

## INSPECTION

### 1. INSPECT INTAKE MANIFOLD FOR WARPAGE

- (a) Using a precision straight edge and feeler gauge, measure the warpage of the contact surfaces of the cylinder head and intake air surge tank.

**Maximum warpage:**

**Intake air surge tank side:**

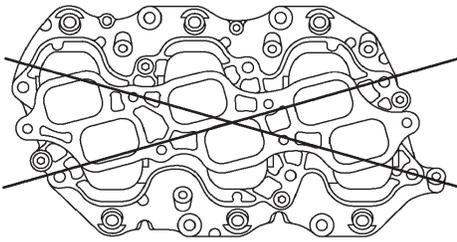
**0.8 mm (0.031 in.)**

**Cylinder head side:**

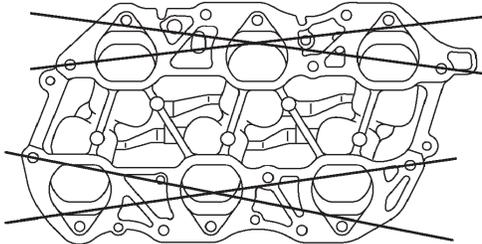
**0.2 mm (0.008 in.)**

If the warpage is greater than the maximum, replace the intake manifold.

Intake Air Surge Tank Side



Cylinder Head Side



Y

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## INSTALLATION

### 1. INSTALL ENGINE WIRE

- (a) Connect the connectors to the engine.
- (b) Engage the clamps to the engine.
- (c) Connect the connector to the knock sensor sub wire.
- (d) Install the ground wire onto the bank 2 cylinder head with the bolt.  
**Torque: 8.0 N\*m (82 kgf\*cm, 71 in.\*lbf)**
- (e) Install the ground wire onto the bank 1 cylinder head with the bolt.  
**Torque: 8.0 N\*m (82 kgf\*cm, 71 in.\*lbf)**

### 2. INSTALL OIL LEVEL GAUGE SUB-ASSEMBLY

### 3. INSTALL OIL FILLER CAP HOUSING

- (a) Install a new gasket.
- (b) Install the oil filler cap housing with the 2 nuts.  
**Torque: 9.0 N\*m (92 kgf\*cm, 80 in.\*lbf)**

### 4. INSTALL OIL FILLER CAP SUB-ASSEMBLY

### 5. INSTALL IGNITION COIL ASSEMBLY (See page [IG-8](#))

### 6. INSTALL INTAKE MANIFOLD (See page [EM-96](#))

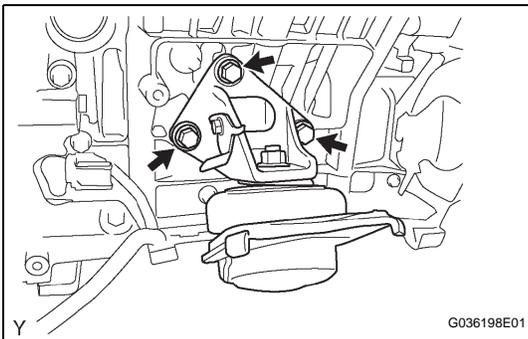
### 7. INSTALL NO. 1 IDLER PULLEY SUB-ASSEMBLY (See page [EM-32](#))

### 8. INSTALL NO. 2 IDLER PULLEY SUB-ASSEMBLY (See page [EM-33](#))

### 9. INSTALL V-RIBBED BELT TENSIONER ASSEMBLY (See page [EM-33](#))

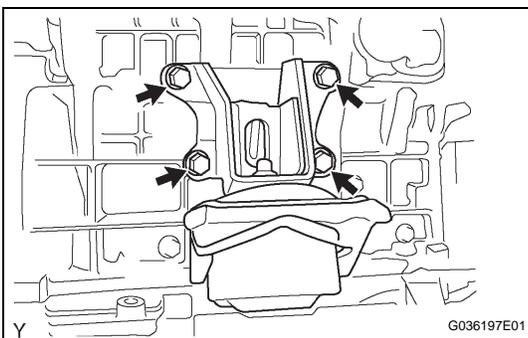
### 10. INSTALL FRONT NO. 1 ENGINE MOUNTING BRACKET LH

- (a) Install the engine mounting bracket with engine mounting insulator with the 3 bolts.  
**Torque: 43 N\*m (435 kgf\*cm, 31 ft.\*lbf)**



### 11. INSTALL FRONT NO. 1 ENGINE MOUNTING BRACKET RH

- (a) Install the engine mounting bracket with engine mounting insulator with the 4 bolts.  
**Torque: 43 N\*m (435 kgf\*cm, 31 ft.\*lbf)**

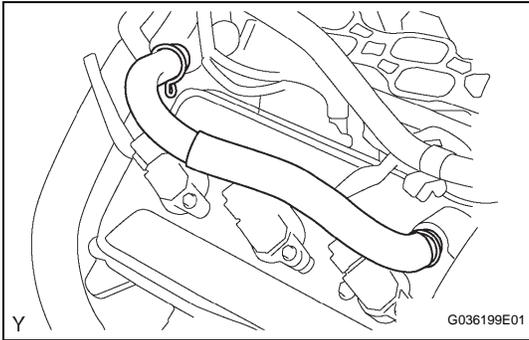


### 12. INSTALL EXHAUST MANIFOLD SUB-ASSEMBLY LH (See page [EM-96](#))

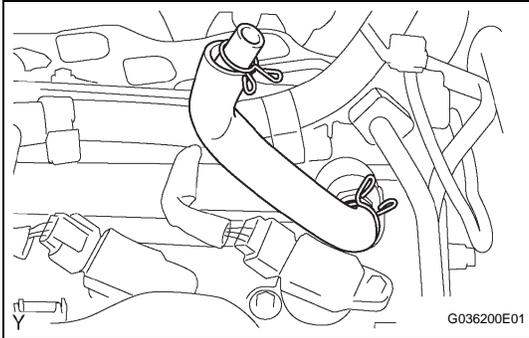
### 13. INSTALL NO. 2 MANIFOLD STAY (See page [EM-96](#))

### 14. INSTALL EXHAUST MANIFOLD SUB-ASSEMBLY RH (See page [EM-97](#))

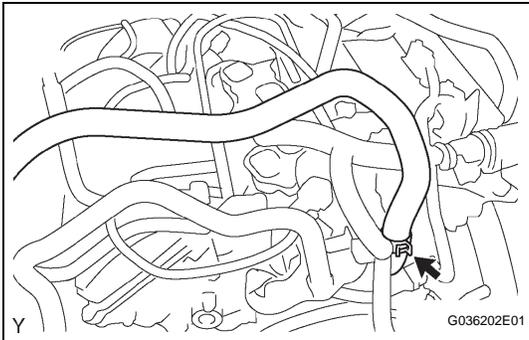
### 15. INSTALL MANIFOLD STAY (See page [EM-97](#))



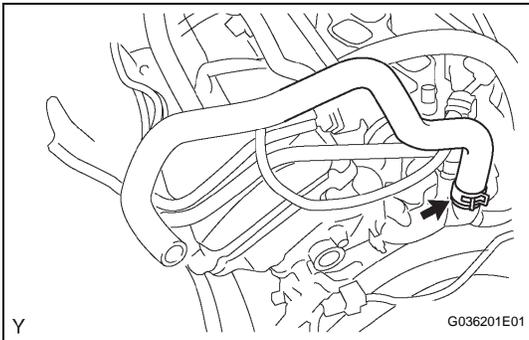
16. INSTALL NO. 2 VENTILATION HOSE



17. INSTALL VENTILATION HOSE

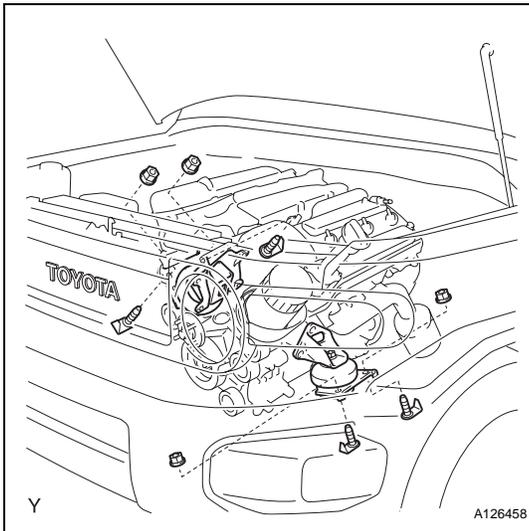


18. INSTALL HEATER OUTLET WATER HOSE



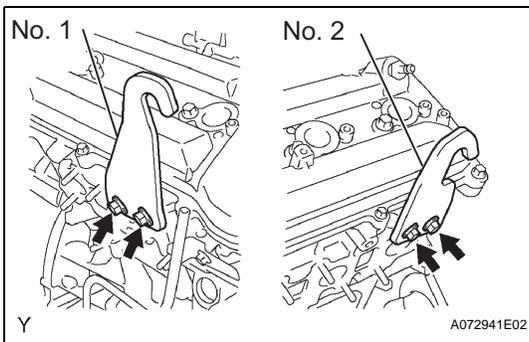
19. INSTALL HEATER INLET WATER HOSE

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## 20. INSTALL ENGINE ASSEMBLY

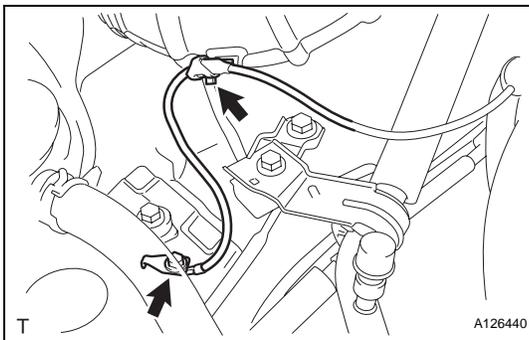
- Attach the engine sling device and hang the engine with a chain block.
- Lower the engine into the engine compartment carefully.
- Attach the engine mounting brackets to the frame brackets.
- Install the engine mounting brackets onto the frame brackets with the 4 bolts and 4 nuts.  
**Torque: 38 N\*m (387 kgf\*cm, 28 ft.\*lbf)**



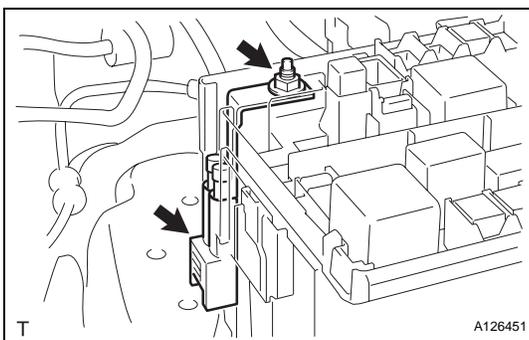
- Remove the 4 bolts and 2 engine hangers.

## 21. INSTALL ENGINE WIRE

- Connect the front differential connector (for Automatic Transmission 4WD).

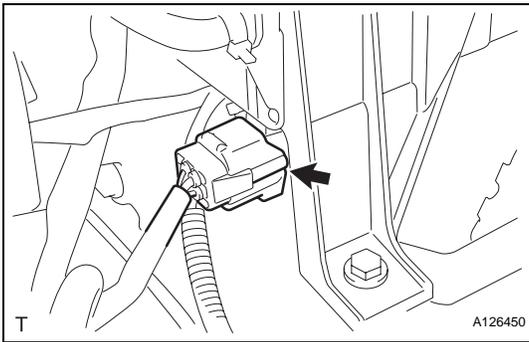


- Install the ground wire with the bolt and engage the clamp.  
**Torque: 8.4 N\*m (85 kgf\*cm, 74 in.\*lbf)**
- Connect the 2 connectors to the A/C unit.
- Connect the 3 connectors to the ECM.
- Connect the connector to the four wheel drive ECU (for Automatic Transmission 4WD).
- Install the glove compartment door (see page [IP-28](#)).

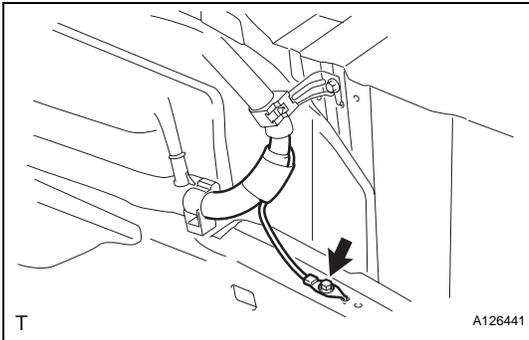


## 22. INSTALL NO. 2 ENGINE WIRE

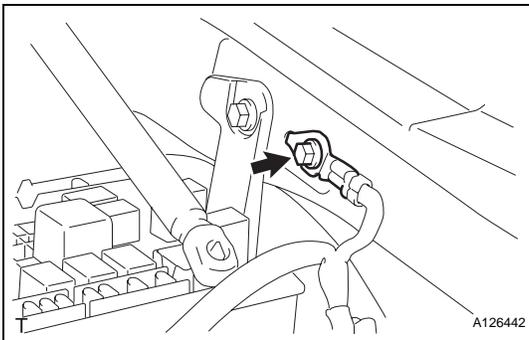
- Install the engine wire onto the engine room relay block with the nut.  
**Torque: 10 N\*m (102 kgf\*cm, 7.4 ft.\*lbf)**



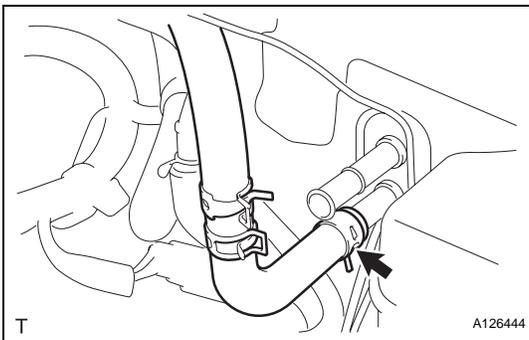
- (b) Connect the connector to the engine room relay block.



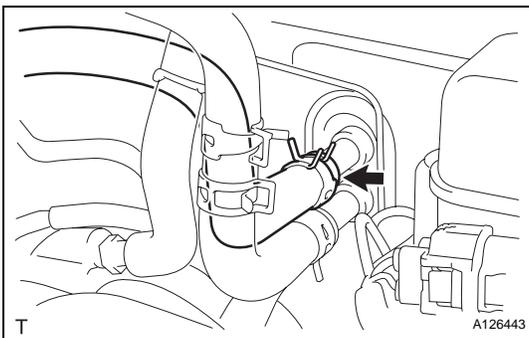
- (c) Install the ground wire onto the frame with the bolt.  
**Torque: 19 N\*m (195 kgf\*cm, 14 ft.\*lbf)**



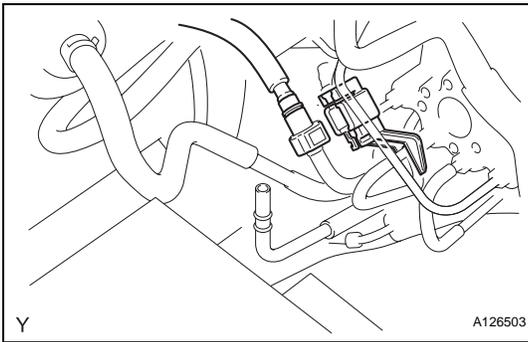
- (d) Install the ground wire onto the body with the bolt.  
**Torque: 8.4 N\*m (85 kgf\*cm, 7.4 in.\*lbf)**



### 23. CONNECT HEATER WATER OUTLET HOSE A (FROM HEATER UNIT)



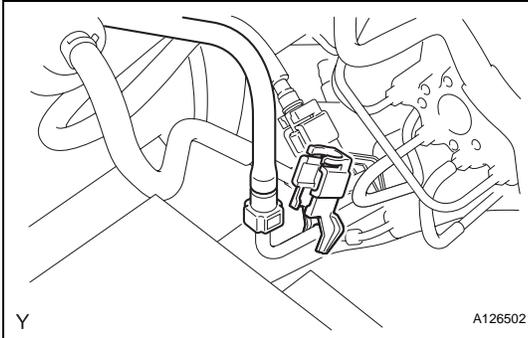
### 24. CONNECT HEATER INLET WATER HOSE

**25. CONNECT NO. 2 FUEL PIPE SUB-ASSEMBLY**

- (a) Connect the No. 2 fuel tube connector and fuel pipe, and install the No. 2 fuel pipe clamp.

**NOTICE:**

Align the fuel tube connector with the pipe, then push the fuel tube connector in until the retainer makes a click sound. If the connection is tight, apply a small amount of engine oil to the tip of the pipe. After connecting, pull the pipe and connector to make sure that they are securely connected.

**26. CONNECT NO. 1 FUEL PIPE SUB-ASSEMBLY**

- (a) Connect the No. 1 fuel tube connector and fuel pipe, and install the No. 2 fuel pipe clamp.

**NOTICE:**

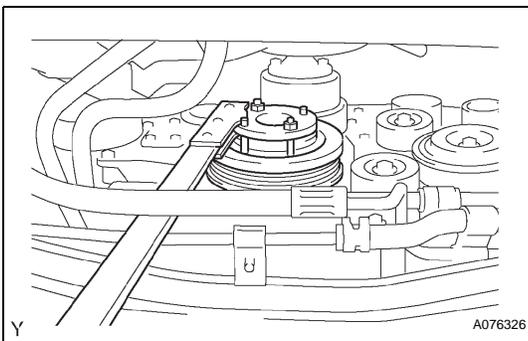
Align the fuel tube connector with the pipe, then push the fuel tube connector in until the retainer makes a click sound. If the connection is tight, apply a small amount of engine oil to the tip of the pipe. After connecting, pull the pipe and connector to make sure that they are securely connected.

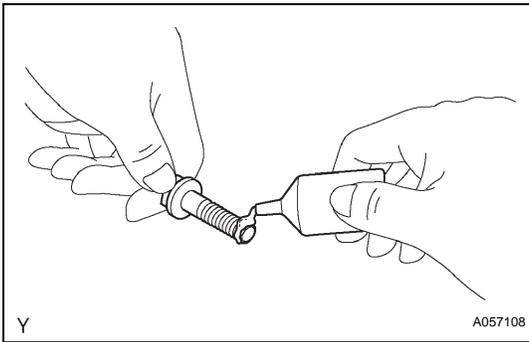
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**27. INSTALL VANE PUMP ASSEMBLY (See page PS-14)****28. INSTALL COOLER COMPRESSOR ASSEMBLY (See page ES-421)****29. INSTALL GENERATOR ASSEMBLY (See page CH-17)****30. INSTALL INTAKE AIR SURGE TANK (See page FU-17)****31. INSTALL NO. 2 SURGE TANK STAY (See page FU-19)****32. INSTALL NO. 1 SURGE TANK STAY (See page FU-19)****33. INSTALL OIL BAFFLE PLATE (See page FU-19)****34. INSTALL THROTTLE BODY BRACKET (See page FU-19)****35. INSTALL FLYWHEEL SUB-ASSEMBLY (for Manual Transmission)**

- (a) Using SST, hold the crankshaft.

**SST 09213-54015 (91651-60855), 09330-00021**

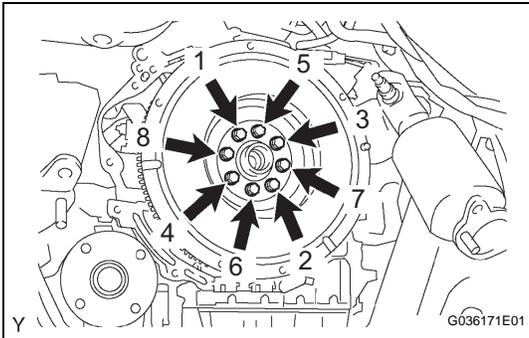




- (b) Apply adhesive to the 2 or 3 end threads of the bolts.

**Adhesive:**

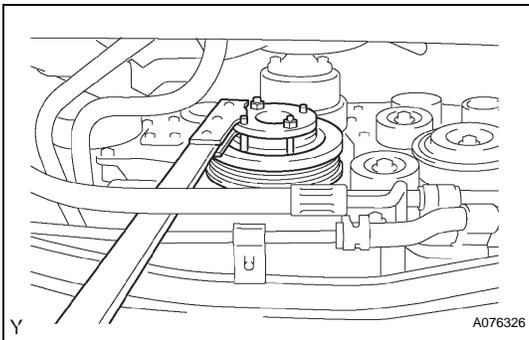
**Toyota Genuine Adhesive 1324, Three Bond 1324 or the equivalent.**



- (c) Install the flywheel and 2 spacers onto the crankshaft.

- (d) Install the flywheel with the 6 bolts in the order shown in the illustration.

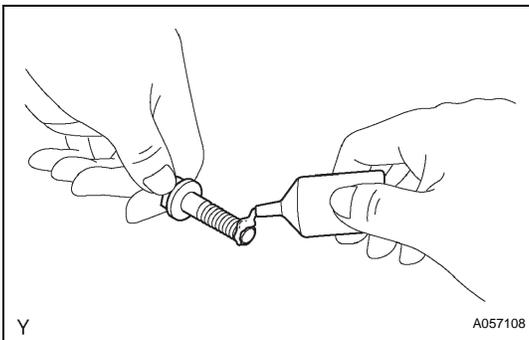
**Torque: 83 N\*m (846 kgf\*cm, 61 ft.\*lbf)**



**36. INSTALL DRIVE PLATE AND RING GEAR SUB-ASSEMBLY (for Automatic Transmission)**

- (a) Using SST, hold the crankshaft.

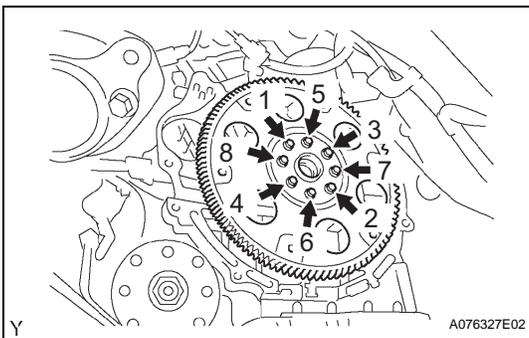
**SST 09213-54015 (91651-60855), 09330-00021**



- (b) Apply adhesive to the 2 or 3 end threads of the bolts.

**Adhesive:**

**Toyota Genuine Adhesive 1324, Three Bond 1324 or the equivalent.**



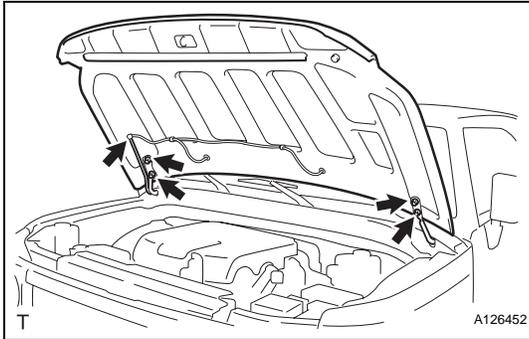
- (c) Install the drive plate and 2 spacers onto the crankshaft.

- (d) Install the drive plate with the 6 bolts in the order shown in the illustration.

**Torque: 83 N\*m (846 kgf\*cm, 61 ft.\*lbf)**

**37. INSTALL CLUTCH DISC ASSEMBLY (for Manual Transmission)**

Refer to the procedures up to "INSTALL CLUTCH DISC ASSEMBLY" (See page [CL-23](#)).



- 38. INSTALL MANUAL TRANSMISSION UNIT ASSEMBLY (for Manual Transmission)**  
Refer to the procedures up to "INSTALL MANUAL TRANSMISSION" (See page [MT-11](#)).
- 39. INSTALL AUTOMATIC TRANSMISSION ASSEMBLY (for Automatic Transmission)**  
Refer to the procedures up to "INSTALL AUTOMATIC TRANSMISSION" (See page [AT-175](#) or [AT-181](#)).
- 40. INSTALL RADIATOR ASSEMBLY**  
Refer to the procedures up to "INSTALL RADIATOR ASSEMBLY" (See page [CO-28](#)).
- 41. INSTALL HOOD SUB-ASSEMBLY**
  - (a) Install the hood with the 4 bolts.
  - (b) Connect the windshield washer hose.
- 42. INSTALL HOOD SUPPORT (See page [ED-5](#))**
- 43. INSTALL BATTERY**
- 44. ADD ENGINE COOLANT (See page [CO-3](#))**
- 45. ADD ENGINE OIL (See page [LU-5](#))**
- 46. PERFORM INITIALIZATION (for Automatic Transmission)**  
(See page [AT-19](#) or [AT-19](#))
- 47. CHECK FOR ENGINE COOLANT LEAKAGE (See page [CO-4](#))**
- 48. CHECK FOR ENGINE OIL LEAKAGE**
- 49. CHECK FOR FUEL LEAKAGE**
- 50. CHECK FOR EXHAUST GAS LEAKAGE**
- 51. INSPECT IGNITION TIMING (See page [EM-1](#))**
- 52. INSPECT ENGINE IDLING SPEED (See page [EM-2](#))**
- 53. INSPECT COMPRESSION (See page [EM-3](#))**
- 54. INSPECT CO/HC (See page [EM-3](#))**
- 55. INSPECT AND ADJUST FRONT WHEEL ALIGNMENT**  
Refer to the procedures up to "INSPECT AND ADJUST FRONT WHEEL ALIGNMENT" (See page [SP-2](#)).