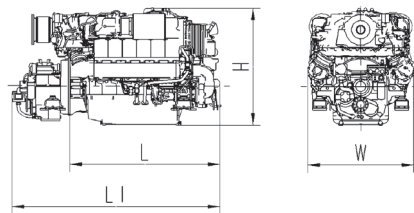
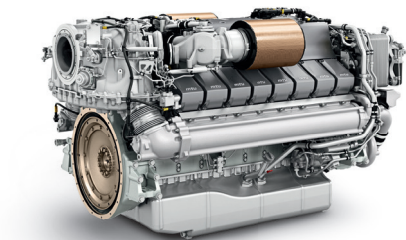




Marine

DIESEL ENGINES 10V/12V/16V 2000 M96

for fast vessels with low load factors (1DS)



Optional equipment and finishing shown. Standard may vary.

Engine	Dimensions (L x W x H) mm (in)	Mass, dry kg (lbs)
10V	1604 x 1165 x 1347 (63.1 x 45.9 x 53.0)	2305 (5082)
12V ¹⁾	1812 x 1293 x 1414 (71.3 x 50.9 x 55.7)	2830 (6239)
12V ²⁾	1847 x 1293 x 1414 (72.7 x 50.9 x 55.7)	2892 (6376)
16V	2258 x 1293 x 1453 (88.9 x 50.9 x 57.2)	3450 (7606)
Engine with gearbox type ³⁾	Dimensions (L ₁ x W x H ₁) mm (in)	Mass, dry kg (lbs)
10V - ZF 2050	2159 x 1165 x 1347 (85.0 x 45.9 x 53.0)	2747 (6056)
12V - ZF 2060 ¹⁾	2516 x 1293 x 1414 (99.1 x 50.9 x 55.7)	3266 (7200)
12V - ZF 2060 ²⁾	2551 x 1293 x 1414 (100.4 x 50.9 x 55.7)	3316 (7311)
16V - ZF 3060	3078 x 1293 x 1453 (121.2 x 50.9 x 57.2)	4020 (8863)

1) 12V SAE 1 - fly wheel housing - standard

2) 12V SAE 0 - fly wheel housing - option

3) gear ratio on request

Typical applications: fast yachts, fast patrolboats, police craft and fire-fighting vessels

Engine type		10V 2000 M96	12V 2000 M96	16V 2000 M96
Rated power ICFN	kW	1120	1342	1790
	(bhp)	(1502)	(1800)	(2400)
Speed	rpm	2450	2450	2450
No. of cylinders		10	12	16
Bore/stroke	mm (in)	135/156 (5.3/6.1)	135/156 (5.3/6.1)	135/156 (5.3/6.1)
Displacement, total	l (cu in)	22.3 (1362)	26.8 (1635)	35.7 (2179)
Flywheel housing		SAE 1	SAE 1/SAE 0	SAE 0
Gearbox type, standard		ZF 2050	ZF 2060	ZF 3060
Optimization of exhaust emissions *		IMO II/EPA 3 recreational/ RCD 2013/53/EU	IMO II/EPA 3 recreational/ RCD 2013/53/EU	IMO II/EPA 3 recreational/ RCD 2013/53/EU
Solas compliance		Yes	Yes	Yes

* IMO - International Maritime Organisation, EPA - US Marine Directive 40 CFR 94, EU RCD - EU Marine Directive for recreational crafts

Standard equipment	
Starting system	Electric starter 24 V
Auxiliary PTO	Alternator, 80A, 28V, 2 pole
Oil system	Gear driven lube oil pump, lube-oil duplex filter doublestage, lube-oil heat exchanger, handpump for oil extraction
Fuel system	Fuel feed pump, fuel hand pump, fuel pre-filter, fuel main filter, on-engine fuel cooler, HP fuel pump, jacketed HP fuel lines, injection nozzles (Common rail system) flame proof hose lines, leak-off collector
Cooling system	Coolant-to-raw water plate core heat exchanger, self priming centrifugal raw water pump, gear driven coolant circulation pump
Combustion air system	Sequential turbocharging with 3 exhaust-gas turbochargers, on-engine intake air filters
Exhaust system	Triple-walled, liquid-cooled, on-engine exhaust manifolds, single centrally located exhaust outlet, 1 exhaust bellows horizontal discharge
Mounting system	Resilient mounts at free end
Engine management system	Engine control and monitoring system (ADEC), engine interface module (EIM)

Optional equipment	
Starting system	Air starter*
Auxiliary PTO	Alternator, 140A or 190A, 28V, 2 pole, bilgepump, on-engine PTOs
Oil system	Oil replenishment system, diverter valve for duplex filter
Fuel system	Duplex fuel pre-filter, diverter valve for fuel filter, monitoring fuel leakage
Cooling system	Coolant preheating system freestanding or engine mounted, integr. seawater gearbox piping
Exhaust system	90° exhaust bellows discharge rotatable
Mounting system	Resilient mounts at driving end
Engine management system	In compliance with classification society regulations
Monitoring/control system	BlueVision NewGeneration
Power transmission	Torsionally resilient coupling
Gearbox options	Reverse reduction gearbox, el. actuated, gearbox mounts, trolling mode for dead-slow propulsion, free auxiliary PTO, hydraulic pump drives

*only applies to 12V and 16V cylinder configurations
> Power definition according ISO 3046
> Intake air temperature 25°C/Sea water temperature 25°C
> Intake air depression 15 mbar/Exhaust back pressure 30 mbar
> Barometric pressure 1000 mbar
> Power reduction at 45°C/32°C: none
Specifications are subject to change without notice. All dimensions are approximate, for complete information refer to installation drawing. For further information consult your distributor/dealer. Fuel consumptions available on request. Please contact your dealer.