The new B33:45

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Trusted to deliver excellence
Bergen Engines

Engines & Foundry
Engine started 1943
First gas engine 1991

- 800 employees
- 6,740 engines sold
- 4,000 in operation
- 900 gas engines
- 100 gas marine

- More than 23 million running hours on LNG
Rolls-Royce supplies medium-speed Bergen engines for marine and power generation applications and for the oil and gas industry. Marine engines are marketed through the Rolls-Royce Marine sales organization; engines for the power and for the oil and gas industry via the Rolls-Royce Power Systems sales organization.
Vessels with Bergen Gas engines
LNG Capability

Complete LNG systems and propulsion packages with a strong focus on the full system throughout the design, build and service stages.
The new Bergen B33:45 platform
Current Products Portfolio

C25:33L
Diesel Engines Propulsion and Gen sets
(1.8 – 3 MW)

B33:45L
Diesel Engines Propulsion and Gen sets
(3.6 – 7.2 MW)

C26:33L
Gas Engines* Propulsion and Gen sets
(1.5 – 2.4 MW)

B35:40L/V
Gas Engines* Propulsion and Gen sets
(3.6 – 7.2 MW)

NOTE: Current gas portfolio includes B9, BV12, C6, C9
Main features of the B36:45 platform:

- **Increased Power**
  - 600 kW/cyl for gas and diesel engines

- **Reduced Lifecycle Cost**
  1. Increased efficiency
  2. Increased service intervals
  3. Improved service friendliness

- **Incr. Power Flexibility**
  - L6, L7, L8, L9, V12, V16, V20

- **Reduced Fuel Consumption**
  - L6 Marine: 7300 kJ/kWh*
  - L6 Land: 7290 kJ/kWh**

- **Reduced vibration**
  - 10-11 mm/s at main structure engine block

- **Emission strategy**
  - IMO Tier III compliant
  - Reduced methane slip

- **Human Machine Interface (HMI)**
  - Dynamic Service Intervals

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*For propulsion engine at 750 rpm, MN 70, no engine driven pumps, with a tolerance of +5%*

**For land engine at 750 rpm, MN 80, with engine driven pumps, ISO tolerance of +5%**
Direct Propulsion
Generating set
B36:45 Main Design Data - Gas fuel

All data subject to change without notice

Bore x stroke: 360 x 450 mm

Cyl. Volume: 45.8 L/cyl.

Speed range: 720/750 rpm generator law

450 – 750 rpm propeller law

Mean piston speed: 11.25 m/s

Cyl. Power Output: 600 kW at 750 rpm

Break mean effective pressure: 21 bar at 750 rpm

Firing pressure, max: 200 bar, max

Charge air pressure: 4.2 bar (abs) max (estimated)

Specific air consumption: 5.2 kg/kWh at 100% load (est.)

ISO Energy

Marine: 7300 kJ/kWh at 100% load

Land: 7290 kJ/kWh at 100% load

consumption at 750 rpm
B36:45 Engine Modules

- Fuel System
- Automation & Control

Identical to B33:45 Diesel
Similar to B33:45 Diesel
New, but based on B33:45
Safety (inherently safe)

- Double walled Gas Supply pipes from LNG tank to combustion chamber
- Gas detection in outer pipe system (ventilated 30 times per hour)
- “Block and bleed” valves stops all gas supply to the engine, if unexpected stop occurs
- Gas detection system above the engine according to class requirement.
Thanks for your attention!