Diesel Engines 12V/16V 2000 M70
for Vessels with High Load Factors (1B)

Typical applications:
Ferries (e.g. Monohulls, Hydrofoils, Catamarans, Surface Effect Ships) and Displacement Yachts

<table>
<thead>
<tr>
<th>Engine Model</th>
<th>12V 2000 M70</th>
<th>16V 2000 M70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated power ICFN kW</td>
<td>788 (1055)</td>
<td>1050 (1410)</td>
</tr>
<tr>
<td>Speed rpm</td>
<td>2100</td>
<td>2100</td>
</tr>
<tr>
<td>No. of cylinders</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>Bore/stroke mm (in)</td>
<td>130/150 (5.1/5.9)</td>
<td>130/150 (5.1/5.9)</td>
</tr>
<tr>
<td>Displacement, total l (cu in)</td>
<td>23.9 (1458)</td>
<td>31.8 (1943)</td>
</tr>
<tr>
<td>Flywheel housing</td>
<td>SAE 1</td>
<td>SAE 0</td>
</tr>
<tr>
<td>Gearbox model</td>
<td>ZF 2050 A</td>
<td>ZF 2550</td>
</tr>
</tbody>
</table>

Performance and Fuel Consumption

<table>
<thead>
<tr>
<th>Speed rpm</th>
<th>12V 2000 M70</th>
<th>16V 2000 M70</th>
</tr>
</thead>
<tbody>
<tr>
<td>2100</td>
<td>1800</td>
<td>1200</td>
</tr>
<tr>
<td>2100</td>
<td>1800</td>
<td>1200</td>
</tr>
</tbody>
</table>

Maximum power kW/bhp

<table>
<thead>
<tr>
<th>Maximum power kW</th>
<th>12V 2000 M70</th>
<th>16V 2000 M70</th>
</tr>
</thead>
<tbody>
<tr>
<td>788</td>
<td>750</td>
<td>385</td>
</tr>
<tr>
<td>1057</td>
<td>1006</td>
<td>516</td>
</tr>
</tbody>
</table>

Power on propeller curve kW/bhp

<table>
<thead>
<tr>
<th>Power on propeller curve kW</th>
<th>12V 2000 M70</th>
<th>16V 2000 M70</th>
</tr>
</thead>
<tbody>
<tr>
<td>788</td>
<td>500</td>
<td>145</td>
</tr>
<tr>
<td>1057</td>
<td>671</td>
<td>194</td>
</tr>
</tbody>
</table>

Fuel consumption g/kWh

<table>
<thead>
<tr>
<th>Fuel consumption g/kWh</th>
<th>12V 2000 M70</th>
<th>16V 2000 M70</th>
</tr>
</thead>
<tbody>
<tr>
<td>209</td>
<td>207</td>
<td>217</td>
</tr>
<tr>
<td>198.4</td>
<td>124.7</td>
<td>38.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fuel consumption l/h</th>
<th>12V 2000 M70</th>
<th>16V 2000 M70</th>
</tr>
</thead>
<tbody>
<tr>
<td>52.4</td>
<td>33.0</td>
<td>10.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fuel consumption gal/h</th>
<th>12V 2000 M70</th>
<th>16V 2000 M70</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.2</td>
<td>43.7</td>
<td>13.2</td>
</tr>
</tbody>
</table>

1) Tolerance +5% per ISO 3046, Diesel fuel to DIN EN 590 with a min L.H.V. of 42800kJ/kg (18390 BTU/lb)  3.0 exponent
Standard Equipment

**Starting System**
- Electric starter motor 24 V

**Auxiliary PTO**
- Charging generator, 140A, 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**
- Gear feed pump, fuel hand pump, fuel pre-filter, fuel main filter with diverter valve, on-engine fuel oil cooler, individual HP injection pumps, jacketed HP fuel lines, injection nozzles (PLN 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, 2 exhaust bellows vertical discharge

**Mounting System**
- Resilient mounts at free end

**Engine Management System**
- Engine and gearbox control and monitoring system (MDEC)

Optional Equipment

**Auxiliary PTO**
- Bilgepump, on-engine PTOs

**Oil System**
- Centrifugal oil filter, oil replenishment system

**Fuel System**
- Duplex fuel pre-filter

**Cooling System**
- Coolant preheating system, integ. seawater gearbox piping

**Exhaust System**
- 2 exhaust bellows horizontal discharge

**Mounting System**
- Resilient mounts at driving end

**Engine Management System**
- In compliance with Classification Society Regulations (EMU + GMU)

**Monitoring / Control System**
- blueline, MCS-5, RCS-5

**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 temperature 25°C / Sea water temperature 25°C
Intake air depression 15 mbar / Exhaust back pressure 30 mbar
Barometric pressure 1000 mbar
Power reduction at 45°C/32°C: none
All engines fulfil IMO emission regulation, certificate on request
16V 2000 M70 available with EPA Tier 2 certificate.

### Dimensions and Masses (incl. gearbox)

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<tr>
<th>Engine Model</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Length [L] [mm (in)]</td>
<td>2600 (102.4)</td>
<td>3130 (123.2)</td>
</tr>
<tr>
<td>Width [W] [mm (in)]</td>
<td>1890 (74.4)</td>
<td>1400 (44.5)</td>
</tr>
<tr>
<td>Height [H] [mm (in)]</td>
<td>1290 (50.8)</td>
<td>1290 (50.8)</td>
</tr>
<tr>
<td>Mass [dry] [kg (lbs)]</td>
<td>3480 (7672)</td>
<td>4520 (9965)</td>
</tr>
</tbody>
</table>

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

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