



# 912. The marine engine.



24-78 kW at 1500-2300 min<sup>-1</sup>



## These are the characteristics of the 912:

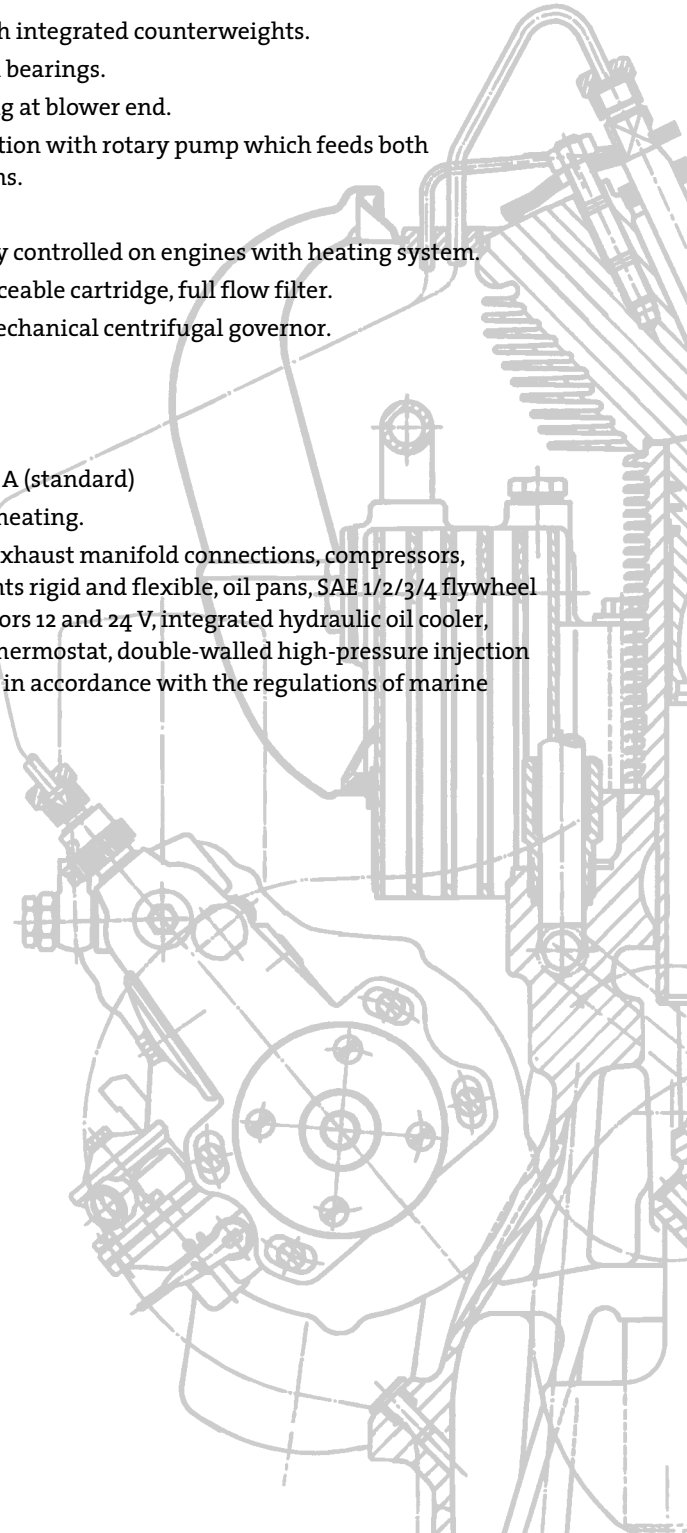
- Air-cooled 3, 4, 5 and 6 cylinder naturally aspirated in-line engines.
- Unit construction system with single cylinder arrangement and maximum parts commonality.
- Advanced injection and combustion systems.
- Electronic governor (option).
- Compact power unit with low weight.
- Only a few servicing points.
- Tried and tested worldwide: more than 2.7 million engines in operation.

## Your benefits:

- ▶ Exemplarily low fuel and oil consumption as well as long maintenance intervals and ease of service save operating costs.
- ▶ Low noise radiation. This eliminates the need for costly noise attenuation measures.
- ▶ Easy and cost-effective installation due to minimum weight and small space requirement.
- ▶ Excellent smooth-running characteristics thanks to low engine vibrations.
- ▶ Incomparably low exhaust emissions, current exhaust emission regulations are easily fulfilled.

## ► Engine description

Type of cooling:	Air-cooled with integrated axial-flow blower.
Crankcase:	Grey cast iron.
Cylinder head:	Aluminium single cylinder heads, protection against seawater corrosion (optional).
Valve arrangement / timing:	Overhead valves in the cylinder head, one inlet and one exhaust valve per cylinder, actuated from gear driven camshaft via tappets, pushrods and rocker arms.
Piston:	Three-ring piston: 2 compression rings, 1 oil scraper ring.
Piston cooling:	Oil cooled with spray nozzles.
Crankshaft:	Crankshaft of nodular iron with integrated counterweights.
Crankshaft and big-end bearings:	Ready-to-install bi-metal plain bearings.
Camshaft:	Steel, seated in bi-metal bearing at blower end.
Lubrication system:	Forced-feed circulation lubrication with rotary pump which feeds both lubricating and heating systems.
Engine oil cooler:	Integrated aluminium cooler.
Oil cooler thermostat:	Oil cooler flow thermostatically controlled on engines with heating system.
Lubricating oil filter:	Paper-type microfilter as replaceable cartridge, full flow filter.
Injection pump / governor:	In-line injection pump with mechanical centrifugal governor.
Injection nozzle:	Five-hole nozzle.
Fuel filter:	Replaceable cartridge.
Starter motor:	12 V, 2.7 kW (standard)
Alternator:	Three-phase alternator, 14 V, 55 A (standard)
Heating system:	Optional connection for cabin heating.
Options:	Intake manifold connections, exhaust manifold connections, compressors, hydraulic pumps, engine mounts rigid and flexible, oil pans, SAE 1/2/3/4 flywheel housings, three-phase alternators 12 and 24 V, integrated hydraulic oil cooler, blower controlled by exhaust thermostat, double-walled high-pressure injection lines, classification acceptance in accordance with the regulations of marine classification societies.



## ► Technical data

Engine type		F 3L 912	F 4L 912	F 5L 912	F 6L 912
Model		in-line	in-line	in-line	in-line
Number of cylinders		3	4	5	6
Bore/stroke	mm	100/120	100/120	100/120	100/120
Displacement	l	2.827	3.770	4.680	5.616
<b>Power ratings for marine propulsion units</b>					
acc. to power category A <sup>1)</sup>					
at 1500 min <sup>-1</sup>	kW (HP)	24 (33)	32 (44)	40 (54)	48 (65)
at 1800 min <sup>-1</sup>	kW (HP)	28 (38)	38 (52)	48 (65)	57 (78)
at 2150 min <sup>-1</sup>	kW (HP)	32 (44)	44 (60)	55 (75)	66 (90)
acc. to power category B <sup>2)</sup>					
at 2300 min <sup>-1</sup>	kW (HP)	38 (52)	51 (69)	65 (88)	78 (106)
<b>Power ratings for on-board generating sets</b>					
Continuous power <sup>3)</sup>					
at 1500 min <sup>-1</sup>	kW (HP)	28 (37)	36 (49)	46 (63)	55 (75)
at 1800 min <sup>-1</sup>	kW (HP)	32 (43)	43 (58)	55 (75)	66 (90)
Specific fuel consumption <sup>4)</sup>					
at 1500 min <sup>-1</sup>	g/kWh (g/HPh)	213 (157)	213 (157)	213 (157)	213 (157)
at 1800 min <sup>-1</sup>	g/kWh (g/HPh)	218 (160)	218 (160)	218 (160)	218 (160)
at 2150 min <sup>-1</sup>	g/kWh (g/HPh)	227 (167)	227 (167)	227 (167)	227 (167)
Weight	kg	270	300	380	410
IMO NO <sub>x</sub> limit values <sup>5)</sup>		fulfilled	fulfilled	fulfilled	fulfilled
Fulfills classification regulations <sup>6)</sup> acc. to:		GL+NKK*	GL+NKK	GL+NKK	GL+NKK

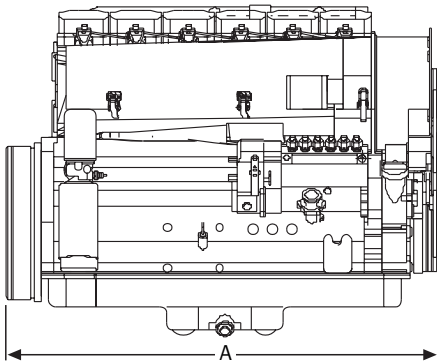
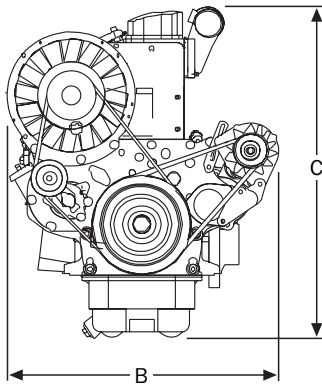
- 1) Continuous net brake fuel stop power, utilization above 80%, SCFN to ISO 3046/7.
- 2) Continuous fuel stop power, utilization max. 70%, SFN to ISO 3046/7.
- 3) Overloadable by 10% for 60 min. within a period of 12 hours (PRP power).
- 4) At optimal operating point. Refers to power category A.
- 5) NO<sub>x</sub> limit values to IMO Technical Code MP/Conf. 3/35. Planned implementation 01.01.2000
- 6) Other marine classifications on request.

Power declarations based on the following ambient conditions:  
25i C intake air temperature, 25i C coolant temperature, barometric pressure 1000 mbar.

\* GL = Germanischer Lloyd  
NKK = Nippon Kajii Kyokai

The values given in this data sheet are for information only and not binding.  
The data provided in the offer is decisive.

## ► Dimensions



Engine Type		A	B	C
F 3L 912	mm	589	679	796
F 4L 912	mm	719	679	796
F 5L 912	mm	866	679	833
F 6L 912	mm	996	679	806



Knowing it's DEUTZ.

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