	Model : <b>6M33G2D0/5</b>	Date : 22/03/23
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## Ratings

RPM	Gross Engine Output				Net Engine Output			
	COP		PRP		COP kWm		PRP kWm	
	kWm	BHP	kWm	BHP	kWm	BHP	kWm	BHP
1500	460	617	575	771	435	584	550	738


1 kWm = 1,34102 BHP

\* When the engine is used with a cooling system using an electrically driven fan, net engine output data may change and quoted figures should be used for reference only

## Basic data

Engine model	6M33G2D0/5
N° of Cylinders / Valves	6 / 24
Cylinders arrangement	In line
Bore x Stroke (mm)	150 x 185
Displacement (L)	19.6
Thermodynamic Cycle	Diesel 4 stroke
Firing Order	
Mean Piston Speed (m/s)	9.25
BMEP (Bar)	19
Cooling System	Liquid (water + 50% antifreeze)
Injection System	Direct
Fuel System	High Pressure Common Rail
Aspiration	Turbocharged and Aftercooled
Compression ratio	15 : 1
Flywheel housing	SAE 1
Flywheel	14"
Rotation Viewed from Flywheel	
Allowed static bending moment of the flywheel housing	
N° of teeth on flywheel ring gear	178
Inertia of flywheel (kg•m <sup>2</sup> )	4.75
Inertia of crankshaft (kg•m <sup>2</sup> )	1.66
Emission standard	N/A
Overall Dimensions with radiator (Length x Width x Height) (mm)	2798 x 1680 x 1954
Engine dry weight without radiator and without radiator pipes (kg)	2090
Engine dry weight with radiator and radiator pipes (kg)	2620
Engine wet weight with radiator (includes oil, coolant) (kg)	2840

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## Air intake system

Air intake temperature rise (°C) .....	≤ 5
Air intake restriction clean filter (mBar) .....	≤ 30
Air intake restriction dirty filter (mBar) .....	≤ 50
Recommended air flow @ PRP (m³/min) .....	40
Min. diameter of intake pipe (mm) .....	140

## Aftercooling system

Aftercooler system type .....	Air to Air
Aftercooler heat dissipating capacity @ PRP (kJ/s) .....	145.5
Max. intake temperature @ 25°C ambient temperature (°C) .....	55
Max. difference between intake temperature and ambient temperature (°C) .....	≤ 30
Max. intake pressure drop of aftercooler (mBar) .....	150

## Lubrication system


Oil capacity Low / High (L) .....	36 / 61
Oil pressure in normal condition idle speed (Bar) .....	≥ 2
Oil pressure in normal condition at 1500 Rpm @ PRP (Bar) .....	4 - 6.5
Lowest oil pressure alarm (shutdown) (Bar) .....	2
High Oil Pressure Warning .....	
Max. oil temperature (°C) .....	105
Oil flow (L/min) .....	≥ 263
Oil fuel consumption ratio based on engine fuel consumption data .....	≤ 0.3 %
Total system capacity (including filters) (L) .....	64

## Heat balance test data (with ambient temperature / °C)

Total heat dissipation @ PRP (kJ/s) .....	
- Heat Rejection to Jacket Water @ PRP (kJ/s) .....	
- Heat Rejection to Aftercooler @ PRP (kJ/s) .....	
- Radiated Heat to Ambient @ PRP (kJ/s) .....	
- Heat Rejected to Exhaust @ PRP (kJ/s) .....	

## Exhaust system

Max. exhaust back pressure (mBar) .....	75
Max. exhaust temperature before turbocharger (°C) .....	≤ 730
Max. exhaust temperature after turbocharger (°C) .....	≤ 550
Exhaust flow @ PRP (m³/min) .....	110
Min. diameter of exhaust pipe (mm) .....	200
Max. bending moment of exhaust gas exit flange (Nm) .....	10

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## Cooling system with standard radiator

System designed for ambient temperature up to (°C) <sup>1</sup>	50
Radiator type	Mechanical
Fan type	Belt driven pusher
Min. inside diameter of coolant outlet pipe (mm)	84
Coolant capacity of radiator and pipes (L)	115
Coolant alarm (shutdown) temperature (°C)	108
Thermostat opening temperature / full open temperature (°C)	80 / 92
Coolant capacity of the engine (L)	44
Cooling fan airflow (m <sup>3</sup> /min)*	783.3
Fan absorbed power (kW)	23.1
Max additional restriction - Duct allowance (Pa)	75

\* Air flow figure assumes the presence of the standard radiator provided, taking into consideration the backpressure caused

## Fuel system

Governor	ECU
Governor steady state speed stability at constant load (ISO 8528-5 Class G3) <sup>2</sup>	≤ +/- 0.5 %
Max. restriction at fuel pump inlet (Bar)	0.5
Max. pressure at fuel inlet (Bar)	
Max. fuel return restriction (Bar)	0.5
Max. fuel inlet temperature (°C)	70
Fuel supply flow (L/hr)	900
Min. diameter of inlet pipe (mm)	14
Min. diameter of return pipe (mm)	14


## Electrical system

Electrical system voltage (negative to ground) (Vdc)	24
Starter power (kW)	8.5
Battery charger current (A)	55
Battery charger absorbed power (kW)	1.6
Max. electric resistance of starting circuit (Ω)	0.008
Min. sectional area of wire (mm <sup>2</sup> )	70
Min. cold start temperature without auxiliary starting device (°C) <sup>3</sup>	- 5
Min. cold start temperature with auxiliary starting device (°C) <sup>3</sup>	- 10

<sup>1</sup> The indicated value is based on the AOT value of 50°C for an engine tested at 100% of the PRP Power, reflecting temperature in an open condition, without an enclosure or container, without any airflow obstruction in the front of the radiator, without air recirculation, with free exhaust gas exit and with the engine thermostatic valve in its full open condition, without a closing plate present. The reference air restriction is equal to 50Pa. For the equivalent ATB (Air-to-Boil) performance in a customer or project basis, please consult Baudouin Application Engineering.

<sup>2</sup> This refers only to the frequency response of the engine and should not be confused with the performance class of the Generator Set, which is subject to additional contributing factors such as alternator selection and control settings.

<sup>3</sup> Engines used in emergency standby application or applications that require immediate start under load, they must be equipped with coolant heaters. Baudouin recommend heaters installation to be executed by providing constant coolant circulation across all the engine components. Two heaters are required for V-type engines, one per each side.

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## Noise

Diesel engine noise (Acoustic power level) (dB(A)) .....	120
Noise - upper side (dB(A)) .....	103.6
Noise - right side (view from flywheel) (dB(A)) .....	104.7
Noise - left side (view from flywheel) (dB(A)) .....	105.5
Noise – front (radiator) side (dB(A)) .....	100.5
Noise – rear (flywheel) side (dB(A)) .....	103.9

Notes :

- Noise test made at 100% of the PRP power, at 1 mt. distance, on engine without radiator, without cooling fan and without silencer.
- Noise test refers to ISO 6798 norm : "Reciprocating internal combustion engines. Measurement of emitted airborne noise. Engineering method and survey method".

## Fuel consumption

Rating	gr/kWh	L/hr
100% PRP	199.1	136.3
100% COP	194.7	106.6
75% PRP	194.7	100
50% PRP	196	67.1
25% PRP	221.3	37.9
Fuel consumption tolerance +/- 5%		

## Ratings definitions

### Continuous Operation Power (COP)

Continuous Power is the maximum power available for an unlimited period of use at a constant load factor. No overload capability is allowed.

### Prime 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.

- All ratings are based on operating conditions under ISO 8528-1, ISO 3046, DIN6271. Performance tolerance of  $\pm 5\%$ .
- 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.
- Power output curves are based on the engine operating with fuel system, water pump and lubricating oil pump; not included are battery charging alternator, fan and optional equipment.