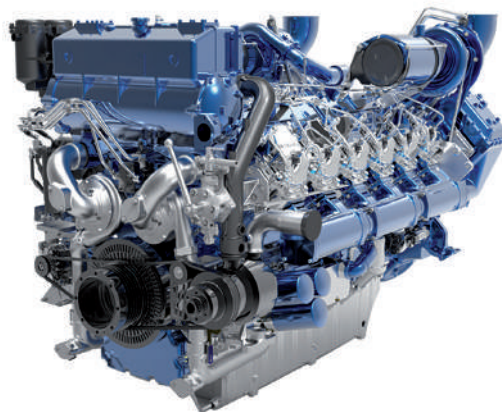


Marine Engines

12 M33.2

4 Stroke diesel engine, direct injection

Bore and stroke	150 x 185 mm
Number of cylinders	12V@ 90°
Total displacement	39,2 litres
Compression ratio	15/1
Engine rotation (ISO 1204 standard)	counterclockwise
Idle speed	650 rpm
Flywheel housing	SAE 0
Flywheel	SAE 18"



Customer benefits

Continuous compact power with reference torque performance in its category

Global environment care with low exhaust emissions and controlled fuel consumption at any running cycle

Simple technology with mechanical injection

Life cycle cost efficiency with extended mean time between overhauls (MBTO)

Rated power - Fuel consumption

Duty	kW	hp	rpm	Fuel consumption g/kWh	Peak torque / speed (N.m / rpm)	l/h	IMO
P1	956	1300	1600	210	6520 / 1100	245	II
P1	956	1300	1800	215	6900 / 1100	245	II
P1	1029	1400	1800	218	7360 / 1200	267	II
P2	1103	1500	1800	219	8196 / 1200	288	II

	P1 duty	P2 duty
Application	unrestricted continuous	continuous
Engine load variations	very little or none	Numerous
Average engine load factor	80 to 100 %	30 to 80 %
Annual working time	5000 hr +	3000 to 5000 h
Time at full load	unlimited	8 h each 12 h

Power definition

Standard ISO 3046/1

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	0 ± 5%
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



Standard equipment

Cooling system

Fresh / raw water heat exchanger with integrated thermostatic valves and expansion tank
 Cast iron centrifugal fresh water pump, mechanically driven
 Bronze self-priming raw water pump, mechanically driven

Lubrication system

Full flow screwable oil filters
 Fresh water cooled lube oil cooler
 Lube oil purifier with replaceable cartridge
 Manual prelubricating oil pump

Fuel system

In-line injection pump with flanged mechanical governor
 Double wall injection bundle with leakage collector
 Duplex fuel filters replaceable while engine running

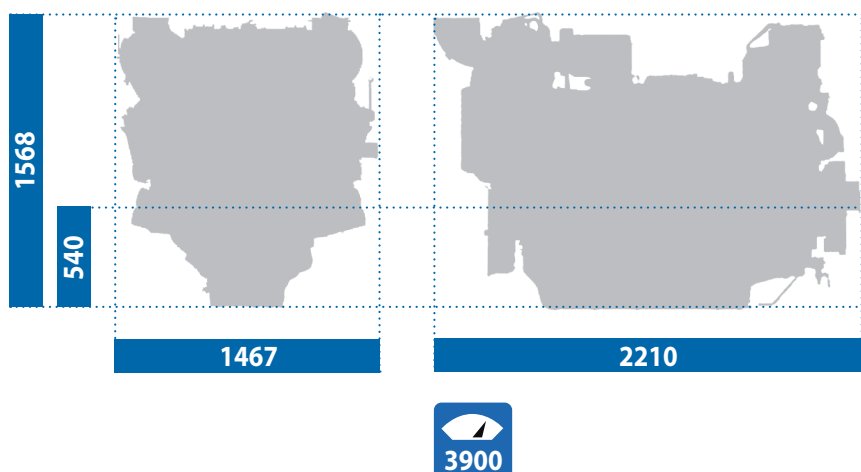
Intake air and exhaust system

Fresh water cooled turbo blower
 Fresh water cooled exhaust gas manifold

Electrical system

Voltage: 24V DC
 Electrical starter on flywheel crown
 175A battery charger
 Engine room and bridge panels

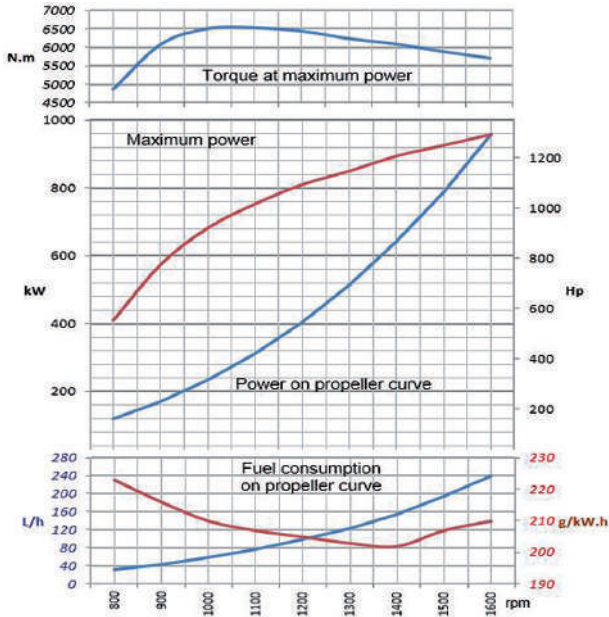
Dimensions and dry weight (mm / kg)



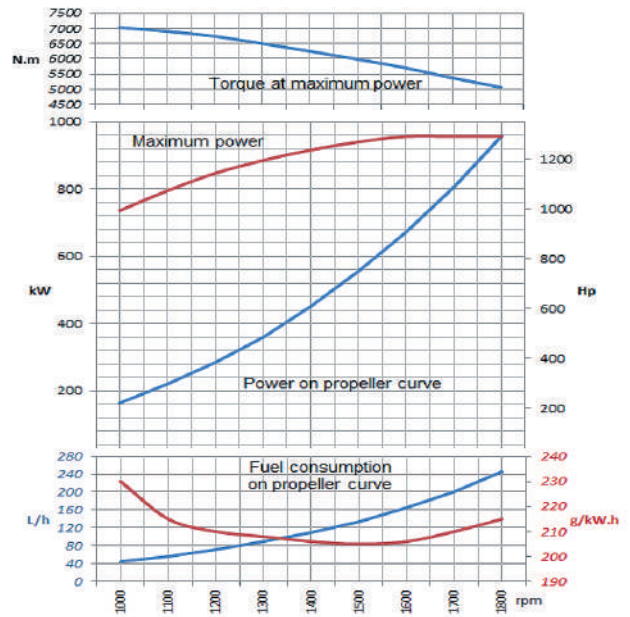


Performance

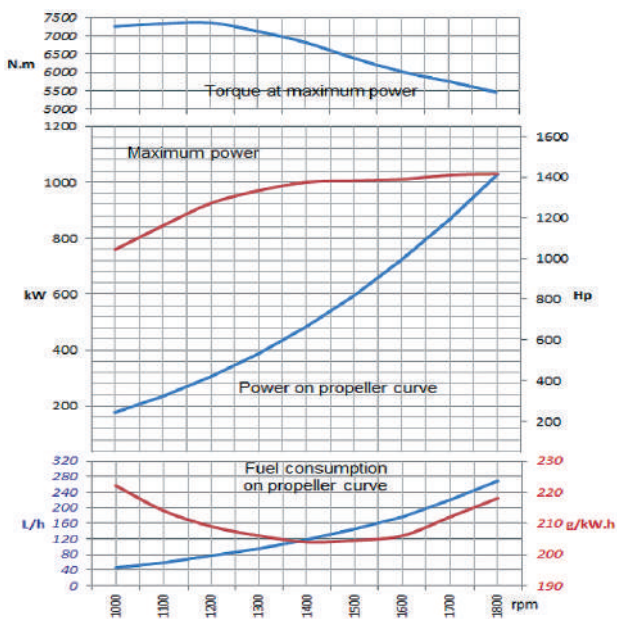
P1 - 956 kW - 1300 hp @1600 rpm



P1 - 956 kW - 1300 hp @1800 rpm



P1 - 1029 kW - 1400 hp @1800 rpm



P2 - 1103 kW - 1500 hp @1800 rpm

