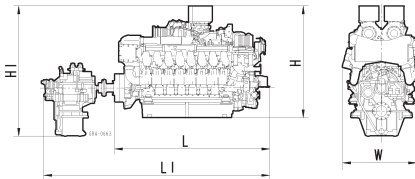
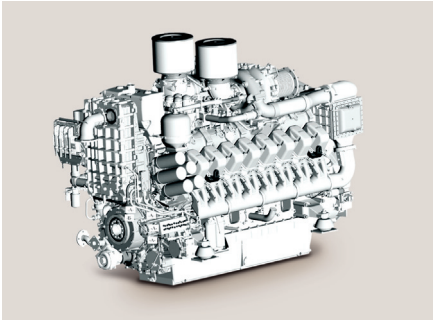


Diesel Engines 16V 4000 M53/M63

for Vessels with Unrestricted Continuous Operation (1A)



Dimensions and Masses

| 16V 4000 | Dimensions (LxWxH) mm (in) | Mass, dry kg (lbs) |
|-----------------|----------------------------------|--------------------|
| M53R/M53 | 2990x1600x2360 (117.7x62.9x92.9) | 8620 (19004) |
| M63/M63L | 2990x1600x2360 (117.7x62.9x92.9) | 8620 (19004) |

| 16V 4000 - with standard gearbox | Dimensions (L1xWxH1) mm (in) | Mass, dry kg (lbs) |
|----------------------------------|---------------------------------|--------------------|
| M53R/M53 | 3430x1600x2860 (135x62.9x112.5) | 11075 (24416) |
| M63/M63L | 3430x1600x2860 (135x62.9x112.5) | 11075 (24416) |

Typical applications: e.g. work boats, tugs, barges, ferries, governmental vessels

| Engine Model | | 16V 4000 M53R | 16V 4000 M53 | 16V 4000 M63 | 16V 4000 M63L |
|---|-----------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Rated power ICFN | kW (bhp) | 1520 (2038) | 1840 (2467) | 2000 (2682) | 2240 (3004) |
| Speed | rpm | 1600 | 1800 | 1800 | 1800 |
| No. of cylinders | | 16 | 16 | 16 | 16 |
| Bore/stroke | mm (in) | 170/210 (6.7/8.3) | 170/210 (6.7/8.3) | 170/210 (6.7/8.3) | 170/210 (6.7/8.3) |
| Displacement, total | l (cu in) | 76.3 (4656) | 76.3 (4656) | 76.3 (4656) | 76.3 (4656) |
| Flywheel housing | | SAE 00 | SAE 00 | SAE 00 | SAE 00 |
| Gearbox model, standard | | WAF 763 | WAF 863 L | WAF 863 L | WAF 863 L |
| Gearbox model, alternativ | | ZF 7661 | ZF 7661 | ZF 9311 | ZF 9311 |
| Optimization of exhaust emissions ¹⁾ | | IMO II/EPA 2/EU IIIA ²⁾ | IMO II/EPA 2/EU IIIA ²⁾ | IMO II/EPA 2/EU IIIA ²⁾ | IMO II/EPA 2/EU IIIA ²⁾ |

¹⁾ IMO - International Maritime Organisation (MARPOL)
EPA - US Marine Regulation 40 CFR 94
EU - Nonroad Directive 97/68/EC

²⁾ Recognition through the RheinSchUO (CCNR)

M53 - unrestricted continuous duty with average load factors up to approximately 90%; M63 - heavy duty with high load factors up to approximately 80%



Power. Passion. Partnership.

| Fuel Consumption ¹⁾ | | 16V 4000 M53R | 16V 4000 M53 | 16V 4000 M63 | 16V 4000 M63L |
|--------------------------------|-------|---------------|--------------|--------------|---------------|
| at rated power | g/kWh | 195 | 196 | 194 | 195 |
| | l/h | 357.1 | 434.5 | 467.5 | 526.3 |
| | gal/h | 94.3 | 114.8 | 123.5 | 139.1 |

¹⁾ Tolerance +5% per ISO 3046, Diesel fuel to DIN EN 590 with a min L.H.V. of 42800kJ/kg (18390 BTU/lb)

| Standard Equipment | |
|--------------------------|---|
| Starting system | Electric starter motor 24V, 2 pole |
| Oil system | Gear driven lube oil pump, non switchable oil filter, Centrifugal oil filter, lube oil heat exchanger, pump for lube oil extraction, opened crankcase ventilation |
| Fuel system | Fuel conditioning system with water separator, Fuel delivery pump, duplex lube fuel filter with diverter valve, common rail fuel injection system with high-pressure pump, pressure accumulator and electronic fuel injection with cylinder cutout system, jacketed HP fuel lines, flame- proof hose lines, leak-off fuel tank level monitoring |
| Cooling system | Engine version for separate heat exchanger, gear driven coolant circulation pump |
| Combustion air system | Engine coolant temperature-controlled intercooler, turbocharging with 2 water-cooled turbochargers, on-engine seawater-resistant air filters |
| Exhaust system | Triple-walled, liquid-cooled, on-engine exhaust manifolds, 30° discharge elbow, exhaust bellows |
| Mounting system | Resilient mounts |
| Power transmission | Torsional resilient and off-set compensating coupling (Centa CX for D-Drive); Torsional resilient coupling with bearing housing (Centamax for T-Drive) |
| Auxiliary PTO | Charging generator, 120A, 28V, 2 pole |
| Engine management system | Engine control and monitoring system (ADEC); engine interface module - EiM, engine mounted |
| Engine safety system | The scope of delivery for the engine fulfils SOLAS requirements for admissible surface temperature and shielding of fuel and lube oil lines |

| Optional Equipment | |
|--------------------------|--|
| Starting system | Coolant preheating system; air starter |
| Oil system | Lube oil priming system, oil level monitoring, automatic oil replenishment system with basic scope of monitoring, switchable oil filter with extended scope of monitoring |
| Fuel System | Switchable pre-filter with water separator in conjunction with switchable additional secondary filter |
| Cooling system | Coolant-to-raw water plate core heat exchanger, self priming centrifugal raw water pump, engine mounted coolant expansion tank, gear driven coolant circulation pump, raw-water connection for gearbox cooling |
| Combustion air system | Intake air silencer |
| Exhaust system | 90° discharge elbow |
| Auxiliary PTO | Bilgepump (as secondary coolant pump), PTOs at free end of engine |
| Engine management system | Expansion In compliance with extended scope of monitoring (individual exhaust temperature monitoring) |
| Gearbox option | Various reserve reduction gearbox models, elec. actuated, gearbox mounts, PTO for hydraulic pump at driving shaft or at mediate shaft, trolling, trailing pump, propeller shaft flange |
| Classification | ABS, BV, CCS, CR, DNV, GL, KR, LR, NK, RINA including necessary extensions to scope of supply |

> The rated power of the stated diesel engines corresponds to ISO 3046-1:2002 (E) and ISO 15550:2002 (E).

> Intake air temperature 25°C/Sea water temperature 25°C

> Intake air depression 15 mbar/Exhaust back pressure 30 mbar

> Barometric pressure 1000 mbar

> No power reduction at 54°C/32°C (increase fuel consumption: 2%)

Specifications are subject to change without notice. All dimensions are approximate, for complete information refer to installation drawing. For further information consult your MTU distributor/dealer.

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