

# 4000 Series 4006-23TRS1

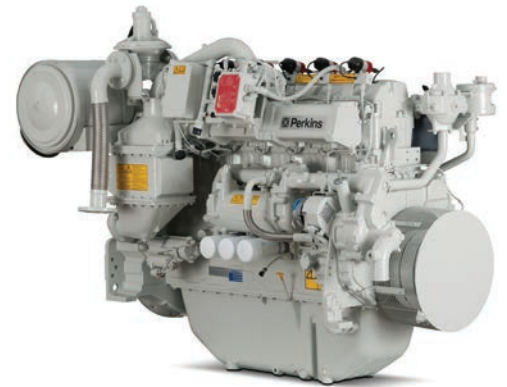
## 4006-23TRS2 Spark Ignited Gas Engine

322 kWm at 1500 rpm  
393 kWm at 1500 rpm

Developed from a proven engine range that offers superior performance and reliability, the 4006-23TRS is designed to meet the future demands of the power generation industry for clean, efficient gas fuelled engines.

The 4006-23TRS 6-cylinder spark ignition gas engine offers high performance, dependability and reliability whilst meeting the market's increasingly stringent emission requirements.

The 4006-23TRS is a turbocharged, air to water charge cooled, 6 cylinder inline engine, designed for operation on a wide range of methane based gases. Its premium features and design provide economic and durable operation as well as exceptional mechanical efficiency and power-to-weight ratio, whilst offering improved emissions. The overall performance and reliability characteristics make this the prime choice for today's power generation industry.



### Economic power

- Utilises advanced combustion technology to deliver durable and reliable power
- High commonality of components with other engines in the 4000 Series family for reduced stocking levels
- Individual large valve cylinder heads with matched deep bowl pistons for greater swirl, achieve high mechanical efficiency

- Engines to comply with major international standards.
- All engines in the 4000 Series family are capable of meeting the NOx requirements of TA Luft

\*Engine specification suitable for running on landfill gas, digester gas, biogas and coal bed mine gas. (please contact your account manager or nearest distributor for more information)

### Reliable power

- Developed and tested using the latest engineering techniques
- Piston temperatures controlled by an advanced gallery jet cooling system
- Extended durability and reduced servicing with extended component life add benefit of the reduced whole life cost
- Robust to varying gas quality  
Specs for both natural gas and biogas are available\*

### Product support

- With highly trained Perkins distributors in thousands of communities in over 180 countries, you are never far away from expert product knowledge, genuine parts and a range of advanced diagnostic technology for keeping your engine in peak condition

#### Warranties and Service Contracts

We provide one-year warranties for our gas engines, as standard. These are supported by multilevel Extended Service Contracts that can be bought additionally

### Compact, clean and efficient power

- Exceptional power-to-weight ratio and compact size give optimum power density for ease of transportation and installation
- In excess of 40% mechanical efficiency
- Designed to provide excellent service access for ease of maintenance

### Discover more

[www.perkins.com](http://www.perkins.com)

[www.perkins.com/distributor](http://www.perkins.com/distributor)

To find your local distributor

Engine Speed rpm	Type of Operation	Typical Generator Output (Gross)	Gross Engine Power
		kWe	kWm
4006-23TRS1	Continuous Operating Power	307	322
4006-23TRS2	Continuous Operating Power	375	393

The above ratings represent the engine performance capabilities to conditions specified in ISO 8528/1, ISO 3046/1:1986, BS 5514/1. Derating may be required for conditions outside these; consult Perkins Engines Company Limited.

Generator powers are typical and are based on an average alternator efficiency and a power factor (cos.  $\theta$ ) of 1.

Fuel specification: Natural gas having a Lower Calorific Value of 34.71 MJ/m<sup>3</sup>.

Rating Definitions

Continuous Operating Power: Power available for true Base load, rating as defined in ISO 8528/1, BS 5514/1 – No overload permitted.

Photographs are for illustrative purposes only and may not reflect final specification.

All information in this document is substantially correct at time of printing and may be altered subsequently.  
Publication No. PN1850/09/12 Produced in England ©2012 Perkins Engines Company Limited

 **Perkins**<sup>®</sup>

THE HEART OF EVERY GREAT MACHINE

# 4000 Series 4006-23TRS1 4006-23TRS2 Spark Ignited Gas Engine

322 kWm at 1500 rpm  
393 kWm at 1500 rpm



## Electrounit/Cogen specification

### Air inlet and exhaust

- Mounted air filter – replaceable cartridge type
- Dry exhaust manifolds
- Exhaust manifold shielding
- High efficiency turbocharger

### Governing, gas and ignition system

- Air/Fuel mixer with zero pressure regulator and mixture adjustment screw
- Metal braided flexible gas connection
- Altronic 800 'C' Series ignition system with individual cylinder ignition coils, spark plugs
- Digital governing system, governing to ISO8528-5 class G2

### Lubrication system

- Gear driven, externally mounted lubricating oil pump
- Wet sump with filler and dipstick
- Full-flow replaceable canister type oil filters
- Jacket water cooled shell and tube oil cooler/stabiliser
- Closed circuit crankcase ventilation system – natural gases only

### Cooling system

- Pressurised jacket water cooling system, gear-driven jacket water, circulating pump – supply on Electrounit only
- Air to water charge cooler, pipe work – supply on Electrounit only
- Jacket water thermostatic control – supply on Electrounit only

### Electrical equipment

- 24 volt starter motor
- 24 volt 70 amp battery charging alternator with integral voltage, regulator and activating switch – supply on Electrounit only
- High coolant temperature
- Low oil pressure switch
- High manifold pressure switch
- Digital knock detection

### Flywheel and housing

- High inertia flywheel to SAE J620 Size 14
- SAE 'O' flywheel housing

### Mountings

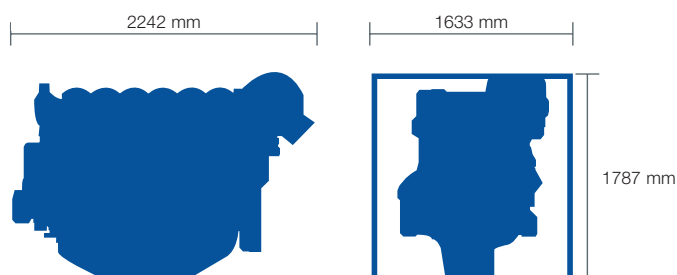
- Front and rear engine mounting support

## Literature

- User's Handbook

## Optional equipment

- 220 / 240 Volt thermostatically controlled immersion heater
- Three way thermostatic valve for charge cooler cooling circuit
- Mechanically driven water pump for charge cooler circuit
- Exhaust temperature monitoring
- Tool kit
- Additional manuals



Designation	Cogeneration Unit		Electro Unit	
	TRS1	TRS2	TRS1	TRS2
Fuel Consumption Gross at 1500 rpm	kJ/kW	kJ/kW	kJ/kW	kJ/kW
Continuous Baseload Rating	2.55	2.49	2.58	2.52
75% of Prime Power Rating	2.63	2.57	2.66	2.60
50% of Prime Power Rating	2.84	2.73	2.87	2.76
25% of Prime Power Rating	3.88	3.35	3.91	3.38

Fuel consumption figures are for TA Luft compliant engines at ISO 8528/1 in "Cogen" engine specification, running on British natural gas with LCV 34.71 MJ/Sm<sup>3</sup>

## General data

Number of cylinders .....	6
Cylinder arrangement .....	Vertical in-line
Cycle.....	4 stroke
Induction system ...	Turbocharged and air-to-water charge cooled
Combustion system.....	Spark ignited
Cooling system.....	Water cooled
Bore and stroke.....	160 x 190 mm (6.3 x 7.5 in)
Displacement .....	22.92 litres (1399 cubic in)
Compression ratio .....	12.0:1
Direction of rotation .....	Anti-clockwise viewed on flywheel
Total lubrication system capacity.....	122.7 litres (32.4 US gals)
Total coolant capacity .....	36 litres (9.5 US gals)
Dimensions – Length....	2242 mm *2242 mm (88.3 in *88.3 in)
Width.....	1633 mm *1418 mm (64.3 in *55.8 in)
Height.....	1787 mm *1787 mm (70.3 in *70.3 in)
Dry weight .....	2420 kg (5335 lb)

\*Cogeneration unit

Photographs are for illustrative purposes only and may not reflect final specification.

All information in this document is substantially correct at time of printing and may be altered subsequently.  
Publication No. PN1850/09/12 Produced in England  
©2012 Perkins Engines Company Limited

## Perkins Engines Company Limited

Peterborough PE1 5FQ  
United Kingdom  
Telephone +44 (0)1733 583000  
Fax +44 (0)1733 582240

[www.perkins.com](http://www.perkins.com)



THE HEART OF EVERY GREAT MACHINE