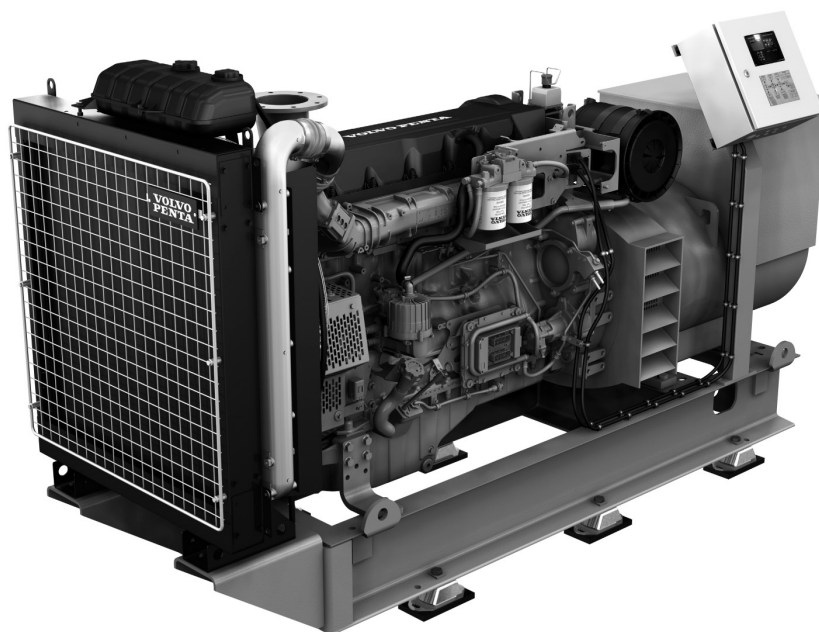


VOLVO PENTA MARINE GENSET

D13-MG (FE)

12.78 liter, in-line 6 cylinder

Emission compliance: IMO Tier II



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	18.5:1			
Engine speed	1500 rpm	1800 rpm	1500 rpm	1800 rpm
Crankshaft power HE/KC, kW	300	360	360	400
Crankshaft power RC, kW	289	341	349	381
Emission compliance	IMO Tier II	IMO Tier II	IMO Tier II	IMO Tier II
Spec. fuel consumption HE/KC, g/kWh				
at 50% load	203	207	197	203
at 75% load	193	200	190	197
at 100% load	194	200	191	199
Recommended fuel to conform to	ASTM-D975 1-D and 2-D, EN 590 or JIS KK 2204			

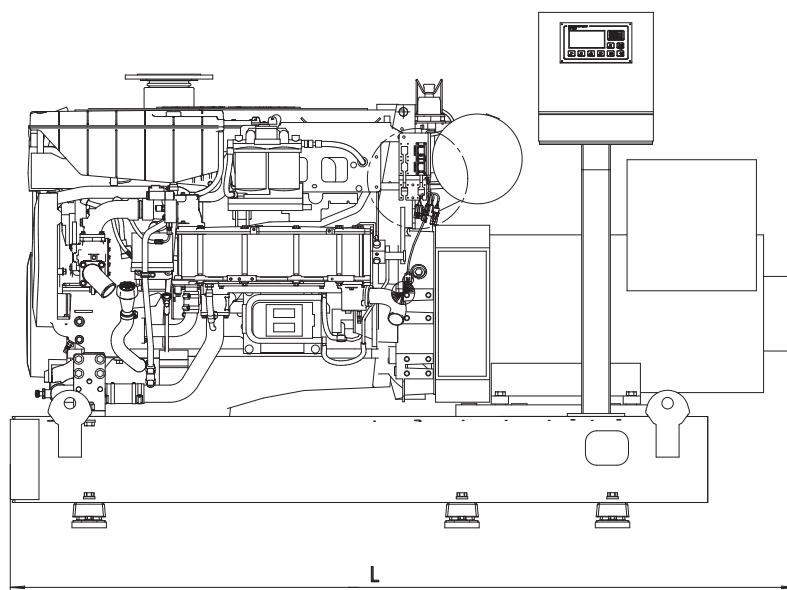
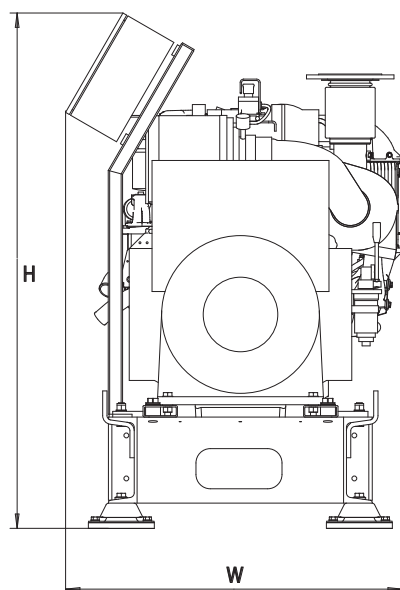
10% overload available acc. to class requirements. Fuel temperature 40°C (104°F). Technical data according to ISO 3046 Fuel Stop Power with a tolerance ±4%. Fuel with a lower calorific value of 42700 kJ/kg and density of 840 g/liter at 15°C (60°F). Merchant fuel may differ from this specification which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

¹⁾ Heat Exchanger cooled system (HE), ²⁾ Radiator Cooled system (RC), ³⁾ Keel Cooled system (KC)

D13-MG (FE)

12.78 liter, in-line 6 cylinder

Emission compliance: IMO Tier II



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	kWm	kWe	kVA
D13 MG / S4L1MF41	360	300	375
D13 MG / S5L1MC41	360	341	426
D13 MG / S5L1MD41	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.

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	300	286	358
D13 MG / S5L1MD41	360	344	430

Power output at 1800 rpm 60Hz/440V

Engine	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 1799/1799

D13 MG / S5L1MC41.....2817 x 1174 x 1799/1799

D13 MG / S5L1MD412817 x 1174 x 1799/1799

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

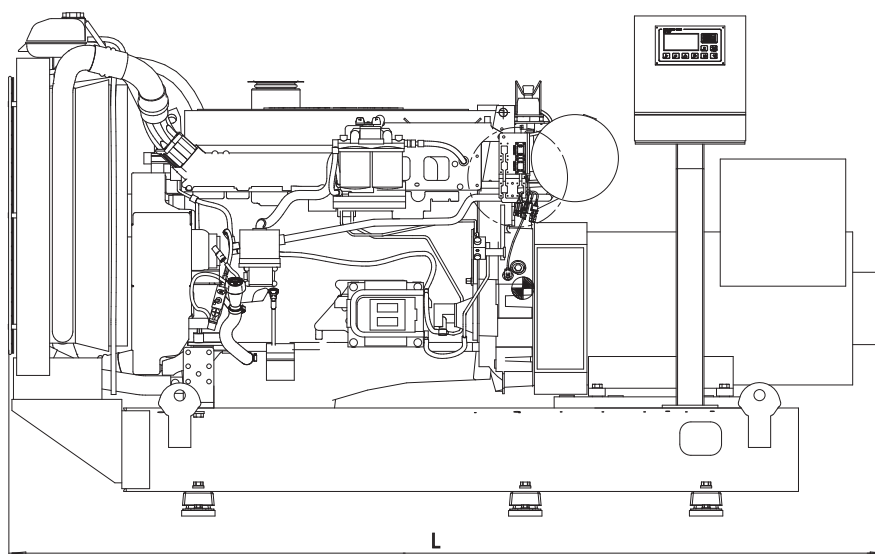
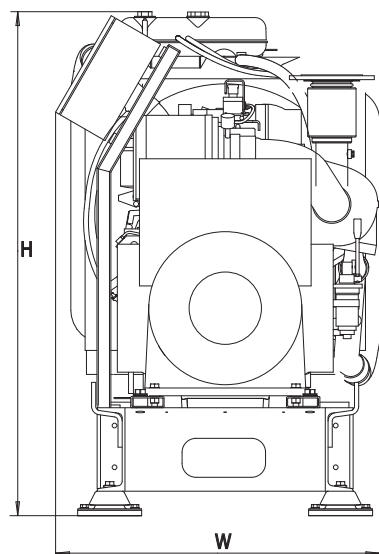
D13 MG / S5L1MC41.....3135

D13 MG / S5L1MD413265

D13-MG (FE)

12.78 liter, in-line 6 cylinder

Emission compliance: IMO Tier II



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

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 1813/1813
D13 MG / S4L1MF41.....	3147 x 1165 x 1813/1813
D13 MG / S5L1MC41.....	3219 x 1165 x 1813/1813
D13 MG / S5L1MD41	3219 x 1165 x 1813/1813

Weight RC, kg

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

H₁ = Height including exhaust compensator

H₂ = Total genset height including expansion tank

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	341	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.

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12.78 liter, in-line 6 cylinder

Emission compliance: IMO Tier II

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

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

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)

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

- MCC a flexible and expandable control and monitoring system for classified installations. Incl. separate safety shutdown system
- Meets classification requirements of separate shutdown and monitoring system

- Easy to interface with leading suppliers of ship control systems
- Possibility to connect relays for remote control functions (potential free contacts)
- Classifiable by all major classification societies

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

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 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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