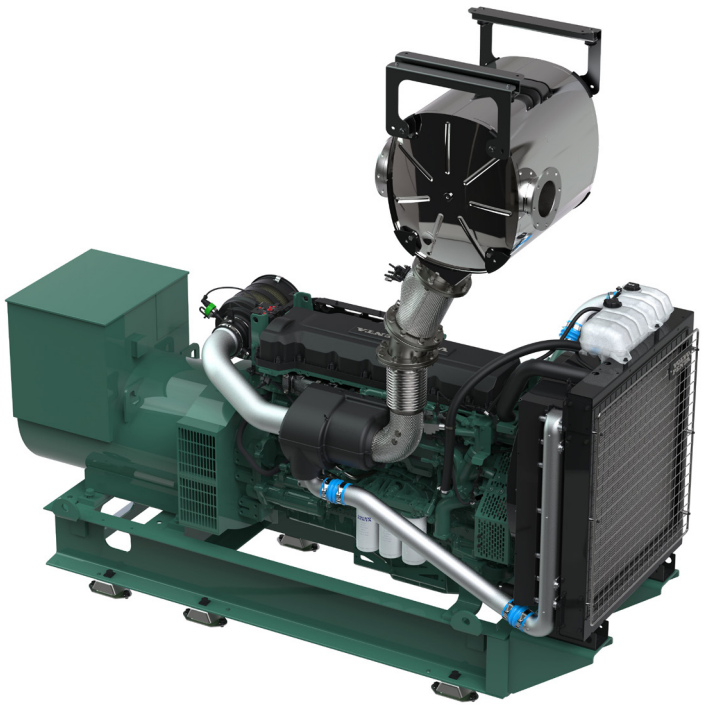
VOLVO PENTA MARINE GENSET

D13 MG

Emission compliance: IMO Tier III

310–415 kVA (248–332 kWe) at 1500rpm 50Hz/400V, 375–475 kVA (300–380 kWe) at 1800rpm 60Hz/440V



Technical Data Engine

Engine designation	D13 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	131			
Stroke, mm	158			
Displacement, l	12.78			
Compression ratio	18.5			
	1500 rpm	1500 rpm	1800 rpm	1800 rpm
Crankshaft Power HE Cooling, kW	300	360	360	400
Crankshaft Power RC Cooling, kW	289	349	341	381
Crankshaft Power KC Cooling, kW	300	360	360	400
Specific fuel consumption HE/KC, g/kWh, (50%)	205	199	212	207,2
(75%)	195	191	200	199
(100%)	191	191	197	197
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.

VOLVO PENTA

D13 MG

Technical description

Complete Genset
- High system efficiency as a result of system optimization of the complete Genset
- All used components of highest quality from well reputed suppliers
- Reinforced set 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 and cylinder head made of cast iron
- One piece cylinder head
- Replaceable wet cylinder liners and valve seats/guides
- 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)
- Senders for oil pressure (after filter), oil temp, oil pressure, oil level, fuel pressure, freshwater pressure, exhaust temp, crankcase pressure, speed crank and cam, boost pressure/temp, seawater pressure (not KC or RC cool.), coolant level, coolant temp
- Exhaust temperature indication

Lubrication system
- Freshwater-cooled oil cooler integrated in cylinder block
- Twin full flow oil filter of spin-on type and single by-pass filter

Fuel system
- Electronic Unit Injectors
- Gear-driven fuel pump, driven by timing gear
- Electronically controlled injection timing
- 5-hole high pressure injector nozzles
- Twin engine-mounted spin-on fine fuel filters with change over valve

Turbocharger
- Dry twin entry turbocharger

Heat Exchanger cooled system (HE)
- For seawater- and central-cooled Gensets
- Engine-mounted plate heat exchanger with expansion tank
- Belt-driven centrifugal freshwater pump
- Belt-driven rubber impeller raw water pump

Radiator cooled system (RC)
- For aircooled Gensets
- Polygroove belt-driven radiator fan
- Belt-driven centrifugal cooling water pump
- Air to air CAC (Charge Air Cooler)

Keel cooled system (KC)
- 2-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
- 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
Two options for control systems

2. MCC (Marine Commercial Control), an open system that is type-approved. Incl. separate safety shutdown system
3. Open CAN Interface, engine delivered without control system. Different options with or without shut down senders and switches.

Optional equipment

Engine
- Twin fuel pre-filters/water separator with change over valve
- Flexible exhaust compensator
- Cooling water connection bellows
- Electrical and air starting systems available individually or in parallel.
- Raw water pressure indication (only in combination with raw water pump)
- Engine heater 2000W
- Visco fan (only for RC gensets)

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

Exhaust aftertreatment system
- SCR (Selective Catalytic Reduction)
- Aqueous UREA solution 32% or 40%
- Complete system – developed, certified, and serviced by one company
- Fully integrated capabilities
- Prop-to-helm system (IPS)
- SCR unit reduces noice by up to 35 dBA
- Wide range of installation options available

Miscellaneous
- Dry exhaust silencer with or without spark arrestor
- 110A alternator with integrated charging sensor
- Basic toolkit
- Spare parts according to classification recommendations

Contact your local Volvo Penta dealer for further information.

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

The Genset illustrated may not be entirely identical to production standard Gensets.

Technical Data HE Genset

Power output at 1500 rpm 50Hz/400V

Engine / Generator	kWm	kWe	kVA
D13 MG / HCM434F-1	300	248	310
D13 MG / HCM534C-1	300	284	355
D13 MG / HCM534D-1	360	332	415

Power output at 1800 rpm 60Hz/440V

Engine / Generator	kWm	kWe	kVA
D13 MG / HCM434F-1	360	300	375
D13 MG / HCM534C-1	360	341	426
D13 MG / HCM534D-1	400	380	475

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.

Weight, kg

D13 MG / HCM434F-1 3070
D13 MG / HCM534C-1 3175
D13 MG / HCM534D-1 3305

Dimensions L x W x H_1/H_2 (mm), not for installation

D13 MG / HCM434F-1 ..... 2739 x 1174 x 1814/1814
D13 MG / HCM534C-1 ..... 2817 x 1174 x 1814/1814
D13 MG / HCM534D-1 ..... 2817 x 1174 x 1814/1814

H_1 = Height including exhaust compensator
H_2 = Total genset height including control box

Technical Data RC Genset

Power output at 1500 rpm 50Hz/400V

Engine / Generator	kWm	kWe	kVA
D13 MG / HCM434F-1	289	248	310
D13 MG / HCM534C-1	289	275	344
D13 MG / HCM534D-1	349	332	415

Power output at 1800 rpm 60Hz/440V

Engine / Generator	kWm	kWe	kVA
D13 MG / HCM434F-1	341	300	375
D13 MG / HCM534C-1	341	322	402
D13 MG / HCM534D-1	381	360	450

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.

Weight, kg

D13 MG / HCM434F-1 3080
D13 MG / HCM534C-1 3185
D13 MG / HCM534D-1 3315

Dimensions L x W x H_1/H_2 (mm), not for installation

D13 MG / HCM434F-1 ..... 3147 x 1165 x 1811/1811
D13 MG / HCM534C-1 ..... 3219 x 1165 x 1811/1811
D13 MG / HCM534D-1 ..... 3219 x 1165 x 1811/1811

H_1 = Height including exhaust compensator
H_2 = Total genset height including expansion tank

Technical Data KC Genset

Power output at 1500 rpm 50Hz/400V

Engine / Generator	kWm	kWe	kVA
D13 MG / HCM434F-1	300	248	310
D13 MG / HCM534C-1	300	284	355
D13 MG / HCM534D-1	360	332	415

Power output at 1800 rpm 60Hz/440V

Engine	kWm	kWe	kVA
D13 MG / HCM434F-1	360	300	375
D13 MG / HCM534C-1	360	341	426
D13 MG / HCM534D-1	400	380	475

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.

Weight, kg

D13 MG / HCM434F-1 3030
D13 MG / HCM534C-1 3135
D13 MG / HCM534D-1 3265

Dimensions L x W x H_1/H_2 (mm), not for installation

D13 MG / HCM434F-1 ..... 2739 x 1174 x 1814/1814
D13 MG / HCM534C-1 ..... 2811 x 1174 x 1814/1814
D13 MG / HCM534D-1 ..... 2811 x 1174 x 1814/1814

H_1 = Height including exhaust compensator
H_2 = Total genset height including control box

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