Service Update

SU 2302 7.3L RADIATOR COOLANT LEAKS

Models Affected: Model Year 2021 thru current model BBCV buses equipped with Ford 7.3L engine.

Issue: Coolant leaks at the transmission cooler fitting(s) have been found on certain radiators due to deformation of the EPDM gasket used to seal the transmission cooler to the lower radiator tank. This deformation is caused from transmission oil wicking through the thread adapter threads and exposing the lower portion of the gasket to transmission oil.

Corrective Action: Re-configure hydraulic interface between the transmission cooler lines and the transmission oil cooler.

Parts/Items Needed:

Part Number	Description	Quantity
10059342	KIT, SEAL, TRANS OIL-COOLER, RADIATOR	1
10081789	ADAPTER,90,3/4NPT X ¾-16UNF,37 DEG FLARE	1
10081790	ADAPTER,3/4NPT X ¾-16UNF,37 DEG FLARE	1
10081850	O RING,VALVE,RADIATOR,PETCOCK(00089936)	1
10079947	Lower coolant connector	1 (as needed)
Source Local	Coolant- Motorcraft™ VC-7DIL-B or equivalent	As Needed
Source Local	Trans oil- Mercon LV- XT-10 or equivalent	As Needed

Unique Tools/Materials Needed

Item Description	Quantity
Clean 5-gallon bucket w/ lid	2
1 7/8” Chrome socket	1
Torque Wrench	1
Long 90° pick	1

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10” Adjustable Wrench	2
Long funnel	1
¾-16 UNF flare plug LINK TO PURCHASE	2
¾ NPT x 4” pipe nipple	2
Loc-Tite™ 242 medium strength	1
Loc-Tite™ 567 Pipe Thread Sealant	1
Vacuum coolant filler	1

WARNING: Always follow all Federal, State, Local and Shop safety standards and use proper safety equipment, and thoroughly read and understand all instructions before performing these procedures.

Park bus on level surface, apply parking brake, turn off ignition key, and chock wheels.

Instructions:

1) Identify coolant leaks are sourcing from the large chrome steel nut(s) on the bottom of the radiator as shown in the photo above.
2) If the leak is not present, no further action is required. If the leak is present, continue to Step 3.
3) Close both heater valves (red and yellow) on the engine to isolate the heater system.
4) Place clean & suitable container below LH side of radiator to save and reuse the coolant. A clean 5-gallon bucket works well.
5) Open radiator petcock and then remove surge tank cap. Drain coolant.
6) Disconnect both transmission cooler lines from the radiator and tip up to keep them from draining out.

   NOTE: TIP- Having two ¾-16 UNF flare plugs to thread into cooler lines will keep them from dripping on you during repairs. Link to purchase in parts list.
7) Once coolant is drained, use 10” adjustable wrench to loosen and remove the left side steel nut.

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NOTE: Steel nuts removed should be tagged, labeled with the body number, and retained for 60 days in for potential review.

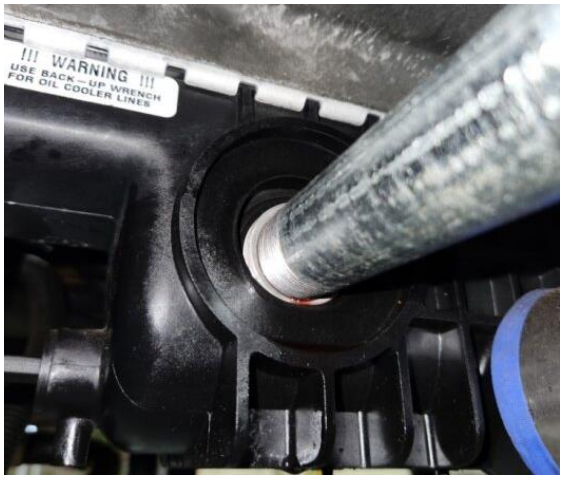
IMPORTANT: If no Loc-Tite is observed, describe that in repair narrative and include supporting photos.

8) Thread one of the ¾" pipe nipples into the LH side of the trans cooler.

9) Remove the RH side steel nut and thread in the pipe nipple

10) Using the pipe nipples for handles, remove & replace the EPDM gaskets that seal the trans cooler to the lower radiator tank. Use long pick to maneuver gasket in/out.

11) Using the same pick, remove hardened Loc-Tite™ from the trans cooler threads.



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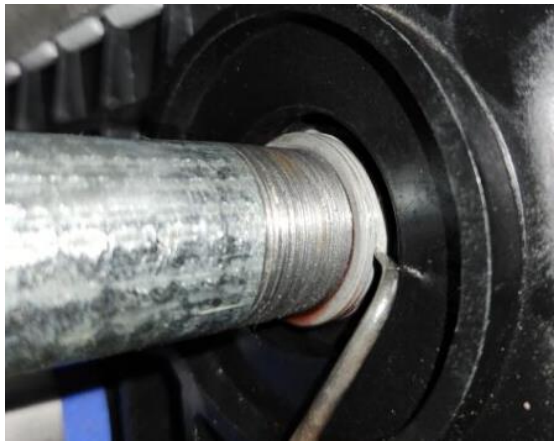
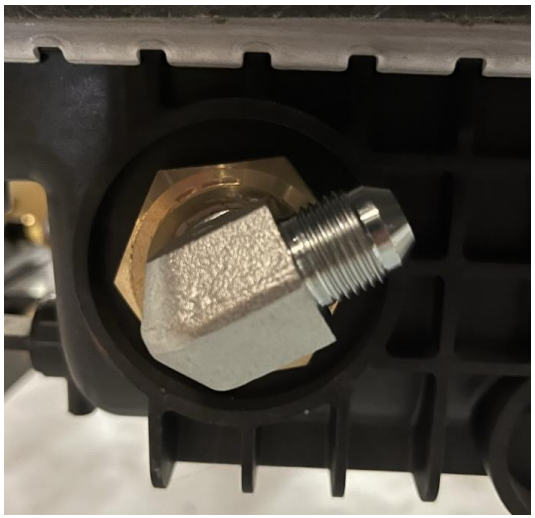
NOTE: Take your time here because any leftover Loc-Tite™ will inhibit the new nuts from threading on without galling the threads. The cooler is aluminum.

12) Apply 242 and install both brass nuts that came in the 10059342 kit, using the pipe nipples to help position the cooler. Once hand tight, remove nipple at that location. Torque nuts to 28 Ft-lbs. (38 N-M).



13) Remove pipe nipple, apply Loc-Tite™567 to NPT threads, and Install 10081789 90° fitting into the left/driver's side cooler port. Clock fitting as shown below.



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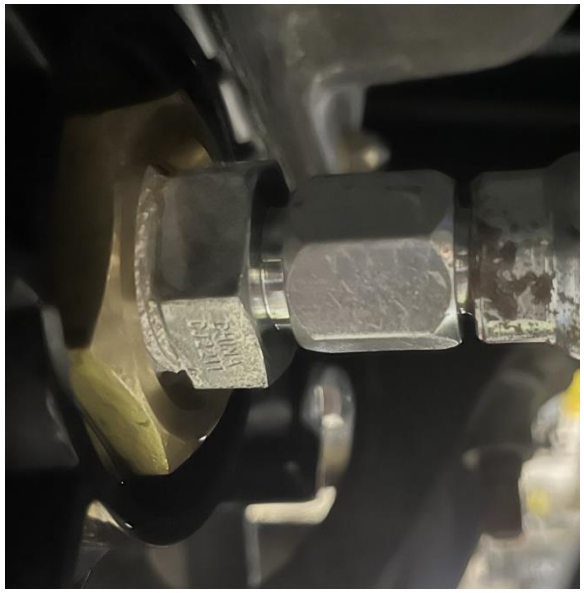
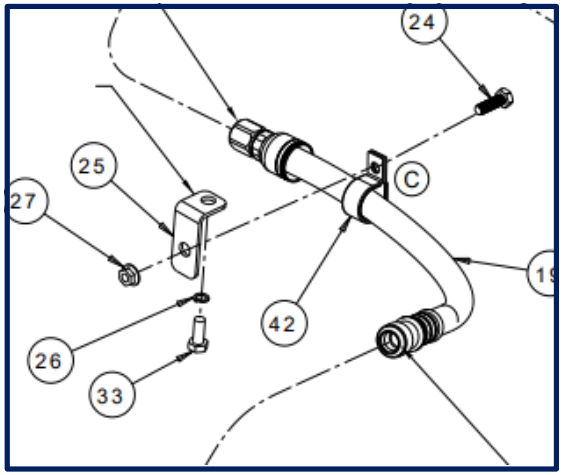
14) Remove pipe nipple, apply Loc-Tite™ 567 to the NPT threads, and Install 10081790 straight fitting into the right/passenger side cooler port.



15) Verify P clamp from passenger side cooler line is configured, per the below illustration. Make corrections if not.



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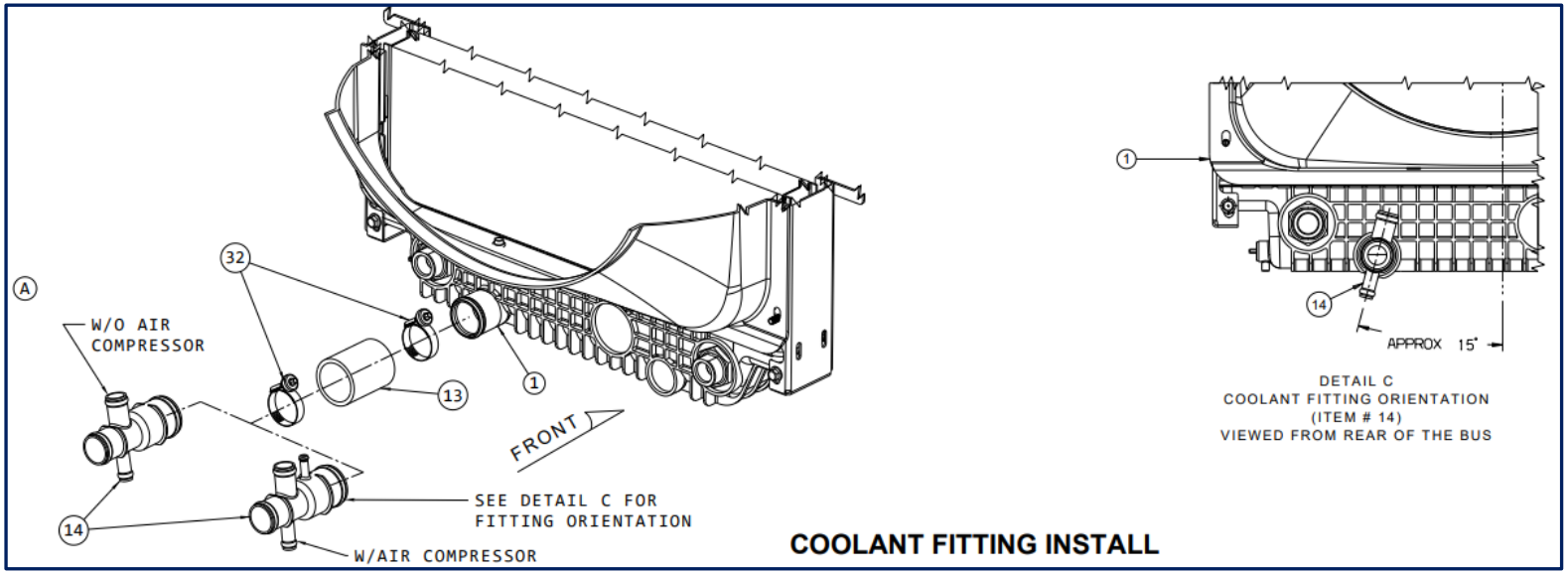
16) Install both cooler lines onto the flare fittings. Torque to 35-39 Ft-LBS (47-52 NM).

17) Replace o-ring on radiator drain with 10081850.

18) If unit is built without an air compressor, replace the lower coolant connector with updated part 10079947.



COOLANT FITTING INSTALL

19) Vacuum fill the cooling system reusing the coolant drained if meeting re-use guidelines.

a) Verify system holds vacuum to ensure no coolant leaks.

NOTE: The 7.3L is stubborn to remove the air from the cooling system post repairs. Although it's possible to get the air out of the system by running the engine, its substantially more efficient to vacuum fill it if at all possible.

20) Start engine and bring to operating temp (196°-216° F). Adjust coolant level, as needed.

21) Road test unit and bring transmission up to operating temp (196°- 216° F). Verify no leaks and adjust fluid level, as required.

NOTE: Transmission cooler loop is thermostatically controlled. Transmission oil will NOT circulate in the cooler loop if transmission fluid temp is <185°F.

22) Open heater valves and return to service.