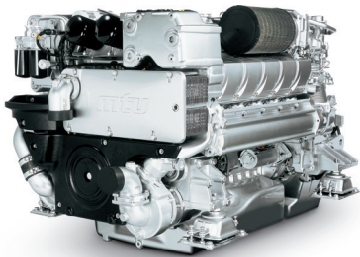




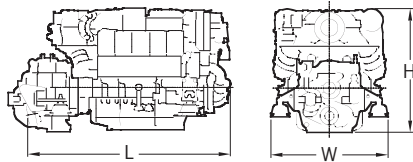
Marine

DIESEL ENGINES 12V/16V 2000 M92

for fast vessels with low load factors (1DS)



Engine with gearbox	Dimensions (L x W x H), mm (in)	Mass, dry kg (lbs)
12V/ZF 2060	2580 x 1295 x 1350 (101.6 x 51.0 x 53.1)	3270 (7209)
16V/ZF 3060	3105 x 1295 x 1390 (122.2 x 51.0 x 54.7)	4010 (8840)



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

Optional equipment and finishing shown. Standard may vary.

Engine type		12V 2000 M92	16V 2000 M92
Rated power ICFN	kW	1220	1630
	(bhp)	(1635)	(2185)
Speed	rpm	2450	2450
No. of cylinders		12	16
Bore/stroke	mm (in)	135/156 (5.3/6.1)	135/156 (5.3/6.1)
Displacement, total	l (cu in)	26.8 (1635)	35.7 (2179)
Flywheel housing		SAE 0	SAE 0
Gearbox type ²⁾		ZF 2060 A	ZF 3060 A
		i = 1.2 – 2.5	i = 1.3 – 3.0
Optimization of exhaust emissions ¹⁾		IMO II compl./EPA 2/EU IIIA ²⁾	IMO II compl./EPA 2/EU IIIA ²⁾

1) IMO - International Maritime Organisation
EPA - US Marine Directive 40 CFR 94
EU - Recreational crafts 94/25 EC

2) EU IIIA/RheinSchUO (CCNR) on request

Performance & fuel consumption ¹⁾			12V 2000 M92				16V 2000 M92			
Speed	rpm		2450	2200	2000	1200	2450	2200	2000	1200
Maximum power	kW		1220	1220	1160	600	1630	1630	1550	790
	bhp		1635	1635	1555	805	2185	2185	2080	1060
Power on propeller curve (n ³)	kW		1220	880	635	145	1630	1190	890	195
	bhp		1635	1180	850	195	2185	1595	1195	260
Fuel consumption on propeller curve ¹⁾	g/kWh		215	216	217	220	210	216	209	225
	l/hr		316.0	229.0	166.0	38.4	412.4	309.7	224.1	52.9
	gal/hr		83.5	65.0	43.7	10.2	109.0	81.8	59.2	14.0

1) Tolerance +5% per ISO 3046, Diesel fuel to DIN EN 590 with a min L.H.V. of 42800 kJ/kg (18390 BTU/lb)

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 with diverter valve, lube-oil heat exchanger, handpump for oil extraction
Fuel system	Fuel feed pump, fuel hand pump, fuel pre-filter, fuel main filter with diverter valve, on-engine fuel oil cooler, HP fuel pump, jacketed HP fuel lines, injection nozzles (CR system), flame proof hose lines, leak-off fuel tank level monitored
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 2 water-cooled 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 vertical discharge
Mounting system	Resilient mounts at free end
Engine management system	Engine control and monitoring system (ADEC)

Optional equipment	
Auxiliary PTO	Alternator, 140A, 28V, 2 pole, bilgepump, on-engine PTPs
Oil system	Centrifugal oil filter, oil replenishment system
Fuel system	Duplex fuel pre-filter
Cooling system	Coolant preheating system, integr. seawater gearbox piping
Exhaust system	1 exhaust bellows horizontal discharge
Mounting system	Resilient mounts at driving end
Engine management system	In compliance with Classification Society Regulations
Monitoring/control system	smartline, blueLine, bluevision, BlueVision NewGeneration, Callosum
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
Classification	ABS, BV, CCS, DNV, GL, KR, JG, LR, NK, RINA

Reference conditions:

- > 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 installations drawing. For further information consult your distributor/dealer. May feature options not fitted as standard to standard engine.