



# 4000 Series EGi

## Spark Ignited Gas Engine

### 4016-E61TRS

1042 kWm at 1500 rev/min

Designed to meet the future demands of the market for clean, efficient gas fuelled engines for the power generation industry, the Perkins 4016-E61TRS 16-cylinder spark ignition gas engine offers high performance, dependability and reliability while meeting the increasingly stringent emission requirements of the market.

The 4016-E61TRS is a turbocharged and air-to-water charged cooled 16-cylinder vee-form engine designed for operation on natural gas. Particular emphasis on efficiency and emission control together with durability, reliability and exceptional thermal efficiency and reduced whole life costs, make selection of the Perkins 4016-E61TRS engine the prime choice at a nominal 1000 kWe.

#### Efficient Power

The modern design of the very latest developments in combustion and engineering techniques, to give world beating, fuel efficiencies, economical whole life costs and reliability.

#### Clean, Smooth Power

Extensive research in combustion, air smell and noise/vibration/harshness have resulted in a smooth, quiet engine. This, combined with the emissions performance makes the 4016-E61TRS more environmentally acceptable in these days of increased concern.

#### Reliable Power

Extended durability and attention to reduced servicing with extended component life add to the benefit of reduced whole life cost. Total after-sales service, backed by a network of Perkins Gas Partners with dedicated expertise in service and maintenance of gas engines.

#### Options

The 4016-E61TRS 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.

Engine Speed (rev/min)	Type of Operation	Gross Engine Power	
		kWe	kWm
1500	Continuous Operation Power	1008	1042

The above ratings represent the engine performance capabilities specified in ISO 8528/1, BS5514/1. Electrical ratings are based on average alternator efficiency at unity power factor, based on Natural Gas having a lower calorific value of 34.71 MJ/m<sup>3</sup>. Please consult your local Perkins distributor or Perkins Engines Company Limited for derating for ambient conditions or for use of gaseous fuels other than that specified above. Continuous Operation Power. A 'true' Baseload rating as defined in ISO 8528 as 'COP'.

# 4000 Series EGi 4016-E61TRS

## Standard Specification

### Core Engine

High grade cast iron featuring integral crankcase inspection doors  
Wet type liners in centrifugal cast iron, plateau honed for quick ring bedding and reduced oil consumption  
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 piston with advanced bowl design. Three ring pack, gallery (oil) cooled  
Slit cap connecting rods, forged steel with multi-bolt fixing - shot peened

### Gas/ignition system

Air/fuel mixer with Woodward Tecjet gas injection valve control system; automatic adjustment according to fuel gas characteristics  
Metal braided flexible gas connection  
Individual cylinder ignition coils mounted direct to the spark plugs

### Lubrication system

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

### Cooling system

Pressurised fresh water jacket water cooling system  
Two-stage air to water charge cooler, jacket/secondary water cooled

### Air intake system

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

### Exhaust system

Dry cast iron exhaust manifolds with heat shields  
Horizontal exhaust outlet

### Engine management system

Full electronic management system, governing to ISO 8528 Part 5 Class G2 standard  
Engine protection system for high/low coolant temperature and low oil pressure, overspeed, misfire and knock protection  
Customer communication module

### Electrical system

24 Volt electric starter motors

### Drive system

Cast iron flywheel housing SAE 00 and flywheel SAE J620 Size 18  
Viscous type torsional vibration damper

### 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 wrapping and suitable for containerised shipment



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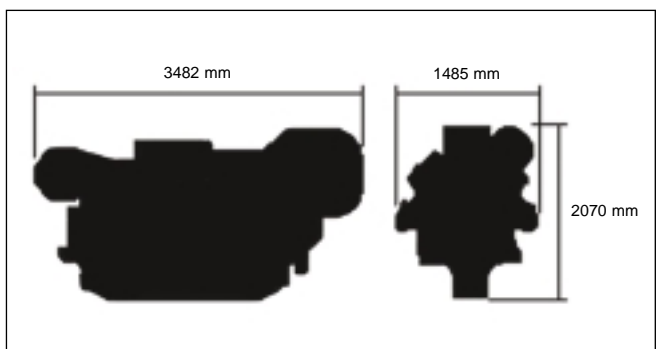
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## General Data

Number of cylinders	16
Cylinder arrangement	60° Vee
Cycle	4 stroke
Induction system	Turbocharged
Combustion system	Two-stage charge cooled
Cooling System	Spark Ignition
Bore and stroke	Water-cooled
Displacement	160 mm x 190 mm
Compression ratio	61.12 litres
Direction of rotation	12:1
Total lubrication system capacity	Anti-clockwise, viewed on flywheel
Total coolant capacity	286 litres
Length	95 litres
Width	3482 mm
Height	1485 mm
Dry weight	2070 mm
	5600 Kg

Fuel consumption kJ/kWs		
	TALuft	1/2TALuft
100% of COP	2.47	2.53



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