



A Textron Company

TECHNICAL BULLETIN

407-20-133

16 October 2023

MODEL AFFECTED: 407

SUBJECT: ENGINE TORQUE, ENGINE OIL PRESSURE, AND
TRANSMISSION OIL PRESSURE INDICATION
SYSTEMS, MODIFICATION OF

HELICOPTERS AFFECTED: Part I: Serial numbers 53000 through 53900, 53911
through 54166, 54300 through 54752, 54805
through 54929.
Part II: Serial numbers 54304, 54567, 54805
through 54929.

[Serial numbers 54930 and subsequent will have the
intent of this bulletin accomplished prior to delivery.]

COMPLIANCE: At customer's option.

DESCRIPTION:

This technical bulletin provides instructions to modify the engine torque transducer (1B7), the engine oil pressure transducer (1G5) and the transmission oil pressure transducer (1G6) wire harness installations to reduce the possibility of water ingress in the transducer connectors.

PART I of this technical bulletin provides instructions to replace the connectors MS3116F8-4S with new connectors 160-027-508, and add heat shrink sleeves on each transducer wire harness to fill the gap between the wires and the connector inserts.

PART II of this technical bulletin provides instructions to re-orient clamps to improve water drip loops.

Applicability of this bulletin to any spare part shall be determined prior to its installation on an affected helicopter.

APPROVAL:

The engineering design aspects of this bulletin are Transport Canada Civil Aviation (TCCA) approved.

CONTACT INFO:

For any questions regarding this bulletin, please contact:

Bell Product Support Engineering
Tel: 1-450-437-2862 / 1-800-363-8023 / productsupport@bellflight.com

MANPOWER:

Approximately 12 man-hours are required to complete this bulletin. This estimate is based on hands-on time and may vary with personnel and facilities available.

WARRANTY:

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

MATERIAL:**Required Material:**

The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Qty (Note)</u>
10-597817-351	Contact	12(1)
2530-00246-00	Heat shrink sleeve	1 foot (0.31m)(2)
160-027-508	Connector	3(2)

NOTES:

1. Not required for helicopters serial numbers 53000 through 54012.
2. Part number is for quantities sold by the foot. Actual quantity required must be specified in the order.
3. Only required for helicopters serial numbers 53000 through 54012.

Consumable Material:

The following material is required to accomplish this bulletin, but may not require ordering, depending on the operator's consumable material stock levels. This material may be obtained through your Bell Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Qty (Note)</u>	<u>Reference *</u>
2000-00731-00	Insulation tape.	1 Roll (1)(2)	C-548
PLT2S-C702Y	Cable Tie	AR	C-292

* C-XXX numbers refer to the consumables list in the BHT-ALL-SPM, Standard Practices Manual

NOTES:

1. Quantity indicated is the format that the product is delivered in. Actual quantity required to accomplish the instructions in this bulletin may be less than what has been delivered.
2. Only required for **PART II**.

SPECIAL TOOLS:

11-6782 Insertion tool (or equivalent)
11-6900 Extraction tool (or equivalent)
45-1987 Wire stripper (or equivalent)
HT-900 Raychem heat gun (or equivalent)
TH254 Turret/Positioner
M22520/1-01 Crimp tool

WEIGHT AND BALANCE:

Not affected.

ELECTRICAL LOAD DATA:

Not affected.

REFERENCES:

407-MM, Maintenance Manual, chapter 95
407-MM, Maintenance Manual, chapter 96
407-MM, Maintenance Manual, chapter 53
BHT-ELEC-SPM, Electrical Standard Practices Manual
BHT-ALL-SPM, Standard Practices Manual

PUBLICATIONS AFFECTED:

407-IPB, Illustrated Parts Breakdown, chapter 95
407-MM, Maintenance Manual, chapter 98

ACCOMPLISHMENT INSTRUCTIONS:

PART I: Replacement of connector and addition of heat shrink sleeve

1. Prepare the helicopter for maintenance.
2. Make sure all electrical power is removed from helicopter.

WARNING

OBEY ALL THE SAFETY PRECAUTIONS WHEN YOU DO MAINTENANCE ON OR NEAR ELECTRICAL/ELECTRONIC EQUIPMENT (407-MM, chapter 96).

-NOTE-

The engine oil pressure transducer (1G5) is not installed on the 407GX_i. Only the engine torque transducer (1B7) and the transmission oil pressure transducer (1G6) are affected by **PART I** for the 407GX_i.

3. Gain access to the engine torque transducer (1B7), the engine oil pressure transducer (1G5) and the transmission oil pressure transducer (1G6) connectors on the transmission deck by removing the air inlet cowling assembly (DMC-407-A-53-04-00-02A-520A-A).
4. Disconnect the engine torque transducer (1B7), the engine oil pressure transducer (1G5) and the transmission oil pressure transducer (1G6) connectors 1B7P1, 1G5P1 and 1G6P1 (BHT-ELEC-SPM).

-NOTE-

Mark each wire with the connector pin number before extracting the contacts.

5. Disassemble the connectors and extract all wires from the connectors 1B7P1, 1G5P1 and 1G6P1 (BHT-ELEC-SPM).

-NOTE-

It could be required to cut and replace the contact for the heat shrink sleeve installation.

6. Install and apply heat to the heat shrink sleeve (1, Figure 1), and install a new contact (2) on each wire as shown in Figure 1 (BHT-ELEC-SPM).

-NOTE-

For helicopter serial numbers 53000 through 54012, It is required to replace the connectors 1B7P1, 1G5P1 and 1G6P1 with new connectors 160-027-508.

7. Insert all wires into the connectors 1B7P1, 1G5P1 and 1G6P1, and assemble the connectors as removed in step 5 (BHT-ELEC-SPM).
8. Connect the connectors 1B7P1, 1G5P1 and 1G6P1 to the engine torque transducer (1B7), the engine oil pressure transducer (1G5) and the transmission oil pressure transducer (1G6) (BHT-ELEC-SPM).
9. For helicopter serial number 53000 through 54299. Do a transmission oil pressure functional check (DMC-407-A-95-61-08-01A-340A-A).
10. For helicopter serial number 54300 and subsequent. Do a transmission oil pressure operational check (DMC-407-A-95-65-07-01A-320A-A).
11. For helicopter serial number 53000 through 54299. Do an engine torque indication system functional check (DMC-407-A-95-61-01-00A-340A-A).
12. For helicopter serial number 54300 through-54303, 54305 through 54566 and 54568 through 54800. Do an engine torque indication operational check (DMC-407-A-95-65-00-00A-320B-A).
13. For helicopter serial number 54304, 54567, 54805 and subsequent. Do an engine torque indication operational check (DMC-407-A-95-65-00-00A-320C-A).

-NOTE-

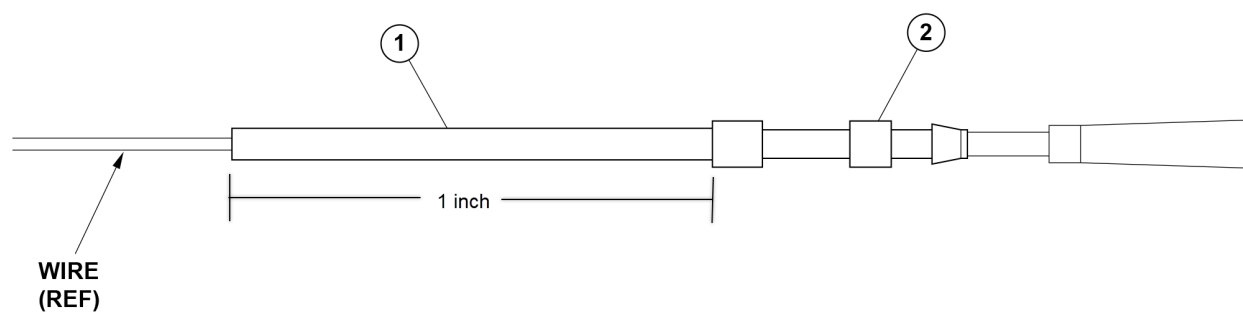
The engine oil pressure functional check is not required for 407GX.

14. For helicopter serial number 53000 through 54299. Do an engine oil pressure indication system functional check (DMC-407-A-95-61-07-01A-340A-A).
15. For helicopter serial number 54300 through-54303, 54305 through 54566 and 54568 through 54800. Do an engine oil pressure operational check (DMC-407-A-95-65-06-01A-320A-A).

16. Inspect the transmission deck area and install the air inlet cowling assembly (DMC-407-A-53-04-00-02A-720A-A).
17. Make an entry in the helicopter logbook and historical service records indicating compliance with **Part I** of this Technical Bulletin.

Part II: Re-orientation of clamps

1. Prepare the helicopter for maintenance.
2. Gain the access on transmission deck by removing the air inlet cowling assembly (DMC-407-A-53-04-00-02A-520A-A).
3. Remove and retain the screw (1, Figure 2), the nut (2), the washers (3) and the clamps (4 and 5) for the transmission oil pressure transducer (1G6) wire harness.
4. Re-orient and install the clamps (4 and 5) with the screw (1), the nut (2) and the washers (3), as shown in Figure 2.
5. Remove and retain the screw (6), the nut (7), the washers (8) and the clamps (9 and 10) for the engine torque transducer (1B7) wire harness.
6. Wrap the insulation tape (11) on the tube. Re-orient and install the clamps (9 and 10) with the screw (6), the nut (7) and the washers (8), as shown in Figure 2.
7. Inspect the transmission deck area and install the air inlet cowling assembly (DMC-407-A-53-04-00-02A-720A-A).
8. Make an entry in the helicopter logbook and historical service records indicating compliance with **Part II** of this Technical Bulletin.

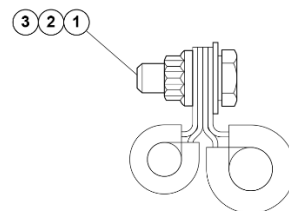
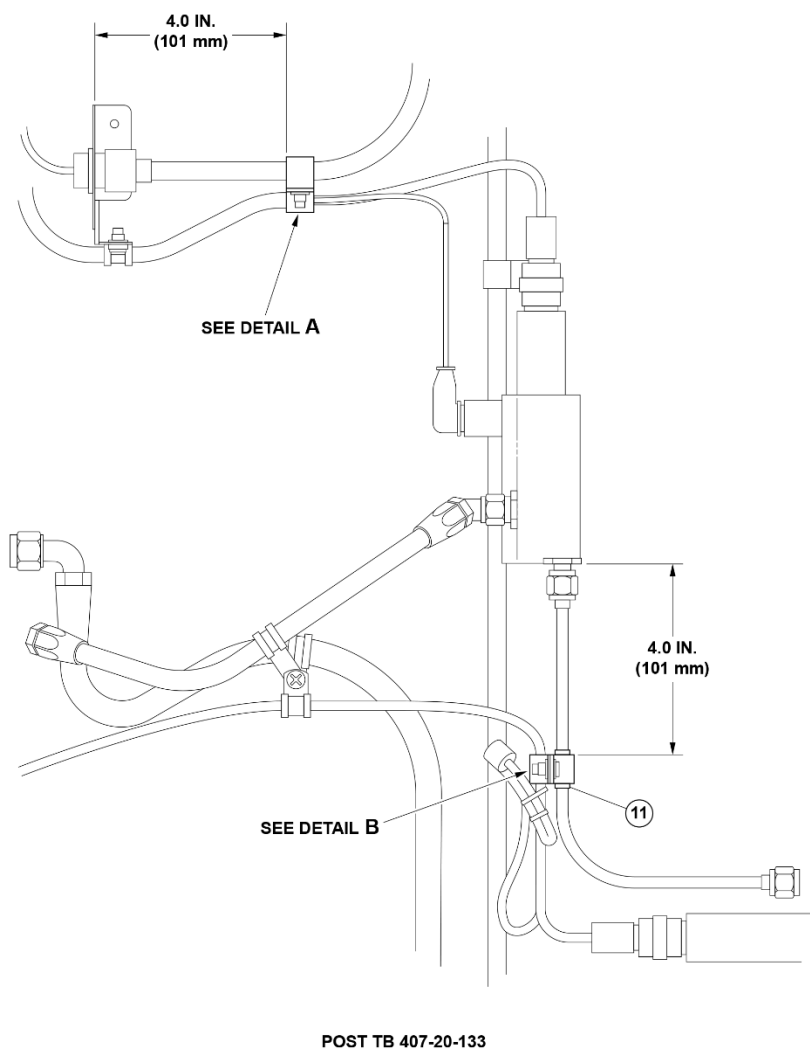


1. Heat shrink sleeve (2530-00246-00)
2. Contact (10-597817-351)

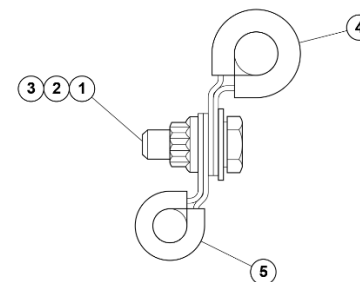
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Connector Ref Des	Crimping tool	Turret/Positioner	Insert/ Extract tool
1B7P1	M22520/1-01	TH254	11-6782/ 11-6900
1G6P1	M22520/1-01	TH254	11-6782/ 11-6900
1G5P1	M22520/1-01	TH254	11-6782/ 11-6900

Figure 1 – Heat shrink sleeve installation

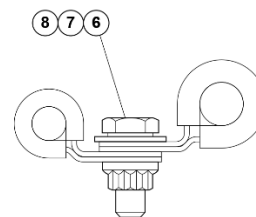


PRE TB 407-20-133

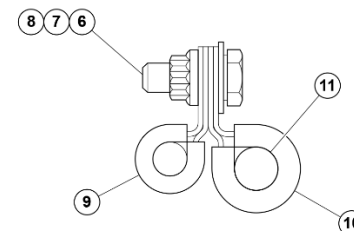


POST TB 407-20-133

DETAIL A
(View looking FWD)



PRE TB 407-20-133



POST TB 407-20-133

DETAIL B
(View looking INBD LH side)

1. Screw
2. Nut
3. Washer
4. Clamp
5. Clamp
6. Screw
7. Nut
8. Washer
9. Clamp
10. Clamp
11. Insulation tape (C-548)

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Figure 2 – Re-orient the clamps