

F240

810-1565 kW at 720-1000 min⁻¹

TOTAL SERVICE



WÄRTSILÄ ENGINES

CHARACTERISTICS

- Water-cooled 6-, 8- and 9-cylinder in-line engines.
- Four stroke, direct fuel injection.
- Turbocharger and charge air cooler.
- Cylinder heads with 4 valve technology.
- Light fuel oils (LFO) or marine diesel oils (MDO) with specifications meeting CIMAC: 1990, DB; ISO 8217:2005(E), ISO-F-DMB and BSMA 100: 1989 class M2 can be used.

BENEFITS

- High reliability of the engine.
- Low operational costs due to easy maintenance and long maintenance intervals.
- Low fuel and lubricating oil consumption.
- Full power can be taken from flywheel end or free end of the engine.



ENGINE DESCRIPTION

Crankshaft	The one-piece crankshaft is made from alloyed forging steel and is mounted in the bed plate. A high degree of balance is achieved by mounted counterweights.
Torsional vibration damper	A torsional vibration damper is fitted at non flywheel side.
Cylinder block	The one-piece cylinder block is made of nodular cast iron.
Cylinder liner	The cylinder liner is made of centrifugally cast iron.
Connecting rod	The connecting rod is forged of alloy steel and fully machined. Lubricating oil is fed to the piston pin bearing and piston via a bore in the connecting rod.
Piston	The piston is of the composite type with steel crown and aluminium skirt. The piston crown is oil cooled. The piston has four piston rings.
Cylinder head	The cylinder head is made of alloyed cast iron and contains two inlet valves, two exhaust valves, injector, safety valve and starting air valve. The cylinder head is mounted on the cylinder block with six cylinder head studs. All valve seats are renewable.
Camshaft	The one-piece camshaft is driven by the crankshaft through a gear train. The cams are individually mounted on the camshaft and can be adjusted when necessary.
Injection pump	Each cylinder has a single high-pressure fuel pump.
Governor	The engine is normally provided with a mechanical-hydraulic governor prepared for pneumatic or electric remote control.
Fuel system	The main parts of the fuel system consist of a fuel feed pump, a duplex fuel filter, high-pressure fuel pumps, double-walled high-pressure fuel lines and fuel injectors.
Lubricating oil system	The system is provided with an engine driven lubricating oil pump of the vane type that secures trouble free operation. Furthermore it has a change-over duplex filter and oil cooler.
Lubricating oil filter	The engine is equipped with a full flow duplex oil filter. In addition the engine is equipped with a centrifugal filter.
Starting system	The engine starts by compressed air via the starting air valves fitted in the cylinder heads.
Cooling water system	<p>The cooling water system consists of two separate systems, the high temperature system (HT-circuit) and the low temperature system (LT-circuit).</p> <p>The cylinder liner, turbocharger and the charging air (via the first stage of the air cooler if a two stage air cooler is applied) are cooled within the HT-circuit.</p> <p>The lubricating oil and the charge air (respectively via the lubricating oil cooler and the second stage of the air cooler if a two stage air cooler is applied) are cooled within the LT-circuit.</p>
Exhaust gas system	Exhaust pipes are insulated by mineral wool and shielded by a metal cover.
Charge air system	The air cooler is fitted on the air inlet manifold.
Turbocharging	The turbocharger is arranged at flywheel side of the engine.
Classification	All established classification societies.
EIAPP	The engine can be provided with an EIAPP certificate if it complies with the NO _x Technical Code according IMO regulations MARPOL 73/78 - Annex VI.

TECHNICAL DATA

TECHNICAL DATA				
Engine type		6F240	8F240	9F240
Model		in-line	in-line	in-line
Number of cylinders		6	8	9
Bore / stroke	mm	240 / 260	240 / 260	240 / 260
Displacement	l	70.62	94.16	105.93
Compression ratio		13	13	13
Direction of rotation		Clockwise or counter-clockwise		
Maximum power ratings				
Engine speed	min ⁻¹	720 - 1000	720 - 1000	720 - 1000
Engine output ¹⁾	kW	810 - 1040	1130 - 1390	1220 - 1565
Mean effective pressure	bar	18.8 - 20.3	18.8 - 20.3	18.8 - 20.3
Mean piston speed	m/s	6.2 - 8.7	6.2 - 8.7	6.2 - 8.7
Specific fuel consumption ²⁾	g/kWh	188 - 198	188 - 196	188 - 196
Lubricating oil consumption ³⁾	l/h	1.3	1.3	1.3
Idling speed	min ⁻¹	300	300	300

¹⁾ Maximum Continuous Rating (MCR). Engines for heavy continuous duty (fishing, towing, dredging) will be rated at 95% of MCR.

The reference conditions of the maximum continuous output are in accordance with ISO 3046/1-1986, i.e.

total barometric pressure 1000 mbar
 air temperature 45 °C
 relative humidity 60%
 charge air coolant temperature 32 °C
 lower calorific value of the fuel 42,700 kJ/kg

For higher temperatures, the output has to be reduced in accordance with the rules stated in ISO 3046/1.

²⁾ Fuel consumption at 100% load.

According to ISO 3046/1, lower calorific value 42,700 kJ/kg, at constant engine speed, without engine driven pumps.

Tolerance +5%.

³⁾ Lubricating oil consumption at 100% load, Tolerance approximately 10%.

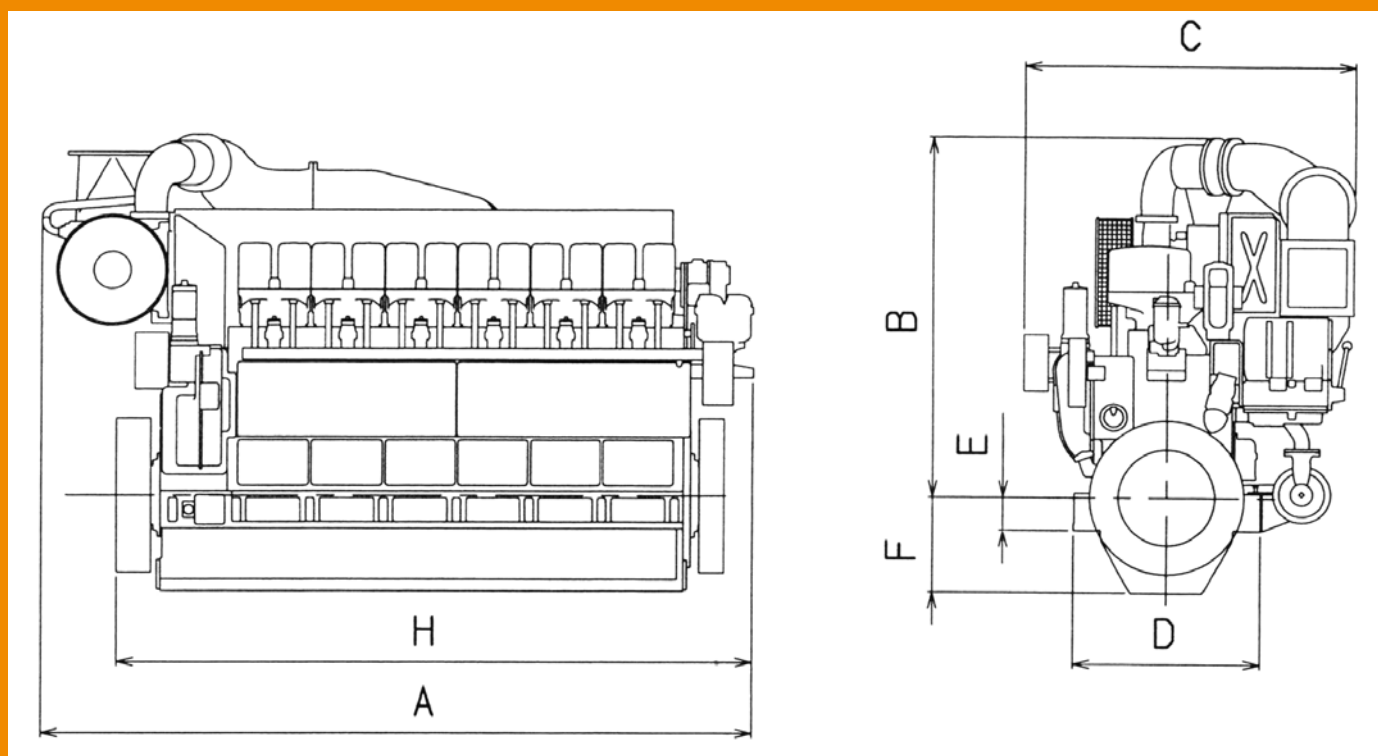
Note:

The values given in this document are for information purposes only and not binding.

The data provided in the offer is decisive.



DIMENSIONS



PRINCIPAL ENGINE DIMENSIONS (mm) AND WEIGHTS (t)

Engine type	A	B	C	D	E	F	H	Weight
6F240	3864	1898	1734	980	175	502	3354	11.5
8F240	4670	1898	1734	980	175	502	4124	14.5
9F240	5055	1898	1734	980	175	502	4509	15.7

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