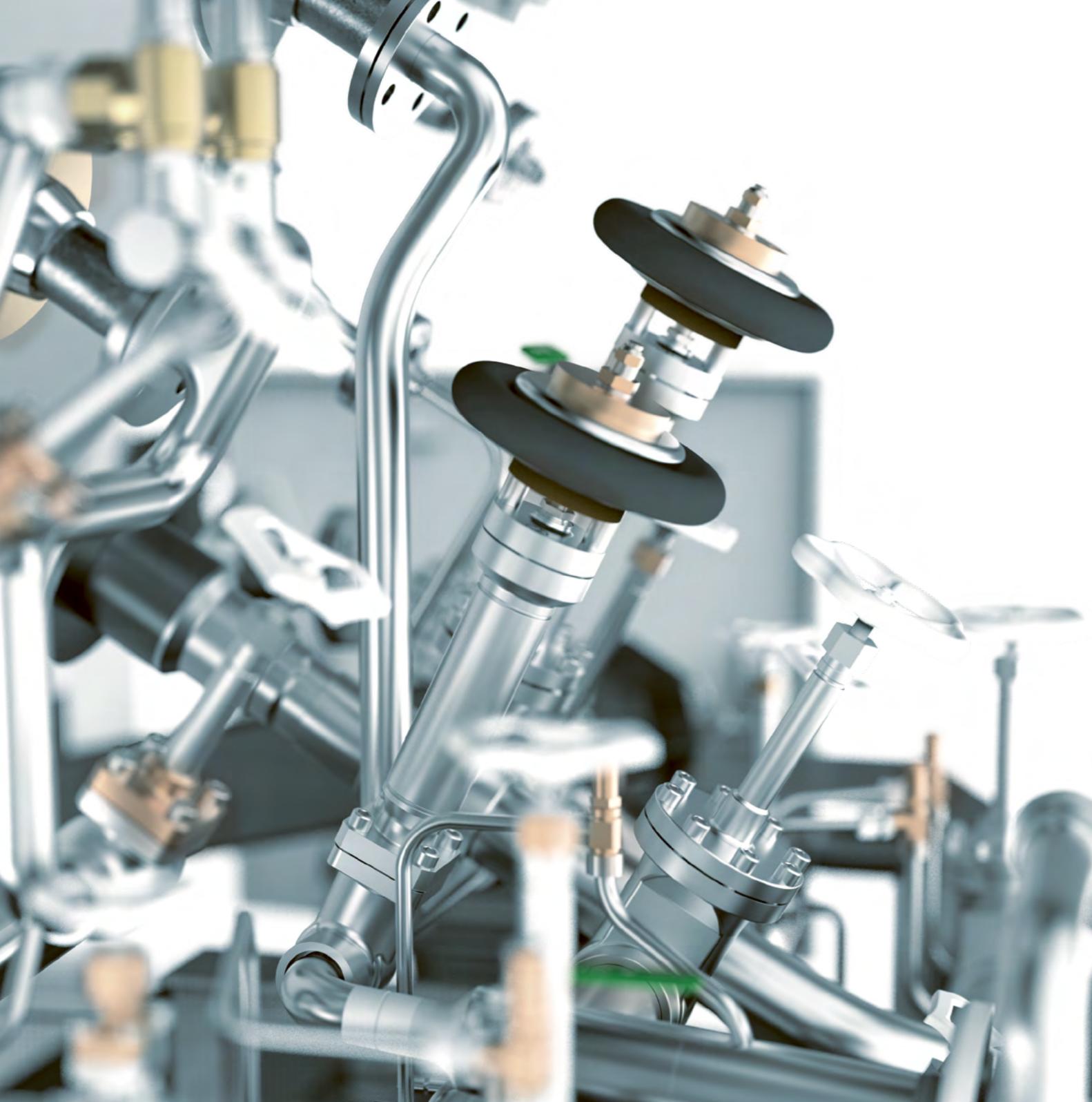


**HEROSE**

**INSIGHTS**



**Built to Endure**



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Managing Directors (left to right):  
Jens Silligmüller, Dirk Zschalich, Matthias Langenohl

## INTRODUCTION

Dear Readers,

**Built to Endure:** This value proposition not only applies to our valves but is also HEROSE Group's guiding principle. It is our promise to our customers, partners and ourselves.

Since foundry master Theodor Rose laid the foundation for our success story in establishing his valve factory in 1873, a great deal has happened: over the course of time, HEROSE has undergone constant change and transformation. We have survived crises, seized opportunities and created prospects for ourselves. We have developed new products and opened up future markets. One thing has always remained the same: **our great passion for quality and innovation.** For more than 150 years, this is what we have been standing for.

HEROSE sets standards. We are one of the **world's leading manufacturers of safety valves for industrial applications** and the **number one in cryogenics.** We develop, build and sell valves, which are in successfully use all over the world. We specialise in engineering and manufacturing tailor-made solutions that meet market demand, right up to series production readiness. All our valves tested even in extreme conditions. We work together to find future-oriented solutions for the toughest demands.

Dirk Zschalich

Jens Silligmüller

Matthias Langenohl

THIS IS US

## Home in Bad Oldesloe **worldwide** in use

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HEROSE is one of the world's leading manufacturers of valves. We have a tradition of quality – it is the basis on which we build our future. We have a global reach: innovative solutions for the most demanding customers on all continents.

Valves have been our **profession for more than 150 years**. Our success story as an owner-managed company began in 1873 in Altona near Hamburg. The foundry and valve factory Th. Rose produced, among other things, beer taps and bathroom fittings, but especially bronze valves for maritime shipping, for which there were very stringent safety requirements even back then.

For more than 45 years we have **specialised in cryogenic valves and safety valves**. We apply all our know-how and our extensive experience each and every day to develop new products that overcome even the **toughest challenges**.

Midway between the North Sea and the Baltic Sea, Bad Oldesloe has been our home for more than 100 years. This is the nexus of our worldwide network of branches, subsidiaries and partners. We have been systematically expanding the location for 25 years, and it is always state of the art. With a **cutting-edge production facility**, our own **innovative development and engineering**, as well as excellently equipped **testing facilities**, we are optimally positioned for the future.



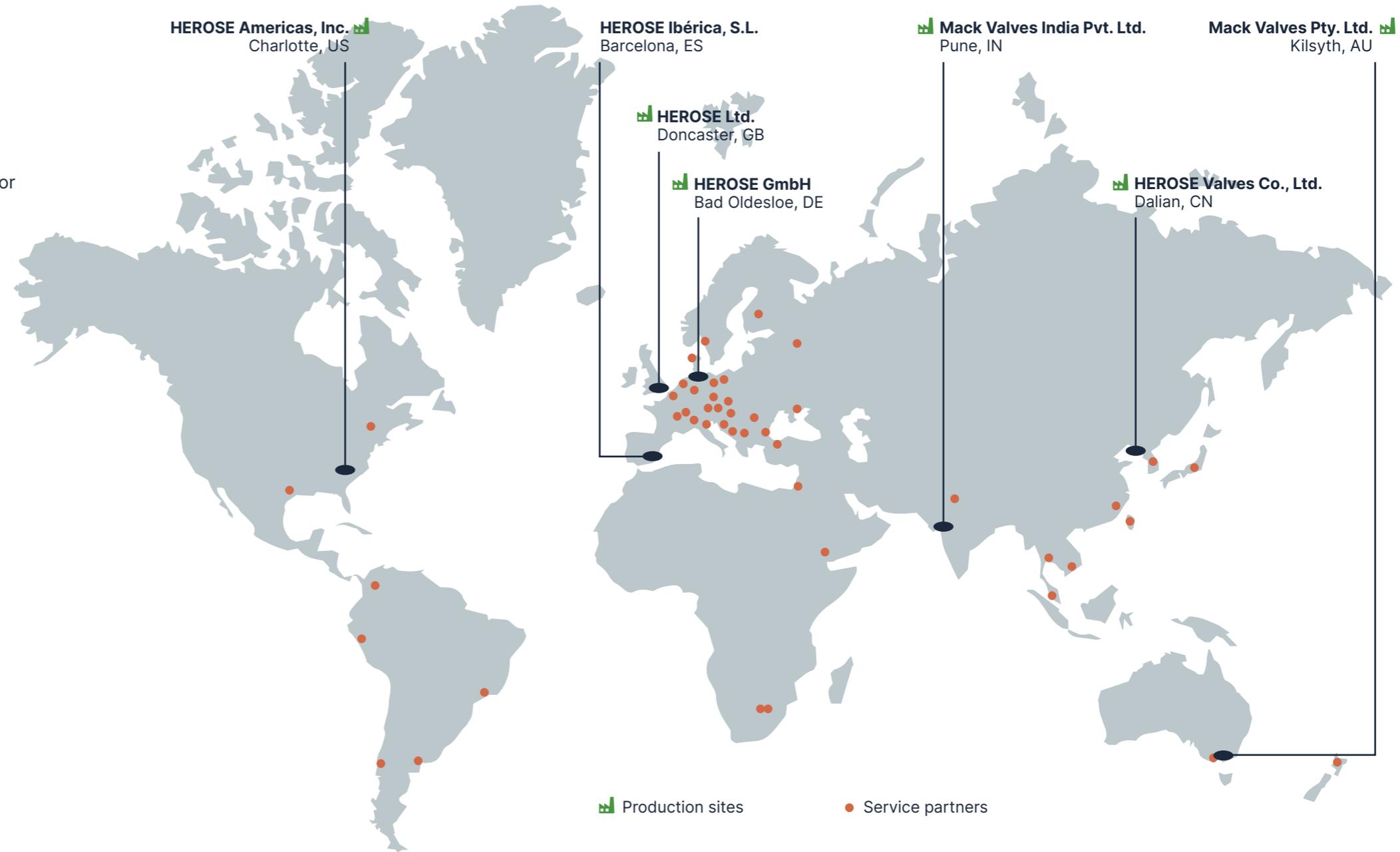
## HEROSE GROUP

### Always close at hand

All around the globe, customers from industry and commerce rely on our **innovative and reliable valves** for a wide range of applications.

As well as headquarters in Bad Oldesloe, the HEROSE Group includes six subsidiaries on four continents and covers five time zones. Together with our external sales and service partners, we have built a strong, international network that ensures our products and services are available globally. For you, this means **short lead times and fast service**. We are there when and where you need us.

**Our promise:** reliable products available worldwide in 100 percent HEROSE quality.



FACTS & FIGURES

## More than 150 years speak volumes

Quality made in Germany by HEROSE: when it comes to the safety and performance of our valves, the numbers send a clear message. More than 150 years of HEROSE – that means **more than 150 years of know-how and experience.**

Year after year, more than half a million valves are shipped from our plants, almost 80 percent of which are exported to customers in more than 90 countries. For cryogenic liquefied technical gases or LNG, for steam, compressed air or liquids, powdered or granular media – customers from **a huge variety of industries rely on HEROSE every day.**

Behind the numbers are the people at HEROSE: worldwide more than 550 highly qualified employees and more than 100 partners work hand in hand to deliver on our quality promise – around the clock, with a high level of motivation and no ifs or buts.



More than  
**150**  
years of  
experience



Owner-managed  
company

More than  
**500**<sub>k</sub>  
valves produced  
per year

More than  
**42**  
sales partners  
worldwide



Six  
production facilities

More than  
**65**  
authorised  
service partners

More than  
**550**  
employees  
worldwide



Global sales  
network

More than  
**100**<sub>m</sub>  
euro  
annual turnover

## MILESTONES

We are proud of our  
**more than 150-year** tradition

Scan for  
more illustrated  
history



**1873**

Founding of the valve factory TH. ROSE KG in Altona near Hamburg

**1947**

Founding of the joint trading company HEROSE GMBH ARMATUREN UND METALLE

**1991**

ISO 9001 certification

**1996**

Management buy-out by W. Zschalich

**1998**

Founding of HEROSE Ltd., Doncaster, GB

**1989**

First partnership with Valvomec

**1997**

Development of the CRYOGENIC portfolio

**1921**

Founding of HERO Armaturenwerk GmbH in Bad Oldesloe

**1978**

First cryogenic safety valve

**1992**

Merger of HERO and TH. ROSE to form HEROSE GmbH

**2010**

Portfolio expansion including LNG valves for shipping

**2011**

Founding of HEROSE Valves Co., Ltd., Dalian, CN

**2012**

Founding of HEROSE Ibérica, S.L., Barcelona, ES

**2013**

Takeover of LORCH Sicherheitsventile GmbH

**2017**

Takeover of Mack Valves Pty. Ltd., Kilsyth, AU

**2019**

Launch of hydrogen initiative

**2014**

Founding of HEROSE Trading Co., Ltd., Dalian, CN

**2022**

Relaunch of the corporate design

**2023**

Company anniversary

**2024**

Founding of HEROSE Americas, Inc., Charlotte, US

OUR DNA

## Vision statement

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We are the world's leading manufacturer of valves, solutions and services in the fields of cryogenic and general industrial applications.

As a successful family business, we are growing profitably, are financially independent and live a value-based corporate culture.

Being a true market leader requires more than experience and excellence:

**HEROSE – Built to Endure!**

OUR DNA

## Mission statement

---

**Built to Endure** is a promise – to our customers, our partners and to ourselves.

Our tradition of consistency, reliability and perseverance goes back more than 150 years. The customer is always the focus of what we do.

We impress our partners with our curiosity, creativity and pragmatism. Uncompromising high product quality is essential to safety – worldwide.

As an international group, we combine our strengths to boost our performance for our customers' benefit.

OUR DNA

## Our **value-based** corporate culture

---

Our corporate values are more than just words – they are the essence of the HEROSE brand. They provide direction in our day-to-day operations and decision-making. They are our beacon for today and tomorrow. Our corporate values, our vision and our mission are the three pillars which guide us while allowing for growth and change.

We tackle challenges with passion and drive, never losing sight of the needs of our customers. Welcome to HEROSE – where we live by our values and cultivate customer relationships.



| We are a family business.  
**Familienmitglied**



| Be the best possible you.  
**Potenzialmeister**



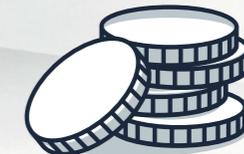
| Think customer first.  
**Kundenbegeisterer**



| Tell it like it is.  
**Klartextredner**



| Get things done.  
**Zielstürmer**



| Always make a profit.  
**Ergebnismacher**

## OUR PROMISE

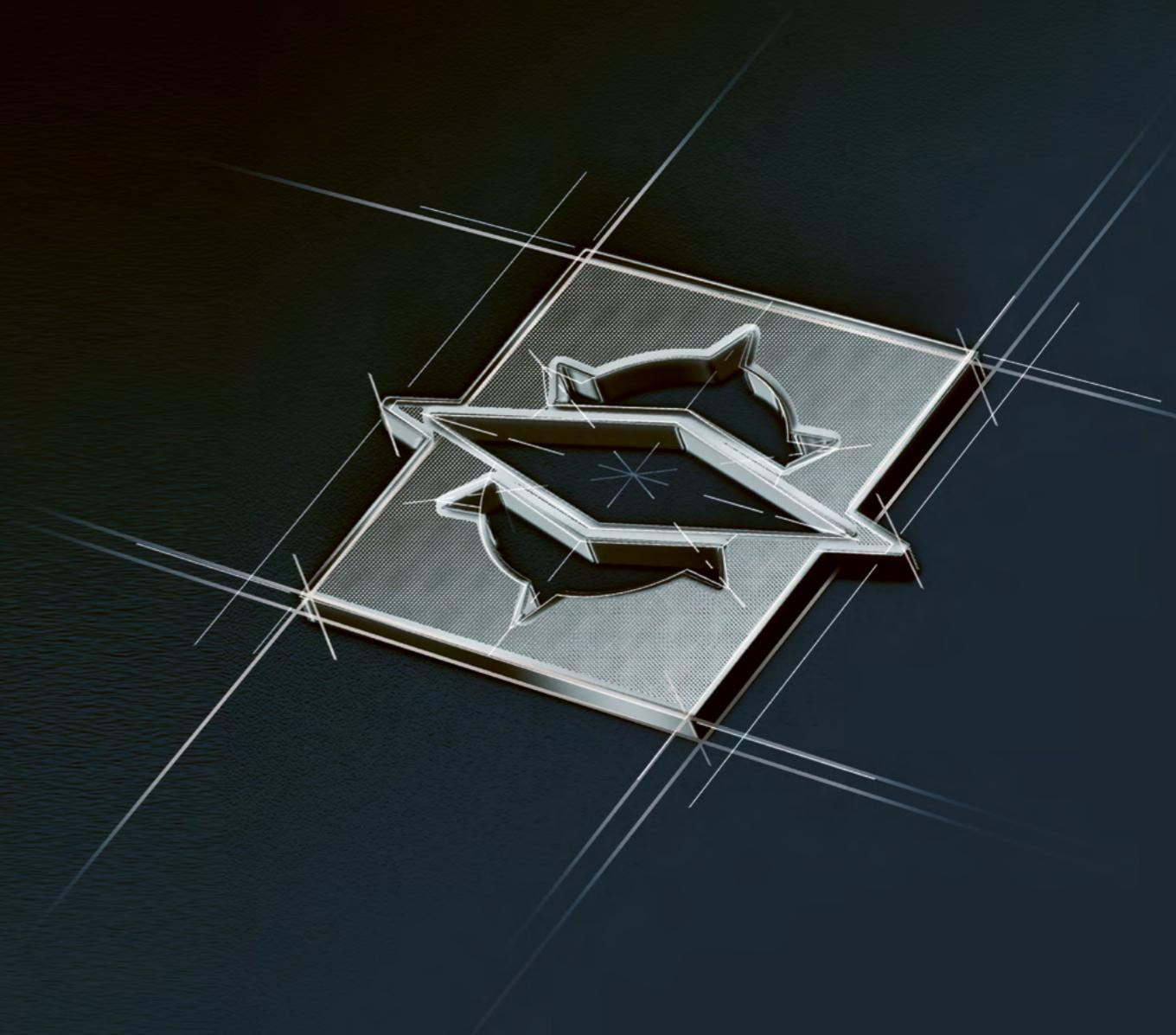
# Built to Endure

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Built to Endure is a promise – to our customers, to our partners and to ourselves.

**Endurance** means much more than just resistance, reliability, perseverance and persistence. Endurance also describes the aspiration to bring a difficult task to a successful conclusion.

The "**Power of Endurance**" is the HEROSE beacon that burns within us all and whose radiance makes us what we are: a true market leader!



## EXTREME CONDITIONS

### A rolling stone **gathers no moss**

For this reason, our engineers are constantly searching for innovative solutions – e.g. to deal with the corrosive salt in seawater desalination plants. HEROSE safety valves made of seawater-resistant bronze show no signs of wear, even after many years.

A dramatic photograph of a lighthouse on a rocky island. A massive, white-capped wave is crashing over the lighthouse, creating a large splash of water. The scene is set against a dark, stormy sky. The lighthouse is a dark silhouette with a person visible on top. The overall mood is one of extreme weather and resilience.

# BUILT TO ENDURE



**BUILT TO ENDURE**

**Products for the highest demands**

Quality is the essence, because when it matters, our valves perform. This is what our teams are working on worldwide. Our concept is transparent and comprehensive – from the selection of the raw materials to careful quality and functional testing and on to certified service. But the most important aspect is the people at HEROSE. Where quality and safety are concerned, they know no compromise.

HEROSE products withstand a lot – for a long, long time. There is no room for mistakes and carelessness, but rather 100 percent high-quality work is required. This is the challenge we set ourselves day in, day out. Together with our customers and partners, we therefore push boundaries and break new ground, always in search for innovative, practice-oriented solutions for constantly new applications.

**Built to Endure:** We build valves that last. Sustainable, forward-looking thinking defines what we do. This includes our quality suppliers, with whom we maintain long-term relationships, as well as service, which carefully and competently supports our customers.



### Research in our own testing facilities

Our testing facilities are as varied as our product portfolio: we test our products and innovations on site, directly and with maximum precision. In addition to our water testing area and air testing area with a high-pressure spherical accumulator, our high-pressure test facility allows us to carry out tests on our high-pressure valves safely and reliably. Fast, reliable and under real, extreme conditions, so you get nothing but the best.



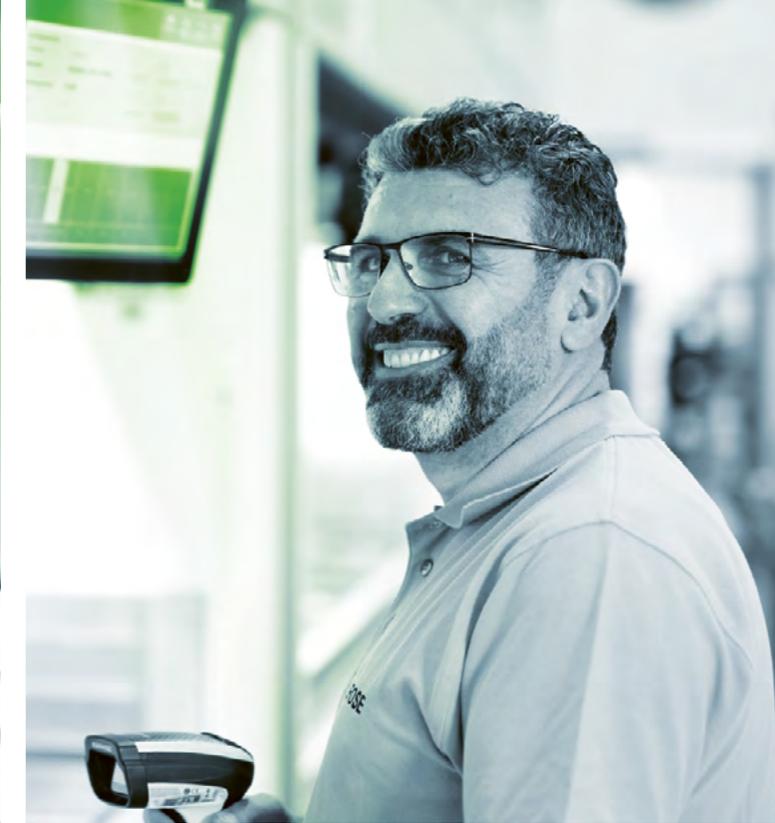
### High-quality raw materials

Perfect end products start with tested raw materials: deliveries of raw materials are checked during our incoming goods check. State-of-the-art test methods and thorough measurements form the basis of the check, ensuring that each part meets our requirements. In addition, pressure-bearing parts are tested for strength and tightness before assembly. Quality starts with top-class raw materials.



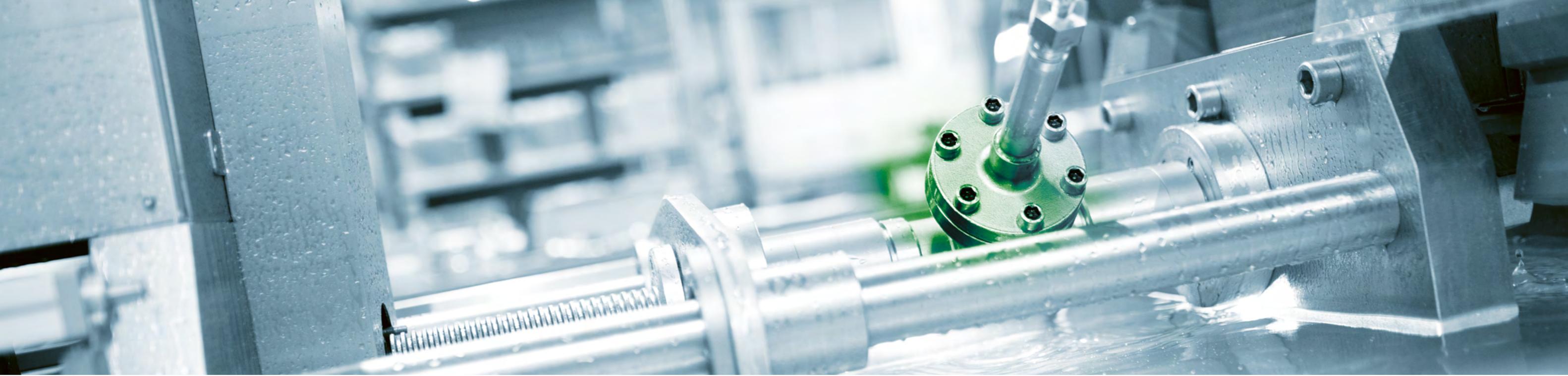
### Innovative and practice-oriented solutions

HEROSE engineers, manufactures and distributes its own products. Building from this, we specialise in developing and manufacturing to series-production level custom solutions for which there is market demand. Together with our customers, we are constantly developing specific solutions, e.g. for transporting hydrogen or for LNG marine systems. We develop today what you need tomorrow.



### Production using state-of-the-art machinery

Modern CNC machines and specially developed degreasers enable us to work effectively and flexibly. Higher output rates mean shorter lead times for you. The flexibility of the machines also enables us to react to market-specific requirements. Our production process translates to effectiveness and flexibility.



#### WORLDWIDE APPROVALS

### Our strategy: **top quality**

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In plants and technical installations, our products are just a small gear in the big wheel – but an important gear because, in most cases, function and safety depend on them. That is why our strategy is quite simply: top quality. More than 170 certifications and classifications for worldwide application testify to this.

#### Certified quality management

Our slogan is “Quality control from design to delivery”. Clarity of responsibility, documented processes, risk management and continuous improvement define our daily operations. HEROSE introduced this quality management system as far back as 1991. It is TÜV certified to DIN EN ISO 9001:2015.

#### Highest standard for environmental management

Our products feature durability and the ability to be repaired and maintained. The materials are almost 100 percent recyclable. Production waste and rejects are sustainably disposed of and sent to recycling. Our environmental management system is certified to DIN ISO 14001 and undergoes continuous development.

EXTREME CONDITIONS

## **Under zero** we are the hero

---

Valves from HEROSE set worldwide standards in cryogenic technology. With ease of maintenance and durability. And with the claim to be made for you.

# BUILT TO ENDURE

## CRYOGENIC LIQUEFIED INDUSTRIAL GASES

In the **cryogenic sector**,  
our experience is a big plus

Cryogenic liquefaction reduces the volume of industrial gases by a factor of up to 600, making economical transport and storage solutions possible. Our expertise in the development and manufacture of cryogenic valves guarantees maximum process reliability in all handling of industrial gases. All parts are automatically degreased and thus meet the very highest safety requirements – even for oxygen service.



### PROCESSING

For the industrial production of high purity nitrogen, oxygen, argon and other atmospheric gases, the individual components of air are separated using a thermal process in air separation units. The necessary repair and maintenance work in the Cold Box is greatly simplified by the use of HEROSE top-entry valves.



### TRANSPORT

Industrial gases are liquefied at cryogenic temperatures and transported in special trailers from the air separation unit to the customer. Thanks to lightweight HEROSE valves, the payload can be increased.



### STORAGE

Depending on the quantity purchased, cryogenic liquefied air gases are stored in fixed storage tanks with capacities from 3,000 to 100,000 litres. HEROSE offers the entire range of valves and modules for the safe filling, storage and delivery on the customer's premises.



## CRYOGENIC LIQUEFIED NATURAL GAS

### Tried-and-tested solutions for **LNG requirements**

Natural gas becomes liquid at a temperature of  $-161^{\circ}\text{C}$ , allowing this versatile fuel to be supplied without depending on pipelines. We use our many years of experience in the field of industrial air gases to provide valves which are optimised for LNG applications – including certified fire-safe to EN ISO 10497 if required.



#### PROCESSING

To provide customers with natural gas in different physical states according to their needs, more and more decentralised liquefaction and regasification plants are being built. HEROSE supplies a variety of valves to meet the different process requirements.



#### FUELLING

The use of LNG as a maritime fuel has considerable environmental advantages – lower emissions of carbon dioxide, sulphur dioxide and nitrogen oxides. We offer a wide range of valves for marine installations with extreme demands with regard to fire safety. In addition, we have developed complete solutions for the associated infrastructure, for the storage and transportation of LNG.



#### STORAGE

Cryogenic liquefied natural gas is stored in tanks with different capacities. HEROSE valves are tried-and-tested in many storage tank filling and delivery lines, including valves approved for safety-relevant applications, which are certified fire-safe to EN ISO 10497.



#### TRANSPORT

The transport of LNG from the storage facilities to the user's satellite stations is handled by special trailers. The frequency of filling, transporting and discharging exposes them to extreme loads. HEROSE supplies the appropriate DIN EN 12567-tested shut-off valves for liquefied natural gas.



## HYDROGEN

# Towards a green future together

The geopolitical situation means that hydrogen is no longer a topic for the future but a very relevant issue now. Hydrogen technologies are key elements to achieve the energy transition and to decarbonise industry and mobility. Renewable hydrogen will replace fossil fuels. The technologies exist and many projects are under way to build the hydrogen infrastructure for production, import and transport.



### PRODUCTION

Electrolysers produce hydrogen and oxygen from water using renewable electricity. HEROSE safety valves are customised to electrolyser power inputs from 1 to 100 megawatts, both for hydrogen and oxygen. Possible set pressures range from 0.5 to 55 bar and, in cases where the gases are compressed further, up to 1,200 bar and beyond.



### TRANSPORT & STORAGE

Hydrogen is stored and transported in gaseous form at 200 to 700 bar in pressure vessels or in liquid form at  $-253\text{ }^{\circ}\text{C}$  in special cryotanks. Our FullX top-entry valve is suitable for cryogenic temperatures down to  $-255\text{ }^{\circ}\text{C}$ . With a wide range of sizes and options, it can be used for most applications in hydrogen liquefiers, storage tanks and road trailers.



### FUELLING

To fill the hydrogen tanks in vehicles such as trucks, buses and trains in a short time, the hydrogen flow rate must be much higher than in passenger cars. With a flow capacity of up to 2,000 kilograms per hour and a pressure of up to 1,200 bar, HEROSE safety valves are the ultimate safety device in case of an accident, and discharge the hydrogen safely.



EXTREME CONDITIONS

Under **pressure**  
we work best

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Our high-performance valves can best display their outstanding qualities under pressure – for example, our high pressure safety valve protects systems up to 1,200 bar against excessive pressure.

**BUILT TO ENDURE**

## LIQUIDS, POWDERED & GRANULAR

# Reliable even under challenging conditions

The operating location and conditions can be a major challenge for any technical installation: weather, seawater or powdered and granular media constantly put the technology to the test. Our engineering department overcomes these challenges with quality and precision.



### LIQUIDS

Seawater desalination plants are used on cruise ships, for instance, to provide drinking and operating water. Our HEROSE safety valves are made of seawater-resistant bronze and are therefore suitable for a wide range of applications.

- › Waste water treatment
- › Seawater desalination plants
- › Firefighting systems



### POWDER & GRAINS

Silo trailers for the transport of powdered and granular media have become a European success story. One of the reasons for this success is the HEROSE safety valve for pneumatic discharge pressure protection. Thanks to its robustness, valve operation is also exemplary in extreme operating conditions.

- › Food industry
- › Animal feed
- › Wood
- › Cement



## COMPRESSED AIR & STEAM

# Stellar performance under pressure

The objective of our development and production is maximum safety – especially when it comes to the safety of people. This is why we test the reliability of our products in particular extreme situations. Our safety valves are installed in many high-speed trains for good reason: they protect against excessive pressure buildup between compressor and reservoir in the braking system.



### COMPRESSED AIR

Compressors supply stationary as well as mobile compressed air. HEROSE safety valves protect systems up to 1,200 bar and offer our customers solutions for different applications.

- › Compressors
- › Industrial plants
- › Municipal vehicles
- › Braking systems



### STEAM

Liquids can be separated by distillation, which utilises heat. One important criterion is the surface properties of the materials used. Depending on the application and type of sealing materials, HEROSE offers stainless steel springs and the option of nickel-plated valves.

- › Distillation plants
- › Sterilisers
- › Fermenters
- › Autoclaves





OUR PRODUCT RANGE

**As different your needs,**  
as diverse our products

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Valves are used in the most varied situations. Whether in heat or freezing cold, at sea, on land, for storage and transport. Our product selection is as diverse as the areas of application and requirements. So it will always fit perfectly!

**BUILT TO ENDURE**

## OUR PRODUCT RANGE

# Reliable solutions for all requirements

The individual valves within our various HEROSE product groups are as varied as the applications in which they are used, but all have one thing in common: **quality through and through** – which is what makes them so reliable and durable. Choose products whose function you can rely on.



### | LCV Globe Valve

The Liquid Cylinder Valve (LCV) is a compact globe valve. It is a reliable shut-off device for use on portable cylinders. Its design enables it to be opened and closed without changing the overall height, making it ideal for narrow spaces. With options such as a check function, an extended topwork and different connections available, the portfolio provides the perfect solution for almost every application.



### | Globe Valves

HEROSE globe valves seal, regulate or prevent flow. With additional features, such as a bellows seal for increased tightness requirements or a check function, HEROSE has the right valve for every application. In addition, a wide range of connection and material combinations are available. Top-entry valves for vacuum-insulated pipework systems complete the portfolio.

### | Gate Valves

Our HEROSE gate valves, which shut off the pipe vertical to the direction of flow, are designed to have a flow rate three to five times higher than globe valves of a similar size. This speeds up the filling of tanks and trailers and saves valuable time when delivering cryogenic liquefied gases. With different actuator options available, we offer solutions for various applications.



## Actuated Valves

The actuator, which can be pneumatic or electric, facilitates precise and efficient control of the flow of a medium. On request, our actuated HEROSE shut-off valve comes with an additional handwheel, with which the valve can be opened or closed manually in case of a pneumatic failure. The valve body is optionally available in seawater-resistant materials, making it ideal for offshore use.



## Angle Valves

Our angle valves, which control or prevent the flow of a medium at a 90-degree angle, are available with different inlet and outlet connections as well as different material combinations. In addition, we offer, for example, a check function that saves the necessity of a separate valve. HEROSE angle valves can be used universally for different physical medium states. They are manufactured in stainless steel, bronze and brass.



## Ball Valves

Ball valves are essential valves in industry – be it in air separation units, pressure vessels for cryogenic liquefied air gases or in applications in the food, pharmaceutical, biology, chemical and industrial sectors. The larger flow diameter of our cryogenic ball valves reduces flow losses and results in faster opening and closing times. From various sizes to manual or pneumatic models with different pressure ratings for the respective nominal size, we have the right solution for your application.

## Safety Valves

Ultimate safety for the protection of vessels or piping systems: guaranteed by HEROSE safety valves. Because they are certified to global standards, they can be used worldwide. Our valves are approved for pressures of up to 1,200 bar and are available in different materials. They therefore cover a wide range of applications.



## Check Valves

If the medium is only supposed to flow in one direction – with no back flow – our check valves are installed in systems and pipelines. Due to their special construction, they can likewise be used in low temperatures. With a wide range of manufacturing materials, connections and nominal pressures, we offer valves for many fields of application.



## Strainers

HEROSE strainers ensure compliance with specified purity levels for downstream processes. Screens and filters with different mesh sizes are available. With multiple combinations of materials and connections available, our strainer can be used in a wide variety of pipework systems to protect valves, pipelines and devices from contamination.



## Pressure Regulators

Pressure build-up, economizer and safety function are all combined in the HEROSE pressure regulator. Fewer valves and pipework are required, which also saves costs. When liquid is withdrawn, negative pressure is created. By evaporation, our pressure regulator builds up the pressure that is lacking and, if required, releases it again. In this way, technical gases such as nitrogen, oxygen or argon can be stored economically in a cryogenic liquefied state in a stationary tank under constant pressure.



## Changeover Valves

Is it possible to maintain safety valves during ongoing operation? Yes: our changeover valves usually have two outlets and one inlet, so that two safety valves can be connected to one pressure system. The connected vessel does not have to be emptied for testing or maintenance. Numerous designs offer a wide range of applications in the field of air gases, vapours and cryogenic liquefied gases.



## Fill Cluster

The fill cluster is a combination of individual HEROSE valves and is factory pre-assembled to form a system. This reduces the joining and welding work on site and saves time and cost when installing on the vacuum-insulated vessel.



## Modules

The HEROSE module portfolio consists of complete technical units for the purpose of operation and control. Their main use is in the supply of industrial gases – from the storage tank for cryogenic liquefied media to the point of delivery to the customer. The modules contain all components in a single, compact and portable design, greatly reducing installation times on site.

## SERVICE AT HEROSE

# We offer an extensive service and maintenance portfolio

We focus our attention on the individual needs of our customers, and act as a reliable partner to ensure the long service life and functional life of our valves. Digital services round off our on-site customer service. Trained specialists from the HEROSE Group and our service partners meet the highest standards. We are continuously improving our services, which means we can offer our customers the best possible service across the board.

## | Valve Information Service

The Valve Information Service (VIS) provides information on each and every single HEROSE valve. As well as product-specific data, certificates that have already been issued can be reissued on activation of the corresponding service level.

Further implementations are planned, such as the provision of suitable spare parts, 3D models and detailed maintenance schedules.

- Direct access to a valve you have purchased – including in the past
- Access through serial number and type number
- Option to download operating instructions, approvals, certificates, test reports and spare parts information
- View product-specific manufacturing information
- Link to the HEROSE Digital catalogue with the facility to send an enquiry



# HEROSE GROUP

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