



Engine Datasheet TCD13.0 1800 min⁻¹

Engine			
Type		TCD13.0	
Speed	[min ⁻¹]	1800	
Net frequency	Hz	60	
Power standard		LTP	
Power level		G1	G2
Exhaust emission standard		Fuel optimized	
General			
Aspiration		Turbo, CAC	
No of cylinders		6	
Configuration		in-line	
Injection system		Common Rail	
Displacement	[L]	12.94	
Bore	[mm]	131	
Stroke	[mm]	160	
Compression ratio		19	
Mean effective pressure	[bar]		
Piston speed	[m/s]	9.6	
Rotation (looking at flywheel)		ccw	
No of teeth on flywheel ring gear		143	
Governor performance			
Speed droop (static) electr. gov.	[%]	0	
Governing standards			
to ISO 8528 Parts 1 and 5		G3	
Moment of inertia			
Flywheel (standard genset spec.)	[kg m ²]	2.16	
Max. step load acceptance, 1st step	[%]	-	-
Sound power at full load, incl. cooling system ⁵	[dB(A)]	111,3	116,1
Sound press. (1m average, full load), incl. cool. syst.	[dB(A)]	97,5	98,6
Weight			
Engine dry, w/o cooling system	[kg]	1154	
Engine with cooling system	[kg]		
Lubrication system			
Oil specification		TR0199-99-1217	
Oil consumption (as % of fuel consumption)	[%]	0.1	
Oil capacity (sump)	[L]	30	
Min. oil pressure (warning)	[bar]	0.8	
Min. oil pressure (shut down)	[bar]	0.6	
Max. permissible oil temperature (oil pan)	[°C]	130	
Output			
Gross output(LTP or StandBy Power) ¹	[kW]	445	485
Fan reduction	[kW]	17.5	17.5
Net flywheel	[kW]	427.5	467.5
Electrical output ²	[kVA]/[kWe]	500	555
Alternator efficiency	[%]	95	95
Gross output(PRP or Prime Power) ^{1a}	[kW]	410	445
Gross output(Continous Power) ^{1b}	[kW]	380	410
Fuel System			
Fuel consumption			
25% load ³	[l/h]	25.41	28.94
50% load ³	[l/h]	47.13	51.57
75% load ³	[l/h]	67.82	74.62
100% load ³	[l/h]	92.94	105.01
110% load ³	[l/h]	102.1	110.22



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25% load	[g/kWh]	216	223
50% load	[g/kWh]	200	198
75% load	[g/kWh]	193	192
100% load	[g/kWh]	193	201
110% load	[g/kWh]	195	194
Max. suction head of fuel feed pump	[m]	2	2

Cooling System

General engine cooling data

Max. perm. coolant outlet temperature	[°C]	99	
Max. perm. flow resistance (cool. syst. and piping)	[bar]		
Max. temperature of coolant (warning)	[°C]	105	
Max. temperature of coolant (shutdown)	[°C]	108	
Temperature at which thermostat starts to open	[°C]	83	
Temperature at which thermostat is fully open	[°C]	95	
Delivery of coolant pump	[m ³ /h]	34.8	
Min. pressure before coolant pump	[bar]	0.8	
Temperature at CAC outlet at standard conditions	[°C]	50	

DEUTZ cooling system

Coolant capacity (engine)	[L]	20	
Coolant capacity (incl. cooling unit)	[L]		
Air to boil (max. permissible cool. air temp. at fan)	[°C]	55	
Fan power consumption ⁴	[kW]	17.5	
Cooling air flow	[m ³ /h]	43298	
Air pressure loss		1.64	

Heat Balance

Heat dissipation (engine radiator) ⁶	[kW]	133	148
Heat dissipation (CAC) ⁶	[kW]	77	89.6

Inlet / Exhaust Data

Max. intake depression (Switch setting)	[mbar]	50	50
Combustion air volume	[m ³ /h]	1915	1983
Max. exhaust back pressure	[mbar]	50	50
Max. exhaust gas temperature	[°C]	507	517
Exhaust gas flow (at above temp)	[m ³ /h]	5403	5890
Exhaust flange / pipe diameter	[mm]	120	120

Electrical System

Voltage	[V]	24	
Starter	[kW]	8.8	
Alternator output	[A]	80	
Batteries (minimum capacity, cold start limit -5°C)	[Ah]	2 x 143	

Powers (kW) in accordance with DIN ISO 14396.

1. Limited time power 100%, which is capable for up to 500 h/year of which maximum of 300 h/year is continuous running, not exceedable, but required power for governing purpose only has to be considered. Necessary supply of engine power usually 10% for governing purpose only.

1a Prime power 100% , average power output ≤ 80%, no time limitation, plus 5% additional power for governing purpose only.

1b Continuous power 100% , no time limitation, plus 10% power for governing purpose only.

2. Ratings in accordance with ISO 8525 LTP. Alternator efficiency please see datasheet. 1500 min-1 = kVA, 1800 min-1 = kW

3. At calorific value 42700 kJ/kg + 5 %, density 0.835 kg/dm³, temperature 280 K.

4. Technical data and max. permissible torque for fan drive see data sheet.

5. Sound power values measured in accordance with ISO 6798.

6. The heat quantities are valid for the dimensioning of the cooling system.

They are given for the engine with the highest fuel consumption.

For further application guidance see HND Installation Manual.

All data are provided for informational purposes only and are subject to amendment.