

**TECHNICAL DATA**  
**ENGINE TYPE**  
**N4.100**

**CARACTERISTICS**

Number of cylinders: 4  
Displacement : 3053 cm<sup>3</sup>  
Bore - Stroke : 94 X 110 mm  
Compression ratio : 20 / 1  
Compression pressure : 4.0 MPa  
2.9 MPa mini  
Max. pressure diff . between cyl. : 0.4 MPa  
Maximum rpm in load : 2800 tr/min  
Maximum speed without load : 3020 tr/mn  
Idle speed : 850 tr/mn  
Max. torque : 313 Nm @ 2000 tr/mn  
Firing order : 1-3-4-2  
Rotation : CCW view from flywheel  
Cylinder n°1 Timing side

**INJECTION**

Injection system : Direct E-CDIS  
Injectors : Denso P Type  
Fuel pump : Denso Type Mini Bosh  
Injection pressure : 1<sup>st</sup> stage : 19 MPa  
2<sup>nd</sup> stage : 24 MPa  
Injection Timing : 7.5° - 9.5° before TDC

**TURBO COMPRESSOR**

Delivery pressure :  
55 +/- 5 kPa  
Exhaust gas temperature :  
490°C - 550°C / 600°C maxi  
Axial play : 0.173 mm

**TIGHTENING TORQUE**

Cylinder head cover bolts: 10 Nm  
Cylinder head bolts : 190 Nm  
Flywheel bolts : 103 Nm  
Connecting rods bolts : 71 Nm  
Crankcase 2 bolts (bearing case): 143Nm  
Crankcase 2 nuts (bearing case): 61Nm  
Rocker arm bracket bolts: 52 Nm  
Crankshaft pulley bolt : 265 Nm  
Injector nozzle clamp bolt: 26Nm  
Glow plugs: 8.5 Nm  
Injection pumps gear nut (LH): 148 Nm  
Nut B+ starter : 10 Nm



**LUBRICATION**

Oil pressure at idle: 49 kPa mini  
Oil pressure at max. load : 197 – 392 kPa  
Recommended oil : API CD15W40  
(MOTUL TEKMA MEGA OU  
MOTUL MARINE 4T)  
Oil pan Capacity : 10-11.2 litres  
inclinaison depending  
Gearbox : see type  
Capacity : see type  
Oil : see type

**COOLING CIRCUIT**

Capacity : 12 litres  
Thermostat opening temperature: 82 °C

**DIAGRAMS**

Valve clearance (engine cold):  
Intake: 0.13~0.17 Exhaust: 0.13~0.17  
Valve recessing:  
Inlet and Exhaust : 0.65-0.85 mm  
Max : 1.2 mm

**PISTON RINGS**

Cut value clearance:  
- Firing piston ring: 0.25-0.40 mm  
limit: 1.25 mm -  
Compression Ring : 0.30-0.45 mm  
limit : 1.25 mm  
Oil ring : 0.25-0.45 mm  
limit: 1.25 mm

**CYLINDER HEAD**

Surface flatness: < 0.05 mm

**SEA WATER PUMP**

Flow: 130 litres/mn @ 2800 tr/mn

**ELECTRICITY**

Glow plug resistance: 0.95 Ω  
Recommended Battery: 12V 100/110Ah  
Alternator 14V 100A  
Starter: 12V 3.0 kW