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Model Year: 2010	Model: Prius	Doc ID: RM000002WH601NX
Title: 2ZR-FXE ENGINE MECHANICAL: ENGINE ASSEMBLY: REMOVAL (2010 Prius)		

REMOVAL

1. PRECAUTION

HINT:  .

2. DISCHARGE FUEL SYSTEM PRESSURE

HINT:  .

3. REMOVE REAR NO. 2 FLOOR BOARD (for Separate Type)

4. REMOVE REAR DECK FLOOR BOX

5. REMOVE REAR NO. 3 FLOOR BOARD

6. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

NOTICE:

When disconnecting the cable, some systems need to be initialized after the cable is reconnected  .

7. REMOVE SERVICE PLUG GRIP

8. ALIGN FRONT WHEELS FACING STRAIGHT AHEAD

9. REMOVE FRONT WHEEL

10. REMOVE REAR ENGINE UNDER COVER LH

11. REMOVE REAR ENGINE UNDER COVER RH

12. REMOVE FRONT SPOILER COVER (w/ Front Spoiler)

13. REMOVE ENGINE UNDER COVER (w/ Cover)

14. REMOVE NO. 1 ENGINE UNDER COVER

15. REMOVE NO. 2 ENGINE UNDER COVER

16. DRAIN ENGINE OIL [INFO](#)

17. DRAIN COOLANT (for Engine) [INFO](#)

18. DRAIN COOLANT (for Inverter) [INFO](#)

19. DRAIN HYBRID TRANSAXLE FLUID [INFO](#)

20. REMOVE FRONT WIPER ARM HEAD CAP [INFO](#)

21. REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY LH [INFO](#)

22. REMOVE FRONT WIPER ARM AND BLADE ASSEMBLY RH [INFO](#)

23. REMOVE COWL SIDE VENTILATOR SUB-ASSEMBLY LH [INFO](#)

24. REMOVE COWL SIDE VENTILATOR SUB-ASSEMBLY RH [INFO](#)

25. REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSEMBLY [INFO](#)

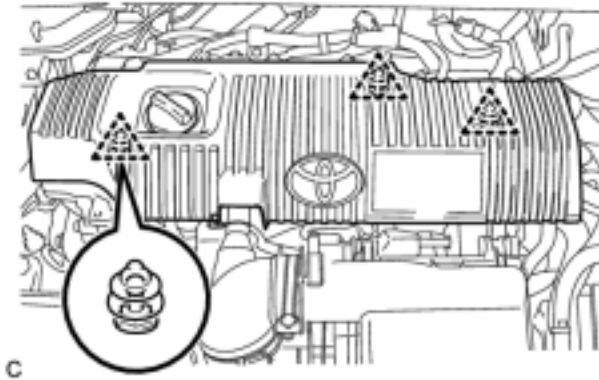
26. REMOVE WINDSHIELD WIPER MOTOR AND LINK ASSEMBLY [INFO](#)

27. REMOVE COWL BODY MOUNTING REINFORCEMENT LH [INFO](#)

28. REMOVE OUTER COWL TOP PANEL SUB-ASSEMBLY [INFO](#)

29. REMOVE NO. 2 CYLINDER HEAD COVER

- (a) Remove the 3 clips and No. 2 cylinder head cover.



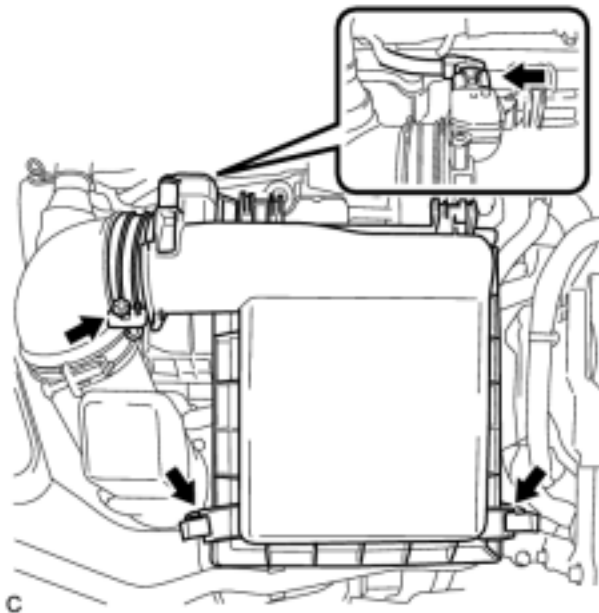
NOTICE:

- Attempting to disengage both front and rear clips at the same time may cause the cover to break.
- Pull the cover straight up to remove. Attempting to pull the cover forward may cause it to break.

NOTICE:

Attempting to disengage both front and rear clips at the same time may cause the cover to break.

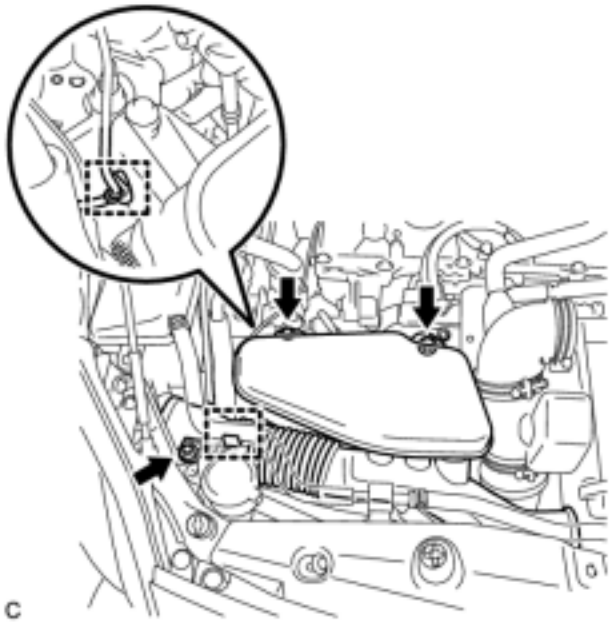
30. REMOVE AIR CLEANER CAP SUB-ASSEMBLY



- (a) Disconnect the air flow meter connector.

- (b) Disconnect the 2 clamps and hose band, and remove the air cleaner cap sub-assembly.
- (c) Remove the air cleaner filter element.

31. REMOVE INLET AIR CLEANER ASSEMBLY

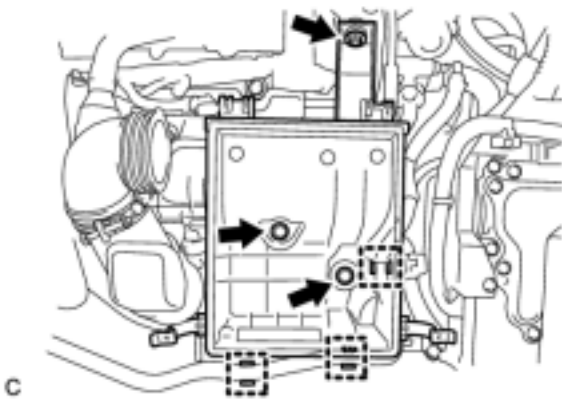


(a) Separate the water by-pass hose from the inlet air cleaner assembly.

(b) Separate the wire harness clamp from the inlet air cleaner assembly.

(c) Remove the 3 bolts and inlet air cleaner assembly.

32. REMOVE AIR CLEANER CASE



(a) Separate the No. 4 water by-pass hose from the air cleaner case.

(b) Remove the 3 bolts and air cleaner case.

33. REMOVE AIR CLEANER HOSE ASSEMBLY

INFO

34. REMOVE RADIATOR SUPPORT OPENING COVER

INFO

35. REMOVE NO. 1 INVERTER BRACKET

INFO

36. DISCONNECT ENGINE ROOM MAIN WIRE

INFO

37. REMOVE INVERTER TERMINAL COVER

INFO

38. CHECK TERMINAL VOLTAGE

INFO

39. DISCONNECT FRAME WIRE

INFO

40. DISCONNECT HIGH VOLTAGE CABLE OF FRONT TRANSAXLE

INFO

41. DISCONNECT NO. 2 ENGINE WIRE

INFO

42. INSTALL INVERTER TERMINAL COVER

INFO

43. DISCONNECT NO. 2 ENGINE ROOM WIRE

INFO

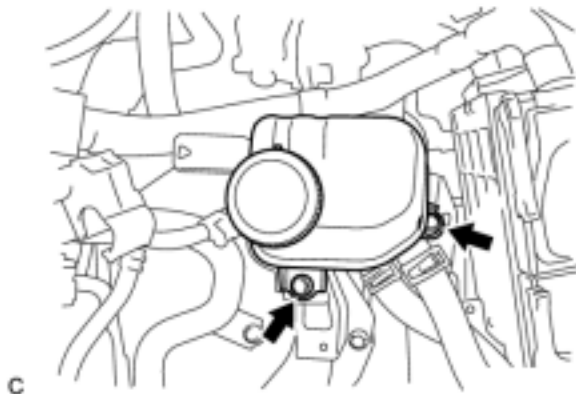
44. DISCONNECT WATER HOSE

INFO

45. REMOVE INVERTER WITH CONVERTER ASSEMBLY

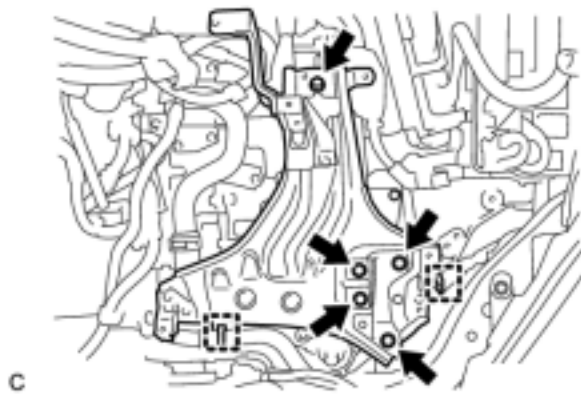
INFO

46. REMOVE INVERTER RESERVE TANK ASSEMBLY



(a) Remove the 2 bolts and inverter reserve tank assembly.

47. REMOVE INVERTER TRAY BRACKET



(a) Separate the 2 clamps.

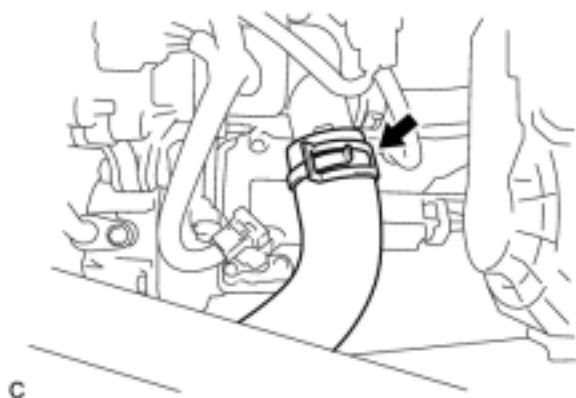
(b) Remove the 5 bolts and inverter tray bracket.

48. DISCONNECT NO. 1 RADIATOR HOSE



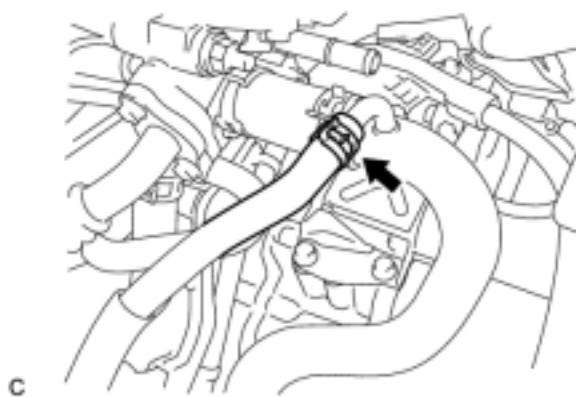
(a) Disconnect the No. 1 radiator hose from the radiator pipe assembly.

49. DISCONNECT NO. 2 RADIATOR HOSE



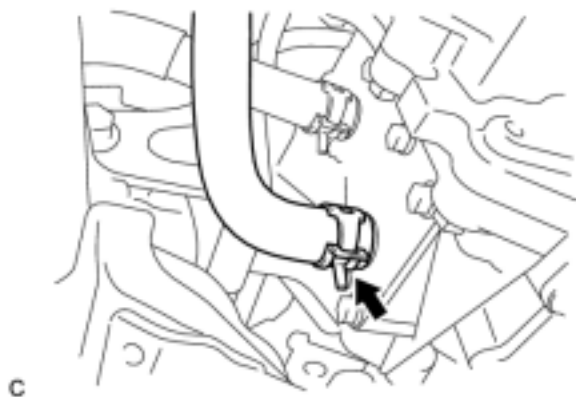
(a) Disconnect the No. 2 radiator hose from the water inlet.

50. DISCONNECT NO. 4 WATER BY-PASS HOSE



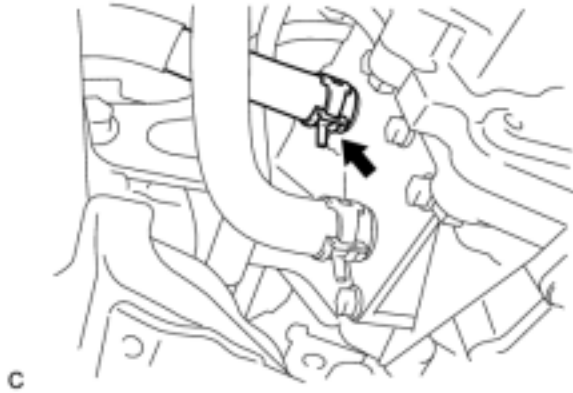
(a) Disconnect the No. 4 water by-pass hose from the radiator pipe assembly.

51. DISCONNECT NO. 3 INVERTER COOLING HOSE



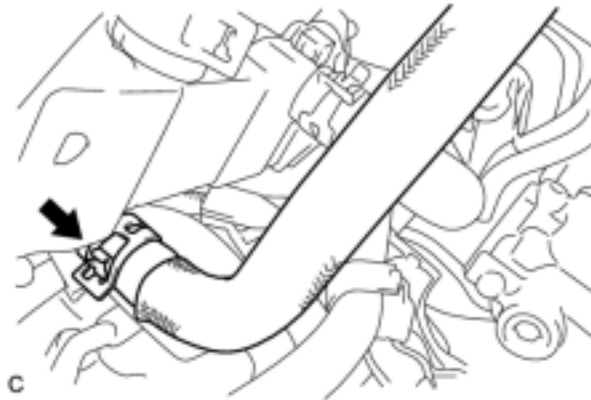
(a) Disconnect the No. 3 inverter cooling hose from the hybrid transaxle assembly.

52. DISCONNECT NO. 5 INVERTER COOLING HOSE



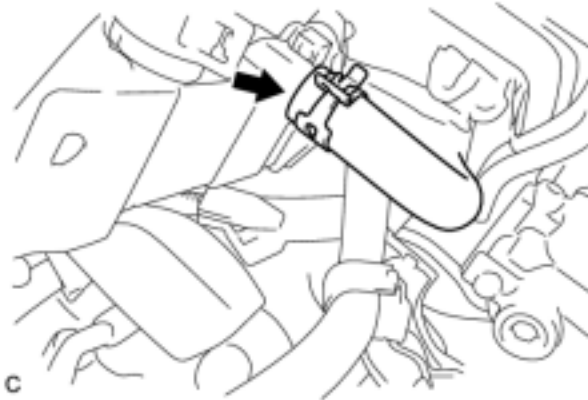
(a) Disconnect the No. 5 inverter cooling hose from the hybrid transaxle assembly.

53. DISCONNECT OUTLET HEATER WATER HOSE



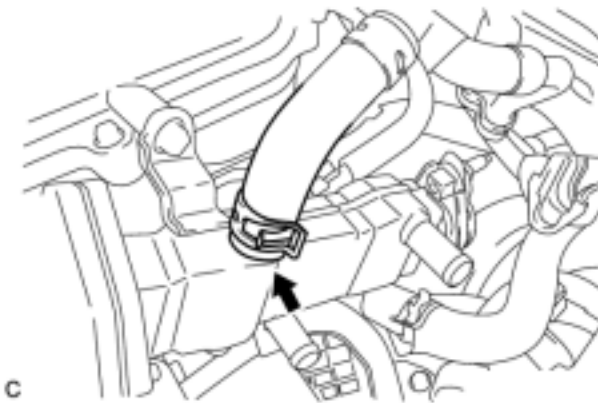
(a) Disconnect the outlet heater water hose.

54. DISCONNECT INLET HEATER WATER HOSE



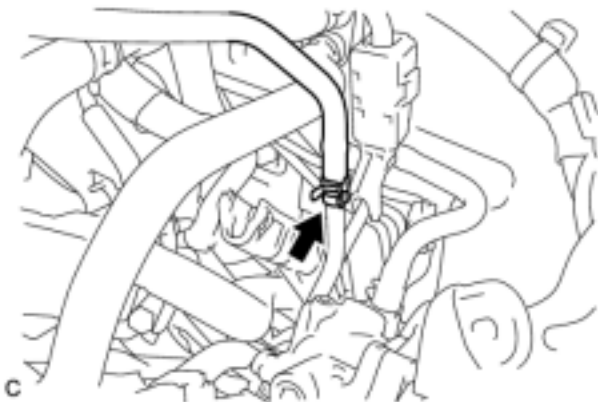
(a) Disconnect the inlet heater water hose.

55. DISCONNECT HEATER HOSE



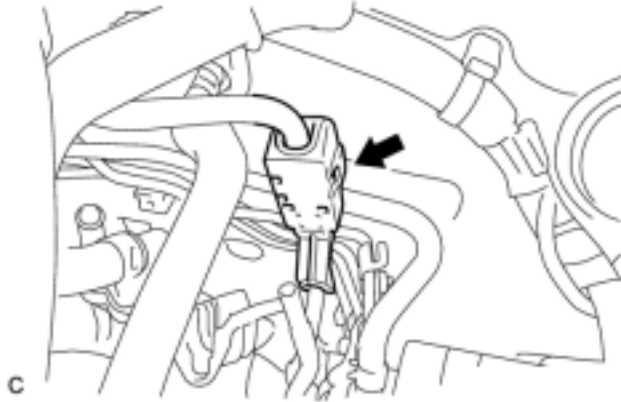
(a) Disconnect the heater hose.

56. DISCONNECT NO. 1 FUEL VAPOR FEED HOSE



(a) Disconnect the No. 1 fuel vapor feed hose.

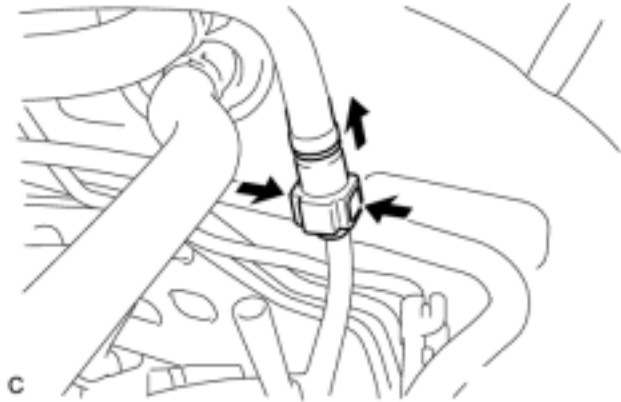
57. DISCONNECT FUEL TUBE SUB-ASSEMBLY



(a) Release the claw and remove the No. 1 fuel pipe clamp.

(b) Pinch the retainer as illustrated, then pull the fuel tube connector out of the pipe.

NOTICE:

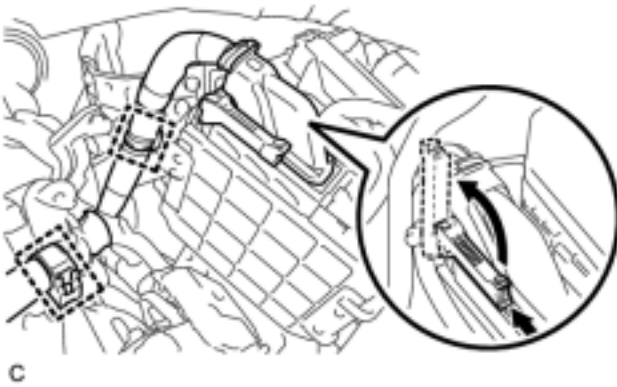


- Remove any dirt and foreign matter from the fuel tube connector before performing this work.
- Do not allow any scratches or foreign matter on the parts when disconnecting, as the fuel tube connector has the O-rings that seal the pipe.
- Perform this work by hand. Do not use any tools.
- Do not forcibly bend, kink or twist the nylon tube.
- Protect the disconnected parts by covering them with plastic bags after disconnecting the fuel tube.
- If the fuel tube connector and pipe are stuck, push and pull to release them.

58. SEPARATE ELECTRIC INVERTER COMPRESSOR

INFO

59. DISCONNECT WIRE HARNESS

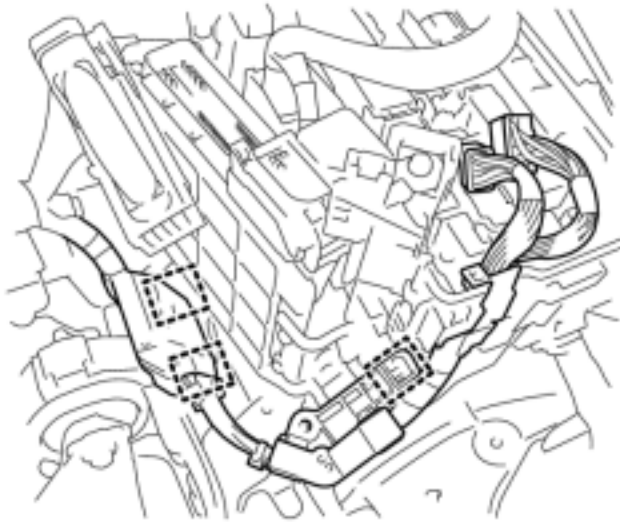


(a) Disconnect the 2 clamps.

(b) Pull up the lever and disconnect the connector of the ECM.



(c) Remove the 2 connectors and clamp from the engine room junction block and disconnect the wire harness.



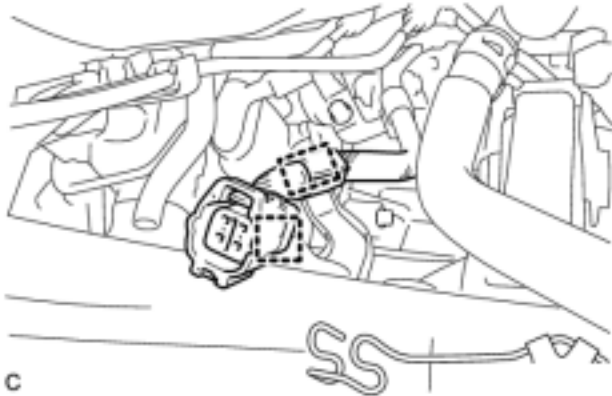
(d) Disconnect the 3 clamps.

c



(e) Remove the bolt and disconnect the earth wire.

c



(f) Disconnect the 2 clamps and wire harness.

60. SECURE STEERING WHEEL

INFO

61. REMOVE COLUMN HOLE COVER SILENCER SHEET

INFO

62. SEPARATE NO. 2 STEERING INTERMEDIATE SHAFT ASSEMBLY

INFO

63. SEPARATE NO. 1 STEERING COLUMN HOLE COVER SUB-ASSEMBLY

INFO

64. REMOVE TAIL EXHAUST PIPE ASSEMBLY

INFO

65. REMOVE FRONT NO. 3 ENGINE UNDER COVER

INFO

66. REMOVE FRONT CENTER FLOOR BRACE

INFO

67. REMOVE FRONT EXHAUST PIPE ASSEMBLY (w/ Exhaust Heat Recirculation System)

INFO

68. REMOVE FRONT EXHAUST PIPE ASSEMBLY (w/o Exhaust Heat Recirculation System)

INFO

69. REMOVE FRONT AXLE SHAFT NUT LH

INFO

70. REMOVE FRONT AXLE SHAFT NUT RH

HINT:

Perform the same procedure as for the LH side.

71. SEPARATE FRONT SPEED SENSOR LH

INFO

72. SEPARATE FRONT SPEED SENSOR RH

HINT:

Perform the same procedure as for the LH side.

73. SEPARATE TIE ROD END SUB-ASSEMBLY LH

INFO

74. SEPARATE TIE ROD END SUB-ASSEMBLY RH

HINT:

Perform the same procedure as for the LH side.

75. SEPARATE FRONT STABILIZER LINK ASSEMBLY LH

INFO

76. SEPARATE FRONT STABILIZER LINK ASSEMBLY RH

HINT:

Perform the same procedure as for the LH side.

77. SEPARATE FRONT NO. 1 LOWER SUSPENSION ARM SUB-ASSEMBLY LH

INFO

78. SEPARATE FRONT NO. 1 LOWER SUSPENSION ARM SUB-ASSEMBLY RH

HINT:

Perform the same procedure as for the LH side.

79. SEPARATE FRONT DRIVE SHAFT ASSEMBLY LH

INFO

80. REMOVE FRONT DRIVE SHAFT ASSEMBLY LH

INFO

81. SEPARATE FRONT DRIVE SHAFT ASSEMBLY RH

HINT:

Perform the same procedure as for the LH side.

82. REMOVE FRONT DRIVE SHAFT ASSEMBLY RH

HINT:

Perform the same procedure as for the LH side.

83. REMOVE FRONT DRIVE SHAFT HOLE SNAP RING LH

INFO

84. REMOVE FRONT DRIVE SHAFT HOLE SNAP RING RH

HINT:

Perform the same procedure as for the LH side.

85. REMOVE FRONT LOWER ENGINE MOUNTING BRACKET REINFORCEMENT

INFO

86. REMOVE REAR SIDE RAIL REINFORCEMENT SUB-ASSEMBLY LH

INFO

87. REMOVE REAR SIDE RAIL REINFORCEMENT SUB-ASSEMBLY RH

INFO

88. REMOVE FRONT SUSPENSION MEMBER REAR BRACE LH

INFO

89. REMOVE FRONT SUSPENSION MEMBER REAR BRACE RH

HINT:

Perform the same procedure as for the LH side.

90. REMOVE FRONT SUSPENSION CROSSMEMBER SUB-ASSEMBLY

INFO

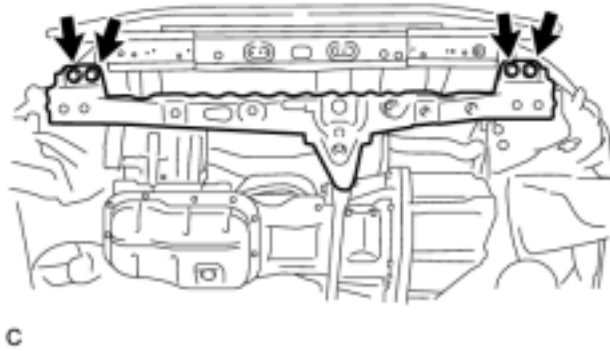
91. REMOVE ENGINE ASSEMBLY WITH TRANSAXLE



(a) Set the engine lifter.

NOTICE:

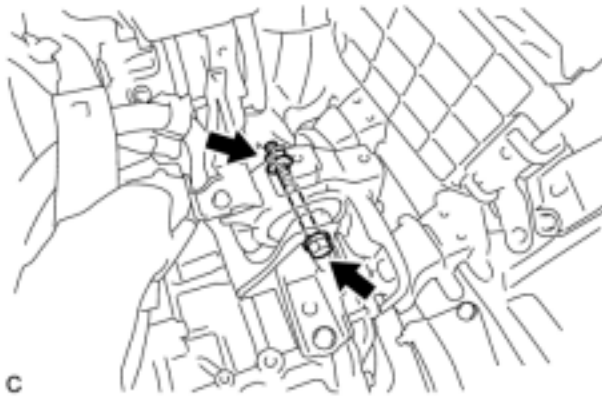
Place the engine on wooden blocks or equivalent so that the engine is level.



(b) Remove the 4 bolts and front crossmember sub-assembly.

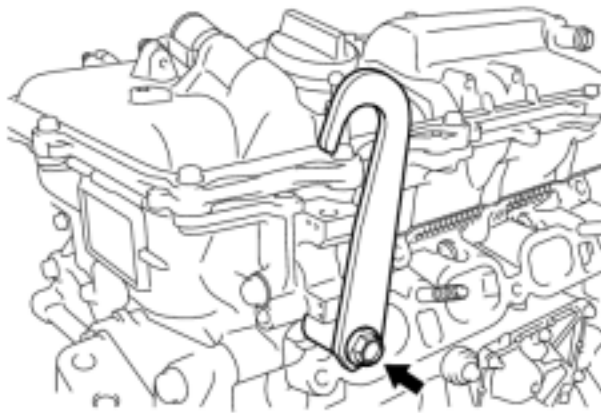


(c) Remove the bolt and 2 nuts, and separate the engine mounting insulator RH.



(d) Remove the bolt and nut, and separate the engine mounting insulator LH.

(e) Carefully remove the engine with transaxle from the vehicle.



(f) Install the 2 engine hangers with the 2 bolts.

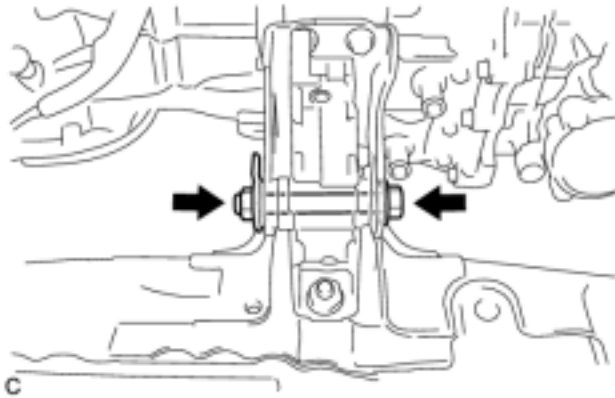
Torque: 43 N·m (438 kgf·cm, 32ft·lbf)

PART NAME	PART NO.
No. 1 engine hanger	12281-37021
No. 2 engine hanger	12282-37011
Bolt	91552-81050



(g) Attach the sling device to the engine hangers and chain block.

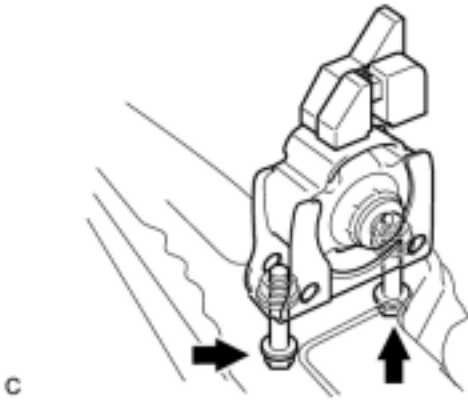
92. REMOVE FRONT CROSSMEMBER SUB-ASSEMBLY



(a) Remove the bolt and nut.

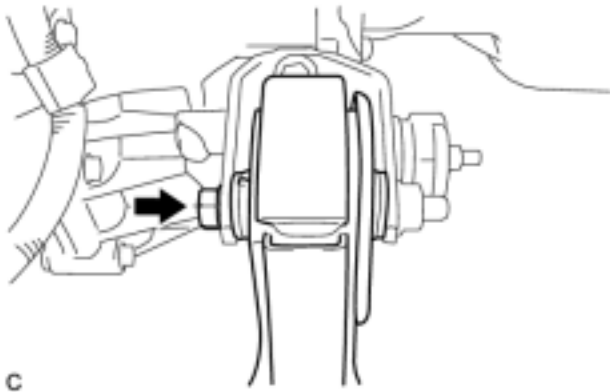
(b) Remove the front engine mounting insulator from the front engine mounting bracket.

93. REMOVE FRONT ENGINE MOUNTING INSULATOR



(a) Remove the 2 bolts and front engine mounting insulator.

94. REMOVE REAR ENGINE MOUNTING INSULATOR

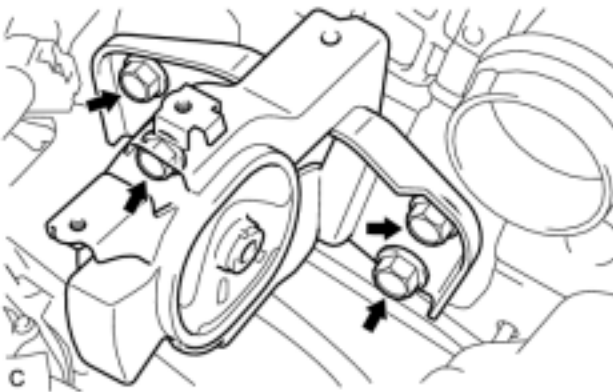


- (a) Remove the through bolt, and separate the rear engine mounting insulator.

HINT:

Perform this procedure only when replacement of the engine mounting insulator is necessary.

95. REMOVE ENGINE MOUNTING INSULATOR LH



- (a) Remove the 4 bolts and engine mounting insulator LH.

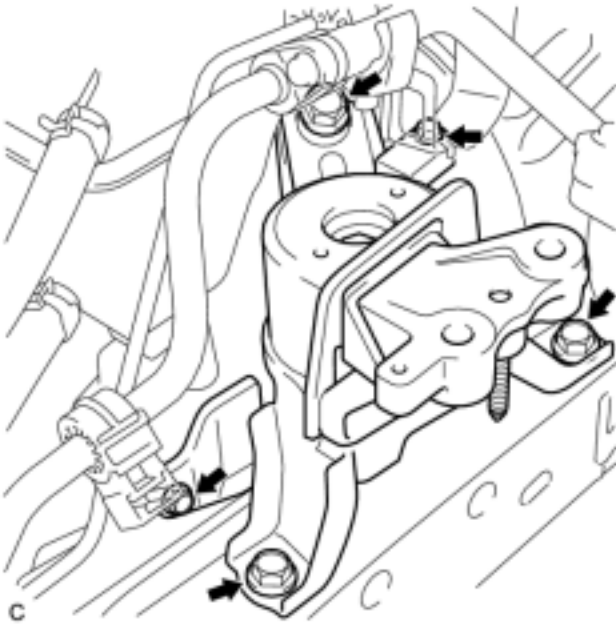
HINT:

Perform this procedure only when replacement of the engine mounting insulator is necessary.

96. REMOVE ENGINE MOUNTING INSULATOR SUB-ASSEMBLY RH

HINT:

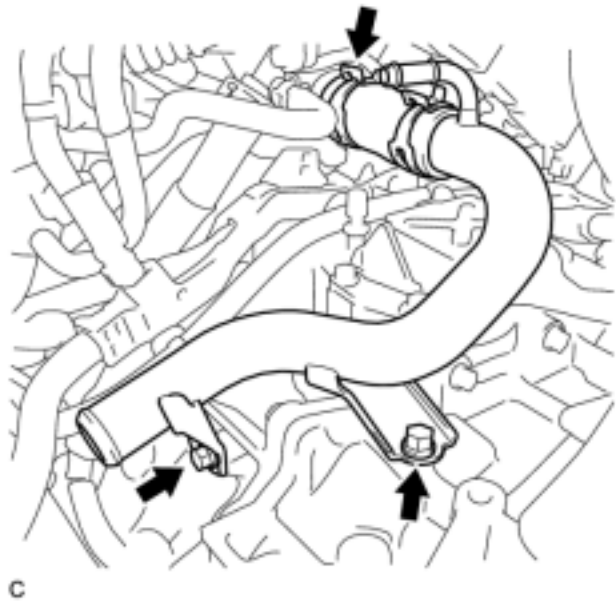
Perform this procedure only when replacement of the engine mounting insulator is necessary.



(a) Remove the 3 bolts and 2 cooler brackets.

(b) Remove the 3 bolts and engine mounting insulator sub-assembly RH.

97. REMOVE RADIATOR PIPE



(a) Separate the No. 3 radiator hose from the cylinder head.

(b) Remove the 2 bolts and radiator pipe.

98. REMOVE FLYWHEEL HOUSING SIDE COVER

INFO

99. REMOVE STARTER HOLE INSULATOR

INFO

100. REMOVE ENGINE WIRE

101. REMOVE HYBRID VEHICLE TRANSAXLE ASSEMBLY

- (a) Remove the hybrid vehicle transaxle assembly

INFO

NOTICE:

Be careful not to apply excess force to the transmission input damper assembly when removing or installing the hybrid vehicle transaxle assembly. If excess force is applied, the transmission input damper assembly may be damaged, or its splines may become misaligned.

102. REMOVE TRANSMISSION INPUT DAMPER ASSEMBLY

- (a) Gently place the engine assembly onto wood blocks or equivalent.

NOTICE:

This step should be done while hanging the engine assembly using the engine hangers and a chain block.

- (b) Remove the transmission input damper assembly

INFO

103. REMOVE FLYWHEEL SUB-ASSEMBLY

- (a) Gently place the engine assembly onto wood blocks or equivalent.

NOTICE:

This step should be done while hanging the engine assembly using the engine hangers and a chain block.

- (b) Remove the flywheel sub-assembly

INFO

