

# TAD851-853GE

7.7 liter, in-line 6 cylinder



The TAD851-853GE is a powerful, reliable and economical Generating Set Diesel Engine built on the dependable in-line six design.

### Durability & low noise

Designed for easiest, fastest and most economical installation. 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 charging system with low internal losses contributes to excellent combustion and low fuel consumption.

The TAD851-853GE complies with EU Stage IIIA and EPA Tier3 Certificate exhaust emission regulations.

### Easy service & maintenance

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

- Electronic governing EMS 2.4
- CAN bus communication
- Compact design for the power class
- High power to weight ratio
- Emission compliant acc. to EU Stage IIIA and EPA Tier3 Certificate
- Noise optimized engine design
- RoHS2 Compliant
- Dual speed

	50 Hz / 1500 rpm									60 Hz / 1800 rpm								
	Continuous power			Prime power			Standby power			Continuous power			Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TAD851GE	165	152	190	220	202	253	242	223	278	169	156	194	225	207	259	248	228	285
TAD852GE	186	173	216	248	231	289	273	254	317	185	172	216	247	230	287	272	253	316
TAD853GE	186	175	219	248	233	291	273	257	321	200	188	235	266	250	313	293	275	344

Generator efficiency (typical): TAD851GE 92%, TAD852GE 93%, TAD853GE 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

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## Technical Data

Configuration and no. of cylinders .....	in-line 6
Displacement, l (in <sup>3</sup> ) .....	7.7 (470)
Method of operation .....	4-stroke
Bore, mm (in.) .....	110 (4.33)
Stroke, mm (in.) .....	135 (5.31)
Wet weight, engine only, kg (lb) .....	737 (1625)

## 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 and fillets for moderate load on main and big-end bearings
- Keystone top compression rings for long service life
- Replaceable valve guides and valve seats
- Lift eyelets
- Flywheel housing with connection acc. to SAE1/SAE2
- Flywheel for flexplate
- 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 dipstick, short in front
- Integrated full flow oil cooler, side-mounted

### Fuel system

- Common rail
- Gear driven fuel feed pump
- Electronic governor
- Fuel prefilter with water separator
- Fine fuel filter of cartridge insert type

### Intake and exhaust system

- Connection flange for exhaust line
- Turbo charger, centre low with exhaust flange
- Two-stage air filter, with cyclon
- Heater flange in charge air inlet (with relay)

### Cooling system

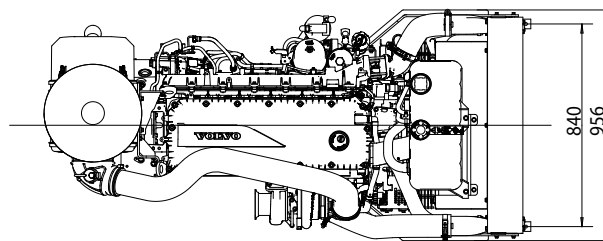
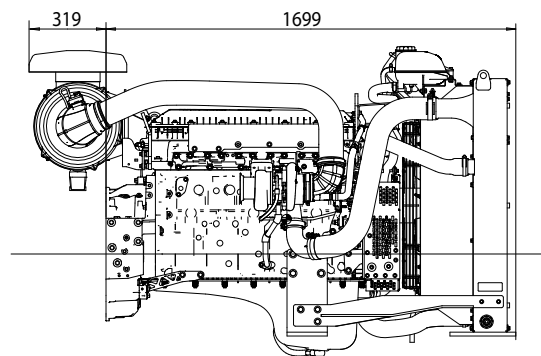
- Belt driven, maintenance-free coolant pump with high degree of efficiency
- Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block
- Reliable thermostat with minimum pressure drop
- Pusher fan
- Visco fan or fixed fan

### Electrical system

- Engine Management System 2 (EMS 2.4), 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 Module (CIM). The CIM converts the digital CAN bus signal to an analog signal, making it possible to connect a variety of instruments. The CIM is a control panel with display, engine control, monitoring, alarm, parameter setting and diagnostic functions. The CIM also presents error codes in clear text.
- Sensors for oil pressure, boost pressure, boost temp, exhaust temp, coolant temp, water in fuel, fuel pressure and two speed sensors.

## Dimensions

Not for installation. Dimensions in mm.



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.

### 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 governing 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% at rated ambient conditions at delivery. Ratings are based on ISO 8528. Engine speed governing in accordance with ISO 8528-5.

Please contact your local Volvo Penta dealer for further information.



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