VOLVO PENTA

TWG1781GE

17.26 liter, in-line 6 cylinder

TWG1781GE is a reliable, powerful and compact in-line 6 cylinder spark ignited gas engine. It´s designed to power a wide range of generator sets.

This 17-liter gas engine, built on the Volvo Penta 17-liter platform, leverages state-of-the-art technologies to deliver exceptional power density while maintaining a common footprint.

It features a spark ignited combustion technology with single point injection system, lambda controlled combustion and three way catalyst to reach low exhaust emission levels.

The TWG1781GE runs efficiently on both natural gas and bio methane, making it ideal for pipeline-rich regions. It maximizes uptime while giving operators the opportunity to significantly lower their overall emissions when powered by renewable natural gas.

The engine also features a compact and low weight design that is well-balanced, providing smooth operation with low noise. It´s designed for easily accessible service points.

A range of options are available and will suit a variety of installations.

- High power density and fuel efficiency
- Low exhaust emissions
- Certified according to US EPA Stationary
- Compact and low weight design
- Speed 1800 rpm
- Suitable for a wide range of applications
- Service interval 1000 hours

60 Hz / 1800 rpm

	Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA
TWG1781GE	441	414	518	485	456	570

Generator efficiency (typical): 94%

kWm = kiloWatt mechanical, net with fan*; **kWe** = kiloWatt electrical = kWm x Generator eff.; **kVA** = kiloVoltAmpere calculations based on a 0.8 power factor = kWe / 0.8
1 kW = 1 hp x 1.36; **1 hp** = 1 kW x 0.7355
*) According to technical data
**)Dependent on gas quality

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Technical Data

Configuration and no. of cylinders	in-line 6
Displacement, l (in³)	17.26 (1053.3)
Method of operation	4-stroke
Bore, mm (in.)	149 (5.86)
Stroke, mm (in.)	165 (6.5)
Compression ratio	13.5:1
Wet weight, engine only, kg (lb)	1900 (4190)
Wet weight, Genpac (engine, cooling system, air filtration system kg (lb)	2200 (4851)

Fuel consumption*

*)Depending on gas quality

Prime Power, kg/h (lb/h)

	TWG1781GE
	1800 rpm
25%	31 (69)
50%	49 (171)
75%	71 (157)
100%	95 (209)

Standby Power, kg/h (lb/h)

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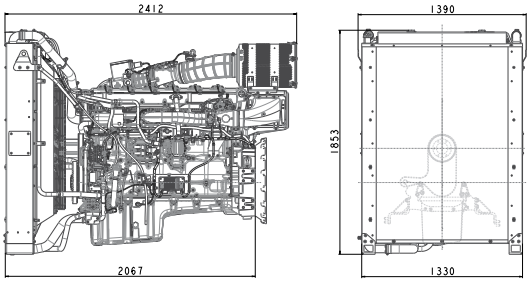
	1800 rpm
25%	33 (37)
50%	53 (60)
75%	78 (88)
100%	105 (119)

Dimensions

Not for installation. Dimensions in mm.



Technical description

Engine and block

- Wet, replaceable cylinder liners
- Aluminum pistons for high performance
- Crankshaft induction hardened bearing surfaces and fillets with seven main bearings
- Case hardened and Nitrocarburized transmission gears for heavy duty operation
- Viscous type crankshaft vibration dampers to withstand single bearing alternator torsional vibrations
- Replaceable valve guides and valve seats
- Overhead camshaft and 4 valves per cylinder
- SAE1 alternator interface

Lubrication system

- Full flow oil cooler
- Full flow disposable spin-on oil filter
- Bypass filter with extra high filtration
- Volvo Penta VDS4.5 ULA 10w-30
- Engine delivered with oil

Fuel system

- Double safety valve and zero pressure valve
- State of the art gas injection valve

Cooling system

- Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block.
- Dual-circuit
- Belt driven coolant pumps with high degree of efficiency
- Fixed fan drive
- Water-cooled charge air coolers
- Coolant VCS2

Turbo charger

- Efficient and reliable turbo charger
- Water cooled center housing for higher performance
- Charge air cooler
- Waste gate system for the turbo charger

Electrical system

- ECM4.1, an electronically controlled processing system which optimizes engine performance. It also includes advanced facilities for diagnostics and fault tracing
- The instruments and controls connect to the engine via the CAN SAE J1939 interface
- Sensors for inputs such as: oil pressure, oil temp, boost pressure, boost temp, coolant temp, air filter pressure, knock sensors.
- Lambda sensor and exhaust gas temp sensor

Rating guidelines

CONTINUOUS POWER is defined as being the maximum power which the generating set is capable of delivering continuously while supplying a constant electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer.

PRIME POWER rating corresponds to ISO Standard Power for continuous operation. It is applicable for supplying electrical power at variable load for an unlimited number of hours instead of commercially purchased power. A10 % overload capability for govering purpose is available for this rating.

STAND-BY POWER rating corresponds to ISO Standard Fuel Stop Power. It is applicable for supplying stand-by electrical power at variable load in areas with well established electrical networks in the event of normal utility power failure. No overload capability is available for this rating.

DATA CENTRE POWER is defined as being the maximum power which a generating set is capable of delivering while supplying a variable or continuous electrical load and during unlimited run hours. Depending on the sites to supply and the availability of reliable utility, the generating set manufacturer is responsible to define what power level he is able to supply to fulfil that requirement including hardware or software or maintenance plan adaptation.

Power standards

The engine performance complies with ISO 3046, BS 5514, and DIN 6271. The technical data refers to an engine without a cooling fan and operating on natural gas with a Lower heating value (LHV) of 38.85 MJ/m3 (+-5%) and a Methane value of 73.3 (+-2%), where applicable, even if this results in deviations from the listed standards. Power ratings are based on ISO 8528.

Please contact your local Volvo Penta dealer for further information.

AB Volvo Penta
SE-405 08 Göteborg, Sweden
www.volvopenta.com