

# LUBRICATION SYSTEM

## ON-VEHICLE INSPECTION

### 1. CHECK ENGINE OIL LEVEL

(a) Warm up the engine, then stop the engine and wait for 5 minutes. Check that the engine oil level is between the low and full marks on the oil level gauge.

If the engine oil is low, check for oil leaks and add engine oil up to the full mark.

**NOTICE:**

**Do not add engine oil above the full mark.**

### 2. CHECK ENGINE OIL QUALITY

(a) Check the oil for deterioration, water intrusion, discoloring or thinning.

If the oil quality is visibly poor, replace the oil.

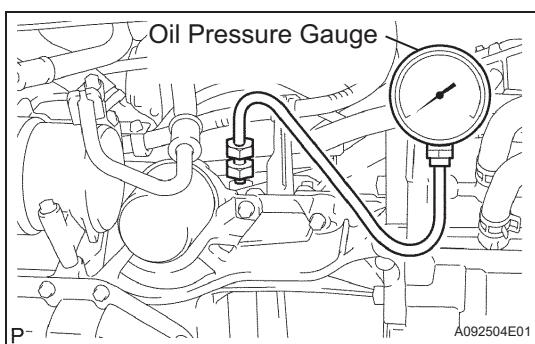
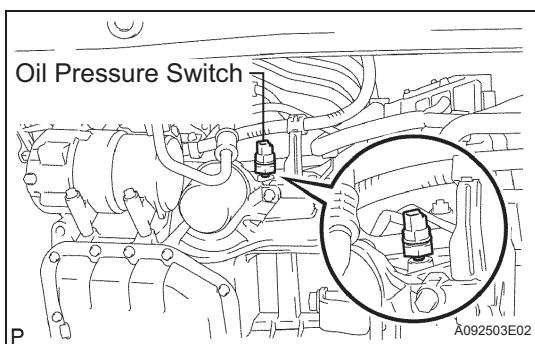
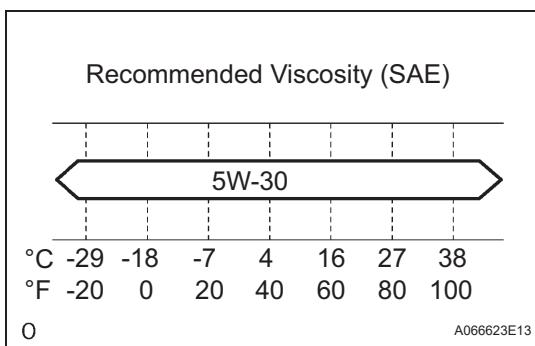
**Oil grade:**

**Use API grade SL "Energy-Conserving", or ILSAC multi grade engine oil.**

**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 replacement.**



### 3. CHECK OIL PRESSURE

(a) Remove the engine oil pressure switch assembly.

- (1) Disconnect the oil pressure switch connector.
- (2) Using a 24 mm deep socket wrench, remove the oil pressure switch.

(b) Install an oil pressure gauge.

- (1) Install the adaptor, then install an oil pressure gauge.

(c) Set the vehicle to inspection mode (see page IN-34).

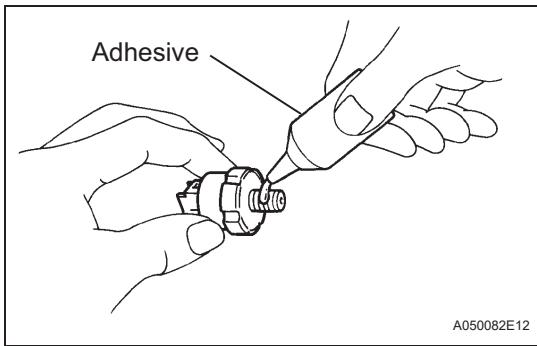
(d) Warm up the engine.

(e) Inspect the oil pressure.

**Standard oil pressure**

Condition	Specified Condition
Idle	59 kPa (0.6 kgf/cm <sup>2</sup> , 4.2 psi) or more
2,500 rpm	150 to 550 kPa (1.5 to 5.6 kgf/cm <sup>2</sup> , 22 to 80 psi)

- (f) Remove the oil pressure gauge.



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- (g) Install the engine oil pressure switch.

- (1) Apply adhesive to the threads.

**Adhesive:**

**Toyota Genuine Adhesive 1324, Three Bond 1324 or Equivalent**

- (2) Using a 24 mm deep socket wrench, install the oil pressure switch.

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

**NOTICE:**

**Do not start the engine within 1 hour of installation.**

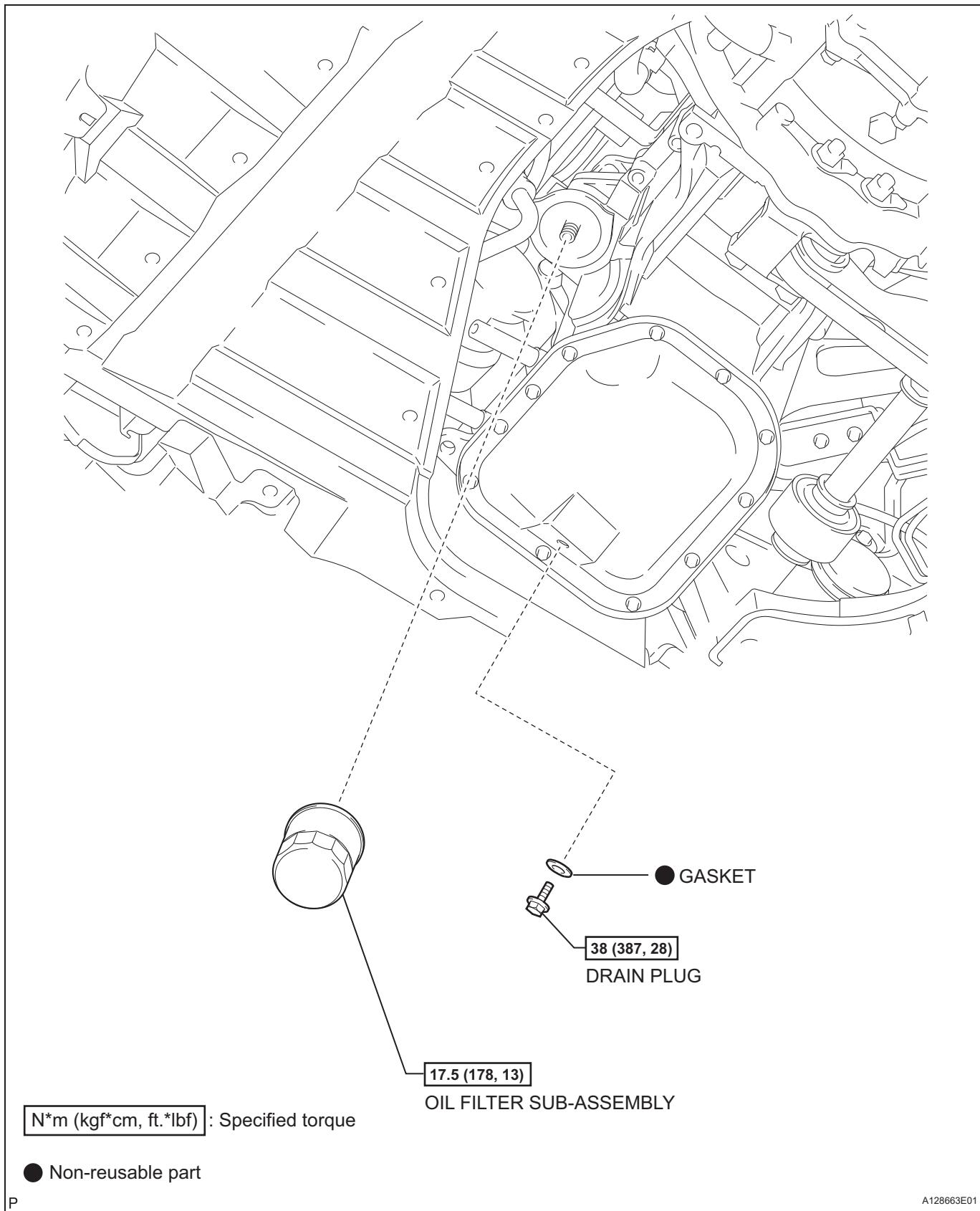
- (3) Connect the oil pressure switch connector.

#### 4. CHECK FOR ENGINE OIL LEAKS

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# OIL FILTER

## COMPONENTS



## REPLACEMENT

### CAUTION:

- Prolonged and repeated contact with engine oil will cause removal of natural oils from the skin, leading to dryness, irritation and dermatitis. In addition, used engine oil contains potentially harmful contaminants which may cause skin cancer.
- Precautions should be taken when replacing engine oil to minimize the risk of your skin making contact with used engine oil. Wear protective clothing and gloves. Wash your skin thoroughly with soap and water, or use a water-less hand cleaner to remove any used engine oil. Do not use gasoline, thinners or solvents.
- For environmental protection, used oil and used oil filter must be disposed of at designated disposal sites.

### 1. DRAIN ENGINE OIL

- (a) Remove the oil filler cap.
- (b) Remove the oil drain plug, then drain the oil into a container.
- (c) Clean the oil drain plug and install it with a new gasket.

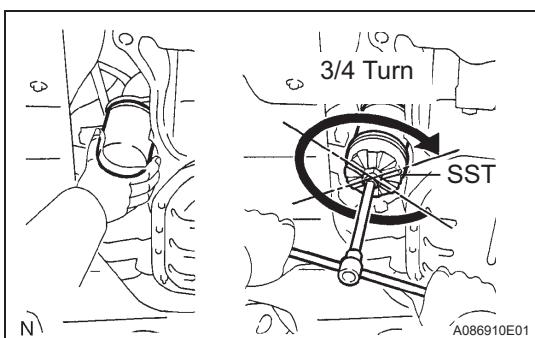
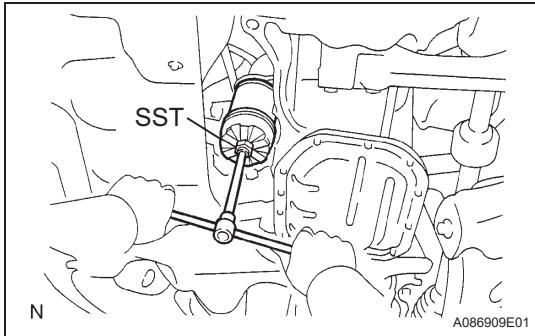
**Torque: 38 N\*m (387 kgf\*cm, 28 ft.\*lbf)**

### 2. REMOVE OIL FILTER SUB-ASSEMBLY

- (a) Using SST, remove the oil filter.
- SST 09228-06501**

### 3. INSTALL OIL FILTER SUB-ASSEMBLY

- (a) Check and clean the oil filter installation surface.
- (b) Apply clean engine oil to the gasket of a new oil filter.



- (c) Lightly screw the oil filter into place, and tighten it until the gasket contacts the seat.

- (d) Using SST, retighten it by a 3/4 turn.
- SST 09228-06501**

**Torque: 17.5 N\*m (178 kgf\*cm, 13 ft.\*lbf)**

### 4. ADD ENGINE OIL

- (a) Add new oil.
- Standard oil capacity**

Item	Specified Condition
Drain and refill with oil filter change	3.7 liters (3.9 US qts, 3.3 Imp. qts)
Drain and refill without oil filter change	3.4 liters (3.6 US qts, 3.0 Imp. qts)
Dry fill	4.1 liters (4.3 US qts, 3.6 Imp. qts)

- (b) Install the oil filler cap.

### 5. CHECK ENGINE OIL LEVEL (See page LU-1)