

safe and reliable



KÜHME Solutions for Gas Fueled Ships



- **Gas as Fuel for Ships – a Future driven Value Chain** **3**
- **Safety for your Process** **4**
- **Conventional GVU-C** **6**
- **Encapsulated 3D-GVU** **7**
- **Encapsulated GVU-NT** **8**
- **GVU Overview** **9**
- **Case Study (Installation History)** **10**

FIND OUT MORE

The interactive MORE Button will lead you to content related additional, more detailed information.

You are Welcome. Just try and find out.



Gas as Fuel for Ships – a Future driven Value Chain

Alternative Fuels represent a matter of **global significance** and are subject to ecological background. Due to intensified establishment of emission based regulations and standards the marine sector has actively driven a process to determine alternative solutions to optimize marine engine systems accordingly.

In this context Gas / LNG has prevailed as most advantageous clean solution concept. Secured availability of the Fuel and the possibilities to utilize the same for **new building projects as well as retrofitting** engine systems of existing fleets offer excellent basic prerequisites accordingly. The value chain is furthermore complemented by **highly beneficial ecological and simultaneous economical** aspects.

The significant reduction of emissions and noise levels are thus accompanied by stable, transparent as well as less cost compared to regular heavy fuel oil.





KÜHME as a technology leader within the field of safety shut-off valve equipment has specialized in design, development & production of special valves for most challenging applications. In the course of utilizing Gas as a Fuel for Marine Engines the application requires an outmost level of safety.

KÜHME Valves – The Interface between Fuel and Safety



The corresponding high demands are considered particularly in the fuel feed and storage facilities. Advanced type approved KÜHME Shut-Off Valve Technology is building the backbone to guarantee highest safety level in those particular sub-systems upstream to the engines.



... up to the Complete System Solution

More than 50 years of know how and experience feed into every level of detail of each KÜHME valve skid and system solution. Internationally renowned as a manufacturer of fully integrated valve skids for fuel handling and combustion systems, our plug & go portfolio covers tailored equipment for Gas Fueled Marine Engines as well.

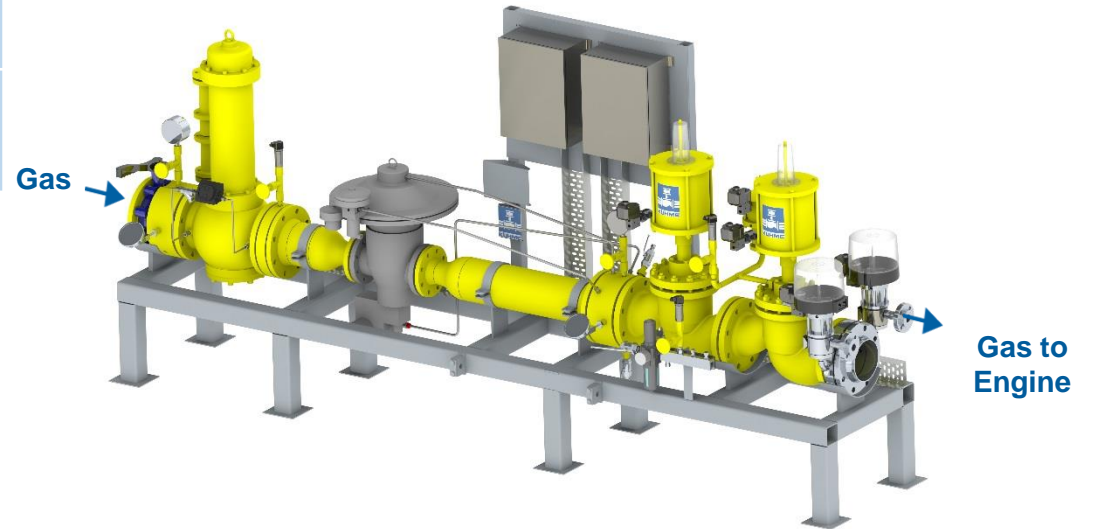


Your individual application - one tailored KÜHME Solution

In that respect the fusion of proven shut-off valve technology and complex application driven system integration is reflected in so called Gas Valve Units (GVU) – fitted for installation right upstream the Engine or relocated from the Engine Room.



Features	<ul style="list-style-type: none"> - Modular structure - Optional additional sensors for optimized monitoring
ESDs	Certified Safety Shut-Off Valves Type KÜHME KVII/F
Pipe Connection	DN 25 / DN 50 / DN 80 / DN 100 / DN 150



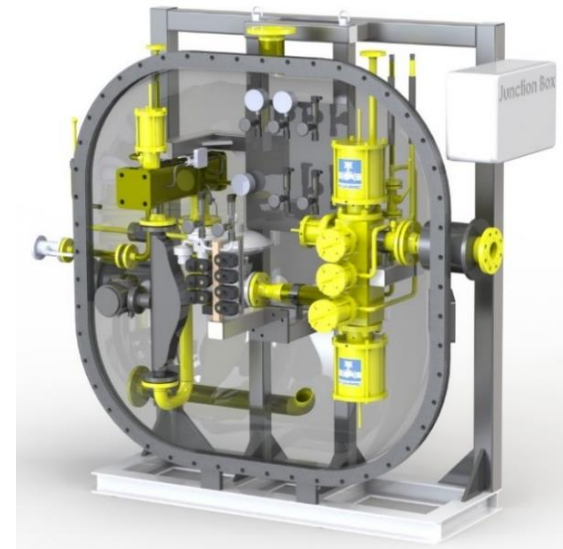
Proven KÜHME Technology for a future-driven Application

Encapsulated 3D-GVU



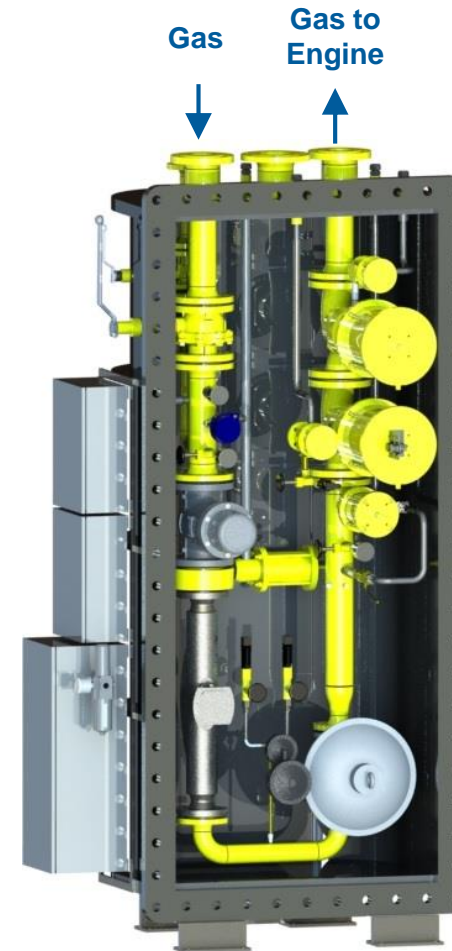
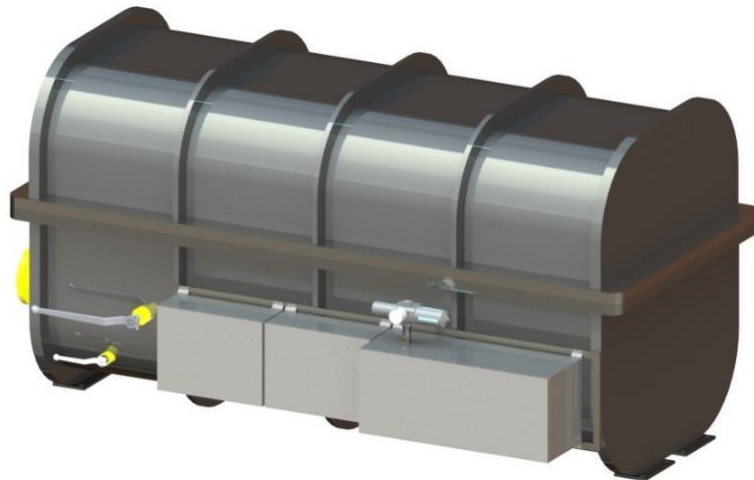
Features	<ul style="list-style-type: none">- Explosion proof design- Backpressure safe up to 37 bar (g)- Redundant high safety sealing system for external tightness
ESDs	Certified Safety Shut-Off Valves Type KÜHME DGV
Pipe Connection	DN 80 / DN 100 / DN 150

Optimized for easy maintenance and additional instrumentation



Encapsulated GUV-NT

Features	<ul style="list-style-type: none">- Explosion proof design- Modular structure
Installation Direction	Either horizontal or vertical
ESDs	Certified Safety Shut-Off Valves Type KÜHME KVII/F
Pipe Connection	DN 50 / DN 80 / DN 100 / DN 150



Most compact space and weight saving design

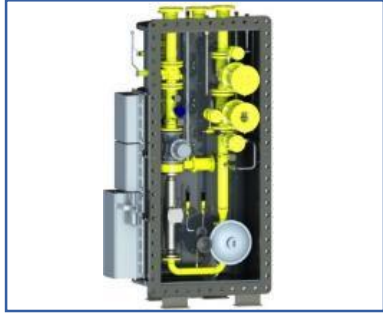
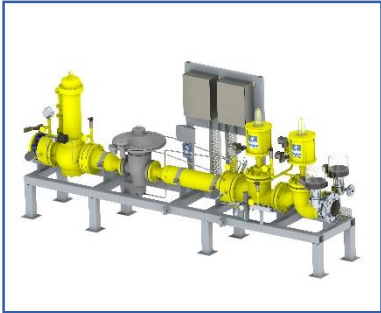
GVU Technology designed by KÜHME



GVU-C

3D-GVU

GVU-NT



available not available

Enclosure

Double Block & Bleed

KÜHME Valve Series: KV / DGV

Installation: horizontal / vertical

Coriolis (optional)

Enclosure tightness control (optional)

Service opening (optional)

Enclosure opening device (optional)

Case Study



Source: <https://hmc.heerema.com/fleet/sleipnir/>



Source: <https://hmc.heerema.com/fleet/sleipnir/>

Ship Name	SLEIPNIR
Application	Offshore Heavy Lifting
Dimensions	Length 220 m / Width 102 m
Crane Capacity	2 Cranes – each 10.000 Tonnes
Power Generation	96 MW total / 12 engines of 8 MW each
Type of Engine	MAN Dual Fuel Engines 8L51/60DF
Emission Limits	Compliant to IMO Tier III

Case Study



KÜHME's Customer	MAN Diesel & Turbo Augsburg, Germany
Size	DN 100
Year of Production	2016
Volume	12 pieces of 3D-GVU



PLEASE JOIN US:



KÜHME Armaturen GmbH

Am Vorort 14
44894 Bochum
Germany

Phone: +49 234 29802 - 0

Fax: +49 234 29802 – 10

E-Mail: info@kuehme.de

Web: www.kuehme.de