

LU-1

LUBRICATION SYSTEM

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LUBRICATION SYSTEM — Troubleshooting

TRUBLESHOOTING

Problem	Possible cause	Remedy	Page
Oil leakage	Cylinder head, cylinder block or oil pump body damaged or cracked	Repair as necessary	EM-62 or EM-83
	Oil seal faulty	Replace oil seal	
	Gasket faulty	Replace gasket	
Low oil pressure	Oil leakage	Repair as necessary	LU-5
	Relief valve faulty	Repair relief valve	
	Oil pump faulty	Repair oil pump	LU-5
	Engine oil poor quality	Replace engine oil	LU-4
	Crankshaft bearing faulty	Replace bearing	EM-74
	Connecting rod bearing faulty	Replace bearing	EM-72
High oil pressure	Oil filter clogged	Replace oil filter	LU-4
	Relief valve faulty	Repair relief valve	LU-8

LUBRICATION SYSTEM

Recommended Viscosity (SAE):

°C	-29	-18	-7	4	16	27	38
°F	-20	0	20	40	60	80	100
SAE	5W	5W	5W	5W	10W	10W	10W

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FR Vehicles

Oil Pressure Gauge

Oil Pressure Switch

FF Vehicles w/o Oil Cooler

Oil Pressure Switch

FF Vehicles w/ Oil Cooler

Oil Pressure Switch

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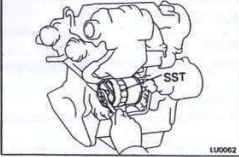
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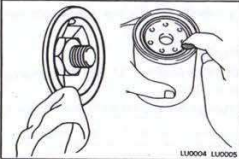
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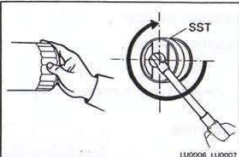
LUBRICATION SYSTEM — Replacement of Engine Oil and Oil Filter



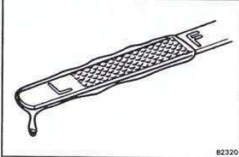
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LU0004 LU0005



LU0006 LU0007



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REPLACEMENT OF ENGINE OIL AND OIL FILTER

1. DRAIN ENGINE OIL

(a) Remove the oil filler cap.

(b) Remove the oil drain plug and drain the oil into a container.

2. REPLACE OIL FILTER

(a) Using SST, remove the oil filter.

SST 09228-44010

(b) Inspect and clean the oil filter installation surface.

(c) Apply clean engine oil to the gasket of a new oil filter.

(d) Lightly screw in the oil filter to where you feel resistance.

(e) Then, using SST, tighten the oil filter an extra 3/4 turn.

SST 09228-44010

3. FILL WITH ENGINE OIL

(a) Clean and install the oil drain plug with a new gasket. Torque the drain plug.

Torque: 400 kg-cm (29 ft-lb, 39 N-m)

(b) Fill the engine with new oil, API grade CD or better. If it is impossible to get the CD or better grade by any means, you may use the CC grade.

NOTE: Be sure to use CD type for the vehicle with turbocharger.

	Oil capacity			Liters (USqts, Imp.qts)		
	FR vehicles	FF vehicles	CV only			
Drain and refill w/o Oil filter change	3.5 (3.7, 2.9)	3.8 (4.0, 3.3)	3.8 (4.0, 3.3)			
w/ Oil filter change	4.2 (4.4, 3.6)	4.3 (4.5, 3.8)	4.3 (4.5, 3.8)			
Dry fill	5.0 (5.3, 4.4)	4.8 (5.1, 4.2)	5.0 (5.3, 4.4)			

(c) Install the oil filler cap.

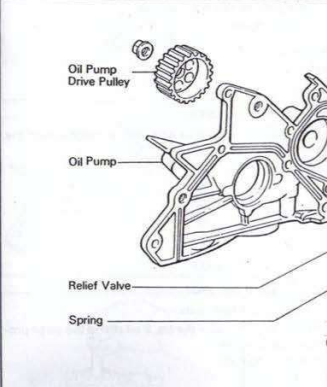
4. START ENGINE AND CHECK FOR LEAKS

5. RECHECK OIL LEVEL

Recheck the engine oil level and refill as necessary.

LUBRICATION SYSTEM

OIL PUMP COMPONENTS



Oil Pump Drive Pulley

Oil Pump

Relief Valve

Spring

REMOVAL NOTE

NOTE: strain

1. RAISE CAUTION

2. DRAIN

3. REMOVE (See :)

4. REMOVE PULL

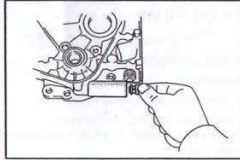
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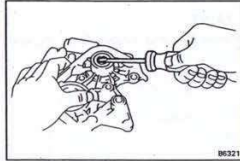
LU-8

LUBRICATION SYSTEM — Oil Pump



4. INSPECT RELIEF VALVE

Check the relief valve for scoring or wear.
If damaged, replace the valve or pump assembly.



REPLACEMENT OF OIL SEAL

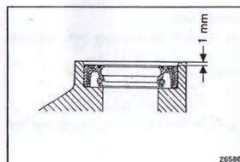
1. REMOVE OIL SEAL

Using a screwdriver, pry out the oil seal.



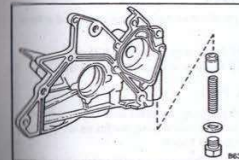
2. INSTALL OIL SEAL

- Apply MP grease to a new oil seal.
- Using a socket wrench and hammer, drive in the new oil seal.



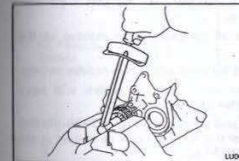
CAUTION: Drive in the oil seal to the depth of about 1 mm (0.04 in.) from the pump body edge.

LUBRICATION SYSTEM

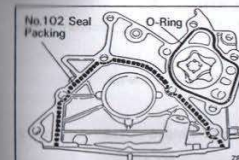


ASSEMBLY
(See page 10)

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INSTALL
(See page

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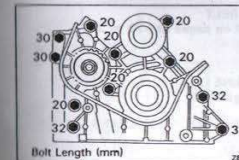
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NOTE

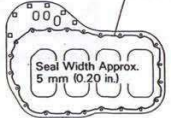


LU-10

LUBRICATION SYSTEM — Oil Pump

FR Vehicles

No. 102 Seal Packing



Seal Width Approx.
5 mm (0.20 in.)

FF Vehicles

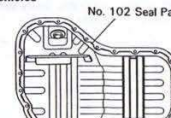
No. 102 Seal Packing



Seal Width Approx.
5 mm (0.20 in.)

FR Vehicles

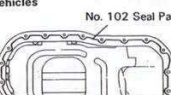
No. 102 Seal Packing



Seal Width Approx.
5 mm (0.20 in.)

FF Vehicles

No. 102 Seal Packing



Seal Width Approx.
5 mm (0.20 in.)

2. INSTALL OIL STRAINER

Install the strainer with the two bolts, two nuts and a new gasket.

Torque: Bolt 185 kg-cm (13 ft-lb, 18 N-m)
Nut 55 kg-cm (48 in.-lb, 5.4 N-m)

3. INSTALL NO. 2 OIL PAN

(a) Remove any old packing material and be careful not to drop any oil on the contacting surfaces of the No. 2 oil pan and cylinder block.

- Using a razor blade and gasket scraper remove all the old packing (FIPG) material from the gasket surfaces and sealing groove.
- Thoroughly clean all components to remove all the loose material.
- Clean both sealing surfaces with a non-residue solvent.

CAUTION: Do not use a solvent which will have adverse affect on the painted surfaces.

(b) Apply No. 102 seal packing (Part No. 08826-00080) or equivalent to the No. 2 oil pan as shown in the figure.

- Install a nozzle that has been cut to the 5 mm (0.20in.) opening.

NOTE: Avoid applying an excess amount to the surface. Be especially careful near oil passages.

- Parts must be assembled within 15 minutes of application. Otherwise, the material must be removed and reapplied.
- Immediately remove nozzle from tube and reinstall cap.

(c) Install the No. 2 oil pan with seven bolts.

Torque: 75 kg-cm (65 in.-lb, 7.4 N-m)

4. INSTALL NO. 1 OIL PAN

(a) Install the No. 1 oil pan in the same procedure of step 3.

(b) Install the bolts and nuts.

Torque: 75 kg-cm (65 in.-lb, 7.4 N-m)

5. INSTALL CRANKSHAFT TIMING PULLEY AND NO. 2 IDLER PULLEY

(See steps 1 and 3 on page EM-32)

6. INSTALL TIMING BELT

(See steps 7 to 20 on pages EM-33 to 37)

7. LOWER ENGINE

8. REFILL WITH ENGINE OIL

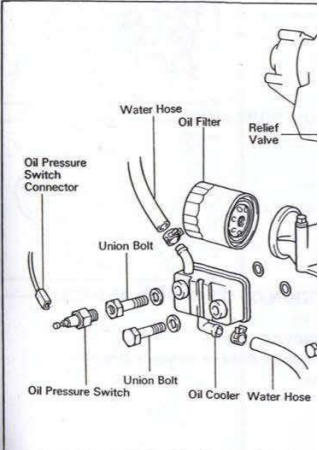
(See step 3 on page LU-4)

9. START ENGINE AND CHECK FOR LEAKS

10. RECHECK OIL LEVEL

LUBRICATION SYSTEM —

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Water Hose
Oil Filter
Relief Valve
Oil Pressure Switch Connector
Union Bolt
Oil Pressure Switch
Union Bolt
Oil Cooler
Water Hose

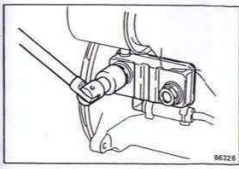
REMOVAL VALVE

1. DRA

2. REM
(a)
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3. REM
(a)
(b)

4. REM



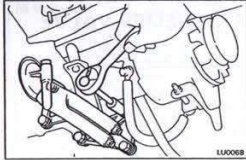
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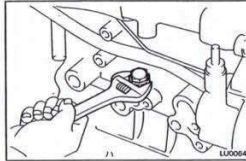
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LU-12

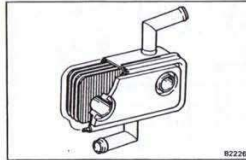
LUBRICATION SYSTEM — Oil Cooler and Relief Valve



5. **REMOVE OIL FILTER BRACKET**
Remove the five bolts and oil filter bracket with the O-ring.
6. **REMOVE EXHAUST MANIFOLD STAY (CV)**

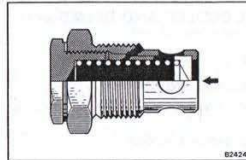


- ## 7. REMOVE RELIEF VALVE

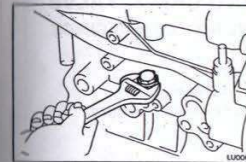


INSPECTION OF OIL COOLER AND RELIEF VALVE

- 1. INSPECT OIL COOLER**
Check the oil cooler for damage or clogging.
- 2. INSPECT RELIEF VALVE**
Push the valve with a screwdriver to check if it is stuck.



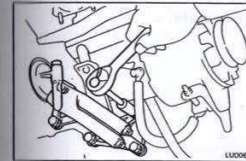
LUBRICATION SYSTEM –



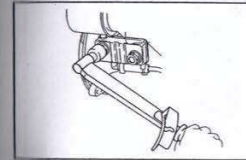
**INSTA
VALVI**

(See page 10)

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| | Fill |

OIL NOZZLE AND CHECK VALVE

INSPECTION OF OIL NOZZLE AND CHECK VALVE

