VOLVO PENTA

VOLVO PENTA **MARINE GENSET DIESEL**

D8-MG

7.7 liter, in-line 6 cylinder

Technical Data

Engine designation	D8 MG	
No. of cylinders and configuration	in-line 6	
Method of operation	4-stroke, direct-injected, turbocharged diesel engine with charge air cooler	
Bore, mm	110	
Stroke, mm	135	
Displacement, l	7.7 (469.7)	
Compression ratio	16.5:1	
	1500 rpm	1800 rpm
Crankshaft Power HE/KC Cooling, kW	239	275
Specific fuel consumption HE/KC, g/kWh		
50%	210	213
75%	211	215
100%	213	218
Emission compliance	China Stage II	US EPA Tier 3
Recommended fuel to conform to	ASTM-D975 1-D & 2-D, EN 590 or JIS KK 2204	

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 Genset
- High system efficiency as a result of system optimization of the complete Genset
- Dimensioned for high output and low sound level
- Mono-block engine/generator rigidly mounted on a common bed frame
- Engine directly coupled to generator via a flexplate
- Flexible mountings including welding plates mounted under the frame

Engine and block
- Cylinder block made of cast iron
- One piece cast iron cylinder head
- Replaceable dry cylinder liners and valve seats/guides
- Ladder frame fitted to engine block
- Drop forged crankshaft with induction hardened bearing surfaces and fillets with seven main bearings
- Four valve per cylinder layout with overhead camshaft
- Each cylinder features cross-flow inlet and exhaust ducts
- Gallery oil cooled forged aluminum pistons, three piston rings (keystone top ring)
- Rear-end transmission

Lubrication system
- Seawater-cooled oil cooler
- Twin switchable oil filters as standard

Fuel system
- Common rail fuel injection system
- Gear-driven fuel pump and injection timing
- Electronically controlled central processing system (EMS - Engine Management System)
- Twin switchable fuel filters as standard

Air inlet and exhaust system
- Mid-positioned twin entry turbocharger with aftercooler
- Air filter with replaceable inserts
- Wet exhaust elbow (option)
- Loss of sea water alarm

Cooling system

Two options available:

1. HE (Heat Exchanger)
- Seawater-cooled tubular heat exchanger
- Coolant system prepared for hot water outlet
- Easily accessible seawater impeller pump in rear end

2. KC (Keel Cooling)
- 1,5-circuit cooling system
- Belt-driven centrifugal cooling water pump in HT circuit
- Engine mounted expansion tank in HT circuit
- Gear driven rubber impeller cooling water pump in CAC LT circuit

Generator
- 4-pole, brushless, AC marine generator
- Temperature rise class F and class H
- Tropical insulation class H
- Stator winding as standard with short 2/3 pitch winding, ideal for non-linear load (thyristor load)
- Automatic Voltage Regulator (AVR) for accurate voltage regulation
- Permanent magnet mounted on generator for independent power supply to AVR
- Single bearing generator as standard
- Voltage available range up to 690V
- IP23 enclosure as standard
- Anti condensation heating

Control System
- The Marine Commercial Control System (MCC) is easily integrated into the ship's control system. Marine Commercial Control (MCC) a flexible and expandable control and monitoring system for classified installations. Incl. separate safety shutdown system.

Optional equipment

Engine
- Exhaust temperature indication
- Engine heater

Generator
- Air inlet filters according to IP23
- Air inlet louvres/filters according to IP44
- Parallel equipment mounted in generator
- Thermistors (1 or 2 per phase) mounted in generator for temperature measurement of windings in generator
- PT100 elements (1 or 2 per phase) mounted in generator for temperature measurement of windings in generator
- Double bearing generator (on request)
- PT100 elements mounted in generator bearings for temperature measurement

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7.7 liter, in-line 6 cylinder

Technical Data HE/KC Genset (Class F)

Power output at 1500 rpm 50H/400V, kVA (kWe)

D8 MG / UCM274G1. . . . . 148 (119)
D8 MG / UCM274H1. . . . . 169 (136)
D8 MG / S4L1MC41 . . . . . 210 (168)
D8 MG / S4L1MD41 . . . . . 230 (184)
D8 MG / S4L1ME41 . . . . . 275 (220)
D8 MG / S4L1MF41 . . . . . 279 (223)

Power output at 1800 rpm 60Hz/440V, kVA (kWe)

D8 MG / UCM274G1. . . . . 185 (149)
D8 MG / UCM274H1. . . . . 213 (170)
D8 MG / S4L1MC41 . . . . . 243 (196)
D8 MG / S4L1MD41 . . . . . 268 (216)
D8 MG / S4L1ME41 . . . . . 321 (257)

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 H_1/H_2 (mm), not for installation

D8 MG / UCM274G1. . . . . 2219 x 1051.50 x 1650
D8 MG / UCM274H1. . . . . 2259 x 1051.50 x 1650
D8 MG / S4L1MC41 . . . . . 2513 x 1051.50 x 1650
D8 MG / S4L1MD41 . . . . . 2513 x 1051.50 x 1650
D8 MG / S4L1ME41 . . . . . 2513 x 1051.50 x 1650
D8 MG / S4L1MF41 . . . . . 2603 x 1051.50 x 1650

Weight HE/KC, kg

D8 MG / UCM274G1. 1450
D8 MG / UCM274H1. 1496
D8 MG / S4L1MC41 1720
D8 MG / S4L1MD41 1810
D8 MG / S4L1ME41 1894
D8 MG / S4L1MF41 2030

Technical Data HE/KC Genset (Class H)

Power output at 1500 rpm 50H/400V, kVA (kWe)

D8 MG / UCM274G1. . . . . 159 (127)
D8 MG / UCM274H1. . . . . 175 (140)
D8 MG / S4L1MC41 . . . . . 215 (172)
D8 MG / S4L1MD41 . . . . . 240 (192)
D8 MG / S4L1ME41 . . . . . 279 (223)

Power output at 1800 rpm 60Hz/440V, kVA (kWe)

D8 MG / UCM274G1. . . . . 192 (154)
D8 MG / UCM274H1. . . . . 219 (175)
D8 MG / S4L1MC41 . . . . . 260 (208)
D8 MG / S4L1MD41 . . . . . 305 (244)
D8 MG / S4L1ME41 . . . . . 321 (257)

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.

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

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