

INSTALLATION

TRANSAXLE

Special Tool(s)

SPECIAL TOOL REFERENCE



ST1341-A

Heavy Duty Floor Crane
014-00071 or equivalent



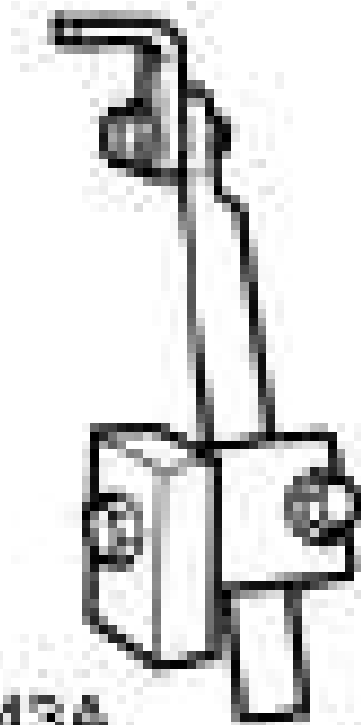
ST1293-A

Powertrain Lift
014-00765



Spreader Bar
303-D089 (D93P-6001-A3) or equivalent

ST1602-A



Universal Adapter Brackets
014-0001

ST2743A

Material

ITEM SPECIFICATION

Item	Specification
Motorcraft® MERCON® LV Automatic Transmission Fluid XT-10-QLV	MERCON® LV

WARNING: Do not smoke, carry lighted tobacco or have an open flame of any type when working on or near any fuel-related component. Highly flammable mixtures are always present and may be ignited. Failure to follow these instructions may result in serious personal injury.

All vehicles

NOTE: Due to packaging requirements, the correct bolt must be used at the damper locations.

NOTE: The damper contains a clutch which is designed to slip briefly during vehicle operation. It is essential that no grease, oil or cleaning solvents be allowed to contaminate the slip clutch. Do not use grease on transmission input shaft. Should the damper become contaminated, it must be replaced.

1. Install the transaxle damper.
 - Tighten to 29 Nm (21 lb-ft).

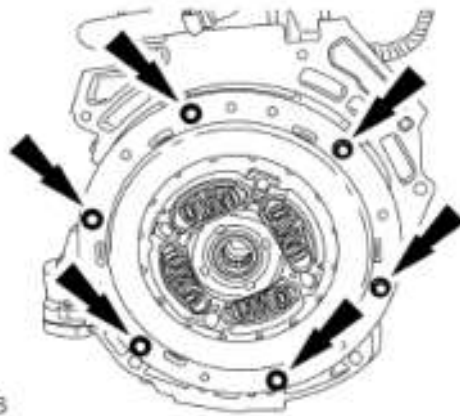


Fig. 102: Locating Transaxle Damper And Bolts
Courtesy of FORD MOTOR CO.

2. **NOTE:** When positioning the engine to the transaxle, care must be taken to maintain alignment of the damper spline with the transaxle input shaft.

NOTE: Transaxle removed from view for clarity.

NOTE: If installing a new transaxle, install the lower insulator bracket and bolts.

- Tighten to 90 Nm (66 lb-ft).

Using the Heavy Duty Floor Crane and Spreader Bar, position the engine and transaxle together. Install the 6 transaxle-to-engine bolts.

- Tighten to 48 Nm (35 lb-ft).

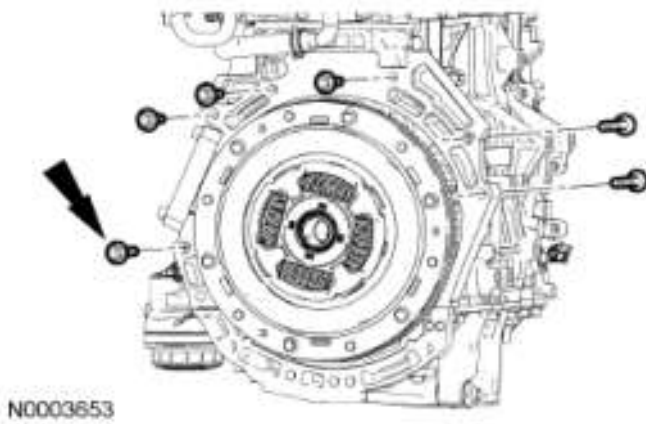


Fig. 103: Locating Engine Transaxle Bolts
Courtesy of FORD MOTOR CO.

3. Connect the high voltage wiring harness electrical connector.

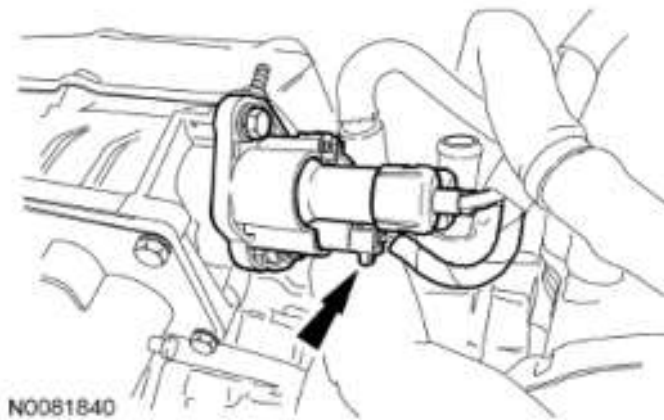


Fig. 104: Locating High Voltage Wiring Harness Electrical Connector
Courtesy of FORD MOTOR CO.

4. Using the Heavy Duty Floor Crane and Spreader Bar, position the engine and transaxle onto the Powertrain Lift.

NOTE: Due to the weight of the transaxle, special care should be taken to mount the powertrain securely to the Powertrain Lift.

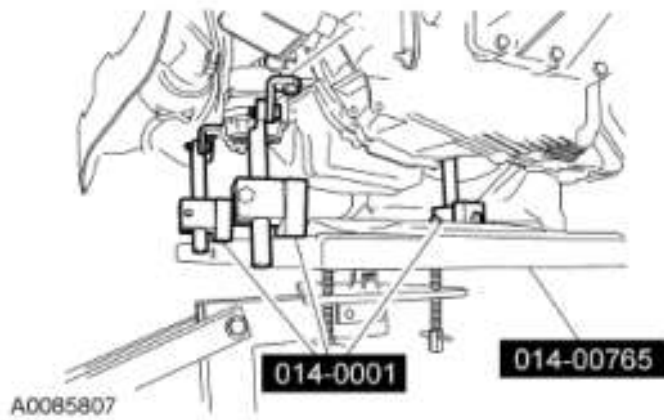


Fig. 105: Identifying Powertrain Lift And Universal Adapter Brackets
 Courtesy of FORD MOTOR CO.

5. Using the Universal Adapter Brackets, secure the engine to the Powertrain Lift.
6. Raise the engine and transaxle into the vehicle.
7. Install the upper insulator.
 1. Tighten the nuts to 90 Nm (66 lb-ft).
 2. Tighten the through bolt to 103 Nm (76 lb-ft).

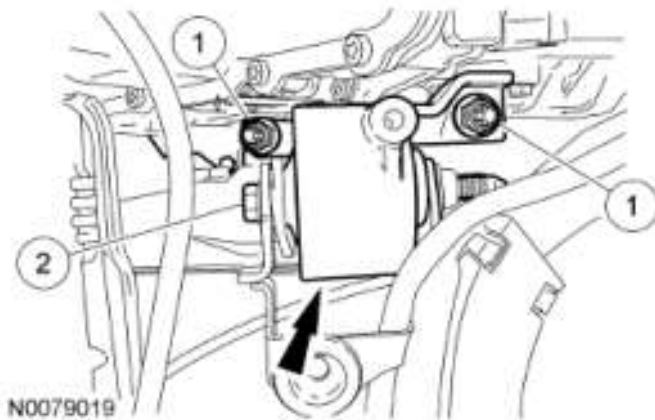


Fig. 106: Locating Upper Insulator Through Bolt
 Courtesy of FORD MOTOR CO.

8. Install the upper insulator bracket.
 - Tighten to 25 Nm (18 lb-ft).

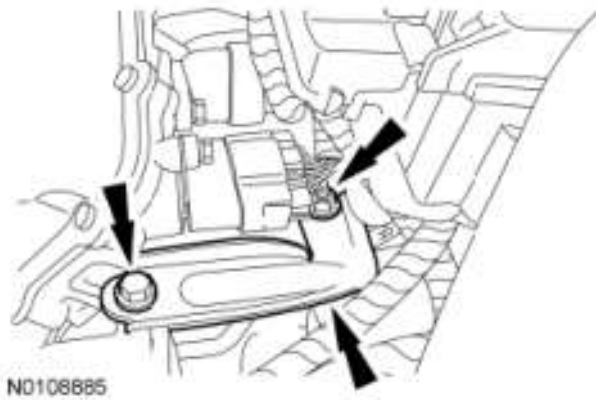


Fig. 107: Locating Upper Insulator Bracket Bolt, Nut And Bracket
Courtesy of FORD MOTOR CO.

9. Install the 3 engine mount bracket nuts.
 - Tighten to 115 Nm (85 lb-ft).

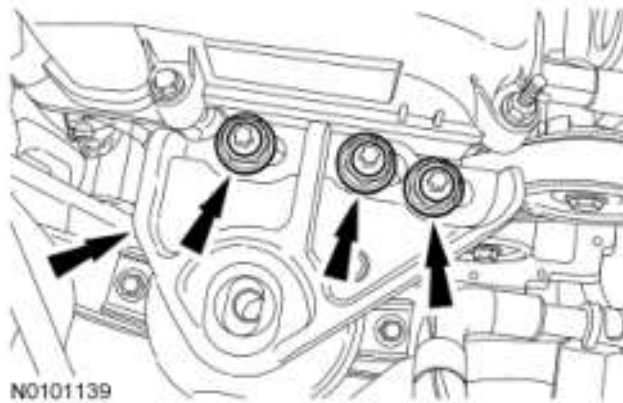


Fig. 108: Locating Engine Mount Bracket And Nuts
Courtesy of FORD MOTOR CO.

10. Install the engine mount bracket bolt.
 - Tighten to 115 Nm (85 lb-ft).

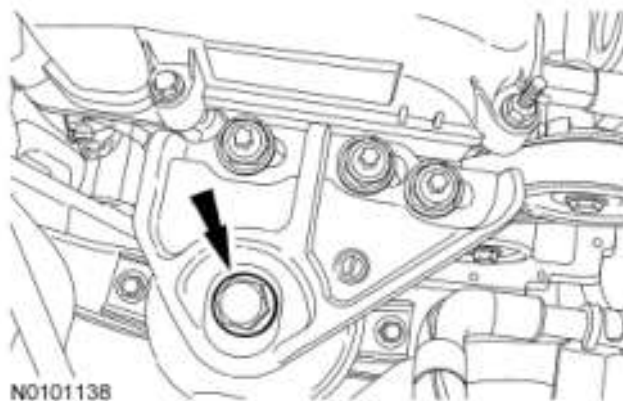


Fig. 109: Locating Engine Mount Bracket Bolt
Courtesy of FORD MOTOR CO.

11. Using the Powertrain Lift, raise the subframe into position.

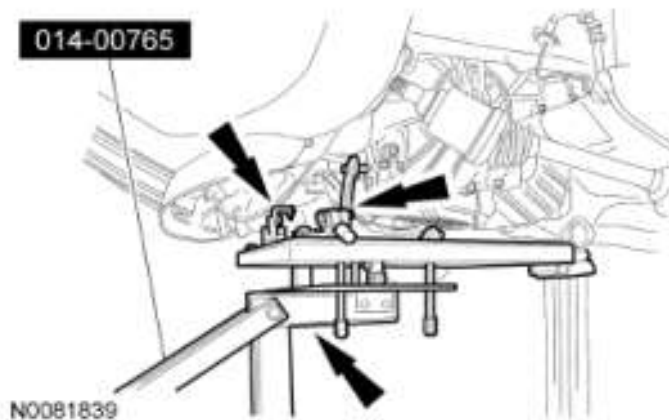


Fig. 110: Raising Subframe Into Position Using Powertrain Lift
Courtesy of FORD MOTOR CO.

NOTE: RH shown in illustration, LH similar.

12. Install the 2 subframe nuts.
- Tighten to 150 Nm (111 lb-ft).

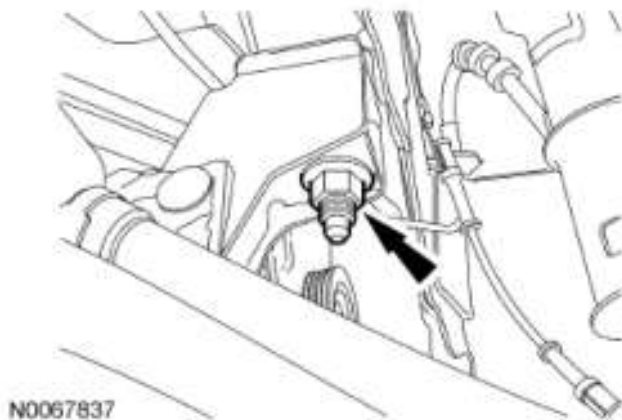


Fig. 111: Locating Subframe Nuts
Courtesy of FORD MOTOR CO.

NOTE: When installing the subframe bolts, make sure both of the subframe bolts are fully engaged in their cage nuts before tightening to specification.

NOTE: RH shown in illustration, LH similar.

13. Tighten the 2 subframe bolts.
- Tighten to 175 Nm (129 lb-ft).

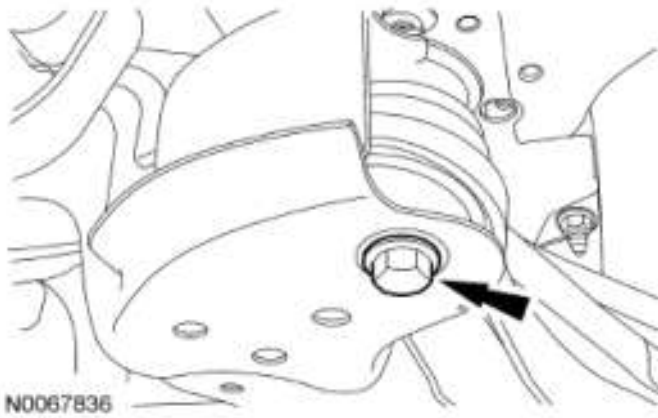


Fig. 112: Locating Subframe Bolts
Courtesy of FORD MOTOR CO.

14. Install the rear roll restrictor, bracket and bolts.
 - Tighten to 90 Nm (66 lb-ft).

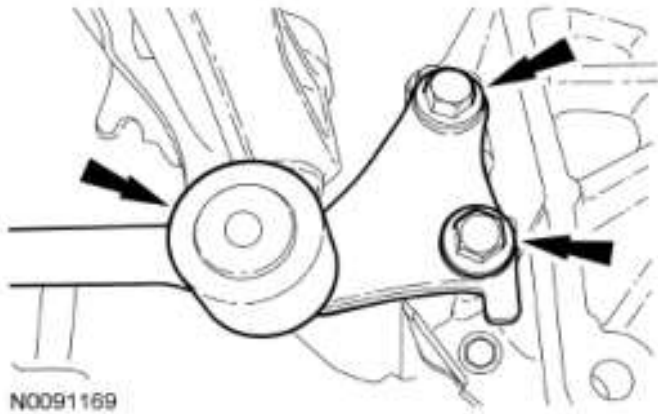


Fig. 113: Locating Roll Restrictor, Bolts And Bracket
Courtesy of FORD MOTOR CO.

15. Connect the steering column coupling to the steering gear and install the new steering column coupling pinch bolt.
 - Tighten to 40 Nm (30 lb-ft).

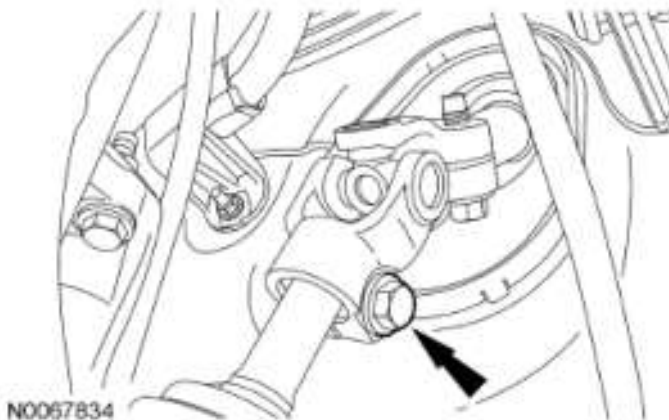


Fig. 114: Locating Steering Column Coupling Pinch Bolt
Courtesy of FORD MOTOR CO.

16. Install the rear insulator through bolt.
 - Tighten to 115 Nm (85 lb-ft).



Fig. 115: Locating Rear Insulator Through Bolt
Courtesy of FORD MOTOR CO.

17. Install the 2 transaxle-to-engine bolts.
 - Tighten to 48 Nm (35 lb-ft).

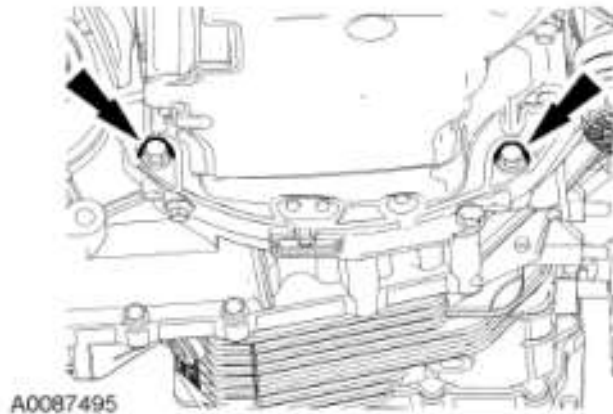


Fig. 116: Locating Transaxle-To-Engine Bolts
Courtesy of FORD MOTOR CO.

18. Install the 2 transaxle-to-engine bolts.
 - Tighten to 48 Nm (35 lb-ft).

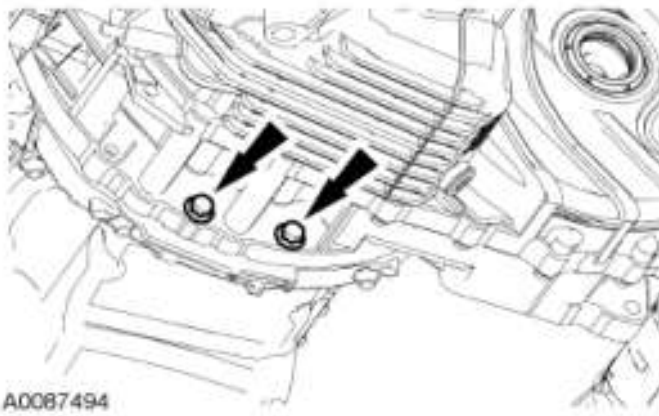


Fig. 117: Locating Transaxle-To-Engine Bolts
Courtesy of FORD MOTOR CO.

19. Install the engine support crossmember.
 - Tighten the 2 bolts to 90 Nm (66 lb-ft).
 - Tighten the new nut to 175 Nm (129 lb-ft).

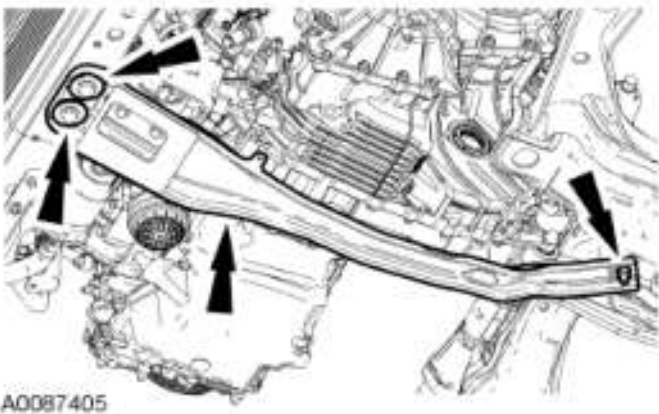


Fig. 118: Identifying Engine Support Crossmember Nut And Bolts
Courtesy of FORD MOTOR CO.

20. Install the rear roll restrictor-to-crossmember through bolt.
 - Tighten to 90 Nm (66 lb-ft).

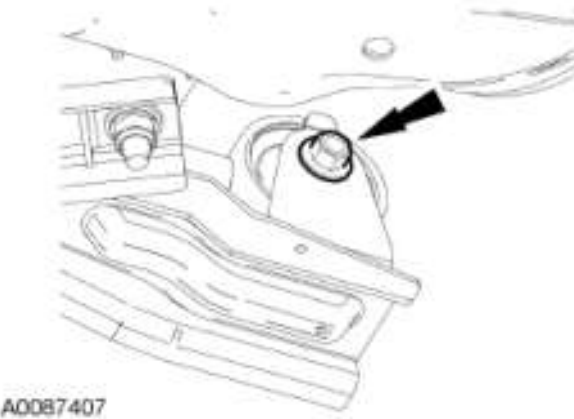


Fig. 119: Locating Rear Roll Restrictor-To-Crossmember Bolt
Courtesy of FORD MOTOR CO.

21. Install the lower insulator through bolt.
 - Tighten to 115 Nm (85 lb-ft).

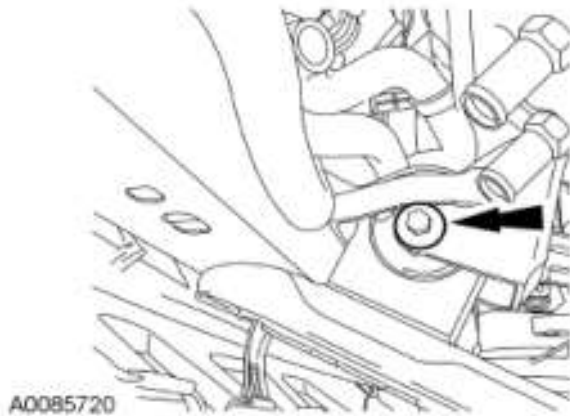


Fig. 120: Locating Lower Insulator Through Bolt
Courtesy of FORD MOTOR CO.

22. Connect the lower radiator hose to the radiator.
 - Install the retaining clip.

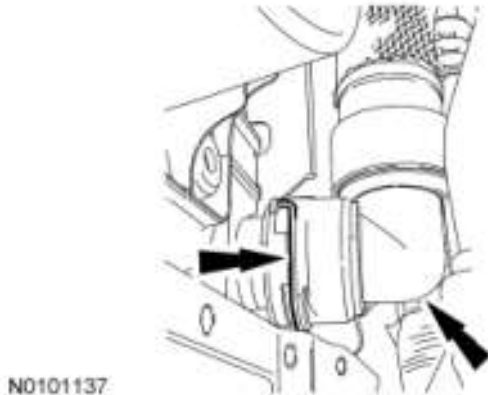


Fig. 121: Locating Wire Clip And Hose
Courtesy of FORD MOTOR CO.

23. Install the auxiliary coolant pump.
 - Install the 2 bolts.
 - Tighten to 10 Nm (89 lb-in).
 - Connect the electrical connector.

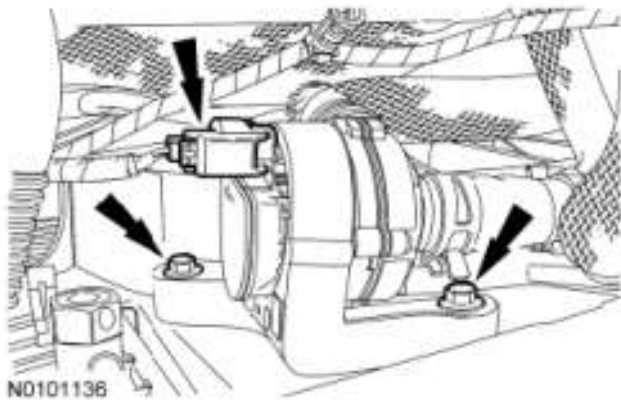


Fig. 122: Locating Auxiliary Coolant Pump Electrical Connector And Bolts
Courtesy of FORD MOTOR CO.

24. Install a new gasket and connect the A/C tube to the A/C compressor.
- Install the nut.
 - Tighten to 15 Nm (133 lb-in).



Fig. 123: Locating A/C Tube From A/C Compressor
Courtesy of FORD MOTOR CO.

25. Install a new gasket and connect the A/C tube to the A/C compressor.
- Install the nut.
 - Tighten to 15 Nm (133 lb-in).

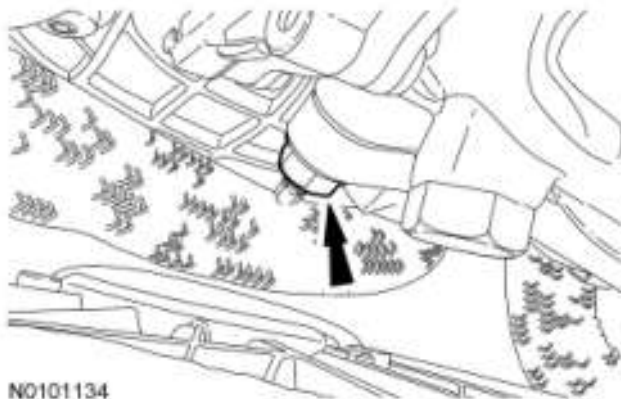


Fig. 124: Locating A/C Tube From A/C Compressor
Courtesy of FORD MOTOR CO.

26. Position the MECS pump in place and install the 2 bolts.
 - Tighten to 20 Nm (177 lb-in).

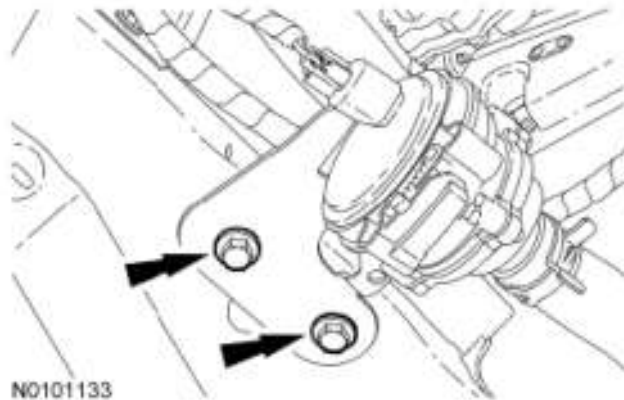


Fig. 125: Locating MECS Pump Bolts
Courtesy of FORD MOTOR CO.

27. Connect the vacuum pump electrical connector and attach the harness retainer.

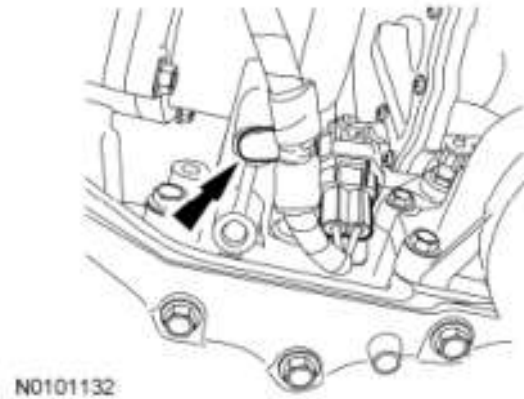


Fig. 126: Locating Vacuum Pump Assembly Electrical Connector And Harness Retainer
Courtesy of FORD MOTOR CO.

28. Install the wiring harness fasteners, the transaxle ground cable and nut.
 - Tighten to 20 Nm (177 lb-in).

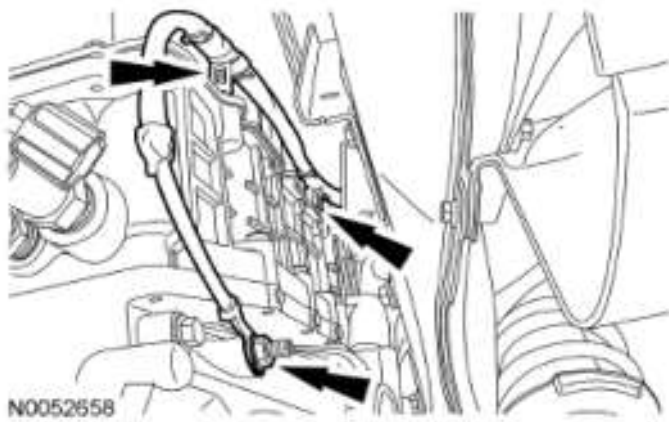


Fig. 127: Locating Harness Fasteners, Nut And Ground Cable
Courtesy of FORD MOTOR CO.

29. Attach the selector lever cable fastener to the engine front cover stud bolt.

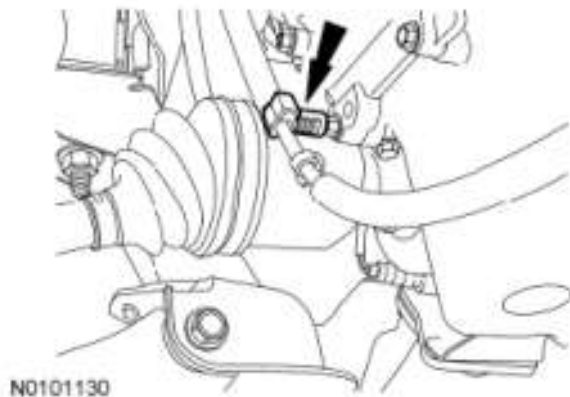


Fig. 128: Locating Engine Front Cover Stud Bolt
Courtesy of FORD MOTOR CO.

30. Attach the selector lever cable fastener to the A/C compressor mounting bracket.

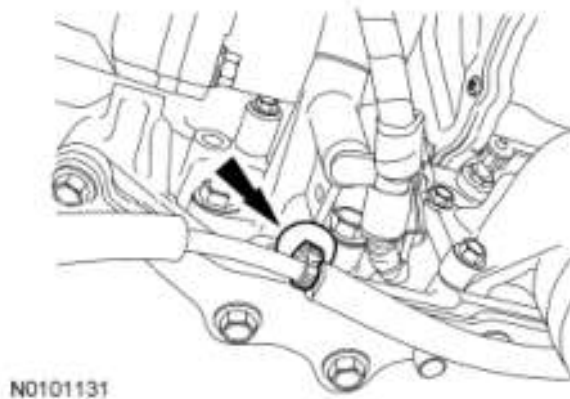


Fig. 129: Locating Selector Lever Cable Fastener From A/C Compressor Mounting Bracket
Courtesy of FORD MOTOR CO.

31. Connect the selector lever cable.

- Install the selector lever cable bracket and the 2 nuts finger-tight.
- Attach the selector lever cable to the manual control lever.

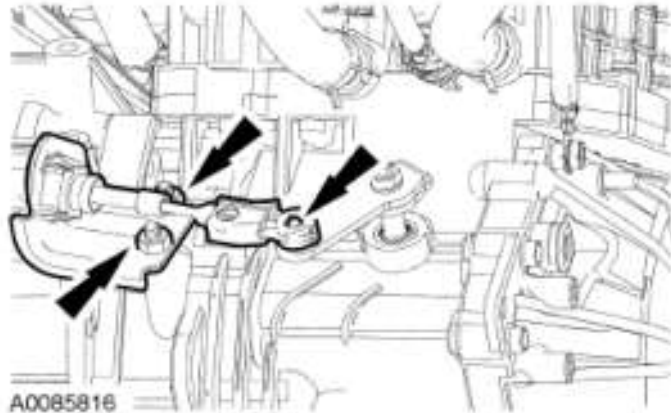


Fig. 130: Identifying Transaxle Control Cable And Nuts
 Courtesy of FORD MOTOR CO.

32. Position the control lever between the 2 casting ribs on the transaxle case.

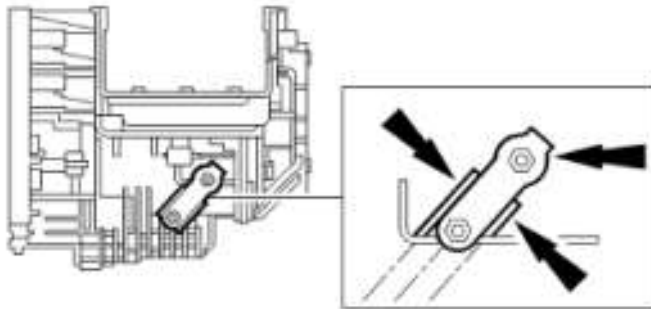


Fig. 131: Identifying Control Lever Position
 Courtesy of FORD MOTOR CO.

33. Place the gear selector lever in the D position.
34. Tighten the selector lever cable bracket nuts to 23 Nm (17 lb-ft).
35. To verify the correct selector lever cable adjustment, observe the selector lever on the transaxle while an assistant moves the selector lever into each range position ending in the D position.
36. Install the transaxle control snow shield.
 - Tighten to 22 Nm (16 lb-ft).

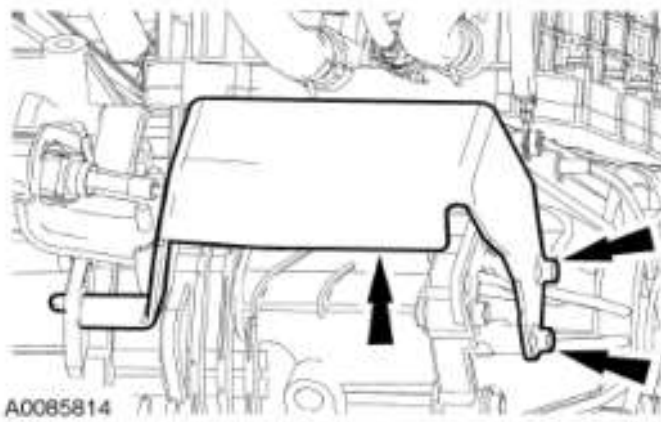


Fig. 132: Locating Transaxle Control Snow Shield And Bolts
Courtesy of FORD MOTOR CO.

NOTE: If installing a new transaxle, tighten transaxle coolant tube fittings to 50 Nm (37 lb-ft).

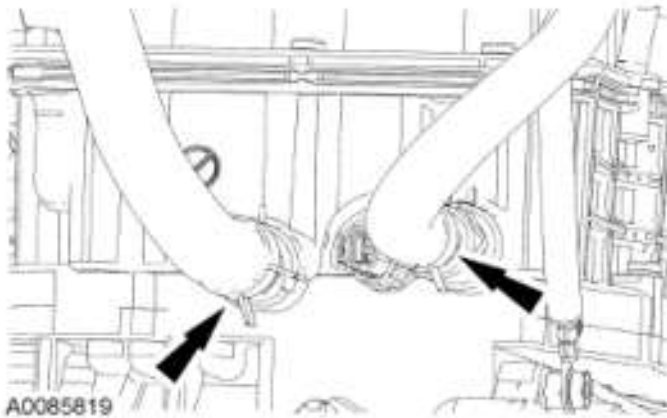


Fig. 133: Identifying Transaxle Coolant Hoses
Courtesy of FORD MOTOR CO.

37. Connect the transaxle coolant hoses.
38. Connect the transaxle coolant temperature sensor electrical connector and pin-type retainer.

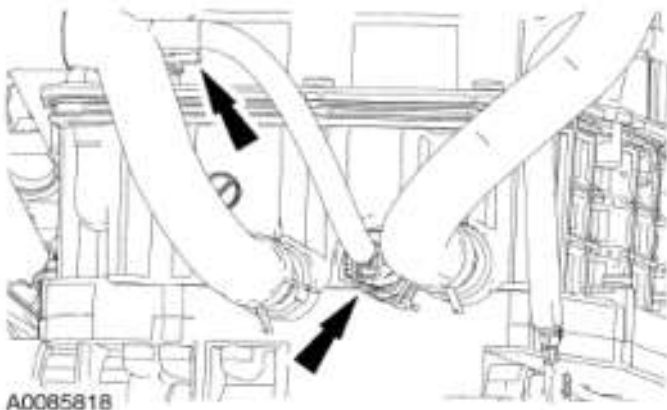


Fig. 134: Locating Transaxle Coolant Temperature Sensor Electrical Connector

Courtesy of FORD MOTOR CO.

39. Position the DC-to-DC converter in place and install the 3 nuts.
 - Tighten to 12 Nm (106 lb-in).

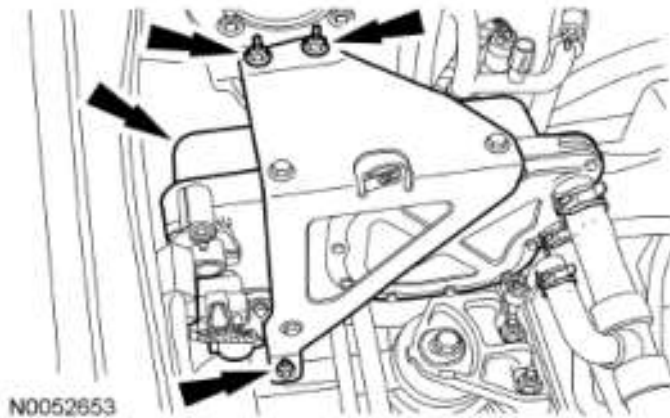


Fig. 135: Identifying DC-To-DC Converter And Nuts
Courtesy of FORD MOTOR CO.

40. Connect the DC-to-DC converter electrical connector and 2 wire harness retainers (1 shown in illustration).

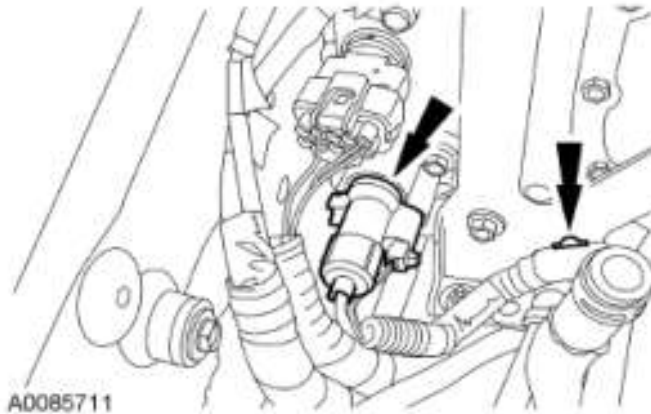


Fig. 136: Locating DC-To-DC Converter Electrical Connector And Wiring Harness Retainers
Courtesy of FORD MOTOR CO.

41. Connect the coolant vent hose.



Fig. 137: Locating Coolant Vent Hose
Courtesy of FORD MOTOR CO.

42. Connect the 2 low voltage electrical connectors and the engine harness-to-body harness retainer.

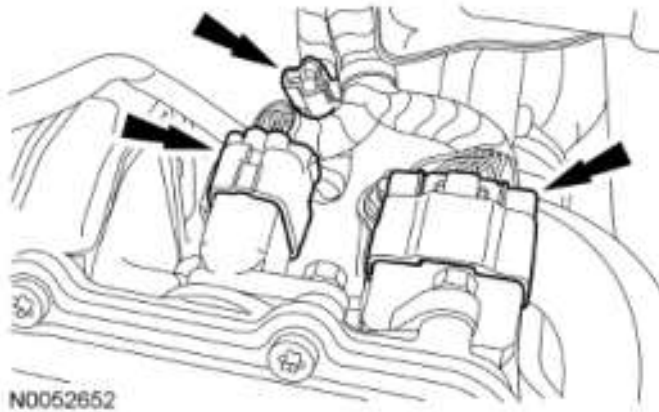


Fig. 138: Locating Low Voltage Electrical Connectors And Engine Harness-To-Body Harness Retainer
Courtesy of FORD MOTOR CO.

43. Connect the transaxle harness electrical connector and install the stud bolt.
- Tighten to 10 Nm (89 lb-in).

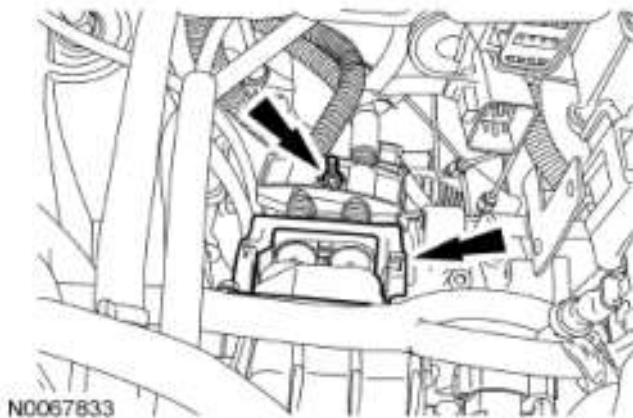


Fig. 139: Locating Transaxle Harness Electrical Connector And Stud Bolt
Courtesy of FORD MOTOR CO.

44. Connect the upper Evaporative Emission (EVAP) tube quick connect coupling to the purge valve. For additional information, refer to **FUEL SYSTEM-GENERAL INFORMATION** .

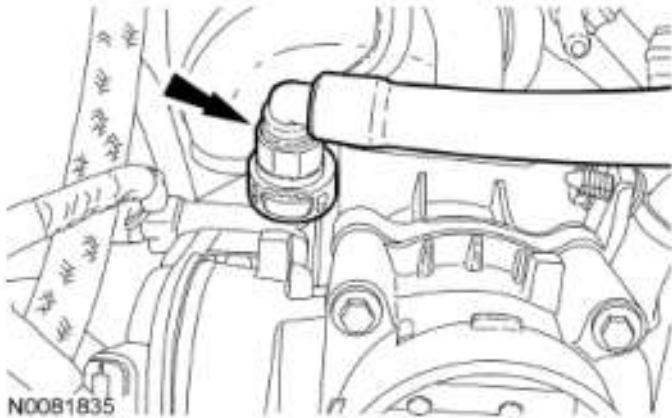


Fig. 140: Locating Upper Evaporative Emission Tube Quick Connect Coupling
Courtesy of FORD MOTOR CO.

45. Connect the engine control harness electrical connector.

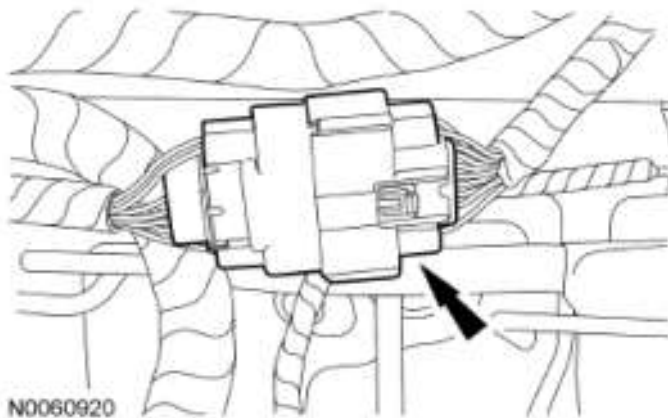


Fig. 141: Locating Engine Control Harness Electrical Connector
Courtesy of FORD MOTOR CO.

46. If equipped, connect the block heater electrical connector.
- Attach the harness retainer clips.

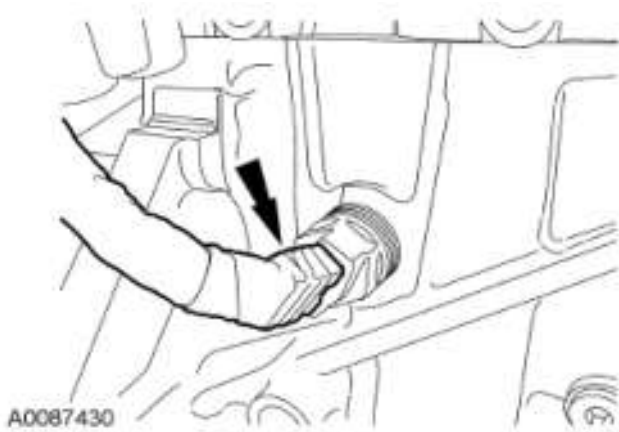


Fig. 142: Locating Block Heater Electrical Connector
Courtesy of FORD MOTOR CO.

47. Connect the PCM electrical connector.
- Position the harness and install the nut.
 - Tighten to 6 Nm (53 lb-in).

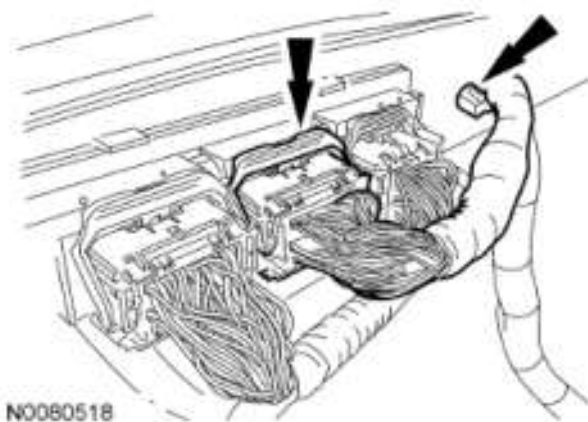


Fig. 143: Locating PCM Center Electrical Connector And Wiring Harness Retainer Nut
Courtesy of FORD MOTOR CO.

48. Connect the brake booster vacuum hose to the brake booster.

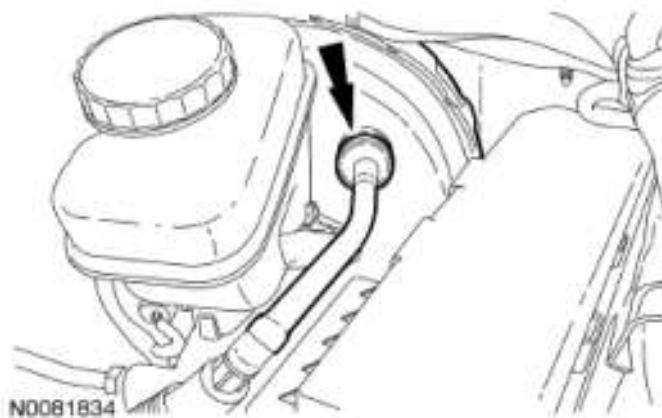


Fig. 144: Locating Brake Booster Vacuum Tube
Courtesy of FORD MOTOR CO.

49. Connect the upper radiator coolant hose.



Fig. 145: Locating Upper Radiator Coolant Hose
Courtesy of FORD MOTOR CO.

50. Connect the heater hoses to the heater core.

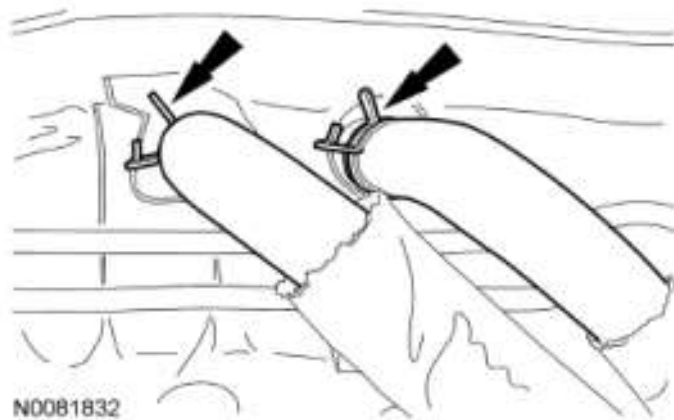


Fig. 146: Locating Heater Hose Clamps And Heater Core
Courtesy of FORD MOTOR CO.

All-Wheel Drive (AWD) vehicles

51. Position the Power Transfer Unit (PTU) in place and install the 4 bolts.
 - Tighten to 45 Nm (33 lb-ft).

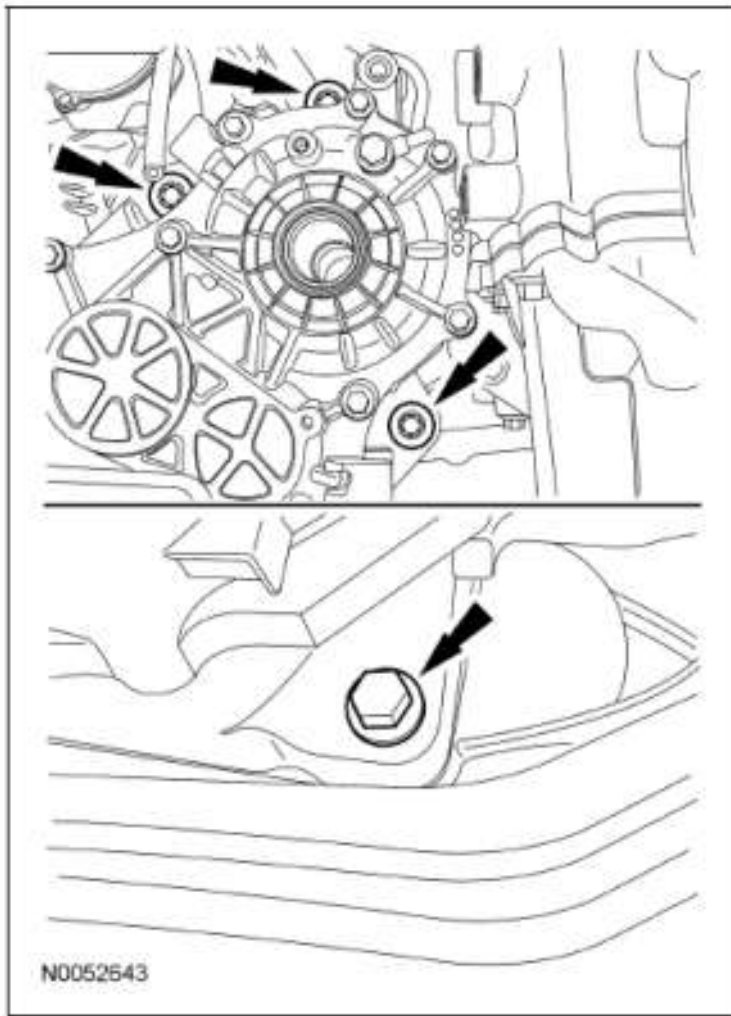


Fig. 147: Identifying Transfer Case-To-Transaxle Bolts And Transfer Case
Courtesy of FORD MOTOR CO.

52. Connect the PTU vent hose.

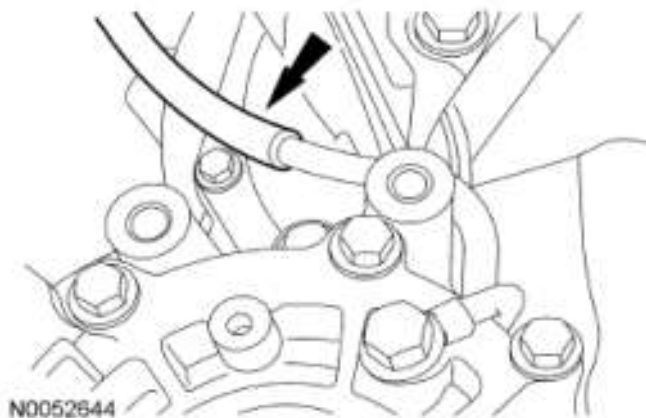


Fig. 148: Locating Transfer Case Vent Hose
Courtesy of FORD MOTOR CO.

53. Install the PTU heat shield and the bolts.

- Tighten to 14 Nm (124 lb-in).

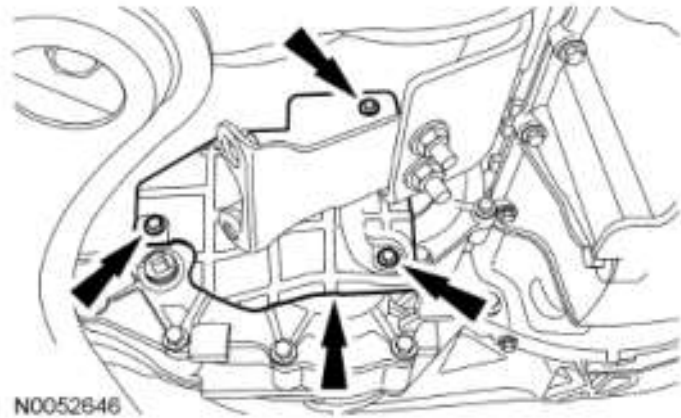


Fig. 149: Locating PTU Heat Shield And Bolts
Courtesy of FORD MOTOR CO.

54. Position the PTU -to-engine support bracket and install the bolts.
- Tighten to 40 Nm (30 lb-ft).

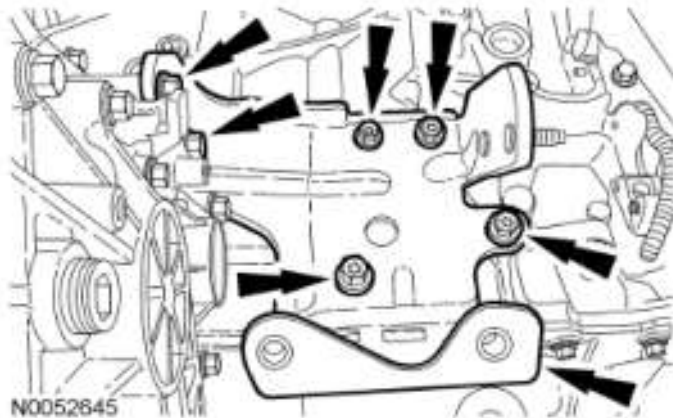


Fig. 150: Locating Bolts And Transfer Case-To-Engine Bracket
Courtesy of FORD MOTOR CO.

55. Install the exhaust bracket bolts.
- Tighten to 25 Nm (18 lb-ft).

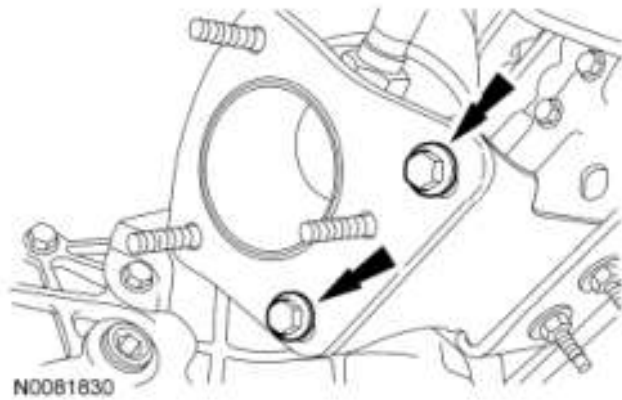


Fig. 151: Locating Catalytic Converter Bracket Bolts
 Courtesy of FORD MOTOR CO.

56. Install the driveshaft. For additional information, refer to **DRIVESHAFT** .

All vehicles

57. Install the LH halfshaft and intermediate shaft. For additional information, refer to **REMOVAL AND INSTALLATION** .

NOTE: RH side shown in illustration, LH similar.

58. Connect the RH and LH suspension.
1. Position the tie-rod end and install the new retaining nut.
 - Tighten to 55 Nm (41 lb-ft).
 2. Connect the stabilizer bar link and install the nut.
 - Tighten to 63 Nm (46 lb-ft).



Fig. 152: Identifying Stabilizer Bar Link And Nut
 Courtesy of FORD MOTOR CO.

59. Install the RH brake hose retainer and the ABS sensor bolt.
- Tighten to 15 Nm (133 lb-in).

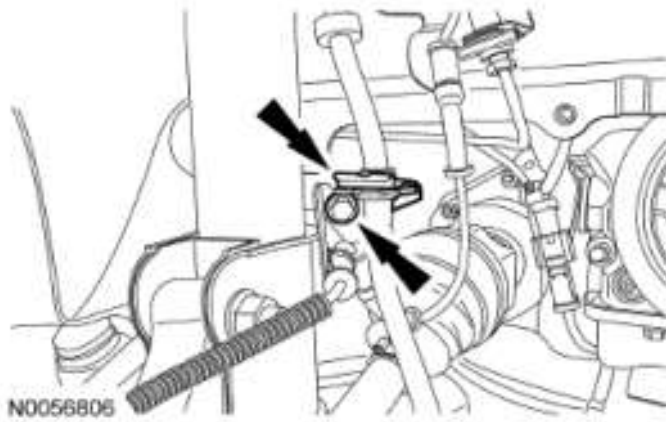


Fig. 153: Locating ABS Sensor Retaining Bolt And Brake Hose Retainer
Courtesy of FORD MOTOR CO.

60. Install the LH brake hose retainer and the ABS sensor bolt.
- Tighten to 15 Nm (133 lb-in).

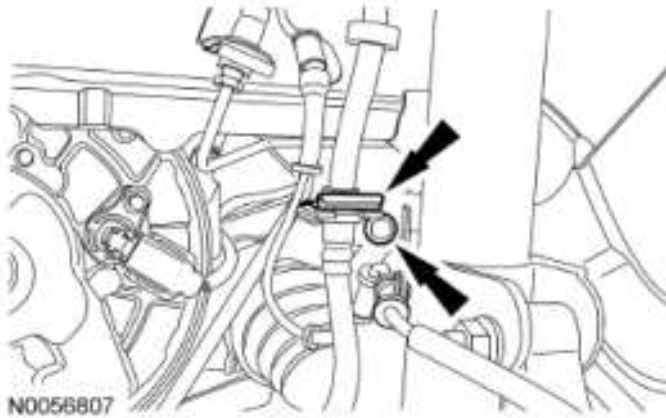


Fig. 154: Locating ABS Sensor Retaining Bolt And Brake Hose Retainer
Courtesy of FORD MOTOR CO.

61. Install the catalytic converter inlet pipe and install the nuts.

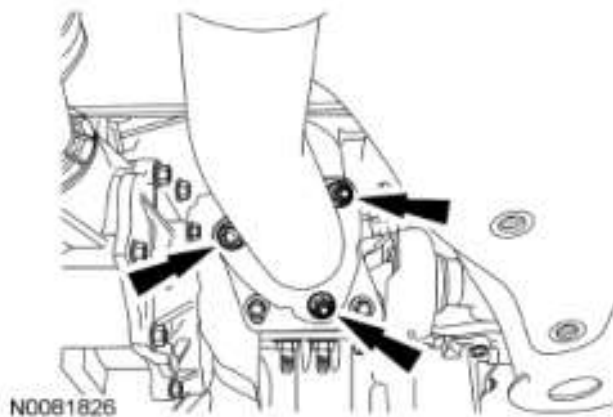


Fig. 155: Identifying Catalytic Converter Inlet Pipe-To-Catalytic Manifold Converter Nuts
Courtesy of FORD MOTOR CO.

62. Remove the catalytic converter inlet pipe-to-converter nuts.

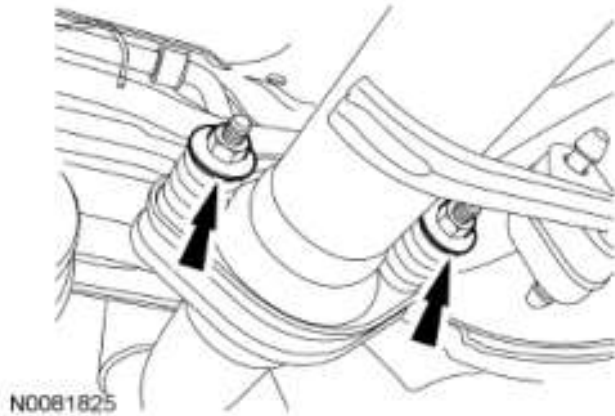


Fig. 156: Locating Catalytic Converter Inlet Pipe-To-Converter Nuts
Courtesy of FORD MOTOR CO.

63. Install the lateral support crossmember and the bolts.

- Tighten to 115 Nm (85 lb-ft).



Fig. 157: Locating Lateral Support Crossmember And Bolts
Courtesy of FORD MOTOR CO.

64. Install the front wheels and tires. For additional information, refer to **WHEEL AND TIRE** .

65. Connect the fuel supply tube. For additional information, refer to **QUICK CONNECT COUPLING** .

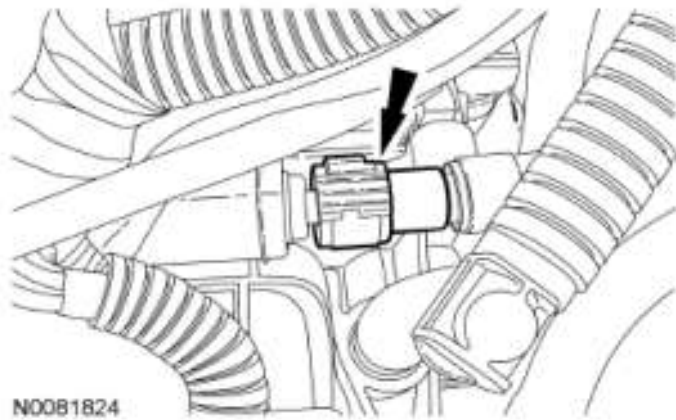


Fig. 158: Locating Fuel Supply Tube
Courtesy of FORD MOTOR CO.

66. Install the accessory drive belt. For additional information, refer to **ACCESSORY DRIVE BELT** .
67. Install the engine coolant degas bottle. For additional information, refer to **DEGAS BOTTLE** .
68. Install the battery tray. For additional information, refer to **REMOVAL AND INSTALLATION** .
69. Enable the vehicle high voltage electrical system. For additional information, refer to **GENERAL PROCEDURES** .
70. Remove the steering wheel holding device.
71. Reset the Passive Anti-Theft System (PATS). For additional information, refer to **PASSIVE ANTI-THEFT SYSTEM (PATS) PARAMETER RESET** .
72. Fill and bleed the Motor Electronics Cooling System (MECS). For additional information, refer to **MOTOR ELECTRONICS COOLING SYSTEM DRAINING AND FILLING** .
73. Fill and bleed the cooling system. For additional information, refer to **COOLING SYSTEM DRAINING, FILLING AND BLEEDING** .
74. Fill the transaxle. For additional information, refer to **TRANSMISSION FLUID DRAIN AND REFILL** .