

## 21 - Transmission and Transfer Case/Automatic - 8HP50/850RE/Removal and Installation

### Removal and Installation - 3.6L

**Labor Operations:** Click to hide the list of LOPs associated with this procedure

No LOP information available for this service procedure.

**Special Tools:** Click to hide the list of tools used in this procedure

[Click here to launch the form to order any tools you need.](#)

	<p>9546 - Disconnect Tool</p> <p>Originally Shipped In Kit Number(s) 9590.</p>
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#### REMOVAL

##### CAUTION:

The transmission and torque converter must be removed as an assembly to avoid component damage. The converter driveplate, oil pump, or oil seal can be damaged if the converter is left attached to the driveplate during removal. Be sure to remove the transmission and converter as an assembly.

##### NOTE:

If the transmission is being reconditioned (clutch/seal replacement) or replaced, it is necessary to perform the Transmission Control Module (TCM) Adaptation Procedure using the scan tool (Refer to 08 - Electrical/8E - Electronic Control Modules/MODULE, Transmission Control/Module Programming) .

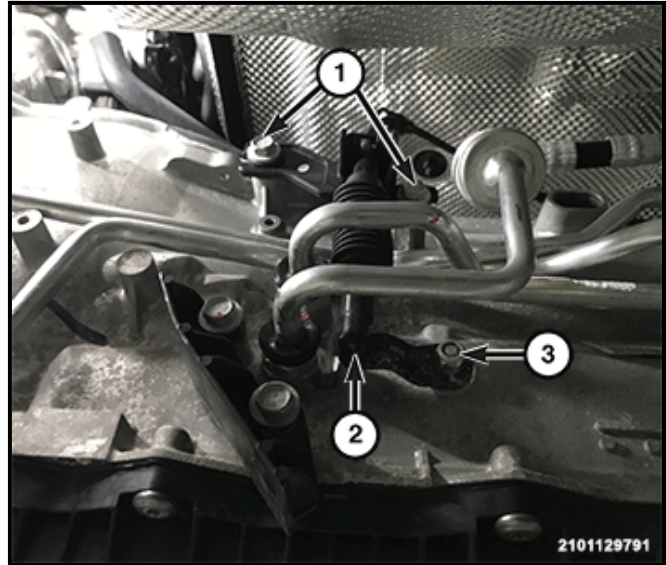
1. Disconnect and isolate the negative battery cable(s) (Refer to 08 - Electrical/Battery System/Standard Procedure) .
2. Raise and support the vehicle (Refer to 04 - Vehicle Quick Reference/Hoisting/Standard Procedure) .
3. Remove the transmission mount nuts (Refer to 09 - Engine/Engine Mounting/INSULATOR, Engine Mount/Removal and Installation) .
4. If equipped, remove the transfer case skid plate (Refer to 13 - Frame and Bumpers/Under Body Protection/PLATE, Skid, Front/Removal and Installation) .
5. Remove the starter (Refer to 08 - Electrical/Starting/STARTER/Removal and Installation) .

- Support the transmission with a suitable jack and remove the frame cross-member supporting the transmission (Refer to 13 - Frame and Bumpers/Frame/CROSSMEMBER, Front Suspension/Removal and Installation) .

**NOTE:** Be careful not to damage the transmission pan.

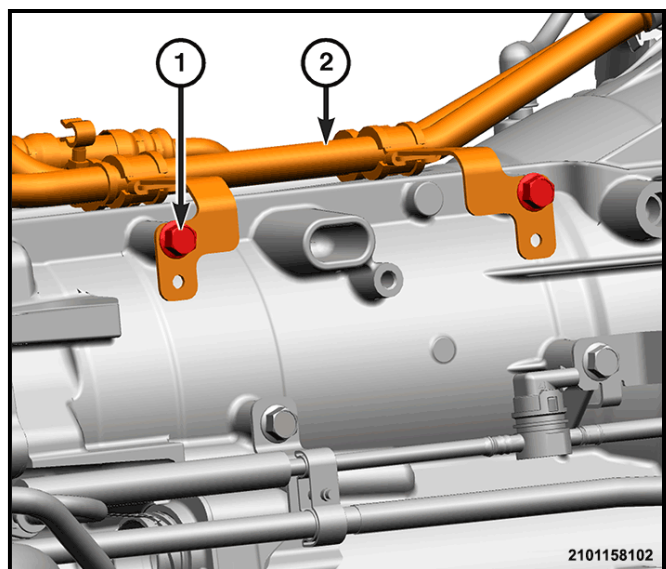
- Remove the exhaust pipe (Refer to 11 - Exhaust System/PIPE, Exhaust/Removal and Installation) .
- Remove the heat shield below rear prop shaft.

- Disconnect the Manual Park Release (MPR) cable (2) from the MPR lever.



- Remove the transfer case (Refer to 21 - Transmission and Transfer Case/Transfer Case/Removal and Installation) .

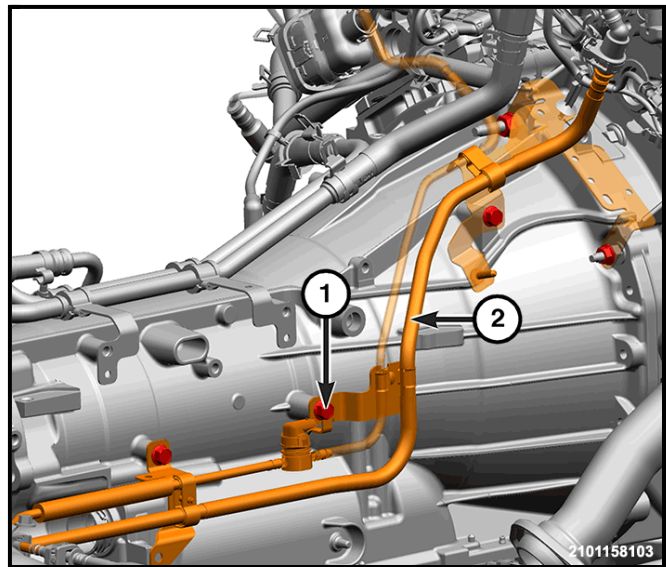
- Remove the two fasteners (1) that hold the transmission heater coolant hoses (2) to the right side of the transmission.



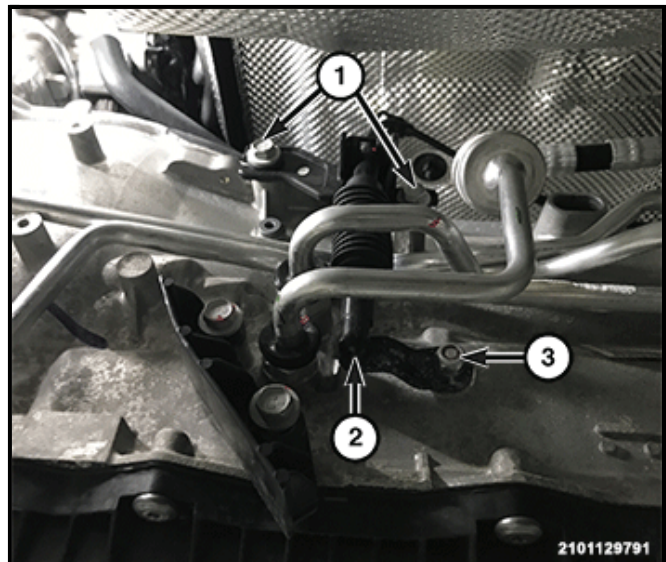
12. Disconnect the 13-pin plug connector (1). Turn the connector counter-clockwise to release.



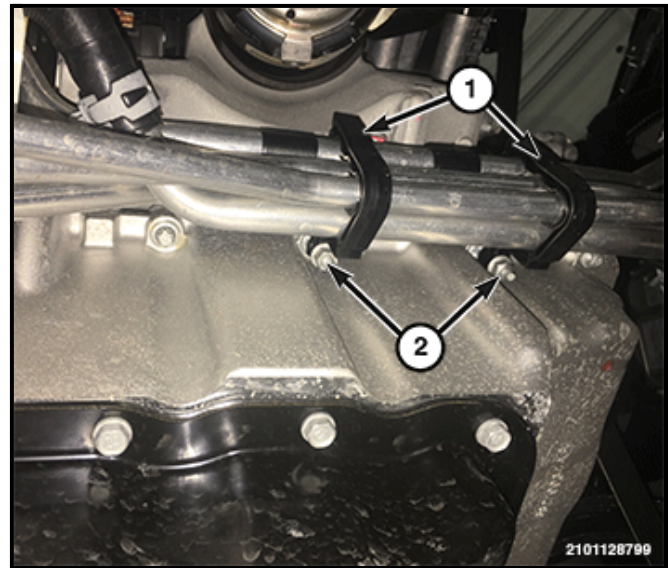
13. Remove the vapor line bracket fasteners (1) and let the bracket and lines (2) hang freely.
14. Remove all remaining wiring harness retainers from the transmission.



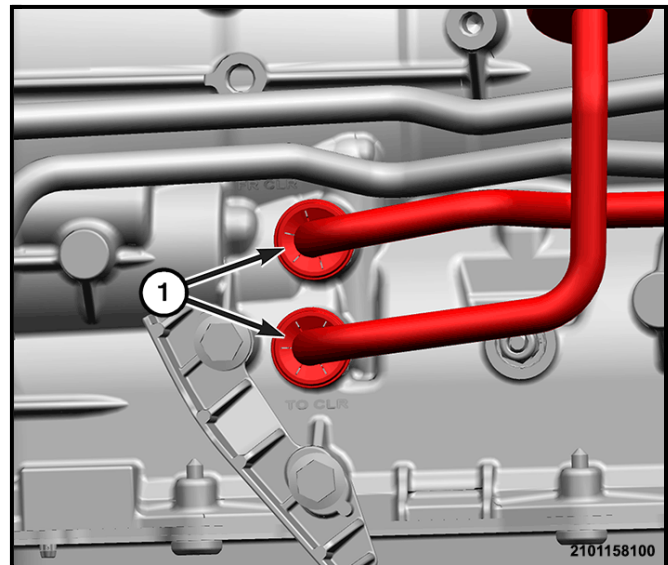
15. Remove the bolts (1) from the MPR cable bracket (2) and position the cable bracket (2,3) aside.



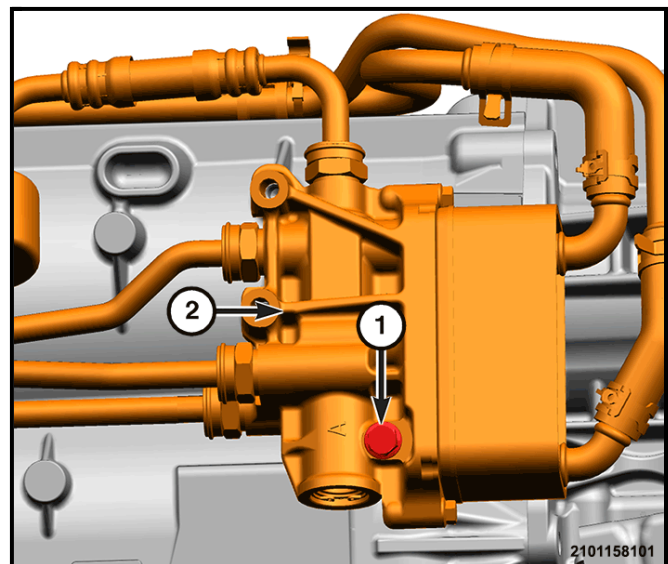
16. Disconnect the left front transmission oil cooler line clip (1).
17. Remove the two transmission oil cooler line retaining bolts (2) from the transmission, and one transmission oil cooler line retaining bolt from the engine.



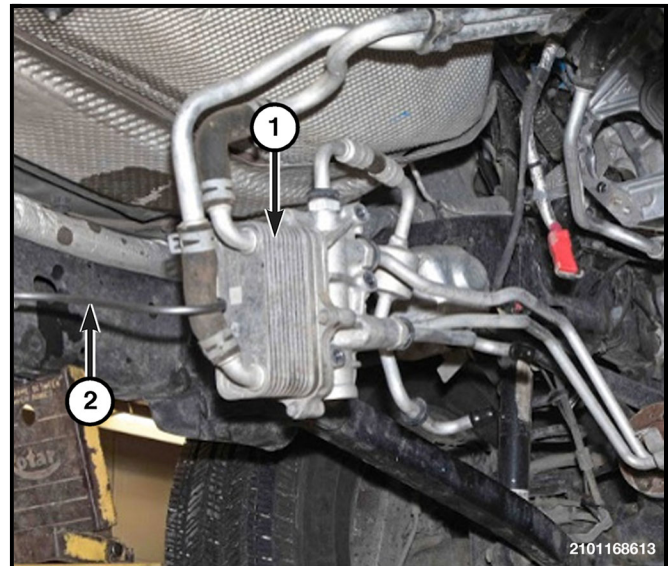
18. Using the Disconnect Tool 9546, disconnect the transmission oil cooler lines (1) from the transmission.



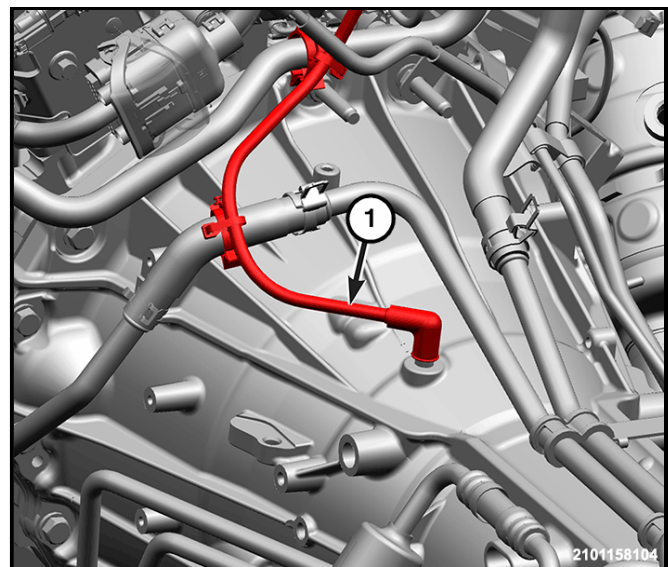
19. Remove the fastener (1) retaining the transmission oil heater (2). Position the transmission oil heater aside.



20. Using a suitable tool (2), secure the transmission oil heater (1) to the frame.



21. Disconnect transmission vent hose (1).



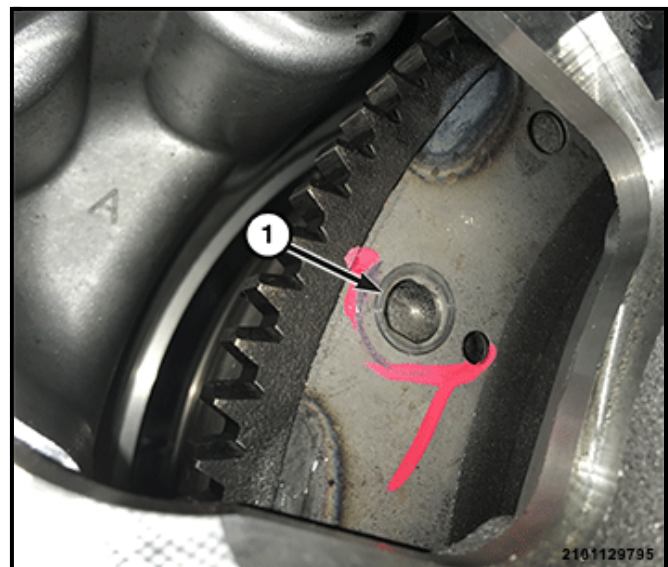
22. Rotate the crankshaft clockwise and remove six torque converter bolts through the starter pocket (1).

**NOTE:**

**There are three sets of two torque converter bolts located 120° apart from each other.**

**NOTE:**

**If necessary, use a grease pen or similar to mark crankshaft pulley every 120° for converter bolt location.**



23. Remove the transmission to engine bolts.

24. Support engine with a suitable stand before removing transmission.

**NOTE:** Be careful not to damage the engine oil pan when using the stand. Use a rubber or wood block between the pan and the stand to support the engine.

25. Secure the transmission to a suitable jack.

26. Carefully maneuver the transmission and the torque converter assembly rearward off of the engine block dowels.

**NOTE:** Be careful not to damage or bend the transmission oil cooler lines.

27. Hold the torque converter in place during removal of the transmission.

28. Lower transmission and remove the assembly from under the vehicle.

29. Remove the torque converter (Refer to 21 - Transmission and Transfer Case/Automatic/TORQUE CONVERTER/Removal and Installation) .

## INSTALLATION

**NOTE:** If the transmission is being reconditioned (clutch/seal replacement) or replaced, it is necessary to perform the TRANSMISSION VERIFICATION TEST (Refer to 28 - DTC-Based Diagnostics/MODULE, Transmission Control (TCM) /Standard Procedure).

1. If a replacement transmission is being installed, transfer any components necessary such as the shift cable bracket and MPR bracket from the original transmission onto the replacement transmission.
2. Apply a light coating of Mopar® High Temp Grease to the torque converter hub pocket in the rear pocket of the engine crankshaft.
3. Install the torque converter (Refer to 21 - Transmission and Transfer Case/Automatic/TORQUE CONVERTER/Removal and Installation) .
4. Place the transmission on a suitable jack and secure the transmission to the jack.

5. Raise the transmission and align the torque converter with the drive plate and the transmission converter housing with the engine block.

**NOTE:** If the torque converter was spun or removed, align the torque converter bolt holes with the starter pocket to ease the bolt installation.

6. Move the transmission forward. Then maneuver the transmission to align the converter housing with the engine block dowels.

**NOTE:**

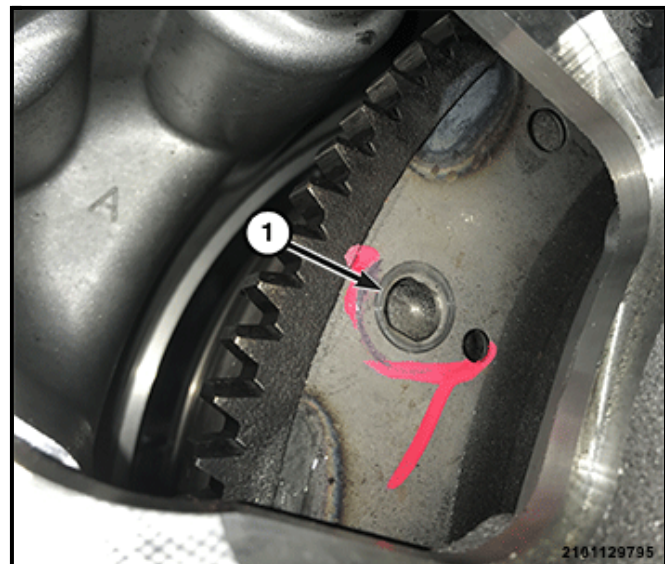
**It may be necessary to use a suitable jack to support the rear of the engine during transmission installation.**

7. Carefully maneuver the transmission forward and over the engine block dowels until the converter hub is seated in the crankshaft. Verify that there are no wires loose or that the transmission vent hose have become trapped between the engine block and the transmission.

8. Install two bolts to attach the transmission to the engine.

9. Install the remaining torque converter housing to engine bolts. Tighten all of the torque converter housing bolts to the proper ([Torque Specifications](#)) .

10. Rotate the crankshaft in a clockwise direction to line up the alignment hole (1) in the flex plate, then start the first bolt.



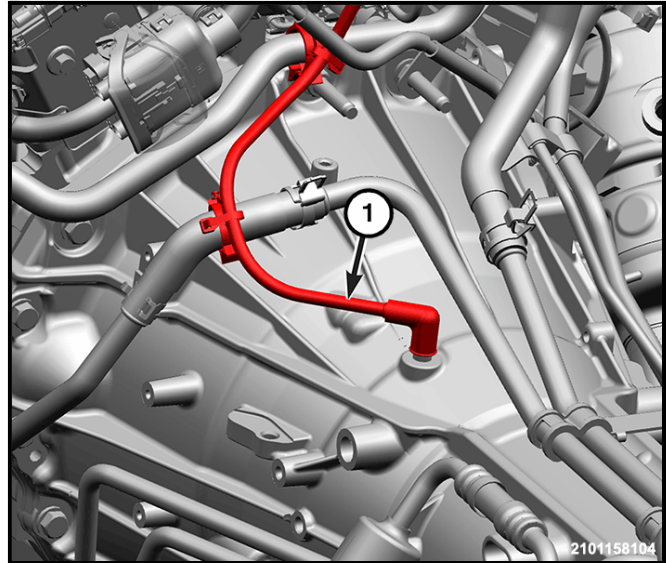
11. Rotate the crankshaft in a clockwise direction until the flexplate to torque converter bolts are accessible. There are three sets of two bolts 120° apart.

**NOTE:**

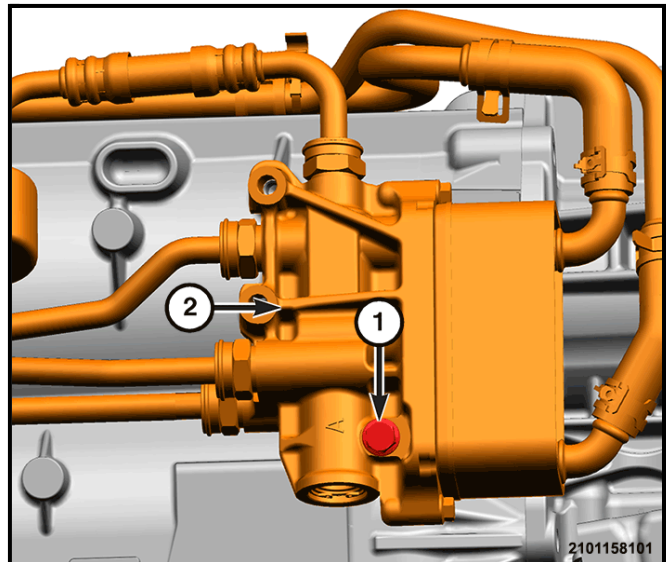
**Install all torque converter bolts by hand first. There are three sets of two bolts 120° apart.**

12. Install the torque converter to flexplate bolts through the starter pocket and tighten to the proper (Torque Specifications) .

13. Connect the transmission vent hose (1).

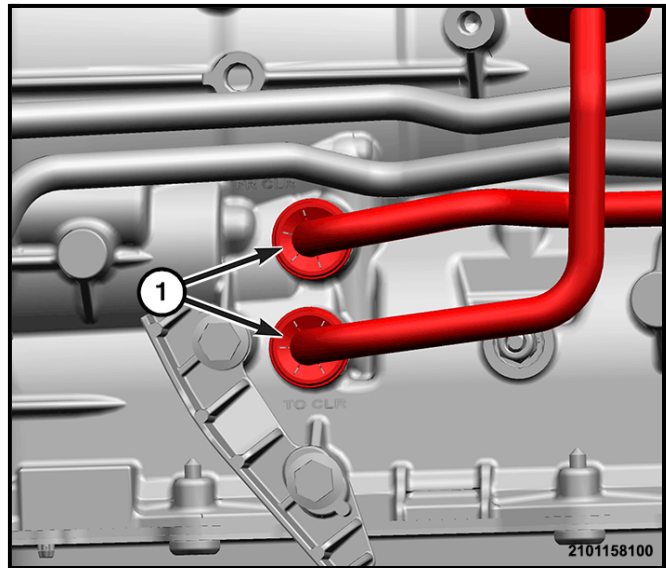


14. Place the transmission oil heater, install the fastener and tighten to proper (Torque Specifications) .

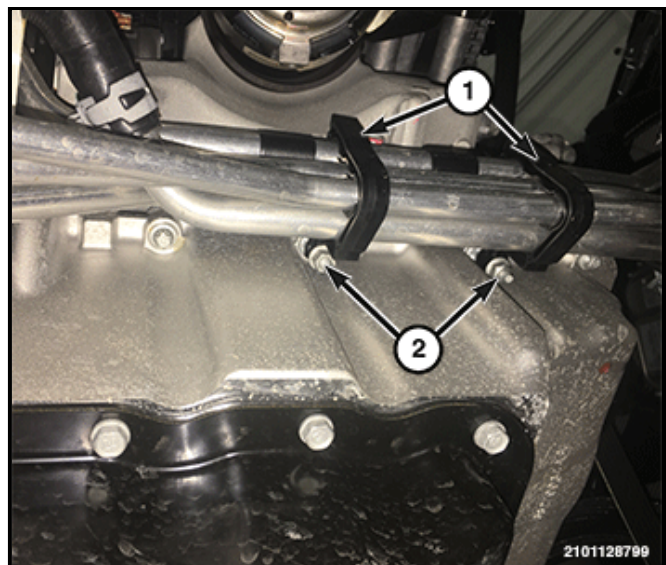


15. Connect the transmission lines (1) to the transmission. Be sure that the lines are fully

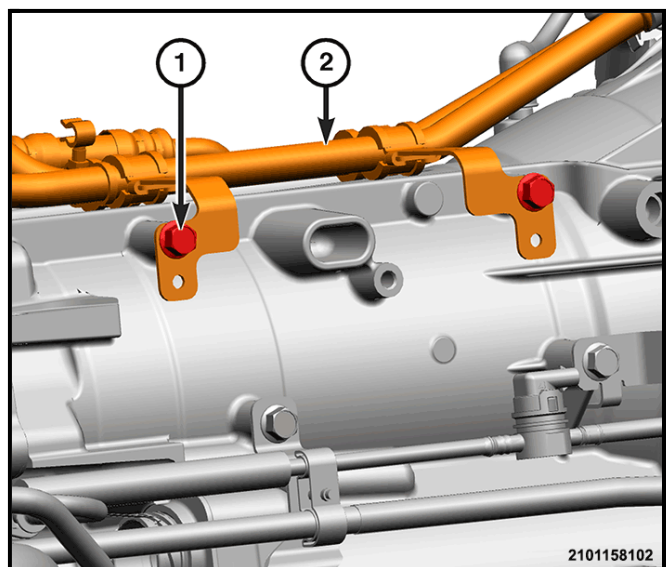
seated. Snap the lock ring over the line fitting.



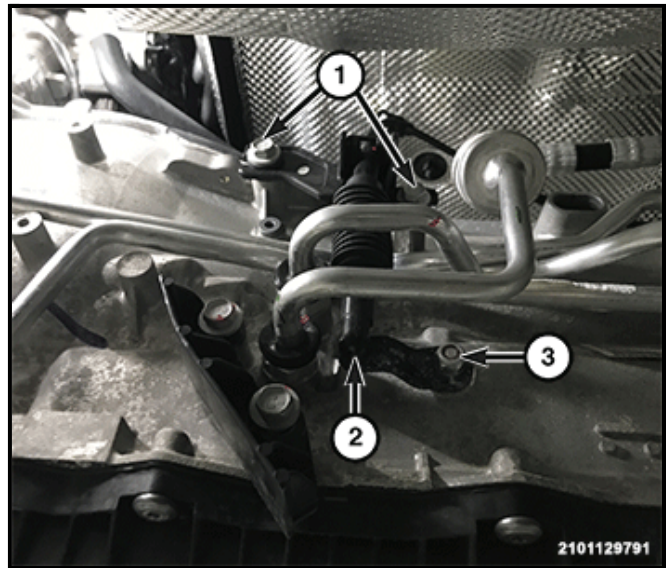
16. Install the two transmission oil cooler line retaining bolts (2) to the transmission, and one transmission oil cooler line retaining bolt to the engine. Connect left front transmission line clip (1).



17. Install the two fasteners (1) that hold the transmission heater coolant hoses (2) to the right side of the transmission.



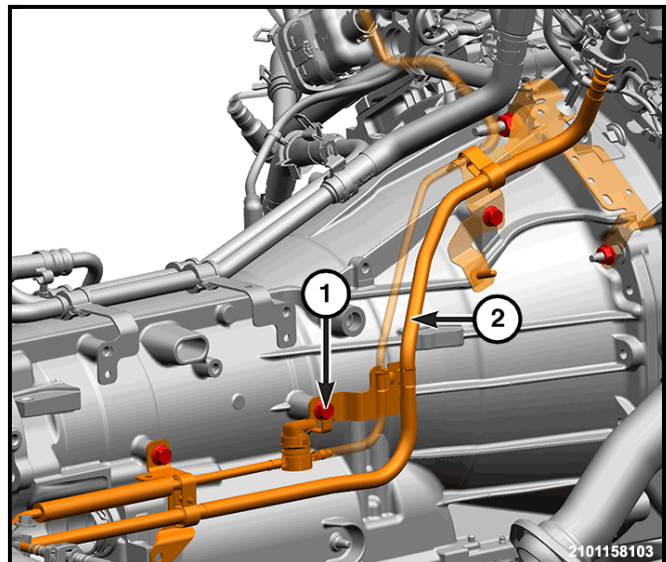
18. Install the MPR cable (2) onto the bracket and lock into place.



19. Connect the 13-pin plug connector (1). Turn the connector clockwise to lock.



20. Place the brackets and lines (2), and install the vapor line bracket fasteners (1) and torque to the proper (Torque Specifications) .



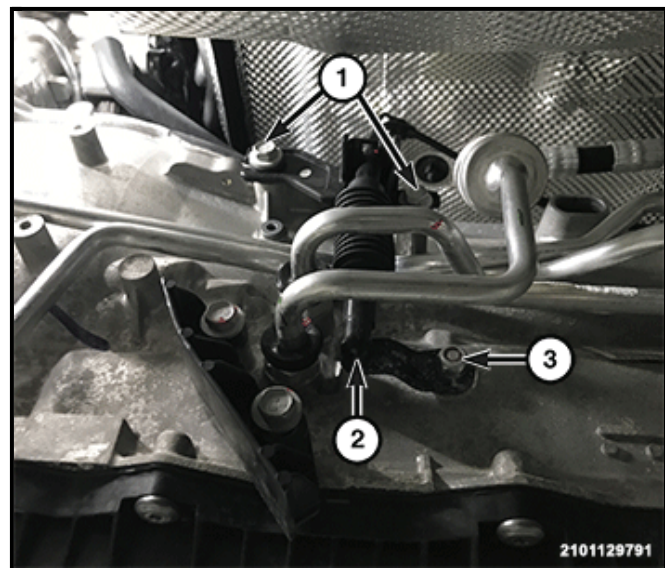
21. Install the transfer case (Refer to 21 - Transmission and Transfer Case/Transfer Case/Removal and Installation) .

**NOTE:**

**Support the front of the front propeller shaft. Do not install the front propeller shaft to axle bolts until the left side catalytic converter is installed.**

22. Install the front propeller shaft to the transfer case (Refer to 03 - Differential and Driveline/Propeller Shaft/Removal and Installation) .
23. Install the transmission mount nuts (Refer to 09 - Engine/Engine Mounting/INSULATOR, Engine Mount/Removal and Installation) .
24. Install the rear propeller shaft (Refer to 03 - Differential and Driveline/Propeller Shaft/Removal and Installation) .

25. Connect the MPR cable (2) to the MPR lever (3).



26. Install the heat shield for the rear propeller shaft/muffler.
27. Install the front propeller shaft (Refer to 03 - Differential and Driveline/Propeller Shaft/Removal and Installation) .
28. Install the exhaust pipe (Refer to 11 - Exhaust System/PIPE, Exhaust/Removal and Installation) .
29. Install the frame cross-member supporting the transmission (Refer to 13 - Frame and Bumpers/Frame/CROSSMEMBER, Front Suspension/Removal and Installation) . .

30. Install the starter (Refer to 08 - Electrical/Starting/STARTER/Removal and Installation) .
31. Install the transfer case skid plate (Refer to 13 - Frame and Bumpers/Under Body Protection/PLATE, Skid, Front/Removal and Installation) .
32. Fill the transmission with appropriate fluid (Refer to 21 - Transmission and Transfer Case/Automatic/FLUID and FILTER/Standard Procedure) .
33. Lower the vehicle.
34. Connect the negative battery cable(s) (Refer to 08 - Electrical/Battery System/Standard Procedure) .
35. If the valve body is replaced, program the Transmission Control Module (TCM) (Refer to 08 - Electrical/8E - Electronic Control Modules/MODULE, Transmission Control/Module Programming) .
36. Perform the TRANSMISSION VERIFICATION TEST (Refer to 28 - DTC-Based Diagnostics/MODULE, Transmission Control (TCM) /Standard Procedure).