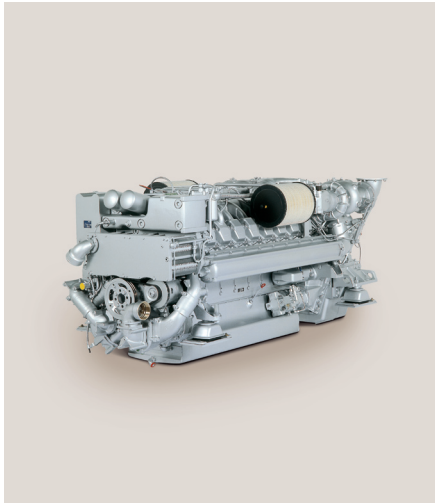


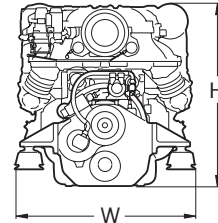
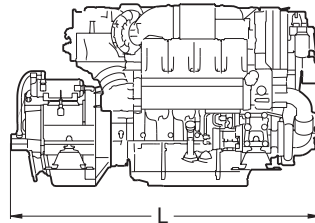
Diesel Engines 12V/16V 2000 M70

for Fast Vessels with High Load Factors (1B)



Dimensions and Masses

2000 M70 - with gearbox	Dimensions (LxWxH) mm (in)	Mass, dry kg (lbs)
12V/ZF 2050	2600x1890x1290 (102.4x74.4x50.8)	3480 (7672)
16V/ZF 4540	3310x1400x1290 (123.2x55.1x50.8)	4520 (9965)



Typical applications: Ferries, Monohulls, Hydrofoils, Catamarans, Surface Effect Ships and Displacement Yachts

Engine Model	12V 2000 M70	16V 2000 M70
Rated power ICFN kW (bhp)	788 (1055)	1050 (1410)
Speed rpm	2100	2100
No. of cylinders	12	16
Bore/stroke mm (in)	130/150 (5.1/5.9)	130/150 (5.1/5.9)
Displacement, total l (cu in)	23.9 (1458)	31.8 (1943)
Flywheel housing	SAE 1	SAE 0
Gearbox type	ZF 2050 i = 1.2 – 2.5	ZF 4540 i = 1.5 – 2.5
Optimization of exhaust emissions ¹⁾	IMO I	IMO I/EPA 2

1) IMO - International Maritime Organization (MARPOL)
EPA - US marine directive 40 CFR 94



Performance and Fuel Consumption ¹⁾		12V 2000 M70			16V 2000 M70		
Speed	rpm	2100	1800	1200	2100	1800	1200
Maximum power	kW	788	750	385	1050	1000	475
	bhp	1057	1006	516	1408	1341	637
Power on propeller curve ²⁾	kW	788	500	145	1050	670	200
	bhp	1057	671	194	1408	898	268
Fuel consumption	g/kWh	209	207	217	211	205	208
	on propeller curve ²⁾						
	l/h	198.4	124.7	38.0	267.0	165.5	50.1
	gal/h	52.4	33.0	10.0	70.5	43.7	13.2

¹⁾ Tolerance +5% per ISO 3046, Diesel fuel to DIN EN 590 with a min L.H.V. of 42800kJ/kg (18390 BTU/lb) ²⁾ 3.0 exponent

Standard Equipment	
Starting system	Electric starter 24 V
Auxiliary PTO	Alternator, 140A, 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, individual HP injection pumps, jacketed HP fuel lines, injection nozzles (PLN 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 set of combustion-air filters
Exhaust system	Triple-walled, liquid-cooled, on-engine exhaust manifolds, 2 exhaust bellows vertical discharge
Mounting system	Resilient mounts at free end
Engine management system	Engine control and monitoring system (MDEC)

Optional Equipment	
Auxiliary PTO	Bilgepump, on-engine PTOs
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	2 exhaust bellows horizontal discharge
Mounting System	Resilient mounts at driving end
Engine Management System	In compliance with Classification Society Regulations
Monitoring/Control System	smartline, blue line, blue vision , 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

> Power definition according ISO 3046

> Intake air depression 15 mbar/Exhaust back pressure 30 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 MTU distributor/dealer.

> Intake air temperature 25°C/Sea water temperature 25°C

> Barometric pressure 1000 mbar