

## 12M26D902E201 G-Drive Engine Data Sheet

Speed	Gross Engine Output		
	COP	PRP	ESP
rpm	kWm	kWm	kWm
<b>1800</b>	<b>680</b>	<b>820</b>	<b>902</b>

### Ratings Definitions

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

### Engine basic data

Engine model	12M26D902E201	Cylinder number/valve number	12/48
bore diameter /stroke mm	150×150	Displacement(L)	31.8
Fuel System	Mechanical Pump	Aspiration	Turbocharged and Aftercooled
Compression Ratio	15.7:1	Emission Standard	—
Overall Dimension (Length×Width×Height) (mm)	2119×1353×1705	Engine net weight (kg)	3470
Injection timing ( °CA)	21-22		
Flywheel housing	SAE 0	Flywheel	18
Max. Permissible Fixing Angle ( °)	Longitudinal Inclination	Front /Rear	10/10
	Cross Inclination	Left/Right	22.5/22.5
Dynamic angle ( °)	Longitudinal Inclination	Front/Rear	/
	Cross Inclination	Exhaust pipe side /Intake pipe side	/

Permitted temperature ambient °C	-10~50	Permitted altitude limit m	2000
Valve lashes at cold (mm)	0.3±0.03		

## Performance Data

Idle Speed (rpm)	750±30	Over Speed limit (rpm)	1854
Mean Piston Speed (m/s)	9	BMEP (MPa)	1.719
Friction Power (kW)	/	Fan Power (kW)	40
<b>Load factor</b>	<b>Power kW</b>	<b>Fuel consum. g/kW.h</b>	<b>Fuel consum. L/h</b>
10%	82	382.5	37.34
25%	205	260.6	63.60
50%	410	216.3	105.58
75%	615	207.4	151.85
85%	697	208.3	172.84
100%	820	208.1	203.15
110%	902	210.4	225.93

## Air intake system

Intake air temperature rise (°C)	Permitted difference between turbocharger inlet temperature and ambient temperature (this parameter impacts emission ,LAT and altitude capability)	≤5
Intake air resistance (kPa)	Clean filter	≤3
	Dirty filter	≤5
Air filter mass flow (kg/h)		/
Air mass flow (kg/h)	Rated Power	5112
	Standby Power	5344
Clear efficiency of air filter (%)		0.995
Recommended Min. diameter of intake pipe (mm)		140

## Inter cooling system

Intercooler heat dissipating capacity (KJ/S)	Rated Power	188.9
	Standby Power	219.7
Intercooler efficiency (%)	Rated Power	≥85
	Standby Power	≥85
Max. intake temperature (°C)		55
Max. difference between intake temperature and ambient temperature (°C)		30

Permitted max. intake pressure drop of intercooler (kPa)	12
Recommended intercooler radiator cooling area (m <sup>2</sup> )	110

## Exhaust system

Max. exhaust back pressure (kPa)	7.5	
Max. exhaust temperature (°C)	Before turbocharger	750
	After turbocharger	550
Recommended muffler mass flow/volume (kg/h)	/	
Exhaust-gas mass flow (kg/h)	Rated Power	5283
	Standby Power	5534
Recommended Min. diameter of exhaust pipe (mm)	300	
Max. bending moment of turbocharged flange (N·m)	10	

## Lubrication system

Volume of oil pan (L)	113	
Oil pressure in normal condition (kPa)	Idle speed	≥200
	Rated Power	400~600
Alarm for low & high oil pressure (kPa)	200 (≤160automatic stop) /—	
Temperature range in main oil passage at rated working condition (°C)	85~105	
max. oil temperature (°C)	/	
Max. oil pressure while engine starting (kPa)	1000	
Opening pressure of main oil passage pressure limiting valve (kPa)	500-550	
Max. Oil flow (L/min)	≥350 (1500 r/min)	
	≥360 (1800 r/min)	
Oil consumption	≤0.3%	

## Noise and Emission

Emission standard	Off-road stageII	
Exhaust smoke (FSN)	Rated Power	Rb≤1.5
	Standby Power	/
Diesel engine noise dB(A)	sound power level : 123.4	

## Fuel system

Injection pump type	Mechanical
Governor	Electric governer
Steady speed governing factor	±3%
Max supply fuel restriction at rated power conditon (kPa)	13

Return restriction in pipe (kPa)		15
Max. supply fuel temperature at rated power condition (°C)		45
Max. flow of fuel supply (kg/h)	Rated Power	171.45
	Standby Power	190.31
Min. pressure of fuel pump (kPa)		35
Min. Ventilation rate of fuel tank (L/h)		/
Recommended diameter of inlet pipe (mm)		12
Recommended diameter of return pipe (mm)		12

## Electrical system

Electrical system voltage (V)		24
Motor power/ working voltage (kW/V)		10/24
Battery charging Alternator/ working voltage (kW/V)		1.54/28
Permitted max. electric resistance of motor control lines (Ω)		0.002
Recommended Min. conductor cross-sectional area (mm <sup>2</sup> )		90
The lowest cold starting temperature (°C)	No aided starting device	0
	Aided starting device	-10

## Cooling system

Water pump Transmission ratio		2
Min. coolant temperature of engine working (°C)		50
Min. water fill rate (L/min)		/
Max. initial fill time (min)		/
Recommended Min diameter of outside water pipe(mm)		45
Min. pressure at water pump inlet at No or only a part of degassing Device (kPa)		50
Min. pressure at water pump inlet at Complete degassing device (kPa)		0
Max. deaeration time(min)		/
Min. expansion tank volume (% total cooling system capacity)		/
Min expansion space (% total cooling system capacity)		/
Coolant capacity of engine (L)		/
Coolant capacity of radiator (L)		/
High temperature of alarm (°C)		95

Thermostat opening temp./ full open temp. (°C)	77(1/-2)/87
Min. permitted pressure in cooling system (kPa)	50
Max. permitted external resistance (at rated speed) (kPa)	50

### Heat balance test data (ambient temperature: 22°C)

Pressure of water in/ water out (kPa / kPa)	Rated Power	-10.8/ 140.2
	Standby Power	-8.5/ 130.2
Coolant mass flow (m <sup>3</sup> /h)	Rated Power	28.9
	Standby Power	29
Temperature of water in/ water out (°C/°C)	Rated Power	86.4/ 91.3
	Standby Power	85.3/90.9
Temperature of intake air : before/after intercooler (°C/°C)	Rated Power	187.0/54.6
	Standby Power	203.0/ 55.7
Pressure of intake air :before /after intercooler (kPa / kPa)	Rated Power	227.9/218.2
	Standby Power	245.4/235.3
Heat be taken away by Coolant (kJ/s)	Rated Power	304.5
	Standby Power	349.2
Heat be taken away by intercooler (kJ/s)	Rated Power	188.9
	Standby Power	219.7
Heat be taken away by exhaust gas (kJ/s)	Rated Power	586.9
	Standby Power	661.9
Gross Heat of Engine (kJ/s)		1992.2/2122.9

### Mounting system

Inertia of complete engine (kg•m <sup>2</sup> )		/
		/
		/
Inertia of flywheel (kg•m <sup>2</sup> )		6.97
Inertia of crankshaft (including crankshaft gear) (kg•m <sup>2</sup> )		2.58
Centroid position mm	X	/
	Y	/
	Z	/
Permitted static bending moment at flywheel housing flange face		/