

4000 Series

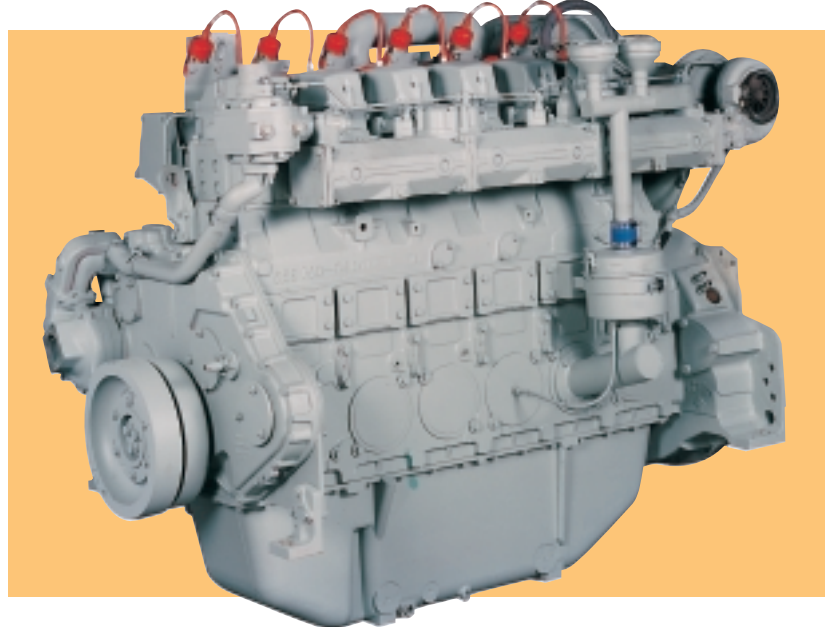
Spark Ignited Gas Engine

4006TESI

300 kWm at 1200 rpm
322 kWm at 1500 rpm

Designed in advance of today's uncompromising demands within the gas power generation industry, the Perkins 4000 Series family of 6, 8, 12 and 16 cylinder spark ignition gas engines offers superior performance, dependability and reliability.

The 4006TESI is a turbocharged and air-to-water charged cooled, 6 cylinder in-line engine, designed for operation on a wide range of gases including natural, landfill and digester gases. The internationally proven durability and reliability, combined with exceptional thermal efficiency and reduced whole life costs, make selection of the Perkins 4000 Series engine as prime mover the obvious choice. The 4000 Series spark ignited gas engine can be supplied to suit customer requirements as a Gas Electro Unit for power generation or Cogen Unit specification for combined heat and power operation.



Economic power

- The modern design of the 4000 Series incorporates the latest development and engineering techniques, resulting in excellent durability, economical whole life costs and reliability.

Efficient power

- Designed for maximum thermal efficiency, the 4006TESI offers compact, high power to weight ratio, an economical solution to power and heat requirements.
- High commonality of components with other engines in the 4000 Series family offers reduced stocking and inventory levels.

Reliable power

- The high level of product serviceability and ease of maintenance maintain optimum availability.
- Total after-sales service, backed by Perkins' world-wide distributor/dealer network.

Engine Speed rev/min	Type of Operation	Gross Engine Power	
		kWe	kWm
1200	Continuous Operation Power	Refer to Perkins Engines Company Limited	
1500	Continuous Operation Power	309	322

The above ratings represent the engine performance capabilities in accordance with ISO 3046 at reference conditions equivalent to those specified in ISO 3046/1. Electrical ratings are based on average alternator efficiency at a unity power factor based on natural gas having a lower calorific value of 34.71 MJ/m³.

Please consult your local Perkins distributor/dealer or Perkins Engines Company Limited for derating calculations for ambient conditions or use of gaseous fuels other than British natural gas.

Continuous Operation Power – A 'true' Baseload rating as defined in ISO 8528 as COP.

Standard Gas Engine Specification

Core engine

- High-grade cast iron cylinder block featuring crankcase inspection doors
- Wet liners in centrifugally cast iron, plateau honed for quick ring bedding and excellent oil control
- Forged steel crankshaft
- Forged camshaft – carburised hardened
- High grade cast iron individual cylinder heads, each with four valves per cylinder
- Crankshaft driven gear train for camshaft
- Aluminium alloy gallery (oil) cooled pistons with three-ring pack,
- Split cap connecting rods, forged steel with 2 bolt fixing – shot peened

Gas/Ignition system

- Air/fuel mixer with zero pressure regulator and mixture adjustment screw
- Metal braided flexible gas connection
- Altronic 800 °C Series ignition system and wiring harness
- Individual cylinder ignition coils

Lubrication system

- Gear driven lubricating oil pump, externally mounted
- Spin on type replaceable lubricating oil filters
- Shell and tube type oil cooler, jacket water cooled
- Crankcase closed circuit ventilation

Cooling system

- Pressurised fresh water jacket water cooling system
- Centrifugal type gear driven pump and thermostatic control †
- Air to water charge cooler, secondary water cooled
- Secondary water pump, centrifugal type, gear driven †
- Charge cooler water thermostat, loose supply †

Air intake system

- Paper element air filter with restriction indicator
- Exhaust gas driven turbocharger

Exhaust system

- Cast iron jacket water cooled exhaust manifold
- Vertical exhaust outlet †

Governing system

- Electronic governing system, conforming to ISO 8528 Part 5 Class G2

Electrical system

- 24 Volt electric starter motor
- 24 Volt battery charging alternator †

Drive system

- Cast iron flywheel housing SAE 0 and flywheel SAE J620 Size 14
- Viscous type torsional vibration damper(s)

Engine protection system

- 24 Volt high coolant temperature and low oil pressure switches
- Overspeed switch and probe
- Emergency stop button – grounding ignition system
- High manifold pressure switch

Engine mountings

- Engine supports: front and rear feet mounted off the crankcase

Painting

- Commercial primer finish

Packing/Preservation

- All engines are preserved after test running, shrink wrapped and suitable for containerised shipment

† Not supplied on Cogen Unit

Technical Data

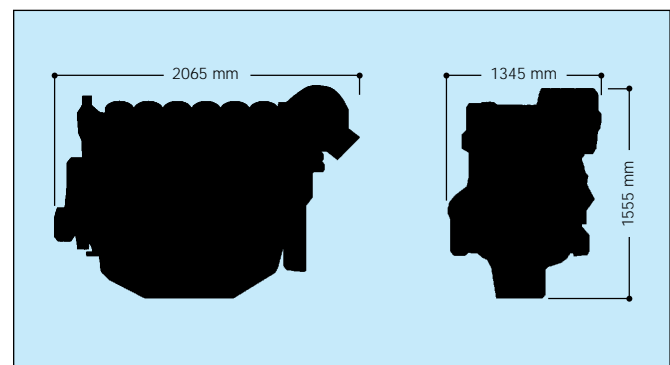
Number of cylinders	6
Cylinder arrangement	In-line
Cycle	4-stroke
Induction system	Turbocharged, charge cooled
Combustion system	Spark ignition
Cooling system	Water cooled
Displacement	22.92 litres
Bore and Stroke	160 mm x 190 mm
Compression ratio	9.5:1 Low compression (LC) 11.5:1 High compression (HC)
Direction of rotation	Anti-clockwise, viewed on flywheel
Total lubrication oil capacity	122.7 litres
Coolant capacity	36 litres
Engine dimensions:	
Total Weight (dry)	2420 kg
Length	2065 mm
Width	1345 mm
Height	1555 mm

Fuel consumption kJ/kWs		
	1200 rev/min	1500 rev/min
4006TESI 200LC		
100% of COP rating		2.77
75% of COP rating		2.90
4006TESI 140LC*		
100% of COP rating		2.90
75% of COP rating		2.99
4006TESI 140HC*		
100% of COP rating		2.71
75% of COP rating		2.87
4006TESI 90HC#		
100% of COP rating		2.80
75% of COP rating		2.95

*Complies with TA Luft emissions regulations as regards NOx, CO and HC

#1/2TA Luft: An oxidising catalyst may be required

COP: Continuous Operation Power



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All information given in this leaflet is correct at the time of printing but may be changed subsequently by the company.

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