

Exploring tomorrow's energy
sources and our solutions within

Methanol & Ethanol

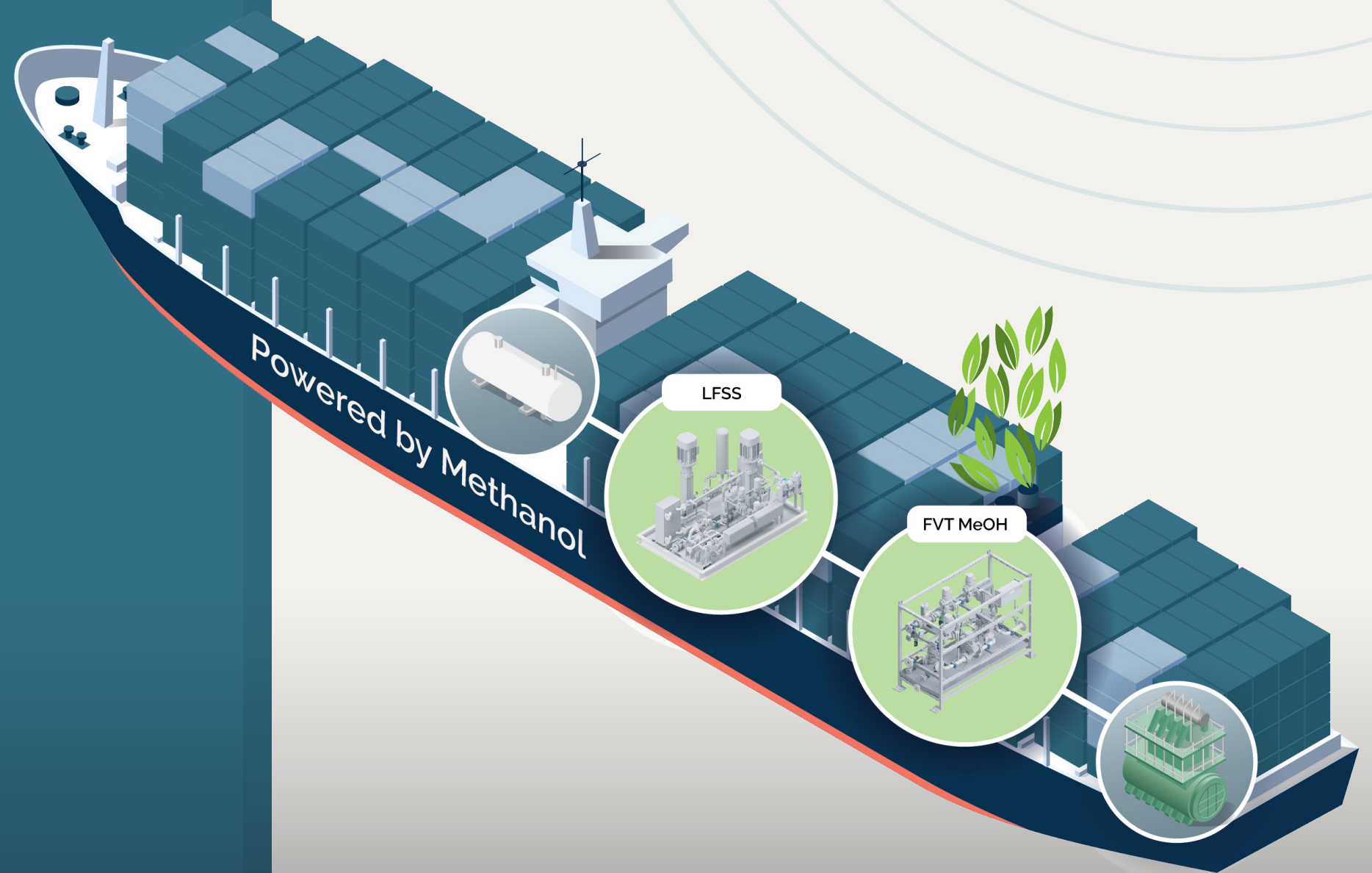


FUELTECH

PART OF G&O MARITIME GROUP

What role will methanol play in the journey toward a decarbonized future?

When considering green methanol derived from the synthesis of carbon dioxide and hydrogen, achieving CO₂-neutral combustion becomes a tangible possibility. Additionally, methanol exhibits favorable emissions characteristics, with reduced NO_x emissions and the absence of SO_x or soot emissions in pure methanol combustion. This positions methanol with significant potential to be a pivotal player in the maritime energy transition.



Our experience within methanol fuel operations



We have developed solutions utilizing methanol for propulsion **since 2013**



We have **+180 units** for methanol fuel operation in order or operation worldwide



We have delivered **+160 units** for methanol operation to customers



Currently, our unit is installed on **+140** sailing ships

Ship type references



86 ships



29 ships



15 ships



13 ships



1 ship

Our solutions are also compatible with ethanol

In addition to methanol, our solutions are fully compatible with ethanol, supporting a broader range of low-carbon fuel pathways. Our methanol product range has been thoroughly tested on pure ethanol as well as ethanol-methanol blends, demonstrating stable and reliable operation across the full load range.

This fuel-flexible design enables shipowners to adapt to fuel availability and evolving regulatory requirements without compromising performance or safety. By supporting both methanol and ethanol, our solutions provide a practical and future-oriented approach to maritime decarbonization, allowing operators to take immediate steps toward emissions reduction while preparing for the wider adoption of green methanol.

2-stroke technology for the main propulsion line

Across various marine vessels including container vessels, bulk carriers, and car carriers

Our 2-stroke technologies are designed for the main propulsion line across a diverse range of marine vessels, including container vessels, bulk carriers, and car carriers.

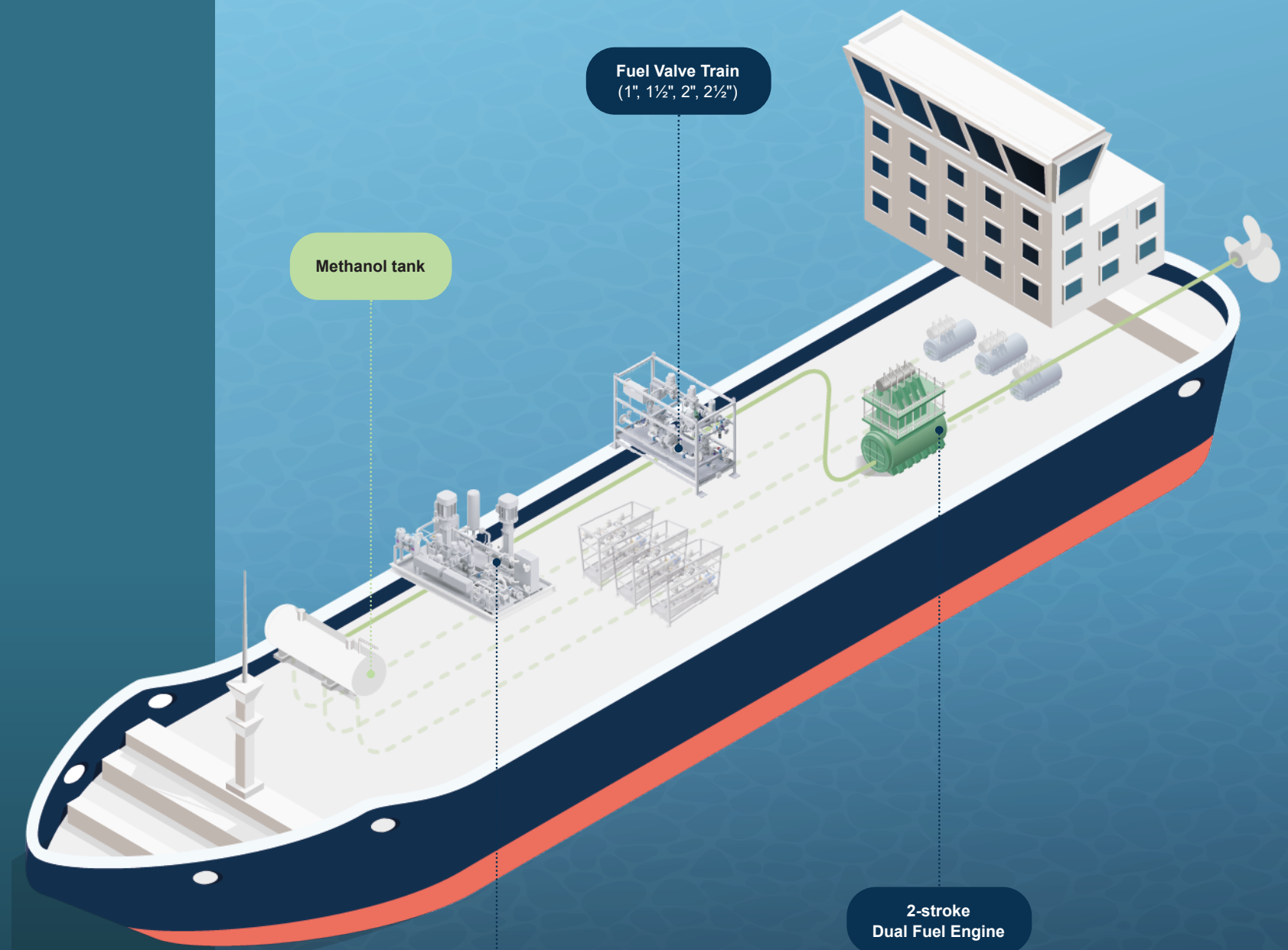
Explore our innovative product lineup for 2-stroke methanol and ethanol propulsion, featuring the CAPEX-Optimized Low-flashpoint Fuel Supply System (LFSS) and the advanced Fuel Valve Train (FVT) tailored for operational performance.



Turn the page to discover more information about our solutions

- Low-flashpoint Fuel Supply System with centrifugal pump technology
- Fuel Valve Train (1", 1½", 2", 2½")

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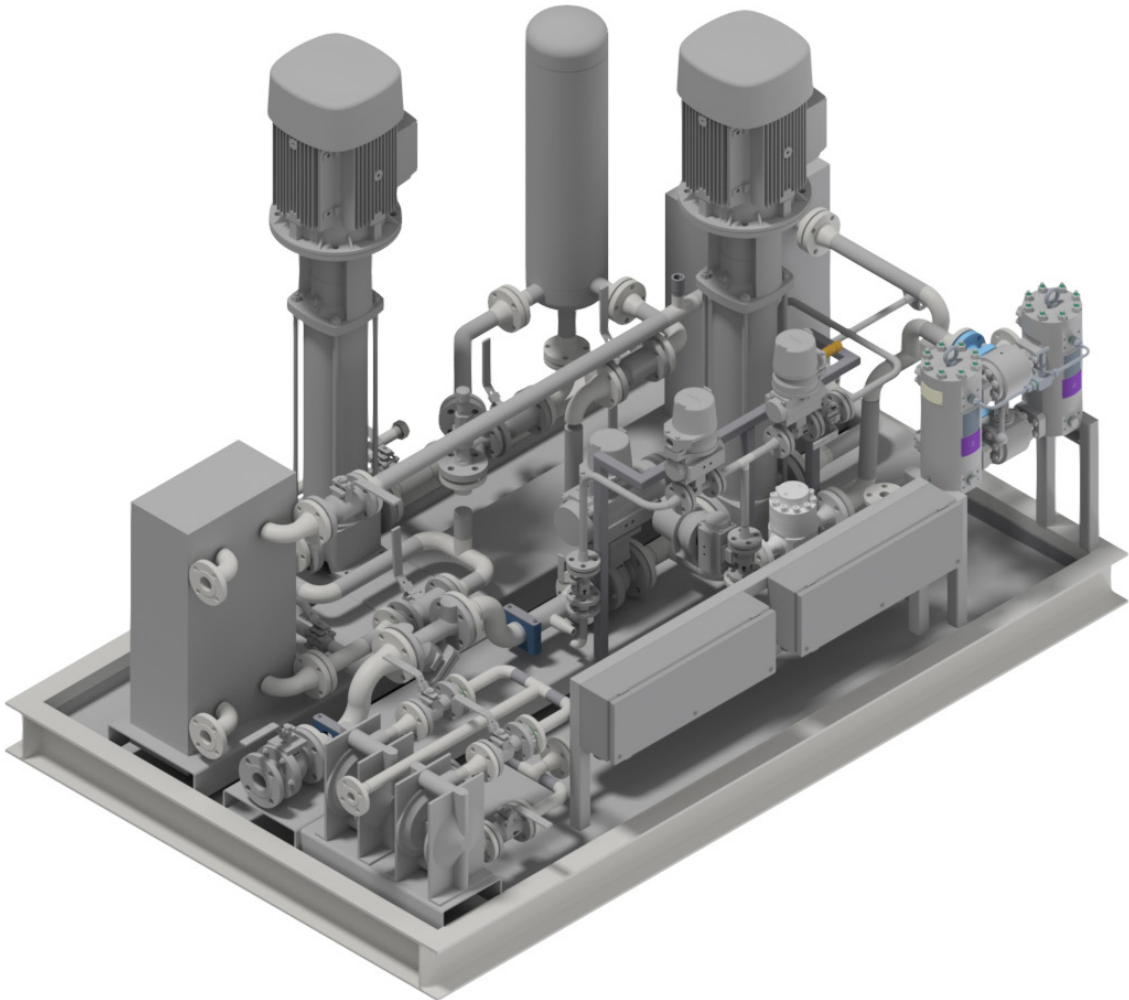
Low-flashpoint Fuel Supply System with centrifugal pump technology

The LFSS MeOH, a comprehensive Low-flashpoint Fuel Supply System, is engineered to seamlessly manage the reception, conditioning, and delivery of methanol and ethanol fuel from the tank to the engine through the Fuel Valve Train. This integrated system incorporates inlet-, pressure control-, temperature conditioning-, and filtration components into a cohesive package.

Utilizing single-pump-stage technology, the LFSS MeOH ensures efficient fuel delivery to end-user equipment. Designed with precision, it guarantees the safe and reliable delivery of fuel within engine specifications.

Benefits

- ✓ Small footprint allowing the integration of the LFSS into compact areas without sacrificing performance or functionality.
- ✓ CAPEX optimization focuses on minimizing initial investment costs, leading to improved resource allocation and potentially higher returns on investment.



Scan the code to see the full datasheet.



Description	LFSS-M5	LFSS-M10	LFSS-M20	LFSS-M30
LFSS size	Inlet: 2" (DN50) Outlet: 1" (DN25) Purge & bleed line: ½" (DN15)	Inlet: 2½" (DN65) Outlet: 1½" (DN40) Purge & bleed line: ½" (DN15)	Inlet: 3" (DN80) Outlet: 2" (DN50) Purge & bleed line: 1" (DN25)	Inlet: 3½" (DN90) Outlet: 2,5" (DN65) Purge & bleed line: 1" (DN25)
Nominal working pressure	1.300 kPa (13 bar)	1.300 kPa (13 bar)	1.300 kPa (13 bar)	1.300 kPa (13 bar)
Design pressure	1.600 kPa (16 bar)	1.600 kPa (16 bar)	1.600 kPa (16 bar)	1.600 kPa (16 bar)
Maximum flow capacity	5.000 kg/h	9.975 kg/h	19.500 kg/h	31.000 kg/h
Fuel temperature inlet	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C
Fuel temperature outlet	+25°C to +50°C	+25°C to +50°C	+25°C to +50°C	+25°C to +50°C

Fuel Valve Train for safe fuel supply of to internal combustion engines

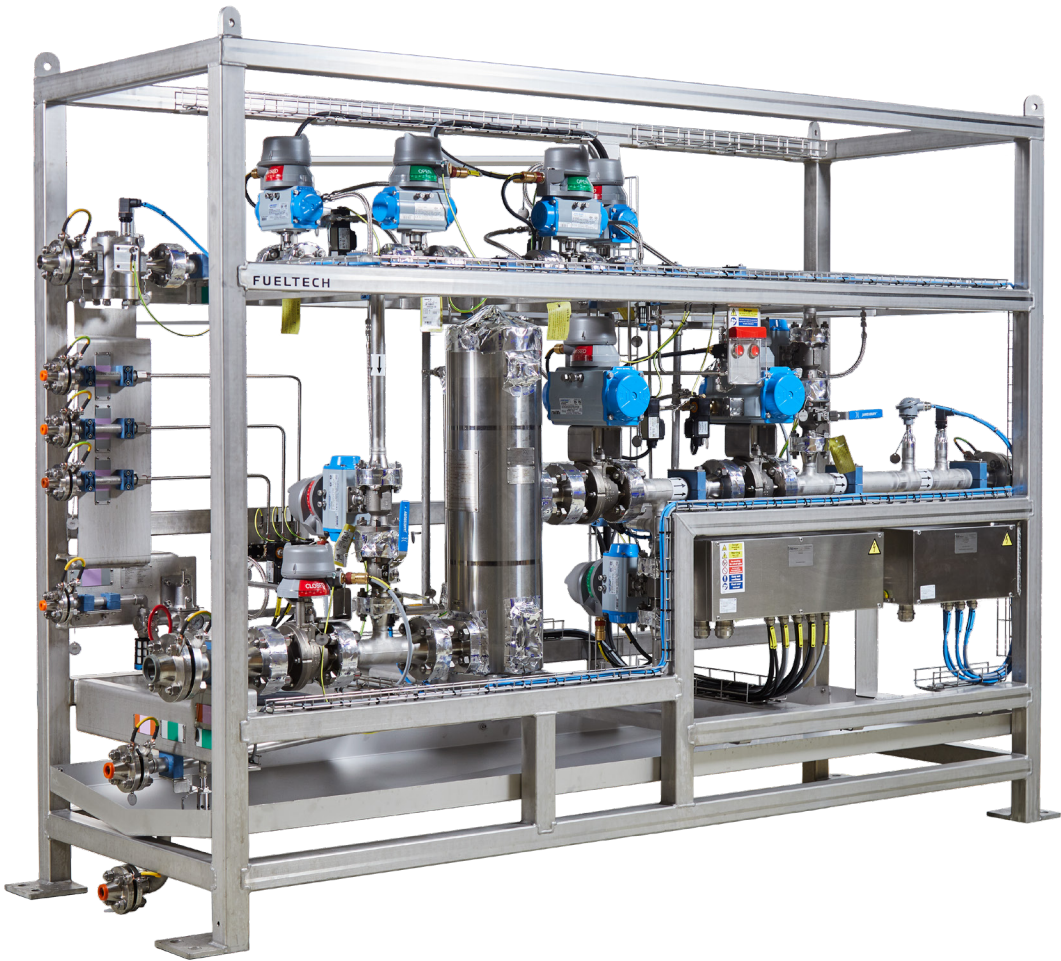
The Fuel Valve Train is a block and bleed valve configuration designed to control the flow of methanol and ethanol from the Low-flashpoint Fuel Supply System to the engine.

In case of a normal shutdown or emergency shutdown, the Fuel Valve Train will disengage the fuel supply to the engine and send excess fuel from the Fuel Valve Train to the drain. A nitrogen purge system is incorporated into the Fuel Valve Train to purge the system and the engine while preventing the fuel from reaching any safe areas.

Benefits

- ✓ Designed to comply with the strict IMO regulations for reducing SOx, NOx, and CO₂ emissions thus enabling a more climate-friendly operation in the future
- ✓ A solution for new builds and retrofit, providing flexibility in the transition pathway
- ✓ The Fuel Valve Train is designed for easy accessibility and maintenance

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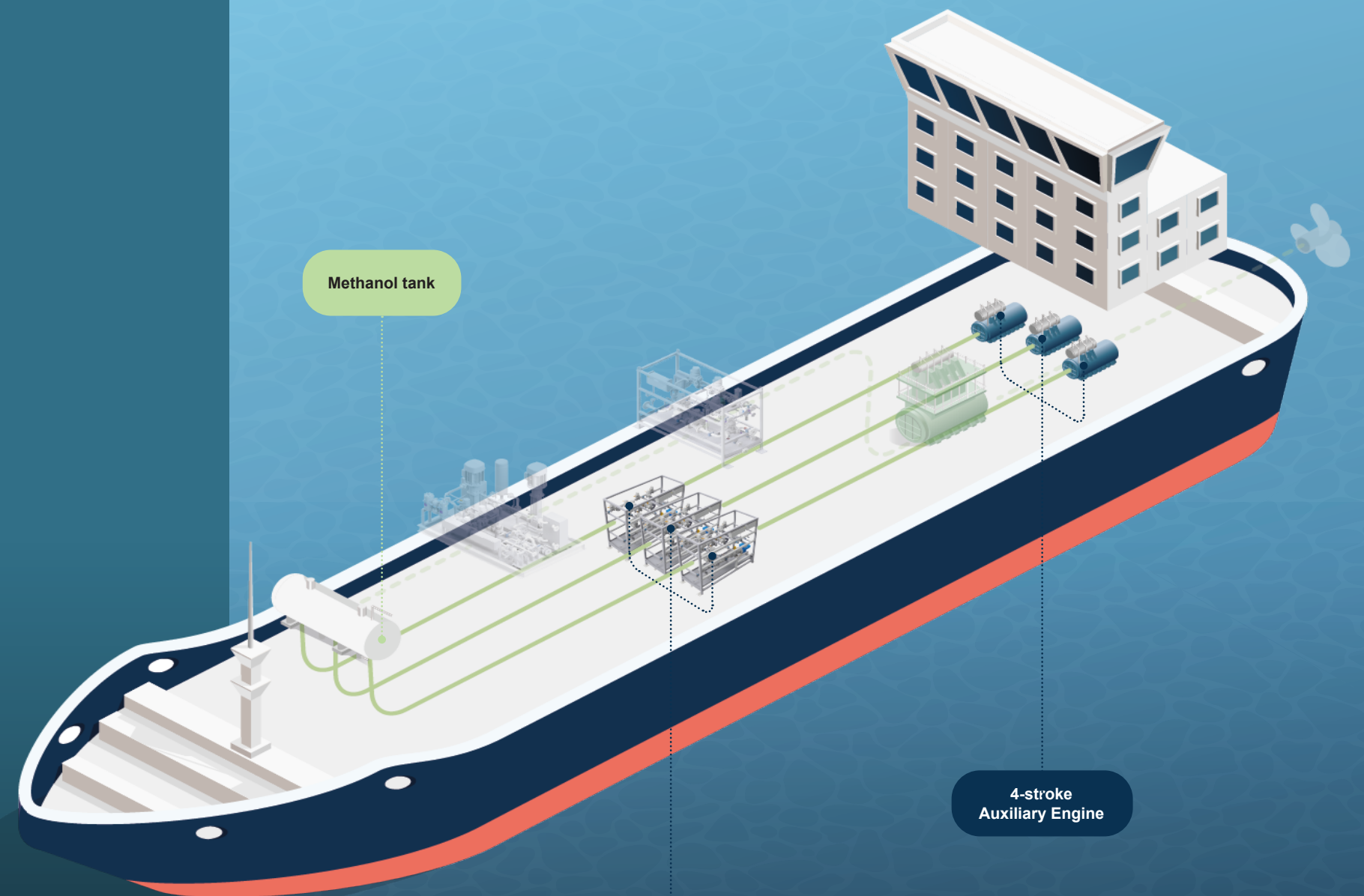


Description	FVT 1"	FVT 1½"	FVT 2"	FVT 2½"
FVT size	Main Line: 1", DN25 N2 Line: ½", DN15	Main Line: 1½", DN40 N2 Line: ½", DN15	Main Line: 2", DN50 N2 Line: 1", DN25	Main Line: 2½", DN65 N2 Line: 1", DN25
Nominal working pressure	13 bar – 1.300 kPa	13 bar – 1.300 kPa	13 bar – 1.300 kPa	13 bar – 1.300 kPa
Design pressure	16 bar – 1.600 kPa	16 bar – 1.600 kPa	16 bar – 1.600 kPa	16 bar – 1.600 kPa
Desing flow	Methanol flow: 3.600 kg/h	Methanol flow: 12.000 kg/h	Methanol flow: 19.000 kg/h	Methanol flow: 31.000 kg/h
Media design temperature	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C

4-stroke technologies for various marine vessels

From auxiliary engines on large vessels to diesel-electric propulsion and high- and medium-speed propulsion, experience cutting-edge 4-stroke technologies seamlessly integrated across a spectrum of maritime vessels. Our product line caters to diverse needs, supporting auxiliary engines on large vessels such as containers, bulk carriers, and car carriers, and enabling efficient diesel-electric propulsion and high-/medium-speed propulsion.

Explore our innovative solutions for 4-stroke methanol and ethanol propulsion, including the Low-flashpoint Fuel Supply Valve Train and the Fuel Valve Train, designed to elevate performance and efficiency across maritime applications.



Turn the page to discover more information about our solutions

- Low-flashpoint Fuel Supply Valve Train
- Fuel Valve Train (1/2")

Low-flashpoint Fuel Supply Valve Train

The LSFVT from FuelTech A/S represents an integrated solution that combines a Low-flashpoint Fuel Supply System (LFSS) with a Fuel Valve Train (FVT). The solution is engineered for methanol and ethanol fuel utilization and designed to fit 4-stroke auxiliary engines and other methanol consumer such as boilers and fuel cells.

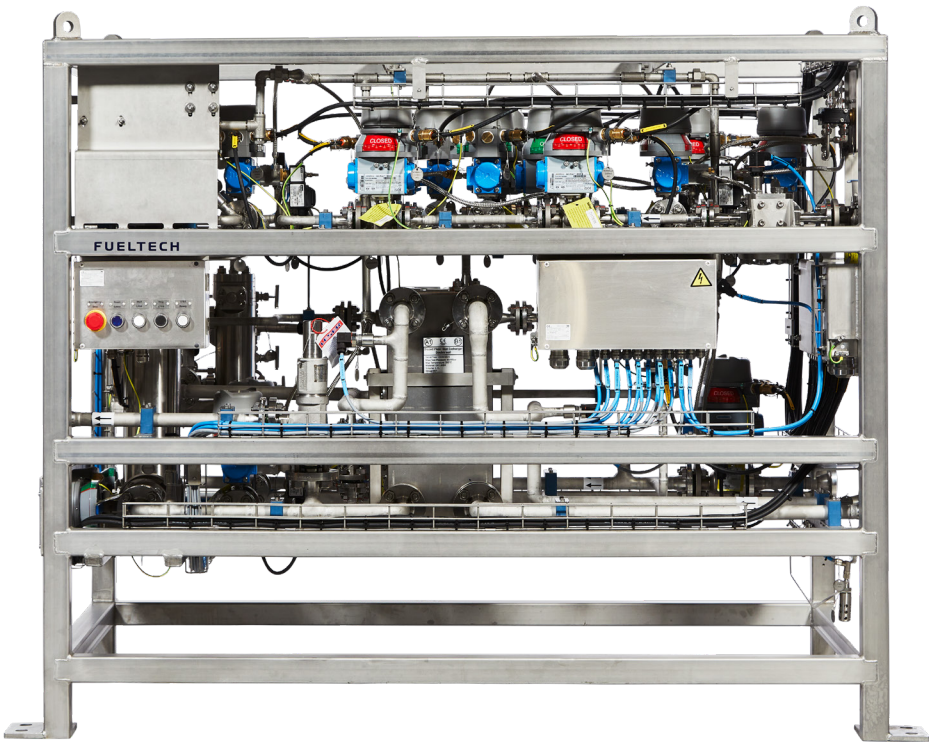
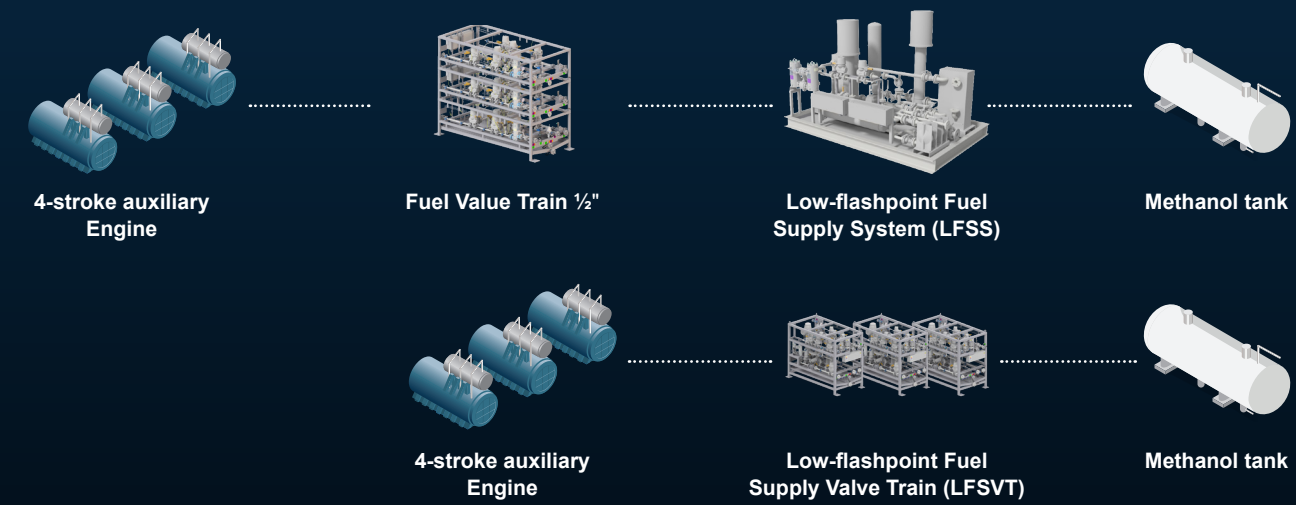
The LSFVT assumes overall control of crucial parameters including flow rate, temperature, and safety, thereby encompassing a comprehensive range of functions.

The engine load signal supplied from SaCos controls the internal pump speed under specific engine load conditions. The goal is to minimize the amount of bypass fuel through (1PVC5662) to <10% and thereby optimize the energy use. To ensure adequate fuel flow to the engine a minor buffer/bypass is needed when the engine load changes.

Benefits

- ✓ The merge between the LFSS and FVT results in an optimized configuration tailored for smaller vessels, effectively minimizing the footprint with its compact design.
- ✓ With the merged solution, we provide the entire system between tank and engine eliminating the need for multiple suppliers.
- ✓ Customers can rely on a single point of contact, simplifying communication, coordination, and support throughout the entire system implementation and operation.

Comparison of our Low-flashpoint Fuel Supply Valve Train with a conventional configuration.



Scan the code to see the full datasheet.



Description	1/2"
LFSVT size	Inlet: 1" (DN25) Outlet: 1/2" (DN15) Nitrogen: 1/2" (DN15) Drain: 1/2" (DN15)
Nominal working pressure	1.300 kPa (13 bar)
Design pressure	1.600 kPa (16 bar)
Maximum flow capacity	1.200 kg/h
Fuel temperature inlet	-10°C to +55°C
Fuel temperature outlet	25°C to 50°C

Fuel Valve Train with stackable design for enhanced flexibility

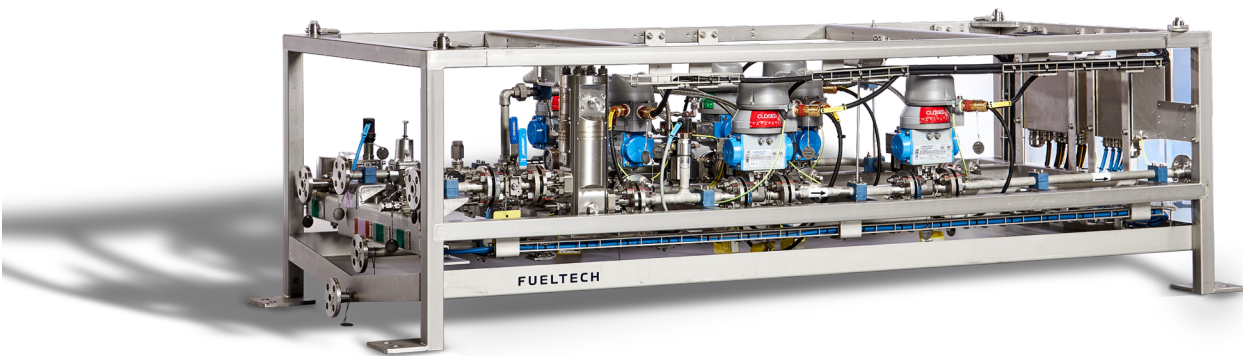
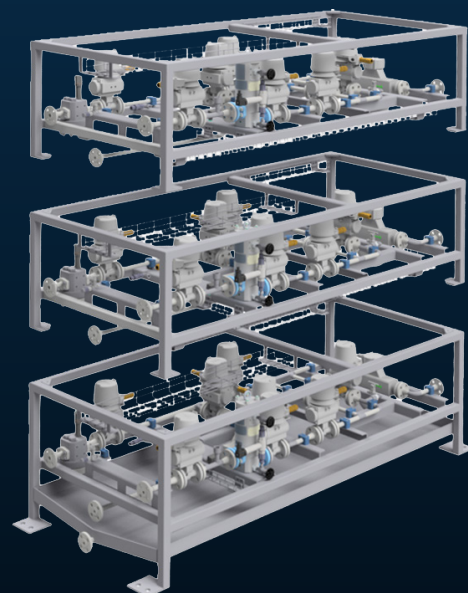
The Fuel Valve Train is designed to be connected through piping from the Low-flashpoint Fuel Supply System (LFSS) system to fuel consumers such as internal combustion engines.

The unit is controlled by the engine control system and is designed to stop the fuel supply in case of normal or emergency shutdown and redirect the fuel from the pipe systems and Fuel Valve Train (FVT) to the drain. An incorporated nitrogen purge system purges between the FVT and the engine, as well as the pipe system connecting the FVT to the LFSS.

The FVT is designed with a primary focus on auxiliary consumers, incorporating a unique feature: stackable units. This innovative design allows for seamless layering of units, presenting an optimized solution tailored to the specific needs of small vessels.

Benefits

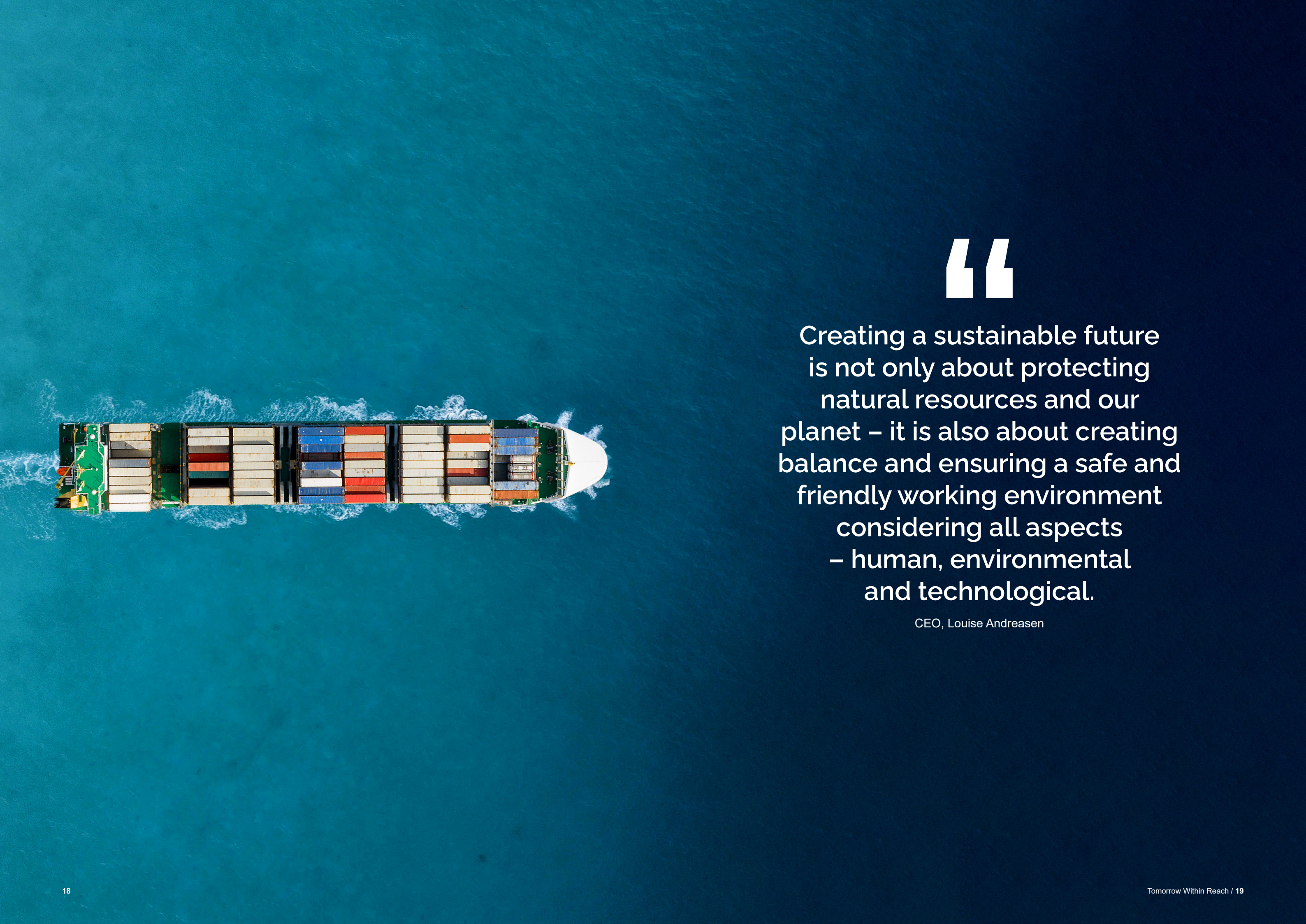
- ✓ The Fuel Valve Train holds a modular design crafted for adaptability and scalability. This modular approach facilitates easy customization to meet specific customer requirements.
- ✓ The Fuel Valve Train is engineered to be compact and space efficient. By minimizing the physical footprint per unit, our solution is well-suited for installations where space constraints are a critical factor.



Scan the code to see the full datasheet.



Description	FVT
FVT size	Main line: ½ inch (DN15) Purge and bleed line: ½ inch (DN15) Optional water line: ½ inch (DN15)
Nominal working pressure	Methanol: 1.300 kPa (13 bar)
Design pressure	1.600 kPa (16 bar)
Desing flow	MeOH flow: 1.500kg/h
Media design temperature	-25°C to +60°C



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Creating a sustainable future is not only about protecting natural resources and our planet – it is also about creating balance and ensuring a safe and friendly working environment considering all aspects – human, environmental and technological.

CEO, Louise Andreasen

Integrated maritime technology

FuelTech A/S is a global engineering company, working for a zero-emission maritime industry. We develop and produce fuel systems that enable vessels to operate on greener, alternative fuels, while maintaining a safe and reliable operation. Our comprehensive solutions cover the full scope of supply between the tank and engine.

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