

WEICHAI pursues an active policy of product development and improvement. For this reason the company reserves the right to change specifications without prior notice.

6170

MARINE PROPULSION POWER

RELIABLE · DURABLE · POWERFUL

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Contact your local dealer for more information regarding WEICHAI engine and optional equipment/accessories



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WEICHAI

Technical Data

Engine model	X6170ZC450-1	X6170ZC540-2	X6170ZC580-3	X6170ZC620-5	X6170ZC818-5
Rated power, Ps(kW)	450(330)	540(397)	580(426)	620(456)	818(601)
Rated speed, r/min	1000	1200	1350	1500	1500
Power rating	P1				
Min. fuel consumption, g/(kW·h)	195				
No. of cylinders	in-line 6				
Description	4-stroke, direct-injected, turbocharged diesel engine with air cooler				
Bore x Stroke, mm (in)	170 x 200(6.69 x 7.87)				
Displacement, L (in ³)	27.24(1661.9)				
Compression ratio	15.1:1				
Dry weight, kg (lb)	3100(6836)				
Emission	IMO Tier II				
Firing order	1-5-3-6-2-4				
Idle speed, r/min	450	500	550	600	600
Flywheel housing/Flywheel	SAE 0/14", 16" or 18"				
Other engine models	X6170ZC350-1, X6170ZC408-1, X6170ZC480-2, X6170ZC620-2, X6170ZC650-2, X6170ZC680-3, X6170ZC550-5, X6170ZC756-5				

Class Definition

Power Classification	Time at full load	Mean engine load factor	Annual working time	Typical applications
P1 Continuous Duty	Unlimited	70% ~ 100%	recommended but not limited to 5000h-8000h	Ocean vessel Engineering vessel
P2 Heavy Duty	8h per 12h	40% ~ 80%	recommended but not limited to 5000h	Ferries, High speed passengers boats, Trawlers, Inland waterway transport boats, Tugboat, offshore trade vessel, Purse seine vessel
P3 Intermittent Duty	4h per 12h	40% ~ 80%	recommended but not limited to 3000h	Offshore service boats, Seasonal cruise ship, Official vessels with high utilization rate
P4 Light Duty	2h per 8h	60%	recommended but not limited to 1000h	Fishery patrol ship, Maritime surveillance ship, Patrol boat, Life boat, Stormships used by local governments
P5 High Performance Duty	0.5h per 5h	60%	recommended but not limited to 500h	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

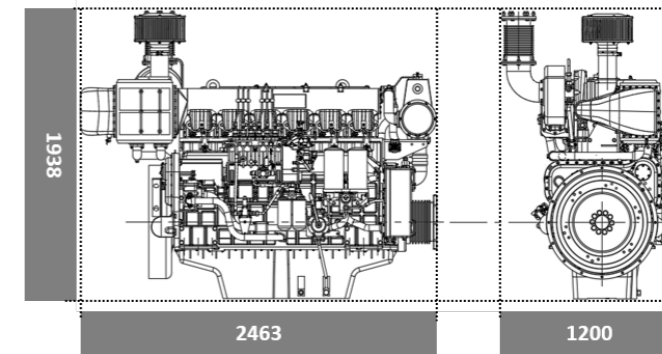
Fuel oil

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.

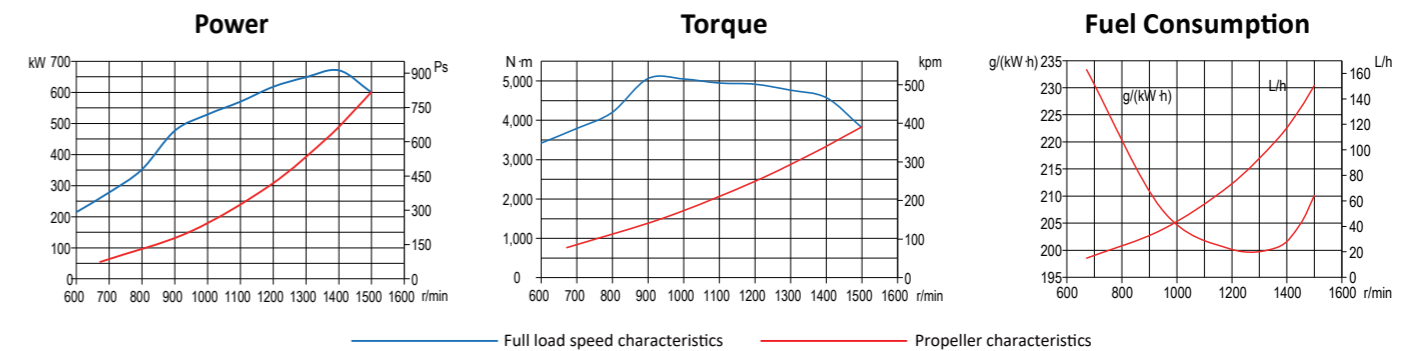
Ambient temperature 45 °C / 113 °F
 Raw water temperature 32 °C / 90 °F

Engine Dimensions



Dimensions may vary based on selected engine configuration

Performance Curves(X6170ZC818-5)



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

