



A Textron Company

## ALERT SERVICE BULLETIN

**412-24-201**

**PSL # 2122**

3 December 2024

**MODEL AFFECTED:** 412EP

**SUBJECT:** TRANSMISSION ASSEMBLY 412-040-008-105,  
UPGRADE OF

**HELICOPTERS AFFECTED:** Serial numbers 39101 through 39121, 39123,  
39124, 39125, 39126 and 39128.

[Serial number 39122, 39127 and 39129 through  
39999 will have the intent of this bulletin  
accomplished, prior to delivery.]

**COMPLIANCE:** No later than 100 flight hours or 120 days after the  
release date of this bulletin.

### DESCRIPTION:

Bell has received reports of three issues related to the main transmission. The first issue reported, is transmission oil pressure indication fluctuations caused by fretting wear of the oil pressure transducer/connector locking mechanism. The second issue is fretting wear between two oil jets and their respective housings due to loss of torque of the oil jet attaching screw. The third issue reported is contamination of the transmission oil due to fretting of the spring inside the oil filler cap assembly secured to the support case.

**PART I** of this bulletin mandates the replacement of the currently installed 222-375-077-105 transducer and 160-027-508 connector by 222-375-077-121 transducer and D38999/26WA35SN connector having an improved locking mechanism.

**PART II** replaces MS35266-62 screws securing the oil jets to the housing with NAS1351-3H6 screws with a specified torque.

**PART III** introduces a new 412-040-050-101 adapter as a replacement for the 205-040-136-001 cap assembly and FC-3662 adapter installed on the 212-040-054-117 support case assembly.

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 FAA 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](mailto:productsupport@bellflight.com)

**MANPOWER:**

Approximately 4 man-hours are required to complete PART I this bulletin, 2 man-hours for PART II and 2 man-hours for PART III. This estimate is based on hands-on time and may vary with personnel and facilities available.

**WARRANTY:**

Owners / Operators of Bell Helicopters who comply with the instructions in this bulletin will be eligible to receive non prorated replacement parts as applicable, listed in the MATERIAL section of the bulletin, together with Labor. The [www.mybell.com](http://www.mybell.com) portal allocates specific warranty entitlement for an aircraft by serial number. The Product Service Letter (PSL) number which will be listed below the bulletin number on the introduction page. This is going to be a required field when submitting a claim on the Bulletins Tab for replacement parts, labor, and/or freight. If you receive an ASB or TB that does not have a PSL number, then there is no warranty entitlement for that bulletin.

Labor entitlement: \$440.0 USD

To receive parts, labor, under warranty:

- Comply with the instructions contained in this Bulletin no later than the applicable date in the “compliance section”.
- If there is a PSL number identified in the bulletin you will be required to enter this PSL number which will validate warranty entitlement for the selected aircraft. Please ensure that you use the Bulletin tab on the warranty section on [www.mybell.com](http://www.mybell.com) portal to file your claim.

You can find out to how to submit a warranty claim on the link below.

[www.mybell-user-guidebooks](http://www.mybell-user-guidebooks)

## MATERIAL:

### Required Material:

The parts listed below are part of the convenience kit CA-412-24-201. The kit **CA-412-24-201** is required for the accomplishment of this bulletin and can be obtained through your Bell Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Qty (Note)</u>
222-375-077-121	Transducer	1
D38999/26WA35SN	Connector	1
AS3208-04	Packing	1
M85049/38-9W	Strain Relief	1
130-061-06W4MA	Tubing	1
412-040-050-101	Adapter	1
AS3209-142	Packing	1
NAS1351-3H6	Screw	2

### 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>
AS100028	Safety Wire	A/R	C-405
2010-05928-00	Anaerobic Sealant (Loctite 222)	50cc (1)	C-299
2010-07915-01	Sealant (AMS-S-8802, Class B-2)	6 OZ	C-308
2000-00697-00	Devcon 2-Ton (Clear Coat)	A/R	C-298
2000-00731-00	Electrical Insulation Tape	Roll 1" wide	C-548

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

**NOTE 1:** This is the quantity sold through Bell Spares. As an alternate, it is acceptable to use medium strength LOCTITE 243 that can be locally procured.

### SPECIAL TOOLS:

Adapter Tool 204-040-354-009. Locally fabricated work aid can be used as an alternate to remove FC-3662 adapter (Figure 5).

### WEIGHT AND BALANCE:

Not Affected.

## ELECTRICAL LOAD DATA:

Not affected.

## REFERENCES:

BHT-412-IPBS-EPX Illustrated Parts Breakdown Supplements  
BHT-412-MM Maintenance Manual  
BHT-412-MMS-EPX Maintenance Manual Supplements  
412-704-155-101 Retrofit Kit Drawing (Bell internal reference only)

## PUBLICATIONS AFFECTED:

BHT-412-IPBS-EPX Illustrated Parts Breakdown Supplements  
BHT-412-MMS-EPX Maintenance Manual Supplements

## ACCOMPLISHMENT INSTRUCTIONS:

### PART I. Oil pressure transducer and connector replacement.

1. Prepare helicopter for maintenance and remove necessary cowlings to access the oil pressure transducer (2, Figure 1, Detail A).
2. Disconnect connector (3), remove safety wire (1), transducer (2), and the packing.
3. Install new AS3208-04 packing and 222-375-077-121 transducer (2). Torque 50 to 65 in-lbs (5.65 to 7.35 Nm) and safety wire with AS100028 (C-405).
4. Remove existing terminal lugs from the strain relief.
5. Disconnect strain relief from connector (2).
6. Remove wires listed below from the existing connector (2, Figure 1, Detail B).

NO. WIRE	DISCONNECT FROM 6340MT2P1 – PIN NO.
D5C22 BLU	D
D5C22 WHT	A
D6C22 BLU	C
D6C22 WHT	B

7. Remove and discard contacts from the end of each wire.
8. Discard existing connector (2).
9. Install new 130-061-6W4MA tubing over the wires.

10. Install new M85049/38-9W strain relief over the wires.
11. Install one of the supplied contacts at the end of each wire and insert in new D38999/26WA35SN connector (2, Figure 1, Detail B).

<b>NO. WIRE</b>	<b>CONNECT TO 6340MT2P1 – PIN NO.</b>
D5C22 BLU	4
D5C22 WHT	1
D6C22 BLU	3
D6C22 WHT	2

12. Install new strain relief on new connector (2).
13. Install the two terminal lugs on the strain relief.
14. Locate the data tag showing the harness assembly part number and re-identify the harness assembly as 412-079-740-403 -105FM with a permanent marker.
15. Secure connector (2) to transducer (3).
16. Do an operation check of the transmission oil pressure indicator system per BHT-412-MM, Chapter 96 (DMC-412-A-96-11-00-03A-320A-A).

**PART II. Oil jets attachment screw replacement.**

1. Gain access to ring gear (4, Figure 2).
2. Locate the two oil jets (3) and remove the safety wire (1) and screws (2) (Figure 2, Detail A and Detail B).
3. Ensure the threads in housing (5) and the new NAS1351-3H6 screw threads are clean and free of contamination.

-NOTE-

Ensure the threads in housing (5) and the new NAS1351-3H6 screw threads are clean and free of contamination before installing the screw. If the MS124695 insert installed in housing (5) requires replacement, refer to the BHT-ALL-SPM, Chapter 8.

4. Apply Loctite (C-299) to the threads of the screws and install. Torque screws 10 to 18 in-lbs. (1.13 to 2 Nm) and safety wire with AS100028 (C-405).

### **PART III. Oil cap assembly 205-040-136-001 and adapter FC-3662 replacement.**

1. Gain access to cap assembly and adapter (2 and 3, Figure 3).
2. Remove tube assembly (1).
3. Remove sealant around the cap assembly (2) and adapter (3).
4. Remove cap assembly (2).

<b>CAUTION</b>
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Use great care to prevent foreign object from entering the transmission.

5. Heat the support case assembly (4), to approximately 200°F ((93°C) and remove adapter (3) using tool (5) or fabricated work aid (Figure 6).
6. Thoroughly clean the threads in support case assembly (4 Figure 3, Detail C) and the threads of the new 412-040-050-101 adapter (6).
7. Install AS3209-142 packing (7) and install adapter (6) into support case assembly (4). Torque 67 to 75 ft-lbs (90.8 to 101.7 Nm).
8. Apply sealant (C-308) at the joint between adapter (6) and support case assembly (4).
9. Install tube assembly (1). To obtain proper fit, elbow fitting (8) may require adjustment. Loosen jam nut (9) and adjust elbow fitting (8) as required and tighten jam nut (10).
10. Locate the support case assembly identification marking location (Figure 4, Detail A) and using a vibrating stylus, re-identify the support case assembly as 212-040-054-447 -121FM. Apply primer and paint touch up as required. It is acceptable to re-identify the support case with a permanent marker. If a permanent marker is used, apply a coat of clear epoxy (C-298) after marking.
11. Locate the transmission assembly data plate (Figure 4, Detail B) and using a vibrating stylus, re-identify the transmission assembly as 412-040-008-405 -107FM.
12. Locate the Modification Plate (Figure 4, Detail C) and using a vibrating stylus, reidentify the transmission assembly as 412-040-008-405 -107FM. In the "Modification Incorporated" area, mark ASB 412-24-201.
13. Make an entry in the helicopter and historical service records indicating compliance with this Alert Service Bulletin.

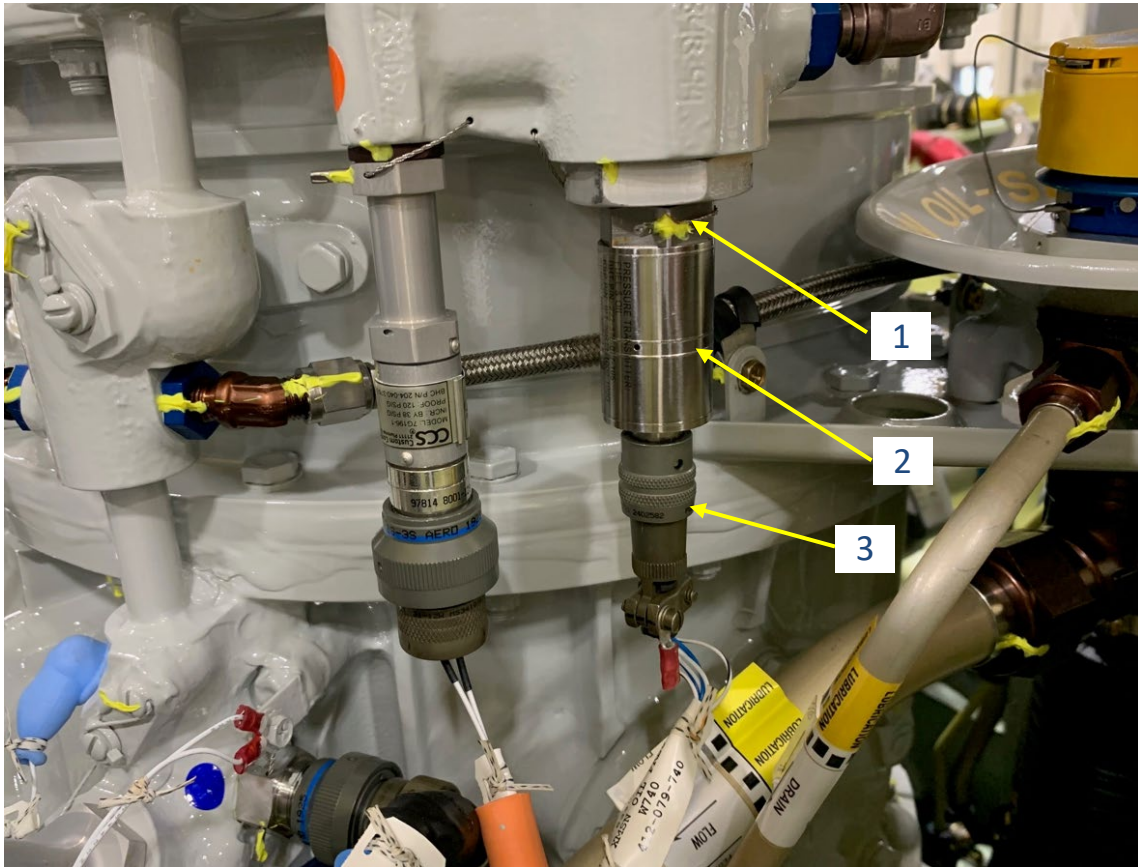


Figure 1, Detail A. Transducer and connector installation.

1. Safety Wire
2. Transducer
3. Connector

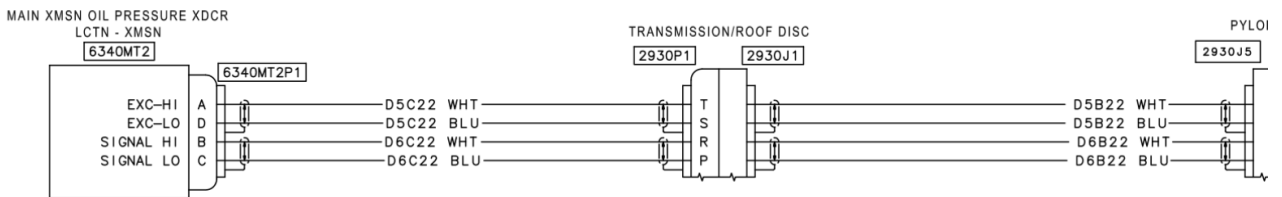


Figure 1, Detail B. Engine and Drivetrain Wiring Diagram Extract (412-475-803-103)

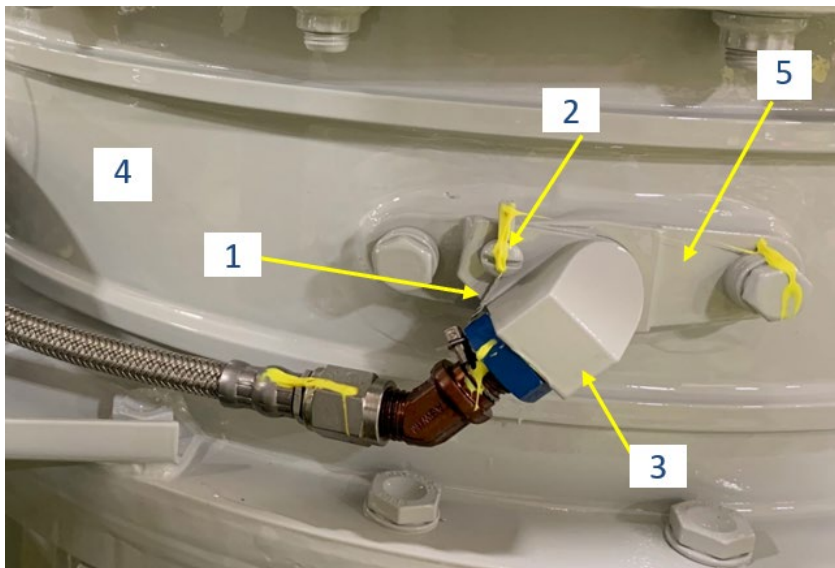
Figure 1 (Sheet 1 of 2). Transducer and connector replacement.



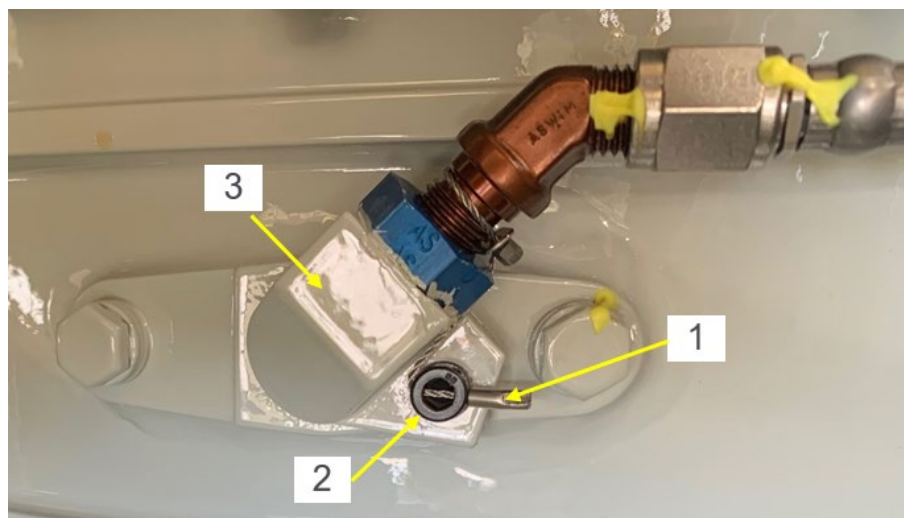
**Figure 1, Detail C. Transducer 222-375-077-121 and Connector D38999/26WA35SN (post ASB).**

**Figure 1 (Sheet 2 of 2). Transducer and connector replacement.**





**Figure 2, Detail A. Jet located at approximately the 1 o'clock position (R/H side view looking down).**



**Figure 2, Detail B. Jet located on L/H side above rotor brake quill (post ASB shown).**

1. Safety Wire
2. Screw
3. Oil Jet
4. Ring Gear
5. Housing Assembly

Note: Installation for both oil jets is similar.

**Figure 2. Oil jet attaching screw replacement.**

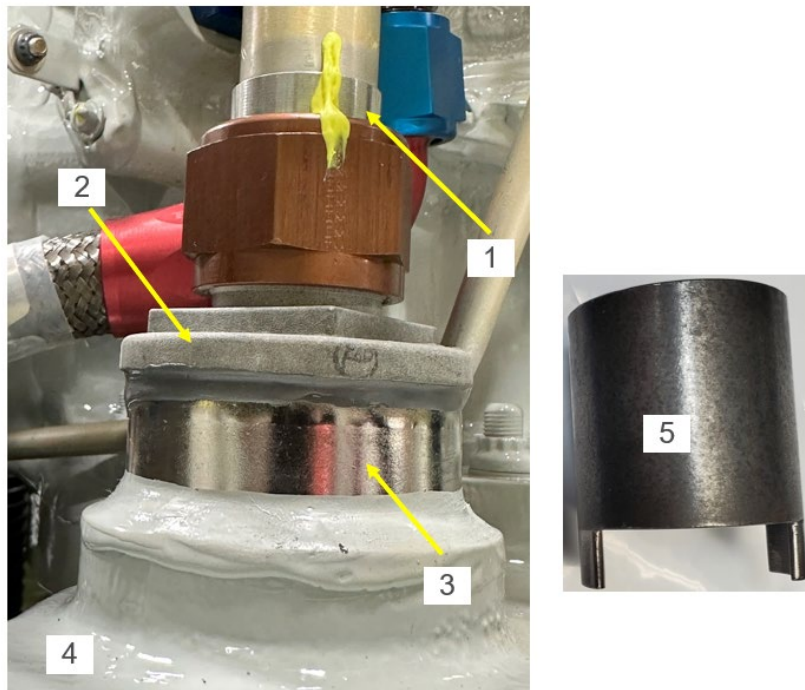


Figure 3, Detail A. Cap assembly 205-040-136-001 and adapter FC-3662.

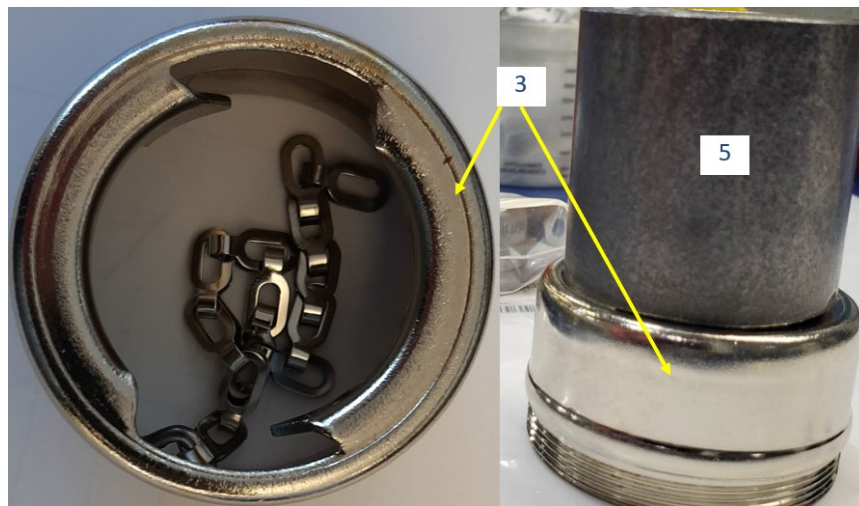
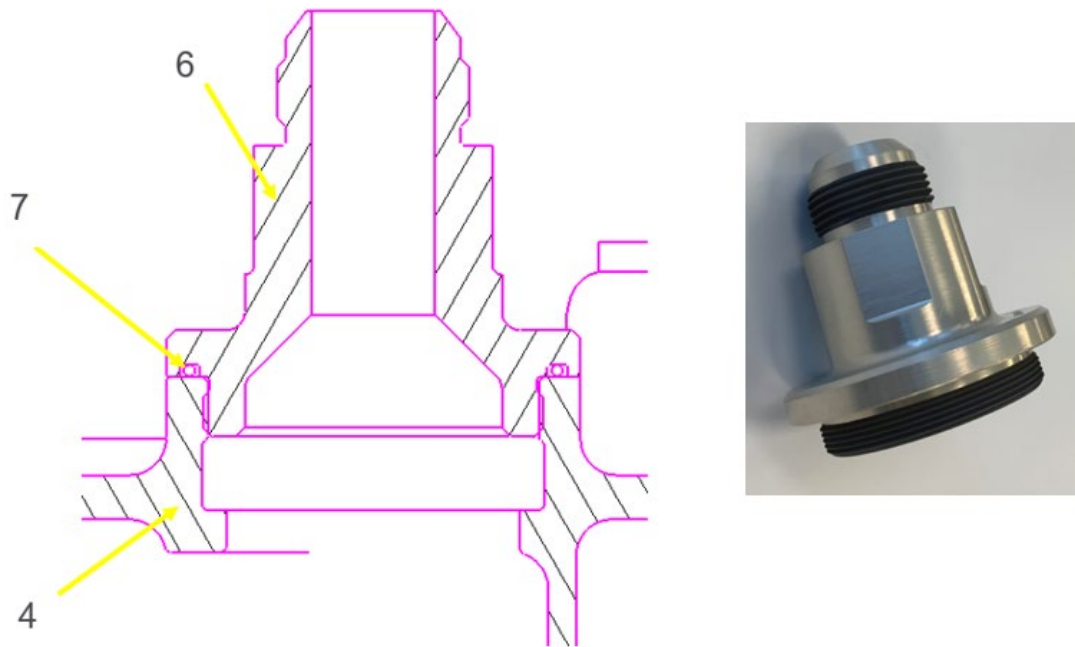
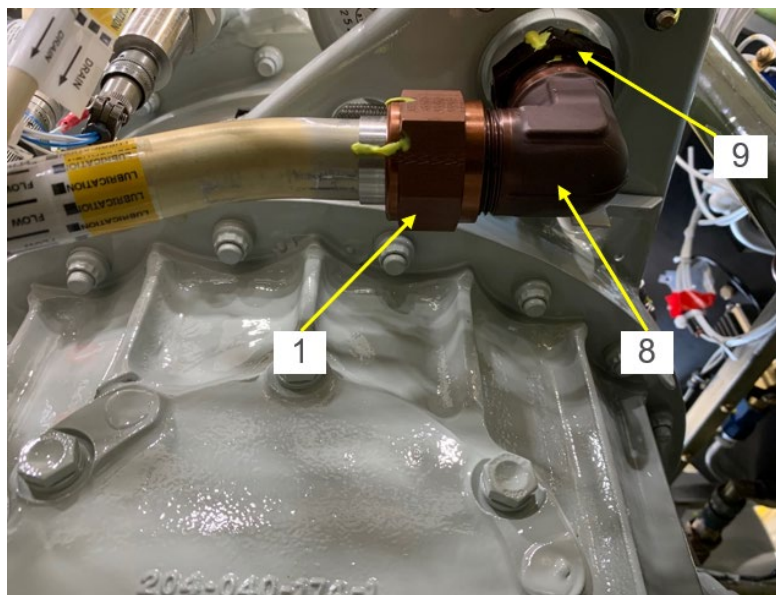


Figure 3, Detail B. Adapter FC-3662 and Tool 204-040-354-009.

Figure 3 (Sheet 1 of 3). Oil Filler cap 205-040-136-001 and Adapter FC-3662 Replacement.

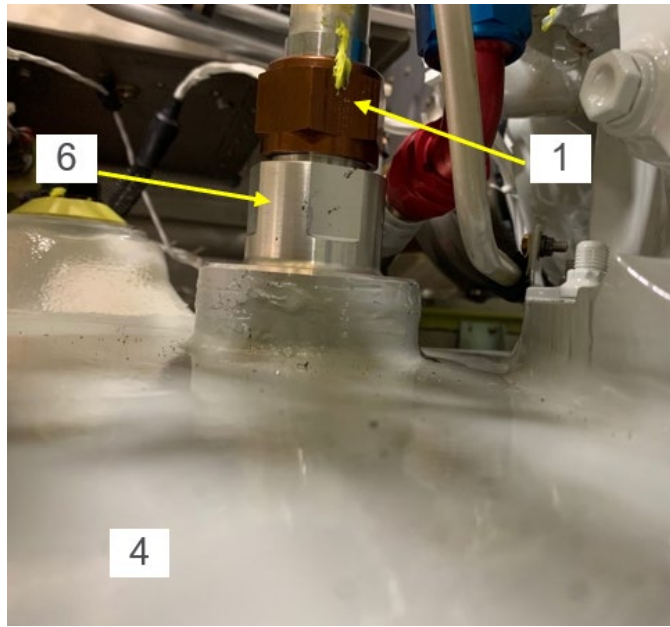


**Figure 3, Detail C. New adapter 412-040-050-101.**



**Figure 3, Detail D. Elbow fitting adjustment.**

**Figure 3 (Sheet 2 of 3). Oil Filler cap 205-040-136-001 and Adapter FC-3662 Replacement.**



**Figure 3, Detail E. Adapter 412-040-050-101 installation.**

1. Tube Assembly 205-040-162-001
2. Oil Filler Cap Assembly 205-040-136-001
3. Adapter FC-3662
4. Support Case Assembly
5. Adapter Tool 204-040-354-009
6. Adapter 412-040-050-101
7. Packing
8. Elbow fitting
9. Jam nut

**Figure 3 (Sheet 3 of 3). OIL Filler Cap 205-040-136-001 and Adapter FC-3662 Replacement.**



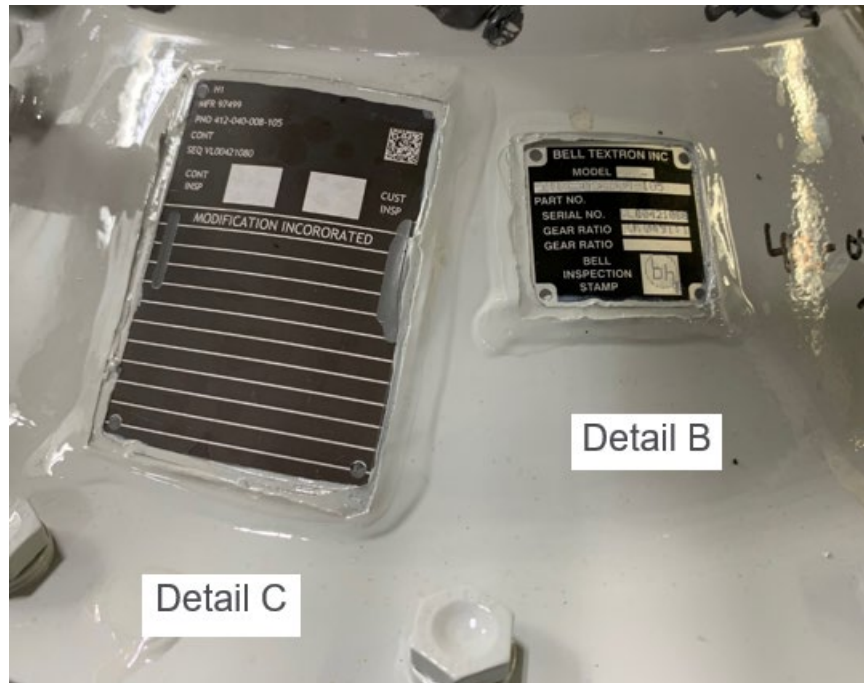
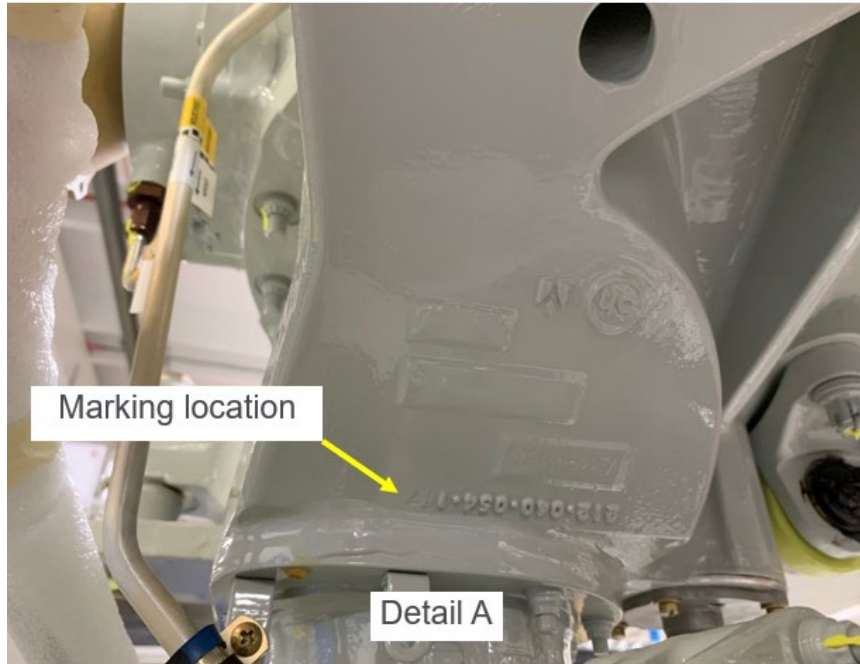
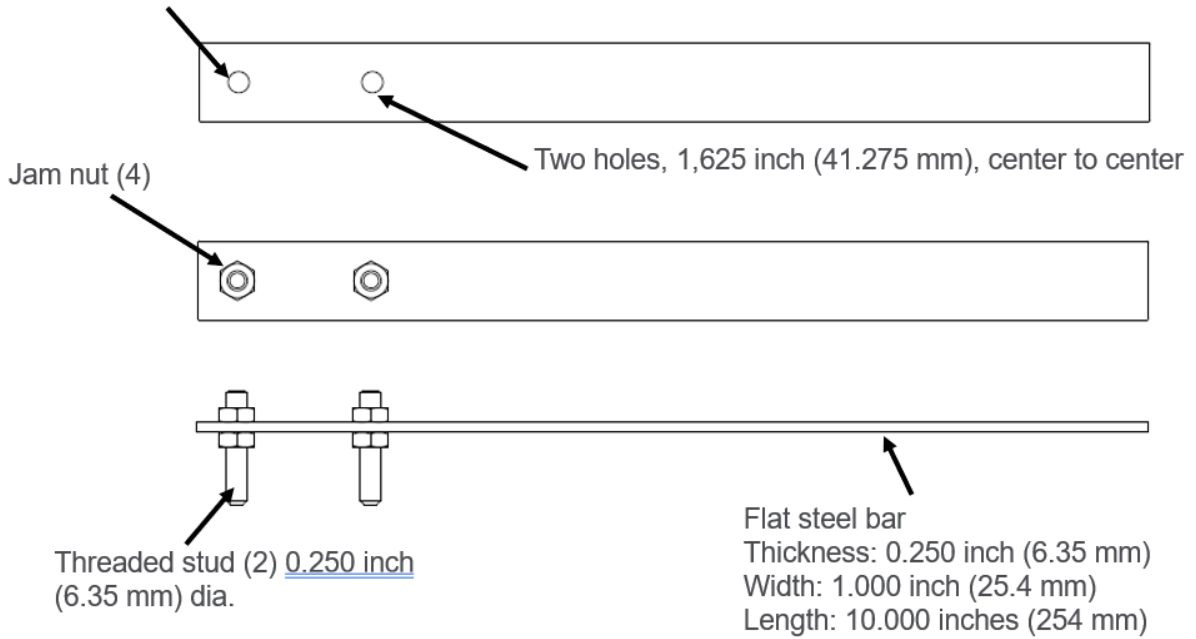


Figure 4. Support case assembly and transmission assembly marking.

Two holes 0.250 inch (6.35 mm) dia.



**Figure 5. Adapter FC-3662 removal work-aid.**