



Basic engine specifications

Rating	P2
Rated power-kW	1104
Rated speed-rpm	1800
Overload power-kW	/
Overload speed-rpm	/
Rated power tolerance-%	1~3
Idle speed-rpm	650
High idle speed-rpm	1980
N° of Cylinders / Valves	12/48
Cylinders arrangement	V type
Thermodynamic cycle	4 stroke
Bore × Stroke-mm(in)	150×185 (5.91×7.28)
Compression ratio	15:1
Displacement-L(in ³)	39.2 (2392.1)
Fuel system	Mechanical
Injection system	Direct injection
Aspiration	Turbocharged and aftercooled
Flywheel housing/Flywheel/N° of teeth on flywheel ring gear(standard)	SAE 0/18°/194
Flywheel housing/Flywheel/N° of teeth on flywheel ring gear(optional)	/
Firing order	A1-B2-A5-B4-A3-B1-A6-B5-A2-B3-A4-B6
Rotation(from flywheel end)	Counterclockwise
Overall dimensions (L×W×H) -mm(in)	2352×1454×1720 (92.6×57.2×67.7)
Dry weight-kg(lb)	3900 (8598)
Wet weight-kg(lb)	4165.4 (9183)
Max. output power of front end-kW(hp)	567 (771.1)
Max. output torque of front end- N.m(ft-lbs)	4702 (3470.1)
Inertia of flywheel- kg.m ² (lb.ft ²)	7.16 (169.84)
Inertia of crankshaft- kg.m ² (lb.ft ²)	4.52 (107.21)
Max. bending moment @ flywheel housing- N.m(ft-lbs)	/ (/)
Location of GC-mm[in]	(840,0,280) [(33.1,0,11.0)]
Emission compliance	IMO Tier II

Security parameters

Alarm speed-rpm	2070
Shut down speed-rpm	2160
Alarm oil pressure-MPa	0.2
Shut down oil pressure-MPa	0.16
Alarm oil temperature-°C(°F)	105(221)
Alarm coolant temperature-°C(°F)	95(203)

Noise

Diesel engine noise(Acoustic power level)- dB(A)	120.8
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Rating definitions

Continuous power (P1)

The engine can run at full load continuously. The average load factor is 70% to 100%. Annual working time is more than 4000h.

Heavy duty power (P2)

The engine can run at full load for 8h every 12h. The average load factor is 40% to 80%. Annual working time is 2000h to 4000h.

Pleasure vessels in commercial operation (P3)

The engine can run at full load for 4h every 12h. The average load factor is 50% to 70%. Annual working time is 500h to 2000h.

Government vessels (P4)

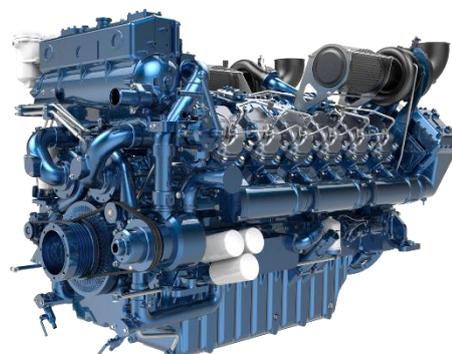
The engine can run at full load for 2h every 8h. The average load factor is 70% to 90%. Annual working time is less than 500h.

Light duty power (P5)

The engine can run at full load for 0.5h every 5h. The average load factor is 60%. Annual working time is less than 300h.

General remarks

- The origin of coordinates is at the center of the flywheel housing back end surface. X axis directs from flywheel to front, Z axis directs vertical up, Y axis direction is defined by right-hand rule.
- All ratings are based on operating conditions under ISO 8665, ISO 3046-1.
- Curves represent net engine performance in accordance with ISO 3046/1 with standard accessories such as fuel injection pump, water pump and L.O. pump under the condition of 25°C/77°F ambient temperature, 100kPa[29.612 in Hg] barometric pressure, 30% relative humidity and 25°C/77°F raw water temperature at inlet.
- Reference document: D000013765.





12M33C1500-18 Marine propulsion engine



Air intake system

Intake air flow-m ³ /min(cfm)	84.70 (3024.99)
Max. allowable intake air restriction(include pipe and air filter)- kPa(in H ₂ O)	5 (20.08)
Intake air temperature up to-°C(°F)	55 (131)
Heat rejection to atmosphere-kW(BTU/min)	145.7 (8286.0)

Cooling system

Coolant capacity of the engine-L(gal)	128 (28.16)
Max. sea water strainer mesh hole diameter- mm(in)	2 (0.08)
Sea water pump power-kW(hp)	9.2 (12.5)
Expansion tank pressure cap- kPa(in H ₂ O)	80 (11.6)
Heat dissipating to heat exchanger- kW(BTU/min)	671.3 (38176.8)
Coolant flow-m ³ /h(gal/h)	/ (l)
Recommended outlet water temperature-°C(°F)	75~90 (167~194)

Exhaust system

Exhaust flow-m ³ /min(cfm)	234.79 (8385.32)
Max. exhaust back pressure-kPa(in H ₂ O)	7.5 (30.1)
Max. exhaust temperature before turbocharger-°C(°F)	700 (1292)
Max. exhaust temperature after turbocharger-°C(°F)	550 (1022)
Max. bending moment of turbocharger flange- N.m(ft-lbs)	10 (7.4)
Exhaust smoke-FSN	≤1.5

Lubricating system

Max. install angle(fore-aft)	5°
Max. install angle(athwart ship)	15°
Max. operating angle(fore-aft)	7.5°
Max. operating angle(athwart ship)	22.5°
Sump type	Wet
Oil capacity Low/High-L(gal)	117/144 (25.7/31.7)
Oil fuel consumption ratio based on engine fuel consumption data-%	≤0.4
Oil flow- L/min(gal/min)	470 (103.4)

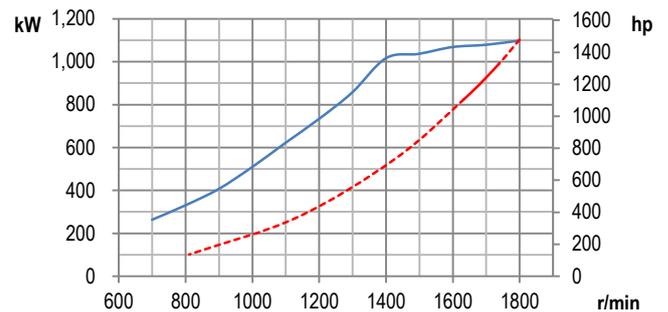
Fuel system

Fuel flow supply line- L/h(gal/h)	280.48 (61.70)
Fuel flow return line- L/h(gal/h)	/ (l)
Max. Allowable fuel supply restriction -kPa(in H ₂ O)	13 (52.2)
Fuel supply restriction on engine-kPa(in H ₂ O)	10 (40.2)
Allowable fuel restriction of shipyard supplied components-kPa(in H ₂ O)	3 (12.0)
Max. fuel return restriction-kPa(in H ₂ O)	15 (60.2)
Max. self-priming height of fuel delivery pump-m(ft)	1 (3.28)
Max. fuel inlet temperature-°C(°F)	44 (111.2)

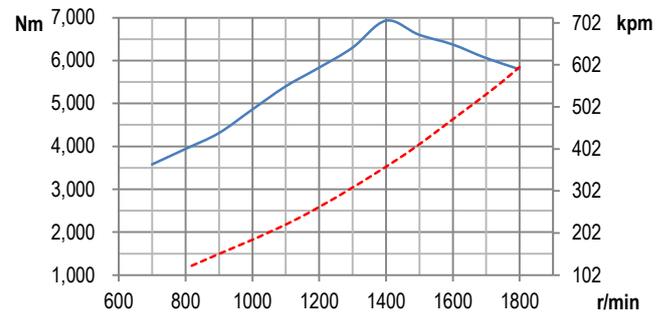
Electric system

Electrical system voltage(2-pole)-V	24
Starter power-kW(hp)	10 (13.6)
Recommended battery capacity(5°C and above)- A.h	180~220
Recommended battery capacity(-5°C and above) - A.h	/
Alternator working current-A	55

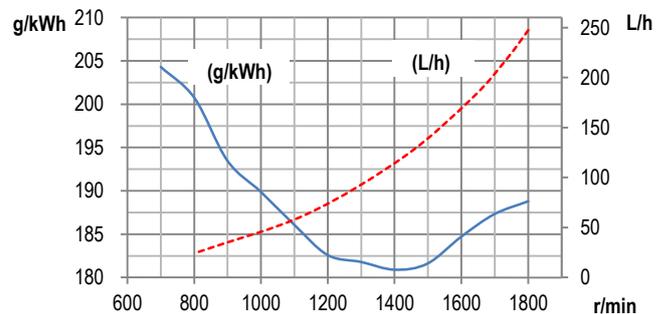
Power



Torque



Fuel consumption



— Full load speed characteristics
 - - - Propeller characteristics

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Materials and specifications are subject to change without notice.