

Cascadia Radiator Update—EPA10

20-73

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

Description of Revisions: *This bulletin replaces the version dated December 2012. Incorrect part numbers and table titles are corrected and updated.*

General Information

Some EPA10 compliant Cascadia vehicles, manufactured from start of production to the dates listed below, with specific combination 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 May 2012, DD13 equipped vehicles are standard with isolated engine-mounted radiators. Beginning October 2012, DD15 and 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.

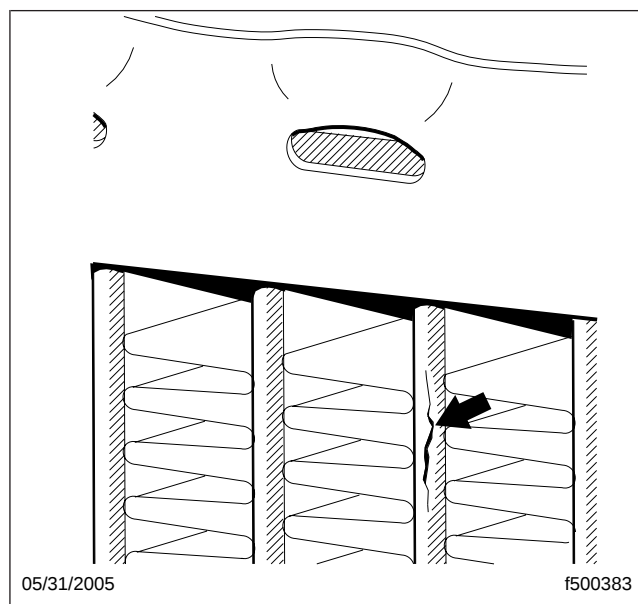


Fig. 1, Crack in Coolant Tube

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 **Subject 88.00, Subject 100** in the *Cascadia Workshop Manual*.
6. Remove the driver-side charge air cooler (CAC) hose.
7. Remove passenger-side CAC hose.
8. Remove the surge tank. For instructions, see **Subject 20.00, Subject 110** of the *Cascadia Workshop Manual*.
9. Remove the three radiator strut rods and discard them.
10. Remove the upper fan shroud.
11. Remove the upper radiator hose.
12. Remove the fan. For instructions, refer to **Group 20** of the *Cascadia Workshop Manual*.
13. Loosen the A/C condenser and move it out of the way as follows.
 - 13.1 Remove the receiver-drier and upper A/C hose mounting nuts, then free the receiver-drier. See [Fig. 2](#).
 - 13.2 Remove the radiator baffle from the right side of the radiator and discard it. See [Fig. 3](#).

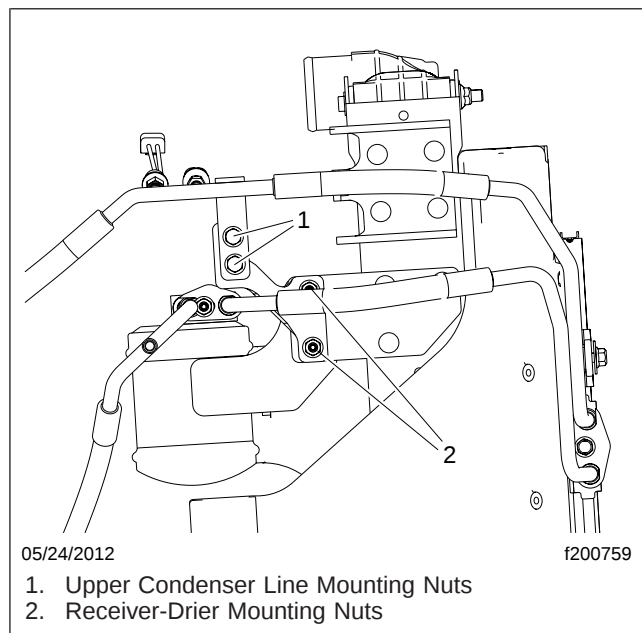


Fig. 2, Receiver-Drier Installation (typical)

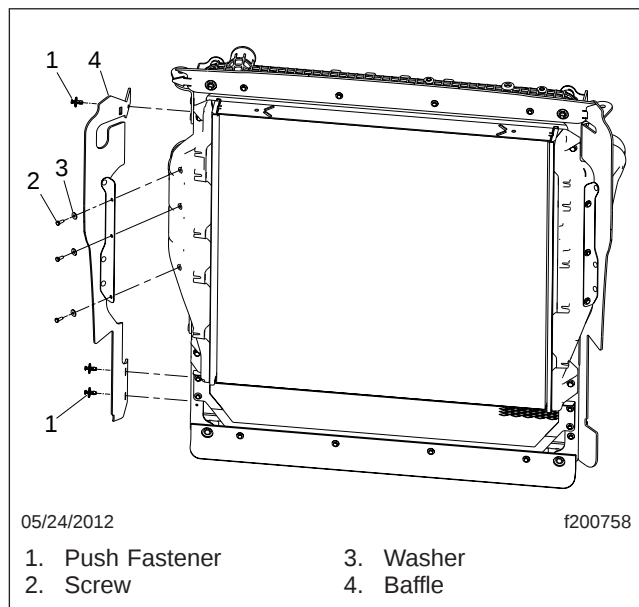


Fig. 3, Radiator Baffle, Right Side

- 13.3 Unbolt the A/C condenser from the CAC. See [Fig. 4](#).

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

- 13.4 Carefully move the condenser around and set it on right front tire. Secure it as needed. See [Fig. 5](#).

14. Disconnect the transmission cooler lines from the radiator. Cap and/or plug the fittings to prevent spills.

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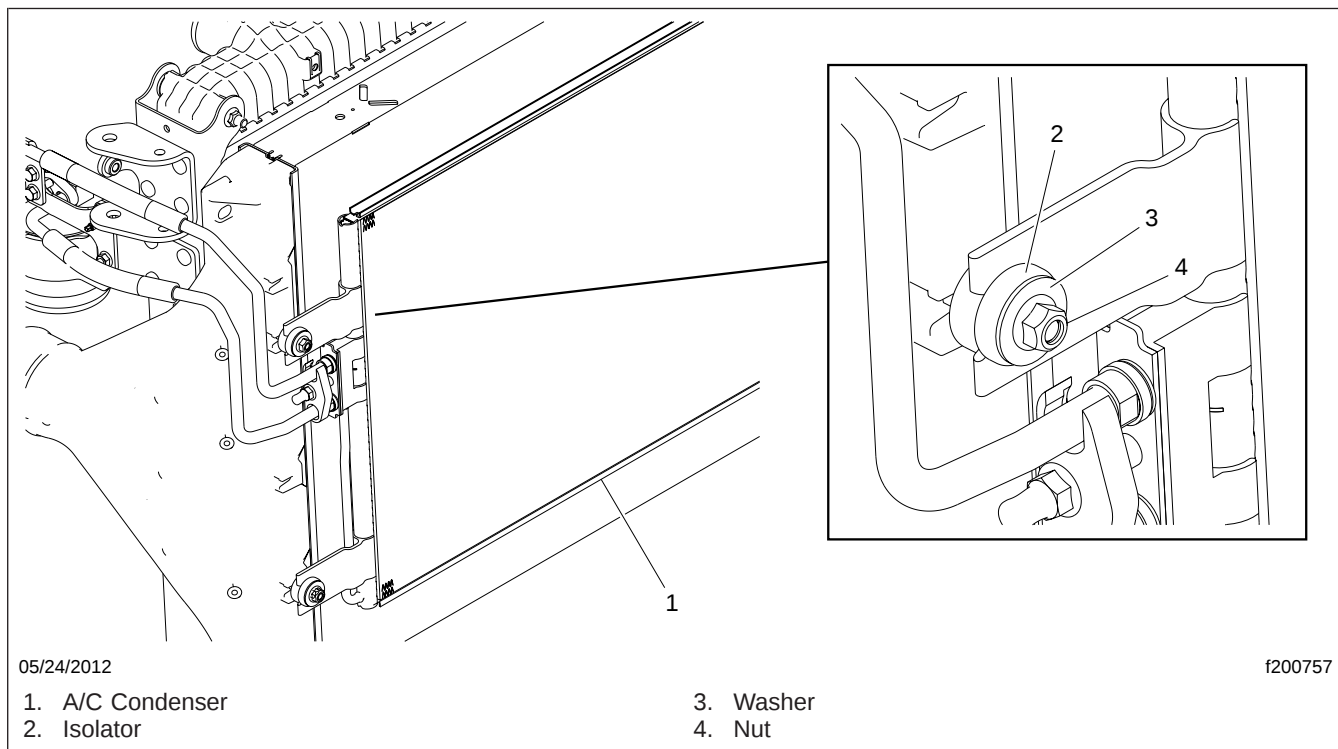


Fig. 4, A/C Condenser Installation

15. Disconnect the lower radiator hose.
16. Unbolt the radiator from the lower mount.
17. Using an appropriate lifting device, remove the radiator assembly from vehicle.
18. Remove the CAC from the radiator.
19. Remove the lower fan shroud from the radiator.
20. Remove the lower radiator mounting brackets from the engine.
21. Remove the transmission cooler lines. Cap and/or plug the fittings at the transmission and on the lines to prevent spills.
22. Install the new lower radiator mounting brackets. See [Fig. 6](#). Tighten 191 to 234 lbf·ft (260 to 317 N·m).
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. 7](#). For vehicle specific plumbing diagrams refer to EZWiring.
24. Inspect the CAC isolators. If they are damaged, replace them with CAC hardware kit MOD 3S054916.
25. Install the CAC on the new radiator.
26. Install the three new radiator baffles on the CAC. See [Fig. 8](#).
27. Install the new lower fan shroud on the new radiator. See [Fig. 9](#).
28. Remove the VORAD antenna cover and antenna from the mounting bracket, then remove the bracket.
29. Install the new lower baffle on the front closing crossmember. See [Fig. 10](#).

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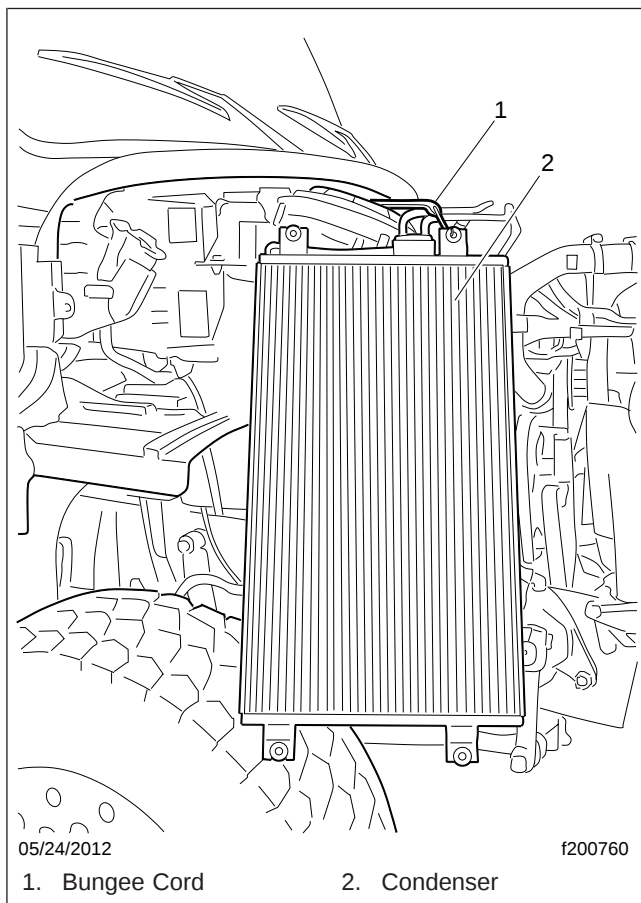


Fig. 5, Securing the A/C Condenser

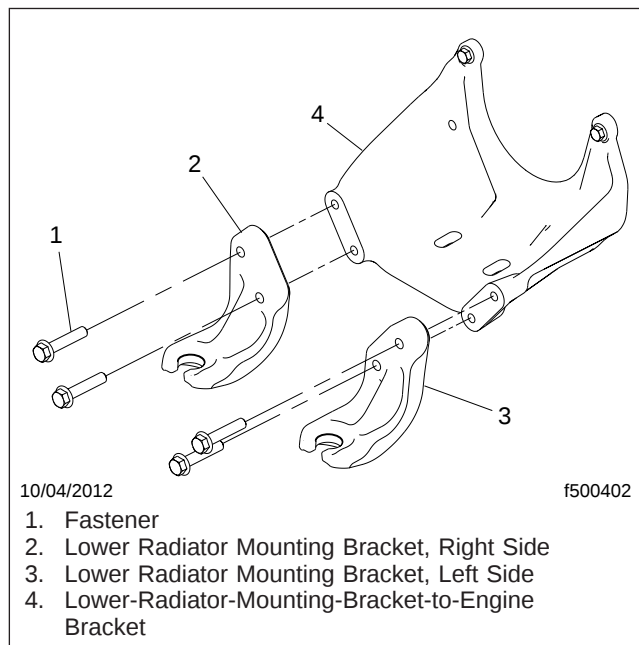


Fig. 6, Lower Radiator Mounting Brackets Installation

30. Install the new VORAD antenna mounting bracket. See [Fig. 11](#).
31. Install the VORAD antenna and the antenna cover.
32. Install the new transmission cooler jumper lines on the radiator. See [Fig. 12](#).
33. Using an appropriate lifting device, position the new radiator assembly in the vehicle. Install the mounting nuts, but do not tighten them at this time. See [Fig. 13](#).
34. Install the new radiator strut rods. See [Fig. 14](#). Do not tighten the mounting fasteners at this time.
35. Install the new upper radiator hose. See [Fig. 15](#).
36. Install the new lower radiator hose assembly. See [Fig. 16](#).
37. Install the A/C condenser as follows.
 - 37.1 Move the condenser into position and secure it temporarily. See [Fig. 4](#).
 - 37.2 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).
 - 37.3 Tighten the condenser mounting bolts 112 to 144 lbf·in (1266 to 1627 N·cm).

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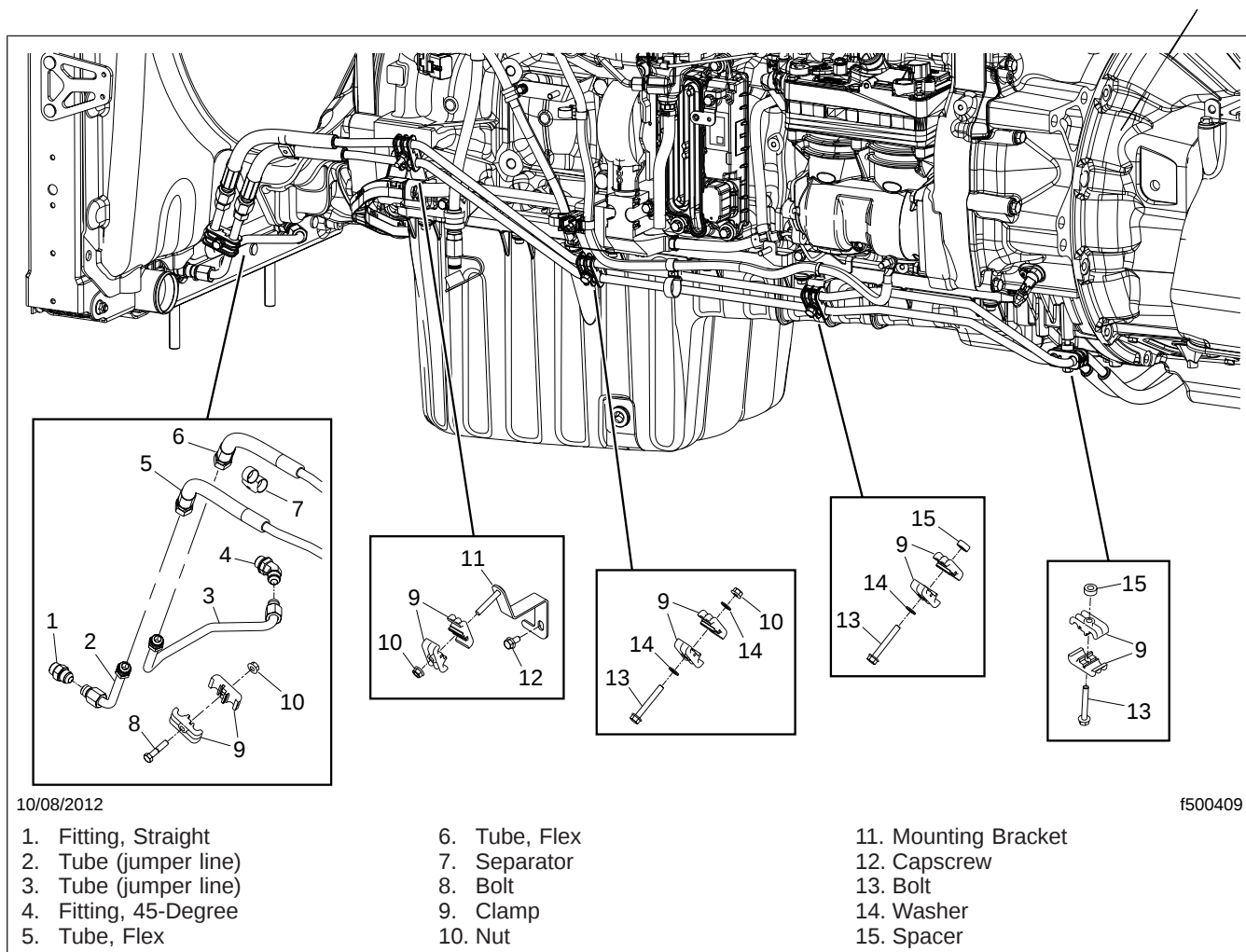


Fig. 7, Transmission Cooler Line Installation (typical)

38. Apply sealant (48-00094-141) to the threads of the fasteners, then install the fan. Tighten 30 lbf-ft (41 N·m).
39. Install the upper fan shroud.
40. Tighten the radiator strut rod fasteners at the radiator 55 to 65 lbf-ft (75 to 90 N·m), and at the engine block 125 to 139 lbf-ft (171 to 188 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 **Subject 88.00, Subject 100** in the *Cascadia Workshop Manual*.
43. Install the CAC hoses.
44. Fill the cooling system.
45. Start the engine and check for coolant and transmission fluid leaks. Repair as needed.
46. Install the hood. For instructions, see **Subject 88.00, Subject 100** in the *Cascadia Workshop Manual*.

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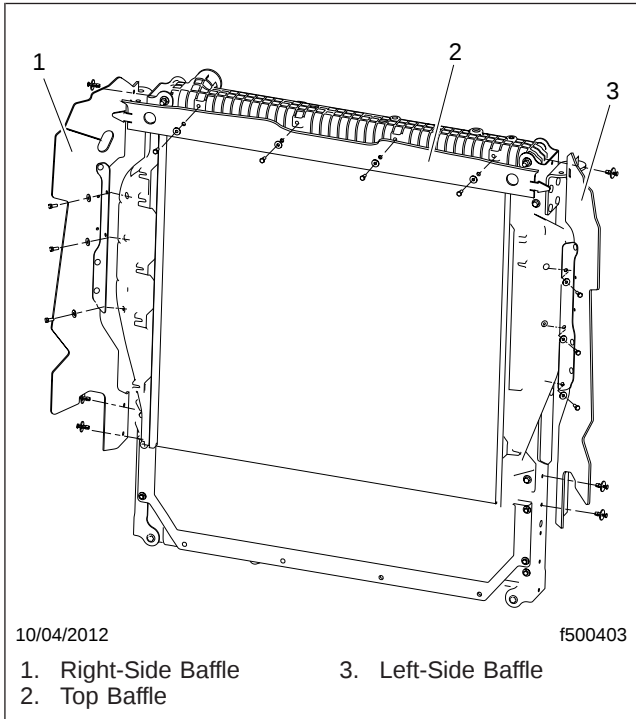


Fig. 8, Radiator Baffle Installation

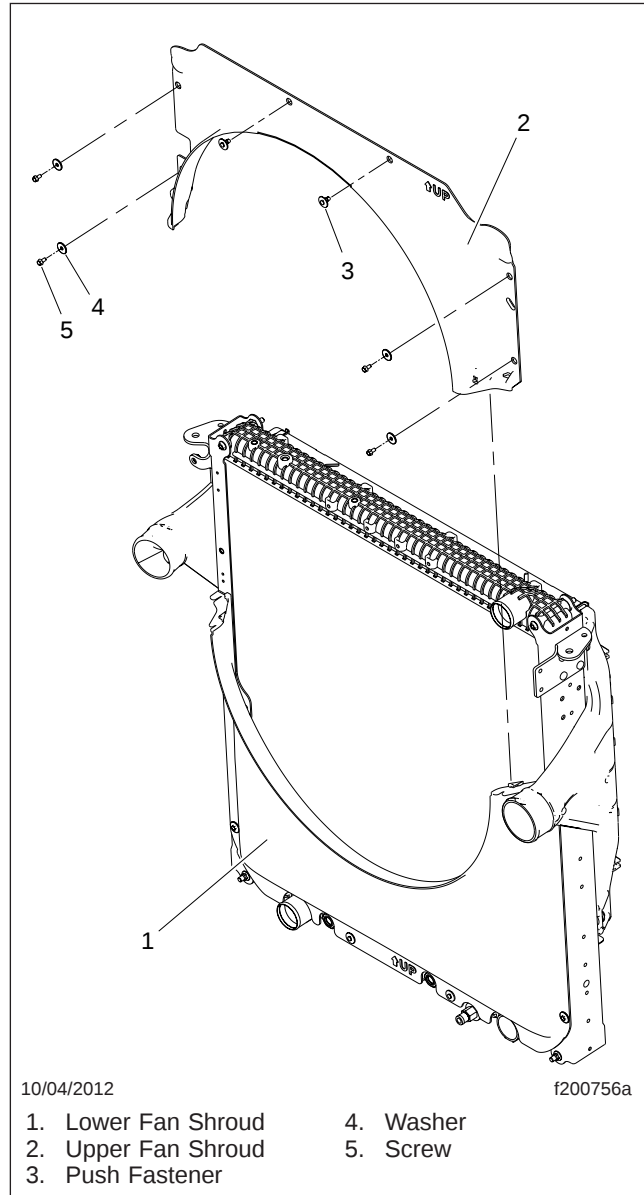


Fig. 9, Fan Shroud Installation

47. Install the bumper. For instructions, refer to **Group 31** of the *Cascadia Workshop Manual*.

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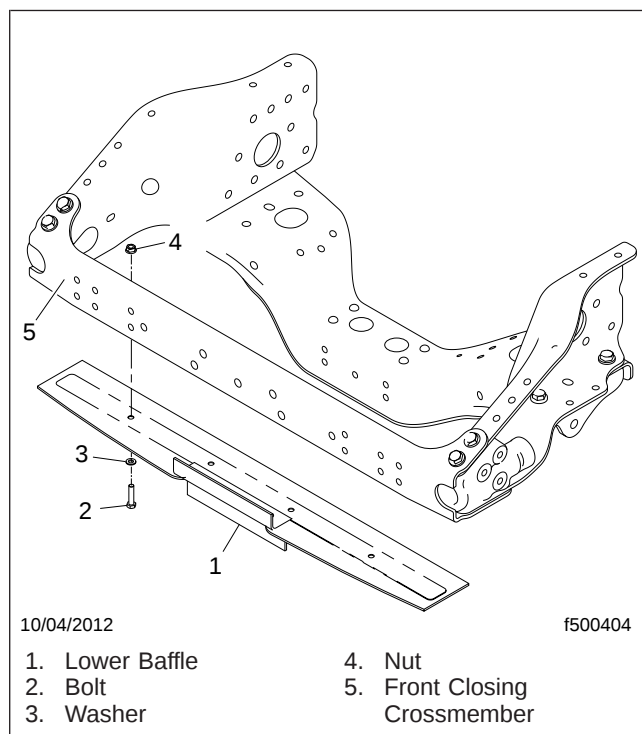


Fig. 10, Lower Baffle Installation

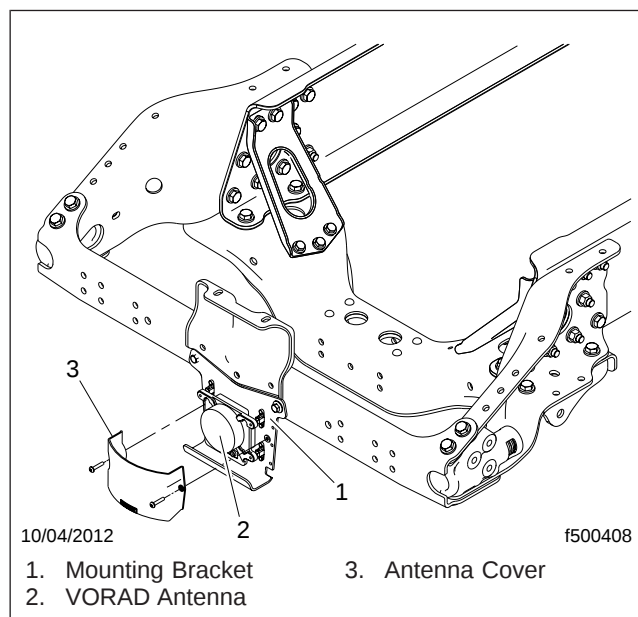


Fig. 11, VORAD Bracket and Antenna Installation

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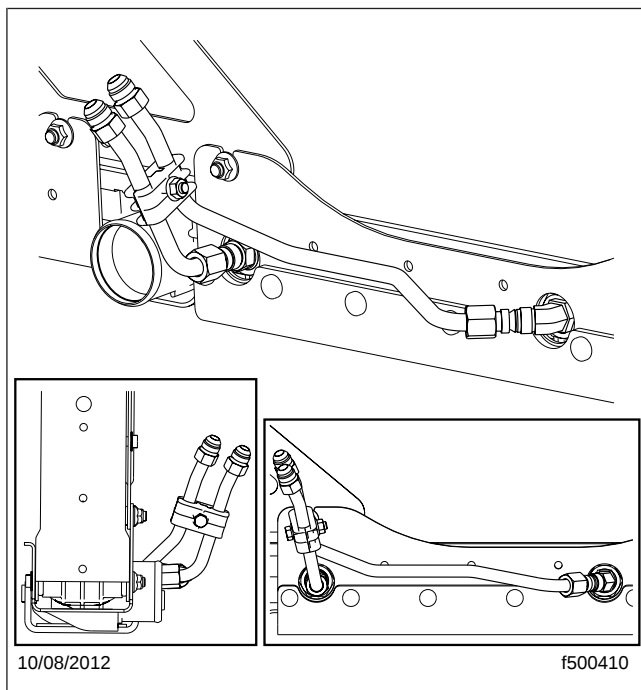


Fig. 12, Transmission Cooler Jumper Line Installation

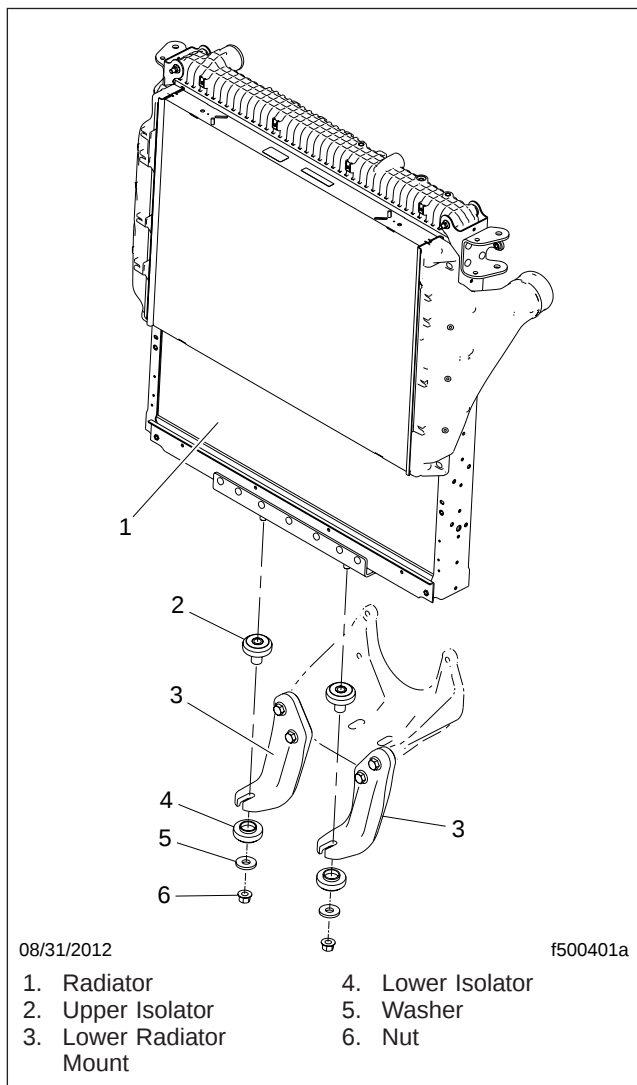


Fig. 13, Radiator Installation

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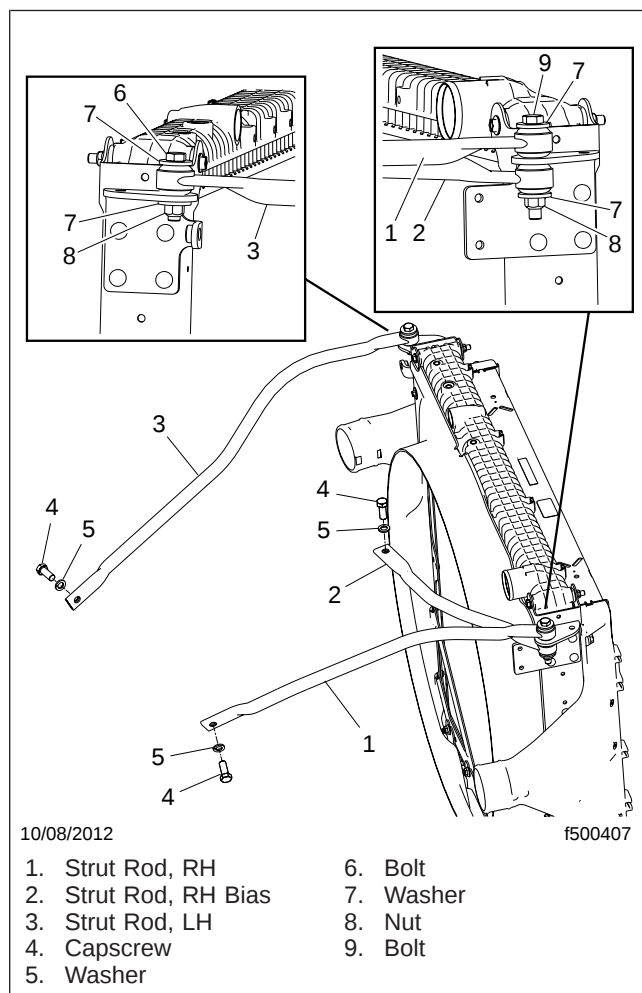


Fig. 14, Isolated Radiator Strut Rod Installation

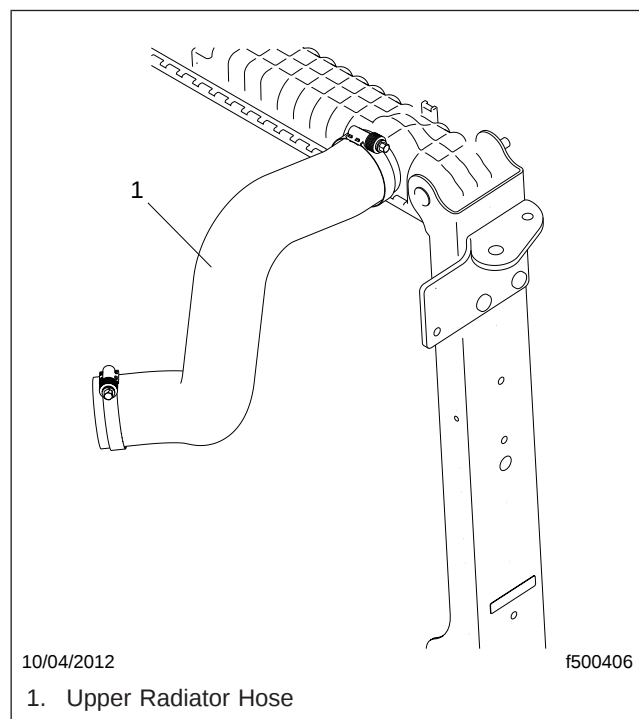


Fig. 15, Upper Radiator Hose Installation

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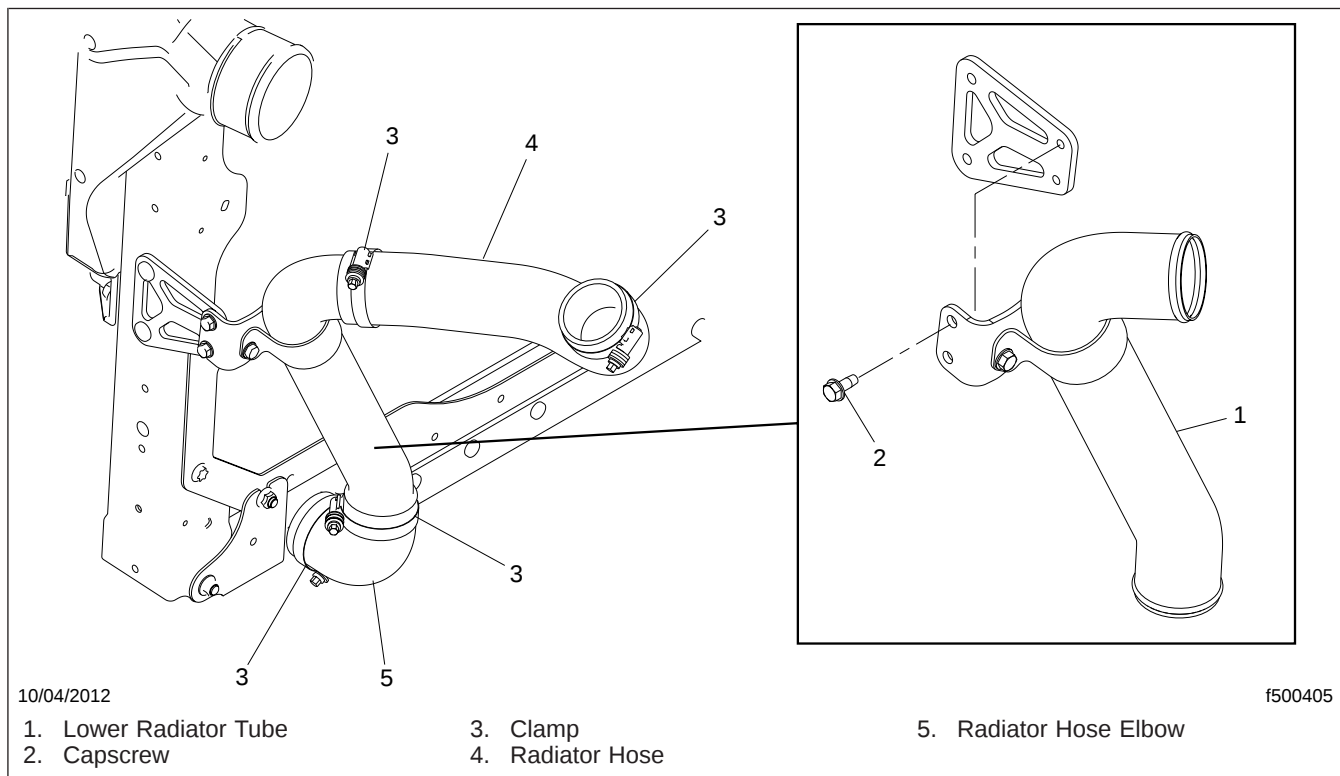


Fig. 16, Lower Radiator Hose Installation

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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 DD13 Engine	Table 2	Eaton FR	Table 3
		Eaton RT	Table 4
		Eaton ECA	Table 5
125 BBC with DD13 Engine	Table 6	Eaton FR	Table 7
		Eaton RT	Table 8
		Eaton ECA	Table 9
125 BBC with DD15 Engine	Table 10	Eaton FR	Table 11
		Eaton RT	Table 12
		Eaton ECA	Table 13
125 BBC with Cummins ISX15 Engine	Table 14	Eaton FR/O	Table 15
		Eaton RT	Table 16
		Eaton ECA	Table 17
		Eaton ECA with External Transmission Filter	Table 18

Table 1, Vehicle Configuration and Required Parts

Cascadia 113 (DD13), 1625 to 1400 Radiator Conversion		
Part Number	Description	Quantity
MOD 3S0580800003	RADIATOR M1400,BO,LSO,ITOC	1
A05-30850-000	SHROUD-FAN,1400	1
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, KIT	2
A05-30644-000	STRUT-RAD,DD13,MED,LH,M1400,ISO (P3113)	1
A05-30645-000	STRUT-RAD,DD13,MED,RH,M1400,ISO (P3113)	1
A05-30646-000	STRUT-RAD,DD13,MED,BIAS,M1400,ISO (P3113)	1
23-12237-075	SCREW-HWH,SERR,THDRLG,5/16-18	2
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

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Cascadia 113 (DD13), 1625 to 1400 Radiator Conversion		
Part Number	Description	Quantity
05-21968-000	HOSE-CLNT,M1400,P3-113,M2,DD13	1
A05-18548-000	TUBE-CLNT,LWR,M1400,DD13,DD15	1
05-25925-003	HOSE-COOLANT,LWR,ELBOW,ECR	1
23-12485-250	CLAMP-WORM,CONSTANT,2-1/2 HOSE	4
A05-27145-001	ASSY-BAFFLE,P3,M105,SIDE LH	1
A05-27145-002	ASSY-BAFFLE,P3,M105,SIDE RH	1
05-26639-000	RECIRC-BAFFLE,P3,M105, TOP	1
A05-30679-000	RECIRC-BAFFLE,P3,M1400, Bottom	1
A22-69862-000	BRKT ASSY-AC,H02,MID PIPE	1
PH 1695HB64	Fitting-Surge Tank (for units built before Nov. 2010)	1

Table 2, Cascadia 113 (DD13), 1625 to 1400 Radiator Conversion

Cascadia 113 (DD13), Manual Transmission Cooler Plumbing Eaton FR		
Part Number	Description	Quantity
A07-22714-000	TUBE-SUPPLY,FWD,JUMPER,M1400	1
A07-22715-000	TUBE-RETURN,FWD JUMPER,M1400	1
A07-22753-001	BRKT-BRKT,SPRT,TRANS CLR LINES	1
07-22721-000	TUBE-SPLY,M-ITOC,DD13,P3-113	1
07-22722-000	TUBE-RETURN,M-ITOC,DD13,P3-113	1
N910143 008005	SCRW HEX FLNG,M8X1.25X40,	1
DDE N910112008000	NUT,HX FLNG MTRC,M8X1.25,CLS 8	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	4

Table 3, Cascadia 113 (DD13), Manual Transmission Cooler Plumbing Eaton FR

Cascadia 113 (DD13), Manual Transmission Cooler Plumbing Eaton RT		
Part Number	Description	Quantity
A07-22714-000	TUBE-SUPPLY,FWD,JUMPER,M1400	1
A07-22715-000	TUBE-RETURN,FWD JUMPER,M1400	1
A07-22753-001	BRKT-BRKT,SPRT,TRANS CLR LINES	1
07-22754-000	TUBE-SUP,DD13,M-ITOC,DD13,LH	1
07-22755-000	TUBE,RETURN,M-ITOC,DD13,P3	1
N910143 008005	SCRW HEX FLNG,M8X1.25X40,	1
DDE N910112008000	NUT,HX FLNG MTRC,M8X1.25,CLS 8	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	4

Table 4, Cascadia 113 (DD13), Manual Transmission Cooler Plumbing Eaton NO FR

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Cascadia 113 (DD13), Manual Transmission Cooler Plumbing Eaton ECA		
Part Number	Description	Quantity
A07-22714-000	TUBE-SUPPLY,FWD,JUMPER,M1400	1
A07-22715-000	TUBE-RETURN,FWD JUMPER,M1400	1
A07-22753-001	BRKT-BRKT,SPRT,TRANS CLR LINES	1
07-22712-000	TUBE-SUP,DD13,M-ITOC,DD13,LH	1
07-22713-000	TUBE,RETURN,M-ITOC,DD13,P3	1
N910143 008005	SCRW HEX FLNG,M8X1.25X40,	1
DDE N910112008000	NUT,HX FLNG MTRC,M8X1.25,CLS 8	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	4

Table 5, Cascadia 113 (DD13), Manual Transmission Cooler Plumbing Eaton ECA

Cascadia 125 (DD13), 1625 to 1400 Radiator Conversion		
Part Number	Description	Quantity
Part number	Description	QTY
MOD 3S0580800003	RADIATOR M1400,BO,LSO,ITOC	1
A05-30850-000	SHROUD-FAN,1400	1
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, KIT	2
A05-30647-000	STRUT-RAD,DD13,MED,LH,M1400,AFT,ISO (P3125)	1
A05-30648-000	STRUT-RAD,DD13,MED,RH,M1400,AFT,ISO (P3125)	1
A05-30649-000	STRUT-RAD,DD13,MED,BIAS,M1400,AFT,ISO (P3125)	1
23-12237-075	SCREW-HWH,SERR,THDRLG,5/16-18	2
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
05-21797-001	HOSE-CLNT,UPR,DD13	1
A05-18548-000	TUBE-CLNT,LWR,M1400,DD13,DD15	1
05-25925-003	HOSE-COOLANT,LWR,ELBOW,ECR	1
05-21969-000	HOSE-CLNT,M1400,P3-125,HDEP	1
23-12485-250	CLAMP-WORM,CONSTANT,2-1/2 HOSE	4
A05-27145-001	ASSY-BAFFLE,P3,M105,SIDE LH	1
A05-27145-002	ASSY-BAFFLE,P3,M105,SIDE RH	1
05-26639-000	RECIRC-BAFFLE,P3,M105,TOP	1
A22-69862-000	BRKT ASSY-AC,H02,MID PIPE	1
PH 1695HB64	Fitting-Surge Tank (for units built before Nov. 2010)	1

Table 6, Cascadia 125 (DD13), 1625 to 1400 Radiator Conversion

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Cascadia 125 (DD13), Manual Transmission Cooler Plumbing Eaton FR		
Part Number	Description	Quantity
A07-22758-000	TUBE-SUPPLY,FWD,JUMPER,M1400	1
A07-22759-000	TUBE-RETURN,FWD JUMPER,M1400	1
A07-22753-001	BRKT-BRKT,SPRT,TRANS CLR LINES	1
07-22721-000	TUBE-SPLY,M-ITOC,DD13,P3-113	1
07-22722-000	TUBE-RETURN,M-ITOC,DD13,P3-113	1
N910143 008005	SCRW HEX FLNG,M8X1.25X40,	1
DDE N910112008000	NUT,HX FLNG MTRC,M8X1.25,CLS 8	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	4

Table 7, Cascadia 125 (DD13), Manual Transmission Cooler Plumbing Eaton
FR

Cascadia 125 (DD13), Manual Transmission Cooler Plumbing Eaton RT		
Part Number	Description	Quantity
A07-22758-000	TUBE-SUPPLY,FWD,JUMPER,M1400	1
A07-22759-000	TUBE-RETURN,FWD JUMPER,M1400	1
A07-22753-001	BRKT-BRKT,SPRT,TRANS CLR LINES	1
07-22754-000	TUBE-SUP,DD13,M-ITOC,DD13,LH	1
07-22755-000	TUBE,RETURN,M-ITOC,DD13,P3	1
N910143 008005	SCRW HEX FLNG,M8X1.25X40,	1
DDE N910112008000	NUT,HX FLNG MTRC,M8X1.25,CLS 8	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	4

Table 8, Cascadia 125 (DD13), Manual Transmission Cooler Plumbing Eaton
RT

Cascadia 125 (DD13), 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
A07-22753-001	BRKT-BRKT,SPRT,TRANS CLR LINES	1
07-22712-000	TUBE-SUP,DD13,M-ITOC,DD13,LH	1
07-22713-000	TUBE,RETURN,M-ITOC,DD13,P3	1
N910143 008005	SCRW HEX FLNG,M8X1.25X40,	1
DDE N910112008000	NUT,HX FLNG MTRC,M8X1.25,CLS 8	2
23-12912-800	ELB-45,VITON O RING,#8	1
23-13039-008	CONN-STR THRD,VITON O-RING	1

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Cascadia 125 (DD13), Manual Transmission Cooler Plumbing Eaton ECA		
Part Number	Description	Quantity
23-13687-000	CLAMP TUBE SNAP VERSION	4

Table 9, Cascadia 125 (DD13), Manual Transmission Cooler Plumbing Eaton ECA

Cascadia 125 (DD15), 1625 to 1400 Radiator Conversion		
Part Number	Description	Quantity
MOD 3S0580800003	RADIATOR M1400,BO,LSO,ITOC	1
A05-30850-000	SHROUD-FAN,1400	1
05-30581-000	STRUT-RAD,DD15,MED,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, KIT	2
A05-30681-000	STRUT-RAD,DD15,MED,LH,ISO	1
A05-30682-000	STRUT-RAD,DD15,MED,RH,ISO	1
A05-30683-000	STRUT-RAD,DD15,MED,BIAS,ISO	1
23-12237-075	SCREW-HWH,SERR,THDRLG,5/16-18	2
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
05-21797-001	HOSE-CLNT,UPR,DD13	1
A05-18548-000	TUBE-CLNT,LWR,M1400,DD13,DD15/PARA>	1
05-25925-003	HOSE-COOLANT,LWR,ELBOW,ECR	1
05-21969-000	HOSE-CLNT,M1400,P3-125,HDEP	1
23-12485-250	CLAMP-WORM,CONSTANT,2-1/2 HOSE	4
A05-27145-001	ASSY-BAFFLE,P3,M105,SIDE LH	1
A05-27145-002	ASSY-BAFFLE,P3,M105,SIDE RH	1
05-26639-000	RECIRC-BAFFLE,P3,M105,TOP	1
A22-69862-000	BRKT ASSY-AC,H02,MID PIPE	1
PH 1695HB64	Fitting-Surge Tank (for units built before Nov. 2010)	1

Table 10, Cascadia 125 (DD15), 1625 to 1400 Radiator Conversion

Cascadia 125 (DD15), Manual Transmission Cooler Plumbing Eaton FR		
Part Number	Description	Quantity
A07-22758-000	TUBE-SUPPLY,FWD,JUMPER,M1400	1
A07-22759-000	TUBE-RETURN,FWD JUMPER,M1400	1
A07-22753-001	BRKT-BRKT,SPRT,TRANS CLR LINES	1
07-22767-000	TUBE-SPLY,M-ITOC,DD15,P3-125	1
07-22768-000	TUBE-RETURN,M-ITOC,DD15,P3-125	1
N910143 008005	SCRW HEX FLNG,M8X1.25X40,	1
DDE N910112008000	NUT,HX FLNG MTRC,M8X1.25,CLS 8	2
23-12912-800	ELB-45,VITON O RING,#8	1

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Cascadia 125 (DD15), Manual Transmission Cooler Plumbing Eaton FR		
Part Number	Description	Quantity
23-13039-008	CONN-STR THRD,VITON O-RING	1
23-13687-000	CLAMP TUBE SNAP VERSION	4

Table 11, Cascadia 125 (DD15), Manual Transmission Cooler Plumbing Eaton FR

Cascadia 125 (DD15), Manual Transmission Cooler Plumbing Eaton RT		
Part Number	Description	Quantity
A07-22758-000	TUBE-SUPPLY,FWD,JUMPER,M1400	1
A07-22759-000	TUBE-RETURN,FWD JUMPER,M1400	1
A07-22753-001	BRKT-BRKT,SPRT,TRANS CLR LINES	1
07-22765-000	TUBE-SUP,DD15,M-ITOC,DD15,LH	1
07-22766-000	TUBE,RETURN,M-ITOC,DD15,P3	1
N910143 008005	SCRW HEX FLNG,M8X1.25X40,	1
DDE N910112008000	NUT,HX FLNG MTRC,M8X1.25,CLS 8	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	4

Table 12, Cascadia 125 (DD15), Manual Transmission Cooler Plumbing Eaton RT

Cascadia 125 (DD13), 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
A07-22753-001	BRKT-BRKT,SPRT,TRANS CLR LINES	1
07-22763-000	TUBE-SUP,DD15,M-ITOC,P3	1
07-22764-000	TUBE-RET,DD15,M-ITOC,P3	1
N910143 008005	SCRW HEX FLNG,M8X1.25X40,	1
DDE N910112008000	NUT,HX FLNG MTRC,M8X1.25,CLS 8	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	4

Table 13, Cascadia 125 (DD13), Manual Transmission Cooler Plumbing Eaton ECA

Cascadia 125 (ISX15), 1625 to 1400 Radiator Conversion		
Part Number	Description	Quantity
MOD 3S0580800002	RADIATOR M1400,BO,RSO,ITOC	1
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

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Cascadia 125 (ISX15), 1625 to 1400 Radiator Conversion		
Part Number	Description	Quantity
BCD 27463 14	ISOLATOR-RAD, 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
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 (cut to 8" length)	3ft
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
A05-27145-001	ASSY-BAFFLE,P3,M105,SIDE LH	1
A05-27145-002	ASSY-BAFFLE,P3,M105,SIDE RH	1
05-26639-000	RECIRC-BAFFLE,P3,M105,TOP	1
A05-30850-000	SHROUD-FAN,1400	1
A22-69862-000	BRKT ASSY-AC,H02,MID PIPE	1

Table 14, Cascadia 125 (ISX15), 1625 to 1400 Radiator Conversion

Cascadia 125 (ISX15), Manual Transmission Cooler Plumbing Eaton FR/O		
Part Number	Description	Quantity
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
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 15, Cascadia 125 (ISX15), Manual Transmission Cooler Plumbing 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

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Cascadia 125 (ISX15), Manual Transmission Cooler Plumbing Eaton NO FR		
Part Number	Description	Quantity
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 16, 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 17, 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
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

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Cascadia 125 (ISX15), Manual Transmission Cooler Plumbing Eaton ECA with External Transmission Filter		
Part Number	Description	Quantity
23-13039-008	CONN-STR THRD,VITON O-RING	1
23-13687-000	CLAMP TUBE SNAP VERSION	8

Table 18, 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. 17](#).

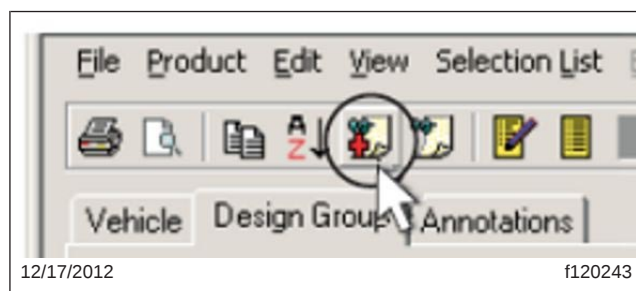


Fig. 17, Add Annotation Icon

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.

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.

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Normal warranty applies. See [Table 19](#) for QuickClaim damage code and labor allowance information. Refer to this service bulletin by number at the beginning of the claim comments. See [Table 20](#) 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	266-5025A	Cascadia 1625/1500 to 1400 Radiator Update	5.6

Table 19, 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	042-002-001	12	266-5025A	Cascadia 1625/1500 to 1400 Radiator Update	5.6
05-29617-000					
05-29617-001					
05-29617-002					
05-29617-003					
05-29617-004					
05-29617-005					
05-29617-006					
05-29617-007					
05-29617-008					
05-29617-009					

Table 20, OWL VMRS Codes and Labor Allowance