

VOLVO PENTA MARINE GENSET

D13 MG

Emission compliance: IMO Tier III

310–430 kVA (248–344 kWe) at 1500 rpm 50Hz/400V, 375–479 kVA (300–383 kWe) at 1800 rpm 60Hz/440V



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EN SAVOIR PLUS



Engine designation	D13 MG
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
	(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.

Technical Data HE/KC Genset (Class F)

Power output at 1500 rpm 50Hz/400V

Engine / Generator	kWm	kWe	kVA
D13 MG / S4L1MF41	300	248	310
D13 MG / S5L1MC41	300	284	355
D13 MG / S5L1MD41	360	332	415

Power output at 1800 rpm 60Hz/440V

Engine / Generator	kWm	kWe	kVA
D13 MG / S4L1MF41	360	300	375
D13 MG / S5L1MC41	360	341	426
D13 MG / S5L1MD41	400	380	475

Technical Data HE/KC Genset (Class H)

Power output at 1500 rpm 50Hz/400V

Engine / Generator	kWm	kWe	kVA
D13 MG / S4L1MF41	300	272	340
D13 MG / S5L1MC41	360	286	358
D13 MG / S5L1MD41	360	344	430

Power output at 1800 rpm 60Hz/440V

Engine / Generator	kWm	kWe	kVA
D13 MG / S4L1MF41	360	324	405
D13 MG / S5L1MC41	360	343	429
D13 MG / S5L1MD41	400	383	479

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 HE/KC L x W x H₁/H₂ (mm), not for installation

D13 MG / S4L1MF41	2739 x 1174 x 1814/1814
D13 MG / S5L1MC41	2817 x 1174 x 1814/1814
D13 MG / S5L1MD41	2817 x 1174 x 1814/1814

H₁ = Height including exhaust compensator
 H₂ = Total genset height including control box

Weight HE, kg

D13 MG / S4L1MF41	3070
D13 MG / S5L1MC41	3175
D13 MG / S5L1MD41	3305

Weight KC, kg

D13 MG / S4L1MF41	3030
D13 MG / S5L1MC41	3135
D13 MG / S5L1MD41	3265

Technical Data RC Genset (Class F)

Power output at 1500 rpm 50Hz/400V

Engine / Generator	kWm	kWe	kVA
D13 MG / S4L1MF41	289	248	310
D13 MG / S5L1MC41	289	275	344
D13 MG / S5L1MD41	349	332	415

Power output at 1800 rpm 60Hz/440V

Engine / Generator	kWm	kWe	kVA
D13 MG / S4L1MF41	341	300	375
D13 MG / S5L1MC41	341	322	402
D13 MG / S5L1MD41	381	360	450

Technical Data RC Genset (Class H)

Power output at 1500 rpm 50Hz/400V

Engine / Generator	kWm	kWe	kVA
D13 MG / S4L1MF41	289	272	340
D13 MG / S5L1MC41	289	312	390
D13 MG / S5L1MD41	349	332	415

Power output at 1800 rpm 60Hz/440V

Engine / Generator	kWm	kWe	kVA
D13 MG / S4L1ME41	341	280	350
D13 MG / S4L1MF41	341	321	401
D13 MG / S5L1MC41	381	361	451

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 RC L x W x H₁/H₂ (mm), not for installation

D13 MG / S4L1ME41	3057 x 1165 x 1811/1811
D13 MG / S4L1MF41	3147 x 1165 x 1811/1811
D13 MG / S5L1MC41	3219 x 1165 x 1811/1811
D13 MG / S5L1MD41	3219 x 1165 x 1811/1811

H₁ = Height including exhaust compensator
 H₂ = Total genset height including expansion tank

Weight RC, kg

D13 MG / S4L1ME41	3010
D13 MG / S4L1MF41	3080
D13 MG / S5L1MC41	3185
D13 MG / S5L1MD41	3315

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, crank-case 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 and 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

Two options for control systems

1. MCC (Marine Commercial Control), an open system that is type-approved. Incl. separate safety shutdown system
2. 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 noise 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

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.



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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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