

# Wärtsilä 20



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.



## Typical application areas

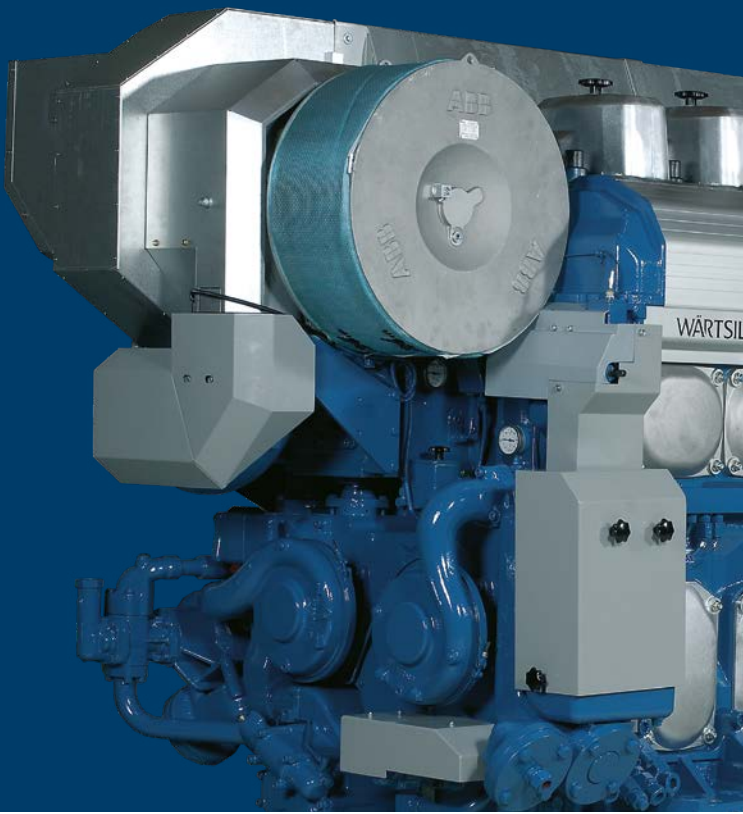
The Wärtsilä 20 is suitable for a broad range of applications. Thanks to its modular and compact design, the engine can be optimised for constant speed generating sets, as well as for variable speed with main engine mechanical drive applications.

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.



## 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



## Main technical data

Wärtsilä 20		IMO Tier II or III	
Cylinder bore	200 mm	Fuel specification: Fuel oil	
Piston stroke	280 mm	700 cSt/50°C	7200 sR1/100°F
Cylinder output	185/200/220 kW/cyl	ISO 8217, category ISO-F-RMK 700	
Speed	900/1000/1200 rpm	SFOC 190 g/kWh at ISO condition	
Mean effective pressure	28/27.3/25 bar		
Piston speed	8.4/9.3/11.2 m/s		

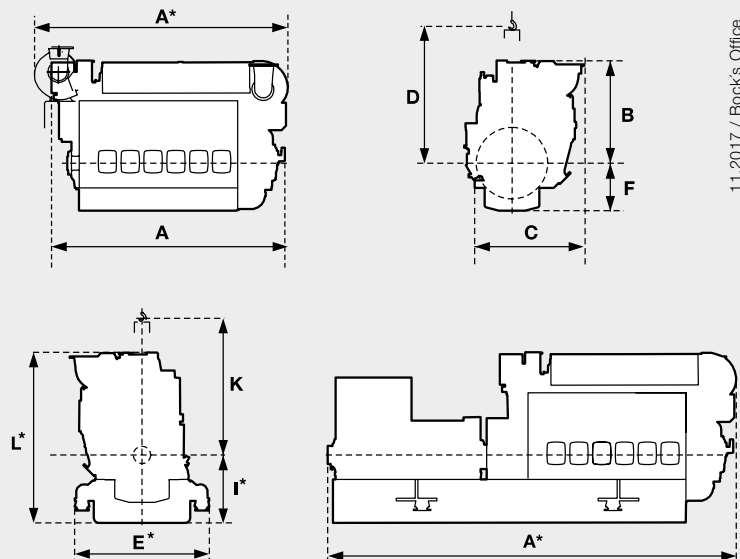
### Rated power

Engine type	kW/900 rpm	kW/1000 rpm	kW/1200 rpm
4L20	740	800	–
6L20	1 110	1 200	1320
8L20	1 480	1 600	1760
9L20	1 665	1 800	1980

### Dimensions (mm) and weights (tonnes)

Engine type	A*	A	B*	B	C*	C	D	F	Weight
4L20	–	2 510	–	1 348	–	1 483	1 800	725	7.2
6L20	3 254	3 108	1 528	1 348	1 580	1 579	1 800	624	9.3
8L20	3 973	3 783	1 614	1 465	1 756	1 713	1 800	624	11.0
9L20	4 261	4 076	1 614	1 449	1 756	1 713	1 800	624	11.6

\*Turbocharger at flywheel end.



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## 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 NO<sub>x</sub> 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.

[www.wartsila.com](http://www.wartsila.com)

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