# **VOLVO PENTA GENSET ENGINE**

# **TAD1345GE**



441 kW (600 hp) at 1500 rpm, 449 kW (611 hp) at 1800 rpm, acc. ISO 3046

The TAD1345GE is a powerful, reliable and economical Generating Set Diesel Engine built on the dependable Volvo inline six concept.

#### **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 & noise 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 TAD1345GE is EU Stage 2 emission certified. An electronically controlled viscous fan drive is available giving substantially lower noise and fuel consumption.

#### Easy service & maintenance

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

### **Technical description**

#### Engine and block

- Cast iron cylinder block with optimum distribution of forces without the block being unnessarily heavy.
- Wet, replaceable cylinder liners
- Piston cooling for low piston temperature and reduced ring temperature
- Tapered connecting rods for increased piston lifetime
- Crankshaft induction hardened bearing surfaces and fillets with seven bearings for moderate load on main and high-end bearings
- Case hardened and Nitrocarburized transmission gears for heavy duty operation
- Keystone top compression rings for long service life
- Viscous type crankshaft vibration dampers to withstand single bearing alternator torsional vibrations
- Replaceable valve guides and valve seats
- Over head camshaft and four valves per cylinder



#### **Features**

- High power density
- Highly efficient cooling system
- Dual Speed 1500 / 1800 rpm
- EMS 2
- EU Stage 2 emission certified
- Wide range of optional equipment including visco fan.

#### Lubrication system

- Full flow oil cooler
- Full flow disposable spin-on oil filter, for extra high filtration
- The lubricating oil level can be measured during operation
- Gear type lubricating oil pump, gear driven by the transmission

#### Fuel system

- Electronic high pressure unit injectors
- Fuel prefilter with water separator and waterin-fuel indicator / alarm
- Gear driven low-pressure fuel pump
- Fine fuel filter with manual feed pump and fuel pressure switch

#### Cooling system

- Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block. Reliable sleeve thermostat with minimum pressure drop
- Belt driven coolant pump with high degree of efficiency
- Electronically controlled viscous fan drive provides lower noise and fuel consumption (optional).
- Coolant filter as standard

#### Turbo charger

- Efficient and reliable turbo charger
- Electronically controlled Waste-gate
- Extra oil filter for the turbo charger

#### 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.
- Possibility to perform a start battery test according to the NCPA requirements via CAN bus signals.
- 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 anolog 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, fuel temp, water in fuel, fuel pressure and two speed sensors.



# TAD1345GE

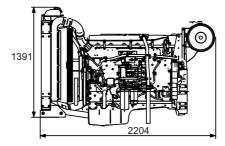
Technical Data General Engine designation		in-line 64-stroke131 (5.16)158 (6.22)12.78 (780)1325 (2921)
Performance with fan, kW (hp) at:	1500 rpm	1800 rpm
Prime Power Standby Power	388 (528) 431 (586)	392 (533) 431 (586)
Lubrication system	1500 rpm	1800 rpm
Oil consumption, liter/h (US gal/h) a Prime Power Standby Power Oil system capacity incl filters, liter.	0.04 (0.011) 0.04 (0.011)	0.05 (0.013) 0.05 (0.013) 36
Specific fuel consumption at:	1500 rpm	1800 rpm
Prime Power, g/kWh (lb/hph) 25 % 50 % 75 % 100 % Standby Power, g/kWh (lb/hph)	217 (0.352) 199 (0.323) 197 (0.319) 196 (0.318)	229 (0.371) 205 (0.332) 200 (0.324) 201 (0.326)
25 % 50 % 75 % 100 %	211 (0.342) 198 (0.321) 197 (0.319) 196 (0.318)	225 (0.365) 204 (0.331) 201 (0.326) 202 (0.327)
Intake and exhaust system Air consumption, m³/min (cfm) at:	1500 rpm	1800 rpm
Prime Power Standby Power Max allowable air intake restriction,	26.8 (946) 27.6 (975)	33.0 (1165) 33.0 (1165)
kPa (PSI) Exhaust gas temperature after turbir		5 (0.7)
°C (°F) at: Prime Power Standby Power Max allowable back-pressure in exh	477 (891) 571 (1060) aust line,	440 (824) 490 (914)
kPa (PSI) Exhaust gas flow, m³/min (cfm) at:		10 (1.5)
Prime power Standby Power	56.8 (2006) 58.3 (2059)	77.0 (2719) 82.0 (2896)
Cooling system Fan power consumption, std ratio, k	<b>1500 rpm</b> W (hp)10 (14)	1 <b>800 rpm</b> 18 (24)
Cooling system AOT at max cooling air flow, °C (°F)	1500 rpm	1800 rpm
Prime Power Standby Power May cooling air flow, m3/s (cfs)	59 (138) 55 (131) 6.5 (230)	63 (145) 60 (140) 8.0 (283)

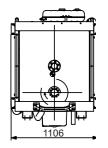
Standard equipment	Engine	Gen Pac
Engine Automatic belt tensioner		
Lift eyelets	•	•
Flywheel	•	•
Flywheel housing with conn. acc. to SAE 1		_
Flywheel for 14" flex. plate and flexible coupling	•	•
Engine suspension	•	•
Fixed front suspension		
Lubrication system	•	•
Oil dipstick		
Full-flow oil filter of spin-on type	•	•
By-page oil filter of epip-on type	•	•
By-pass oil filter of spin-on type Oil cooler, side mounted	•	•
Low noise oil sump	•	•
Fuel system	•	•
Fuel filters of disposable type		
Electronic unit injectors	•	•
Pre-filter with water separator	•	•
Intake and exhaust system	•	•
Air filter with replaceable paper insert		
Air filter with replaceable paper insert Air restriction indicator	•	•
Air cooled exhaust manifold	•	•
Connecting flange for exhaust pipe	•	•
Exhaust flance	•	•
Exhaust flange Turbo charger, low right side		
Cooling system	·	•
Radiator incl intercooler	_1)	
Coolant pump	•	
Fan hub	•	•
Thrust fan	<b>1</b> )	•
Fan guard	_	•
Belt guard	_	•
Control system		
Engine Management System (FMS) with		
Engine Management System (EMS) with CAN-bus interface SAE J1939		
Alternator	•	-
Alternator 80 A		
Starting system		
Starter motor		
Connection facility for extra starter motor	•	•
Instruments and senders		
Temp and oil pressure for automatic		
stop/alarm	•	-
Other equipment		
Expandable base frame	_	
Engine Packing	_	•
Plastic wrapping		
	-	-
1)		

<sup>1)</sup> must be ordered, se order specification

For our wide range of optional equipment, please see Order speci-

## **Dimensions TAD1345GE**





Note! Not all models, standard equipment and accessories are available in all countries. All specifications are subject to change without notice.

The engine illustrated may not be entirely identical to production standard engines.

6.5 (230)

#### Power Standards

Max cooling air flow, m3/s (cfs)

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 (7.01 ib/OS gain, also whiter lins 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 3046/IV, class A1 and ISO 8528-5 class G3

#### Exhaust emissions

The engine complies with EU stage 2 emission legislation according to the Non Road Directive EU 97/68/EEC. The engine also complies with TA-luft -50% exhaust emission regulations.

#### **Rating Guidelines**

8.0 (283)

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.
STANDBY POWER rating corresponds to ISO Standard Fuel Stop Power. It is applicable for supplying standby 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. available for this rating.

1 hp = 1 kW x 1.36



Available later
 optional equipment or not applicable

<sup>•</sup> included in standard specification