

Technical Engine Data

16V4000G63

Water charge air cooling (external);

50 Hz - 1.500/min

fuel consumption optimized



| | | | |
|---|--|------------------------------------|---|
| Operating method | Four stroke Diesel | Flywheel housing flange | SAE 00 |
| Combustion system | Direct Injection | Flywheel interface | 21 |
| Charging method | Exhaust turbo charger and Water charge air cooling (external); | Starter ring-gear teeth no. | 182 |
| Bore / Stroke | 170 / 210 mm | Injection system | Common Rail System with electronically controlled high-pressure injection through single injection pumps |
| Displacement, total | 76.3 Liter | Control / Monitoring | Electronic engine management system "ADEC" |
| Number of cylinders | 16 | Number of turbo chargers | 4 |
| Cylinder configuration | V - 90° | Number of intercooler | 1 |
| Compression ratio | 16.5 : 1 | | |
| Direction of rotation (viewed from flywheel side) | left | | |

| MTU-Application group | | | | 3D (ICFN) | 3B (ICXN) |
|---|--------------------------------------|--------|---|--------------|--------------|
| Power (ISO 3046) | | kW | A | 2185 | 1965 |
| Mean piston speed | | m/s | A | 10.5 | 10.5 |
| Mean effective pressure | | bar | A | 22.9 | 20.6 |
| Engine weight (Engine in basic execution) | dry | kg | R | 7700 | 7700 |
| | wet | kg | R | - | - |
| Dimensions (Engine only) | length | mm | R | 3001 | 3001 |
| | height | mm | R | 1660 | 1660 |
| | width | mm | R | 2154 | 2154 |
| Consumption | | | | | |
| Specific fuel consumption (be) (Tolerance +5% according to ISO 3046/1) | 100% CP | g/kWh | G | 195 | 191 |
| | 75% CP | g/kWh | R | 193 | 193 |
| | 50% CP | g/kWh | R | 198 | 203 |
| Lube oil consumption (after run-in) | | | R | - | - |
| Capacity | | | | | |
| Engine oil capacity, initial filling (standard oil system) | total | Liter | R | 300 | 300 |
| | Oil pan capacity, dipstick mark min. | Liter | L | 210 | 210 |
| | Oil pan capacity, dipstick mark max. | Liter | L | 240 | 240 |
| Engine coolant capacity (without cooling equipment) | | Liter | R | 175 | 175 |
| Intercooler coolant capacity | | Liter | R | 50 | 50 |
| Heat dissipation | | | | | |
| Engine coolant dissipation | 100% load | kW | R | 800 | 730 |
| Charge-air heat dissipation | 100% load | kW | R | 410 | 320 |
| Radiation and convection heat, engine | | kW | R | 90 | 90 |
| Starter system | | | | | |
| Electrical Starter (make Delco) | | | | | |
| Starter, rated voltage | | V | R | 24 | 24 |
| Starter, rated power | | kW | R | - | - |
| Starter, power requirement max. | | A | R | - | - |
| Starter, power requirement at firing speed | | A | R | - | - |
| Recommended battery capacity | Lead-acid | Ah/20h | R | 450 | 450 |
| | NiCd | Ah/5h | R | 240 | 240 |
| Firing speed | | 1/min | R | 80 - 120 | 80 - 120 |
| Coolant pre-heating | | | | | |
| Preheating temperature (min.) | | °C | R | 32 | 32 |
| Heater performance | | kW | R | 9 | 9 |

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| Coolant system, Engine coolant circuit | | | | |
| Coolant temperature (at engine outlet to cooling equipment) | °C | A | 100 | 100 |
| Coolant temperature after engine, alarm | °C | R | 102 | 102 |
| Coolant temperature after engine, shutdown | °C | L | 104 | 104 |
| Coolant antifreeze content, max. permissible | % | L | 50 | 50 |
| Cooling equipment: coolant flow rate | m ³ /h | A | 68.5 | 68.5 |
| Coolant pump: inlet pressure, min. | bar | L | 0.2 | 0.2 |
| Coolant pump: inlet pressure, max. | bar | L | 1.5 | 1.5 |
| Pressure loss in off-engine cooling system, max. permissible | bar | L | 0.7 | 0.7 |
| Cooling equipment: height above engine max. permissible | m | L | 15 | 15 |
| Cooling equipment: design pressure | bar | A | 2.5 | 2.5 |
| Coolant system, Charge-air coolant circuit | | | | |
| Coolant temperature before intercooler (engine inlet) | °C | A | 55 | 55 |
| Coolant antifreeze content, max. permissible | % | L | 50 | 50 |
| Cooling equipment: coolant flow rate | m ³ /h | A | 30 | 30 |
| Pressure loss in off-engine cooling system max. permissible | bar | L | 0.7 | 0.7 |
| Cooling equipment: height above engine max. permissible | m | L | 15 | 15 |
| Cooling equipment: design pressure max. permissible | bar | A | 2.5 | 2.5 |
| Combustion air | | | | |
| Combustion air volume flow | m ³ /s | R | 2.6 | 2.3 |
| Intake air depression | mbar | A | 15 | 15 |
| Intake air depression new filter limit value | mbar | L | 50 | 50 |
| Fuel system | | | | |
| Fuel supply flow, max. | l/min | R | 17 | 14 |
| Fuel temperature, max. | °C | L | 55 | 55 |
| Fuel pressure at supply connection on engine, max. admissible | bar | L | 1.5 | 1.5 |
| Fuel pressure at supply connection on engine, min. admissible | bar | L | -0.1 | -0.1 |
| Exhaust system | | | | |
| Exhaust volume flow | m ³ /s | R | 6.6 | 5.8 |
| Exhaust temperature after turbocharger | °C | R | 490 | 485 |
| Exhaust backpressure limit value | mbar | L | 85 | 85 |
| General operating data | | | | |
| Recommended minimum continuous load | % | R | 20 | 20 |
| Engine mass moment of inertia, with standard flywheel | kgm ² | R | 23.1 | 23.1 |
| Noise emission | | | | |
| (Free-field sound pressure level, 1m distance) | | | | |
| Engine surface noise | dB(A) | R | 106 | 109 |
| Exhaust noise, unsilenced | dB(A) | R | 115 | 113 |

A = Design value; G = Guaranteed value; R = Guideline value

L = Limit value, up to which the engine can be operated w/o change

- = Data not available; * = Estimated or projected values

Reference conditions

| | Standard | Power available up to |
|-------------------------------|----------|-----------------------|
| Intake air temperature | 25°C | 40°C |
| Site altitude above sea level | 100 m | 400 m |

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