cadmium Plating
20-43-01	Chromic Acid Anodizing
20-50-03	Bearing Installation and Retention

3. Materials

NOTE: Equivalent substitutes may be used.

- A. Primer -- BMS 10-11, type 1 (Ref 20-60-02)

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REPAIR-GENERAL

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SUPPORT ASSEMBLY - REPAIR 1-1

251T4203-1

NOTE: Refer to REPAIR-GEN for list of applicable standard practices. For repair of surfaces which may only require stripping and restoration of original finish, refer to Refinish instructions, Fig. 601, REPAIR 2-1.

1. Bearing Replacement

- A. Remove bearings (37, 38) (IPL Fig. 1)
- B. Install replacement bearings (37, 38) using wet primer and roller swage per 20-50-03.

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REPAIR 1-1

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MISCELLANEOUS PARTS REFINISH – REPAIR 2-1

1. Repair of the parts listed in Fig. 601 consists of restoration of the original finish.

IPL FIG. & ITEM	MATERIAL	FINISH
<u>Fig. 1</u>		
Support (39)	Al alloy	Chromic or sulfuric acid anodize (F-17.05) and apply one coat BMS 10-11, type 1 primer (F-20.02) all over, except do not apply primer to bolt hole ID's and bearing bores.
Quadrant (40)	Al alloy	Chromic acid anodize and apply one coat BMS 10-11, type 1 primer (F-18.13) all over except do not apply primer to bolt hole ID's and splines.
Crank (45)	Al alloy	Chromic acid anodize and apply one coat BMS 10-11, type 1 primer (F-18.13) all over, except do not apply primer to hole ID's and splines.
Shaft (50B,55)	4340 Steel, 180-200 ksi	Cadmium plate (0.0002-0.0004 thick) (F-15.02) all over.

Refinish Details
Figure 601

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REPAIR 2-1

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ASSEMBLY1. Materials

NOTE: Equivalent substitutes may be used.

A. Grease -- MIL-G-23827 (Ref 20-60-03)

2. Lubricants

A. Apply grease to all internal or external splines or threads, including adjacent relief grooves, prior to assembly.

B. After assembly, all exposed splines, threads, and relief grooves are to have a light, unbroken coating of grease.

3. Assembly (IPL Fig. 1)

A. Special instructions not required. Use standard industry practices.

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ILLUSTRATED PARTS LIST

1. This section lists and illustrates replaceable or repairable component parts. The Illustrated Parts Catalog contains a complete explanation of the Boeing part numbering system.
2. Indentures show parts relationships as follows:

Assembly

Detail Parts for Assembly

Subassembly

Attaching Parts for Subassembly

Detail Parts for Subassembly

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

3. One use code letter (A, B, C, etc.) is assigned in the EFF CODE column for each variation of top assembly. All listed parts are used on all top assemblies except when limitations are shown by use code letter opposite individual part entries.
4. Letter suffixes (alpha-variants) are added to item numbers for optional parts, Service Bulletin modification parts, configuration differences (except left- and right-hand parts), product improvement parts, and parts added between two sequential item numbers. The alpha-variant is not shown on illustrations when appearance and location of all variants of the part is the same.
5. Service Bulletin modifications are shown by the notations PRE SB XXXX and POST SB XXXX.
 - A. When a new top assembly part number is assigned by Service Bulletin, the notations appear at the top assembly level only. The configuration differences at detail part level are then shown by use code letter.
 - B. When the top assembly part number is not changed by the Service Bulletin, the notations appear at the detail part level.

6. Parts Interchangeability

Optional
(OPT)

The parts are optional to and interchangeable with other parts having the same item number.

Supersedes, Superseded By
(SUPSDS, SUPSD BY)

The part supersedes and is not interchangeable with the original part.

Replaces, Replaced By
(REPLS, REPLD BY)

The part replaces and is interchangeable with, or is an alternate to, the original part.

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ILLUSTRATED PARTS LIST

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VENDORS

15653 KAYNAR MFG COMPANY INC KAYLOCK DIV
PO BOX 3001 800 SOUTH STATE COLLEGE BLVD
FULLERTON, CALIFORNIA 92634

21335 TEXTRON INC FAFNIR BEARING DIVISION
37 BOOTH STREET
NEW BRITAIN, CONNECTICUT 06050

38443 TRW INC BEARING DIV
402 CHANDLER STREET
JAMESTOWN, NEW YORK 14701

43991 FAG BEARING INCORPORATED
HAMILTON AVENUE
STAMFORD, CONNECTICUT 06904

52828 REPUBLIC FASTENER MFG CORP
1300 RANCHO CONEJO BLVD
NEWBURY PARK, CALIFORNIA 91320

56878 SPS TECHNOLOGIES INC
HIGHLAND AVENUE
JENKINTOWN, PENNSYLVANIA 19046

71087 BOOTS ACFT NUT DIV TOWNSEND CO SEE TEXTRON INC CHERRY
FASTENER TOWNSEND DIV V11815

72962 ESNA DIV OF AMERACE CORP
2330 VAUXHALL ROAD
UNION, NEW JERSEY 07083

80539 SPS TECHNOLOGIES INC AEROSPACE PRODUCTS DIV
2701 SOUTH HARBOR BOULEVARD
SANTA ANA, CALIFORNIA 92702

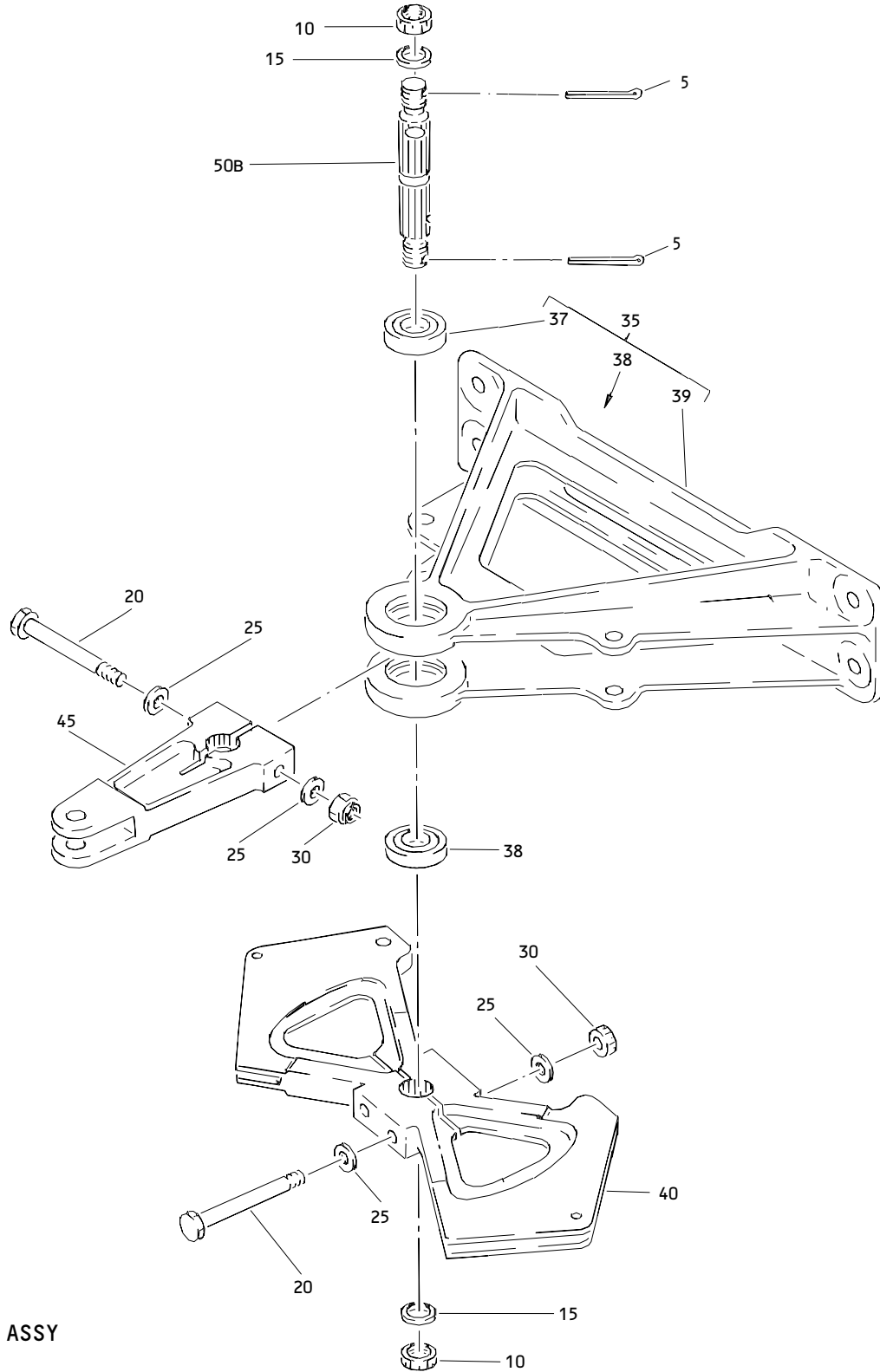
92215 VOI-SHAN DIV OF VSI CORP
8463 HIGUERA STREET
CULVER CITY, CALIFORNIA 90230

92595 AUTOMATIC SCREW MACHINE PRODUCTS CO
PO BOX 1608 709 2ND AVENUE SE
DECATUR, ALABAMA 35602

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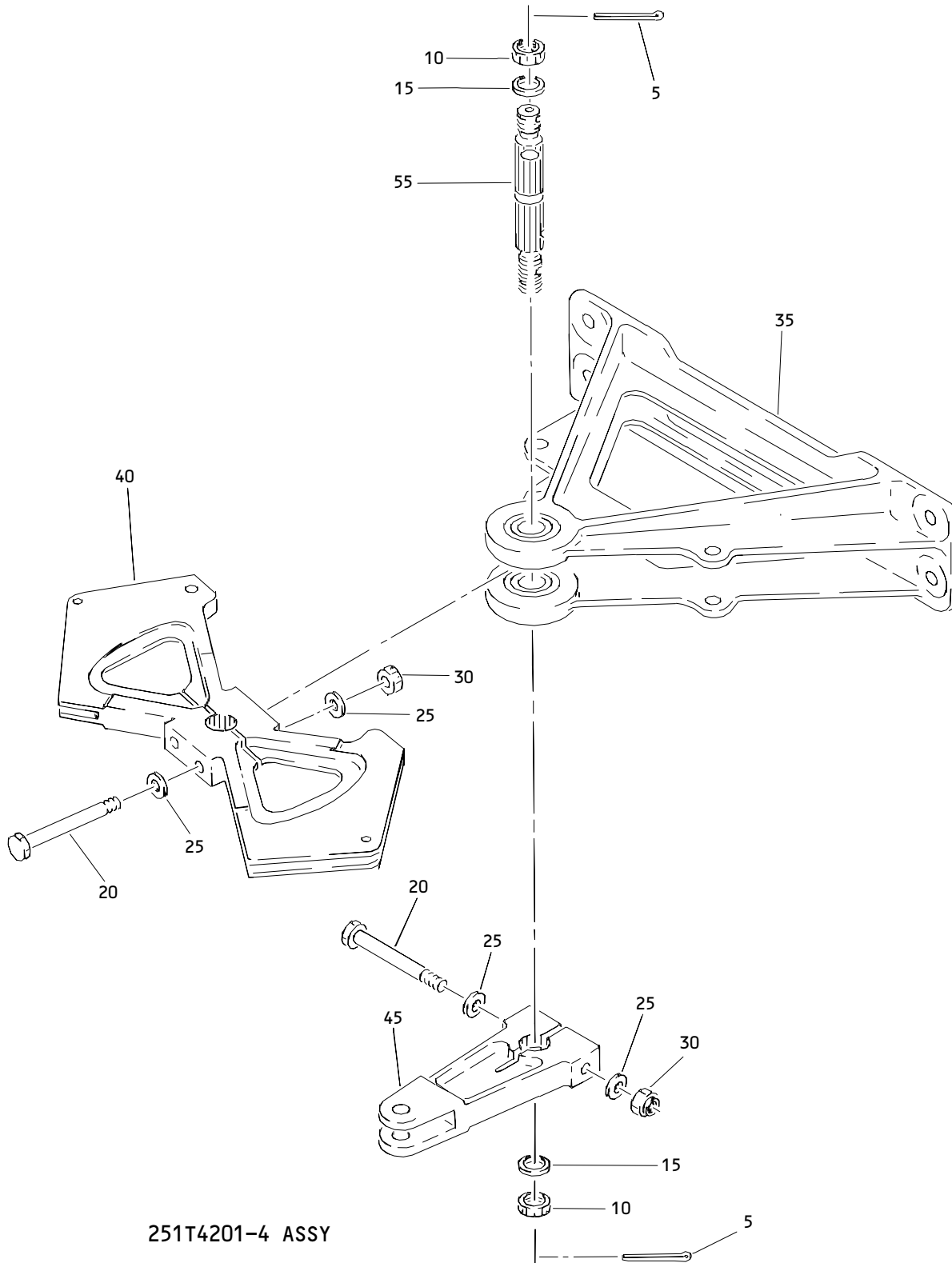
251T4201-3 ASSY

Stabilizer Trim Quadrant and Crank Assembly
 Figure 1 (Sheet 1)

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251T4201-4 ASSY

Stabilizer Trim Quadrant and Crank Assembly
Figure 1 (Sheet 2)

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-					
-1	251T4201-1		DELETED		
-1A	251T4201-3		QUADRANT AND CRANK ASSY- STAB. TRIM	A	RF
-3	251T4201-2		DELETED		
-3A	251T4201-4		QUADRANT AND CRANK ASSY- STAB. TRIM	B	RF
5	MS24665-287		.PIN-COTTER		2
10	BACN10JD106		.NUT- (V15653) (SPEC BACN10JD106) (V56878) (V72962) (V92595)		2
15	AN960PD616		.WASHER		2
20	NAS6604-23		.BOLT		3
25	AN960PD416L		.WASHER		6
30	BRH10-4		.NUT- (V52828) (SPEC BACN10JC4) (OPT H10-4BAC (V15653)) (OPT NS202101-048 (V80539)) (OPT RMLH9075-4W (V72962)) (OPT T6S428J (V71087)) (OPT VN303A048 (V92215)) (OPT 96-048 (V80539))		3

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FIG. & ITEM	PART NO.	AIRLINE PART NUMBER	NOMENCLATURE 1234567	EFF CODE	QTY PER ASSY
01-35	251T4203-1		.SUPPORT ASSY		1
37	KP6A		..BEARING- (V38443) (SPEC BACB10BX6) (OPT KP6AFS428 (V21335)) (OPT KP6A2TS (V43991)) (OPT LLKP6A (V38443))		1
38	KP8A		..BEARING- (V38443) (SPEC BACB10BX8) (OPT KP8AFS428 (V21335)) (OPT KP8A2TS (V43991)) (OPT LLKP8A (V38443))		1
39	251T4203-2		..SUPPORT		1
40	251T4202-1		.QUADRANT- (OPT ITEM 40A)		1
-40A	251T4202-3		.QUADRANT- (OPT ITEM 40)		1
45	251T4205-1		.CRANK- (OPT ITEM 45A)		1
-45A	251T4205-3		.CRANK- (OPT ITEM 45)		1
50	251T4206-1		DELETED		
50A	251T4206-2		DELETED		
50B	251T4206-3		.SHAFT	A	1
55	251T4206-4		.SHAFT	B	1

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