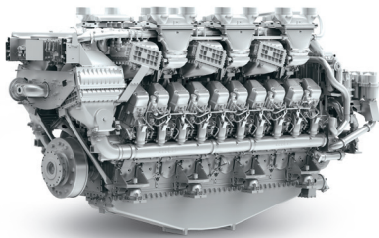




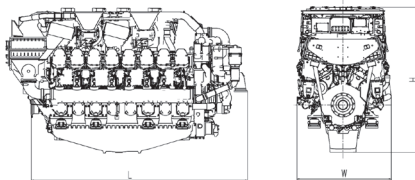
## Marine

# DIESEL ENGINES 16V 1163 M94

for fast vessels with low load factors (1DS)



Engine	Dimensions (L x W x H) mm (in)	Mass, dry kg (lbs)
M94	4547 x 1942 x 2925 (179 x 76.5 x 115.2)	20560 (45327)



Typical applications: e.g. frigates, corvettes, patrol boats, fast ferries and displacement yachts

Optional equipment and finishing shown. Standard may vary.

Engine type		16V 1163 M94
Rated power ICFN	kW	5920
	(bhp)	(7940)
Speed	rpm	1275 - 1325
No. of cylinders		16
Bore/stroke	mm (in)	230/280 (9.1/11.0)
Displacement	l (cu in)	186.1 (11357)
Optimization of exhaust emissions*		IMO II

\* IMO - International Maritime Organisation (MARPOL)

Fuel consumption <sup>2)</sup>		16V 1163 M94
at 100% power	g/kWh	211
	l/h (gal/hr)	1498 (395)
Optimum value	g/kWh	201

2) 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	Air-in cylinder starting system (max. operating pressure 40 bar)
Oil system	Double impeller oil circulation pumps, oil heat exchanger, centrifugal oil filter, oil change equipment, lube oil priming system
Fuel system	Mechanically driven fuel delivery pump, fuel duplex filter, Common-Rail injection system with high pressure pumps, high pressure accumulators and electrically operated injection valves, jacketed high pressure fuel lines, cylinder bank cut out system, leak-off fuel tank with level monitor, fuel prefilter with water separator, hand pump for fuel prefilter priming, electric fuel booster pump with non-return valve for starting aid
Cooling system	Coolant circulation pumps, coolant thermostats, raw water pump, non-self-priming, coolant preheating system, coolant expansion tank, raw water cooled plate-core heat exchanger
Combustion air system	On engine air system with suction from engine room, set of air filters with connection housing
Exhaust system	Two-stage MTU sequential turbocharging (speed/load-sensitive turbocharger cut-in/out) comprising several modular turbocharger groups each with 1 L.P. and 1 H.P. turbochargers and L.P. and H.P. intercoolers; electric./pneum. operated intake air and exhaust gas flow control flaps for sequential turbo charging, vertical exhaust connection with exhaust compensators
Mounting system	Resilient engine mounting
Power transmission	Torsionally resilient steel spring coupling, engine mounted, radial and axial shaft misalignment coupling
Engine management system	Engine control and monitoring system (ADEC), engine control unit (ECU), engine monitoring unit (EMU), engine interface module (EIM), sensors, plug connectors and wiring on engine
Monitoring/control system	Local monitoring/control for the propulsion plant(s), local operating panel (LOP) (with gearbox monitoring; with gearbox clutch control In/Out), MTU standard interface of local operating panel (LOP) (for gearbox monitoring and gearbox clutch control), shaft speed monitoring by local operating panel (LOP), MTU standard interface of local operating panel (LOP) (for shaft speed monitoring), electric pump control unit (EPC) (for lube oil and fuel)

Optional equipment	
Starting system	Compressed air tank, start pilot cold starting aid
Oil system	Automatic oil level check and replenishment system
Fuel system	Fuel oil treatment plant for separating solids and water
Cooling system	Raw water pump primer for non-self-priming raw water pump
Combustion air system	On engine air system for external air intake, set of air intake elbows (air filter with water separator supplied by shipyard)
Exhaust system	Exhaust pipe junction (horizontal discharge), exhaust pipe junction (insulated), resiliently mounted on engine, with horizontal exhaust gas discharge toward engine driving end or free end, consisting of: junction of on-engine exhaust outlets, with bellows before junction, bellows after junction with counter flange and attaching hardware for resilient connection of ship's-side exhaust line
Mounting system	Resilient engine mounting for increased shock and sea-state related loads
Monitoring/control system	MTU monitoring and control system MCS, remote control system RCS
Certification	ABS, BV, CCS, CR, DNV, GL, KR, LR, NK, RINA and others

Reference conditions:

- > Power definition acc. 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 MTU distributor/dealer.