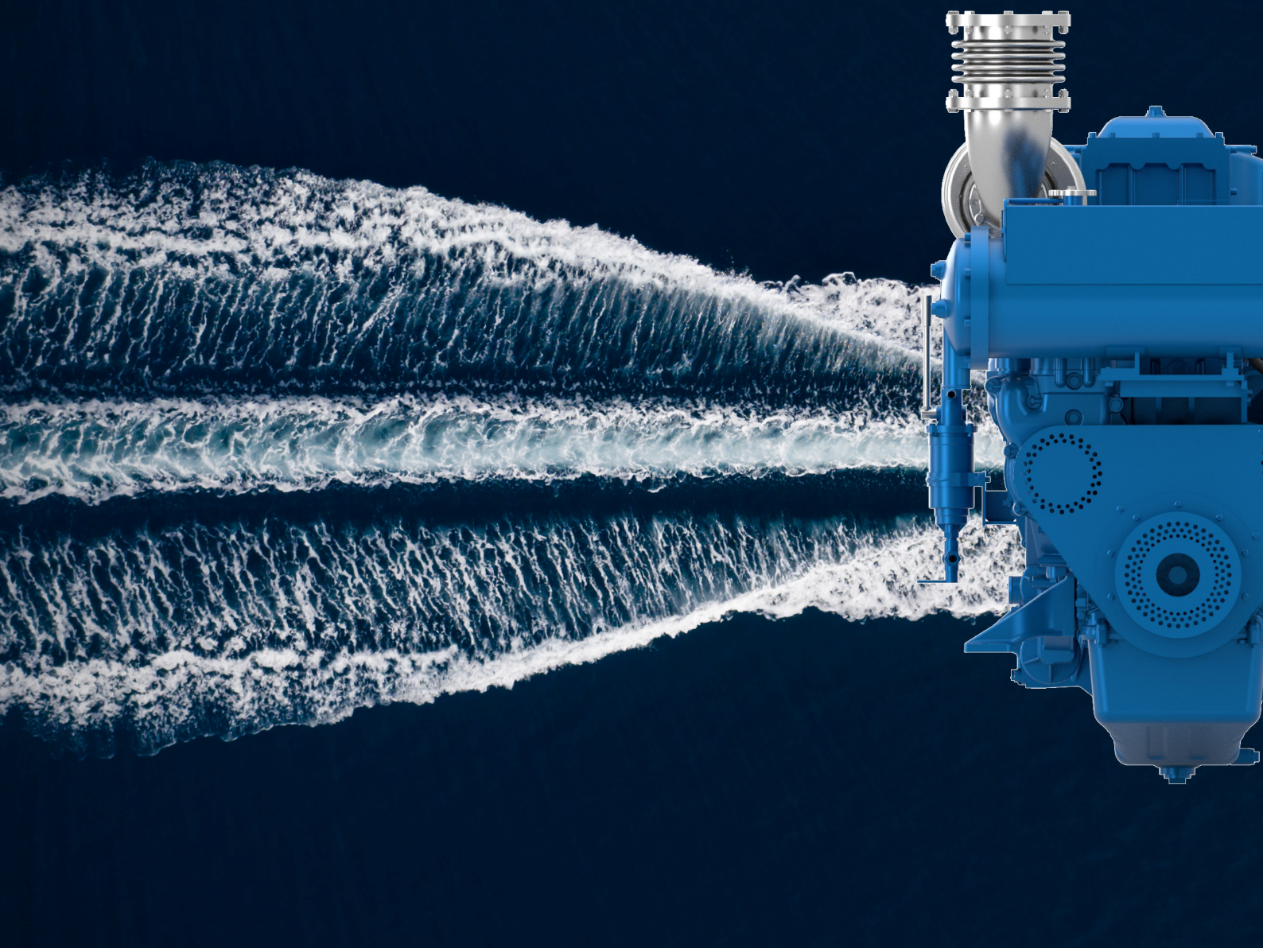
MOTEURS Baudouin

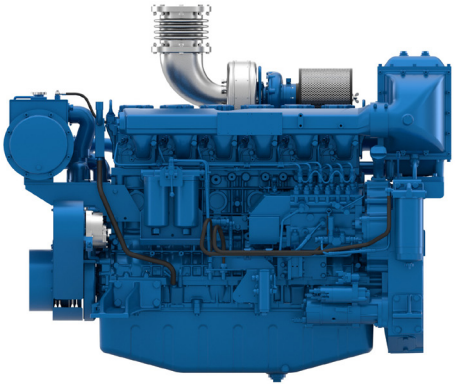


6M16

Propulsion Diesel Engine

6M16

Propulsion Diesel Engine



Number of cylinders	6 in line
Bore and stroke (mm)	126 X 130
Total displacement (L)	9.7
Compression ratio	17/1
Engine rotation	counter clockwise
Idle speed (rpm)	650
Flywheel	SAE 1
Flywheel housing	SAE 14"

Customer benefits

Genuine marine design, our engine is designed specifically for Marine applications with Marine components

Global environment care with low exhaust emissions at any running cycle

Simple technology with mechanical injection

Life cycle cost efficiency with extended MTBO, modular concept reducing number of 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	240	326	2100	214	218	61	II
P2	264	359	2100	216	225	69	II

	P1	P2
Application	Unrestricted Continuous	Continuous (Heavy)
Engine load variations	Not important	Important
Average Engine load factor	80-100%	30-80%
Annual working time	More Than 5000 H	3000 -5000 H
Time at full load	Unlimited	8h Each 12h

P1 Continuous Duty

- Deep sea trawlers
- Shrimps trawlers
- Sea going tug boats
- River tug boats
- Push boats
- Freighters
- Dredges
- LCT
- Ferries

P2 Heavy Duty

- Deep sea trawlers
- Shrimps trawlers
- Sea going tug boats
- River tug boats
- Push boats
- Freighters
- Dredges
- LCT
- Ferries

P3 Intermittent Duty

- Seasonal passenger vessels
- Fishing boats
- Pilot boats
- Commercial pleasure boats
- Pump boats
- Displacement sailboats
- Trawlers
- Bow thrusters

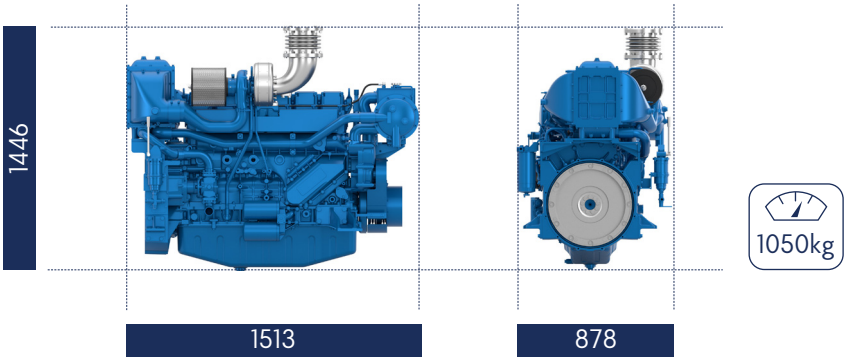
P4 Light Duty

- Private pleasure boats
- Multi-hull pleasure boats
- Survey or rescue fast vessels
- Military fast vessels.

P5 High performance Duty

- Private pleasure boats
- Multi-hull pleasure boats

Dimensions and dry weight (mm/kg)

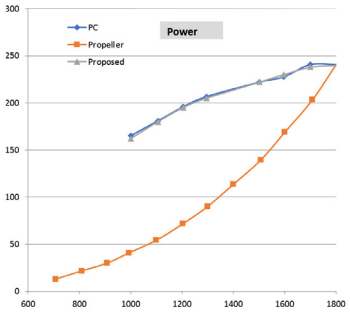


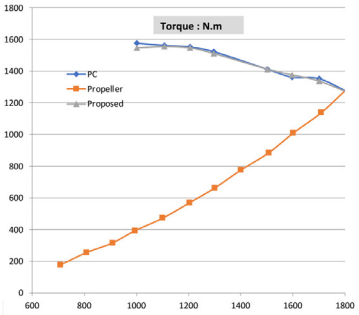
Standard equipment

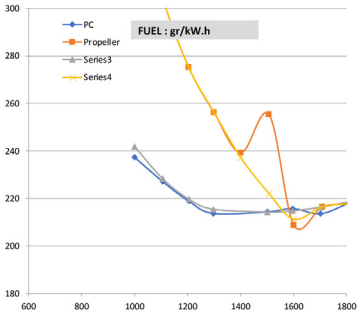
Engine & Block	Cast iron cylinder block, with replaceable cylinder liners Separate cast iron cylinder heads Replaceable valves guides and seats Steel forged crankshaft with 7 bearings Lube oil cooled light alloy piston with 3 high performance piston rings
Cooling System	Fresh / raw water heat exchanger with integrated thermostatic valves and expansion tank Cast iron centrifugal fresh water pump, mechanically driven Bronze self-priming raw water pump, mechanically drive
Lubrication System	Full flow screwable oil filters Fresh water cooled lube oil cooler
Fuel System	In line injection pump with flanged mechanical governor Double wall injection bundle Duplex fuel filters replaceable engine running Water separator
Intake Air & Exhaust System	Insulated exhaust gas manifold Turbo blower with insulated turbine housing Low water temperature cooled intake air cooler
Electrical System	Voltage: 24Vcc Electrical starter on flywheel crown 35A battery charger
Optional Equipment	Cooling system adapted for box / keel cooling Connection for emergency raw water circuit Resilient mounts under engine Bilge pump Air starter Exhaust water injection after turbocharger Resilient mounts under engine Free end PTO

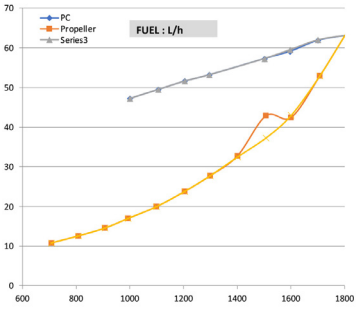
Performance

P1 - 240kW - 326hp @2100rpm

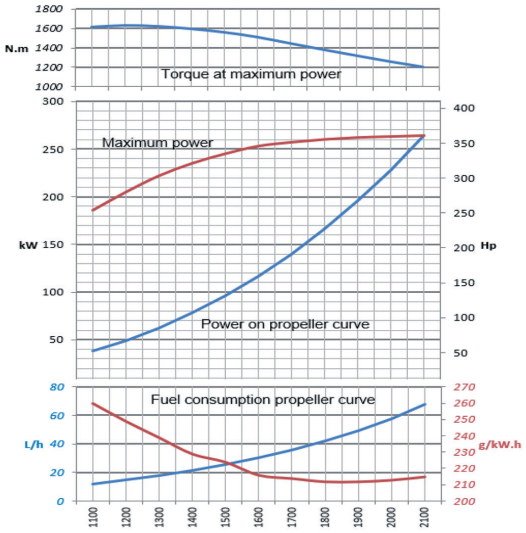








P2 - 264kW - 360hp @2100rpm



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.

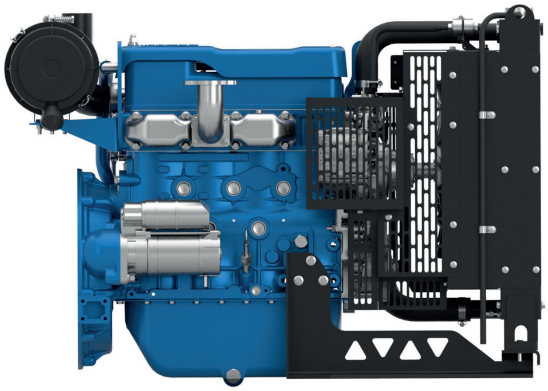
Ambient temperature	45°C / 113°F
Raw water temperature	32°C / 90°F

MOTEURS Baudouin

4M06

PowerKit ESP/PRP Diesel Engine

4M06
ESP/PRP Diesel Engine



Bore & Stroke (mm)	89 x 92
Displacement (L)	2.3
N° of Cylinders	4
Cylinders Arrangement	In line
Fuel System	High Pressure Common Rail/ Mechanical
Governor (Gov.)	ECU/ Electronic
Aspiration (Asp.)	Naturally Aspirated Turbocharged Turbocharged & air-to-air cooled

Customer benefits

Warranty terms – 2 yrs unlimited PRP, 4 yrs/800h ESP
50°C Cooling package standard with low derating
Low fuel consumption across the range
Extended mean time between overhauls (MTBO)

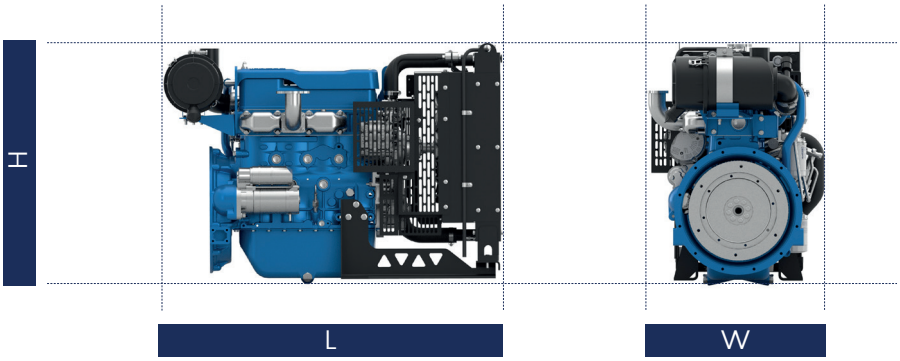
ESP/ PRP									
Diesel Engine Models	Gross Engine Output		Typical Generator Output				RPM	Asp.	Gov.
	ESP	PRP	ESP		PRP				
	kWm		kWe	kVA	kWe	kVA			
4M06GT20/5[a]	20	18	16	20	15	18	1500	NA	ELEC
4M06G2D0/S	20	18	16	20	15	18	1500	NA	ELEC
4M06GT25/5[a]	25	23	20	25	18	23	1500	NA	ELEC
4M06G4D0/S	25	23	20	25	18	23	1500	NA	ELEC
4M06GT35/5[a]	33	30	28	35	26	32	1500	T	ELEC
4M06G6D0/S	33	30	28	35	26	32	1500	T	ELEC
4M06G8D0/S	41	37	35	44	32	40	1500	T	ELEC
4M06G50/5	48	44	40	50	36	45	1500	T/A-A	ELEC
4M06G10D0/5	53	48	53	55	40	50	1500	T/A-A	ECU
4M06G2D0/S	25	23	20	25	18	23	1800	NA	ELEC
4M06G4D0/S	30	27	25	32	23	29	1800	NA	ELEC
4M06G6D0/S	41	37	33	42	30	38	1800	T	ELEC
4M06G8D0/S	47	43	41	51	37	47	1800	T	ELEC
4M06G50/6	58	53	50	63	45	56	1800	T/A-A	ELEC
4M06G10D0/S	63	58	55	69	50	63	1800	T/A-A	ECU

*Please note that the models ending with S are switchable engines (Dual Speed)
** a - Telecom

Standard Equipment

Engine and block	Cast iron gantry type structure block One-piece forged crankshaft Separate cast iron cylinder heads and wet liners Aluminum alloy pistons with oil cooling gallery
Cooling System	Radiator and hoses supplied directly mounted on the engine Thermostatically-controlled system with belt drivencoolant pump and pusher fan
Lubrication system	Flat bottom large capacity oil pan Spin-on full-flow lube oil filter
Fuel system	P type fuel injection pump and injector for higher inject pressure, for engines with electronic governor High pressure Common Rail injection system, for engines with ECU Fine filter
Air intake and exhaust system	Special rear mounted air filter with restriction indicator Exhaust manifold shield for heat isolating
Electrical System	12V DC electric starter motor and battery charging alternator LOP + HWT sensors
Flywheel and housing	SAE 4 flywheel housing and 7.5" flywheel, for engines 4M06G20/5 & 25/5 and 4M06G20/6 & 25/6 SAE 3 flywheel housing and 11.5" flywheel, for other engines

Dimensions and dry weight (mm/kg)



Diesel Engine	Speed	Dimensions and dry weight including radiator			
		L	W	H	Weight
	RPM	mm	mm	mm	Kg
4M06GT20/5	1500	1055	580	855	290
4M06G2D0/S	1500/1800	1055	574	756	265
4M06GT25/5	1500	1055	580	855	290
4M06G4D0/S	1500/1800	1055	574	756	265
4M06GT35/5	1500	1111	610	899	300
4M06G6D0/S	1500/1800	1130	597	802	273
4M06G8D0/S	1500/1800	1130	597	802	273
4M06G50/5	1500	1185	684	797	286
4M06G10D0/S	1500/1800	1185	684	802	274
4M06G50/6	1800	1185	684	797	286

Ratings definitions

Emergency Standby Power (ESP)

Emergency Standby Power is the maximum power available for a varying load for the duration of a main power network failure. The average load factor over 24 hours of operation should not exceed 70% of the engine's ESP power rating. Typical operational hours of the engine is 200 hours per year, with a maximum usage of 500 hours per year. This includes an annual maximum of 25 hours per year at the ESP power rating. No overload capability is allowed. The engine is not to be used for sustained utility paralleling applications.

Prime Rated Power (PRP)

Prime Power is the maximum power available for unlimited hours of usage in a variable load application. The average load factor should not exceed 70% of the engine's PRP power rating during any 24 hour period. An overload capability of 10% is available, however, this is limited to 1 hour within every 12 hour period..

1) All ratings are based on operating conditions under ISO 8528-1, ISO 3046, DIN6271. Performance tolerance of ±5%.
2) Test conditions: 100 kPa, 25°C air inlet temperature, relative humidity of 30%, with fuel density 0.84 kg/L. Derating may be required for conditions outside these; please contact the factory for details.