

## **TECHNICAL DATA ENGINE TYPE N4.85**

### **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 : 266 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

### **CYLINDEAR 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