

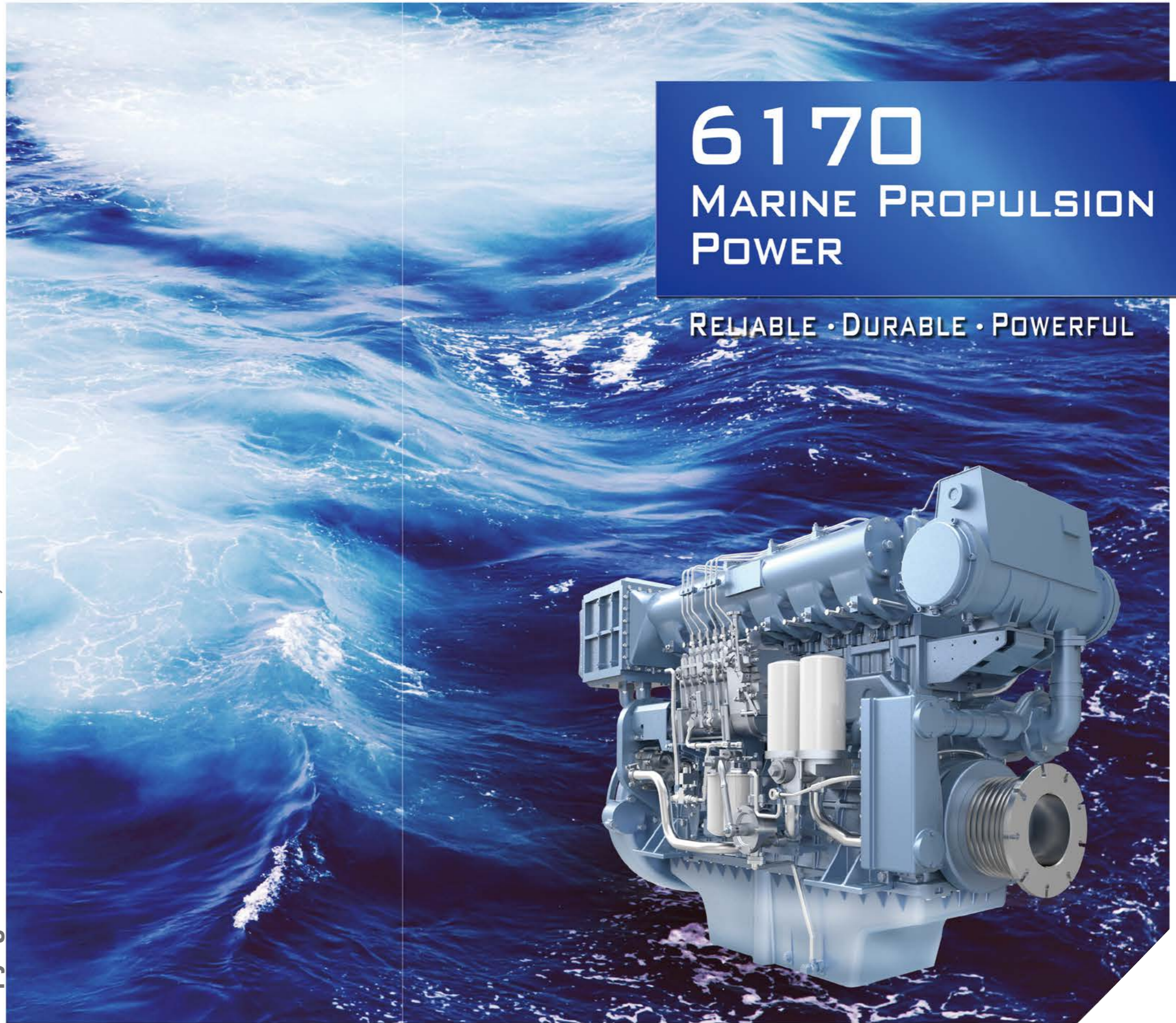
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# 6170 MARINE PROPULSION POWER

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Technical Data

Engine designation	X6170ZC450-2	X6170ZC540-2	X6170ZC580-3	X6170ZC620-4	X6170ZC818-5
Rated power(HP/kW)	450/330	540/397	580/426	620/456	818/601
Speed(rpm)	1200	1200	1350	1500	1500
Power class	P1				
Min. fuel consumption (g/kW.h)	195				
No. of cylinders	in-line 6				
Description	4-cycle, direct-injected, turbocharged diesel engine with air cooler				
Bore/Stroke, mm (in)	170/200(6.69/7.87)				
Displacement, L (in <sup>3</sup> )	27.24(1661.9)				
Compression ratio	15:1				
Dry weight, kg (lb)	3100(6836)				
Emission compliance	IMO Tier II				
Firing order	1-5-3-6-2-4				
Idle speed(r/min)	500	500	550	600	600
Flywheel housing/Flywheel	SAE 0°/14°, 16° or 18°				
Recommended fuel to conform to	ASTM-D975: 1-D / 2-D; DIN51601; NATO CODES F54/F57/F76; GB252 0/-10/-20/-35/-50; BS2869: A1/A2; W-F-800C:DF-F-A,DF-1,DF-2				
Other engine models	X6170ZC300-1/X6170ZC350-1/X6170ZC408-1/X6170ZC480-2/X6170ZC520-2/X6170ZC450-1				

Class Definition

Rating	Time at full load	Mean engine load factor	Annual working time	Cruising speed	Typical applications
P1 Continuous Duty	unlimited	80% ~ 100%	5000h to 7000h	unlimited	Trawlers, Freighters, Dredgers, Ferries, Local carrier, Barge
P2 Heavy Duty	8h per 12h	30% ~ 80%	3000h to 5000h	unlimited	Passengers boats, Harbour tug boats, Coaster, Tuna boat, Seiner, Oceanographic research vessels
P3 Intermittent Duty	2h per 12h	70%	1000h to 3000h	90%	Fishing crafts, Pilot boat, Commercial pleasure crafts, Fire fighting boat
P4 High Output Duty	1h per 12h	60%	< 1000h	80%	Patrol boat, Life boat
P5 Light Duty	1h per 12h	< 30%	< 500h	80%	Leisure yachts

Power Definition

Standard ISO 3046/1 - 1995 (F)

Reference conditions

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

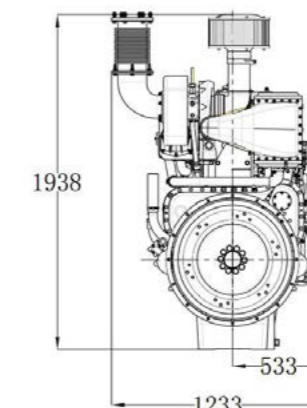
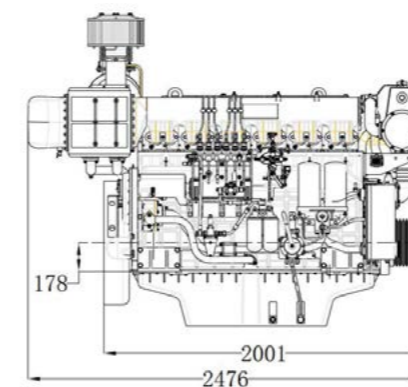
Fuel oil

Relative density 0,840 ± 0,005g/ml  
 Lower calorific power 42,700 kJ/kg  
 Consumption tolerance 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

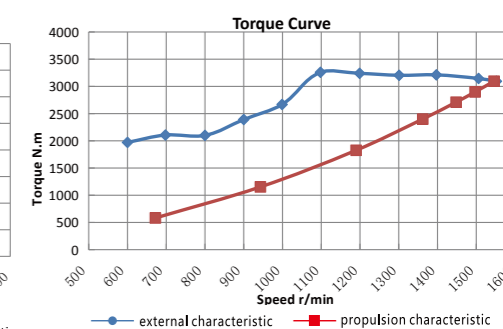
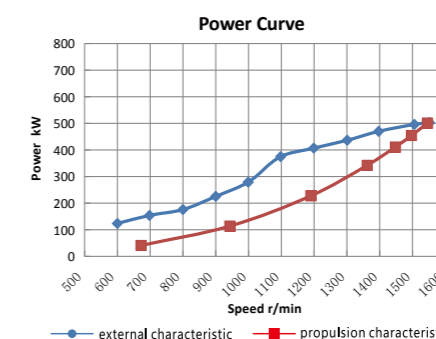
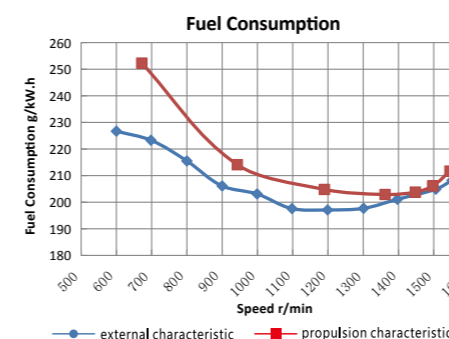
Engine Dimensions



Connections

Raw water inlet	Ø 120 mm
Raw water outlet	Ø 120 mm
Fuel inlet	Ø 18 mm
Fuel outlet	Ø 14 mm
Exhaust	Ø 208 mm

Performance Curves (X6170ZC620-4)



Technical Description

Cylinder block

• Gantry cylinder block and spherical crankshaft box, light weight and high rigidity, structural optimization design gives more potential for internal combustion pressure increase

Crankshaft

• Nodular iron crankshaft has enhanced strength and good balance, 6 counterweights design to reduce the moment of inertia, ensure the responsiveness under any complex operating condition

Piston

• Internal lubricate oil gallery design, three piston rings and gap on the bottom to reduce oil consumption

Connecting rod

• Oblique incision structure, good rigidity, light weight and small moment of inertia which decrease mechanical load effectively and to increase the reliability

Heat exchanger

• High cooling efficiency and sensitive temperature control, the cooling core has multiple materials and could be disassembled solely, easy maintenance, can meets the requirements of inland and sea-going application

Centrifugal water pump

• Forced cooling, mass flow, high cooling efficiency, multiple material vanes

Electrical starter

• High-power pre-engaged electrical starter, double wire system, starts power reach up to 11kW

Air starter

• High-power pre-engaged air starter, output power reach up to 7-17kW, ensure the engine can start easily in various ambient condition

