

VOLVO PENTA MARINE VARIABLE SPEED GENSET

D4-175 (VG)

3.7 liter, in-line 4 cylinder

113 kW_e



Technical Data

Engine designation	D4-175 (VG)
No. of cylinders and configuration	in-line 4
Method of operation	4-stroke, direct-injected, turbocharged diesel engine with charge air cooler
Bore / stroke, mm	103 / 110
Displacement, l (in ³)	3.67 (223.7)
Compression ratio	18.0:1
Crankshaft Power HE/KC Cooling, kW _m	129
Rating	4
Electrical Power, kW _e @ rpm	113 @ 2800 (Generator name plate power)
Emission compliance	IMO NO _x , EU RCD Stage II, US EPA Tier 3
Specific fuel consumption HE/KC, g/kWh at kW _e & rpm	
Peak efficiency	207 (96 kW _e / 2500 rpm)
50%	214 (57 kW _e / 2100 rpm)
75%	207 (85 kW _e / 2400 rpm)
Rated power / rated speed	214 (113 kW _e / 2800 rpm)
Recommended fuel to conform to	ASTM-D975, EN 590, JIS K2204 or HVO EN15940

10% overload available acc. to class requirements. Fuel temperature 40°C (104°F). Technical data according to ISO 3046 Fuel Stop Power with a tolerance ±4%. Fuel with a lower calorific value of 42700 kJ/kg and density of 840 g/liter at 15°C (60°F). Merchant fuel may differ from this specification which will influence engine power output and fuel consumption. The engine is certified according to IMO Tier III for diesel electric propulsion.

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Technical description

Complete Variable speed Genset

- High system efficiency
- Possible to operate at multiple fix speeds or full variable speeds
- Light and compact Generator set
- Engine coupled to generator via flexible coupling
- Flexible mountings included
- Synchronization not needed
- Possibility to mix engine sizes

Generator

- Permanent magnet generator technology
- Small, robust, light and efficient
- Water cooled
- Insulation Class H, Temperature rise Class F
- Double bearing
- IP65 as standard

Standard EM-PMI375-T500

- Low voltage connections done with connector, DEUTSCH HD34-24-47PE
- Anti-condensation heater, 230 VAC/130 W (+HEAT1)
- PT100 in bearing (+BTMP1)
- Redundant temperature surveillance of windings, PT100 (+TEMP5)
- Insulated bearing in N-end (+BIN)
- Rotating sensor, in-built non contact resolver, 6-pole pair, needed for non Danfoss inverters (+RES1)

Engine and block

- Cylinder block and cylinder head made of cast iron
- Ladder frame fitted to engine block
- 4-valve technology with hydraulic lash adjusters
- Double overhead camshafts
- Oil-cooled pistons with two compression rings and one oil scraper ring
- Integrated cylinder liners
- Five bearing crankshaft
- Rear end camshaft transmission

Lubrication system

- Replaceable separate full-flow and by-pass oil filter
- Seawater cooled tubular oil cooler
- Oil level and oil temperature sensors
- Crankcase oil separator, maintenance free unit

Fuel system

- Common rail fuel injection system, 2000 bar

- Electronically controlled central processing system (EMS - Engine Management System)
- Fuel pressure sensor that indicates clogging in fuel filters
- Single fine fuel filter of spin-on type, with water separator and water in fuel alarm

Air inlet and exhaust system

- Air filter with replaceable insert
- Crankcase gases vented into the air inlet
- Exhaust elbow or exhaust riser
- Turbocharger, freshwater cooled
- Loss of sea water alarm

Cooling system

- Thermostatically regulated freshwater cooling
- Seawater tubular heat exchanger
- Coolant system prepared for hot water outlet
- Seawater impeller pump
- Engine mounted seawater strainer

Control system

- MCC (Marine Commercial Control) an open system that is type approved

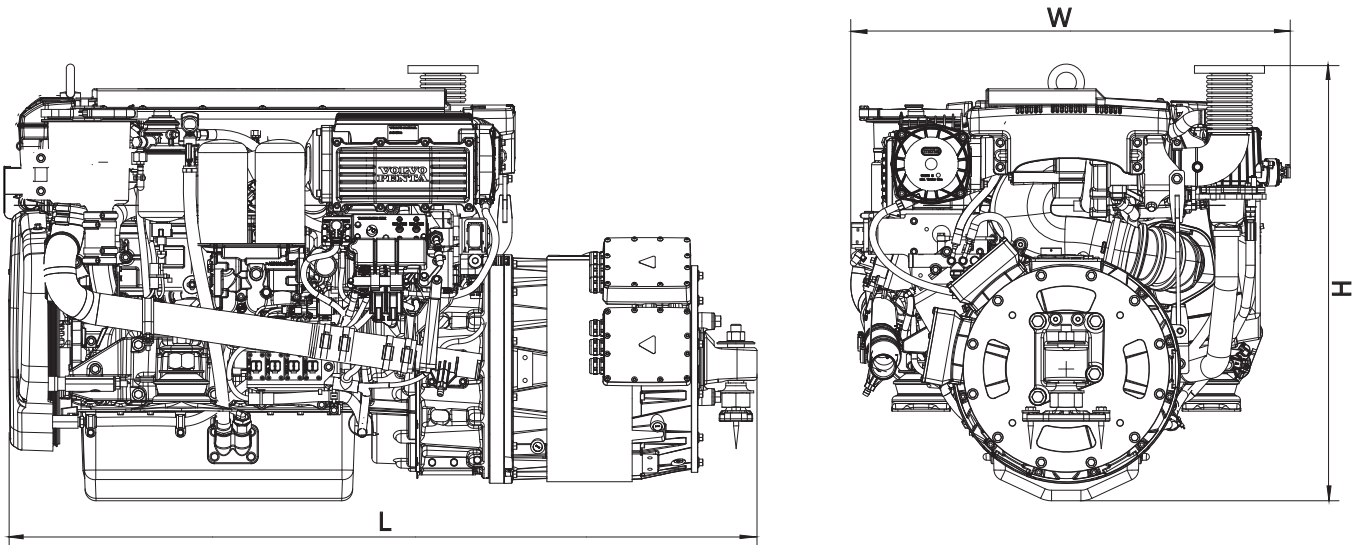
Optional equipment

Engine

- Exhaust temperature indication
- Engine heater

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Technical Data HE/KC Genset (Class F)

Power output at 2800 rpm 650 V_{AC}, kW_e
D4-175 / EM-PMI375 T500-3200 DUAL113

Inverter requirement
Nominal inverter switching frequency 8 kHz

Minimal inverter switching frequency 4 kHz
(with limited speed 1,4 times nominal speed)

10% overload available according to class requirements. Fuel temperature 40°C (104°F).
Technical data according to ISO 3046 Fuel Stop Power and ISO 8665. Fuel with a lower
calorific value of 42700 kJ/kg and density of 840 g/liter at 15°C (60°F). Merchant fuel may
differ from this specification which will influence engine power output and fuel consumption.

Dimensions L x W x H₁ (mm), not for installation
D4-175 / EM-PMI375 T500..... 1473 x 866 x 857

Weight HE, kg
D4-175 / EM-PMI375 T500.....708

Weight KC, kg
D4-175 / EM-PMI375 T500.....690

H1 = Height including exhaust compensator

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.

Contact your local Volvo Penta dealer
for more information regarding Volvo
Penta engines and optional equipment/
accessories or visit
www.volvopenta.com

