

# TECHNICAL BULLETIN

**Bell Helicopter** **TEXTRON**

A Division of Textron Canada Ltd.

NO. 407-97-3

DATE 05-22-97

PAGE NO. 1 of 9

DATE

REV.

12, 800 Rue de l'Avenir, Mirabel, Quebec J7J 1R4

**MODELS AFFECTED:** 407

**SUBJECT:** IMPROVED CORNER MOUNT 407-310-203-101, INTRODUCTION OF.

**HELICOPTERS AFFECTED:** Bell 407 Serial Numbers 53000 and 53002 through 53066.

[Bell 407 Serial Numbers 53001 and 53067 and subsequent will have the intent of this bulletin completed before delivery.]

**COMPLIANCE:** At the next replacement of the corner mounts.

**DESCRIPTION:** This bulletin introduces a new corner mount P/N 407-310-203-101 that provides an increase in service life. The transmission top case will require the removal of studs P/N 406-040-079-115/-103, and the installation of longer studs P/N 406-040-079-127, to permit the installation of the new corner mounts. The part number of the transmission top case will change.

**APPROVAL:** The engineering design aspects of this Technical Bulletin are Transport Canada approved.

**MANPOWER:** Approximately 2.0 man-hours are necessary to do this Bulletin. The man-hours are based on hands-on time and can change due to the personnel and facilities available.

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**WARRANTY:**

Owners/operators of 407 helicopters which have the corner mounts, Part Number 406-010-217-107, installed on their ship(s) are eligible for a special 100% warranty credit when they purchase the replacement corner mounts, Part Number 407-310-203-101.

To receive this credit:

- 1.The original part(s) must have been used, to within 25 hours or 100 RIN of the published life limit for the original part before they are replaced. Deviations to this requirement must be approved in advance through BHT Warranty Administration (Phone 817 280-3406, facsimile 817 280-8898).
- 2.The owner/operator must get the replacement part(s) from an approved BHTI spares supply source.
- 3.The work must be done in compliance with the instructions outlined in this Technical Bulletin.
- 4.The owner/operator must send a completed Malfunction Report (MR) to BHT Warranty Administration within 30 days after the completion of this Technical Bulletin. A copy of the BHTI invoice referencing the replacement parts purchased to accomplish this Technical Bulletin must be attached to the Malfunction Report (MR).

**MATERIAL:**

**Required Material:**

The material that follows is necessary to complete this Bulletin and can be procured through your Bell Helicopter Textron Supply Center.

<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>QUANTITY</u>
407-310-203-101	CORNER MOUNT	4
406-040-079-127	STUD	16 (See Note)
406-040-079-125	STUD	A/R
406-040-079-129	STUD	A/R

<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>QUANTITY</u>
406-040-079-131	STUD	A/R

Note: The standard stud size is -127. However, larger or smaller size studs could have been installed during production. If you can not get the specified torque value and installation height, you will have to use the next larger size stud. Refer to Figure 2 for the identification of the studs.

**Consumable Material:**

The material that follows is necessary to complete the Bulletin, however this material is consumable (bench stock) material and does not require ordering depending on the operators consumable material stock levels. This material can be obtained through your Bell Helicopter Textron Supply Center.

<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>REFERENCE NO.</u>
MIL-P-85582, TY1 CL2	EPOXY POLYAMIDE PRIMER	C-204
MILS8802CLB2 QT	SEALANT	C-308
MILC85285, TY1, 16440	PAINT, GREY	C-245
METHOL ETHOL KEYTONE	SOLVENT (*)	C-309

(\*) Where the use of MEK is not permitted, use RHO SOLV756.

**- NOTE -**

The "C" REFERENCE NO. above is a cross reference to the consumable list found in the Standard Practices Manual.

**SPECIAL TOOLS:**

Stud extractor tool for 0.3125 dia. x 24 tpi threads, such as Snap-On Extractor Set No. CG500-8 or MacMaster Carr (USA) Extractor No. 2769A15.

A vibrating stylus.

**WEIGHT AND BALANCE:**

Installation of Part I will have the effects that follow on Weight and Balance:

<u>Longitudinal</u> <u>Weight change</u>	<u>Arm</u>	<u>Moment</u>
+ 2.4 Lbs. (+ 10.7 N)	+ 126.0 In. (+ 3200 mm)	+ 302.4 In-Lbs. (+ 34.2 N.m.)
<u>Lateral Weight</u> <u>change</u>	<u>Arm</u>	<u>Moment</u>
Not affected.	Not affected.	Not affected.

**ELECTRICAL LOAD DATA:**

Not affected.

**REFERENCES:**

BHT-ALL-SPM, re-issue - 3 February 1995:

Chapter 3, Corrosion control and protective coverings/  
coatings, and

Chapter 8, Miscellaneous practices.

BHT-407-MM-4, rev.2 - 1 April 1996:

Chapter 63, Transmission assembly and Pylon assembly.

BHT-407-IPB, rev.2 - 1 June 1996:

Chapter 63, Main rotor drive.

CSSD-PSE-87-001, Original - 6 August 1987.

**PUBLICATIONS AFFECTED:**

BHT-407-IPB, Chapter 63.

**ACCOMPLISHMENT INSTRUCTIONS:**

**PART I - Replacement of the Corner mounts**

1. Remove the main transmission from the helicopter (refer to BHT-407-MM, Chapter 63).
2. Remove the LH and RH pylon beam assemblies from the transmission. Remove the corner mounts 406-010-217-107 and replace them with the new corner mounts 407-310-203-101 (Refer to BHT-407-MM, Chapter 63).

**PART II - Modification of the Transmission top case**

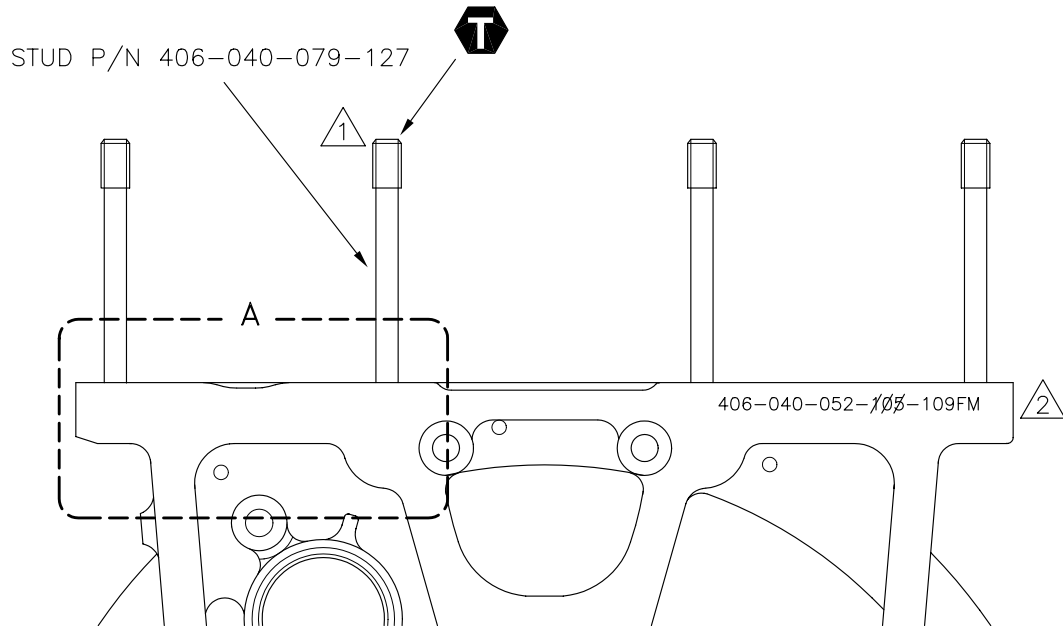
**- CAUTION -**

**DO NOT APPLY MORE THAN 400 IN-LBS (45.2 Nm) OF TORQUE WHEN YOU REMOVE THE STUDS. USE A TORQUE WRENCH TO CONTROL THE FORCE YOU APPLY TO THE STUDS. IF YOU USE MORE THAN 400 IN-LBS (45.2 Nm) OF TORQUE, YOU WILL BREAK THE STUDS.**

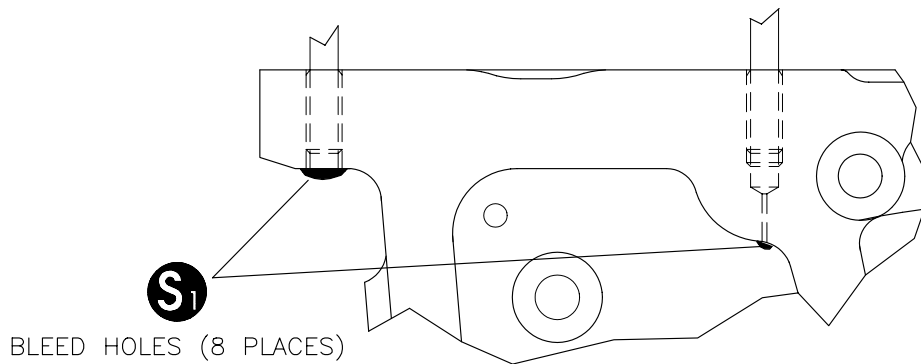
1. Use a heat lamp or equivalent to heat-soak the top case. Increase the temperature of the top case to 250-300°F (121-149°C). Let the heat go through the top case until the epoxy polyamide primer becomes soft and permits you to remove the studs. Use the stud extractor to remove the 16 corner mount studs 406-040-079-103 and -115 from the top case assembly and discard them (Refer to Standard Practices Manual, Chapter 8).
2. Remove the sealant blocking the bleed holes behind the studs on the transmission top case (Figure 1). Make sure that the bleed holes are not blocked.
3. Use a cotton swab moist with MEK (C-309) to clean the threads in the transmission top case bleed holes and on the new studs.
4. Let the transmission top case cool to room temperature. Install the studs 406-040-079-127 wet with unreduced epoxy

polyamide primer (C-204) (Refer to Standard Practices Manual and Figure 1). Seal the bleed holes with sealant (C-308).

5. Re-identify the transmission top case with the use of a vibrating stylus. The depth of the vibroetch must not exceed 0.005 inches (0.127 mm). Reidentify the transmission top case to 406-040-052-~~105~~-109FM (Figure 1). Apply aluminum touch-up solution (BHT-ALL-SPM, Chapter 3), to bare metal surfaces. Apply touch-up paint to all bare metal and new sealant.
6. Re-identify the transmission assembly with the use of a vibrating stylus. The depth of the vibroetch must not exceed 0.005 inches (0.127 mm). Reidentify the transmission assembly to 407-040-006-~~103~~-107FM (Figure 1).
7. Install LH and RH side beam assemblies on the transmission (Refer to BHT-407-MM, Chapter 63).
8. Install the transmission assembly on the helicopter. Perform an operational check of the transmission (Refer to BHT-407-MM, Chapter 63).
9. Make an entry in the helicopter historical record to show that this Technical Bulletin is completed.
10. Make an entry in the Record of Technical Bulletins in the Illustrated Parts Breakdown.



VIEW LOOKING DOWN  
ON TRANSMISSION RHS



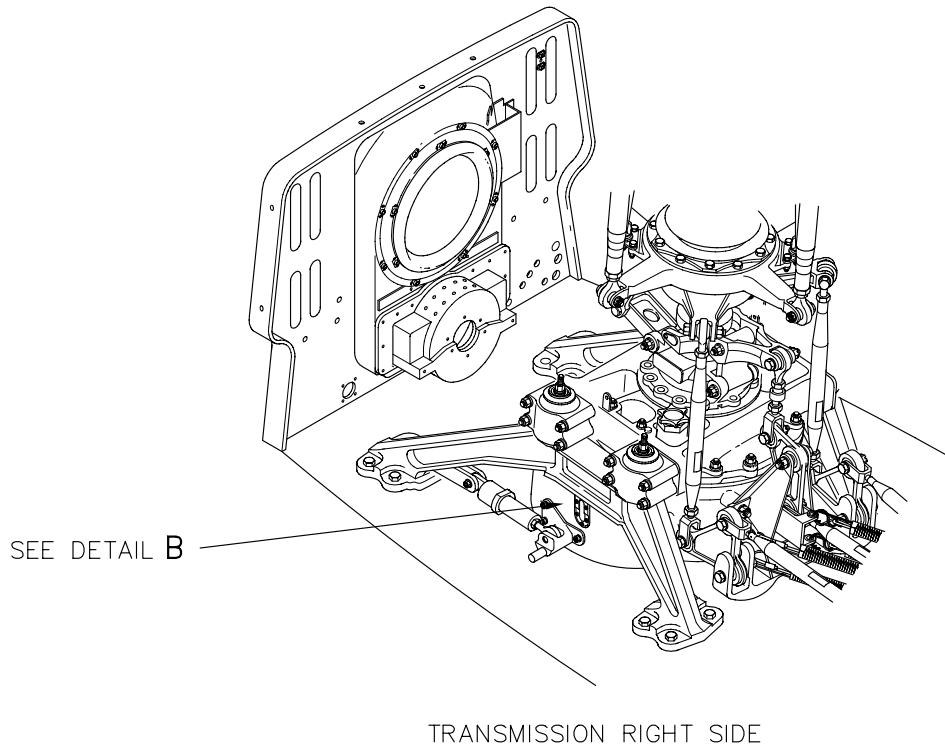
DETAIL A

**T** TORQUE STUDS TO 100-240 IN-LBS (11.3-27.1 Nm)  
TO GET AN INSTALLED  
HEIGHT OF 3.100-3.160 IN. (78.7-80.3 mm)

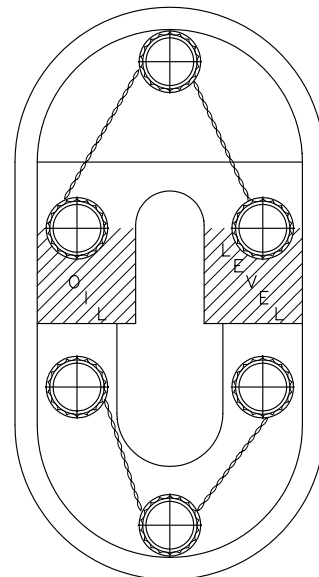
NOTES

- ① The standard stud size is -127. However, larger or smaller size studs could have been installed during production. If you can not get the specified torque value and installation height, you will have to use the next larger size stud. Refer to Figure 2 for the identification of the studs.
- ② Vibroetch new dash number on transmission top case.

**Figure 1. Installation of studs (Sheet 1 of 2)**



○ AIRCRAFT MOD. 407 ○
MFR CODE 407-040-006- <del>103</del> -107FM
PART NO.
CONT NO.
SERIAL NO. A-XXX
CONT. <input type="checkbox"/> CONT.
INSP. <input type="checkbox"/> CUST.
MODIFICATION INCORPORATED



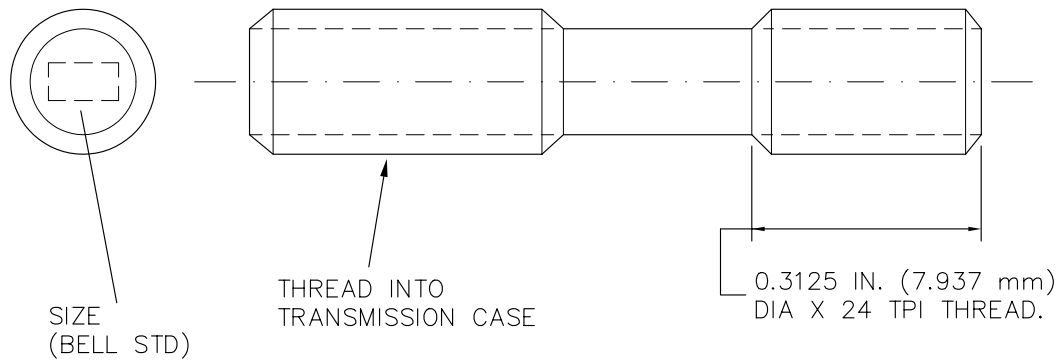
NOTE



Vibroetch new dash number on transmission identification plate.

DETAIL B

Figure 1. Installation of studs (Sheet 2)



UNDERSIZE AND OVERSIZE IDENTIFICATION	-.003	STANDARD	+.003	+.006
	-125	-127	-129	-131

BELL HELICOPTER STUD

Figure 2. Identification of studs