



Low-Speed Portfolio Announces New Mk 10 Platform

Copenhagen,
06/09/2016

MAN Diesel & Turbo has added three new engines to its large-bore engine programme.

The engines are weight-optimised, compared to their MK 9 counterparts, and form the new design platform for a new Mk 10 engine portfolio. Key to the new platform is the development of the TCEV (Top Controlled Exhaust Valve) and FBIV (Fuel Booster Injection Valve) components.

The new units are:

- an MAN B&W G90ME-C10 type (delivering 6,240 kW per cylinder)
- an MAN B&W S60ME-C10 type (delivering 2,490 kW per cylinder)
- an MAN B&W S70ME-C10 type (delivering 3,430 kW per cylinder).

These are the first of a new generation that ultimately will involve the upgrading of all S- and G-engines to the Mk 10 platform.

Ole Grøne, Senior Vice President Sales and Promotion – MAN Diesel & Turbo, said: “For some years now, our primary R&D target has been to develop the next generation of our ME platform. During this time, the goal has been to utilise the full potential of the ME engine concept by reducing the complexity of the hydraulic system and increase system performance; the new TCEV and FBIV technologies have been developed within this scope.”

The design initiative delivers a specific weight reduction of up to 10% per kW, and also accommodates a higher P_{max} , which also contributes to a reduction in fuel consumption.

Grøne added: “We are confident that the market will embrace the benefits of the new platform as it represents a simpler design with fewer components, a reduced total weight, and a reduced fuel consumption. It is an improvement not only for shipowners, but also for our licensees.”

The new platform

The Mk 10 platform is based on a much more mass-optimised design platform that results in lighter engines with reduced overall length, width and height compared to its Mk 9 counterpart.

MAN Diesel & Turbo SE
Teglhølmegade 41
DK-2450 Copenhagen SV
DENMARK
www.mandieselturbo.com

Marketing & Documentation

Further information:
Peter Dan Petersen
Tel.: +45 33 85 14 70
peterd.petersen@man.eu

Graphics and images:
Mia Toft Sørensen
Tel.: +45 33 85 15 90
mia.soerensen@man.eu



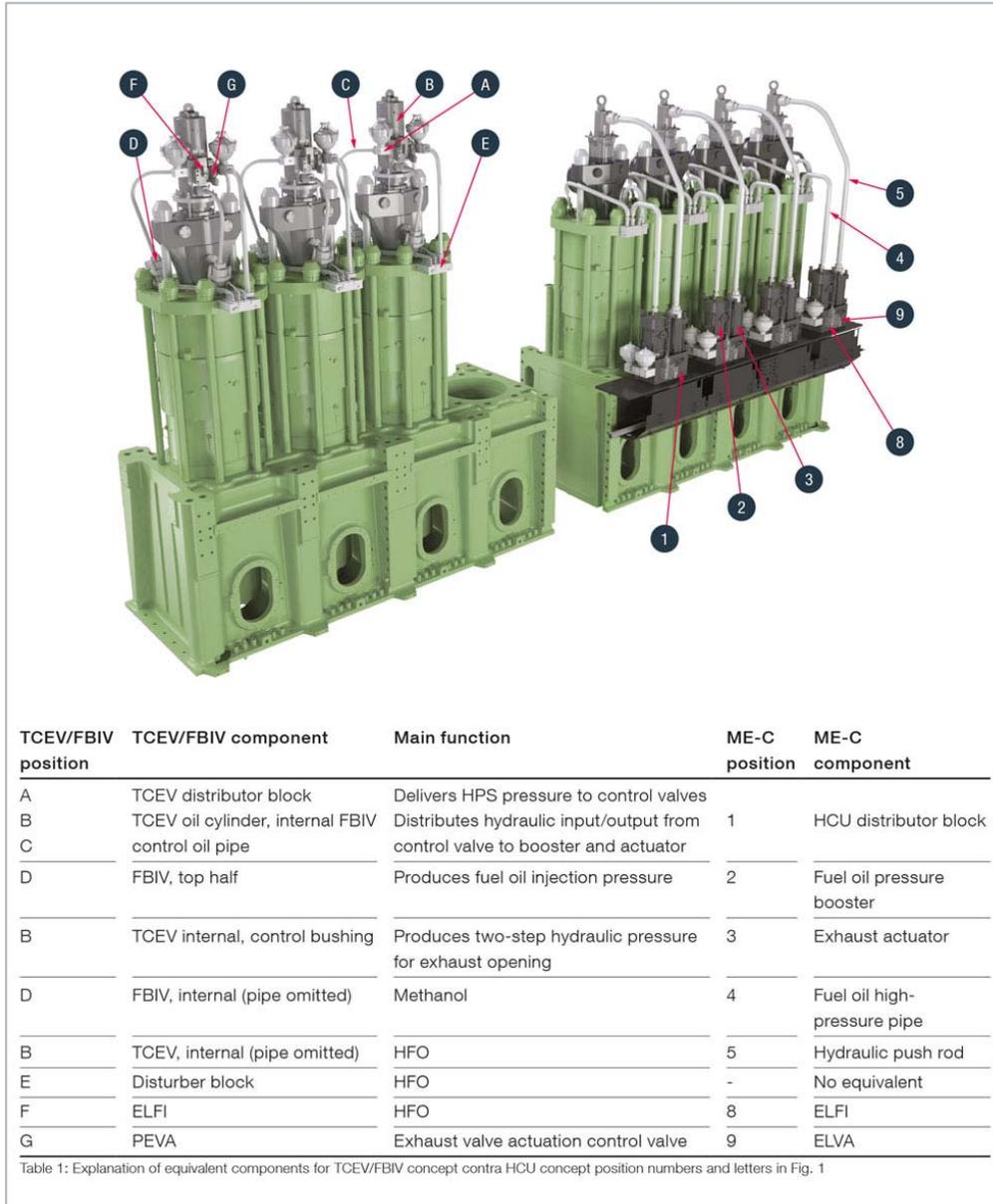
The purpose of the TCEV is to integrate the exhaust actuator, the hydraulic push rod and the HCU block into the exhaust valve. By doing so, the dynamic behaviour is improved with no long hydraulic push rod.

The FBIV and the TCEV technologies are well-suited for integration on the cylinder cover of the engine as the control of the valves for fuel injection is separated from the control of the exhaust valve through using the well-known electronic fuel injection valve (ELFI) and the new proportional exhaust valve actuator (PEVA).

Integration of FBIV and TCEV leads to a considerable weight reduction, because the baseplate, HCU, pressure booster, high-pressure fuel oil pipes and exhaust actuator are eliminated. In combination, these two technologies also offer improved hydraulic dynamics and flexibility.

MAN Diesel & Turbo reports that the TCEV/FBIV system is entering the final confirmation stage and has already operated in service for more than 2,000 hours as a system, and the FBIVs separately for more than 10,000 hours – both on a 50-cm bore engine.

The illustration that appears further on juxtaposes the traditional top-engine solution – from older engine marks – and the newly integrated TCEV/FBIV.



Traditional HCU, actuator and exhaust valve (right) contra the new Mark 10 platform's TCEV/FBIV concept (left). As an example, a G95 Mk 10 type (that eventually will be added to the Mk 10 programme) has been calculated as saving some 2 tonnes per cylinder in weight going from the traditional HCU setup to the TCEV/FBIV concept



Tier III

MAN B&W G90ME-C10

MAN Diesel & Turbo

Cyl.	L ₁ kW	Stroke: 3,260 mm
5	31,200	
6	37,440	
7	43,680	
8	49,920	
9	56,160	
10*	62,400	
11*	68,640	
12*	74,880	

Fuel Oil L₁ MEP: 21.5 bar

MAN B&W G90ME-C10-EGRTC

L ₁ SFOC [g/kWh]	50%	75%	100%
Tier II mode	158.5	160.5	166.0
Tier III mode	165.5	164.0	169.0

MAN B&W G90ME-C10-HPSCR

L ₁ SFOC [g/kWh]	50%	75%	100%
Tier II mode	158.5	160.5	166.5
Tier III mode	160.0	161.5	167.0

MAN B&W G90ME-C10-LPSCR

L ₁ SFOC [g/kWh]	50%	75%	100%
Tier II mode	158.5	160.5	166.5
Tier III mode	159.5	161.5	167.5

* Available on request for HPSCR.

The G90ME-C10 Tier III entry from MAN Diesel & Turbo's Engine Programme

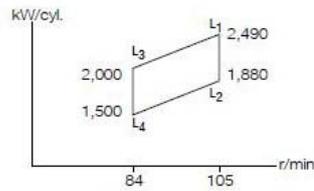


Tier III

MAN B&W S60ME-C10

MAN Diesel & Turbo

Cyl.	L ₁ kW	Stroke: 2,400 mm
5	12,450	
6	14,940	
7	17,430	
8	19,920	



Fuel Oil L₁ MEP: 21.0 bar

MAN B&W S60ME-C10-EGRBP

	L ₁ SFOC [g/kWh]		
	50%	75%	100%
Tier II mode	159.5	161.5	168.0
Tier III mode	167.5	166.0	171.0

MAN B&W S60ME-C10-HPSCR

	L ₁ SFOC [g/kWh]		
	50%	75%	100%
Tier II mode	159.5	161.5	167.5
Tier III mode	161.0	162.5	168.0

MAN B&W S60ME-C10-LPSCR

	L ₁ SFOC [g/kWh]		
	50%	75%	100%
Tier II mode	159.5	161.5	167.5
Tier III mode	160.5	162.5	168.5

The S60ME-C10 Tier III entry from MAN Diesel & Turbo's Engine Programme



Tier III

MAN B&W S70ME-C10

Stroke: 2,800 mm

MAN Diesel & Turbo

Cyl.	L ₁ kW
5	17,150
6	20,580
7	24,010
8	27,440

Fuel Oil L₁ MEP: 21.0 bar

MAN B&W S70ME-C10-EGRBP

L₁ SFOC [g/kWh]

	50%	75%	100%
Tier II mode	159.5	161.5	168.0
Tier III mode	167.5	166.0	171.0

MAN B&W S70ME-C10-HPSCR

L₁ SFOC [g/kWh]

	50%	75%	100%
Tier II mode	159.5	161.5	167.5
Tier III mode	161.0	162.5	168.0

MAN B&W S70ME-C10-LPSCR

L₁ SFOC [g/kWh]

	50%	75%	100%
Tier II mode	159.5	161.5	167.5
Tier III mode	160.5	162.5	168.5

The S70ME-C10 Tier III entry from MAN Diesel & Turbo's Engine Programme

About MAN Diesel & Turbo

MAN Diesel & Turbo SE, based in Augsburg, Germany, is the world's leading provider of large-bore diesel and gas engines and turbomachinery. The company employs around 15,000 staff at more than 100 international sites, primarily in Germany, Denmark, France, Switzerland, the Czech Republic, India and China. The company's product portfolio includes two-stroke and four-stroke engines for marine and stationary applications, turbochargers and propellers as well as gas and steam turbines, compressors and chemical reactors. The range of services and supplies is rounded off by complete solutions like ship propulsion systems, engine-based power plants and turbomachinery trains for the oil & gas as well as the process industries. Customers receive worldwide after-sales services marketed under the MAN PrimeServ brand.