

# TECHNICAL BULLETIN

## **Bell** Helicopter

A Textron Company

No. 206-07-190

Date May 22, 2007

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DATE
REV

**MODEL AFFECTED:** 206A/B SERIES

**SUBJECT:** MAIN ROTOR MAST NUT INSTALLATION  
PROCEDURE, IMPROVEMENT OF

**HELICOPTERS AFFECTED:** Bell 206A/B helicopters serial number 004 through 4640

[Model 206B helicopters serial number 4641 and subsequent will have the intent of this bulletin accomplished prior to delivery]

**COMPLIANCE:** At Customer's Option

**DESCRIPTION:**

Bell Helicopter has received reports from operators indicating difficulties to stabilize the mast nut torque. It has been determined that the mast nut torque instability was due to the paint applied to the mating surfaces of the hub attaching components that peel or compress when the nut is tightened.

This bulletin introduces a change in the paint finish application for the mast nut, the flap restraint base and the trunnion. It also introduces an improved mast nut installation procedure and mast nut torque check. The torque check is now accomplished 1 to 5 hours after main rotor hub installation and is considered completed when the torque is stabilized

Part I of this bulletin provides instructions for helicopters not equipped with flap restraint.

PART II of this bulletin provides instructions for helicopters equipped with flap restraint.

**APPROVAL:**

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

**MANPOWER:**

No additional manpower required when accomplished during main rotor hub installation.

**Warranty:**

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

**MATERIALS:**

**Required Material:**

None required

**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>
MIL-PRF-81733 2.5 OZ	Sealant, Corrosion Inhibitor	1	C-251
Acetone Gallon	Acetone	1(note1)	C-316
MIL-PRF-23377 TI, CLC	Epoxy Polyamide Primer	1	C-204

**NOTE:**

1. Aliphatic Naphtha (C-305), p/n TT-N-95, TYII 1GAL or Methyl Ethyl Ketone ASTM D740 (C-309), p/n Methyl Ethyl Ketone may be used as an alternate.

**SPECIAL TOOLS:**

None required

**WEIGHT AND BALANCE:**

Not affected.

**ELECTRICAL LOAD DATA:**

Not affected

**REFERENCES:**

BHT-206A/B-SERIES-IPB Illustrated Parts Breakdown  
BHT-206A/B-M&O Maintenance and Overhaul  
BHT-206A/B-SERIES-MM Maintenance Manual  
BHT-206B3-CR&O Component Repair and Overhaul  
BHT-ALL-SPM

**PUBLICATIONS AFFECTED:**

BHT-206A/B-SERIES-MM Maintenance Manual  
BHT-206A/B-M&O Maintenance and Overhaul  
BHT-206B3-CR&O Component Repair and Overhaul

**ACCOMPLISHMENT INSTRUCTIONS:**

**PART I. Helicopters not equipped with flap restraint:**

1. Ensure the paint and primer are applied to the mast nut P/N 206-011-007 or 206-011-152 as per new paint scheme (Refer to Figure 1, sheet 1). Failure to adhere to the new paint scheme requirement may result in difficulties to stabilize the mast nut torque.
2. Install the washer 206-010-140-003 and mast nut as follows:
  - a. Apply a thin coat of unreduced polyamide epoxy primer (C-204) between the faying surfaces of the main rotor trunnion and the washer (Refer to Figure 2, detail 2).

**-CAUTION-**

Ensure that wet primer is not applied to the mast nut threads.

- b. Install the washer on the trunnion while the primer is still wet (Refer to the Maintenance Manual, Chapter 62).
- c. Apply a thin coat of unreduced polyamide epoxy primer (C-204) between the faying surfaces of the washer and the mast nut footprint. Install the mast nut while the primer is still wet (Refer to Figure 2, detail 2).
- d. Apply torque to the mast nut 250-275 FT-LBS within 30 minutes after installation.
- e. Install the mast nut lock (Refer to the Maintenance Manual, Chapter 62).

**-NOTE-**

Torque-check accomplished after ground run will help achieve successful subsequent torque-check faster.

**3. Accomplish the mast nut torque-check as follows:**

- a. Within 1 to 5 flight hours after initial installation of the main rotor hub remove the mast nut lock (Refer to Maintenance Manual, Chapter 62).
- b. Use a permanent marker and mark the nut and the trunnion to verify if any movement occurs during torque check.

**-NOTE-**

It is not required to disassemble and inspect the mast nut to washer joint if the mast nut moved.

- c. Perform the mast nut torque-check (Refer to the BHT-ALL-SPM).
- d. Examine the mark for alignment, to determine if the torque application results in a rotation of the mast nut.
- e. Install the mast nut lock (Refer to the Maintenance Manual, chapter 62).

**-NOTE-**

After the first 1 to 5 flight hour torque check a minimum of 15 minutes of flight is required between torque checks.

- f. After the first 1 to 5 hour torque check has been performed and after a minimum of 15 minutes of flight, repeat the above procedure.



- d. Apply torque to the mast nut 250-275 FT-LBS within 30 minutes after installation.
- e. Install the mast nut lock (Refer to the Maintenance Manual, Chapter 62).

**-NOTE-**

Torque-check accomplished during ground run will help achieve successful subsequent torque-check faster.

**3. Accomplish the mast nut torque-check as follows:**

- a. Within 1 to 5 flight hours after initial installation of the main rotor hub, remove the mast lock (Refer to Maintenance Manual, Chapter 62).
- b. Use a permanent marker and mark the nut and the flap restraint support to verify if any movement occurs during torque check.

**-NOTE-**

It is not required to disassemble and inspect the mast nut to flap restraint joint if the mast nut moved.

- c. Perform the mast nut torque-check (Refer to the BHT-ALL-SPM).
- d. Examine the mark for alignment, to determine if the torque application results in a rotation of the mast nut.
- e. Install the mast nut lock (Refer to the Maintenance Manual, chapter 62).

**-NOTE-**

After the first 1 to 5 flight hour torque check a minimum of 15 minutes of flight is required between torque checks.

- f. After the first 1 to 5 hour torque check has been performed and after a minimum of 15 minutes of flight, repeat the above procedure.
  - g. The mast nut torque is considered stabilized when two subsequent torque-checks are successful (no rotation of the mast nut).
- 4. Once the mast nut torque is stabilized proceed as follows:**
- a. Remove the mast nut lock (Refer to the Maintenance Manual, Chapter 62).
  - b. Clean the surface of the flap restraint adjacent to the mast nut, the mast nut serrations and the mast nut lock with naphtha, acetone or MEK.

- c. Apply a bead of sealant MIL-PRF-81733, Type II (C-251) to the mating edge of the mast nut serrations and the flap restraint support (Refer to Figure 2). Ensure no sealant penetrates the mast nut lock retainer bolt hole. Make sure that the bead of sealant is smoothed out to avoid an area capable of retaining pooled moisture.
5. Install the mast nut lock (Refer to the Maintenance Manual, Chapter 62).
6. Make an entry in the helicopter records to indicate that Part II of this Technical Bulletin has been accomplished.

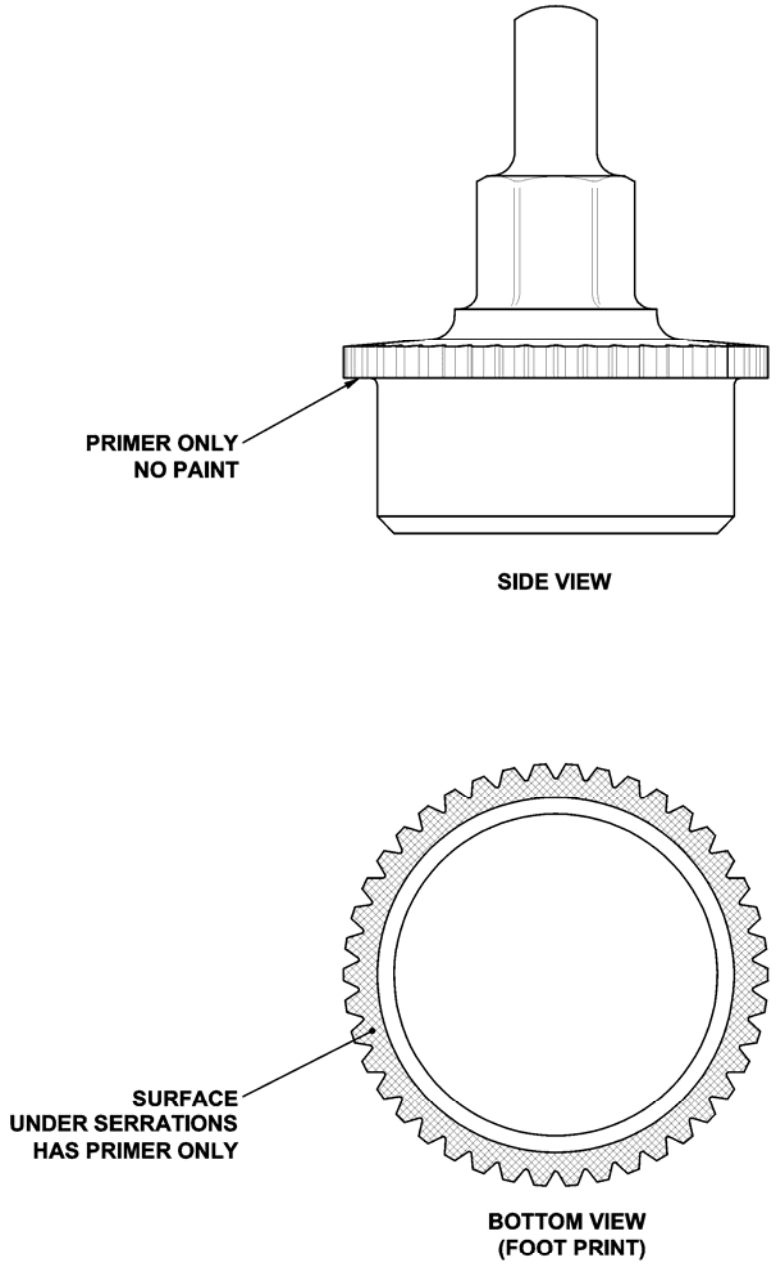
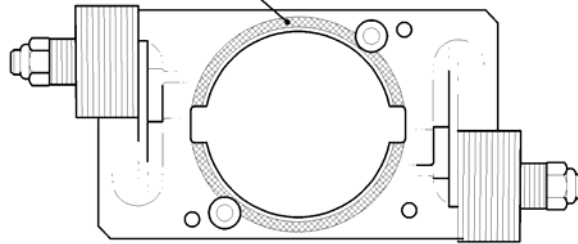
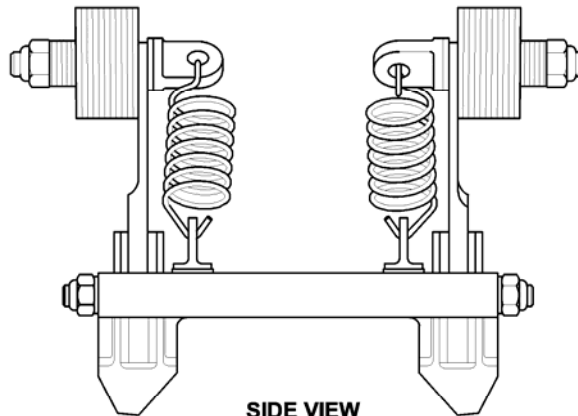


FIGURE 1: Mast Nut Paint Scheme (sheet 1)

PRIMER ONLY ON SURFACE IN CONTACT  
WITH MAST NUT FOOT PRINT

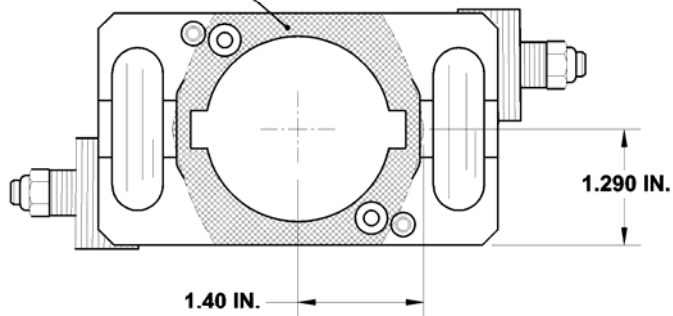


TOP VIEW



SIDE VIEW

PRIMER ONLY ON SURFACE  
IN CONTACT WITH TRUNNION



BOTTOM VIEW

FIGURE 1: Flap Restraint Paint Scheme (sheet 2)

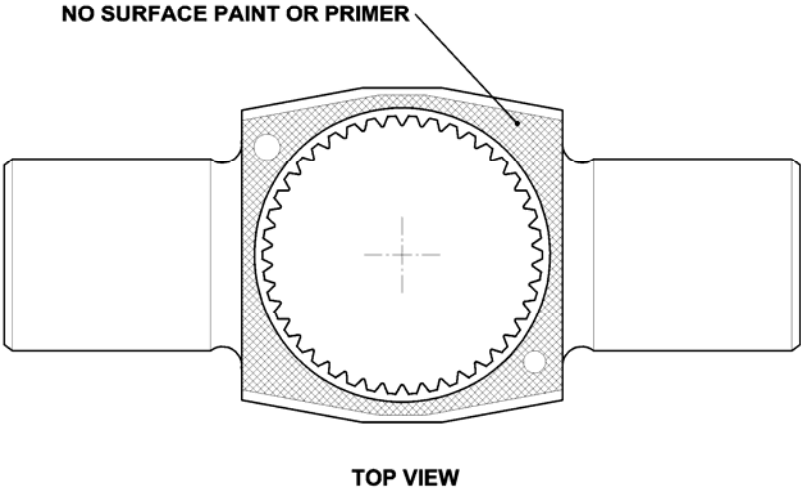
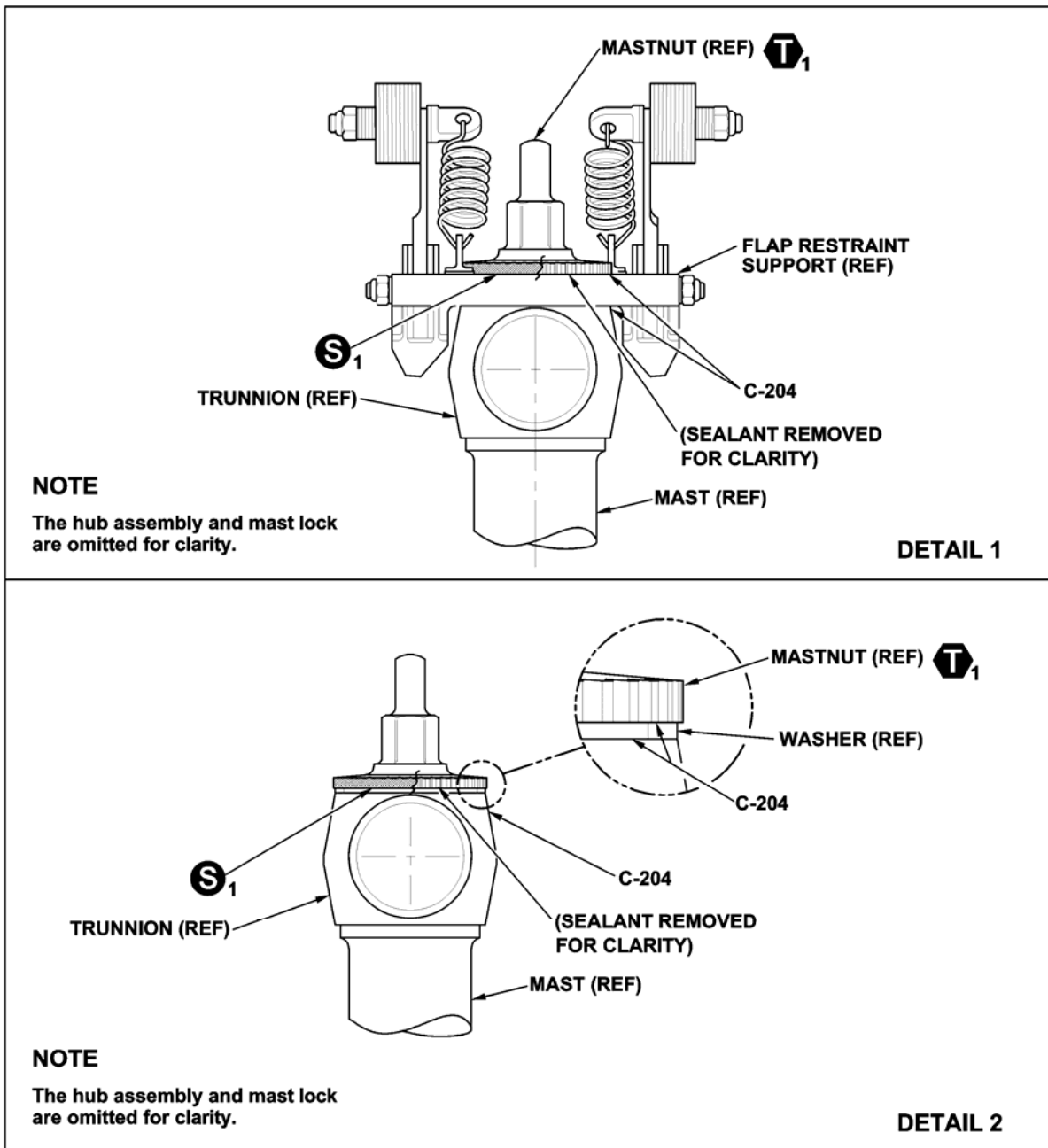


FIGURE 1: Trunnion Paint Scheme (sheet 3)



**S**<sub>1</sub> MIL-PRF-81733 TYPE II (C-251)

**T**<sub>1</sub> 250 TO 275 FT-LBS  
(339 TO 373 Nm)

**FIGURE 2: Main Rotor Installed**