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).

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 No. of cylinders and configuration. Method of operation Bore, mm (in.). Stroke, mm (in.). Displacement, I (in³). Compression ratio. Wet weight, engine only, kg (lb) Wet weight with Gen Pac, kg (lb)		in-line 64-stroke131 (5.16)158 (6.22)12.78 (780)1325 (2921)
Performance with fan, kW (hp) at: Prime Power Standby Power	1500 rpm 388 (528) 431 (586)	1800 rpm 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
Fuel system Specific fuel consumption at: Prime Power, g/kWh (lb/hph) 25 % 50 % 75 % 100 % Standby Power, g/kWh (lb/hph) 25 % 50 % 75 % 100 %	1500 rpm	1800 rpm
	217 (0.352) 199 (0.323) 197 (0.319) 196 (0.318) 211 (0.342)	229 (0.371) 205 (0.332) 200 (0.324) 201 (0.326) 225 (0.365)
	198 (0.321) 197 (0.319) 196 (0.318)	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)	
kPa (PSI) Exhaust gas temperature after turbir		5 (0.7)
°C (°F) at: Prime Power Standby Power Max allowable back-pressure in exh	475 (887) 570 (1058) 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	1500 rpm W (hp)10 (14)	1 800 rpm 18 (24)
Cooling system	1500 rpm	1800 rpm
AOT at max cooling air flow, °C (°F):	: 60 (140)	63 (145)

0KE	Flywheel
16)	Flywheel housing with conn. acc. to SAE 1
22)	Flywheel for 14" flex. plate and flexible coupling
80)	Engine suspension
1:1 21)	Fixed front suspension
	Lubrication system
46)	Oil dipstick
	Full-flow oil filter of spin-on type
pm	By-pass oil filter of spin-on type
	Oil cooler, side mounted
33)	
86)	Low noise oil sump
	Fuel system
pm	Fuel filters of disposable type
	Electronic unit injectors
13)	Pre-filter with water separator
13)	Intake and exhaust system
36	Air filter with replaceable paper insert
30	Air restriction indicator
	Air cooled exhaust manifold
pm	Connecting flange for exhaust pipe
	Exhaust flange
	Turbo charger, low right side
71)	
32)	Cooling system Radiator incl intercooler
24)	
26)	Coolant pump
	Fan hub
65)	Pusher fan
31)	Fan guard
26)	Belt guard
27)	Control system
21)	Engine Management System (EMS) with
	CAN-bus interface SAE J1939
pm	Alternator
OF)	Alternator 80 A
65)	Starting system
65)	Starter motor
\	Connection facility for extra starter motor
).7)	Instruments and senders
	Temp and oil pressure for automatic
24)	stop/alarm
14)	Other equipment
	Expandable base frame
1.5)	Engine Packing
,	Plastic wrapping
19)	
96)	nust be ordered, se order specification
00,	2) Available later
nm	 optional equipment or not applicable
pm	 included in standard specification
24)	
	For our wide range of optional equipment, plea
pm	fication

Standard equipment

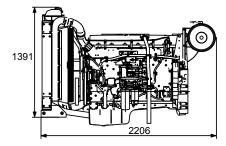
Automatic belt tensioner

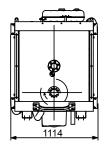
Engine

Lift eyelets Flywheel

ase see Order specification.

Dimensions TAD1345GE





Gen Pac

Engine

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.

60 (140)

56 (133)

6.7 (237)

Power Standards

Prime Power Standby Power

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 in/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

63 (145)

60 (140)

8.2 (290)

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 com-

ar variable load to all ultimited fulfilled in flows instead of com-mercially 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.

1 hp = 1 kW x 1.36

