

CANCELED: Cascadia Radiator Update—EPA10 with Cummins ISX Engines

20-75

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FLC 112 Conventional

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Freightliner Service Bulletin

Description of Revisions: *This bulletin is canceled, and this procedure is no longer warrantable. Please see Freightliner Service Bulletin 20-77, Tuned Mass Absorber Installation, Cascadia with 1625 sq in Radiator, for the recommended procedure to address radiator coolant leaks due to a crack in the coolant tube.*

General Information

Some EPA10 compliant Cascadia vehicles, manufactured from start of production to the dates listed below, with specific combinations of engine operating parameters, may have radiator failures resulting in a coolant leak due to a crack in the coolant tube. See **Fig. 1**. Leaks in other places (at the end tank, header, fittings, or any place other than the coolant tubes) do not apply for this bulletin. If leaks occur in the coolant tubes, Freightliner recommends a radiator update to an isolated engine-mounted 1400 sq in radiator. This procedure is to replace a standard engine-mounted 1625 sq in radiator with an isolated engine-mounted 1400 sq in radiator. DTNA engineering has determined that the 1400 sq in radiator is within the guidelines to adequately cool all engines and horsepower ranges for this vehicle.

IMPORTANT: Beginning October 2012, ISX15 equipped vehicles are standard with isolated engine-mounted radiators. As these vehicles already have isolated engine-mounted radiators, they are not covered under this bulletin.

IMPORTANT: The required parts for this procedure will vary depending on the vehicle BBC measurement and the type of engine and transmission installed. Refer to the tables under "Parts" for lists of required parts for the vehicle being serviced.

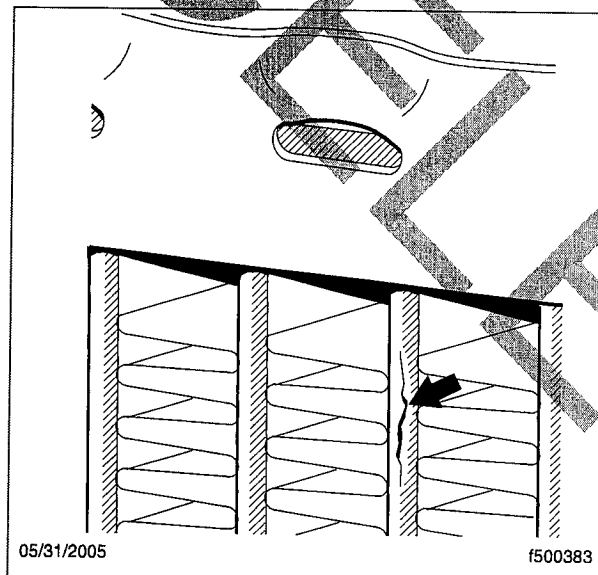


Fig. 1, Crack in Coolant Tube

Replacement

1. Park the vehicle on a level surface, shut down the engine, and set the parking brake. Chock the tires.
2. Open the hood.

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3. Remove the bumper. For instructions, refer to **Group 31** of the *Cascadia Workshop Manual*.
4. Drain the coolant from the radiator and engine block.
5. Remove the hood. For instructions, see **Section 88.00, Subject 100** of the *Cascadia Workshop Manual*.
6. Remove the charge air cooler (CAC) hoses.
7. Remove the surge tank. For instructions, see **Section 20.00, Subject 110** of the *Cascadia Workshop Manual*.
8. Remove the upper radiator hose and discard.
9. Remove the three radiator strut rods and discard them.
10. Remove the upper fan shroud and discard.
11. Remove the fan. For instructions, refer to **Group 20** of the *Cascadia Workshop Manual*.
12. Loosen the A/C condenser and move it out of the way as follows.
 - 12.1 Remove the receiver-drier and upper A/C hose mounting nuts, then free the receiver-drier. See **Fig. 2**.

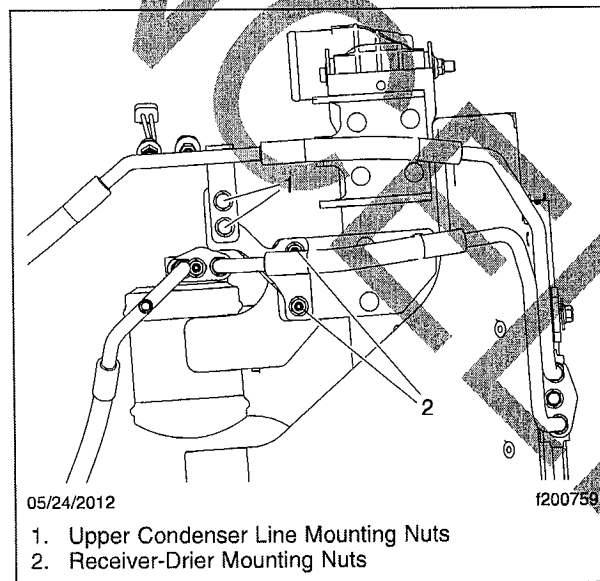


Fig. 2, Receiver-Drier Installation (typical)

- 12.2 Unbolt the A/C condenser from the CAC. See **Fig. 3**.

NOTE: Wrap the condenser in cardboard to protect it while it is moved.

- 12.3 Carefully move the condenser around and set it on right front tire. Secure it as needed. See **Fig. 8**.

13. Disconnect the transmission cooler lines from the radiator. Cap or plug the fittings to prevent spills.
14. Disconnect the lower radiator hose from the radiator, engine, and cross tube. Leave the lower coolant tube attached to the radiator mount.

NOTE: On some vehicles the CAC will have to be removed when radiator is out of the chassis.

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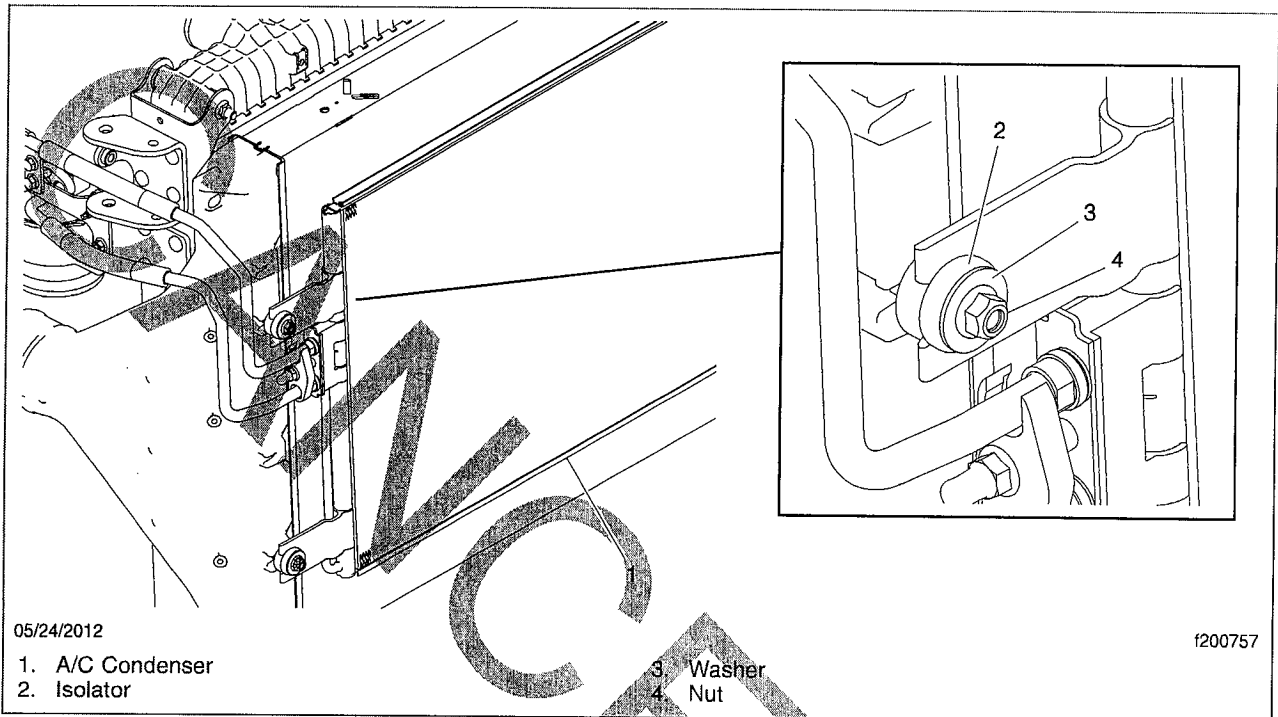


Fig. 3, A/C Condenser Installation

15. Remove the CAC from the radiator leaving the baffles bolted to the CAC.
16. Unbolt the radiator from the lower mount.
17. Using an appropriate lifting device, remove the radiator assembly from vehicle.
18. Remove the lower radiator mounting brackets, with the lower radiator tube attached, from the engine and discard them.

NOTE: Keep all of the transmission cooler line mounting hardware for reuse when installing the new lines.

19. Remove the transmission cooler lines. Cap or plug the fittings at the transmission and on the lines to prevent spills.
20. Install the new bell housing studs in the transmission bellhousing. Tighten 38 to 45 lbf-ft (52 to 61 N·m). See **Fig. 4**.
21. Install the new transmission cooler line bracket. See **Fig. 4**.
22. Attach the power cables as needed.

NOTE: Leave the clamps loose enough to be able to move the lines as needed when hooking up the jumper lines later.

23. Install the new transmission cooler lines from the transmission to the jumper lines on the radiator. Do not install the jumper lines at this time. See **Fig. 5**, **Fig. 6**, and **Fig. 7**. For more vehicle-specific plumbing diagrams refer to EZWiring in PartsPro.

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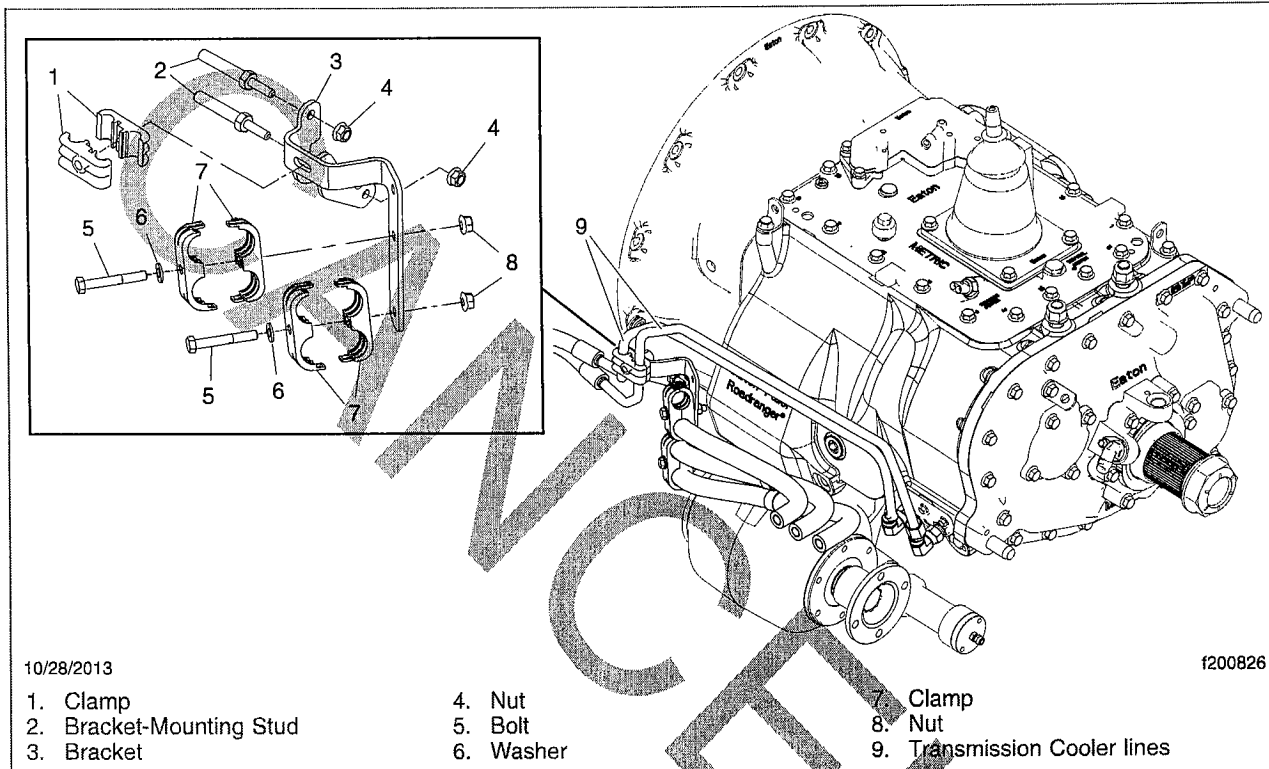


Fig. 4, Bell Housing Studs and Transmission Cooler Line Bracket

24. Install the lower radiator mounting brackets. See **Fig. 9**. Tighten 191 to 234 lbf-ft (260 to 317 N·m).
 25. Inspect the CAC isolators. If they are damaged, replace them with CAC hardware kit MOD 3S054916.
- NOTE: It may be easier to install the CAC when the radiator is positioned in the chassis.
26. Install the CAC on the new radiator. Tighten the mounting bolts 22 lbf-ft (38 N·m)
 27. Install the new fan shroud on the new radiator. See **Fig. 10**.
 28. On vehicles equipped with a VORAD collision warning system, remove the forward antenna cover and forward antenna from the mounting bracket, then remove the bracket from the front closing crossmember. See **Fig. 12**.
- On vehicles equipped with an OnGuard™ collision warning system, remove the antenna and mounting bracket assembly from the front closing crossmember. See **Fig. 13**.
- NOTE: The lower baffle may need to be modified to fit some forward frame options.
29. Install the new lower baffle on the front closing crossmember. See **Fig. 11**.
 30. Install the forward antenna. See **Fig. 12** for VORAD bracket and antenna installation, or **Fig. 13** for OnGuard™ antenna and bracket assembly installation.
 31. Apply sealant (48-00094-141) to the threads of the fasteners, then install the fan. Tighten 30 lbf-ft (41 N·m).
 32. Install the new transmission cooler jumper lines on the radiator. See **Fig. 14**.

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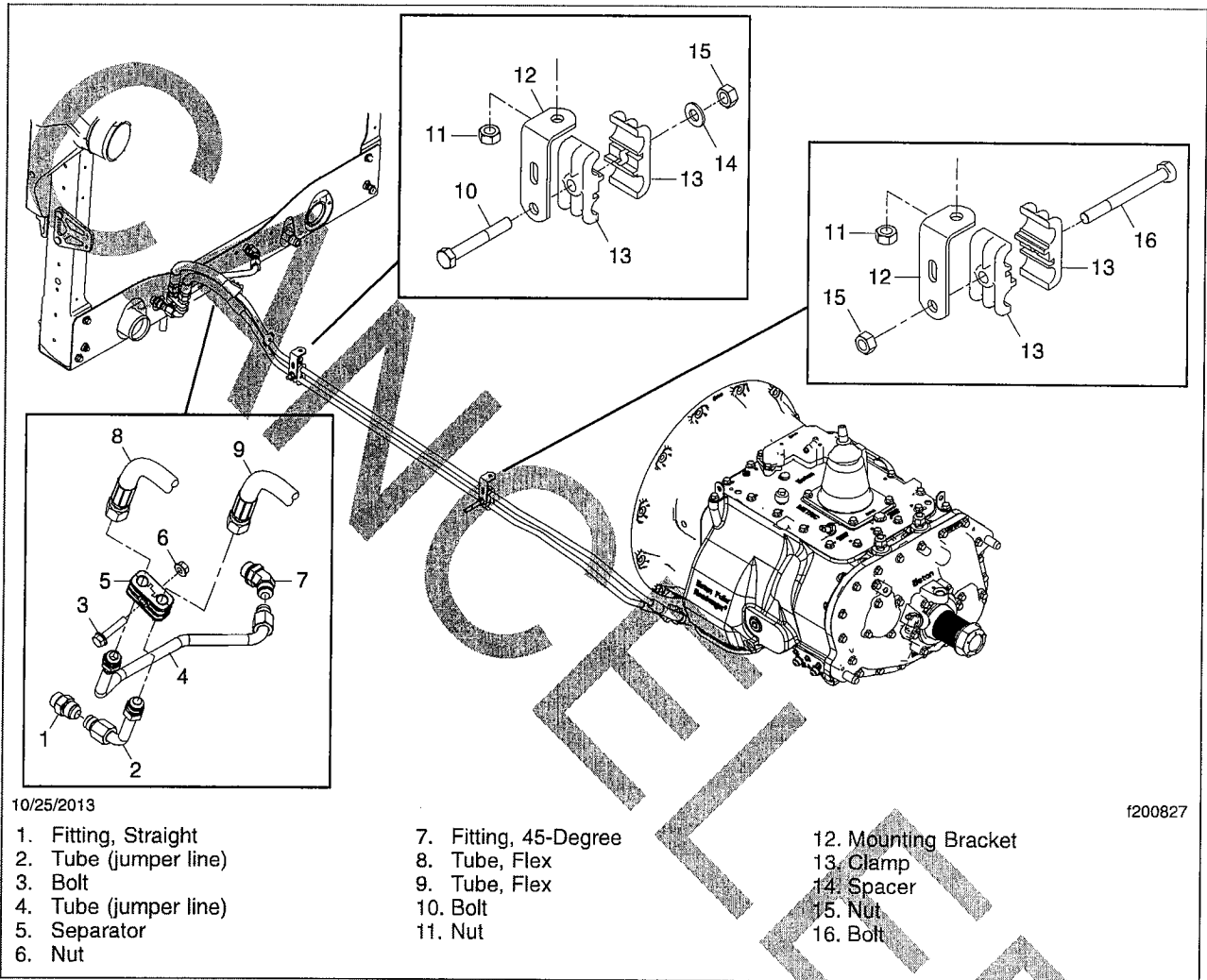


Fig. 5, Transmission Cooler Line Installation (typical)

33. Using an appropriate lifting device, position the new radiator assembly in the vehicle. Install the mounting nuts, but do not tighten them yet. See Fig. 15.
34. Install the new radiator strut rods. See Fig. 16. Do not tighten the mounting fasteners yet.
35. Install the upper radiator hose. See Fig. 17.

NOTICE

The cooler lines are routed close to the fan. Make sure that the lines are secure and have no chance of contacting the fan. Failure to do so may allow the fan to damage the line, causing a leak and potential transmission damage.

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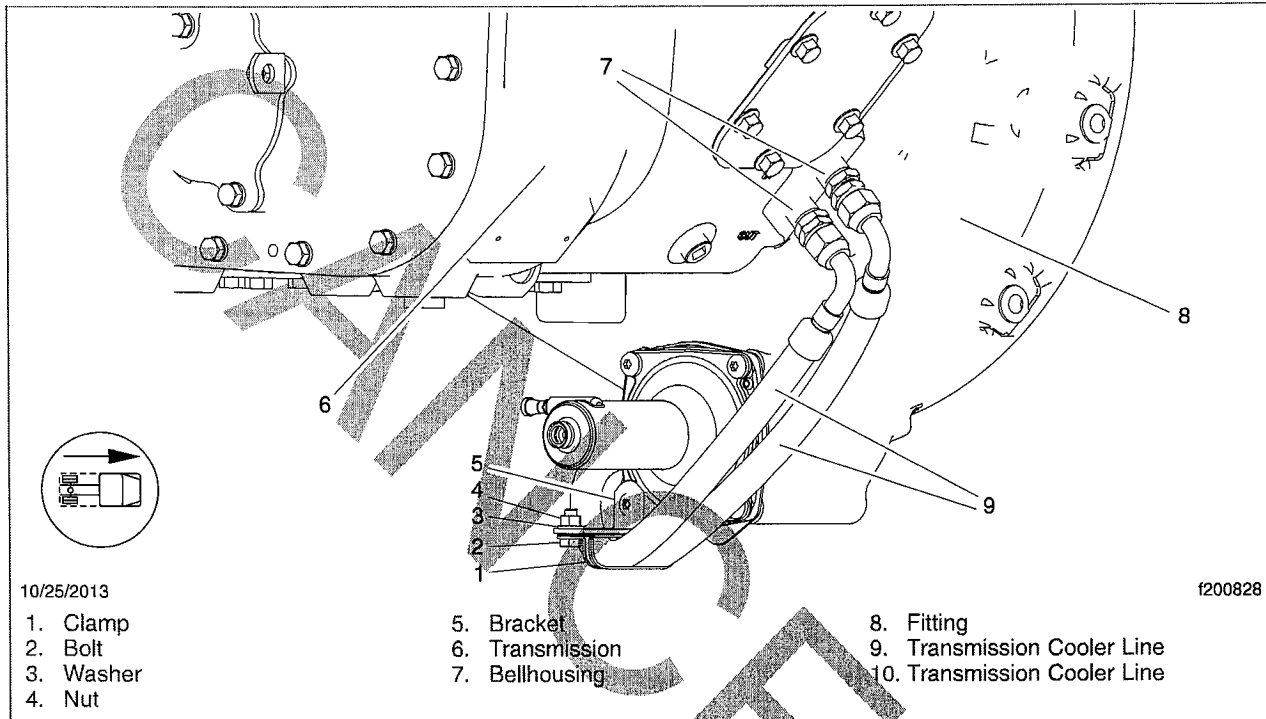


Fig. 6, Transmission Cooler Line Installation, with Filter

36. Connect the transmission cooler lines to the jumper lines on the radiator.

NOTICE

Make sure all of the lines are secure and are away from the fan. Use double zipties if needed. Failure to properly secure the lines may lead to line damage, leaks, and possible transmission failure.

37. Tighten all of the cooler line mounting fasteners.
38. Install the lower radiator hose assembly. See **Fig. 17**.
39. Install the A/C condenser as follows.
 - 39.1 Move the condenser into position and secure it temporarily. See **Fig. 3**.
 - 39.2 Position the receiver-drier and upper A/C line on their respective brackets and install the mounting nuts. See **Fig. 2**. Tighten the nuts 14 to 16 lbf-ft (19 to 22 N-m).
 - 39.3 Tighten the condenser mounting bolts 112 to 144 lbf-in (1266 to 1627 N-cm).
40. Tighten the radiator strut rod fasteners at the radiator and at the engine 55 to 65 lbf-ft (75 to 90 N-m).
41. Tighten the radiator mounting nuts 140 to 170 lbf-ft (190 to 230 N-m).
42. Install the surge tank. For instructions, see **Section 88.00, Subject 100** in the *Cascadia Workshop Manual*.
43. Install the CAC hoses.
44. Fill the cooling system following the air purge procedure in the **Cummins Engine Manual**.

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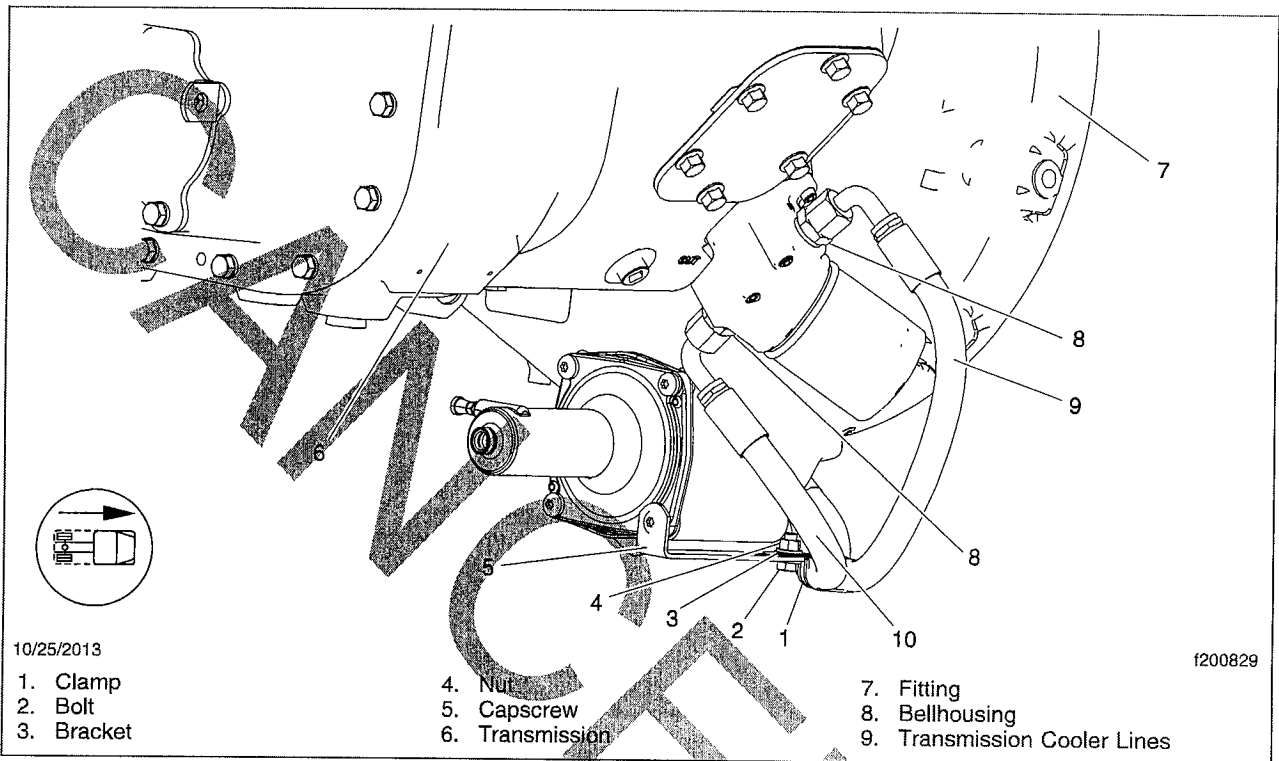


Fig. 7, Transmission Cooler Line Installation, without Filter

45. Pressure check the coolant system for leaks. Repair as needed.
46. Install the hood. For instructions, see **Section 88.00, Subject 100** in the *Cascadia Workshop Manual*.
47. Install the bumper. For instructions, refer to **Group 31** of the *Cascadia Workshop Manual*.
48. Drive the vehicle to get it up to operating temperature.
49. Check all the transmission cooling lines for leaks. Repair as needed.
50. Check coolant and transmission fluid levels. Add fluids as needed.

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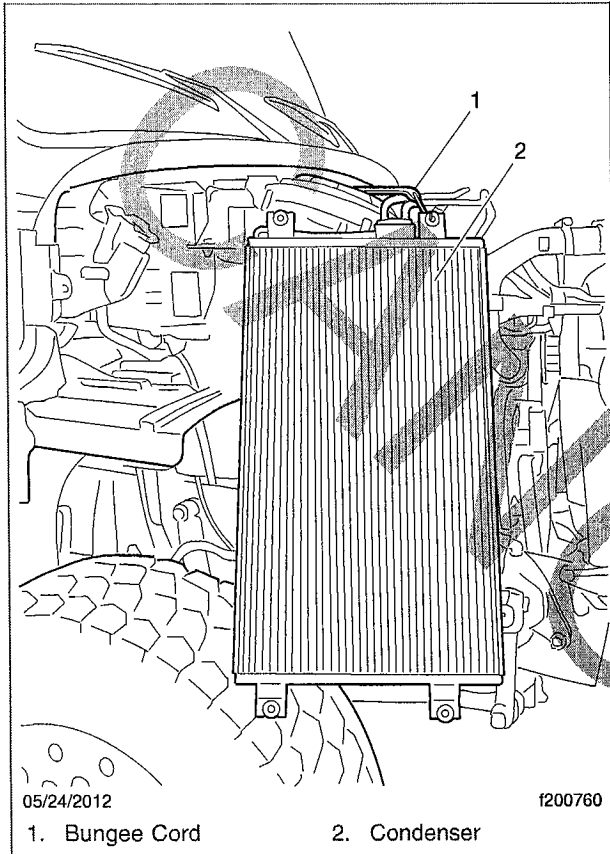


Fig. 8, Securing the A/C Condenser

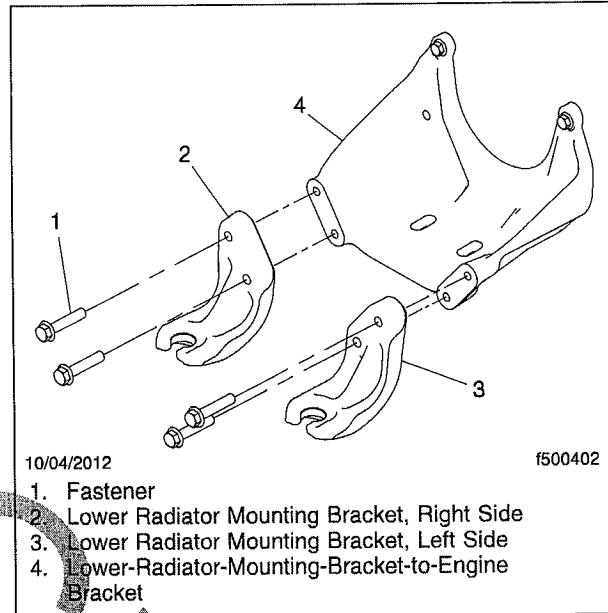


Fig. 9, Lower Radiator Mounting Brackets Installation

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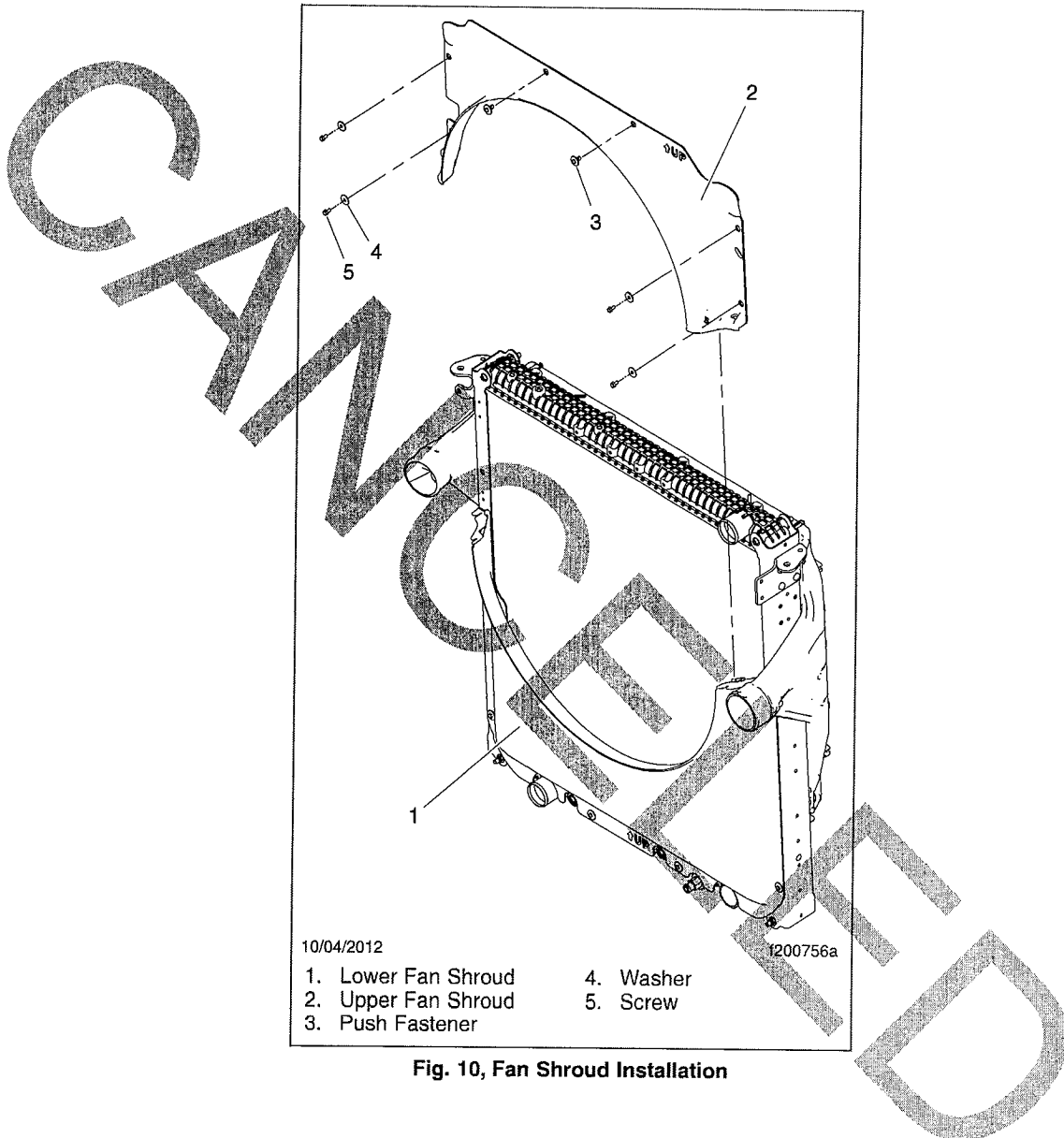
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- 1. Lower Fan Shroud
- 2. Upper Fan Shroud
- 3. Push Fastener
- 4. Washer
- 5. Screw

Fig. 10, Fan Shroud Installation

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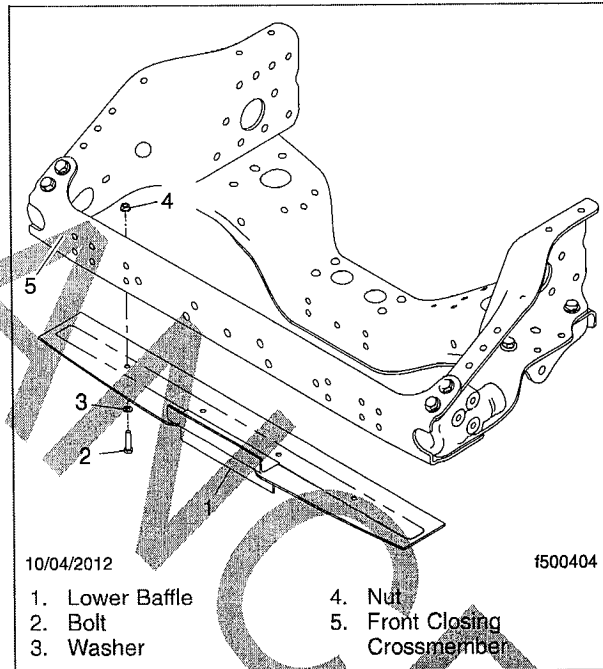


Fig. 11, Lower Baffle Installation

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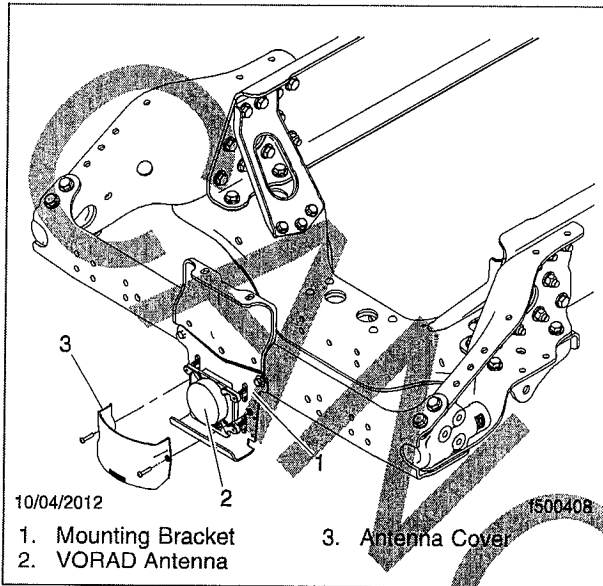


Fig. 12, VORAD Bracket and Antenna Installation

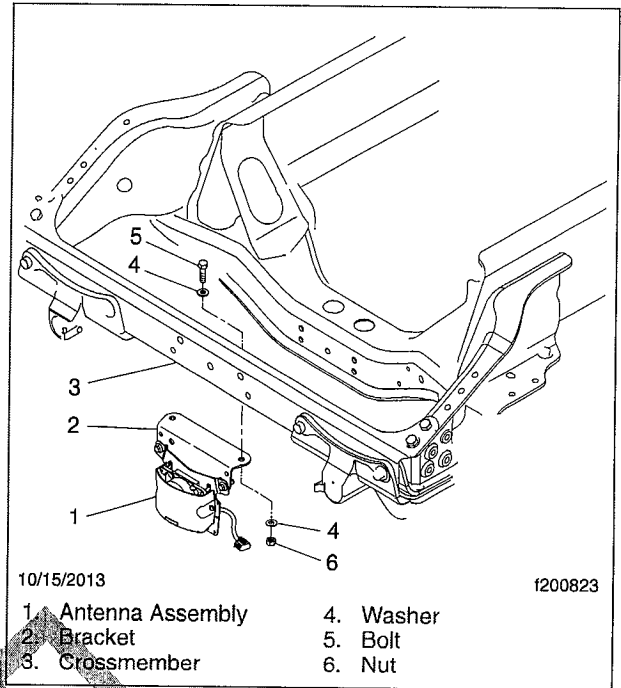


Fig. 13, OnGuard™ Antenna and Bracket Assembly Installation

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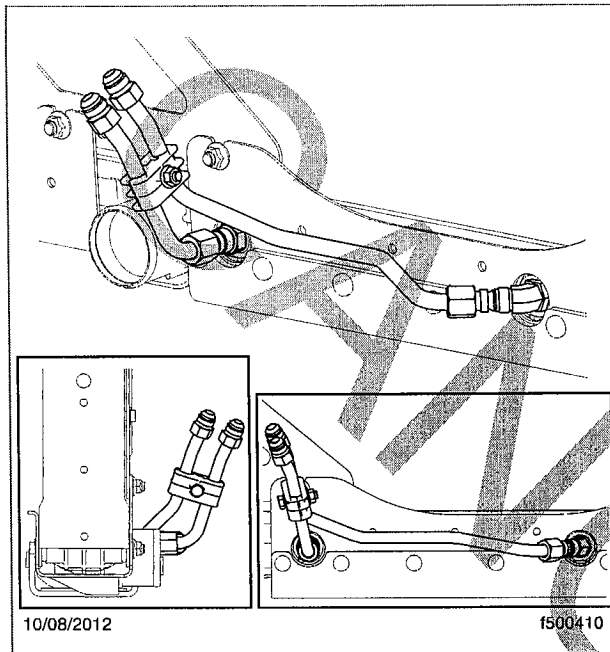


Fig. 14, Transmission Cooler Jumper Line Installation

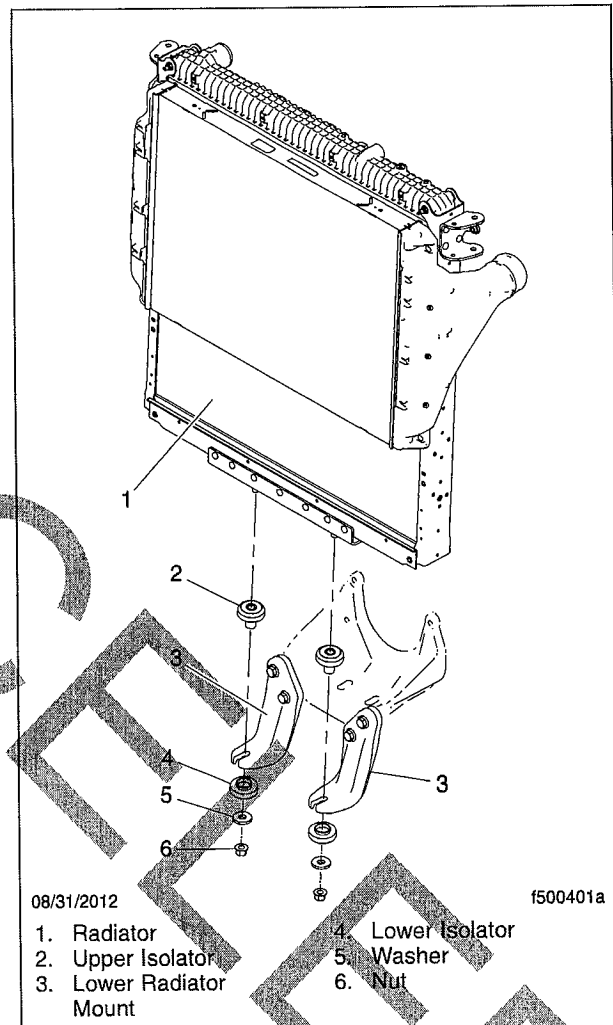


Fig. 15, Radiator Installation

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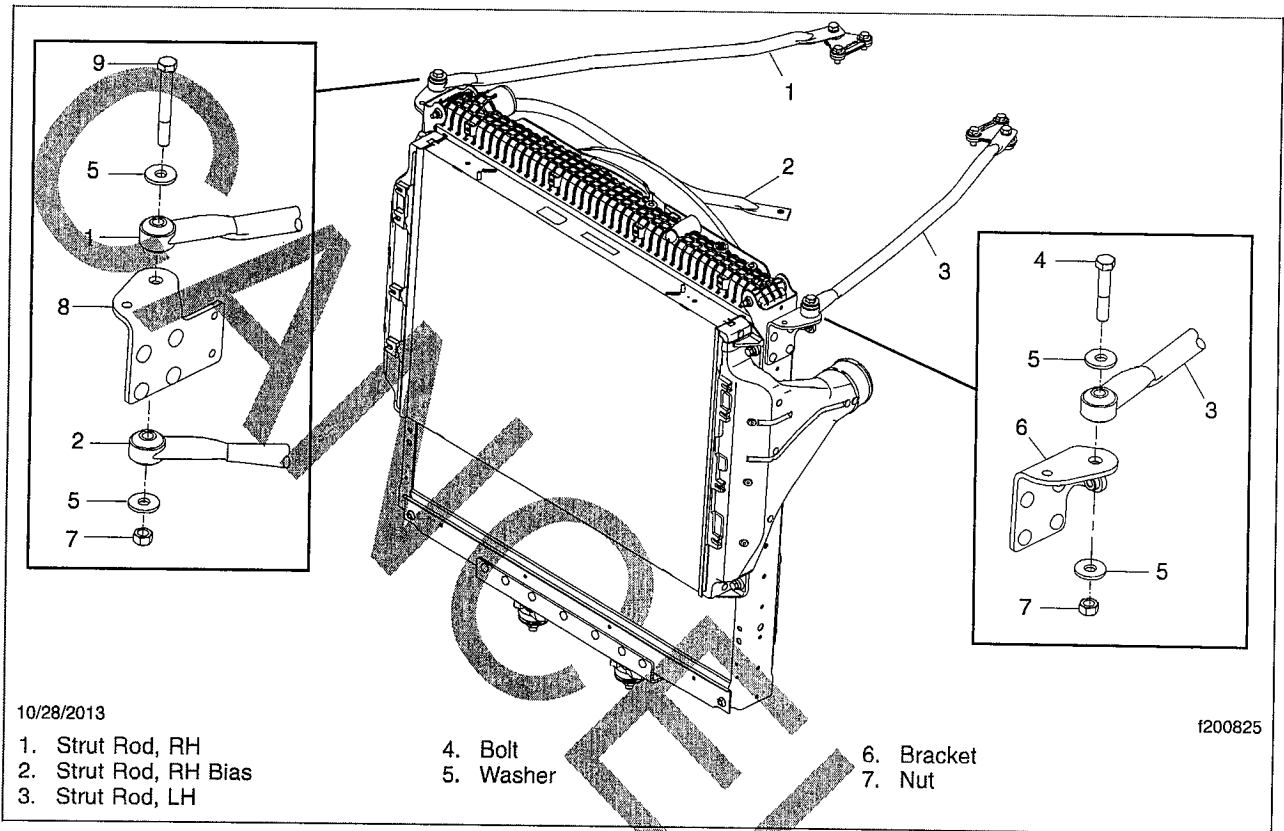


Fig. 16, Isolated Radiator Strut Rod Installation

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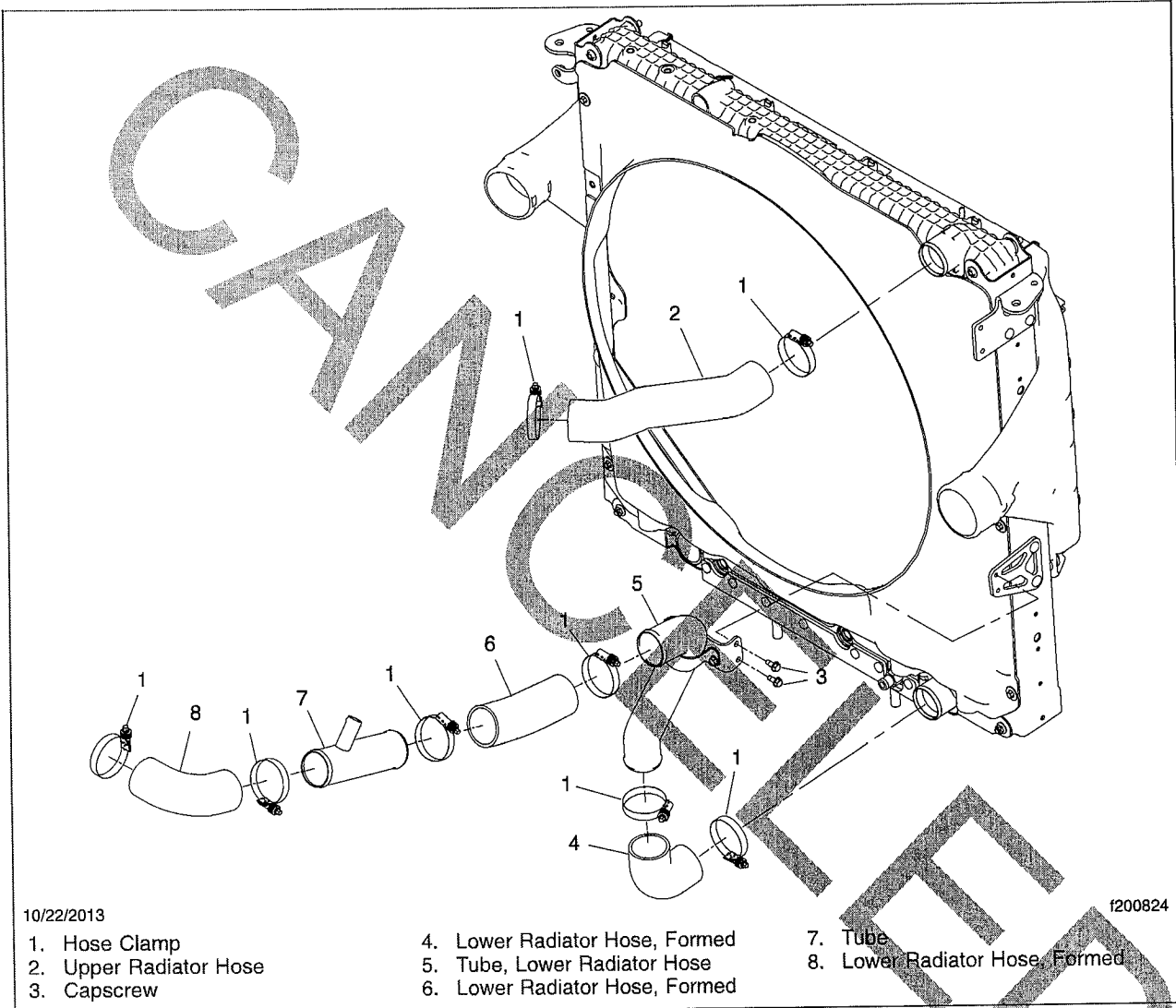


Fig. 17, Radiator Hose Installation

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Parts

Parts are available through the PDC.

Required part for this procedure will vary depending on the vehicle BBC measurement and the type of engine and transmission installed. **Table 1** lists all vehicle configurations and which tables to use to order parts for the vehicle being serviced.

| Required Parts by Vehicle Configuration | | | |
|---|---------------------|---|--------------------------------------|
| BBC and Engine | Radiator Conversion | Transmission | Transmission Cooling Line Conversion |
| 113 BBC with Cummins ISX12 Engine (no Trans Cooler) | Table 2 | Eaton FR/O | Table 3 |
| | | Eaton RT | Table 4 |
| | | Eaton ECA | Table 5 |
| | | ECA with external trans filter | Table 6 |
| 125 BBC with Cummins ISX15 Engine (no Trans Cooler) | Table 7 | Eaton RT | Table 9 |
| | | Eaton ECA | Table 10 |
| | | Eaton ECA with External Transmission Filter | Table 11 |
| 125 BBC with Cummins ISX15 Engine | Table 8 | Eaton FR/O | N/A |

Table 1, Vehicle Configuration and Required Parts

| Cascadia 113 (ISX12) - 1625 to 1400 Radiator Conversion | | |
|---|------------------------------------|-----|
| Part number | Description | QTY |
| MOD 3S0580800002 | RADIATOR M1400,BO,RSO,ITOC | 1 |
| A05-30969-000 | SHROUD-FAN,1400 (P3113) | 1 |
| A05-30679-000 | RECIRC-BAFFLE,P3,M1400, Bottom | 1 |
| 23-12274-003 | RIVET-PUSH-TYPE,REUSABLE,.315" | 8 |
| 000933 010200 | SCREW-CAP,HEX,M10X30,10.9,ZN | 4 |
| 23-12707-010 | WASHER-FLAT,SSTL,M10-20MMX2MM | 4 |
| 23-12668-010 | NUT-HEX,FLNG,M10-1.5,ZN AL | 4 |
| 05-30581-000 | BRKT-RAD SUPT,BTM CHNL,1400,LH,ISO | 1 |
| 05-30581-001 | BRKT-RAD SUPT,BTM CHNL,1400,RH,ISO | 1 |
| 23-13509-065 | SCRW HX FLNG,M16-1.5X65,10.9 | 4 |
| BCD 27463 14 | ISOLATOR-RAD,LWR,KIT | 2 |
| A05-30744-000 | STRUT-RAD,ISX 11.9,MED,LH,ISO | 1 |
| A05-30745-000 | STRUT-RAD,ISX 11.9,MED,RH,ISO | 1 |
| A05-30746-000 | STRUT-RAD,ISX 11.9,MED,BIAS, | 1 |
| 23-11751-250 | SCREW-CAP,HEX,1/2-13,GR8,ZNDI | 1 |
| 23-11751-400 | SCREW-CAP,HEX,1/2-13,GR8,ZN | 1 |
| 23-13833-108 | NUT-HEX,PT,1/2-13,C,ZN/AL,.448 | 2 |
| A05-29076-000 | ASSY-TUBE,LWR RAD,P3,ISX | 1 |
| A05-30827-000 | TUBE-LWR RAD,P3,ISX,M1400 | 1 |

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| Cascadia 113 (ISX12) - 1625 to 1400 Radiator Conversion | | |
|---|--------------------------------|-----|
| Part number | Description | QTY |
| 05-16836-205 | HOSE-ECR,2.50"ID | 1 |
| 05-25925-003 | HOSE-COOLANT,LWR,ELBOW,ECR | 1 |
| 05-29916-000 | HOSE-CLNT,UPR,ISX 11.9 | 1 |
| 05-29973-007 | HOSE-ELB,90DEG,ECR,206 ID | 1 |
| 23-12237-075 | SCREW-HWH,SERR,THDRLG,5/16-18 | 2 |
| 23-12485-250 | CLAMP-WORM,CONSTANT,2-1/2 HOSE | 8 |
| A22-69862-000 | BRKT ASSY-AC,H02,MID PIPE | 1 |

Table 2, Cascadia 113 (ISX12) - 1625 to 1400 Radiator Conversion

| Cascadia 113 (ISX12) - Manual Transmission Cooler Plumbing Eaton FR/O | | |
|---|--------------------------------|-----|
| Part number | Description | QTY |
| A07-22714-000 | TUBE-SUPPLY,FWD,JUMPER,M1400 | 1 |
| A07-22715-000 | TUBE-RETURN,FWD JUMPER,M1400 | 1 |
| 07-22829-000 | TUBE-SUPPLY,ISX12,FR | 1 |
| 07-22830-000 | TUBE-RETURN,ISX11.9,FR,1400 | 1 |
| N910143 008005 | SCRW HEX,ELNG,M8X1.25X40, | 1 |
| DDE N910112008000 | NUT,HX FLNG MTRC,M8X1.25,CLS 8 | 2 |
| PH 8 C6X S | SWIVEL-90 DEG,8 C6X,FTG | 2 |
| 23-13426-005 | BRACKET,ANGLE,STANDOFF | 8 |
| 23-12912-800 | ELB-45,VITON O RING,#8 | 1 |
| 23-13039-008 | CONN-STR THRD,VITON O-RING | 1 |
| 23-13687-000 | CLAMP TUBE SNAP VERSION | 8 |
| 06-88031-000 | BRKT-BATT CBL RTG,PTO,FLYWHEEL | 1 |

Table 3, Cascadia 113 (ISX12) - Manual Transmission Cooler Plumbing Eaton FR/O

| Cascadia 113 (ISX12) - Manual Transmission Cooler Plumbing Eaton RT | | |
|---|--------------------------------|-----|
| Part number | Description | QTY |
| A07-22714-000 | TUBE-SUPPLY,FWD,JUMPER,M1400 | 1 |
| A07-22715-000 | TUBE-RETURN,FWD JUMPER,M1400 | 1 |
| 07-22823-000 | TUBE-SUPPLY,ISX 11.9,HYD-RT | 1 |
| 07-22824-000 | TUBE-RETURN,ISX,11.9 | 1 |
| N910143 008005 | SCRW HEX FLNG,M8X1.25X40, | 1 |
| DDE N910112008000 | NUT,HX FLNG MTRC,M8X1.25,CLS 8 | 2 |
| 23-11472-044 | CONN-MALE,STL,#8 37DJIC,#8MPT | 2 |
| 23-13426-005 | BRACKET,ANGLE,STANDOFF | 3 |
| 23-12912-800 | ELB-45,VITON O RING,#8 | 1 |
| 23-13039-008 | CONN-STR THRD,VITON O-RING | 1 |
| 23-13687-000 | CLAMP TUBE SNAP VERSION | 8 |
| A07-22589-000 | BRACKET-STANDOFF,M8 | 1 |

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| Cascadia 113 (ISX12) - Manual Transmission Cooler Plumbing Eaton RT | | |
|---|---------------------|-----|
| Part number | Description | QTY |
| A07-22787-000 | BRACKET-STANDOFF,M8 | 1 |

Table 4, Cascadia 113 (ISX12) - Manual Transmission Cooler Plumbing Eaton RT

| Cascadia 113 (ISX12) - Manual Transmission Cooler Plumbing Eaton ECA | | |
|--|--------------------------------|-----|
| Part number | Description | QTY |
| A07-22714-000 | TUBE-SUPPLY,FWD,JUMPER,M1400 | 1 |
| A07-22715-000 | TUBE-RETURN,FWD JUMPER,M1400 | 1 |
| 07-22776-001 | TUBE-RETURN,ISX11.9,ULTRASHIFT | 1 |
| 07-22777-001 | TUBE-SUPPLY,ITOC,ISX11.9,ULTRA | 1 |
| N910143 008005 | SCRW HEX FLNG,M8X1.25X40, | 1 |
| DDE N910112008000 | NUT,HX FLNG MTRC,M8X1.25,CLS 8 | 2 |
| 23-11472-044 | CONN-MALE,STL,#8 37DJIC,#8MPT | 2 |
| 23-13426-005 | BRACKET,ANGLE,STANDOFF | 2 |
| 23-12912-800 | ELB-45,VITON O RING,#8 | 1 |
| 23-13039-008 | CONN-STR THRD,VITON O-RING | 1 |
| 23-13687-000 | CLAMP TUBE SNAP VERSION | 8 |
| A07-22589-000 | BRACKET-STANDOFF,M8 | 1 |
| A07-22787-000 | BRACKET-STANDOFF,M8 | 1 |

Table 5, Cascadia 113 (ISX12) - Manual Transmission Cooler Plumbing Eaton ECA

| Cascadia 113 (ISX12) - Manual Transmission Cooler Plumbing Eaton ECA with external trans filter | | |
|---|--------------------------------|-----|
| Part number | Description | QTY |
| A07-22714-000 | TUBE-SUPPLY,FWD,JUMPER,M1400 | 1 |
| A07-22715-000 | TUBE-RETURN,FWD JUMPER,M1400 | 1 |
| 07-22776-000 | TUBE-RETURN,ISX11.9,ULTRASHIFT | 1 |
| 07-22777-000 | TUBE-SUPPLY,ITOC,ISX11.9,ULTRA | 1 |
| N910143 008005 | SCRW HEX FLNG,M8X1.25X40, | 1 |
| DDE N910112008000 | NUT,HX FLNG MTRC,M8X1.25,CLS 8 | 2 |
| 23-11472-044 | CONN-MALE,STL,#8 37DJIC,#8MPT | 2 |
| 23-13426-005 | BRACKET,ANGLE,STANDOFF | 3 |
| 23-12912-800 | ELB-45,VITON O RING,#8 | 1 |
| 23-13039-008 | CONN-STR THRD,VITON O-RING | 1 |
| 23-13687-000 | CLAMP TUBE SNAP VERSION | 8 |
| A07-22589-000 | BRACKET-STANDOFF,M8 | 1 |
| A07-22787-000 | BRACKET-STANDOFF,M8 | 1 |

Table 6, Cascadia 113 (ISX12) - Manual Transmission Cooler Plumbing Eaton ECA with external trans filter

| Cascadia 125 (ISX15) - 1625 TO 1400 RAD CONVERSION LIST w/o TrCI | | |
|--|----------------------------|----------|
| Part Number | Description | Quantity |
| MOD 3S0580800002 | RADIATOR M1400,BO,RSO,ITOC | 1 |

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CANCELED: Cascadia Radiator Update—EPA10 with Cummins ISX Engines

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FLA COE
FLB COE
FLD Conventional
Business Class
FLC 112 Conventional

Century Class Conventional
Argosy COE
Cargo
Columbia

Coronado
Business Class M2
> Cascadia
108SD/114SD

| Cascadia 125 (ISX15) - 1625 TO 1400 RAD CONVERSION LIST w/o TrCI | | |
|--|------------------------------------|----------|
| Part Number | Description | Quantity |
| A05-30850-000 | SHROUD-FAN,1400 (P3125) | 1 |
| 23-12274-003 | RIVET-PUSH-TYPE,REUSABLE,.315" | 8 |
| 23-10800-050 | SCREW-HWH,THDRLG,1/4-20X1/2 | 8 |
| 23-09426-203 | WASHER-PLTD STL,1/4X1.0" | 8 |
| A05-30679-000 | RECIRC-BAFFLE,P3,M1400, Bottom | 1 |
| N304017 010038 | SCREW-CAP,HEX M10X30 10.9 ZN | 4 |
| 23-12707-010 | WASHER-FLAT,SSTL,M10-20MMX2MM | 4 |
| 23-12668-010 | NUT-HEX,FLNG,M10-1.5,ZN AL | 4 |
| 05-30581-000 | BRKT-RAD SUPT,BTM CHNL,1400,LH,ISO | 1 |
| 05-30581-001 | BRKT-RAD SUPT,BTM CHNL,1400,RH,ISO | 1 |
| 23-13509-065 | SCRW HX FLNG,M16-1.5X65,10.9 | 4 |
| N210100 016000 | NUT-FLG HD,M16,CLASS 10, P & O | 2 |
| 01-20963-001 | WASHER-HARDND STL,.656X2.5" | 2 |
| BCD 27463 14 | ISOLATOR-RAD,LWR,KIT | 2 |
| A05-30741-000 | STRUT-RAD,ISX,MED,LH,ISO | 1 |
| A05-30742-000 | STRUT-RAD,ISX,MED,RH,ISO | 1 |
| A05-30743-000 | STRUT-RAD,ISX,MED,BIAS,ISO | 1 |
| 23-11751-250 | SCREW-CAP,HEX,1/2-13,GR8,ZNDI | 1 |
| 23-11751-400 | SCREW-CAP,HEX,1/2-13,GR8,ZN | 1 |
| 23-13833-108 | NUT-HEX,PT,1/2-13,C,ZN/AL,448 | 2 |
| 23-09114-017 | WASHER-HRDN,0.63X1.38X | 4 |
| A05-29076-000 | ASSY-TUBE,LWR RAD,P3,ISX | 1 |
| A05-30827-000 | TUBE-LWR RAD,P3,ISX,M1400 | 1 |
| GT 4175SC250 | HOSE-ECR,2.50"ID | 1 |
| 05-25925-003 | HOSE-COOLANT,LWR,ELBOW,ECR | 1 |
| 05-27689-001 | HOSE-CLNT,UPR,ISX,P2,MEX,ECR | 1 |
| 05-29973-007 | HOSE-ELB,90DEG,ECR,206 ID | 1 |
| 23-12237-075 | SCREW-HWH,SERR,THDRLG,5/16-18 | 2 |
| 23-12485-250 | CLAMP-WORM,CONSTANT,2-1/2 HOSE | 8 |
| A22-69862-000 | BRKT ASSY-AC,H02,MID PIPE | 1 |
| A07-22714-000 | TUBE-SUPPLY,FWD,JUMPER,M1400 | 1 |
| A07-22715-000 | TUBE-RETURN,FWD JUMPER,M1400 | 1 |
| 23-09114-006 | WASHER-HRDN,0.34X0.69X.080,ZN | 3 |
| 23-13862-105 | NUT-HEX,FLG,5/16-18 | 5 |
| 23-09434-175 | SCREW-CAP,HEX5/16-18X1.75GR8PO | 2 |

Table 7, Cascadia 125 (ISX15) - 1625 TO 1400 RAD CONVERSION LIST w/o TrCI

| Cascadia 125 (ISX15) - 1625 TO 1400 RAD CONVERSION LIST w/ TrCI Eaton FR/O | | |
|--|----------------------------|-----|
| Part number | Description | QTY |
| MOD 3S0580800002 | RADIATOR M1400,BO,RSO,ITOC | 1 |
| A05-30850-000 | SHROUD-FAN,1400 (P3125) | 1 |

CANCELED: Cascadia Radiator Update—EPA10 with Cummins ISX Engines

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FLA COE
FLB COE
FLD Conventional
Business Class
FLC 112 Conventional

Century Class Conventional
Argosy COE
Cargo
Columbia

Coronado
Business Class M2
> Cascadia
108SD/114SD

**Freightliner
Service Bulletin**

| Cascadia 125 (ISX15) - 1625 TO 1400 RAD CONVERSION LIST w/ TrCI Eaton FR/O | | |
|--|------------------------------------|-----|
| Part number | Description | QTY |
| 23-12274-003 | RIVET-PUSH-TYPE,REUSABLE,.315" | 4 |
| 23-10800-050 | SCREW-HWH,THDR LG,1/4-20X1/2 | 8 |
| 23-09426-203 | WASHER-PLTD STL,1/4X1.0" | 8 |
| A05-30679-000 | RECIRC-BAFFLE,P3,M1400, Bottom | 1 |
| N304017 010038 | SCREW-CAP,HEX M10X30 10.9 ZN | 4 |
| 23-12707-010 | WASHER-FLAT,SSTL,M10-20MMX2MM | 4 |
| 23-12668-010 | NUT-HEX,FLNG,M10-1.5,ZN AL | 4 |
| 05-30581-000 | BRKT-RAD SUPT,BTM CHNL,1400,LH,ISO | 1 |
| 05-30581-001 | BRKT-RAD SUPT,BTM CHNL,1400,RH,ISO | 1 |
| 23-13509-065 | SCRW HX FLNG,M16-1.5X65,10.9 | 4 |
| N210100 016000 | NUT-FLG HD,M16,CLASS 10, P&O | 2 |
| 01-20963-001 | WASHER-HARDND STL,.656X2.5" | 2 |
| BCD 27463 14 | ISOLATOR-RAD,LWR,KIT | 2 |
| A05-30741-000 | STRUT-RAD,ISX,MED,LH,ISO | 1 |
| A05-30742-000 | STRUT-RAD,ISX,MED,RH,ISO | 1 |
| A05-30743-000 | STRUT-RAD,ISX,MED,BIAS,ISO | 1 |
| 23-11751-250 | SCREW-CAP,HEX,1/2-13,GR8,ZNDI | 1 |
| 23-11751-400 | SCREW-CAP,HEX,1/2-13,GR8,ZN | 1 |
| 23-13833-108 | NUT-HEX,PT,1/2-13,C,ZN/AL,.448 | 2 |
| 23-09114-017 | WASHER-HRDN,0.53X1.38X | 4 |
| A05-29076-000 | ASSY-TUBE,LWR RAD,P3,ISX | 1 |
| A05-30827-000 | TUBE-LWR RAD,P3,ISX,M1400 | 1 |
| GT 4175SC250 | HOSE-ECR,2.50"ID | 1 |
| 05-25925-003 | HOSE-COOLANT,LWR,ELBOW,ECR | 1 |
| 05-27689-001 | HOSE-CLNT,UPR,ISX,P2,MEX,ECR | 1 |
| 05-29973-007 | HOSE-ELB,90DEG,ECR,206 ID | 1 |
| 23-12237-075 | SCREW-HWH,SERR,THDR LG,5/16-18 | 2 |
| 23-12485-250 | CLAMP-WORM,CONSTANT,2-1/2 HOSE | 8 |
| A22-69862-000 | BRKT ASSY-AC,H02,MID PIPE | 1 |
| A07-22714-000 | TUBE-SUPPLY,FWD,JUMPER,M1400 | 1 |
| A07-22715-000 | TUBE-RETURN,FWD JUMPER,M1400 | 1 |
| 07-22855-000 | TUBE-SUPPLY,ISX15,FR | 1 |
| 07-22856-000 | TUBE-RETURN | 1 |
| N304017 010038 | SCRW HEX FLNG,M8X1.25X40, | 1 |
| DDE N910112008000 | NUT,HX FLNG MTRC,M8X1.25,CLS 8 | 2 |
| PH 8 C6X S | SWIVEL-90 DEG,8 C6X,FTG | 2 |
| 23-09130-017 | BRKT-STANDOFF,.344X.344,ANGLE | 1 |
| 23-12912-800 | ELB-45,VITON O RING,#8 | 1 |
| 23-13039-008 | CONN-STR THRD,VITON O-RING | 1 |
| 23-13687-000 | CLAMP TUBE SNAP VERSION | 8 |

| Cascadia 125 (ISX15) - 1625 TO 1400 RAD CONVERSION LIST w/ TrCI Eaton FR/O | | |
|--|--------------------------------|-----|
| Part number | Description | QTY |
| 06-88031-000 | BRKT-BATT CBL RTG,PTO,FLYWHEEL | 1 |

Table 8, Cascadia 125 (ISX15) - 1625 TO 1400 RAD CONVERSION LIST w/ TrCI Eaton FR/O

| Cascadia 125 (ISX15), Manual Transmission Cooler Plumbing Eaton NO FR | | |
|---|--------------------------------|----------|
| Part Number | Description | Quantity |
| A07-22714-000 | TUBE-SUPPLY,FWD,JUMPER,M1400 | 1 |
| A07-22715-000 | TUBE-RETURN,FWD JUMPER,M1400 | 1 |
| 07-22844-000 | TUBE-SUPPLY,ISX15,EATON RT | 1 |
| 07-22845-000 | TUBE-RETURN,ISX15,EATON RT | 1 |
| N910143 008005 | SCRW HEX FLNG,M8X1.25X40, | 1 |
| DDE N910112008000 | NUT,HX FLNG MTRC,M8X1.25,CLS 8 | 2 |
| PH 8 C6X S | SWIVEL-90 DEG,8 C6X,FTG | 4 |
| 23-09130-017 | BRKT-STANDOFF,.344X.344,ANGLE | 1 |
| 23-12912-800 | ELB-45,VITON O RING,#8 | 1 |
| 23-13039-008 | CONN-STR THRD,VITON O-RING | 1 |
| 23-13687-000 | CLAMP TUBE SNAP VERSION | 8 |

Table 9, Cascadia 125 (ISX15), Manual Transmission Cooler Plumbing Eaton NO FR

| Cascadia 125 (ISX15), Manual Transmission Cooler Plumbing Eaton ECA | | |
|---|--------------------------------|----------|
| Part Number | Description | Quantity |
| A07-22758-000 | TUBE-SUPPLY,FWD,JUMPER,M1400 | 1 |
| A07-22759-000 | TUBE-RETURN,FWD JUMPER,M1400 | 1 |
| 07-22833-001 | TUBE-SUPPLY,ISX 15,EATON | 1 |
| 07-22834-001 | TUBE-RETURN,ISX,EATON | 1 |
| N910143 008005 | SCRW HEX FLNG,M8X1.25X40, | 1 |
| DDE N910112008000 | NUT,HX FLNG MTRC,M8X1.25,CLS 8 | 2 |
| PH 8 C6X S | SWIVEL-90 DEG,8 C6X,FTG | 4 |
| 23-09130-017 | BRKT-STANDOFF,.344X.344,ANGLE | 1 |
| 23-12912-800 | ELB-45,VITON O RING,#8 | 1 |
| 23-13039-008 | CONN-STR THRD,VITON O-RING | 1 |
| 23-13687-000 | CLAMP TUBE SNAP VERSION | 8 |

Table 10, Cascadia 125 (ISX15), Manual Transmission Cooler Plumbing Eaton ECA

| Cascadia 125 (ISX15), Manual Transmission Cooler Plumbing Eaton ECA with External Transmission Filter | | |
|---|------------------------------|----------|
| Part Number | Description | Quantity |
| A07-22714-000 | TUBE-SUPPLY,FWD,JUMPER,M1400 | 1 |
| A07-22715-000 | TUBE-RETURN,FWD JUMPER,M1400 | 1 |
| 07-22833-000 | TUBE-SUPPLY,ISX 15,FILTER | 1 |

CANCELED: Cascadia Radiator Update—EPA10 with Cummins ISX Engines

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FLA COE
FLB COE
FLD Conventional
Business Class
FLC 112 Conventional

Century Class Conventional
Argosy COE
Cargo
Columbia

Coronado
Business Class M2
> Cascadia
108SD/114SD

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| Cascadia 125 (ISX15), Manual Transmission Cooler Plumbing Eaton ECA with External Transmission Filter | | |
|---|--------------------------------|----------|
| Part Number | Description | Quantity |
| 07-22834-000 | TUBE-RETURN,ISX,EATON,FILTER | 1 |
| N910143 008005 | SCRW HEX FLNG,M8X1.25X40, | 1 |
| DDE N910112008000 | NUT,HX FLNG MTRC,M8X1.25,CLS 8 | 2 |
| PH 8 C6X S | SWIVEL-90 DEG,8 C6X,FTG | 4 |
| 23-09130-017 | BRKT-STANDOFF,.344X.344,ANGLE | 1 |
| 23-12912-800 | ELB-45,VITON O RING,#8 | 1 |
| 23-13089-008 | CONN-STR THRD,VITON O-RING | 1 |
| 23-13687-000 | CLAMP TUBE SNAP VERSION | 8 |

Table 11, Cascadia 125 (ISX15), Manual Transmission Cooler Plumbing Eaton ECA with External Transmission Filter

PartsPro Global Annotation

It is highly recommended that a Global Annotation regarding this modification be entered in PartsPro. Global annotations give users a way to record and check after-factory installations and modifications for a particular vehicle. It is connected to a specific VIN, and is visible to anyone who views that serial number in PartsPro. Create and view Global Annotation as follows.

1. In PartsPro, enter the serial number (the last six characters of the VIN) in the "Vehicle" tab and press "Enter," or click the "Retrieve Design Group" button.
2. In the "Design Group" tab, click the Add Annotation icon. See Fig. 18.

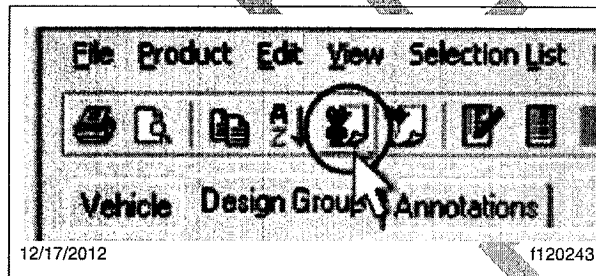


Fig. 18, Add Annotation Icon

3. In the "Add Annotation" window, mark the annotation as "Global" and enter text for the annotation.
Suggested annotation text: The cooling system has been modified to an isolated mount type radiator. See Service Bulletin 20-73 for radiator, radiator mounting, fan, fan shroud, plumbing and transmission cooler line modifications and part numbers.
4. Click the "OK" button to submit.

Daimler Trucks North America will review the content for publication.

For additional information, click the "Help" button or Help → Contents in the top menu bar, and view the "Annotations" topic in PartsPro help, or refer to Freightliner or Western Star Parts Technical Bulletin: 00-009 for instructions.

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CANCELED: Cascadia Radiator Update—EPA10 with Cummins ISX Engines

Freightliner Service Bulletin

FLA COE
FLB COE
FLD Conventional
Business Class
FLC 112 Conventional

Century Class Conventional
Argosy COE
Cargo
Columbia

Coronado
Business Class M2
> Cascadia
108SD/114SD

Warranty

This procedure is warrantable only if the described condition exists and the repair is performed within the applicable base or extended coverage warranty period. If a failure is not found, this procedure is considered preventive and warranty does not apply.

Normal warranty applies. See **Table 12** for QuickClaim damage code and labor allowance information. Refer to this service bulletin by number at the beginning of the claim comments. See **Table 13** for OWL VMRS codes and labor allowance information. Enter this service bulletin number in the *Service Bulletin #* field.

| QuickClaim Damage Code and Labor Allowance | | | |
|--|-----------|--|-------------|
| Damage Code | SRT Code | Description | Time: Hours |
| 266-000A05609 | 266-5025B | Cascadia, 1625/1500 to 1400 Cummins Radiator, Update | 9.5 |

Table 12, QuickClaim Damage Code and Labor Allowance

| OWL VMRS Codes and Labor Allowance | | | | | |
|------------------------------------|----------------|------------|-----------|--|-------------|
| Primary Failed Part | Component Code | Cause Code | SRT Code | Description | Time: Hours |
| 05-29619-001 | | | | | |
| 05-29617-000 | | | | | |
| 05-29617-001 | | | | | |
| 05-29617-002 | | | | | |
| 05-29617-003 | | | | | |
| 05-29617-004 | 042-002-001 | 12 | 266-5025B | Cascadia, 1625/1500 to 1400 Cummins Radiator, Update | 9.5 |
| 05-29617-005 | | | | | |
| 05-29617-006 | | | | | |
| 05-29617-007 | | | | | |
| 05-29617-008 | | | | | |
| 05-29617-009 | | | | | |

Table 13, OWL VMRS Codes and Labor Allowance