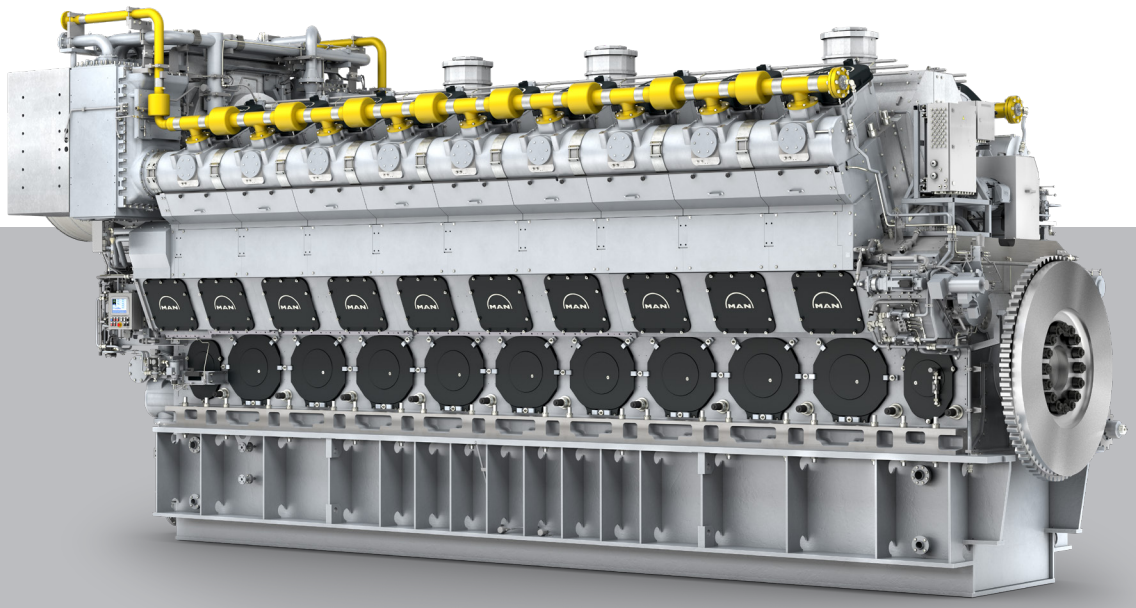
MAN Energy Solutions
Future in the making

MAN 51/60DF

The MAN 51/60DF runs on either liquid or gaseous fuels and can switch seamlessly from liquid to gas and vice versa during operation, giving you the benefits of a high fuel flexibility. The engine can even be started in gas mode and requires only a very small amount of pilot oil. Benefitting from the excellent robustness and reliability of its predecessors, the MAN 51/60DF also ensures low emissions and high efficiency.

Benefits at a glance

- Available with two-stage turbocharging
- Optimized performance settings
- Start and stop in gas mode
- Fuel and operational flexibility with HFO, diesel, natural gas and biogas
- Optimized variants for tropical conditions
- High single cycle efficiency



Energy & storage systems

MAN 51/60DF

High efficiency and high power

Dimensions

Cyl. No.		6L		12V		18V	
L		8,464 mm	333.2 in	9,970 mm	392.5 in	13,489 mm	531.1 in
H		5,807 mm	228.6 in	6,450 mm	253.9 in	6,450 mm	253.9 in
W		3,156 mm	124.3 in	4,884 mm	192.3 in	4,884 mm	192.3 in
Engine weight		171.6 t	378,313 lb	293.8 t	647,718 lb	416.8 t	918,887 lb

Output

Cyl. No.		6L		12V		18V	
Output mech.	kW	6,300	6,900	12,600	13,800	18,900	20,700
Speed	rpm	500/514	500/514	500/514	500/514	500/514	500/514
Frequency	Hz	50/60	50/60	50/60	50/60	50/60	50/60

High efficiency with two-stage turbocharging

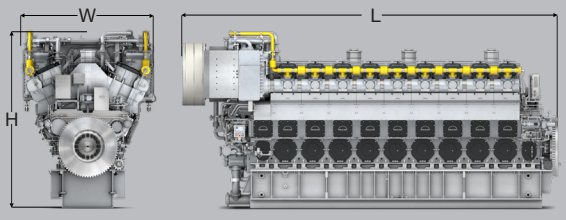
Dimensions

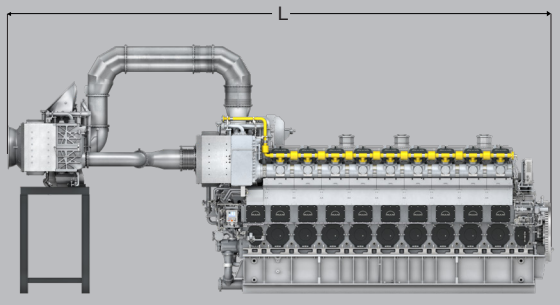
Cyl. No.		18V	
L		19,100 mm	751.9 in
H		9,023 mm	355.2 in
W		4,700 mm	185.0 in
Engine weight		345 t	760,594 lb

Output

Cyl. No.		18V
Output mech.	kW	18,900
Speed	rpm	500/514
Frequency	Hz	50/60

Dimensions and weight +/-10%



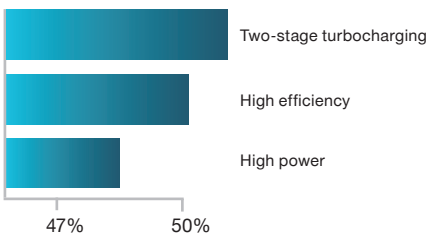


Values according to ISO 3046-1:2002; ISO 15550:2002. Last updated December 2020

Engine Features

General data
- Engine cycle: four-stroke
- No. of cylinders: 6L, 12V, 18V
- Bore: 510 mm / 20.08 in, Stroke: 600 mm / 23.62 in

Fuel efficiency comparison



Engine automation and control
- MAN SaCoS$_{one}$ safety and control system on engine, developed by MAN

Turbocharging system
- 2-stage turbocharging improves efficiency significantly
- MAN constant pressure turbocharging system
- Individual engine / turbocharger optimization matching on site

Fuel & gas system
- Common rail pilot fuel injection system
- Amount of pilot fuel ~1%
- Robust conventional main injection system
- Low pressure gas system (5 bar(g) / 72.52 psi at inlet of gas valve unit)

Starting system
- Starting air valves in cylinder head

Applications
- Whenever fuel flexibility is of benefit
- Locations with non-constant gas supply
- Installations with gas operation at a later date
- Locations with highly volatile fuel prices

MAN Energy Solutions
info@man-es.com
www.man-es.com