140IS–01

# REPLACEMENT

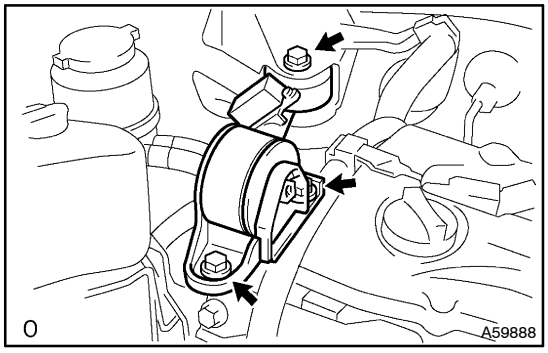
1. **WORK FOR PREVENTING GASOLINE FROM SPILLING OUT (See page 11–1)**
2. **REMOVE FRONT WHEEL**
3. **REMOVE ENGINE UNDER COVER LH**
4. **REMOVE ENGINE UNDER COVER RH**
5. **REMOVE FRONT FENDER APRON SEAL RH**
6. **DRAIN COOLANT (See page 16–6)**
7. **DRAIN AUTOMATIC TRANSAXLE FLUID**

(a) Using a 10 mm hexagon wrench, remove the drain plug and a gasket. Drain automatic transaxle fluid.

(b) Install a new gasket and the drain plug.

**Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)**

8. **REMOVE BATTERY**
9. **REMOVE AIR CLEANER ASSY**
10. **REMOVE ENGINE COVER SUB–ASSY NO.1**
11. **DISCONNECT RADIATOR HOSE INLET**
12. **DISCONNECT RADIATOR HOSE OUTLET**
13. **DISCONNECT OIL COOLER INLET HOSE**
14. **DISCONNECT OIL COOLER OUTLET HOSE**



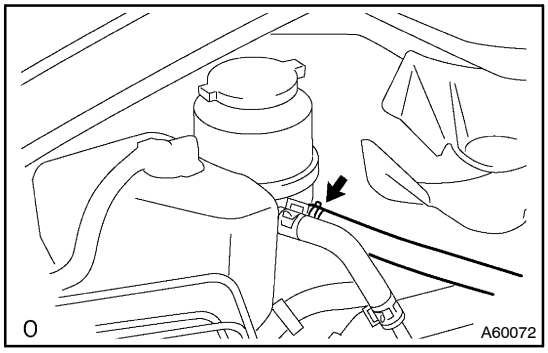

15. **REMOVE ENGINE MOVING CONTROL ROD W/BRACKET**

(a) Remove the 3 bolts and the engine moving control rod w/ bracket.

16. **REMOVE ENGINE MOUNTING STAY NO.2 RH**
17. **REMOVE ENGINE MOUNTING BRACKET NO.2 RH**
18. **REMOVE FAN AND GENERATOR V BELT (See page 14–5)**

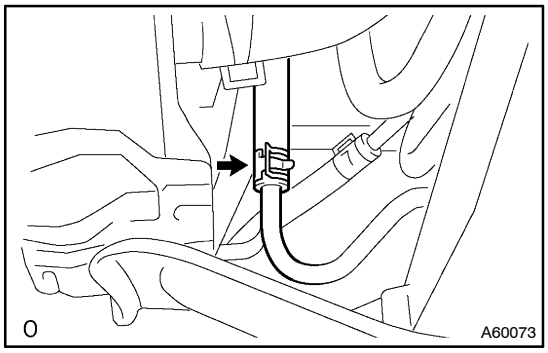
SST 09249–63010

19. **REMOVE VANE PUMP OIL RESERVOIR ASSY**




**20. DISCONNECT OIL RESERVOIR TO PUMP HOSE NO.1**

(a) Remove the clip and disconnect the hose.




**21. DISCONNECT RETURN TUBE SUB–ASSY**

(a) Remove the clip and disconnect the return tube.

**22. DISCONNECT UNION TO CONNECTOR TUBE HOSE**

**23. DISCONNECT FLOOR SHIFT CABLE TRANSMISSION CONTROL SHIFT**
**(See page 40–3)**

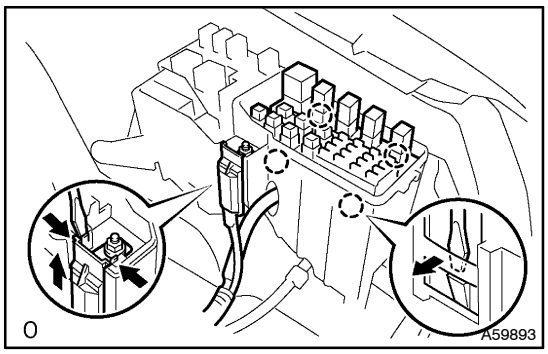
**24. DISCONNECT HEATER INLET WATER HOSE**

**25. DISCONNECT HEATER OUTLET WATER HOSE**

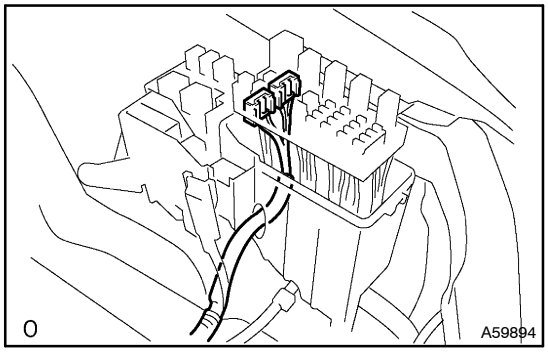
**26. DISCONNECT FUEL TUBE SUB–ASSY**
**(See page 11–1)**

**27. 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 the nut fixing the wire harness.
(2) Using a screwdriver, unlock the engine room junction block. Disconnect the engine wire by pulling it upward.




(3) Disconnect the connectors.
(c) Pull out the engine wire.
(d) Disconnect the B terminal of the generator.
(e) Remove the body ground.
(f) Remove the starter connector.

**28. DISCONNECT ENGINE WIRE NO.2**

(a) Remove the nut and disconnect the terminal 30 of the starter.

**29. REMOVE GENERATOR ASSY**

**30. SEPARATE COMPRESSOR AND MAGNETIC CLUTCH**

HINT:
Hang up the hoses instead of detaching.

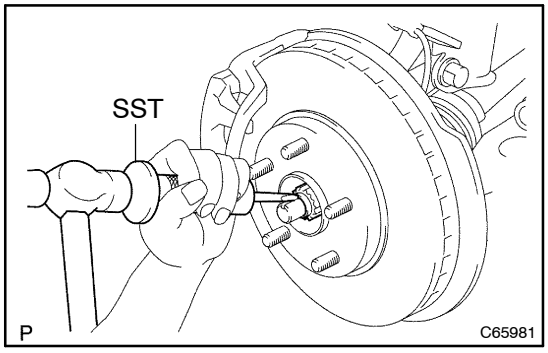
**31. REMOVE EXHAUST PIPE ASSY FRONT**

**32. REMOVE FRONT STABILIZER LINK ASSY LH**

(a) Using a 6 mm socket hexagon wrench to fix the stud bolt.
(b) Remove the nut and the stabilizer bar link.

**33. REMOVE FRONT STABILIZER LINK ASSY RH**

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




**34. 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.

**35. REMOVE FRONT AXLE HUB RH NUT**

SST 09930–00010

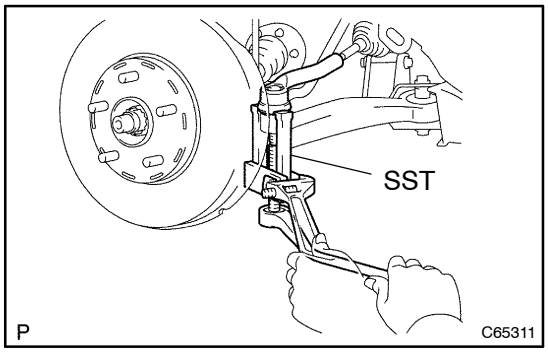
HINT:
Perform the same procedure as above on the opposite side.

**36. REMOVE SPEED SENSOR FRONT LH**

**NOTICE:**
**Keep the tip and connection part of speed sensor off foreign materials.**

**37. REMOVE SPEED SENSOR FRONT RH**

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




**38. DISCONNECT TIE ROD ASSY LH**

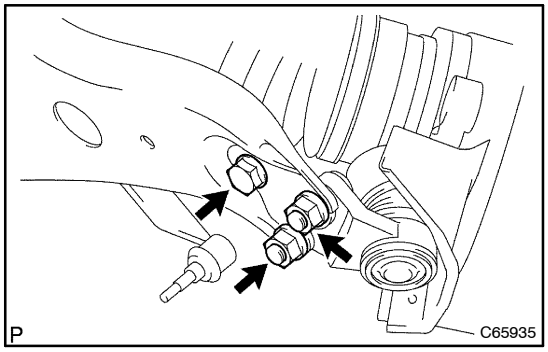
(a) Remove the cotter pin and a castle nut.
(b) Using SST, disconnect the tie rod end from the steering knuckle.
SST 09628–62011

**NOTICE:**
**Be careful not to damage the cover of the ball joint.**

**39. DISCONNECT TIE ROD ASSY RH**

SST 09628–62011

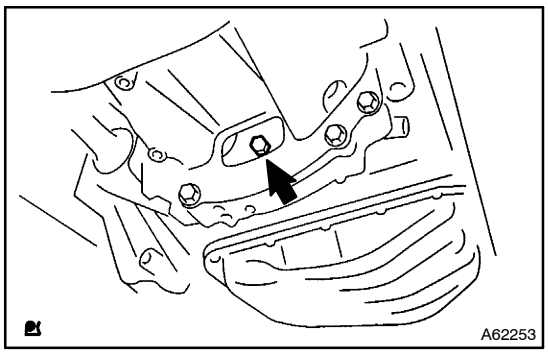
HINT:
Perform the same procedure as above on the opposite side.




**40. DISCONNECT FRONT SUSPENSION ARM SUB–ASSY LOWER NO.1 LH**

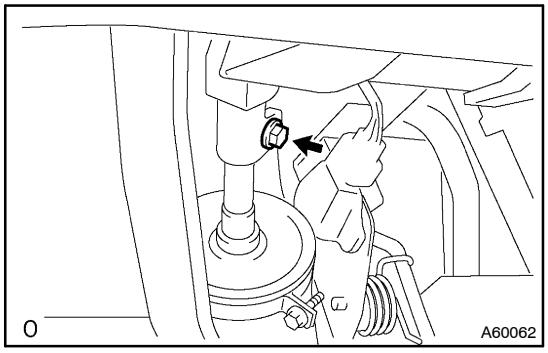
**41. DISCONNECT FRONT SUSPENSION ARM SUB–ASSY LOWER NO.1 RH**

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



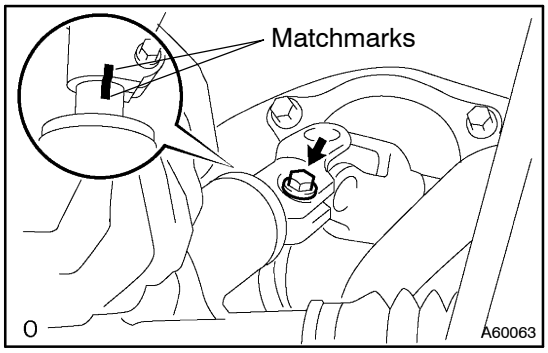

**42. REMOVE DRIVE PLATE & TORQUE CONVERTER CLUTCH SETTING BOLT**

(a) Fix the crankshaft and remove the 6 set bolts.

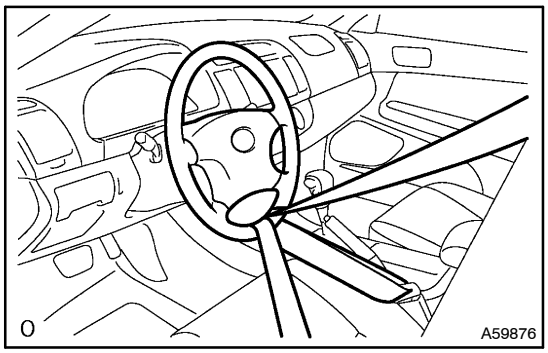



**43. REMOVE STEERING INTERMEDIATE SHAFT SUB–ASSY**

(a) Loosen the sliding yoke bolt.

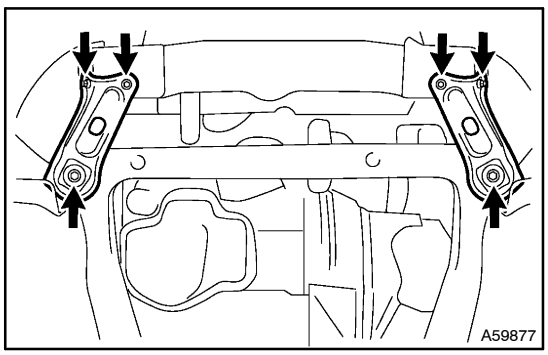



(b) Place matchmarks on the intermediate shaft and control valve shaft.
(c) Remove the bolt, and the steering intermediate shaft.



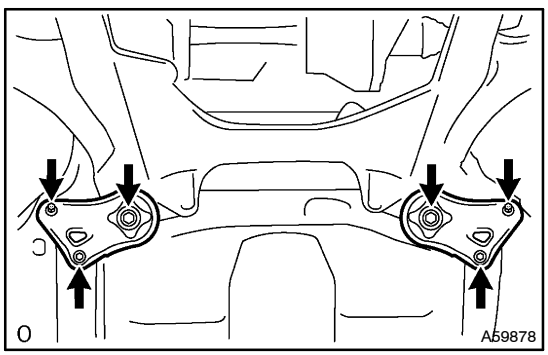

(d) To prevent form rotating the steering wheel, fix the wheel with seat belt.

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

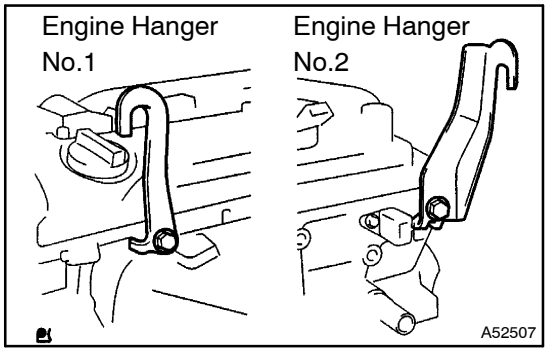



**44. REMOVE ENGINE ASSEMBLY WITH TRANSAXLE**

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

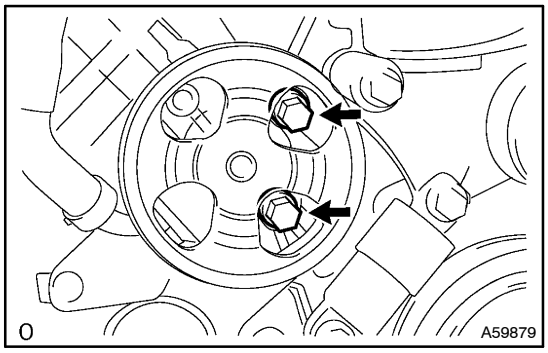



(c) Remove the 4 bolts, 2 nuts and front suspension member brace rear RH and LH.
(d) Carefully, remove the engine assembly from the vehicle.



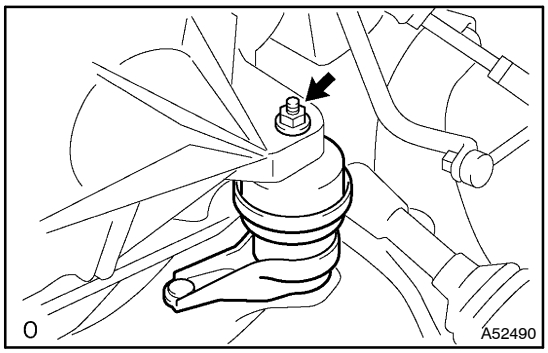

(e) Install the 2 engine hangers as shown in the illustration.
**Parts No. :**
**No. 1 engine hanger 12281–28010**
**No. 2 engine hanger 12282–28010**
**Bolt 91512–61020**
**Torque: 38 N·m (387 kgf·cm, 28 ft·lbf)**

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



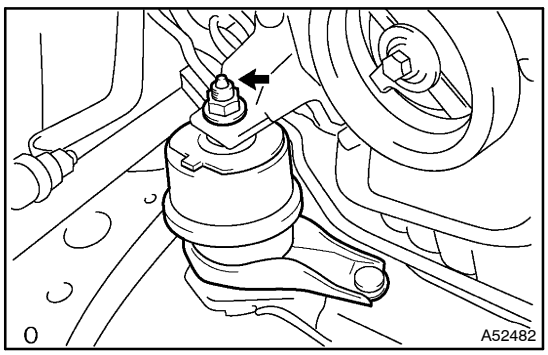

**45. REMOVE VANE PUMP ASSY**

(a) Disconnect the PS oil pressure switch connector.
(b) Remove the 2 bolts and the vane pump from the engine.

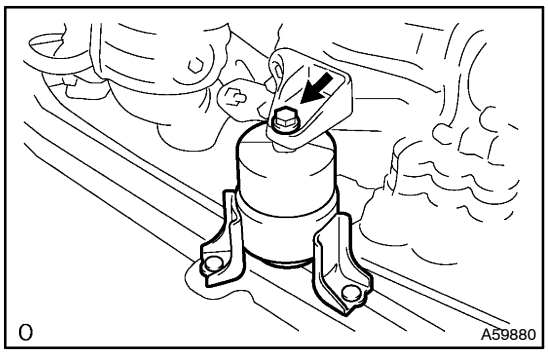



**46. REMOVE FRONT FRAME ASSY**

(a) Remove a nut installing the engine mounting insulator LH.




(b) Remove a nut installing the engine mounting insulator RH.



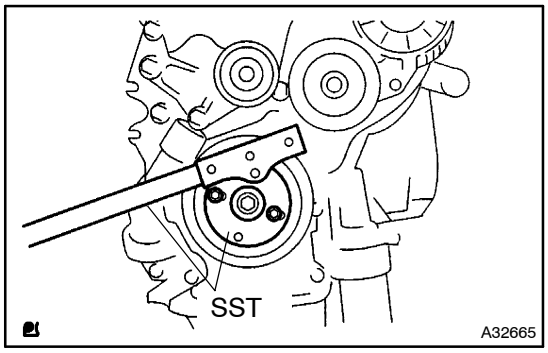

(c) Remove a bolt installing the engine mounting insulator FR.
(d) Raise the engine assembly and separate the front frame.

**47. REMOVE FRONT DRIVE SHAFT ASSY LH**
(See page 30–8)

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

**49. REMOVE STARTER ASSY**
(See page 19–3)

**50. SEPARATE AUTOMATIC TRANSAXLE ASSY**
(See page 40–20)

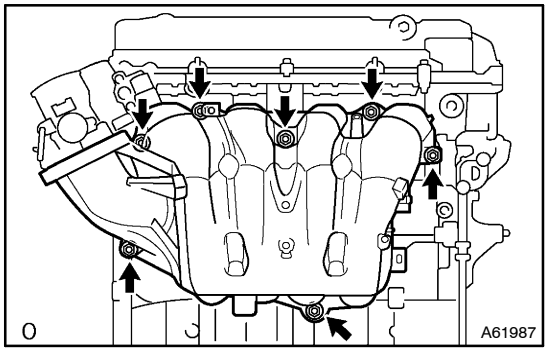



**51. REMOVE DRIVE PLATE & RING GEAR SUB–ASSY**

(a) Fix the crankshaft with SST.
SST 09213–54015 (91651–60855), 09330–00021

(b) Remove the 8 bolts, rear spacer, drive plate and front spacer.

**52. INSTALL ENGINE STAND**




**53. REMOVE INTAKE MANIFOLD**

(a) Remove the 5 bolts, 2 nuts, intake manifold and gasket.

**54. REMOVE VENTILATION HOSE**

**55. REMOVE VENTILATION HOSE NO.2**

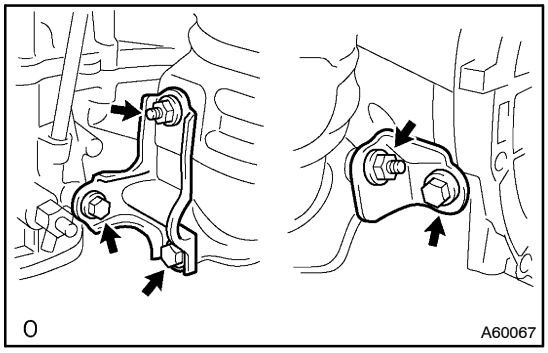
**56. REMOVE ENGINE WIRE**

**57. REMOVE INTAKE MANIFOLD INSULATOR NO.1**

**58. REMOVE OIL LEVEL GAGE SUB–ASSY**

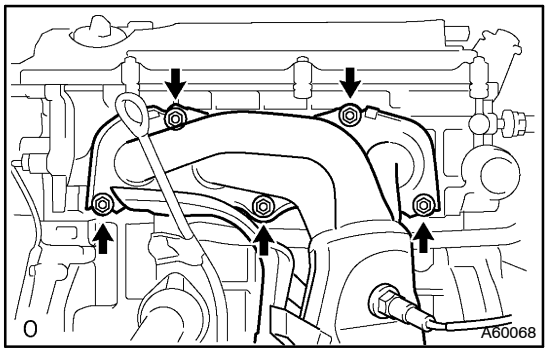
**59. REMOVE OIL LEVEL GAGE GUIDE**

**60. REMOVE MANIFOLD CONVERTER INSULATOR NO.1**




**61. REMOVE EXHAUST MANIFOLD CONVERTER SUB–ASSY**

(a) Remove the 3 bolts, 2 nuts No. 1 and No. 2 exhaust manifold stay.

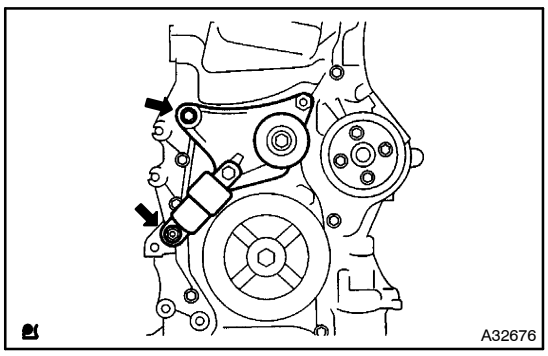



(b) Remove the 5 nuts, exhaust manifold converter and gasket.

**62. REMOVE WATER INLET**

**63. REMOVE THERMOSTAT**

**64. REMOVE IGNITION COIL ASSY**




**65. REMOVE V–RIBBED BELT TENSIONER ASSY**

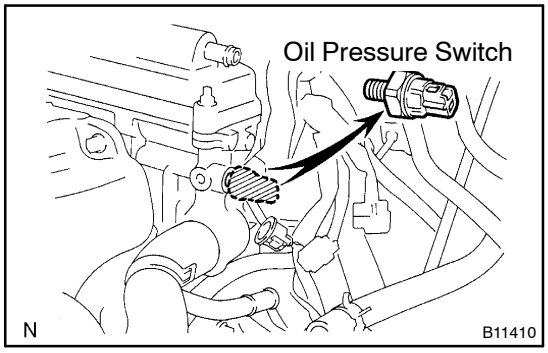
(a) Remove the bolt, nut and the drive belt tensioner.

**66. REMOVE DRIVE SHAFT BEARING BRACKET**

**67. REMOVE TRANSVERSE ENGINE ENGINE MOUNTING BRACKET**

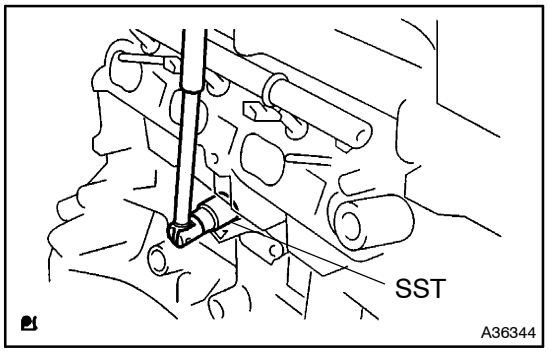
**68. REMOVE FUEL DELIVERY PIPE W/INJECTOR (See page 11–11)**

**69. REMOVE WATER BY–PASS PIPE NO.1**




**70. REMOVE ENGINE OIL PRESSURE SWITCH ASSY**

(a) Remove the oil pressure switch.




**71. REMOVE KNOCK CONTROL SENSOR**

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

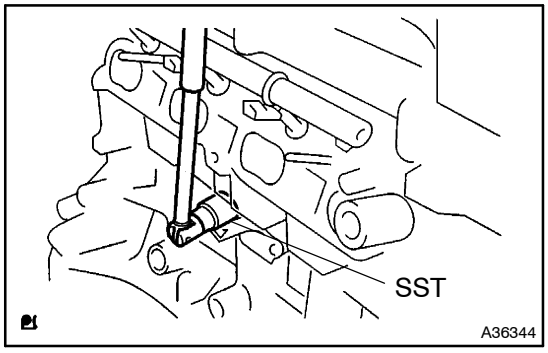
**72. REMOVE E.F.I. ENGINE COOLANT TEMPERATURE SENSOR**

(a) Remove the water temperature sensor.

**73. REPLACE PARTIAL ENGINE ASSY**

**74. INSTALL E.F.I. ENGINE COOLANT TEMPERATURE SENSOR**

(a) Install a new gasket to the water temperature sensor.
(b) Install the water temperature sensor.
**Torque: 20 N·m (208 kgf·cm, 15 ft·lbf)**




**75. INSTALL KNOCK CONTROL SENSOR**

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

**76. INSTALL ENGINE OIL PRESSURE SWITCH ASSY**

(a) Clean the threads of the oil pressure switch, apply adhesive there.
**Adhesive: Part No. 08833–00080 THREE BOND 1344 or equivalent**
(b) Install the oil pressure switch.
**Torque: 15 N·m (153 kgf·cm, 11 ft·lbf)**

**77. INSTALL WATER BY–PASS PIPE NO.1**

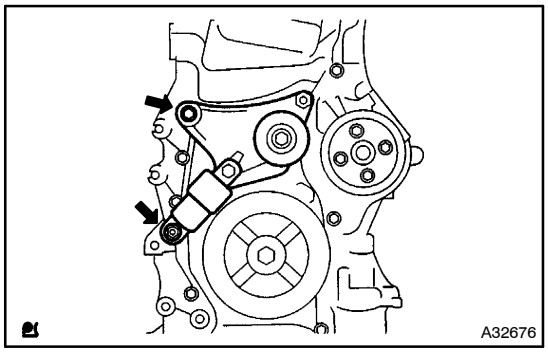
(a) Install a new gasket and the water by–pass pipe No. 1 with the bolt and 2 nuts.
**Torque: 9.0 N·m (92 kgf·cm, 80 in.·lbf)**

**78. INSTALL FUEL DELIVERY PIPE W/INJECTOR (See page 11–11)**
**Torque: 54 N·m (551 kgf·cm, 40 ft·lbf)**

**79. INSTALL TRANSVERSE ENGINE ENGINE MOUNTING BRACKET**

**80. DRIVE SHAFT BEARING BRACKET**

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




**81. INSTALL V–RIBBED BELT TENSIONER ASSY**

(a) Install the drive belt tensioner with the bolt and the nut.
**Torque: 59.5 N·m (607 kgf·cm, 44 ft·lbf)**

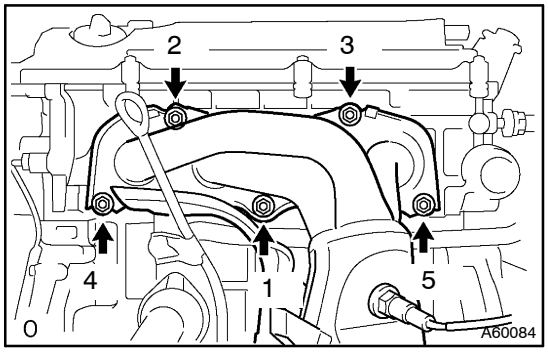
**82. INSTALL IGNITION COIL ASSY**

**Torque: 9.0 N·m (92 kgf·cm, 80 in.·lbf)**

**83. INSTALL THERMOSTAT**
**(See page 16–10)**

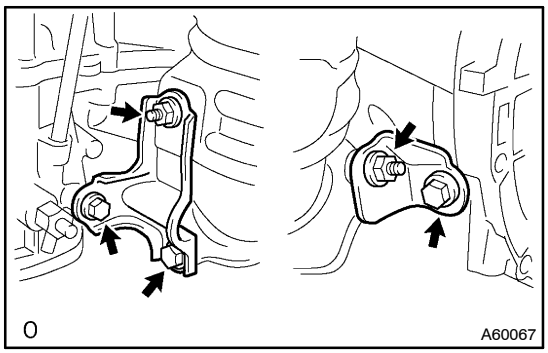
**84. INSTALL WATER INLET**

**Torque: 9.0 N·m (92 kgf·cm, 80 in.·lbf)**




**85. INSTALL EXHAUST MANIFOLD CONVERTER SUB–ASSY**

(a) Install a new gasket and the exhaust manifold converter with the 5 nuts.
**Torque: 37 N·m (378 kgf·cm, 27 ft·lbf)**



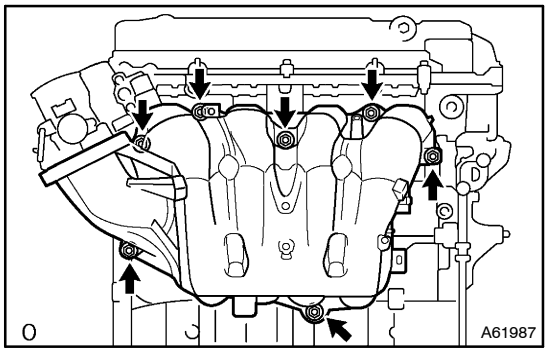

(b) Install the No. 1 and No. 2 exhaust manifold stay with the 3 bolts and 2 nuts.
**Torque: 44 N·m (449 kgf·cm, 32 ft·lbf)**

**86. INSTALL MANIFOLD CONVERTER INSULATOR NO.1**

**Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)**

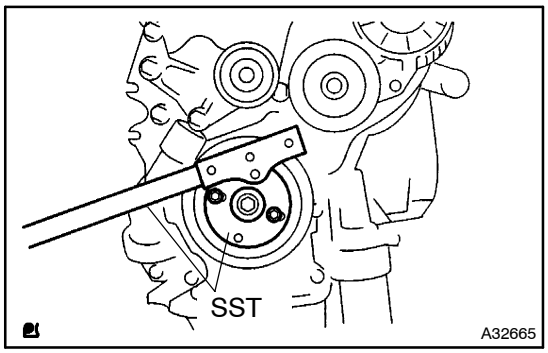
**87. INSTALL OIL LEVEL GAGE GUIDE**

(a) Apply a light coat of engine oil to the O–ring, install it to the guide.
(b) Install the oil level gage and guide with the bolt.
**Torque: 9.0 N·m (92 kgf·cm, 80 in.·lbf)**



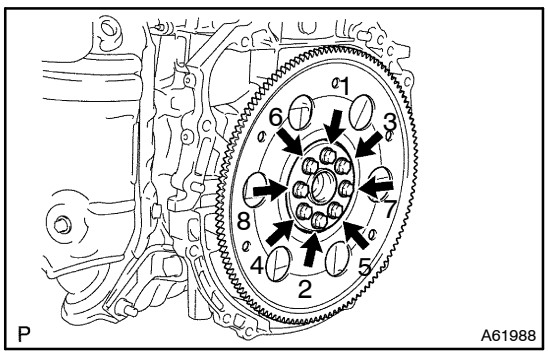

**88. INSTALL INTAKE MANIFOLD**

(a) Install a new gasket and the intake manifold with the 5 bolts and 2 nuts.
**Torque: 30 N·m (306 kgf·cm, 22 ft·lbf)**




**89. INSTALL DRIVE PLATE & RING GEAR SUB–ASSY**

(a) Fix the crankshaft with SST.
SST 09213–54015 (91651–60855), 09330–00021
(b) Clean the bolt and the bolt hole.
(c) Apply Adhesive to 2 or 3 threads of the bolt end.
**Adhesive:**
**Part No. 08833–00070, THREE BOND or equivalent.**

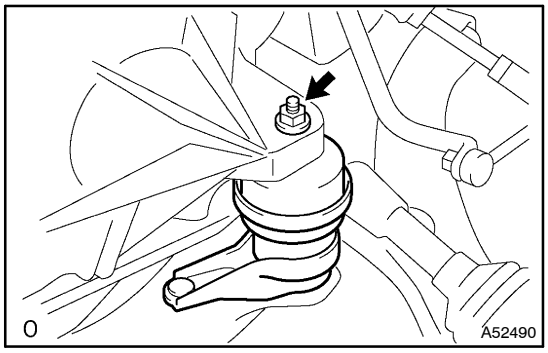



(d) Install and uniformly tighten the 8 bolts, in several passes, in the sequence shown.
**Torque: 98 N·m (1,000 kgf·cm, 72 ft·lbf)**

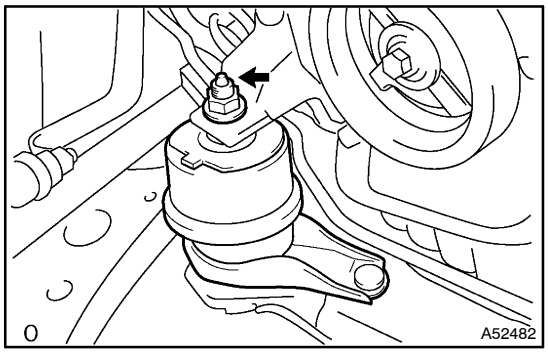
**90. INSTALL AUTOMATIC TRANSAXLE ASSY**
**(See page 40–20)**
**91. INSTALL STARTER ASSY**

**92. INSTALL FRONT DRIVE SHAFT ASSY RH**
**(See page 30–8)**
**Torque: 39 N·m (398 kgf·cm, 29 ft·lbf)**
**93. INSTALL FRONT DRIVE SHAFT ASSY LH**
**(See page 30–8)**

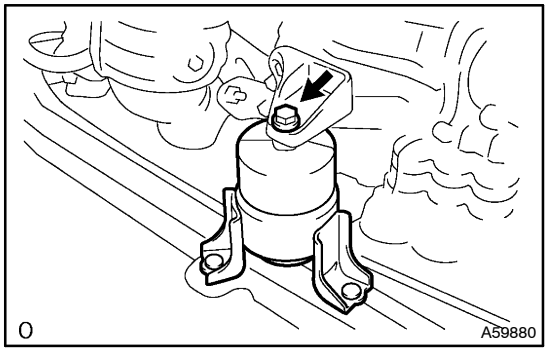
## 94. INSTALL FRONT FRAME ASSY



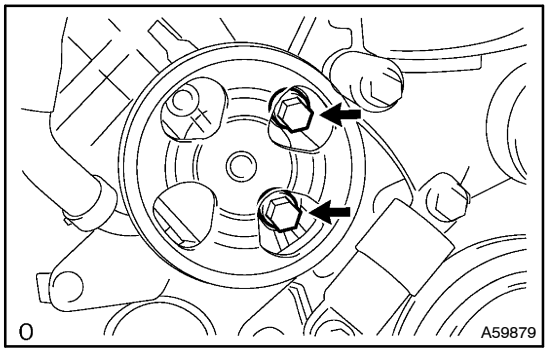

(a) Install the engine mounting insulator LH with a nut (A/T).
**Torque: 95 N·m (969 kgf·cm, 70 ft·lbf)**




(b) Install the engine mounting insulator RH with a nut.
**Torque: 95 N·m (969 kgf·cm, 70 ft·lbf)**

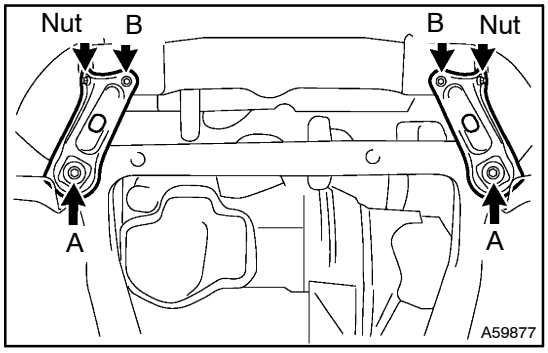



(c) Install the engine mounting insulator FR with a bolt.
**Torque: 87 N·m (888 kgf·cm, 64 ft·lbf)**




## 95. INSTALL VANE PUMP ASSY

(a) Connect the vane pump to the engine with the 2 bolts.
**Torque: 43 N·m (439 kgf·cm, 31 ft·lbf)**



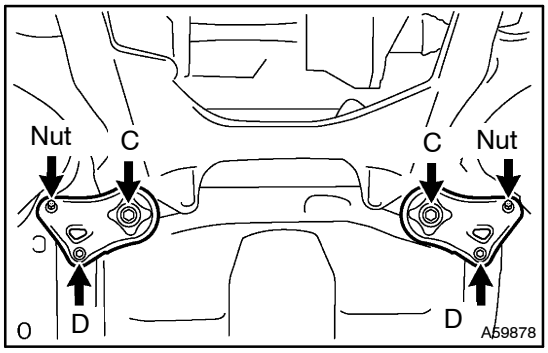

**96. INSTALL ENGINE ASSEMBLY WITH TRANSAXLE**

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

(b) Install the engine assembly to the vehicle.

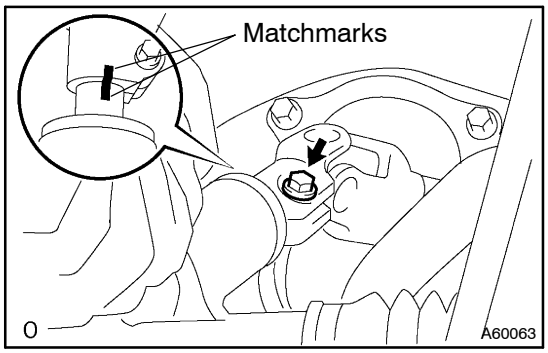
(c) Install the frame side plate LH and RH with 4 bolts and 2 nuts.

**Torque:**
**Bolt A 85N·m (867 kgf·cm, 63 ft·lbf)**
**Bolt B, Nut 32 N·m (326 kgf·cm, 24 ft·lbf)**




(d) Install the front suspension member brace rear RH and LH with 4 bolts and 2 nuts.

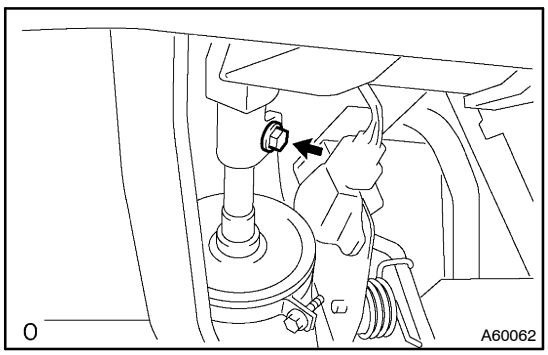
**Torque:**
**Bolt C 85N·m (867 kgf·cm, 63 ft·lbf)**
**Bolt D, Nut 32 N·m (326 kgf·cm, 24 ft·lbf)**




**97. INSTALL STEERING INTERMEDIATE SHAFT SUB–ASSY**

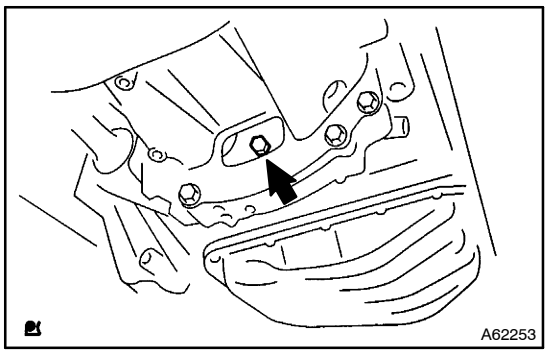
(a) Align the matchmarks on the intermediate shaft and control valve shaft.

**Torque: 35 N·m (357 kgf·cm, 26 ft·lbf)**




(b) Tighten the bolt.

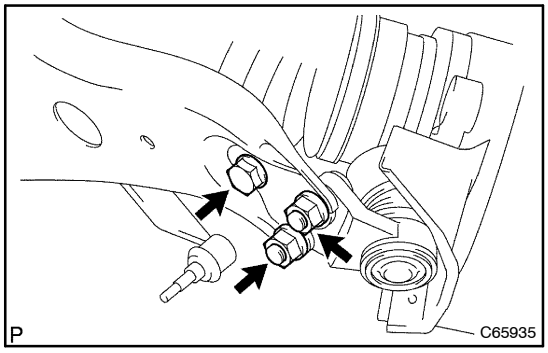
**Torque: 35 N·m (357 kgf·cm, 26 ft·lbf)**




**98. INSTALL DRIVE PLATE & TORQUE CONVERTER CLUTCH SETTING BOLT**

(a) Fix the crank shaft, and install the 6 set bolts.

**Torque: 41 N·m (418 kgf·cm, 30 ft·lbf)**




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

(a) Install the drive shaft to steering knucle.
(b) Install the suspension lower arm with the bolt and the 2 nuts.
**Torque: 127 N·m (1,296 kgf·cm, 94 ft·lbf)**

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

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

**101. 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.

**102. INSTALL TIE ROD ASSY RH**

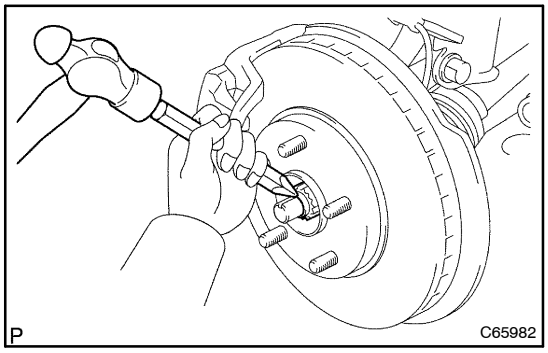
HINT:
Perform the same procedure as above on the opposite side.

**103. INSTALL SPEED SENSOR FRONT LH**

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

**104. INSTALL SPEED SENSOR FRONT RH**

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




**105. INSTALL FRONT AXLE HUB LH NUT**

(a) Using a 30 mm socket wrench, install a new hub nut.
**Torque: 294 N·m (3,000 kgf·cm, 217 ft·lbf)**
(b) Using a chisel, stake the hub nut.

**106. INSTALL FRONT AXLE HUB RH NUT**

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

**107. INSTALL FRONT STABILIZER LINK ASSY LH**

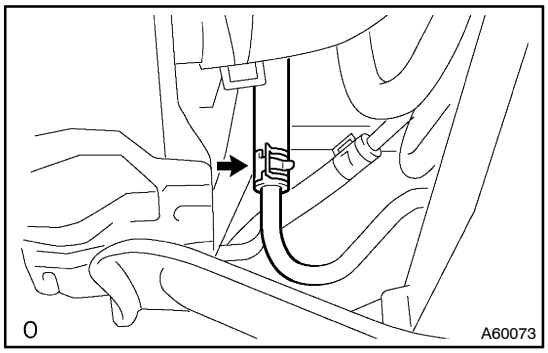
(a) Install the nut by using a 5 mm socket hexagon wrench to fix the stud bolt.
**Torque: 74 N·m (755 kgf·cm, 55 ft·lbf)**

**108. INSTALL FRONT STABILIZER LINK ASSY RH**

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

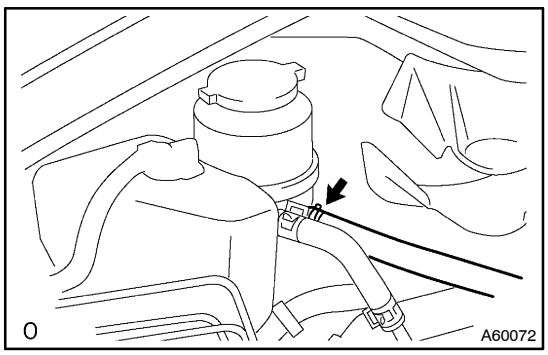
**109. INSTALL EXHAUST PIPE ASSY FRONT**
**(See page 15–2)**

**110. CONNECT FUEL TUBE SUB–ASSY**
**(See page 11–1)**




**111. INSTALL RETURN TUBE SUB–ASSY**

(a) Install the return tube.




**112. INSTALL OIL RESERVOIR TO PUMP HOSE NO.1**

(a) Install the hose No. 1.

**113. INSTALL COMPRESSOR AND MAGNETIC CLUTCH (See page 55–51)**

**114. INSTALL GENERATOR ASSY**
**(See page 19–7)**

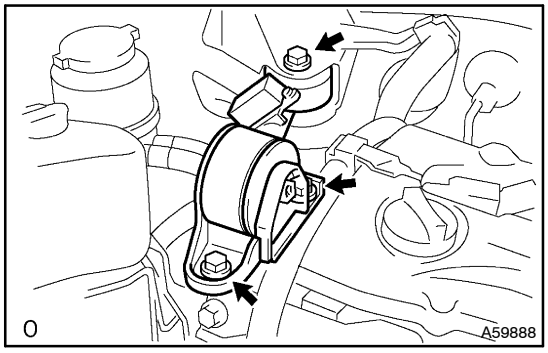
**115. INSTALL FAN AND GENERATOR V BELT**
**(See page 14–5)**
SST 09249–63010

**116. INSTALL ENGINE MOUNTING BRACKET NO.2 RH**

**Torque: 52 N·m (531 kgf·cm, 38 ft·lbf)**

**117. INSTALL ENGINE MOUNTING STAY NO.2 RH**

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




**118. INSTALL ENGINE MOVING CONTROL ROD W/BRACKET**

(a) Install the engine mounting control rod w/bracket with 3 bolts.

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

**119. INSTALL AIR CLEANER ASSY**

**Torque: 5.0 N·m (51 kgf·cm, 44 in.·lbf)**

**120. ADD AUTOMATIC TRANSAXLE FLUID**

**121. ADD ENGINE OIL**

**122. ADD COOLANT (See page 16–6)**

**123. INSPECT OIL LEAK**

**124. CHECK ENGINE COOLANT LEAK (See page 16–6)**

**125. INSPECT FUEL LEAK (See page 11–1)**

**126. INSTALL FRONT WHEEL**

**Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)**

**127. ADJUST FRONT WHEEL ALIGNMENT (See page 26–4)**

**128. INSPECT CHECK IDLE SPEED AND IGNITION TIMING (See page 14–1)**

**129. INSPECT CO/HC (See page 14–1)**

**130. CHECK ABS SPEED SENSOR SIGNAL (See page 05–451 or 05–511)**