SERVICE MANUAL
6WG1T ISUZU
ENGINES

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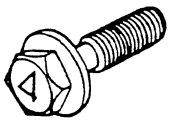
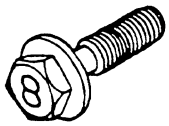
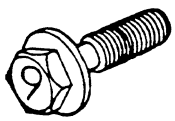
CNH

Cre 9-54850

The tightening torque values given in the table below are applicable to all bolts unless otherwise specified.

FLANGED HEAD BOLT

N·m (kgf·m/lb.ft)

Bolt Identification / Bolt Diameter × pitch (mm)			
M6 × 1.0	5 – 9 (0.5 – 0.9/4 – 7)	6 – 12 (0.6 – 1.2/4 – 9)	———
M8 × 1.25	11 – 20 (1.1 – 2.0/8 – 15)	15 – 28 (1.6 – 2.9/12 – 21)	18 – 34 (2.1 – 3.4/15 – 25)
M10 × 1.25	23 – 39 (2.4 – 3.9/17 – 28)	35 – 59 (3.6 – 6.1/26 – 44)	42 – 71 (4.3 – 7.2/31 – 52)
* M10 × 1.5	22 – 37 (2.3 – 3.8/17 – 28)	35 – 58 (3.5 – 5.8/25 – 42)	40 – 67 (4.1 – 6.8/30 – 49)
M12 × 1.25	55 – 82 (5.6 – 8.4/40 – 61)	77 – 117 (7.9 – 11.9/57 – 86)	85 – 128 (8.7 – 13.0/63 – 94)
* M12 × 1.75	51 – 77 (5.2 – 7.8/38 – 56)	71 – 107 (7.3 – 10.9/53 – 79)	80 – 119 (8.1 – 12.2/59 – 88)
M14 × 1.5	83 – 125 (8.5 – 12.7/62 – 92)	115 – 172 (11.7 –17.6/85 – 127)	123 – 185 (12.6 – 18.9/91 – 137)
* M14 × 2.0	77 – 116 (7.9 – 11.8/57 – 85)	108 – 162 (11.1 – 16.6/80 – 120)	116 – 173 (11.8 – 17.7/85 – 128)
M16 × 1.5	116 – 173 (11.8 – 17.7/85 – 128)	171 – 257 (17.4 – 26.2/126 – 190)	177 – 265 (18.0 – 17.1/130 – 196)
* M16 × 2.0	109 – 164 (11.2 – 16.7/81 – 121)	163 – 244 (16.6 – 24.9/120 – 180)	169 – 253 (17.2 – 25.8/124 – 187)

A bolt with an asterisk (*) is used for female screws that are made of soft material such as cast iron.

ITEMS		SERVICE STANDARD	SERVICE LIMIT
ENGINE ELECTRICAL			
Alternator			
Rotor Coil Resistance	ohm	11.7	–
Starter Motor			
Commutator Undercut	mm(in)	0.5 (0.197)	0.2 (0.0079)
Commutator Outside Diameter	mm(in)	32 (1.26)	31.4 (1.24)
Brush Length	mm(in)	18 (0.709)	11 (0.43)
TURBOCHARGER			
Turbine Shaft End Play	mm(in)	0.075 – 0.110 (0.0030 – 0.0043)	0.12 (0.0047)
Clearance Turbine Shaft and Bearing	mm(in)	0.130 – 0.235 (0.0051 – 0.0093)	0.275 (0.0108)

Troubleshooting

1. Hard starting

Condition	Possible Cause	Correction
Starter motor does not turn over	Loose battery cable terminals Poor battery connections due to rusting	Clean and/or retighten the battery cable terminals
	Battery discharged or weak	Recharge or replace the battery
	Fusible link shorted	Replace the fusible link
	Defective starter switch or starter relay	Replace the starter switch or starter relay
	Defective magnetic switch of starter motor or starter relay	Repair or replace the magnetic switch or starter relay
	Defective starter motor	Repair or replace the starter motor
Starter motor operates but engine does not turn over	Loose battery cable terminals Poor battery connections due to rusting	Clean and/or retighten the battery cable terminals
	Battery discharged or weak	Recharge or replace the battery
	Loose fan belt	Adjust the fan belt tension
	Defective starter motor pinion gear	Replace pinion gear
	Defective magnetic switch of the starter motor	Repair or replace the magnetic switch
	Worn starter motor Weak brush spring	Replace the brush and /or brush spring
	Piston,crank bearing seizure,or other damage	Repair or replace the related parts
Engine turns over but does not start	Air in the fuel system	Bleed air from the fuel system
	Defective engine stop mechanism Control wire improperly adjusted	Replace the engine stop mechanism Adjust the control wire
	Fuel tank is empty	Fill the fuel tank
	Clogged or damaged fuel lines Loose fuel line connections	Repair or replace the fuel lines Retighten the fuel line connections
	Clogged fuel filter element	Replace the fuel filter element or cartridge
	Fuel feed pump strainer is clogged	Clean the fuel pump strainer
	Defective feed pump	Repair or replace the feed pump
	Poor return of the engine stop button	Completely return the engine stop button
	Use of the wrong fuel	Use the recommended fuel
	Water particles in the fuel	Change fuel
	Air in the injection pump	Bleed air from the fuel system
	Injection nozzle sticking	Replace the injection nozzle
	Injection nozzle starting pressure too low Improper spray condition	Adjust or replace the injection nozzle
	Improper injection pump control rack operation	Repair or replace the injection pump control rack
	Injection pump plunger worn or stuck	Replace the injection pump plunger assembly
	Injection pump camshaft seizure or other damage	Replace the injection pump camshaft

Lubricant Application

Name of Lubricant	Location area
Engine Oil	Turbocharger bearings
	Inside of camshaft brackets
	Idle gear shaft & fixing bolts
	Bridges
	Rocker arms
	Camshaft cam nose
	Crank pulley fixing bolt threads and seating surfaces
	Inside and outside of cylinder liners
	Connrod bearing sliding surfaces
	Crankshaft bearing sliding surfaces
	Thrust bearings
	Piston and piston rings
	Piston pins
Molybdenum disulfide grease	Crankcase fixing bolt threads and seating surfaces
	Cylinder head fixing bolt threads and seating surfaces
	Connrod bearing fixing bolt threads and seating surfaces

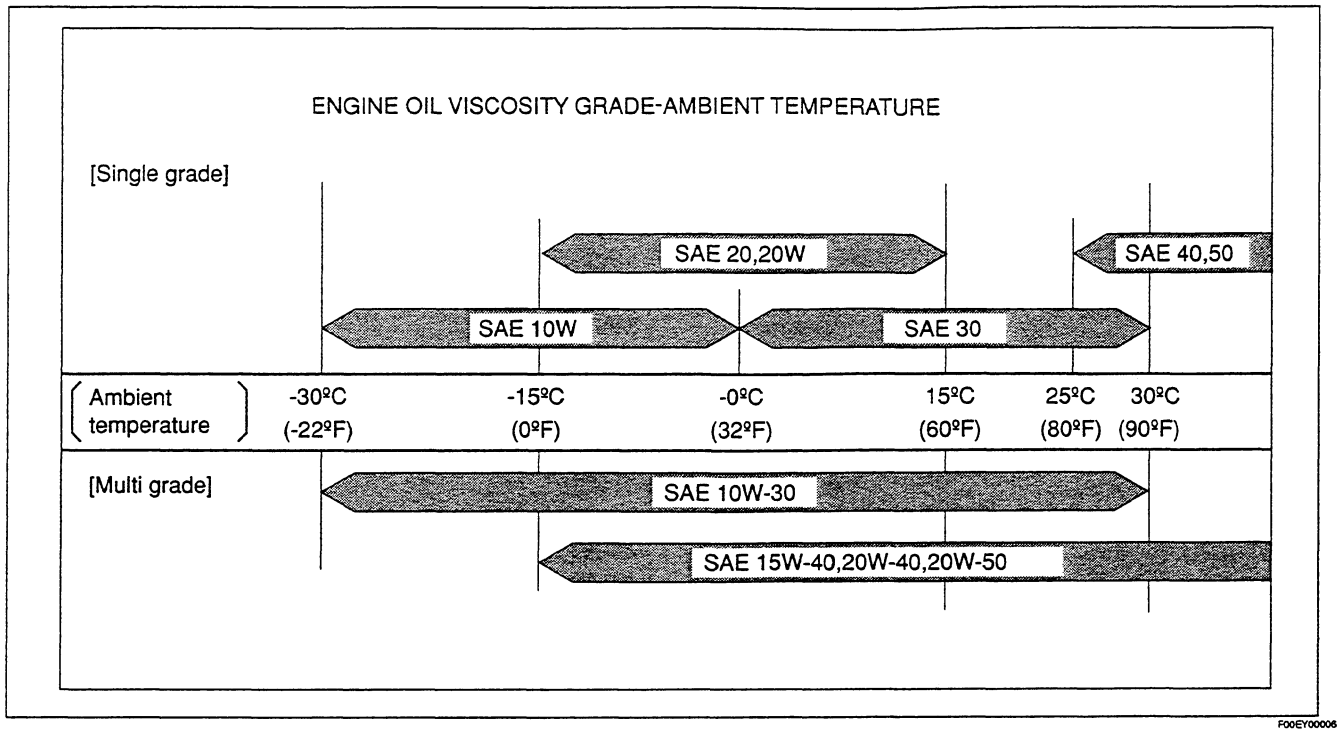
Sealant Application

	Location		Name of sealant
	Name of part	Name of mating part	
1	Crankcase	Cylinder block	Loctite FMD-127
2	Gearcase	Cylinder block	Loctite FMD-127
3	Flywheel housing	Cylinder block	Loctite FMD-127
4	Gearcase	Cylinder head	Loctite FMD-127
5	Gearcase	Upper cylinder block	Loctite FMD-127
6	Upper and lower gearcase	Cylinder head	Loctite FMD-127
7	Crankcase	Gearcase	Cemedyn LG-020L
8	Crankcase	Flywheel housing	Cemedyn LG-020L
9	Oil cooler	Cylinder block	ThreeBond 1207C
10	Nozzle sleeve	Cylinder head	Loctite TL290
11	Thermometer unit threads	Cylinder head	Loctite No.271 or Three Bond No. 1241
12	Oil pressure switch threads	Cylinder block	Loctite No.271 or Three Bond No. 1241

Recommended Lubricants

ENGINE TYPE	TYPE OF LUBRICANT (API)
With or without turbocharger	Diesel engine oil CD grade

Engine Oil Viscosity Chart



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4. Install the inlet duct (inlet pipe to turbocharger) and tighten the fixing bolts to the specified torque.
   - Connect the rubber hose between the inlet duct and turbocharger.
   - Install the heat protector to the rubber hose.

   Torque: 43 N·m (4.4 kgm/32 lbft)
5. Install the inlet pipe (air cleaner to turbocharger).
   Tighten the inlet pipe fixing bolts to the specified torque.

   Inlet pipe at turbocharger side

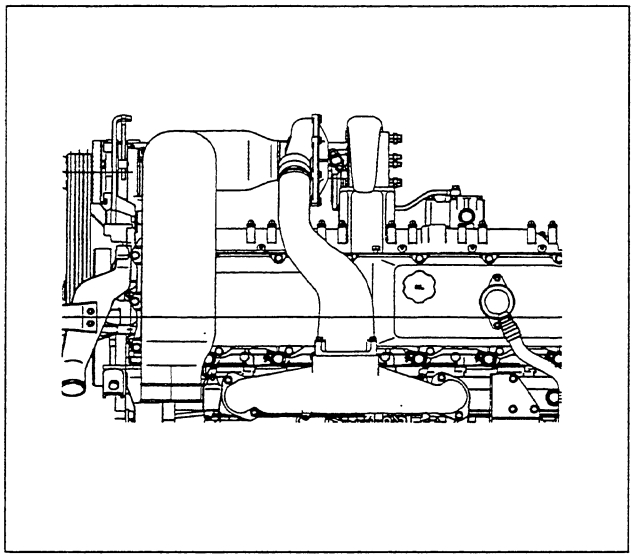
   Torque: 5.4 N·m (0.55 kgm/4.0 lbft)

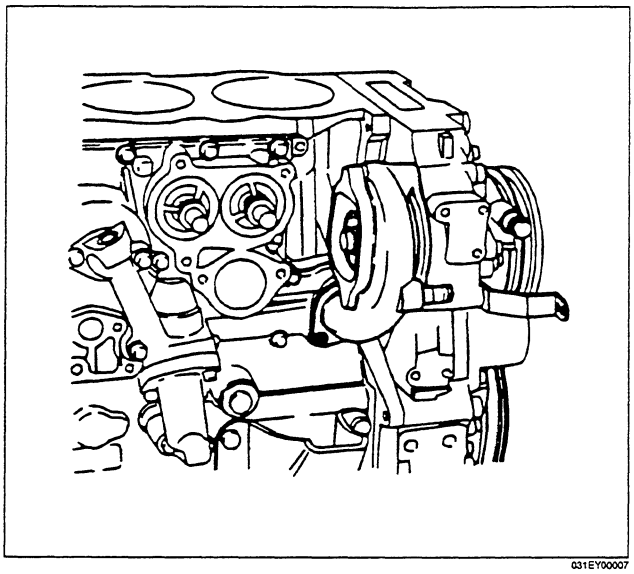
   Inlet pipe at bracket side

   Torque: 52 N·m (5.3 kgm/38 lbft)

   Inlet pipe bracket

   Torque: 118 N·m (12 kgm/87 lbft)

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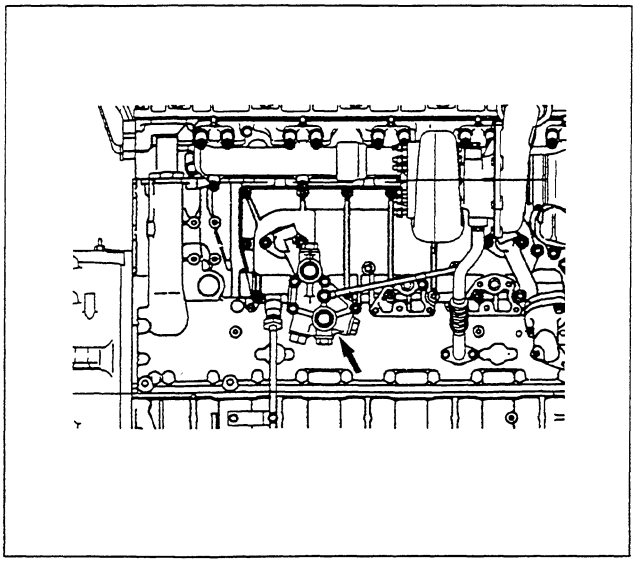

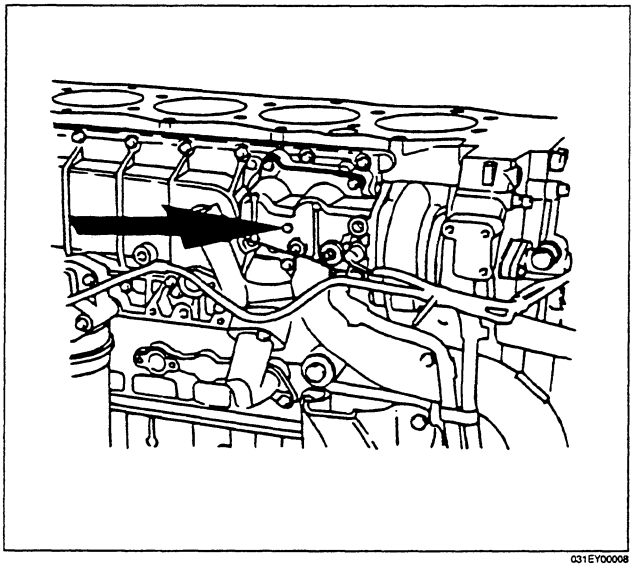
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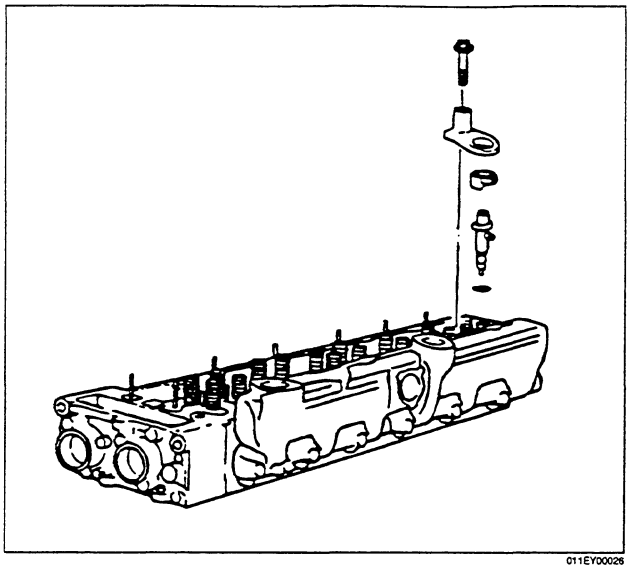
3. Install the water inlet pipe to the oil cooler.
4. Install the oil port cover with new gasket.
   Tighten the fixing bolts to the specified torque.
   Torque: 43 N·m (4.4 kgm/32 lbft)
5. Install the turbocharger oil feed pipe.
6. Install the turbocharger oil drain pipe.
   Refer to "Turbocharger Installation" in this manual.

- Loosen the camshaft bracket fixing nuts from both outside.

6. Remove the leak off pipe.
7. Remove the nozzle clamp.
8. Remove the nozzle holder assembly.
   - Use the nozzle holder remover 1-8523-0013-0 to remove the nozzle holder.

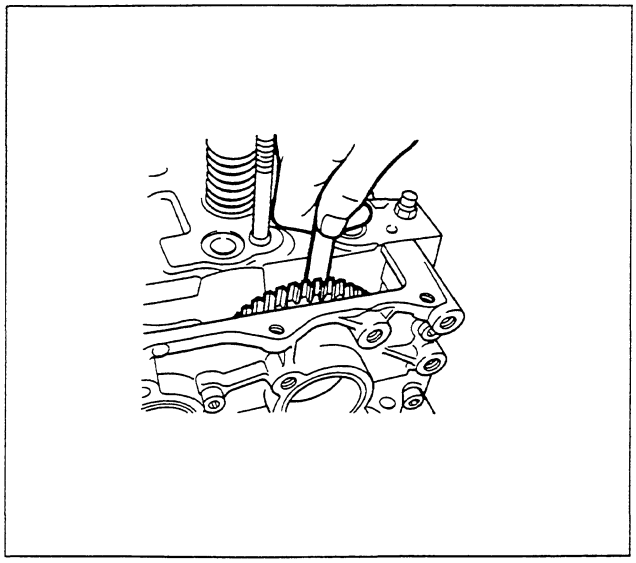
NOTE: Take care not to damage the injection nozzle tips during injection nozzle holder removal.



9. Remove the idler gear C and shaft.
   - Use a feeler gauge to measure the idler gear C end play.

   Standard: 0.05 – 0.14 mm (0.0020 – 0.0055 in.)

   Limit: 0.25 mm (0.098 in.)

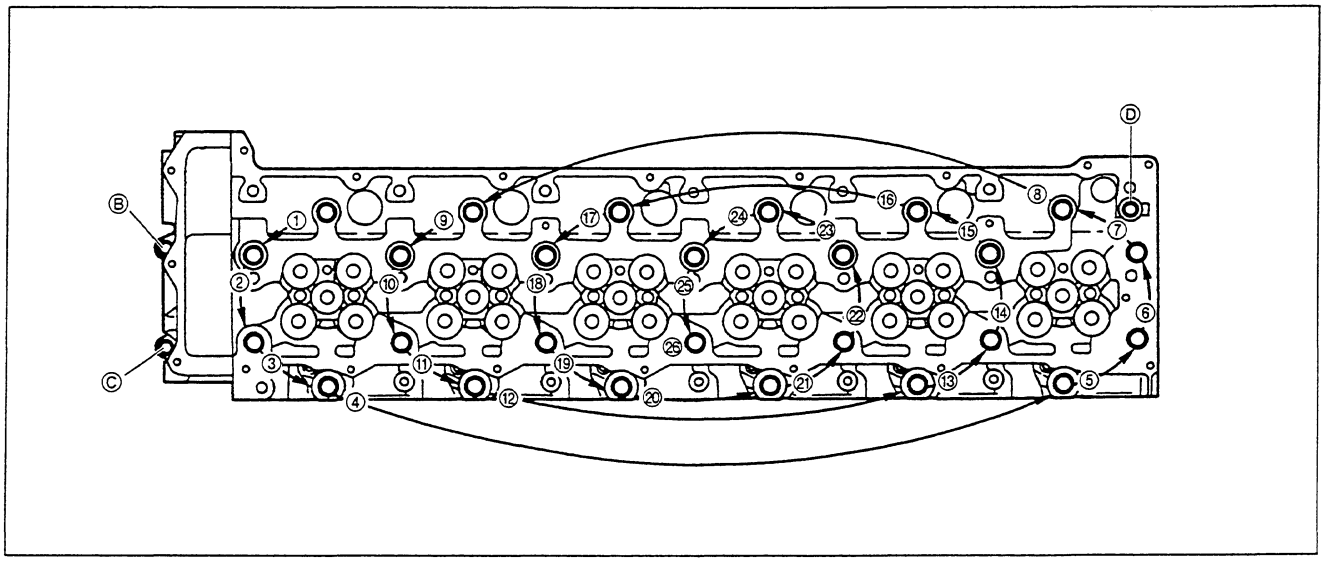


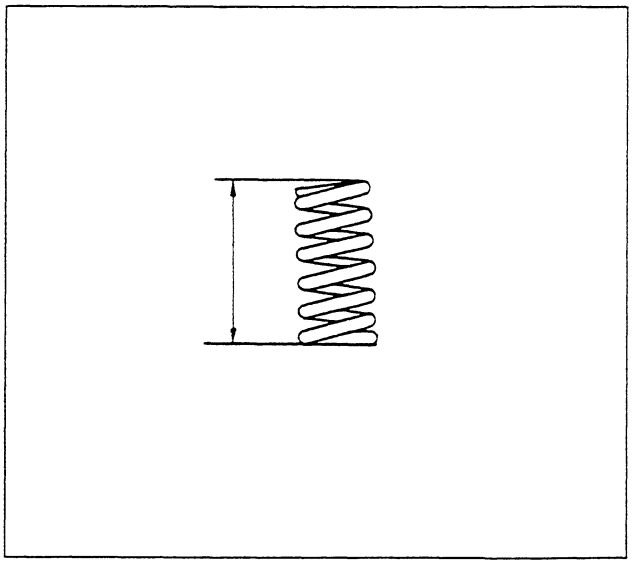
10. Remove the cylinder head assembly.
    - First loosen the bolts B – D.
    - Loosen the cylinder head bolts a little at a time in the numerical order shown in the illustration.

NOTE: Failure to loosen the cylinder bolts in numerical order a little at a time will adversely affect the cylinder head lower surface.

11. Remove the cylinder head gasket.

    Discard the cylinder head gasket.





2. Use a surface plate and a square to measure the valve spring squareness.
   If the measured value exceeds the specified limit, the valve spring must be replaced.

Valve spring squareness

Inlet spring:

Standard: 3.5 mm (0.138 in.)

Limit: 4.8 mm (0.189 in.)

Exhaust spring: outer

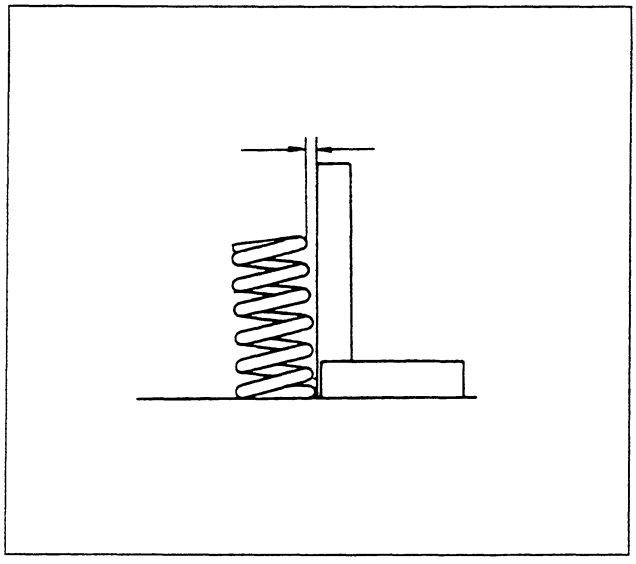
Standard: 4.5 mm (0.177 in.)

Limit: 6.2 mm (0.244 in.)

Exhaust spring: inner

Standard: 4.2 mm (0.165 in.)

Limit: 5.9 mm (0.232 in.)



3. Use a spring tester to measure the valve spring tension.
   If the measured value is less than the specified limit, the valve spring must be replaced.

Valve spring tension

Inlet spring:

Standard: 392 N (40.0 kg/88 lb)/64 mm

Limit: 294 N (38.0 kg/84 lb)/64 mm

Exhaust spring: outer

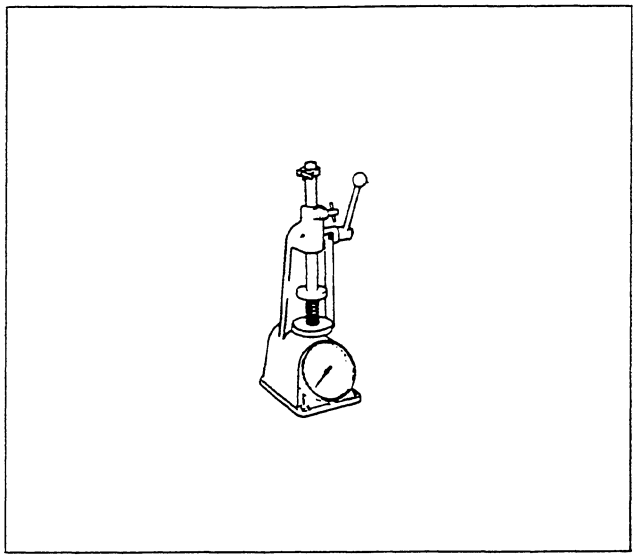
Standard: 610N (62.2 kg/137 lb)/69 mm

Limit: 579 N (59.0 kg/130 lb)/69 mm

Exhaust spring: inner

Standard: 224 N (22.8 kg/50 lb)/66 mm

Limit: 213 N (21.7 kg/48 lb)/66 mm



Valve Stem

1. Set a dial indicator to the valve stem measuring point.
2. Move the valve stem end from side to side.
   Read the dial indicator.
   Note the total indicator reading.
   If the measured value exceed the specified limit, the valve and the valve guide must be replaced as a set.

Valve stem and Valve guide clearance

Inlet:

Standard: 0.040 – 0.077 mm (0.0016 – 0.0030 in.)

Limit: 0.15 mm (0.0059 in.)

Exhaust:

Standard: 0.065 – 0.102 mm (0.0026 – 0.0040 in.)

Limit: 0.25 mm (0.0098 in.)

Rocker Arm Bushing Inside Diameter

Use either a vernier caliper or a dial indicator to measure the rocker arm bushing inside diameter.

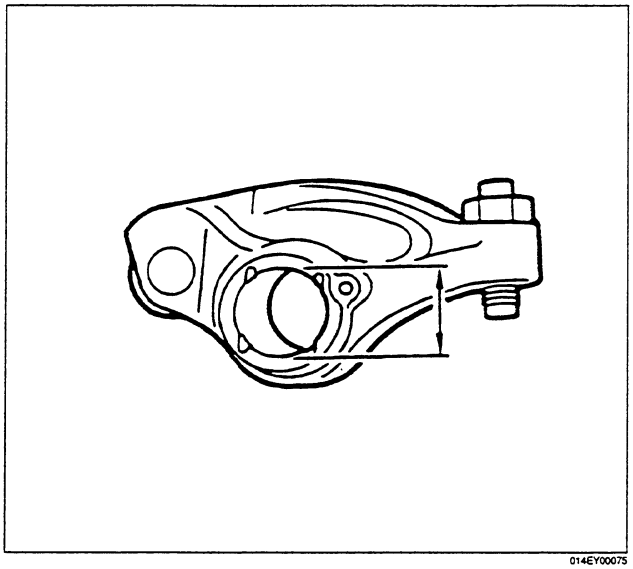
Rocker arm bushing inside diameter

Standard: 28.020 – 28.053 mm (1.1031 – 1.1044 in.)

Rocker arm and rocker arm shaft clearance

Standard: 0.020 – 0.074 mm (0.0008 – 0.0029 in.)

Limit: 0.2 mm (0.0079 in.)



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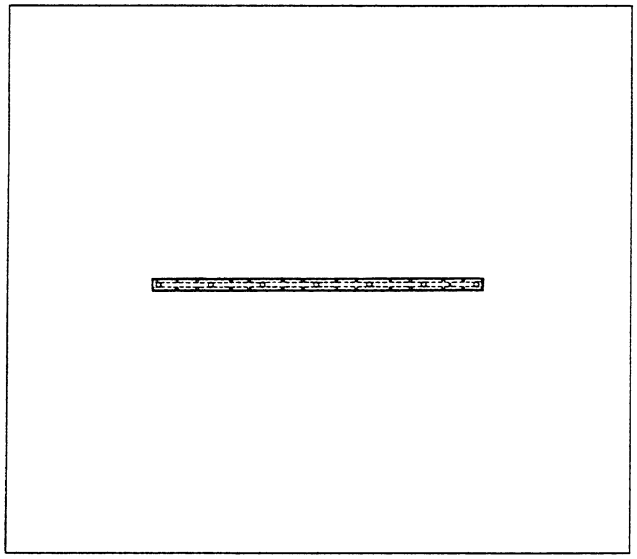
Check that the rocker arm and rocker arm shaft oil port is free of obstructions.

If necessary, use compressed air to clean the rocker arm and rocker arm shaft oil port.



Rocker Arm Roller and Rocker Arm Pin

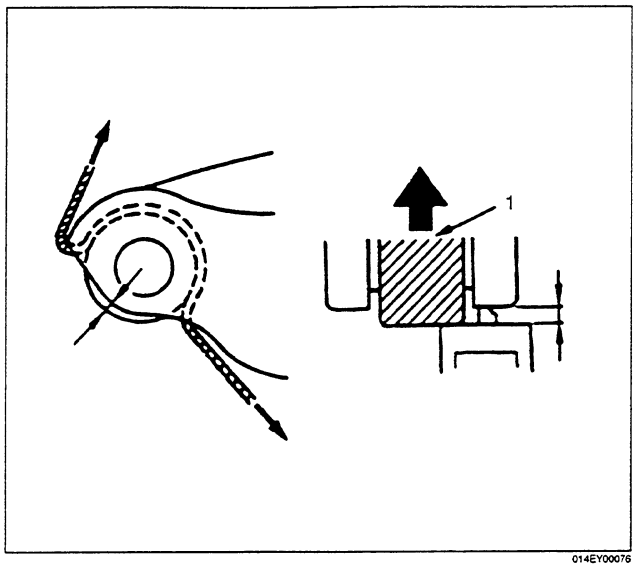
1. Pass a piece of string between the rocker arm and the rocker arm roller.
2. Pull on either end of the string in the directions shown in the illustration.
3. Measure the rocker arm protrusion (1).
4. Mark the measuring point and remove the string.
5. Press the rocker arm roller against the rocker arm with your fingers. Measure the rocker arm protrusion again.
6. Calculate the difference between the 2 protrusions (roller out and roller in). This is the roller and pin clearance.

   If the clearance exceeds the limit, the rocker arm must be replaced.

Rocker arm roller and pin clearance

Standard: 0.036 – 0.069 mm (0.0014 – 0.0027 in.)

Limit: 0.15 mm (0.0059 in.)



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- Measure the end play of the idler gear A (1) and B (2).

Idler gear A end play

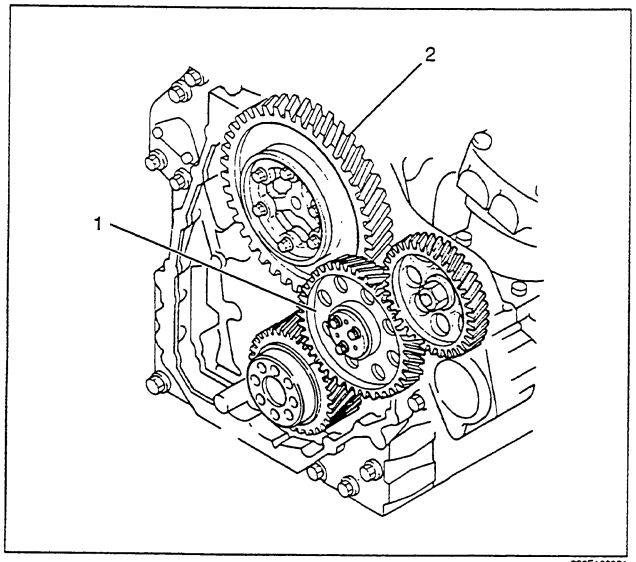
Standard: 0.155 – 0.220 mm (0.0061 – 0.0089 in.)

Limit: 0.35 mm (0.0138 in.)

Idler gear B end play

Standard: 0.050 – 0.140 mm (0.0020 – 0.0055 in.)

Limit: 0.25 mm (0.0098 in.)



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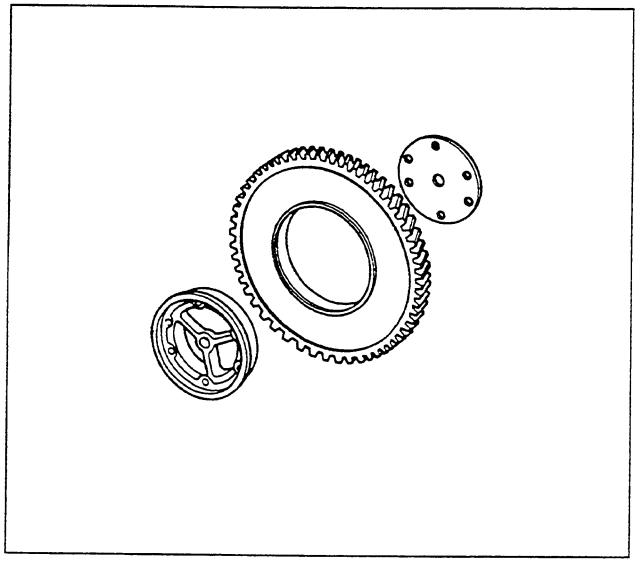
7. Remove the idler gear B.
   - Scribe a front mark on the thrust plate to aid in assembly.



Inspection and Repair

1. Visually inspect the idler gear and idler gear spindle for damage or wear.
2. Use a micrometer to measure the idler gear spindle out side diameter.

   Spindle outside diameter for idler gear A

   Standard: 56.93 – 56.96 mm (2.2413 – 2.2425 in.)

   Limit: 56.85 mm (2.2382 in.)

   Spindle outside diameter for idler gear B

   Standard: 141. 93 – 141.96 mm (5.5878 – 5.5890 in.)

   Limit: 141.85 mm (5.5846 in.)

   Spindle outside diameter for idler gear C

   Standard: 48.93 – 48.96 mm (1.9264 – 1.9286 in.)

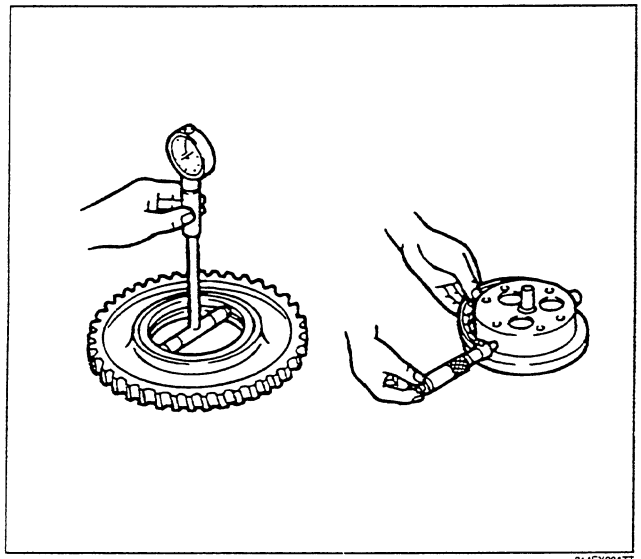
   Limit: 48.85 mm (1.9232 in.)
3. Use a cylinder bore dial indicator to measure the idler gear inside diameter.
4. Calculate the clearance between the idler gear and idler gear spindle.

   Clearance for idler gear A, B, and C

   Standard: 0.040 – 0.105 mm (0.0016 – 0.0041 in.)

   Limit: 0.02 mm (0.0079 in.)

   If the measured value exceeds the specified limit, the idler gear spindle or idler gear must be replaced.



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Legend

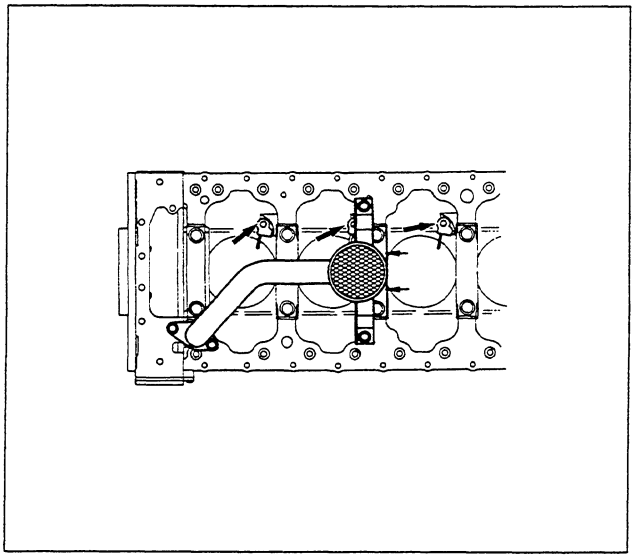
(1) Oil pan
(2) Oil pan gasket
(3) Oil pan spacer
(4) Oil pan spacer gasket
(5) Oil strainer
(6) Oil strainer bracket
(7) Gasket
(8) Oil jet assembly

1. Remove the oil pan.
   Remove the oil pan gasket.
   Discard the oil pan gasket.
2. Remove the oil pan spacer.
   Remove the oil pan spacer gasket.
   Discard the oil pan spacer gasket.
3. Remove the oil strainer.
4. Remove the oil strainer bracket.
5. Remove the oil jet assembly.

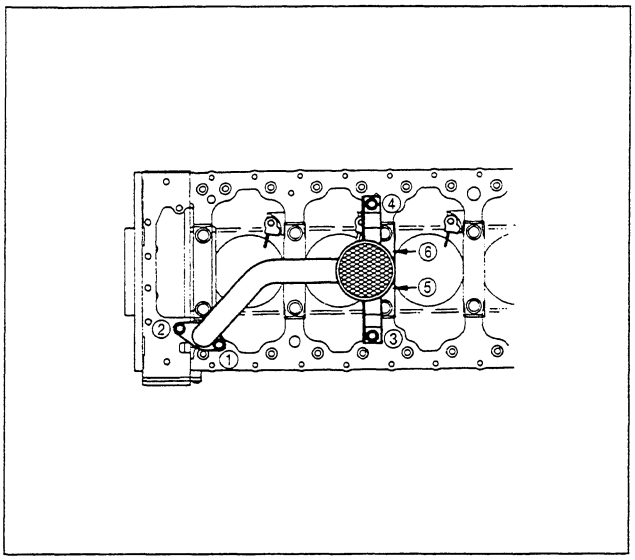
CAUTION: Take care not to bend the oil jet tubing. Do not attempt to repair a damaged oil jet. If damaged, replace the oil jet with a new one.

Installation

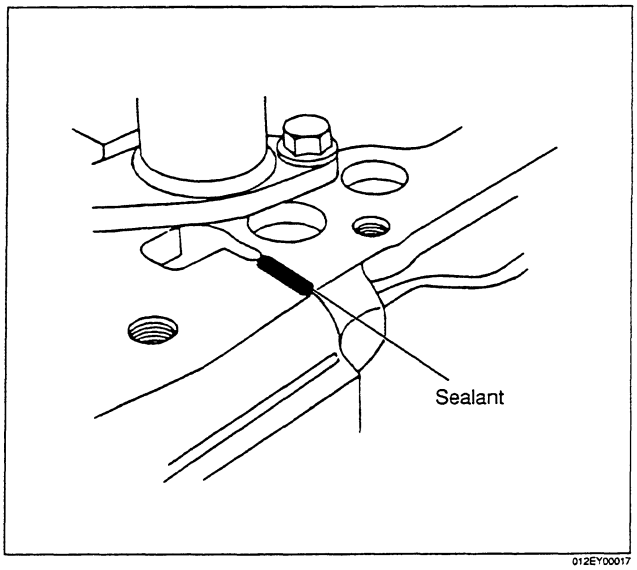
1. Install the oil jet assembly to the cylinder block.
   Tighten the joint bolts to the specified torque.
   Torque: 69 N·m (7.0 kgm/51 lbft)



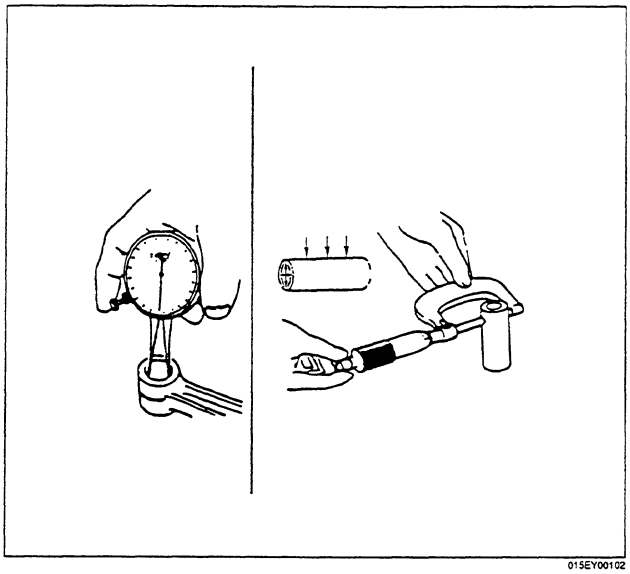
2. Install the oil strainer with new gasket and the oil strainer bracket.
   Tighten the bolts to the specified torque in the numerical order shown in the illustration.
   Torque: 55 N·m (5.6 kgm/41 lbft)



3. Install the oil pan spacer with new gasket.
   - Apply Cemedain LG-020L or equivalent to the cylinder block, flywheel housing and gearcase fitting face.
     The sealant must be 3 – 4 mm of bead.



   Tighten the bolts to the specified torque in the numerical order shown in the illustration.
   Torque:
   Bolt A : 50 N·m (5.1 kgm/37 lbft)
   Other bolt : 38 N·m (3.9 kgm/28 lbft)



Connecting Rod Alignment

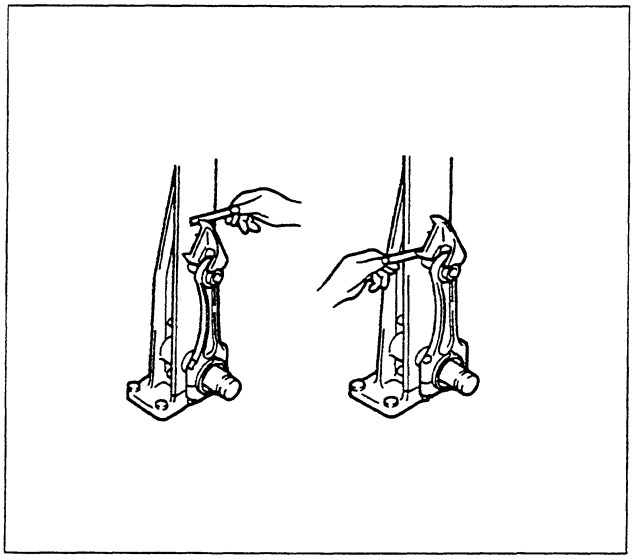
Use a connecting rod aligner to measure the distortion and the parallelism between the connecting rod big end hole and the connecting rod small end hole.
If either the measured distortion or parallelism exceeds the specified limit, the connecting rod must be replaced.

Connecting rod alignment

Per length of 100 mm (3.94 in.)

Standard: 0.05 mm (0.002 in.) or less

Limit: 0.20 mm (0.008 in.)



Crankshaft and Connecting Rod Bearing Clearance

1. Clean the crankshaft, connecting rod, bearing cap, and bearings.
2. Install the bearing to the connecting rod and bearing cap.
3. Apply a coat of molybdenum disulfide grease to the bearing cap bolt threads and setting faces.
4. Prevent the connecting rod from moving.
5. Tighten the bearing cap to the specified torque.

   Connecting rod bearing cap nut torque

   1st step: 98 N·m (10.0 kgm/72 lb·ft)

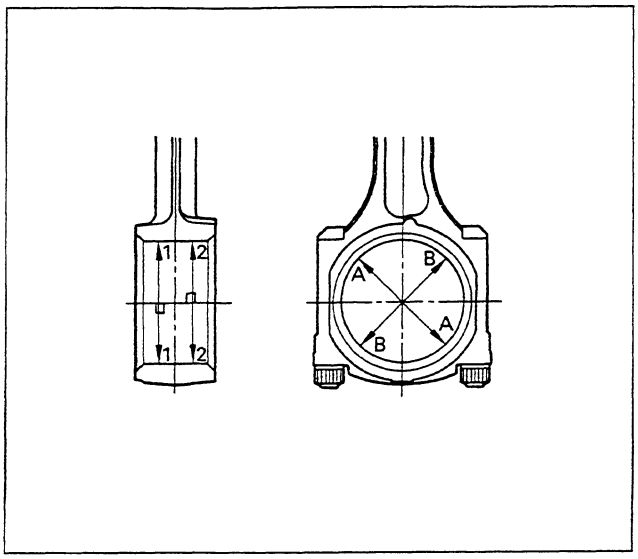
   2nd step: 30 deg.

   3rd step: 30 deg.
6. Use a dial indicator to measure the connecting rod bearing inside diameter.

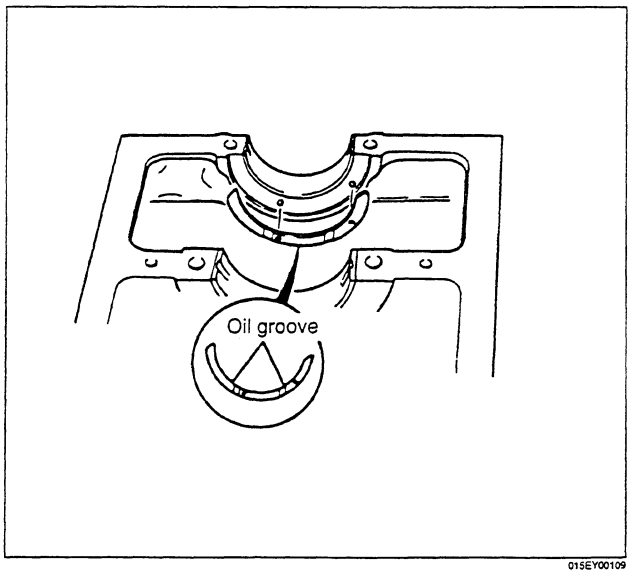
   Crankpin and connecting rod bearing clearance

   Standard: 0.033 – 0.103 mm (0.0013 – 0.0041 in.)

   Limit: 0.16 mm (0.0063 in.)



7. If the clearance between the measured bearing inside diameter and the crankpin exceeds the specified limit, the bearing and/or crankshaft must be replaced.



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- Install the lower crankcase to the cylinder block.
- Apply molybdenum disulfide grease to the crankcase bolts (M18) threads and setting faces.
- Apply engine oil to the crankcase bolts (M12) threads and setting faces.

  Order 1 to 14 in the three steps using the angular tightening method.

M18 bolt

Torque:

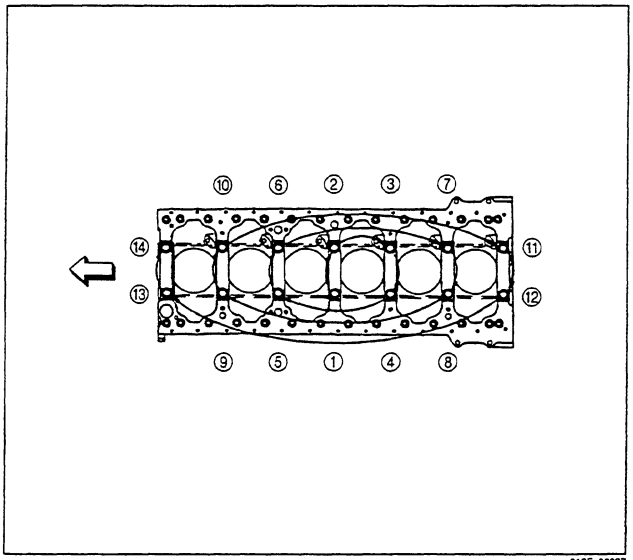
1st step: 49 N·m (5.0 kgm/36 lbft)

2nd step: 88 N·m (9.0 kgm/65 lbft)

3rd step: 90 – 120 deg.

M12 bolt

Torque: 96 N·m (9.8 kgm/71 lbft)



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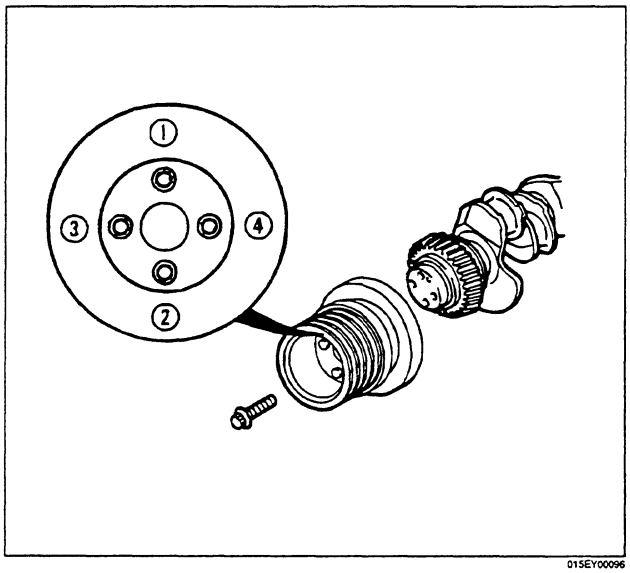
5. Install the piston with the connecting rod.
   Refer to "Piston Installation" in this manual.
6. Install the flywheel to the crankshaft.
   Refer to "Flywheel Housing Installation" in this manual.
7. Install the timing gears to the cylinder block.
   Refer to "Timing Gear Installation" in this manual.
8. Install the oil pan to the cylinder block.
   Refer to "Oil Pan Installation" in this manual.
9. Install the cylinder head to the cylinder block.
   Refer to "Cylinder Head Installation" in this manual.

2. Install the crank pulley.
   - Apply engine oil to the threads of fixing bolts.
   - Set the crank pulley to the crankshaft damper.
   - Tighten the bolts to the specified torque in numerical order shown in the illustration.

   Torque: 267 N·m (27.2 kgm/197 lbft)



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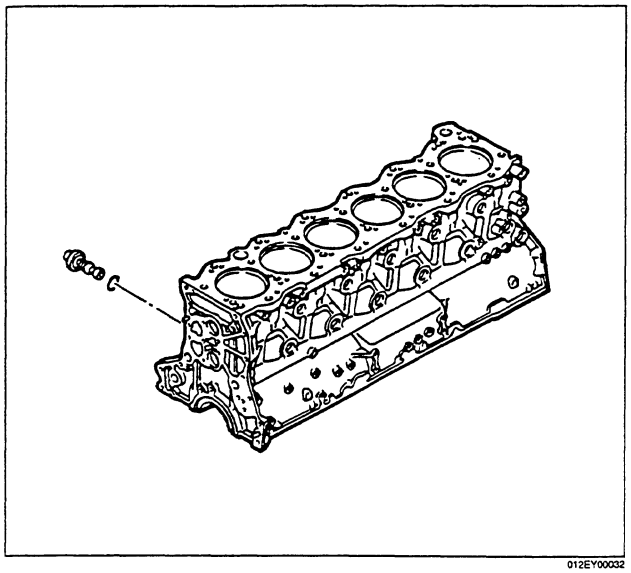
5. Install the oil relief valve.
   - Apply engine oil to the relief valve assembly with new gasket.
   - Install the relief valve to the cylinder block and tighten to the specified torque.

   Torque: 20 N·m (2.0 kgm/14 lbft)



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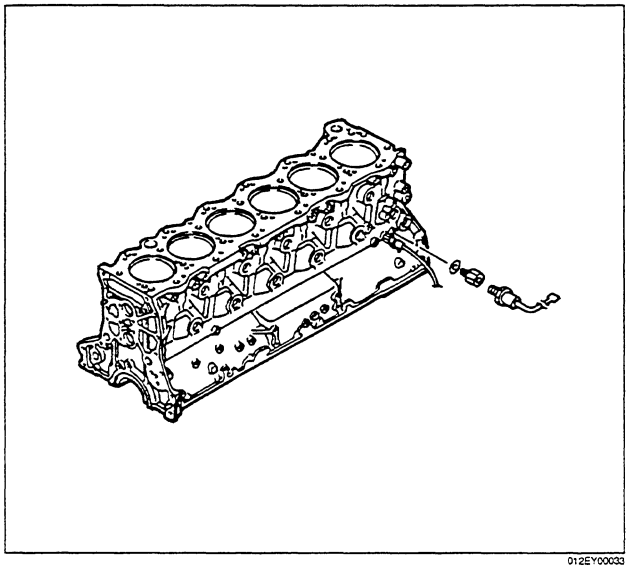
6. Install the oil pressure unit.
   - Install the adapter with new gasket to the cylinder block and tighten it to the specified torque.

   Torque: 41 N·m (4.2 kgm/30 lbft)



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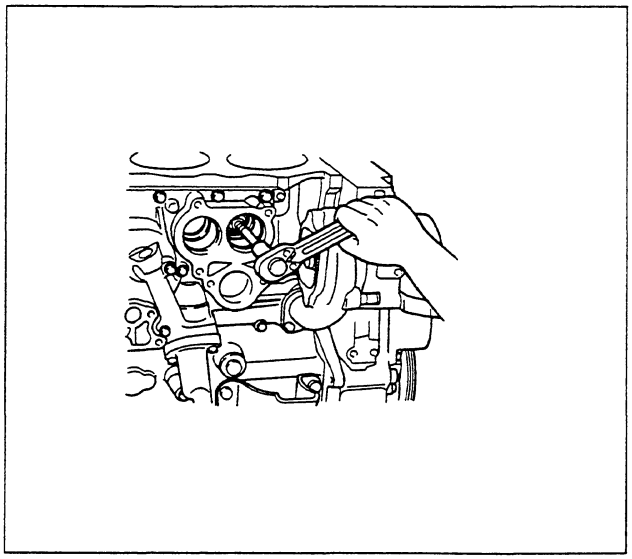
1. Loosen the fixing bolts to remove the thermostat housing.
   Discard the gaskets.
2. Remove the thermostat housing.
   - Carefully remove the thermostat from the oil cooler case.
3. Remove the seal ring.
   - Loosen the seal ring puller 1-8521-0067-0 to take out the seal rings.



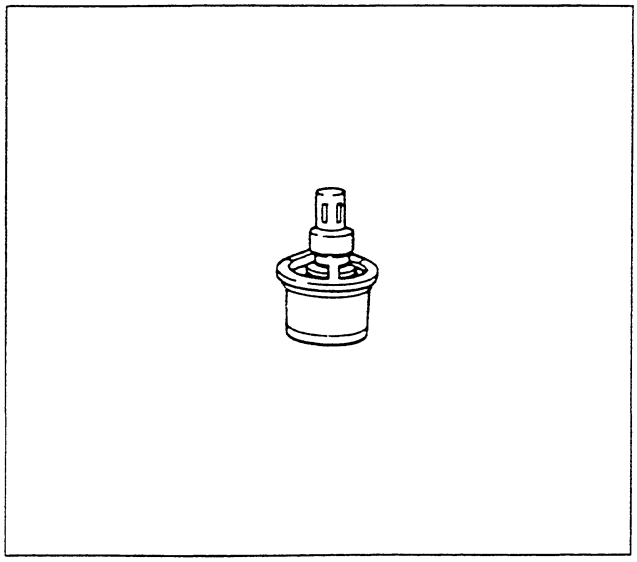
Inspection and Repair

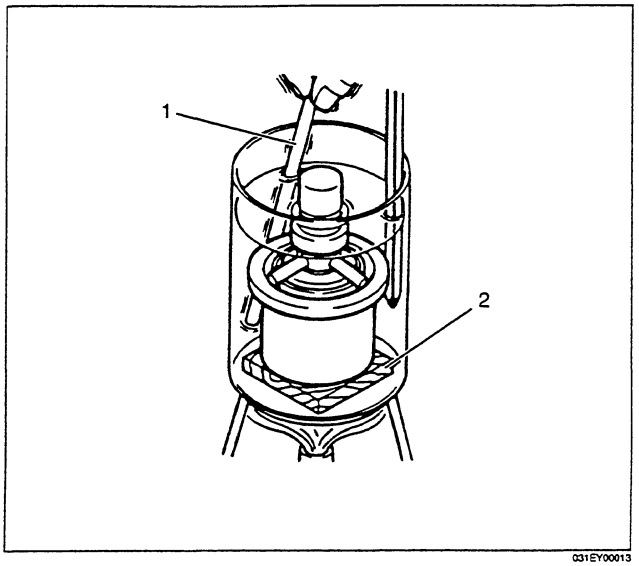
Make necessary adjustment, repairs, and part replacements if excessive wear or damage is discovered during inspection.

1. Check the wax pellet for leakage.
2. Check the springs for damage and weakness.
3. Check the caulking for cracks.

Thermostat operation test

1. Prepare a container large enough to completely contain the thermostat.
2. Fill the container with cold water.
3. Completely immerse the thermostat in the cold water.
4. Place a piece of wood (2) between the thermostat and the bottom of the container (see illustration).
5. Place a thermometer in the water.
6. Heat the water. Stir constantly to prevent direct heat application to the thermostat.
7. Note the temperature at which the thermostat begins to open.
   Initial opening temperature: 79°C (174°F)
8. Note the temperature at which the thermostat opens completely.
   Full open temperature: 95°C (203°F)
9. Measure the thermostat opening height at the fully open position.
   Opening height at full open: 11 mm (0.43 in)





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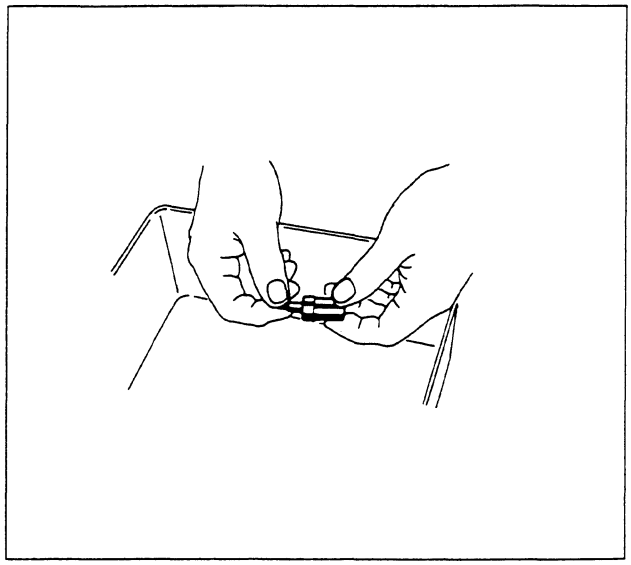
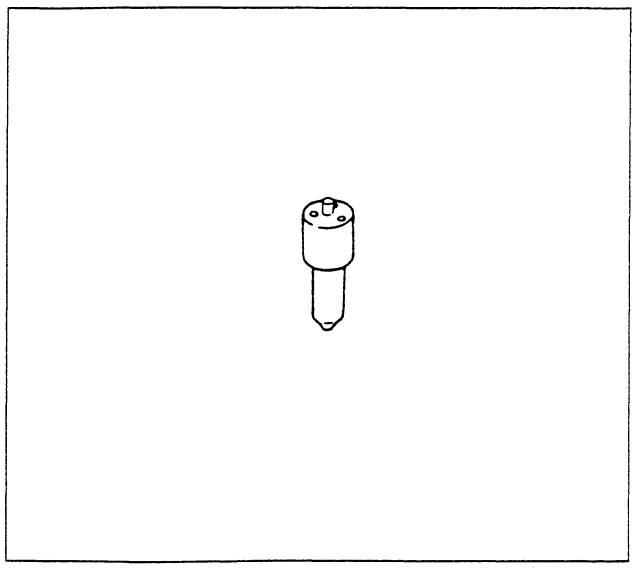
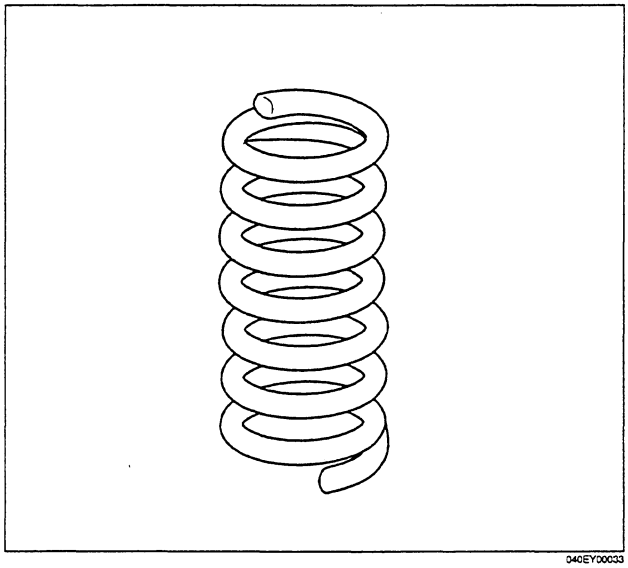




Spring

Inspect the spring for any wear, fell and corrosion.



Nozzle Body and Needle Valve

Check the nozzle body and the needle valve for damage and deformation.

The nozzle and body assembly must be replaced if either of these two conditions are discovered during inspection.

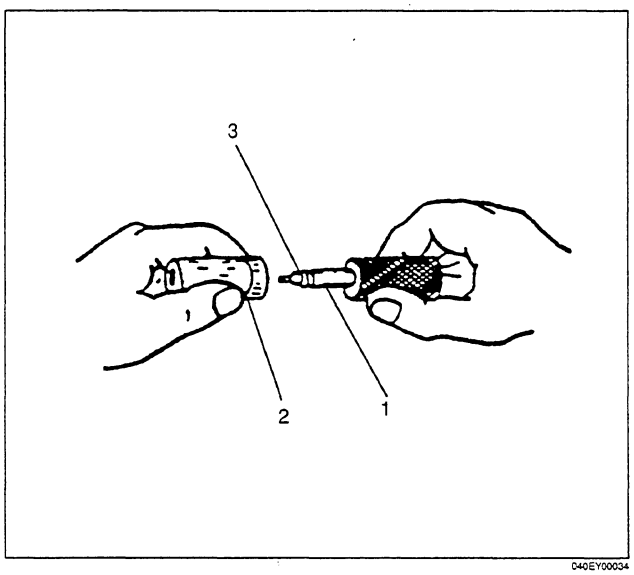
NOTE: New nozzles must be cleaned in a solvent to remove protective coating. The nozzle body and needle must always be replaced as an assembly.

Nozzle Lapping Procedure

1. Lap the nozzle needle (1), and the nozzle body (2) by applying a compound of oxidized chrome with animal oil.

NOTE: Do not apply an excessive amount of the oxidized chrome with animal oil compound to the injection needle valve seat area.

2. Carefully wash the needle valve and the nozzle body in clean diesel fuel after lapping.



Adjustment Procedure

As adjustment of the two-stage injection type nozzle holder is made in hundredths of a millimeter, clean the parts thoroughly in light oil to completely remove any dirt or foreign matter.

1	First nozzle opening pressure adjustment	Adjust the first nozzle opening pressure using the shim.
2	Full needle valve lift confirmation	Confirm the full needle valve lift in accordance with the closed method.
3	Pre-lift confirmation	Confirm pre-lift in accordance with the closed method. **CAUTION:** **If not as specified, replace the nozzle assembly, lift piece, pins and spacer using the nozzle service kit.**
4	Second nozzle opening pressure confirmation	Confirm the second nozzle opening pressure in accordance with the closed method.
5	Second nozzle opening pressure adjustment	Adjust the second nozzle opening pressure using the shim.
6	Final inspection	Confirm the condition of the fuel spray with the nozzle and nozzle holder assembled.

Adjustment Service Data

Nozzle needle valve full-lift		0.32 mm (0.0126 in)
Nozzle needle valve pre-lift		0.06 mm (0.0024 in) at 18.7 MPa (190 kg/cm^2, 2,700 psi)
Nozzle pressure	1st stage	17.7 MPa (180 kg/cm^2, 2,560 psi)
	2nd stage	23.0 – 24.0 MPa (235 – 245 kg/cm^2, 3,340 – 3,480 psi) at lift 0.11 mm (0.0043 in) = (pre lift + 0.05 mm (0.0020 in))

STARTING AND CHARGING

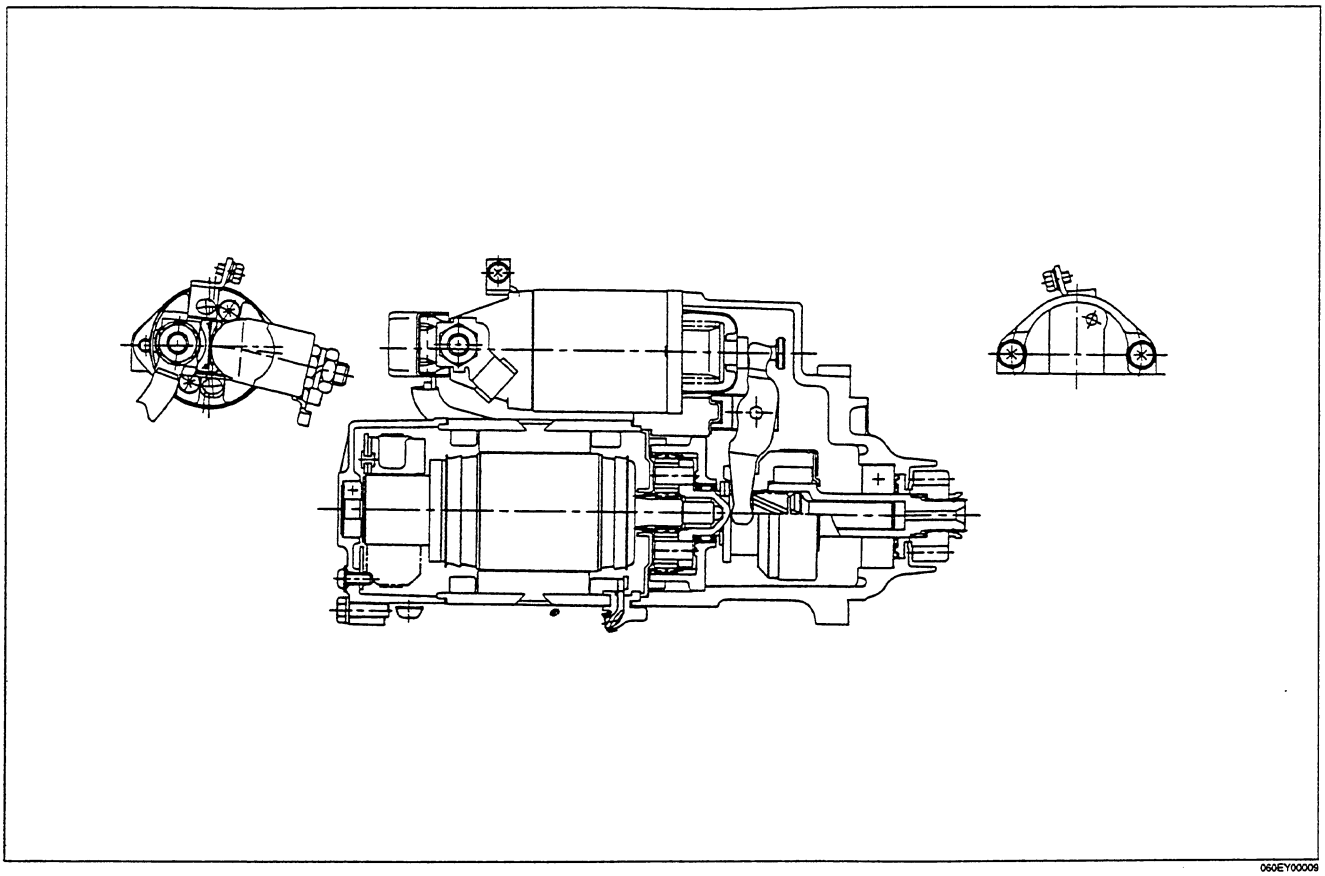
CONTENTS

Service precaution

- Be sure to use the correct fastener in the proper location. If a used fastener is replaced with a new one, the new fastener must be identical to the previous one.
- Some fasteners must always be replaced with new ones following removal. These fasteners are specified in this Manual.
- Some fasteners require thread locker or thread sealant. These fasteners are specified in this Manual.
- Supplemental fastener coatings (paint, grease, or corrosion inhibitor) affect fastener torque and clamping force. They may damage the fastener. Do not use them unless specifically called for.
- Tighten all fasteners to the specified torque. If there is a tightening sequence, follow it exactly.

Starter Motor

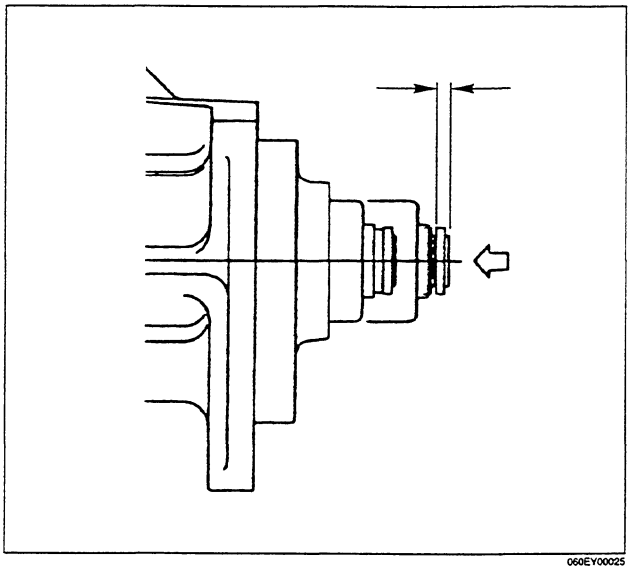
General Description



The starter motor adapts the planetary gears in reduction gear mechanism.

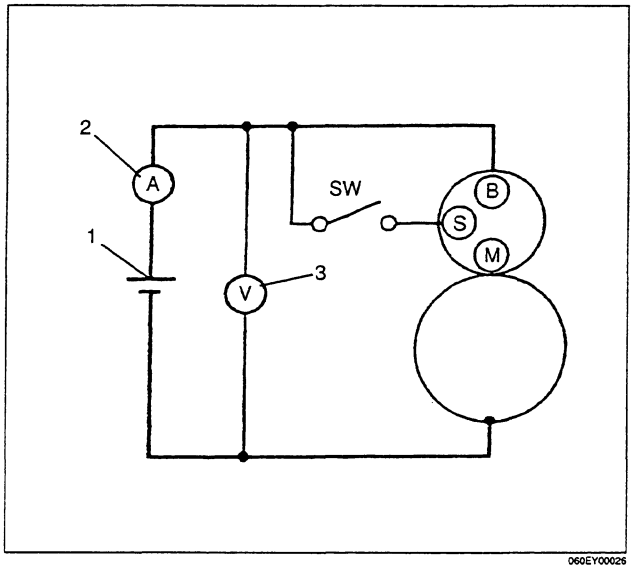
Overrunning clutch shaft return

Press against the head of the overrunning clutch with your hand.
Measure the movement (return) of the clutch shaft.
If the return is outside the specified range, adjust the packing between the front bracket and the magnetic switch.
If adjustment is not possible. Replace the lever.



Performance test

1. Connect the starter motor as shown in the illustration.



Legend

(1) Battery
(2) Ammeter
(3) Voltmeter

2. Turn the switch on.
3. Measure the starter motor speed, the current, and the voltage.

   If the starter motor speed is less than the specified value, the starter motor requires further servicing.

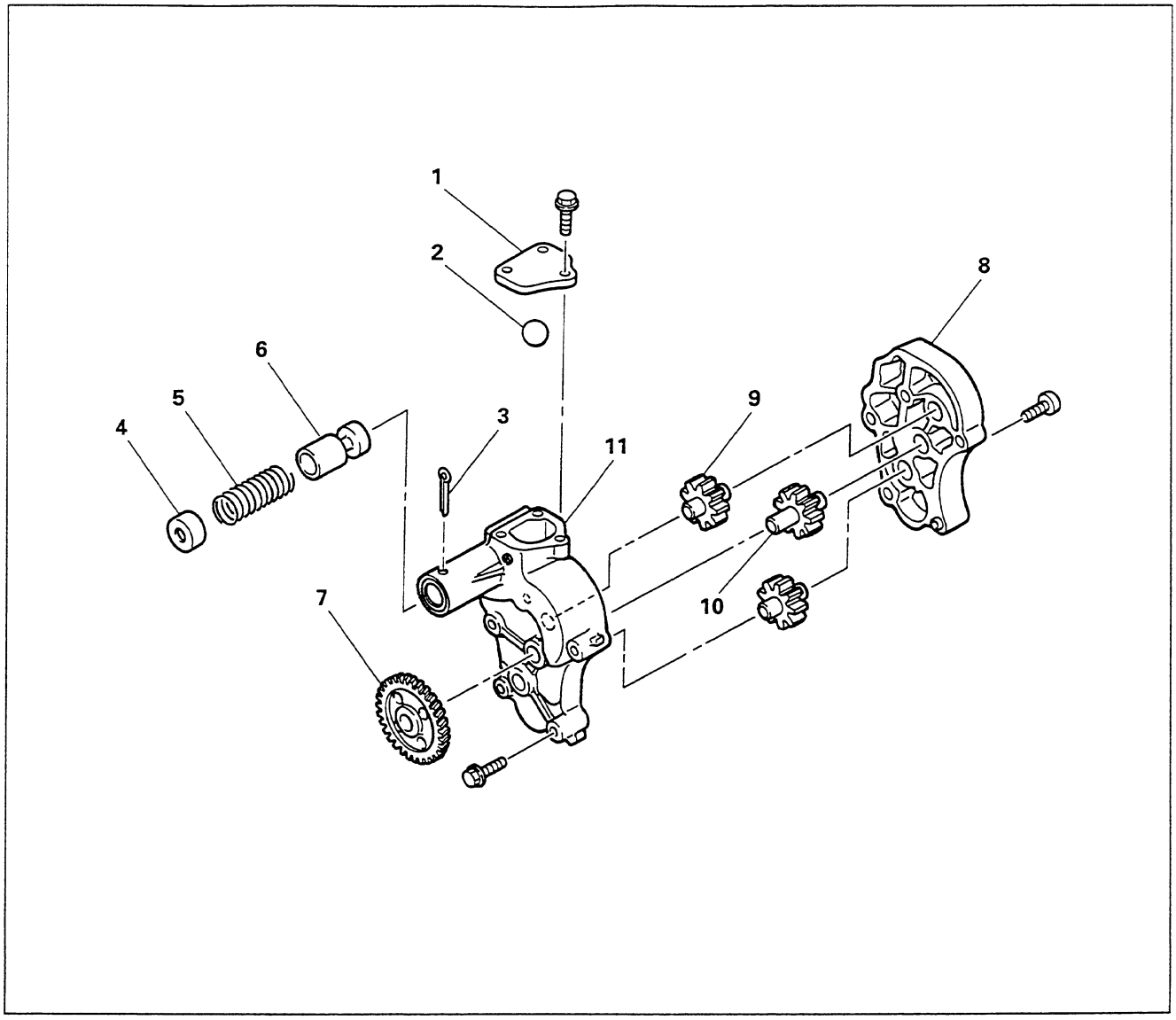
   Starter motor minimum speed: 3,300 min^{-1} (No load)

   If the measured starter motor minimum current and/or terminal voltage is different from the specified value, the starter motor requires further servicing.

   Starter motor minimum current: 85 A (No load)

   Starter motor terminal voltage: 23 V (No load)

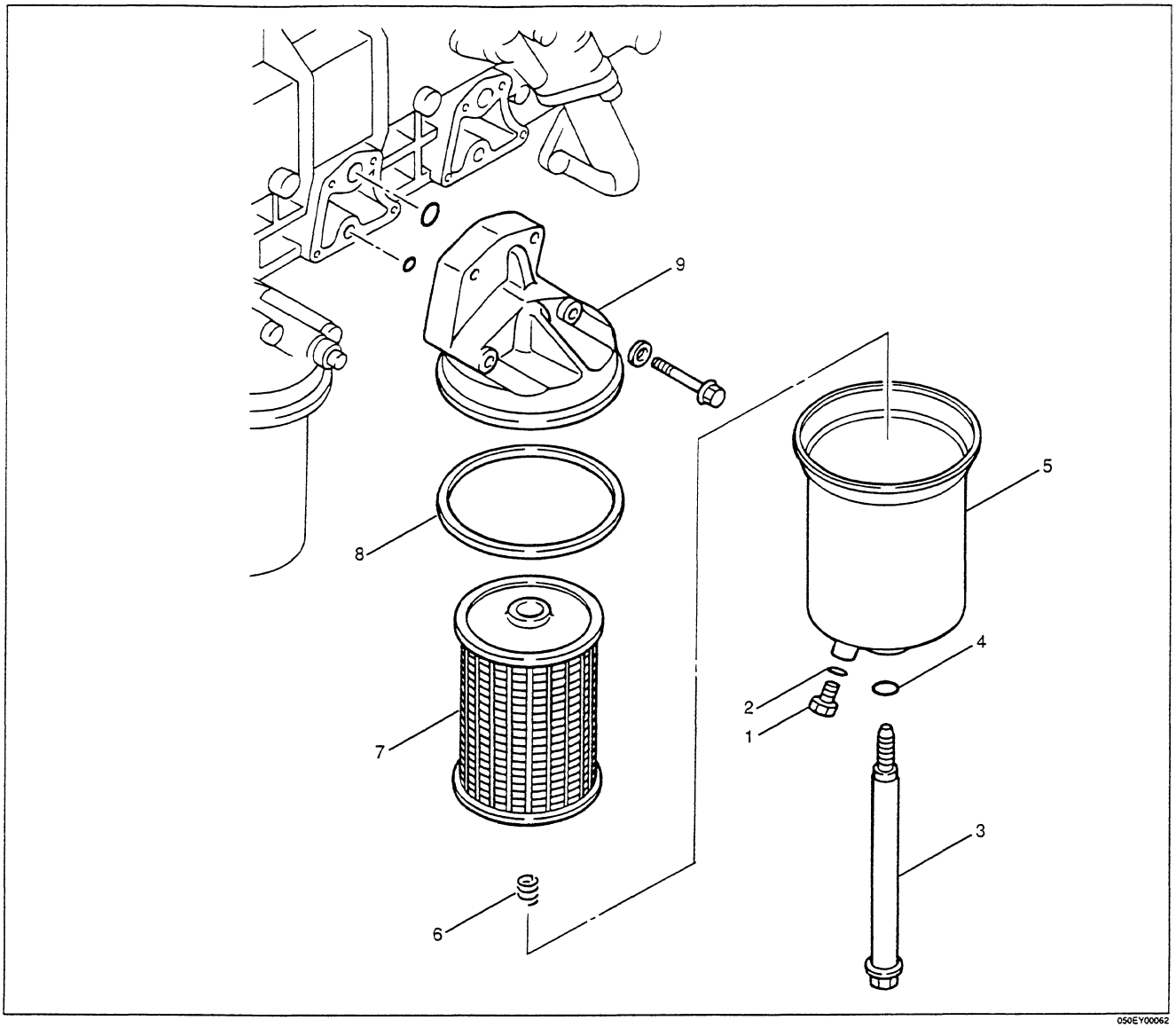
Reassembly



Legend

(1) Cover
(2) Ball
(3) Split pin
(4) Spring seat
(5) Spring
(6) Oil relief valve
(7) Oil pump drive gear
(8) Oil pump cover
(9) Oil pump driven gear
(10) Drive gear shaft
(11) Oil pump body

Partial Oil Filter



Legend

(1) Drain plug
(2) Gasket
(3) Center bolt
(4) Gasket
(5) Oil filter case
(6) Spring
(7) Element
(8) Gasket
(9) Bracket