

TECHNICAL DATA

ENGINE MODEL N4.38



ENGINE SPECIFICATIONS

Number of cylinders: 4
 Displacement: 1498 cc
 Bore - Stroke: 78 X 78.4 mm
 Compression ratio: 22/1
 Minimum compression pressure: 24 bars
 Compression pressure: 29 to 33 bars
 Maximum speed without load: 3200 rpm
 Maximum RPM in load: 3000 rpm
 Idle RPM in forward gear: 800 rpm
 Max. Torque:
 Firing order: 1 - 3 - 4 - 2
 Rotation: Anti clockwise (Flywheel)

INJECTION

Type of injector: MINI (DNOPD)
 Fuel injection pressure: NIPPI DENSO
 Injectors' pressure: 140 bars
 Injection timing: 8 to 10° before TDC

TIGHTENING TORQUE

Arm head cover cap nuts: 0.7 to 0.9 kgFm
 Cylinder head bolts: 6.5 to 7 kgFm
 Flywheel bolts: 5.5 to 6 kgFm
 Connecting rod bolts: 4.2 to 4.7 kgFm
 Rocker arm bracket nuts: 2 to 2.7 kgFm
 Main bearing caps bolts: 3.0 to 3.5 kgFm
 Main bearing caps bolts: 5.0 to 5.5 kgFm
 Nozzle holder assembly: 5.0 to 7.0 kgFm
 Glow plugs: M8: 0.8 to 1.5 kgFm

LUBRIFICATION

Oil pressure at idle RPM: 0.5 bar
 Oil pressure at maximum load: 2 to 4 bars
 Recommended oil: API CD 15W40
 Oil pan capacity: 4 liters <angle> 5 liters
 Gearbox model:
 Oil capacity:
 Recommended oil: } depending on type

DIAGRAMS

Valve clearance (cold):
 Inlet: 0.15 mm
 Exhaust: 0.15 mm
 Valve recessing: - 0.05 to + 0.15 mm

PISTON RINGS

Piston ring gap:
 Piston top compression: 0.30 to 0.45 mm
 Intermediate: 0.30 to 0.45 mm
 Oil control: 0.25 to 0.40 mm

CYLINDER HEAD

Cylinder head surface flatness : <0.05 mm

SEA WATER PUMP

Water flow: 34 litres per minutes

GLOW PLUGS

Resistance: 0.90 to 1.2 ohms