MAN B&W ME-LGI engines

MAN Energy Solutions
Future in the making

MAN B&W ME-LGI engines,
Liquid gas injection – methanol and LPG

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The ME-LGI concept has been implemented on the new ME-LGIM engine, where M stands for methanol. Currently, the ME-LGIM engine has been ordered for a series of twelve 50,000 dwt methanol carriers and two chemical tankers, and seven engines have been delivered and are in service operating on methanol as fuel.

Originally designed for low-flashpoint liquid fuels, the ME-LGI concept is now developed for LPG operation under the engine designation ME-LGIP, where P stands for propane. The ME-LGI concept can be applied on all MAN B&W two-stroke low-speed engine types, either ordered as an original unit or as a retrofit solution. With the ME-LGI concept, MAN Energy Solutions has expanded its dual-fuel portfolio even further, enabling the exploitation of other low-flashpoint fuels such as ethanol, dimethyl ether (DME), gasoline and amonia.

The new engine benefits derive from well-proven electronic controls and from the safety concept developed for the dual-fuel ME-GI engine for natural gas operation, which has become the standard solution in LNG carriers today. The ME-LGI engine concept also comprises the so-called booster fuel injection valve. This innovative fuel booster, specially developed for low-flashpoint liquid fuels, ensures that a low-pressure fuel gas supply system can be employed, significantly boosting reliability and reducing first-time costs.

The fluctuating fuel prices and new IMO low-sulphur regulations from the 2020 shipping regulations have led MAN Energy Solutions to develop the ME-LGI design in order to be able to offer shipowners the possibility of using an additional low-sulphur fuel at a relatively small cost and with enhanced environmental benefits. In this respect, the ability of the ME-LGI engine to run on sulphur-free fuels offers great potential for ship operation within SECA zones.

Expected emission reductions*

	NO_x	SO_x	PM	CO_2
LNG	20-30%	90-97%	90%	23%
LPG	15-20%	90-97%	90%	20%
MeOh	30-50%	90-97%	90%	10%

*Compared to the Tier II engine operating on HFO, conventional fuel valve and HFO pilot oil.

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ME-LGI development

Liquid gas injection engine

MAN Energy Solutions introduced its dual-fuel gas-injection ME-GI engine in 2012. Orders were received immediately, confirming the growing market demand for the option to operate ships on LNG as well as HFO in the face of increasing fuel prices. As a result of the market interest, the company has now extended its dual-fuel engine programme with an ME-LGI unit that can run on alternative low-flashpoint liquid fuels.

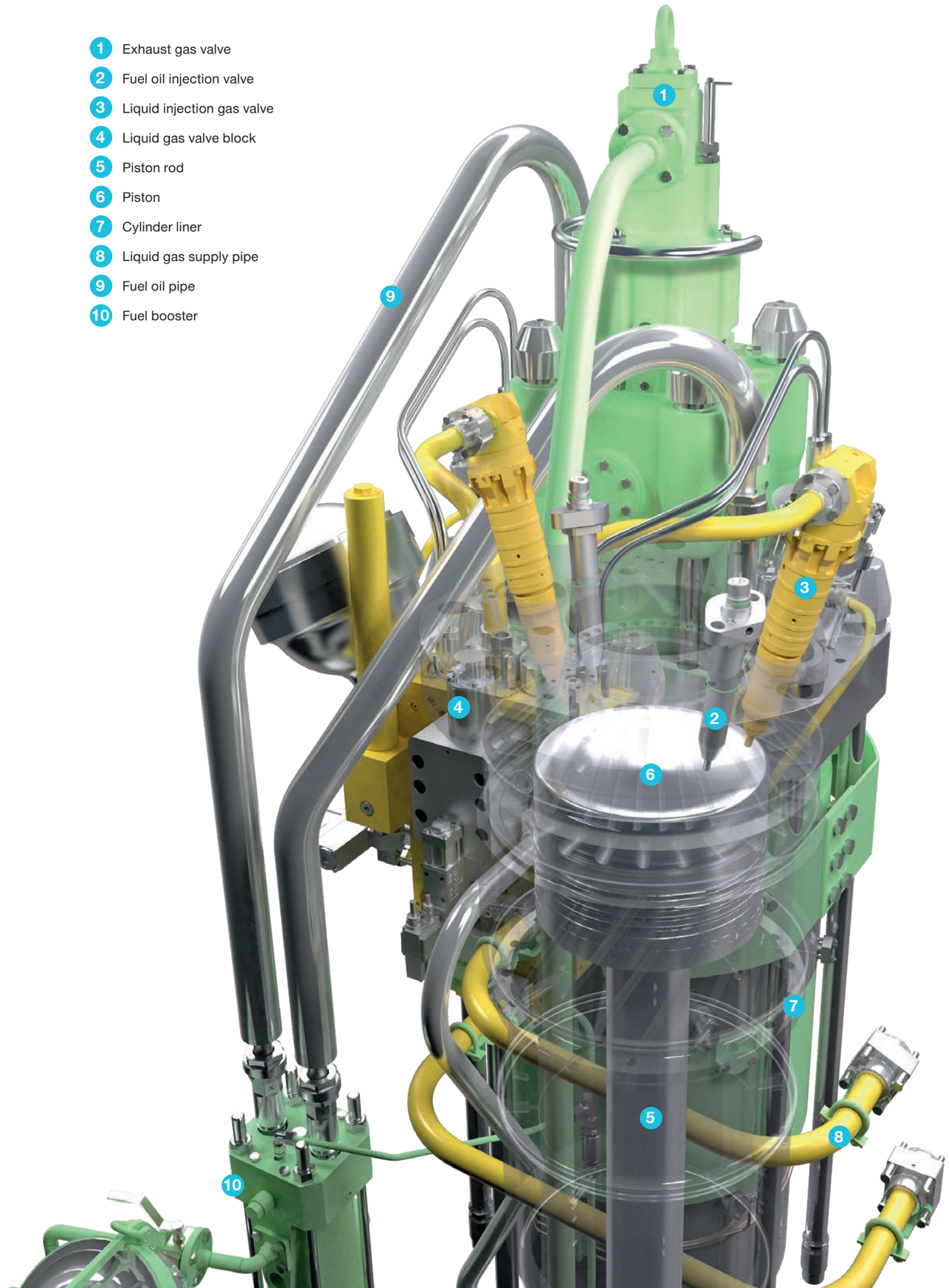
Methanol and LPG carriers have already operated at sea for many years, and many more LPG tankers are currently being built as the global LPG infrastructure grows. With a viable, convenient and comparatively cheap fuel already on board, it makes sense to save time for bunkering by using a fraction of the cargo to power the vessel. Currently, 2 + 8 LPG carriers with a capacity of 80,000 CBM have been ordered. In addition, as an important environmental benefit in terms of emissions, MAN Energy Solutions is already offering a Tier III compatible ME-LGI version. Both EGR and SCR solutions are available.

MAN Energy Solutions already reports significant interest in the ME-LGIP engine and expects orders from owners of LPG carriers within the near future.

MAN Energy Solutions' experience with two-stroke dual-fuel engines operating on NG and LPG stretches back to the 1990s. In this way, we have long been prepared for this market development and feel uniquely poised to deliver the optimal solutions.

The company states that it expects all of its existing MAN B&W two-stroke engines to be retrofittable – in a cost-efficient manner – for operation according to the LGI concept.

1. Exhaust gas valve
2. Fuel oil injection valve
3. Liquid injection gas valve
4. Liquid gas valve block
5. Piston rod
6. Piston
7. Cylinder liner
8. Liquid gas supply pipe
9. Fuel oil pipe
10. Fuel booster



MAN PrimeServ World-Class Service

The MAN PrimeServ offering

The MAN Energy Solutions group offers worldwide, round-the-clock service, 365 days a year. In addition to MAN Energy Solutions' service headquarters in Augsburg, Copenhagen, Frederikshavn, Saint-Nazaire, Hamburg and Stockport, service centers on all continents provide comprehensive and continuous support.

Marine propulsion, gensets, and stationary plants

MAN Energy Solutions' engines are renowned for their quality and durability. We are a global organisation with a strong local presence, delivering exceptional field service management, tailor-made solutions, and first-class technical support.

MAN PrimeServ provides advice and assistance to customers throughout the product life cycle, from delivery to resale. With our far-reaching network of service centers, we respond rapidly to customer needs. Furthermore, we offer outstanding service and unrivalled technical expertise. Plus, we only use genuine spare parts – safeguarding the longevity of your engine.

MAN PrimeServ's aim is to provide:

- Prompt delivery of high-demand OEM spare parts within 24 hours
- Fast, reliable and competent customer support
- Individually tailored O&M contracts
- Ongoing training and qualification of operators and maintenance staff
- Global service, 24 hours a day, 365 days a year
- Diagnosis and troubleshooting with our high-performance Online Service.

Our Copenhagen MAN PrimeServ Academy offers professionally trained instructors with extensive knowledge of and experience with MAN B&W two-stroke engine technology and products.

The academy in Holeby offers comprehensive hands-on courses in operation and maintenance of MAN dual-fuel GenSets.

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