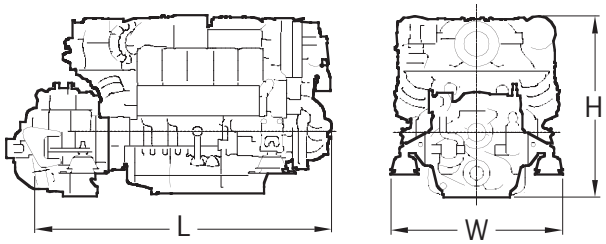
Marine

# Diesel Engines 12V/16V 2000 M72

## for Vessels with High Load Factors (1B)

Dimensions and Masses

| 2000 M72 - with gearbox | Dimensions (LxWxH) mm (in) | Mass, dry kg (lbs) |
|---|---|---|
| 12V/ZF 3050 | 2685x1295x1385 (105.7x51.0x54.5) | 3680 (8113) |
| 16V/ZF 4540 | 3130x1295x1505 (123.2x51.0x59.3) | 4600 (10141) |




Typical applications: Ferries, monohulls, hydrofoils, catamarans, surface effect ships and displacement yachts

| Engine Model | | 12V 2000 M72 | 16V 2000 M72 |
|---|---|---|---|
| Rated power ICFN | kW (bhp) | 1080 (1450) | 1440 (1930) |
| Speed | rpm | 2250 | 2250 |
| No. of cylinders | | 12 | 16 |
| Bore/ stroke | mm (in) | 135/ 156 (5.3/ 6.1) | 135/ 156 (5.3/ 6.1) |
| Displacement, total | l (cu in) | 26.8 (1635) | 35.7 (2179) |
| Flywheel housing | | SAE 1 | SAE 1 |
| Gearbox type | | ZF 3050 | ZF 4540 |
| | | i = 1,3 – 3,0 | i = 1,3 – 4,0 |
| Optimization of exhaust emissions[1] | | IMO 2/EPA 2/EU IIIA [2] | IMO 2/ EPA 2/ EU IIIA [2] |

1) IMO - International Maritime Organization (MARPOL)
EPA - US marine directive 40 CFR 94
EU - Nonroad Directive 97/68/EC including the RheinSchUO (CCNR)
2) including Recreational crafts 94/ 25 EC

Power. Passion. Partnership.

| Performance and Fuel Consumption | | 12V 2000 M72 | | | 16V 2000 M72 | | |
|---|---|---|---|---|---|---|---|
| Speed | rpm | 2250 | 1950 | 1200 | 2250 | 1950 | 1200 |
| Maximum power | kW | 1080 | 1060 | 525 | 1440 | 1420 | 690 |
| | bhp | 1450 | 1420 | 705 | 1930 | 1905 | 925 |
| Power on propeller curve(n3) | kW | 1080 | 720 | 170 | 1440 | 950 | 225 |
| | bhp | 1450 | 965 | 228 | 1930 | 1275 | 300 |
| Fuel consumption | g/kWh | 208 | 217 | 218 | 206 | 207 | 216 |
| on propeller curve[1)] | l/h | 270.7 | 188.2 | 44.65 | 357.4 | 237.0 | 58.6 |
| | (US) gal/h | 71.5 | 49.7 | 11.8 | 94.4 | 62.6 | 15.5 |

[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 24 V |
| Auxiliary PTO | Charging generator, 80A, 28V, 2 pole |
| Oil system | Gear driven lube oil pump, lube-oil duplex filter with diverter valve, lube-oil heat exchanger, handpump for oil extraction |
| Fuel system | Fuel feed pump, fuel hand pump, fuel pre-filter, fuel main filter with diverter valve, on-engine fuel oil cooler, HP fuel pump, jacketed HP fuel lines, injection nozzles (CR system), flame proof hose lines, leak-off fuel tank level monitored |
| Cooling system | Coolant-to-raw water plate core heat exchanger, self priming centrifugal raw water pump, gear driven coolant circulation pump |
| Combustion air system | Sequential turbocharging with 2 water-cooled exhaust-gas turbochargers, on-engine set of combustion-air filters |
| Exhaust system | Triple-walled, liquid-cooled, on-engine exhaust manifolds, single centrally located exhaust outlet, 1 exhaust bellows vertical discharge |
| Mounting system | Resilient mounts at free end |
| Engine management system | Engine and gearbox control and monitoring system (ADEC) |

| Optional Equipment | |
|---|---|
| Auxiliary PTO | Charging generator, 140A, 28V, 2 pole, bilgepump, on-engine PTOs |
| Oil System | Centrifugal oil filter, oil replenishment system |
| Fuel System | Duplex fuel pre-filter |
| Cooling System | Coolant preheating system, integr. seawater gearbox piping |
| Exhaust System | 1 exhaust bellows horizontal discharge |
| Mounting System | Resilient mounts at driving end |
| Engine Management System | In compliance with Classification Society Regulations (EMU + MEU) |
| Monitoring / Control System | **smart***line*, **blue***line*, **blue***vision* |
| Power Transmission | Torsionally resilient coupling |
| Gearbox Options | Reverse reduction gearbox, el. actuated, gearbox mounts, trolling mode for dead-slow propulsion, free auxiliary PTO, hydraulic pump drives |
| Classification | ABS, BV, CCS, DNV, GL, KR, JG, LR, NK, RINA |

> Power definition according ISO 3046
> Intake air depression 15 mbar/Exhaust back pressure 30 mbar
> Power reduction at 45°C/32°C: none
> All engines EPA Tier 2 certified
> Intake air temperature 25°C/Sea water temperature 25°C
> Barometric pressure 1000 mbar
> All engines fulfil IMO emission regulation, certificate on request

Specifications are subject to change without notice. All dimensions are approximate. For complete information refer to installations drawing. For further information consult your MTU or MTU Detroit Diesel distributor/dealer.

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Subject to change. | 3232231 | 1/10 | VMD 2010-08.