

safe and reliable



# SPECIAL VALVES FOR HIGH-PERFORMANCE APPLICATIONS



→ KÜHME Armaturen GmbH

Our most important product:  
safety for your processes





# KÜHME VALVES – THE INTERFACE BETWEEN FUEL AND SAFETY

KÜHME Armaturen GmbH has specialised in the **development, design and production of special valves for power engineering** for more than 40 years. With our wealth of experience we can offer you a wide range from single valves to complete system solutions exactly tailored to suit your requirements.

Valves made by KÜHME are used wherever **combustible media need to be shut off quickly and safely**. KÜHME valves are widely used in coal-fired power stations, gas turbine plants, biogas systems and petrochemical plants. Moreover, they reliably fulfil their tasks in gas pipelines, on FPSO vessels and in nuclear power plants.

All these fields of application have one thing in common: they are areas of high risk and therefore require special attention and care. That is why KÜHME valves are designed to provide a maximum of safety and reliability. From the small DN 15 valve to the large DN 3000 damper we manufacture all of our products with utmost care – **because we know you are relying on us**.



# WHETHER SINGLE VALVE OR SYSTEM SOLUTION: KÜHME STANDS FOR COMPETENCE

KÜHME develops and produces valves of all sizes, with every possible function and degree of detail. Our range includes innovative solutions for the following fields of application:

- Double block and bleed valve unit
- Combined shut-off and control
- Gas mixing and control valve unit
- Compact valve skids and system solutions

From the proven single valve to the custom-designed, highly integrated valve station specially modelled for the particular application – our products all have one thing in common: they are absolutely reliable and comply with international safety standards. Moreover, our valves feature:

- Shortest closing time (e.g. 0.1 seconds)
- Absolute air-tightness (proven with air or helium leakage tests)
- High operating frequency capability
- Very long service life

→ Range of services

Competence means: the smallest detail is just as carefully designed as the entire system



# SOLID, LIQUID OR GASEOUS: KÜHME HAS THE OPTIMAL VALVE SOLUTION

## SOLID MEDIA

Hard coal  
Lignite  
Biomass  
Wood pellets  
Peat

## LIQUID MEDIA

Naphtha  
Heavy oil  
Light oil  
Diesel  
Petrol  
Kerosene  
Methanol  
Ethanol

## GASEOUS MEDIA

Hydrogen  
Oxygen  
Methane  
Natural gas  
Coke-oven gas  
Blast furnace gas  
Syngas  
Refinery gas  
Propane  
Butane  
Ethane  
Ethylene  
Biogas  
Sewage gas  
Pyrolysis gas

Each medium requires its own type of valve technology. KÜHME has more than 40 years of experience producing valves for the complete range of media. The optimal KÜHME valve with its tested and well proven, high-performance sealing system is specifically designed and produced to suit your particular application and type of fuel. Thus KÜHME offers you tailor-made valve solutions for every medium that guarantee rapid, safe shut-off at all times.





→ Fields of application

## POWER PLANT ENGINEERING

The burner shut-off valves in power plants need to function with absolute reliability to ensure smooth and trouble-free operation at all times.

KÜHME manufactures valves for the fast, reliable shut-off of solid, liquid and gaseous fuels.

Our valves are known for their outstanding reliability that guarantees the operating safety of the power plant.





→ Fields of application

## GAS TURBINES AND GAS COMPRESSORS

The Emergency Shutdown Valve (ESD) is of vital importance for the safety of gas turbine plants.

KÜHME valves safely shut off the gas supply within 0.1 seconds and are therefore excellently suited for use with gas turbines and gas compressors in order to protect the systems from damage.



→ Fields of application

## STEELWORKS

KÜHME valves are used in steelworks in order to quickly and safely shut off blast furnace gas, converter gas and coke-oven gas. The valves are capable of withstanding exceptional conditions and function reliably, for example, even at temperatures up to 280 °C and with a high ratio of dust.

KÜHME valves guarantee a safe operation of the plant, due to the double sealing system including automatic tightness check device. This well proven sealing technology is specifically designed and sized for the extreme thermal process conditions in steelworks.



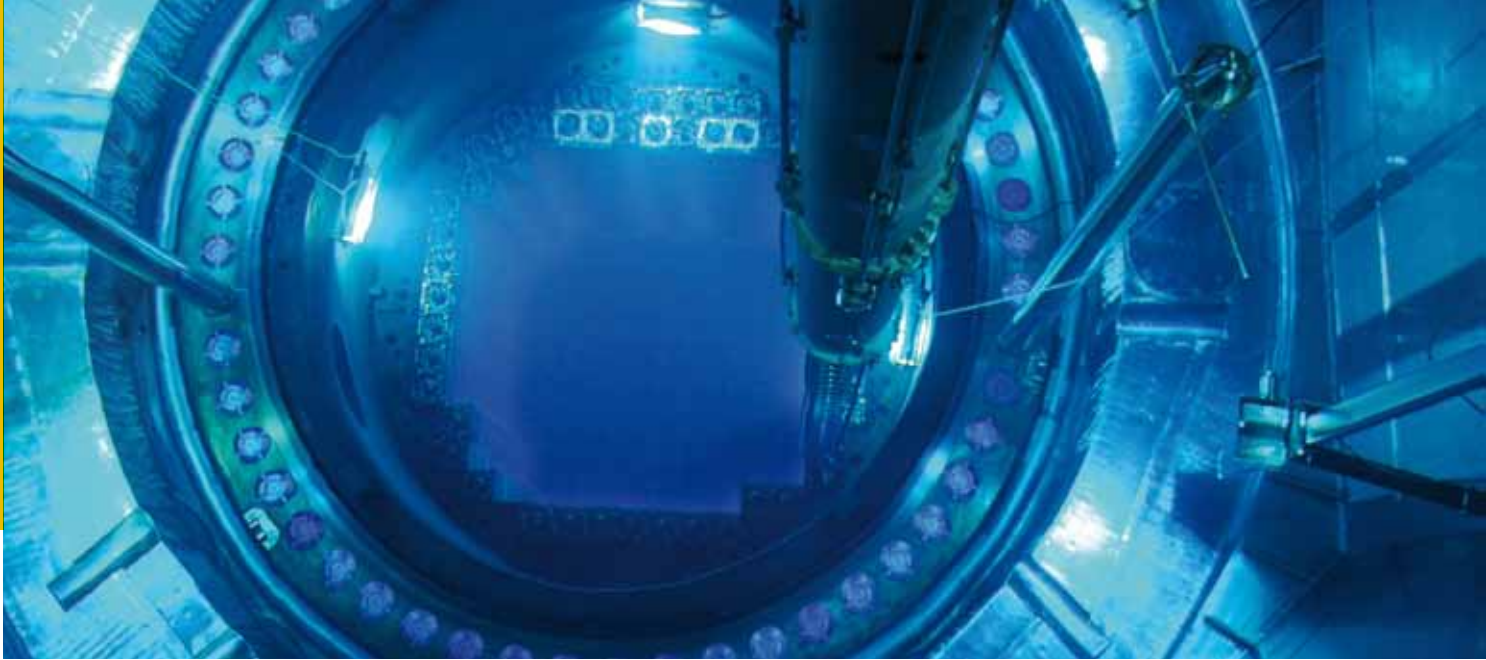
→ Fields of application

## REFINERIES AND PETROCHEMICAL PLANTS

In refineries and the petrochemicals industry it is particularly important that valves are able to function for extended operation periods without maintenance.

The KÜHME process valve series is specially designed for long-term, maintenance-free operation. Our valves are available in a range of versions adapted to suit their specific applications as well as the respective media, temperatures and pressures.

The valves are all approved in accordance with Fire-Safe Regulations as well as SIL Standards and Clean Air Act Regulations (German TA Luft).



→ Fields of application

## NUCLEAR POWER PLANTS

The most stringent safety requirements apply for nuclear power plants.

Valves used in this field must, for example, even be capable of withstanding earthquakes without negative impact for their safe function.

Type tests as well as installations implemented over a period of more than 35 years have proven that KÜHME valves reliably fulfil all specific requirements in terms of both function and safety.

Our valves are mainly utilised in nuclear power plants for quickly and safely isolating the containment system. They are fully equipped with a double sealing system and a test connection to ensure that the automatic tightness test can be performed while the valve is in operation.



→ Fields of application

## BIOGAS, LANDFILL GAS AND GAS STORAGE

The recent change in energy policy is creating new challenges for industry and technology.

For example when feeding natural gas systems with biogas, it is vital to maintain the quality of the combustion gas at a constant calorific value and stable conditions.

KÜHME has developed an innovative compact special valve unit that precisely controls both the volume and the quality of the mixed gas.

The use of landfill gas and gas storage systems poses other challenges. KÜHME provides you with optimal solutions for each of these applications – if our range does not yet include the valve you need for your purpose, we will develop it together with you.

→ Technology approach & knowledge

Success means being better at the  
crucial moment





## ONLY THE BEST SOLUTIONS ARE BRANDED KÜHME

Whether it is one of our established products or an innovative, highly complex special solution: **Only valve systems proven to function safely and reliably in numerous tests are sent to our customer.**

These high quality standards apply to all sizes, all functions and every level of detail.

At KÜHME we call this the **3D approach**: we provide **the entire range of sizes** from the small DN 15 valve to the large DN 3000 damper.

Our portfolio covers **the entire range of functions** – from shutting off and controlling to mixing combustible media. In addition, we offer **every level of detail** from single valves to complex, integrated valve stations.

# THE KÜHME 3-DIMENSIONAL APPROACH – EXACTLY THE RIGHT SOLUTION FOR EVERY APPLICATION

1<sup>st</sup>

DIMENSION

## THE RANGE OF SIZES:

from the small DN 15 valve to the large DN 3000 damper

2<sup>nd</sup>

DIMENSION

## THE RANGE OF FUNCTIONS:

from shutting off and controlling to mixing –  
the right valve for every type of task and medium

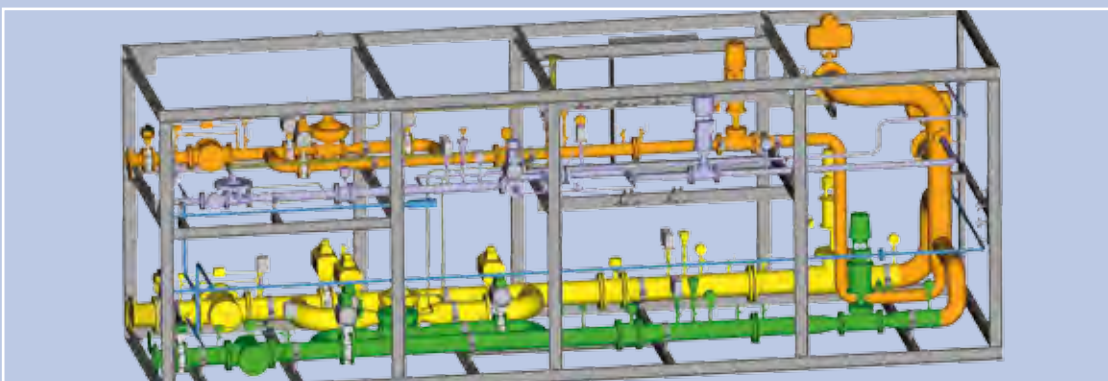
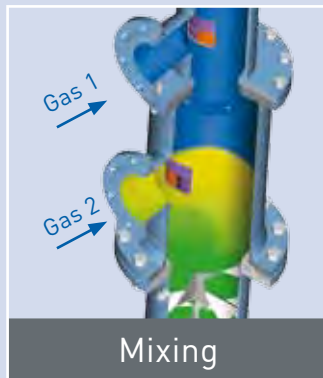
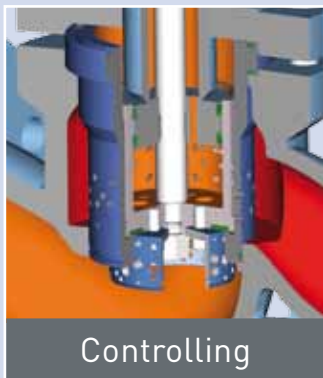
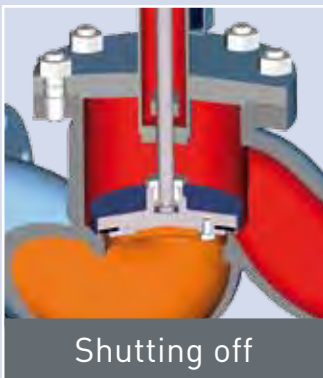
3<sup>rd</sup>

DIMENSION

## THE LEVEL OF DETAIL:

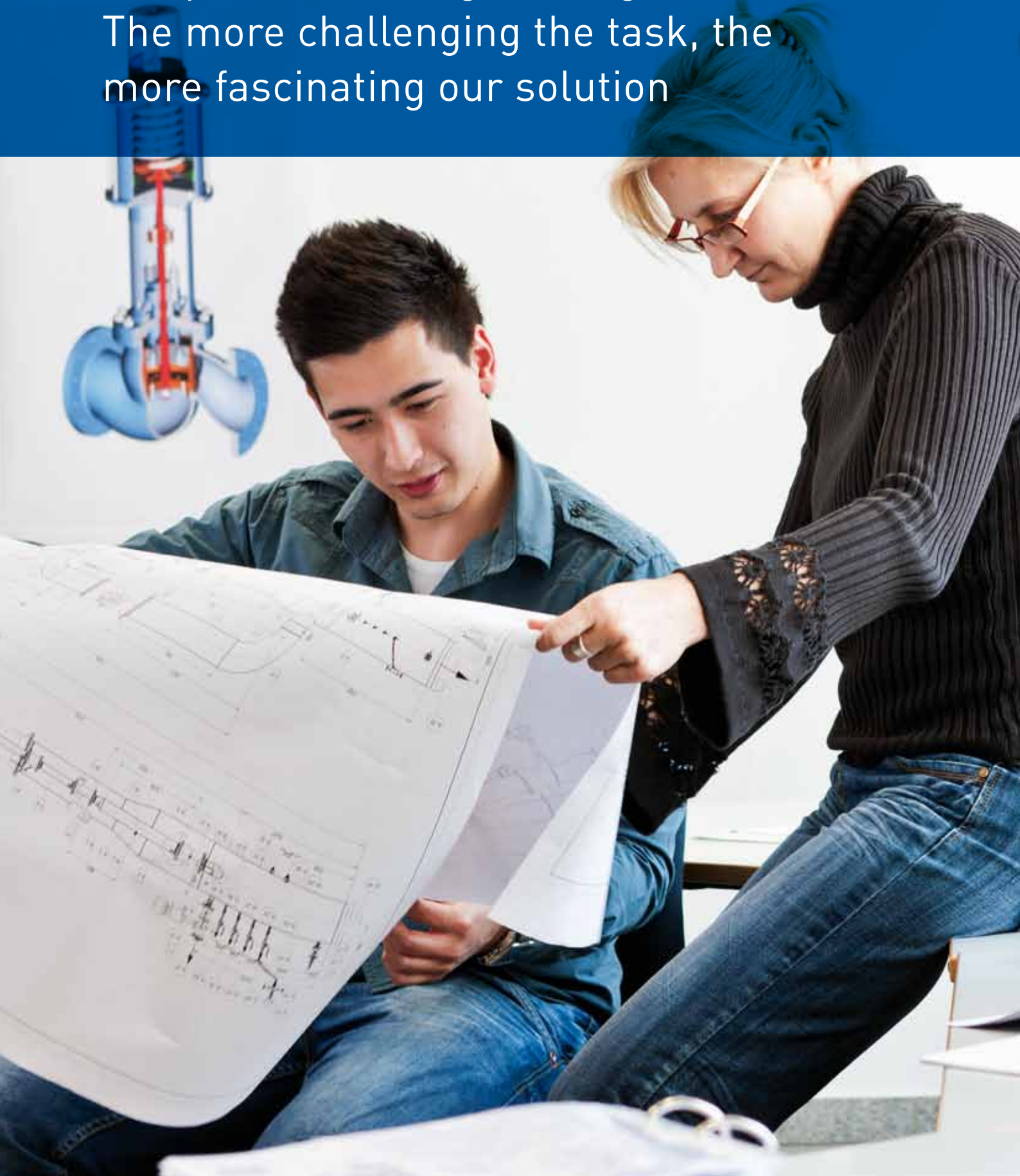
from individual valves to complex, integrated  
valve stations

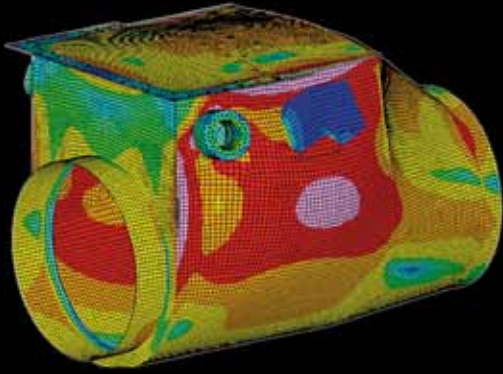




→ Solution competence & innovation

Our passion for engineering:  
The more challenging the task, the  
more fascinating our solution





## DEVELOPING INNOVATIVE SOLUTIONS TOGETHER

Power engineering is constantly developing and demands new, highly efficient solutions **that we develop together with our customers.**

We work with state-of-the-art tools such as **3D-CAD systems as well as FEM and CFD calculations.** In order to stay on the leading edge of technology, we are also maintaining cooperations with various universities.

**All fields of competence are closely connected at our head office in Bochum, Germany.** Whether research and development, design, production, quality management or the testing department and competence centre services, our employees are maintaining a close network and they are constantly exchanging ideas and information.

This creative flow enables us to use our decades of experience **to react to new challenges flexibly, quickly and reliably** and provide sophisticated, safe solutions to master every new challenge.

→ Production competence & quality

When safety counts –  
we accept no compromise!





# QUALITY IS THE PERFECT FUSION OF EXPERIENCE AND THE COMMITMENT TO RESPONSIBILITY

Valves are safety elements that need to meet the highest possible quality requirements. For this reason every single production step in our high-tech manufacturing plant is carried out and carefully checked in Bochum – we are committed to “[Made in Germany](#)”.

All of our production processes are continually optimised in order to ensure maximum reliability: for mechanical processing, we use [state-of-the-art and high-precision CNC machining technologies](#), our qualified welders work with [automatic TIG/MAG and submerged welding systems](#). Our quality inspectors check every single valve according to a predefined test procedure for [tightness, closure time, hydrostatic pressure and function in the original installed position](#).

The KÜHME “[all-in-one](#)” production concept gives us the efficiency and flexibility to produce any required quantity on schedule.



# WE ARE ALL HIGHLY QUALIFIED: THE COMPANY, THE VALVES AND THE TEAM

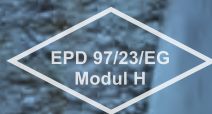
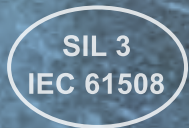
A company that constructs or operates a power plant has to be sure that all of its components meet the **currently applicable safety requirements**. That is why we at KÜHME make sure that our company, our production, our employees and our products are always certified in accordance with the latest standards.

However, these **certifications alone are not enough for us**. In order to be well prepared for the future too, we have developed our own standards with regard to the design implementation, the production quality and the testing, which we continuously enhance.

Together with experts, KÜHME has, for example, developed the **extremely hard-surfaced and corrosion-resistant nickel coating** for nuclear power plant valves as an industrial standard. We already introduced a quality assurance system back in 1974 – long before DIN ISO 9001 was even discussed.

→ Certificates & approvals

We don't just meet standards – we set them





## KÜHME SERVICE – CLOSE TO THE CUSTOMER. FAST, RELIABLE, WORLDWIDE

Reliability means more to us than just our products leaving our company in perfect condition. Reliability also means that the **safe operation of the valves is permanently maintained.**

Our competence centre service therefore quickly and reliably provides our customers worldwide with **services and spare parts.** In our well equipped service workshop, older KÜHME valves can be retrofitted and upgraded to meet the latest technical standards.

If you enter into a **maintenance contract with KÜHME,** we will additionally take on responsibility for the safe operation of your valves even **beyond the warranty period.**



→ KÜHME service worldwide



→ Mission statement

Your satisfaction is our ultimate goal!



# OUR MISSION

The most valuable asset for us is our good reputation. Since 1967, the name KÜHME has stood internationally for the quick, safe and reliable shutting off of combustible media, outstanding quality and fair cooperation with both customers and employees.

It is therefore our highest aim to retain and increase your degree of satisfaction with our products, solutions and services. We are an owner-managed, financially independent private company that manufactures in Germany. We maintain and promote the commitment and the knowledge of our team, we invest in our production site, in research and development and in our service capabilities – as we also wish to impress you with a sustainable and in every way first-class range of goods and service, both now and in future.





safe and reliable



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