



MUN2017-11-07

Updated Data for G70ME-C(-GI)10.5

MAN Diesel & Turbo is continuously pursuing further design optimisations that may benefit our customers and the environment.

This dedicated effort has recently resulted in our decision to introduce a new G70ME-C(-GI)10.5 type engine with optimised performance.

The new G70 type engine has been developed on the basis of the profile of the orders received over the last couple of years. The result is a new and optimised G70ME-C(-GI)10.5 engine in 5- and 6-cylinder versions with a power output covering large-sized LNG tankers, and most Suezmax tankers and Capesize bulkers of today. The new G70ME-C(-GI)10.5 has upgraded performance parameters and design compared to the 9.5 version of the engine, resulting in lower fuel oil (SFOC) and gas (SGC) consumption and significantly reduced mass. Table 1 below shows the main figures.

Results for diesel and dual fuel engines:

- 1.2 g/kWh SFOC (1g/kWh SGC) reduction at 100% load for HL tuning
- 2.7 g/kWh SFOC (2.3 g/kWh SGC) reduction at 85% load for LL-EGB tuning

Possibilities for further optimisation of the cylinder distance and mass are currently being investigated.

The announcement of the new G70 type has been made in two steps. In first step the L1 rpm was selected to 74 rpm and corresponding data was included in the printed version of our 2017 Engine programme 2nd edition.

Based on feedback from shipyards we decided to increase L1 rpm to 77 rpm and today data available in our website and in the CEAS performance calculation program are based on L1 = 77 rpm

	B	S	MEPL1	PcylL1	SpeedL3	SpeedL1	Cyl. dist.	Mass 5 cyl.
	[mm]	[mm]	[bar]	[kW]	[rpm]	[rpm]	[mm]	[t]
G70ME-C9.5	700	3256	21	3640	62	83	1260	585
G70ME-C10.5	700	3256	19	3060	66	77	1100	530

Table 1

Market Update Note



Fig. 1 below illustrates the difference between the engines in the layout diagram. Fig. 2 shows the engine data page from the new Marine Engine Programme 2017, 2nd edition.

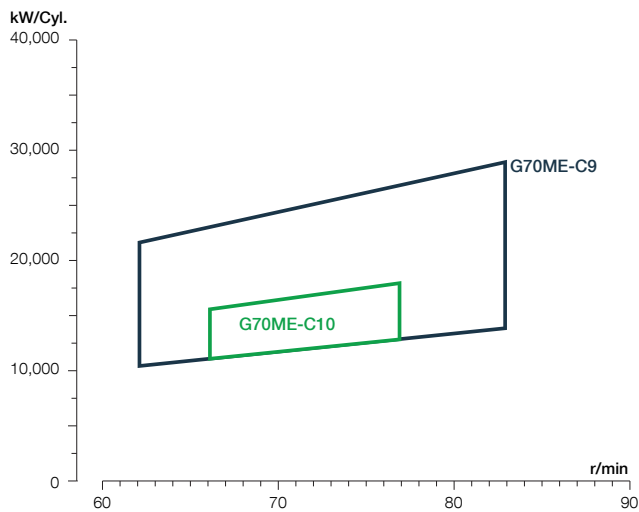


Fig. 1: Difference in layout diagram – G70ME-C9.5 vs G70ME-C10.5

For more details:

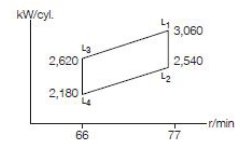
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MAN B&W G70ME-C10.5

Tier III

Cyl.	L ₁ kW	Stroke: 3,256 mm
5	15,300	
6	18,360	



Dual Fuel Mode for GI (Methane)

L₁ MEP: 21.0 bar

MAN B&W G70ME-C10.5-GI-EGRBP

L₁ SFOC equivalent gas + pilot fuel (42,700 kJ/kg) [g/kWh]*

	50%	75%	100%
Tier II mode	156.5	158.0	166.0
Tier III mode	163.5	162.5	168.0

L₁ SGC 50,000 kJ/kg (SPOC pilot fuel 42,700 kJ/kg) [g/kWh]

Tier II mode	125.9 (9.0)	129.2 (6.9)	
Tier III mode	131.9 (9.0)	133.0 (6.9)	

MAN B&W G70ME-C10.5-GI-HPSCR

L₁ SFOC equivalent gas + pilot fuel (42,700 kJ/kg) [g/kWh]*

	50%	75%	100%
Tier II mode	156.5	158.0	165.5
Tier III mode	158.0	159.0	166.0

L₁ SGC 50,000 kJ/kg (SPOC pilot fuel 42,700 kJ/kg) [g/kWh]

Tier II mode	126.0 (8.9)	129.2 (6.8)	136.5 (5.6)
Tier III mode		130.1 (6.8)	

MAN B&W G70ME-C10.5-GI-LPSCR

L₁ SFOC equivalent gas + pilot fuel (42,700 kJ/kg) [g/kWh]*

	50%	75%	100%
Tier II mode	156.5	158.0	165.5
Tier III mode		159.0	166.5

L₁ SGC 50,000 kJ/kg (SPOC pilot fuel 42,700 kJ/kg) [g/kWh]

Tier II mode	126.0 (8.9)	129.2 (6.8)	136.5 (5.6)
Tier III mode	126.8 (8.9)	130.1 (6.8)	

* Gas fuel LCV (50,000 kJ/kg) is converted to fuel oil LCV (42,700 kJ/kg) for comparison with a fuel oil operated engine.

Note: Also available for GIE and LGIP, except GIE and EGR, see pages 11-13.

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Fig. 2: Engine data page from Marine Engine Programme 2017 (online version)