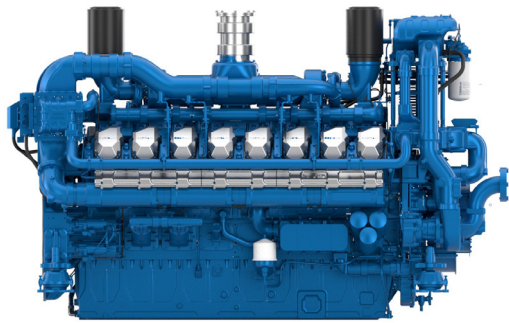


# 16M33.3

Propulsion Diesel Engine



Number of cylinders	16
Bore and stroke (mm)	150 x 185
Total displacement (L)	52.3
Cylinders	16V
Engine rotation	counter clockwise
Idle speed (rpm)	600
Flywheel housing	SAE 00
Flywheel	SAE 21"

### Customer benefits

**Genuine marine design** with simple solutions and routine maintenance accessibility

**Continuous compact power** with top-tier performance in category

**Global environmental care:** low exhaust emissions, noise reduction, and controlled fuel consumption

**Latest safe technology integration:** electronic injection dynamic redundancy, high-efficiency ball bearing turbocharger

**Emphasis on life cycle cost efficiency** with extended MTBO and modular design reducing components and interfaces

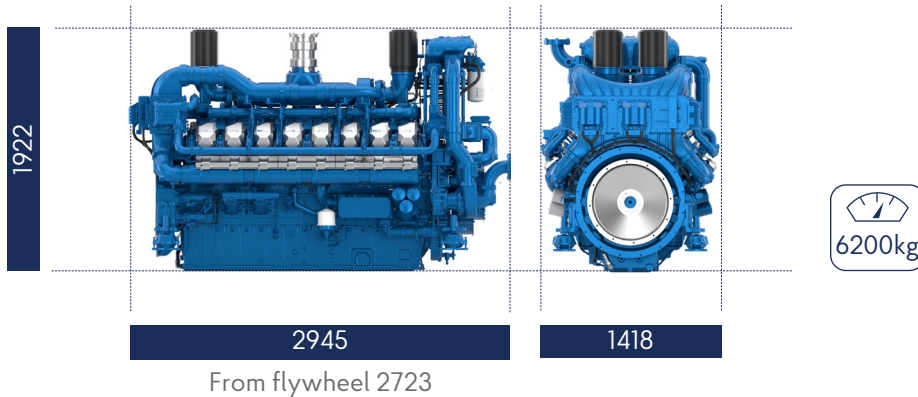
### Rated power - Fuel consumption

Duty	kW	HP	RPM	Fuel consumption			IMO
				Optimum value	Rated power		
				g/kWh	g/kWh	l/h	
P1	1287	1750	1600	204	218	338	II
	1434	1950	1800	209	213	368	II
P2	1361	1850	1600	203	218	358	II
	1545	2100	1800	207	217	406	II

	P1	P2	P3	P4
Application	Unrestricted	Continuous (Heavy)	Intermittent	Light
Engine load variations	Not important	Important	Important	Very important
Average Engine load factor	80-100%	30-80%	60%	60%
Annual working time	5000 - 7000h	3000-5000h	1000-3000h	Less than 1500h
Time at full load	12h each 12h	8h each 12h	2h each 12h	1h each 12h

P1 Continuous Duty	P2 Heavy Duty	P3 Intermittent Duty	P4 Light Duty	P5 High performance Duty
<ul style="list-style-type: none"> <li>• Deep sea trawlers</li> <li>• Shrimps trawlers</li> <li>• Sea going tug boats</li> <li>• River tug boats</li> <li>• Push boats</li> <li>• Freighters</li> <li>• Dredges</li> <li>• LCT</li> <li>• Ferries</li> </ul>	<ul style="list-style-type: none"> <li>• Deep sea trawlers</li> <li>• Shrimps trawlers</li> <li>• Sea going tug boats</li> <li>• River tug boats</li> <li>• Push boats</li> <li>• Freighters</li> <li>• Dredges</li> <li>• LCT</li> <li>• Ferries</li> </ul>	<ul style="list-style-type: none"> <li>• Seasonal passenger vessels</li> <li>• Fishing boats</li> <li>• Pilot boats</li> <li>• Commercial pleasure boats</li> <li>• Pump boats</li> <li>• Displacement sailboats</li> <li>• Trawlers</li> <li>• Bow thrusters</li> </ul>	<ul style="list-style-type: none"> <li>• Private pleasure boats</li> <li>• Multi-hull pleasure boats</li> <li>• Survey or rescue fast vessels</li> <li>• Military fast vessels.</li> </ul>	<ul style="list-style-type: none"> <li>• Private pleasure boats</li> <li>• Multi-hull pleasure boats</li> </ul>

## Dimensions and dry weight (mm/kg)



## Standard equipment

### Engine & Block

Cast iron cylinder block, with replaceable cylinder liners  
 Separate cast iron cylinder heads  
 Replaceable valves guides and seats  
 Steel forged crankshaft with 7 bearings  
 Lube oil cooled light steel piston with 3 high performance piston rings

### Cooling System

Two - stage cooling circuit with built - in HT thermostatic valve  
 Integrated fresh water expansion tank  
 High efficiency tubular heat exchanger  
 Gear driven centrifugal raw water pump  
 Self priming raw water pump with bronze impeller

### Lubrication System

Full flow lube oil filters duplex type  
 Fresh water cooled lube oil heat exchanger

### Fuel System

Common-rail electronic injection  
 High pressure pump with shielded high pressure injection rail and pipes  
 Fuel oil filter duplex type  
 External fuel pre-filter with water separator

### Intake Air and Exhaust System

Double flow raw water cooled intake air heat exchanger module  
 High efficiency dry turbocharger with ball bearing technology

### Electrical System

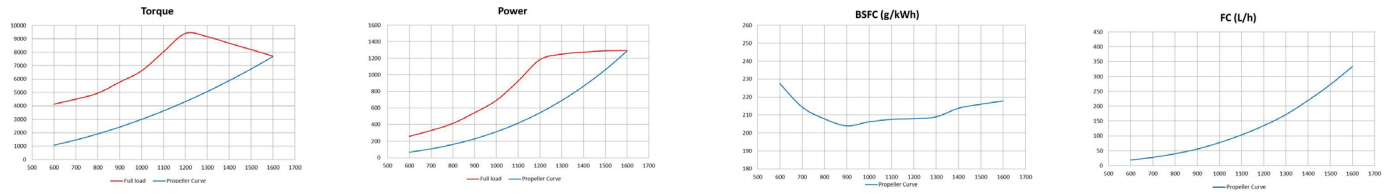
Voltage: 24V DC insulated  
 Electrical starter  
 190A battery alternator

### Optional Equipment

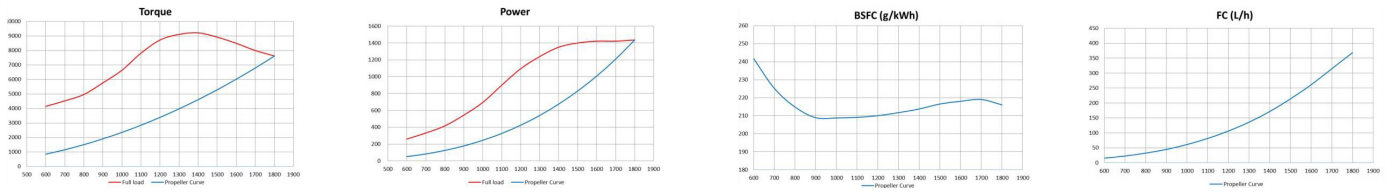
Wet exhaust  
 PTO elastic coupling  
 Additional pulley  
 Electric drain system  
 Standard PTO for hydraulic pump  
 Different alternators possible - including 12V  
 Electrical rotary actuator

### Performance

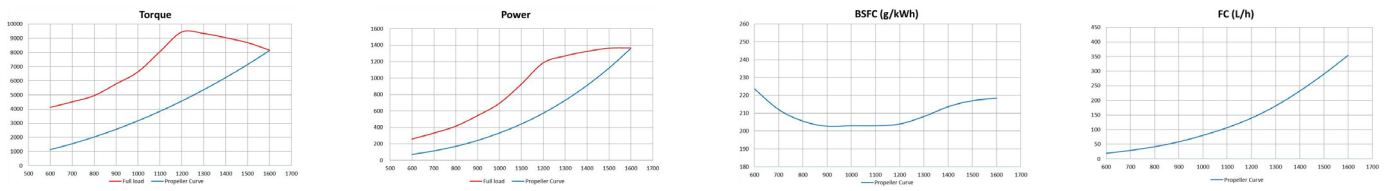
P1 1287kW - 1600rpm



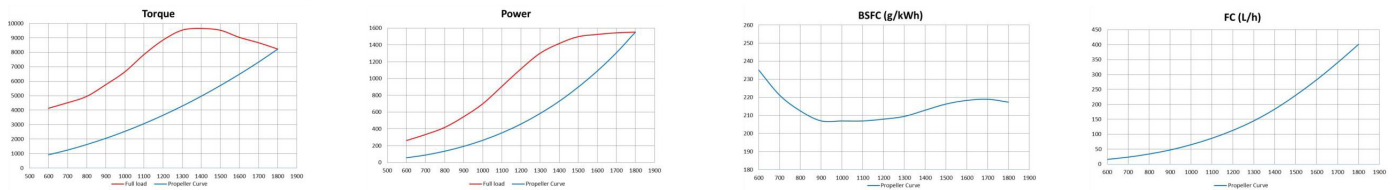
P1 1434kW - 1800rpm



P2 1361kW - 1600rpm



P2 1545kW - 1800rpm



### Power definition

(Standard ISO 3046/1 - 1995 (F))

#### Reference conditions

Ambient temperature	25°C / 77°F
Barometric pressure	100 kPa
Relative humidity	30%R
Raw water temperature	25°C / 77°F

#### Fuel oil

Relative density	0,840 ± 0,005
Lower calorific power	42 700 kJ/kg
Consumption tolerances	+ 5%
	(DIN ISO 3046-1)
Inlet limit temperature	35°C / 95°F

**Our ratings also comply with classification societies maximum temperature definition without power derating.**

Ambient temperature	45°C / 113°F
Raw water temperature	32°C / 90°F