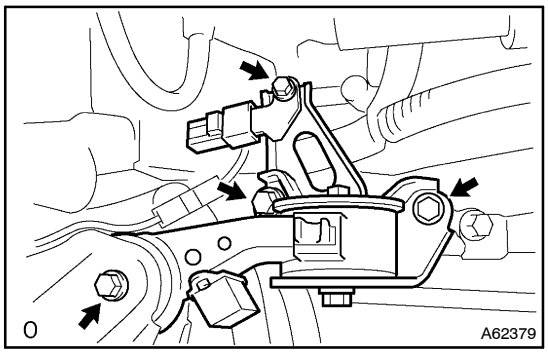
140I2–01

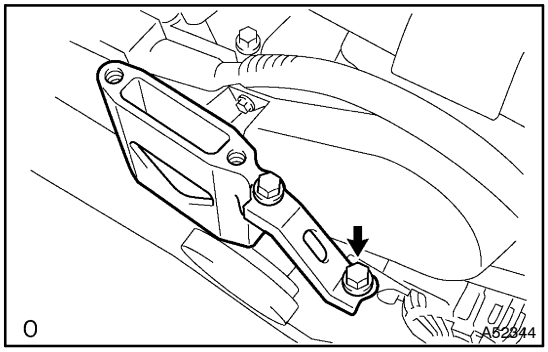
REPLACEMENT

1. WORK FOR PREVENTING GASOLINE FROM SPILLING OUT (See page 11–49)
2. REMOVE FRONT WHEEL
3. REMOVE ENGINE UNDER COVER RH
4. REMOVE ENGINE UNDER COVER LH
5. REMOVE FRONT FENDER APRON SEAL RH
6. DRAIN ENGINE OIL
7. DRAIN COOLANT (See page 16–31)
8. DRAIN AUTOMATIC TRANSAXLE FLUID (See page 40–8)
9. REMOVE BATTERY
10. REMOVE V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1 (See page 14–141)
11. REMOVE VANE PUMP V BELT (See page 14–141)



12. REMOVE ENGINE MOVING CONTROL ROD

(a) Remove the 4 bolts, engine moving control rod and bracket.

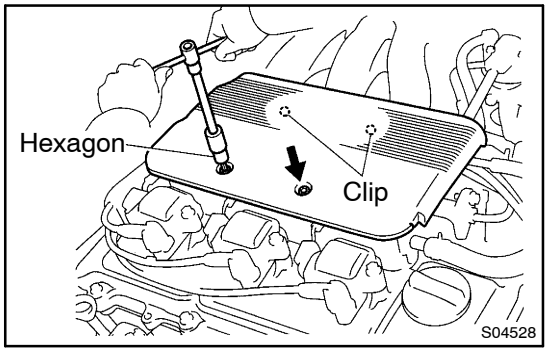


13. REMOVE ENGINE MOUNTING STAY NO.2 RH

(a) Remove the bolt, engine mounting stay No.2 RH and engine mounting bracket No.2 RH.

14. REMOVE UNION TO CHECK VALVE HOSE

(a) Remove the vacuum hose for the brake booster.



15. REMOVE V–BANK COVER SUB–ASSY

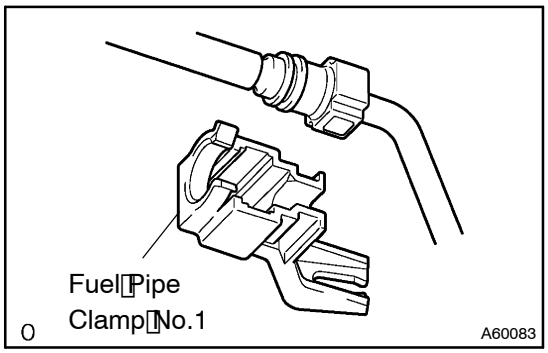
(a) Using a 5 mm hexagon wrench, remove the 2 nuts.
(b) Disconnect the 2 clips, and remove the cover.

16. REMOVE AIR CLEANER INLET ASSY

17. REMOVE AIR CLEANER ASSEMBLY WITH HOSE (See page 10–18)
18. REMOVE AIR CLEANER BRACKET

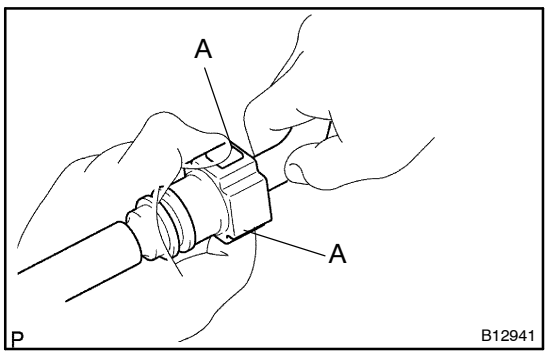
19. REMOVE AIR CLEANER INLET NO.1

20. REMOVE INTAKE AIR RESONATOR SUB–ASSY



21. SEPARATE FUEL PIPE SUB–ASSY NO.1

(a) Remove the fuel pipe clamp.



(b) Disconnect the connector from the tube while pinching part A with fingers as shown in the illustration.

NOTICE:

- **Check if there is any dirt mud on the pipe and around the connector before disconnecting them and clean the dirt away.**
- **Be sure to disconnect with hands.**
- **Do not bent, fold and rotate the nylon tube.**
- **When the connector and the pipe are stuck, push and pull the connector to free the connection and pull it out.**
- **Prevent the disconnected pipe and connector from damaging and mixing foreign objects by covering them with a vinyl bag.**

22. REMOVE RADIATOR HOSE INLET

23. REMOVE RADIATOR HOSE OUTLET

24. DISCONNECT OIL COOLER INLET HOSE

25. DISCONNECT OIL COOLER OUTLET HOSE

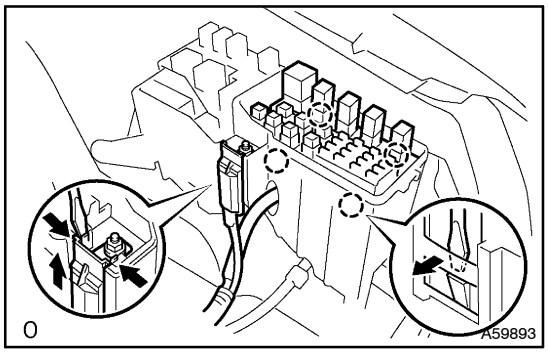
26. DISCONNECT HEATER INLET WATER HOSE

27. DISCONNECT HEATER OUTLET WATER HOSE

28. REMOVE GLOVE COMPARTMENT DOOR ASSY

29. DISCONNECT ENGINE WIRE

(a) Disconnect the engine wire from engine ECU and junction block.

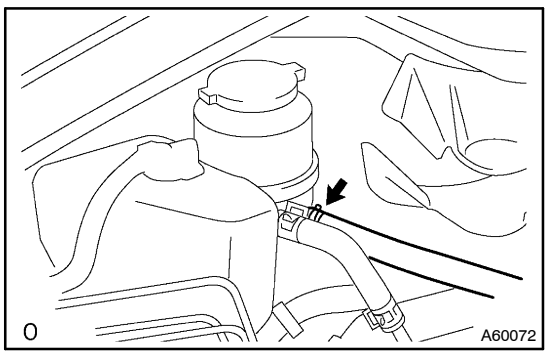


(b) Disconnect the engine wire from engine room junction block.
  (1) Remove a nut and separate the wire harness.
  (2) Using a screwdriver, unlock the engine room junction block. Separate the engine wire by pulling it upward.
  (3) Separate the connector.

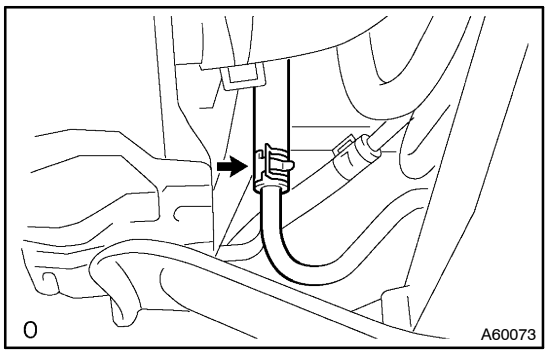
(c) Pull out the engine wire.

(d) Remove the body ground.

30. DISCONNECT FLOOR SHIFT CABLE TRANSMISSION CONTROL SELECT (See page 40–55)



31. DISCONNECT OIL RESERVOIR TO PUMP HOSE NO.1



32. DISCONNECT STEERING GEAR OUTLET RETURN TUBE

33. REMOVE EXHAUST PIPE NO.1 SUPPORT BRACKET

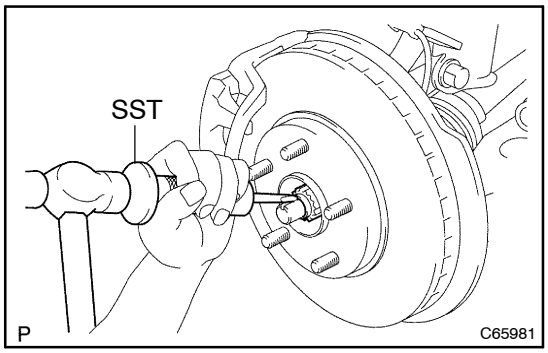
34. REMOVE EXHAUST PIPE ASSY FRONT

35. SEPARATE FRONT STABILIZER LINK ASSY LH

(a) Using a 6 mm socket hexagon wrench, hold the ball stud.
(b) Remove the nut, and separate the stabilizer link.

36. SEPARATE FRONT STABILIZER LINK ASSY RH

HINT:
Perform the same procedure as above on the opposite side.



37. REMOVE FRONT AXLE HUB LH NUT

(a) Using SST and a hammer, unstake the staked part of the lock nut.
SST 09930–00010

NOTICE:
- **When removing the nut, unstake the staked part of it completely.**
- **Do not damage the threads of the drive shaft.**
- **Be sure not to sharpen the tip of the SST.**
- **Set the SST to the groove with the flat face upward.**

(b) Using a 30 mm socket wrench, remove the lock nut.

38. REMOVE FRONT AXLE HUB RH NUT

SST 09930–00010

HINT:
Perform the same procedure as above on the opposite side.

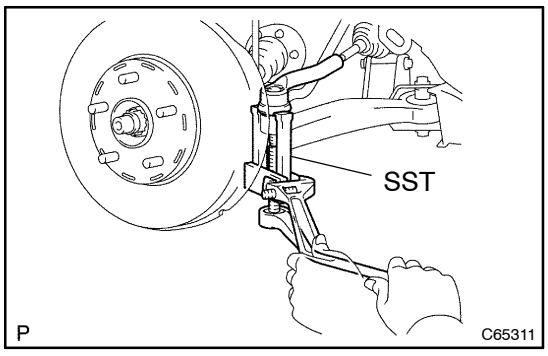
39. SEPARATE SPEED SENSOR FRONT LH

(a) Remove the bolt, and separate the speed sensor from the steering knuckle.

NOTICE:
Do not stick any foreign matter on the sensor tip.

40. SEPARATE SPEED SENSOR FRONT RH

HINT:
Perform the same procedure as above on the opposite side.



41. SEPARATE TIE ROD ASSY LH

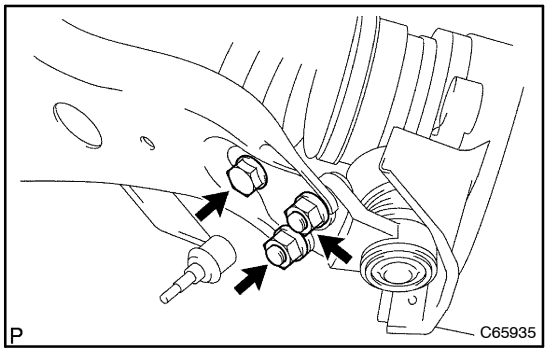
(a) Remove the cotter pin and a nut.
(b) Using SST, separate the tie rod end from the steering knuckle.
SST 09628–62011

NOTICE:
Do not damage the dust cover of the ball joint.

42. SEPARATE TIE ROD ASSY RH

SST 09628–62011

HINT:
Perform the same procedure as above on the opposite side.



43. SEPARATE FRONT SUSPENSION ARM SUB–ASSY LOWER NO.1 LH

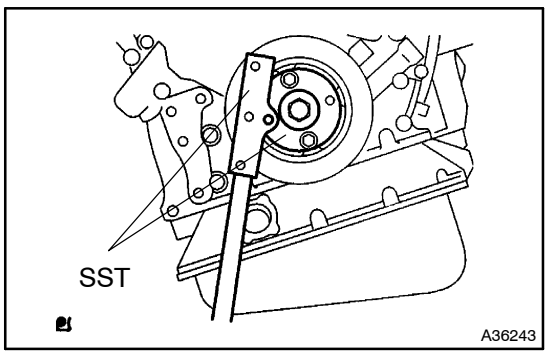
(a) Remove the bolt and 2 nuts, and separate the front suspension arm from the lower ball joint.
(b) Using a plastic hammer, separate the drive shaft from the axle hub.

44. SEPARATE FRONT SUSPENSION ARM SUB–ASSY LOWER NO.1 RH

HINT:
Perform the same procedure as above on the opposite side.

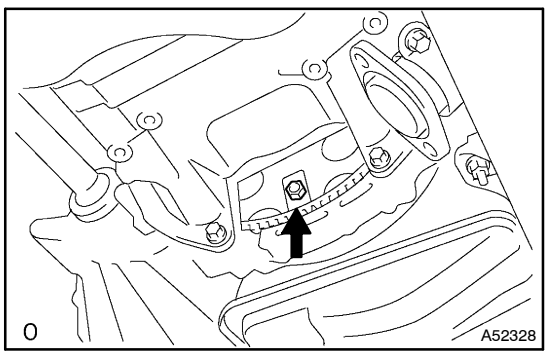
45. REMOVE STARTER ASSY
(See page 19–17)

46. REMOVE EXHAUST PIPE SUPPORT BRACKET NO.1

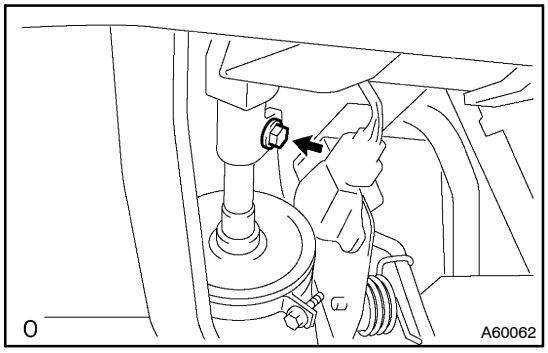


47. REMOVE DRIVE PLATE & TORQUE CONVERTER CLUTCH SETTING BOLT

(a) Using SST, hold the crankshaft.
SST 09213–54015 (91651–60855), 09330–00021
(b) Remove the 2 bolts and flywheel housing under cover.

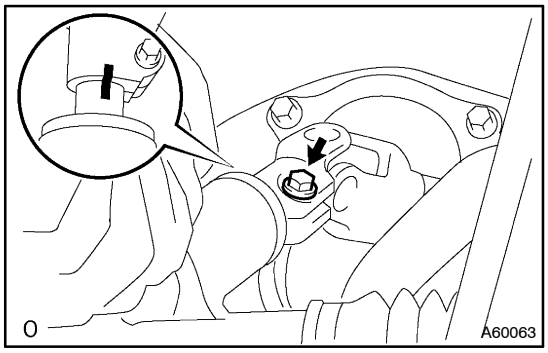


(c) Remove the 6 torque converter set bolts.



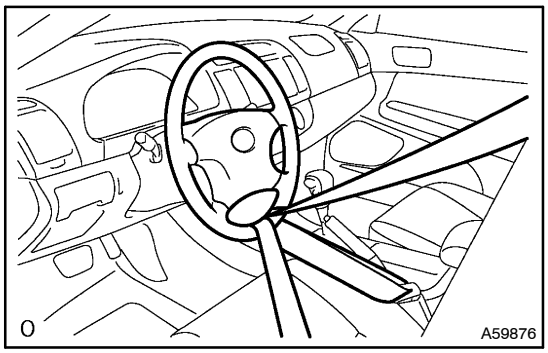
48. SEPARATE STEERING INTERMEDIATE SHAFT SUB–ASSY

(a) Loosen the sliding yoke bolt.



(b) Place match marks on the steering intermediate shaft and control valve shaft.

(c) Remove the bolt, and separate the steering intermediate shaft.

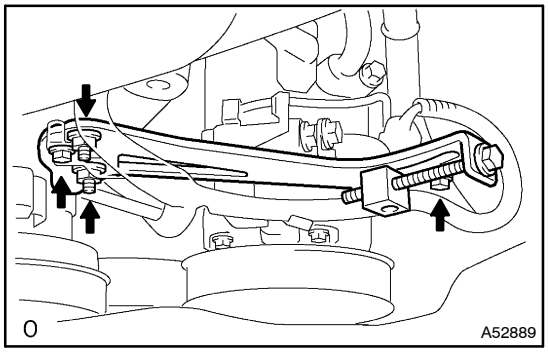


(d) To prevent from rotating the steering wheel, fix the wheel with the seat belt.

NOTICE:
The operation is useful to prevent the damage of the spiral cable.

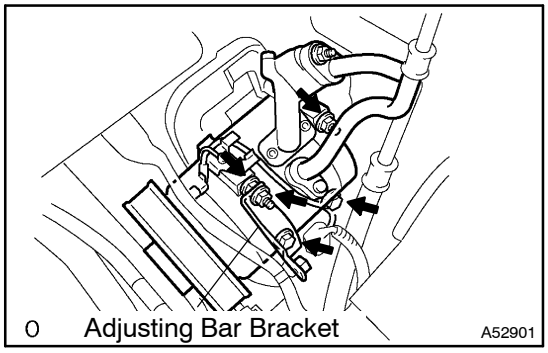
49. REMOVE GENERATOR ASSY
(See page 19–21)

50. REMOVE GENERATOR BRACKET NO.2



51. REMOVE GENERATOR BELT ADJUSTING BAR

(a) Remove the 2 bolts, 2 nuts and the adjusting bar.



52. SEPARATE COMPRESSOR AND MAGNETIC CLUTCH

(a) Remove the bolt, nut and adjusting bar bracket.

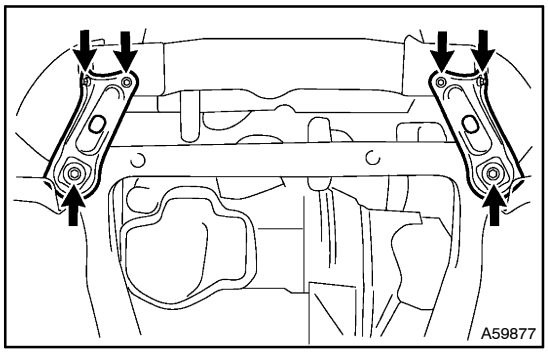
(b) Remove the 3 bolts and compressor.

HINT:

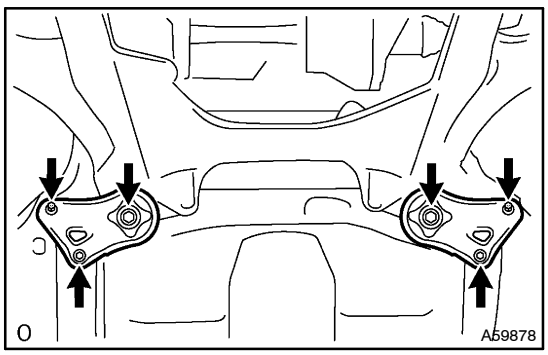
Hang up the hoses instead of detaching.

53. REMOVE ENGINE ASSEMBLY WITH TRANSAXLE

(a) Set the engine lifter.

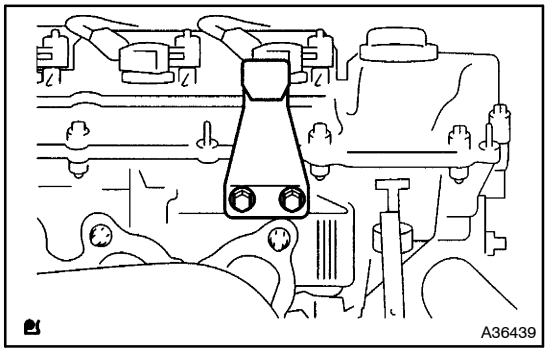


(b) Remove the 4 bolts and 2 nuts, frame side rail plate sub–assembly RH and LH.



(c) Remove the 4 bolts and 2 nuts, front suspension member brace rear RH and LH.

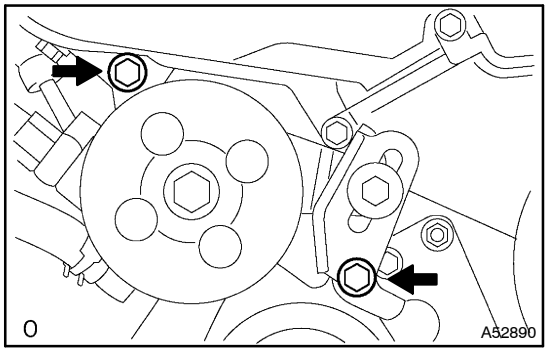
(d) Carefully, remove the engine assembly from the vehicle.



(e) Install the No. 2 engine hanger in the correct direction.

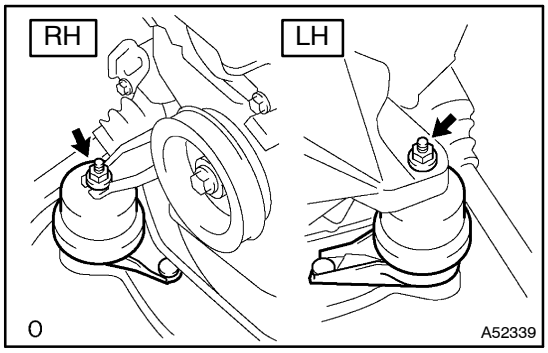
Part No.:
No. 2 engine hanger 12282–20020
Bolt 91621–60822
Torque: 20 N·m (199 kgf·cm, 14 ft·lbf)

(f) Using the chain block and engine sling device, hang the engine assembly.



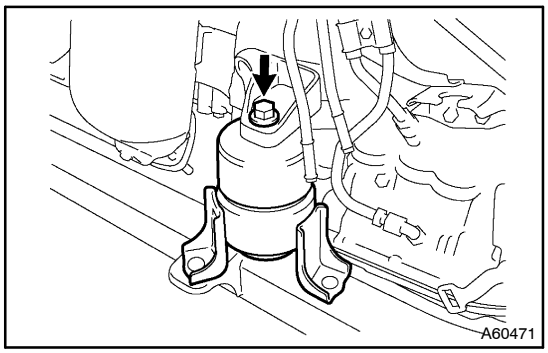
54. REMOVE VANE PUMP ASSY

(a) Separate the power steering oil pressure sensor harness.
(b) Separate the pressure feed tube clamp.
(c) Remove the 2 bolts and vane pump assembly.



55. REMOVE FRONT FRAME ASSY

(a) Remove the 2 nuts, and separate engine mounting insulator RH and LH.



(b) Remove the bolt, and separate engine mounting insulator FR.

56. REMOVE FRONT DRIVE SHAFT ASSY LH
(See page 30–8)
SST 09520–01010, 09520–24010 (09520–32040)

57. REMOVE FRONT DRIVE SHAFT ASSY RH
(See page 30–8)

58. REMOVE ENGINE WIRE

59. REMOVE AUTOMATIC TRANSAXLE ASSY
(See page 40–8)

60. REMOVE DRIVE PLATE & RING GEAR SUB–ASSY
(See page 14–216)
SST 09213–54015 (91651–60855), 09330–00021

61. INSTALL ENGINE STAND

62. REMOVE INTAKE AIR SURGE TANK
(See page 14–143)

63. REMOVE IGNITION COIL ASSY

64. REMOVE INTAKE MANIFOLD
(See page 14–198)

65. REMOVE WATER OUTLET
(See page 14–198)

66. REMOVE EGR PIPE SUB–ASSY NO.2

67. REMOVE EGR PIPE SUB–ASSY NO.1

68. REMOVE EXHAUST MANIFOLD SUB–ASSY RH

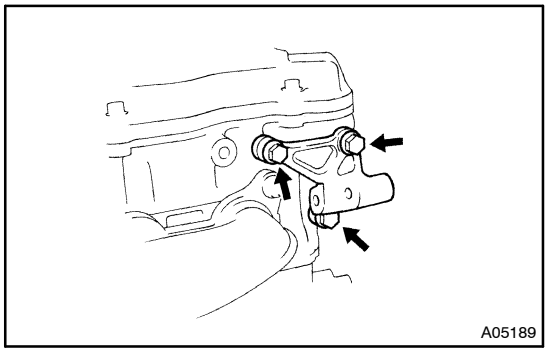
69. REMOVE EGR COOLER NO.1

70. REMOVE MANIFOLD STAY NO.2

71. REMOVE EXHAUST MANIFOLD HEAT INSULATOR NO.2

72. REMOVE EXHAUST MANIFOLD CONVERTER SUB–ASSY NO.2

73. REMOVE DRIVE SHAFT BEARING BRACKET



74. REMOVE PUMP BRACKET

(a) Remove the 3 bolts and pump bracket.

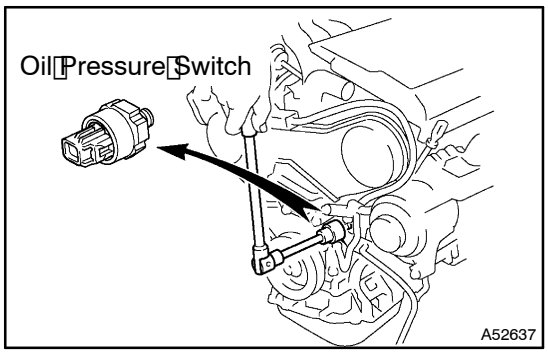
75. REMOVE GENERATOR BRACKET NO.1

76. REMOVE COMPRESSOR MOUNTING BRACKET NO.1

77. REMOVE WATER INLET PIPE
(See page 16–35)

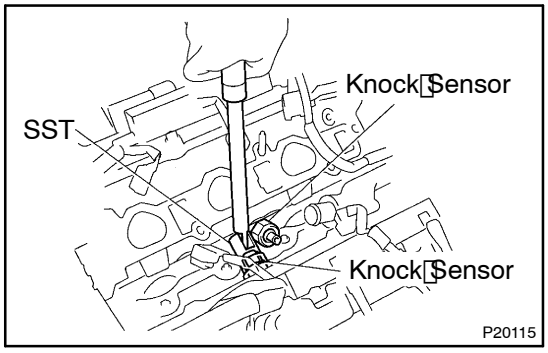
78. REMOVE WATER INLET
(See page 16–35)

79. REMOVE THERMOSTAT
(See page 16–35)



80. REMOVE ENGINE OIL PRESSURE SWITCH ASSY

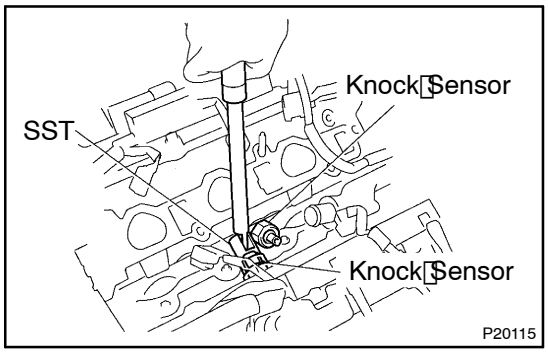
(a) Remove the oil pressure switch.



81. REMOVE KNOCK CONTROL SENSOR

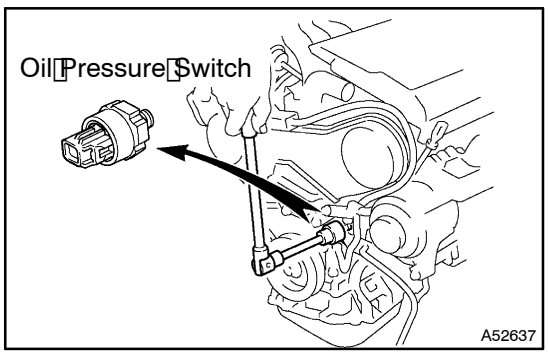
(a) Using SST, remove the 2 knock control sensors.
SST 09816–30010

82. REPLACE PARTIAL ENGINE ASSY



83. INSTALL KNOCK CONTROL SENSOR

(a) Using SST, install the 2 knock control sensors.
SST 09816–30010
Torque: 39 N·m (398 kgf·cm, 29 ft·lbf)



84. INSTALL ENGINE OIL PRESSURE SWITCH ASSY

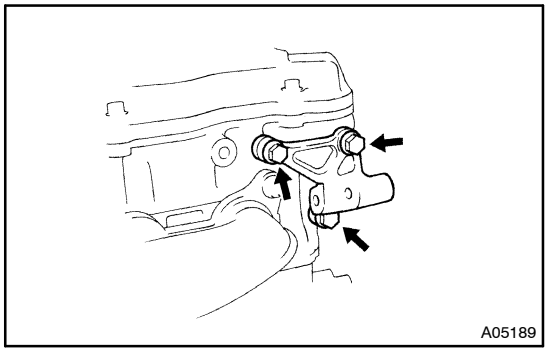
(a) Apply adhesive to 2 or 3 threads of the oil pressure switch.
Adhesive:
Part No. 08833–00080, THREE BOND 1344, LOCTITE 242 or equivalent.
(b) Install the oil pressure switch.
Torque: 15 N·m (152 kgf·cm, 11 ft·lbf)

85. INSTALL THERMOSTAT
(See page 16–35)
86. INSTALL WATER INLET
(See page 16–35)
87. INSTALL WATER INLET PIPE
(See page 16–35)
88. INSTALL COMPRESSOR MOUNTING BRACKET NO.1

Torque: 25 N·m (255 kgf·cm, 18 ft·lbf)

89. INSTALL GENERATOR BRACKET NO.1

Torque: 58 N·m (591 kgf·cm, 43 ft·lbf)



90. INSTALL PUMP BRACKET

Torque: 32 N·m (326 kgf·cm, 24 ft·lbf)

91. INSTALL DRIVE SHAFT BEARING BRACKET

Torque: 64 N·m (653 kgf·cm, 47 ft·lbf)

92. INSTALL EXHAUST MANIFOLD CONVERTER SUB–ASSY NO.2

(a) Install a new gasket and the exhaust manifold LH.
Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)

93. INSTALL EXHAUST MANIFOLD HEAT INSULATOR NO.2

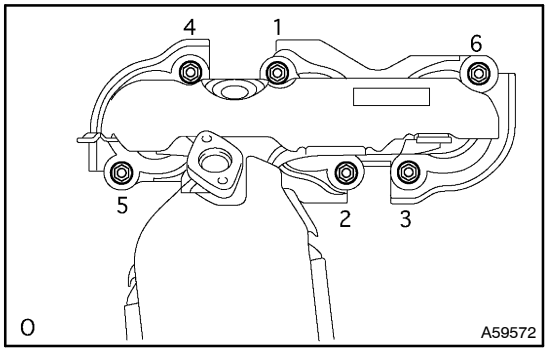
Torque: 8.5 N·m (87 kgf·cm, 55 in.·lbf)

94. INSTALL MANIFOLD STAY NO.2

Torque: 34 N·m (347 kgf·cm, 25 ft·lbf)

95. INSTALL EGR COOLER NO.1

(a) Install a new gasket and the EGR cooler No. 1.
Torque: 9.0 N·m (92 kgf·cm, 80 in.·lbf)



96. INSTALL EXHAUST MANIFOLD SUB–ASSY RH

(a) Install a new gasket and the exhaust manifold RH. Uniformly tighten the nuts in several passes, in the sequence shown.
Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)

97. INSTALL EGR PIPE SUB–ASSY NO.1

(a) Install 2 new gaskets and the EGR pipe.
Torque: 12 N·m (120 kgf·cm, 9 ft·lbf)

98. INSTALL EGR PIPE SUB–ASSY NO.2

(a) Install 2 new gaskets and the EGR pipe.
Torque: 12 N·m (120 kgf·cm, 9 ft·lbf)

99. INSTALL WATER OUTLET
(See page 14–198)

100. INSTALL INTAKE MANIFOLD
(See page 14–198)

101. INSTALL IGNITION COIL ASSY

Torque: 8.0 N·m (82 kgf·cm, 71 in.·lbf)

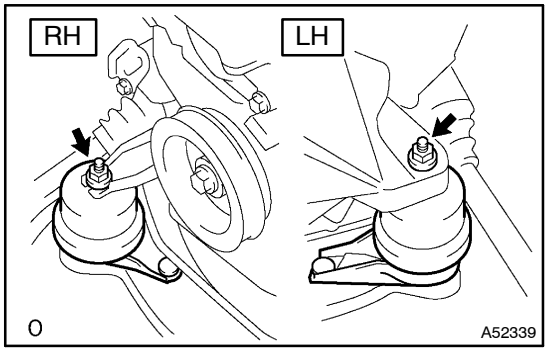
102. INSTALL INTAKE AIR SURGE TANK
(See page 14–143)

103. INSTALL DRIVE PLATE & RING GEAR SUB–ASSY
(See page 14–216)
SST 09213–54015 (91651–60855), 09330–00021

104. INSTALL AUTOMATIC TRANSAXLE ASSY
(See page 40–8)

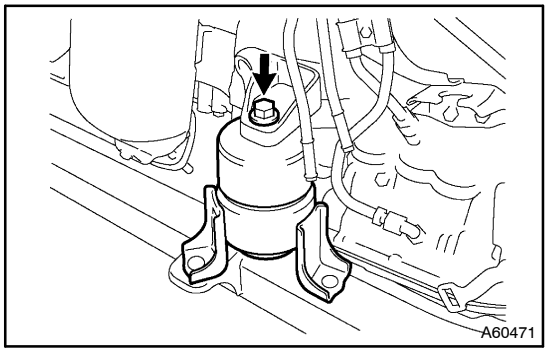
105. INSTALL FRONT DRIVE SHAFT ASSY RH
(See page 30–8)

106. INSTALL FRONT DRIVE SHAFT ASSY LH
(See page 30–8)

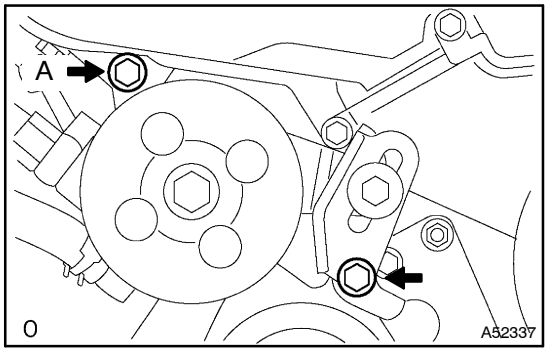


107. INSTALL FRONT FRAME ASSY

(a) Install the engine mounting insulator RH and LH with the 2 nuts.
Torque: 95 N·m (969 kgf·cm, 70 ft·lbf)



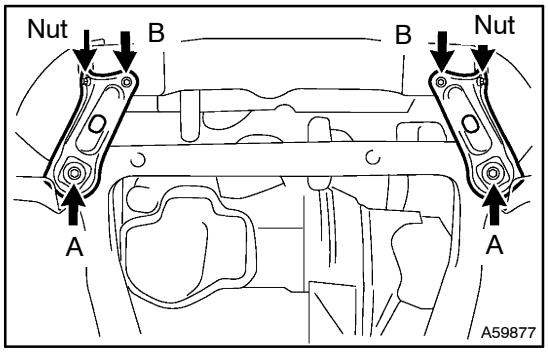
(b) Install the engine mounting insulator FR with the bolt.
Torque: 87 N·m (887 kgf·cm, 64 ft·lbf)



108. INSTALL VANE PUMP ASSY

(a) Install the vane pump assembly with the 2 bolts.
Torque: 43 N·m (439 kgf·cm, 32 ft·lbf)

HINT:
After adjusting the V–ribbed belt, tighten the bolt A.

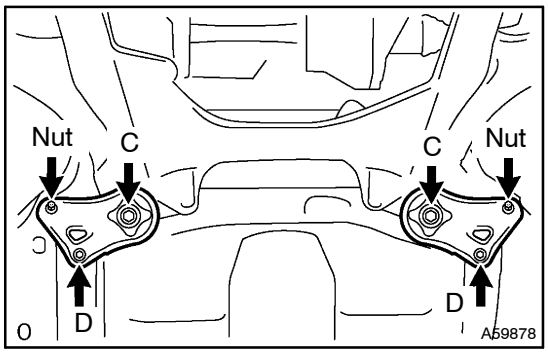


109. INSTALL ENGINE ASSEMBLY WITH TRANSAXLE

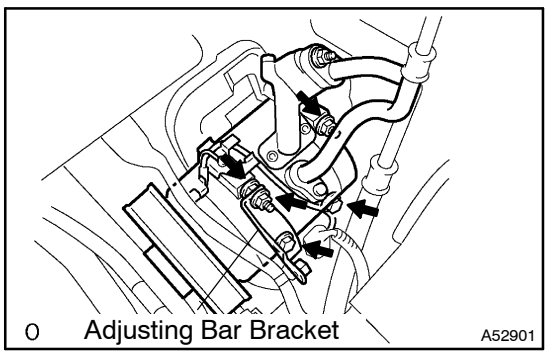
(a) Set the engine assembly with transaxle on the engine lifter.

(b) Install the engine assembly to the vehicle.

(c) Install the frame side rail plate sub–assembly RH and LH with the 4 bolts and 2 nuts.
Torque:
Bolt A 85 N·m (867 kgf·cm, 63 ft·lbf)
Bolt B, Nut 32N·m (326 kgf·cm, 24 ft·lbf)



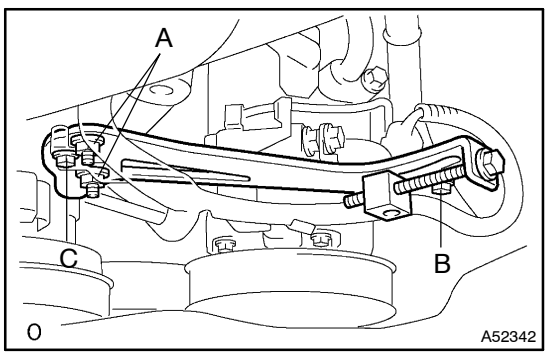
(d) Install the front suspension member brace rear RH and LH with the 4 bolts and 2 nuts.
Torque:
Bolt C 85 N·m (867 kgf·cm, 63 ft·lbf)
Bolt D, Nut 32N·m (326 kgf·cm, 24 ft·lbf)



110. INSTALL COMPRESSOR AND MAGNETIC CLUTCH

(a) Install the compressor with the 3 bolts.
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)

(b) Install the adjusting bar bracket with the bolt and nut.
Torque:
Bolt 25 N·m (250 kgf·cm, 18 ft·lbf)
Nut 26 N·m (260 kgf·cm, 19 ft·lbf)



111. INSTALL GENERATOR BELT ADJUSTING BAR

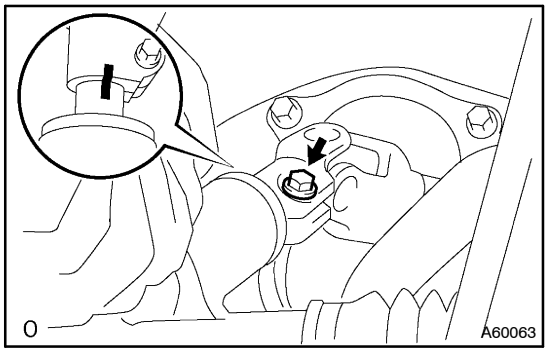
(a) Install the adjusting bar with the 2 bolts and 2 nuts.
Torque:
Nut A 43 N·m (438 kgf·cm, 32 ft·lbf)
Bolt B 18 N·m (184 kgf·cm, 13 ft·lbf)
Bolt C 8.0 N·m (82 kgf·cm, 71 in.·lbf)

112. INSTALL GENERATOR BRACKET NO.2

Torque: 28 N·m (286 kgf·cm, 21 ft·lbf)

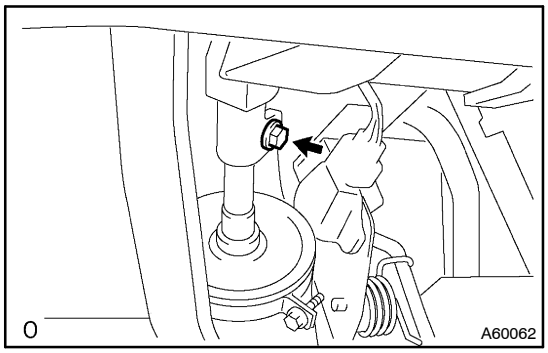
113. INSTALL GENERATOR ASSY

(See page 19–21)

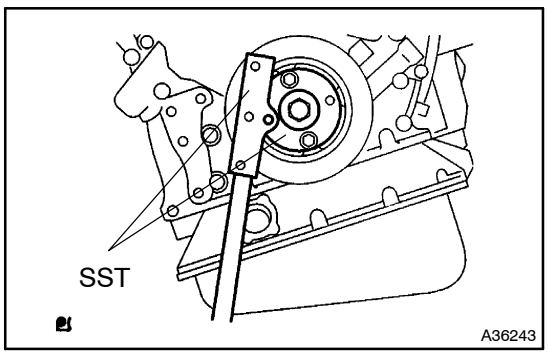


114. INSTALL STEERING INTERMEDIATE SHAFT SUB–ASSY

(a) Align the match marks on the intermediate shaft and control valve shaft, and install the bolt.
Torque: 35 N·m (357 kgf·cm, 26 ft·lbf)

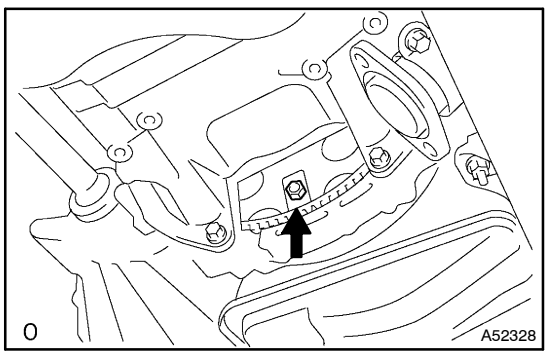


(b) Tighten the sliding yoke bolt.
Torque: 35 N·m (357 kgf·cm, 26 ft·lbf)



115. INSTALL DRIVE PLATE & TORQUE CONVERTER CLUTCH SETTING BOLT

(a) Using SST, hold the crankshaft.
SST 09213–54015 (91651–60855), 09330–00021
(b) Using kerosene or gasoline, clean the bolts thoroughly.
(c) Apply adhesive to 2 or 3 threads of the bolt end.
Adhesive: Part No. 08833–00070, THREE BOND 1324 or equivalent



(d) Install the 6 torque converter set bolts.
Torque: 41 N·m (418 kgf·cm, 30 ft·lbf)

NOTICE:
First tighten green colored bolt and then tighten the 5 bolts.

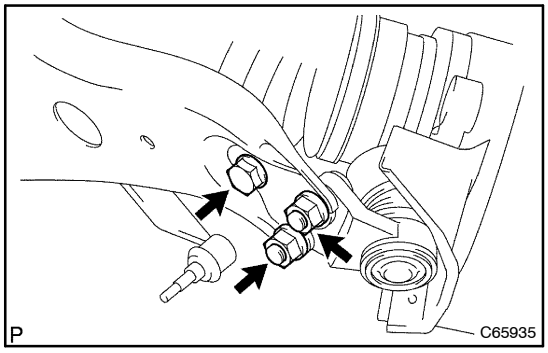
(e) Install the flywheel housing under cover with the 2 bolts.
Torque: 7.8 N·m (80 kgf·cm, 69 in.·lbf)

116. INSTALL EXHAUST PIPE SUPPORT BRACKET NO.1

Torque: 21 N·m (214 kgf·cm, 15 ft·lbf)

117. INSTALL STARTER ASSY

(See page 19–17)



118. INSTALL FRONT SUSPENSION ARM SUB–ASSY LOWER NO.1 LH

(a) Install the drive shaft to steering knuckle.
(b) Install the suspension lower arm with the bolt and 2 nuts.
Torque: 127 N·m (1,295 kgf·cm, 94 ft·lbf)

119. INSTALL FRONT SUSPENSION ARM SUB–ASSY LOWER NO.1 RH

HINT:
Perform the same procedure as above on the opposite side.

120. INSTALL TIE ROD ASSY LH

(a) Connect the tie rod end to the steering knuckle and install a new castle nut.
Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)

NOTICE:
- **Prevent any lubricant from the thread and the taper portions.**
- **After tightening the castle nut, tighten it to the additional direction within 60° to put into a cotter pin.**

(b) Insert a new cotter pin.

121. INSTALL TIE ROD ASSY RH

HINT:
Perform the same procedure as above on the opposite side.

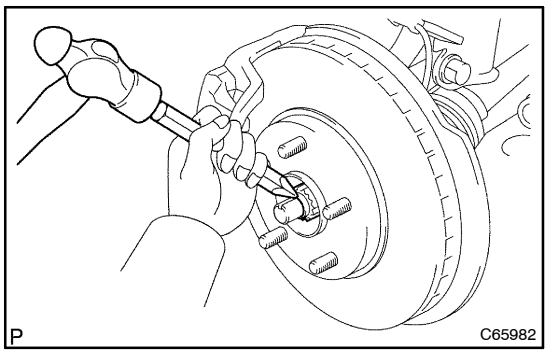
122. INSTALL SPEED SENSOR FRONT LH
(See page 32–48)

123. INSTALL SPEED SENSOR FRONT RH

HINT:
Perform the same procedure as above on the opposite side.

124. INSTALL FRONT AXLE HUB LH NUT

(a) Using a 30 mm socket wrench, install a new hub nut.
Torque: 294 N·m (2,998 kgf·cm, 217 ft·lbf)



(b) Using a chisel, stake the hub nut.

125. INSTALL FRONT AXLE HUB RH NUT

HINT:
Perform the same procedure as above on the opposite side.

126. INSTALL FRONT STABILIZER LINK ASSY LH

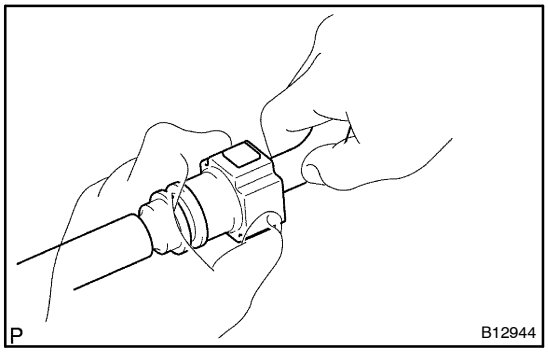
(a) Using a 6 mm socket hexagon wrench, hold the ball stud, and install the nut.
Torque: 74 N·m (755 kgf·cm, 55 ft·lbf)

127. INSTALL FRONT STABILIZER LINK ASSY RH

HINT:
Perform the same procedure as above on the opposite side.

128. INSTALL EXHAUST PIPE ASSY FRONT
(See page 15–8)

129. INSTALL EXHAUST PIPE NO.1 SUPPORT BRACKET
(See page 15–8)



130. CONNECT FUEL PIPE SUB–ASSY NO.1

(a) Push in the fuel tube connector to the fuel pipe until connector makes a "click" sound.

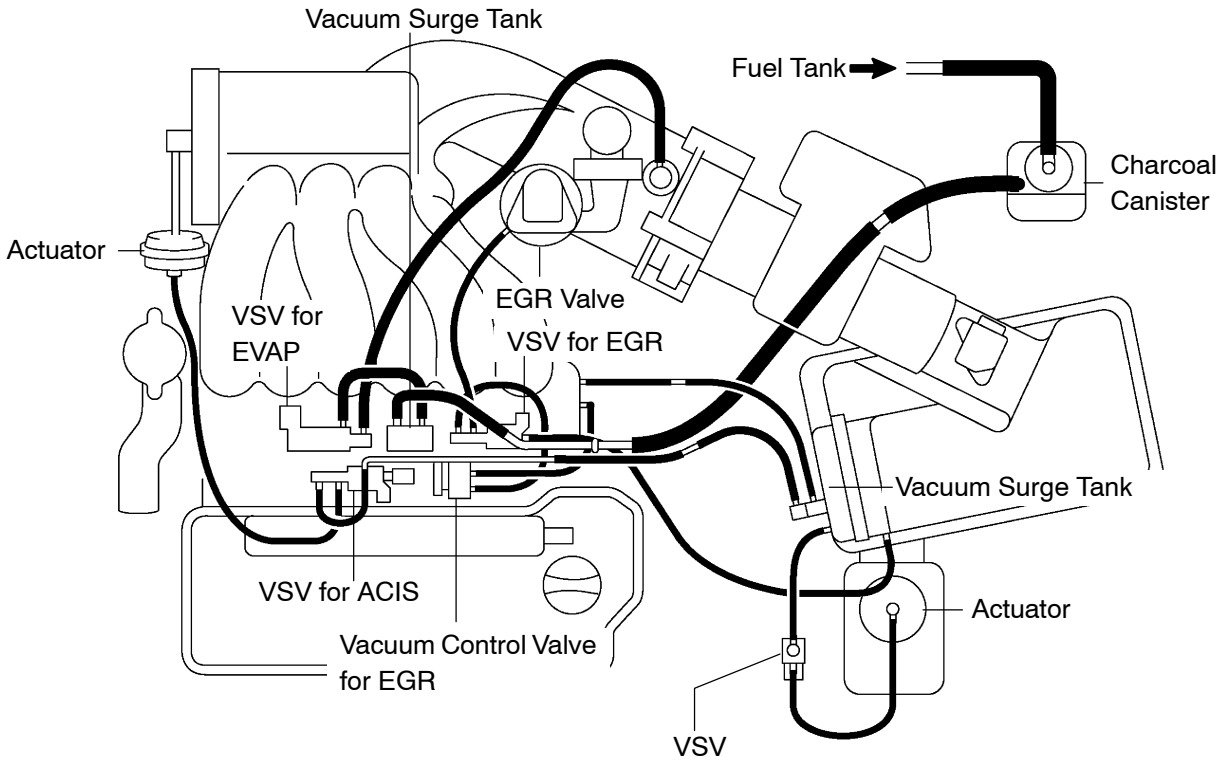
NOTICE:
- **Check if there is any damage or foreign objects on the connected part of the pipe.**
- **After connecting, check if the pipe and the connector are securely connected by pulling them.**

(b) Install the fuel pipe clamp.

131. INSTALL AIR CLEANER ASSEMBLY WITH HOSE (See page 10–18)

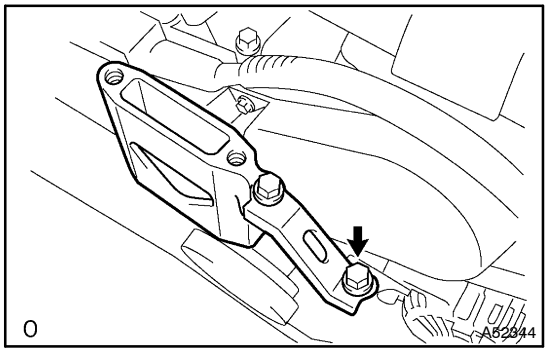
132. CONNECT VACUUM HOSE

Vacuum Hose Routing Diagram



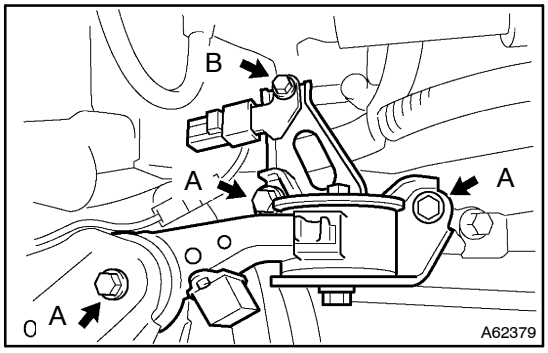
133. INSTALL V–BANK COVER SUB–ASSY

(a) Using a 5 mm socket hexagon wrench, install the V–bank cover with the 2 nuts.
Torque: 7.9 N·m (81 kgf·cm, 70 in.·lbf)



134. INSTALL ENGINE MOUNTING STAY NO.2 RH

(a) Install the engine mounting stay No. 2 RH and engine mounting bracket No. 2 RH with the bolt.
Torque: 64 N·m (653 kgf·cm, 47 ft·lbf)



135. INSTALL ENGINE MOVING CONTROL ROD

(a) Install the engine moving control rod and bracket with the 4 bolts.
Torque:
Bolt A 64 N·m (653 kgf·cm, 47 ft·lbf)
Bolt B 23 N·m (235 kgf·cm, 17 ft·lbf)

136. INSTALL VANE PUMP V BELT
(See page 14–141)
137. INSTALL V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1
(See page 14–141)
138. INSPECT DRIVE BELT DEFLECTION AND TENSION (REFERENCE) (See page 14–137)
139. INSTALL FRONT WHEEL
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
140. ADD AUTOMATIC TRANSAXLE FLUID (See page 40–8)
141. ADD ENGINE OIL
142. ADD COOLANT (See page 16–31)
143. ADD POWER STEERING FLUID
144. BLEED POWER STEERING FLUID (See page 51–3)
145. INSPECT OIL LEAK
146. CHECK ENGINE COOLANT LEAK (See page 16–31)
147. INSPECT FUEL LEAK
148. CHECK EXHAUST GAS LEAK
149. INSPECT AND ADJUST FRONT WHEEL ALIGNMENT (See page 26–4)
150. INSPECT IGNITION TIMING (See page 14–137)
SST 09843–18040, 09843–18020
151. INSPECT ENGINE IDLE SPEED (See page 14–137)
SST 09843–18040
152. INSPECT CO/HC (See page 14–137)
153. CHECK ABS SPEED SENSOR SIGNAL (See page 05–451)