



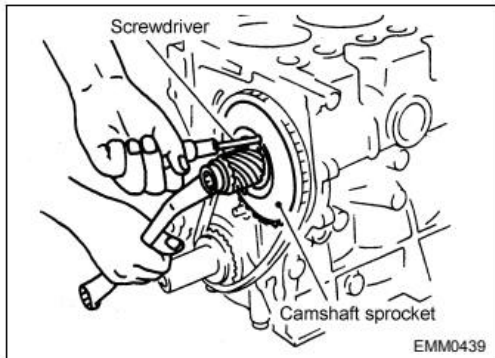
# Service Manual

**TB45 Gasoline Engine**  
**111219-up**

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## TIMING CHAIN

### Removal (Cont'd)



12. Remove camshaft sprocket bolt.

- Insert a screwdriver wrapped in a shop cloth to the hole on camshaft sprocket, secure camshaft sprocket by attaching the tip of screwdriver to camshaft locating plate bolt, and then loosen the bolt.

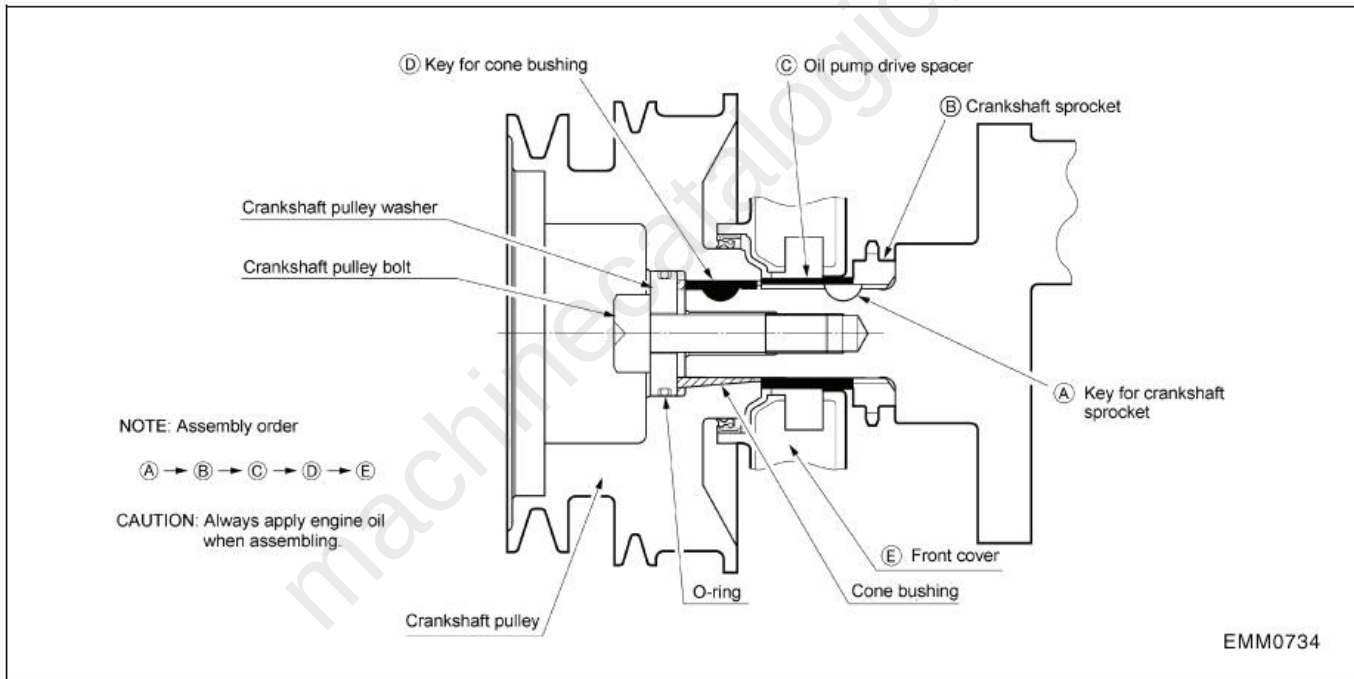
13. Remove chain tensioner and chain guide.

#### ⚠ CAUTION:

Hold the sleeve with a finger to prevent it from popping out when removing.

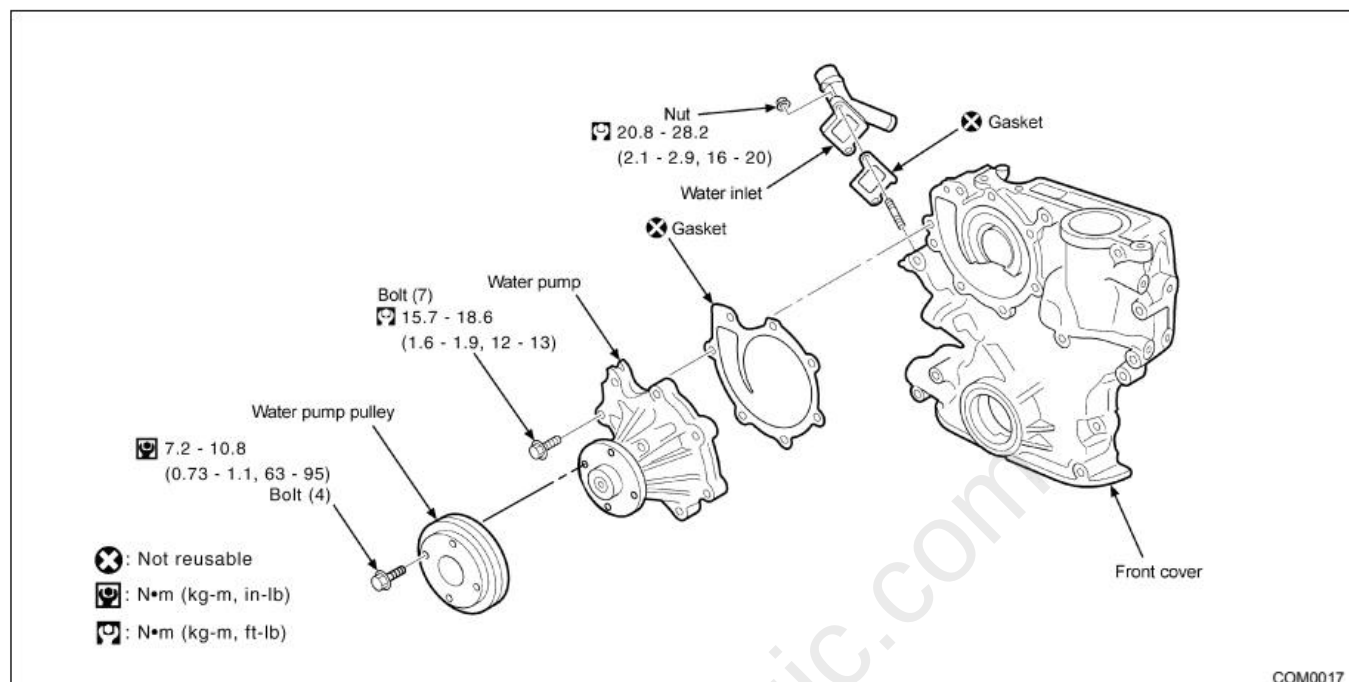
14. Remove distributor drive gear.

15. Remove camshaft sprocket and crankshaft sprocket together with timing chain.



# WATER PUMP

## Component Parts Location



## Removal and Installation

### PREPARATION

#### ⚠ WARNING:

Do not drain coolant when engine is still hot. It may cause burns.

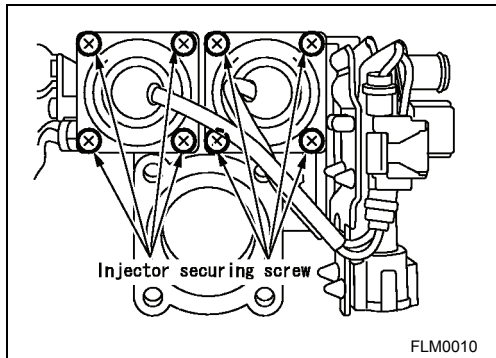
Engine drive belts

#### ⚠ CAUTION:

Handle water pump vane so that it does not contact with other parts.

### Inspection

- Check water pump body and vanes for severe corrosion and dirt.
- Make sure that water pump shaft turns smoothly without roughness.



### Injector Holder (Cont'd)

#### LPG FUEL INJECTOR

##### Removal and installation

- Disassemble and assemble as shown in the figure.
- Install LPG fuel injector and check LPG leakage using soapy water after assembly.
- Insert straight and assemble O-ring and seal rubber on top after changing to new ones and applying engine oil to the circumference lightly.

##### ⚠ CAUTION:

- O-ring may be damaged when tilting and inserting forcibly.
- Do not use silicon oil when inserting.
- Use correct injector specified for each engine type.  
(Check part number on fuel injector body label.)

##### Tightening torque of securing screw:

3.9 - 7.8 N·m (0.40 - 0.80 kg-m, 3 - 6 ft-lb)

##### Check and cleaning

- Perform continuity test of harness connector.  
If it is approximately 1Ω (at room temperature) with a tester, it is normal.  
If continuity should not exist, check for blown fuse.

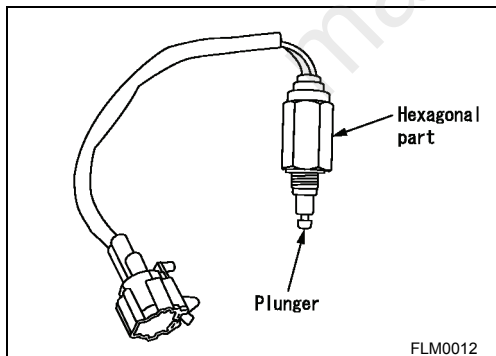
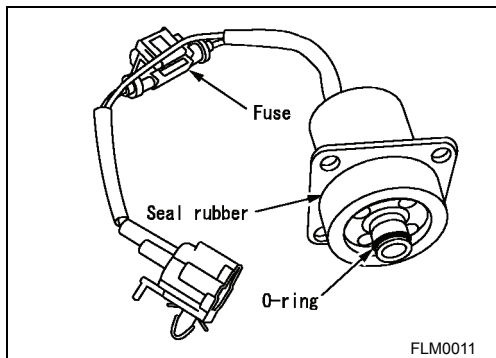
##### NOTE:

If fuse is blown, replace it with proper fuse (5A).

- Check signal wave of related harnesses.  
When a non-standard signal flows, a malfunction may occur again.  
Replace parts if the resistance is not normal.
- Clean injector.  
Clean injector from fuel inlet side with compressed air for approximately 5 minutes.

##### ⚠ CAUTION:

Do not use cleaner such as carb cleaner because it negatively affects rubber parts of inside.



#### LPG ASSISTANCE INJECTOR

##### Removal and installation

- Rotate and remove hexagonal part of body using a spanner.

##### ⚠ CAUTION:

When removing hexagonal part of body, inside spring, plunger, and washer are removed together. Do not drop and lose them.

- Install after assembling inner components in their original position. Replace aluminum washer with new ones.

##### Tightening torque:

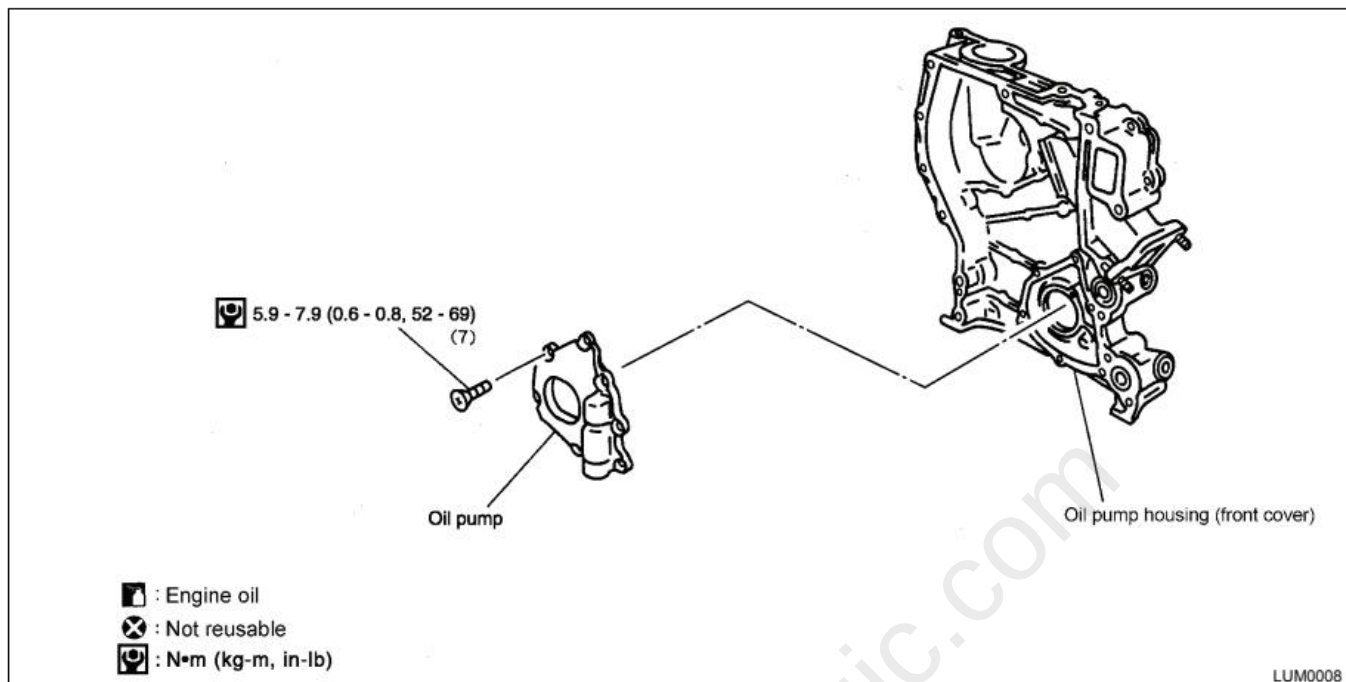
11.8 - 26.5 N·m (1.2 - 2.7 kg-m, 9 - 20 ft-lb)

##### Check and cleaning

If foreign materials such as tars are applied or collected on plunger or its inside, remove them with compressed air.

# OIL PUMP

## Component Parts Location



### ⚠ CAUTION:

Apply new engine oil to the parts marked in the figure prior to installation.

## Disassembly and Assembly

### PREPARATION

Front cover (Refer to "TIMING CHAIN" in EM section.)

### NOTE:

Oil pump is integrated in front cover.

## **Full Version Available**

### **Mitsubishi FG50NF Forklift Engine Service Manual (99739-11100)**

Mitsubishi FG50NF forklift engine service manual, LPG engine diagnostics and repair procedures in searchable PDF. Instant PDF download.

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