SERVICE MANUAL

MODEL
L20A, L24 SERIES
ENGINE

NISSAN

NISSAN MOTOR CO., LTD.
TOKYO, JAPAN

SECTION EL

ENGINE LUBRICATION SYSTEM

EL

LUBRICATING SYSTEM ..... EL- 1

LUBRICATING SYSTEM

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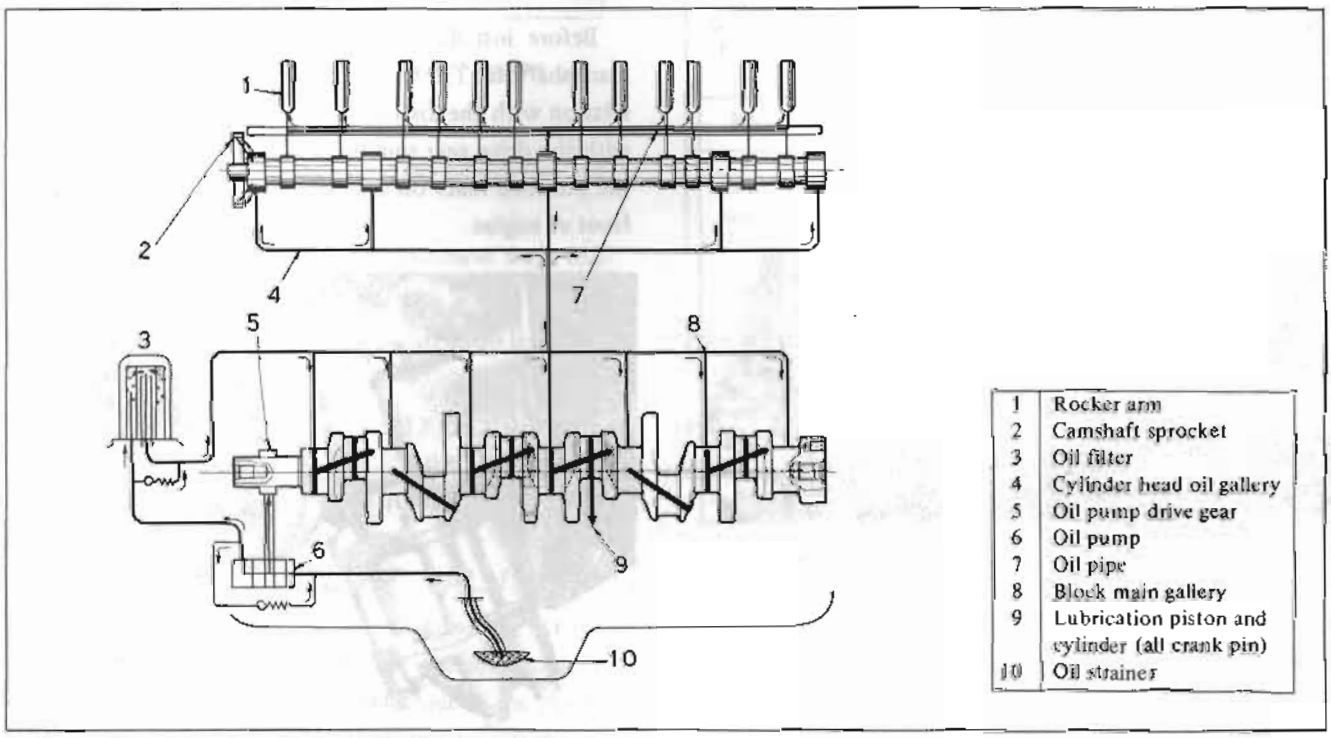


Fig. EL-1 Lubrication circuit

DESCRIPTION

The lubricating system is of a Pressure-feed type, and is composed of highly efficient functional components suited for high performance, i.e. high out-put and high speed running.

L20A and L24 engines adopt the same lubricating system.

LUBRICATION CIRCUIT

Oil drawn from the oil pan through the inlet screen and tube to the inlet side of the oil pump is delivered by the oil pump through the outlet and the oil gallery to the inlet side of the full flow oil filter and to the main oil gallery.

The main oil gallery supplies oil to the crankshaft main bearings and drilled passages in the crankshaft, and thus, oil is fed directly from the main bearings to the connecting rod bearings.

Oil injected from jet holes on the connecting rods lubricates the cylinder walls and piston pins.

In L20A and L24 engines, the oil distributed from the main gallery enters the chain tensioner, and the pad is

held against the chain by oil pressure and spring. The oil also lubricates the timing chain through the jet located near the chain.

Furthermore, lubricant is supplied to the cylinder head main oil gallery through the crankshaft center bearing, and oil is fed to the camshaft bearings on the cylinder head directly from this gallery.

The rocker mechanism is lubricated under two types of lubricating methods.

In L20A and L24 engines, the rocker arm and valve are lubricated intermittently by the oil fed through the oil gallery in the camshaft and the small channel at the base circle portion of each cam.

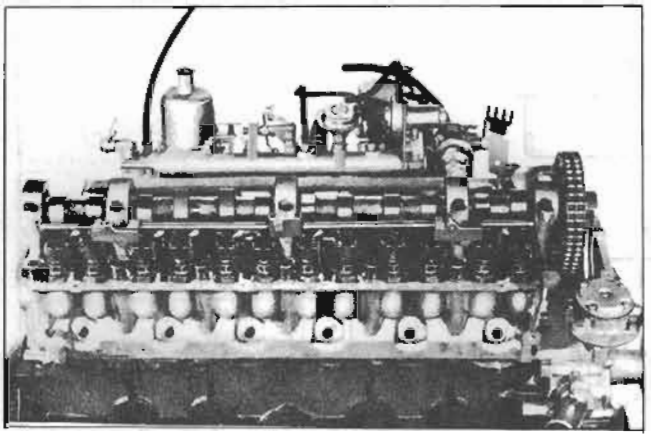


Fig. EL-2 Cylinder head lubrication for L24 engine (model S30)

Lubricant is supplied to this oil pipe through No. 3 camshaft bearing, and the rocker arm and valve are lubricated intermittently by the oil through the small holes or the oil pipe.

OIL PUMP

Description

The oil pump assembly is installed to the bottom of the front cover (by four bolts) and driven by the distributor drive shaft assembly. The oil pump is a rotor type. The oil pressure is regulated by the regulator valve. A slot provided at the top of the drive rotor is engaged with a dog clutch at the lower end of the distributor drive shaft assembly.

The oil pump is thus operated by a gear on the crankshaft through the distributor drive shaft assembly.

Removal (Engine in vehicle)

1. Detach the distributor.
2. Drain engine oil.
3. Remove the splash shield board.
4. Detach the oil pump body together with drive gear spindle.

Installation

Before installing the oil pump in the engine, set the crankshaft to T.D.C. position of No. 1 cylinder for its relation with the distributor. Install the oil pump together with the drive gear spindle in the front cover. Be sure that the punched mark on the drive gear spindle is faced to the front of engine.

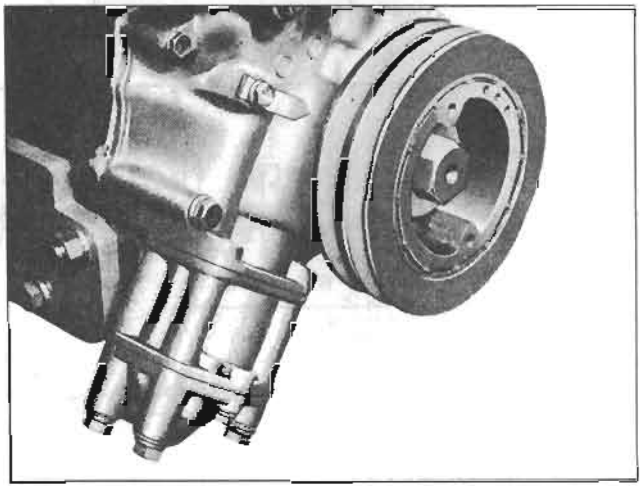


Fig. EL-3 Oil pump installation

Make sure that the engagement is in order by checking at the end of the spindle through the distributor fitting hole.

Tighten the bolts used to connect the oil pump to the front cover.

Disassembly and reassembly

Separate the body cover from the oil pump body by unscrewing one secure bolt, and take out pump drive and driver gears from the pump body.

Assemble the oil pump carefully and do not turn up the oil pump cover gasket.

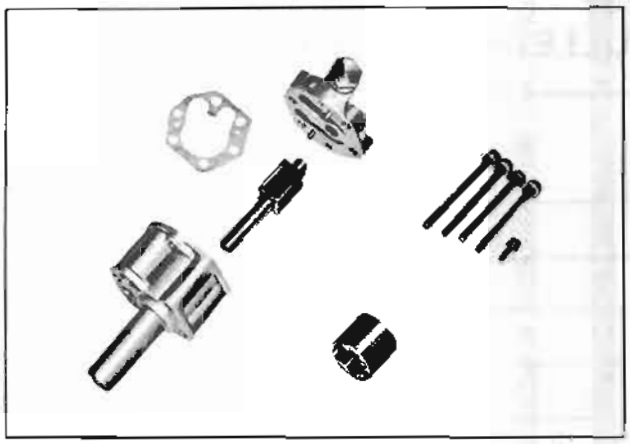


Fig. EL-4 Oil pump for L20A and L24 engine

Inspection and repair

Clean the disassembled parts with cleaning solvent, and inspect for defects.

Inspect the drive rotor shaft for excessive wear and scores and check the following clearances.

Side clearance between outer and inner rotor ..... 0.05 to 0.12 mm (0.0020 to 0.0047 in)

Tip clearance ..... 0.12 mm (0.0492 in)

Clearance between outer rotor and body ..... 0.15 to 0.21 mm (0.0059 to 0.083 in)

OIL PRESSURE RELIEF VALVE

The oil pressure relief valve is not adjustable. At the released position, the valve permits oil passing through a passage on the pump cover to the inlet side of the pump.

Measure the relief valve spring dimension to ensure that the spring is provided with the correct tension.

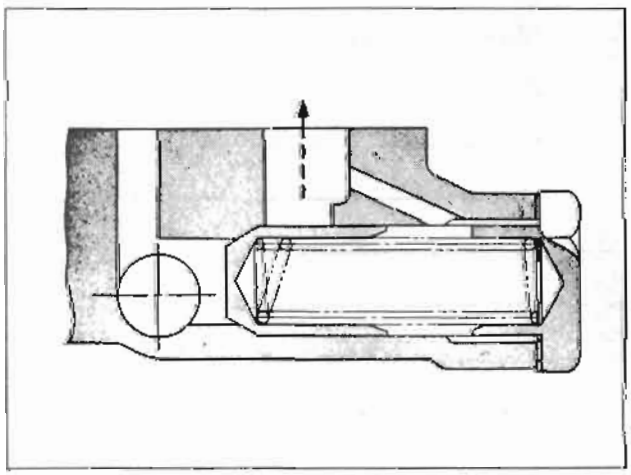


Fig. EL-5 Relief valve

Tightening torque

Oil pump mounting bolts	1.5 to 2.1 kg-m (10.8 to 15.2 ft-lb)
Cap nut-release valve	3.0 to 3.5 kg-m (21.7 to 25.3 ft-lb)

Specifications

Oil pressure at idling	1.0 to 1.2 kg/cm^2 (14.2 to 17.1 lb/sq in)
Relief valve spring	
Free length	57 mm (2.24 in)
Pressured length	39 mm (1.54 in)
Relief valve opening pressure	3.8 to 4.2 kg/cm^2 (54.0 to 59.7 lb/sq in)

OIL FILTER

The oil filter is of an easy-to-handle cartridge type. Thus, the filter element can be readily removed and installed by hand.

The filter element and the filter body are caulked together. Interior cleaning is not necessary but the filter body with element must be replaced at every 10,000 km (6,000 miles).

When installing the oil filter, screw it to the cylinder blocks by hand.



Fig. EL-6 Oil filter

Note: Do not tighten the filter excessively, otherwise oil leakage may occur.

SERVICE JOURNAL OR BULLETIN REFERENCE

DATE	JOURNAL or BULLETIN No.	PAGE No.	SUBJECT