

TECHNICAL BULLETIN
Bell Helicopter **TEXTRON**

A Subsidiary of Textron Inc.

No. 407-05-73

Date Nov 22, 2005

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DATE
REV

MODEL AFFECTED: 407

SUBJECT: SLEEVE ASSEMBLY 406-010-409-113,
INTRODUCTION OF

HELICOPTERS AFFECTED: Bell 407 helicopters serial number 53000 through 53641.

[Bell 407 helicopters serial number 53642 and subsequent will have the intent of Part I and Part II of this bulletin accomplished prior to delivery]

COMPLIANCE: At Customer's Option

DESCRIPTION:

This bulletin introduces an improved swashplate sleeve assembly 406-010-409-113. This sleeve has two holes drilled in the sleeve bearing bores. In addition, the adhesive bonding the bearing to the sleeve assembly is changed. These improvements will ease the replacement of sleeve bearing 406-310-410-101.

Procedures for adding holes and applying adhesive to an existing sleeve assembly are provided in this bulletin.

Part I of this bulletin provides instructions for bonding the sleeve bearing 406-310-410-101 into the sleeve assembly 406-010-409-107 and /-113.

Part II of this bulletin provides instructions for drilling the two added holes in an existing sleeve assembly 406-010-409-107.

APPROVAL:

The engineering design aspects of this bulletin are Transport Canada approved.

MANPOWER:

No additional man-hours are required to accomplish Part I of this bulletin during next overhaul of the swashplate assembly.

Approximately 2.0 man-hours are required to complete Part II of this bulletin. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

MATERIALS:

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 facility consumable material stock levels. This material may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Reference</u>
AMS-S-8802	Sealant	C-351 (Note 1)
ACETONE GALLON	ACETONE ASTM D329	C-316 (Note 2)
PD680 TY2SOLVE	Solvent, Drycleaning	C-304
TT-1735 ISOPROPYL	Isopropyl Alcohol	C-385
MIL-PRF-23377 TI, CLC	Epoxy Polyamide Primer	C-204 (Note 3)
MIL-C-81706 1 QT	Chemical Film Material (Alodine 1200 or 1201)	C-100
MOBIL 28	Grease	C-001 (Note 4)

Notes:

1. As an alternate, AMS-S-8802 QT or AMS-S-8802 6OZ (C-351) may be ordered.
2. As an alternate, use Methyl Ethyl Ketone (C-309).
3. As an alternate, use Epoxy Primer MIL-P-85582, TYI, CL2 (C-204).
4. As an alternate, use AEROSHELL 22 (C-001) or NO.4 SILICONE (C-018).

SPECIAL TOOLS:

None required

WEIGHT AND BALANCE:

Not affected

ELECTRICAL LOAD DATA:

Not affected

REFERENCES:

BHT-407-IPC Illustrated Parts Breakdown
BHT-407-CR&O Component Repair and Overhaul

PUBLICATIONS AFFECTED:

BHT-407-IPC Illustrated Parts Breakdown
BHT-407-CR&O Component Repair and Overhaul

ACCOMPLISHMENT INSTRUCTIONS:

Part I: Instructions to bond in place the sleeve bearing 406-310-410-101 into the sleeve assembly 406-010-409-107 and /-113 with sealant in lieu of adhesive.

1. Remove and discard both sleeve bearings from the sleeve assembly. Refer to BHT-407-CR&O, Chapter 67.
2. Clean the sleeve assembly with solvent (C-304).
3. Inspect the sleeve assembly for condition. Refer to BHT-407-CR&O, Chapter 67.
4. Apply a light coat of grease (C-001) to the support section in contact with the sleeve bearings.
5. Clean the sleeve bearing surfaces with a cloth dampened with acetone (C-316) or Isopropyl Alcohol (C-385).

-NOTE-

No adhesive squeeze out is permitted on the bearing surface or protruding above the bearing surface.

6. Apply a bead of sealant (C-351) to the sleeve assembly upper bearing bore surface. Refer to Figure 1.
7. Insert a sleeve bearing in the sleeve assembly upper bearing bore. Allow the end of the sleeve bearing to overlap the 0.125 inch (3.175 mm) hole in the sleeve assembly by approximately 0.250 inch (6.35 mm). Remove excess adhesive squeeze-out. Refer to Figure 1.
8. Repeat Step 6 and 7 for the installation of the lower sleeve bearing.

-NOTE-

To ensure a closer fit between the bearing and the swashplate support, it is recommended that the support used during this process be the same that will be used in the build-up of the swashplate.

9. Install workaid item # 21 and position the sleeve assembly onto the swashplate support to maintain sleeve bearing inside diameter dimension while the sealant is curing. Allow sealant to cure for 24 hours. Refer to BHT-407-CR&O, Figure 67-68.
10. Once adhesive is cured remove sleeve assembly from swashplate support. Remove the excess sealant squeeze out from bearing and support.
11. Clean all grease applied in step 4, above from the support and the sleeve bearing surfaces with a cloth dampened with acetone (C-318) or Isopropyl Alcohol (C-385).
12. Part I and Part II of this bulletin must be accomplished prior to re-identifying the sleeve assembly. Refer to Part II, Step 12.
13. Make an entry in the Helicopter and the Component Historical Records to show that Part I of this technical bulletin has been accomplished.

Part II: Drill two holes in sleeve assembly 406-010-409-107.

1. Remove and discard both sleeve bearings from the sleeve assembly. Refer to BHT-407-CR&O, Chapter 67.
2. Clean the sleeve assembly with solvent (C-304).

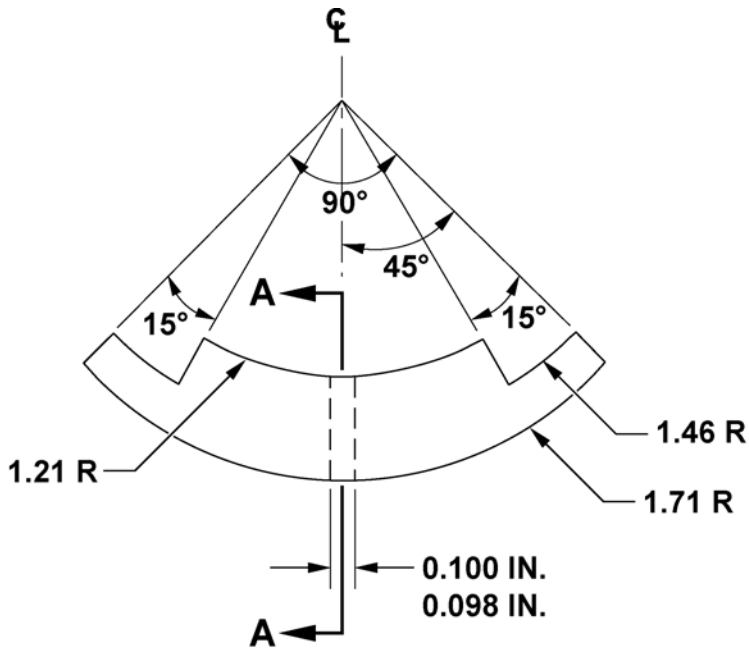
3. Manufacture a workaid, from 4130 or 4140 steel, for use to drill a pilot hole in each sleeve bearing bore. Refer to Figure 2.
4. Position the workaid inside the sleeve assembly into the upper sleeve bearing bore 90 degree to the bushings center line axis. Refer to Figure 2.
5. Protect the external sleeve surface from damage. Install two clamps to secure the workaid at the proper position inside the sleeve assembly.

-NOTE-

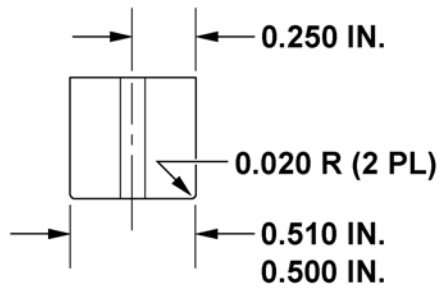
Drill from the inside only to prevent chipping of the tungsten carbide coating.

6. Drill a hole in the sleeve assembly using an angle drill with a # 40 drill bit.
7. Repeat Step 4 through 6 for drilling the hole in the lower sleeve bearing bore.
8. Drilling from the inside, enlarge both holes to 0.125 inch (3.175 mm). Break sharp edges 0.03 to 0.05 inch (0.762 to 1.27 mm) by 45 degrees. Use a ball type stone, 90 grit or finer, mounted on a shank for high-speed grinder to break sharp edge of the tungsten carbide coating.
9. Treat reworked areas with Chemical Film Material (C-100) as per instructions in BHT-ALL-SPM, Chapter 3.
10. Apply one coat of Epoxy Polyamide Primer (C-204) to the reworked areas.
11. Install both sleeve bearings as per Part I instructions of this bulletin.
12. Providing Part I and Part II of this bulletin have been accomplished, identify the sleeve assembly data plate with the use of a vibrating stylus. The depth of the vibroetch must not exceed 0.005 inch (0.127 mm). Change last digits of the part number as follows:

406-010-409-107 107FM
13. Make an entry in the Helicopter and the Component Historical Records to show that Part II of this technical bulletin has been accomplished.



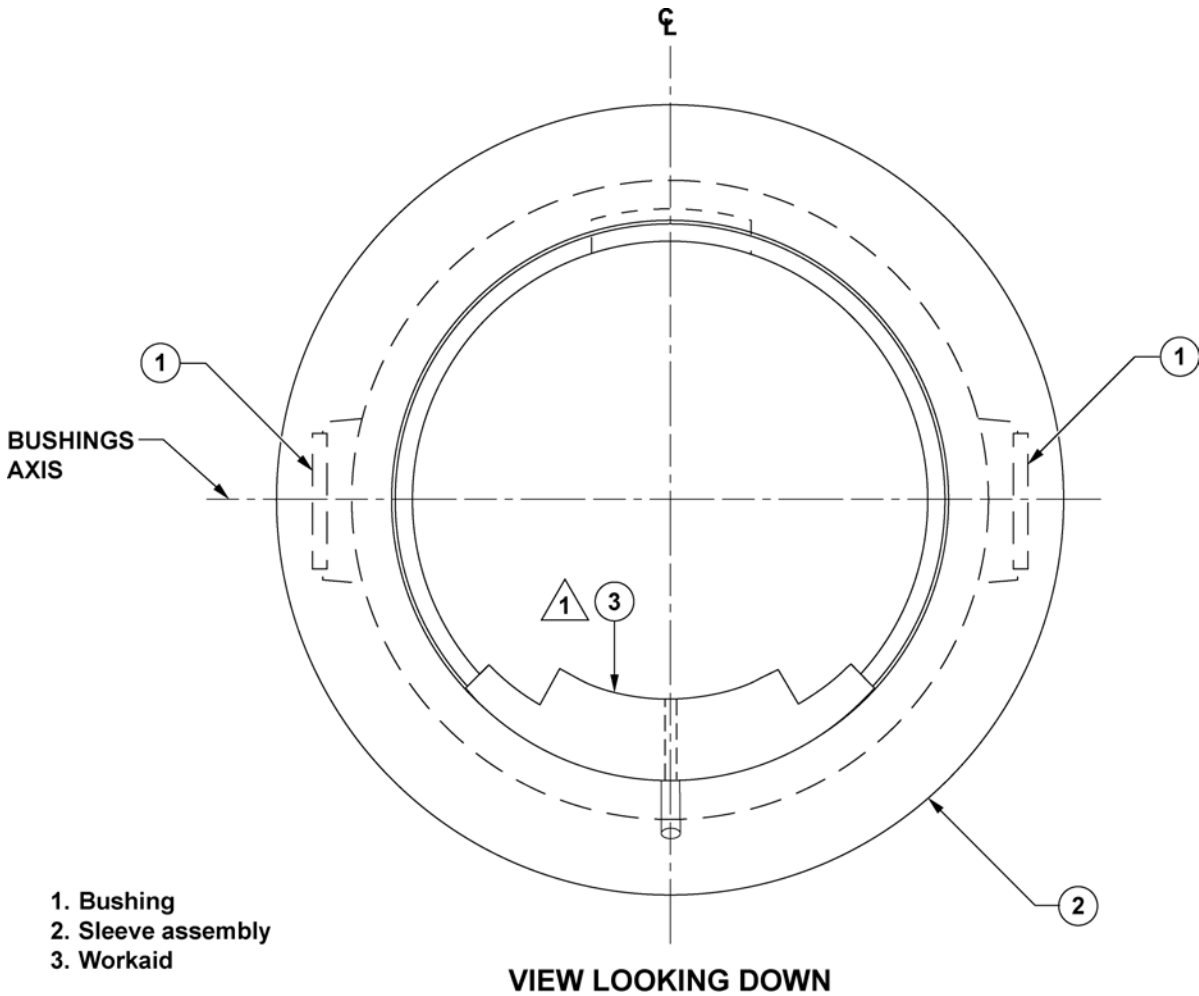
WORKAID
MATERIAL: 4130 OR 4140 STEEL



VIEW A-A

05549001

Figure 1. Workaid for drilling hole in sleeve assembly



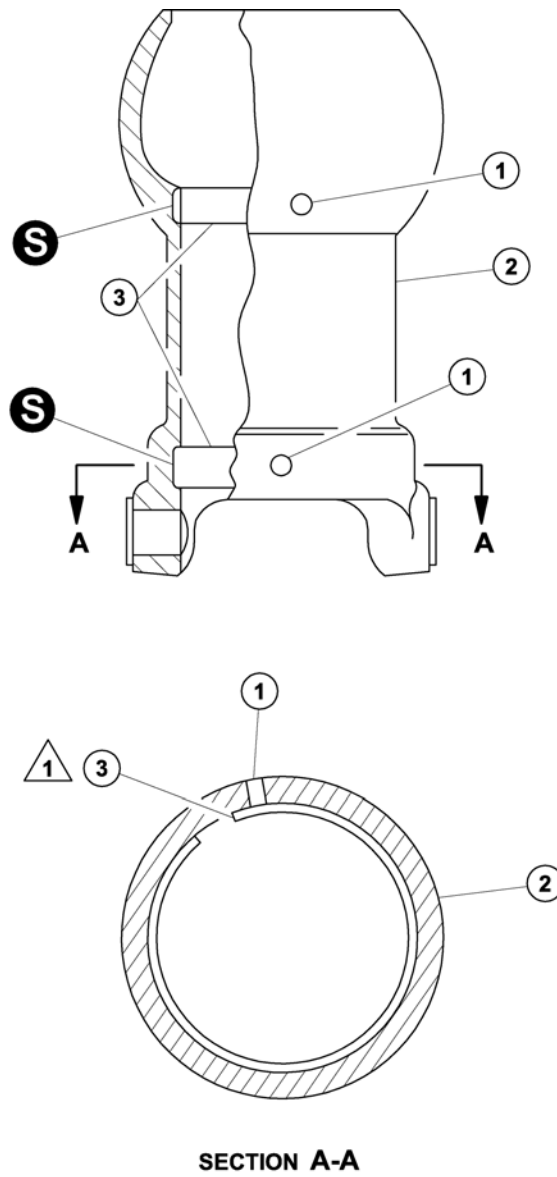
- 1. Bushing
- 2. Sleeve assembly
- 3. Workaid

NOTE

 Workaid is positioned in sleeve bearing bore 90° to the bushing's center line axis.

05549002

Figure 2. Workaid position in sleeve assembly



- 1. 0.125 IN. (3.175 mm) diameter hole
- 2. Sleeve assembly
- 3. Sleeve bearing

S AMS-S-8802 Sealant (C-351)

NOTE
1 Position the end of the sleeve bearing approximately 0.250 IN. (6.35 mm) from the hole in sleeve assembly.

05549003

Figure 3. Pivot sleeve bearing - replacement