



A Textron Company

## ALERT SERVICE BULLETIN

**505-23-35**

**PSL # 1532**

24 July 2023

**MODEL AFFECTED:** 505

**SUBJECT:** OIL COOLER FAN ASSEMBLY HOUSING BRACKET, INSPECTION AND MODIFICATION OF.

**HELICOPTERS AFFECTED:** Serial numbers 65011 through 65020 and 65022 through 65027.

**COMPLIANCE:** **PART I** – 25 flight hours or 30 days following the release date of this bulletin, whichever occurs first.

**PART II** – 50 flight hours or 90 days following the accomplishment of **PART I**, whichever occurs first.

### DESCRIPTION:

Bell was informed that an oil cooler fan assembly housing mounting bracket was found cracked. The initial design was a “Z” shaped bracket that was welded to the housing and then bolted to a bracket on the truss. To improve the fit and installation, Bell improved the design to a slotted bolted bracket at the housing and the truss. **PART I** of this Alert Service Bulletin requires a one-time inspection of right bracket for cracks. If found cracked, modification of the installation must be accomplished prior to next flight. If the bracket is not cracked, modification of the bracket is to be accomplished within the compliance period of **PART II**. **PART II** of this bulletin provides the instructions how to modify the bracket.

### 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](mailto:productsupport@bellflight.com)

## MANPOWER:

Approximately 1.0 man-hour is required to complete **PART I** of this bulletin.  
Approximately 2.5 man-hours are required to complete **PART II** of this bulletin.  
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 replacement part and labor as applicable, listed in the bulletin. 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: Yes

<b>PART I</b>	\$95.00
<b>PART II</b>	\$237.50

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.

**NOTE:** A user guide on how to submit a claim can be found here:  
[How to Submit PSL Bulletin Claims.](#)

## MATERIAL:

### Required Material:

The following **CA-505-23-35** KIT 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>
<b>CA-505-23-35</b>	<b>Modification Kit</b>	1 (1,2)
NAS1792A3-1	NUTPLATE	2 (3)
MS20426AD3-4	RIVET	4 (3)
NAS6603-2	BOLT	2 (3)
NAS1149D0316J	WASHER	2 (3)
SLS-040-370-103	BRACKET	1 (3)

### NOTES:

1. Additional washers NAS1149D0316J and/or NAS1149D0332J may be required for accomplishment of **PART I** of this bulletin, but not included as part of the kit. These will need to be procured separately.
2. Additional NAS6603-3 bolts (QTY2) may be required for the accomplishment of **PART I** of this bulletin but are not part of the kit. These will need to be procured separately.
3. Parts included in kit **CA-505-23-35**.

### 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>
2100-00345-00	CHEMICAL FILM	1 QT (1)	C-100
2100-00044-00	CORROSION PROTECTIVE COMPOUND (GRADE 1)	1 PT (1)	C-101
2100-09016-02	CORROSION PROTECTIVE COMPOUND (GRADE 2)	1 PT (1)	C-104
2230-00559-00	EPOXY POLYAMIDE PRIMER	8 OZ (1)	C-204
2010-07915-01	SEALANT (AMS-S-8802, Class B-2)	6 OZ (1)	C-308

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

**NOTE 1:** The quantity indicated is the format the product is delivered in. The actual quantity required to accomplish the instructions in this bulletin may be less.

## **SPECIAL TOOLS:**

None required.

## **WEIGHT AND BALANCE:**

Not affected.

## **ELECTRICAL LOAD DATA:**

Not affected.

## **REFERENCES:**

505-MM Maintenance Manual, Chapter 53.

BHT-ALL-SPM, Standard Practice Manual, Chapter 3.

## **PUBLICATIONS AFFECTED:**

505-IPB Illustrated Parts Catalogue, Chapter 65.

505-MM Maintenance Manual, Chapter 65.

## **ACCOMPLISHMENT INSTRUCTIONS:**

### **PART I: One-time inspection.**

1. Prepare the helicopter for maintenance.
2. Remove the exhaust fairing (444AT) ([DMC-505-A-53-40-05-00A-520A-A](#)).
3. Using a 10X magnifying glass and bright light, inspect the right bracket (3, Figure 1, sheet 1 of 4) of the oil cooler blower housing for cracks.
  - a. If a crack is found, perform **PART II** of this bulletin prior to next flight.
  - b. If no cracks are found, perform **PART II** of this bulletin within 50 flight hours or 90 days, whichever occurs first, following the accomplishment of **PART I**. Go to step 4.

<b>CAUTION</b>
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MAKE SURE THERE IS SUFFICIENT PROTECTION AROUND THE FAN SHAFT ASSEMBLY AND HOUSING. THE HOUSING WILL BE LOOSE ON THE FAN SHAFT. THIS WILL HELP PREVENT DAMAGE TO THE UNIT.

4. Remove bolts (1, Figure 1, sheet 1 of 4) and washers (2). Measure gap between bracket (3, Figure 1, sheet 1 of 4) and truss bracket (10, Figure 1, sheet 3 of 4).
  - a. If gap is less than 0.016 inch (0.406 mm), go to step 5.
  - b. If gap is 0.016 to 0.050 inch (0.406 to 1.27 mm), shim the gap using NAS1149D0316J and/or NAS1149D0332J washers. Apply sealant (C-308) on faying surfaces of washers prior to installation. Go to step 5.
  - c. If gap is greater than 0.050 inch (1.27 mm), perform **PART II** of this bulletin prior to next flight.
5. Apply corrosion preventive compound (C-104) to the shank of the bolts (1).

-NOTE-

Once bolts (1), washers (2), and shims (additional washers) are installed, make sure that a minimum of 2 threads of the bolts (1) are exposed through the nutplates. If 2 threads cannot be achieved, remove bolts and install NAS6603-3 bolts.

6. Install bolts (1), washers (2), and shims (washers) determined in step 4.b, if required. Torque bolts (1) 20 to 25 inch-pounds (2.3 to 2.8 Nm) plus the measured tare torque of 2 to 18 inch-pounds (0.2 to 2.0 Nm).
7. Install the exhaust fairing (444AT) ([DMC-505-A-53-40-05-00A-720A-A](#)).
8. Make an entry in the helicopter logbook and historical service records indicating compliance with **PART I** of this Alert Service Bulletin.

**PART II: Modification of right bracket of the oil cooler blower housing.**

1. Prepare the helicopter for maintenance.
2. Remove the exhaust fairing (444AT) ([DMC-505-A-53-40-05-00A-520A-A](#)).

**CAUTION**

MAKE SURE THERE IS SUFFICIENT PROTECTION AROUND THE FAN SHAFT ASSEMBLY AND HOUSING. THE HOUSING WILL BE LOOSE ON THE FAN SHAFT. THIS WILL HELP PREVENT DAMAGE TO THE UNIT.

-NOTE-

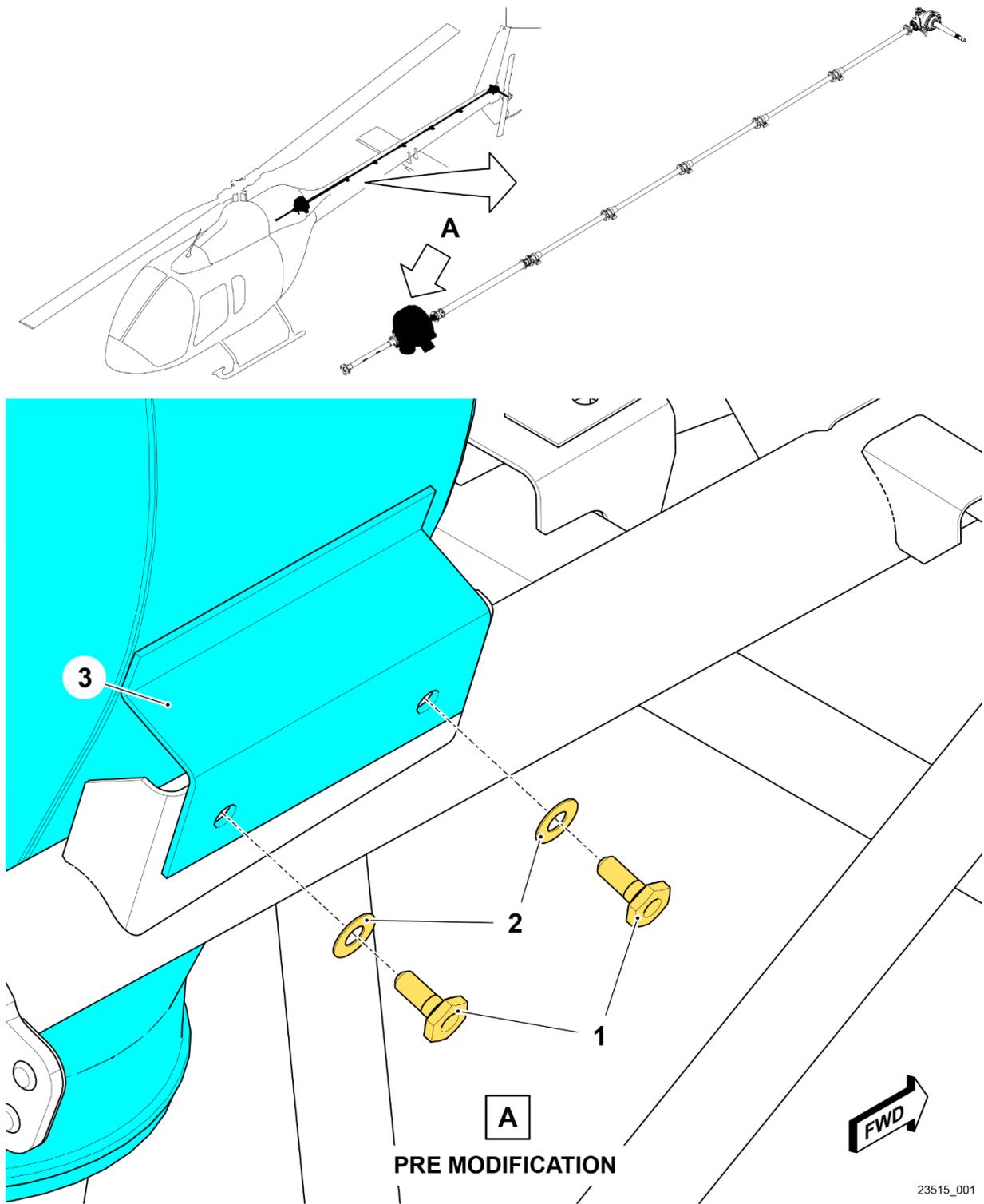
Removal of the right aft-fuselage panel (192AR) may be required ([DMC-505-A-53-30-02-00A-520A-A](#)).

3. Remove bolts (1, Figure 1, sheet 1 of 4) and washers (2) from the blower housing bracket of the fan shaft assembly (3). Retain hardware for installation in a future step.
4. Cut right mounting bracket (6) (Figure 1, View C, sheet 2 of 4).
  - a. Cut to a dimension of 0.800 inch (20.32 mm) on the blower housing bracket (6).
  - b. After being cut, discard cut (vertical) portion of the bracket.
  - c. Round outside corners of cut bracket (6) to a minimum radius of 0.090 inch (2.286 mm). Break all sharp edges.
5. Drill two holes using a 13/64 inch drill bit (5.159 mm) through the right horizontal bracket (6) of the blower housing (Figure 1, sheet 2 of 4). Debur holes.
6. While centering nutplates (4, Figure 1, sheet 2 of 4) over holes drilled in step 5, locate the attachment holes for both nutplates. The attachment holes of the nutplates (4) should be placed in a fore and aft direction as shown.
7. Drill the four holes located in step 6 using a 3/32 inch (2.381 mm) drill bit. Debur holes. Counter sink the holes from the top surface of the bracket (6) with a 100 degree countersink (Figure 1, sheet 2 of 4).
8. Apply chemical film (C-100) to all exposed bare metal of the bracket (6) (BHT-ALL-SPM, Chapter 3). Apply epoxy polyamide primer (C-204) over the chemical film (BHT-ALL-SPM, Chapter 3).
9. Install the nut plates (4) using rivets (5).
10. Apply corrosion preventive compound (C-104) to the shank of the bolts (1) retained from step 3, and bolts (8).
11. Install bracket (7) using bolts (1 and 8) and washers (2 and 9) (Figure 1, sheet 3 of 4) to blower housing bracket (6) and truss (10).

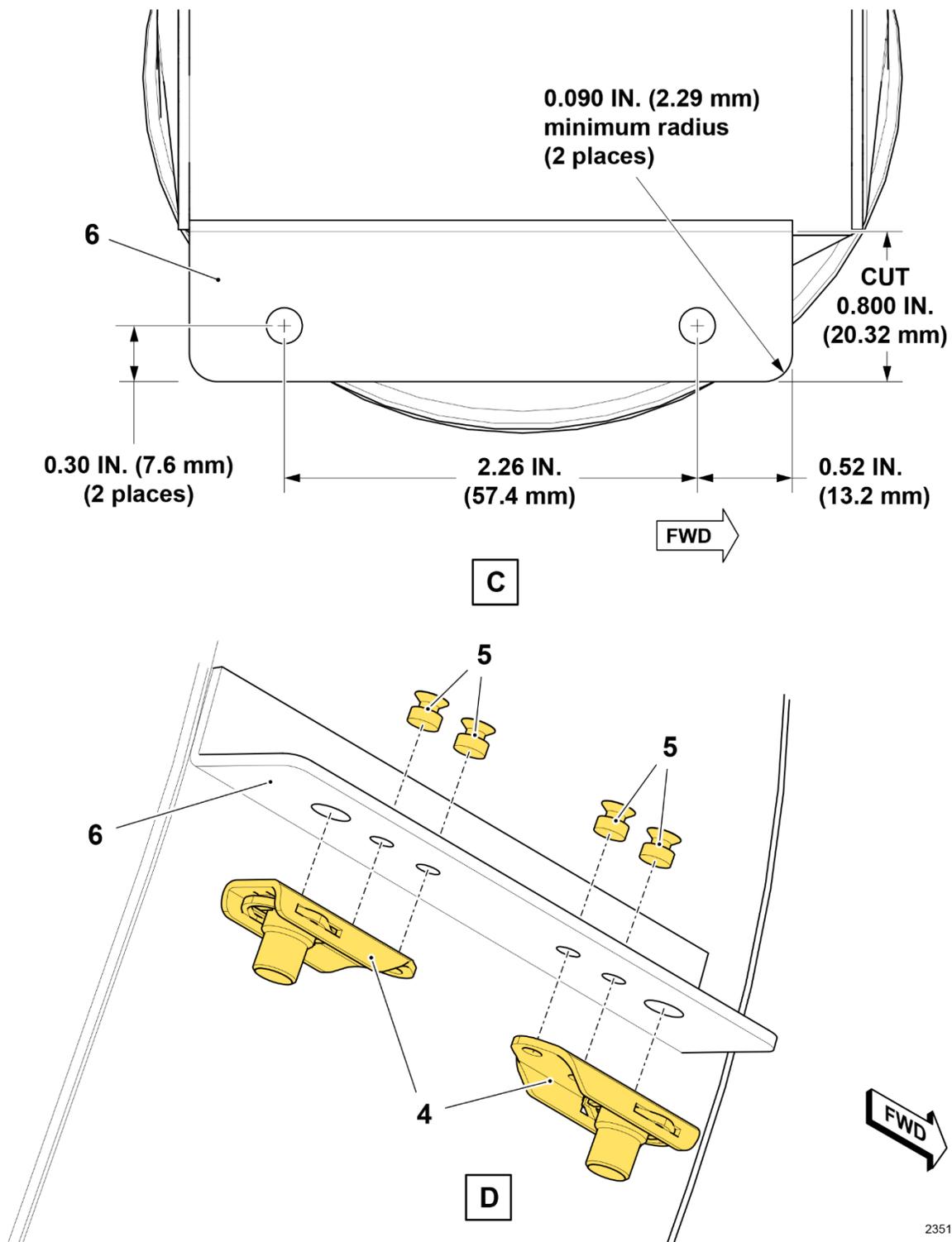
-NOTE-

If adjustment is required, it may require loosening of the bolts on the left oil cooler housing bracket. Following adjustment, the bolts are torqued to the same value as bolts (1 and 8).

12. Torque the bolts (1 and 8) 20 to 25 inch-pounds (2.3 to 2.8 Nm) plus the measured tare torque of 2 to 18 inch-pounds (0.2 to 2.0 Nm).
  - a. Make sure no gaps exist between the bracket (7), oil cooler housing bracket (6), and truss (10).
  - b. Make sure no fouling exists between bracket (7) and truss (10) weld bead.
  - c. Make sure that there is a minimum clearance of 0.050 inch (1.27 mm) between the forward face of the impeller and the housing of the fan shaft assembly.
  - d. If adjustment is required, repeat steps 11 and 12 adjusting housing fit to provide sufficient clearance.
13. Apply Corrosion preventive compound (C-101) to the head of the bolts (1 and 8), washers (2 and 9), and exposed threads of bolts (1 and 8) in nutplates (4).
14. If the right aft-fuselage panel (192AR) was removed, install ([DMC-505-A-53-30-02-00A-720A-A](#)).
15. Install the exhaust fairing (444AT) ([DMC-505-A-53-40-05-00A-720A-A](#)).
16. Make an entry in the helicopter logbook and historical service records indicating compliance with **PART II** of this Alert Service Bulletin.

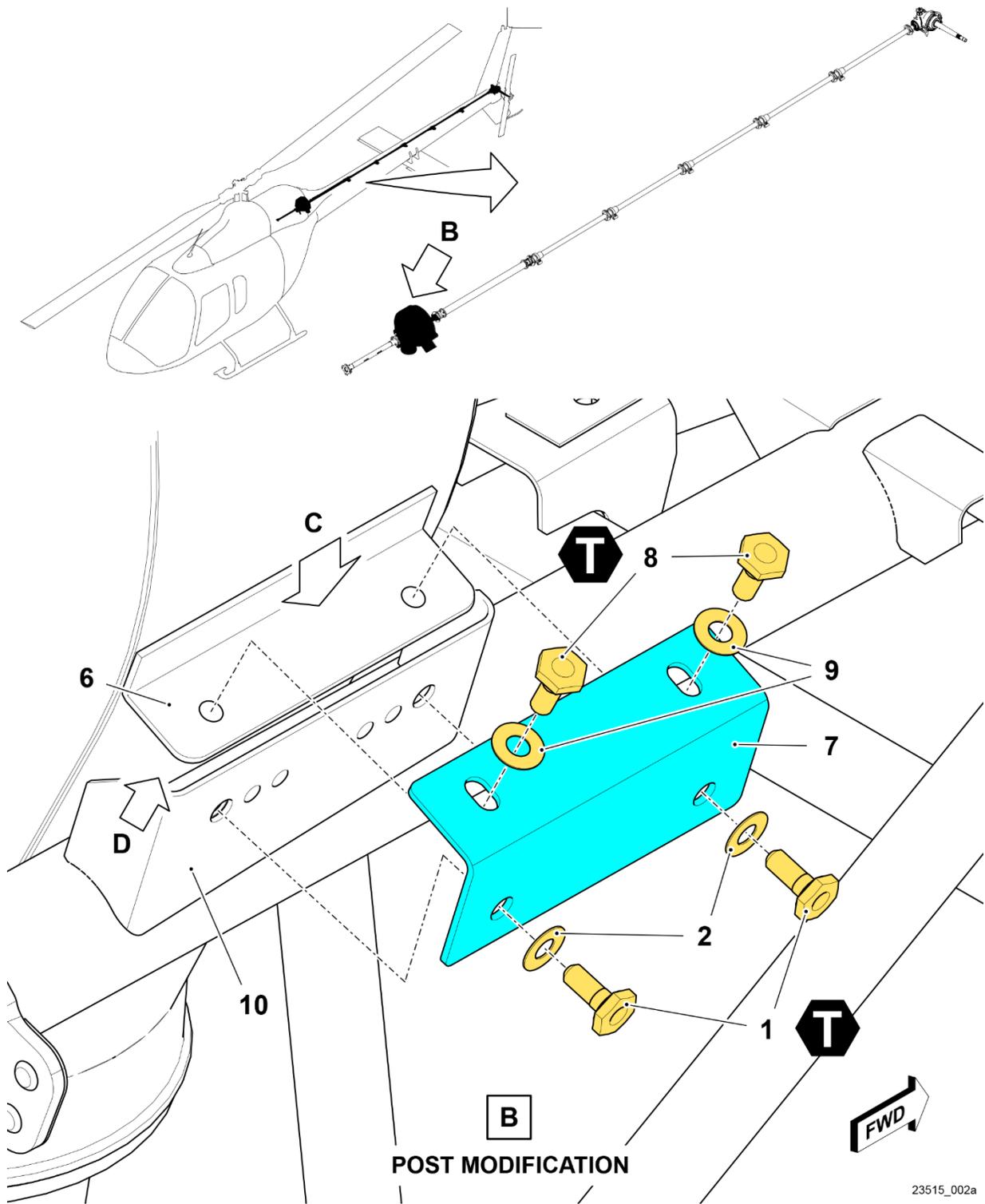


**Figure 1 – Oil Cooler Blower Housing Installation (sheet 1 of 4)**



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**Figure 1 – Oil Cooler Blower Housing Bracket (sheet 2 of 4)**



**Figure 1 – Oil Cooler Blower Housing Bracket (sheet 3 of 4)**

1. Bolt (NAS6603-2) QTY. 2
2. Washer (NAS1149D0316J) QTY. 2
3. Blower horizontal RHS flange
4. Nut plate (NAS1792A3-1) QTY. 2
5. Rivet (MS20426AD3) QTY. 4
6. Blower horizontal RHS flange
7. Truss mount bracket (SLS-040-370-103) QTY. 1
8. Bolt (NAS6603-2) QTY. 2
9. Washer (NAS1149D0316J) QTY. 2
10. Truss (REF)



20 TO 25 IN-LBS (2.3 TO 2.8 Nm)  
plus the measured tare torque of  
2 TO 18 IN-LBS (0.2 TO 2.0 Nm).

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**Figure 1 – Oil Cooler Blower Housing Bracket (sheet 4 of 4)**