The WÄRTSILÄ® 20 is a four-stroke diesel engine that can be run on light fuel oil (LFO) or heavy fuel oil (HFO). The engine can switch from LFO to HFO and vice versa without power interruption at any engine operational load. The Wärtsilä 20 has proven robustness and reliability, with over 6000 engines delivered since it was introduced to the market in the early 1990s. The Wärtsilä 20 covers the lower power range within the Wärtsilä diesel engine family.

**Key benefits**
- Proven and reliable heavy fuel technology
- Easy and cost-effective installation
- Long overhaul intervals
- Low exhaust gas emissions
- Fuel economy over the entire engine operational range
- Minimal consumables thanks to its modular design
- Embedded automation system

**Typical application areas**
The Wärtsilä 20 is suitable for a broad range of applications. Thanks to its modular and compact design, the engine can be optimised for constant speed generating sets, as well as for variable speed with main engine mechanical drive applications.

With its outstanding power-to-weight and power-to-space ratios, the Wärtsilä 20 provides various application options for different types of vessel. For example, in smaller ships, such as small cargo vessels, ferries or tug boats, it can be used as the mechanical drive prime mover. The Wärtsilä 20 is also an excellent generator set drive in both small and large vessels. Its flexibility in engine support arrangements provides an optimal foundation, either rigid or flexible, for numerous applications in both marine and land-based power solutions.
Operational features
The Wärtsilä 20 is able to operate on different fuels, from the lowest viscosity of 1.8 cSt up to 730 cSt HFO (at 50 °C). The engine is also able to use low sulphur fuel oils (<0.1% S) set as standard by emission control area authorities.

Environmental compliance
The Wärtsilä 20 engine is fully compliant with the IMO Tier II exhaust emission regulations set out in Annex VI of the MARPOL 73/78 convention. The engine can also be equipped with an SCR catalyst, such as the Wärtsilä NOR (nitrogen oxide reducer), which can reduce NOX emissions by up to 95%. This means that, already today, the machinery can be IMO Tier III compliant.

Low lifecycle costs
Because the Wärtsilä 20 was originally designed to operate reliably on the poorest quality heavy fuel oil, it is exceptionally reliable when powered by light diesel oils. The engine’s maintenance friendly design provides overhaul intervals of up to 24,000 running hours, while the variable inlet valve closing system, which is a standard feature, enables excellent fuel economy, especially at low engine loads. Since its launch in 1992, more than 6,000 Wärtsilä 20 engines have been installed globally.

Main technical data

<table>
<thead>
<tr>
<th>Wärtsilä 20</th>
<th>IMO Tier II or III</th>
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<tbody>
<tr>
<td>Cylinder bore</td>
<td>200 mm</td>
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<tr>
<td>Piston stroke</td>
<td>280 mm</td>
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<tr>
<td>Cylinder output</td>
<td>185/200/220 kW/cyl</td>
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<tr>
<td>Speed</td>
<td>900/1000/1200 rpm</td>
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<tr>
<td>Mean effective pressure</td>
<td>28/27.3/25 bar</td>
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<tr>
<td>Piston speed</td>
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</table>

<table>
<thead>
<tr>
<th>Engine type</th>
<th>kW/900 rpm</th>
<th>kW/1000 rpm</th>
<th>kW/1200 rpm</th>
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<tbody>
<tr>
<td>4L20</td>
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<td>800</td>
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<tr>
<td>6L20</td>
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<td>1 200</td>
<td>1 320</td>
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<tr>
<td>8L20</td>
<td>1 480</td>
<td>1 600</td>
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<tr>
<td>9L20</td>
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Dimensions (mm) and weights (tonnes)

<table>
<thead>
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<th>Engine type</th>
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<th>A</th>
<th>B*</th>
<th>B</th>
<th>C*</th>
<th>C</th>
<th>D*</th>
<th>D</th>
<th>F</th>
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<td>-</td>
<td>1 348</td>
<td>-</td>
<td>1 483</td>
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<td>3 108</td>
<td>1 528</td>
<td>1 348</td>
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<td>4 076</td>
<td>1 614</td>
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*Turbocharger at flywheel end.