



# KLINGER FLUID CONTROL

# With passion for outstanding quality



## KLINGER GROUP

## Visionary through tradition

KLINGER is one of the world's leading manufacturers and distributors of state of the art Sealing, Fluid Control and Instrumentation solutions. Pioneers in gasket technology, KLINGER was founded in 1886 and is a family owned business.

Today KLINGER is a global group with a total of 40 companies providing their partners with unique expertise and professional advice at 60 manufacturing, distribution and service sites worldwide. This long-established company counts leading businesses from the petrochemical, chemical, infrastructure and transport industries as its customers. KLINGER employs roughly 2,300 people worldwide and has an annual turnover of approximately 400 million Euros (2013).



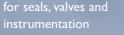
400 million euro was generated by the KLINGER Group in fiscal year 2013

## 2222 2222 2.300 employees

2,300 employees work for the KLINGER Group worldwide 80 countries of the world to which the Group has already exported









Klinger group has subsidiaries or a representative in 60 countries worldwide

# KLINGER FLUID CONTROL

### Led by technical excellence

Based on a stable foundation of product innovations, outstanding quality, permanent further development of work processes and reliable customer support, KLINGER Fluid Control successfully operates worldwide as part of the KLINGER Group. The company has underscored its role as a forerunner for more than 100 years as a competence centre for the development, manufacture, testing and international sales of industrial valves and borosilicate gauge glasses.

Many international certificates and approvals as well as constant improvements in the area of production processes substantiate the key role that KLINGER Fluid Control has taken – and they guarantee the fulfilment of current as well as future market needs across the entire line.

We create sustainable products and solutions that give our customers confidence.

### **RESEARCH AND DEVELOPMENT**

#### LABORATORY



The objective of continuous product improvement is at the heart of all our work in order to cover the requirements of the market.

We dedicate particular attention to environmental and safety relevant issues. For that reason, the name KLINGER stands for products that are developed at the highest level of quality and at the state of the art.

#### We optimise all products through finite element calculations in terms of strength and material usage even before they are built. Preceeding the product launch, additional endurance tests are carried out under a great variety of conditions (pressure, temperature, stress, media).

### PRODUCTION

### QUALITY ASSURANCE



We are a traditional Austrian company and manufacture our products south of Vienna. As a result, we can guarantee our customers the highest level of quality.

Our machines are state of the art and are operated by the best trained employees.

The satisfaction of our customers, our good reputation and business success are based on the quality of our products, customer service, constant improvement to the work processes and productivity increases as well as the just-in-time philosophy that determines our processes.

# KLINGER FLUID CONTROL

Local Know-how

KLINGER Fluid Control is part of the KLINGER Group and is represented around the globe.

We offer our customers a worldwide sale network with longstanding, qualified and competent service and distribution partners. That enables quick service, optimised delivery times and customer-focused services possible on-site.

NORTH ✓ AMERICA

» Canada» USA

### SOUTH AMERICA

» Argentina

» Brazil

### Extensive industry-specific knowledge



#### **INDUSTRY**

KLINGER valves help the steel, metal and mineral industries as well as machine builders to increase productivity and process reliability. At the same time, they can also lower many operating and maintenance costs.



#### **INFRASTRUCTURE**

Outstanding thermal resistance and remarkably long service lives of our products as well as a performance that guarantees integrity and efficiency win over customers in the district heating, water and wastewater industry.



#### CHEMISTRY

Pressure, heat, cold and aggressive media call for reliable products that guarantee zero-fault tolerance. The chemical industry relies on products from KLINGER, which protect the environment through compliance with strict emission regulations.

#### **PULP & PAPER**

The pulp and paper industry effectively reduces its downtimes and water consumption with KLINGER products. Through our solutions, it is possible to realise increasing production speeds with the highest reliability.

## **EUROPE**

- Austria »
- **Belgium** »
- Bulgaria »
- **Czech Republic** »
- Denmark »
- Finland »
- France »
- Germany »
- Great Britain »
- Greece »

- Hungary »
- Italy »
- Latvia »
- Norway »
- Poland **»**
- Portugal »
- Romania »
- Russian Fed. »
- Serbia \_ »
- Sweden »

- Switzerland »
- Slovakia »
- Slovenia »
- Spain »
- Turkey »
- The Netherlands »
- Ukraine »

### **ASIA PACIFIC**

- China »
  - Hong Kong
- India
- Indonesia »
- lapan »
- Kazakhstan »
- Malaysia »

- Pakistan »
- Singapore »
- » South Korea
- Taiwan »
- » Thailand
- Vietnam »

## **MIDDLE EAST & AFRICA**

### » Burkina-Faso

- Egypt »
- Ivory Coast »
- Israel »
- South Africa »
- Turkey »
- **United Arab Emirates**



#### TRANSPORT

KLINGER valves are reliable and long-lasting. That is valued also by worldwide customers from the automotive sector, because our products stand up to extreme demands, for example in the production of car tyres.



#### **OIL & GAS**

High-quality and pressure-resistant products are required for the manufacture, transport, storage and processing of oil and gas. KLINGER supplies solutions that are used successfully worldwide in all these processes, even under the most extreme climatic and geological conditions.



#### **ENERGY**

**AUSTRALIA** 

Plant reliability and process-efficiency are decisive guarantees of success. Our customers from the energy sector such as district heating, solar power, and electricity generation find the best product for any application.



#### **FOOD & BEVERAGE**

The quality, reliability and resilience of KLINGER valves are also convincing in the special area of application found in the food and beverage industry.

## PRODUCT OVERVIEW

## BALL VALVES

KHI

KHA / KHE / KHI KHSVI / KHO From DN 10 up to 1000 for pressure range PN16, PN25, PN40, PN63 or PN100. Great variety of materials and designs, automatable.

KHA

» 08-09





## KHSVI VVS » 10-11



» 14-15

### PISTON VALVES » 16-17

#### **KVN**

From DN 15 up to 200 for pressure range of PN16, PN40 and PN63. Great variety of materials and designs, automatable.

### GAUGE GLASSES » 18

### BOROSILICATE GAUGE GLASSES

Large selection of transparent, reflex and circular gauge glasses. More than 100 years of experience guarantee a long-lasting application.



## AB-COCKS » 18

### **AB-COCKS**

Great variety of materials, nominal widths and designs. The re-sealing function guarantees a long service life. Possible to replace the packing sleeve at any time.

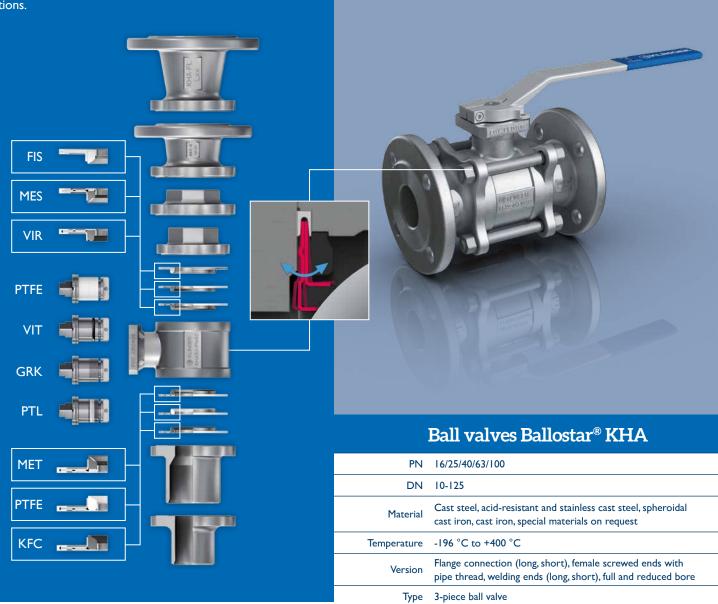




# BALLOSTAR® KHA

## Customized solutions for your applications

A wide range of types due to the modular construction system characterises these 3-piece ball valves. Three kinds of connections, six types of sealing elements and three stuffing box designs ensure that KLINGER Ballostar<sup>®</sup> KHA ball valves are suitable for many different operating conditions and applications.



8

8

2

KHI » Bolt-on design with flange ends

## BALLOSTAR® KHI

### Thousandfold and longtime successfully in service even with challenging operating conditions

We constantly respond to increasing demands concerning operating conditions (pressure, temperature) and special customer requests.

Whether in underground district heating shafts, pump stations, steelworks, potato peeling facilities, hydropower plants or tunnel drilling machines with a diameter of 15 metres, you will find Ballostar® KHI ball valves that fulfil their tasks successfully at these usage sites. The basic function of a shut off valve is fulfilled reliably through the unique elastic sealing system in order to shut off a media flow safely and with high seal tightness.

## PRODUCT ADVANTAGES

- » Bi-directional sealing system no preferred flow direction
- » Full bore slightest pressure losses and low costs for pumping
- » Trunnion mounted ball
- » Low operating torque
- » Generally maintenance free
- » Ballostar ball valve meets the requirements of EN 488:2011
- » Installation in any position
- » Easy automation

#### Special types:

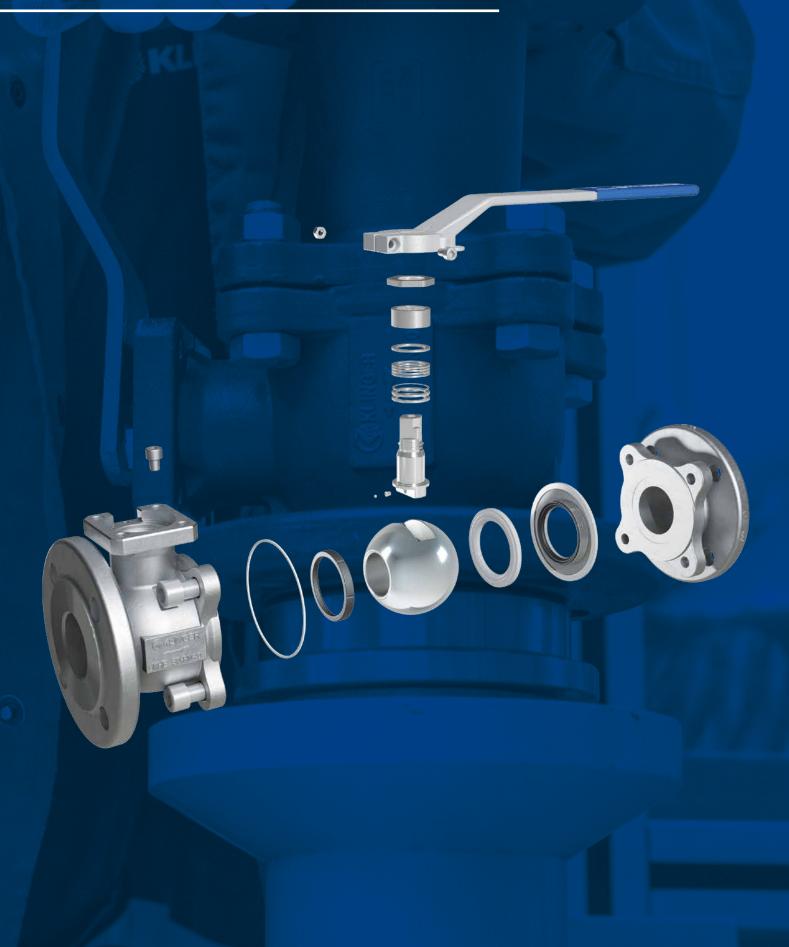
- » Metal seat for abrasive operating media
- » Special coatings for ball
- » Fire Safe version
- » Valves for betonite lining at tunnel drilling machines
- » Special type for vaccum
- » Valves for steam applications
- » Valve for Oxygen application (oil and grease free)
- » High temperature version (KHWI, KHSVWI) for operating temperatures up to +260°C



KHSVI-VVS » Fully welded design with butt welding end

### Ball valves Ballostar® KHI/KHSVI

PN	16/25/40
DN	150-1000
Material	Cast steel, acid-resistant and stainless cast steel, special materials on request
Temperature	-45 °C to +260 °C
Version	Flange connection and welding ends, full and reduced bore, fully welded
Туре	2-piece ball valve KHI, single-piece ball valve KHSVI-VVS



# BALLOSTAR® KHE

## Efficiency through optimisation for the process industry

Also the Ballostar<sup>®</sup> KHE ball valve offers modular selectable system components (operating stem and sealing elements). A construction kit that has already successfully proved itself at the Ballostar<sup>®</sup> KHA valve. Thus the split body KHE valves is prepared for a wide range of operating conditions. A whole ball valve range produced according to ANSI standards (KHE-CL) as well as a complete range of flange valves in short pattern design were considered during the product development.

## PRODUCT ADVANTAGES

- » Reliable leak tight in line and to the atmosphere
- » Pre-stressed, elastic sealing system
- » Re-sealable labyrinth suffing box, optional
- » Stuffing box with O-rings
- » Design with modular components
- » Antistatic design
- » Maintenance-free
- » Fire safe acc. to EN ISO 10497 in standard version
- » Suitable for automation due to top flange acc. to EN ISO 5211

#### Custom designs:

- » Gas design
- » Metallic sealing for abrasive media
- Operating stem extension (with/without protection pipe)



### **Ball valve Ballostar® KHE**

PN	16/40 Class 150/300
DN	15 - 200, ½" - 8"
Material	Cast steel, acid-resistant and stainless cast steel, special materials on request
Temperature	-60 °C to +300 °C
Version	Flange connection (long, short), full bore
Туре	2-piece ball valve



# MONOLITH KHO

## Quality for highest requirements

The body of the KLINGER KHO Monolith ball valve was stress-optimised by KLINGER Fluid Control in cooperation with the Technical University of Vienna to resist highest tensile and pressure forces occuring in underground laid pipe-networks. The whole construction was done and optimised by using FEM-calculations. Thereby an ideal characteristics of forceflow could be realised.

## PRODUCT ADVANTAGES

- » Best valve for underground installation
- » Reliably leak tight \_ in line and to the atmosphere
- » Optimised against the effect of pipeline forces and torque
- » Robust, cast steel body
- » Can be pressurised from both bore sides
- » Maintenance-free
- » Optimised life cycle costs (LCC)
- » Lowest operating torque
- » Ball setting can also be recognised without a hand lever\_\_\_\_\_
- » Ball and operating shaft made of stainless steel
- » Top O-rings can be replaced despite insulation
- » Double mounted, blowout-proof operating shaft
- » Resistant to impurities and corrosion
- » Different operating shaft lengths on request
- » Different welding end designs on request



### Ball valve Ballostar® KHO

PN	25/40
DN	25-300
Material	Cast steel, special materials on request
Temperature	-10 °C to +200 °C
Version	welding ends, for underground service/installation, reduced bore
Туре	single-piece ball valve

# **PISTON VALVES**





## Know-how and quality from the inventor of piston valves

Due to constant technical product improvement, KLINGER is the leading manufacturer of piston valves. Different types of connections (flange, threat, butt and socket weld ends) and piston valves produced according to DIN and ANSI standards complete the wide product range of KLINGER's industrial valves.

## PRODUCT ADVANTAGES

- » Reliable, leak-tight shut off in line and to the atmosphere
- » Unique robust construction principle
- » No wear on sealing surfaces
- » Insensitive to impurity
- » Long service life and optimised life cycle costs
- » Excellent regulation of flow
- » Maintenance free
- » Slightest emissions (TA-Luft, EPA) increasing plant efficiency and reducing loss of operating media
- » Valve remains in line if replacement of seat rings and internal parts are necessary
- » Designed for automation using electro-mechanic or pneumatic actuators



### Piston valve KVN

PN	16/40/63 Class 150/300
DN	ا 5-200, ½″ − 8"
Material	Cast steel, acid-resistant and stainless cast steel, spheroidal cast iron, cast iron, special materials on request
Temperature	-10 °C to +400 °C
Version	Flange connection (long, short), female screwed ends with pipe thread, butt and socket weld ends, regulation function
Туре	piston valve

## BOROSILICATE GAUGE GLASSES

Long and circular design

The quality of a sight (gauge) glass depends mainly on the chemical composition and mechanical strength of the glass material.

Analyses and acid/alkali tests are constantly ensuring a high glass-quality. The mechanical strength is reached by thermal prestressing.



## FIELDS OF APPLICATION

- » Oil refineries
- » Petro-chemical plants
- » Pharmaceutical manufacture
- » Chemical processing
- » Mechanical engineering, especially manufacture of boilers and storage vessels
- » Food and beverages industry
- » Water engineering
- » Pulp and paper industry
- » Textile industry
- » Marine engineering

### Borosilikat gauge glasses

ans all	Design	Reflecting gauge glass, transparent gauge glass, circular gauge glasses
	Material	Borosilicate "extra hard"
	Temperature	-273 °C to +400 °C
	Mica	For transparent gauge glasses
	Spare part sets	Available including KLINGER Sil seals

## PRODUCT ADVANTAGES



- » 90° operation ensures immediate opening and closing procedure
- » Generously dimensioned sealing surface which guarantees leak-tightness across the bore and to the atmosphere, hence: no false instrument readings
- » Hand operation enables throttling, therefore usage in blow-down lines possible
- » Simple design (only one moving part) ensures high operation safety and long durability
- » The packing sleeve, the only part which is subjected to wear, can be replaced within minutes with the AB-Cock staying in line.
- » No jamming caused by corrosion

AB-Cock			
	PN	40/160/250	
	Design	ABM, MABA, ABI, ABZ, etc.	
	Material	brass, steel and stainless steel	1
	Temperature	-200 °C to +400 °C	
	Versionen	Different connection types: Ermeto, Maihak, Burmeister, etc. sealing sleeves in PTFE, KAF, KOR-AF	1

## **AB-COCKS**

Robust shut-off valves for the measurment engineering

AB-Cocks are simple constructed, robust shut-off cocks which are specially designed for the measurment engineering. Due to their reliability and economic efficiency they are applied by the million.

# KLINGER FLUID CONTROL

Full service from the beginning of the project to after sales







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