

TECHNICAL DATA

ENGINE MODEL N4.60



ENGINE SPECIFICATION

Number of cylinders: 4
 Displacement: 1999 cc
 Bore - Stroke: 83 X 92.4 mm
 Compression ratio: 22/1
 Max. Pressure difference between cyl. : 10%
 Compression pressure: 25.5 bars
 Maximum speed without load: 3050 rpm
 Maximum RPM in load: 2800 rpm
 Idle RPM in forward gear: 800 rpm
 Max. Torque: 168 Nm at 1800 rpm
 Firing order: 1 - 3 - 4 - 2
 Rotation: Anti clockwise (Flywheel)

INJECTION

Type of injector: BOSCH
 Fuel injection pressure: BOSCH PFR5M
 Injection pump manufacturer: 140 bars
 Injection timing: 19°

TURBOCHARGER

Boost pressure: 0,55 to 0,60 bar
 Exhaust gas temperature: 450° to 500°
 Axial shaft clearance: 0.12 mm maxi

TIGHTENING TORQUE

Arm head cover cap nuts: 0.7 to 0.9 Nm
 Cylinder head bolts: 9.5 to 10.0 Nm
 Flywheel bolts: 10.0 to 11.0 Nm
 Connecting rod bolts: 4.5 to 5.0 Nm
 Rocker arm bracket nuts: 2.4 to 2.8 Nm
 Main bearing caps bolts:
 M8: 4.7 Nm
 M10: 7.0 to 7.5 Nm
 Nozzle holder assembly: 5.0 to 7.0 Nm
 Glow plugs: 2.0 to 2.5 Nm

LUBRIFICATION

Oil pressure at idle RPM: 1 bar
 Oil pressure at maximum load: 3 to 4.5 bars
 Recommended oil: API CE SF/CD
 Oil pan capacity: 9 litres <angle> 10 litres
 Gear box: } depending the type
 Capacity: }
 Oil recommended: }

COOLING SYSTEM

Capacity: 9 liters
 Liquid 50% antifreeze + 50% water

DIAGRAMS

Valve clearance (cold):
 Inlet: 0.20 mm
 Exhaust: 0.20 mm
 Valve recessing: 0.40 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 0.45 mm

CYLINDER HEAD

Cylinder head surface flatness:
 <0.05 mm / 500 mm

SEA WATER PUMP

Water flow: 138 Liters per hour.

GLOW PLUGS

Resistance: = 1.0 ohm