LUBRICATION SYSTEM

ON-VEHICLE INSPECTION

1. CHECK ENGINE OIL LEVEL
   (a) Warm up the engine, stop the engine and wait for 5 minutes. The oil level should be between the dipstick’s low and full level marks. If the oil level is low, check for leakage and add oil up to the full level mark.
   NOTICE:
   Do not fill engine oil above the full level mark.

2. CHECK ENGINE OIL QUALITY
   (a) Check the oil for deterioration, water contamination, discoloring or thinning. If the quality is visibly poor, replace the oil.
   HINT:
   • TOYOTA Genuine Motor Oil is in this vehicle when it is shipped.
   • Use TOYOTA approved TOYOTA Genuine Motor Oil or equivalent to satisfy the following grade and viscosity.
   Oil grade:
   ILSAC multigrade engine oil is recommended. SAE 5W-30 is the best choice for good fuel economy and good starting in cold weather.
   If SAE 5W-30 is not available, SAE 10W-30 may be used. However, it should be replaced with SAE 5W-30 at the next oil change.

3. CHECK ENGINE OIL PRESSURE
   (a) Disconnect the oil pressure switch connector.

Recommended Viscosity (SAE):

5W-30

°F  -20  0  20  40  60  80  100
°C  -29  -18  -7  4  16  27  38

Temperature Range Anticipated Before Next Oil Change
(b) Using a 24 mm deep socket wrench, remove the oil pressure switch.

(c) Install the oil pressure gauge.
(d) Warm up the engine.
(e) Measure the oil pressure.

**Standard oil pressure**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Specified Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idle</td>
<td>80 kPa (0.8 kgf/cm², 11.6 psi) or more</td>
</tr>
<tr>
<td>6,000 rpm</td>
<td>380 kPa (3.9 kgf/cm², 55.5 psi) or more</td>
</tr>
</tbody>
</table>

If the oil pressure is not as specified, check the oil pump.

(f) Remove the oil pressure gauge.

(g) Apply adhesive to 2 or 3 threads of the oil pressure switch.

**Adhesive:**
- Toyota Genuine Adhesive 1344, Three Bond 1344 or Equivalent

(h) Install the oil pressure switch.

**Torque:** 15 N·m (153 kgf·cm, 11 ft·lbf)

**NOTICE:**
- Do not start the engine for at least 1 hour after installation of the switch.

(i) Connect the oil pressure switch connector.

(j) Start the engine and check for engine oil leaks.
OIL FILTER

COMPONENTS

- OIL FILTER CAP
- OIL FILTER ELEMENT
- O-RING
- GASKET
- DRAIN PLUG

N*m (kgf*cm, ft.*lbf): Specified torque

○ Non-reusable part
REPLACEMENT

CAUTION:

- Prolonged and repeated contact with mineral oil will result in the loss of the skin’s natural oils, leading to dryness, irritation and dermatitis. In addition, used engine oil contains potentially harmful contaminants which may cause skin cancer.
- Wear protective clothing and gloves. Avoid contact with used oil. If contact occurs, wash the area thoroughly with soap and waterless hand cleaner. Never use gasoline, thinners, or solvents to wash the skin.
- In order to protect the environment, dispose of used oil and used oil filters at designated disposal sites only.

1. DRAIN ENGINE OIL
   (a) Remove the oil filler cap.
   (b) Remove the oil drain plug and gasket, and drain the engine oil into a container.

2. REMOVE OIL FILTER CAP ASSEMBLY
   (a) Connect the hose to a pipe.
       HINT:
       The drain pipe is supplied with the oil filter element.
   (b) Remove the oil filter drain plug and O-ring, and then insert the drain pipe into the oil filter cap and drain the engine oil into a container.
(c) Make sure that oil is completely drained, and remove the pipe and O-ring.
HINT:
Be sure to turn the pipe in the direction of the arrow to remove it.

(d) Using SST, remove the oil filter cap together with the oil filter element.
SST 09228-06501

3. REMOVE OIL FILTER ELEMENT
(a) Remove the oil filter element and 2 O-rings from the oil filter cap.
NOTICE:
Be sure to remove the O-ring (for the cap) by hand, without using any tools, to prevent damage to the groove for the O-ring on the cap.

4. INSTALL OIL FILTER ELEMENT
(a) Clean the oil filter cap threads and O-ring groove.

(b) Apply a small amount of engine oil to a new O-ring and install it to the oil filter cap.

(c) Set a new oil filter element in the oil filter cap.

5. INSTALL OIL FILTER CAP ASSEMBLY
(a) Remove any dirt or foreign matter from the installation surface and inside of the engine.

(b) Apply a small amount of engine oil to the O-ring again and install the oil filter cap.
NOTICE:
Be careful that the O-ring does not get caught between the parts.
(c) Using SST, tighten the oil filter cap.
   **SST 09228-06501**
   Torque: 25 N*m (255 kgf*cm, 18 ft.*lbf)
   **NOTICE:**
   - Make sure that the oil filter is installed securely as shown in the illustration.
   - Be careful that the O-ring does not get caught between the parts.

(d) Apply a small amount of engine oil to a new drain plug O-ring, and install it to the oil filter cap.
   **NOTICE:**
   Before installing the O-ring, remove any dirt or foreign matter from the installation surface of the oil filter cap.

(e) Install the oil filter drain plug to the filter cap.
   **Torque: 12.5 N*m (127 kgf*cm, 9 ft.*lbf)**
   **NOTICE:**
   Be careful that the O-ring does not get caught between the parts.

6. **ADD ENGINE OIL**
   (a) Wipe the oil pan and drain plug before installing the plug.
   (b) Install a new gasket and the oil pan drain plug.
      **Torque: 40 N*m (408 kgf*cm, 30 ft.*lbf)**
   (c) Add new oil.
      **Standard oil capacity**

<table>
<thead>
<tr>
<th>Item</th>
<th>Specified Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drain and refill with oil filter change</td>
<td>6.1 liters (6.4 US qts, 5.4 Imp. qts)</td>
</tr>
<tr>
<td>Drain and refill without oil filter change</td>
<td>5.7 liters (6.0 US qts, 5.0 Imp. qts)</td>
</tr>
<tr>
<td>Dry fill</td>
<td>6.5 liters (6.9 US qts, 5.7 Imp. qts)</td>
</tr>
</tbody>
</table>

(d) Install the oil filler cap.

7. **CHECK FOR ENGINE OIL LEAKS**
   (a) Start the engine. Make sure that no oil leaks from the connection point of the oil filter cap.
8. PERFORM OIL CHANGE REMINDER LIGHT RESET PROCEDURE

NOTICE:
To prevent the oil change reminder light from coming on after changing the engine oil, perform the oil change reminder light reset procedure (see page ME-15).
OIL PUMP

COMPONENTS

- RADIATOR SUPPORT OPENING COVER
- FRONT SUSPENSION MEMBER REINFORCEMENT RH
- FRONT FENDER APRON RH
- NO. 1 ENGINE UNDER COVER

N•m (kgf•cm, ft•lbf) : Specified torque
Non-reusable part

GASKET

GASKET

FAN AND GENERATOR V BELT

IDLER PULLEY ASSEMBLY

ENGINE MOUNTING INSULATOR RH

RADIATOR RESERVOIR

NO. 1 ENGINE COVER

GENERATOR ASSEMBLY

HEATED OXYGEN SENSOR CONNECTOR

FRONT EXHAUST PIPE

N*"m (kgf*cm, ft.*lbf) : Specified torque

• Non-reusable part

5.0 (51, 44 in.*lbf)

7.0 (71, 62 in.*lbf)

95 (969, 70)

8.4 (86, 74 in.*lbf)

9.8 (100, 7)

21 (215, 15)

52 (530, 38)

60 (612, 44)

52 (530, 38)

43 (438, 32)
IGNITION COIL CONNECTOR

IGNITION COIL ASSEMBLY

NO. 2 VENTILATION HOSE

CYLINDER HEAD COVER SUB-ASSEMBLY

VENTILATION HOSE

GASKET

N*m (kgf*cm, ft.*lbf) : Specified torque
NO. 1 CHAIN TENSIONER ASSEMBLY

ENGINE MOUNTING BRACKET RH

V-RIBBED BELT TENSIONER ASSEMBLY

CRANKSHAFT PULLEY

TIMING CHAIN COVER OIL SEAL

CRANKSHAFT POSITION SENSOR

**Non-reusable part**

\[ N \times m (\text{kgf} \cdot \text{cm}, \text{ft} \cdot \text{lbf}) \] : Specified torque
LU–10

2AZ-FE LUBRICATION – OIL PUMP

- Chain Tensioner Slipper
- No. 1 Chain Vibration Damper
- Crankshaft Timing Sprocket
- No. 2 Chain Sub-Assembly
  - Oil Pump Drive Sprocket

- Chain Sub-Assembly
- No. 1 Crankshaft Position Sensor Plate
- Timing Chain Guide
- Oil Pump Drive Shaft Sprocket
- Chain Damper Spring
- Chain Tensioner Plate
- Oil Pan Sub-Assembly
  - Oil Pan Drain Plug

\( N \cdot m \) (kgf*cm, ft.*lbf) : Specified torque

- Non-reusable part

GASKET

- Oil Pump Assembly
  - x 3
  - 19 (194, 14)

- x 2
  - 12 (122, 9)

- 40 (408, 30)

- x 12

9.0 (92, 80 in.*lbf)
OIL PUMP ASSEMBLY

OIL PUMP COVER

OIL PUMP STRAINER

OIL PUMP RELIEF VALVE

OIL PUMP RELIEF VALVE SPRING

OIL PUMP RELIEF VALVE PLUG

DRIVE ROTOR

DRIVEN ROTOR

GASKET

8.8 (90, 78 in.*lbf)

N\text{*}m (kgf*cm, ft.*lbf) : Specified torque

Non-reusable part
OIL PUMP

COMPONENTS

Non-reusable part

N*m (kgf*cm, ft.*lbf) : Specified torque
**2GR-FE LUBRICATION – OIL PUMP**

- **CYLINDER HEAD COVER (for Bank 1)**
  - **GASKET**
  - **SEAL WASHER**
  - **OIL PIPE**
  - **WATER INLET HOUSING**

- **CYLINDER HEAD COVER (for Bank 2)**
  - **GASKET**
  - **SEAL WASHER**
  - **OIL PIPE**

- **OIL CONTROL VALVE FILTER**
  - **GASKET**

- **UNION BOLT**

- **GASKET**

**Specifications**

- N·m (kgf·cm, ft.*lbf): Specified torque
- Non-reusable part
LU–10 2GR-FE LUBRICATION – OIL PUMP

Non-reusable part: Specified torque N*m (kgf*cm, ft.*lbf) 
43 (438, 32)

TIMING CHAIN COVER OIL SEAL

CRANKSHAFT PULLEY

OIL PUMP GASKET

N*m (kgf*cm, ft.*lbf) : Specified torque

*1: Do not allow oil to contact these bolts

A132051E01
**2GR-FE LUBRICATION – OIL PUMP**

- **OIL PUMP COVER**: Specified torque N·m (kgf·cm, ft·lbf) 9.0 (92, 80 in·lbf)
- **OIL PUMP RELIEF VALVE**
- **RELIEF VALVE SPRING**
- **PLUG**

*N·m (kgf·cm, ft·lbf)*: Specified torque
REMOVAL

1. DISCHARGE FUEL SYSTEM PRESSURE (See page FU-9)

2. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL
   CAUTION:
   Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.

3. REMOVE ENGINE ASSEMBLY
   (a) Remove the engine from the vehicle (see page EM-21).

4. INSTALL ENGINE TO STAND

5. REMOVE NO. 2 OIL DIPSTICK GUIDE
   (a) Remove the oil dipstick.
   (b) Remove the bolt and dipstick guide.

6. REMOVE OIL DIPSTICK GUIDE
   (a) Remove the bolt and dipstick guide.

7. REMOVE OIL FILTER CAP ASSEMBLY (See page LU-4)

8. REMOVE OIL FILTER ELEMENT KIT (See page LU-5)

9. REMOVE NO. 2 OIL PAN SUB-ASSEMBLY
   (a) Remove the 16 bolts and 2 nuts.
(b) Insert the blade of SST between the oil pan, cut through the applied sealer and remove the oil pan.  
SST 09032-00100
NOTICE:
Be careful not to damage the contact surfaces of the oil pan.

10. REMOVE OIL STRAINER SUB-ASSEMBLY
(a) Remove the bolt, 2 nuts, oil strainer and gasket.

11. REMOVE OIL PAN SUB-ASSEMBLY
(a) Remove the 16 bolts and 2 nuts.
HINT:  
Be sure to clean the bolts and stud bolts and check the threads for cracks or other damage.

(b) Remove the oil pan by prying between the oil pan and cylinder block with a screwdriver.  
NOTICE:
Be careful not to damage the contact surfaces of the cylinder block and oil pan.  
HINT:  
Tape the screwdriver tip before use.
(c) Remove the 2 O-rings from the oil pump.

12. REMOVE WATER INLET HOUSING (See page CO-12)

13. REMOVE OIL PIPE (See page EM-52)

14. REMOVE CYLINDER HEAD COVER SUB-ASSEMBLY (for Bank 1) (See page EM-52)

15. REMOVE NO. 1 OIL PIPE (See page EM-53)

16. REMOVE CYLINDER HEAD COVER SUB-ASSEMBLY (for Bank 2) (See page EM-53)

17. REMOVE CRANKSHAFT PULLEY (See page EM-54)

18. REMOVE TIMING CHAIN COVER SUB-ASSEMBLY (w/ Oil Pump)
   (a) Remove the 23 bolts and 2 nuts as shown in the illustration.

   (b) Remove the timing chain cover by prying between the timing chain cover and cylinder head or cylinder block with a screwdriver.

   HINT:
   Tape the screwdriver tip before use.

   NOTICE:
   Do not damage the contact surfaces of the cylinder head, cylinder block and timing chain cover.
(c) Remove the gasket.

DISASSEMBLY

1. REMOVE OIL PUMP RELIEF VALVE
   (a) Using a 27 mm socket wrench, remove the plug.
   (b) Remove the valve spring and oil pump relief valve.

2. REMOVE OIL PUMP COVER
   (a) Remove the 8 bolts, oil pump cover, drive rotor and driven rotor.
   **NOTICE:**
   Be careful not to damage the drive and driven rotors.
REASSEMBLY

1. INSTALL OIL PUMP ROTOR
   (a) Coat the drive rotor and driven rotor with engine oil.
   (b) Place the drive and driven rotors into the oil pump with the marks facing the pump cover side.

2. INSTALL OIL PUMP COVER
   (a) Install the oil pump cover with the 5 bolts.
   Torque: 8.8 N*m (90 kgf*cm, 78 in.*lbf)

3. INSTALL OIL PUMP RELIEF VALVE
   (a) Coat the relief valve with engine oil.
   (b) Insert the relief valve and spring into the pump body hole.
   (c) Using a 27 mm socket wrench, install the plug.
   Torque: 49 N*m (500 kgf*cm, 36 ft.*lbf)

4. INSTALL OIL PUMP STRAINER
   (a) Install a new gasket and the oil strainer with the 2 nuts.
   Torque: 8.8 N*m (90 kgf*cm, 78 in.*lbf)
INSTALLATION

1. INSTALL OIL PUMP ASSEMBLY
   (a) Install a new gasket and the oil pump with the 3 bolts.
   Torque: 19 N*m (194 kgf*cm, 14 ft.*lbf)

2. INSTALL CHAIN SUB-ASSEMBLY
   (a) Install the chain (see page EM-32).
INSPECTION

1. INSPECT OIL PUMP RELIEF VALVE
   (a) Coat the relief valve with engine oil and drop it into the relief valve hole.
   (b) Check that the relief valve falls in smoothly by its own weight.
       If it does not, replace the relief valve. If necessary, replace the timing chain cover.

2. INSPECT OIL PUMP ROTOR SET
   (a) Install the drive and driven rotors into the timing chain cover with the rotors’ marks facing the cylinder block side. Check that the rotors revolve smoothly.
   (b) Check the tip clearance.
       1) Using a feeler gauge, measure the clearance between the drive rotor and driven rotor tips.
          **Standard tip clearance:**
          0.060 to 0.160 mm (0.0024 to 0.0063 in.)
          **Maximum tip clearance:**
          0.16 mm (0.0063 in.)
          If the tip clearance is greater than the maximum, replace the timing chain cover.
   (c) Check the body clearance.
       1) Using a feeler gauge, measure the clearance between the timing chain cover and driven rotor.
          **Standard body clearance:**
          0.250 to 0.325 mm (0.0098 to 0.0128 in.)
          **Maximum body clearance:**
          0.325 mm (0.0128 in.)
          If the body clearance is greater than the maximum, replace the timing chain cover.
(d) Check the side clearance.
   (1) Using a feeler gauge and precision straightedge, measure the clearance between the rotors and precision straightedge.
   Standard side clearance: 0.030 to 0.090 mm (0.0012 to 0.0035 in.)
   Maximum side clearance: 0.090 mm (0.0035 in.)
   If the side clearance is greater than the maximum, replace the timing chain cover.

REPLACEMENT

1. REPLACE TIMING CHAIN COVER OIL SEAL
   (a) Using a screwdriver, pry out the oil seal.
   HINT:
   Tape the screwdriver tip before use.
   NOTICE:
   Do not damage the surface of the oil seal press fit hole.

   (b) Using SST and a hammer, tap in a new oil seal until its surface is flush with the timing chain cover edge.
   SST 09316-60011 (09316-00011)
   NOTICE:
   • Keep the lip free from foreign matter.
   • Do not tap the oil seal at an angle.
   • Make sure that the oil seal edge does not stick out of the timing chain case.

   (c) Apply MP grease to the lip of the oil seal.

REASSEMBLY

1. INSTALL OIL PUMP COVER
   (a) Install the drive and driven rotors into the timing chain cover with the rotors' marks facing the cylinder block side. Check that the rotors revolve smoothly.

   (b) Install the oil pump cover with the 8 bolts.
   Torque: 9.0 N*m (92 kgf*cm, 80 in.*lbf)
   HINT:
   Bolt length:
   22 mm (0.87 in.) for bolt A
   40 mm (1.58 in.) for bolt B

2. INSTALL OIL PUMP RELIEF VALVE
   (a) Coat the oil pump relief valve with engine oil.
   (b) Install the relief valve and relief valve spring into the timing chain cover hole.
(c) Using a 27 mm socket wrench, install the plug. Torque: 49 N*m (500 kgf*cm, 36 ft.*lb)

**INSTALLATION**

1. INSTALL TIMING CHAIN COVER SUB-ASSEMBLY (w/ Oil Pump)
   
   (a) Install a new gasket.
   
   (b) Align the oil pump’s drive rotor spline and the crankshaft as shown in the illustration.
(c) Apply seal packing in a continuous bead to the engine unit as shown in the illustration.

Seal packing:
Toyota Genuine Seal Packing Block, Three Bond 1207B or Equivalent.
Standard seal diameter:
3.0 mm (0.118 in.) or more
Standard length:
10 mm (0.394 in.)

NOTICE:
• Be sure to clean and degrease the contact surfaces, especially the hatched areas in the illustration.
• When the contact surfaces are wet, wipe them off with an oil-free cloth before applying seal packing.
• Install the timing chin cover within 3 minutes and tighten the bolts within 15 minutes after applying seal packing.
• Do not start the engine for at least 2 hours after the installation.
(d) Apply seal packing in a continuous line to the timing chain cover as shown in the illustration.

Seal packing:
For oil related part:
Toyota Genuine Seal Packing Black, Three Bond 1207B or Equivalent
For water related part:
Toyota Genuine Seal Packing 1282B, Three Bond 1282B or Equivalent
Standard seal diameter

<table>
<thead>
<tr>
<th>Position</th>
<th>Specified Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - A</td>
<td>6.0 mm (0.236 in.)</td>
</tr>
<tr>
<td>B - B</td>
<td>6.5 mm (0.256 in.)</td>
</tr>
<tr>
<td>Continuous line area</td>
<td>4.5 mm (0.18 in.) or more</td>
</tr>
<tr>
<td>Dashed line area</td>
<td>3.5 mm (0.14 in.) or more</td>
</tr>
<tr>
<td>Alternate long and short dashed line area</td>
<td>3.5 mm (0.14 in.) or more</td>
</tr>
</tbody>
</table>

**NOTICE:**
- When the contact surfaces are wet, wipe them off with an oil-free cloth before applying seal packing.
- Install the timing chain cover within 3 minutes and tighten the bolts within 15 minutes after applying seal packing.
- Do not start the engine for at least 2 hours after the installation.

(e) Temporarily install the timing chain cover with the 23 bolts and 2 nuts.

**NOTICE:**
Make sure there is no oil on the bolts. If there is oil on the bolts, clean them before installing them.

**HINT:**
Bolt length:
- 40 mm (1.57 in.) for bolt A
- 55 mm (2.17 in.) for bolt B
- 25 mm (0.98 in.) for bolt C
(f) Tighten the bolts in this order: Area 1, Area 2, Area 3, Area 4.
Torque: 21 N*m (214 kgf*cm, 15 ft.*lbf) for Area 1, 2 bolt
21 N*m (214 kgf*cm, 15 ft.*lbf) for Area 3 bolt, nut
43 N*m (438 kgf*cm, 32 ft.*lbf) for Area 4 bolt A
21 N*m (214 kgf*cm, 15 ft.*lbf) for Area 4 except bolt A

2. INSTALL CRANKSHAFT PULLEY (See page EM-126)
3. INSTALL CYLINDER HEAD COVER SUB-ASSEMBLY (for Bank 2) (See page EM-127)
4. INSTALL NO. 1 OIL PIPE (See page EM-128)
5. INSTALL CYLINDER HEAD COVER SUB-ASSEMBLY (for Bank 1) (See page EM-127)
6. INSTALL OIL PIPE (See page EM-127)
7. INSTALL WATER INLET HOUSING (See page CO-14)
8. INSTALL OIL PAN SUB-ASSEMBLY
   (a) Install 2 new O-rings to the timing chain cover.

(b) Apply seal packing in a continuous line as shown in the illustration.
Seal packing:
   Toyota Genuine Seal Packing Black, Three Bond 1207B or Equivalent
Standard seal diameter:
   3.0 to 4.0 mm (0.118 to 0.156 in.)
NOTICE:
   • Remove any oil from the contact surface.
   • Install the oil pan within 3 minutes and tighten the bolts within 15 minutes after applying seal packing.
   • Do not start the engine for at least 2 hours after the installation.
2GR-FE LUBRICATION – OIL PUMP

(c) Install the oil pan with the 16 bolts and 2 nuts. Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf) for bolt A
21 N*m (214 kgf*cm, 15 ft.*lbf) for except bolt A, nut

9. INSTALL OIL STRAINER SUB-ASSEMBLY
   (a) Install a new gasket and the oil strainer with the bolt and 2 nuts. Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

10. INSTALL NO. 2 OIL PAN SUB-ASSEMBLY
    (a) Apply seal packing in a continuous line as shown in the illustration.
        Seal packing:
        Toyota Genuine Seal Packing Black, Three Bond 1207B or Equivalent
        Standard seal diameter: 3.0 to 4.0 mm (0.118 to 0.156 in.)
        NOTICE:
        • Remove any oil from the contact surface.
        • Install the oil pan within 3 minutes and tighten the bolts within 10 minutes after applying seal packing.
        • Do not start the engine for at least 2 hours after the installation.

    (b) Install the oil pan with the 16 bolts and 2 nuts. Torque: 10 N*m (102 kgf*cm, 7 ft.*lbf)

11. INSTALL OIL FILTER ELEMENT KIT (See page LU-5)
12. INSTALL OIL FILTER CAP ASSEMBLY (See page LU-5)
13. INSTALL OIL DIPSTICK GUIDE
    (a) Install a new O-ring to the dipstick guide.
(b) Install the dipstick guide with the bolt.  
Torque: 21 N*m (214 kgf*cm, 15 ft.*lbf)

14. INSTALL NO. 2 OIL DIPSTICK GUIDE
   (a) Install a new O-ring to the dipstick guide.

   (b) Install the dipstick guide with the bolt.  
       Torque: 21 N*m (214 kgf*cm, 15 ft.*lbf)  
   (c) Install the oil dipstick.

15. REMOVE ENGINE FROM STAND

16. INSTALL ENGINE ASSEMBLY
   (a) Install the engine to the vehicle (see page EM-31).

17. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL