

TECHNICAL BULLETIN
Bell Helicopter
A Textron Company

No. 206L-08-232

Date APR 25, 2008

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DATE
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MODEL AFFECTED: 206L series

SUBJECT: TRANSMISSION OIL PUMPS P/N 206-040-190-005 AND 406-340-100-101 BEARING REPLACEMENT PROCEDURE, INTRODUCTION OF.

HELICOPTERS AFFECTED: 206L Helicopters serial number 45004 through 45153 and 46601 through 46617.

206L-1 Helicopters serial number 45154 through 45790.

206L-3 Helicopters serial number 51001 through 51612.

206L-4 Helicopters serial number 52001 and subsequent.

COMPLIANCE: At Customer's Option

DESCRIPTION:

This bulletin is issued to provide replacement instructions for the transmission oil pump bearings.

APPROVAL:

The engineering design aspects of this bulletin are TCCA approved.

MANPOWER:

No additional man-hours are required when the bearings are replaced at transmission overhaul.

WARRANTY:

There is no warranty credit applicable for parts or labor associated with this bulletin.

MATERIALS:

Required Material:

The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Helicopter Textron Supply Center.

PART I:

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>
36-04503-0043-1	Bearing	1
36-04503-0255-1	Bearing	1

PART II:

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>
36-04503-0404-1	Bearing	2

Consumable Material:

The following material is required to accomplish this bulletin; however this material is considered consumable (bench stock) material and may not require ordering depending on the operator's consumable material stock levels. This material may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>	<u>Reference</u>
P-P-101	Fine grit emery cloth	1	C-423

SPECIAL TOOLS:

WORKAIDS #1, #2, #3, #4 and #5, refer to figure 1 of this TB.
REAMER 0.5000 TO 0.5005 IN (12.7 to 12.713 mm)

WEIGHT AND BALANCE:

Not Affected

ELECTRICAL LOAD DATA:

Not Affected

REFERENCES:

BHT-206L-SERIES-IPB, Illustrated Parts Breakdown
BHT-206L-MM, Maintenance Manual
BHT-206L1-MM, Maintenance Manual
BHT-206L3-MM, Maintenance Manual
BHT-206L4-MM, Maintenance Manual
BHT-206L-CR&O, Component Repair and Overhaul

PUBLICATIONS AFFECTED:

BHT-206L-SERIES-IPB, Illustrated Parts Breakdown
BHT-206L-CR&O, Component Repair and Overhaul

ACCOMPLISHMENT INSTRUCTIONS:

PART I: Replacement of bearings P/N 36-04503-0043-1 and 36-04503-0255-1 in pump P/N 206-040-190-005

1. Remove transmission oil pump (BHT-206L-MM) (BHT-206L1-MM) (BHT-206L3-MM).
2. Disassemble the transmission oil pump (BHT-206L-CR&O).
3. Prepare workaids (#1, #2, #3 and #5, Figure 1).

-NOTE-

It is not necessary to replace both bearings at the same time.

4. Use workaids #1 and #2 to remove bearing (1, Figure 2) from head assembly (3) and bearing (2) from housing body (4) of transmission oil pump. Discard removed bearings (1 and 2).
5. Inspect bearing bores of head assembly (3) and housing body (4). Refer to Figure 4 of this TB.

6. Install bearing (1, Figure 3) into head assembly (3) and bearing (2) into housing body (4) as follow:
 - a. Apply heat to head assembly (3) and housing body (4). Do not exceed 200° F (93.33° C).
 - b. Coat the OD of bearings (1 and 2) and bearing bores of head assembly (3) and housing body (4) with transmission oil.

CAUTION

ALIGN OIL FEED HOLE IN BEARINGS (1 AND 2) WITH OIL FEEL HOLES IN HEAD ASSY (3) AND HOUSING BODY (4) PRIOR TO INSTALLING BEARINGS. FAILURE TO DO SO WILL RESULT IN INADEQUATE OIL FLOW TO THE BEARINGS (1 AND 2) AND WILL CAUSE DAMAGE TO THE PUMP.

- c. Use workaids #2 and #3 to press bearing (1) into head assembly (3). Use workaids #2 and #5 to press bearing (2) into housing body (4).
- d. Inspect bearings (1 and 2) to ensure no damage has resulted from bearing installation.

-NOTE-

After deburing and clean up the surface finish must be 32 RMS or smoother.

- e. Final machine or ream inside diameter of the bearings (1 and 2) to 0.5000 to 0.5005 inch (12.7 to 12.713 mm). Perform a Fluorescent Penetrant Inspection to the head assembly (3) and housing body (4)(BHT-ALL-SPM, Chapter 6). No cracks allowed.
 - f. Inject transmission oil through oil feed holes to head assembly (3) and housing body (4) and observe for oil flow at the bearing inside diameter.
7. Reassemble the transmission oil pump (BHT-206L-CR&O).
 8. Install transmission oil pump (BHT-206L-MM) (BHT-206L1-MM) (BHT-206L3-MM).
 9. Make an entry in the helicopter Historical Service Record to show that this Technical Bulletin is completed.

PART II: Replacement of bearings P/N 36-04503-0404-1 in pumps P/N 406-340-100-101

1. Remove transmission oil pump (BHT-206L4-MM, Maintenance Manual).
2. Disassemble the transmission oil pump (BHT-206L-CR&O).
3. Prepare workaids (#1, #2, #4, and #5, Figure 1).

-NOTE-

It is not necessary to replace both bearings at the same time.

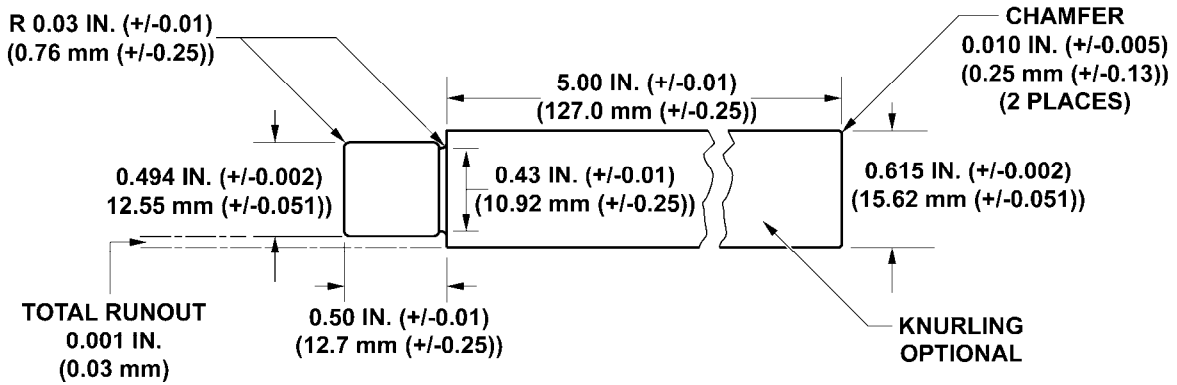
4. Use workaids #1 and #2 to remove bearings (1 and 2, Figure 2) from head assembly (3) and housing body (4) of transmission oil pump. Discard removed bearings (1 and 2).
5. Inspect bearing bores of head assembly (3) and housing body (4). Refer to Figure 4 of this TB.
6. Install bearings (1 and 2, Figure 3) into head assembly (3) and housing body (4) as follow:
 - a. Apply heat to head assembly (3) and housing body (4). Do not exceed 200° F (93.33° C) prior installing bearings (1 and 2).
 - b. Coat the OD of bearings (1 and 2) and to bearing bores of head assembly (3) and housing body (4) with transmission oil.
 - c. Use workaids #2 and #4 to press bearing (1) into head assembly (3). Use workaids #2 and #5 to press bearing (2) into housing body (4).
 - d. Inspect bearings (1 and 2) to ensure no damage has resulted from bearing installation.

-NOTE-

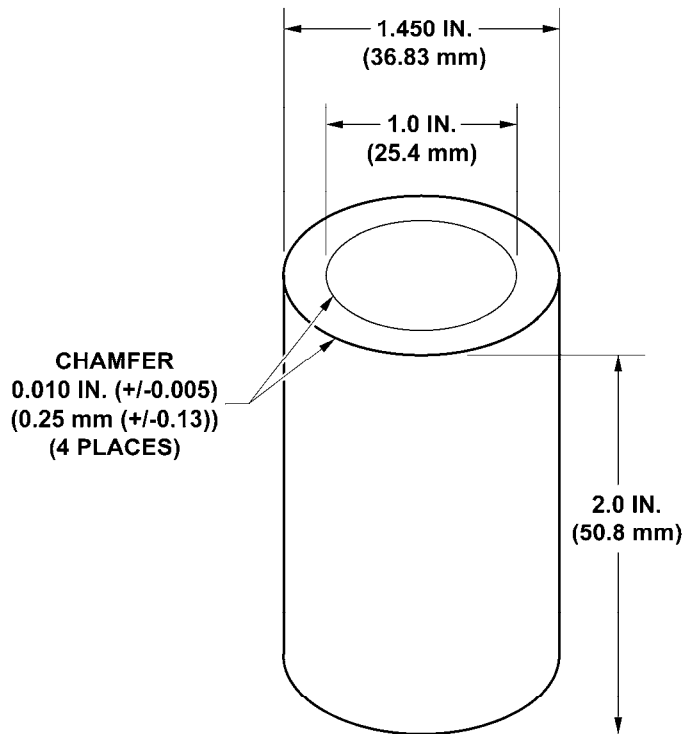
After deburring and clean up the surface finish must be 32 RMS or smoother.

7. Final machine or ream inside diameter of the bearings (1 and 2) to 0.5000 to 0.5005 inch (12.7 to 12.713 mm). Perform a Fluorescent Penetrant Inspection to the head assembly (3) and housing body (4) (BHT-ALL-SPM, Chapter 6). No cracks allowed.

8. Reassemble the transmission oil pump (BHT-206L-CR&O).
9. Install transmission oil pump (BHT-206L4-MM, Maintenance Manual).
10. Make an entry in the helicopter Historical Record to show that this Technical Bulletin is completed.



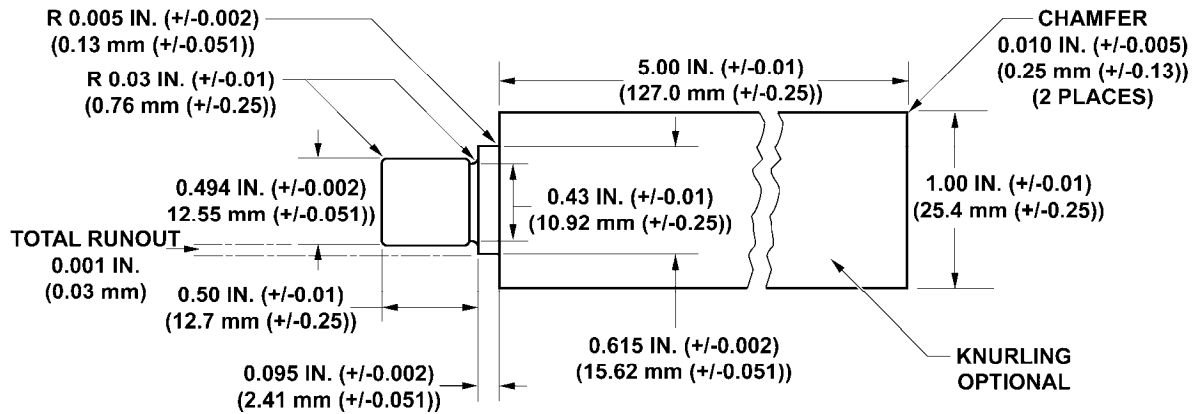
**BEARING REMOVAL
WORKAID NO. 1
MATERIAL: 4130 STEEL OR EQUIVALENT**



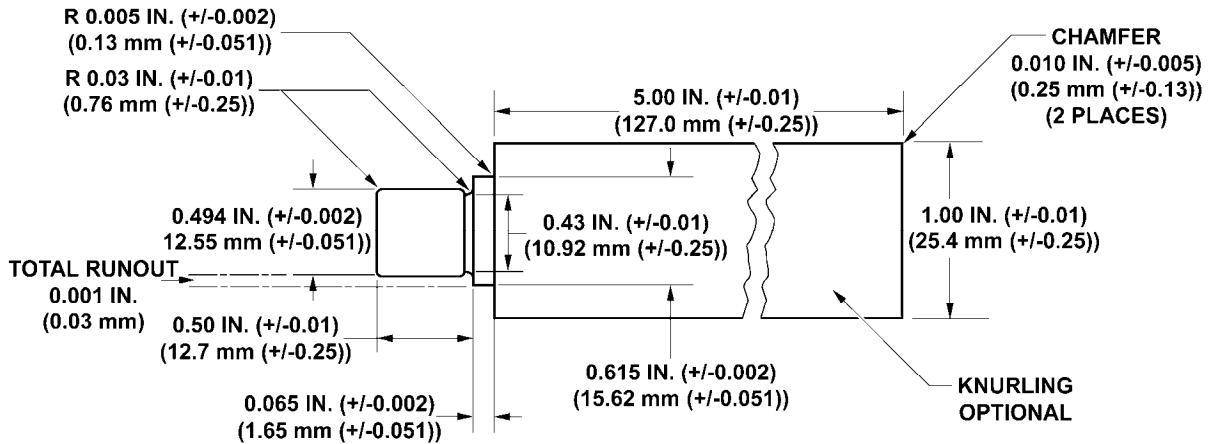
**BEARING REMOVAL/INSTALLATION
WORKAID NO. 2
MATERIAL: ALUMINUM**

06515002

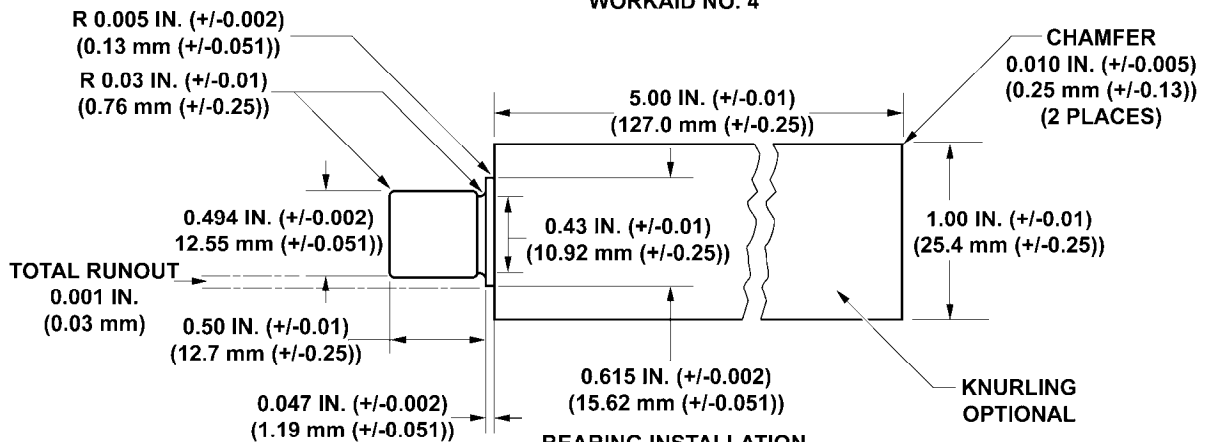
Figure 1. Built up instructions of Work Aids (sheet 1 of 2)



BEARING INSTALLATION
HEAD ASSEMBLY
WORKAID NO. 3



BEARING INSTALLATION
HEAD ASSEMBLY
WORKAID NO. 4

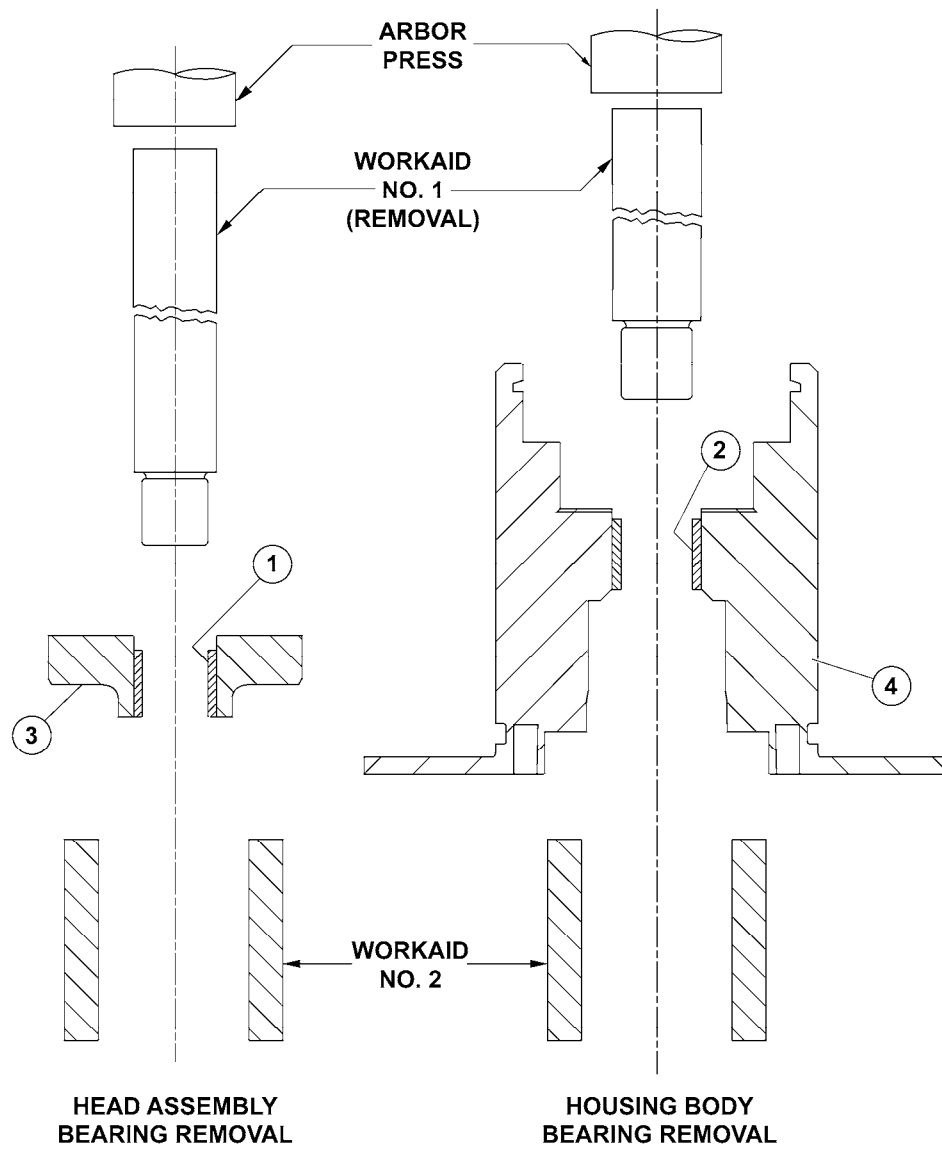


BEARING INSTALLATION
HOUSING BODY ASSEMBLY
WORKAID NO. 5

MATERIAL:
4130 STEEL OR EQUIVALENT

06515003

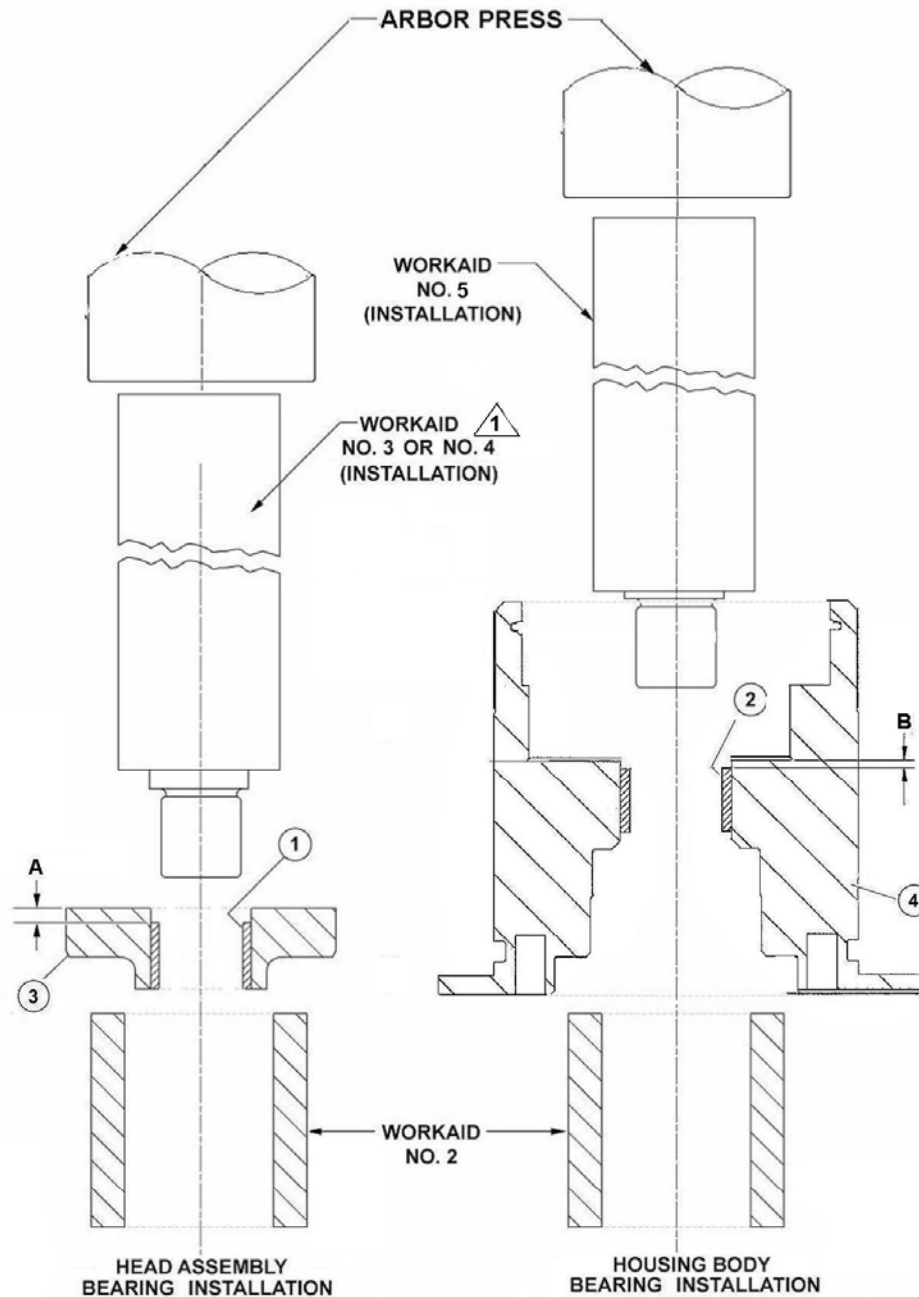
Figure 1. Built up instructions of Work Aids (sheet 2)



- 1. Bearing
- 2. Bearing
- 3. Head assembly
- 4. Housing body

06515005

Figure 2. Bearing removal from Head Assembly and housing body



06514004

Dimension	PART I of this TB	PART II of this TB
A	0.090 TO 0.100 IN (2.286 TO 2.540 mm)	0.060 TO 0.070 IN (1.524 TO 1.778 mm)
B	0.040 TO 0.050 IN (1.016 TO 1.270 mm)	0.040 TO 0.050 IN (1.016 TO 1.270 mm)

LEGEND

ITEM	Nomenclature	PART I of this TB	PART II of this TB
1.	Bearing	36-04503-0043-1	36-04503-0404-1
2.	Bearing	36-04503-0255-1	36-04503-0404-1
3.	Head assembly	P/N N/R	P/N N/R
4.	Housing body	P/N N/R	P/N N/R


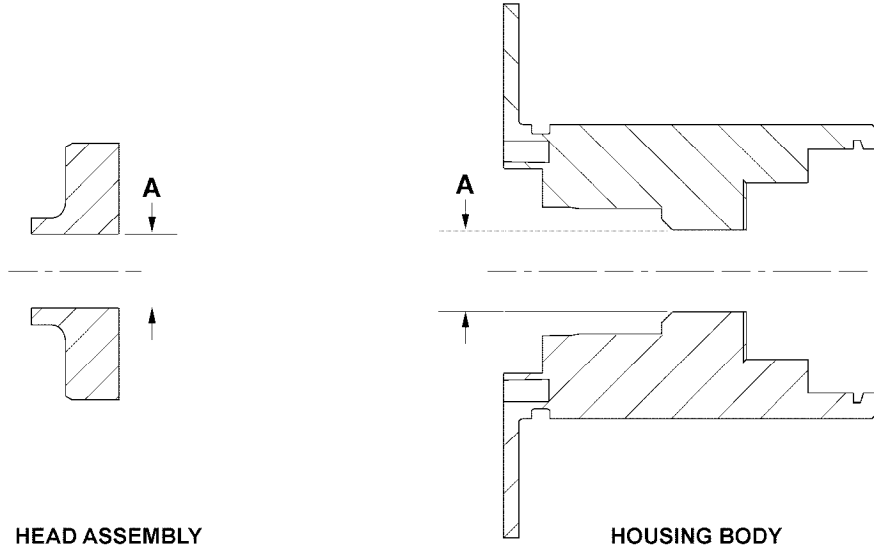
NOTE:
 Work Aid #3 only used on PART I of this TB
 Work Aid #4 only used on PART II of this TB

Figure 3. Bearing installation on Head Assembly and housing body



NO.	REF LTR	CHARACTERISTIC	INSPECTION METHOD	LIMIT
1	A	Inside diameter	Measure	0.6250 inch (15.875 mm) maximum diameter.
2	A	Mechanical damage	Visual/measure	Permitted if damage cannot be felt with a 0.020 inch (0.508 mm) spherical radius probe. △ 1
3	A	Mechanical damage	Visual/measure	10% of total surface is permitted for repair.

NOTE

1 Polish mechanical damage smooth with a fine Emery cloth (C-423). Treat repaired area with chemical film treatment (C-100).

06515001

Figure 4. Inspection and repair of head assembly and housing body bores.