

**CRYOGENIC  
LNG**



**FIRE SAFETY?  
MY VALVES  
REMAIN COOL.**

Complete valve packages  
for LNG transportation.



**HEROSE of Pressure.**



**As a leading company in the field of industrial valves and fittings, we consistently meet complex challenges with application-oriented engineering solutions.**

Our extensive expertise in dealing with various gases, vapours and liquids is based on more than 140 years of industry-specific knowledge that is rivalled by none in this form.

The cost-effectiveness and safety of your process are always our greatest concern. It is for that reason that we devise the best possible solution for your individual application with the help of first-class materials and components, and comprehensive quality assurance.

In 2017, we entered into a unique cooperation with the Australian-Indian valve manufacturer MACK Valves in order to remain at the forefront of technical development and be able to offer our service worldwide.

**HEROSE of Pressure –**  
experts in handling compressed media.

### Our Approvals:



### Our Classifications:



# RELIABLE PROCESSES IN HIGHLY COMPLEX SYSTEMS – EFFICIENTLY REALISED WITH VALVE AND SAFETY CONCEPTS FROM HEROSE.

## CRYOGENIC

Safety at the lowest temperatures? HEROSE valves are internationally certified for handling technical gases and liquefied natural gas in the low temperature range. Applications for the storage and transport of cryogenic gases – we routinely work with temperatures as low as  $-269\text{ }^{\circ}\text{C}$ .



## INDUSTRY

Safety at high pressures? In pressure-loaded systems, HEROSE solutions ensure the best possible functionality and consistently increase the overall efficiency of your system. From safety valves in processes for seawater desalination and compressed air-driven braking systems of high-speed trains to compressors – working with up to 550 bar is part of our daily business.



## ENERGY

Safety despite demanding environmental conditions? HEROSE components are produced from high-quality materials and subjected to consistent quality checks to make them suitable for handling media in harsh environments. In order to ensure that a reliable power supply is maintained, seawater- and weather-resistant HEROSE valves are used in oil-immersed transformers to regulate the cooling circuit.



# PROCESS RELIABILITY DESPITE THE RISK OF FIRE: OUR APPLICATION-SPECIFIC SOLUTIONS FOR YOUR CHALLENGES.

Whether it involves meeting comprehensive regulatory requirements or facing complex process conditions, HEROSE valves protect pressurised containers and cryogenically liquefied natural gas (LNG) facilities with ease – based on years of experience, at all times and with the highest quality.

## Transport

The transport of LNG from liquefied petroleum gas storage facilities to the users' satellite stations is a heavy burden for the special tankers. Frequent filling, transporting and unloading requires the highest quality and reliability of all components. In accordance with DIN EN 12567, HEROSE supplies isolating valves that have been optimised for LNG, ensuring comfortable handling and comprehensive safety.





## Storage

Cryogenically liquefied natural gas is stored in small-scale tank farms in quantities of 10,000 to 100,000 m<sup>3</sup>. HEROSE valves have proven their worth in many fill and extraction lines at tank farms; these include valves approved for use in safety-relevant places in accordance with the EN ISO 10497 standard regarding fire safety.



## Refuelling

The use of LNG as a fuel for ships has significant environmental benefits – it causes low emissions of carbon, sulphur dioxide and nitrogen oxides. HEROSE offers a variety of valves for use on ships, where the requirements for fire safety are always extensive. In addition, we have comprehensive solutions available for the associated infrastructure for storage and transport of LNG.



## Processes

Decentralised liquefaction and regasification facilities are increasingly being created in order to provide buyers with natural gas in the various aggregate states required by them. HEROSE offers a variety of valves that meet the different process requirements.

# FIRE SAFETY FOR TRANSPORTABLE CONTAINERS: THE HEROSE ACTUATED TRAILER VALVE, TYPE 01853.

In transportable pressure containers in particular, a compact yet sufficiently functional design is of the utmost importance. The HEROSE trailer control valve type 01853 is designed to significantly reduce the impact of force on connecting elements such as piping during transport. Optimised use of materials and the compact design of the actuator play a decisive role. Certified according to EN ISO 10497, the valve is guaranteed to operate safely in the event of a fire, ensuring the safety of the entire system at all times.



## Technical data:

Sizes:	DN 15 till DN 80
Drücke:	up to 50 bar
Temperatures:	-196 °C till +120 °C
Connections:	Butt weld, socket weld, Flange
Materials:	Stainless steel

# HARSH TRANSPORT CONDITIONS IN THE FIELD OF LNG POWER? EVERYTHING UNDER CONTROL WITH HEROSE VALVES AND FITTINGS.

In the field of LNG power, cryogenic liquefied natural gas is primarily used to ensure decentralised energy supply. However, feeding into existing gas networks is also a typical application.

Conventional gas-to-power systems make it possible to convert available energy, so that electricity can be provided to nearby industries or bulk purchasers, for example. Feeding natural gas into an existing pipeline network is done through peak shaving stations. In the event of an increase in demand for natural gas, these stations feed the corresponding volumes into the network and thereby cover peaks in demand.

In many cases, the LNG is delivered to the stations and facilities through portable containers – e.g. ISO containers – that are transported by semi-trailers to a variety of destinations. HEROSE offers the complete valve package for LNG power applications, adapted to the operating conditions during transport, as well as to the filling and emptying process of the container.

# RELIABLE FUNCTION UNDER EXTREME CONDITIONS?

## ALL IN A DAY'S WORK FOR THE HEROSE EMERGENCY SHUT-DOWN VALVE.

When refuelling LNG-powered ships, it is essential that all valves operate reliably to ensure complete safety. The HEROSE emergency shut-down valve is specially designed for this application and interrupts the flow of LNG in the event of an emergency. The bunker station's supply lines are separated from the ship that is being refuelled with the utmost reliability. The valve is at no time affected by the low temperatures of the liquid natural gas, high pressure or, for example, a fire surrounding it.

All the components of the emergency shut-off valve are made of stainless steel and designed for longevity and offshore operation. In addition, the drive components are coated to be highly resistant to seawater. The "open", "closed" and "manual override" positions can be detected reliably via sensors and, in addition, the opening or closing process can be controlled through runtime monitoring.



### Technical data:

Sizes:	DN 10 till DN 200
Drücke:	up to 50 bar
Temperatures:	-196 °C till +60 °C
Connections:	Butt weld, socket weld, Flange
Materials:	Stainless steel

# SHIP ENGINES WITH LOWER EXHAUST EMISSIONS? HEROSE VALVES ENABLE ENVIRONMENTALLY FRIENDLY PROPULSION CONCEPTS.

Increasingly stricter regulations regarding exhaust emissions from the global shipping industry are key drivers for the development of new propulsion concepts. The International Maritime Organisation (IMO) is one of the organisations that regulates limits on permissible exhaust emissions in the maritime sector.

In this regard, using LNG as fuel is a pioneering alternative to the hitherto widely used heavy oil. Ships with this kind of propulsion concept have in comparison a much more environmentally friendly pollutant composition and meet the applicable environmental regulations.

Technical handling of the natural gas on the way to and on the ship itself takes place while it is in a cryogenic liquefied state. This offers many advantages when it comes to transport and storage, but at the same time also poses challenges for safe handling of the substance. This applies both to the infrastructure on the mainland at the bunker stations – currently still few and far between – and on the ship itself.

HEROSE valves have been specially designed for use in all applications that involve the handling, transport and storage of liquid natural gas and offer the highest level of quality in addition to reliable operation. For various ocean carriers and shipbuilders, using valves and fittings from Bad Oldesloe in their LNG propulsion concepts is now standard and they are increasingly using the assembly and maintenance services offered by our specialists.

# UNCOMPROMISING SAFETY: GUARANTEED FUNCTIONALITY THROUGH MAXIMUM QUALITY IS STANDARD BUSINESS PRACTICE FOR US.

HEROSE specialises in the development and sustainable production of innovative, practical solutions and bringing them up to series-production stage. The reliability of our products to ensure the safety of your process is always our primary concern. We guarantee this through company-wide DIN EN ISO 9001:2015-certified processes, such as comprehensive material and functional tests.

We have a cryogenic, water and air test bench for simulation of extreme conditions and for testing our valves. Qualified specialists manufacture our products on state-of-the-art CNC machines, degrease all components regardless of the intended use with specially developed systems and ensure full traceability through consistent component identification.



*Leak testing*



*Materials testing*

We offer our customers reliable solutions through the highest degree of safety and see an opportunity in every challenge we face. Successful solutions for extreme temperatures ranging from  $-269^{\circ}\text{C}$  to  $+400^{\circ}\text{C}$ , special valves for air separation and valves for the liquefaction of natural gas are examples of our drive to innovate ever more effective and efficient concepts.



*Labelling of pressure-bearing components*



*Free of oil and grease*

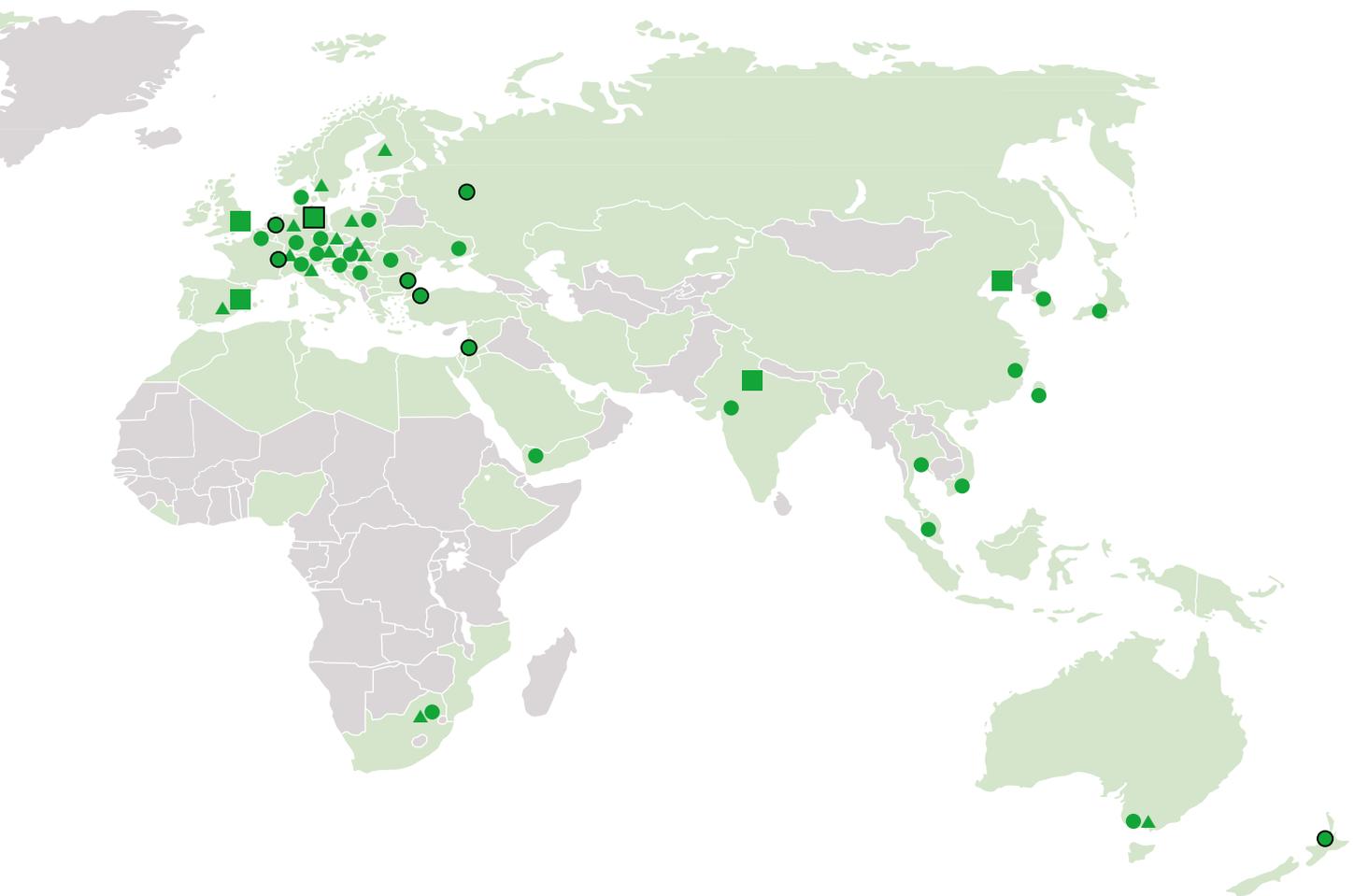
# PRODUCTS AND SERVICES AVAILABLE ON ALL CONTINENTS? – WE ARE BY YOUR SIDE ALL OVER THE WORLD.

A global network of local offices and partners makes it possible for us to offer pioneering solutions in more than eighty countries. Thanks to our high-quality valves and fittings, reliable system protection and optimised maintenance options are ensured at all times. In addition to implementing application-optimised valve and safety concepts, customers place their trust in the flexibility of our processes and appreciate our policy of personal consulting. Our customer service is there to ensure that through professional installation and maintenance of all valves and fittings, even sensitive components and products are properly installed in your systems and work reliably.

## **HEROSE of Pressure:**

- Many years of experience in applications involving sophisticated technical media
- Highest technical reliability of the valves and fittings
- Consistent quality assurance and materials of the highest quality
- Worldwide service and maintenance options





- Headquarter
  - International subsidiaries
  - HEROSE partner with authorised service centre
  - HEROSE partner
  - ▲ Authorised service partner
- For the addresses of our partners and authorised service centres please visit [herose.com](http://herose.com)*
- Current HEROSE sales regions



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