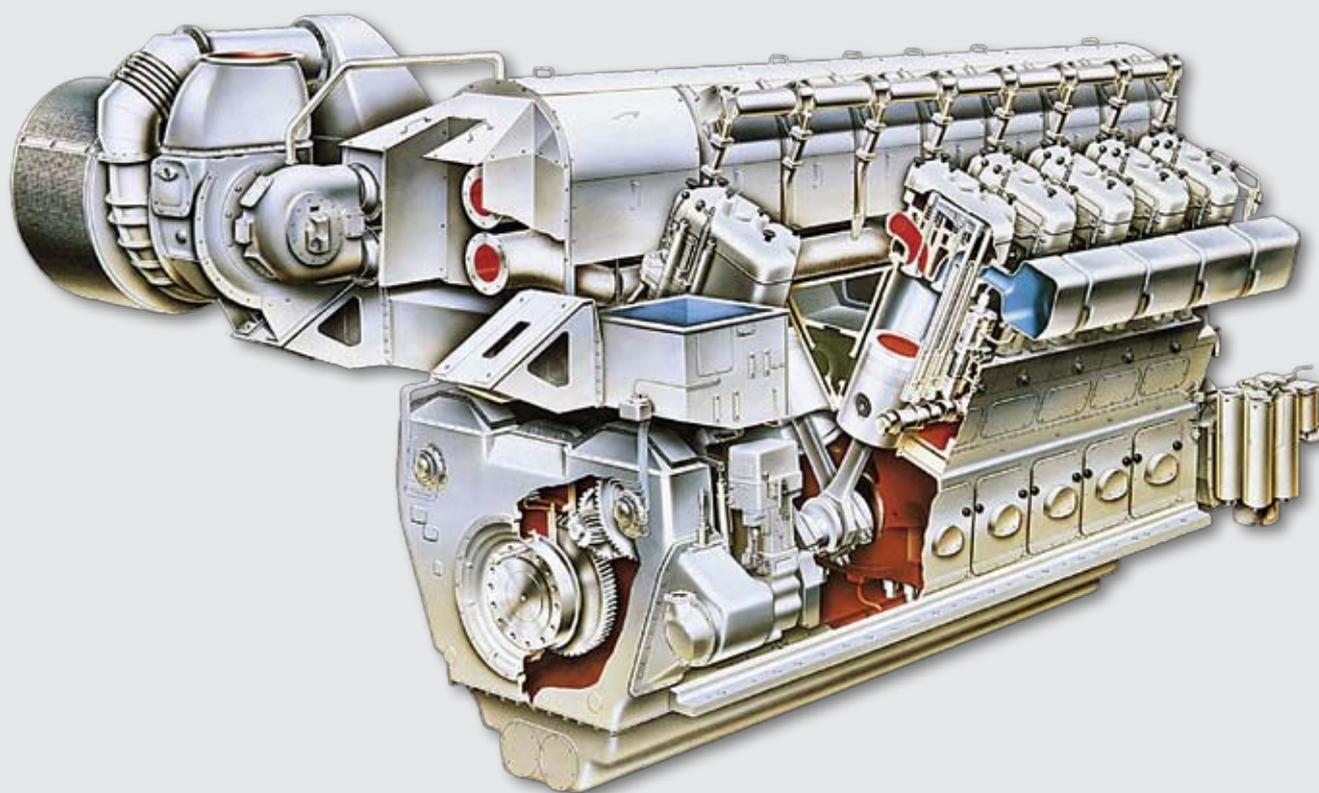


640

2020-7060 kW at 500-650 min⁻¹

TOTAL SERVICE



WÄRTSILÄ DEUTZ MARINE ENGINES

CHARACTERISTICS

- Water-cooled engine.
- Four-valve technology.
- Each cylinder has a single injection pump.
- Turbocharger(s).

BENEFITS

- Easy maintenance.
- Operating cost savings due to an optimized combustion process.



ENGINE DESCRIPTION

Crankcase	The crankcase is made of nodular cast iron. The engine has a dry sump.
Crankshaft	The crankshaft is fitted in underslung arrangement.
Cylinder liner	The thick-walled cylinder liner is made of centrifugally cast iron.
Connecting rod	The obliquely split connecting rod is drop forged. The bearing cap is hydraulically tightened.
Piston	The piston skirt is made from forged aluminium. The piston crown is made of heat-treated steel. The oil-cooled piston has 5 piston rings.
Cylinder head	The cylinder head is made of nodular cast iron. It has two inlet valves, two exhaust valves, four rotators, one starting air valve and one injection valve.
Camshaft	The camshaft is of the multi-piece type, each piece controlling one cylinder. The cams and the bearing mating faces of the camshaft are surface hardened.
Injection system	Each cylinder has a single injection pump. Engines running on heavy fuel are provided with a separate injection cooling system.
Governor	The engine has a hydraulic governor.
Lubricating oil system	Lubrication by means of a gear-driven pump, self-cleaning (back-scouring) filter and freestanding oil separators in the main circuit. The lubricating oil is cooled in a tubular heat exchanger.
Starting system	The engine is started by compressed air via starting valves fitted in the cylinder head.
Cooling water system	1) The cooling water of the engine flows through a tubular heat exchanger or a radiator. 2) Engines running on MDF blend or HFO use a separate injector cooling circuit.
Turbocharging	The engine has a turbocharger(s) and a charge air cooler(s).
Classification	By all established classification societies.
EIAPP	The engine can be provided with an EIAPP certificate if it complies with the NO _x Technical Code according IMO regulations MARPOL 73/78 - Annex VI.

TECHNICAL DATA

TECHNICAL DATA					
Engine type		BV6M640	(S)BV8M640	(S)BV12M640	(S)BV16M640
Model		in-line	in-line	V	V
Number of cylinders		6	8	12	16
Bore / stroke	mm	370 / 400	370 / 400	370 / 400	370 / 400
Displacement	l	258.1	344.1	516.1	688.1
Compression ratio		12	12	12	12
Direction of rotation		Clockwise or counter-clockwise			
Engine speed	min ⁻¹	500 - 650	500 - 650	500 - 650	500 - 650
Mean piston speed	m/s	6.7 - 8.7	6.7 - 8.7	6.7 - 8.7	6.7 - 8.7
Idling speed	min ⁻¹	150	150	150	150
Engines for ship propulsion					
Continuous net brake fuel stop power ¹⁾	kW	2020 - 2650	2695 - 3530	4040 - 5290	5390 - 7060
Brake mean effective pressure	bar	18.8 - 19.0	18.8 - 18.9	18.8 - 18.9	18.8 - 18.9
Specific fuel consumption ²⁾	g/kWh	188 - 194	185 - 191	183 - 189	182 - 188
Specific lubricating oil consumption	g/kWh	1.2	1.2	1.2	1.2

1) Power according to DIN ISO 3046, part 1/04 91.

Reference conditions:

Air pressure: 1000 mbar.

Ambient temperature: 45 °C.

Charge air coolant temperature: 46 °C.

2) For diesel fuel, net calorific value 42,700 kJ/kg, without engine-driven oil and cooling water pumps.

Remark:

Letter 'B' refers to a turbocharging principle version.

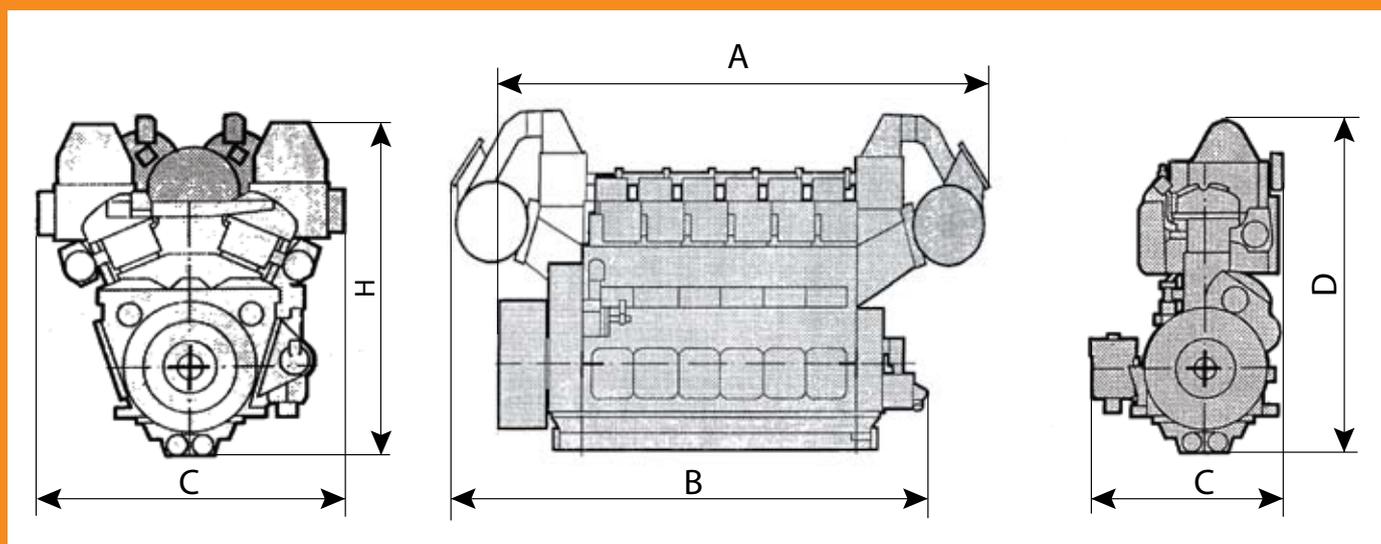
Letter 'V' refers to a four-stroke version.

Letter 'M' refers to a water-cooled version.

Letter 'S' refers to a ship version.



DIMENSIONS



PRINCIPAL ENGINE DIMENSIONS (mm) AND WEIGHTS (t)

Engine type	A	B	C	D	Weight (without flywheel)
BV6M640	6480	6348	2249	4075	29
(S)BV8M640	7769	7664	2249	4075	38
(S)BV12M640	6698	6640	3524	3844	48
(S)BV16M640	8040	7982	3524	4068	62

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