

## WP10D264E201 G-Drive Engine Data Sheet

Speed	Gross Engine Output		
	COP	PRP	ESP
rpm	kWm	kWm	kWm
<b>1800</b>	<b>204</b>	<b>240</b>	<b>264</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	WP10D264E201	Cylinder number	6
bore diameter /stroke mm	126×130	Displacement(L)	9.726
Fuel System	Mechanical Pump	Aspiration	Turbocharged and Itercooled
Compression Ratio	17:1	Emission Standard	Off-road stageII
Overall Dimension (Length×Width×Height) (mm)	1505×843×1196	Engine net weight (kg)	875±50
Injection timing ( °CA)	14±1		
Flywheel housing	SAE 1	Flywheel	11.5" / 14"
Max. Permissible Fixing Angle ( °)	Longitudinal Inclination	Front /Rear	10/10
	Cross Inclination	Left/Right	45/15
Dynamic angle ( °)	Longitudinal Inclination	Front/Rear	/
	Cross Inclination	Exhaust pipe side /Intake pipe side	/

Permitted temperature ambient °C	-30~50	Permitted altitude limit m	4000
Valve lashes at cold (mm)	Intake: 0.3 Exhaust 0.4		

## Performance Data

Idle Speed (rpm)	650±50	Over Speed limit (rpm)	1890
Mean Piston Speed (m/s)	7.8	BMEP (MPa)	1.81
Friction Power (kW)	/	Fan Power (kW)	10.5
<b>Load factor</b>	<b>Power kW</b>	<b>Fuel consum. g/kW.h</b>	<b>Fuel consum. L/h</b>
10%	24	335.9	9.60
25%	60.4	232.2	16.70
50%	120.2	203.6	29.13
75%	180.6	196.8	42.31
85%	/	/	/
100%	240.8	197.7	56.67
110%	263.8	199.9	62.78

## 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)	≤15
Intake air resistance (kPa)	Clean filter	≤3.5
	Dirty filter	≤7
Air filter mass flow (kg/h)		/
Air mass flow (kg/h)	Rated Power	1330
	Standby Power	1408
Clear efficiency of air filter (%)		99.5
Recommended Min. diameter of intake pipe (mm)		100

## Inter cooling system

Intercooler heat dissipating capacity (KJ/S)	Rated Power	33.2
	Standby Power	39.9
Intercooler efficiency (%)	Rated Power	/
	Standby Power	/
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> )	23

## Exhaust system

Max. exhaust back pressure (kPa)	6±0.5	
Max. exhaust temperature (°C)	Before turbocharger	≤700
	After turbocharger	≤600
Recommended muffler mass flow/volume (kg/h)	/	
Exhaust-gas mass flow (kg/h)	Rated Power	1377
	Standby Power	1464
Recommended Min. diameter of exhaust pipe (mm)	100	
Max. bending moment of turbocharged flange (N·m)	10(using elastic connections)	

## Lubrication system

Volume of oil pan (L)	24	
Oil pressure in normal condition (kPa)	Idle speed	100-250
	Rated Power	350-550
Alarm for low & high oil pressure (kPa)	80/1000	
Temperature range in main oil passage at rated working condition (°C)	85-105	
max. oil temperature (°C)	105	
Max. oil pressure while engine starting (kPa)	1000	
Opening pressure of main oil passage pressure limiting valve (kPa)	450-550	
Max. Oil flow (L/min)	118	
Oil consumption	≤0.2%	

## Noise and Emission

Emission standard	Off-road stageII	
Exhaust smoke (FSN)	Rated Power	Rb≤2.0
	Standby Power	Rb≤2.5
Diesel engine noise dB(A)	≤103.5	

## Fuel system

Injection pump type	Mechanical Pump
Governor	Mechanical/ Electric governor
Steady speed governing factor	≤5%/≤3%

Max supply fuel restriction at rated power conditon (kPa)		18
Return restriction in pipe (kPa)		22
Max. supply fuel temperature at rated power condition (°C)		50
Max. flow of fuel suply (kg/h)	Rated Power	47.59
	Standby Power	52.74
Min. pressure of fuel pump (kPa)		35
Min. Ventilation rate of fuel tank (L/h)		≥340
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)		5.4/24
Battery charging Alternator/ working voltage (kW/V)		1.5/28
Permitted max. electric resistance of motor control lines (Ω)		0.004
Recommended Min. conductor cross-sectional area (mm <sup>2</sup> )		50
The lowest cold starting temperature (°C)	No aided starting device	-10
	Aided starting device	-30

## Cooling system

Water pump Transmission ratio		1.19
Min. coolant temperature of engine working (°C)		40
Min. water fill rate (L/min)		11
Max. initial fill time (min)		5
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)		0
Min. pressure at water pump inlet at Complete degassing device (kPa)		50
Max. deaeration time(min)		25
Min. expansion tank volume (% total cooling system capacity)		0.15
Min expansion space (% total cooling system capacity)		0.06
Coolant capacity of engine (L)		22

Coolant capacity of radiator (L)	31
High temperature of alarm (°C)	98±2
Thermostat opening temp./ full open temp. (°C)	71±2 / 82
Min. permitted pressure in cooling system (kPa)	50
Max. permitted external resistance (at rated speed) (kPa)	50

## Heat balance test data

Pressure of water in/ water out (kPa / kPa)	Rated Power	7.9/20.7
	Standby Power	8.2/20.8
Coolant mass flow (m <sup>3</sup> /h)	Rated Power	17
	Standby Power	17
Temperature of water in/ water out (°C/°C)	Rated Power	70.6/75.4
	Standby Power	72.4/77.9
Temperature of intake air : before/after intercooler (°C/°C)	Rated Power	146.4/57.4
	Standby Power	160.3/58.8
Pressure of intake air :before /after intercooler (kPa / kPa)	Rated Power	149.9/148.2
	Standby Power	166.1/164.3
Heat be taken away by Coolant (kJ/s)	Rated Power	94.9
	Standby Power	108.7
Heat be taken away by exhaust gas (kJ/s)	Rated Power	33.2
	Standby Power	39.9
Heat be taken away by intercooler (kJ/s)	Rated Power	181
	Standby Power	200
Gross Heat of Engine (kJ/s)		555.2/615.3

## Mounting system

Inertia of complete engine (kg•m <sup>2</sup> )		I <sub>xx</sub> =44.9 / I <sub>xy</sub> =-0.6
		I <sub>yy</sub> =149.1 / I <sub>yz</sub> =3.34
		I <sub>zz</sub> =128.1 / I <sub>xz</sub> =4.79
Inertia of flywheel (kg•m <sup>2</sup> )		0.95
Inertia of crankshaft (including crankshaft gear) (kg•m <sup>2</sup> )		0.35
Centroid position mm	X	548.6
	Y	-3
	Z	176.6
Permitted static bending moment at flywheel housing flange face		10800

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