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Ratings


Maximum power at maximum speed (kWm) **47**

Maximum power at maximum speed (HP) **64**

Speed - Rpm	1500	1600	1700	1800	1900	2000	2100	2200
Net Engine Industrial Continuous Power at the flywheel								
Power	kWm	29	31	33	35	\	\	\
	HP	39.4	42.2	44.9	47.6	\	\	\
Specific fuel consumption at 100% of engine power								
gr/kWh	218.2	215.2	215.6	217.1	\	\	\	\
Fuel consumption tolerance : +/- 5 %								

Basic data

Engine model	.....4M06V6D0
N° of Cylinders / Valves	.....4 / 8
Cylinders arrangement	.....In line
Bore x Stroke (mm)	.....89 × 92
Displacement (L)	.....2.3
Thermodynamic Cycle	.....Diesel 4 stroke
Cooling System	.....Liquid (water + 50% antifreeze)
Injection System	.....Direct
Fuel System	.....Mechanical Pump
Aspiration	.....Turbocharged
Compression ratio	.....17.5 : 1
Flywheel housing	.....SAE 3
Flywheel	.....10"/11.5"
N° of teeth on flywheel ring gear	.....128
Inertia of flywheel (kg•m ²)	.....0.47
Inertia of crankshaft (kg•m ²)	.....0.039
Emission standard	.....N/A
Overall Dimensions with radiator (Length x Width x Height) (mm)	.....1130 × 609 × 801
Engine dry weight without radiator and without radiator pipes (kg)\
Engine dry weight with radiator and radiator pipes (kg)282
Engine wet weight with radiator (includes oil, coolant) (kg)309

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Air intake system

Air intake temperature rise (°C)	≤ 5
Air intake restriction clean filter (mBar)	≤ 35
Air intake restriction dirty filter (mBar)	≤ 60
Recommended air flow at 1800 Rpm at max Industrial Continuous Power (m ³ /min)	2.82
Min. diameter of intake pipe (mm)	50

Aftercooling system

Aftercooler system type	N/A
Aftercooler heat dissipating capacity at 1800 Rpm at max Industrial Continuous Power (kJ/s)	N/A
Max. intake temperature @ 25°C ambient temperature (°C)	N/A
Max. difference between intake temperature and ambient temperature (°C)	N/A
Max. intake pressure drop of aftercooler (mBar)	N/A

Lubrication system


Oil capacity Low / High (L)	7.1 / 9.5
Oil pressure in normal condition idle speed (Bar)	≥ 1
Oil pressure in normal condition at 1800 Rpm at max Industrial Continuous Power (Bar)	2 - 5
Lowest oil pressure alarm (shutdown) (Bar)	1
Max. oil temperature (°C)	115
Oil flow (L/min)	22
Oil fuel consumption ratio based on engine fuel consumption data	≤ 0.4 %
Total system capacity (including filters) (L)	11.5

Heat balance test data (with ambient temperature 28 °C)

Total heat dissipation at maximum speed at maximum power (kJ/s)	68.3
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Exhaust system

Max. exhaust back pressure (mBar)	80
Max. exhaust temperature before turbocharger (°C)	≤ 700
Max. exhaust temperature after turbocharger (°C)	≤ 650
Exhaust flow at 1800 Rpm at max Industrial Continuous Power (m ³ /min)	9.3
Min. diameter of exhaust pipe (mm)	50
Max. bending moment of exhaust gas exit flange (Nm)	10

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Cooling system with standard radiator

System designed for ambient temperature up to (°C) ¹	50
Radiator type	Mechanical
Fan type	Belt driven pusher
Min. inside diameter of coolant outlet pipe (mm)	32
Coolant capacity of radiator and pipes (L)	11
Coolant alarm (shutdown) temperature (°C)	105
Thermostat opening temperature / full open temperature (°C)	72 / 82
Min. pressure in cooling system (Bar)	0.15
Coolant capacity of the engine (L)	5
Cooling fan airflow at 1800 Rpm at max Industrial Continuous Power (m ³ /min)	103.3
Max additional restriction - Duct allowance (Pa)	50
Fan absorbed power at 1800 Rpm (kW)	1


Fuel system

Governor	Mechanical
Fuel cut off stopping system	Energized to run type
Max. restriction at fuel pump inlet (Bar)	0.5
Max. fuel return restriction (Bar)	0.5
Max. fuel inlet temperature (°C)	70
Fuel supply flow at 1800 Rpm at max Industrial Continuous Power (L/hr)	40.2
Min. pressure of fuel pump (Bar)	1.3
Min. diameter of inlet pipe (mm)	10
Min. diameter of return pipe (mm)	10

Electrical system

Electrical system voltage (negative to ground) (Vdc)	12
Starter power (kW)	3.7
Battery charger current (A)	55
Battery charger absorbed power (kW)	0.8
Max. electric resistance of starting circuit (Ω)	0.004
Min. sectional area of wire (mm ²)	50
Min. cold start temperature without auxiliary starting device (°C)	- 5

¹ The indicated value is based on an AOT value of 50°C for an engine tested at 1800 Rpm at max Industrial Continuous Power, in an open condition, without an enclosure or container, without any airflow obstruction in the front of the radiator, without air recirculation, with free exhaust gas exit and with the engine thermostatic valve in its full open condition, without a closing plate present.

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Noise

Diesel engine noise (Acoustic power level) (dB(A))	107.9
Noise - upper side (dB(A))	91.9
Noise - right side (view from flywheel) (dB(A))	91.3
Noise - left side (view from flywheel) (dB(A))	94.7
Noise – front (radiator) side (dB(A))	95.3
Noise – rear (flywheel) side (dB(A))	95.4

Notes :

- a) Noise test made at 1800 Rpm at 100% of the power, 1 mt. distance, on engine without radiator, without cooling fan and without silencer.
- b) Noise test refers to GB/T 1859 norm : Reciprocating internal combustion engines. "Measurement of emitted airborne noise. Engineering method and survey method".

Ratings definitions

Industrial Continuous Power

This power rating is for applications that operate with constant load and speed except for short periods during startup or shutdown. This rating conforms to ISO 3046 Continuous Power.

- 1) All ratings are based on operating conditions under ISO 3046, DIN6271. Performance tolerance of $\pm 5\%$.
- 2) Test conditions : 100 kPa, 25°C air inlet temperature, relative humidity of 30%, with fuel density 0.84 kg/L. Derating may be required for conditions outside these; please contact the factory for details.
- 3) Max 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.