

TECHNICAL BULLETIN
Bell Helicopter **TEXTRON**

A Subsidiary of Textron Inc.

No. 206-05-184

Date Apr 11, 2005

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DATE
REV

MODEL AFFECTED: 206A/B SERIES

SUBJECT: Improved Oil Pump Seal, 38-79004-1045-2,
Introduction of.

HELICOPTERS AFFECTED: Model 206A, S/N 004 through 660;
S/N 672 through 715.
Model 206B, S/N 661 through 671;
S/N 716 and subsequent.

-NOTE-

This technical Bulletin cancels and supercedes the TB 206-01-176.

COMPLIANCE: At Customer's Option

DESCRIPTION:

This Bulletin is being issued to introduce a new seal on the Transmission Oil Pump. This new seal has performed exceptionally well during testing and is anticipated to display significantly longer service life than the seal that is currently used.

APPROVAL:

The data in this bulletin is TCCA approved.

MANPOWER:

Accomplishment of this bulletin during a normal overhaul will not require additional man hours.

MATERIALS:

The following items will be required to accomplish this bulletin and may be procured from your local Bell Helicopter Supply Center.

<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>QTY</u>
38-79004-1045-2	SEAL	1

SPECIAL TOOLS:

WORKAID ITEM #1, Figure 3.
WORKAID ITEM #2, Figure 3.

WEIGHT AND BALANCE:

Not affected

ELECTRICAL LOAD DATA:

Not affected

REFERENCES:

BHT-206A/B-SERIES-MM, Rev. 3, 12 July 2004.
Chapter 63, Main Rotor Drive System.

BHT-206B3-CR&O, Rev. 1, 22 August 1994.
Chapter 63, Main Rotor Drive System.

BHT-206A/B-M&O, Rev. 41, 21 November 1995.
Section VI.

BHT-206A/B-IPB, Rev. 5, 1 November 2001.
Main Rotor Drive.

PUBLICATIONS AFFECTED:

BHT-206A/B-IPB, Rev. 5, 1 November 2001.
Main Rotor Drive.

BHT-206B3-CR&O, Rev. 1, 22 August 1994.
Chapter 63, Main Rotor Drive System.

BHT-206A/B-SERIES-MM, Rev. 2, 07 June 2002.
Main Rotor Drive System.

ACCOMPLISHMENT INSTRUCTIONS:

1. Remove hydraulic pump (BHT-206A/B-SERIES-MM, Chapter 63).
2. Disassemble transmission oil pump as follows:
 - a. Remove retainer ring (1, figure 1).
 - b. To allow for easier reassembly, apply an index mark with a permanent ink marker to the head assembly (2) and the body assembly (12).
 - c. Lightly tap output end of the shaft (7) with a soft hammer to remove the shaft and the head assembly (2) from the body assembly (12).
 - d. Remove the retainer rings (6), the inner gerotor (11) and the key (8) from the shaft (7).

CAUTION

**BE EXTREMELY CAREFUL TO NOT DAMAGE THE
SURFACE OF THE BEARING DURING SEAL REMOVAL.**

- e. With an offset screwdriver or equivalent, remove the seal (5).
3. Discard retainer (14) and plate (13). These 2 parts will not be installed with the 38-79004-1045-2 seal.
4. Visually inspect oil pump parts details for condition (BHT-206B3-CR&O, Chapter 63) (BHT-206A/B-M&O, Section VI).
5. Assemble Pump as follows:
 - a. Obtain the workaids (#1 and #2, figure 3) or their equivalents.

- b. Ensure that all parts are clean.
- c. Lubricate new seal (5, figure 2) with transmission oil.

-NOTE-

Do not use hydraulic to install seal (5). Use an arbor press. Excessive pressure can deform the seal casing distorting the seal lip and cause leakage to occur.

-NOTE-

Due to dimensional differences of the new seal (5), do not reinstall the spacer (13, figure 1) and retaining ring (14).

- d. Use workaid (1#, figure 3) to press the new seal (5, Figure 2), with lip facing inboard, into pump body (12) until seated (Refer to figure 2, step 1).
- e. Install the outer gerotor (10) into the pump body assembly (12).
- f. If disassembled, reassemble the inner gerotor (11) to the shaft (7) as follows:
 - 1) Install the key (8), the inner gerotor (11) and the retainer rings (6) onto the shaft (7).
- g. Place the bullet workaid (#2, figure 3) on the outboard end of the shaft (7, figure 2).
- h. Lubricate the seal (5), the gerotors (10 and 11) and the shaft (7) with transmission oil.
- i. Insert the shaft (7) into the body assembly (12). Rotate shaft (7) to engage inner and outer gerotors (10 and 11). Remove the bullet workaid.
- j. Align the marks done previously on the head assembly (2) and the body assembly (12).
- k. Position the head assembly (2) into the body assembly (12). Ensure that the head assembly (2) clears the groove for the retainer ring (1).
- l. Install the retaining ring (1) with the chamfered edge of the retaining ring facing outboard. Ensure the retainer ring (1) is firmly seated in the groove of the pump assembly (12).
- m. Rotate the shaft (7) and check for free and smooth rotation.

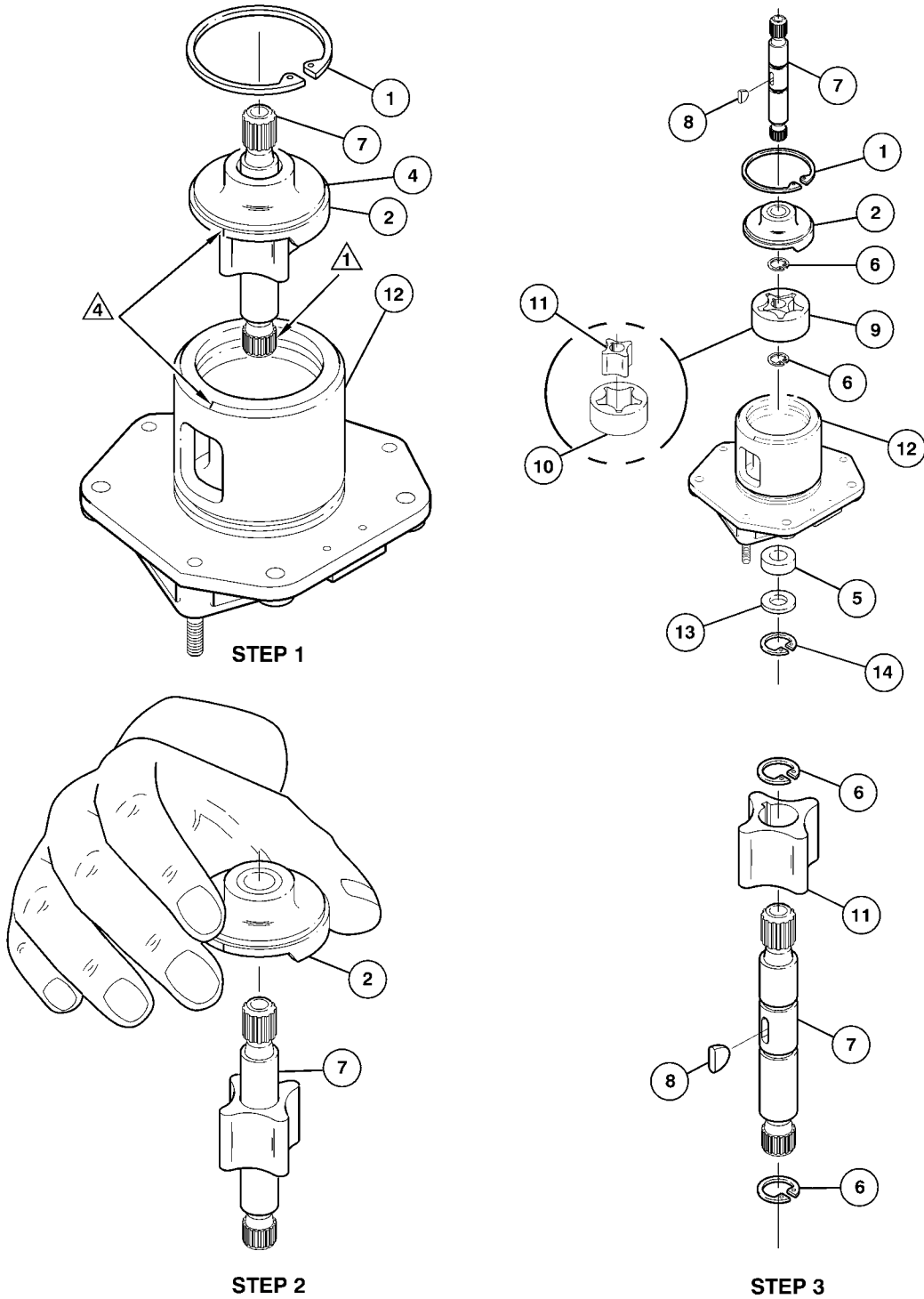
- n. Re-identify the oil pump assembly.

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-NOTE-

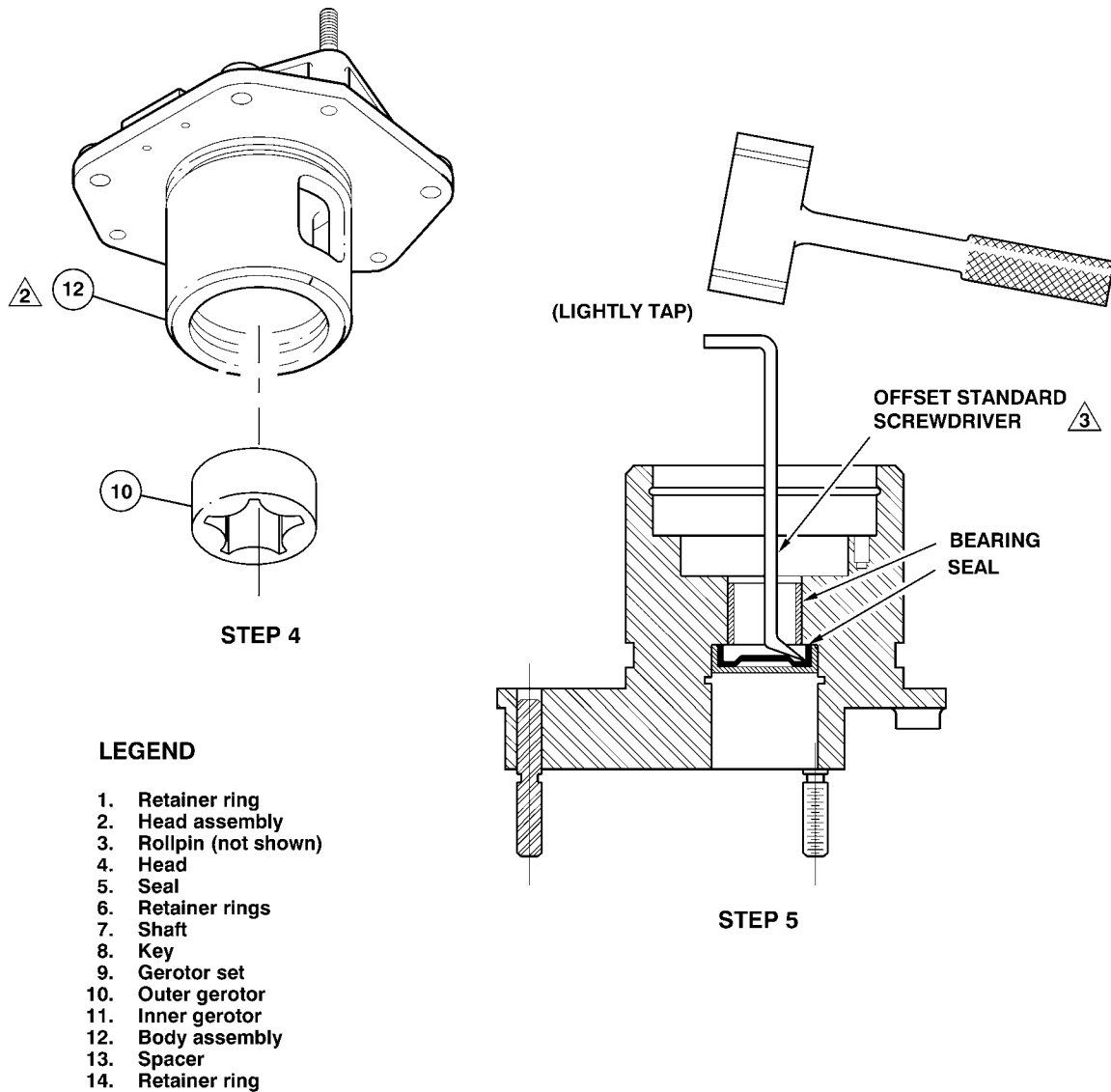
Following installation into the helicopter, perform an operational check to ensure that the transmission oil pressure is within limits and that no leaks exist.

- 6. Install pump assembly into transmission (BHT-206A/B-SERIES-MM, Chapter 63).
- 7. Make an entry in the Historical Service Record indicating the work that was performed.



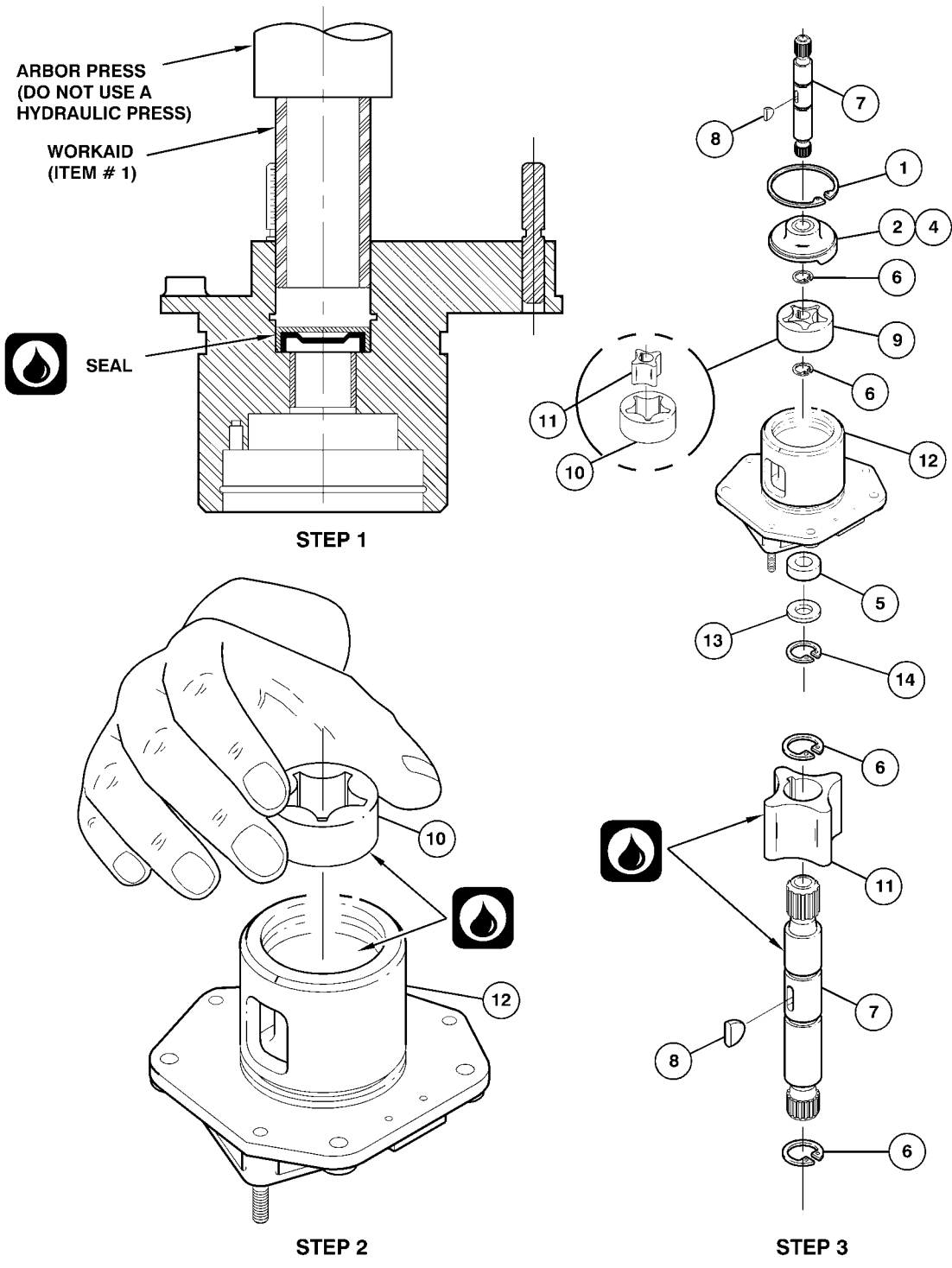
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Figure 1. Oil Pump Assembly – Disassembly (Sheet 1 of 2)



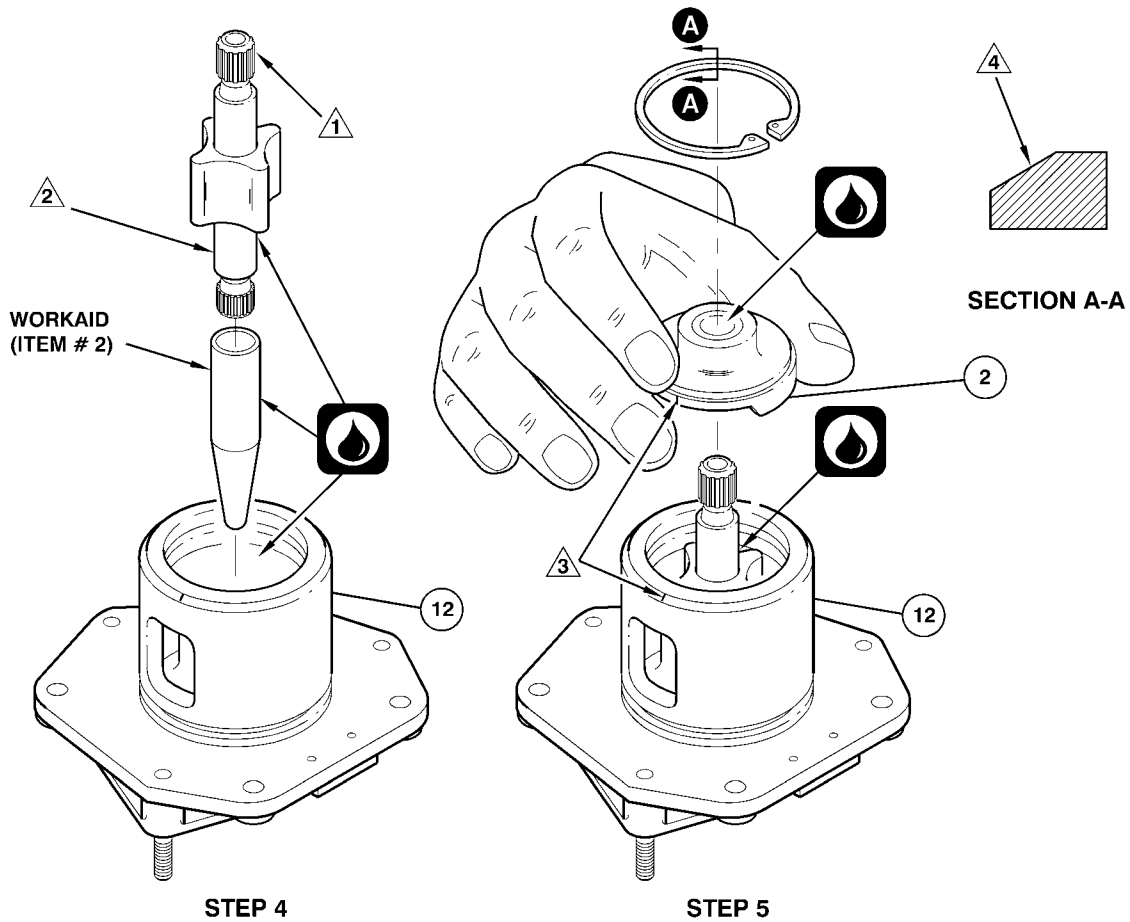
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Figure 1. Oil Pump Assembly – Disassembly (Sheet 2)



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Figure 2. Oil Pump Assembly – Assembly (Sheet 1 of 2)



LEGEND

- | | |
|------------------------|-------------------|
| 1. Retainer ring | 8. Key |
| 2. Head assembly | 9. Gerotor set |
| 3. Rollpin (not shown) | 10. Outer gerotor |
| 4. Head | 11. Inner gerotor |
| 5. Seal | 12. Body assembly |
| 6. Retainer rings | 13. Spacer |
| 7. Shaft | 14. Retainer ring |



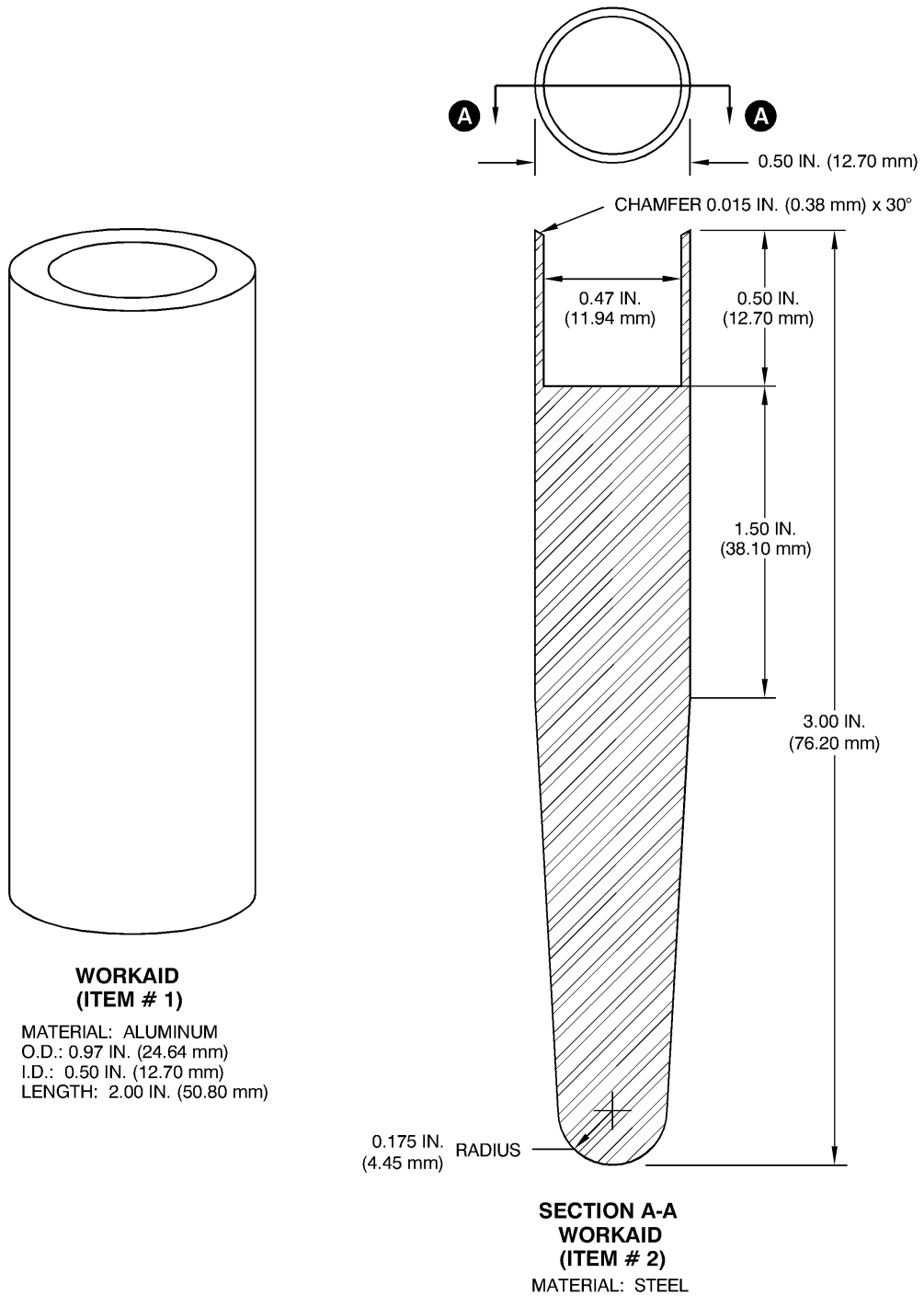
SYSTEM LUBRICANT

NOTES

- ① Turn shaft to engage inner and outer gerotor.
- ② Longer section of shaft down.
- ③ Align index marks to make sure internal pin aligns with receptacle. Alignment pin is not shown for clarity.
- ④ Chamfered edge of retainer faces outboard, away from head assembly (2).
- 5. Verify free rotation of oil pump shaft.

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Figure 2. Oil Pump Assembly – Assembly (Sheet 2)



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Figure 3. Workaids No. 1 and No. 2