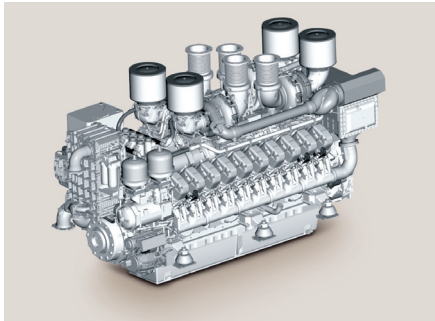


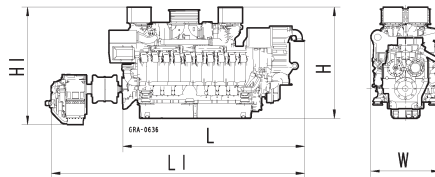
# Diesel Engines 20V 4000 M73/M73L

## for Fast Vessels with High Load Factors (1B)



### Dimensions and Masses

20V 4000 M73/M73L	Dimensions (LxWxH) mm (in)	Mass, dry kg (lbs)
	3930x1465x2440 (154.8x57.7x96.1)	12080 (26631)
20V 4000 - with Gearbox	Dimensions (L <sub>r</sub> xWxH <sub>r</sub> ) mm (in)	Mass, dry kg (lbs)
M73/ZF 9055	5535x1465x2610 (218.0x57.7x102.8)	13570 (29916)
M73L/ZF 23560 C	5535x1465x2610 (218.0x57.7x102.8)	14785 (32595)



Typical applications: Ferries, monohulls, hydrofoils, catamarans, surface effect ships and yachts

Engine Model	20V 4000 M73	20V 4000 M73L
Rated power ICFN      kW (bhp)	3200 (4290)	3600 (4830)
Speed                      rpm	1970	2050
No. of cylinders	20	20
Bore/stroke              mm (in)	170/190 (6.7/7.5)	170/190 (6.7/7.5)
Displacement, total    l (cu in)	86.2 (5260)	86.2 (5260)
Flywheel housing	SAE 00	SAE 00
Gearbox type <sup>2)</sup>	ZF 9055	ZF 23 560 C
Optimization of exhaust emissions <sup>1)</sup>	IMO II/EPA 2	IMO II/EPA 2

1) IMO - International Maritime Organization (MARPOL)

EPA - US marine directive 40 CFR 94

2) gearbox variants "Down Angle (A)" and "V-Drive" available on request



Fuel Consumption *		20V 4000 M73	20V 4000 M73L
at rated power	g/kWh	213	212
	l/h	821.2	919.5
	gal/h	217	242.9

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

Standard Equipment	
Starting system	24V electric starter, 2-pole
Oil system	Integral lube-oil pump; automatic oil filter (16/20V), centrifuge, lube oil-heat exchanger, pump for oil extraction, priming system
Fuel system	Fuel delivery pump, fuel duplex filter (switchable), Common Rail injection system with HP pump, pressure accumulator and electronic injection with cylinder cutout, jacketed HP fuel lines, flame-resistant hoses, leak-fuel tank with level monitoring, fuel conditioning system
Cooling system	MTU split-circuit cooling system, map-controlled coolant thermostats, raw water-cooled engine coolant-plate-core heat exchanger, self-priming raw water centrifugal pump, engine coolant circulating pump, raw water connection for gear oil cooling, flame-resistant hoses and rubber, bellows, coolant expansion tank (separate)
Combustion air system	Water-cooled charge-air pipework, coolant temperature controlled intercooler, sequential turbocharging, with 4 (20V) water-cooled turbochargers, seawater-repellent intake air filter on engine with integral intake air silencer
Exhaust system	Triple-walled, liquid-cooled, exhaust manifolds on engine, exhaust bellows, exhaust outlet from horizontal 30° upwards
Engine mounting	Resilient mounts
Power transmission	Torsionally-resilient couplings with offset compensation
Auxiliary PTO	Generator 120A, 28V, 2-pole
Engine management system	Engine control and monitoring system (ADEC), interface to gearbox controller, interface to remote control and monitoring system, local operating panel (LOP), fuel consumption display
Engine safety system	The scope of delivery for the engine fulfills SOLAS requirements for admissible surface temperature without additional insulation

Optional Equipment	
Starter	Air starter
Oil System	Oil level monitoring, automatic oil replenishment, main bearing and conrod bearing temperature monitoring
Cooling system	Engine coolant preheater
Auxiliary PTO	Auxiliary PTO free crankshaft end
Engine management	Extension as per classification society specifications
Monitoring and control system	MTU MCS Monitoring and Control Systems, RCS Remote Control Systems
Gearbox options	Various marine reduction-reversing gears, electrically actuated, rigid or resilient gearbox mounting, drive for hydraulic pump on drive or intermediate shaft, Trolling system, under tow oil pump, propeller shaft flange
Classification	ABS, BV, CCS, CR, DNV, GL, KR, LR, NK, RINA including necessary extensions to the scope of delivery

> 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