



SERVICE INFORMATION LETTER

SERVICE INFORMATION LETTER NO. 0141

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- DATE: September 11, 1995
1. SUBJECT: : New Improved Tail Rotor Teeter Bearing Assembly
2. MODELS: F28C, 280C, F28F, 280F, 280FX, TH-28 and 480 Helicopters
3. EFFECTIVITY: F28C, all S/N's; 280C, all S/N's; F28F, prior to S/N 803; 280F, all S/N's; 280FX, prior to S/N 2078; TH-28, prior to S/N 3007; 480, prior to S/N 5005
4. BACKGROUND:

Enstrom has had service life problems with teeter bearing designs in tail rotor assemblies. After several design iterations, Enstrom now has a teeter bearing configuration that will give users greater service life. The new bearing will be standard on all new production aircraft and is available as a field retrofit kit P/N 28-01056. For the convenience of our operators, Enstrom will have two types of teeter bearing kits available in order to expedite the delivery of these kits. One kit will have a new hub P/N 28-150067-15, the other kit will be an exchange hub for rework and will be identified by a (-R) after the kit number 28-01056. (See Page 4 for full description of kit.)

NOTE

Kit installation on tail rotor assemblies with spindle P/N other than 28-150064-13 and 28-150074-11 will also require a new spindle.

5. COMPLIANCE:

At owners discretion, owners, maintenance personnel, and service centers can order this improved teeter bearing kit from Enstrom's Customer Service Department. In addition to the tail rotor teeter bearing kit, a special tool kit is also available to personnel who may be installing these kits. These tools will assist maintenance people in making this change more expedient. Special tool kit number T-2893 is available through Enstrom Customer Service.

5-1. Install the tail rotor needle bearing upgrade kit (P/N 28-01056) into the spindle P/N 28-150074-11 or 28-150064-13 using the following procedure (Reference Figure 1, Page 5):

A. Disassemble the tail rotor assembly following the procedures in the applicable maintenance manual.

B. Install one of the washers (3) onto the hub with the chamfer toward the center of the hub.

C. Apply a light coating of Loctite® #277 (red) to the inside diameter of one of the journals (4). Install the journal onto the hub with the large chamfer outboard. Remove any excess Loctite®.

NOTE

Use ultra fine crocus cloth to eliminate interference fit between the hub journal and the bearing journal.

D. Install the hub into the spindle and install the other washer and journal in the same manner.

NOTE

Install the needle bearings into the spindle to a depth of .191/.193 inches if not using the tool kit T-2893 (Refer to Figure 2).

E. Position one of the needle bearings (5) at the teeter bearing bore of the spindle and using the installation tool from the tool kit T-2893, press the bearing onto the spindle.

F. Turn the spindle over and insert the hub into the bearing that was just installed. Install the remaining bearing.

CAUTION

Ensure the hub and journal are aligned with the remaining needle bearing during installation to prevent any damage.

G. Check that the hub rotates freely in the bearings. Determine the cause if the hub does not rotate freely.

H. Install the seal (6), thrust bumper (7) with the lubrication grooves toward the hub, cap (9), and retaining ring (10) on both sides of the spindle.

I. Determine the amount of shims (10) required to center the hub and remove the end play. Then add an additional .004 to .005 inch of shims to each side for preload.

J. Remove the retaining rings and caps from the spindle. Divide the shims into two equal amounts. Install the shims between the thrust bumpers (7) and the caps (9). Reinstall the caps and retaining rings. If the caps or retaining rings do not seat properly in the spindle, use a pair of non-marring pliers to rotate the cap to seat it properly.

K. Check that the hub still rotates freely in the spindle. There might be a slight preload on the hub but the hub should still be able to be rotated.

L. Purge lubricate the teeter bearings with grease conforming to MIL-G-81322 (Mobilgrease® 28 or equivalent).

M. Reassemble the tail rotor assembly following the procedures in the applicable maintenance manual.

5-2. Purge lubricate the needle bearings every 50 hours or more frequently if warranted by environmental conditions with grease conforming to MIL-G-81322 (Mobilgrease® 28 or equivalent).

5-3. Replace the hub or needle bearings using the following procedure:

A. Remove the blade and grip assemblies from the tail rotor using the procedures in the applicable maintenance manual.

B. Remove the retaining rings (10), caps (9), shims (8), thrust bumpers (7) and seals (6) from the spindle.

CAUTION

When pressing the hub and bearings out of the spindle, do not allow the hub to bottom against the spindle.

C. Using tool kit T-2893 or another suitable device with a properly sized dowel, press the hub (1) toward one side of the spindle until the hub is about to contact the spindle. Turn the spindle over and press the hub and opposite needle bearing in the same manner.

D. Move the hub to the opposite side of the spindle as the bearing to be removed and insert the split pressing tools from the tool kit onto the journal (4). Press the needle bearing from the spindle. Insert the split pressing tools onto the opposite side of the hub and press out the remaining needle bearing.

NOTE

The journal is installed with Loctite #277 (red).

E. Using the tool kit or other suitable device, remove one of the journals from the hub. Remove the hub from the spindle and remove the remaining journal and the washers (3).

6. MAN HOURS REQUIRED: For removal-teardown kit installation, static and Chadwick balance of tail rotor assembly 2.5 hours.

7. WARRANTY: New ship: standard warranty (1 year, 1000 hours). Kit installation on other aircraft the warranty is 120 days or 100 hours, whichever comes first.

8. WEIGHT CHANGES: Not applicable.

9. LOG BOOK ENTRY: Standard entry to define change.

10. REPETITIVE INSPECTIONS: Standard 50 and 100 hour inspections.

11. KIT CONTENTS: The tail rotor needle bearing upgrade kit consists of the following items:

<u>Part Numbers</u>	<u>Quantity</u>	<u>Description</u>	<u>Item #, Figure 1</u>
28-150067-15	1	Hub	2
28-150076-17	2	Washer	3
28-150076-15	2	Journal	4
B-1210	2	Bearing	5
28-150076-19	2	Seal	6
28-150076-13	2	Thrust Bumper	7
28-150078-12	4	Shim (.002)	8
28-150076-13	4	Shim (.003)	8
28-150076-15	4	Shim (.005)	8
28-150076-11	2	End Plate	9
N5002-100	2	Retaining Ring	10

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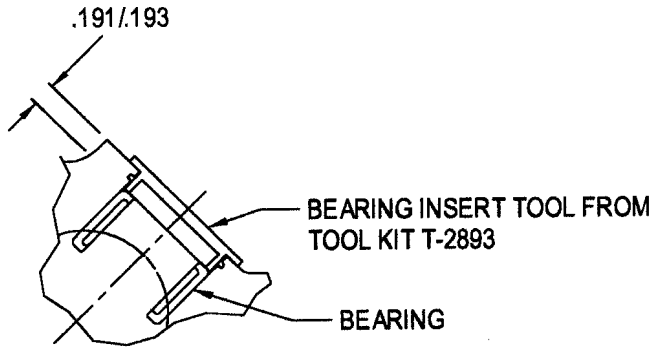


FIGURE 2 - BEARING INSTALLATION

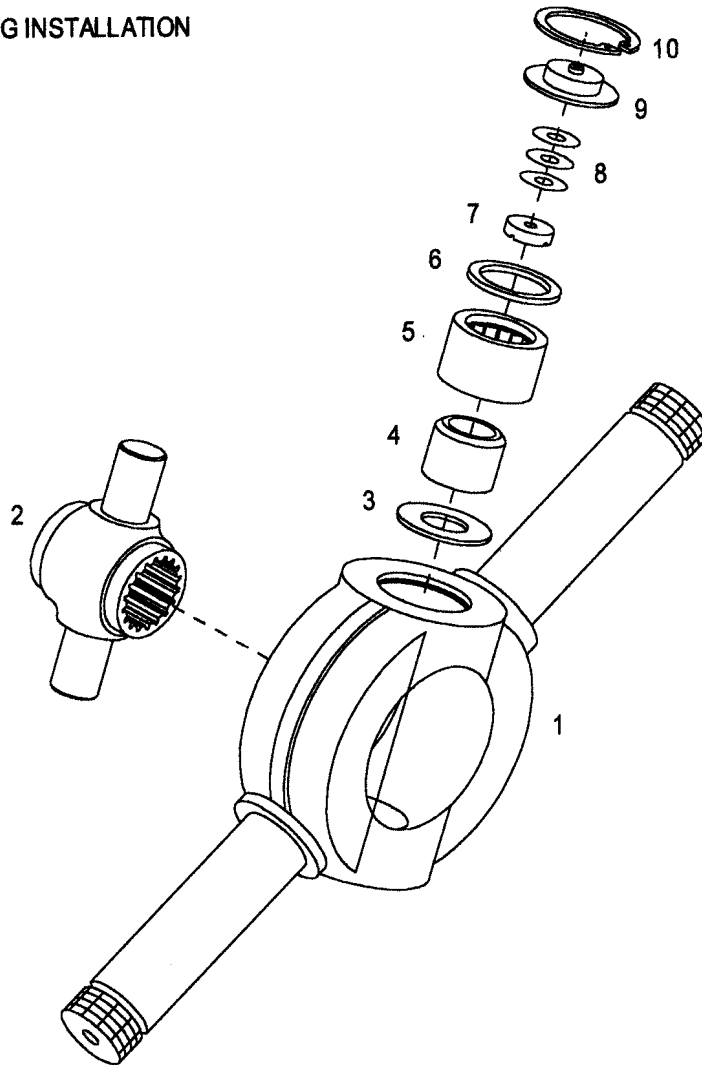


FIGURE 1 - TAIL ROTOR NEEDLE BEARING UPDATE KIT INSTALLATION