A Textron Company

TECHNICAL BULLETIN 429-21-66

21 April 2021

MODEL AFFECTED: **429**

SUBJECT: **FORWARD FUEL VENT, RELOCATION OF**

HELICOPTERS AFFECTED: **Serial numbers 57001 through 57244, 57246, 57247, 57249, 57250, 57252, through 57255, 57260 through 57267, 57270 through 57272, 57276, 57280 through 57335, 57337 through 57372, 57374 through 57379, 57382 through 57389, 57391 through 57395, 57397 through 57406, 57409 through 57417, 57419 and subsequent.**

[Serial numbers 57245, 57248, 57251, 57256 through 57259, 57268, 57269, 57273 through 57275, 57277 through 57279, 57336, 57373, 57380, 57381, 57390, 57396, 57407, 57408 and 57418 will have the intent of this bulletin accomplished prior to delivery.]

COMPLIANCE: At customer's option.

DESCRIPTION:

Bell has received several field reports of fuel smell in the cabin during certain phases of flight and hot weather. This TB introduces 2 fuel vent relocation customizing kits to address this issue. Kit 429-899-269-101 is for helicopters equipped with an air conditioner while kit 429-899-269-103 is for aircraft without an air conditioner.

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 8.0 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.

Part Number	Nomenclature	Qty (Note)
429-899-269-101	**KIT, Customizing-Fuel vent Relocation Consisting of:**	**1 (1)**
110-070-41	RUBBER	1 FT(2)
31-099P4A027B	TUBING TAPE	2
429-899-268-103	FUEL VENT HOSE ASSY	1
429-899-268-105	HOUSING ASSY	1
429-899-268-117	ANGLE	1
429-899-268-119	CORNER ANGLE	1
MS20470AD4-6	RIVET	AR(3)
MS21919WDG11	CLAMP	1(4)
MS21919WDG17	CLAMP	3(5)
MS21919WDG6	CLAMP	1(6)
NAS1149D0316J	WASHER	6
NAS1801-3-8	SCREW	3
NAS9926-3L	NUT	3

429-899-269-103	**KIT, Customizing-Fuel vent Relocation Consisting of:**	**1 (7)**
110-070-41	RUBBER	1 FT(2)
31-099P4A027B	TUBING TAPE	2
429-899-268-103	FUEL VENT HOSE ASSY	1
429-899-267-101	HOUSING ASSY	1
429-899-279-101	FITTING	1
429-899-279-102	FITTING	1
429-899-279-105	MOUNT	1
429-899-279-107	SUPPORT ASSY	1
MS20470AD4-6	RIVET	AR(3)
MS21919WDG16	CLAMP	4(8)
NAS1149D0316J	WASHER	6
NAS1801-3-8	SCREW	6

NOTES:

1. This kit is for helicopters equipped with an air conditioner.
2. The alternate part number for 140-070-41 is 2330-12125-00.
3. Not included in the kits. Purchase separately, quantity as required.
4. Replaced by AS21919WDG11Y.
5. Replaced by AS21919WDG17Y.
6. Replaced by AS21919WDG06Y.
7. This kit is for helicopters without an air conditioner.
8. Replaced by AS21919WDG16Y.

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.

Part Number	Nomenclature	Qty (Note)	Reference *
2000-06013-01	Adhesive	1 OZ (1)	C-300
2100-00061-00	Acetone	1 Gal (1)	C-316
Commercial	Isopropyl alcohol	AR (2)	C-285
Commercial	Cheese cloth	AR (2)	C-486

* 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. As required.

SPECIAL TOOLS:

None required.

WEIGHT AND BALANCE:

Kit 429-899-269-101

	Longitudinal		Lateral*	
Weight	**Arm**	**Moment**	**Arm**	**Moment**
+1.55 pounds	175 inch	+271 inch-pounds	0 inch	0 inch-pounds
+0.7 kg	4445 mm	+3112 kg x mm	0 mm	0 kg x mm

Kit 429-899-269-103

	Longitudinal		Lateral*	
Weight	**Arm**	**Moment**	**Arm**	**Moment**
+1.77 pounds	175 inch	+310 inch-pounds	0 inch	0 inch-pounds
+0.8 kg	4445 mm	+3556 kg x mm	0 mm	0 kg x mm

* In lateral calculations, - is left and + is right.

ELECTRICAL LOAD DATA:

Not affected.

REFERENCES:

BHT-429-IPB, Illustrated Parts Breakdown
BHT-429-MM, Maintenance Manual
BHT-ALL-SPM, Standard Practice Manual
BHT-ALL-SRM, Structural Repair Manual

PUBLICATIONS AFFECTED:

None affected.

ACCOMPLISHMENT INSTRUCTIONS:

Installation of kit 429-899-269-101 for helicopters equipped with an air conditioner

1. Prepare the helicopter for maintenance.

2. Disconnect the battery and external DC power from the helicopter (DMC-429-A-96-60-00-00A-520A-A).

3. Remove the forward cowl assemblies (600CL and 600CR) (DMC-429-A-53-00-00-44A-520A-A).

4. Remove and discard the upper vent hose assembly (1, Figure 1) (DMC-429-A-28-10-00-08A-520A-A).

5. Remove and discard the standoff (2), screw (3), washers (4) and clamp (5).

6. Remove and discard the union (6), the washers (7) and the nut (8) (DMC-429-A-28-10-00-08A-520A-A).

-NOTE-

Rivet quantity needed will depend on the edge distance observed and the existing Air Comm air conditioner structure geometry.

7. Locate and Install the angle (1, Figure 2) with the rivets (2) per Figure 2, Section B-B.

8. Locate and Install the corner angle (3) with the rivets (2) per Figure 2, Section B-B.

9. Connect the fuel vent hose assembly (4) to the forward rollover valve (5). Orient the elbow in order to ensure maximum clearance with adjacent structure. Torque the fuel vent hose assembly (4) end fitting 300 to 500 inch-pounds (33.9 to 56.5 Nm).

-NOTE-

Make sure to orient the clamps (6, 7 and 8) to avoid fouling between the fuel vent hose assembly and the adjacent structure. Adjust the location of the clamps on the Air Conditioner lines to avoid any low points between both ends of the fuel vent hose assembly (4).

10. Install the clamps (6, 7 and 8) with the screws (9), the washers (10) and the nuts (11) as shown in Figure 2, Views C, D and E.

11. On the internal surface of the forward cowl assembly (600CR), trace a template using the housing assembly (12, Figure 2) at the location shown in Figure 4.

-NOTE-

Bonding and surface preparation shall be performed in a dry and dust free area. Surfaces to be bonded must be clean, dry, and free from oil or grease. Clean residues with acetone (C-316) or isopropyl alcohol (C-285) using a clean cheesecloth (C-486) and allow to dry. Prepare composite surfaces by abrading with 100 grit or finer sandpaper or cloth. Mix, apply and cure adhesive per manufacturer's instructions while observing pot life.

12. Bond the seal (13) onto the internal surface of the forward cowl assembly (600CR) using adhesive (C-300). The Seal (13) should follow the outline of the housing assembly (12) that was drawn on the cowling during step 11.

13. Install the housing assembly (12) with the rivets (2) as shown in Figure 2, View A. Adjust the housing assembly (12) in the inboard and outboard direction to obtain a good sealing contact between the housing assembly (12) and the seal (13).

14. Insert the end of the fuel vent hose assembly (4) into the housing assembly (12). Cut the end of the hose as illustrated in Figure 2, View A to obtain 0.5-inch protrusion from the grommet surface.

15. Install the identification tape (14) at the locations shown in Figure 2, Views A and G.

16. Drill vent holes in the cowling (600CR) as shown in Figure 2, View H (BHT-ALL-SRM, Chapter 4).

17. Install the forward cowl assemblies (600CL and 600CR) (DMC-429-A-53-00-00-42A-720A-A).

18. Re-connect the battery to the helicopter (DMC-429-A-96-60-00-00A-720A-A).

19. Make an entry in the helicopter logbook and historical service records indicating compliance with this Technical Bulletin.

Installation of kit 429-899-269-103 for helicopters that are not equipped with an air conditioner

1. Prepare the helicopter for maintenance.

2. Disconnect the battery and external DC power from the helicopter (DMC-429-A-96-60-00-00A-520A-A).

3. Remove the forward cowl assemblies (600CL and 600CR) (DMC-429-A-53-00-00-44A-520A-A).

4. Remove and discard the upper vent hose assembly (1, Figure 1) (DMC-429-A-28-10-00-08A-520A-A).

5. Remove and discard the standoff (2) screw (3), washers (4) and clamp (5).

6. Remove and discard the union (6), washers (7) and nut (8).

7. Locate and install the fitting (1, figure 3) to the right-hand roof beam with the rivets (2) as shown in Figure 3, Section B-B.

8. Locate and install the fitting (3) to the left-hand roof beam with the rivets (2) as shown in Figure 3, Section C-C.

9. Locate and install the support assembly (4) and mount (5) with the rivets (2) as shown in Figure 3, Sections B-B and C-C.

10. Connect the fuel vent hose assembly (6) to the forward rollover valve (7). Orient the elbow in order to ensure maximum clearance with adjacent structure. Torque the fuel vent hose assembly (6) end fitting 300 to 500 inch-pounds (33.9 to 56.5 Nm).

11. Install the clamps (8) with the screws (9) and washers (10). Position the outboard clamps downwards and the inboard clamps upwards as shown in Figure 3, View D.

12. On the internal surface of the forward cowl assembly (600CR), trace a template using the housing assembly (11, Figure 3) at the location shown in Figure 4.

13. Install the housing assembly (11) to the mount (5) with the screws (9) and washers (8).

14. Insert the end of the fuel vent hose assembly (6) into the housing assembly (11). Cut the end of the hose as illustrated in Figure 3, View A to obtain 1-inch protrusion from the grommet surface.

-NOTE-

Bonding and surface preparation shall be performed in a dry and dust free area. Surfaces to be bonded must be clean, dry, and free from oil or grease. Clean residues with acetone (C-316) or isopropyl alcohol(C-285) using a clean cheesecloth (C-486) and allow to dry. Prepare composite surfaces by abrading with 100 grit or finer sandpaper or cloth. Mix, apply and cure adhesive per manufacturer's instructions while observing pot life.

15. Bond the seal (12) onto the internal surface of the forward cowl assembly (600CR) using adhesive (C-300). The seal (12) should follow the outline of the housing assembly (11) that was drawn on the cowling during step 12.

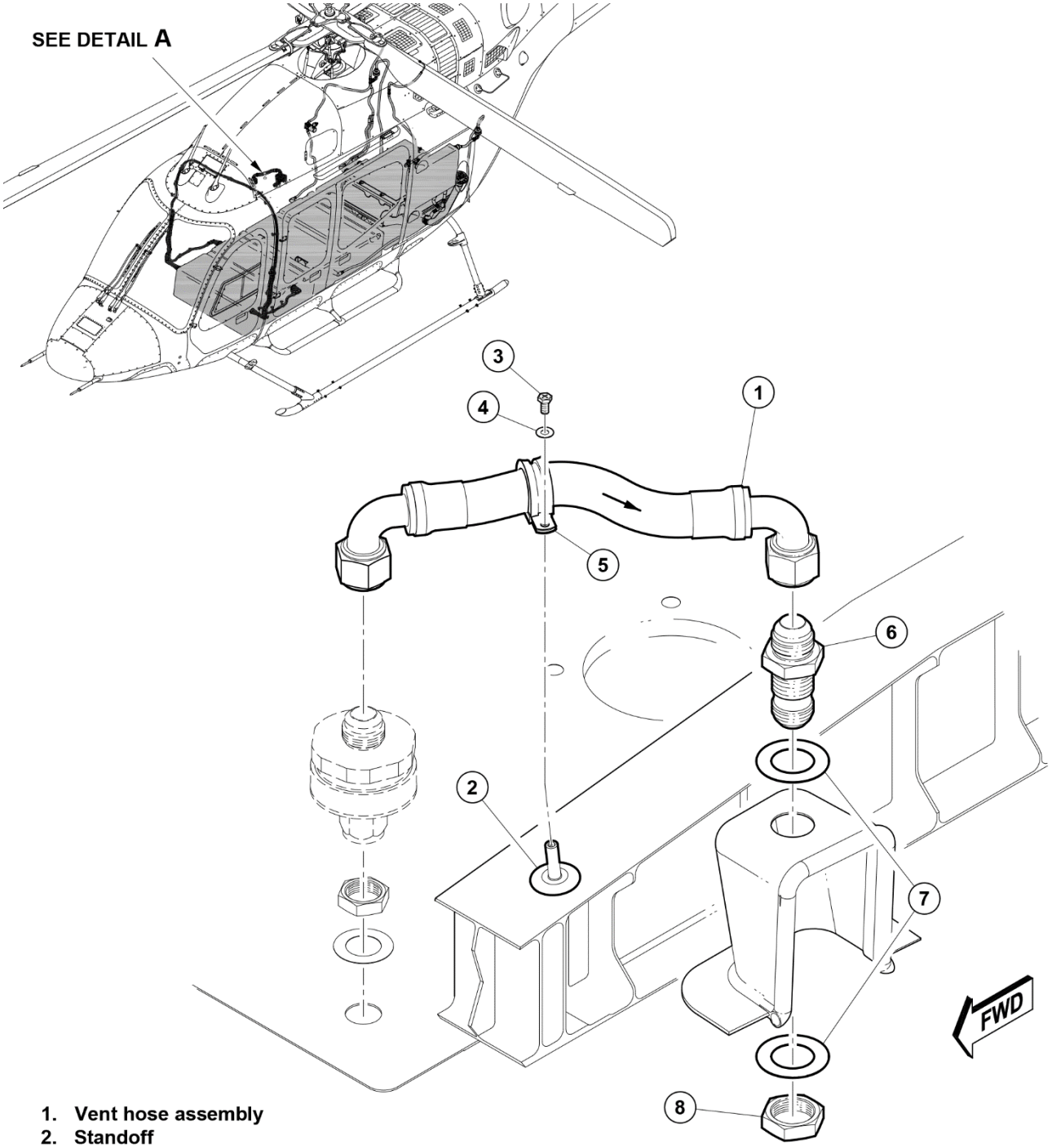
16. Install the identification tape (13) at the locations shown in Figure 3, View A.

17. Drill vent holes in the cowling (600CR) as shown in Figure 3, View F (BHT-ALL-SRM, Chapter 4).

18. Install the forward cowl assemblies (600CL and 600CR) (DMC-429-A-53-00-00-42A-720A-A).

19. Re-connect the battery to the helicopter (DMC-429-A-96-60-00-00A-720A-A).

20. Make an entry in the helicopter logbook and historical service records indicating compliance with this Technical Bulletin.



1. Vent hose assembly
2. Standoff
3. Screw
4. Washer
5. Clamp
6. Union
7. Washer
8. Nut

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Figure 1 – Original Fuel Vent Hose Removal

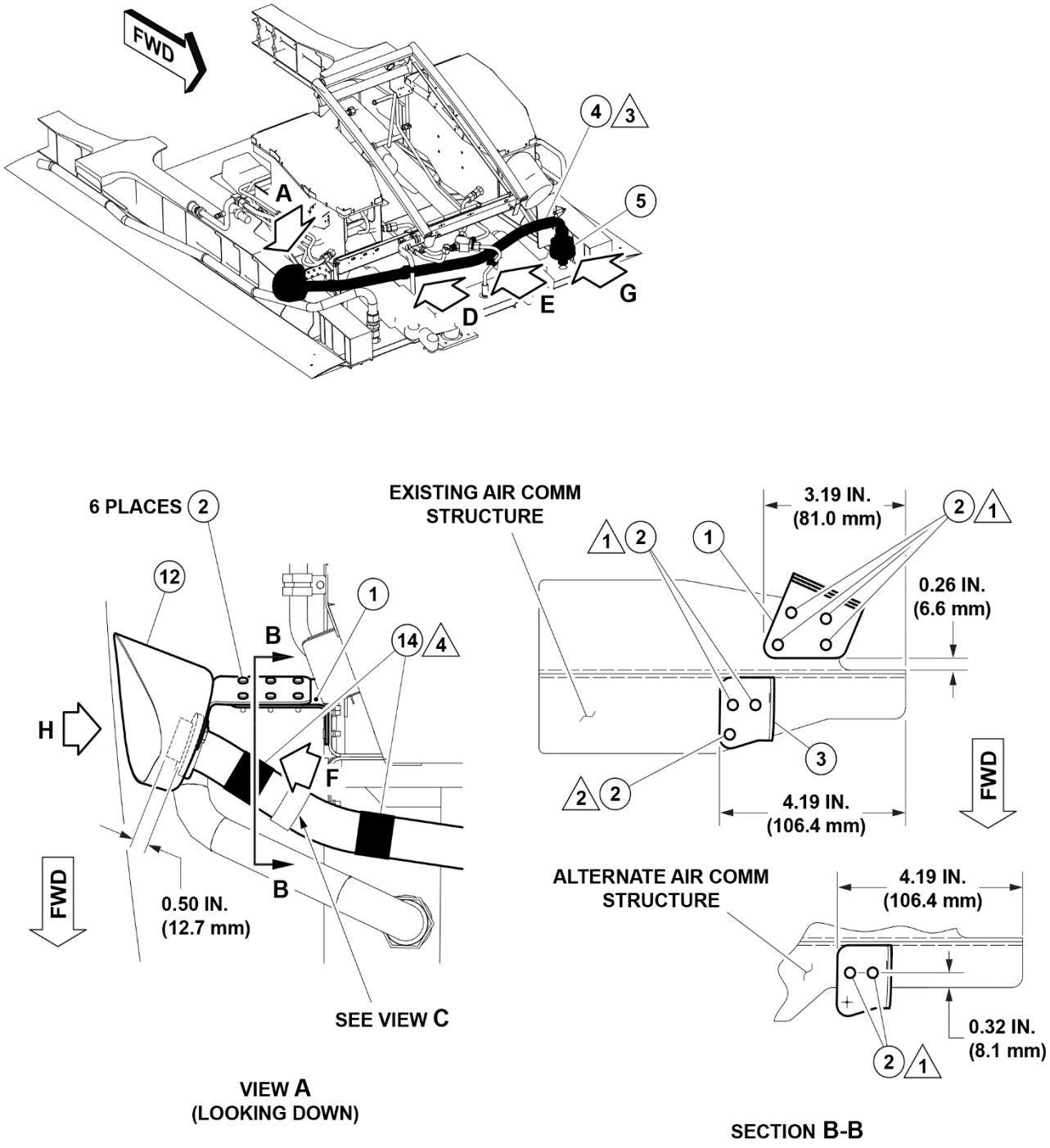

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Figure 2 – Fuel Vent Relocation With The Air Conditioner (Page 1 of 3)

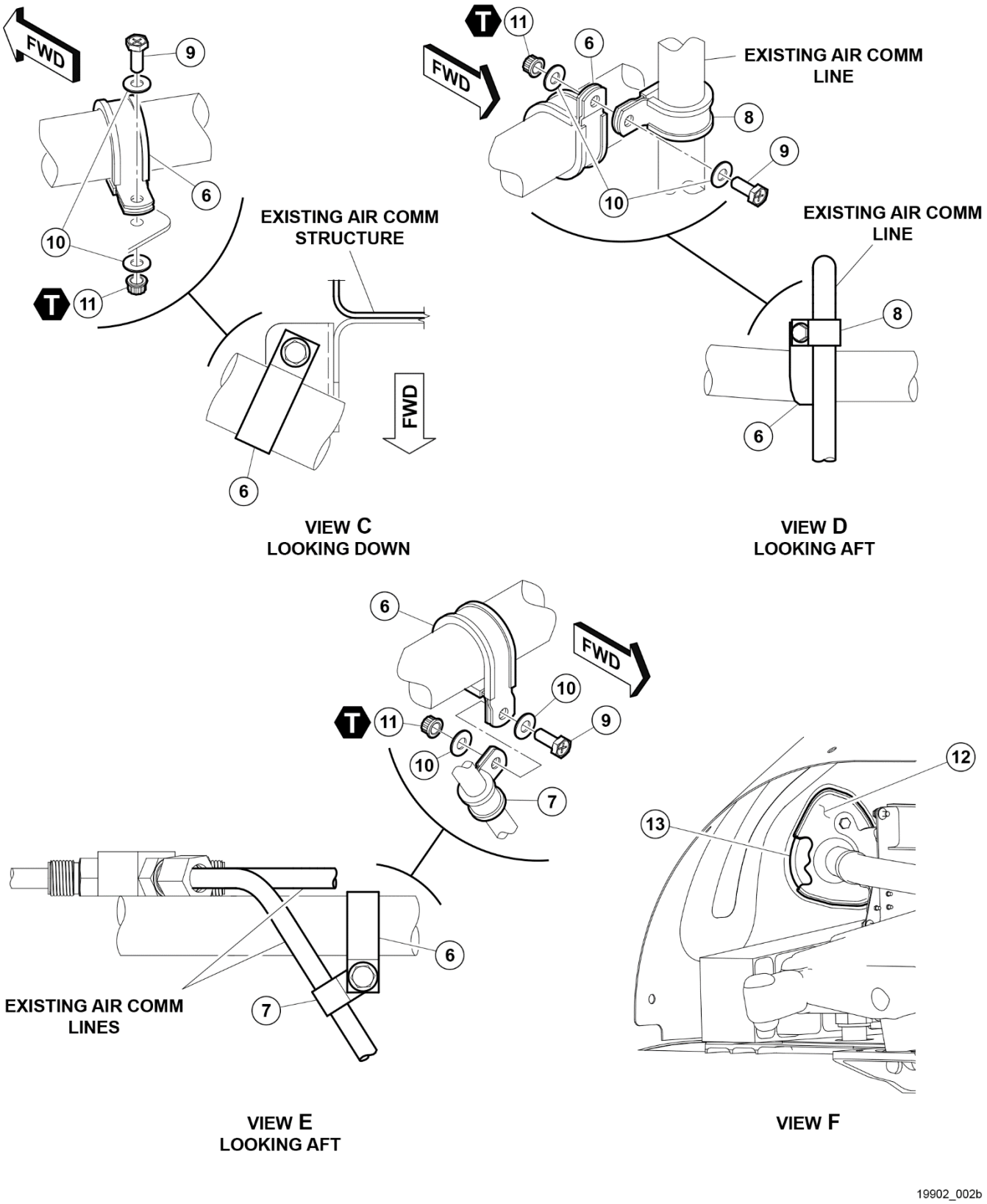
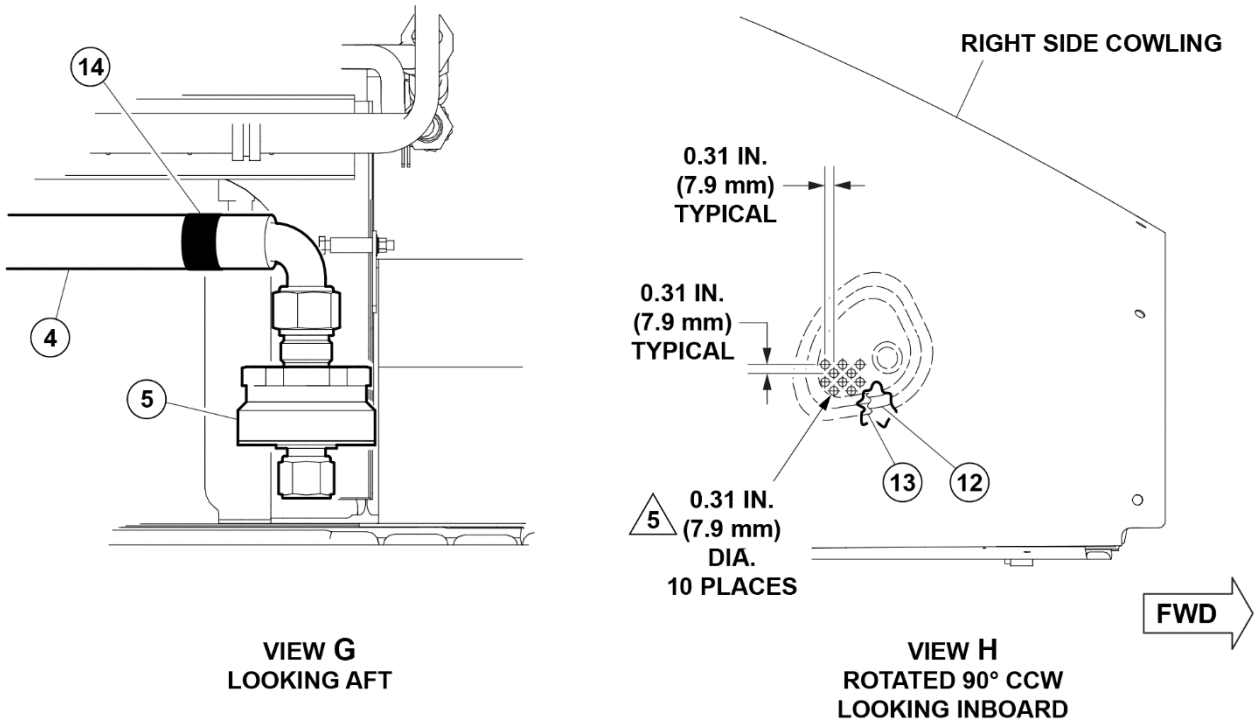


Figure 2 – Fuel Vent Relocation With The Air Conditioner (Page 2 of 3)



VIEW G
LOOKING AFT

VIEW H
ROTATED 90° CCW
LOOKING INBOARD

1. Angle (429-899-268-117)
2. Rivet (MS20470AD4-6)
3. Corner angle (429-899-268-117)
4. Hose assembly (429-899-268-103)
5. Forward rollover valve
6. Clamp (MS21919WDG17)
7. Clamp (MS21919WDG6)
8. Clamp (MS21919WDG11)
9. Screw (NAS1801-3-8)
10. Washer (NAS1149D0316J)
11. Nut (NAS9926-3L)
12. Housing assembly (429-899-268-105)
13. Seal (110-070-41)
14. Identification tape (31-099P4A027B)

T 12 TO 15 IN-LBS
(1.4 TO 1.7 Nm)

NOTES

1. Locate from corner angle.
2. Install only if edge disctance can be met.
3. Orient elbow in order to ensure maximum cleareance with adjacent structure.
4. The identification tape can be installed in either one of the locations depicted in the figure.
5. Locate hole pattern approximately as shown close to lower aft adjacent cowling seal.

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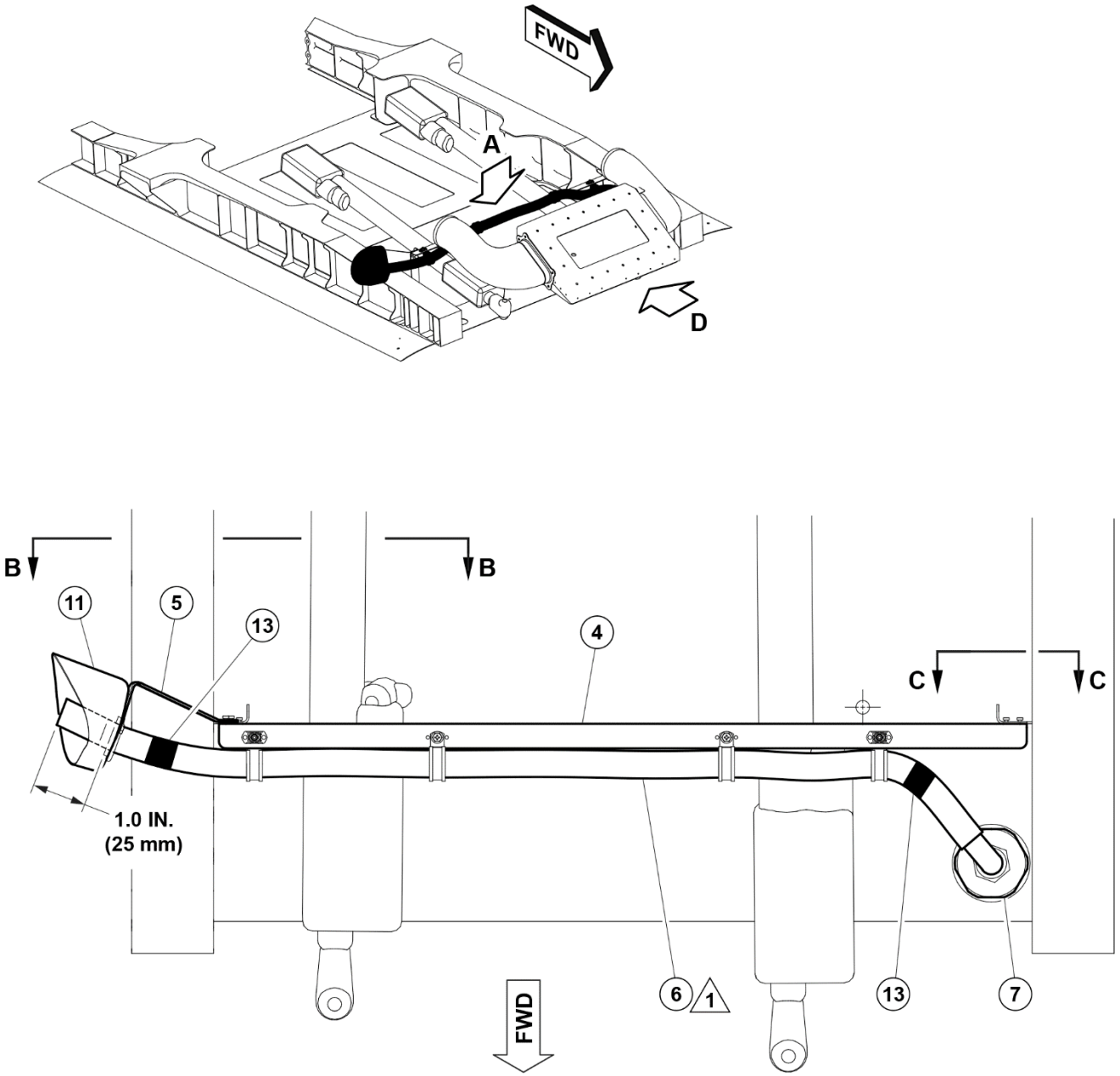
Figure 2 – Fuel Vent Relocation With The Air Conditioner (Page 3 of 3)



VIEW A

19902_003a

Figure 3 – Fuel Vent Relocation Without The Air Conditioner (Page 1 of 3)

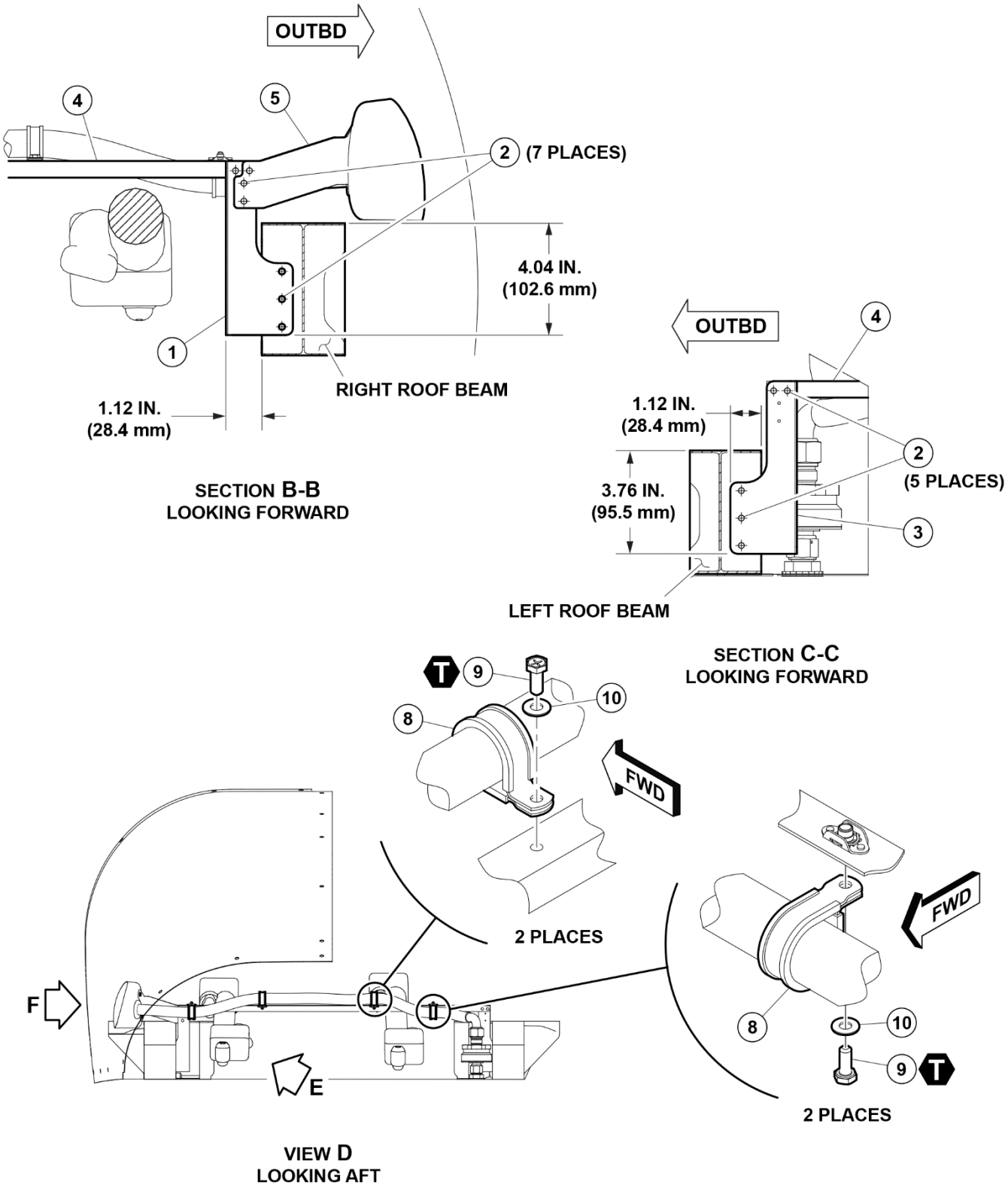
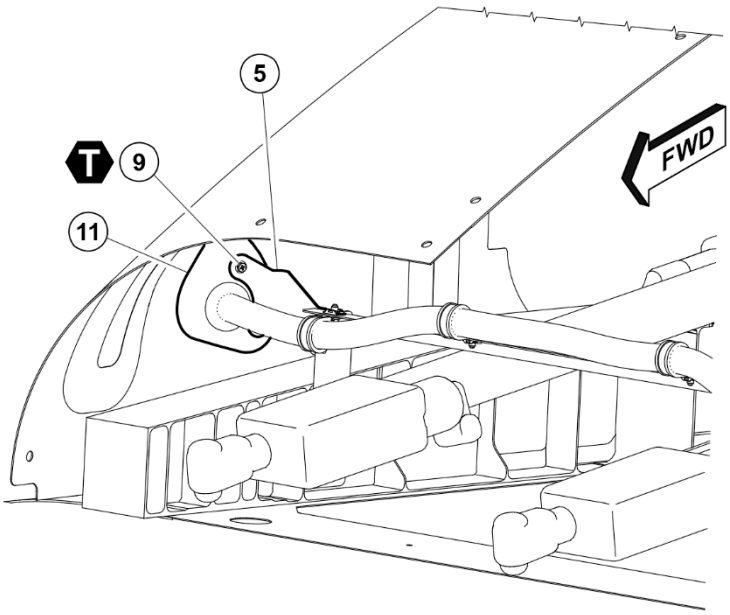
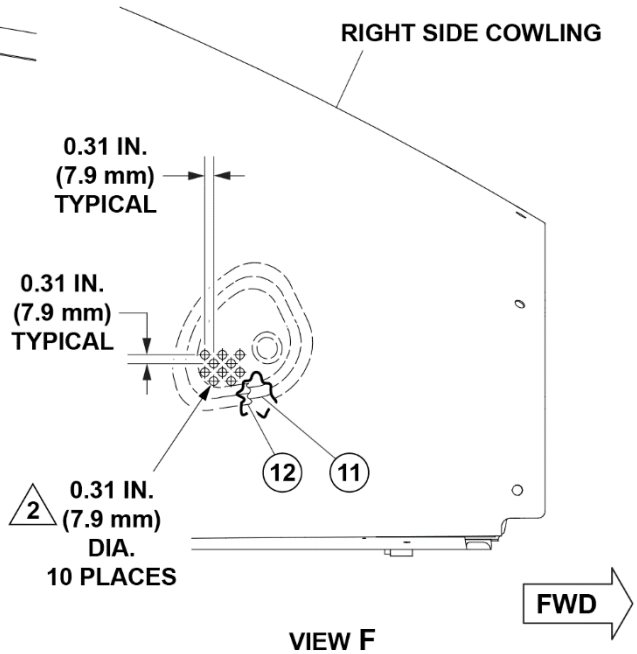


Figure 3 – Fuel Vent Relocation Without The Air Conditioner (Page 2 of 3)



VIEW E



VIEW F
LOOKING INBOARD

1. Fitting (429-899-279-101)
2. Rivet (MS20470AD4-6)
3. Fitting (429-899-279-102)
4. Support assembly (429-899-279-101)
5. Mount (429-899-279-105)
6. Fuel vent hose assembly (429-899-268-103)
7. Forward rollover valve
8. Clamp (MS21919WDG16)
9. Screw (NAS1801-3-8)
10. Washer (NAS1149D0316J)
11. Housing assembly (429-899-267-101)
12. Seal (110-070-41)
13. Identification tape (31-099P4A027B)

T 12 TO 15 IN-LBS
(1.4 TO 1.7 Nm)

NOTES

1. Orient elbow in order to ensure maximum clearance with adjacent structure.
2. Locate hole pattern approximately as shown close to lower aft adjacent cowling seal.

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Figure 3 – Fuel Vent Relocation Without The Air Conditioner (Page 3 of 3)

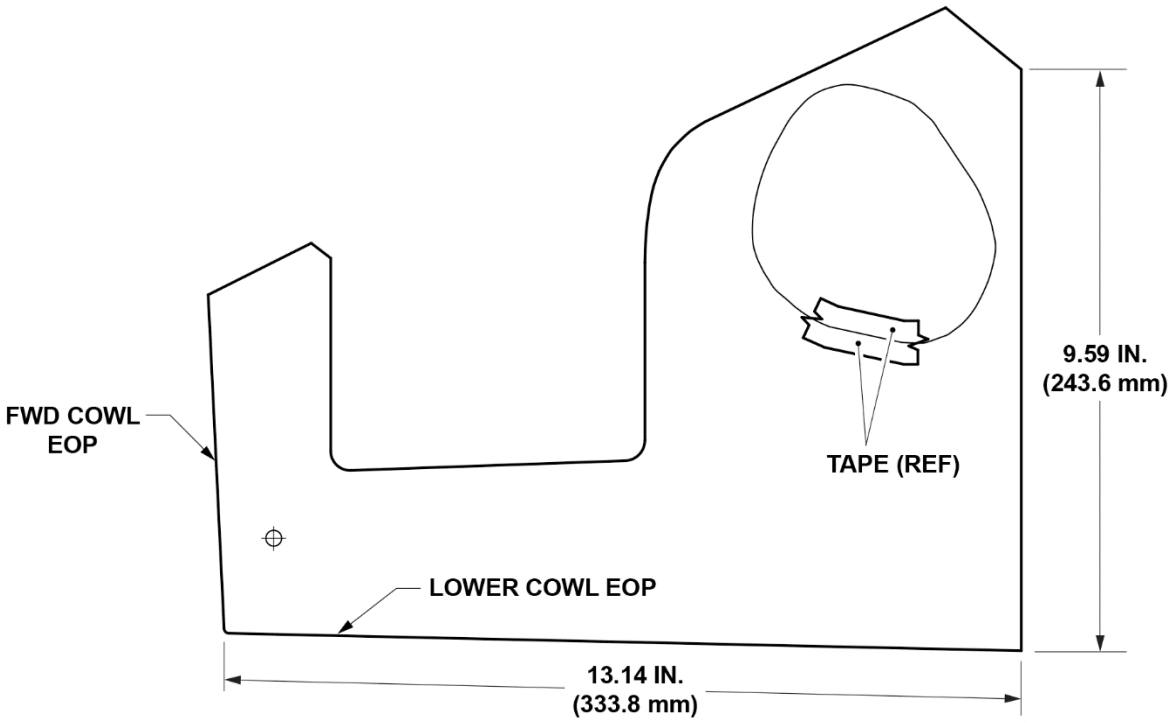

Figure 4 – Forward Cowl Assembly (600CR) Template