



FIELD SERVICE CAMPAIGN – 1910827 August 2019

SUBJECT:

Transmission Oil Cooler Lines

MODELS INVOLVED:

LoneStar®

DEFECT DESCRIPTION:

Certain LoneStar® models may have been built without transmission oil cooler lines.

ELIGIBILITY:

This procedure applies ONLY to vehicles marked in the International® Service PortalSM with FSC 19108. Also complete any other open campaigns listed on the Service Portal at this time.

TOOLS REQUIRED:

Part Number	Description	Quantity
N/A	Cummins QuickServe Online Parts and Service Information	N/A

Table 1 Parts Information**PARTS REQUIRED:**

Part Number	Description	Quantity
164797R1	EXTENSION, CLIP TYPE	1 (Obtain Locally)
300785C1	EXTENSION, CLIP 90 DEGREE	1 (Obtain Locally)
300790C1	EXTENSION, CLIP	1
306132C1	STRAP, CABLE LOCK	1
3522693C1	CLAMP, PIPE 1 5/16" X 1 5/16"	1
3544378C1	NUT, HEXAGON M6	7
3544379C1	NUT, FLANGE M8	3
3552155C1	BOLT, FLANGE HEAD M6 X 20	6
3668337C1	ADAPTER, MALE 3/4-16 UNC X-10	4
3819403C1	CLIP, HALF MOON	6
4034728C1	TUBE TRANSMISSION COOLER	1
4034730C1	TUBE TRANSMISSION COOLER	1

40374R1	BOLT, HEXAGON FLANGE	1
439117C2	EXTENSION, CLIP	1
447266R91	CLAMP, PIPE SGL-CUSHIONED 5/8" ID X .406" MOUNTING	2
450017C1	LOOM, CONVOLUTED ELECTRICAL WIRE 1" I.D. X 1.29" O.D. (need 700 ft)	14
470375C1	CLAMP, CABLE 1" X 1" X 13/32"	5
505198C1	CLAMP, PIPE DBL-CUSHIONED 1.0" ID X 1.0" ID X .281" MOUNTING	1
86224H	SPACER, PIPE 1/4"	1
M10PR00092	HOSE, ASSEMBLY TRANSMISSION OIL COOLER	2
3535872C1	STRAP, CABLE LOCK DUAL CLAMP TIE 12.9"	1
30326R1	WASHER, LOCK 8.8 X 17 X 2MM	1
3619975C1	EXTENSION, CLIP	1

Table 2 Parts Information

WORK INSTRUCTIONS

GOVERNMENT REGULATION: Engine fluid (oil, fuel, and coolant) may be a hazard to human health and the environment. Handle all fluid and other contaminated materials (such as filters and rags) in accordance with applicable regulations. Recycle or dispose of engine fluids, filters, and other contaminated materials according to applicable State and Federal regulations.

WARNING! To prevent personal injury and / or death, or damage to property, park vehicle on hard flat surface, turn the engine off, set the parking brake, and install wheel chocks to prevent the vehicle from moving in both directions.

WARNING! To prevent personal injury and / or death, always wear safe eye protection when performing vehicle maintenance.

WARNING! To prevent personal injury, and / or death, or damage to property, keep flames, sparks, or other heat sources away from the vehicle and do not smoke while servicing the vehicle's batteries. Batteries expel gases which may cause an explosion resulting in personal injury / death, or damage to property. Avoid contact with any heat sources.

1. Park vehicle on a flat surface.
2. Shift transmission into Park or Neutral and set parking brake.
3. Turn ignition to Key OFF position.
4. Install wheel chocks.
5. Position jack under front axle.
6. Raise axle and support on jack stands.
7. Position drain pan under transmission to catch fluid that may leak during procedure.



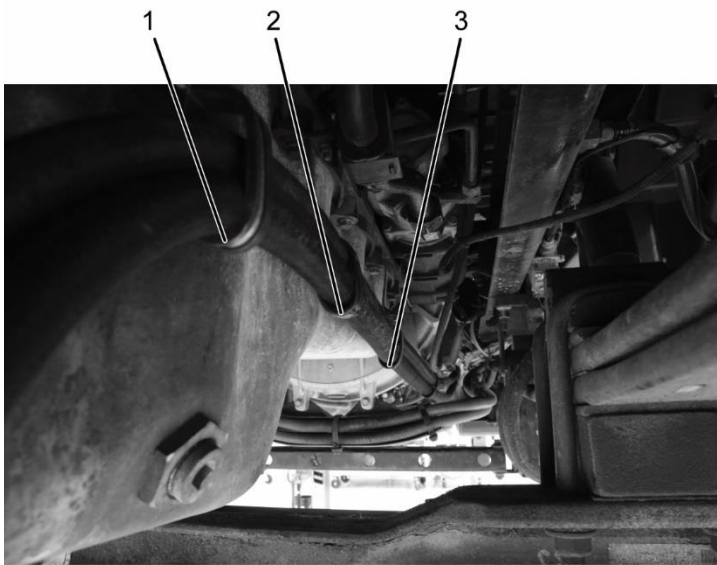
0000460523

Figure 1. O-Ring Hose Adapter Fittings

1. Adapter fitting (2)

NOTE: Supply line and return line plug caps are not shown in Figure 1.

8. Locate, remove and discard supply and return line plug caps at rear of transmission.
9. Install O-ring hose adapter fittings (Figure 1, Item 1). Using torque wrench, tighten to 41- 42 lb-ft (55 - 57 N•m).



0000460543

Figure 2. Line Routing

1. P-clamp - 6th pan bolt location
2. P-clamp - 5th pan bolt location
3. P-clamp - 3rd pan bolt location

NOTE: Save fasteners for reuse.

10. Locate and remove the following oil pan bolts from left-side of vehicle, working from rear of vehicle forward:
 - a. 3rd pan bolt (Figure 2, Item 3).
 - b. 5th pan bolt (Figure 2, Item 2).
 - c. 6th pan bolt (Figure 2, Item 1).

NOTE: For Steps 11 - 13, refer to Cummins documentation for correct oil pan bolt torque specification.

NOTE: Ensure L-bracket mounting locations and previously removed oil pan bolts are clean and free of debris prior to installation.

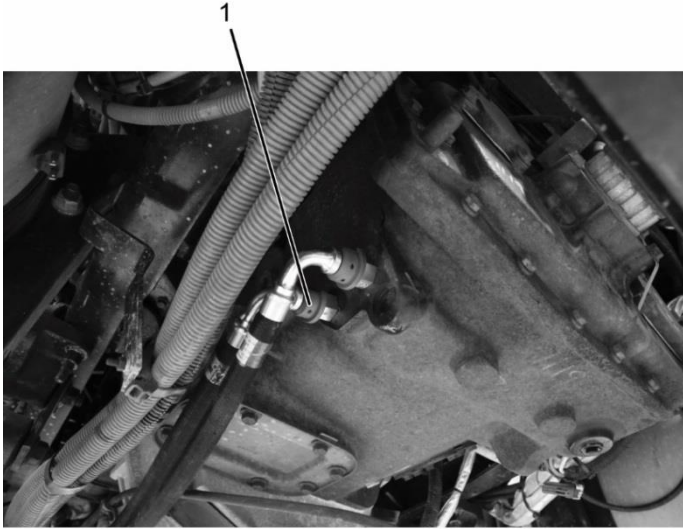
11. Fasten L-bracket to 6th oil pan bolt from rear of vehicle (Figure 2, Item 1). Using torque wrench, tighten oil pan bolt to correct torque specification.
12. Fasten L-bracket to 5th oil pan bolt from rear of vehicle (Figure 2, Item 2). Using torque wrench, tighten oil pan bolt to correct torque specification.
13. Fasten L-bracket to 3rd oil pan bolt from rear of vehicle (Figure 2, Item 3). Using torque wrench, tighten oil pan bolt to correct torque specification.

NOTE: To facilitate ease of installation, identify and temporarily label supply line and / or return line.

14. Position transmission cooler oil supply line and return line under vehicle, along driver-side of oil pan.

NOTE: DO NOT securely tighten nuts and bolts at this time. Supply lines need to be easily threaded through P-clamps in Step 16.

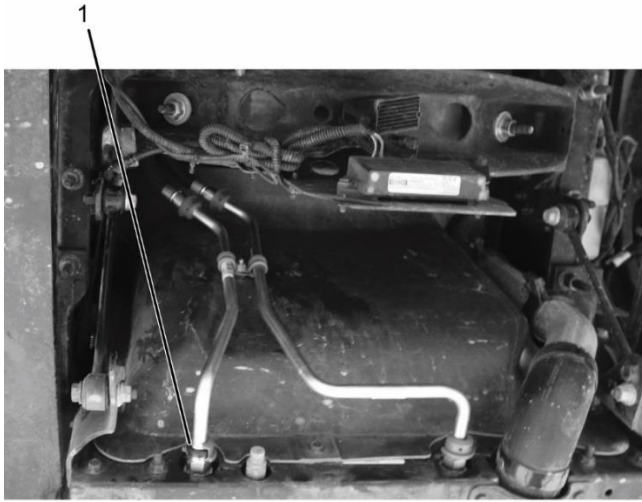
15. Install P-clamps to oil pan L-brackets using retaining nuts / bolts. Loosely tighten nuts / bolts.
16. Route supply line and return line through P-clamps. DO NOT fasten P-clamps.



0000460563

Figure 3. Supply / Return Line Connections - Transmission

1. Safety lock
17. Connect supply and return lines to quick disconnect fittings at rear of transmission. Engage and lock BLUE safety locks over fittings (Figure 3, Item 1).
18. Remove and discard supply and return line plug caps at transmission oil cooler.

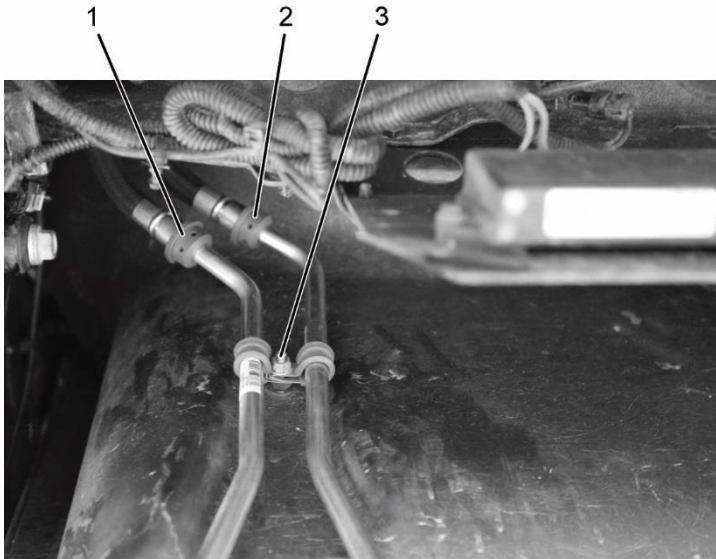


0000460583

Figure 4. Supply Line Connection / Return Line Connection

1. Safety lock

19. Connect supply and return line tubes to quick disconnect fittings at transmission oil cooler. Engage and lock BLUE safety locks over fittings (Figure 4, Item 1).

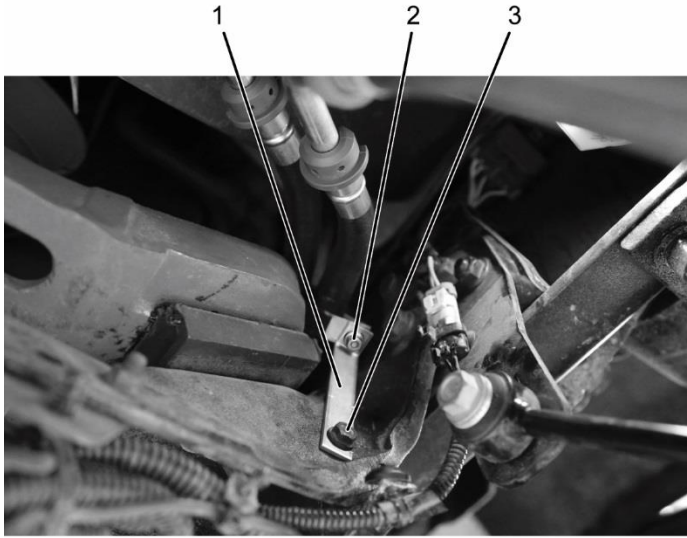


0000460603

Figure 5. Hard Line Connections

1. Supply line
2. Return line
3. P-clamp / retaining bolt

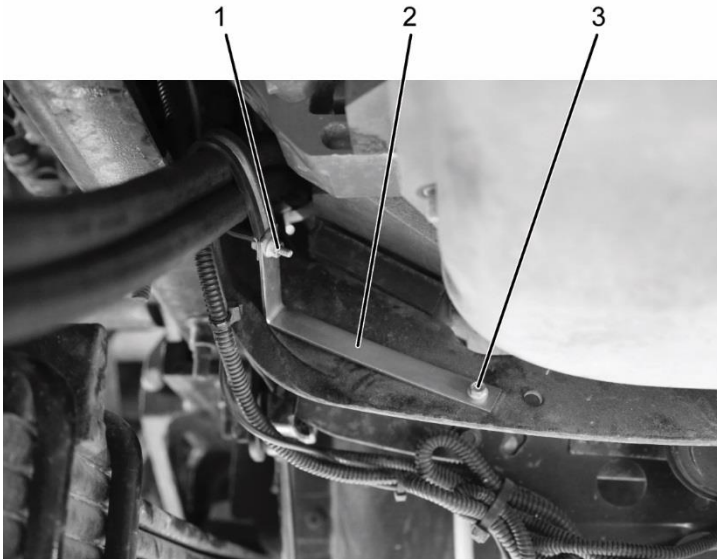
20. Connect supply line (Figure 5, Item 1) and return line (Figure 5, Item 2) to quick disconnect fittings and their respective tubes located near top driver-side of shroud. Engage and lock BLUE safety locks over fittings.
21. Use P-clamp and retaining bolt to secure transmission cooler tubes to lower section / left-side of fan shroud (Figure 5, Item 3). Securely tighten bolt.



0000460643

Figure 6. Engine Mount Crossmember (Left / Front Side)

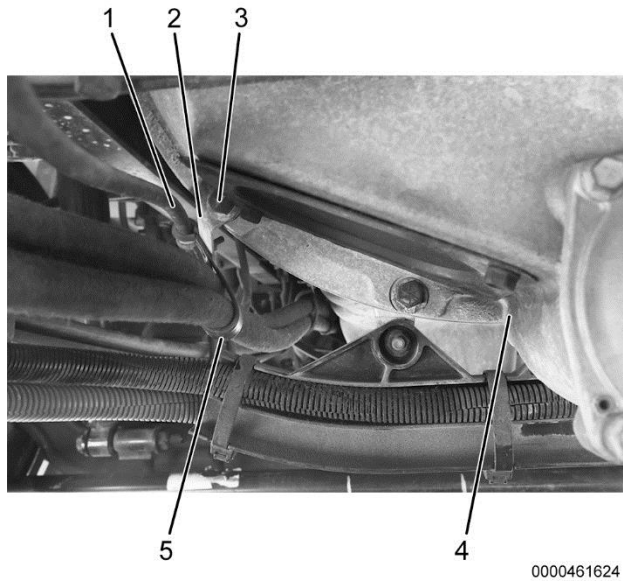
1. L-bracket
 2. P-clamp nut / bolt
 3. L-bracket bolt
-
22. Fasten L-bracket to left / front side of engine mount crossmember using L-bracket bolt (Figure 6, Item 3). Securely tighten bolt.
 23. Use P-clamp and retaining nut / bolt (Figure 6, Item 2) to secure transmission cooler lines to the L-bracket (Figure 6, Item 1). Securely tighten nut and bolt.



0000460663

Figure 7. Engine Mount Crossmember (Left / Rear Side)

1. P-clamp nut / bolt
 2. L-bracket
 3. L-bracket bolt
-
24. Fasten L-bracket to left / rear side of engine mount crossmember using L-bracket bolt (Figure 7, Item 3). Securely tighten bolt.
 25. Use P-clamp and retaining nut / bolt (Figure 7, Item 1) to secure transmission cooler lines to L-bracket (Figure 7, Item 2). Securely tighten nut and bolt.



0000461624

Figure 8. Bell Housing

1. P-clamp, small
 2. L-bracket
 3. Bolt
 4. Center of bell housing
 5. P-clamp, large
-
26. Looking from rear of vehicle toward front driver-side of vehicle, access and locate second bolt (Figure 8, Item 3) from center of bell housing (Figure 8, Item 4).
 27. Remove bolt (Figure 8, Item 3) and retain for reuse. DO NOT discard bolt.
 28. Using bolt removed in Step 27, install L-bracket (Figure 8, Item 2) to bell housing. Using torque wrench tighten bolt to 50 - 60 lb-ft (68 - 81 N•m).
 29. Route supply line and return line through large P-clamp (Figure 8, Item 5).
 30. Route hydraulic clutch line through small P-clamp (Figure 8, Item 1).
 31. Use P-clamp / retaining nut and bolt to secure transmission cooler lines and hydraulic clutch line to driver-side of bell housing. Securely tighten nut and bolt.
 32. Securely tighten oil pan P-clamp nuts / bolts installed in Step 15.

33. Position jack under front axle.
34. Raise axle, remove jack stands and lower to ground.
35. Run engine and verify no leaks at fittings.
36. Turn engine OFF.
37. Top off fluid.
38. Remove drain pan.
39. Remove wheel chocks.

LABOR INFORMATION

Operation number must appear on all claims.

Operation Number	Description	Time
A40-19108-1	Install Supply and Return Transmission Oil Cooler Lines	1.8 hrs

Table 3 Labor Information

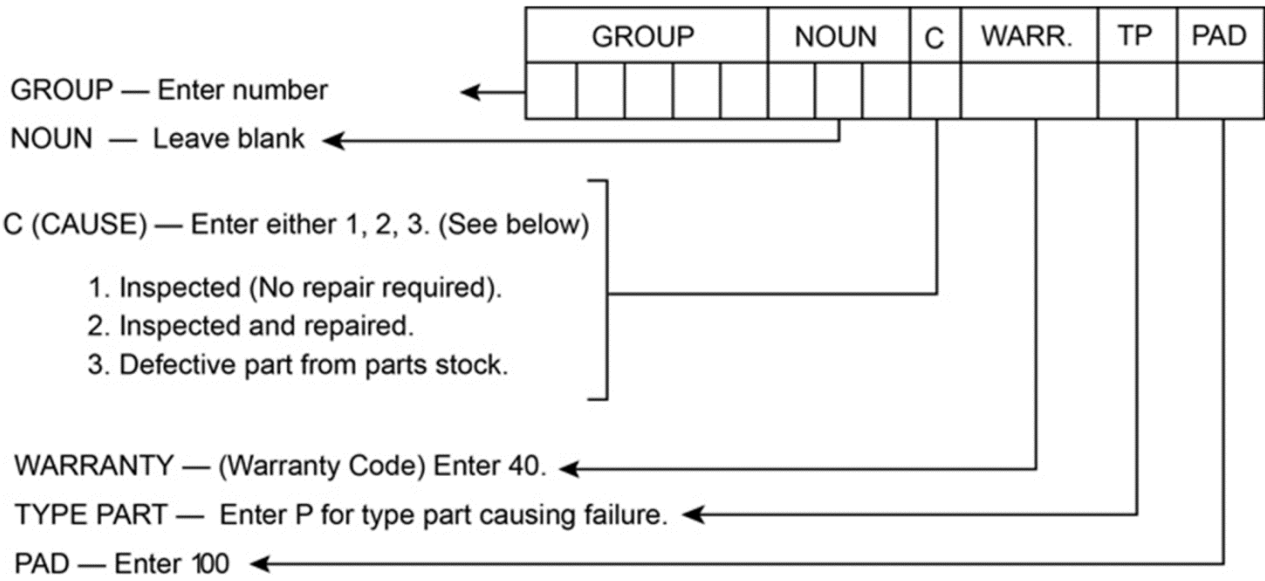
WARRANTY CLAIMS

Warranty claim expense is to be charged to Warranty. Claims are to be submitted in the normal manner, making reference to Field Service Campaign 19108.

Section 7 of the Warranty Policy and Procedures Manual contains further information related to the submission and processing of AFC / Recall claims.

As with all claim submissions, items acquired locally must be submitted in the “Other Charges” tab. The cost of any bulk items (such as a bag of cable tie straps, roll of wire, barrel of oil, or tube of silicone) should be prorated for the cost of the individual pieces / amount used during each repair.

To make sure this important improvement is made in a timely manner, all claims for 19108 activity must be submitted by 27 August 2020 or within the normal warranty period for the component, if after 27 August 2020.



0000047910