

## 6M16G250/5e2

## G-Drive Engine Datasheet

Speed	Gross Engine Output		
	COP	PRP	ESP
rpm	kWm	kWm	kWm
1500	204	216	238

### Ratings definitions

	Continuous Power (COP)	Prime Power (PRP)	Standby Power (ESP)
Annual working time	Unlimited	Unlimited	≤200 h
Mean engine load factor	100%	≤70% per 250 h	≤80% per 24 h
Time at full load	Unlimited	≤500 h per year	≤25 h per year
Overload capacity	No	1 h per 12 h (10% overload) ≤25h per year	No

1) The power ratings are in accordance with ISO 3046.

2) Test conditions: 100 kPa, 25 °C air inlet temperature, relative humidity of 30%, with fuel density 0.84 kg/L.

3) The engine maybe operated at : up to 1000m and 30°C without power deration. For sustained operation above these conditions, derate by 3% per 300m, and 2% per 11°C.

4) 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.

### Basic data

Engine model	6M16G250/5e2	No. of Cylinders/Valves	6/12
Bore×Stroke (mm)	126×130	Displacement (L)	9.726
Fuel system	Mechanical pump	Aspiration	Turbocharged and Intercooled
Compression ratio	17:1	Emission standard	EU Stage II
Overall Dimension (Length×Width×Height) (mm)	1525×730×1063	Engine net weight (kg)	875
Fuel supply advance angle (°)	12±1		
Flywheel housing	SAE 1	Flywheel	11.5"/14"
Max. permitted installing angle (°)	Longitudinal inclination	Front /Rear	10/10
	Cross inclination	Left/Right	45/15
Permitted temperature ambient (°C)	-30-50	Permitted altitude limit (m)	4000
Valve lash/clearance at cold (mm)	(intake valve:0.3±0.06) /(exhaust valve:0.4±0.06)		

### Performance data

Idle Speed (rpm)	650±50	Max. Speed Limit (rpm)	1545
Mean Piston Speed (m/s)	6.5	BMEP (MPa)	1.777
Friction Power (kW)	/	Fan Power (kW)	6.08
Load factor	Power (kW)	Fuel consum. g/(kW.h)	Fuel consum. (L/h)
10%	22.0	318.7	8.3
20%	43.8	242.0	12.6
25%	54.2	226.1	14.6
30%	64.7	216.5	16.7
40%	87.0	207.5	21.5
50%	108.2	201.6	26.0
60%	130.2	196.4	30.4
70%	151.4	194.8	35.1
75%	162.3	193.9	37.5
80%	173.1	192.0	39.6
90%	194.5	193.8	44.9
100%	216.1	193.0	49.7

111%	239.4	193.0	55.0
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### Air intake system

Air intake temperature rise (°C)	Permitted difference between turbocharger inlet temperature and ambient temperature (this parameter impacts emission, LAT and altitude capability)	≤15
Air intake resistance (kPa)	Clean filter	≤3.5
	Dirty filter	≤7
Needed air flow (kg/h)	Rated Power	1249
	Standby Power	1041
Air filter efficiency		≥99.5%
Recommended Min. diameter of intake pipe (mm)		100

### Intercooler system

Intercooler heat dissipating capacity (kJ/s)	Rated Power	30.7
	Standby Power	38.6
Intercooler efficiency	Rated Power	/
	Standby Power	/
Max. intake temperature when the ambient temperature is 25°C (°C)		55
Permitted temperature difference between intake temperature and ambient temperature (°C)		30
Permitted max. intake pressure drop of intercooler (kPa)		12
Intercooler radiator cooling area (m <sup>2</sup> )		23

### Exhaust system

Permitted Max. exhaust back pressure (kPa)		6±0.5
Max. exhaust temperature (°C)	Before turbocharger	≤700
	After turbocharger	≤600
Exhaust flow (kg/h)	Rated Power	1301
	Standby Power	1084
Recommended Min. diameter of exhaust pipe (mm)		100
Max. bending moment at the turbocharger flange (N·m)		10

### Lubrication system

Volume of oil pan (L)		24
Oil pressure in normal condition (kPa)	Idle speed	100-250
	Rated Power	330-550
Lowest oil pressure alarm valve/highest alarm valve (kPa)		80/1000
Temperature range in main oil passage under rated working condition (°C)		85~105
Max. oil pressure while engine starts (kPa)		1000
Opening pressure of main oil passage pressure limiting valve		450-550
Oil flow (L/min)		118
Oil fuel consumption ratio		≤0.2%

### Noise and Emission

Exhaust smoke (FSN)	Rated working station	≤2.0
	Max. torque working condition	/
Diesel engine noise (Acoustic power level) (dB(A))		/

### Fuel system

Governor	Electric/Mechanical governor
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Steady speed droop		≤3%(Electric),≤5-6% (Mechanical)
Max. fuel supply resistance of the fuel pump inlet at rated working condition (kPa)		18
Max. fuel return resistance (kPa)		22
Permitted Max. fuel inlet temperature (°C)		50
Fuel supply flow (kg/h)	Rated Power	42.76
	Standby Power	47.65
Min. pressure of fuel pump (kPa)		35
Recommended min. diameter of inlet pipe (mm)		12
Recommended min. diameter of return pipe (mm)		12

#### Electric system

Electric system voltage(V)		24
Starter power/voltage (kW/V)		5.4/24
Alternator power/voltage (kW/V)		1.54kW/28V
Permitted Max. electric resistance of the starting circuit (Ω)		0.004
Recommended Min. sectional area of wire (mm <sup>2</sup> )		50
The lowest cold starting temperature (°C)	Without auxiliary starting device	-10
	With auxiliary starting device	-30

#### Cooling system

Water pump Transmission speed ratio		1.19
Permitted Min. coolant temperature when engine working (°C)		40
Coolant fill rate (L/min)		11
Max. time to fill (min)		5
Recommended Min. inside diameter of outlet water pipe(mm)		45
Min. pressure at water pump inlet without degassing device or with some degassing device (kPa)		0
Min. pressure at water pump inlet with full degassing device (kPa)		50
Max. degassing time(min)		25
Coolant capacity of engine (L)		22
Coolant capacity of radiator (L)		68
Water alarm temperature (°C)		98±2
Thermostat opening temp./ full open temp. (°C)		(71±2)/82
Permitted Min. pressure in cooling system		50
Permitted Max. external resistance (at rated speed)		50

#### Heat balance test data (with ambient temperature 42°C )

Pressure of water in/ water out (kPa / kPa)	Rated Power	6.7/15.8
	Standby Power	6.9/15.7
Coolant flow (m <sup>3</sup> /h)	Rated Power	14
	Standby Power	14.1
Temperature of water in/ water out (°C/°C)	Rated Power	70.7/76.2
	Standby Power	72.4/78.1
Temperature before/after intercooler (°C/°C)	Rated Power	149.0/52.2
	Standby Power	162.5/51.0
Pressure before /after intercooler (kPa / kPa)	Rated Power	143.9/142.7
	Standby Power	163.0/161.8

Heat taken away by Coolant (kJ/s)	Rated Power	87.8
	Standby Power	94.1
Heat taken away by intercooler (kJ/s)	Rated Power	30.7
	Standby Power	38.6
Heat taken away by exhaust gas (kJ/s)	Rated Power	155.7
	Standby Power	173
Total heat dissipation (kJ/s)		506.3/560.7

### Mounting system

Inertia of flywheel (kg•m <sup>2</sup> )	0.95
Inertia of crankshaft (kg•m <sup>2</sup> )	0.35

### Fuel consum. Curve

