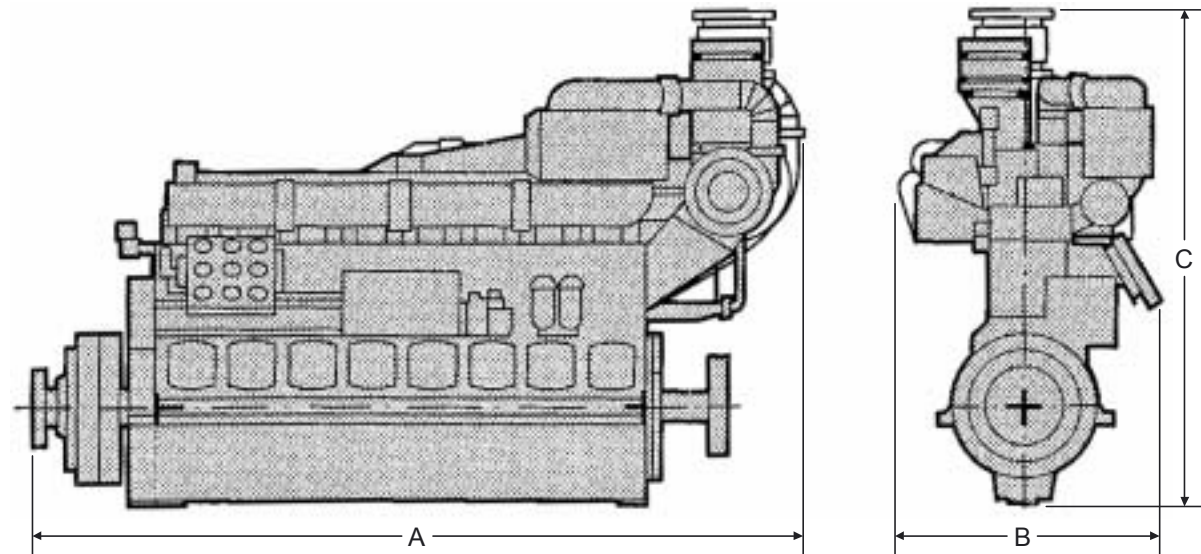


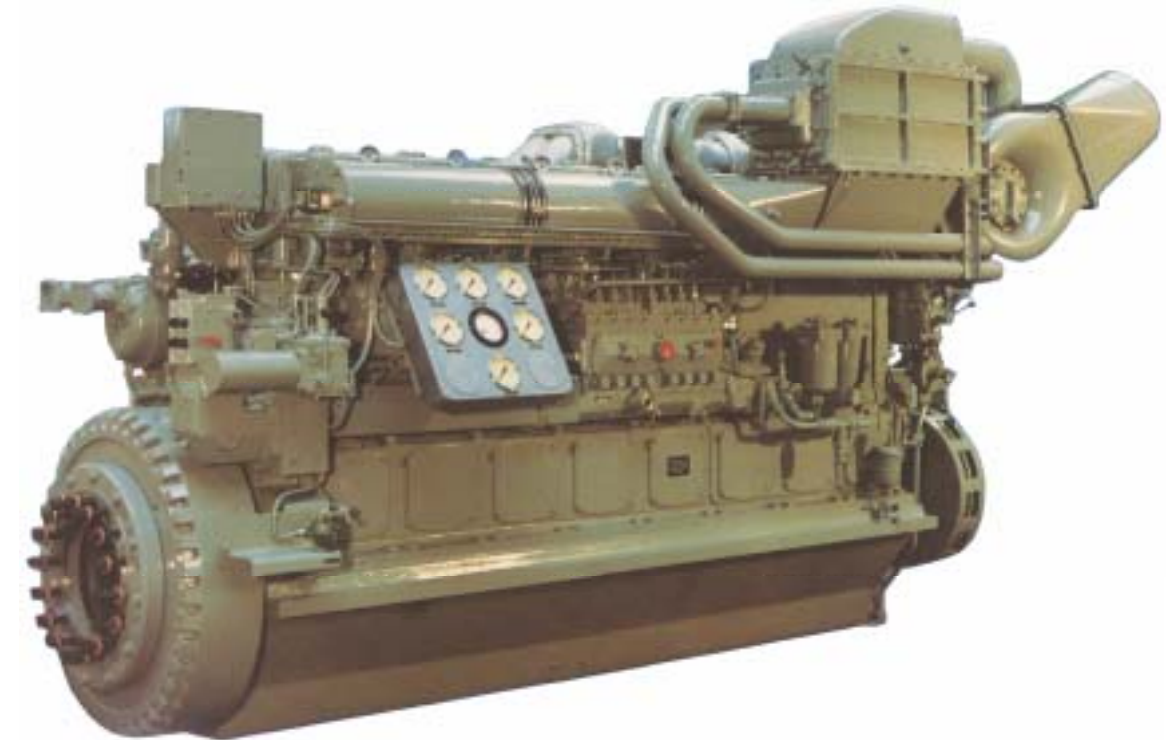
➤ Dimensions



Engine type		A	B	C
BA6M528	mm	3234	1240	2342
BA8M528	mm	4023	1362	2483
BA12M528	mm	4396	1680	2117
BA16M528	mm	4041	1720	2640

Engine type		BA6M528	BA8M528	BA12M528	BA16M528
Weight (with radiator, without flywheel)	t	6.2 – 6.5	8.6	11.8	16.3

# Total Service



## WÄRTSILÄ DEUTZ marine engines

### Characteristics

- Turbocharged and charge-air cooled 6 and 8 cylinder in-line engines and 12 and 16 cylinder V-engines.
- Depending on rated power and type of fuel provided, exhaust valves are fitted with rotators and inlet valves with special seat lubrication.
- All models are uni-directional units for either clockwise or counter-clockwise rotation.

### Benefits

- Designed for operation on MDO or HFO.
- Extremely easy to maintain and service. Large access doors.
- Can be equipped with remote control and for partially unattended operation.
- The use of nodular cast iron ensures maximum component strength and hence the compactness.

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## ➤ Engine description

<b>Crankcase</b>	In-line engines: The crankcase is made of nodular cast iron and secured to the bedplate by sturdy studs. The crankshaft is carried in the bedplate. V-engines with 48° angle: single piece crankcase with the main bearing caps bolted to the crankcase in horizontal and vertical direction.
<b>Crankshaft</b>	The crankshaft is made from heat treated steel and equipped with counterweights. The hardened shaft journals and crankpins are lubricated through passages in the shaft. The crankshaft has a forged flange for mounting the flywheel.
<b>Cylinder liner</b>	The cylinder liner is made of centrifugally cast iron and is supported on the crankcase by a flange.
<b>Connecting rod</b>	The big end of the drop forged connecting rod is split straight. V-engines have two rods acting in parallel on one crankpin.
<b>Main, big end and small end bush bearings</b>	The bearings are of the lead bronze type with a steel back and provided with a thin running-in layer. A continuous supply of lube oil to the main and big end bearings is ensured through passages in the crankshaft. The oil supply to the small end bush is either by an oil channel in the connecting rod or by a cooling nozzle.
<b>Piston</b>	The piston is made in one piece of light alloy steel. The piston is provided with three compression rings and one oil control ring. The pistons of medium- and high-rated engine models are cooled by oil supplied by a cooling nozzle.
<b>Cylinder head</b>	The cylinder head is made of cast iron and equipped with one inlet and exhaust valve, a pneumatic starting valve, an indicator valve and a centrally located injector. The cylinder head is provided with replaceable inlet and exhaust valve inserts and is mounted on the crankcase or the liner and secured by four studs.
<b>Camshaft</b>	The cams and bearing points of the camshaft are hardened. The bearing bushes are installed in the crankcase. Hardened gears, which are located at the flywheel end, drive the camshaft.
<b>Injection pump</b>	In-line engines have a fuel pump mounted at the operating side of the engine. V-engines have one fuel pump mounted at each side of the engine.
<b>Governor</b>	A hydraulic Woodward governor driven by the timing gear train controls the engine speed.
<b>Lubricating oil system</b>	The engine driven oil pump draws lubricating oil from the engine sump and delivers it through oil cooler and filter into the main oil gallery. All bearings are connected to the main oil circuit.
<b>Starting system</b>	The cylinder head is provided with starting valves.
<b>Cooling water system</b>	Fresh cooling water is circulated through the engine-driven centrifugal pump. Circulating over the mounted lube oil and charge air cooler.
<b>Exhaust gas system</b>	Piping is made of heat resistant materials with heat shielding. Bellow-type expansion joints are fitted between the various cylinders.
<b>Turbocharging</b>	In-line engines and 12-cylinder V-engine: one ABB turbocharger. 16-cylinder V-engine: two ABB turbochargers. The turbochargers have their own oil supply.
<b>Classification</b>	By all established classification societies.

## ➤ Technical Data

Engine type		BA6M528	BA8M528	BA12M528	BA16M528
Model		in-line	in-line	48° V-engine	48° V-engine
Number of cylinders		6	8	12	16
Bore / stroke	mm	220 / 280	220 / 280	220 / 280	220 / 280
Displacement	l	63.9	85.2	127.8	170.4
Compression ratio		12	12	12	12
Direction of rotation		clockwise or counter-clockwise			

### Marine propulsion with 'A' rating to DIN 6270

Speed	min <sup>-1</sup>	720 - 1000	720 - 1000	720 - 1000	720 - 1000
Mean piston speed	m/s	6.7 - 9.3	6.7 - 9.3	6.7 - 9.3	6.7 - 9.3
Heavy duty*	kW	537 - 699	713 - 930	1070 - 1397	1427 - 1865
Normal duty*	kW	563 - 735	750 - 982	1125 - 1471	1500 - 1964
BMEP	bar	14.9 - 13.8	14.9 - 13.8	14.7 - 13.8	14.7 - 13.8
Specific fuel consumption <sup>1</sup>	g/kWh	215 - 217	211 - 215	212 - 213	212 - 213
Lubricating oil consumption	kg/h	1.0 - 1.5	1.5 - 2.0	2.4 - 3.0	3.6 - 4.1
Light duty*	kW	592 - 772	787 - 1030	1184 - 1545	1578 - 2059

### Marine auxiliary service (power generation on board)

Speed	min <sup>-1</sup>	720 - 1000	720 - 1000	720 - 1000	720 - 1000
'A' rating to DIN 6270 (Continuous)*	kW	596 - 780	794 - 1041	1192 - 1559	1589 - 2081

### Operation on heavy fuel oil

Speed	min <sup>-1</sup>	720 - 750	720 - 750	720 - 750	720 - 750
'A' rating with heavy fuel oil of max. 600 RIS	kW	563 - 588	750 - 780	1125 - 1173	1500 - 1563
Minimum idling speed	min <sup>-1</sup>	200 - 250	200 - 250	200 - 250	200 - 250

1) At rated power point. According to ISO 3046-1, without engine-driven pumps.

Reference conditions deviating from ISO 3046-1:  
 Altitude: 300 m above sea level  
 Intake temperature: 45 °C  
 Water temperature at charge air cooler inlet: 32 °C  
 All ratings marked \* refer to use of gas oil and MDF distillate

An optimum layout for the engine for the particular application can be ensured only by informing this company accordingly.  
 The data given are subject to change without notice.