



TECHNICAL SERVICE BULLETIN

Classification: EM22-007B	Reference: ITB22-038B	Date: August 4, 2023
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TURBOCHARGER REPLACEMENT PROCEDURE

This bulletin has been amended. See **AMENDMENT HISTORY** on the last page.
Please discard previous versions of this bulletin.

APPLIED VEHICLES: 2016-2023 Q50 (V37)
2017-2022 Q60 (CV37)

APPLIED ENGINES: VR30DDTT

SERVICE INFORMATION

If either one or both turbochargers require replacement, refer to the **SERVICE PROCEDURE** in this bulletin for the updated procedure.

IMPORTANT: You **MUST** closely follow the entire **SERVICE PROCEDURE** as it contains information that is essential to successfully completing this repair.

- 2016-2017 Q50 and 2017 Q60 will require an ECM reprogramming at the end of this **SERVICE PROCEDURE** for Turbocharger Exhaust Gas Temperature Sensor deletion. Refer to ITB17-050.

Bulletins are intended for use by qualified technicians, not 'do-it-yourselfers'. Qualified technicians are properly trained individuals who have the equipment, tools, safety instruction, and know-how to do a job properly and safely. **HINT:** If you believe that a described condition may apply to a particular vehicle, **DO NOT** assume that it does. See your Infiniti retailer to determine if this applies to your vehicle.

SERVICE PROCEDURE

Remove Driveline

IMPORTANT: The following Figures are of an AWD vehicle; 2WD is similar.

1. Place the vehicle on a lift that will allow the drivetrain to be removed.
2. Remove the Engine Cover.
 - Refer to the ESM: **REPAIR > ENGINE > ENGINE MECHANICAL > REMOVAL AND INSTALLATION > ENGINE COVER**
3. Remove the Cowl Top Cover RH and Cowl Top Cover LH.
 - Refer to the ESM: **REPAIR > BODY EXTERIOR, DOORS, ROOF & VEHICLE SECURITY > EXTERIOR > REMOVAL AND INSTALLATION > COWL TOP**
4. Disconnect the battery cable from the negative terminal.
5. Remove the cover from the battery positive terminal.
6. Disconnect the battery cable from the positive terminal.
7. Release the fuel pressure.

⚠ WARNING

To avoid the risk of death or severe personal injury, work in a well-ventilated area to prevent gasoline vapors from accumulating and to prevent their possible ignition.

- Refer to the ESM: **DIAGNOSIS > ENGINE > ENGINE CONTROL SYSTEM > BASIC INSPECTION > ENGINE CONTROL SYSTEM > FUEL PRESSURE CHECK**

8. Disconnect the wiring harness connector shown in Figure 1.
9. Roll up the wiring harness dust boot (Figure 1).

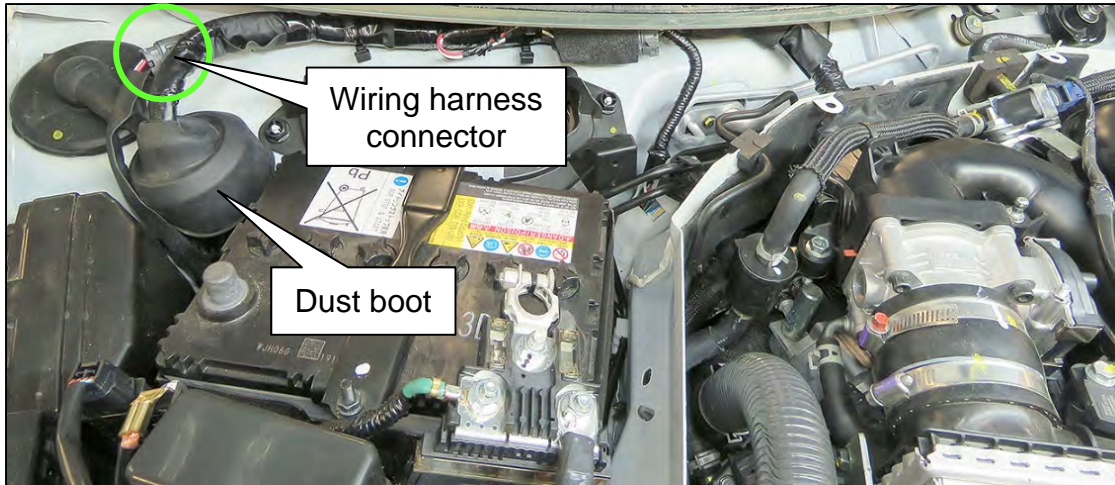


Figure 1

10. Disconnect the Engine Control Harness connector from the Engine Room Harness connector (Figure 2), located under the dust boot.

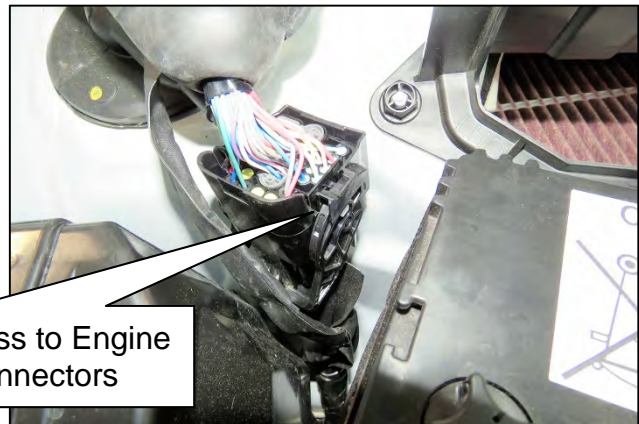


Figure 2

11. Disconnect the wiring harness connector shown in Figure 3.
 - Located directly behind the battery.
12. Detach the two (2) engine control harness mounting clips (Figure 3).

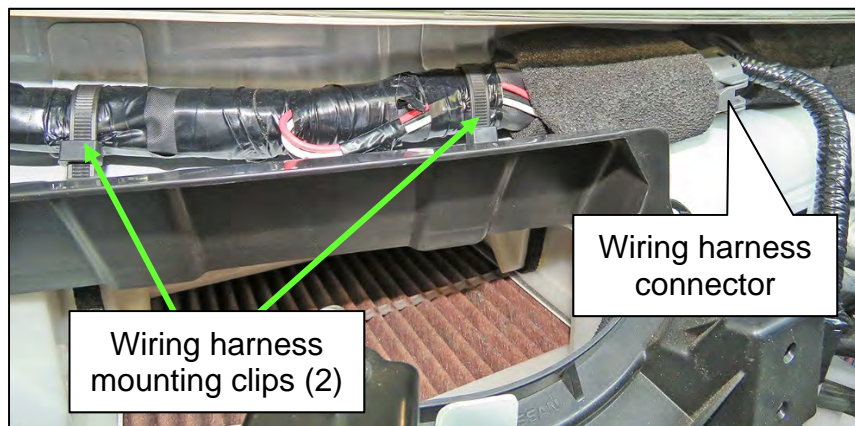


Figure 3

13. Detach the Engine Control Harness grommet from the bulkhead.

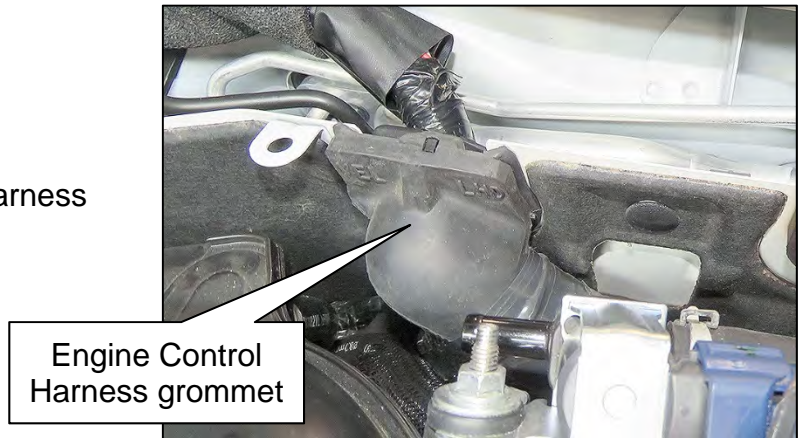


Figure 4

14. Disconnect Vacuum Hose 1 from the vacuum piping (Figure 5), and then detach its grommet from the bulkhead.

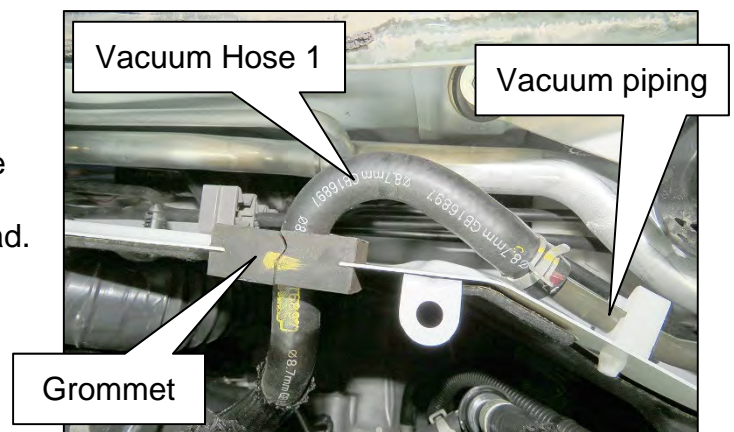


Figure 5

15. Disconnect the three (3) ECM wiring harness connectors.

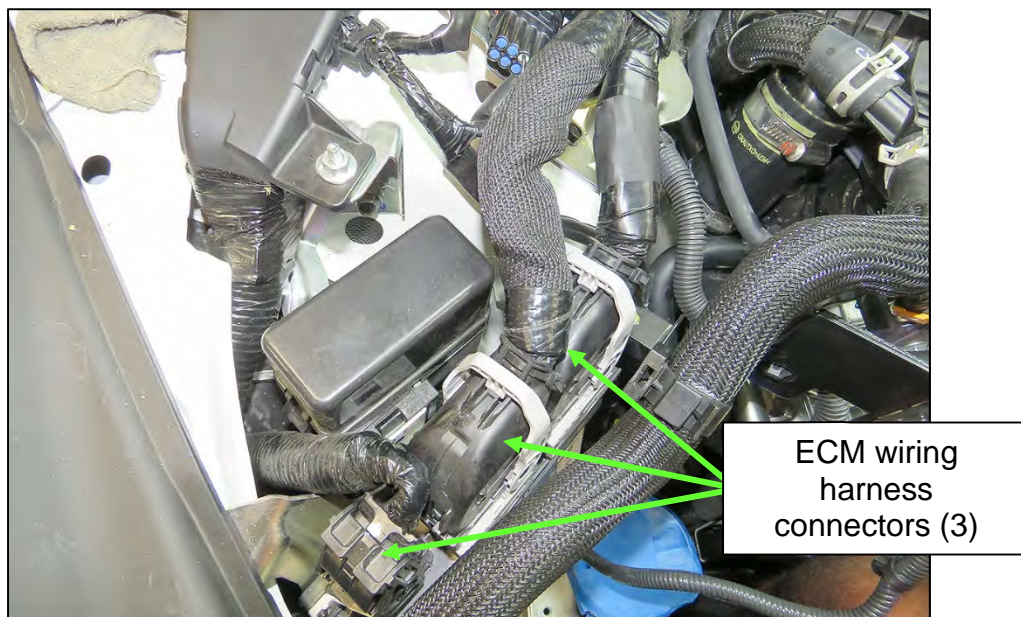


Figure 6

16. Disconnect the three (3) wiring harness connectors shown in Figure 7.

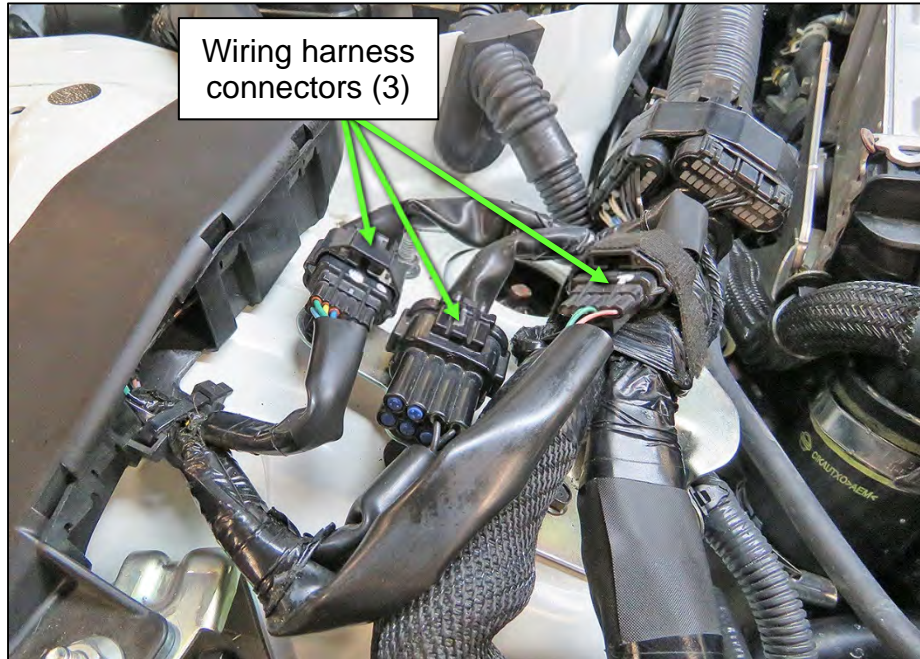


Figure 7

17. Remove the positive battery cable nut, and then remove the positive battery cable from the battery terminal with fusible link.

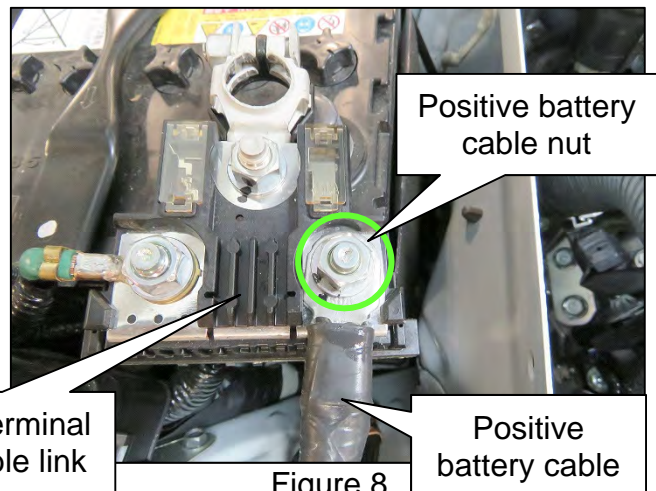


Figure 8

18. Disconnect the engine wiring harness from its mounting bracket.
19. Detach the positive battery cable grommet from the vehicle.

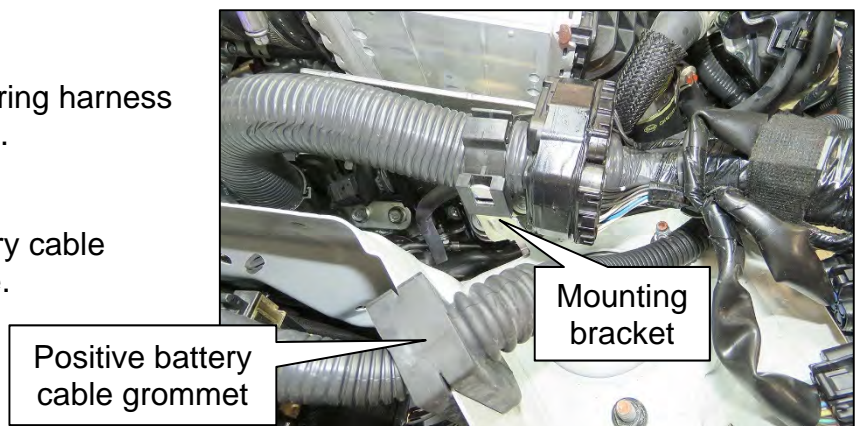


Figure 9

20. Detach the body ground cable (Figure 10) and the engine ground cable (Figure 11).
 - The body ground cable is located on the driver (LH) side of the engine room inner fender.
 - The engine ground cable is located on the front of the timing cover.

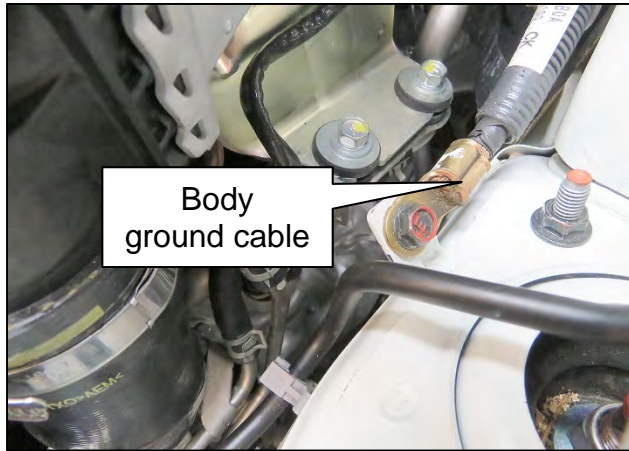


Figure 10

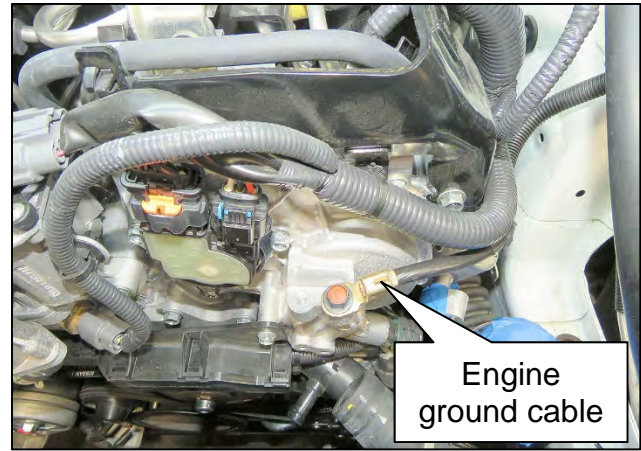


Figure 11

21. Remove all vehicle Under Covers.
22. Drain the coolant from the radiator.
23. Remove the two (2) bolts retaining the engine room wiring harness bracket shown in Figure 12.
24. Disconnect both the passenger (RH) side and the driver (LH) side heater hoses from the engine.

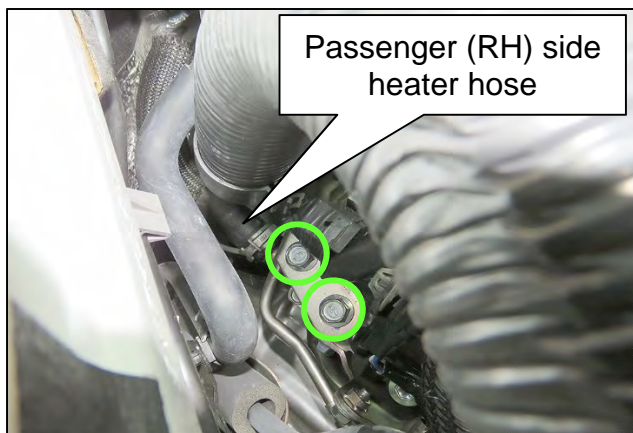


Figure 12



Figure 13

25. Detach Fuel Feed Hose 2.

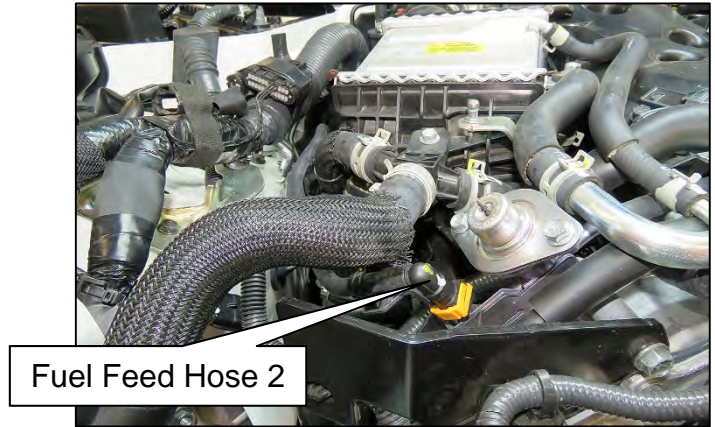


Figure 14

26. Disconnect Water Hose 1 from Connector Pipe 3.

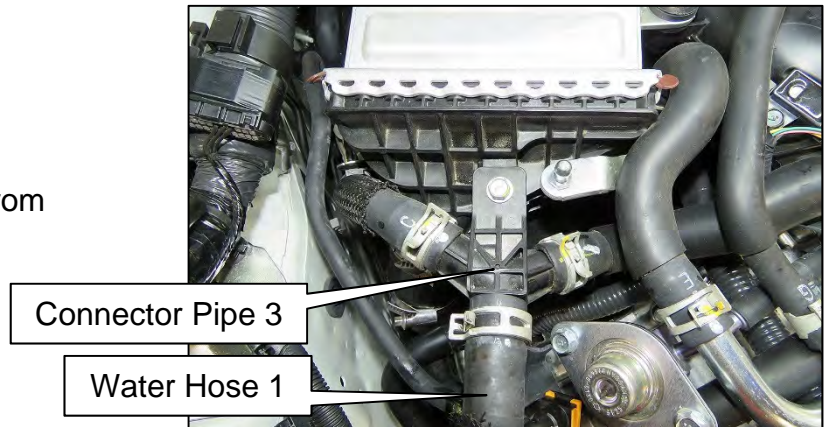


Figure 15

27. Disconnect Water Hose 9 from Water Pipe 3.

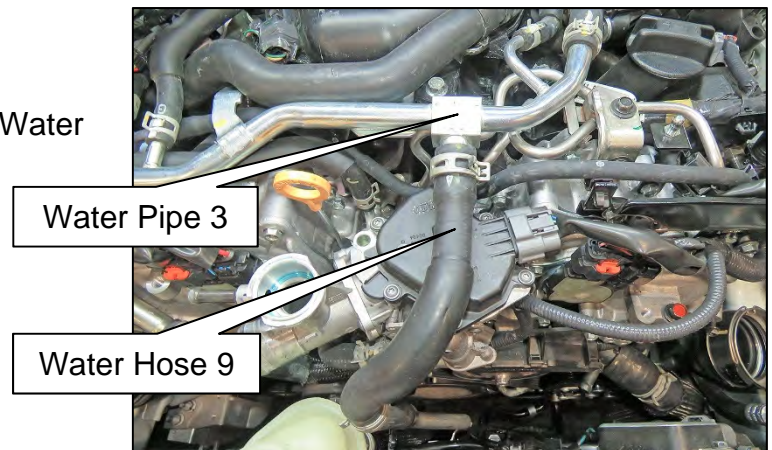


Figure 16

28. Remove the Air Duct (inlet), shown in Figure 17.

- Eight (8) clips.

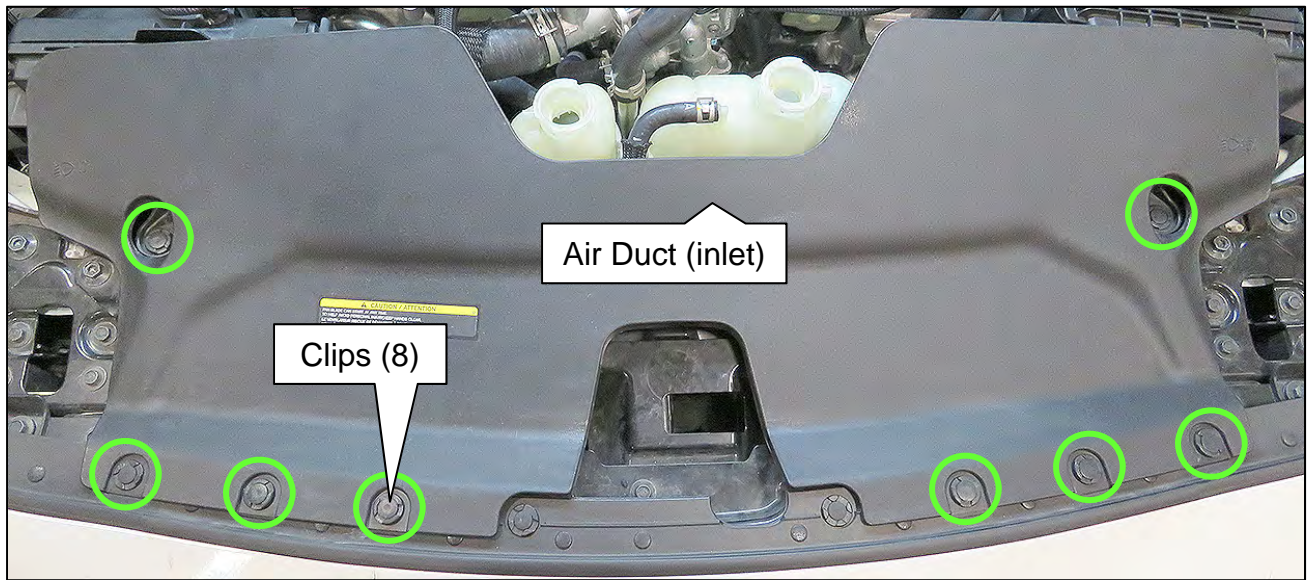


Figure 17

29. Disconnect the Radiator Hose (Upper) and the Reservoir Tank Hose from the Multi-way Control Valve.

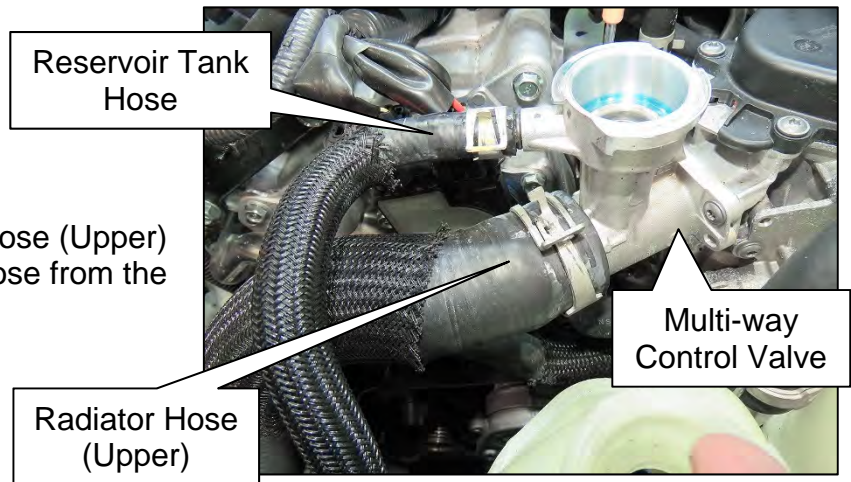


Figure 18

30. Disconnect the Radiator Hose (Upper) from the radiator.

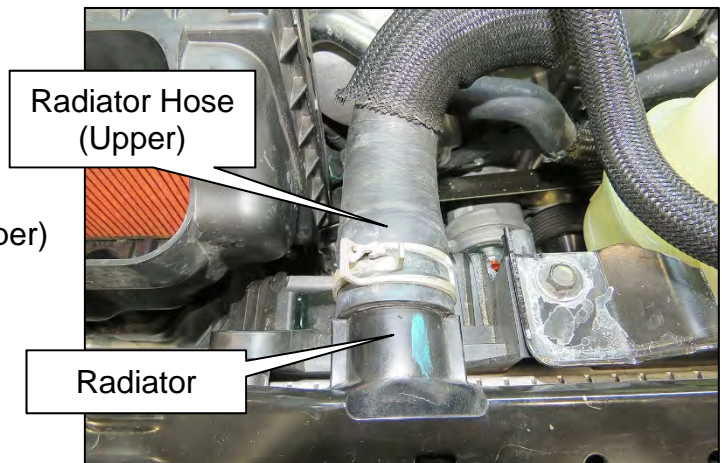


Figure 19

31. Unclip the first clip of the passenger (RH) side and the driver (LH) side Hood Side Seal Assemblies, to allow access to the Air Cleaner Body (bank 1) and Air Cleaner Body (bank 2) mounting bolts (Figure 20).

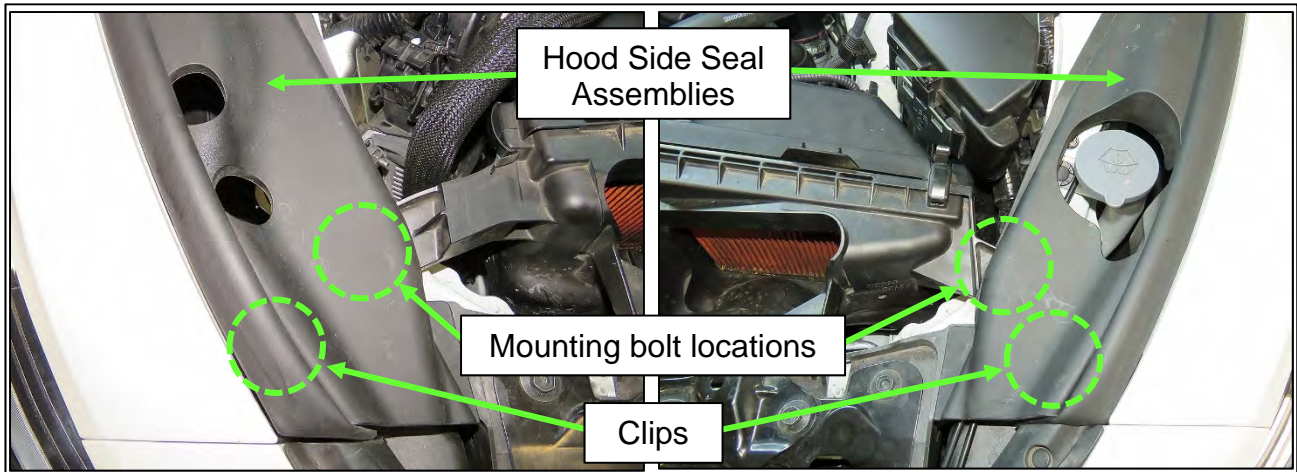


Figure 20

32. Disconnect both MAF sensor wiring harness connectors from the MAF sensors (Figure 21), located on the Air Cleaner Body (bank 1) and Air Cleaner Body (bank 2).
33. Unclip the MAF sensor wiring harnesses from Air Cleaner Body (bank 1) and Air Cleaner Body (bank 2).
34. Unbolt both Air Cleaner Body (bank 1) and Air Cleaner Body (bank 2); two (2) bolts each where shown in Figure 21.
35. Detach both Air Cleaner Body (bank 1) and Air Cleaner Body (bank 2) from Air Duct (bank 1) and Air Duct (bank 2), and then remove them from the vehicle.
 - Air Duct (bank 1) and Air Duct (bank 2) are located beneath Air Cleaner Body (bank 1) and Air Cleaner Body (bank 2).

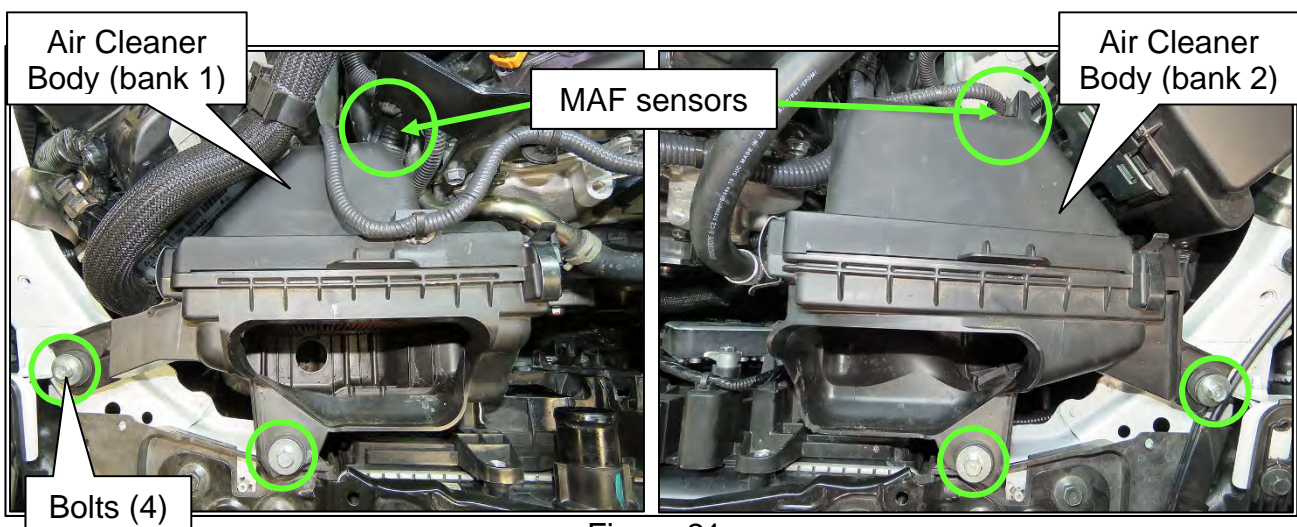


Figure 21

36. Place tape over Air Duct (bank 1) and Air Duct (bank 2) inlets, to prevent foreign objects from entering the ducts.

NOTICE

To prevent engine damage, tape must be placed over both duct inlets. If foreign debris enter either duct inlet, turbocharger damage and possibly engine damage may occur.

37. For vehicles that have an oil cooler, remove the two (2) bolts retaining Oil Cooler Pipe 1 bracket to the vehicle (Figure 22 and Figure 23), located under the Air Cleaner Body (bank 1).

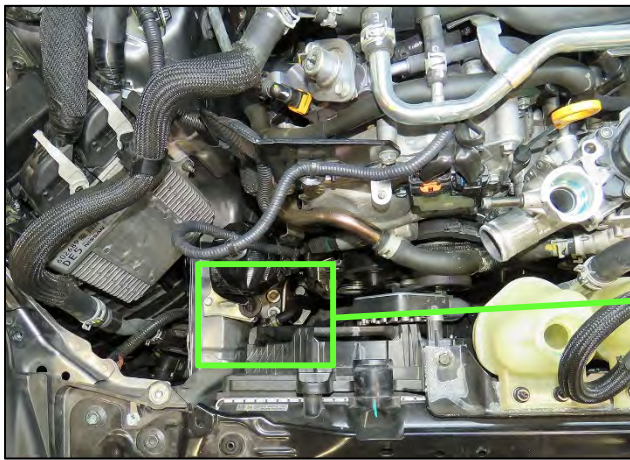


Figure 22

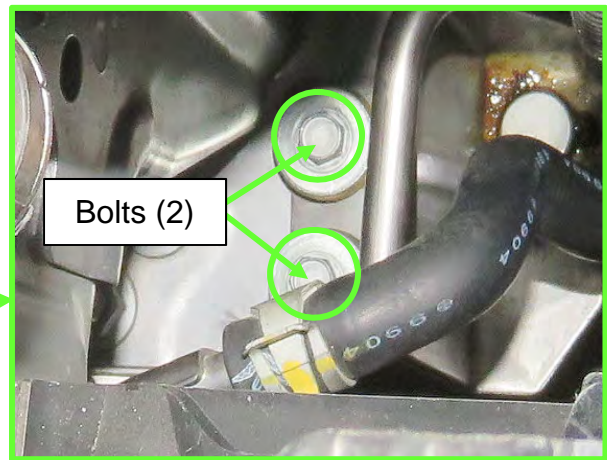


Figure 23

38. Recover the A/C refrigerant using approved equipment.
39. Disconnect the High-Pressure Flexible Hose from the condenser.
- One (1) bolt.

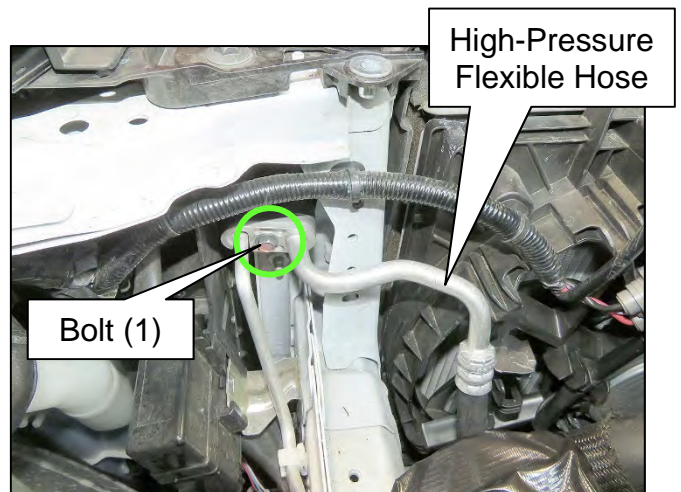


Figure 24

40. Disconnect the Low-Pressure Flexible Hose from the Internal Heat Exchanger Pipe.
- One (1) bolt.

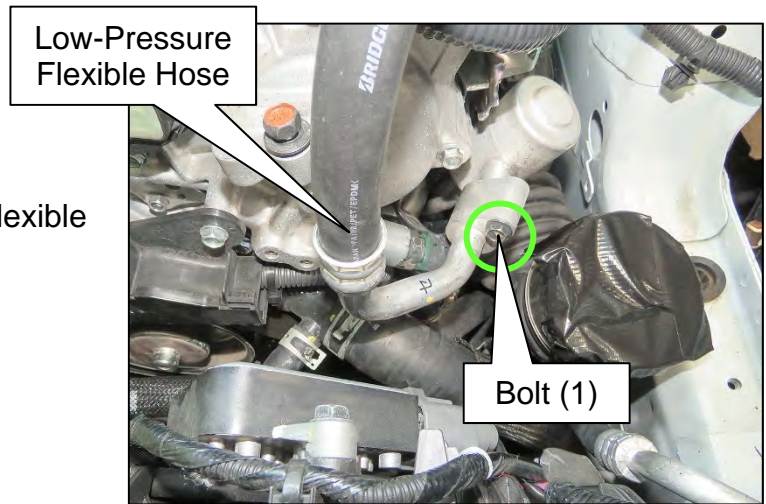


Figure 25

41. Detach the Radiator Hose (lower) and the Reservoir Tank Hose from the Multi-way Control Valve.

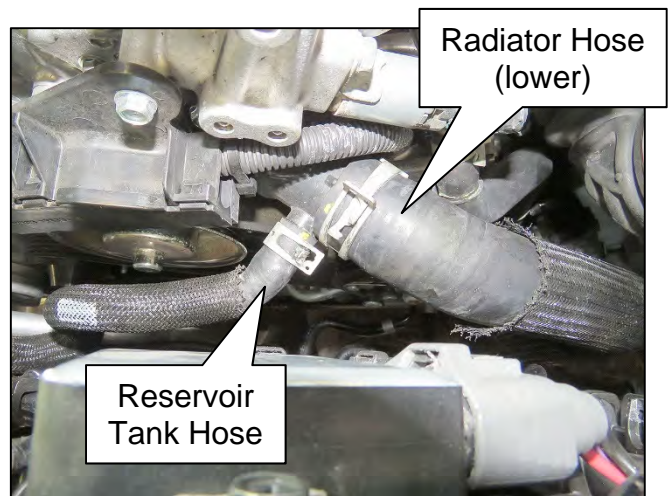


Figure 26

The following Figures are of the passenger (RH) side AWD; driver (LH) side is similar.
HINT: 2WD is similar for steps 42-47.

42. Raise the vehicle to a comfortable height, and then remove both front wheel assemblies.

The following steps will be performed on both passenger (RH) side and the driver (LH) side.

43. Remove both front brake caliper assemblies and rotors.

HINT: Two (2) piston caliper shown in Figure 27. Four (4) piston removal is similar.

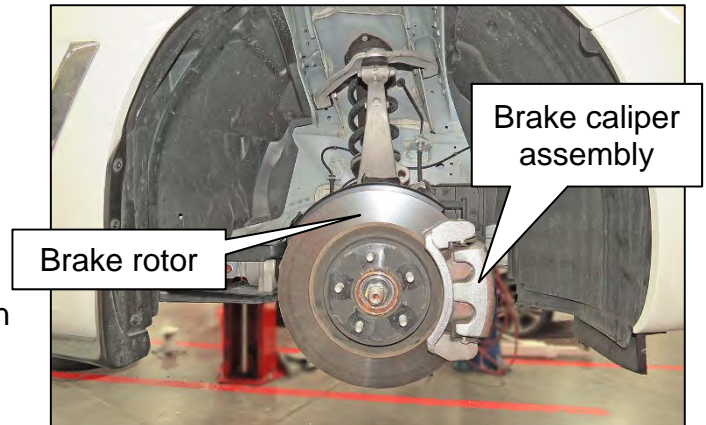


Figure 27

44. Remove the brake hose locator clips.

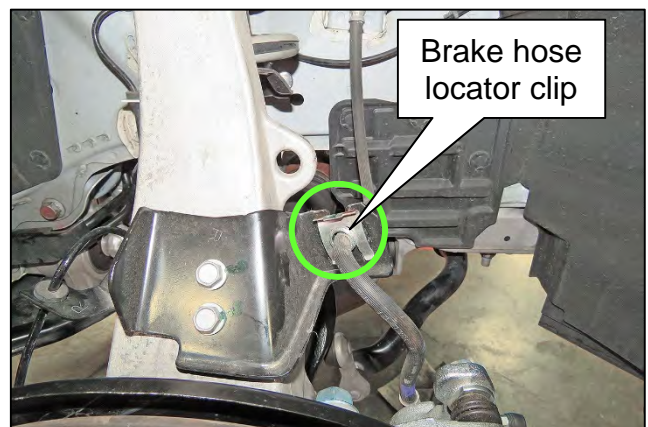


Figure 28

45. Remove the wheel sensors from both front Steering Knuckles.

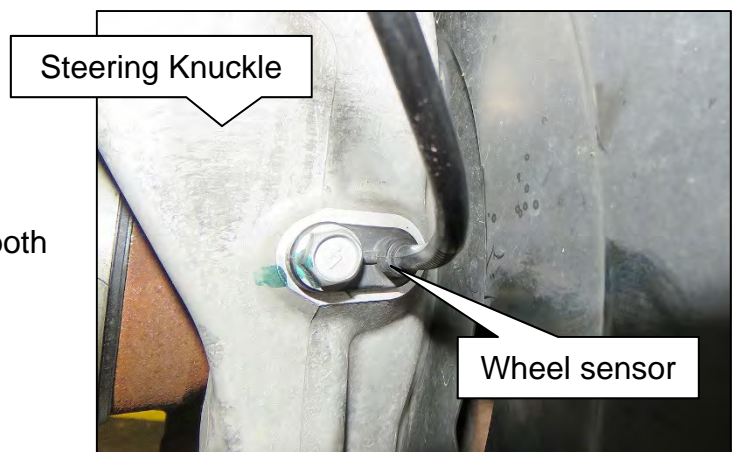


Figure 29

46. Detach the wheel sensor harnesses from the two (2) locations they are attached to on each steering knuckle bracket (Figure 30).

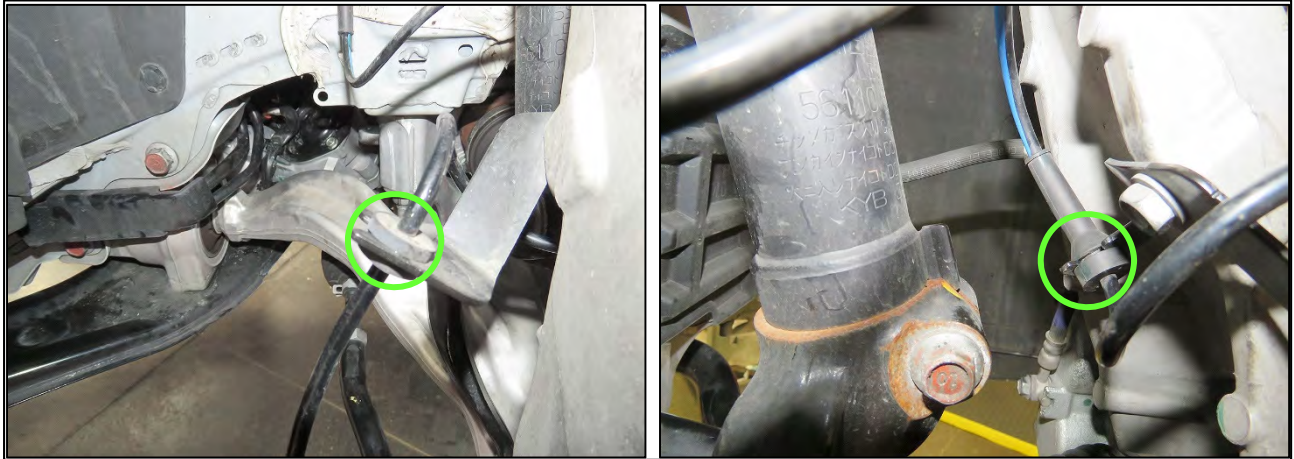


Figure 30

47. Remove the top steering knuckle nuts and remove both bolts.

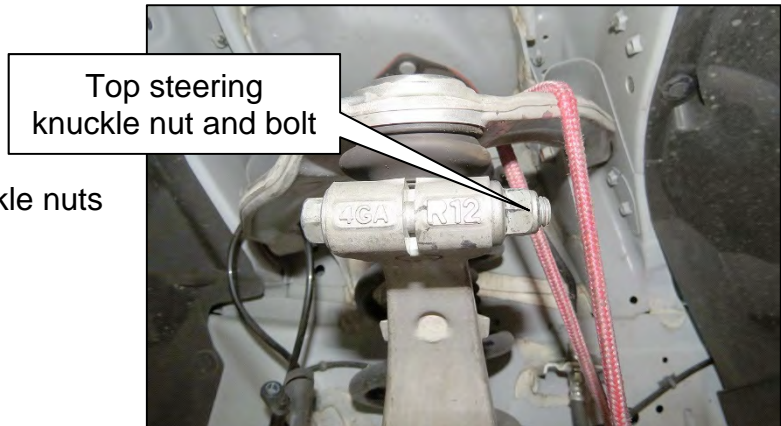


Figure 31

48. Remove the Shock Absorber Arm to the Transverse Link nuts and both bolts.

- AWD shown in Figure 32. The 2WD bolt is in the same location.

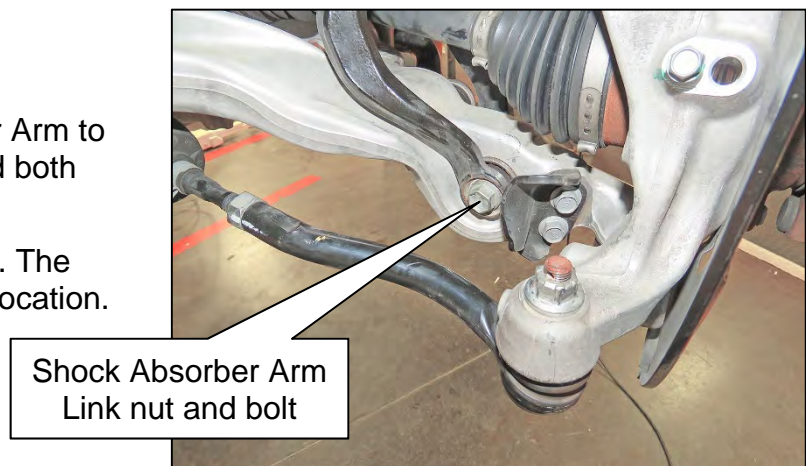


Figure 32

49. Raise the vehicle to a comfortable height to disconnect the undercarriage components.

50. Remove the two (2) nuts and bolts that connect the Exhaust Front Tube to the Center Muffler, where shown in Figure 33.

- For AWD vehicles, the Center Muffler will remain attached to the vehicle.

51. For 2WD only, remove the complete propeller shaft from the vehicle.

- Refer to the ESM: **REPAIR > TRANSMISSION & DRIVELINE > DRIVELINE > REMOVAL AND INSTALLATION > REAR PROPELLER SHAFT**

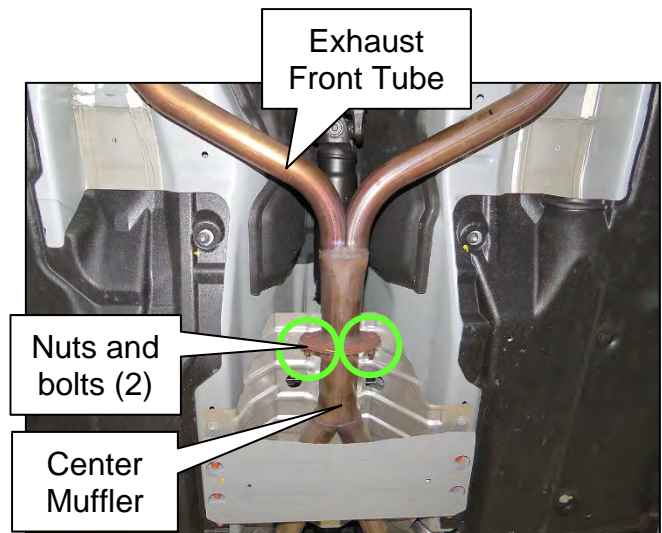


Figure 33

52. For AWD vehicles, remove the four (4) nuts and bolts that connect the propeller shaft to the transmission, and then disconnect the propeller shaft from transmission.

- The propeller shaft will remain attached to the final drive.
- One (1) hidden nut/bolt in Figure 34.



Figure 34

53. Disconnect the transmission's Control Rod.

- Remove the Snap Pin to separate the Control Rod.

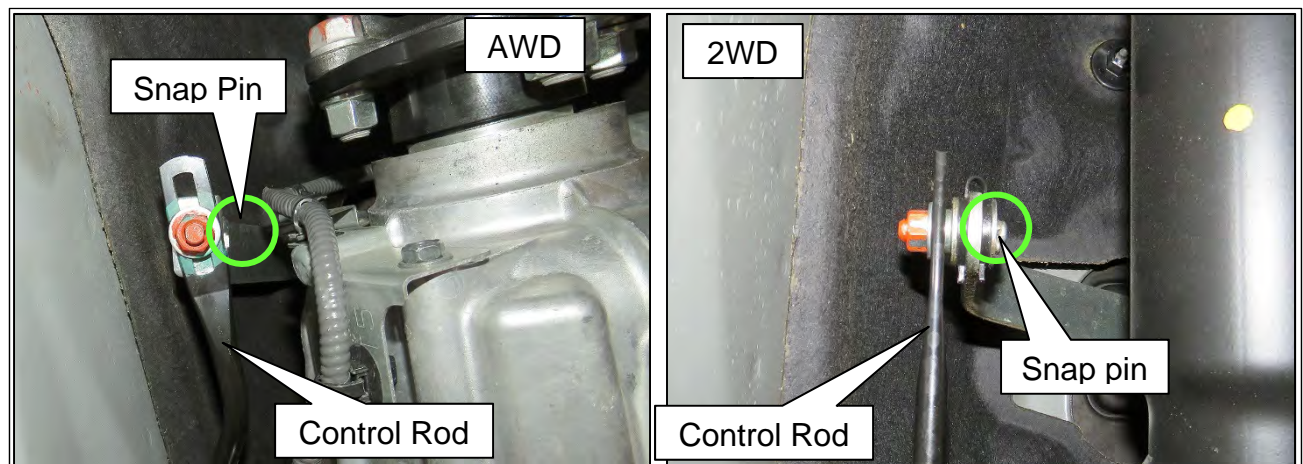


Figure 35

54. Remove one (1) bolt, and then disconnect the steering shaft from the steering rack.

HINT: The bolt location and component view may differ based on the type of steering system.

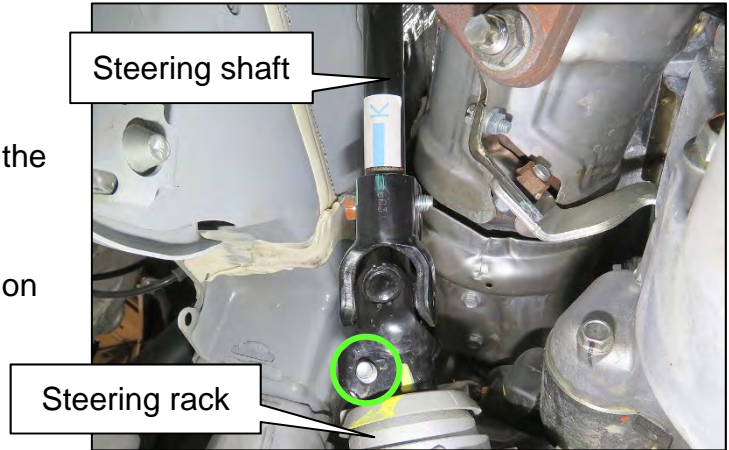


Figure 36

55. Disconnect the power steering wiring harness connector, if present.
- Electric power steering type shown in Figure 37.
 - Located on either the driver (LH) side or passenger (RH) side of the front corner of the front suspension member.

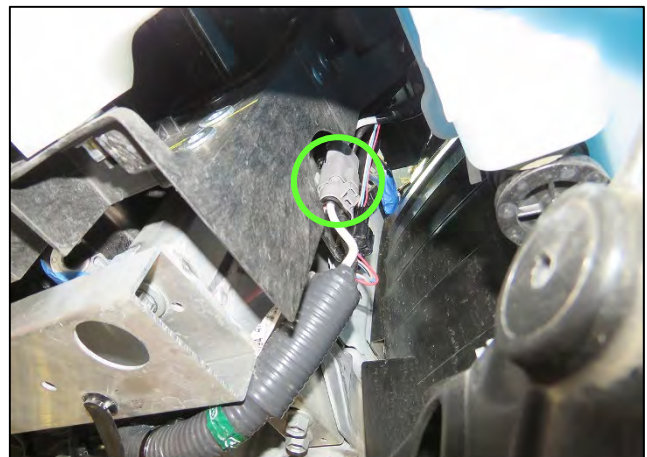


Figure 37

56. Detach the A/T fluid cooler hoses.

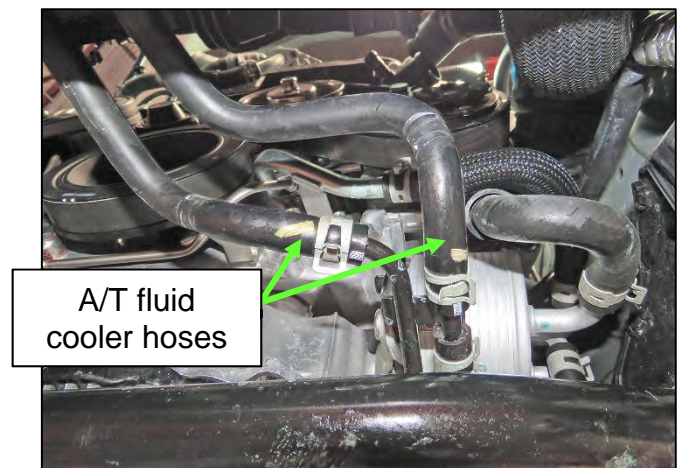


Figure 38

57. If the vehicle has an oil cooler, disconnect Oil Cooler Hose 1 and Oil Cooler Hose 2.

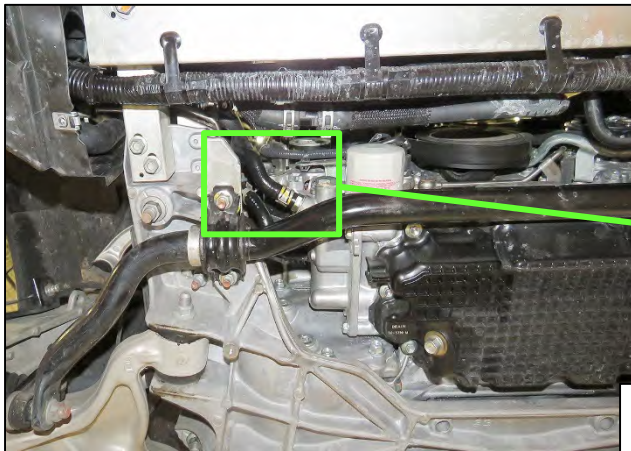


Figure 39

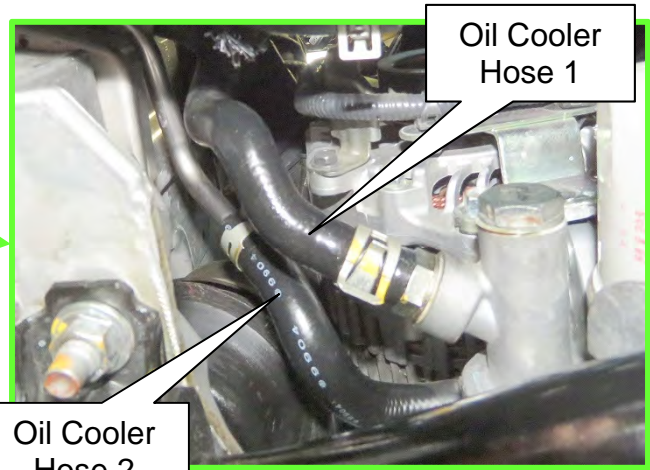


Figure 40

58. Place a driveline support table under the driveline, and raise to support the driveline.

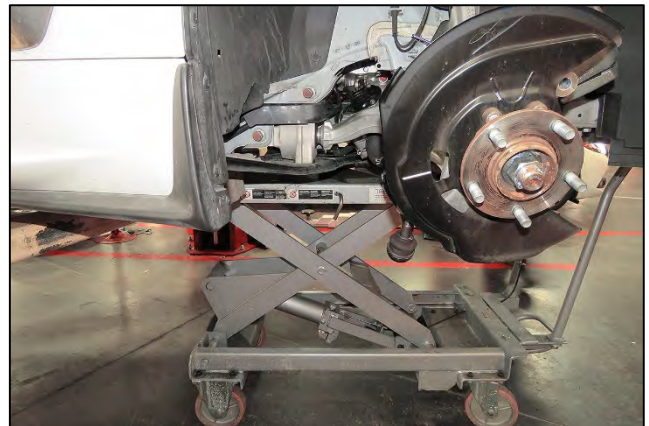


Figure 41

59. Remove the four (4) rear engine mounting member bolts (Figure 42).
60. Remove the front suspension member nuts and bolts indicated in Figure 42.
- AWD has a total of four (4) front suspension member nuts.
 - 2WD has two (2) front suspension member nuts.
 - Two (2) front suspension member bolts (both AWD and 2WD).
 - AWD only: Two (2) front cross bar bolts.

HINT: Figure 42 is of an AWD vehicle. Nut and bolt locations are similar for 2WD.

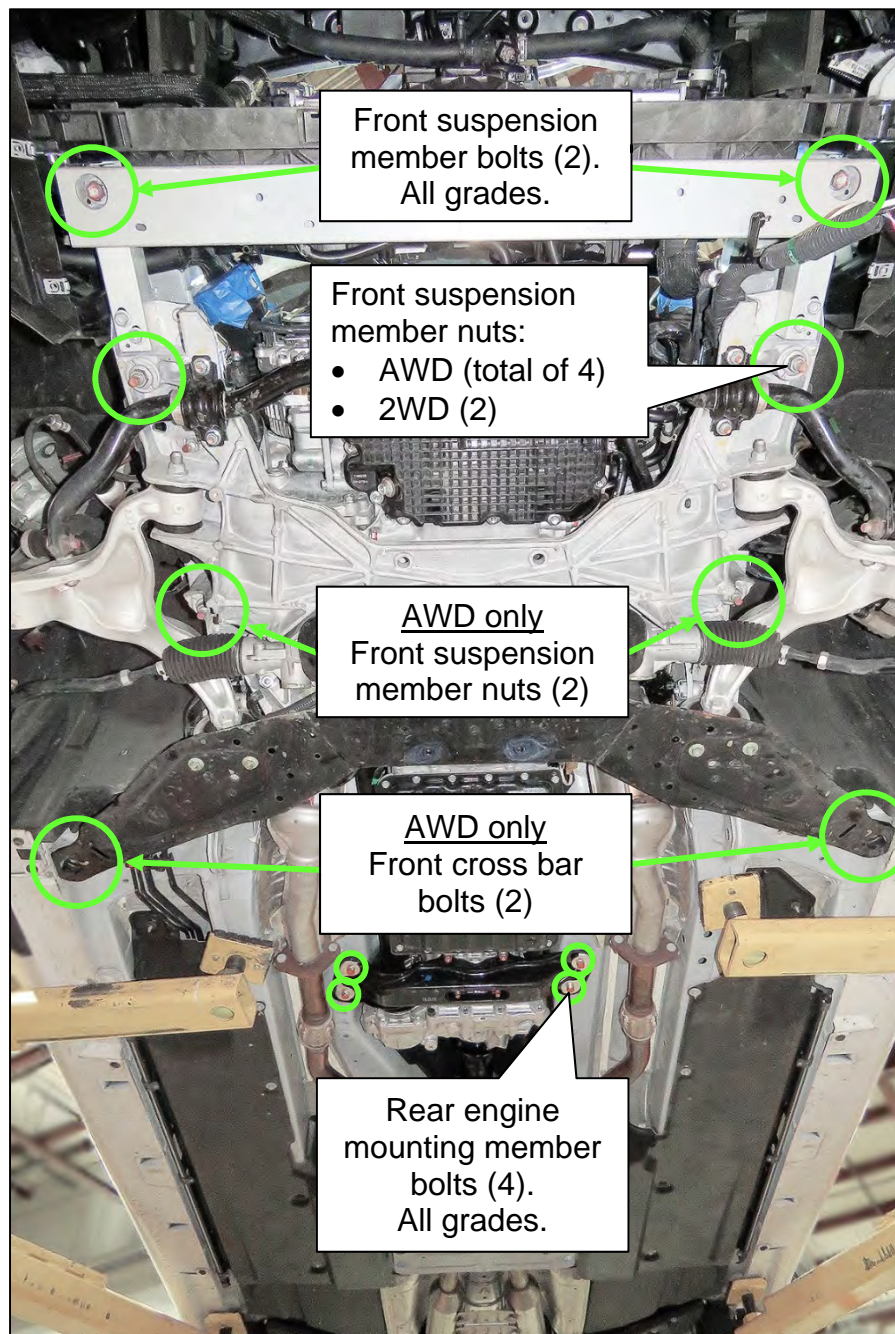


Figure 42

61. For AWD vehicles, remove the four (4) transverse link bolts; two (2) per side.

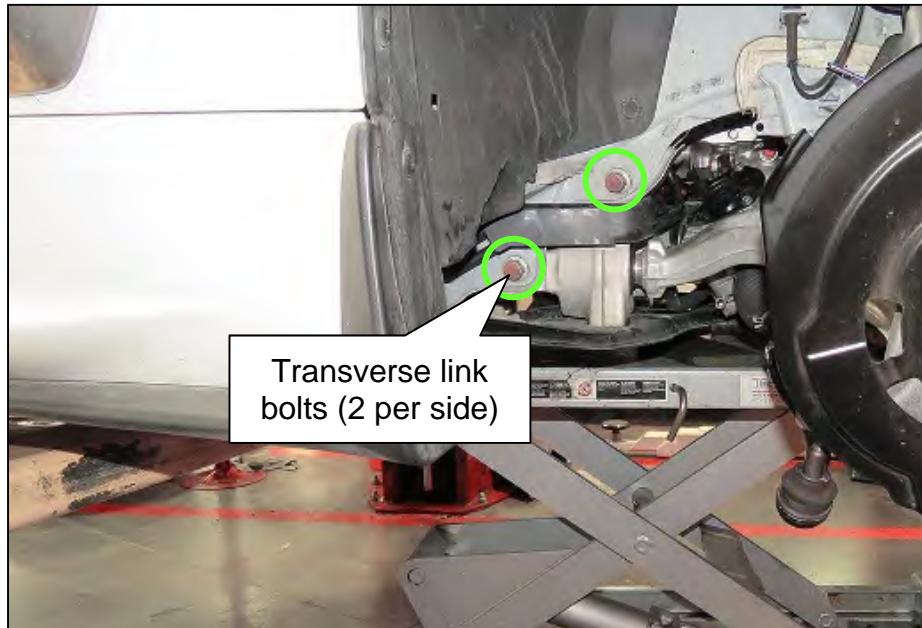


Figure 43

62. Carefully lower the complete driveline away from the vehicle.

Remove the Passenger (RH) Side Turbocharger

63. Loosen the Air Inlet Hose clamp shown in Figure 44. This hose will be detached in step 80 on page 24.
64. Release the spring clamps and disconnect the two (2) associated hoses, shown in Figure 44.
65. Disconnect the wiring harness connector shown in Figure 44.

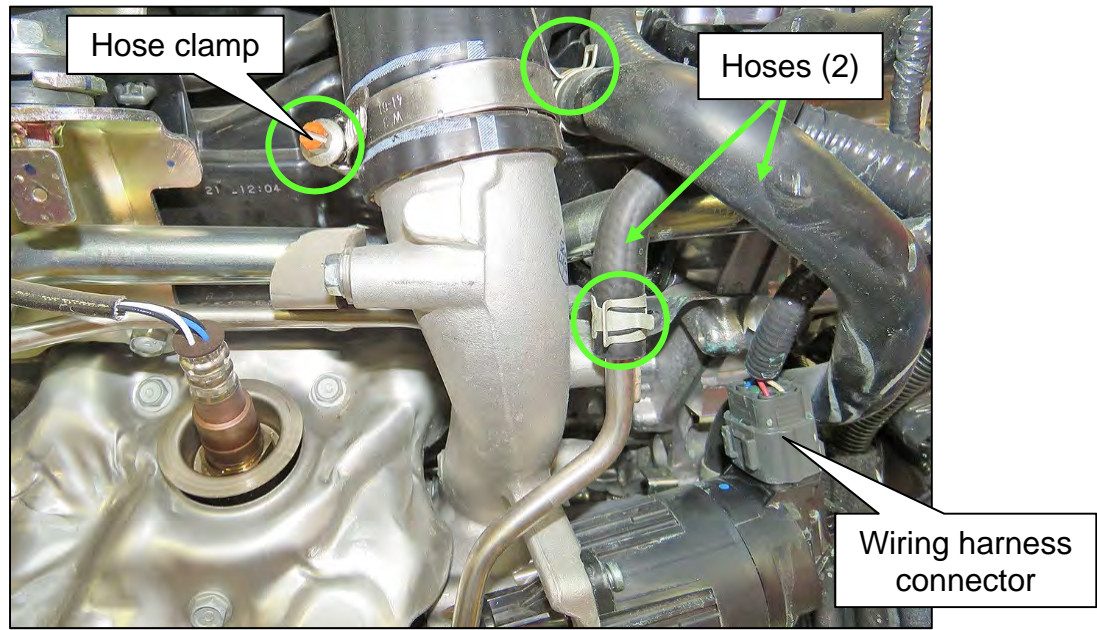


Figure 44

66. Unplug the A/F sensor wiring harness connector, and then remove the A/F sensor from the turbocharger housing.
67. If present, unplug the Turbocharger Exhaust Gas Temperature Sensor (Bank 1) wiring harness connector, and then remove the sensor from the turbocharger housing.

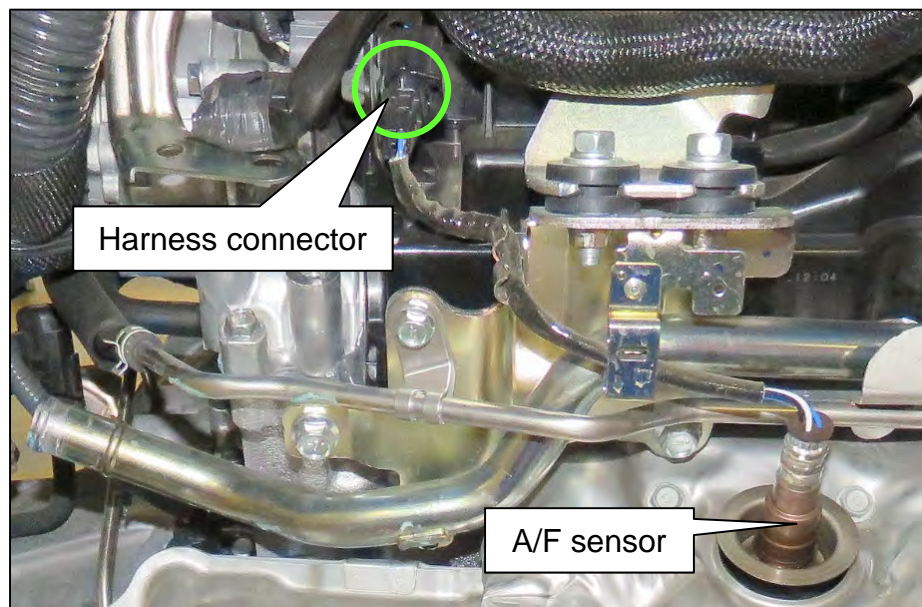


Figure 45

68. Remove the turbocharger Heat Insulator (upper).

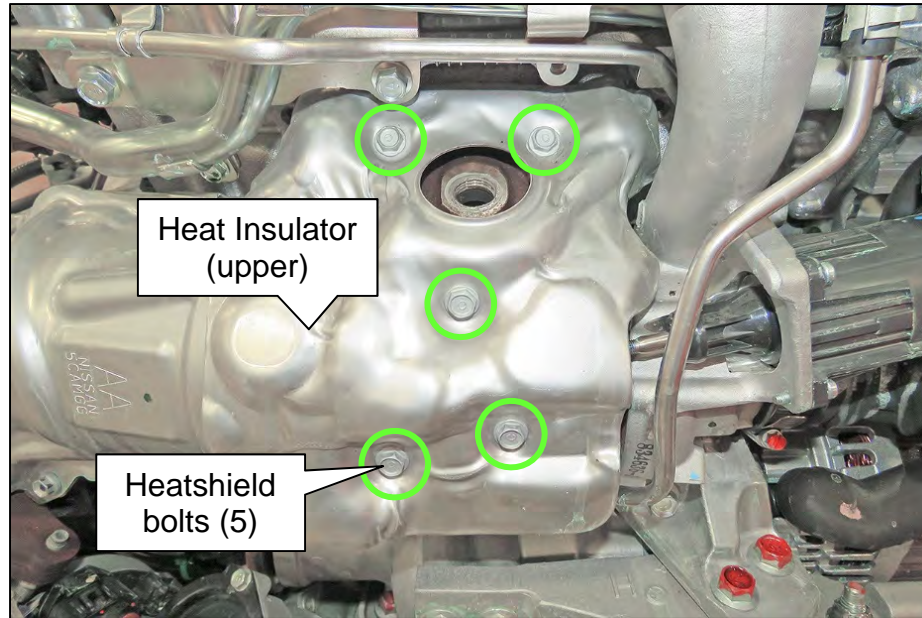


Figure 46

69. Remove the two (2) exhaust mount bolts shown in Figure 47.

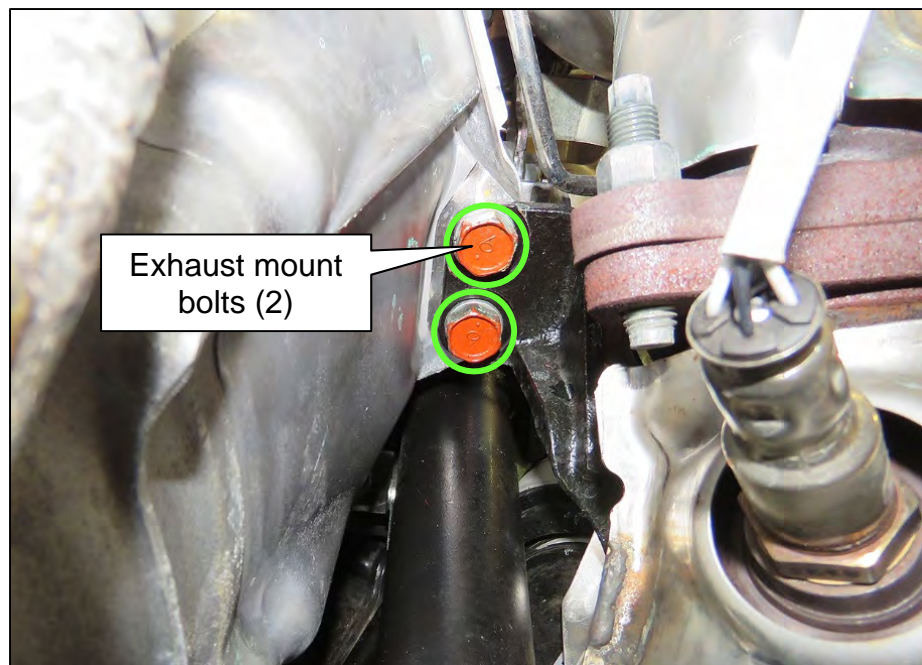


Figure 47

70. Remove the three (3) nuts that connect the Catalyst Converter (bank 1) to the 2nd Catalyst Converter (bank 1).

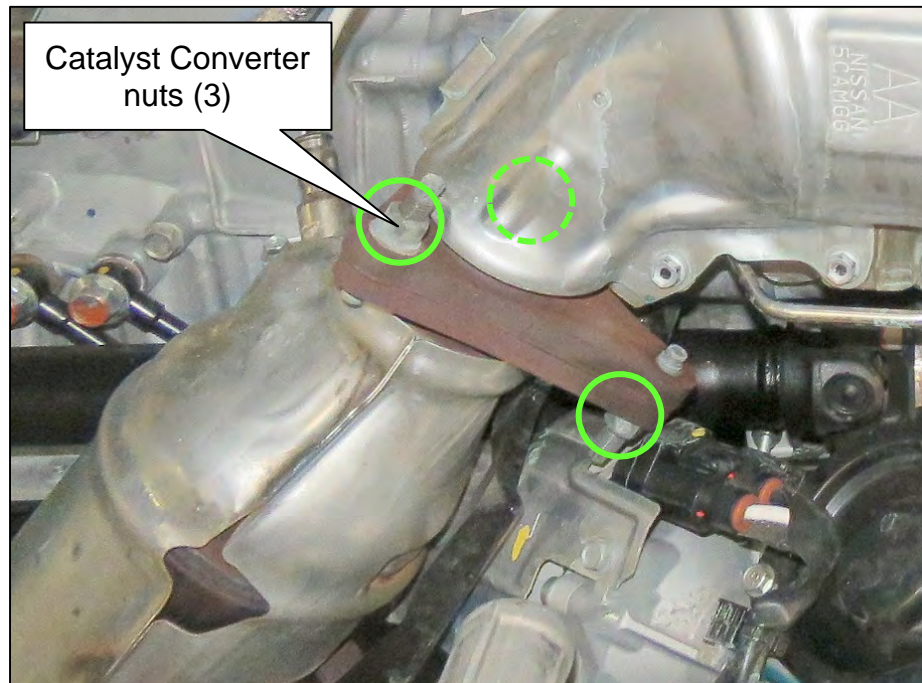


Figure 48

71. Remove the Catalyst Converter (bank 1) support bracket bolt.

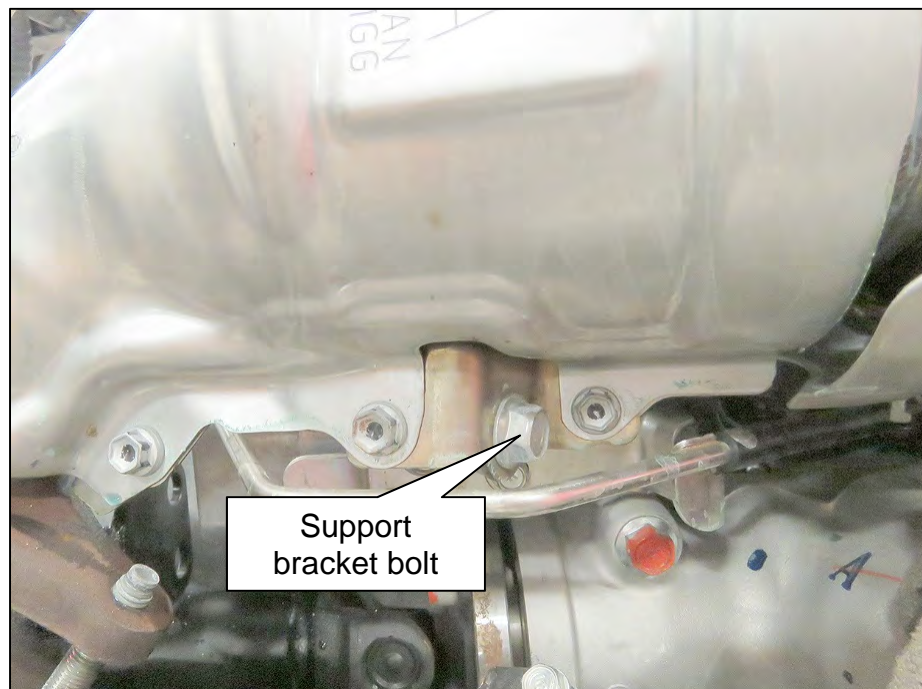


Figure 49

72. Release the spring clamp and disconnect the associated coolant hose shown in Figure 50.
73. Remove the water tube bracket bolt (Figure 50).

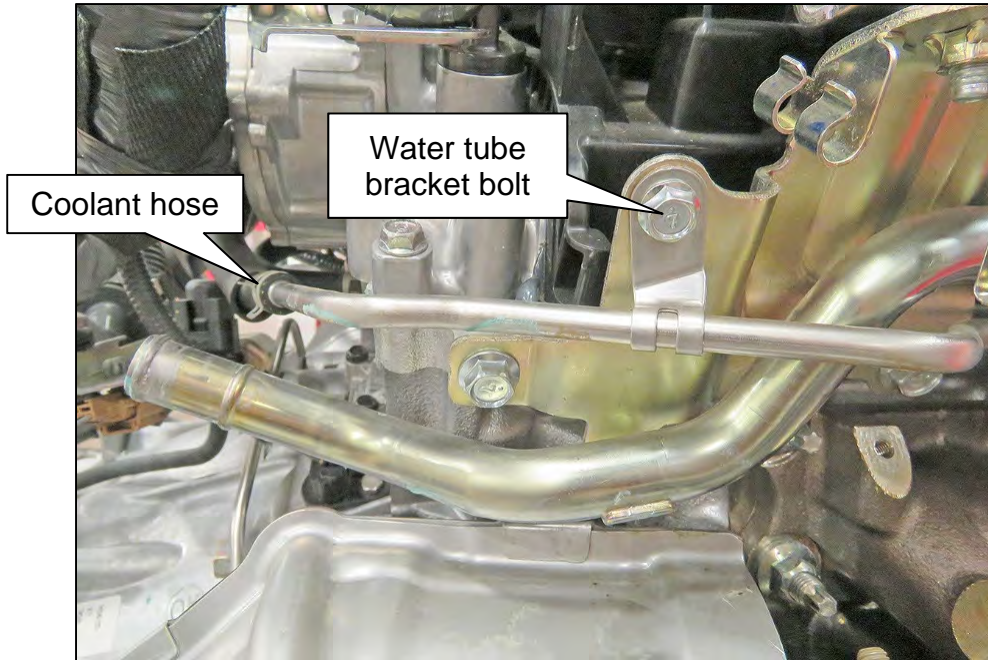


Figure 50

74. If present, disconnect the Turbocharger Speed Sensor (Bank 1) wiring harness connector (not shown).
75. Loosen the turbocharger assembly mounting nuts in order, from 1 to 4, as shown in Figure 51.
76. Remove the band clamp bolt.

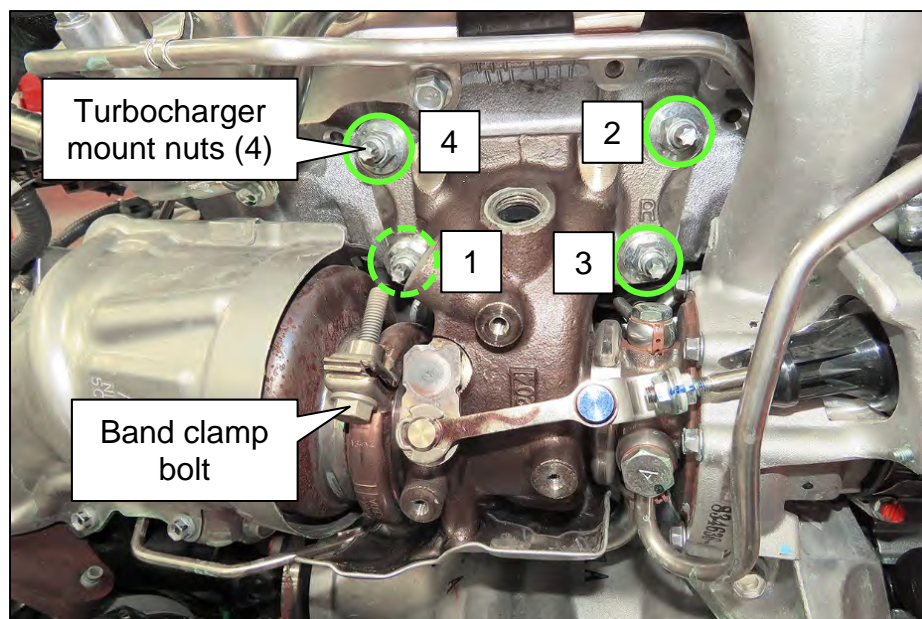


Figure 51

77. Detach Catalyst Converter (bank 1) from the turbocharger outlet.
78. Release the spring clamp and disconnect the associated oil return hose shown in Figure 52.

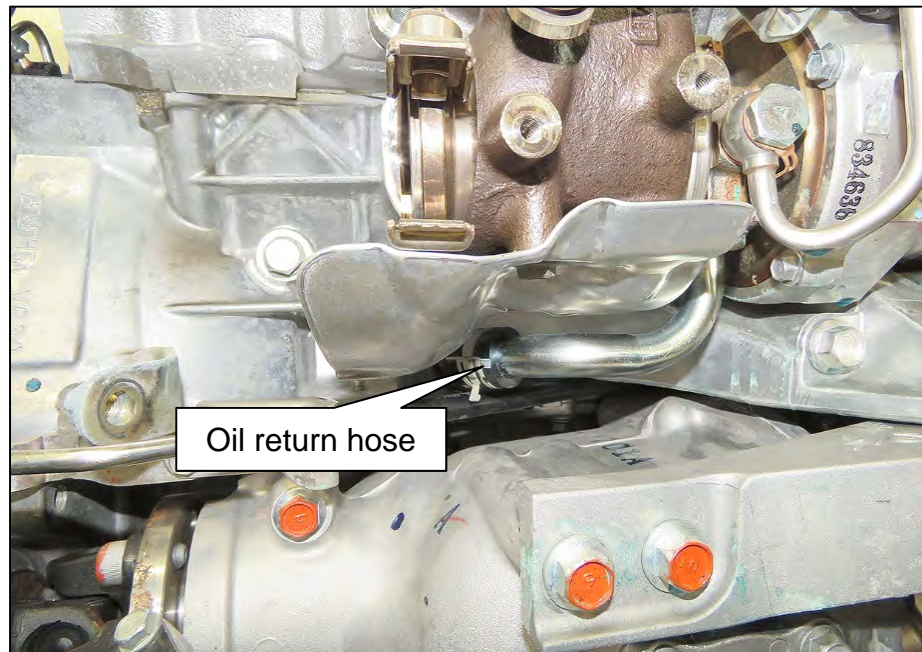


Figure 52

79. Remove the eye bolt retaining the oil feed tube.

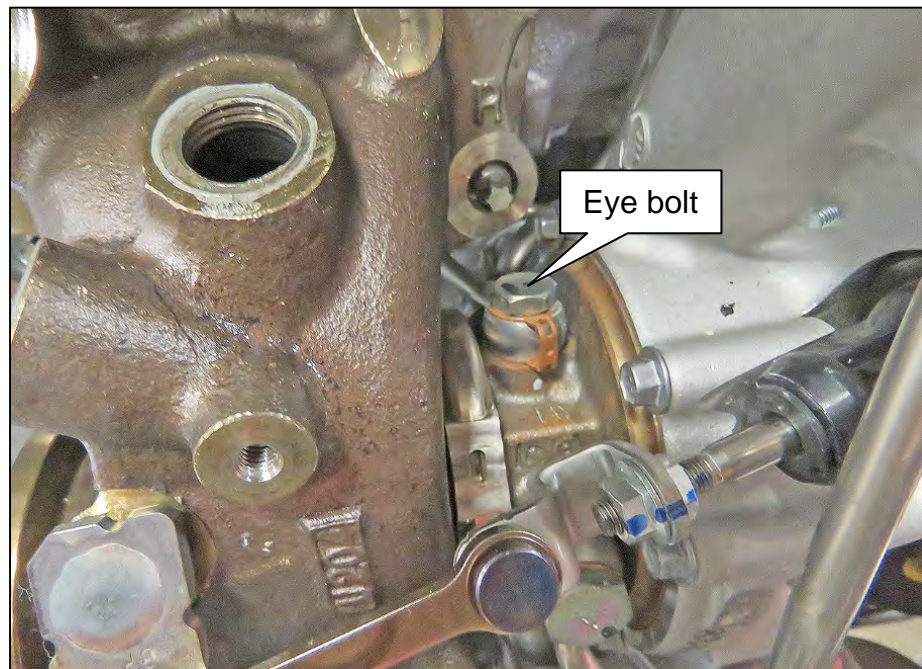


Figure 53

80. Detach the Air Inlet Hose from the turbocharger.
81. Gently remove the turbocharger from its mounting studs so that the oil line mounting bracket bolt can be reached (Figure 54).
82. Remove the oil feed tube mounting bracket bolt shown in Figure 54.

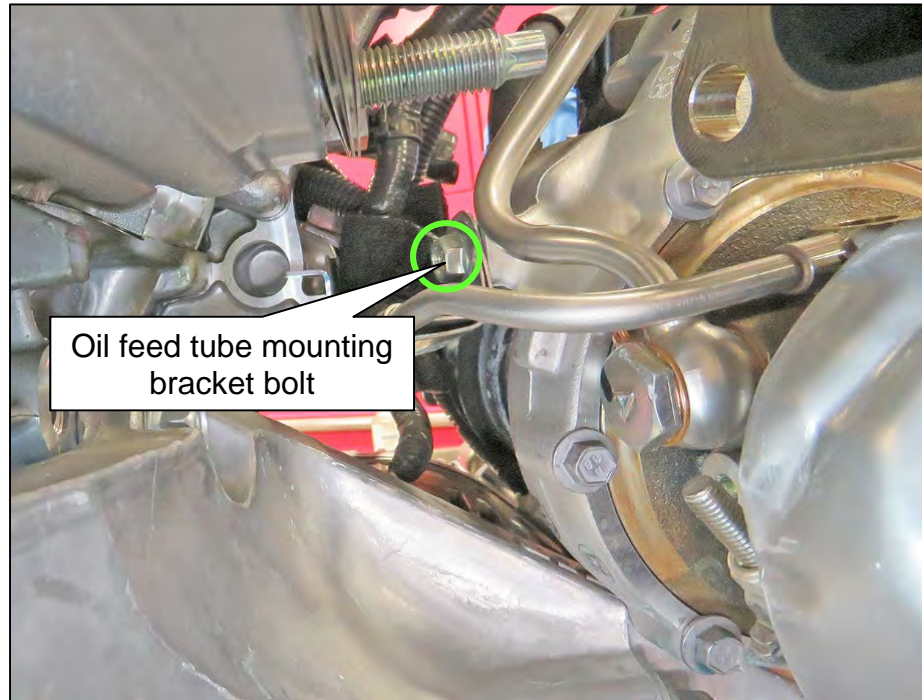


Figure 54

83. Remove the turbocharger from the engine and place it on a clean workbench.

Reinstall the Passenger (RH) Side Turbocharger

84. Transfer the components from the old to the new turbocharger assembly and torque to the specifications below.

IMPORTANT: Refer to **PARTS INFORMATION** for single use parts.

- Water tube eye bolt torque: 25.0 N•m (2.6 kg-m, **18 ft-lb**)
HINT: One (1) Water tube eye bolt is hidden in Figure 55.
- Bracket bolt torque: 9.0 N•m (0.92 kg-m, **80 in.-lb**)
- Oil Return Pipe 1 bolt torque: 9.0 N•m (0.92 kg-m, **80 in.-lb**)
- Heat Insulator (lower) bolt torque: 9.0 N•m (0.92 kg-m, **80 in.-lb**)
- If present, Turbocharger Speed Sensor (bank 1):
 - Wiring harness connector bracket to turbocharger torque: 7.0 N•m (0.71 kg-m, **62 in.-lb**)
 - Wiring harness connector to bracket torque: 2.2 N•m (0.22 kg-m, **19 in.-lb**)

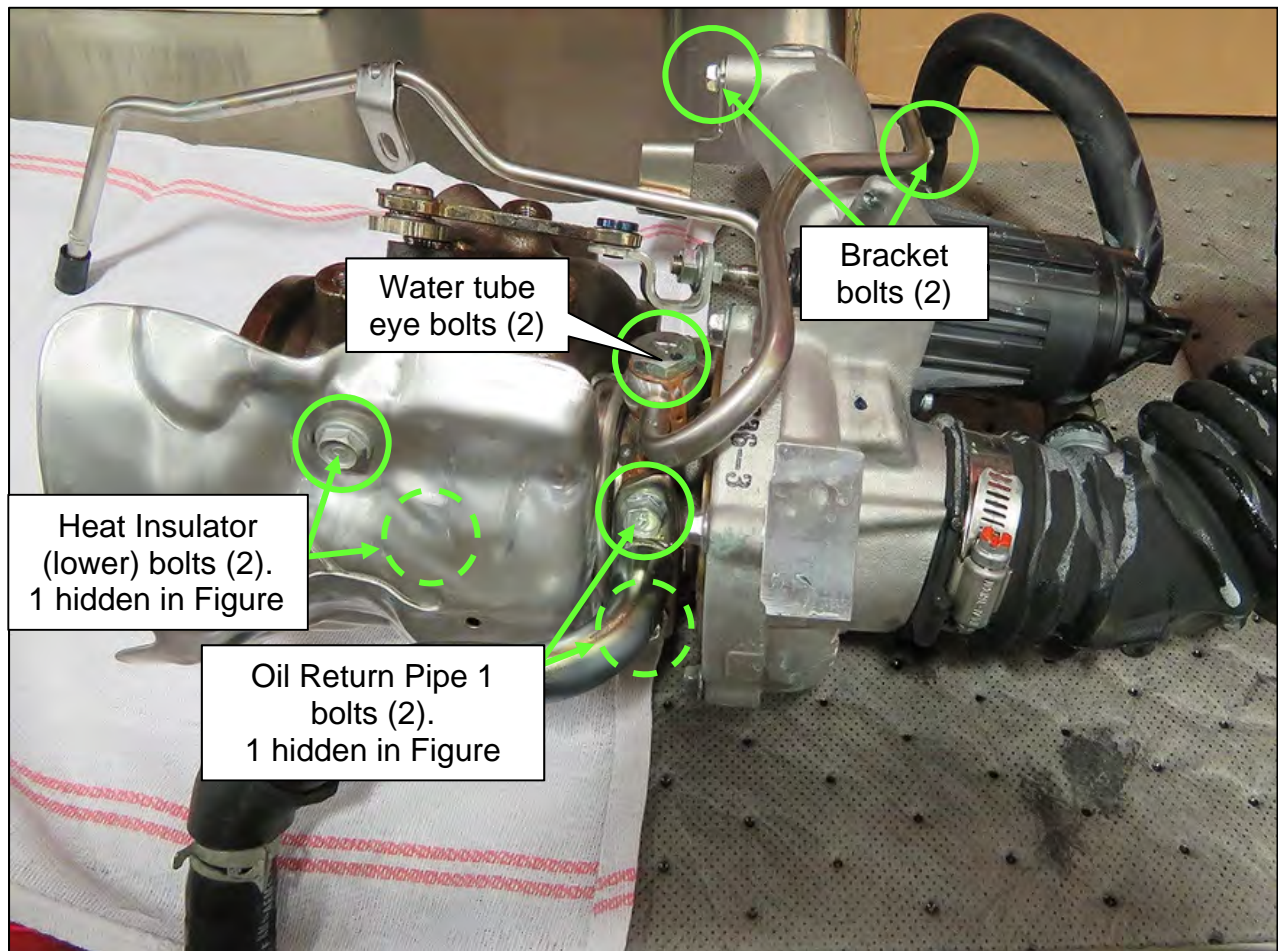


Figure 55

85. Install and temporarily tighten the eye bolt for the oil line, with a new gasket (Figure 56).
86. Reattach the oil feed tube mounting bracket with bolt (Figure 56) and torque to specification.
 - Bolt torque: 9.0 N•m (0.92 kg-m, **80 in.-lb**)

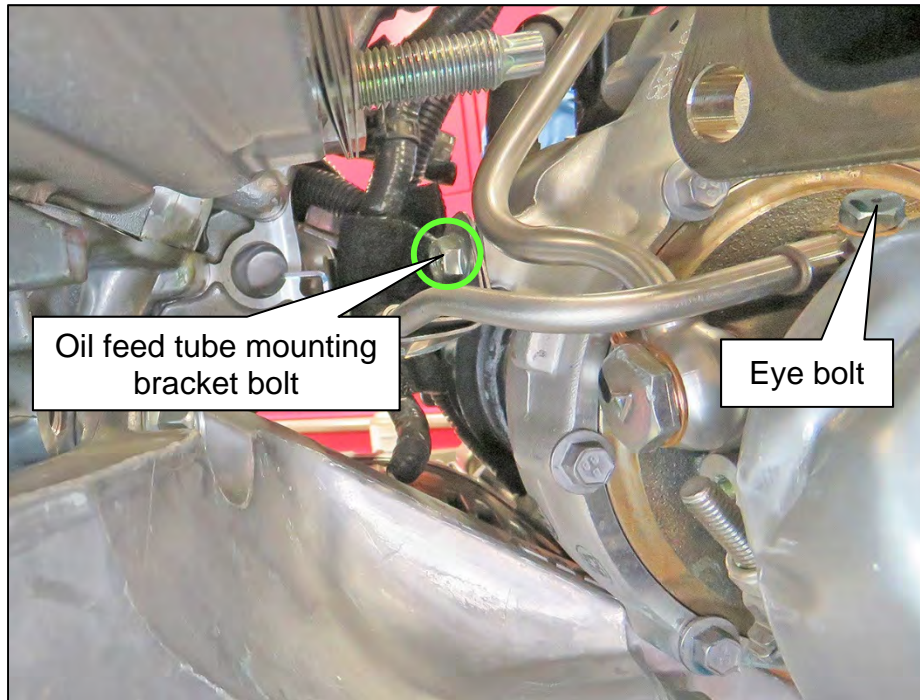


Figure 56

87. Align the turbocharger Air Inlet Hose 1 (bank 1) with the turbocharger output, and then slide the turbocharger onto its mounting studs.
 - Leave the turbocharger Air Inlet Hose 1 (bank 1) clamp loose at this time.
 - Replace the turbocharger to cylinder head gasket with a new part from **PARTS INFORMATION**.

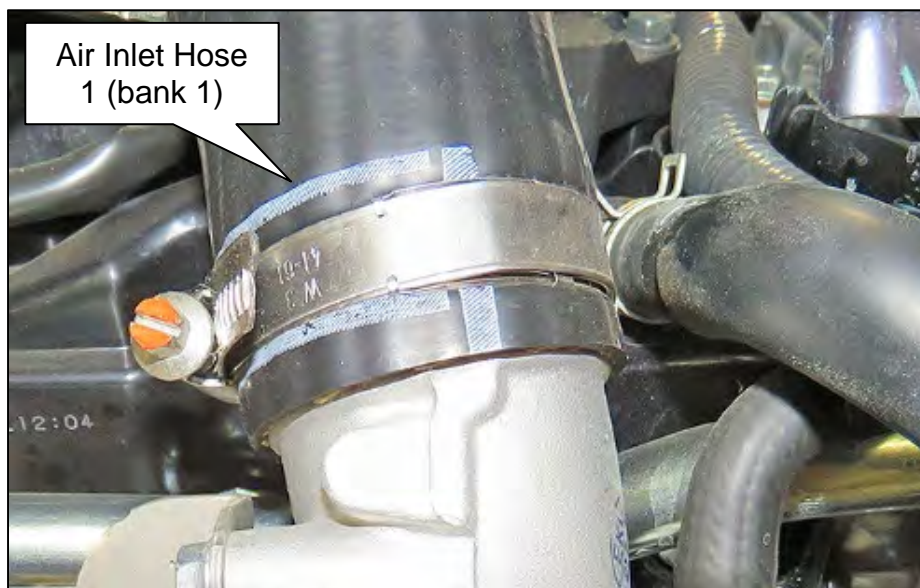


Figure 57

88. Reconnect the oil return hose and spring clamp.

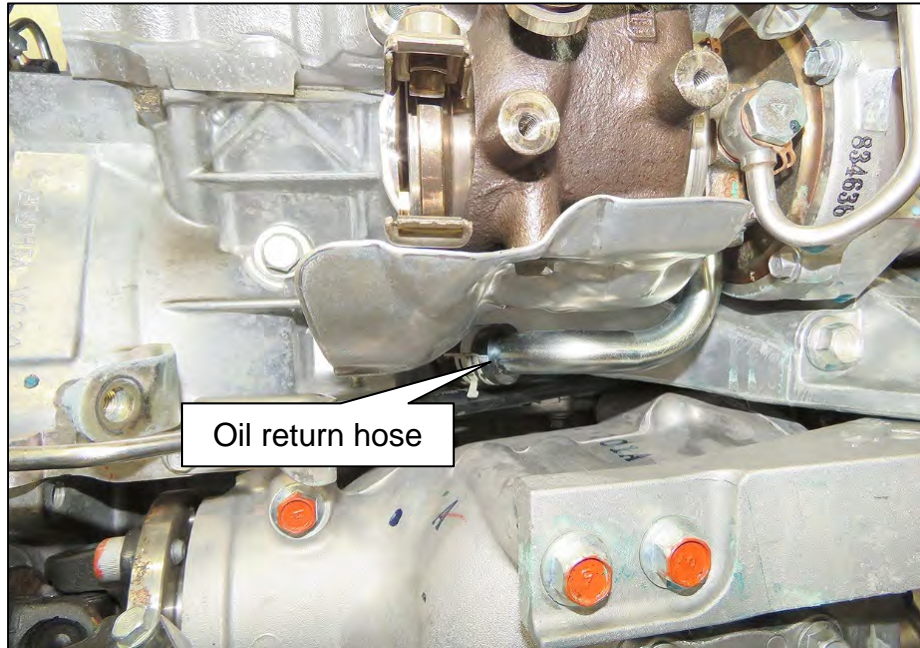


Figure 58

89. Install all four (4) turbocharger mount nuts, and then torque them in the order (from 1 to 6) shown in Figure 59.
- Nut torque: 30.5 N•m (3.1 kg-m, **22 ft-lb**)
90. Align the Catalyst Converter (bank 1) with 2nd Catalyst Converter (bank 1) studs and install the nuts finger tight. See **PARTS INFORMATION** for new gasket.
91. Reattach the Catalyst Converter (bank 1) to the turbocharger outlet, and then lightly tighten the band clamp bolt enough to align catalyst, but allow it to rotate.

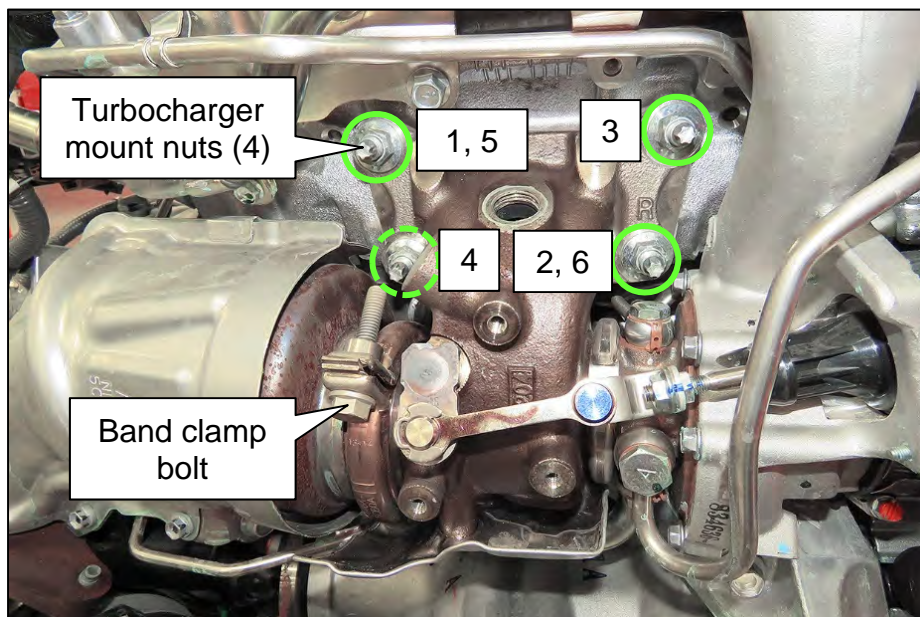


Figure 59

92. Install the catalyst converter support bracket bolt and torque to specification.
- Bolt torque: 47.8 N•m (4.9 kg-m, **35 ft-lb**)

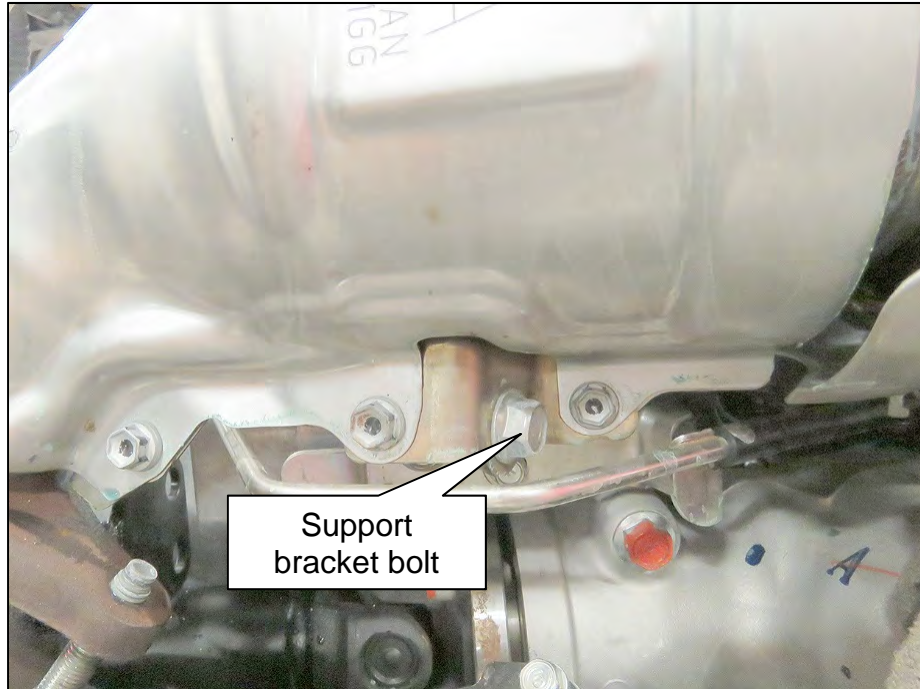


Figure 60

93. Torque the Catalyst Converter (bank 1) to the turbocharger outlet band clamp bolt to specification.
- Bolt torque: 15 N•m (1.5 kg-m, **11 ft-lb**)
94. Torque the oil feed tube eye bolt to specification.
- Bolt torque: 25.0 N•m (2.6 kg-m, **18 ft-lb**)

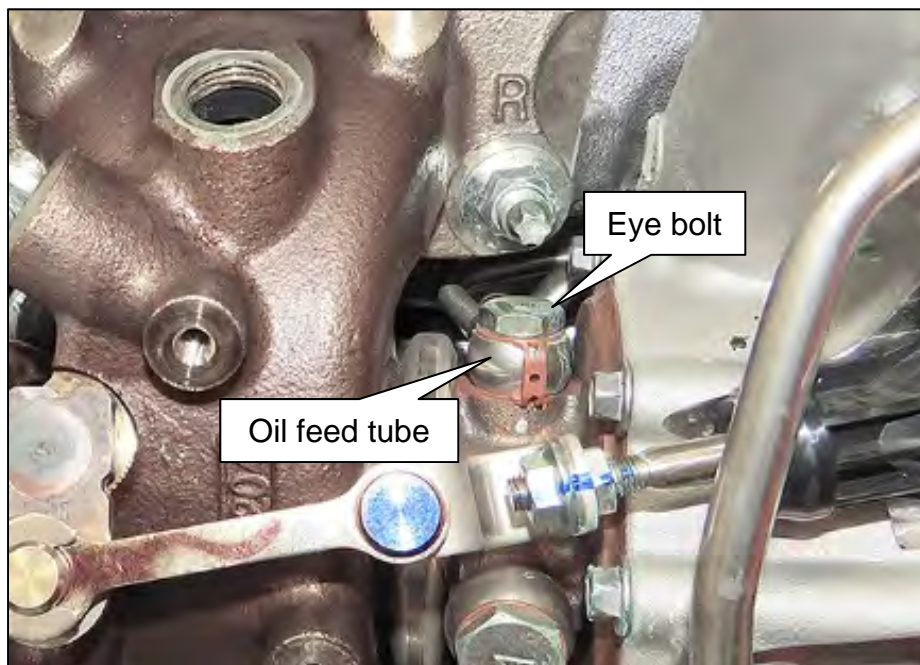


Figure 61

95. Reinstall the water tube bracket bolt (Figure 62) and torque to specification.
 - Bolt torque: 9.0 N•m (0.92 kg-m, **80 in.-lb**)
96. Reinstall the coolant hose and its spring clamp (Figure 62).

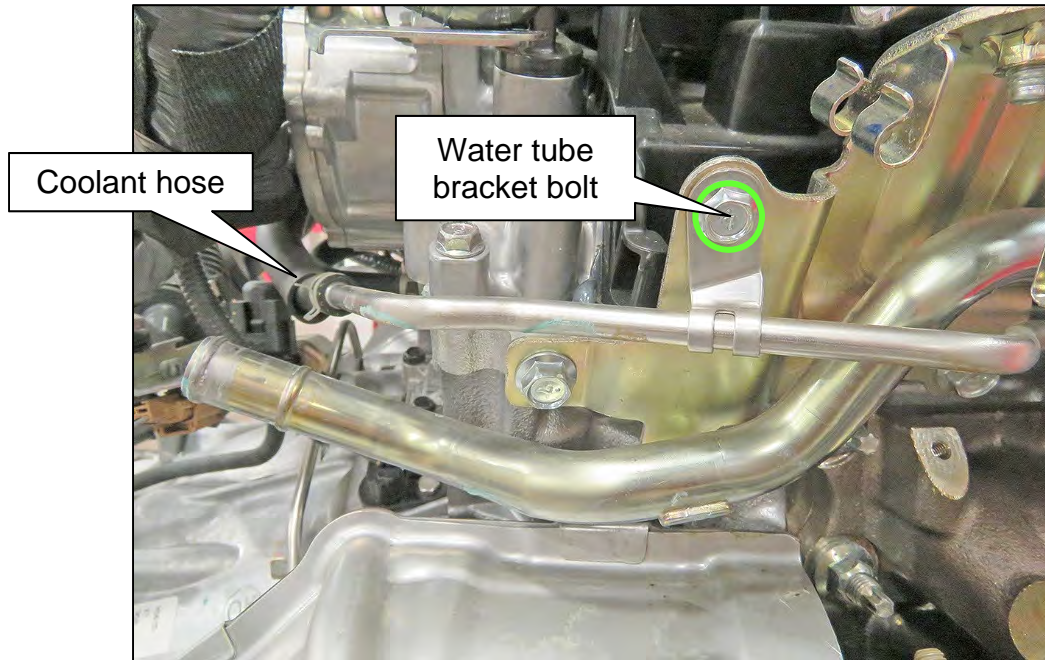


Figure 62

97. Reinstall the two (2) exhaust mount bolts shown in Figure 63 finger tight.

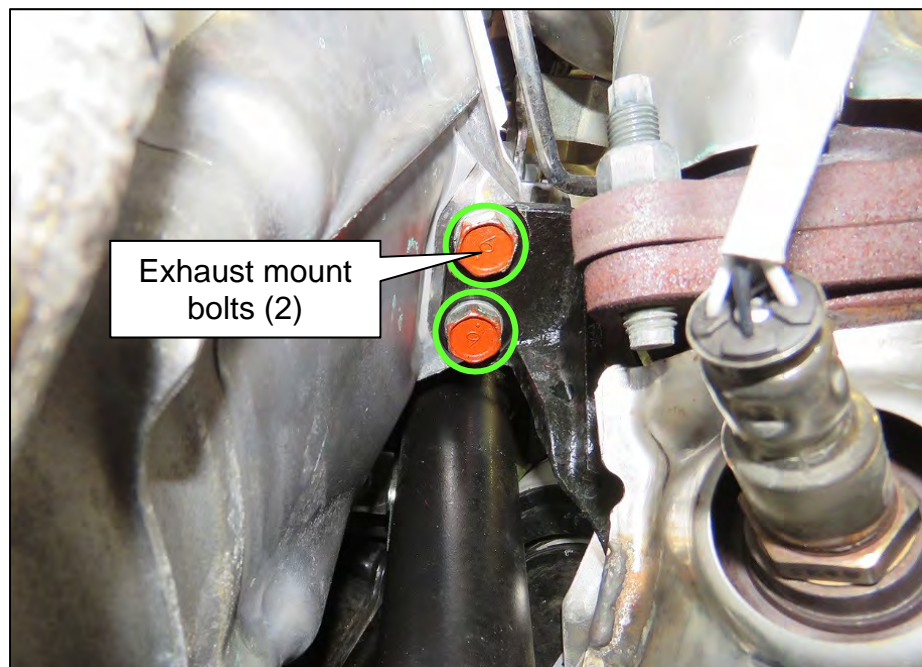


Figure 63

98. Torque the Catalyst Converter (bank 1) to 2nd Catalyst Converter (bank 1) nuts that were finger tightened, in step 90 on page 27, to specifications.
- Nut torque: 44.9 N•m (4.6 kg-m, **33 ft-lb**)
99. Torque the two (2) exhaust mount bolts installed finger tight in step 97 on page 29 to specification.
- Bolt torque: 44.9 N•m (4.6 kg-m, **33 ft-lb**)

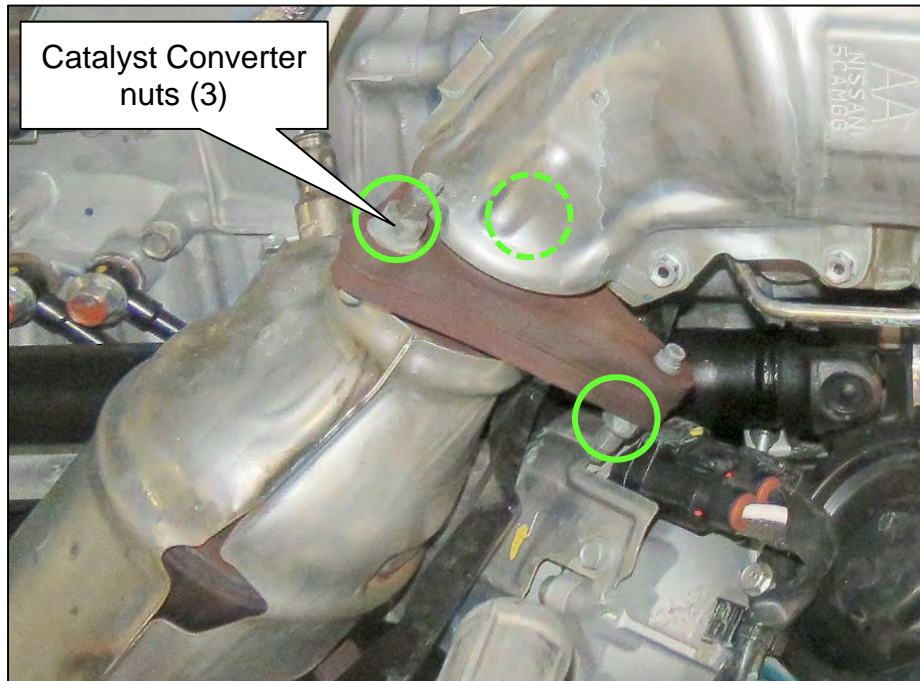


Figure 64

100. Reinstall Heat Insulator (upper) with five (5) bolts.
- Bolt torque: 9.0 N•m (0.92 kg-m, **80 in.-lb**)

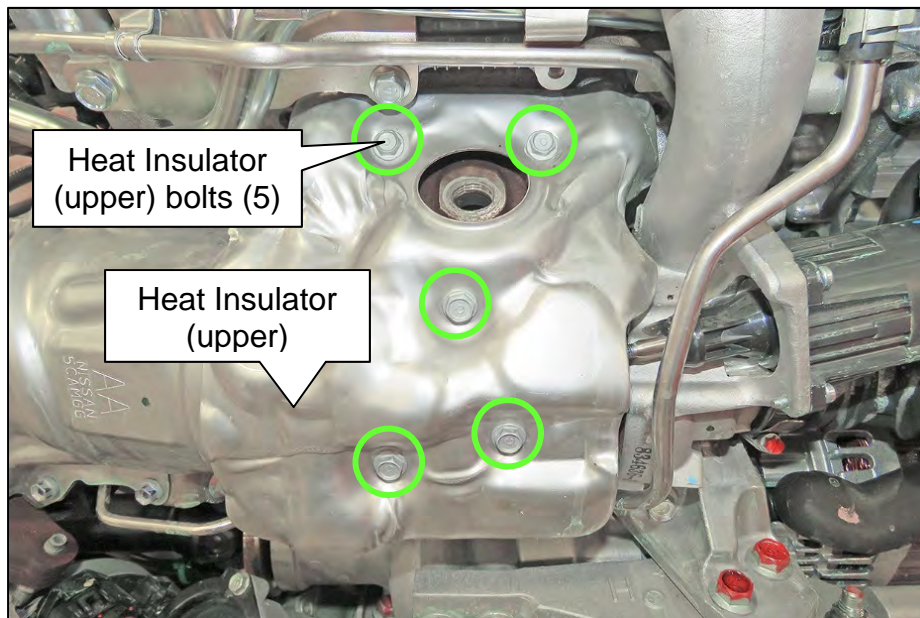


Figure 65

101. Install a new A/F sensor from **PARTS INFORMATION**, torque it to specification and then reconnect its wiring harness connector.

- A/F sensor torque: 50 N•m (5.1 kg-m, 37 ft-lb)

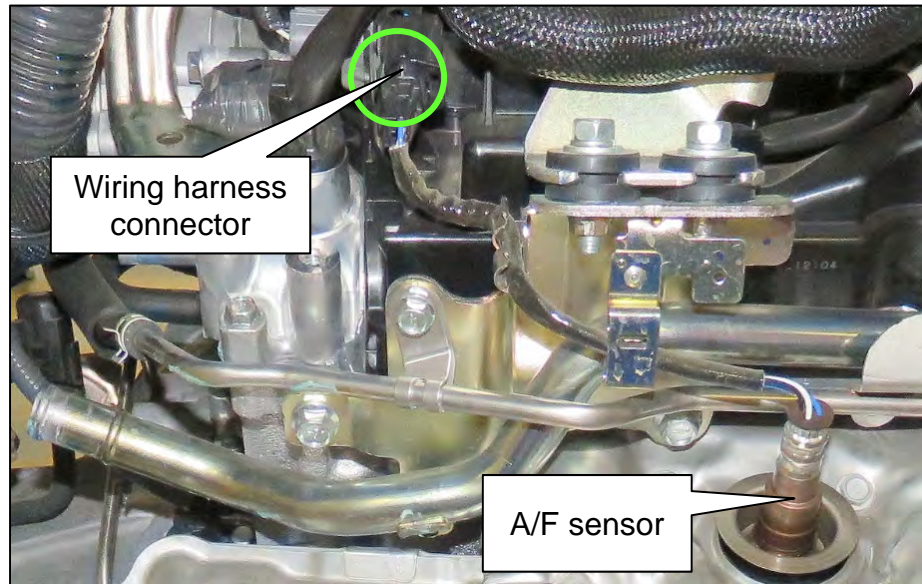


Figure 66

102. Tighten the hose clamp (Figure 67).

103. Reconnect the two (2) hoses (Figure 67).

104. Reconnect the wiring harness connector (Figure 67).

105. If the Turbocharger Exhaust Gas Temperature Sensor (bank 1) wiring harness connector was disconnected in step 74 on page 22, then reconnect it.

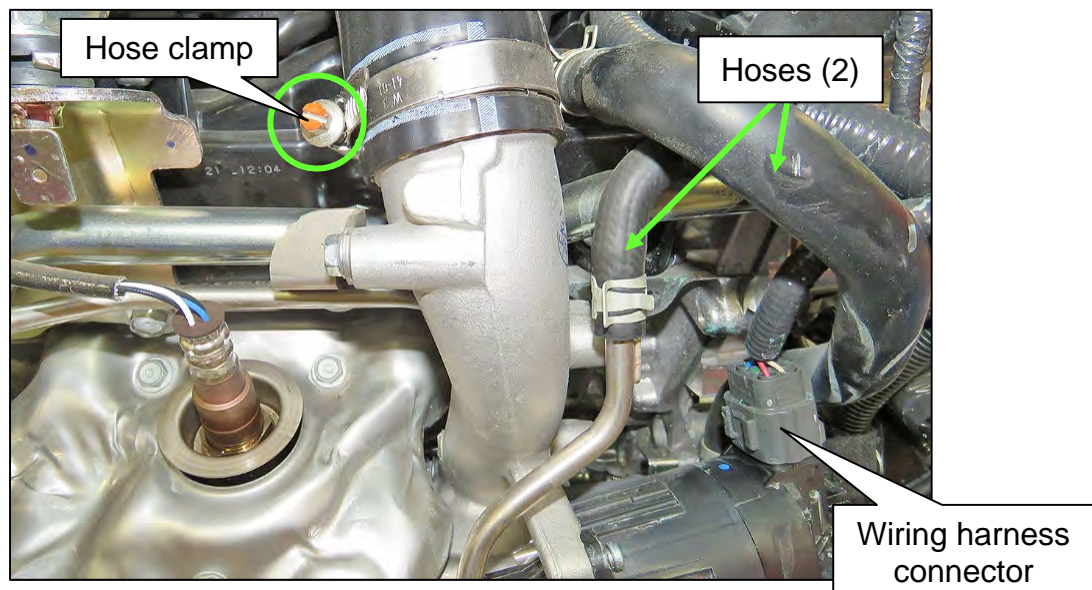


Figure 67

Remove the Driver (LH) Side Turbocharger

106. Loosen the hose clamp shown in Figure 68. This hose will be detached in step 124 on page 36.
107. Release the spring clamps and disconnect the three (3) associated hoses, shown in Figure 68.
108. Disconnect the wiring harness connector shown in Figure 68.

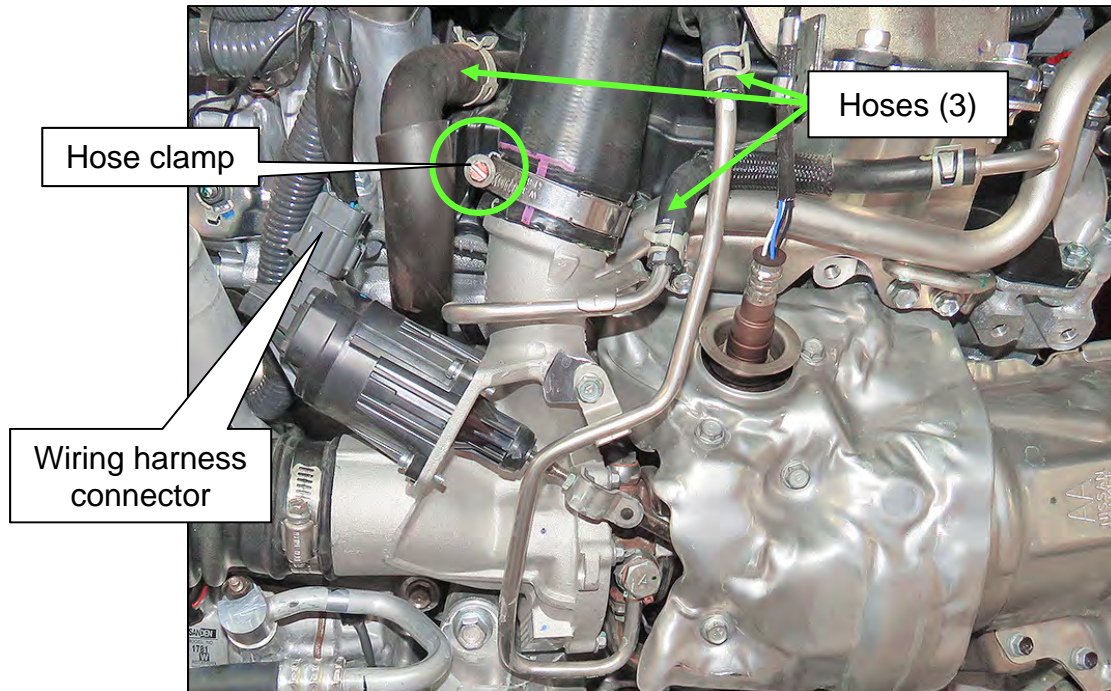


Figure 68

109. Unplug the A/F sensor wiring harness connector, and then remove the A/F sensor from the turbocharger housing.

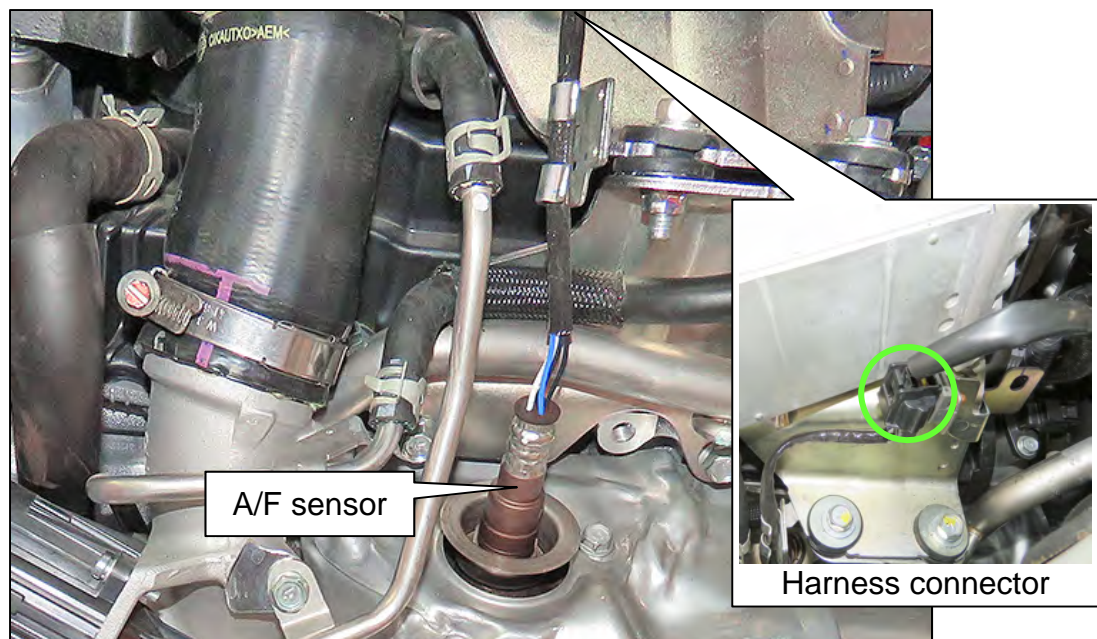


Figure 69

110. If present, unplug the Turbocharger Exhaust Gas Temperature Sensor (Bank 2) wiring harness connector, and then remove the sensor from the turbocharger housing.
111. Remove the turbocharger Heat Insulator (upper).

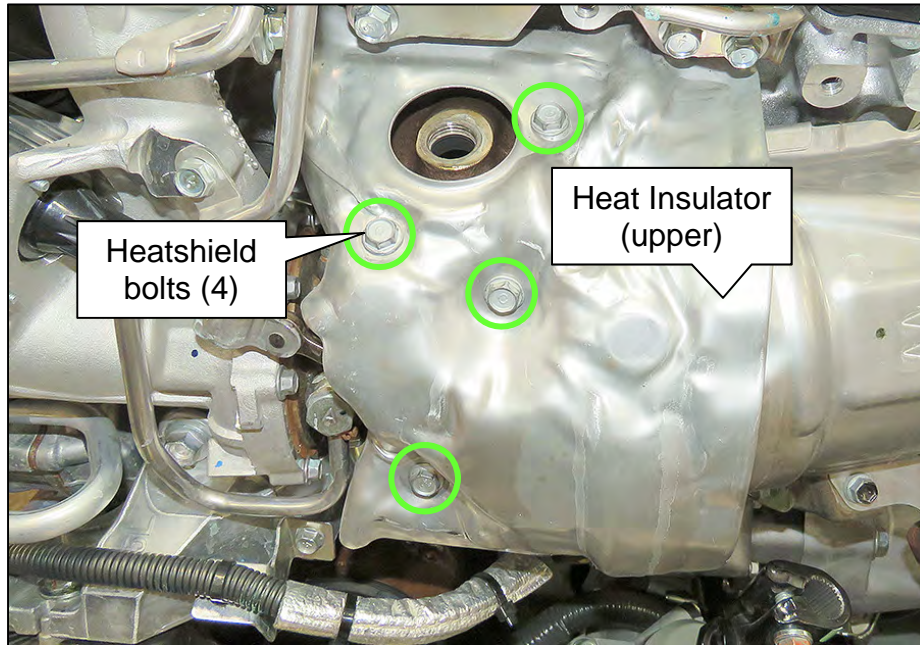


Figure 70

112. Remove the two (2) nuts that connect the Catalyst Converter (bank 2) to the 2nd Catalyst Converter (bank 2).

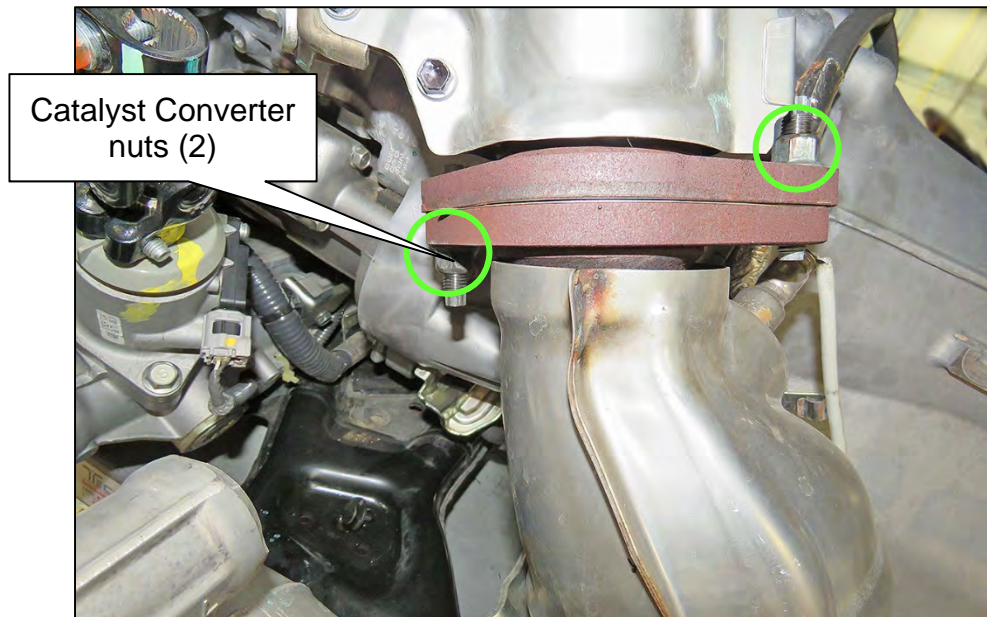


Figure 71

113. Remove the Catalyst Converter (bank 2) support bracket bolt.

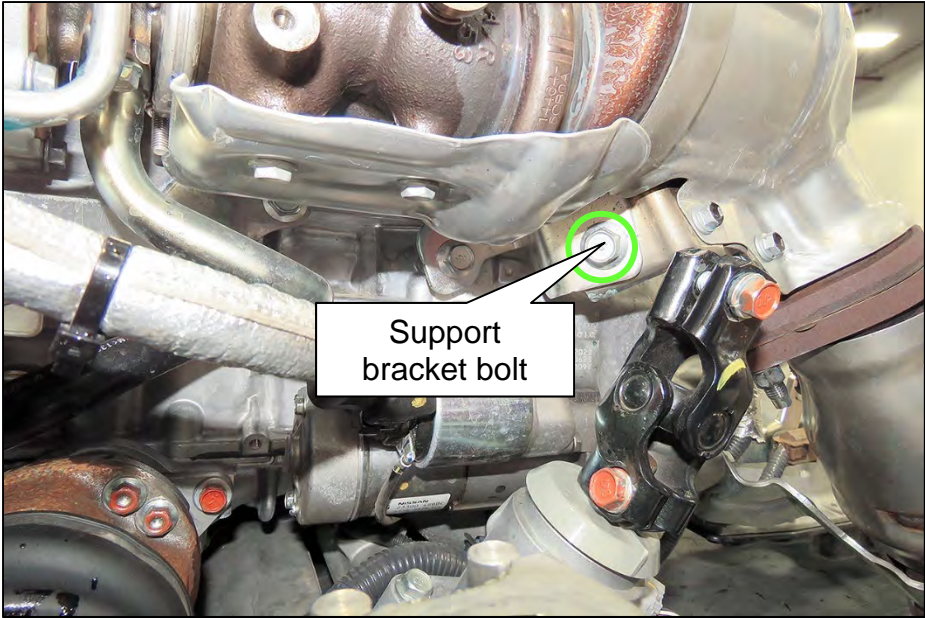


Figure 72

114. Remove the 2nd Catalyst Converter (bank 2) support bracket bolt.

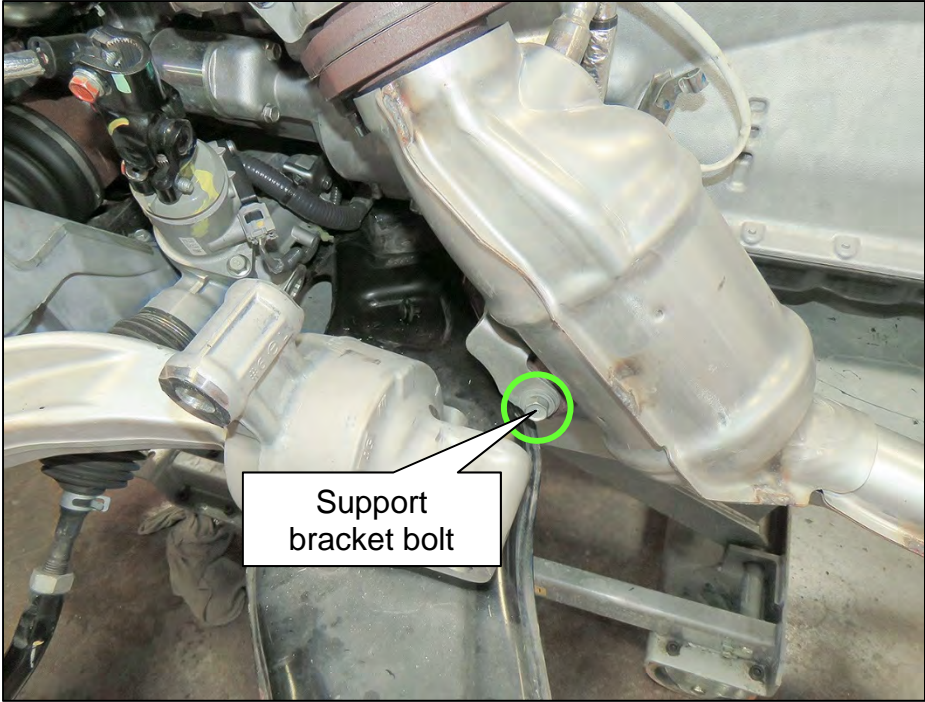


Figure 73

115. Loosen the turbocharger assembly mounting nuts in order, from 1 to 4, as shown in Figure 74.

116. Remove the band clamp bolt.

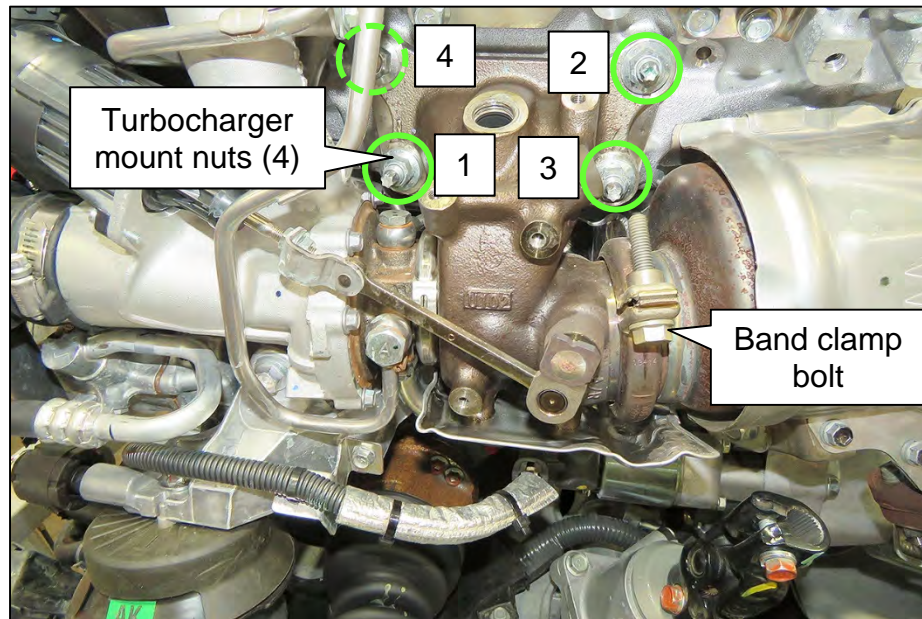


Figure 74

117. Detach Catalyst Converter (bank 2) from the turbocharger outlet.

118. Release the spring clamp and disconnect the associated oil return hose shown in Figure 75.



Figure 75

119. Remove the eye bolt retaining the oil feed tube.

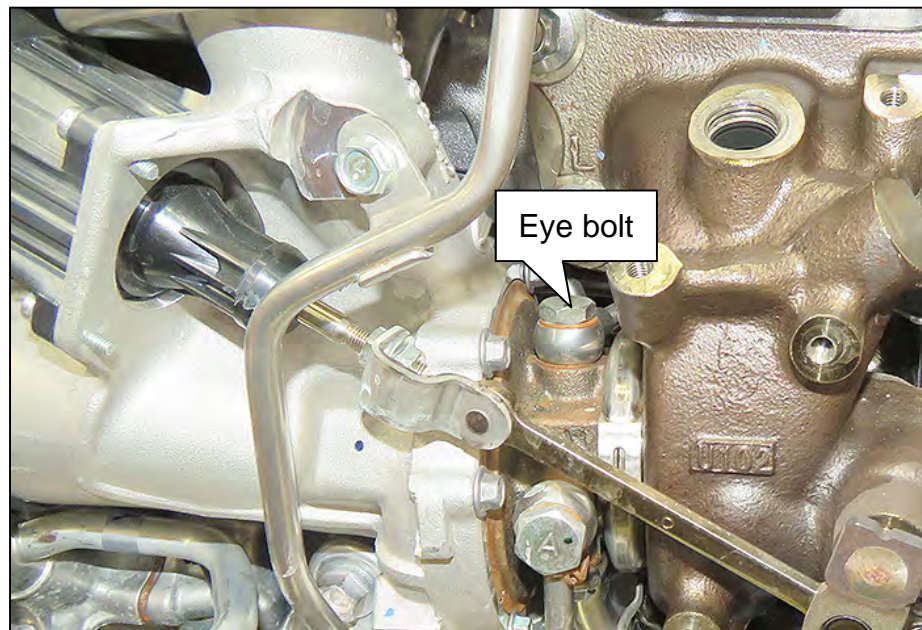


Figure 76

120. Remove both the A/C High-Pressure Flexible Hose and then the Low-Pressure Pipe 2 from the A/C compressor (Figure 77).

121. Remove the Oil Feed Tube mounting bracket bolt shown in Figure 77.

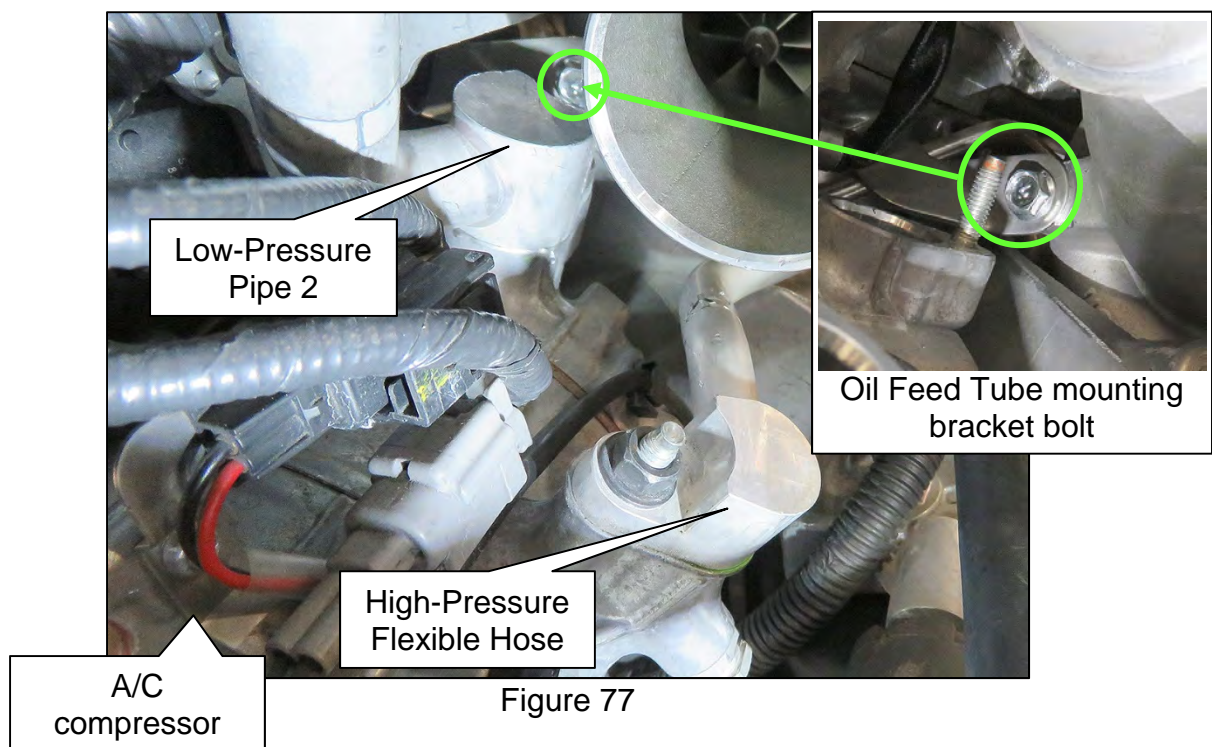


Figure 77

122. If present, disconnect the Turbocharger Speed Sensor (Bank 2) wiring harness connector.

123. Remove the turbocharger from the engine and place it on a clean workbench.

124. Transfer the components from the old to the new turbocharger assembly and torque to the specifications below.

IMPORTANT: Refer to **PARTS INFORMATION** for single use parts.

- Water tube eye bolt torque: 25.0 N•m (2.6 kg-m, **18 ft-lb**)
HINT: One (1) Water tube eye bolt is hidden in Figure 55.
- Bracket bolt torque: 9.0 N•m (0.92 kg-m, **80 in.-lb**)
- Oil return pipe bolt torque: 9.0 N•m (0.92 kg-m, **80 in.-lb**)
- Heat insulator (lower) bolt torque: 9.0 N•m (0.92 kg-m, **80 in.-lb**)
- If present, Turbocharger Speed Sensor (bank 2):
 - Wiring harness connector bracket to turbocharger torque: 7.0 N•m (0.71 kg-m, **62 in.-lb**)
 - Wiring harness connector to bracket torque: 2.2 N•m (0.22 kg-m, **19 in.-lb**)

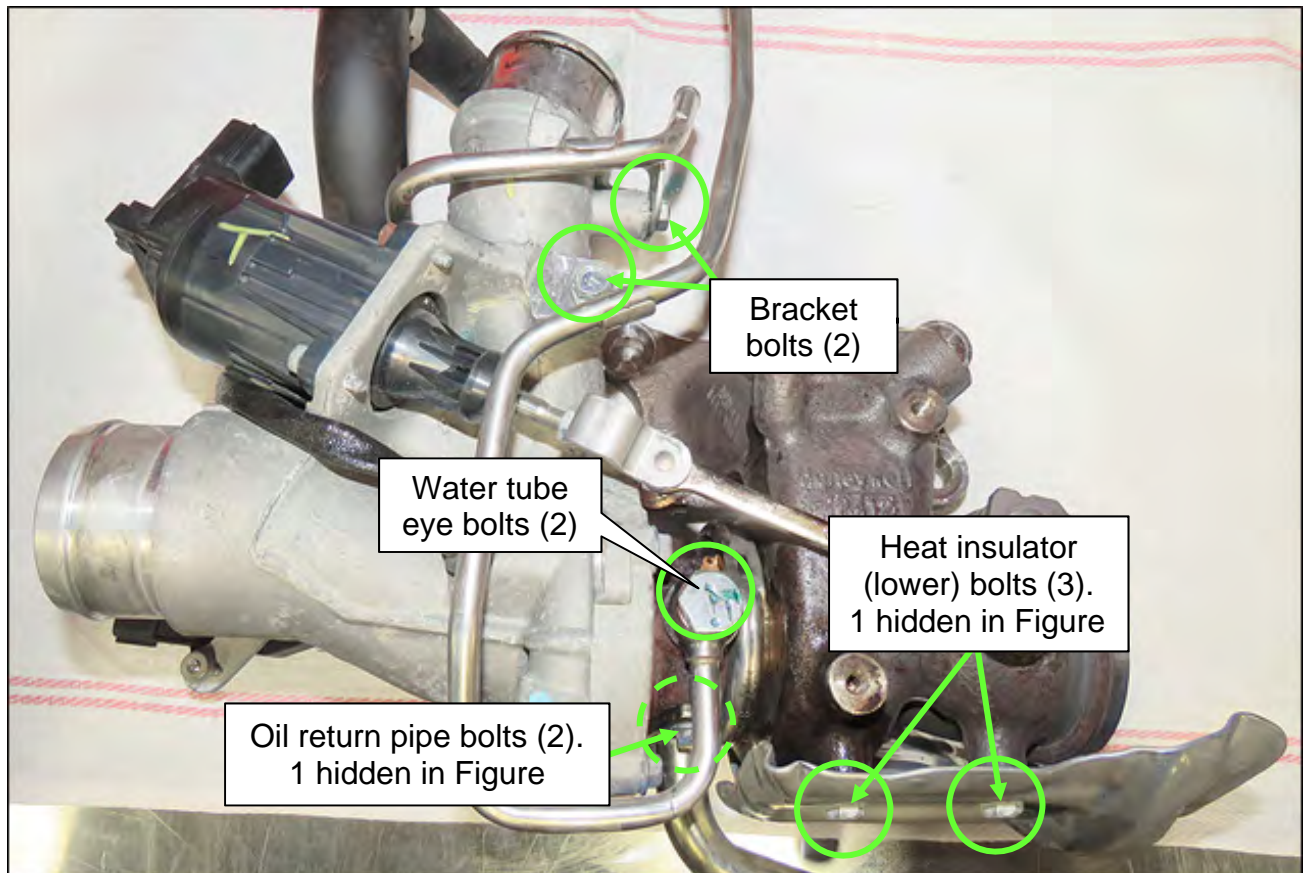


Figure 78

Reinstall the Driver (LH) Side Turbocharger

125. If present, reconnect the Turbocharger Speed Sensor (Bank 2) wiring harness connector.
126. Install and temporarily tighten the eye bolt for the oil feed tube, with a new gasket (Figure 79).

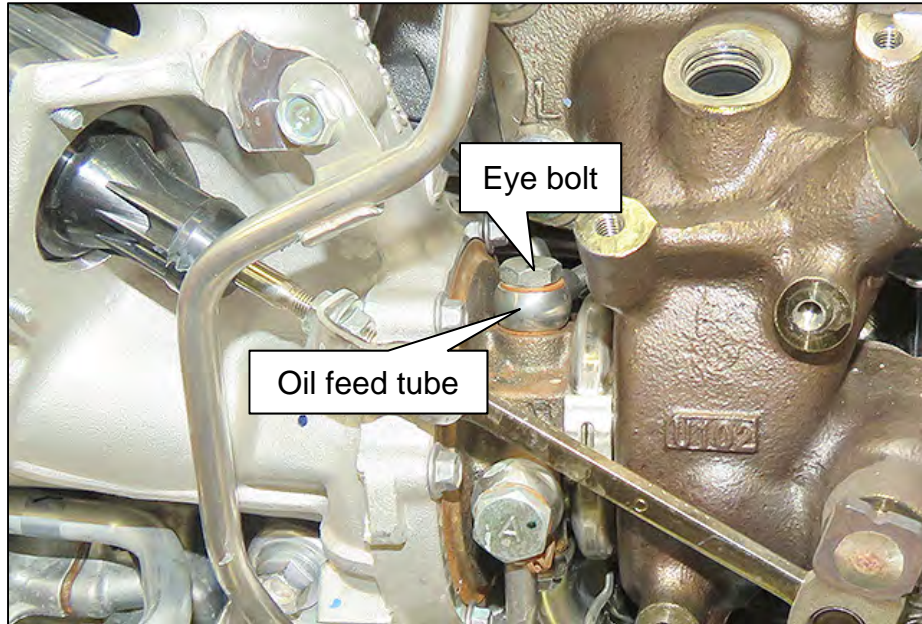


Figure 79

127. Reattach the Oil Feed Tube mounting bracket bolt (Figure 80), and then torque to specification.
 - Bolt torque: 9.0 N•m (0.92 kg-m, **80 in.-lb**)

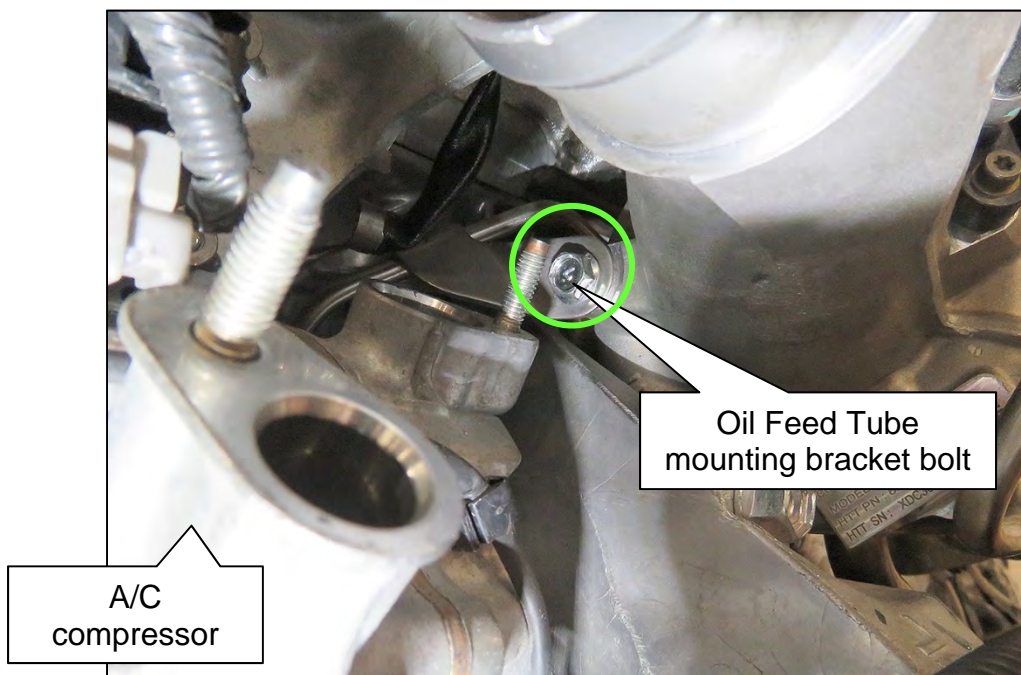


Figure 80

128. Align the turbocharger Air Inlet Hose 1 (bank 2) with the turbocharger output, and then slide the turbocharger onto its mounting studs.

- Leave the turbocharger Air Inlet Hose 1 (bank 2) clamp loose at this time.
- Replace the turbocharger to cylinder head gasket with a new one from **PARTS INFORMATION**.

129. Reconnect the wiring harness connector shown in Figure 81.

130. Reconnect the three (3) hoses shown in Figure 81.

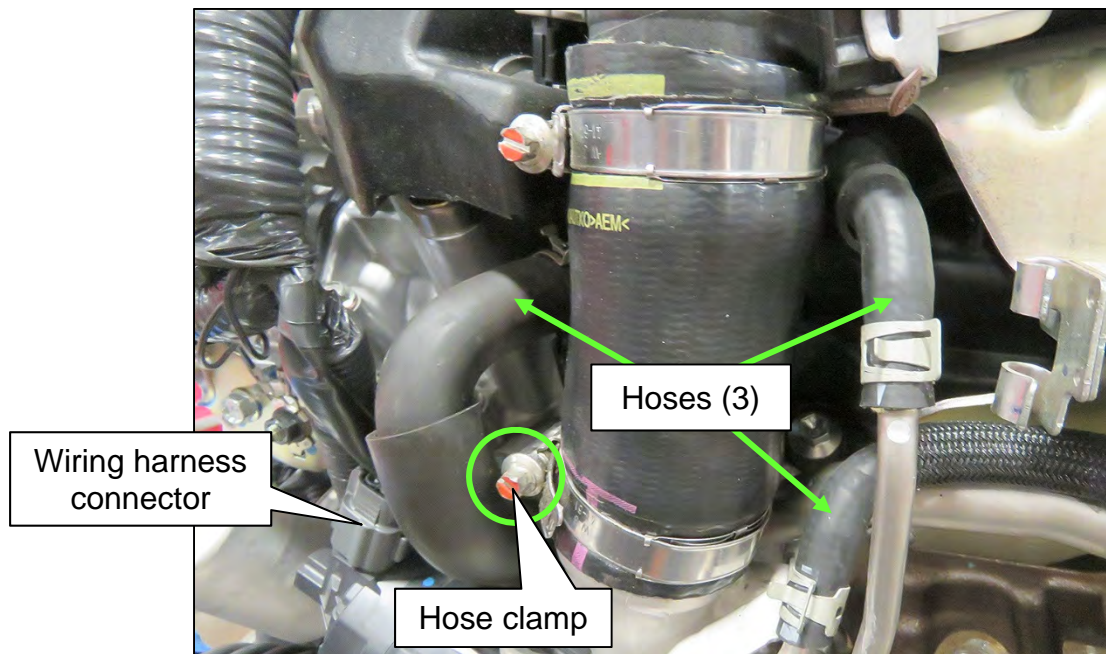


Figure 81

131. Reconnect the oil return hose and spring clamp.



Figure 82

132. Install all four (4) turbocharger mount nuts, and then torque them in the order (from 1 to 6) shown in Figure 83.
 - Nut torque: 30.5 N•m (3.1 kg-m, **22 ft-lb**)
133. Align the Catalyst Converter (bank 2) with 2nd Catalyst Converter (bank 2) studs and install the nuts finger tight.
134. Reattach the Catalyst Converter (bank 2) to the turbocharger outlet, and then lightly tighten the band clamp bolt just enough to align catalyst, but allow it to rotate.
 - Band clamp will be torqued in step 138 on page 42.

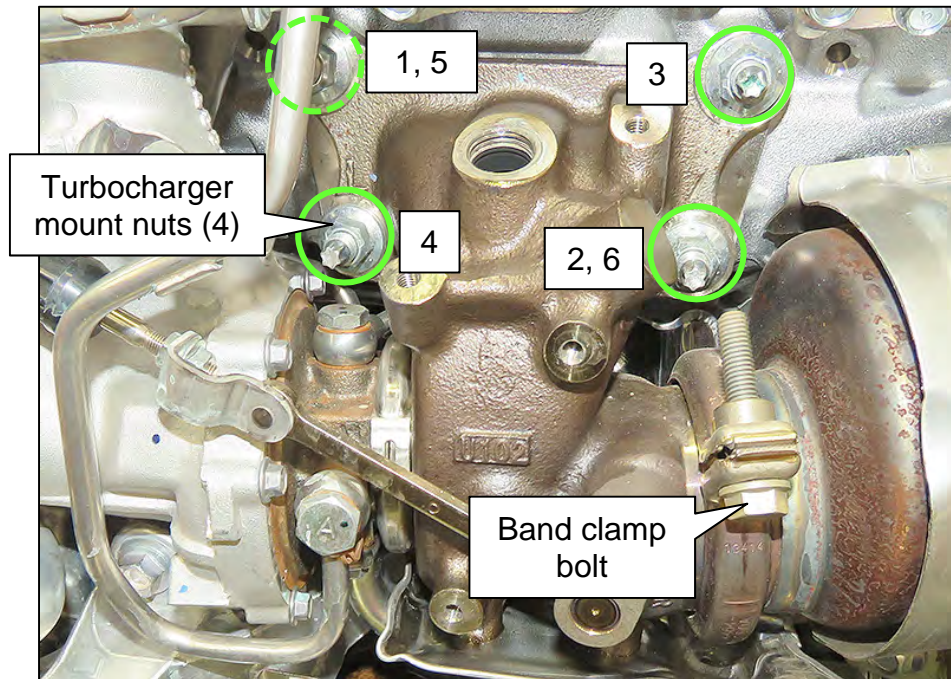


Figure 83

135. Reinstall the 2nd Catalyst Converter (bank 2) support bracket bolt finger tight.

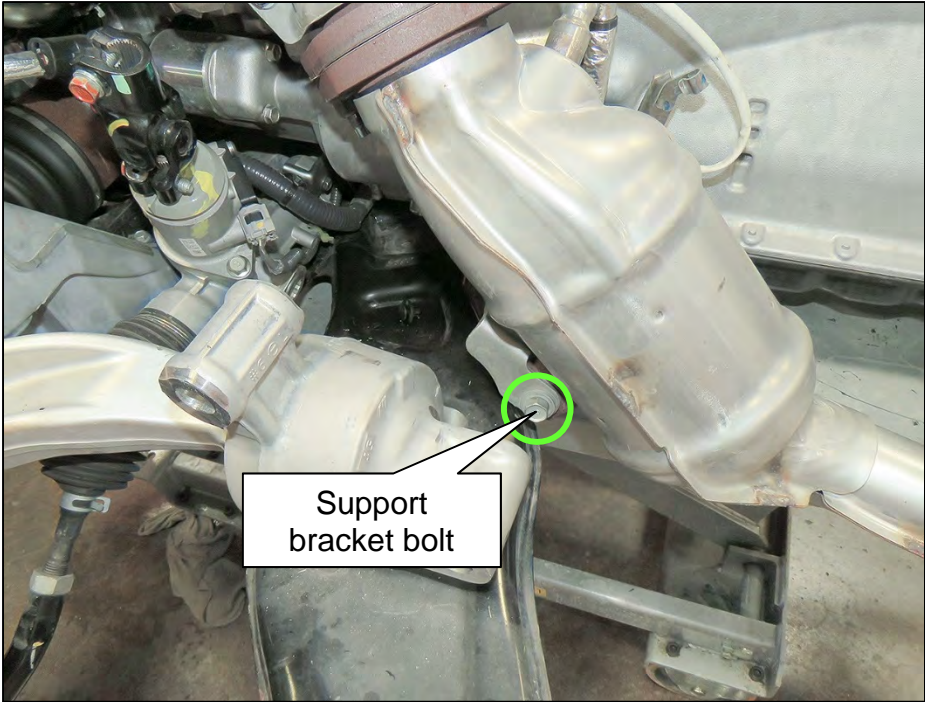


Figure 84

136. Reinstall the Catalyst Converter (bank 2) support bracket bolt finger tight.

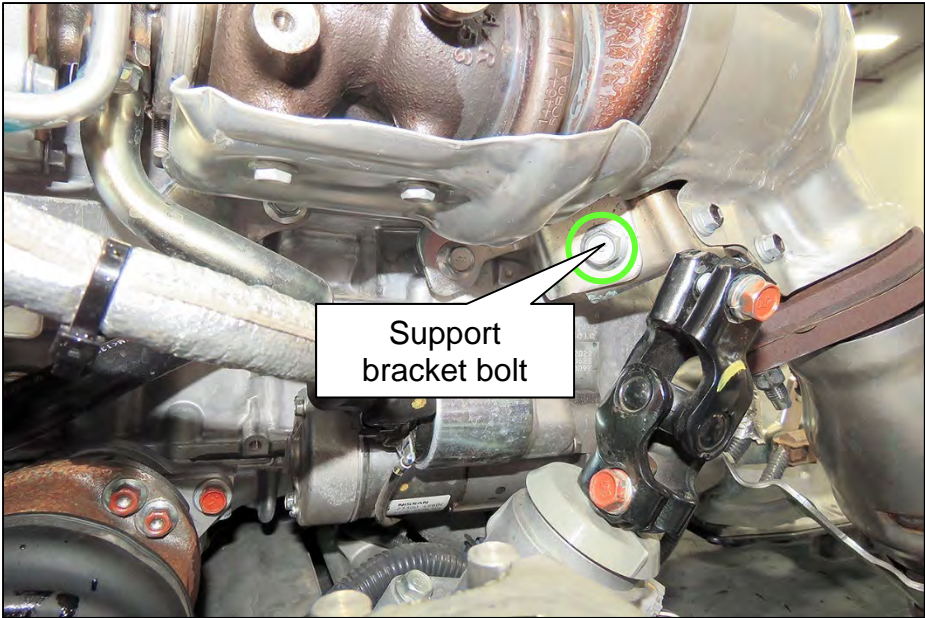


Figure 85

137. Torque the Catalyst Converter (bank 2) to the turbocharger outlet band clamp bolt to specification.

- Bolt torque: 15 N•m (1.5 kg-m, **11 ft-lb**)

138. Torque the 2nd Catalyst Converter (bank 2) support bracket bolt to specification.

- Bolt torque: 47.8 N•m (4.9 kg-m, **35 ft-lb**)

139. Torque the Catalyst Converter (bank 2) support bracket bolt to specification.

- Bolt torque: 47.8 N•m (4.9 kg-m, **35 ft-lb**)

140. Torque the oil feed tube eye bolt (Figure 86) to specification.

- Bolt torque: 25.0 N•m (2.6 kg-m, **18 ft-lb**)

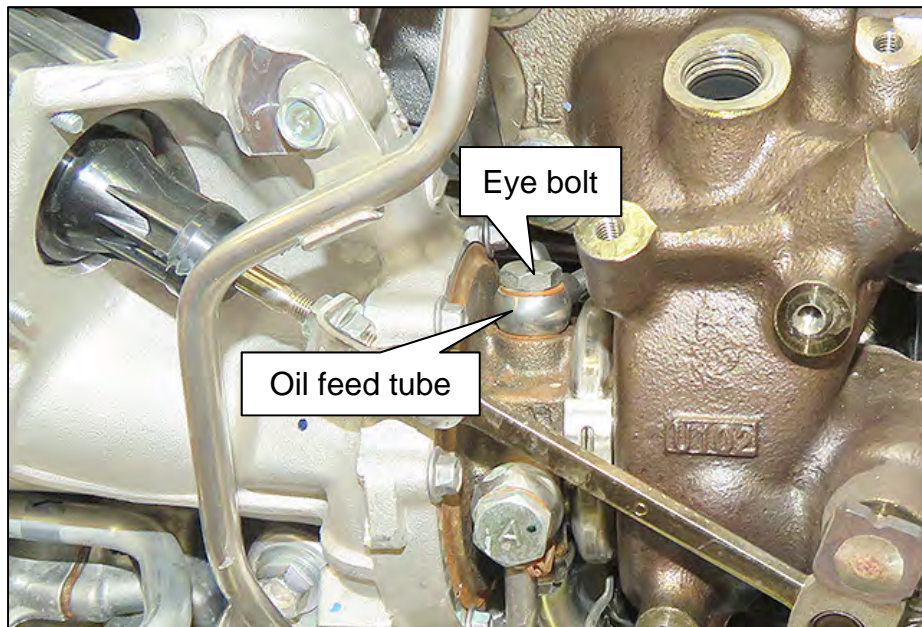


Figure 86

141. Torque the Catalyst Converter (bank 2) to 2nd Catalyst Converter (bank 2) nuts that were finger tightened, in step 134 on page 40, to specification.

- Nut torque: 44.9 N•m (4.6 kg-m, **33 ft-lb**)

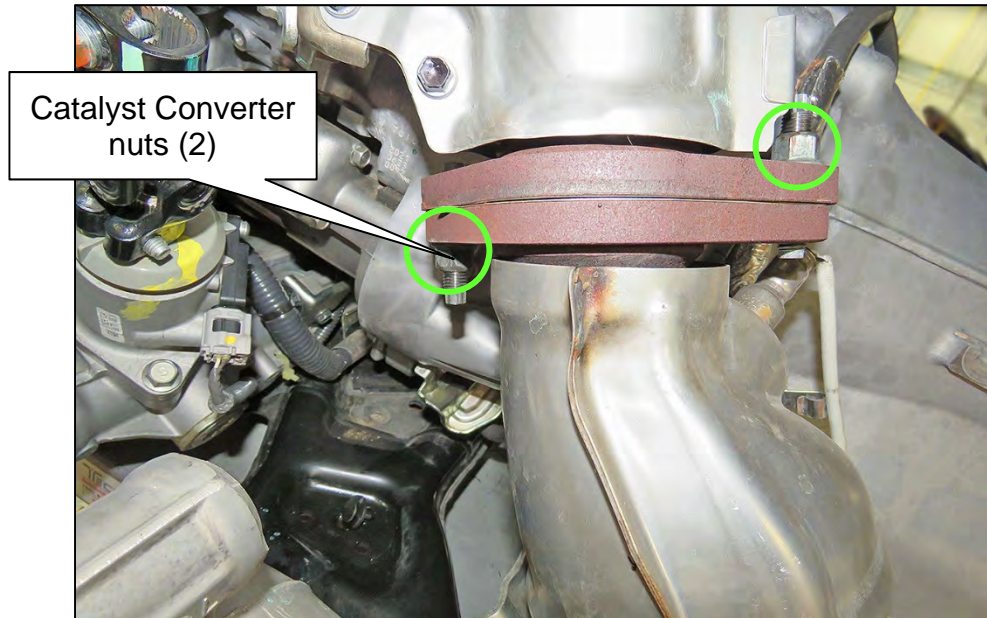


Figure 87

142. Reinstall Heat Insulator (upper) with four (4) bolts.

- Bolt torque: 9.0 N•m (0.92 kg-m, **80 in.-lb**)

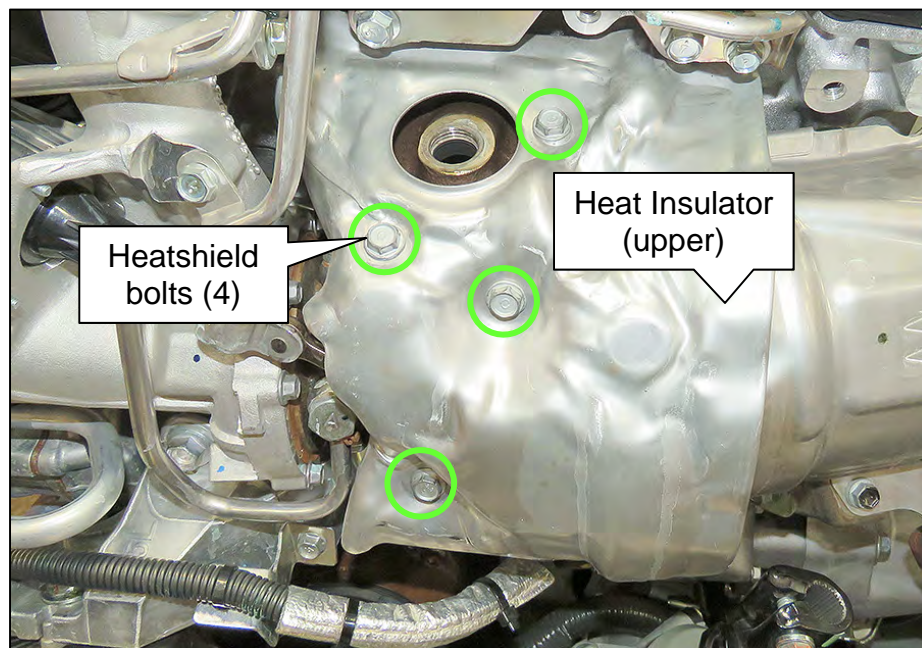


Figure 88

143. Install a new A/F sensor from **PARTS INFORMATION**, torque it to specification and then reconnect its wiring harness connector.

- A/F sensor torque: 50 N•m (5.1 kg-m, 37 ft-lb)

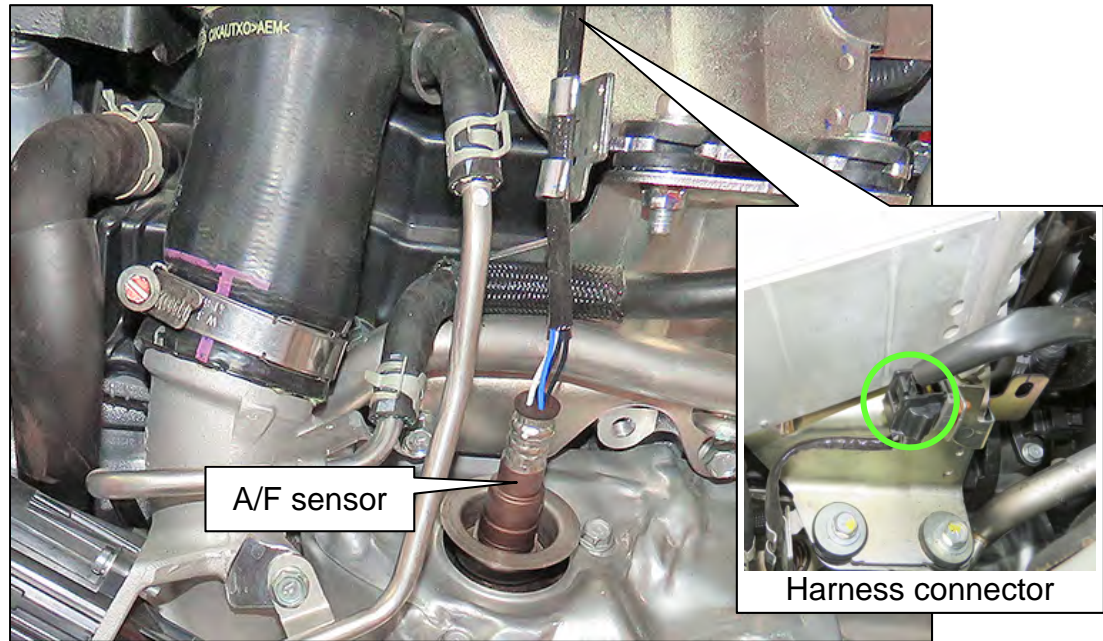


Figure 89

144. Tighten the hose clamp shown in Figure 90.

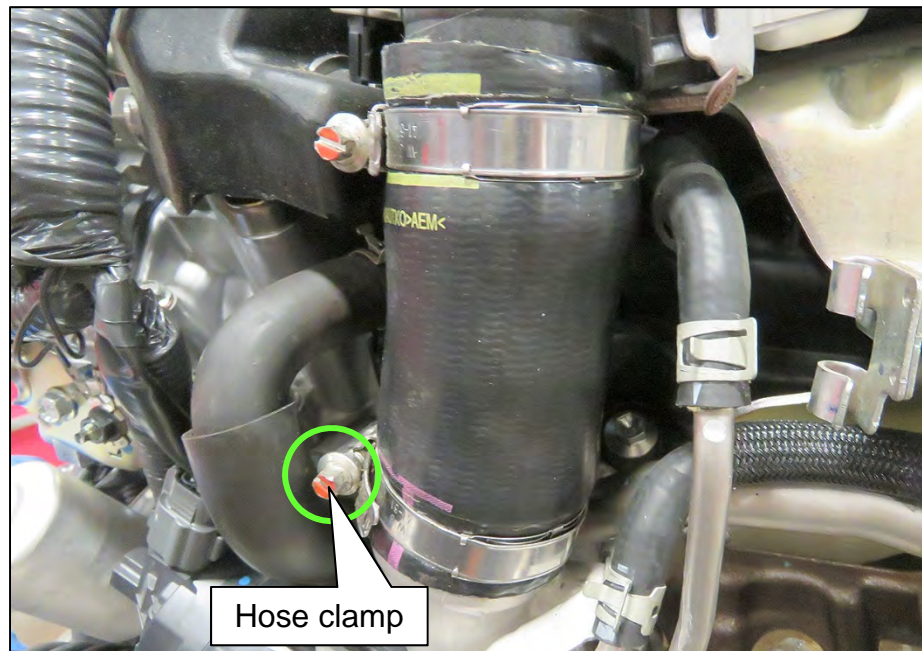


Figure 90

145. Reattach the Low-Pressure Pipe 2 and then the A/C High-Pressure Flexible Hose to the A/C compressor (Figure 91) and then torque to specification.

- Nut torque: 13.7 N•m (1.4 kg-m, **10 ft-lb**)

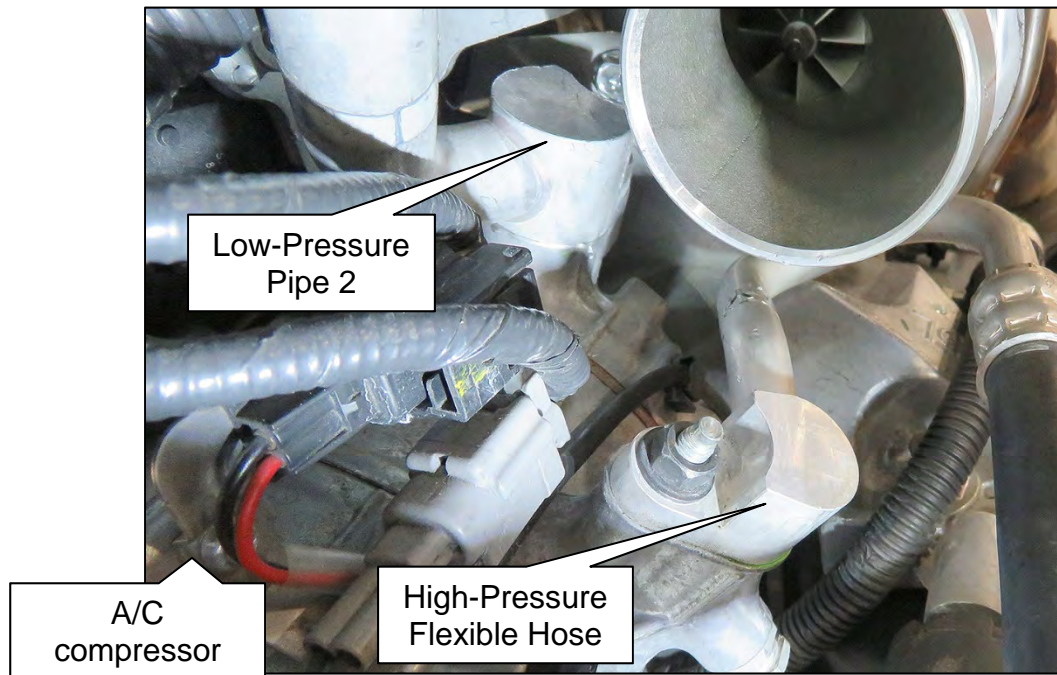


Figure 91

Reinstall Driveline

146. Carefully raise the driveline back into the vehicle.

147. For AWD vehicles, reinstall the four (4) transverse link bolts; two (2) per side, and temporarily tighten.

- These bolts will be torqued to specification in step 153 on page 47.

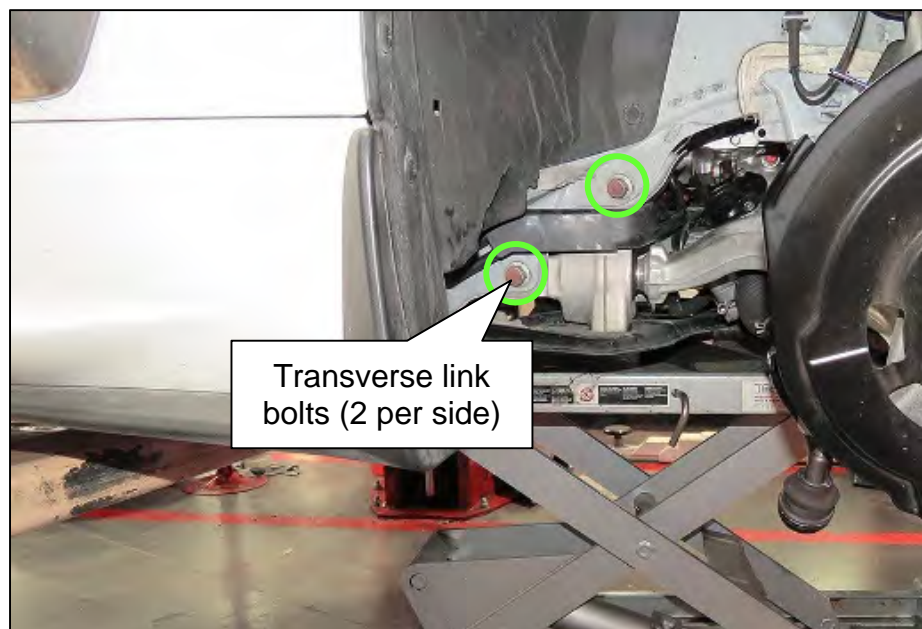
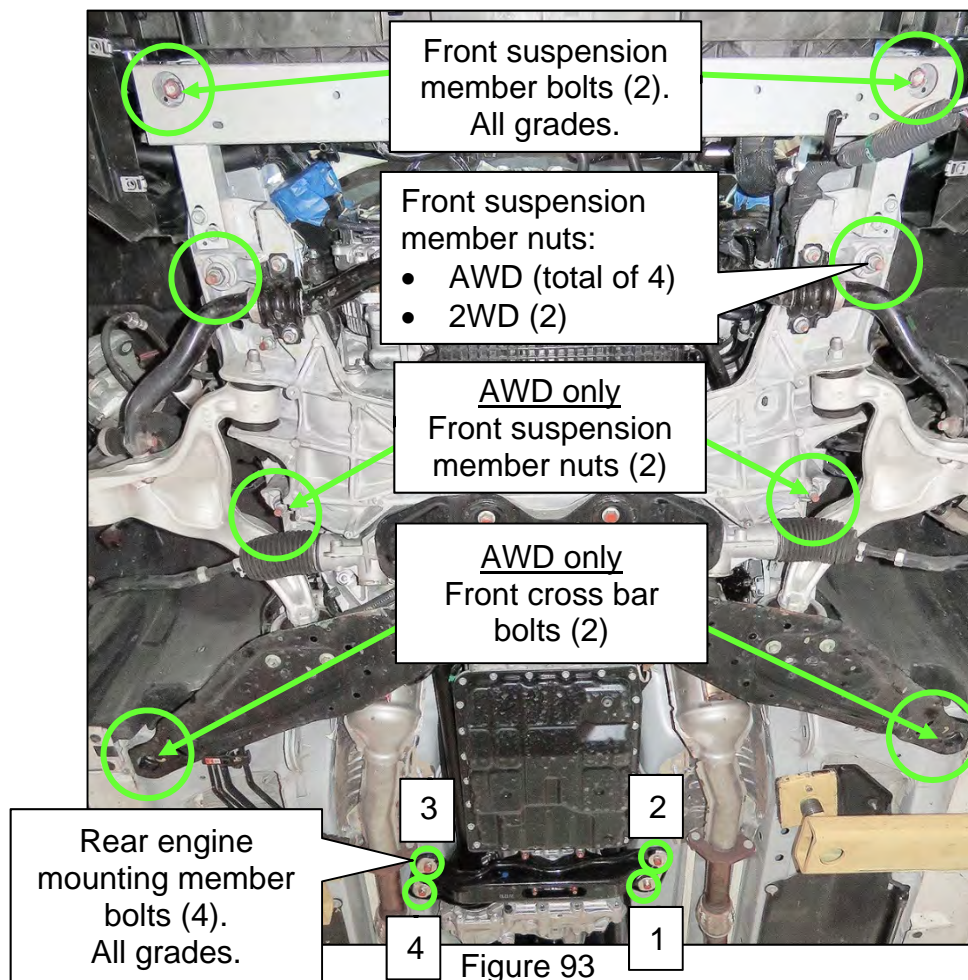


Figure 92

148. Reinstall and temporarily tighten the following nuts and bolts indicated in Figure 93.

- AWD has a total of four (4) front suspension member nuts.
- 2WD has two (2) front suspension member nuts.
- Two (2) front suspension member bolts (both AWD and 2WD).
- AWD only: Two (2) front cross bar bolts.
- The rear engine mounting member bolts.

HINT: Figure 93 is of an AWD vehicle. Nut and bolt locations are similar for 2WD.



149. Torque the sub frame nuts, bolts, and front cross bar bolts to the following specifications:

- Torque the front suspension member nuts to 130 N•m (13 kg-m, **96 ft-lb**).
- Torque the front suspension member bolts to 82 N•m (8.4 kg-m, **60 ft-lb**).
- Torque the front cross bar bolts to 75 N•m (7.7 kg-m, **55 ft-lb**).

150. Torque the rear engine mounting member bolts in the pattern shown in Figure 93.

- Bolt torque: 49 N•m (5.0 kg-m, **36 ft-lb**).

151. For AWD vehicles, torque the four (4) transverse link bolts; two (2) per side, to specification.

- Bolt torque: 128 N•m (13 kg-m, **94 ft-lb**)

Transverse link bolts (2 per side)

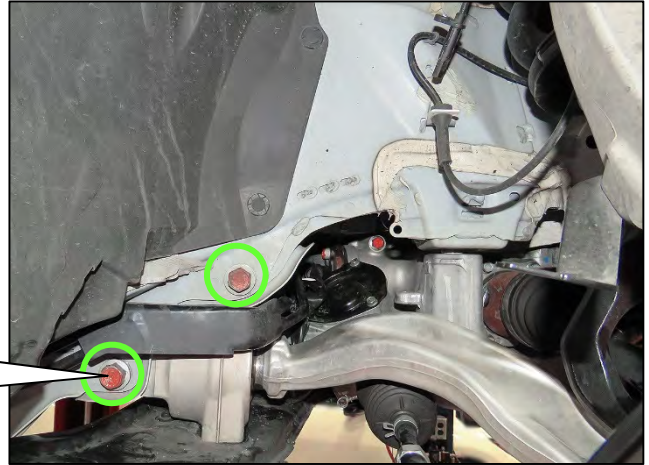


Figure 94

152. Slowly lower, and then remove, the driveline support table from under the driveline.

Driveline support table

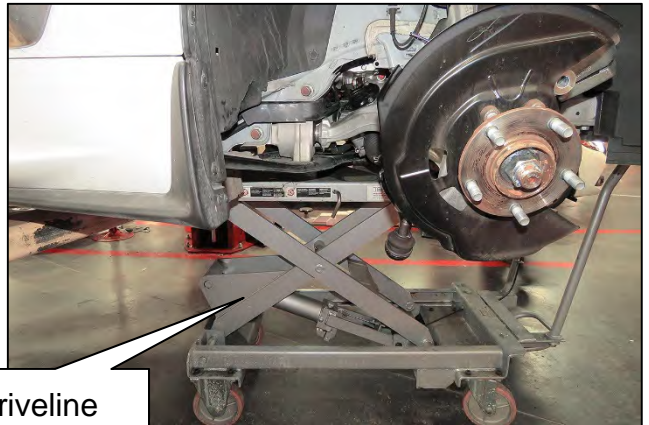
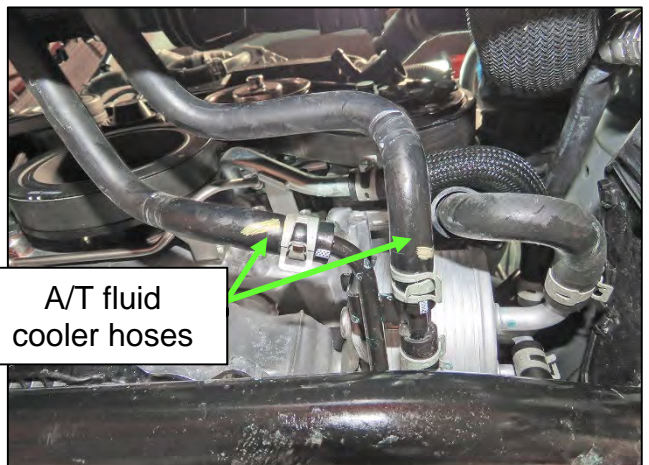


Figure 95

153. Raise the vehicle to a comfortable height for the following steps.

154. Reattach the A/T fluid cooler hoses.



A/T fluid cooler hoses

155. Reconnect Oil Cooler Hose 1 and Oil Cooler Hose 2 if they were disconnected in step 57 on page 16.

Figure 96

156. Reconnect the power steering wiring harness connector, if present.

HINT: Electric power steering type shown in Figure 37.

- Located on either the driver (LH) side or passenger (RH) side of the front corner of the front suspension member, under the inner fender protector.

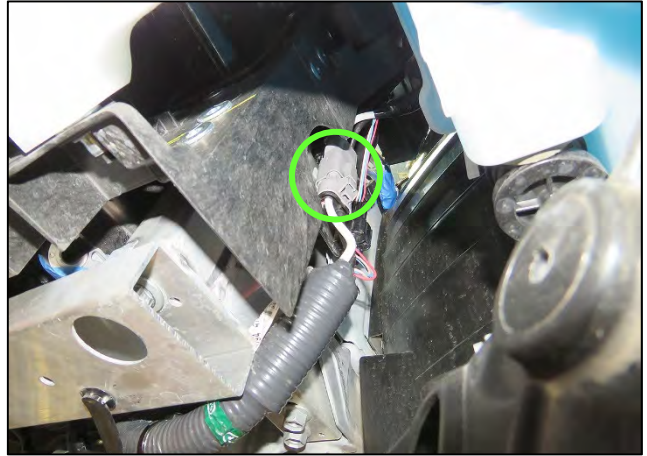


Figure 97

157. Reconnect the steering shaft to the steering rack, and then install the bolt.

- Bolt torque: 26.5 N•m (2.7 kg-m, **20 ft-lb**)

HINT: The bolt location and component view may differ based on the type of steering system.

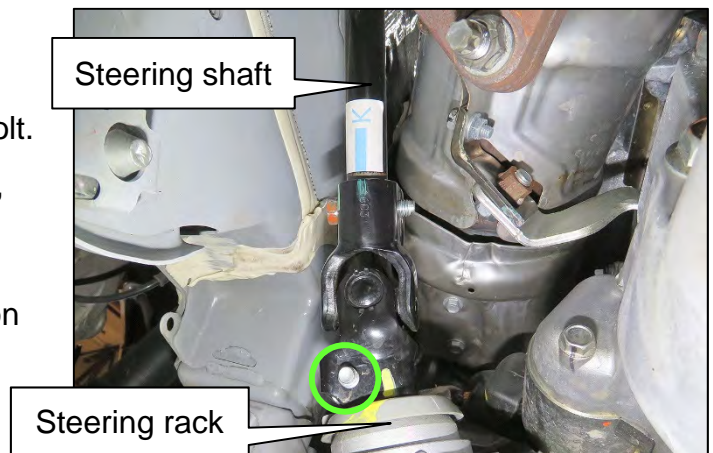


Figure 98

158. Reconnect the transmission's Control Rod with Snap Pin.

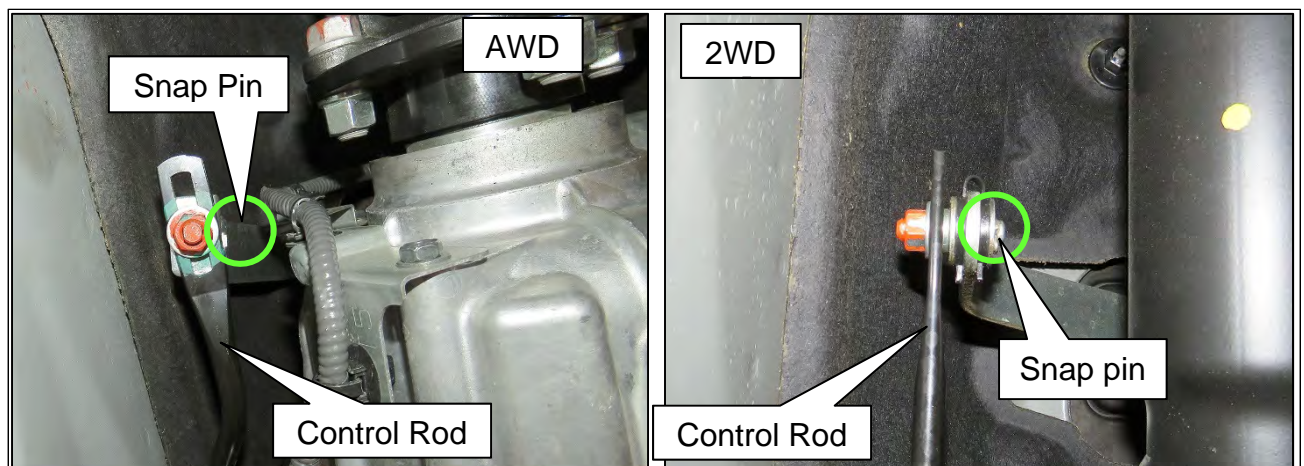


Figure 99

159. For 2WD only, reinstall the propeller shaft and complete exhaust into the vehicle, and then skip to step 163.

- Refer to the ESM: **REPAIR > TRANSMISSION & DRIVELINE > DRIVELINE > REMOVAL AND INSTALLATION > REAR PROPELLER SHAFT**

160. For AWD vehicles, reconnect the propeller shaft to the transmission with four (4) nuts and bolts, and then torque to specification.

- Torque to 80 N•m (8.2 kg-m, **59 ft-lb**).
- One (1) hidden nut/bolt in Figure 100.



Figure 100

161. Reconnect the Exhaust Front Tube to the Center Muffler with a new gasket and two (2) nuts and bolts (Figure 101), and then torque to specification.

- Torque to 58 N•m (5.9 kg-m, **43 ft-lb**).
- See **PARTS INFORMATION** for single use parts.

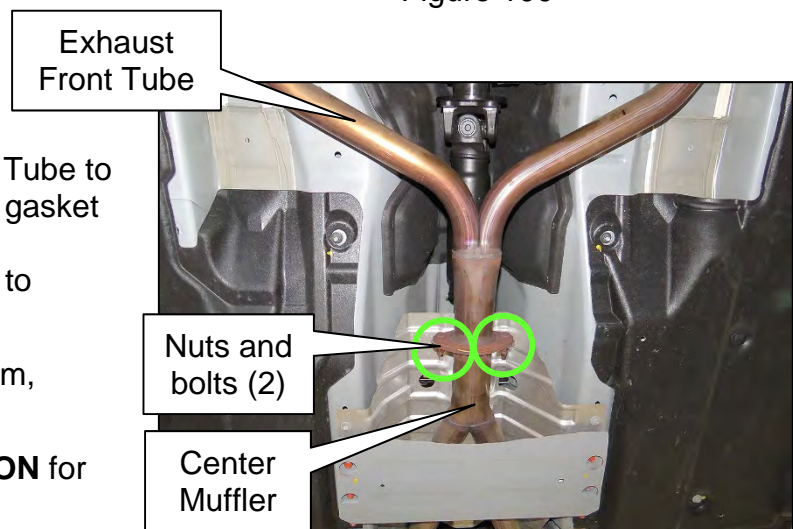


Figure 101

162. Reinstall all Under Covers.

163. Lower the vehicle to a comfortable height to reassemble the suspension and brake components.

The following steps will be performed on both the passenger (RH) side and the driver (LH) side of the vehicle. The figures are of the RH side. The LH side is similar.

164. Reattach both Shock Absorber Arms to the Transverse Links with nuts and fasteners, and then torque to the specifications below.

- For AWD torque, refer to Figure 102.
- For 2WD torque, refer to Figure 103.

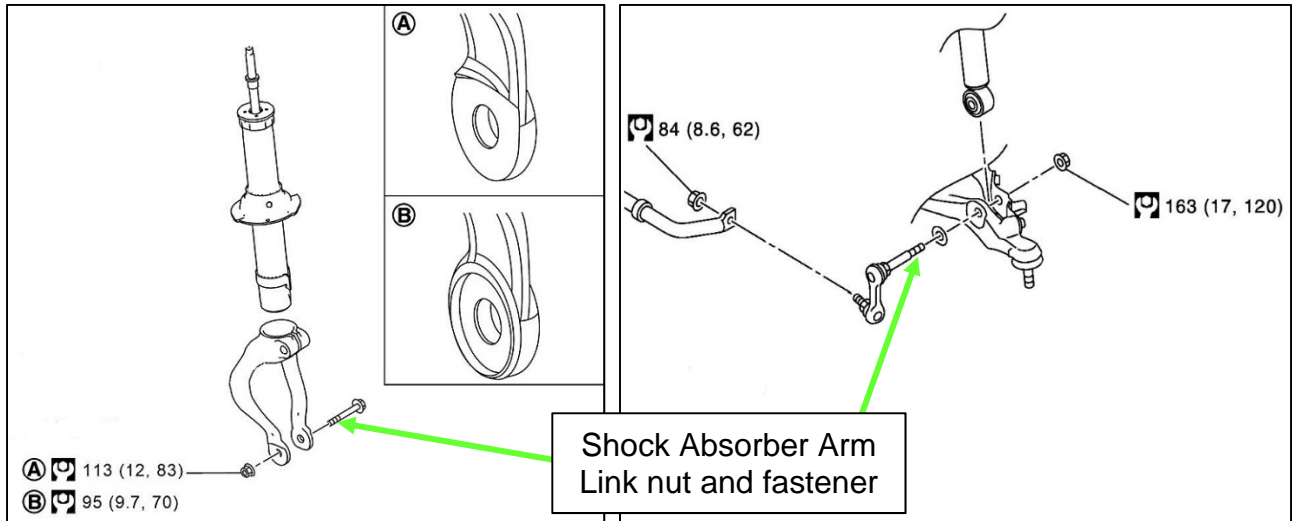


Figure 102

Figure 103

165. Reattach the top of the Steering Knuckle to the Upper Link, and then torque to specification.

- Torque to 55 N•m (5.6 kg-m, **41 ft-lb**).

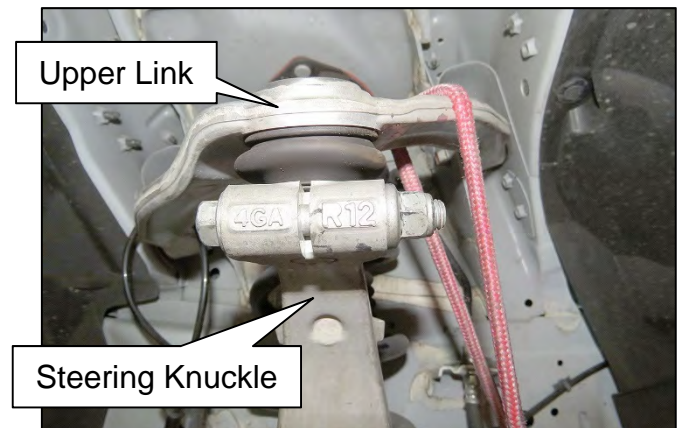


Figure 104

166. Reattach both brake rotors and caliper assemblies, and then torque bolts to specification.

- For 2 or 4 piston calipers, torque bolts to 123 N•m (13 kg-m, **91 ft-lb**).

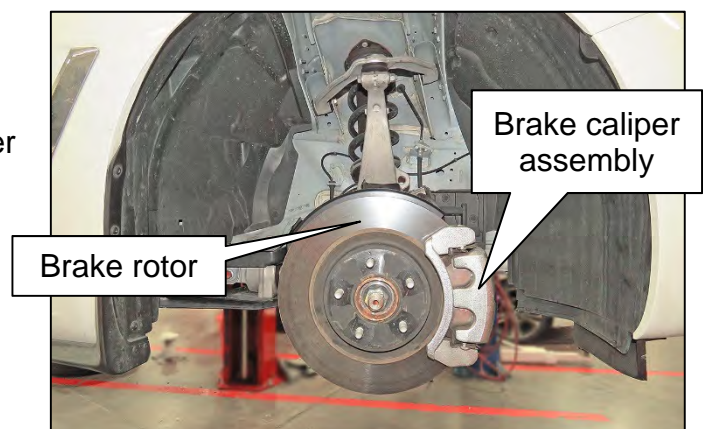


Figure 105

167. Reattach the brake hose locator clips.

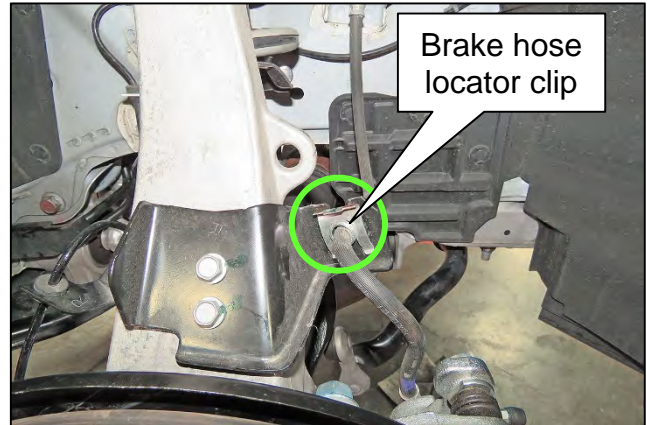


Figure 106

168. Reattach the wheel sensors to both Steering Knuckles.

- Bolt torque: 9 N•m (9.2 kg-m, 80 in.-lb)

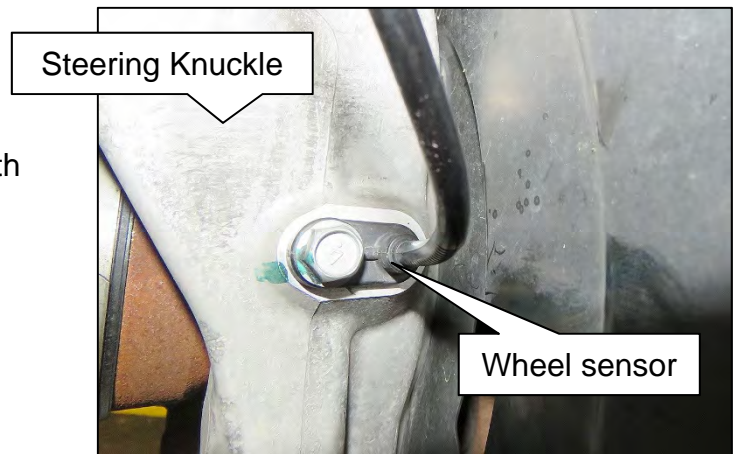


Figure 107

169. Reattach the wheel sensor harnesses to the two (2) locations, on each Steering Knuckle, shown in Figure 108.



Figure 108

170. Lower the vehicle to a comfortable height to work in engine room.

171. Reattach the High-Pressure Flexible Hose to the condenser.

- One (1) bolt.
- Bolt torque: 5.5 N•m (0.56 kg-m, **49 in.-lb**)

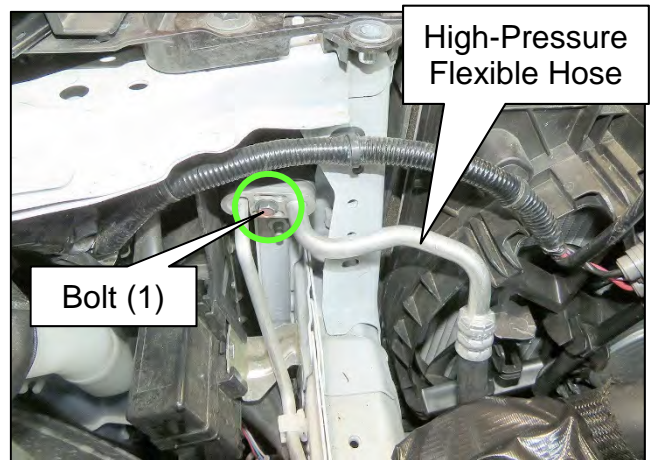


Figure 109

172. Reconnect the Low-Pressure Flexible Hose to the Internal Heat Exchanger Pipe.

- One (1) bolt.
- Bolt torque: 5.5 N•m (0.56 kg-m, **49 in.-lb**)

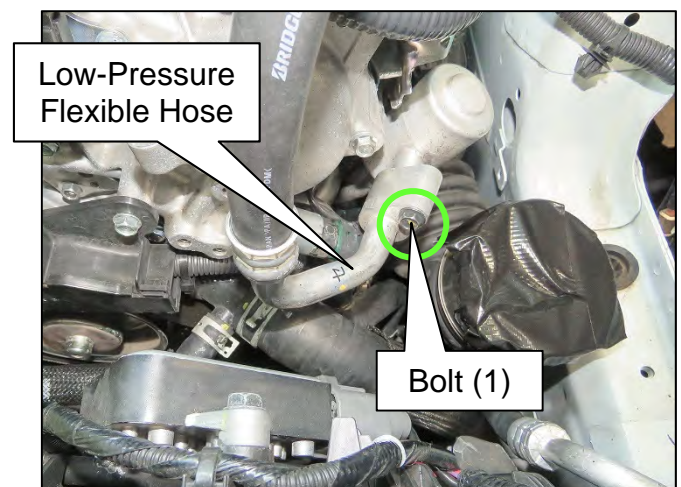


Figure 110

173. Reattach the Radiator Hose (lower) and the Reservoir Tank Hose to the Multi-way Control Valve.

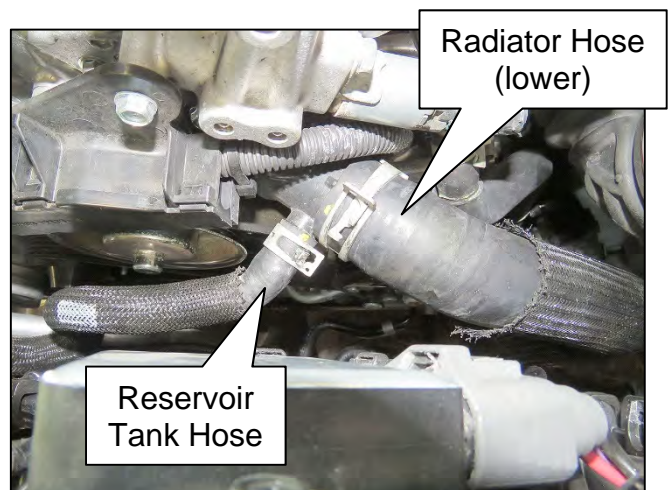


Figure 111

174. For vehicles that the Oil Cooler Pipe 1 bolts were removed in step 37 on page 10, reinstall the two (2) bolts.
- Bolt torque: 5.5 N•m (0.56 kg-m, **49 in.-lbs**)
175. Remove the tape from over Air Duct (bank 1) and Air Duct (bank 2) inlets.
176. Reattach both Air Cleaner Body (bank 1) and Air Cleaner Body (bank 2) to Air Duct (bank 1) and Air Duct (bank 2), and then install their bolts; a total of four (4).
- Bolt torque: 5.5 N•m (5.6 kg-m, **49 in.-lb**)
177. Reattach the MAF sensor wiring harnesses to Air Cleaner Body (bank 1) and Air Cleaner Body (bank 2).
178. Reconnect both MAF sensor wiring harness connectors to the MAF sensors (Figure 112), located on the Air Cleaner Body (bank 1) and Air Cleaner Body (bank 2).

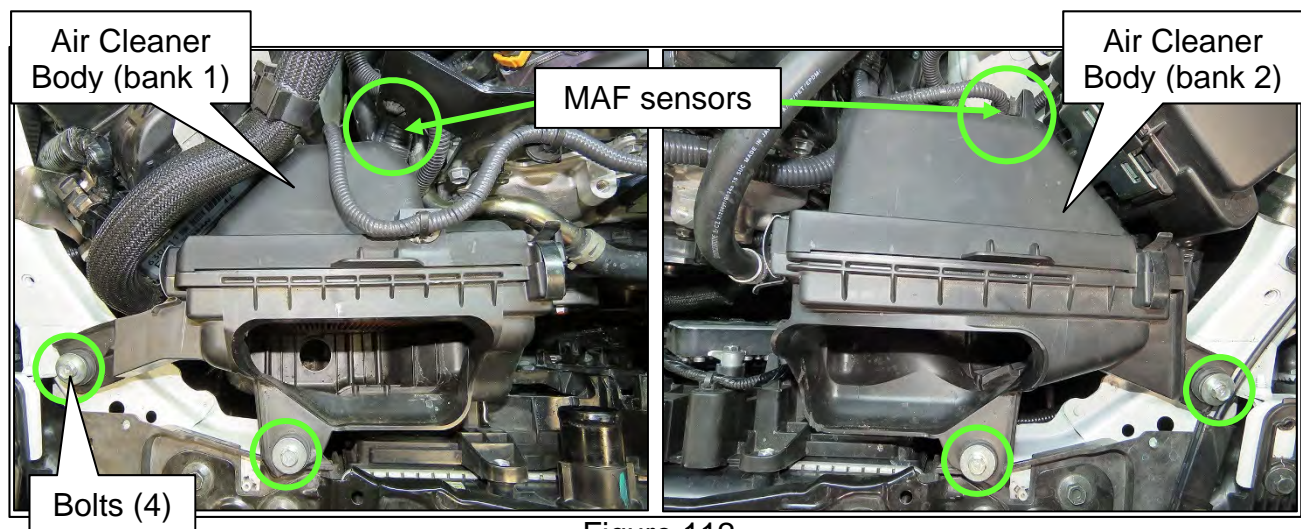


Figure 112

179. Reattach the passenger (RH) side and the driver (LH) side Hood Side Seal Assembly clips (Figure 113).

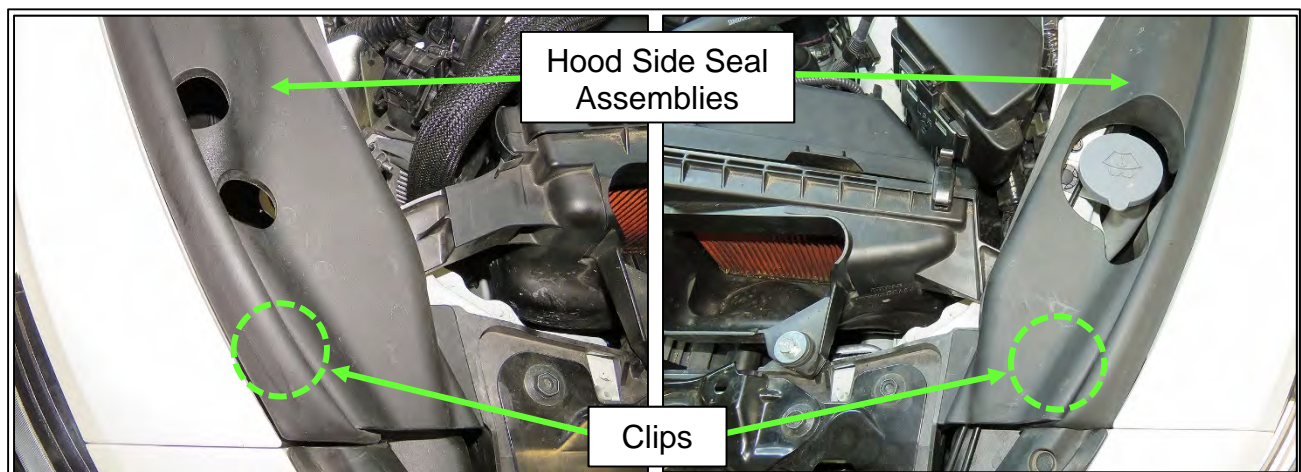


Figure 113

180. Reconnect the Radiator Hose (Upper) to the radiator.

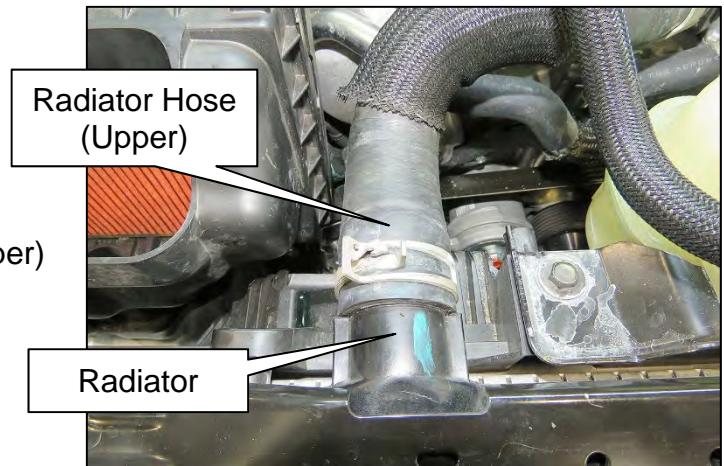


Figure 114

181. Reconnect the Radiator Hose (Upper) and the Reservoir Tank Hose to the Multi-way Control Valve.

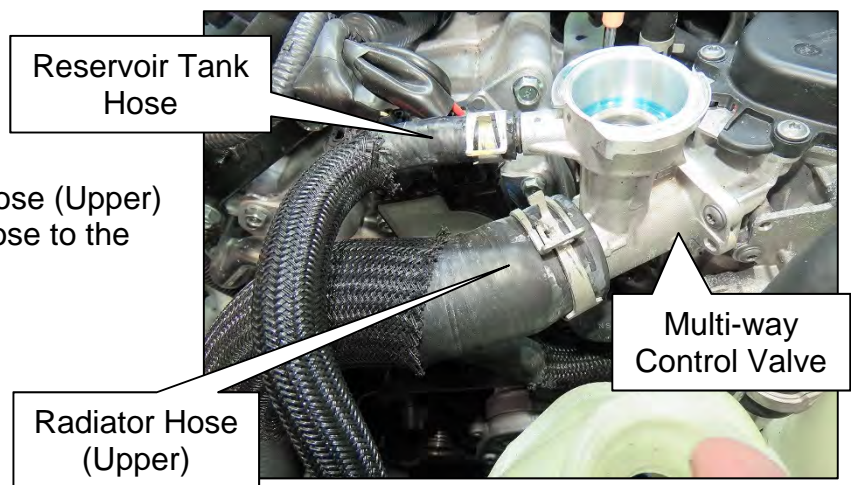


Figure 115

182. Install the Air Duct (inlet), shown in Figure 116.

- Eight (8) clips.

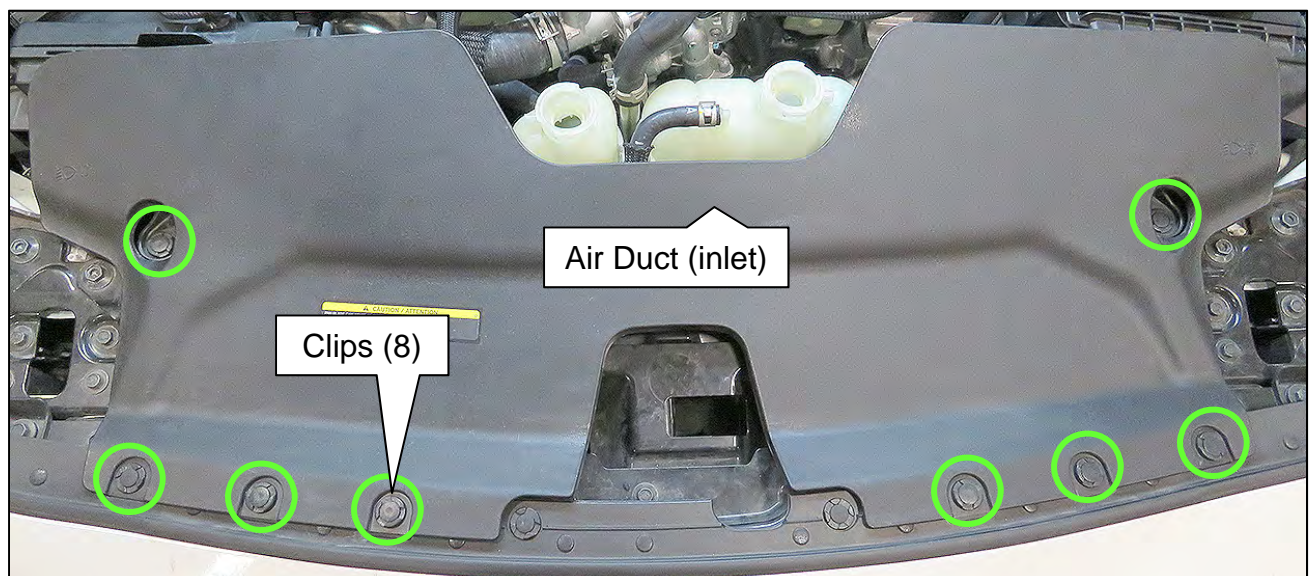


Figure 116

183. Reconnect Water Hose 9 to Water Pipe 3.

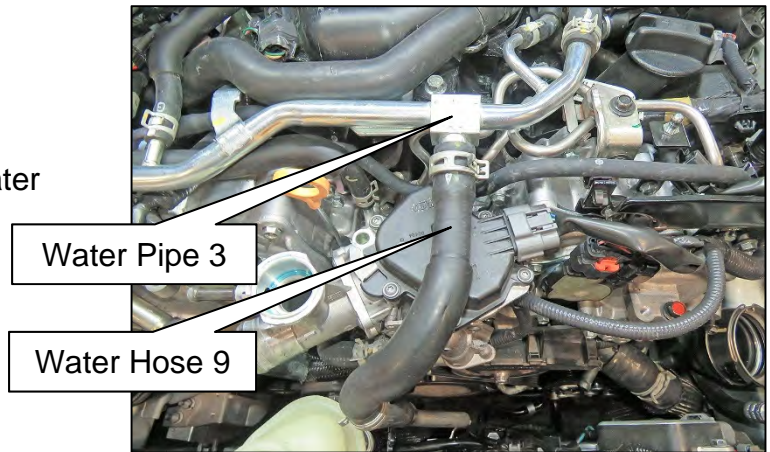


Figure 117

184. Reconnect Water Hose 1 to Connector Pipe 3.

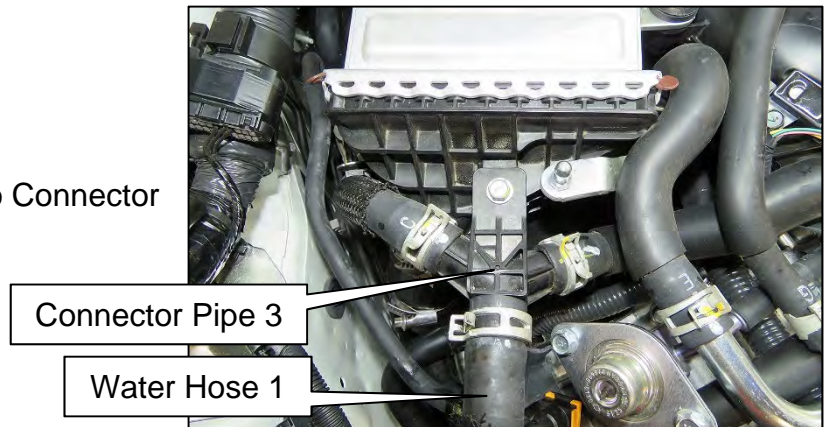


Figure 118

185. Reattach Fuel Feed Hose 2.

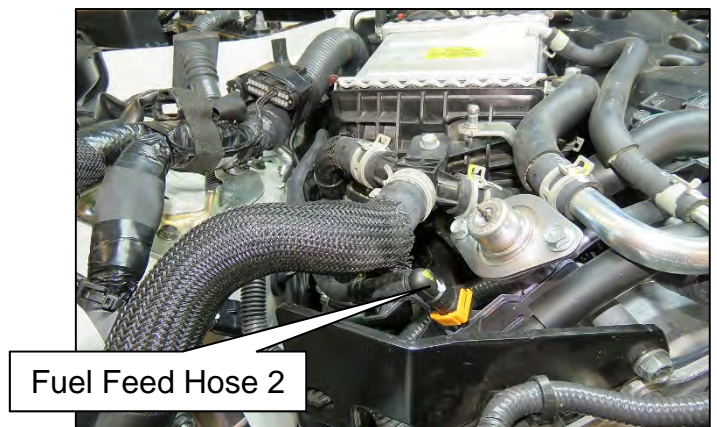


Figure 119

186. Reconnect both the passenger (RH) side and the driver (LH) side heater hoses to the engine (Figure 120 and Figure 121).

187. Reinstall the two (2) bolts retaining the engine room wiring harness bracket (Figure 120).

- Bolt torque: 13.5 N•m (1.4 kg-m, **10 ft-lb**)

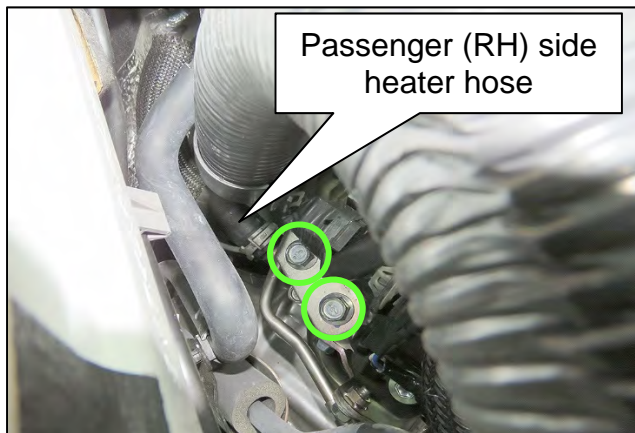


Figure 120



Figure 121

188. Reattach the body ground cable (Figure 122) and the engine ground cable (Figure 123).

- The body ground cable is located on the driver (LH) side of the engine room inner fender.
- The engine ground cable is located on the front of the timing cover.

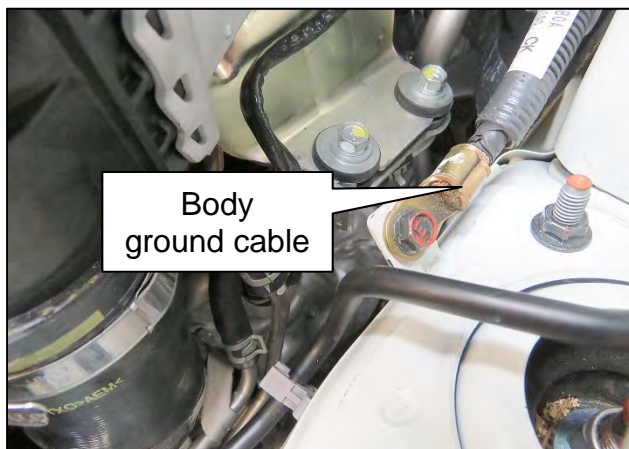


Figure 122

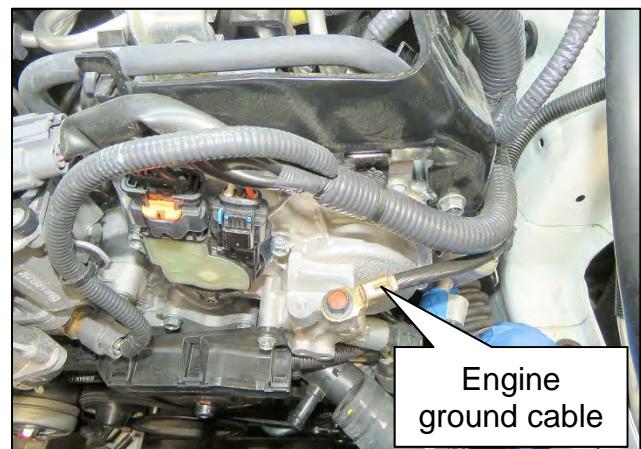


Figure 123

189. Reattach the positive battery cable grommet to the vehicle.

190. Reconnect the engine wiring harness to its mounting bracket.

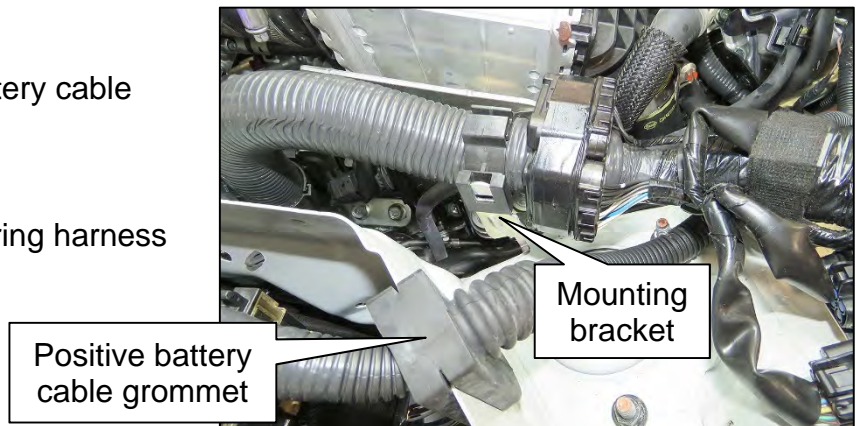


Figure 124

191. Reattach the positive battery cable to the battery terminal with fusible link.

- Nut torque: 13.5 N•m (1.4 kg-m, **10 ft-lb**)

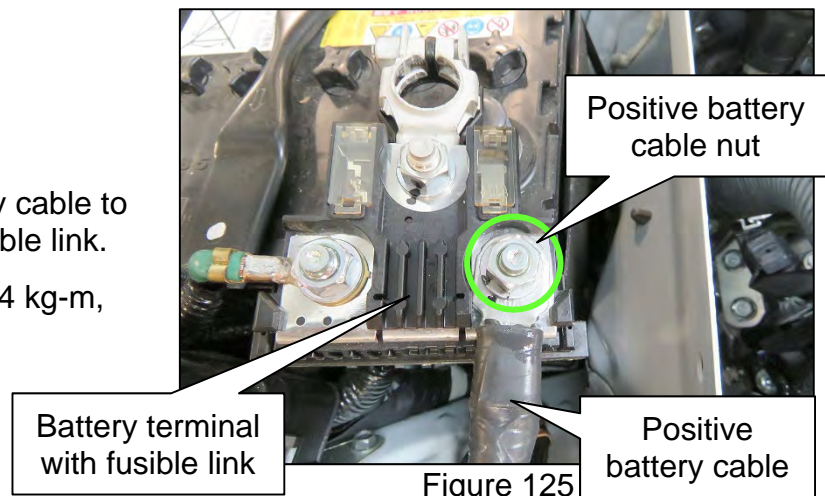


Figure 125

192. Reconnect the three (3) wiring harness connectors shown in Figure 126.

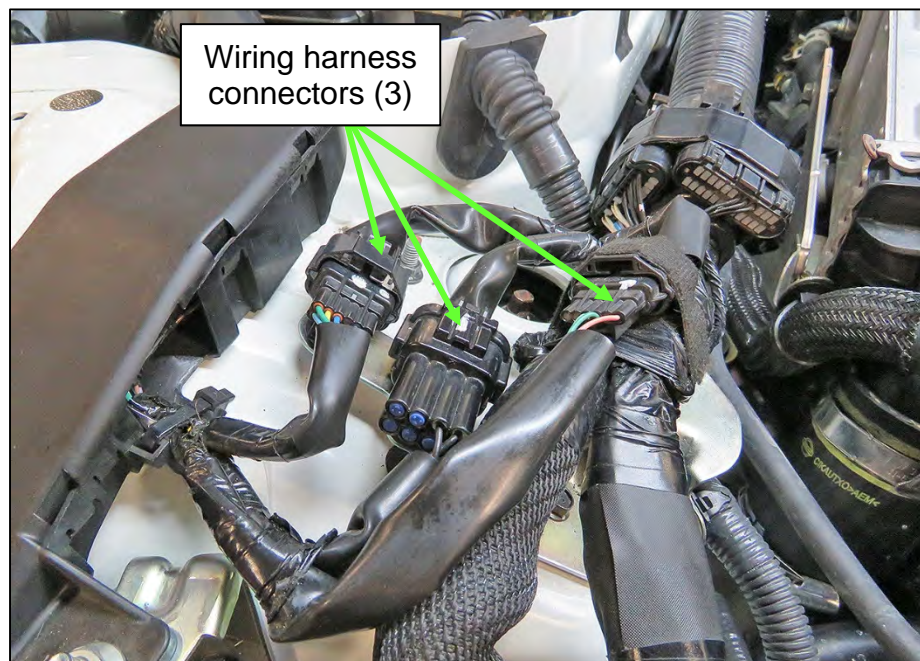


Figure 126

193. Reconnect the ECM wiring harness connectors (3).

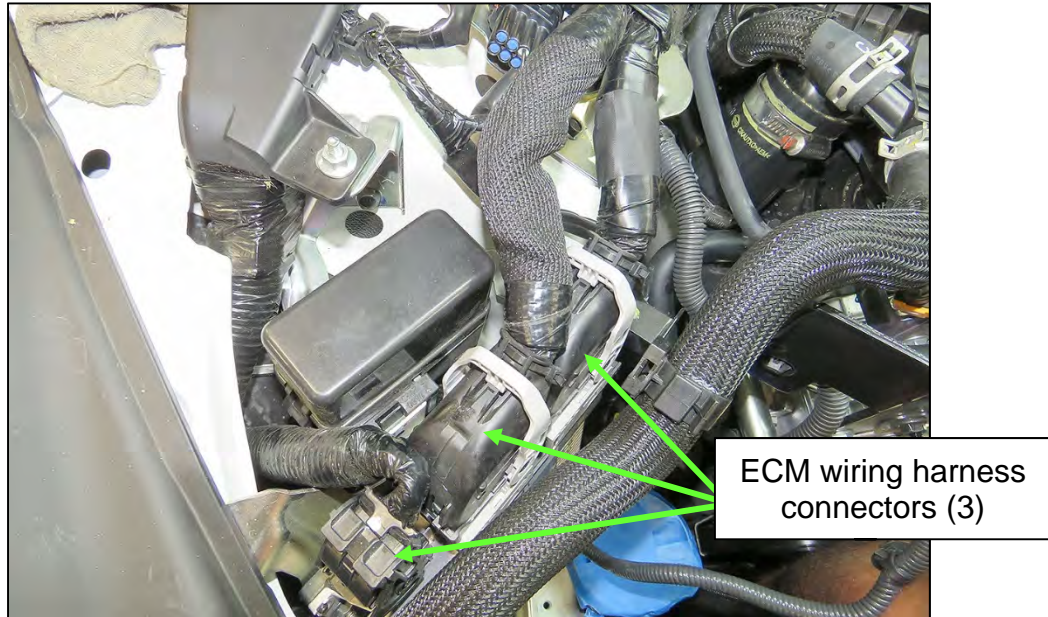


Figure 127

194. Reconnect the Vacuum Hose 1 to the vacuum piping (Figure 128), and then reattach its grommet to the bulkhead.

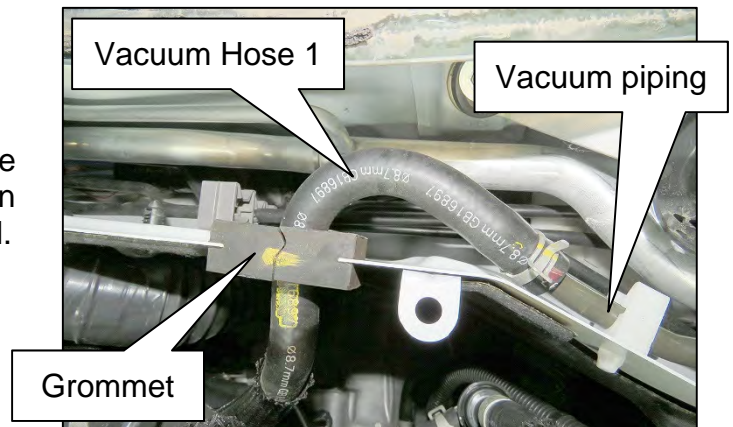


Figure 128

195. Reattach the Engine Control Harness grommet to the bulkhead.

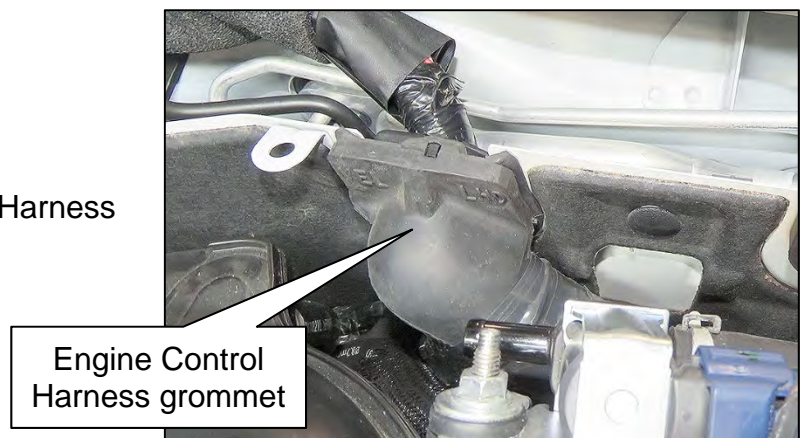


Figure 129

196. Reattach the two (2) Engine Control Harness mounting clips (Figure 130).

197. Reconnect the wiring harness connector (Figure 130).

- Located directly behind the battery.

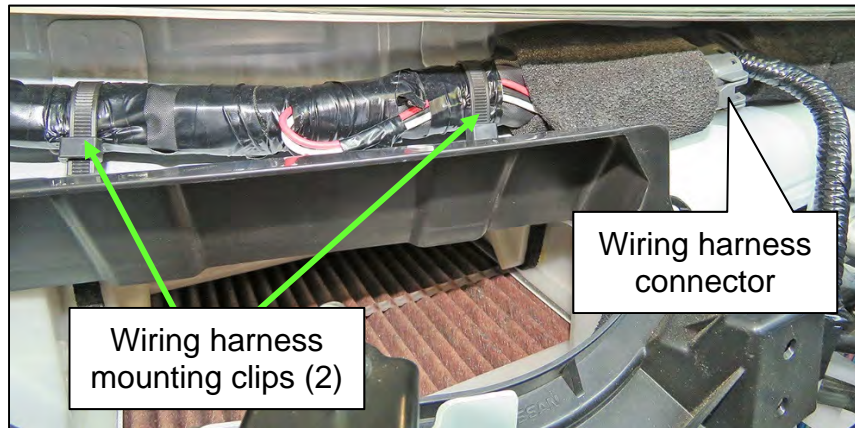


Figure 130

198. Reconnect the Engine Control Harness from the Engine Room Harness (Figure 131).

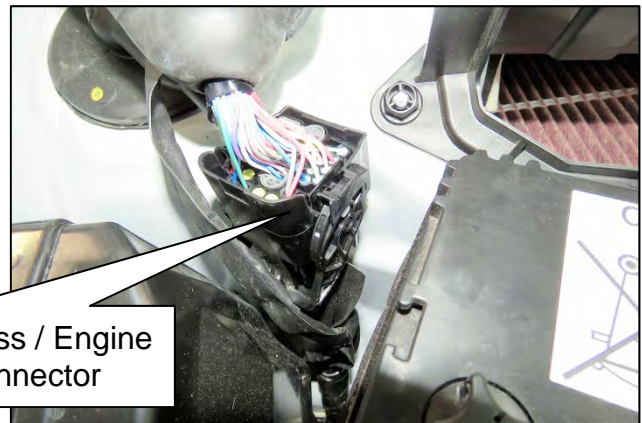


Figure 131

199. Roll down the wiring harness dust boot (Figure 132).

200. Reconnect the wiring harness connector shown in Figure 132.

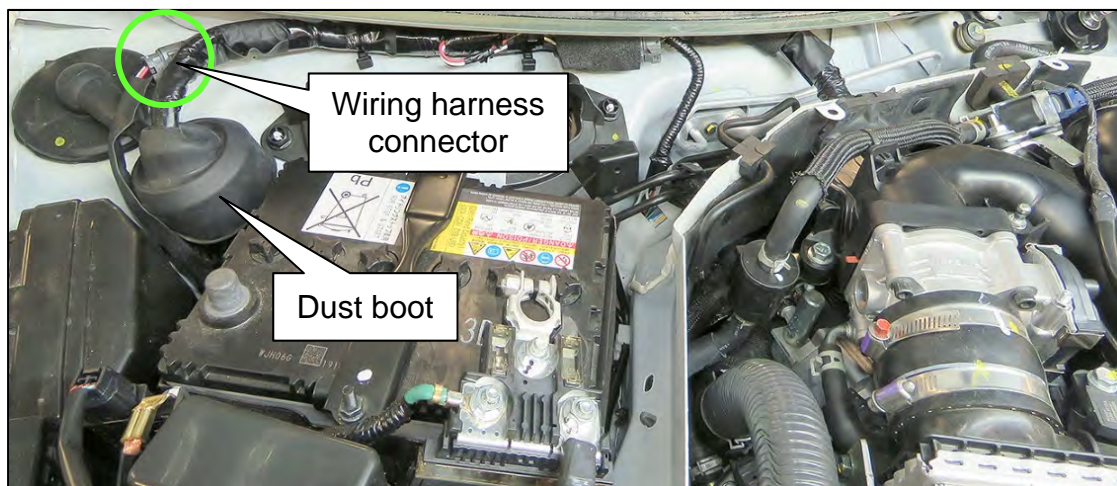


Figure 132

201. Refill the engine coolant.
202. Refill Intercooler coolant.
203. Reconnect the battery cable to the positive terminal.
 - Nut torque: 13.5 N•m (1.4 kg-m, **10 ft-lb**)
204. Reinstall the cover of the battery positive terminal.
205. Reconnect the battery cable to the negative terminal.
 - Nut torque: 13.5 N•m (1.4 kg-m, **10 ft-lb**)
206. Reinstall the Cowl Top Cover RH and Cowl Top Cover LH.
 - Refer to the ESM: **REPAIR > BODY EXTERIOR, DOORS, ROOF & VEHICLE SECURITY > EXTERIOR > REMOVAL AND INSTALLATION > COWL TOP**
207. Reinstall the Engine Cover.
 - Refer to the ESM: **REPAIR > ENGINE > ENGINE MECHANICAL > REMOVAL AND INSTALLATION > ENGINE COVER**
208. Perform **Turbocharger Wastegate Control Solenoid Valve Data Initialization**.
 - Refer to the ESM: **DIAGNOSIS > ENGINE > ENGINE CONTROL SYSTEM > BASIC INSPECTION > ENGINE CONTROL SYSTEM > TURBOCHARGER WASTEGATE CONTROL SOLENOID VALVE DATA INITIALIZATION**
209. Perform **Idle Air Volume Learning**.
 - Refer to the ESM: **DIAGNOSIS > ENGINE > ENGINE CONTROL SYSTEM > BASIC INSPECTION > ENGINE CONTROL SYSTEM > IDLE AIR VOLUME LEARNING**
210. Is the **APPLIED VEHICLE** a 2016-2017 Q50 or 2017 Q60?
 - YES:** Refer to ITB17-050 for required ECM reprogram for Exhaust Gas Temp Sensor deletion, and then proceed to step 211.
 - NO:** Proceed to step 211.
211. Recharge the A/C refrigerant using approved equipment.
212. Perform **Required Procedure After Battery Disconnection**.
 - Refer to the ESM: **GENERAL INFORMATION > GENERAL INFORMATION > BASIC INSPECTION > ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL**

PARTS INFORMATION

DESCRIPTION	PART NUMBER	QUANTITY
TURBOCHARGER (LH)	(1)	1
TURBOCHARGER (RH)	(1)	1
GASKET - EYEBOLT	15189-5CA0A	6
EXHAUST NUT	14094-JG30A	8
HEAT SHIELD BOLT	14069-JD00A	14
TURBOCHARGER INLET GASKET	14415-5CA0A	2
TURBOCHARGER OIL INLET GASKET	15196-MB40B	1
TURBOCHARGER OIL OUTLET GASKET	15196-5CB0A	2
GASKET - EYEBOLT	15189-5CA0B	2
GASKET - EYEBOLT	11026-AD200	1
PROP BOLT (AWD)	37120-AL60A	4 If Needed
PROP SHAFT NUTS (AWD)	37171-AL60A	4 If Needed
PROP BOLT (2WD)	37120-AH00A	3 If Needed
PROP WASHER (2WD)	37121-JK20B	3 If Needed
PROP SHAFT NUTS (2WD)	37171-AL60A	3 If Needed
CENTER BEARING MOUNTING BRACKET NUTS (2WD)	01225-00062	2 If Needed
FRONT SUSPENSION NUT	54588-JK03A	4
NUT	55269-AG00E	4
CLAMP	14464-5CA1A	4
EXHAUST GASKET	20692-8H30A	1
EXHAUST CLAMP	14464-5CB0A	2
CONVERTER GASKET	14445-5CB0A	2
COOLANT (2)	999MPL25500P	As Needed
AIR FUEL RATIO SENSOR	22693-5CA0A	2
CLAMP	01558-00451	2

- (1) Refer to the EPC and use vehicle VIN to look up grade specific part.
- (2) Order this item through the Infiniti Maintenance Advantage program: Phone 877-INF-IMA1 (877-463-4621). Website order via link on the dealer portal; www.NNAnet.com and click on the "Maintenance Advantage-Tire/Battery/Chemical" link.

Continued on the next page.

PARTS INFORMATION (continued)

DESCRIPTION	PART NUMBER	QUANTITY
SEAL - O RING	92472-N823A	2
SEAL - O RING	92474-N823A	1
SEAL - O RING	92473-N823A	1
SEAL - O RING	92471-N823A	1
NUT	20602-41G0A	5
GASKET EXHAUST	20691-19U0A	1
GASKET CONVERTOR	20813-5CA0A	1

CLAIMS INFORMATION

Submit a Primary Part (PP) type line claim using the following claims coding:

DESCRIPTION	PFP	OP CODE	SYM	DIA	FRT
Replace RH Turbocharger- RWD	(1)	DX62AA	ZE	32	7.8
With AWD					7.4
Replace LH Turbocharger- RWD		DX63AA			7.8
With AWD					7.4
Replace Both Turbochargers- RWD		DX64AA			8.8
With AWD					8.4

- (1) Reference the electronic parts catalog and use the Turbocharger Assy (14411-*****) as the Primary Failed Part (PFP).

AMENDMENT HISTORY

PUBLISHED DATE	REFERENCE	DESCRIPTION
November 14, 2022	ITB22-038	Original bulletin published
December 9, 2022	ITB22-038A	PARTS INFORMATION revised
August 4, 2023	ITB22-038B	APPLIED VEHICLES , page 46, and PARTS INFORMATION revised