TAD550GE

4.76 liter, in-line 4 cylinder

The TAD550GE is a powerful, reliable and economical Generating Set Diesel Engine built on the dependable in-line four design.

Energy efficiency and Economy
Through careful management of the combustion process, involving precise control of air movement and injection spray Volvo Penta has been able to achieve high efficiency and reduced exhaust emission levels that comply with current requirements and which will enable the engines to satisfy future legislation. Volvo Penta engines offer the highest kWh/Liter fuel, resulting in superior economy and performance.

Durability & low noise
Designed for easy, fast and economical installation. Field tested to ensure highest standard of durability and long life. Well-balanced to produce smooth and vibration-free operation with low noise level. To maintain a controlled working temperature in cylinders and combustion chambers, the engine is equipped with piston cooling. The engine is also fitted with replaceable cylinder liners and valve seats/guides to ensure maximum durability and service life of the engine.

Low exhaust emission
The state of the art, high-tech injection and highly efficient charge air system with low internal losses contributes to excellent combustion and low fuel consumption. The engine is EPA/CARB Tier 3 & EU Stage 3A emission certified. These regulations are met by using V-ACT™ (Volvo Advanced Combustion technology). V-ACT includes a flexible high pressure Common-rail fuel injection system, an air management system including an internal exhaust gas recirculation device and an enhanced electronic controller.

Easy service & maintenance
Easily accessible service and maintenance points contribute to the ease of service of the engine.

- **Certified for US/EPA Tier 3 and EU Stage 3A**
- **High efficient cooling system**
- **Compact design**
- **With or without engine-mounted cooling system**
- **Switchable between 1500/1800 rpm**
- **Excellent step load performance**
- **Low operating cost**

50 Hz/1500 rpm

Prime power			Standby power		
kWm	kWe	kVa	kWm	kWe	kVa
76	69	86	84	77	97

60 Hz/1800 rpm

Prime power			Standby power			Gen.eff.
kWm	kWe	kVa	kWm	kWe	kVa	%
85	76	96	94	85	106	91

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

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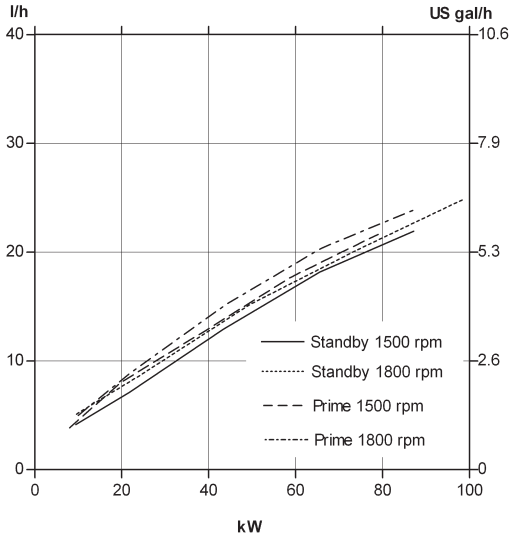
Technical Data

General

Engine designation	TAD550GE
No. of cylinders and configuration	in-line 4
Method of operation	4-stroke
Bore, mm (in.)	108 (4.25)
Stroke, mm (in.)	130 (5.12)
Displacement, l (in³)	4.76 (290.7)
Compression ratio	18
Dry weight, engine only, kg (lb)	531 (1170)
Dry weight with cooling system, kg (lb)	617 (1360)

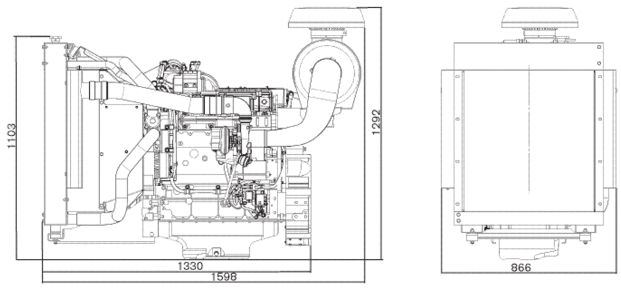
Performance	1500 rpm	1800 rpm
with fan, kW (hp) at:		
Prime Power	76 (104)	85 (115)
Standby Power	84 (115)	94 (127)
Fan power consumption, kW (hp)	2.5 (3)	4.6 (6)

Fuel consumption



Dimensions TAD550GE

Not for installation



Technical description

Engine and block

- Optimized cast iron cylinder block with optimum distribution of forces
- Piston cooling for low piston temperature and reduced ring temperature
- Drop forged steel connecting rods
- Crankshaft hardened bearing surfaces with Tri-metal bearings
- Keystone top compression rings for long service life
- Replaceable valve guides and valve seats
- 2 valves per cylinder actuated via pushrods driven via camshaft
- PTO positions at flywheel end
- Lift eyelets
- Flywheel housing with connection acc. to SAE 3
- Flywheel for flex plate
- Fixed integrated radiator front engine suspension
- Transport brackets, rear

Lubrication system

- Full flow cartridge insert filter
- Rotary displacement oil pump driven by the crankshaft
- Deep front oil sump
- Oil filler on top
- Oil dipstick, short in front
- Integrated full flow oil cooler, side-mounted

Fuel system

- Common rail with two high pressure pumps
- Gear driven fuel feed pump
- Seven hole fuel injection nozzles
- Engine mounted fuel pre-filter with water separator
- Fine fuel filter of cartridge insert type

Intake and exhaust system

- Connection flange for exhaust line
- Waste gate turbo charger, centre low with exhaust flange
- Two-stage air filter, with cyclone
- Heater flange in charge air inlet (with relay)

Cooling system

- Belt driven, maintenance-free coolant pump with high degree of efficiency
- Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block
- Reliable thermostat with minimum pressure drop
- Pusher fan

Electrical system

- Engine Management System 2 (EMS 2), 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, either through the Control Interface Unit (CIU) or the Digital Control Unit (DCU). The CIU converts the digital CAN bus signal to an analog signal, making it possible to connect a variety of instruments. The DCU is a control panel with display, engine control, monitoring, alarm, parameter setting and diagnostic functions. The DCU also presents error codes in clear text.
- Sensors for oil pressure, oil temp, boost pressure, boost temp, coolant temp, water in fuel, fuel pressure and two speed sensors.

Rating guidelines

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.

Power standards

The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. The technical data applies to an engine without cooling fan and operating on a fuel with calorific value of 42.7 MJ / kg (18360 BTU/lb) and a density of 0.84 kg/liter (7.01 lb/US gal), also where this involves a deviation from the standards. Power output guaranteed within 0 to +2% att rated ambient conditions at delivery. Ratings are based on ISO 8528. Engine speed governing in accordance with ISO 8528-5.

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Please contact your local Volvo Penta dealer for further information. Please note that products illustrated may differ from production models. Not all models and accessories are available in all markets, and standard equipment may vary between different markets. Every effort has been made to ensure that facts and figures are correct at the time of publication. However, Volvo Penta reserves the right to make changes without prior notice at any time.

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