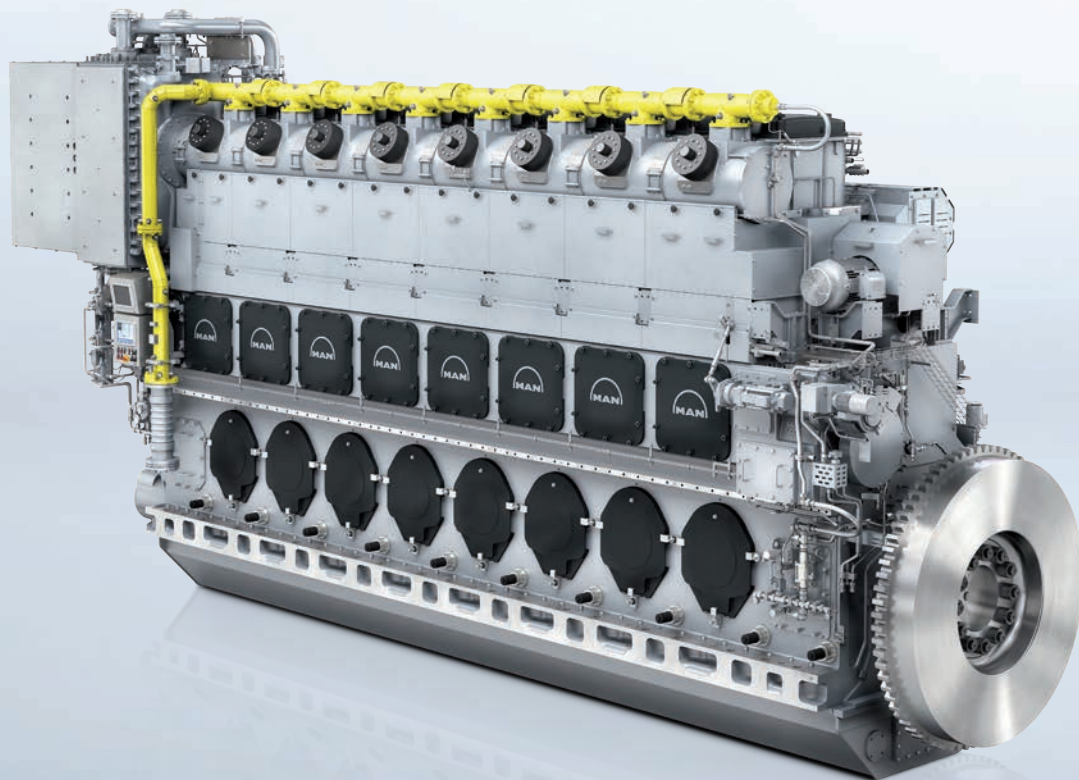


**FOUR
STROKE
MARINE
ENGINES**



MAN L51/60DF

DIESEL-ELECTRIC PROPULSION

Let your fuel take you further. By combining diesel and gas technologies in one engine, the MAN 51/60DF gives you absolute fuel flexibility. There's no better way to keep your engine running effectively and economically. Full steam ahead.

Benefits at a glance

- High power output
- Lowest fuel consumption over entire engine load
- Best load acceptance behaviour
- Full fuel flexibility
- High reliability and long TBOs

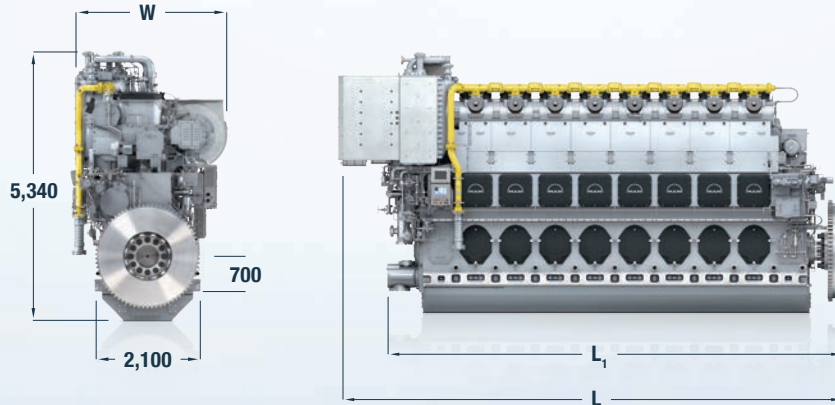
Engineering the Future – since 1758.

MAN Diesel & Turbo



MAN L51/60DF

DIESEL-ELECTRIC PROPULSION



Dimensions

Cyl. No.	6	7	8	9	
L	8,494	9,314	10,134	11,160	mm
L ₁	7,455	8,275	9,095	9,915	mm
W	3,165	3,165	3,165	3,283	mm
Dry mass	106	119	135	148	t

Output

Speed		514	500	rpm
mep		20.0	20.6	bar
MAN 6L51/60DF		6,300	6,300	kW
MAN 7L51/60DF		7,350	7,350	kW
MAN 8L51/60DF		8,400	8,400	kW
MAN 9L51/60DF		9,450	9,450	kW

LHV of fuel gas $\geq 28,000$ kJ/Nm³

(Nm³ corresponds to one cubic meter of gas at 0 °C and 1.013 bar)

Minimum centreline distance for twin engine installation: 3,200 mm

Last updated August 2016

General

- Engine cycle: Four-Stroke
- No. of cylinders: 6, 7, 8, 9
- Bore: 510 mm – Stroke: 600 mm
- Swept volume per cyl: 122.6 dm³

Fuel consumption at 85 % MCR

- Diesel Mode: 180.2 g/kWh
- Gas Mode: 7,265 kJ/kWh

Cylinder output (MCR)

- At 500/514 rpm: 1,050 kW
- Power-to-weight ratio: 15.6 – 16.8 kg/kW

Compliance with emission regulations

- IMO Tier II
- MO Tier III (Gas mode)
- IMO Tier III (Diesel mode with MAN SCR)

Main features

- Turbocharging system**
High efficiency constant pressure MAN TCA series exhaust turbocharging system
- Engine automation and control**
MAN in-house developed engine attached Safety and Control System **SaCoS_{One}**
- Air management**
Variable turbine area allowing improved

MCR = Maximum Continuous Rating | SCR = Selective Catalytic Reduction

adaption for Diesel and Gas mode operation while maintaining highest turbocharger efficiency over entire engine load

Fuel system

Common Rail pilot fuel injection system
Conventional main injection system
Variable injection system for lowest fuel consumption while meeting IMO Tier II emission limits in Diesel mode

Gas system

Cylinder individual low pressure gas admission system, 5 bar(g) at inlet of gas valve unit

Cooling system

2-string high and low temperature cooling water systems

Starting system

Starting air valves within cylinder heads

Engine mounting

Resilient or rigid mounting

Optional equipment

- Fuel Sharing mode for highest fuel flexibility
- 100 % Power Take-Off at engine free end available
- Variable inlet valve timing for improved combustion in part load operation

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