Diesel Engines 4R 700 M91/M93/94 for Fast Vessels with Low Load Factors (1DS)

Typical applications:
Fast Yachts, Fast Patrol Boats, Police Craft and Fire-Fighting Vessels

<table>
<thead>
<tr>
<th>Engine Model</th>
<th>4R 700 M91</th>
<th>4R 700 M93</th>
<th>4R 700 M94</th>
</tr>
</thead>
<tbody>
<tr>
<td>VM engine model</td>
<td>MR 704 LS</td>
<td>MR 704 LH</td>
<td>MR 704 LX</td>
</tr>
<tr>
<td>Rated power IFN kW (bhp)</td>
<td>125 (168)</td>
<td>154 (206)</td>
<td>169 (227)</td>
</tr>
<tr>
<td>Speed rpm</td>
<td>3800</td>
<td>3800</td>
<td>3800</td>
</tr>
<tr>
<td>No. of cylinders</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Bore/stroke mm (in)</td>
<td>94/100 (3.7/3.9)</td>
<td>94/100 (3.7/3.9)</td>
<td>94/100 (3.7/3.9)</td>
</tr>
<tr>
<td>Displacement, total l (cu in)</td>
<td>2.8 (169)</td>
<td>2.8 (169)</td>
<td>2.8 (169)</td>
</tr>
<tr>
<td>Flywheel housing</td>
<td>SAE 4</td>
<td>SAE 4</td>
<td>SAE 4</td>
</tr>
<tr>
<td>Recommended Gearbox model</td>
<td>TM545A</td>
<td>TM545A</td>
<td>TM545A</td>
</tr>
<tr>
<td>Transmission ratio</td>
<td>1.5 - 2.0</td>
<td>1.5 - 2.0</td>
<td>1.5 - 2.0</td>
</tr>
<tr>
<td>IMO</td>
<td>compliant</td>
<td>compliant</td>
<td>compliant</td>
</tr>
<tr>
<td>EU 94/25/EC REC*</td>
<td>compliant</td>
<td>compliant</td>
<td>compliant</td>
</tr>
<tr>
<td>EPA 40 CFR 94, Stage 2 REC*</td>
<td>not compliant</td>
<td>compliant</td>
<td>compliant</td>
</tr>
<tr>
<td>Fuel Consumption ¹</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>at rated power g/kWh</td>
<td>230</td>
<td>244</td>
<td>241</td>
</tr>
<tr>
<td>l/h</td>
<td>34.6</td>
<td>45.3</td>
<td>49.1</td>
</tr>
<tr>
<td>gal/h</td>
<td>9.2</td>
<td>12.0</td>
<td>13.0</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)
* Recreational craft
### Dimensions and Masses (without gearbox)

<table>
<thead>
<tr>
<th>Engine Model</th>
<th>4R 700 M91/M93/M94</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>mm (in)</td>
</tr>
<tr>
<td>Width</td>
<td>mm (in)</td>
</tr>
<tr>
<td>Height</td>
<td>mm (in)</td>
</tr>
<tr>
<td>Mass [dry]</td>
<td>kg (lbs)</td>
</tr>
<tr>
<td>705 (27.8)</td>
<td>758 (29.8)</td>
</tr>
</tbody>
</table>

Specifications are subject to change without notice.

All dimensions are approximate, for complete information refer to installations drawing.

For further information consult your MTU distributor/dealer.

---

### Standard equipment

- SAE 4 flywheel housing
- Starter motor 2.4 kW – 12 V
- Alternator 90 A – 12 V
- Oil and fuel filters
- Air filters
- Freshwater engine cooling system with seawater heat exchanger
- Engine lubricating oil cooled by seawater heat exchanger
- Freshwater cooled exhaust manifold and turbocharger
- Bronze seawater circulating pump with impeller in special rubber
- Centrifugal pump for freshwater circulation
- Crankcase oil pump
- Stainless steel exhaust gas/seawater mixer
- Flexible mounts
- Electrical instrument panel with alarms, with cable extension cord of 8 m

### Optional equipment

- Hydraulic reversal/reduction gear
- Fly bridge dashboard

The rated power 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

The power produced at the flywheel will be within the tolerance of ±3% - according to ISO 15550:2002(E) - up to 45°C (113°F) combustion air temperature measured at the air cleaner inlet and up to 32°C (89.6°F) sea or raw water temperature measured at the sea water pump suction inlet.

All engines fulfill IMO, EU and EPA 2 emission regulation. Certificate on request.

---

**Tognum Group Companies**

**Europe / Middle East / Africa / Latin America**

MTU Friedrichshafen GmbH
88040 Friedrichshafen, Germany
Phone +49 7541 90 7003
Fax +49 7541 90 7081
marineregion1@mtu-online.com
www.mtu-online.com

**USA / Canada / Mexico**

MTU Detroit Diesel, Inc.
13400 Outer Drive West
Detroit, Michigan 48239, USA
Phone +1 313 592 7806
Fax +1 313 592 5137
marineregion3@mtu-online.com
www.mtudetroitdiesel.com

**Asia / Australia / Pacific**

MTU Asia Pte. Ltd.
1, Benoi Place
Singapore 629923, Republic of Singapore
Phone +65 6861 5922
Fax +65 6861 3615
marineregion2@mtu-online.com
www.mtu-online.com.sg