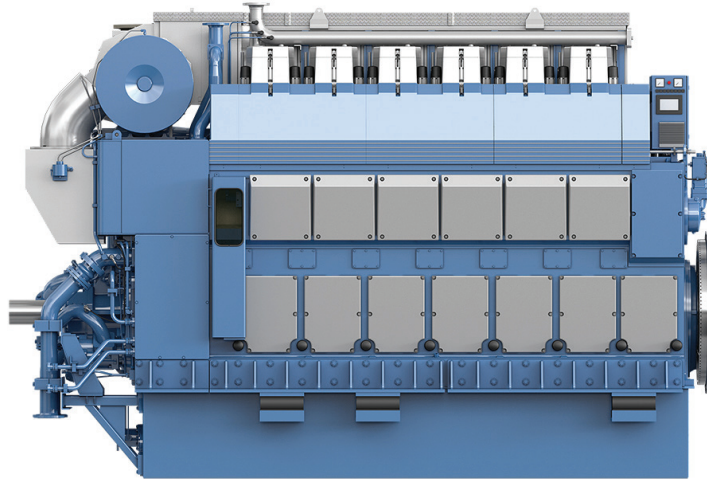


ROLLS-ROYCE BERGEN ENGINES

Kongsberg Maritime is the exclusive distributor of Rolls-Royce medium speed engines for commercial marine applications



KONGSBERG



MARINE DIESEL ENGINES

Bergen B33:45L propulsion

Choose Rolls-Royce Bergen engines for cost-effective operation

The Bergen B-series is based on a modular design, which gives a flexible platform and at the same time carries forward the Bergen traditional values as a robust and reliable engine. The selection of technology was done after consulting a broad range of operators, designers and shipbuilders, to establish the qualities they prize in an engine. This engine series was first introduced to the market in 2014 as a diesel engine, and the gas version followed in 2018. It is available in several in-line or Vee cylinder variants for both diesel and gas, and is equally suitable for mechanical transmission or as a marine generating set.

Main benefits for ship yards:

- Easy installation
- New resilient mounting (no need of welding brackets)
- Aligned piping at pump-end for easy connection
- Flexible exhaust routing (and air ducting if applicable): 15 degree rotation of connection points to turbocharger available

Main benefits for ship owners:

- Reliable power
- IMO Tier II compliant without use of SCR
- IMO Tier III compliant with use of SCR
- Proven low life cycle costs
- Dynamic service intervals with 25.000 hrs between main services when operating within a defined load window
- Full equipment health monitoring
- Fast load response
- Low vibration/structural noise level
- 24/7 support by global service network
- Compact and modular design with a low weight construction
- Possible conversion from diesel to gas and vice versa
- New flexible mounts without welded brackets
- Aligned piping at pump end for ease of connection
- Flexible exhaust routing – 15 degree rotation of connections to turbocharger
- Full power can be taken from either end of crankshaft up to and including V12 version

MOST TYPICAL APPLICATIONS:

- Subsea construction vessel
- Pipe layer / heavy lift ships
- Seismic survey vessels
- Anchor-handler tug supply vessels
- Fishing vessels
- RoPax
- Ferry
- Cargo ships
- Cruise vessels

ENGINE TYPE		B33:45L6P	B33:45L8P	B33:45L9P
Number of cylinders		6	8	9
Engine speed	r/min	750	750	750
Mean piston speed	m/s	11.2	11.2	11.2
Max.cont rating (MCR)	kW	3600	4800	5400
Mean effective pressure (BMEP)	bar	25	25	25
Specific fuel oil consumption (SFOC)	g/kWh*	from 173	from 174	from 171
SFOC with engine driven pumps	g/kWh	from 175	from 176	from 173
Specific lubricating oil consumption	g/kWh	0.5	0.5	0.5
Cooling water temp. engine outlet	°C	90	90	90

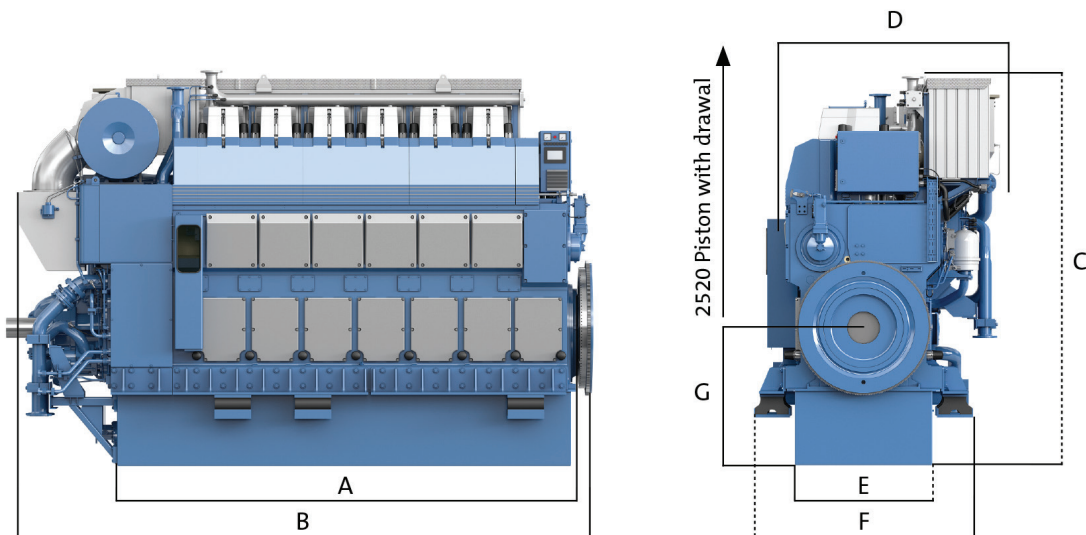
Engine ratings are according to ISO 3046/1. The above figures are based on conditions at maximum 45°C ambient air temperature and maximum 32°C sea water temperature.

*SFOC is based on MDO with a net calorific value of 42.7 MJ/kg, and no engine driven pumps.

Heavy fuel operation: The engines are designed for operations on Heavy fuel with viscosity up to 700 cSt at 50°C ISO 8217 RMH77. Ratings will be specified subject to type of application.

Waste heat recovery: Necessary data for arranging waste heat recovery plants (exhaust gas and cooling water) are available upon request.

Note: Due to continuous development, some data may be changed without notice.

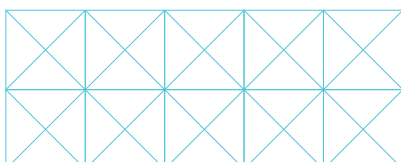


Principal dimensions

All dimensions in mm.

ENGINE TYPE	A	B	C	D	E	F	G	WEIGHT DRY ENGINE
B33:45L6P	4600	5630	3890	2380	1354	2138	1350	42400 kg
B33:45L8P	5640	6800	4160	2665	1354	2138	1350	53500 kg
B33:45L9P	6160	7320	4170	2665	1370	2138	1360	56400 kg

Weight dry engine excludes transport foundation.



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