

## TD226B-3D G-Drive Engine Data Sheet

Speed	Gross Engine Output		
	COP	PRP	ESP
rpm	kWm	kWm	kWm
<b>1500</b>	<b>38.25</b>	<b>45</b>	<b>50</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	TD226B-3D	Cylinder number	3
bore diameter /stroke mm	105×120	Displacement(L)	3.12
Fuel System	Mechanical Pump	Aspiration	Turbocharged
Compression Ratio	15.5: 1	Emission Standard	Off-road stageII
Overall Dimension (Length×Width×Height) (mm)	866×738×996	Engine net weight (kg)	400±50
Overall Dimension (Length×Width×Height) (mm)	1152×738×996	Engine and Radiator weight (kg)	430±50
Injection timing ( °CA)	21.5		
Flywheel housing	SAE 3	Flywheel	11.5"
Max. Permissible Fixing Angle ( °)	Longitudinal Inclination	Front /Rear	25/25
	Cross Inclination	Left/Right	30/30
	Longitudinal Inclination	Front/Rear	/

Dynamic angle (°)	Cross Inclination	Exhaust pipe side /Intake pipe side	/
Permitted temperature ambient °C	-10~50	Permitted altitude limit m	4000
Valve lashes at cold(mm)	Intake: 0.20 ±0.05 Exhaust 0.30 ±0.05		

## Performance Data

Idle Speed (rpm)	750±50	Over Speed limit (rpm)	1575
Mean Piston Speed (m/s)	6	BMEP (MPa)	769
Friction Power (kW)	/	Fan Power (kW)	/
<b>Load factor</b>	<b>Power kW</b>	<b>Fuel consum. g/kW.h</b>	<b>Fuel consum. L/h</b>
10%	4.5	424.7	2.28
25%	11.25	274.6	3.68
50%	22.5	229.1	6.14
75%	33.75	216.1	8.68
85%	38.25	215.5	9.81
100%	45	216.2	11.58
110%	49.5	217.9	12.84

## 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)	/
Intake air resistance (kPa)	Clean filter	≤3.5
	Dirty filter	≤6
Air filter mass flow (kg/h)		698.4
Air mass flow (kg/h)	Rated Power	213
	Standby Power	222
Clear efficiency of air filter (%)		0.995
Recommended Min. diameter of intake pipe (mm)		80

## Inter cooling system

Intercooler heat dissipating capacity (KJ/S)	Rated Power	/
	Standby Power	/
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)	/
Recommended intercooler radiator cooling area (m <sup>2</sup> )	/

## Exhaust system

Max. exhaust back pressure (kPa)	/	
Max. exhaust temperature (°C)	Before turbocharger	/
	After turbocharger	600
Recommended muffler mass flow/volume (kg/h)	/	
Exhaust-gas mass flow (kg/h)	Rated Power	223
	Standby Power	234
Recommended Min. diameter of exhaust pipe (mm)	65	
Max. bending moment of turbocharged flange (N•m)	27	

## Lubrication system

Volume of oil pan (L)	7.25	
Oil pressure in normal condition (kPa)	Idle speed	≥120
	Rated Power	300-600
Alarm for low & high oil pressure (kPa)	120/800	
Temperature range in main oil passage at rated working condition (°C)	80-105	
max. oil temperature (°C)	/	
Max. oil pressure while engine starting (kPa)	800	
Opening pressure of main oil passage pressure limiting valve (kPa)	540-750	
Max. Oil flow (L/min)	30	
Oil consumption	≤0.2%	

## Noise and Emission

Emission standard	Off-road stageII	
Exhaust smoke (FSN)	Rated Power	Rb≤2.0
	Standby Power	/
Diesel engine noise dB(A)	110	

## Fuel system

Injection pump type	Mechanical, AD
Governor	Mechanical/ Electric optional

Steady speed governing factor		≤5%
Max supply fuel restriction at rated power conditon (kPa)		20
Return restriction in pipe (kPa)		20
Max. supply fuel temperature at rated power condition (°C)		50
Max. flow of fuel suply (kg/h)	Rated Power	9.83
	Standby Power	10.84
Min. pressure of fuel pump (kPa)		20
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)		12
Motor power/ working voltage (kW/V)		4/12
Battery charging Alternator/ working voltage (kW/V)		0.91/14
Permitted max. electric resistance of motor control lines (Ω)		0.002
Recommended Min. conductor cross-sectional area (mm <sup>2</sup> )		65-85
The lowest cold starting temperature (°C)	No aided starting device	-10
	Aided starting device	-30

## Cooling system

Water pump Transmission ratio		1.4
Min. coolant temperature of engine working (°C)		40
Min. water fill rate (L/min)		19
Max. initial fill time (min)		5
Recommended Min diameter of outside water pipe(mm)		42
Min. pressure at water pump inlet at No or only a part of degassing Device (kPa)		/
Min. pressure at water pump inlet at Complete degassing device (kPa)		5
Max. deaeration time(min)		25
Min. expansion tank volume (% total cooling system capacity)		/
Min expansion space (% total cooling system capacity)		/
Coolant capacity of engine (L)		8
Coolant capacity of radiator (L)		20

High temperature of alarm (°C)	100
Thermostat opening temp./ full open temp. (°C)	76/90
Min. permitted pressure in cooling system (kPa)	50
Max. permitted external resistance (at rated speed) (kPa)	45

## Heat balance test data

Pressure of water in/ water out (kPa / kPa)	Rated Power	-12.4/7.6
	Standby Power	-12.6/7.8
Coolant mass flow (m <sup>3</sup> /h)	Rated Power	6.2
	Standby Power	6.3
Temperature of water in/ water out (°C/°C)	Rated Power	79.9/84.2
	Standby Power	80.7/85.3
Temperature of intake air : before/after intercooler (°C/°C)	Rated Power	114.8/
	Standby Power	125/
Pressure of intake air :before /after intercooler (kPa / kPa)	Rated Power	85/
	Standby Power	96.8/
Heat be taken away by Coolant (kJ/s)	Rated Power	28.3
	Standby Power	30.4
Heat be taken away by exhaust gas (kJ/s)	Rated Power	/
	Standby Power	/
Heat be taken away by intercooler (kJ/s)	Rated Power	33.4
	Standby Power	37.2
Gross Heat of Engine (kJ/s)		114.6

## Mounting system

Inertia of complete engine (kg•m <sup>2</sup> )	I <sub>xx</sub> =24.9	I <sub>xy</sub> =0.94
	I <sub>yy</sub> =78.4	I <sub>yz</sub> =-4.26
	I <sub>zz</sub> =85.5	I <sub>xz</sub> =-0.48
Inertia of flywheel (kg•m <sup>2</sup> )		1.117
Inertia of crankshaft (including crankshaft gear) (kg•m <sup>2</sup> )		0.27
Centroid position mm	X	410.72
	Y	-21.291
	Z	138.77
Permitted static bending moment at flywheel housing flange face		1000

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