KLINGER Belgium

SOLUTIONS

for Chemicals

www.klinger.be

KLINGER GROUP

Visionary by Tradition

KLINGER is the world's leading manufacturer and provider of sealing and fluid control solutions.

Founded in 1886 as a family enterprise, the pioneer in gasket technology today has evolved into a globally operating corporate group comprising independent global manufacturing, sales and service companies that offer unique know-how and expert on-site consulting services in 60 countries around the world.

Our customers include leading companies from a wide range of industries from manufacturing, infrastructure and automotive to marine, oil & gas, chemicals, pulp & paper, as well as energy, food & beverage, and pharmaceuticals. KLINGER employs around 2,900 people worldwide with total annual sales of around 686 million euros.

€ 686 MIO. ANNUAL SALES

686 million euros in revenue generated by the KLINGER Group per year.

2,900 EMPLOYEES

Our global workforce is 2,900 people strong.

80 MARKETS

The KLINGER Group has already exported to 80 countries and counting.

18 PRODUCTION SITES

The KLINGER Group manufactures gaskets, valves, instrumentation, expansion joints and hoses in almost 20 countries.

60 COUNTRIES

The KLINGER Group subsidiaries and representatives are at home all over the world.

93 LOCATIONS

With a presence in more than 90 locations worldwide, KLINGER is an international enterprise.

KLINGER® trusted. worldwide.

CHEMICAL & PETROCHEMIC AL PLANTS

Processes

Chemical products are essential in our daily lives: from plastic utensils and medicines to detergents, pesticides, and high-tech specialty chemicals that enhance our comfort and convenience. Both basic and complex chemicals are manufactured on a large scale in industrial plants.

KLINGER specializes in handling high pressures, aggressive and toxic media, and extreme temperatures. Managing solids, liquids, and gases is our core expertise. As leaders in valve, sealing, and monitoring technology, we've served the chemical industry for decades. Your added value: maximum safety, reliability, and system availability.

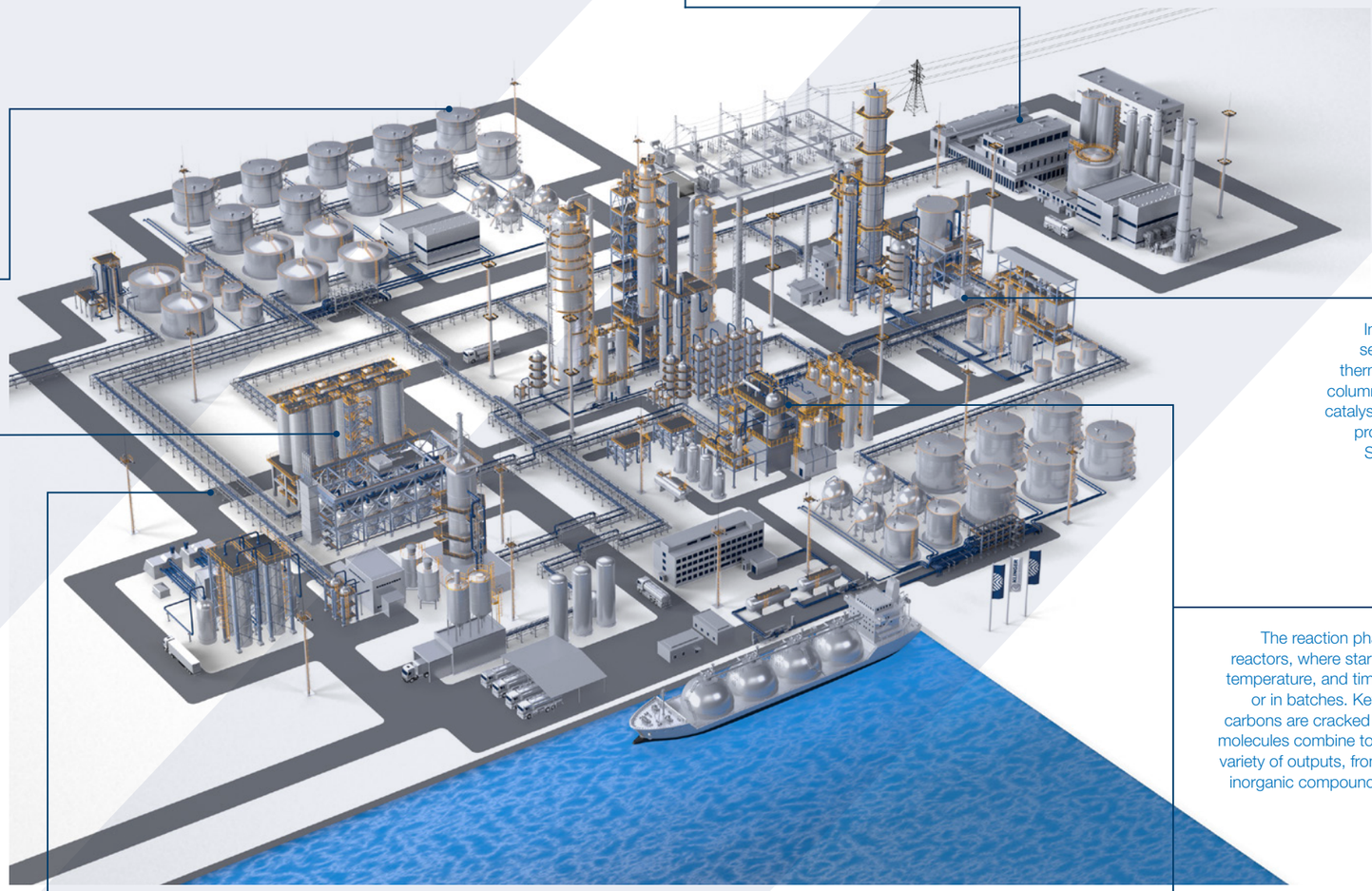
KLINGER helps you maintain system integrity and achieve safety goals for people and the environment. The certified solutions handle demanding, safety-critical applications across various chemical industries with durability and minimal risk, ensuring higher productivity and sustained plant availability.

With a global network and extensive industry expertise, KLINGER supports your success in the chemical sector.

UTILITIES

In chemical plants, essential utility areas support safe and efficient operations

Energy Supply	Involves generating and distributing electrical, steam, thermal, and other energy forms.
Steam and Heating	Provides heat for processes, using steam or other transfer media for reactions and temperature control.
Cooling Water	Removes process heat and cools equipment through circuits, cooling towers or other technologies.
Air and Gas Compression	Supplies compressed air and gases for instrument operation and control.
Water and Wastewater Management	Manages water for production, cleaning, and treatment.
Instrument Air and Nitrogen	Delivers purified air or nitrogen to maintain clean, inert environments.
Chemical Supply	Provides detergents, catalysts, and additives for various processes.



TANK FARM

Tank farms are complex facilities in the chemical and petro-chemical industries used to store, fill, and transport aggressive substances like fuels, oils, gases, and acids. Safe operation is crucial, especially with explosive or hazardous materials, requiring high-quality products to prevent leaks and malfunctions. Temperature and humidity must also be carefully controlled.

PREPARATION PHASE

This phase prepares reactants for the main reaction by removing impurities and adjusting their form as needed through washing, drying, grinding, dosing, and mixing. Some materials may require changes in state, concentration, or other properties. Quality checks ensure standards are met, forming a solid foundation for efficient, high-quality production in the reaction phase.

PIPELINE SYSTEM

In chemical plants, pipeline systems are crucial for transporting raw materials, gases, oils, and intermediates between processing units, ensuring continuous production and efficient resource use. Seals, fluid control, and monitoring systems keep operations safe and reliable, preventing issues like pressure surges and cavitation shocks.

PURIFICATION PHASE (COLUMNS)

In the final stage, products are purified, concentrated, or separated from residual reactants and by-products using thermal processes and separation equipment like distillation columns and evaporators. Unreacted materials, solvents, and catalysts are often recycled back to the reactor. Concentrated products are then piped for further processing or storage. Solid products undergo filtration, drying, and sometimes granulation or sieving before being packed into containers such as drums, sacks, IBCs, or tankers.

REACTION PHASE

The reaction phase executes planned chemical reactions in specialized reactors, where starting materials are processed under controlled pressure, temperature, and time to yield products. Reactors can operate continuously or in batches. Key processes include steam cracking, where light hydro-carbons are cracked at high temperatures with steam, and synthesis, where molecules combine to form complex compounds. These methods produce a variety of outputs, from polymers and pharmaceuticals to agrochemicals and inorganic compounds, depending on factors like product type, raw material availability, cost, and environmental considerations.

ENERGY RECUPERATION

Implementing energy recuperation systems in exothermic reactions not only minimizes energy waste but also contributes to more sustainable operation. As a result, companies can achieve both economic and environmental benefits while maintaining efficient production processes.

VALVES

INTEC BALL VALVES

INTEC is synonymous with high-quality ball valves and proven design with perfect technical functionality. They are used in a wide range of industrial applications for the safe transport and handling of liquid, gaseous, or solid-laden media. The design ensures reliable sealing, even at high pressures, high and cryogenic temperatures, and when dealing with aggressive, corrosive, and abrasive media.

The INTEC series, respectively system technology, is characterized by robust construction, high reliability, and ease of use. Additionally, the valves are available in many different designs, sizes, and pressure ratings to meet the specific requirements of almost any application. High-quality materials and precise manufacturing processes, combined with minimal manufacturing tolerances, ensure a long service life.

Thanks to continuous investment in research and development to provide innovative solutions, INTEC valves meet the latest technical standards.

ADVANTAGES

- Standard and custom high-performance ball valves
- Modular construction system
- Soft-seated or metal-seated ball valves with standard vacuum tightness
- Guarantee highest safety and availability as well as low storage costs
- Resistant to aggressive media, extreme pressures, high and low temperatures and high switching cycles
- Suitable for liquid, gaseous and solid media
- Metal sealing between ball and ball seat absolutely gas-tight
- Meet the highest requirements for fugitive emissions and make a significant contribution to environmental protection
- Maintenance-free designs
- Long service life

FLOATING BALL VALVE INTEC K200 & K220 SERIES

BENEFITS / PROPERTIES

2-piece floating high-end ball valves with proven design and technical functionality for safe shut-off. The ball valves are available in various material combinations and with different features and perfect technical functionality.

SPECIFICATIONS

- DN15–DN200 (NPS 1/2"–NPS 8")
- PN16-PN40 (ANSI Class 150–300)
- Soft seated, both sides fixed seat rings
- Available in stainless steel, carbon steel and special materials upon request
- Fire-Safe, leakage rate A
- Stuffing box system absolutely aging resistant and fugitive emissions certified acc. TA Luft and ISO 15848

Options: INTEC K220 one end with spring-loaded seat rings especially for temperature and pressure changes. INTEC K221 metal-seated

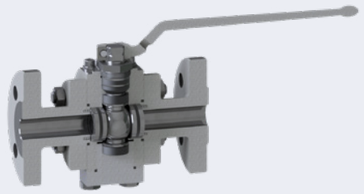
TRUNNION-MOUNTED BALL VALVE / INTEC K210 SERIES

BENEFITS / PROPERTIES

2-piece trunnion-mounted ball valves with both ends with spring-loaded seat rings. Trunnion-mounted ball valves are effective in both low and high-pressure situations. In low or no-pressure situations the spring-loaded seats will create a seal, while also working for high-pressure applications.

SPECIFICATIONS

- DN15–DN500 (NPS 1/2"–NPS 20")
- PN16-PN420 (ANSI Class 150–2500)
- Soft- and metal-seated
- Up to +800 °C (metal seat)
- Both ends with spring-loaded seat rings
- Available in stainless steel, carbon steel and special materials upon request
- Cryogenic version (down to -196 °C)
- Wide range of sealing materials
- Fire-Safe, leakage rate A
- Stuffing box system absolutely aging resistant and fugitive emissions certified acc. TA Luft and ISO 15848



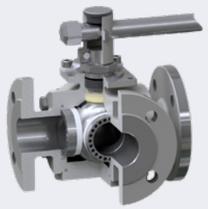
HIGH-PRESSURE BALL VALVE INTEC K800-SERIES

BENEFITS / PROPERTIES

3-piece high-pressure ball valve of the modular INTEC system technology. High-precision bearings and both ends with spring-loaded seat ring elements ensure safe handling in all applications of the high-pressure ranges.

SPECIFICATIONS

- DN15–DN200 (NPS 1/2"–NPS 8")
- PN16–PN500 (ANSI Class 150–4500)
- Soft- and metal-seated
- Up to +800 °C (metal seat)
- Both ends with spring-loaded seat rings
- Available in stainless steel, carbon steel and special materials upon request
- Cryogenic version (down to -196 °C)
- Wide range of sealing materials
- Fire-Safe, leakage rate A
- Stuffing box system absolutely aging resistant and fugitive emissions certified acc. TA Luft and ISO 15848



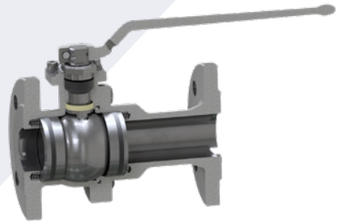
MULTI-WAY BALL VALVE INTEC K400 SERIES

BENEFITS / PROPERTIES

The universal multiple way trunnion-mounted ball valve in the modular construction system of the INTEC series. With 3-, 4- or 5-way applications, the safety of your medium flow is ensured. The 3-way ball valves are ideal for mixing or distributing media but also for shutting off side channels.

SPECIFICATIONS

- Stainless steel, carbon steel and special materials like Duplex, Super Duplex, Hastelloy B2/C4/C276, titanium, zirconium, Monell, Nickel etc. are available
- EN pressure classes PN16-160 and ANSI classes 150–900
- Standard sizes DN 15–150 (1/2"–6")
- Higher pressure ratings, temperatures and other face-to-face dimensions upon request
- Full bore with T- or L-bore ball



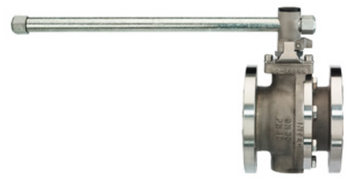
PRESSURE RELIEF BALL VALVE INTEC K220-S-DE-VERSION

BENEFITS / PROPERTIES

Pressure relief ball valves are used to ensure safe handling of critical and expanding media such as propane, butane, methane, ammonia, etc. Both ends with spring loaded seat rings. The upstream side seat will be pushed back at 2 bar higher pressure in the cavity, resulting in the pressure in the cavity always being relieved to the upstream side. The ball valve can be used bidirectionally, thus avoiding incorrect assembly during maintenance work.

SPECIFICATIONS

- Available in stainless steel, carbon steel and special materials like Duplex, Super Duplex, Hastelloy B2/C4/C276, titanium, zirconium, Monell, nickel etc.
- EN pressure classes PN16-40 and ANSI classes 150–600
- Standard sizes DN15–200 (1/2"–8")



FREE OUTLET BALL VALVE INTEC K230-SERIES

BENEFITS / PROPERTIES

The ball valve revolution for all aggregation conditions. Fields of application: production of catalysts, transport of solids (bulk material transport systems), gaseous media with solid, solid/liquid content applications, crystallizing media.

SPECIFICATIONS

- DN80–DN500 (NPS 3"–NPS 20")
- PN16-PN40 (ANSI Class 150–300)
- Soft- and metal seated, one end with spring-loaded seat ring, free outlet, trunnion-mounted
- Available in stainless steel, carbon steel and special materials upon request
- Wide range of sealing materials
- Fire-Safe, leakage rate A
- Stuffing box system absolutely aging resistant and fugitive emissions certified acc. TA Luft and ISO 15848

VALVES

INTEC DUOBALL BALL VALVE SERIES

The INTEC Duoball ball valve has a double and independent shut-off of the pipeline, which significantly increases operational safety and reliability.Therefore, the safety factor is increased by a factor of four compared with standard ball valves. In addition, the design has several connection options in the space between the two closures.

These are used for monitoring and ventilation. This configuration provides the best technology for the most demanding isolation applications where double block and bleed is required. Due to the double insulation and venting function, every Duoball valve is bidirectionally tight and useable.

CONFIGURATION

Like all ball valves of the INTEC series, the Duoball valve is available with floating ball or trunnion-mounted ball as well as in soft- or metal-seated design. All ball seat systems naturally meet the requirements of leakage rate A according to EN 12266 and are absolutely gas-tight.

DESIGN

The design is based on the integration of two ball valves in one body. The INTEC Duoball ball valve is available in the same length as a standard valve acc. to EN 588 R1 and provides a compact and economical alternative to using multiple valves. The INTEC Duoball has the smallest feasible cavity chamber, and inlet and outlet connections enable the cavity chamber to be flushed.

OPTIONS

- Leakage monitoring
- Pressure monitoring
- Flushing connection
- Nitrogen pressure overlay
- Connection for a safety pressure relief valve

TANK BOTTOM BALL VALVE INTEC K500 SERIES

BENEFITS / PROPERTIES

Tank bottom ball valve of the modular INTEC system technology. The stem is angularly placed and thus a clog-free installation and trouble free automation is possible.

SPECIFICATIONS

- DN80/50–DN200/150 (NPS 3/2”–NPS 8/6”)
- PN10-PN16 (Cl. 150)
- Tank connection acc. to DIN 28140 Part 1
- Soft- and metal-seated and free outlet possible
- Available in stainless steel, carbon steel and special materials upon request
- Fire-Safe, leakage rate A
- Stuffing box system absolutely aging resistant and fugitive emissions certified acc. TA Luft and ISO 15848

SAMPLING DEVICE BALL VALVE INTEC K700 SERIES

BENEFITS / PROPERTIES

This sampling device ball valve has an extremely large outlet with pressure relief of the sampling flask. The sealing systems and the body materials can be designed acc. to medium-duty requirements. This sampling device unit is available for plant lines from DN15 up to DN200. Cavity filler design is available. A flask connection with thread acc. to DIN 168 or spring-loaded disk is possible.

SPECIFICATIONS

- DN15–DN200 (NPS 1/2”–NPS 8”)
- PN16-PN40 (ANSI Class 150–300)
- Soft- and metal-seated
- Sample volume between 10 and 70 ml
- Sealing systems and body materials can be designed acc. to medium-duty requirements
- Stuffing box system absolutely aging resistant and fugitive emissions certified acc. TA Luft and ISO 15848

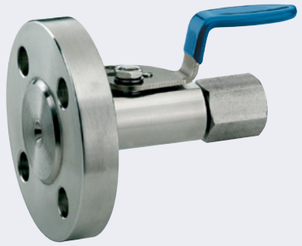
MINIPLANT BALL VALVE INTEC K100 SERIES

BENEFITS / PROPERTIES

The high-pressure series for all laboratory and miniplant applications for process industries. The series is available in different versions ranging from threaded end-to-clamping ring connections with compact design. All versions are used in laboratory and control applications. A further benefit of this series is the intelligent automation capability.

SPECIFICATIONS

- DN8–DN20
- PN100-PN250
- Female and male threaded ends, pipe screwing and clamping ring
- Stuffing box system absolutely aging resistant and fugitive emissions certified acc. TA Luft and ISO 15848



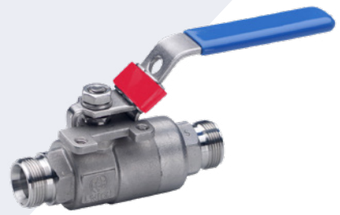
PRESSURE GAUGE BALL VALVE INTEC K600 SERIES

BENEFITS / PROPERTIES

Stainless-steel ball valves for pressure gauges and measurements lines. Different connections such as flanges acc. to EN 1092, outside thread acc. to DIN 16288, pressure gauge connection acc. to DIN 16284 or female and male threads are available. The minimized dimensions and safety provided by the pressure relief of the gauge are among the key advantages this product offers.

SPECIFICATIONS

- Different connections make installation fast and easy
- Available with or without vent bore, with test connection port or with expansion tube
- Anti-static device, maintenance-free shaft sealing with friction washer and cone ring
- Minimized dimensions
- Stuffing box system absolutely aging resistant and fugitive emissions certified acc. TA Luft and ISO 15848



RK-PROBALL BALL VALVE KH1-, KH2-, KH3-SERIES

BENEFITS / PROPERTIES

The RK-Proball series stands out with its particular cost effectiveness. Depending on the design, the ball valves are suitable in air pressure systems, light chemical industry, alkaline and acidic substances, solvents and other chemical agents. RKProball ball valves of type NC are certified acc. to the German Clean Air Act VDI 2440. Flexible usability – a great plus for your plant.

SPECIFICATIONS

- DN4–DN100
- PN16-PN63
- One, two and three-piece body
- Flange, threaded and butt weld ends and clamping ring connection
- Fire-Safe design

SPECIAL BALL VALVES

BENEFITS / PROPERTIES

KLINGER’s customized products make us one of the leading companies in the field of special valves that provide solutions for specific customer problems. The extensive technical plant engineering know-how enables us to work closely together with the customers for a detailed plant engineering of valves. The breadth and depth of our product range offers our customers everything they need – and with consistently high product and service quality.

SPECIFICATIONS

- Customized solutions with the advantages and materials of the INTEC System-Technology

VALVES

BALLOSTAR BALL VALVES

BALLOSTAR series KHA/KHE/KHI-F – the multi-talented products for many applications. BALLOSTAR series KHA, KHE and KHI-F valves feature a cast body with stable bolting for greater mechanical stability in terms of thermal expansion.

They are characterized by flexibility, modularity, availability, reliability and suitability for many different media. BALLOSTAR series KHA and KHI-F valves are available with drain/test valve for double block & bleed functionality.

BALLOSTAR KHA

The new KHA – the multi-talented product for many applications. The Ballostar KHA offers more stable bolting of the body with shorter bolts for greater mechanical stability in terms of thermal expansion.

FIRE SAFETY

The ball valve can be used for fire-safe applications at any given time as the basic design is already certified by default.

IMPROVED CORROSION PROTECTION KACP

Advanced Corrosion Protection is a newly developed, special coating procedure with galvanic coating ensuring improved protection against corrosion.

ANTI-STATIC AS STANDARD

As standard, the KLINGER Ballostar KHA features anti-static components in accordance with ISO 7121 and EN 1983, respectively.

TA LUFT (VDI 2440) / ISO 15848

The standard stuffing box meets the requirements of TA Luft (VDI 2440). Double sealing of the split body with a KLINGERSIL C-4430 soft gasket protects against external leakages and meets the highest helium emission testing requirements. Also available with EN 15848.

OXYGEN DESIGN

Because increased concentrations of oxygen lead to greater fire and explosion hazards, a valve must also meet certain prerequisites in terms of oxygen.

THE ELASTIC UNIQUE SEALING ELEMENT OF KHA

SPECIFICATIONS

- FS, KFC, PTFE, Viton™, metal version available
- Firm and robust design
- Suitable for abrasive and corrosive media
- Suitable for high temperature fluctuations
- Suitable for high operating cycles
- No clogging and blocking due to elastic properties
- Flexible construction for various applications in different industries
- Fire-Safe certification in standard version
- Flanged ANSI Version CL 150/300 available
- Housing material in duplex available
- Use with gaseous oxygen
- Improved O-ring system on operating shaft and additional C4430 sealing on pitch flange
- Fugitive emission acc. to ISO 15848-1
- Standard temperature range up to max. 250 °C
- Improved weight, lighter investment casting construction

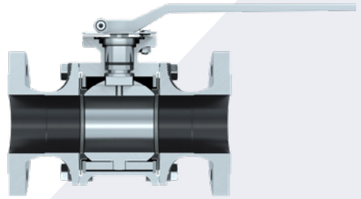
BALLOSTAR DOUBLE BLOCK & BLEED KHA-DBB

BENEFITS / PROPERTIES

A single ball valve instead of two with the double block & bleed (DBB) function, KLINGER offers a perfect solution in terms of life cycle costs. Unlike a floating design, the 3-piece ball valve is in this case trunnion mounted. This construction alternative (for nominal widths between 50 and 125 mm) improves durability, ensuring that the valve delivers optimal
functionality and operational safety even under the most demanding conditions. Next to time and cost savings, the optional double block & bleed functionality, either with a drain valve or drainage by way of the trunnion, is important in applications with limited installation space.

SPECIFICATIONS

- DN15–125
- PN16-40
- Cast, stainless steel or duplex
- DBB certificate



BALLOSTAR TRUNNION MOUNTED KHA-TM

BENEFITS / PROPERTIES

Three-piece design with trunnion mounted ball. Elastic sealing elements on both sides of the ball ensure bi-directional in-line tightness. The sealing elements have firm and elastic properties at the same time, and are suitable for corrosive and abrasive media and high operating cycles. In low-pressure or vacuum environments, the elastic sealing elements deliver outstanding results.

SPECIFICATIONS

- DN15–125
- PN16-40
- Cast or stainless steel

BALLOSTAR KHE-FK

BENEFITS / PROPERTIES

Two-piece body, flanged ball valve optimized for the process industry. The 2-piece body design reduces the risk of an external leakage, because there is just one sealing area between body and flanged end. The entire ball valve range is produced in EN standard (short pattern) and in ANSI standard (CL150).

SPECIFICATIONS

- Standard antistatic, Fire-Safe, TA Luft
- Leakage rate A
- Oxygen service natural gas service
- Gas distribution systems with up to 16 bar

BALLOSTAR KHI-F

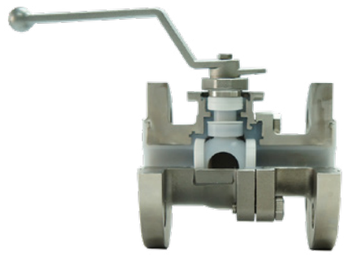
BENEFITS / PROPERTIES

The KLINGER Ballostar KHI-F ball valves are designed for the harshest and most demanding applications in various industries. Furthermore, the KHI-F comes with stainless-steel and duplex housing materials with soft and metal-seated sealing system.

SPECIFICATIONS

- DN150–400, 6"–16"
- Housing: rust- and acid-proof casting, duplex casting
- Ball: rust- and acid-proof casting, duplex casting
- Trunnion mounted
- Leakage rate A (EN 12266-1/ISO 5208), Class VI for soft seated
- Leakage rate Class IV-S1 (EN 60534-4) for metal seated

LINED BALL VALVE



KHD-LB

BENEFITS / PROPERTIES

KHD-LB lined ball valves provide excellent corrosion resistance in industrial applications. They offer good chemical stability, high corrosion resistance, low rubbing modulus, and self-lubrication features. They are suitable for alkali and acid applications in semi-conductor manufacturing, as well as for gas and pharmaceutical applications.

SPECIFICATIONS

- Material: 1.0619/1.4308+ PFA/FEP
- Sizes: DN15-DN200, larger sizes available upon request
- Class 150 to Class 300
- PN16
- Operation: lever, gear

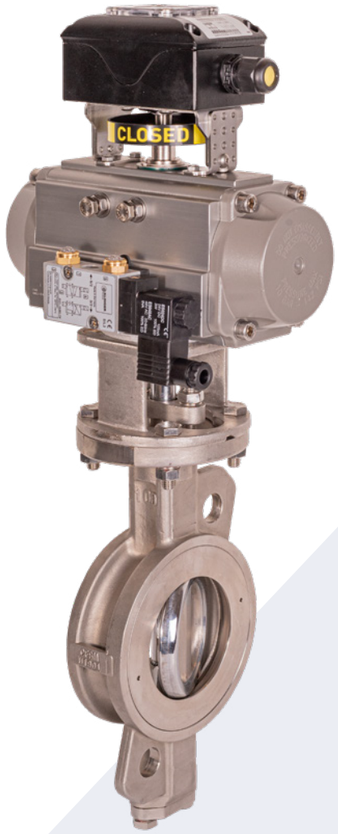
VALVES

BUTTERFLY VALVES

Quarter-turn valves fully open or close with a quarter turn of the disk and are characterized by their fast and easy operation. They are popular due to their light weight, small installation footprint, lower costs and availability in very large sizes.

Butterfly valves have a wide range of applications, particularly in flow shut-off, and are used in a variety of process media and industries, especially in the areas of LNG, oil, gas as well as water supply, collection and distribution, and pumping stations.

The designs of butterfly valve bodies include wafer type, lug type, and flange end connections.



BUTTERFLY VALVE KKD-MS82

BENEFITS / PROPERTIES

KKD-MS82 series butterfly valves for chemical applications, e.g. different materials for water, air and for most standard process materials as chemicals and other non-burning gases and liquids. As standard with lockable handle. Valves are equipped with RPTFE or metal seats, with wafer, lug, or flange connection.

CONCENTRIC BUTTERFLY VALVE KKD-81

BENEFITS / PROPERTIES

KKD-81series butterfly valves with EPDM liner are suitable for process water and inert gases. Butterfly valves are used as control valves or as closing valves in different process applications. Fitted with handle or manually operated gear.

SPECIFICATIONS

- Material: cast iron body (carbon steel also available)
- Liner material: EPDM, PTFE, NBR, Viton and Hypalon
- Pressure rating: PN10-25 and ANSI Class 150
- Available sizes: DN50–600 and up to DN1200 upon request

DOUBLE OFFSET BUTTERFLY VALVE KKD-82

BENEFITS / PROPERTIES

KKD-82 double offset butterfly valves are well suited for applications where rubber-lined butterfly valves cannot be used due to media, pressure and temperature range. They offer 100% bi-directional disk sealing with soft seats, while metal seats offer uni-directional sealing in high-temperature applications. Upon request, the metal seat option can be made bi-directional acc. to EN 12255-1 Class V. Fire-Safe version, and compliance with ISO 15848-1 available upon request.

SPECIFICATIONS

- Material: CF8M (carbon steel available)
- Pressure rating: PN10-40 and ANSI Classes 150 and 300
- Available sizes: DN50–600 and up to DN1200 upon request

TRIPLE OFFSET BUTTERFLY VALVE KKD-83

BENEFITS / PROPERTIES

KKD-83 triple offset butterfly valves with metal seat are designed for high-temperature and high-pressure applications, and are well-suited for applications requiring bi-directional zero leakage. They provide space and weight savings while minimizing installation and maintenance costs. Inherently fire-safe, compliance with ISO 15848-1 available upon request. They are fitted with lever or manual gear, and available in water, lug, flanged, and butt-weld end connections.

SPECIFICATIONS

- Material: CF8M (carbon steel available)
- Pressure rating: PN10-40 and ANSI Classes 150 and 300
- Available sizes: DN80–600 and up to DN1200 upon request

LINED BUTTERFLY VALVE KKD-L81

BENEFITS / PROPERTIES

KKD-L81 lined butterfly valves are designed with PFA, FEP, and PTFE materials for high corrosion resistance. The one-piece disk and stem design prevents damaging lining components due to movement. All lining components must pass high-voltage spark test to ensure there is no air in the lining components.

SPECIFICATIONS

- Material: 1.0619/1.4308+ PFA/FEP
- Sizes: DN40–DN600, larger sizes available upon request
- Class 150
- PN10-16
- Operation: lever, gear

VALVES

PISTON VALVE KVN

BENEFITS / PROPERTIES

KVN series piston valve with hand wheel for flow media as steam, water and standard gases. Piston valves can be used as control or shut-off valves. The piston valve has a unique graphite seat system which allows its use in contaminated media substituting for globe valves, for example. Valve connection with welding ends, threads and flanges.

SPECIFICATIONS

- Fire-Safe
- Valve for oxygen service
- Valve on the basis of TA Luft
- Emission testing ISO 15848
- Valve materials stainless steel, carbon steel and cast iron with pressure class PN16-63 and ANSI Class 150 and 300

GLOBE VALVE KAD

BENEFITS / PROPERTIES

KAD series globe valves with hand wheel or manually operated gear for flow media such as steam, water and standard gases. Globe valves have a metal seat and come with flanges or butt-weld ends.

SPECIFICATIONS

Valve materials carbon steel and CF8M. EN pressure classes PN10-40 and ANSI classes 150 and 300. Higher pressure classes optionally available. Standard sizes DN80-400 (2”–16”).

GATE VALVE KSD

BENEFITS / PROPERTIES

KSD series gate valves with hand wheel or manually operated gear for flow media such as steam, water and standard gases. Gate valves have metal seat and come with flanges or butt-weld ends.

SPECIFICATIONS

Valve materials carbon steel and CF8M. EN pressure classes PN10-40 and ANSI classes 150 and 300. Higher pressure classes optionally available. Standard sizes DN80–600 (3”–24”), but up to DN1200 (48”) optionally available.

GLOBE VALVE KAD

BENEFITS / PROPERTIES

KAD series globe valves with hand wheel for flow media such as steam, water and standard gases. Globe valves have a metal seat and come with flanges, welded or threaded ends.

SPECIFICATIONS

- Valve materials carbon steel and CF8M
- Pressure class ANSI class 800, higher pressure classes are optionally available
- Standard sizes DN10-50 (3/8”–2”)

GATE VALVE KSD-GTF

BENEFITS / PROPERTIES

KSD-GTF gate valves are designed with bolted bonnet, OS&Y, and flexible wedge for most applications. Gate valves are commonly used for fully open and fully closed operations.

SPECIFICATIONS

- Material: 1.0619, 1.4408, 1.4308
- Sizes: DN15–DN1500, larger sizes available upon request
- Class 150 to Class 1500
- PN10 to PN160
- Operation: hand wheel, gear

GLOBE VALVE KAD-GBF

BENEFITS / PROPERTIES

KAD-GBF globe valves are primarily used in fluid regulation applications as well as complete shut-off of flow. The medium does not flow directly in one direction, but enters the valve body and rises in it before exiting on the other side.

SPECIFICATIONS

- Material: 1.0619, 1.4408, 1.4308
- Sizes: DN15-DN300, larger sizes available upon request
- Class 150 to Class 1500
- PN16 to PN63
- Operation: hand wheel, gear

BELLOW GLOBE VALVE KAD-BLGB

BENEFITS / PROPERTIES

KAD-BLGB series bellow globe valves use bellows to seal the valve stem components. The lower end of the stainless-steel bellows is welded to the stem to prevent the fluid from eroding the stem. These valves are totally leak-proof and can handle corrosive liquids.

SPECIFICATIONS

- Material: 1.0619, 1.4408, 1.4308
- Sizes: DN15-DN300, larger sizes available upon request
- Class 150 to Class 600
- PN16 to PN40
- Operation: hand wheel, gear

CHECK VALVE KRD

BENEFITS / PROPERTIES

KRD series check valves suitable for different substances such as steam, water, air and for most standard process media such as pulp. They can also be used with flammable gases and liquids. Check valves are swing type with metal seat, with flanges or welding ends.

SPECIFICATIONS

- Valve materials carbon steel and CF8M
- Pressure classes in EN standard are PN10-40 and ANSI Class 150 and 300
- Higher pressure classes are available upon request
- Standard sizes are DN80-600 (3”–24”) but available up to DN900 (36”) upon request

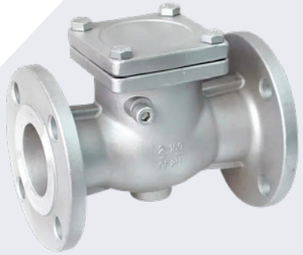
CHECK VALVE KRC

BENEFITS / PROPERTIES

KRC series check valves are suitable for different substances. Water, air and for most standard process media such as pulp and other non-burning gases and liquids. Check valves feature metal seats and are installed between flanges.

SPECIFICATIONS

- Valve materials CF8M
- Pressure classes PN10-40 and ANSI classes 150 and 300
- Special materials AISI 317 and SMO for bleaching applications also available
- Standard sizes DN50-600 (2”–24”), but up to DN1000 (20”) optionally available



CHECK VALVE KRD-SCF

BENEFITS / PROPERTIES

KRD-SCF check valves use a flapper that swings on a hinge as sealing element. A swing check valve is designed to prevent the medium in the pipeline from flowing back. As the pressure reaches zero, the valve shuts fully to prevent back-flow.

SPECIFICATIONS

- Material: 1.0619, 1.4408, 1.4308
- Sizes: DN50-DN600, larger sizes available upon request
- ANSI Class 150-1,500
- PN16 to PN63

LINED CHECK VALVE KRD-LPV

BENEFITS / PROPERTIES

KRD-LPV lined plug valves are designed for high corrosion resistance. The cylinder or cone-shaped plug can be rotated inside the valve body to control fluid flow.

SPECIFICATIONS

- Material: 1.0619/1.4308+ PFA/FEP
- Sizes: DN15-DN350
- ANSI Class 150
- PN10/16/25
- Operation: lever, gear

STRAINER KFD-YSF

BENEFITS / PROPERTIES

KFD-YSF strainers are designed to remove debris from pipeline by directing the flow through a screen to remove contaminants; ideal for fluid, gas and even steam piping systems.

SPECIFICATIONS

- Material: 1.0619, 1.4408, 1.4308
- Sizes: DN40-DN600, larger sizes available upon request
- ANSI Class 150–600
- PN16 to PN40
- Mesh 40/100 available

PLUG VALVE KPD-PVF

BENEFITS / PROPERTIES

KPD-PVF plug valves are designed as self-lubricating for low maintenance requirements, and perfect for the chemical, refinery, and desalination industries. They use a compressible sleeve as a sealing member in contact with the plug element.

SPECIFICATIONS

- Material: 1.0619, 1.4408, 1.4308, alloy
- Sizes: DN15-DN600, larger sizes available upon request
- ANSI Class 150–300
- PN16 to PN40
- Operation: hand wheel, gear

CHECK VALVE KRD-LCF

BENEFITS / PROPERTIES

KRD-LCF check valves feature a piston-type design. They are used in conjunction with globe and angle valves in piping systems where the direction of flow changes frequently. Suited for high-pressure environments.

SPECIFICATIONS

- Material: 1.0619, 1.4408, 1.4308
- Sizes: DN15-DN300, larger sizes available upon request
- ANSI Class 150–600
- PN16 to PN40

CHECK VALVE KRD-DPC

BENEFITS / PROPERTIES

KRD-DPC check valves are designed with a dual plate with built-in retainer. The two plates of the dual-plate check valve are hinged vertically in the center, eliminating the effect of gravity in horizontal installations.

SPECIFICATIONS

- Material: 1.0619, 1.4408, 1.4308
- Sizes: DN50-DN1200, larger sizes available upon request
- ANSI Class 150–2,500
- PN10 to PN160

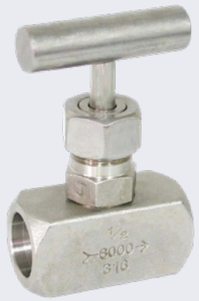
CHECK VALVE KRD-SWS

BENEFITS / PROPERTIES

KRD-SWS check valves are designed with a one-piece disk with wafer connection. The center-guided spring and disk design ensures that the sealing face is correctly aligned and sealed tightly at all directions. The design guarantees low pressure drops.

SPECIFICATIONS

- Material: 1.4408
- Sizes: DN15-DN300
- PN16, PN40



NEEDLE VALVE KID-NV10

BENEFITS / PROPERTIES

KID-NV10 needle valves are designed for use in isolation or vent system media during the instrumentation process. Female threaded, butt weld, socket weld, and lock-type fittings are available.

SPECIFICATIONS

- Material: 1.4408
- Sizes: DN6-DN50
- 6,000 PSI
- PN420
- Operation: lever

VALVES

CONTROL VALVES

Globe control valves are servo-driven devices that change the fluid flow rate in a regulated process. These valves are connected to a linear actuator that changes their degree of opening based on a signal from the control system. These valves are the most common type, used to control many fluids such as gas, steam, and liquids, and are used in a variety of industries.

The operating mode is a linear movement which can be equipped with pneumatic, electro-pneumatic and digital positioners etc.

Series 3000 valves for alimentary industry can be CE 1935/2004 compliant.

2000/2003 SERIES

BENEFITS / PROPERTIES

The 2000/2003 series control valves are designed for heavy-duty industrial systems, offering superior performance across a wide range of temperatures. The 2000 series features a two-way globe body with screwed-in seat, while the 2003 series has a three-way body with diverting or mixing functions. The modular intermediate bodies of both series can be adapted to specific applications and feature guided plugs.

SPECIFICATIONS

- DN15–150
- PN16-PN40 and ANSI 300
- Connections: UNI/DIN PN16, PN40 and ANSI 300 flanges

EURO SERIES

BENEFITS / PROPERTIES

The EURO series control valve is a simple and reliable general service globe valve. The precision-machined plug and seat deliver excellent control performance. The plug is guided in its upper part. They are particularly suitable for regulation in medium-duty/light-duty systems.

SPECIFICATIONS

- DN15–150
- PN16-PN40
- Connections: UNI/DIN PN16, PN40 Flanges
- Seal: soft (Class VI) and metallic (Class IV – V)
- Actuator: Pneumatic diaphragm (maximum supply 3 bar)
- Temperature from -20 to +205 °C

800/803 SERIES

BENEFITS / PROPERTIES

The 800/803 series control valves are ideal for medium-duty/light-duty systems. The 800 series features a two-way body with screwed-in seat and bottom inspection cap, while the 803 series includes a three-way configuration with diverting or mixing functions. Both series have guided plugs and provide reliable, maintenance-free operation.

SPECIFICATIONS

- DN15–150
- PN16-PN40
- Connections: UNI/DIN PN16, PN40 Flanges
- Seal: soft (Class VI) and metallic (Class IV – V)
- Actuator: Pneumatic diaphragm (maximum supply 3 bar)
- Temperature from -20 to +205 °C

3000/3003 SERIES

BENEFITS / PROPERTIES

The 3000/3003 series control valves are designed for precise flow control, with diverting or mixing function in the 3003 series. Built from stainless steel or special alloys, they are fully customizable based on the application. Cryogenic, high-temperature, and bellows-sealed variants are available with fast production times.

SPECIFICATIONS

- DN10–50 (1/4 in.–2 in.)
- UNI/DIN PN16-PN160, ANSI 150–600
- Connections: UNI PN16-PN160 and ANSI 150–600 Flanges; Thread NPT – GAS; BW and SW welding; clamp
- Seal: soft (Class VI) and metallic (Class IV – V)
- Actuator: Pneumatic diaphragm (maximum supply 3 bar)
- Temperature from -196 to +350 °C

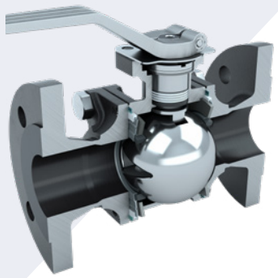
4000 SERIES

BENEFITS / PROPERTIES

The 4000 series control valves are designed for super vacuum-insulated cryogenic systems and can also be used in pilot and experimental processes. The valve body and extension are machined from stainless-steel bars, making them fully configurable to suit the application. All internal parts are removable without having to uninstalling the body from the system, thus facilitating all maintenance work.

SPECIFICATIONS

- DN10–40
- PN16 (DN32/40); PN16/40 (DN10/25)



BALLOSTAR KHA V-PORT

BENEFITS / PROPERTIES

For flow control and regulation applications, the Ballostar KHA ball valve model is available with different V port ball and used especially for control purposes in harsh applications. Furthermore the V-Port KHA can be automated with regulating actuators.

SPECIFICATIONS

- Different characteristic curves due to various ball cuttings
- Applicable for clear media without solids
- Easily combinable with pneumatic and electric control actuators
- V-port ball versions are available with 10°, 30° and 60° angles as well as slotted
- The V-port balls in the different cuttings are available for the entire size range of the KHA ball valve model
- Soft sealing up to 230 °C with KFC sealing rings in regular operation
- To maintain the leakage rate A, the valve may only cool down when the ball is fully open or closed – not in the control position

SEGMENT BALL VALVE KHD-SGF

BENEFITS / PROPERTIES

KHD-SGF segment ball valve is lightweight yet rugged, and suitable for both on-off and control applications in harsh environments.

SPECIFICATIONS

- Available in materials CF8M and carbon steel
- Soft seat and metal seat are available
- Standard sizes DN25-400 (1”–16”) for ANSI and DIN PN16 standards

AUTOMATION & ACCESSORIES

PNEUMATIC ACTUATORS

BENEFITS / PROPERTIES

Pneumatic actuators are the most common actuators for quarter-turn valves to open/close or for control. Actuators can use only pneumatic operation (DA) or be designed to operate with spring force (SR). It is also possible to operate them over 180 degrees and with hydraulic oil.

SPECIFICATIONS

Normal pressure in the actuator feed (air) is 4.5–6 barG. There are special products for ATEX zones and also products for different reliability levels (SIL) according to customer specifications. Some manufacturers also produce actuators in material 316 if high chemical resistance is required.

ELECTRIC ACTUATORS

BENEFITS / PROPERTIES

Electric actuators come in quarter-turn or multi-turn designs. They are slower than pneumatic actuators. Their biggest advantage over pneumatic actuators is force. Bigger valves require large forces to operate and electric actuators combined with gear units can provide these high forces.

SPECIFICATIONS

Most actuators use electric power. Since there are different standards for electric power in different countries, the standard has to be known before selecting the actuator for the valve. Products are available for ATEX zones and the most common data transfer protocols are supported by actuators from different suppliers.

POSITIONERS

BENEFITS / PROPERTIES

The positioner is the control unit of a pneumatically actuated valve. The positioner receives a signal and the actuator then moves the valve into the desired position according to that setpoint.

SPECIFICATIONS

Normal pressure for positioners (air) is 4.5–8 barG. There are special products for ATEX zones and also products for different reliability levels (SIL) according to customer specifications. Customers receive position information. In addition, the positioner is able to communicate with the automation system via several protocols.

LIMIT SWITCHES

BENEFITS / PROPERTIES

When valves are moving only to open and closed positions without controlling fluids in the middle position, the valve actuator can be equipped with a device that sends a signal to the automation system when the valve is fully open or closed.

SPECIFICATIONS

Limit switches operate with mechanical or inductive sensors. There are special products for ATEX zones and also products for different reliability levels (SIL) according to customer specifications.

SOLENOID VALVES

BENEFITS / PROPERTIES

The positioner moves the actuator to the valve position that corresponds to the setpoint. The valve actuator can be driven by a device that feeds pneumatic air into actuator to move the valve into the open or closed position. Special features can be integrated to move the valve also in the middle positions to gain some control functions.

SPECIFICATIONS

Normal pressure for solenoid valves (air) is 4.5–8 barG. There are special products for ATEX zones products for different reliability levels (SIL) according to customer specifications.

GASKETS

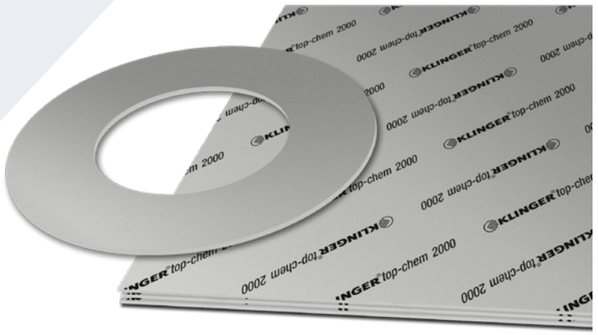
TOP-CHEM 2000

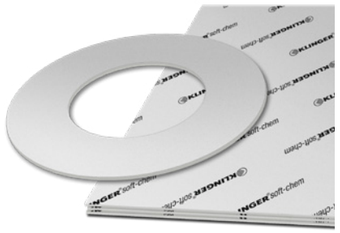
BENEFITS / PROPERTIES

» The perfect universal gasket for heavy-duty applications
» Suitable for high temperatures up to 260 °C in combination with high pressure
» The only PTFE gasket with API 6FA Fire-Safe certificate
» Excellent for all types of aggressive media
» High retention of bolt load – retorquing not required
» No aging
» Lowest cold and hot flow

SPECIFICATIONS

» PTFE filled with silicon carbide
» Dimensions of standard sheet: 1,500 x 1,500 mm
» Thickness: 1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm
» Tolerances: thickness acc. to DIN 28091-1, length ±50 mm, width ±50 mm
» Can be supplied as cut gaskets in DIN, ANSI and user-defined dimensions





TOP-CHEM 2003

BENEFITS / PROPERTIES

» Suitable for low temperatures and large sealing surfaces
» Excellent for all types of aggressive media
» FDA conformity
» No aging
» Excellent adaption to poor flange surfaces
» High tightness at low torque

SPECIFICATIONS

» PTFE filled with hollow glass microspheres
» Dimensions of standard sheet: 1,500 x 1,500 mm
» Thickness: 1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm

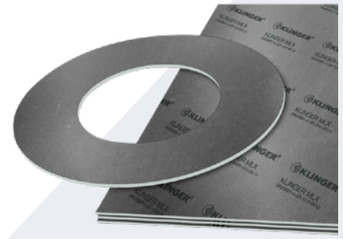
SOFT-CHEM

BENEFITS / PROPERTIES

» Multi-directional expanded PTFE
» Suitable for a wide range of applications
» Easy to cut
» Excellent sealing at low loads
» Seals irregular flanges
» No aging of the material

SPECIFICATIONS

» Multi-directional expanded PTFE
» Dimensions of standard sheet: 1,500 x 1,500 mm
» Thickness: 1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm
» Tolerances: thickness -10%/+20%, length ±50 mm, width ±50 mm
» Can also be supplied as cut gaskets in DIN, ANSI, and user-defined dimensions



SEALEX

BENEFITS / PROPERTIES

» Newly developed installation tape facilitates assembly and adjustment
» Improved dimensional stability reduces the need for retightening
» Suitable for aggressive media up to 260 °C at limited bolt loads
» Adapts perfectly to worn and non-parallel flange surfaces
» FDA certificate of conformity for food & pharma applications
» Excellent for non-metallic and glass flanges
» Suitable for large flange diameters

SPECIFICATIONS

» Sealing tape of expanded PTFE
» Width and thickness, standard rolls: 3 x 1.5 mm – 30 m, 5 x 2 mm – 20 m, 7 x 2.5 mm – 15 m, 10 x 3 mm – 8 m, 10 x 3 mm – 25 m, 14 x 5 mm – 5 m, 14 x 5mm – 25 m, 17 x 6 mm – 5 m, 20 x 7 mm – 5 m, 25 x 8 mm – 5 m

GRAPHITE MULTILAYER MLX

BENEFITS / PROPERTIES

» Advanced multilayer graphite laminate with impregnated graphite layers and smooth 0.05 mm stainless-steel inserts
» Outstanding leakage performance, even under demanding conditions
» High mechanical stability and excellent creep resistance
» Suitable for high internal pressures and elevated surface loads
» Ideal for gaskets with narrow sealing widths
» Durable, non-stick surface for easy removal
» Fire-Safe and compliant with TA Luft standards

SPECIFICATIONS

» Constructed from multiple layers of impregnated graphite and stainless-steel inserts, mechanically bonded without adhesive
» Dimensions of standard sheet: 1,500 x 1,500 mm
» Thickness: 1.5 mm, 2.0 mm, 3.0 mm
» Tolerances: thickness ±5%, length ±5 mm, width ±5 mm

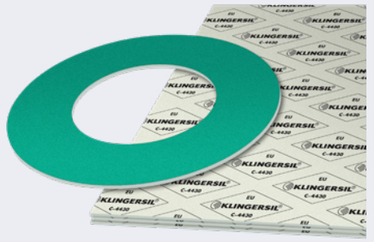
GRAPHITE LAMINATE XSM

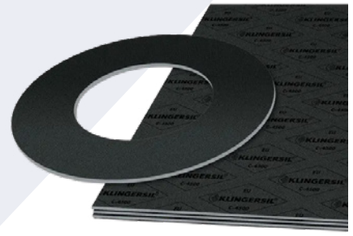
BENEFITS / PROPERTIES

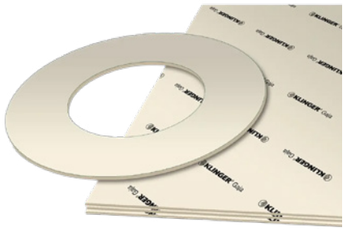
» Special graphite foil with oxidation inhibitors for enhanced thermal resistance
» Excellent chemical resistance across a wide range of media
» Superior high-temperature performance
» Mechanically bonded, 0.1 mm tanged stainless-steel insert for reinforced stability
» Stable physical properties across the entire temperature range
» Very good tightness and reliable sealing behavior
» Suitable for high-temperature applications up to 550 °C

SPECIFICATIONS

» Adhesive-free gasket material made from oxidation-resistant expanded graphite combined with a 0.1 mm tanged stainless-steel insert
» Free from resins, impregnations, or any organic compounds
» Dimensions of standard sheet: 1,000 x 1,000 mm
» Thickness: 1 mm, 1.5 mm, 2.0 mm







KLINGERSIL C-4430

BENEFITS / PROPERTIES

» Universal gasket for general use up to 250 °C
» Excellent stress relaxation
» Highly suitable for steam and hot water
» Does not stick to the flange

SPECIFICATIONS

» Synthetic material and glass fibers bonded with NBR, non-stick surfaces
» Dimensions of standard sheet: 2,000 x 1,500 mm
» Thickness: 0.5 mm, 1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm
» Tolerances: thickness acc. to DIN 28091-1, length ±50 mm, width ±50 mm
» Can also be supplied as cut gaskets in DIN, ANSI, and user-defined dimensions

KLINGERSIL C-4500

BENEFITS / PROPERTIES

» Composed of carbon fibers and heat-resistant additives
» Resistant to creep and cold flow
» Suitable for high-temperature alkaline media
» Suitable for superheated steam

SPECIFICATIONS

» Carbon fibers and special heat-resistant additives bonded with NBR
» Dimensions of standard sheet: 2,000 x 1,500 mm
» Thickness: 0.5 mm, 1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm
» Tolerances: thickness acc. to DIN 28091-1, length ±50 mm, width ±50 mm
» Can also be supplied as cut gaskets in DIN, ANSI, and user-defined dimensions

GAJA

BENEFITS / PROPERTIES

» Sustainable sourcing
» Supports green initiatives
» Consciously avoiding any color pigments
» Contains no mineral oils
» Reduction of environmental impact
» Contributes to corporate sustainability goals
» Reduced carbon footprint
» Enhanced brand image

SPECIFICATIONS

» Cellulose fibers bonded with natural rubber, bio-circular silica, no additives
» Dimensions of standard sheet: 2,000 x 1,500 mm
» Thickness: 0.8 mm, 1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm
» Tolerances: thickness acc. to DIN 28091-1, length ±50 mm, width ±50 mm. Can also be supplied as cut gaskets in DIN, ANSI, and user-defined dimensions

GASKETS

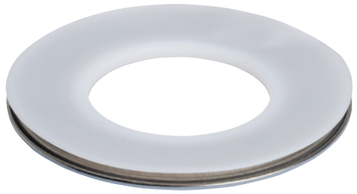
GROOVED GASKET WITH MF OVERLAY B15A

SPECIFICATIONS

The loose centering ring is split in two and has a predetermined breaking point. SIGRAFLEX® MF is used as a support material, consisting of a graphite layer, stainless-steel foil and PTFE coating (non-adhesive). It provides a non-stick effect and is resistant to damage during installation. The material has a very low leakage rate (in compliance with TA Luft). Additional safety is ensured in the event of vibration failure.

» Temperature range: up to +300 °C
» Max pressure: very high strength. This enables the application of very high surface pressures of up to 480 N/mm² and thus sealing of high internal pressures.

Alternatively, also available with layers made of graphite or non-sintered PTFE in various qualities.



PTFE-ENVELOPED GASKETS

BENEFITS / PROPERTIES

Due to their high chemical resistance and excellent sealing performance, PTFE-enveloped gaskets are suitable for fluctuating pressures and temperatures from -195 °C to +250 °C. They enable reliable connections of glass, enameled, coated or lined equipment in both laboratory and large-scale systems.

Their resistance to aggressive chemicals makes them especially suitable for the chemical industry. PTFE's non-stick properties further prevent material adhesion.

SPECIFICATIONS

» High mechanical stability under pressure and temperature cycling
» Uniform surface pressure for improved tightness
» Excellent resistance to aggressive chemicals
» Reduced risk of extrusion and leakage
» Long service life and reduced maintenance effort

SPIRAL WOUND GASKET

BENEFITS / PROPERTIES

Spiral wound gaskets are reliable sealing solutions for chemical plants, refineries, gas facilities, and water treatment systems. Spiroflex gaskets combine graphite or PTFE fillers with metallic windings to provide excellent leak tightness, even under high pressures and temperatures.

Designs such as the SpZ profile reduce required bolt loads while maintaining a tight seal and fire-safe versions protect sensitive products from graphite contact.

They are available in a wide range of sizes and shapes, including large and oval gaskets for valves and vessels, making them ideal for demanding chemical industry applications. Due to their relatively high springback, spiral wound gaskets have proven particularly suitable for metal-to-metal contact applications. The SpVNG type is used here.

RING JOINT GASKET RTJ

BENEFITS / PROPERTIES

Similar to H15/H9/H7, RTJ gaskets are used when extreme high pressures and temperatures must be sealed, offering the potential for virtually leak-free performance. Ring-joint (RTJ) gaskets, a type of metallic seal, work by pressing two metal surfaces together so they adapt to each other, smoothing out surface irregularities. This requires special RTJ grooves in the corresponding flanges.

ADVANTAGE

High degree of standardization and widespread use, as it is an ASME standard.

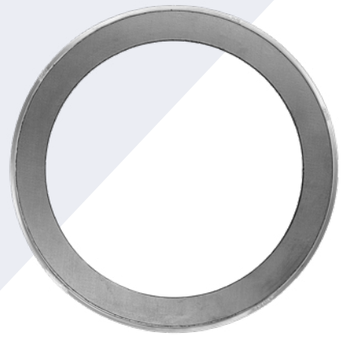
WELD RING GASKET A42

BENEFITS / PROPERTIES

Weld ring gaskets with an internal hollow lip according to profile A42 can, when designed appropriately, also help to minimize the stresses on the welds.

The use of hollow-lip welded seals is strongly recommended, especially when joining components with different thermal expansion behavior or when there are temperature differences between flanges or seals due to design or operating conditions.

For detailed design and calculation, an online configurator for welded seals and our specialists department at KLINGER are at your disposal.



CORRUGATED GASKET W1A-3

BENEFITS / PROPERTIES

The W1A-3 corrugated gasket from KLINGER bridges the gap between simple flat gaskets and advanced designs such as grooved or metal gaskets.

It achieves higher tightness classes at the same bolt loads and is suitable for higher pressures.

The stainless-steel 1.4571 core with a non-sintered PTFE layer provides excellent resistance to a wide range of media; other corrosion-resistant steels or nickel-based alloys are also available.

Thanks to soft plastic support layers, the gasket adapts well to flange surfaces. During assembly, the soft material is pressed into the corrugation valleys and only compressed at the peaks, reducing the sealing area and creating multiple line contacts.

H15 / H9 / H7

BENEFITS / PROPERTIES

The H15 gasket from KLINGER is a high-performance alternative to flat gaskets for smooth flange faces. It ensures reliable sealing even under extreme conditions.

Unlike RTJ or lens seals, no special groove shape is needed. Available in soft iron, stainless or CrMo steels, and nickel alloys, the H15 can also be galvanically coated (e.g., silver, nickel) to improve sealing at low loads, compensate surface imperfections, or enhance media resistance.

Its convex design achieves tightness of ≤ 1 × 10^{-8} mg/(m·s) with low bolt forces. Suitable for extreme pressures and temperatures from –200 °C to +800 °C, the gasket also features a loose centering ring that prevents vibration fracture and increases safety.

GASKETS

GRAPHITE RINGS

Graphite rings are widely used in many applications due to their large temperature range (-270 °C to +550 °C), chemical stability (all media except oxidizing media) and large pressure range (from vacuum to +1,000 bar, depending on the application/valve design).

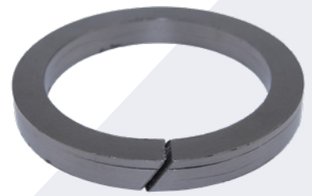
GRAPHITE RINGS

BENEFITS / PROPERTIES

Easy to install even in mass production.

SPECIFICATIONS

98% or 99.85% purity, density from 1.4 g/cc to1.8 g/cc, all diameters possible



GRAPHITE RING WITH SINGLE CUT

BENEFITS / PROPERTIES

Scarf cut allows ring to be bent for easier installation.

SPECIFICATIONS

98% or 99.85% purity, density from 1.4 g/cc to1.8 g/cc, all diameters possible

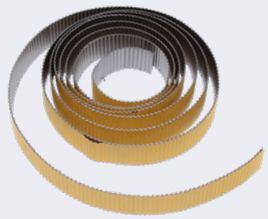
GRAPHITE RING IN HALVES

BENEFITS / PROPERTIES

Easy installation, especially on site for shutdowns. Multiple rings should be installed with 90° offset form cut to cut.

SPECIFICATIONS

98% or 99.85% purity, density from 1.4 g/cc to1.8 g/cc, all diameters possible



GRAPHITE TAPE

BENEFITS / PROPERTIES

Used for manufacturing/refurbishing of Kammprofiles. Direct application on flanges or valve stems. Graphite tape corrugated/non-corrugated self-adhesive/non-adhesive.

SPECIFICATIONS

Different thicknesses in 98% or 99.85% purity

HIGH-PRESSURE SEAL

BENEFITS / PROPERTIES

Special design for high pressures. Stainless-steel metal end caps reduce (obstruct) extrusion of graphite.
High-pressure seal/bonnet gasket/Brettschneider ring

SPECIFICATIONS

For pressures up to 1,000 bar

PACKINGS

TOPLINE K3622 LE

BENEFITS / PROPERTIES

» Min. operating temperature: -240 °C
» Max. operating temperature: 650 °C
» Max. static pressure: 580 bar
» pH: 0–14
» A fantastic plant-wide spool packing for block valves
» High graphite purity: 99.5–99.9%
» Passed API 622 3rd Edition FE tests along with Annex-C (high temperature) tests
» The packing exterior is densely impregnated with lubricating agents to reduce stem friction and a corrosion inhibitor to prevent pitting

SPECIFICATIONS

Expanded graphite packing with metal wire mesh jacketing around each yarn along with multiple metal wire reinforcements inside each yarn. Standard package: 8 m/roll. Sizes, square profile (mm): 3, 5, 6.5, 8, 9.5, 11, 12.5, 14, 16, 17.5, 19, 20.5, 22, 25. Tolerances: ±0.4 for 3, 5, 6.5. All others ±0.8

GRAPHITE PACKING K46

BENEFITS / PROPERTIES

Special design for high pressures. Stainless-steel metal end caps reduce (obstruct) extrusion of graphite.

SPECIFICATIONS

This high-performance packing resists chemicals, pressure, and temperature in valves and pumps. Graphite boosts performance, offering a cost-effective alternative to pure graphite packings for header or footer rings.

Media properties: Temperature: -240 °C to +450 °C (up to +650 °C in non-oxidizing environments). Pressure: static 200 bar, dynamic 8 bar. Speed: 20 m/s. pH: 0-14.

APPLICATIONS

Tank storage, filling and sampling, high temperature, corrosive media, steam.

GRAPHITE PACKING 3222W

BENEFITS / PROPERTIES

This high-performance, multi-service graphite packing is designed for both valve and pump applications, offering excellent chemical and temperature resistance.

SPECIFICATIONS

Expanded graphite ensures superior sealing, while Inconel wire adds stability under stress. Its flexible, self-lubricating design reduces wear, requires minimal gland pressure, and remains effective under temperature or pressure cycling.

Media properties: Temperature: -200 °C to +450 °C (up to +650 °C in non-oxidizing environments). Pressure: static 300 bar, dynamic 25 bar. pH: 0-14.

APPLICATIONS

Product distribution, energy recuperation, high pressure, high temperature (+220 °C), corrosive media, steam.

SYNTHETIC FIBER PACKING K25

BENEFITS / PROPERTIES

Made with high-strength aramid yarns and PTFE lubrication for smooth break-in.

SPECIFICATIONS

This packing ensures reliable sealing in extreme rotary and reciprocating pump applications. Designed for demanding services, it delivers durable, trouble-free performance through top-quality materials and advanced production methods.

Media properties: Temperature: -100 °C to +280 °C Pressure: static 250 bar, rotary 30 bar, reciprocating 100 bar. Speed: 20 m/s. pH: 0-12.

APPLICATIONS

A wide range of chemicals, heavy slurry applications, bitumen (tar) pumps, filtration, product distribution, tank storage, crystallizing and polymerization media.

SYNTHETIC FIBER PACKING K10

BENEFITS / PROPERTIES

Made from acrylic yarn and PTFE, offers a cost-effective yet versatile sealing solution for valves and pumps.

SPECIFICATIONS

Designed for reliability in demanding applications, it ensures durable, trouble-free performance through high-quality materials and advanced production methods.

Media properties: Temperature: -100 °C to +260 °C). Pressure: static 100 bar, rotary 20 bar, reciprocating 80 bar. Speed: rotary: 10 m/s, reciprocating: 2 m/s. pH: 2-12.

APPLICATIONS

Filling, sampling, general use, supply media such as water, mild acids and alkalies, mild slurries, nitrogen and compressed air.

PTFE PACKING K54S

BENEFITS / PROPERTIES

Made from PTFE filaments with a PTFE lubricant, offers outstanding chemical resistance, including strong acids and alkalies.

SPECIFICATIONS

Its braiding ensures a firm yet flexible structure with consistent density. Designed for minimal maintenance, it requires little adjustment after installation, making it a durable and cost-effective sealing solution.

Media properties: Temperature: -200 °C to +280 °C. Pressure: static 200 bar. Speed: 5 m/s. pH: 0-14.

APPLICATIONS

Sampling, measurement and control processes, cryogenic, corrosive media, toxic and creeping media, drinking water (WRAS approval).

PTFE PACKING K54H

BENEFITS / PROPERTIES

A pure PTFE yarn packing with exceptional chemical resistance, including strong acids and alkalies.

SPECIFICATIONS

Enhanced with a mineral-based lubricant, it delivers superior performance in dynamic valve applications. The braiding ensures a firm yet flexible structure, requiring minimal adjustment after installation.

Media properties: Temperature: 200 °C to +260 °C. Pressure: dynamic 100 bar. Speed: 10 m/s. pH: 0-14.

APPLICATIONS

Filtration, filling, product distribution, Cryogenic, corrosive media, toxic and creeping media.

EXPANSION JOINTS

VIBRATION ABSORBERS

BENEFITS / PROPERTIES

Metal expansion joints can also be used to absorb vibrations in systems. They are manufactured from thin, multi-layer bellows for excellent vibration absorbing capabilities.

Multi-layer bellows help to dampen high-frequency and low-amplitude vibrations. While vibration absorbers are mostly used with flanged connections, they can also be supplied with welded connections.

A very typical accessory with this type of expansion joint is a limit rod/tie rod to restrain pressure thrust of bellows or limit excessive design movements. Metal expansion joints are an excellent choice for absorbing vibrations where temperatures or pressures are too high for rubber expansion joints. Rubber washers can reduce noise and vibrations.

SPECIFICATIONS

- Size: DN50–500 (other sizes available upon request)
- Design pressure: up to 16 barG
- Design temperature: up to 400 °C
- Bellows material: AISI 304, 316L, 321 or customized
- Flange material: carbon steel, stainless steel
- Connections: fixed flanges
- Standard: EN/ASME/customized
- Accessories: limit rods
- Fluid/Applications: vibrations

INDUSTRY APPLICATIONS / PROCESS

- Pumps for debarking/flume (generally downstream of pumps)
- Pumps (suction or discharge)
- Rotating machinery and equipment
- Engines
- Exhaust applications
- Shipbuilding industry and many more…

SF TYPE (FIXED FLANGE)

BENEFITS / PROPERTIES

Fixed-flange expansion joints feature welded flange connections that meet various industrial standards (ASME, EN, DIN, JIS, etc.) or custom. The flanges, welded to bellows, are non-rotating. These joints are ideal for high-pressure applications where sealing is critical. It's recommended to match the flange material to the piping grade. Care should be taken to avoid bolt misalignment during installation. No on-site welding is required. Commonly used across industries, they can be designed as single or universal types based on design needs.

SPECIFICATIONS

- Size: DN25–1000 (other sizes available upon request)
- Design pressure: up to 16 barG
- Design temperature: up to 400 °C
- Bellows material: AISI 304, 316, 321 or custom
- Flange material: CS, SS, custom
- Quick connection
- Connections: fixed flanges
- Standard: EN/ASME/custom
- Accessories: tie rods/limit rods
- Fluids/Applications: gases/liquids/solids

These types of expansion joints can be supplied with limit rods/tie rods, liners, covers, rods, hinges or gimbals.

INDUSTRY APPLICATIONS / PROCESS

- Digester/steam generating process/pre-heaters/TMP 2-stage refining
- Biomass boiler/condensate, evaporator and heat exchanger boilers
- District heating
- Steam lines
- Chemical and process industries
- Steel and iron industries
- Water (hot and cold) lines
- Marine applications, exhaust systems
- Geothermal applications and many more…

KB TYPE

BENEFITS / PROPERTIES

Weld-end expansion joints are available in various grades of carbon-steel, stainless-steel, or nickel-alloy pipes. These can be manufactured according to industry standards or customized to your specifications. KLINGER offers a wide range of custom design capabilities.

Commonly used across industries, these joints can be designed as single or universal types, depending on design requirements. They are ideal for high-pressure environments where welding is feasible and leakage is a concern. Compared to flanged types, they are more economical due to the absence of costly flanges and gaskets, and they require no maintenance.

ADVANTAGES:

- More economical than flanged joints
- No gaskets required
- Welded connections eliminate leakage

SPECIFICATIONS

- Size: DN25–1000 (other sizes available upon request)
- Design pressure: up to 16 barG
- Design temperature: up to 400 °C
- Bellows material: AISI 304, 316, 321 or custom
- Connections: weld ends
- Standard: EN/ASME
- Accessories: tie rods/limit rods
- Fluids/Applications: gases/liquids/solids

These types of expansion joints can be supplied with limit rods, liners, covers, rods, hinges or gimbals.

INDUSTRY APPLICATIONS / PROCESS

- Hot & cold water
- Superheated water
- Steam and condensate lines
- City district heating
- HVAC applications
- Chemical and process industries
- Geothermal applications and many more…

UNIVERSAL EXPANSION

BENEFITS / PROPERTIES

Universal type of expansion joints come with weld-end connections in CS/SS and alloyed materials. The properties are like those of "single bellows" flanged types, although with much higher movement absorption in the lateral direction.

They are mainly used for lower pressure applications. With weld-end types of connection, welding to existing piping systems is easy.

This type of expansion joints is commonly used safely in many industries and applications.They can be designed as single or universal expansion joint depending on design conditions.

SPECIFICATIONS

- Size: DN25–1000 (other sizes available upon request)
- Design pressure: up to 6 barG
- Design temperature: up to 400 °C
- Bellows material: AISI 304, 316, 321 or custom
- Flange material: CS, SS, custom
- Quick connection
- Connections: weld ends/flanges
- Standard: EN/ASME/custom
- Accessories: tie rods/limit rods
- Fluids/Applications: gases/liquids/solids

These types of expansion joints can be supplied with limit rods/tie rods, liners, covers, rods, hinges or gimbals.

INDUSTRY APPLICATIONS / PROCESS

- Digester/steam generating process/preheater/TMP 2-stage refining
- Biomass boiler/condensate, evaporator and heat exchanger boilers
- District heating
- Steam lines
- Chemical and process industries
- Steel and iron industries
- Water (hot and cold) lines
- Marine applications, exhaust systems
- Geothermal applications and many more…

EXPANSION JOINTS WITH RODS

BENEFITS / PROPERTIES

Metal expansion joints with rods can also be used to absorb movements in piping systems due to earthquakes, ground settlements or landslides.

These events can cause large movements in piping systems and cause critical piping systems to fail. These expansion joints are an excellent choice for such applications. They are designed to absorb large axial and lateral movements.

They come with rods to control or limit excessive movements. They can have pipe ends or welded/rotating flange connections supplied in accordance with many industrial norms or special drillings.

SPECIFICATIONS

- Size: DN150–5000
- Design pressure: up to 16 barG
- Design temperature: up to 400 °C
- Bellows material: AISI 304, 316, 321 or custom
- Flange & hardware material: carbon steel, stainless steel
- Connections: flanged/welded ends
- Standard: EN/ASME
- Accessories: tie rods/limit rods
- Fluids/Applications: seismic & thermal movements

INDUSTRY APPLICATIONS / PROCESS

- Industrial applications
- Hot and cold water pipelines
- Firefighting systems
- Steam and condensate lines and many more…

EXPANSION JOINTS

RUBBER EXPANSION JOINTS (REJ) – STANDARD MOLDED

BENEFITS / PROPERTIES

KLINGER's standard rubber expansion joints are available in EPDM, NBR, CR, and SBR, with rotatable flanges in carbon steel, stainless steel, or cast iron. They operate up to 110 °C and up to 16 barG.

Cost-efficient, lightweight, and quickly available, they absorb vibrations and axial, lateral, and angular movements. No gasket is needed, as the rubber body seals directly. Nylon-cord reinforcement maintains flexibility.

SPECIFICATIONS

- Size: DN25–800 (other sizes available upon request)
- Bellows material: EPDM, NBR, CR, SBR
- Design pressure: up to 16 barG and higher (upon request)
- Design temperature: up to 110 °C
- Flange material: CS, SS, cast iron
- Vacuum support in SS

W/TIE-RODS

BENEFITS / PROPERTIES

KLINGER's rubber expansion joints are widely used for vibration absorption. Rotatable, customizable flanges and tie rods with rubber bushings reduce noise while allowing movement. Bellows use materials equal or superior to standard types, suitable for higher temperatures and pressures.

No gasket is needed as the rubber body seals directly. Hardware restrains thrust and excess motion, while nylon-cord reinforcement ensures flexibility.

SPECIFICATIONS

- Size: DN25–800 (other sizes available upon request)
- Bellows material: EPDM, NBR, CR, SBR,
- Design pressure: up to 16 barG and higher (upon request)
- Design temperature: up to 110 °C
- Flanged material: CS, SS, cast iron
- Special hardware material: CS, SS, custom
- Vacuum support in SS

RECTANGULAR – WELDED ENDS

BENEFITS / PROPERTIES

Fabric expansion joints with weld ends are usually custom-made, offering designers flexibility for ducting and piping systems. They are ideal for low-pressure, high-temperature applications up to 850 °C, with short installation lengths, high flexibility, and low reaction forces on piping. Liners protect against high flow, prevent abrasion, and hold insulation in place.

SPECIFICATIONS

- Can be designed and manufactured in various types in accordance with required operating conditions
- High vibration and noise elimination
- Compensation on thermal expansion
- High flexibility
- Working & design temperature: up to 800 °C
- Design pressure: up to 0,5 barG
- Minimum reaction force

CLAMPING BANDS

BENEFITS / PROPERTIES

In addition to flanged and welded types, we also manufacture expansion joints for installation with clamping bands. Mostly customized, they give piping designers flexible options for ducting and piping systems. Suitable for low-pressure, high-temperature use up to 850 °C, they feature short installation lengths, high flexibility, and low reaction forces. Liners from existing systems can often be reused.

SPECIFICATIONS

- Can be designed and manufactured in various types in accordance with required operating conditions
- High vibration and noise elimination
- Compensation on thermal expansion
- High flexibility
- Working & design temperature: up to 800 °C
- Design pressure: up to 0,5 barG
- Minimum reaction force

FABRIC EXPANSION JOINTS

BENEFITS / PROPERTIES

Fabric expansion joints offer flexibility to absorb movement in multiple directions, making them ideal for systems with vibration or thermal expansion. They are lightweight and less expensive than metal expansion joints, especially in large dimensions. Their high temperature tolerance makes them suitable for exhaust systems and other high-heat environments. They also help reduce vibrations and require minimal maintenance, ensuring long-term reliability. They are produced to customer specifications.

SPECIFICATIONS

- Design pressure: up to max. 500 mbar
- Design temperature: max.1,200 °C

MAGNETIC LEVEL GAUGES

BENEFITS / PROPERTIES

Magnetic level gauges are suitable for applications where toxic or hazardous media is used and the requirements are immediate and safe response to level changes, perfect visibility, continuous indication of fluid level, local or remote display.
The advantages:

- Standard unpressurized float system
- Float without mechanical or magnetic guide rails, 360° magnet system
- Fully corrosion-resistant system
- Measurement is unaffected by pressure, vacuum, temperature, foam and viscosity
- Minimum sensitivity to density variations
- Low-temperature version is fitted with ice-free indicator strip
- Unique free-view indicator strip in plastic, aluminum or full SS 316
- Fully adjustable switches
- Scale/ruler available in mm, cm, % or liters
- Back-lighting is not required
- Safe, environmentally friendly and maintenance-free design
- Broken/leaking float indicator rail possible
- Special designs according to client specifications possible
- Direct business with the manufacturer, reducing transfer mistakes
- Fully penetrated weldings with almost all of our gauges

SPECIFICATIONS

- Built in stainless steel 316(L), other materials upon request, e.g. Titanium, 254 SMO, or plastics
- Design according DIN or ASME for safe or ATEX/IECEx areas
- Suitable for steam and process applications
- Design temperature up to 450 °C
- Pressure up to 250 bar
- Suitable for toxic and hazardous fluids
- Alarm switching facilities and transmitter as option
- Very high length feasible
- Side- and top-mounted models available
- Material, test certificate standard, possible, additional certificates/documents such as NACE, X-ray, DP, PMI, WPS/PQR etc. upon request

MAGNETIC LEVEL GAUGE TRANSMITTER

BENEFITS / PROPERTIES

Suitable for all KLINGER magnetic level gauges. The reed chain is standard mounted along the complete length of the magnetic level gauge.

SPECIFICATIONS

- Reed chain for an analog output signal
- Output signal std. 4..20 mA, options such as HART 5 or HART 7, PROFIBUS, fieldbus possible
- Design in standard, Exi or Exd
- Approval type Exi: II 1 G Ex ia IIC T6 Ga/II 1 D Ex ia IIIC T135 °C Da
- Type Exd: II 2G Ex db IIC T5..T1 Gb/II 2D Ex tb IIIC T100 °C..T350 °C
- Transmitter “SMART” type
- Temperature -50 ... +350 °C
- Accuracy standard 5 mm, also possible ±7.5 mm and ±2.5 mm
- Material housing ABS, aluminum, 304 or 316 stainless steel
- Enclosure IP 66, IP 67 or IP 68, depending on housing and design
- Connection M16 x 1,5, M 20x1.5, 1/2” NPT or 3/4” NPT
- Options: housing with LCD display (also optical)

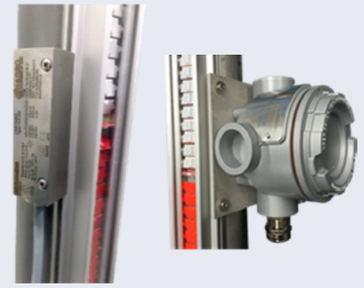
MAGNETIC LEVEL GAUGE SWITCH GENERAL PURPOSE

BENEFITS / PROPERTIES

Suitable for all KLINGER magnetic level gauges.

SPECIFICATIONS

- Function SPDT, bi-stable as standard
- System micro switch
- Max rating 5 A/100 W/100 VA
- Temperature rating -50 …+180 °C or +350 °C
- Lifetime 1 x 106
- Enclosure IP 67
- Connection M16x1,5 or M20x1,5 cab gland
- Dimensions: 95 x 65 x 54 mm
- Material: aluminum or stainless-steel housing



MAGNETIC LEVEL GAUGE SWITCH EXI TYPE HLS-25I, HLS-HA1E & EXD TYPE HLS-25D & HLS-HAD

BENEFITS / PROPERTIES

Suitable for all KLINGER magnetic level gauges.

SPECIFICATIONS

- Temperature rating: -40 …+100 °C HLS-25i and HLS-25d, -50 …+350 °C HLS-Ha1E and HLS-HaD
- Approval: HLS-25i: II 1 GD Exia IIC T6 Ga and II 1 GD Exia IIIC T85 °C IP 66/67 Da
- HLS-Ha1E: Ex i “simple apparatus“
- HLS-25d: II 2 GD Ex db IIC T6 Gb and II 2 GD Ex tb IIIC T85 °C Db
- HLS-HaD: II 2 G Ex db IIC T5..T1 Gb and II 2 D Ex tb IIIC T100 °C..T350 °C Db

REFLEX LEVEL GAUGE

BENEFITS / PROPERTIES

Reflex level gauges allow the medium to be viewed through a reflex glass: the side of the glass exposed to the medium has a prismatic surface, while the other side is smooth. The medium level inside the level gauge is indicated as the result of the light refraction principle.

SPECIFICATIONS

- Built from carbon steel, stainless steel and special materials upon request
- Suitable for steam and process applications
- Design temperature up to 400 °C
- Pressure up to 400 bar

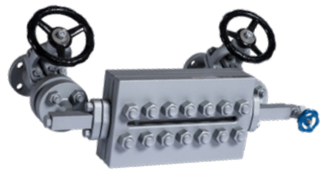
BICOLOR LEVEL GAUGE

BENEFITS / PROPERTIES

Bi-color level gauges are a variation of transparent level gauges and are mainly used to measure very high-pressure water steam. These gauges feature two flat transparent glasses which, together with the gauge body, form the chamber containing the medium. In this case, a special red and green illuminator is mounted on the back of the gauge body to create a double illumination system.

SPECIFICATIONS

- Built from carbon steel
- High pressure steam applications only
- Design temperature up to 400 °C
- Pressure up to 225 bar



TRANSPARENT LEVEL GAUGE

BENEFITS / PROPERTIES

In this kind of level gauge, the medium is contained within two glasses whose surfaces are both smooth. The medium level can be easily observed looking through the glasses.

SPECIFICATIONS

- Built from carbon steel, stainless steel and special materials upon request
- Suitable for steam and process applications
- Design temperature up to 400 °C
- Pressure up to 250 bar
- A light source can be installed to improve visibility

CHEMICAL & PETROCHEMIC AL PLANTS

Challenges & Solutions

KLINGER trusted. worldwide.

	SAFETY & STANDARDS	SUSTAINABILITY & DECARBONIZATION	LIFE CYCLE & RELIABILITY	PRODUCTIVITY & PLANT EFFICIENCY	SERVICES	ENGINEERING
Industry challenges	Extreme operating conditions: high pressures, varying temperatures, aggressive, corrosive and toxic media Highest safety standards (SIL, ATEX, Fire-Safe, etc.) Precise control of process	Process improvement Global competition Production costs Strict environmental standards Reduction of waste material Maintaining product quality, productivity and capacity Reduction of water and energy consumption	High plant availability Low operating costs Reduction in unplanned downtime	Flexible and efficient production Competitive production technologies Obsolete components	Expert advise Fast response times Training Regular updates Compliance with standards	Complex technical requirements Customized support (rapid, tailored, flexible) Component selection and analysis
KLINGER solution	Adherence to standards Components comply with relevant industrial standards: ASME, ISO, EN, and API Manufactured and tested according to proven safety procedures Quality assurance Use of high-grade materials Minimal tolerances Innovation Expertise	Sustainability support High-performance components (meet or exceed standards) Performance with reduced emissions Compliance with fugitive emissions standards, including ISO 15848-1 Corporate commitment to sustainability	Reliable system components Durable designs, extended repair cycles, maximized uptime High system availability minimizes unforeseen downtime	Total cost of ownership (TCO, optimization of investment costs) Energy efficient, low consumption Operational flexibility	Comprehensive service range Online services, calculators (IntegrityXpert, KemProof, KLINGER Expert), online database Training and support, on-site training, e-larning Operational services, audits, leak detection and repair (LDAR) Global logistics	Collaboration with client operators and engineers Decades of experience and a high level of expertise Engineering services Laboratory capabilities Damage assessments – root cause analyses

PRODUCT OVERVIEW
Media Properties

MEDIA PROPERTIES	VALVES			GASKETS		PACKINGS	INSTRUMENTATION	EXPANSION JOINTS
	ON/OFF BALL VALVES	CONTROL VALVES	ON/OFF GATE, GLOBE, CHECK, BUTTERFLY VALVES	SOFT GASKETS	METAL GASKETS		LEVEL GAUGES	
High pressure	**INTEC K800 series** (K811, K814) **INTEC K200 series** (K211, K214, K231, K234) **INTEC K100 series** (K110-K150) **INTEC K600 series**	**3000/3003 series**	Gate valve **KSD-GTF**	**KLINGERSIL C-4430** **KLINGERSIL C-4500** **top-chem 2000** **Graphite gaskets**	Ring joint gaskets RTJ Weld ring gaskets Grooved gaskets	**TopLine K46, K3622LE, K54S, K54H, Graphite rings**	**R160, R250, A400, T160, T250, TA120, KTA180, KTA225,** magnetic level gauges	Weld ends (KB type)/fixed flanges (SF type)/universal types w/weld ends or flanges/universal types w/tie-rods or limit rods/pressure-balanced types/hinged & gimballed types/specially made rubber EJ
Vacuum	**All INTEC series** **KHA, KHA-TM, KHE-FK, KHI-F, KVN**	**All series with vacuum packings**	Butterfly valve **KKD-82** Butterfly valve **KKD-83**	**top-chem 2003** **Graphite gaskets**	Grooved gaskets Weld ring gaskets	**TopLine K46, K3622LE, K54S, K54H, Graphite rings**	All glass and magnetic level gauges	High temp. & high pressure: all metal, custom design for vacuum/high temperature & medium pressure: all metal + rubber, custom design for vacuum/high temperature & low pressure: all metal + rubber + fabric, custom design for vacuum/low temperature & low pressure: all types, but custom for vacuum
High temperature (> 220 °C)	**INTEC K200 series** with HT Packing (K224, K214, K211, K221) **INTEC K800 series** with HT Packing (K811, K814) **INTEC K400 series** (K411, K414) **INTEC K500 series** (K524, K521) **KHA, KHA-TM, KHE-FK, KHI-F, KVN**	**2000/2003** and **3000/3003 series** with long-finned bellow bonnet	Gate valve **KSD-GTF** Globe valve **KAD-GBF** Bellow Globe valve **KAD-BLGB**	**Graphite gaskets**	Grooved gaskets Corrugated gaskets	**TopLine K46, K3622LE, K54S, K54H, Graphite rings**	All glass and magnetic level gauges	High temperature & high pressure: all metal/high temperature & medium pressure: all metal + rubber/high temperature & low pressure: all metal + rubber + fabric
Low temperature (cryogenic)	**INTEC K200 series** with INTEC 12-TT **INTEC K800 series** with INTEC 12-TT **INTEC K400 series** with INTEC 12-TT **KHA**	**2000/2003**, **3000/3003** and **4000 series**		**top-chem 2000** **top-chem 2003** **soft-chem** **Graphite gaskets**	PTFE-coated gasket PW21E Grooved gaskets with PTFE coating	**TopLine K46, K3622LE, K54S, K54H, Graphite rings**	All glass level gauges (austentic stainless steel) All magnetic level gauges	All types in metal minimum SS or custom materials
Highly corrosive media (max. PN16 & 160 °C)	**KHD-LB**	**3000/3003 series**	Butterfly valve **KKD-82** Butterfly valve **KKD-83** Gate valve **KSD-GTF** Globe valve **KAD-GBF** Check valve **KRD-SCF** Check valve **KRD-LCF** Check valve **KRD-SWS** Check valve **KRD-DPC** Strainer **KFD-YSF**	**top-chem 2000** **top-chem 2003** **soft-chem** **Graphite gaskets**	PTFE-coated gasket PW5E	**TopLine K46, K3622LE, K54S, K54H, Graphite rings**	All glass and magnetic level gauges (exotic materials or plastics)	Max. 160 °C & 16 barG: all types in metal and minimum in SS 316L or higher material grade (custom)/Max. 110 °C & max. 16 barG: all types in metal, and minimum in SS 316L or higher material grade (custom)/EPDM rubber types/Max. 500 °C & max. 0,5 barG: all types in metal, and minimum in SS 316L or higher material grade (custom)/fabric types, special reinforced bellows
Highly corrosive media (> PN16 & 160 °C)	**All INTEC series** in Hastelloy, Inconel, Monel, etc.	**3000/3003 series**	Butterfly valve **KKD-82** Butterfly valve **KKD-83** Gate valve **KSD-GTF** Globe valve **KAD-GBF** Check valve **KRD-SCF** Check valve **KRD-LCF** Check valve **KRD-SWS** Check valve **KRD-DPC** Strainer **KFD-YSF**	**top-chem 2000** **Graphite gaskets**		**TopLine K46, K3622LE, Graphite rings**	All magnetic level gauges (exotic materials)	Customized

PRODUCT OVERVIEW
Media Properties

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MEDIA PROPERTIES	VALVES			GASKETS		PACKINGS	INSTRUMENTATION	EXPANSION JOINTS
	ON/OFF VALVES	CONTROL VALVES	ON/OFF GATE, GLOBE, CHECK, BUTTERFLY VALVES	SOFT GASKETS	METAL GASKETS		LEVEL GAUGES	
Crystallizing & polymerizing media	**INTEC K200 series** (K230, K231, K234) **INTEC K500 series** **KHA, KHI-F**			**KLINGERSIL C-4430** **KLINGERSIL C-4500** **top-chem 2000*** **top-chem 2003*** *with inner eyelet	Grooved gaskets Corrugated gaskets	**TopLine K46, K3622LE, K54S, K54H, Graphite rings**		Material selection & design are specific and customized for each process
(Fast) expanding media	**INTEC K220, K224**, **K221-S-DE Version** **K220-S-DE Version** **INTEC K230, K231, K234** **INTEC K200-S-DEB** **KHA, KHI-F**			**top-chem 2000** **top-chem 2003**	Grooved gaskets Corrugated gaskets	**TopLine K46, K3622LE, K54S, K54H, K4311, Graphite rings**		Metal: all temp. & pressures/rubber: max. up to 110 °C or 80 °C depending on process max. 16 barG
Temperature & pressure load change	**INTEC K220, K221, K211, K210, K224, K214** **KHA, KHA-TM, KHI-F**			**top-chem 2000** **top-chem 2003**	Grooved gaskets Corrugated gaskets	**TopLine K46, K3622LE, K54S, K54H, Graphite rings**	All glass and magnetic level gauges with limits	Metal: all temp. & pressures/rubber: max. up to 110 °C or 80 °C depending on process max. 16 barG
Steam	**INTEC K200, K210, K220, K214, K221, K224, K211, K204-S-D** **KHA, KHA-TM, KHE-FK, KHI-F, KVN**	**EURO** and **2000/2003 series**	Gate valve **KSD-GTF** Globe valve **KAD-GBF** Bellow Globe valve **KAD-BLGB** Strainer **KFD-YSF**	**KLINGERSIL C-4430** **KLINGERSIL C-4500** **top-chem 2000** **Graphite gaskets**	Grooved gaskets Spiral wound gaskets	**TopLine K46, K3622LE, Graphite rings**	All glass and magnetic level gauges	All metal. Types: depending on process & applications and piping/ system design
Toxic & creeping media	**All INTEC series** with Special Service (e.g. EO Service)	**2000/2003** and **3000/3003 series** with bellow bonnet	N/A	**top-chem 2000** **top-chem 2003**	Grooved gaskets	**TopLine K46, K3622LE, K54S, K54H, Graphite rings**	All magnetic level gauges	Metal: higher grade materials, custom/ all pressures & temp./ rubber: materials, custom/ pressures up to 16 barG & temp. up to 80 °C or 110 °C, depending on process & applications/ system design
Supply media (water, nitrogen, compressed air)	**RK-Proball series** **KHA, KHA-TM, KHE-FK, KHI-F, KVN**		Butterfly valve **KKD-81** Butterfly valve **KKD-82** Gate valve **KSD-GTF** Globe valve **KAD-GBF** Bellow Globe valve **KAD-BLGB** Check valve **KRD-SCF** Check valve **KRD-LCF** Check valve **KRD-SWS** Check valve **KRD-DPC** Strainer **KFD-YSF**	**KLINGERSIL C-4430** **KLINGERSIL C-4500** **top-chem 2000** **top-chem 2003** **Gaja** **Graphite gaskets**	Grooved gaskets Corrugated gaskets	**TopLine K46, K3622LE, K54S, K54H, Graphite rings**	All glass and magnetic level gauges	Metal: for all pressures & temp./rubber: materials: EPDM, NBR or custom for pressures up to 16 barG & temp. up to 80 °C or 110 °C, depending on process & applications/ system design

PRODUCT OVERVIEW
Processes

PROCESS	VALVES			GASKETS		PACKINGS	INSTRUMENTATION	EXPANSION JOINTS
	ON/OFF BALL VALVES	CONTROL VALVES	ON/OFF GATE, GLOBE, CHECK, BUTTERFLY VALVES	SOFT GASKETS	METAL GASKETS		LEVEL GAUGES	
Storage (tanks/vessels)	**INTEC K200 series** **INTEC K400 series** **INTEC K500 series** **INTEC K600 series** **INTEC K800 series** **KHA, KHA-TM, KHE-FK, KHI-F, KVN**	All series	Butterfly valve **KKD-82** Butterfly valve **KKD-83** Gate valve **KSD-GTF** Globe valve **KAD-GBF** Check valve **KRD-SCF** Check valve **KRD-LCF** Check valve **KRD-SWS** Check valve **KRD-DPC** Strainer **KFD-YSF**	**depending on media** **Graphite Gaskets**	Grooved gaskets Corrugated gaskets	**TopLine K46, K3622LE, K54S, K54H, Graphite rings**	All glass and magnetic level gauges	Weld ends (KB type) Fixed flanges (SF type) Universal types w/weld ends or flanges Universal types w/tie rods or limit rods Pressure balanced types Hinged & gimballed types Standard NBR & specially made rubber EJ
Filtration	**All INTEC series, KHA series**		Gate valve **KSD-GTF** Globe valve **KAD-GBF** Check valve **KRD-SCF** Check valve **KRD-LCF** Strainer **KFD-YSF**	**depending on media** **Graphite Gaskets**	Grooved gaskets Corrugated gaskets	**TopLine K46, K3622LE, K54S, K54H, Graphite rings**	Magnetic level gauges	All metal & rubber
Filling	**INTEC K500 series** **INTEC K230, K231, K234**		Globe valve **KAD-GBF**	**depending on media** **Graphite Gaskets**	Grooved gaskets Corrugated gaskets	**TopLine K46, K3622LE, K54S, K54H, Graphite rings**		All metal & rubber
Sampling	**INTEC K700 series**	Dosing valves		**depending on media**	Grooved gaskets Corrugated gaskets	**TopLine K46, K3622LE, K54S, K54H, Graphite rings**		N/A
Media distribution (pipeline)	**All INTEC series** **KHA, KHA-TM, KHE-FK, KHI-F, KVN**	All series	Butterfly valve **KKD-82** Butterfly valve **KKD-83** Gate valve **KSD-GTF** Globe valve **KAD-GBF** Check valve **KRD-SCF** Check valve **KRD-LCF** Check valve **KRD-SWS** Check valve **KRD-DPC** Strainer **KFD-YSF**	**depending on media** **Graphite Gaskets**	Grooved gaskets Corrugated gaskets	**TopLine K46, K3622LE, K54S, K54H, Graphite rings**		Weld ends (KB type) Fixed flanges (SF type) Universal types w/weld ends or flanges Universal types w/tie rods or limit rods Pressure balanced types Hinged & gimballed types Specially made rubber EJ
Measurement/ control	**INTEC K600 series** **KHA, KHA-TM, KHE-FK, KHI-F, KVN**	**EURO, 800/803, 2000/2003, 3000/3003** and **4000 series** and Dosing valves	Butterfly valve **KKD-82** Globe valve **KAD-GBF**	**depending on media** **Graphite Gaskets**	Grooved gaskets Corrugated gaskets	**TopLine K46, K3622LE, K54S, K54H, Graphite rings**	All magnetic level gauges (With reed switch and/or 4-20 mA transmitter)	N/A
Energy recuperation	**All INTEC series, KHA series**					**TopLine K46, K3622LE, K54S, K54H, Graphite rings**		N/A

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