



SOLUTIONS

for the Energy Industry





KLINGER GROUP

Visionary by Tradition





KLINGER is the world's leading manufacturer and provider of industrial gaskets and valves.

Formed in 1886 as family enterprise, the pioneers in gasket technology today presents themselves as a globally active Group. Independent global manufacturing, sales and service companies offer unique know-how and competent on-site consultancy services from a total of 60 countries worldwide.

Our customers comprise leading companies belonging to the manufacturing industry, infrastructure, automotive, marine, oil & gas, the chemical, pulp & paper, the energy sector, food & beverage, and the pharmaceutical industry. KLINGER employs around 2,600 people worldwide with a total annual sale of around 635 million Euros.



635 MIO. ANNUAL SALES

635 million euros are generated by the KLINGER Group per year.



2,600 EMPLOYEES

Our global workforce amounts to 2,600 persons worldwide.



80 COUNTRIES

KLINGER Group has already exported to 80 countries and counting.



18 PRODUCTION SITES

for seals, valves, instrumentation, expansion joints and hoses.



60 COUNTRIES

worldwide are home to a group subsidiary or representative.





PLANT VIEWS

KLINGER Energy Industry Solutions

In all kinds of power plants, heat pumps, P2X installations and district heating installations, you will find products manufactured by KLINGER. We have many years of experience as supplier of valves, gaskets, compensators, pressure and temperature measurement, gas detection, as well as level measurement. KLINGER products within the energy industry reduce operating and maintenance costs and allow for a very long lifespan, providing a perfect TCO (Total Cost of Ownership) ratio.

BIOGAS

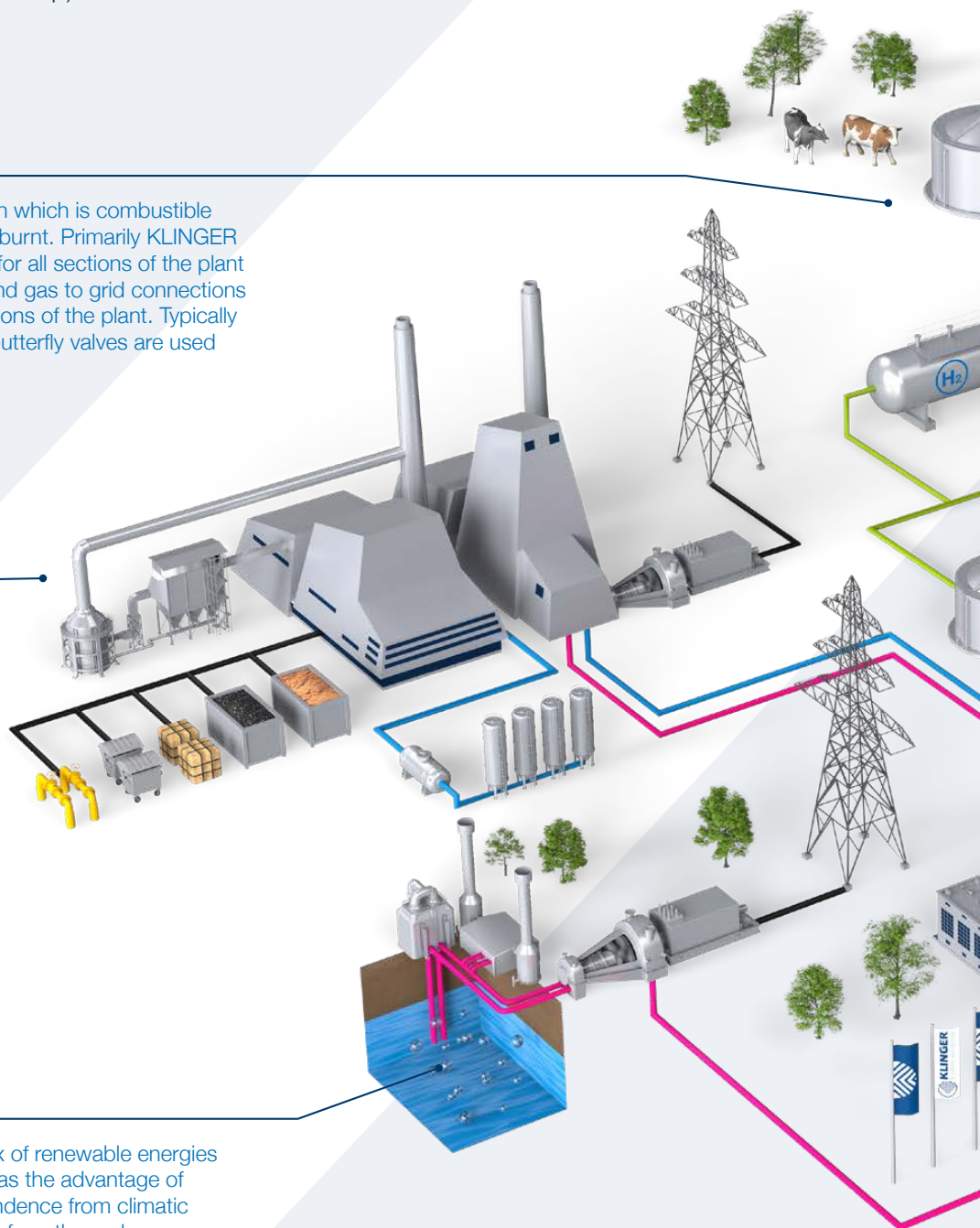
Biogas mainly comprises of hydro-carbon which is combustible and can produce heat and energy when burnt. Primarily KLINGER supplies products for biogas production for all sections of the plant including the digesters, the gas mixing and gas to grid connections whilst also handling the slurry/water sections of the plant. Typically knife gate valves, manual and actuated butterfly valves are used around the plants we have worked on.

THERMAL ENERGY

In all types of power plants, you will find products manufactured by KLINGER. Our product line includes a complete range of ball valves, butterfly valves, actuators, compensators, water level fittings, high pressure valves, control valves, pressure/vacuum valves, steam traps, safety valves and gaskets. KLINGER supplies pressure and temperature measurement, gas detection and level measurement for the energy industry.

GEOHERMAL ENERGY

Geothermal energy complements the mix of renewable energies from wind power and solar energy and has the advantage of “constant availability”, as there is independence from climatic conditions. For extraction and utilization of geothermal energy KLINGER offers valves, compensators, gaskets and instruments allow to work under high temperatures, variable flow rates, aggressive gases and the crystallized salts securing optimal performance.



RENEWABLE ENERGY

KLINGER provides safe and reliable solutions in sealing technology within renewable energy sources including solar and wind power generation. KLINGER is well known in the industry as a supplier of metallic gaskets and jointing materials. Nowadays, a low carbon economy is no longer a bonus, but a necessity. Slip rings, a major component found in wind turbines, are such an example.

P2X

P2X is essential in achieving a carbon neutral society that meets an increasing demand for energy. Through electrolysis it furthermore offers a competitive option for energy storage. Fossil fuels are being replaced by renewable energy such as wind, solar, and hydro power. At KLINGER we provide comprehensive industrial solutions tailored to individual requirements. We consider operating costs as well as the energetic requirements.

HEAT PUMPS

A heat pump transforms electricity to heat or cooling either usually in air or water. In recent years, heat pumps are getting more and more popular in both homes and larger applications, because of the high efficiency. KLINGER has a wide range of products it offers towards heat pump manufacturers. We have many years of experience, proven functionality, quality and endurance.

ENERGY DISTRIBUTION

KLINGER energy distribution products are designed to deliver the highest possible energy efficiency, reliability and cost-effectiveness. These include a wide range of shutoff ball and butterfly valves, butterfly control valves, valves with long stem for underground installation, hot tapping and branching valves for expanding existing distribution piping networks. KLINGER's compensators are a flexible and yet very vital component to be able to keep process systems tight.



PRODUCT OVERVIEW

Product and process mapping of the Energy Industry

ENERGY SEGMENTS	EQUIPMENT	MEDIA	VALVES
Renewable energy	Nacelle equipment HEX cooling	Water Lubrication oil Aviation fuel oil	KLINGER Ballostar® KHA, KHE, Check valves
Wind turbine	Wind turbine towers & foundation		KLINGER Ballostar® KHA, KHE
	Accommodation, sub station and helipad		KLINGER Ballostar® KHA, KHE, Y-strainers, Check valves, Butterfly valves 3530
Solar panel	Liquid heat transfer system	Water Thermal oil	KLINGER Ballostar® KHA, KHE, Double block bleed
	Accumulation tank		KLINGER Ballostar® KHA, KHE, Double block bleed, INTEC K811 - three-piece high-pressure ball valves
P2X	Electrolyser process incl. Alkaline electrolyser, Membrane electrolyser	Demineralised water Hydrogen Odorous gasses Oxygen	KLINGER Ballostar® KHA, KHE, Double block bleed, INTEC K811 - three-piece high-pressure ball valves, Tandem Duoball valves, RK Proball, Duoball valves
P2X, incl. electrolyzers, infrastructure, storing, distribution, fuelling.	Utility cooling	Water Thermal oil	KLINGER Ballostar® KHA, KHE, Double block bleed
	Waste heat handling		KLINGER Ballostar® KHA, KHE, Double block bleed, INTEC K811 - three-piece high-pressure ball valves
	Gas compression, distribution & tanks	Gases Water	INTEC K200 - two-piece flanged ball valves, INTEC K811 - three-piece high-pressure ball valves
	Hydrogen fuelling stations	Hydrogen	INTEC K200 - two-piece flanged ball valves, INTEC K811 - three piece high-pressure ball valves
Biogas	Feed and digester system	Manure, household or industrial fibrous waste Biogas; raw- as well as treated gas	KLINGER Knife gate valves, Butterfly valves, Segment ball valves, Diaphragm valves
Biogas	Gas system	Gases	KLINGER Ballostar® KHA, KHE, Y-strainers
Geothermal	Direct underground water feed system	Mineral rich underground water Water Low pressure and medium pressure steam Condensate	KH(SV)I, KHA, INTEC K200 - two-piece flanged ball valves
Geothermal	Turbine system (same concept as Thermal energy)		KH(SV)I, KHA, INTEC K200 - two-piece flanged ball valves, INTEC K811 - three-piece high-pressure ball valves, Segment ball valves, Triple eccentric butterfly valves, Steam traps, Safety valves, Pressure reducing valves
	Underground water for heat pumps		KLINGER Ballostar® KHA, KH(SV)I, KHO

GASKETS	INSTRUMENTATIONS	EXPANSION JOINTS & HOSES
KLINGERSIL® C-4400 and C-4430, KLINGER® KGS GII, Sentry Reverse Integrity Gaskets	KLINGER Magnetic and Vortex flowmeters	Rubber Expansion Joints with flanges, Metal Expansion Joints with flanges/weldends, Type: SF/DF/KB, Metal hoses
KLINGER® Top-Chem 2000, KLINGER® Graphite		Metal hoses
KLINGER® Milam PSS	Labom pressure gauges and transmitters	Rubber Expansion Joints with flanges, Metal Expansion Joints with flanges/weldends, Type: SF/DF/KB, Metal hoses
KLINGERSIL®, NBR	KLINGER Ultrasonic flowmeters	Metal Expansion Joints with flanges/weldends, Type: SF/DF/K, Metal hoses
		Metal Expansion Joints with flanges/weldends, Type: SF/DF/KB, Metal hoses
KLINGERSIL® C-4500, KLINGER® Top-Chem 2000, KLINGER® Top-Chem 2003, KLINGER® KGS GII	KLINGER Vortex flowmeters LUGB-G, Labom Compact CA1600, Barksdale BHyT, Honeywell XNX transmitters	Rubber Expansion Joints with flanges, Metal hoses
KLINGER® KGS GII	KLINGER Magnetic and Ultrasonic flowmeters	Rubber Expansion Joints with flanges, Metal hoses
KLINGER® KGS GII	KLINGER Magnetic and Ultrasonic flowmeters	Metal Expansion Joints with flanges/weldends, Type: SF/DF/KB, Metal hoses
KLINGERSIL® C-4500, KLINGER® Top-Chem 2000, KLINGER® Top-Chem 2003, KLINGER® KGS GII, Steelflon WLP	KLINGER Vortex flowmeters LUGB-G, Labom Compact CA1600, Barksdale BHyT, Honeywell XNX transmitters	Metal Expansion Joints with flanges/weldends, Type: SF/DF/KB, Metal hoses
KLINGER® Spiral Wound Gaskets, Steelflon WLP	Barsdale and Labom transducers	
KLINGER® KGS GII		Rubber Expansion Joints with flanges, Metal Expansion Joints with flanges/weldends, Type: SF/DF/KB & Vibration absorbers, Metal hoses
KLINGERSIL® C-4400 and C-4430, KLINGER® Top-Chem 2000, KLINGER® Top-Chem 2003, KLINGER® Milam PSS	Honeywell XNX, XCD, Honeywell FLS100 flamedetectors	Metal Expansion Joints with flanges/weldends Type: SF/DF/KB, Metal hoses
KLINGER® Spiral Wound Gaskets CRIR, Steelflon WLP	KLINGER Magnetic flowmeters	Rubber Expansion Joints with flanges, Metal Expansion Joints with flanges/weldends, Type: SF/DF/KB & Vibration absorbers
KLINGER® Spiral Wound Gasket CRIR		For Gasturbines: Fabric / Metal Expansion Joints, Metal hoses
KLINGERSIL®	KLINGER Magnetic flowmeters	Rubber Expansion Joints with flanges, Metal Expansion Joints with flanges/weldends, Type: SF/DF/KB & Vibration absorbers



PRODUCT OVERVIEW

Product and process mapping of the Energy Industry

ENERGY SEGMENTS	EQUIPMENT	MEDIA	VALVES
Thermal energy	Boiler	Feed water (LP, MP or HP) Steam (LP, MP or HP) Condensate Acid Fuel oil or natural gas Incondensable gasses Flue gas Desulprization liquid Lub oil	KLINGER Ballostar® KHA, KHE, Armstrong liquid drainers, KVN, 2-, 3-way control valves
Thermal power plants	Turbine		KOSO high pressure control valves, KOSO 3-way mixing globe valves, KOSO high pressure bypass valves
	Feed water system Deaerator		Armstrong Steam Traps, Air vent valves, Breather valves
	Flue gas cleaning		KLINGER Ballostar® KHE, Double- and Triple eccentric, Butterfly valves with teflon seats
	Fuel system (bio fuels, fossil fuels)		Butterfly valves, Diaphragm valves
	Water treatment		Diaphragm valves
	Incineration plant		KLINGER Ballostar® KHA, KHE, Diaphragm valves, Butterfly valves
	Engine (diesel, gas, emergency diesel)		KLINGER Ballostar® KHA, KHE, Control valves
Heat pumps	Compressor components	Ammonia and R cooling media Sea, lake or underground water Treated district heating / distribution water	KLINGER Ballostar® KHA, INTEC K200 - two-piece flanged ball valves, INTEC K811 - three-piece high-pressure ball valves
Heat pumps	Water intake system		KLINGER Ballostar® KHA, KHE, Air vent valves
	Hot water District heating supply		KHO, KHD-FW, KKD-FW, Butterfly valves
Energy distribution	District heating - transmission	Treated water / demineralized water Seawater Treated cooling water	KHO, KH(SV)I, KHD-FW, KKD-FW, Check valves, Butterfly valves, Double- and Triple eccentric
District heating and district cooling	District heating - distribution		KHO, KHD-FW, KKD-FW, Check valves
	District cooling - water intake		Butterfly valves super duplex and bronze, Strainers, Check valves, Balancing valves, Mud boxes
	District cooling - distribution		KHO, KH(SV)I, KHD-FW, KKD-FW, Check valves

GASKETS	INSTRUMENTATIONS	EXPANSION JOINTS & HOSES
KLINGERSIL®	KLINGER Water level gauges	Metal Expansion Joints with flanges/weldends, Type: SF/DF/KB, Metal hoses
KLINGER® Graphite	Labom pressure transmitter pascal	For Gasturbines: Fabric / Metal Expansion Joints, Metal hoses
KLINGER® Spiral Wound Gaskets, Steelflon WLP	KLINGER Magnetic flowmeters	Metal Expansion Joints with flanges/weldends, Type: SF/DF/KB, Metal hoses
KLINGER® Spiral Wound Gaskets CR, Steelflon WLP	Honeywell XNX, XCD	
KLINGER® KGS GII	KLINGER Gear flowmeters	
NBR, EPDM, FKM	KLINGER Magnetic flowmeters	
Ceramic Gasket Braid		
KLINGER® Spiral Wound Gaskets, Steelflon WLP, NBR	Honeywell XNX, FLS100	
KLINGERSIL®	Barksdale and Labom	Metal Expansion Joints, Rubber Expansion Joints, Metal hoses
O-ring	KLINGER Flowswitch S22	Metal Expansion Joints, Rubber Expansion Joints
KLINGERSIL®, KLINGER® KGS GII		Metal Expansion Joints, Rubber Expansion Joints
KLINGER® Spiral Wound Gaskets CRIR, Glass, Ceramic and Mica	KLINGER Magnetic flowmeters	Metal Expansion Joints with flanges/weldends, Type: SF/DF/KB/DH
KLINGER® Spiral Wound Gaskets CRIR, Glass, Ceramic and Mica	KLINGER Magnetic flowmeters	Metal Expansion Joints with flanges/weldends, Type: SF/DF/KB/DH
KLINGERSIL®	KLINGER Magnetic flowmeters	Rubber Expansion Joints with flanges
KLINGERSIL®, KLINGER® KGS GII	KLINGER Magnetic flowmeters	

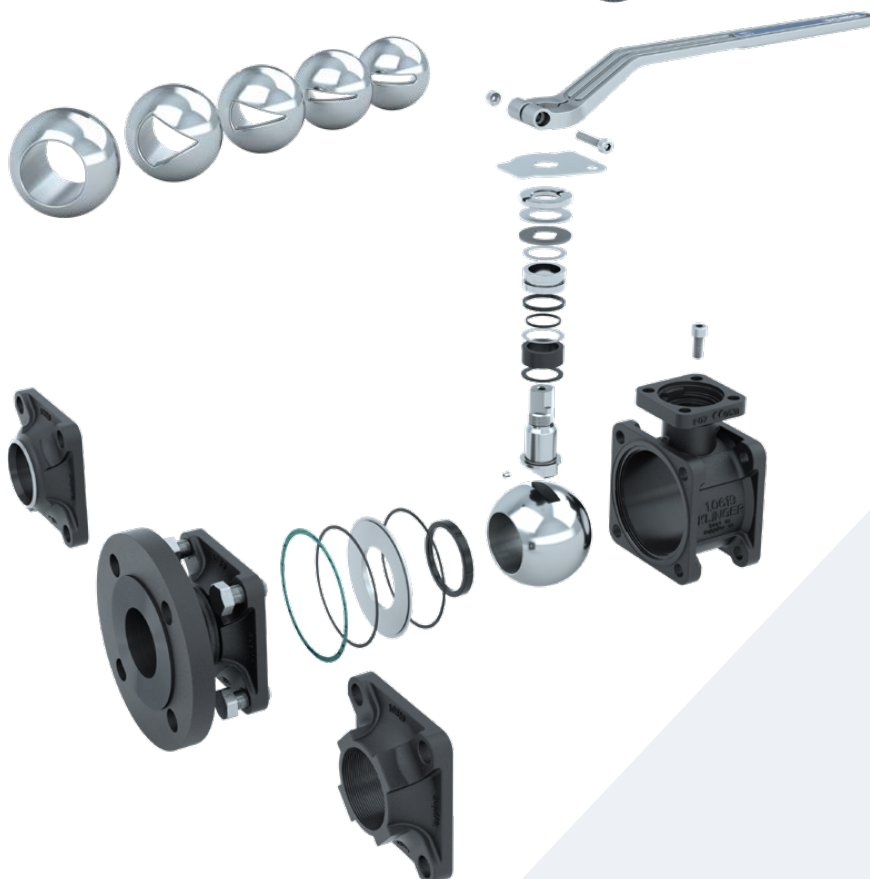
VALVES

KLINGER BALLOSTAR® KHA BALL VALVE

The new KHA – the multi-talented product for many applications.

In this context, the KLINGER Ballostar® KHA offers a more stable bolting of the body with shorter bolts for greater mechanical stability with regard to thermal expansion.

A wide range of types due to the modular construction system characterizes these three-piece ball valves. Three kinds of connections, six types of sealing elements and three stuffing box design ensure that KLINGER Ballostar® KHA ball valves are suitable for many different operating conditions within the heat and power sector.



FIRE SAFETY

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

IMPROVED CORROSION PROTECTION

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

SERIAL ANTISTATIC

The KLINGER Ballostar® KHA features serial antistatic equipment in accordance with ISO 7121 and EN 1983 respectively.

TA-LUFT (VDI 2440)

The standard stuffing box meets the requirements of TA Luft (VDI) 2440). Double sealing at the body section by means of the KLINGERSIL® C-4430 soft gasket protects against external leakages and meets the highest helium emission testing requirements.

OXYGEN DESIGN

Due to the fact that increased concentrations of oxygen lead to greater fire and explosion hazards, a valve must therefore meet certain pre-requirements in terms of oxygen.



KLINGER BALLOSTAR® KHE BALL VALVE

BENEFITS / PROPERTIES

Due to the two-piece body construction design the risk of an external leakage is reduced, because there is just one sealing area between body and flanged end piece. Offers modular selectable system components (operating stem and sealing elements). Split body KHE valves are prepared for a wide range of operating conditions.

SPECIFICATIONS

- » Maintenance-free.
- » Supports pressurization on both sides.
- » Ball with cylindrical full bore.
- » Sealing in accordance with EN 12266-1 – leakage rate A.
- » Metal seat for abrasive media.
- » Operating stem sealed by O-rings.
- » Operating stem extension.
- » Oxygen version (oil- and grease-free).
- » Gas version.



KLINGER BALLOSTAR® KHI BALL VALVE

BENEFITS / PROPERTIES

Two-piece body, flanged ends on both sides. In addition the ball valve housing comes with a test and drain valve, which enables the pressure to be relieved without having to open the pipeline when the ball is closed. This is a significant advantage as it allows for leak-testing at any time.

SPECIFICATIONS

- » Maintenance-free. Fire Safe.
- » "TA-Luft".
- » Double block and bleed.
- » Oxygen, gas and vacuum version.
- » Certified acc. to EN 488:2019.
- » High temperature version up to 260°C.



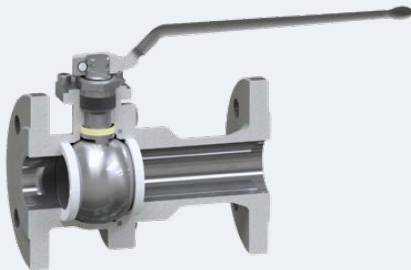
KLINGER BALLOSTAR® KHSVI BALL VALVE

BENEFITS / PROPERTIES

One-piece ball valves have a fully welded body with welding ends on both sides. It is fit for underground district heating trenches and buried pipelines. The test and drain valve welded to the ball valve housing allows the pressure to be relieved intermediately while the ball is closed.

SPECIFICATIONS

- » Fire safe applications and is certified in accordance with API Standard 607, and EN ISO 10497 by Lloyd's Register.
- » Approval granted for utilization with gaseous oxygen at operating pressures of up to 16 bar and operating temperatures of up to 60°C.
- » With the double block and bleed function only need one valve instead of two valves.
- » This alternative solution is especially useful for installations with limited space.



INTEC BALL VALVES FOR HYDROGEN & OXYGEN

BENEFITS / PROPERTIES

High temperature ball valves for P2X applications. Mixture of steam and hydrogen. (operating: 300°C @ 2.2 barg / design: 380°C @ 3.5 barg). Mixture of air and oxygen. (operating: 408°C @ 0.1 barg / design: 480°C @ 0.5 barg) INTEC K221-S-HT: Floating ball. Metal seated. Single side spring loaded seat ring. INTEC K211-S-HT: Trunnion mounted ball. Metal seated. Both sides spring loaded seat rings.

SPECIFICATIONS

- » Standard materials (WCB/1.0619, ASTM 351-CF8M/1.4408).
- » Special materials (Duplex, Hastelloy, etc.) on request.
- » Seat ring and ball hard metal coated.
- » Gas-tight.
- » Fire-Safe acc. to API 607 and DIN EN ISO 10497.



KLINGER MONOBALL KHO BALL VALVE

BENEFITS / PROPERTIES

The Monoball KHO is a fully welded ball valve and has been successfully used in the field of district energy and industrial technology for more than 30 years. Continuing this success, we have brought the Monoball valve series to the next technological level. Durability, functionality, no maintenance required and user-friendliness were the top priorities during development.

SPECIFICATIONS

- » PN16/40.
- » DN 15-250.
- » Material: Cast steel, stainless steel.
- » Temperature: -5°C to 200°C.
- » Permanently elastic, maintenance-free sealing system comprises corrosion-resistant, prestressed stainless steel bellows washers.
- » Graphite-reinforced PTFE sealing rings.



KLINGER KHD-FW

BENEFITS / PROPERTIES

Fully welded ball valves. Space-saving, long service life, maintenance-free. 30 years of effective service life, maintenance-free, and the same life as the pipeline. End connections are 360° welded onto the body eliminating any possible leakage through the body. Lightweight and space-saving, and thanks to the self-lubricating bearing valves are basically maintenance-free. With spring-loaded body seals, KHD-FW fully welded ball valves offer excellent tolerance for thermal expansion.

SPECIFICATIONS

- » Pressure Rating PN16, PN25, PN40.
- » DN 15-1400.
- » Material: Carbon steel, stainless steel.
- » Temperature: -20°C to 200°C.
- » Bore Full and reduced bore.
- » Long service life, maintenance free. Anti-blowout stem for safety. Trunnion-mounted on larger size.



KLINGER TANDEM DUO BALL VALVE

BENEFITS / PROPERTIES

The Duo Ball Valve is designed for applications with extremely high safety requirements. These are two compact ball valves arranged in series, which are switched in parallel via a switching linkage by means of a single INTEC 40KS spring-loaded unit.

SPECIFICATIONS

- » Pressure of max. Δp 31 bar and a temperature application range of -34°C to 40°C .
- » Available with a floating ball or trunnion mounted ball as well as soft or metal seated execution.
- » All ball seat systems naturally fulfill the leakage rate A according to EN 12266 and are absolutely gas-tight.



SEGMENTED CONTROL BALL VALVE

BENEFITS / PROPERTIES

A segmented ball valve has contoured V-notch segment in the ball. The V-notch ball allows positive shearing action and produces an inherent equal percentage flow characteristic. It provides non-clogging, high capacity flow control. Application: regulation of water, fluids, air, gas etc. Simple installation in flange ball valve. Broad range of V-port balls.

SPECIFICATIONS

- » Pressure class: PN10, PN16 and 150lbs.
- » Segment ball: Stainless steel CF8(304)+Cr / CF8M+Cr.
- » Spindle/Sleeve: Stainless steel 17-4PH/ Selflubricating PTFE/316-PTFE/304.
- » Seat seal: PTFE / Metal 316+stellite.
- » Connection: Flanges according to EN1092 / ANSI 16.5.
- » Temperature: -29° to 180°C (400°C metallic seal).



KLINGER TRIPLE ECCENTRIC BUTTERFLY VALVE

BENEFITS / PROPERTIES

Triple eccentric design is no rubbing. Zero leakage bidirectional tight shut-off. Friction-free operation. With laminated resilient disc ring. Service application: Hydraulic, petroleum, natural gas, chemical, power.

SPECIFICATIONS

- » Size range: 3" - 48".
- » Valve material: Stainless steel, carbon steel.
- » End connections: Wafer type, Lug type, Flange type, Butt-weld type.
- » Seat ring material: Laminated type (SS304 + Graphite).
- » Disc material: Stainless steel, carbon steel.
- » Stem material: Stainless steel.



KLINGER BUTTERFLY VALVE RS LUGGED EPDM SEAT

BENEFITS / PROPERTIES

A resilient seated butterfly valve with superior design features and materials of construction to provide repeatable tight shutoff in severe abrasive and corrosive environments for a variety of applications. Used for Flue Gas Desulfurization, water and chemical isolation.

SPECIFICATIONS

- » Material: GGG40 w/ blue primer.
- » Pressure class: PN10/PN16.
- » Disc, top stem, bottom stem: Stainless steel.
- » Seat: EPDM, NBR or viton.
- » Connection: Mounting between flanges DIN PN10.
- » Temperature: EPDM: -10°C to 135°C .



KLINGER BUTTERFLY VALVE KKD-FW

BENEFITS / PROPERTIES

Triple eccentric butterfly valve with flexible metal seal is excellent as shut-off or control valve for the use in district heating, cooling and wide range of applications. Made of high-quality materials, the butterfly valve follows design features triple offset geometry with state of art U-type flexible metal sealing offering excellent shut-off characteristics and is suitable for wide range of temperatures.

SPECIFICATIONS

- » Pressure Rating: PN10, PN16, PN25.
- » DN 300-1400.
- » Material: Carbon steel, stainless steel.
- » Temperature: -10°C to 200°C .
- » End Type: Welding end, flanges.
- » Bore: Full and reduced bore.
- » Leakage: Class EN 12266-1 Rate B.



KLINGER BUTTERFLY VALVE WAFER TEFLON SEAT

BENEFITS / PROPERTIES

Application: Liquids (aggressive) gases, flue gases. Short face to face and low weight. Exchangeable seat. Actuator flange ISO 5211 for direct mounting of actuators.

SPECIFICATIONS

- » Material: GGG40 w/epoxy coating.
- » Pressure class: PN10.
- » Disc: Stainless steel AISI 316.
- » Stem: Stainless steel AISI 316.
- » Delivers: DN 40-300: Epoxy coated steel.
- » Face to face: DIN 3202-K1.
- » Connection: Mounting between flanges PN10, PN16 or ANSI 150.
- » Temperature: PTFE: -60°C to 200°C .
- » Options: Lugged type. Gearbox for narrower dimensions. Pneumatic or electric actuator.



KLINGER BUTTERFLY VALVE WAFER 3530 NBR SEAT

BENEFITS / PROPERTIES

Wafer w/centering holes for PN10/16, NBR seat. Application: Liquids, gases or powdered media (depending on seat type). Double O-ring seal in stem, bottom bearing in bronze, bushing and top bearing in Delrin, bushing ensures long life. Short face to face and low weight. Exchangeable seat. Actuator flange ISO 5211 for easy mounting of pneumatic or electric actuator.

SPECIFICATIONS

- » Material: Cast iron ASTM A 126-B w/ blue coating, (Ductile cast iron ASTM A395 ≥ DN 700).
- » Pressure class: PN16: DN 40-600.
- » Seat type: NBR.
- » Other seat material available.
- » Temperature NBR: -10°C to 80°C.



KLINGER BUTTERFLY VALVE LUGGED 3533 EPDM/EPT SEAT

BENEFITS / PROPERTIES

Application: Liquids, gases and powdery media (depending on seat type) Lugged type is bolted on the flange and ensure 100% centering. Double O-ring seal in the spindle, as well as the bottom bearing in the bronze bushing and the top bearing. Mounting flange ISO 5211 for easy mounting of pneumatic or electric actuator.

SPECIFICATIONS

- » Ductile cast iron ASTM A395 w/ blue coating.
- » Pressure class: PN10, PN16, ANSI150LB.
- » Stem: Stainless steel AISI 316.
- » Spindle: Stainless steel AISI 410.
- » Handle/notched disc: DN 40-300: FCD 45-SG iron/ galvanized steel.
- » Reduction gear: DN 40-600: SG iron.
- » Seat: EPDM/EPT.
- » Connection: Mounting on DIN flanges PN10 / PN16.
- » Temperature: EPDM: -20°C to 120°C.



KLINGER BUTTERFLY VALVE FLANGED 3537 EPDM/EPT SEAT

BENEFITS / PROPERTIES

Application: Liquids, gases and powdered media. Can be bolted on the flange ensuring 100% centering. Double O-ring seal in stem, bottom bearing in bronze, bushing and top bearing in Delrin, bushing provides long life. Short face to face and low weight. Exchangeable seat. Actuator flange ISO 5211 for easy mounting of pneumatic or electric actuator.

SPECIFICATIONS

- » Cast iron ASTM A 126-B w/ blue coating.
- » Pressure class: PN10.
- » Disc, stem: Stainless steel AISI 316.
- » Seat: EPDM/EPT.
- » Temperature: NBR: -20°C to 120°C.
- » Geabox: DN 500 to DN 1000. SG iron.
- » Options: Pneumatic or electric actuator. Seat type (NBR, viton, silicone). Disc material (Al-Br, SG-iron).



KLINGER BUTTERFLY VALVE KKD 82

BENEFITS / PROPERTIES

KLINGER KKD series butterfly valve is suitable for different substances. Flow medias such as steam, water and standard gases can be controlled or valves can be used as closing valve in different process applications. Fitted with handle or manual gear. Butterfly valves have metal or PTFE seat and is to be installed between flanges.

SPECIFICATIONS

- » Valve materials CF8M (carbon steel available).
- » Pressure classes in EN standard are PN10-40 and ANSI Class 150 and 300.
- » Standard sizes are DN 80-600 (3"-24") but is available up to DN 1200 (48") on request.



LUGGED DOUBLE ECCENTRIC BUTTERFLY VALVE VF913

BENEFITS / PROPERTIES

Application: Liquids, gases and vapors at high temperatures. Short face to face and low weight compared to alternative valve types. Double eccentric shut-off reduces wear on the seat. Simple mounting of pneumatic, hydraulic and electric actuators. Blow out proof stem design. ATEX 94/9/CE II cat 2 GD.

SPECIFICATIONS

- » Material: ASTM A216 Gr. WCB.
- » Pressure class: PN10-16, ANSI 150 LBS.
- » Disc: Stainless steel AISI 304.
- » Seat: PTFE.
- » Stem: AISI 304.
- » Gland packing: PTFE.
- » Leak rate: ISO 5200 Rate A (No leakage).
- » Temperature: PTFE: -29°C to 160°C.



TRIPLE OFFSET BUTTERFLY VALVE VKX

BENEFITS / PROPERTIES

Application: liquids, gases and vapors under high temperatures. Short installation dimensions and low weight compared to alternative valve types. Tricentric closure means the disc is only in contact with the seat in the fully closed position. No tearing and minimal wear on the seat. Floating disc adapts to the seat completely and ensures 100% tight closure. Simple mounting of pneumatic and electric actuators.

SPECIFICATIONS

- » Material: Steel 1.0619.
- » Pressure class: PN40.
- » Disc: Steel 1.0619
- » Lamella seal: Stainless steel 1.4462 /graphite.
- » Seat: Stellite 21.
- » Spindle: 1.4542,
- » Spindle seals: Graphite.
- » Temperature: -10°C to 400°C.

KOSO 3-WAY VALVE TYPE 521F/531F

BENEFITS / PROPERTIES

Application: Steam. Diverting type that divides the flow into two directions and mixing type that converges two flows into one are available. For valve size 2.5" (65A) or under, 531F (mixing type) is further used as a diverting type with no functional problem.

SPECIFICATIONS

- » Regulation ratio: 30:1.
- » Size: DN 20-200.
- » Pressure level: ANSI 150-600lbs.
- » Temperatures: -45°C to +300°C.
- » Body size: 3/4" (20A) to 8" (200A).
- » Body rating: ANSI Class 150 to 600, JIS 10K to 40K.
- » Fluid temperature: -45°C to +300°C.
- » Connections: Flanged (RF).
- » Body materials: SCPH2/WCB, SCS13A/CF8, SCS14A/CF8M.
- » Trim materials: SCS14A/CF8M, SCS24.
- » Actuator combination:
 - 5200LA: Pneumatic diaphragm actuator
 - 6300LA: Pneumatic cylinder actuator
 - 3500LB, 3600LB: Solid state electronic actuator
 - 3800LA: Microprocessor actuator.



KOSO BYPASS

BENEFITS / PROPERTIES

Turbine bypass valves increase the flexibility in the operation of steam power plants. They assist in faster start-ups and shutdowns without incurring significant damage to critical and expensive components in the steam circuit due to thermal transients. In some boiler designs, turbine bypass systems are further used for safety functions.

SPECIFICATIONS

High reliability, low vibration and noise, fine control, tight shutoff, excellent, reliable desuperheating performance, ease of maintenance - no welded seat or cage. Bypass capacity are 30 - 35%, 60 - 70% and 100% of the design flow. Koso's 530D/540D bypass systems are configured with pneumatic actuators; electro-hydraulic actuation is available upon request.



BALL VALVE WITH ACTUATOR

SELECTIONS

Both pneumatic and electric the actuator can be used for the automation of ball valves. Selection of actuator can be made according to valve maximum torque tolerance. In this context the necessary pressure differential determines in torque of the required actuator. Ball valves operation degrees are 0-90.

CONTROL

As a control valve, the standard ball valve is more like a throttling valve. If there is a possibility to use V-Port Ball or Segment Ball execution inside the valve, then ball valves turn out to be very good as sharp control valves, whose control characteristics can be adjusted exactly to the customers needs within the process.



BUTTERFLY VALVE WITH ACTUATOR

SELECTIONS

Both pneumatic and electric the actuator can be used for the automation of butterfly valves. The actuator should be selected in accordance with the needed torque values and the required operation times. Operation degrees are 0-90.

CONTROL

As a control valve standard the butterfly valve is preferably applicable in standard control areas from 10-80 degrees from the closed position. Furthermore, there are special executions available for reducing the cavitation phenomena and to modify control abilities especially in lower stream control.



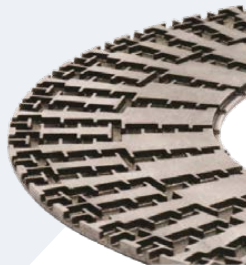
KNIFE GATE VALVE WITH ACTUATOR

SELECTIONS

Both pneumatic and electric the actuator can be used for the automation of knife gate valves. The actuator should be selected in accordance with the needed torque values and which kind of operation times are required. Operation type is linear movement.

CONTROL

Standard gate valves are not suitable in control applications, but there are as well as special ports for controlling the fluid and as well as special materials for resisting corrosion of the knife.



KOSO VECTOR™

BENEFITS / PROPERTIES

KOSO VECTOR™ trims deliver reliable control, long life and freedom from cavitation, erosion, vibration and noise problems. VECTOR™ trims are suitable for compressible and incompressible fluids.

SPECIFICATIONS

Body style Globe, angle, body size 1" – 42", body rating ASME 150 – 4500 class & API-6A 3000 – 15000, fluid temperatures -196 °C to 620 °C, connections Flanges (RF, RTJ), butt welded, socket weld, body materials WCB, LCB, LCC, C5, WC6, WC9, C12A, CF3, CF8M, A105, LF2, LF3, F11, F22, F91, F316, 254SMO, Duplex, AISI 4130, trim materials Carbon Steel, 410 SS, 17-4 PH, F11, F22, F44, F91, 304 SS, 316 SS, Inconel, Duplex, Tungsten Carbide, PSZ, Metal seat leakage Cv x 0.01%, Class IV or V, MSS-SP61. Actuation options Pneumatic diaphragm or piston, electric, electro-hydraulic.

POWER APPLICATIONS

- » Turbine bypass
- » Condenser dump devices
- » Turbine stop & control valves
- » Main and booster feedpump recirculation
- » Startup and main feedwater regulation
- » Startup system
- » Attemperator spraywater control
- » Deaerator level control
- » Auxiliary steam
- » Soot blower control
- » Deaerator pegging steam
- » High level (emergency) heater drain
- » Steam vent
- » Desuperheating systems
- » Steam conditioning
- » Sampling systems



KLINGER CONTROL GLOBE VALVES

SELECTIONS

Globe type control valves are normally controlled with pneumatic or even hydraulic actuators because of control response time. Globe type control valves are the most common type to control steam and gas media but can be used for most fluids. Operation type is linear movement.

CHARACTERISTICS

Globe type control valves can be one-step control valves, but several pressure reducing points can additionally be installed inside the valve. This enables higher reduction without increasing amount of cavitation and high volume of sound.



KLINGER CONTROL VALVE ELECTRIC ACTUATORS

BENEFITS / PROPERTIES

Electric actuators have quarter turn or multiple turn models, and operation time is slower than in pneumatic actuators. The biggest advantage compared to pneumatic actuators is strength. Bigger valves need a large amount of force to operate and with electric actuators combined with gear units these high forces can be found.

CHARACTERISTICS

Most of the 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-areas and the most known data transfer protocols are supported by actuators from different suppliers.



KLINGER CONTROL VALVE PNEUMATIC ACTUATORS

BENEFITS / PROPERTIES

Pneumatic actuators are the most common actuators for quarter turn valves to be open/close or control actuators. Actuators can be only with pneumatic operation (DA) or another direction is built to operate with spring force (SR).

CHARACTERISTICS

Normal pressure in the actuator feed (air) is 4,5-6 bar(g). There are special products for ATEX-areas and products for different reliability levels (SIL) according to customer specifications. Can be produced in material 316 if high chemical resistance is needed.



LIMIT SWITCHES

BENEFITS / PROPERTIES

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

CHARACTERISTICS

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



POSITIONERS

BENEFITS / PROPERTIES

Positioners are devices that contribute to the control valve in positioning the actuator with the help of a control signal. They respond according to the input signal they receive pneumatically or electrically. These positioners would provide output power to the actuator. Positioners move control valves to a specified position.

CHARACTERISTICS

Normal pressure for positioners (air) is 4,5-8 bar(g). There are special products for ATEX-areas and also products for different reliability levels (SIL) according to customer specifications. Customers receive position information, additionally the positioner is able to communicate with several protocols within the automation system.



SOLENOID VALVES

BENEFITS / PROPERTIES

The valve actuator can be driven with a device that feeds the pneumatic air into the actuator to move the valve into open or close position. Special features can be used to move the valve also in the middle positions to gain some control functions.

CHARACTERISTICS

Normal pressure for solenoid valves (air) is 4,5-8 bar(g). There are special products for ATEX-areas products for different reliability levels (SIL) according to customer specifications.



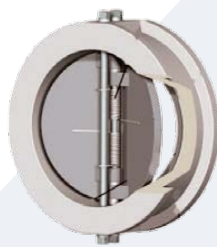
CHECK VALVE TYPE 113R/R

BENEFITS / PROPERTIES

Flange connection PN10.
Application: Steam, water, oil and non-aggressive liquids. For horizontal or vertical installation with upward flow direction. Compact. Build-in stop for disc not to hit tube walls. Due to the design the disc is self-sealed at horizontal mounting.

SPECIFICATIONS

- » Type: R.
- » Material: Steel.
- » Pressure class: PN10.
- » Disc: Steel.
- » Seat/stem: AISI 304.
- » Options: Body and disc in acid-proof stainless steel. Larger or smaller dimensions. Other connections: PN6, 16, 25, 40, 64, ANSI 150 lbs or 300 lbs.



CHECK VALVE TYPE 407

BENEFITS / PROPERTIES

Compact settlement. Environment-friendly. No maintenance. Hot and cold water plants. Low-pressure steam plants. Oil plants. Chemical plants.

SPECIFICATIONS

- » Duo check, cast iron.
- » Flange connection PN16.
- » Material: Cast iron GG25.
- » Pressure class: PN16.
- » Disc: Stainless steel AISI 304.
- » Spring: Stainless steel.
- » O-rings: EPDM.
- » Temperature: -10°C to 100°C.
- » Options: House and disc in other materials. Dimensions up to DN 600. Other connections and pressure stages.



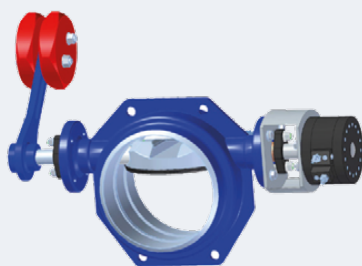
CHECK VALVE TYPE CV

BENEFITS / PROPERTIES

For liquids and gases. Short face to face. Easy installation. Horizontal - or vertical mounting with upward flow direction.

SPECIFICATIONS

- » Type CV.
- » Material: Stainless steel AISI 316.
- » Pressure class: PN16.
- » Disc: Stainless steel AISI 316, suspended.
- » O-ring: EPDM.
- » Flange sealing: EPDM O-rings.
- » Temperature: -40°C to 155°C.
- » Options: Body and disc in other materials. Spring-loaded disc. O-rings in other materials. Other flange connections PN6, 10, 25, 40, ANSI 150, 300 and 1500.



CHECK VALVE TYPE NX26

BENEFITS / PROPERTIES

Application: water, liquids, steam and gases. Weight arm and two-stage oscillating hydraulic damper with adjustable valves for desired damping.

SPECIFICATIONS

- » Size: DN 150-1400.
- » Flange, Wafer, double flange and welding ends.
- » Pressure level: PN10-40 (ANSI 150-300 lbs).
- » Temperatures: -20°C to 425°C.



KNIFE GATE VALVE TYPE C

BENEFITS / PROPERTIES

A knife gate valve works by allowing thick media to easily flow over soft seals with no interference. The advantages of knife gate valves are that they're cheap, easy to actuate, and light. Their smooth surfaces are easy to clean and do not contaminate the fluid.

SPECIFICATIONS

- » Sizes: from 125x125 to 1400x1400. Also available in rectangular designs.
- » Working pressure - Standard: 0.5 Kg/cm².
- » Standard flanges: Special connecting flanges can be manufactured on request. The connecting flange and the face-to-face dimension can be adapted to the customer's needs.



KNIFE GATE VALVE TYPE F

BENEFITS / PROPERTIES

Unidirectional wafer-design knife gate valve. One-piece cast body with guides to support gate and seat wedges. Provides high flow rates with low pressure drop. Various seat and packing materials available. It has an arrow on the body indicating the flow direction. General Applications: This knife gate valve is suitable for working with dry products like powder and grain. It is generally used for gravity discharge of dry solids.

SPECIFICATIONS

- » Sizes: DN 50 to DN 1200 (larger sizes on request).
- » Standard flanges: DIN PN10 and ANSI B 16.5 (class 150).
- » Resilient seat materials: EPDM, nitrile, viton, silicone, PTFE. Packing: greased cotton, dry cotton, cotton + PTFE, synthetic + PTFE, ceramic fibre.
- » All types of actuators can be applied.



KLINGER SLIDE GATE VALVE KSD

BENEFITS / PROPERTIES

KLINGER KSD series gate valve with hand wheel or with pneumatic actuator suitable for different substances. Flow media as pulp stock and dispersion waters. Gate valves are with metal seat, EPDM or PTFE seat and will be installed between flanges.

SPECIFICATIONS

- » Valve material CF8M (carbon steel also available).
- » Pressure classes in EN standard are PN10-25 and ANSI Class 150.
- » Standard sizes are DN 50-600 (2"-24") but is available up to DN 1200 (48") on request.



KLINGER GATE VALVE TYPE ZK 40-100

BENEFITS / PROPERTIES

Gate valve is designed to open and stop the flow. The gate valve can be mounted to a pipeline in any position. It should operate in a close or open position.

SPECIFICATIONS

- » DN 50 -500 mm.
- » Pressure: 40 bar.
- » Temperature up to 670°C.
- » Medium-water, steam and other non-toxic, non-aggressive media.
- » Drive type - Hand wheel, AUMA drive, NWA drive, MODACT drive.



FLUE GAS THROTTLING VALVE TYPE R4E

BENEFITS / PROPERTIES

Throttle valves control the quantity of the gas and air mixture. Furthermore, in special applications the throttle valve can be used as a gas valve to control mixture quality. The precise manufactured valves allow optimum engine control and an exceptional lifetime. Short face to face and low weight. Used to modify the rate of flow. Can be supplied with manual, pneumatic or electric operator.

SPECIFICATIONS

- » Material: Steel St37-2.
- » Pressure class: PN16 depending on temperature.
- » Disc: Steel St. 37.
- » Stem: Stainless steel 1.4305.
- » Seal: Metallic, non-seal.
- » Connection: Mounting between flanges DIN 24154 Teil 2 (1990).
- » Temperature: Up to 280°C.
- » Options: Other dimensions, flanged version (R4(E), With stop bar in body, leakage ~0.5% of Kva.



THROTTLING VALVE TYPE 5A

BENEFITS / PROPERTIES

A throttling valve, by definition, is a valve that can start, stop, and regulate the amount of fluid going from Point A to Point B. Typically, there will be a higher amount of pressure on one side of the throttle valve with a lower amount of pressure on the opposite end. Throttling Valve Wafer. Application. Gases and vapours. Short face to face and low weight. Used to modify the rate of flow. Grid lever w/ locking device 0°-90°.

SPECIFICATIONS

- » Material: Cast iron GG 25.
- » Pressure class: PN16 depending on temperature.
- » Disc: Steel.
- » Stem: Steel.
- » Lever: Steel.
- » Scale - brass.
- » Seal: Metallic, non-seal.
- » Connection: Mounting between DIN flanges PN6/10/16.
- » Temperature: Up to 280°C (Up to 450°C w/ disc and stem of stainless steel), Leak rate: ~1% of Kva.



ARMSTRONG STEAM TRAP

BENEFITS / PROPERTIES

Steam traps are part of the process to remove condensate water from the steam system. The function of the steam trap is either mechanical (inverted steam trap bucket, float) or operated by temperature/pressure-ratation (thermodynamic, thermic). When the steam trap is working together with the heat exchanger, trap capacity has to be calculated according to the capacity of the exchanger.

SPECIFICATIONS

- » Materials for steam traps are cast iron, carbon steel and stainless steel.
- » Cast iron is quite common as it has better heat transfer abilities. As a result the traps perform better.
- » DN 15-50 but also bigger steam traps are available for high capacity heat exchanger.



BALANCING VALVE

BENEFITS / PROPERTIES

Balancing valves maintain flow conditions so that control valves function properly in HVAC systems, because unbalanced systems can produce wide temperature variations among rooms and can increase energy needs. Application: Heating and cooling systems.

SPECIFICATIONS

- » Material: Brass 12165 and cast iron 447.
- » Pressure: 25 bar, max. 20 bar at 130°C.
- » Seat sealing: EPDM.
- » O-rings: EPDM.
- » Adjustment handwheel.
- » Heat-resistant ABS.
- » Connection: Female threads BSPT.
- » Temperature -10°C to 130°C (antifreezes under 0°C).



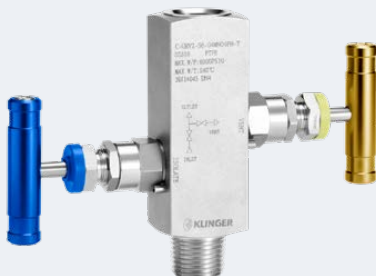
FLOAT VALVE

BENEFITS / PROPERTIES

Float valves can be used to prevent overfilling or overflow of tanks when the liquid needs to be diverted rather than dumped in a drain. Suitable valves can be mounted on the base of the tank with the outlet piped through the tank wall. Application: Filling and level control of water and liquids in an unpressurized tanks.

SPECIFICATIONS

- » Type 642: Chrome-plated brass CuZn37Pb.
- » Type 645: Stainless steel 1.4408/1.4571.
- » Float/arm: Stainless steel 1.4571.
- » Seal: EPDM.
- » Pressure: max 10 bar.
- » Temperature: Max. 120°C.
- » Thread: ISO 228-1.
- » Options: PTFE seal (+200°C - 8 bar).



KLINGER NEEDLE VALVE

BENEFITS / PROPERTIES

The precision, adjustability, flexibility, and versatility makes it perfect for using in the energy sector. One of the biggest advantages of using a needle valve is its small opening. Even when fully retracted, the plunger does not allow fluid to flow. The fine-threaded screw that retracts the plunger controls the flow rate.

SPECIFICATIONS

- » Valve body: A351 CF8M (AISI 316).
- » Pressure class: PN400/6000psi.
- » Seat: Metal.
- » Stem: AISI 316, rising.
- » Gland packing: PTFE, option RPTFE (graphite).



KLINGER KVN PISTON VALVE

BENEFITS / PROPERTIES

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

SPECIFICATIONS

- » Material: Steel 1.0619.
- » Pressure class: PN40.
- » Bonnet: Steel 1.0619.
- » Hand wheel: Steel.
- » Stem: Stainless steel.
- » Piston: Stainless steel 1.4104.
- » Lantern: Sint-C10. ≥DN 65: GG-20.
- » Valve rings: Klinger KX module.
- » Temperature: -10°C to 120°C up to 40 bar
Max. 400°C up to 22 bar.



SINGLE OR MULTIBASKET FILTER OV

BENEFITS / PROPERTIES

Filter OV provides a cost-effective method of protecting pipeline equipment, cleaning liquids or salvaging valuable solids. The filter is of cast construction and is supplied with one high quality stainless steel cylindrical basket. It is used in liquid handling installations where the flow can be shut off for short periods to allow the removal of the basket for cleaning.

SPECIFICATIONS

- » Body and cover material: Cast Iron, cast steel, Bronxe, stainless steel.
- » Connections: Flanged, threaded.
- » Maximum working pressure: 17 - 50 bar at 50°C.
- » Baskets: Stainless steel.
- » Basket & Mesh Lining: BS1449 Grade 316 S31.
- » Drain plug: Stainless steel, bronze.
- » Gasket: Viton.

SAUNDERS® DIAPHRAGM VALVE

KLINGER Denmark's diaphragm valves for industry are simple and ingenious in their design. The diaphragm valve is made up of 3 parts. A valve body, a diaphragm and an upper part that opens and closes the valve.

Since the diaphragm separates the moving parts in the upper part, it is a dead space-free design. It is insensitive to impurities in the medium, and the diaphragm valve closes 100% tight.

Diaphragm valves for industry can handle virtually all gases and liquids, as only the valve body and diaphragm are in contact with the medium.



SAUNDERS® DIAPHRAGM VALVE TYPE A

BENEFITS / PROPERTIES

Saunders® produces international standard industrial diaphragm valves that can be used in applications such as water treatment, slag and deaerator. Application: process water, wastewater, abrasive media with up to 15% solids, demineralized water, ion exchange, reverse osmosis, etc.

SPECIFICATIONS

- » Material: Cast iron w/ hard rubber lining.
- » Pressure class: PN10/16.
- » Bonnet: Cast iron GG25.
- » Handwheel: ABS plastic / steel > DN 65.
- » Diaphragm: Q.
- » Max. temperature: -10°C to 85°C.
- » Max. pressure: 16 bar DN 15-50.
- » 10 bar DN 65-125.
- » 7 bar DN 150.
- » Face to face: DIN 3202-F1 (EN558-1, Series 1).

SAUNDERS® DIAPHRAGM VALVE TYPE KB

BENEFITS / PROPERTIES

Application: Powder, slurry, sewage media (depending on diaphragm and valve body). 100% tight and straight through design. Diaphragm isolates all bonnet working parts from media. Available with diaphragm types and valve body lining for aggressive and abrasive media, Simple actuation.

SPECIFICATIONS

- » Material: Cast iron, SG iron, gunmetal, stainless steel.
- » Lining: Hard rubber, butylene rubber, neoprene, glass.
- » Pressure class: PN10.
- » Bonnet: Cast iron GG25.
- » Hand wheel: Cast iron (DN 15-50). Steel (DN 65+).
- » Diaphragms: Natural rubber (AA), EPM (425), butylene (300), neoprene (HT), viton (226), nitrile (C), hypalon (237), EPDM (XA).
- » Max. temperature: -30°C to 150°C.



PRESSURE REDUCING VALVE

BENEFITS / PROPERTIES

Pressure reducing valve is a self-actuated proportional action type valve. Composed by a direct action single seat special body valve, flow tries to close, with diaphragm and feedback spring, controlled by downstream pressure. The valve can simply and easily be installed. It is suitable for industrial plants where compressed air is not available.

CHARACTERISTICS

Normal materials for pressure reducing valves are carbon steel and stainless steel. Flow media are normally gaseous or fluids which do not contain coarse material. Pressure reducing valves will always be calculated according to process requirements.



SAFETY VALVE

BENEFITS / PROPERTIES

Safety valves secure the process – process vessels and pipes from high pressure peaks. Safety valves can be divided into two categories: Capacitive safety valves which will always be calculated for a specific process or its part, and expansion safety valves where the valve's maximum flow is given in the opening pressure.

CHARACTERISTICS

Valve materials can be selected from carbon steel to titanium. Different materials can be combined in different parts depending on if the fluid is in contact with valve parts or not. Different operating temperatures have an effect on the bonnet since it has to be open or closed. Lever is available for manual operation.



Y-STRAINER TYPE 821

BENEFITS / PROPERTIES

Y-strainers are devices for mechanically removing unwanted solids from liquid, gas or steam lines by means of a perforated or wire mesh straining element. They are used in pipelines to protect pumps, meters, control valves, steam traps, regulators and other process equipment. Application: water, fluids, oil and gas

CHARACTERISTICS

Exchangeable filter. Standard with exhaust plug. Many options regarding filter sizes and materials. Filter – stainless steel. Mesh size: (standard) - 1.0 mm ≤ DN 50, - 1.25 mm DN 65-80 - 1.6 mm DN 100-200. Options: Other mesh sizes, materials and pressure ratings.



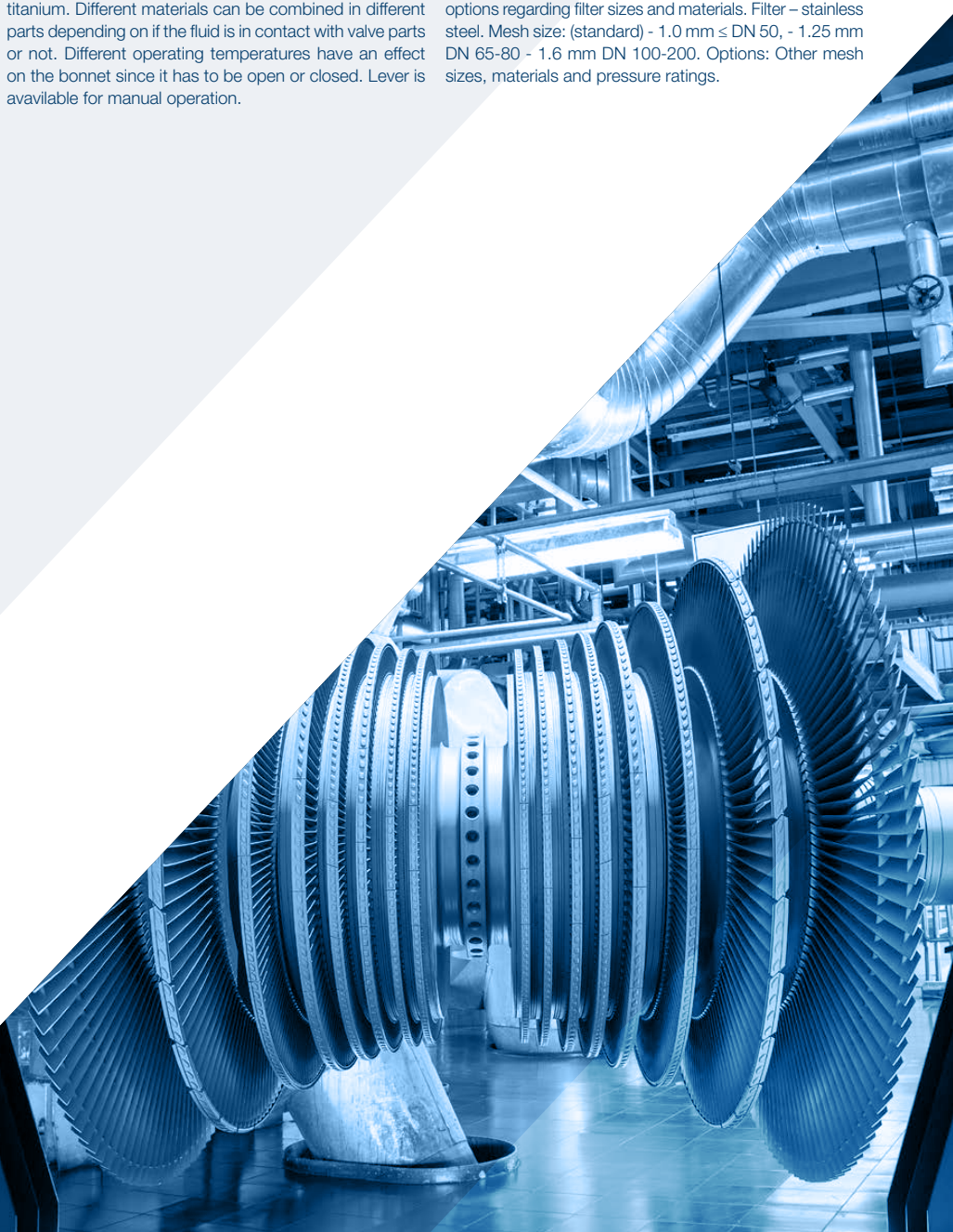
PRESSURE & VACUUM RELIEF VALVES TYPE B100 AND B200

BENEFITS / PROPERTIES

Lightweight design provides easy handling whilst interchangeable components ensure standard parts are easily replaced. The standard seating design ensures minimum leakage of less than 1 scfh at 90% of set pressure. All valves are supplied with full form flanges to meet individual requirements. Other connections are available upon request.

SPECIFICATIONS

- » Open vent Weight Loaded.
- » Standard pressure settings: +2 mbarg to 100 mbarg.
- » Standard vacuum settings: -2 mbarg to -100 mbarg.
- » Size range: 2" (50 mm) - 12" (300 mm).
- » Standard body materials: Aluminium, carbon steel, stainless steel.
- » Standard trim material: Stainless steel.
- » Diaphragm material: PTFE.
- » Removable seats.



GASKETS

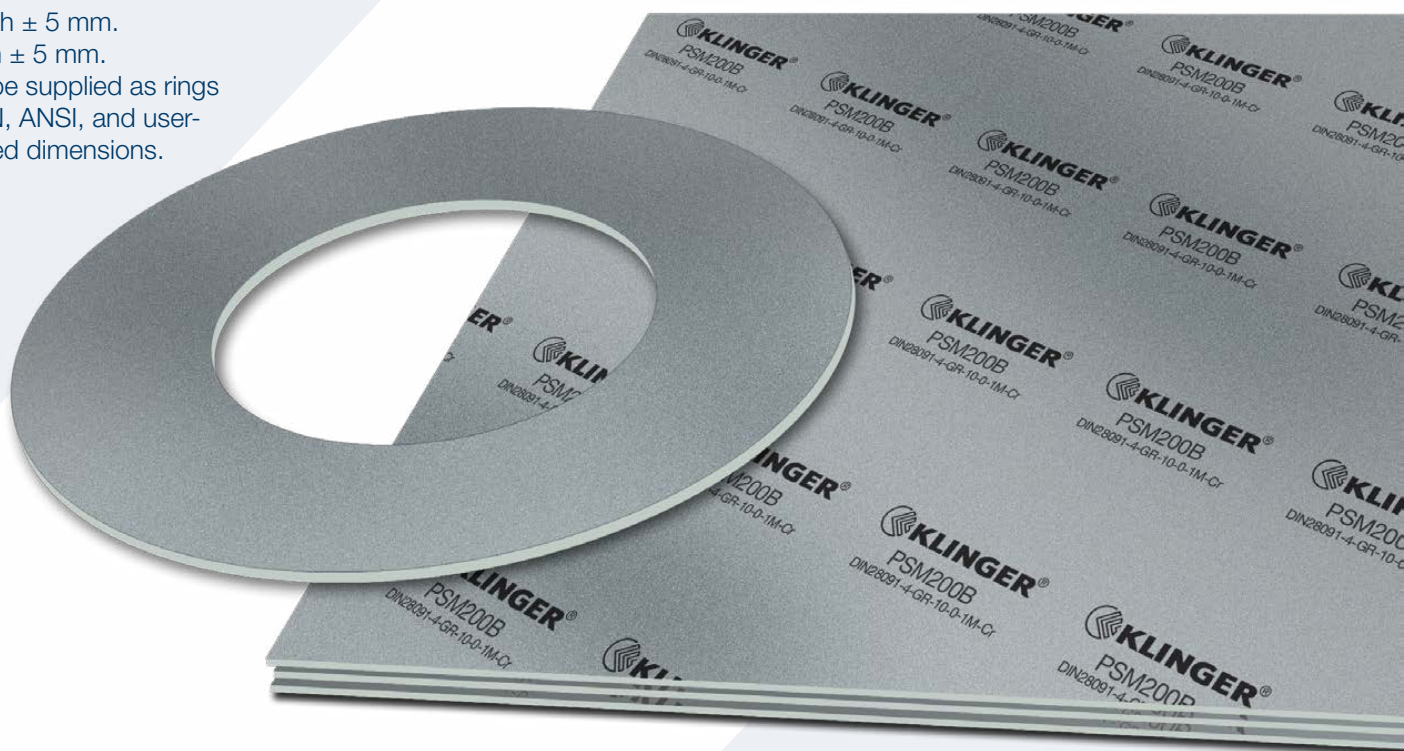
KLINGER® GRAPHITE PSM

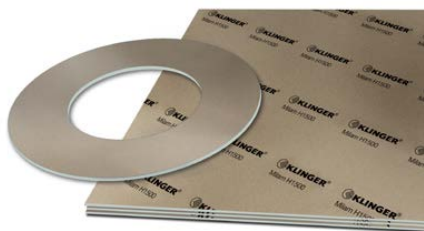
Manage 450°C in continuous operation in combination with high pressure. KLINGER® Graphite PSM is suitable for worn flange surfaces and excellent in steam applications. It does not stick on the flange and contains no adhesive. It is perforated steel insert which is very resistant to exhaust. KLINGER® Graphite PSM is also available as TA-Luft-approved in type TSM.

With processes becoming ever more complex and environmental restrictions ever tighter, the requirements for sealing applications in the energy industry are more demanding than ever. KLINGER Denmark is helping its customers to minimize harmful emissions, increase reliability and reduce the cost to the operator.

SPECIFICATIONS

- » Material: Graphite with perforated steel insert, AAA anti-stick surface.
- » Purity: 98% alt. 99.82%.
- » Density according to the customer's requests.
- » Dimensions: Standard sheet.
- » Size: 1000-2000 x 1000-2000 mm.
- » Thickness: 0.6, 0.8, 1, 1.5, 2, 3, 4, 5 and 6 mm.
- » Tolerances: Thickness $\pm 5\%$.
Length ± 5 mm.
Width ± 5 mm.
- » Can be supplied as rings in DIN, ANSI, and user-defined dimensions.





KLINGER® MILAM PSS

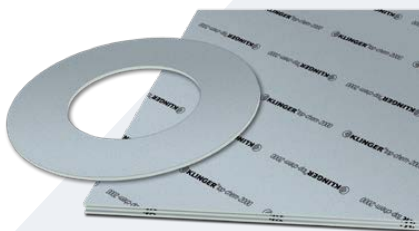
BENEFITS / PROPERTIES

High temperature materials up to 900°C in continuous operation. Suitable for applications such as exhaust pipes, turbines, turbochargers and fuel lines. Unparalleled resistance to dry heat.

NOTE! Not a high-pressure gasket, max 5 bar.

SPECIFICATIONS

- » Mica with stainless steel insertion.
- » AAA self-released surfaces.
- » Dimensions: Standard sheet.
- » Size: 1200 x 1000 mm.
- » Thickness: 1.0 mm, 1.3 mm, 2.0 mm, 3.2 mm.
- » Tolerances: thickness: $\pm 10\%$, length: $\pm 5\%$, width: $\pm 5\%$.
- » Also comes delivered as rings in DIN, ANSI, and user-defined dimensions.



KLINGER® TOP-CHEM 2000

BENEFITS / PROPERTIES

The perfect universal gasket for heavy-duty applications. Manage high temperatures in combination with high pressure up to 260°C. The only PTFE gasket with a Fire-safe certificate API 6FA. Excellent for all types of aggressive media. Retained resilience = retorque is not necessary. No aging. No cold flow. Extreme gas tightness.

SPECIFICATIONS

- » Modified PTFE.
- » Dimensions: Standard sheet.
- » Size: 1500 x 1500 mm.
- » Thickness: 1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm.
- » Tolerances: Length ± 50 mm, Width ± 50 mm.
- » Can be supplied as rings in DIN, ANSI, and user-defined dimensions.



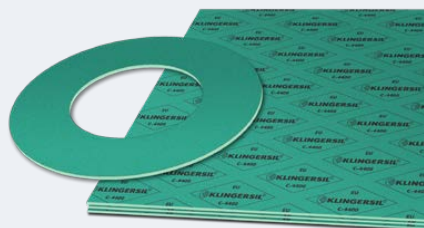
KLINGER® TOP-CHEM 2003

BENEFITS / PROPERTIES

Suitable for low temperature and large sealing surfaces. Excellent for all types of aggressive media. Retained resilience = retorque is not necessary. No aging. Excellent adaption to bad flange surfaces. High gas tightness at low torque.

SPECIFICATIONS

- » Modified PTFE.
- » Dimensions: Standard sheet
- » Size: 1500 x 1500 mm.
- » Thickness: 1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm.
- » Tolerances: Length ± 50 mm, width ± 50 mm.
- » Can be supplied as rings in DIN, ANSI, and user-defined dimensions.



KLINGERSIL® C-4400

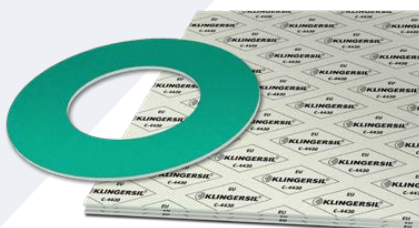
BENEFITS / PROPERTIES

The market's first asbestos-free gasket material with the most references worldwide. Its distinctive matrix imparts resistance to oils, water, steam, gases, salt solutions, fuels, alcohols, mild organic and inorganic acids, hydrocarbons, lubricants, and refrigerants.

- High-pressure material for broad industrial use.
- Available in sheets and custom-cut gaskets.
- Holds a rich variety of approvals, such as: DIN DVGW, SVGW and ÖVGW, TA-Luft, BAM UVV 28, BS 7531 Grade Y, WRC+KTW+HTB, TÜV Poland, Germanischer Lloyd.

SPECIFICATIONS

- » Consisting of aramid fibers bonded with NBR.
- » Dimensions: Standard sheet.
- » Size: 1000 x 1500 mm, 2000 x 1500 mm.
- » Thicknesses: 0.5 mm, 1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm.



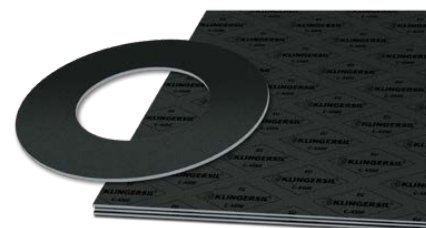
KLINGERSIL® C-4430

BENEFITS / PROPERTIES

Universal gaskets for general use up to 250°C. Very good pressure stability. Very suitable for steam and hot water. Does not stick on the flange.

SPECIFICATIONS

- » Synthetic and fiberglass bound with NBR, AAA self-release surfaces.
- » Dimensions: Standard sheet.
- » Size: 1500 x 2000 mm or 1000 x 1500 mm.
- » Thickness: 0.25 mm, 0.5 mm, 0.8 mm, 1.0 mm, 1.5 mm, 2.0 mm, 3.0 mm.
- » Additional thicknesses, sizes, and tolerances are available upon request.
- » Tolerance: Thickness $\pm 10\%$, Length ± 50 mm, Width ± 50 mm.



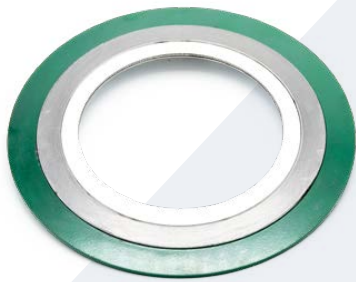
KLINGERSIL® C-4500

BENEFITS / PROPERTIES

Superior-performance gasket material designed especially for the chemical industry. Combining carbon fibers and special heat-resistant additives with an NBR bonding. Higher temperatures, alkaline media. Superheated steam is typical application scenarios where operators also profit from its resistance against oils, gases, salt solutions, fuels, alcohols, moderate organic and inorganic acids, hydrocarbons, lubricants and refrigerants.

SPECIFICATIONS

- » Carbon fibers and special heat-resistant additives bonded with NBR.
- » Resistant to creep and cold flow.
- » Dimensions: Standard sheet.
- » Size 1000 x 1500 mm, 2000 x 1500 mm.
- » Thickness 0.5 mm, 0.6 mm, 0.8 mm, 1.0 mm, 1.5 mm, 2.0 mm, 2.5 mm, 3.0 mm.
- » Thickness according to DIN 28091-1.
- » Length: ± 50 mm.
- » Width: ± 50 mm.



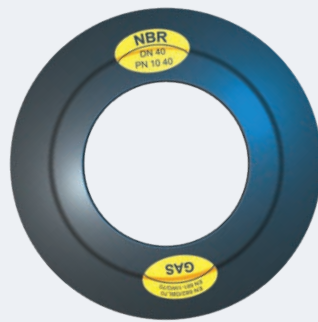
KLINGER® SPIRAL WOUND GASKET TYPE CR/CRIR

BENEFITS / PROPERTIES

Very suitable and common in heavy industry, chemicals and refinery applications. Manage in continuous operation between 450°C – 600°C (graphite). Suitable for applications with pressures up to 250 bar. There are multiple filling and metal materials to choose from. The standard is graphite.

SPECIFICATIONS

- » Spiral wound gasket with filling material of graphite (550°C), PTFE (260°C), Mica (1000°C) or Mica & Graphite (900°C).
- » The standard execution has the inner ring and winding in 316L steel/graphite and the outer ring in carbon steel.
- » Also available in various stainless steel solutions.
- » Wide range dimensions; DIN, ANSI, and user-defined.



KLINGER® KGS GII

BENEFITS / PROPERTIES

Suitable for temperatures up to 200°C (with FKM). Ideal for low surface pressure and non-parallel flange surfaces. Versatile use with water, gases, wastewater, chemicals, etc. Commonly applied in sewage treatment plants, waterworks, biogas plants, and the chemical industry. Highly compatible with plastic and fiberglass flanges, even under negative pressure. Available in designs with gas approval (DIN-DVGW) and drinking water approval (KTW). Customizable in various thicknesses, sizes, and tolerances upon request.

SPECIFICATIONS

- » Elastomer with steel core.
- » Available elastomers: NR, NBR, EPDM, CSM, FKM.
- » Available in DIN: DN 15 to DN 2000 and PN6 to PN40.
- » ANSI 1/2"-36" 150 – 300 Lbs.



EPDM RUBBER SHEETS

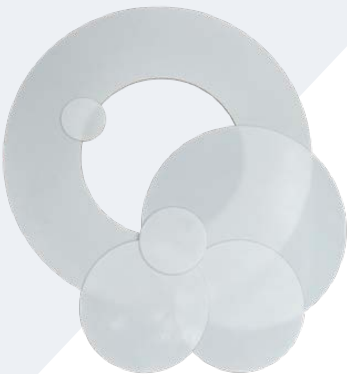
BENEFITS / PROPERTIES

Rubber sheet without inserts. Application: Water, glycol/ water, acids, bases, food, and more. Available in sheets ranging from 0.5 to 20.0 mm (depending on hardness), also as customized gaskets and seals. Used as gaskets, sealing strips, edge protectors, and intermediate rubber. Excellent resistance to many organic fluids, including acid and alkali. VERY suitable for CIP. Not suitable for mineral oils and grease. Temp -30°C to +120°C (depending on type).

SPECIFICATIONS

Depending on material type.

- » Material type: EPDM 9614: Hydrogen peroxide cured, EPDM 9575: Sulfur cured, EPDM 4660: Sulfur cured.
- » Color: Black and white.
- » Density: 1.15 g/m³, 1.22 g/m³ and 1.30 g/m³.
- » Tensile strength: 5 MPa, 9 MPa, 45 MPa.
- » Tolerance hardness: 60o +/-5 Shore A, 70o +/-5 Shore A, 80o +/-5 Shore A.
- » Dimension tolerance: P2 DIN 7715/5.



PTFE VIRGIN

BENEFITS / PROPERTIES

Application: Virtually all media, acids, bases, chemicals, and especially food. Supplied in sheets ranging from 0.10 to 12.0 mm, as well as custom-cut gaskets.

SPECIFICATIONS

- » Type: PTFE.
- » Material: Pure PTFE.
- » Color: White.
- » Density: 2.2 g/cm³.
- » Media resistance: See resistance table.
- » Approvals: Meets FDA CFR21§177.1550.
- » Temperature: -150°C to 260°C. Short-term 300°C.



CERAMIC GASKET BRAID

BENEFITS / PROPERTIES

Application: High temperature sealing for melting furnaces and hardening ovens, fire doors, safes, boilers, etc. Ceramic gasket braid is made from ceramic fireproof fibers. The refractory fibers are lightweight, highly insulating, elastic, and chemically resistant. Additionally, the fibers exhibit significant flexibility at high temperatures. Widely used as gaskets in applications requiring high-temperature resistance.

SPECIFICATIONS

- » Square or round in wide range of variants.
- » Working temperature resistance up to 1250°C depending on model.



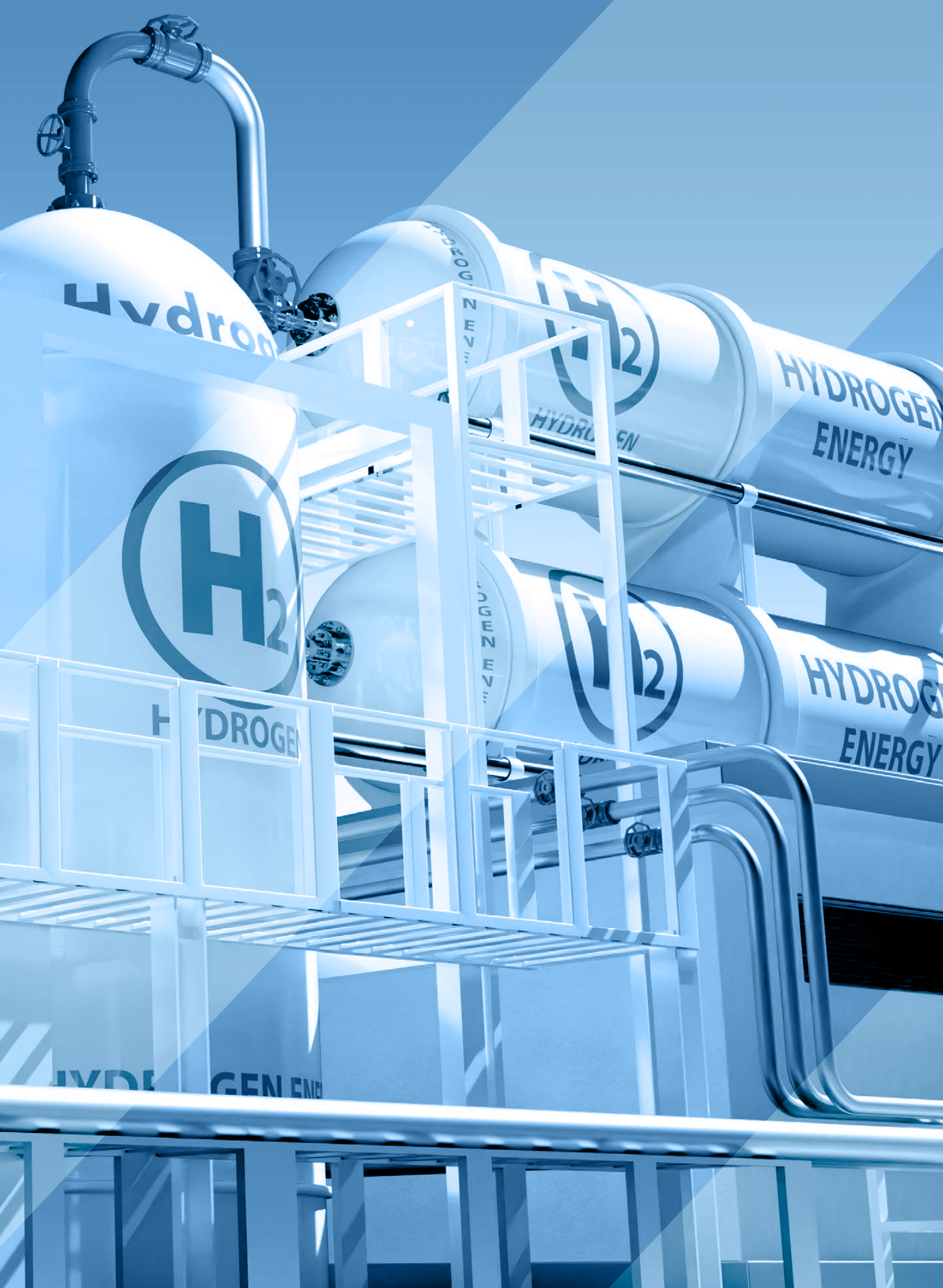
STEELFLON WLP

BENEFITS / PROPERTIES

Applications: Suitable for a wide range of applications. SteelFlon WLP reduces cross-section leakage through pre-compression of gasket and surface leakage through "O ring effect". Furthermore it reduces surface leakage of a flanged gasket in a particularly significant manner. Compared to a smooth metal flange, it provides improved ease of installation due to increased rigidity.

SPECIFICATIONS

- » Meets leakage requirements under VDI Directive 2440 and TA Luft.
- » Starting at 10 N/mm² leakage rate 0.0001 mg/s m (DIN 28090-1).
- » Media resistance of 1.4571 and/or PTFE.
- » No measurable creeping and high blow-off safety.
- » Quick replacement because gaskets do not stick to gasket surfaces.
- » Storage cost reduction due to gasket's universal nature (PN and class coverage with "unitec" design).
- » Availability: 2.0 to 4.0 mm thick.
- » Special sizes: Any diameter up to 4,500 mm.



EXPANSION JOINTS & HOSES

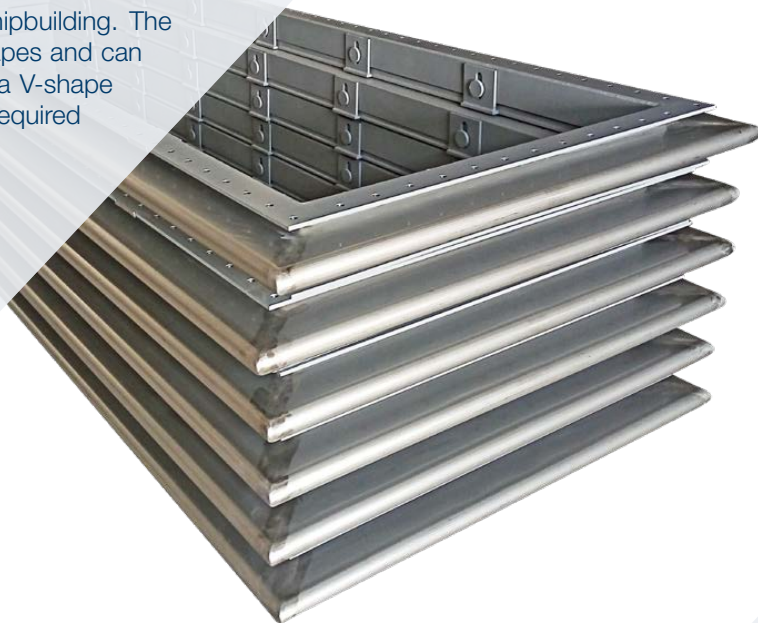
KLINGER RECTANGULAR MEJ

BENEFITS / PROPERTIES

Rectangular metal expansion joints are designed to absorb movements in all directions i.e. axial, lateral and angular. The rectangular bellows are mostly designed for very low pressure applications such as ducts, exhaust systems, ventilation systems, etc. Rectangular metal expansion joints are commonly used in gas turbines exhaust systems, turbine and condenser connections, etc. i.e. in shipbuilding. The bellows can be designed and manufactured as U- and V-shapes and can be connected via various corner types (single/double/camera V-shape corners or round corner U-shape) in accordance with required operating conditions.

SPECIFICATIONS

- » Size: Customized.
- » Design pressure: Up to 1 bar(g).
- » Design temperature: Up to 850°C.
- » Minimum reaction forces.
- » Bellow materials:
CS, AISI 304, 316L, 321.
- » Hardware materials:
CS, AISI 304, 316L, 321.



KLINGER KB TYPE

BENEFITS / PROPERTIES

Weld end expansion joints are equipped with carbon steel or stainless steel pipe connections. Even though they can absorb movements in any direction, this model is mainly used for axial movements. If lateral movement is requested, a universal type, with double bellows, would be more suitable. These types of expansion joints can be supplied with liners, covers, rods, hinges, or gimbals.

SPECIFICATIONS

- » Size: DN 25-1000 (for other sizes – check with us)
- » Design pressure: Up to 16 bar(g)
- » Design temperature: Up to 400°C
- » Bellows material: AISI 304, 316, 321 or nickel alloys.



KLINGER DF TYPE (FLOATING FLANGED)

BENEFITS / PROPERTIES

Floating flanged expansion joints are with rotatable flanges, which can be made from carbon steel or stainless steel. Though they can absorb movements in any direction, this type is mainly used for axial movements. If lateral movement is requested, a universal type, with double bellows, would be more suitable. Good for exhaust gas, liquid medium, and steam.

SPECIFICATIONS

- » Size: DN 25-1000 (for other sizes check with us).
- » Design pressure: Up to 16 bar(g).
- » Design temp.: Up to 400°C.
- » Bellows material: AISI 304, 316, 321 or nickel alloys.
- » Flanged material: Carbon steel, stainless steel, customized.
- » Quick connection.



KLINGER EXTERNALLY PRESSURISED DB TYPE

BENEFITS / PROPERTIES

Externally pressurized expansion joints are an excellent answer for large axial displacement needs and where the pressure is high, and if you would like to avoid U-loops or be in control of your maintenance costs.

SPECIFICATIONS

- » Design pressure: Up to 40 bar(g).
- » Design temperature: Up to 400°C.
- » Bellows material: AISI 304, 316, 321.
- » Flanged material: Carbon steel, stainless steel.
- » Extreme gas tightness.



RUBBER EXPANSION JOINTS

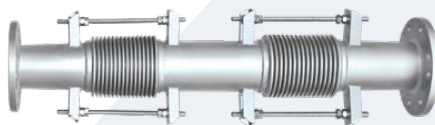
BENEFITS / PROPERTIES

Rubber as material, provides excellent flexibility in short lengths. Flanges manufactured from various grades of carbon and stainless steel and cast iron in according with various industry standards. Up to 110°C working temp. and 16 bar working pressures, rubber expansion joints are used in a variety of applications especially to absorb vibrations.

SPECIFICATIONS

- » Size: DN 25-800.
- » Design pressure: Up to 16 bar(g).
- » Design temperature: Up to 110°C.
- » Bellows material: EPDM, NBR, CR, SBR.
- » Flanged material: Carbon steel, stainless steel, nodular cast iron.

Customizable, can be produced for your specific needs.



KLINGER UNIVERSAL EXPANSION JOINTS WITH RODS

BENEFITS / PROPERTIES

Universal expansion joints can 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. For applications, i.e. seismic, tank farms/ oil terminals, this type of expansion joints are an excellent choice. They are designed to absorb large axial and lateral movements.

SPECIFICATIONS

- » Size: DN 32-1000 (for other sizes check with us).
- » Design pressure: Up to 16 bar(g).
- » Design temperature: Up to 400°C.
- » Bellows material: AISI 304, 316, 321.
- » Flanged & hardware material: CS/SS/Customized.



KLINGER FABRIC EXPANSION JOINTS

BENEFITS / PROPERTIES

Fabric expansion joints from KLINGER are customized products. There are many various sizes, shapes, materials, and connection types. They are very flexible considered their lengths and can resist very high temperature, though the pressure is in the lower end. These expansion joints are used in a variety of applications especially in refineries and gas turbine installations.

SPECIFICATIONS

- » Size: Check with us, as these are mainly customized
- » Design pressure: Up to 0,5 bar(g)
- » Design temperature: Up to 850°C. For higher temperature, please check with us.
- » Bellows material: Fabrics in various types
- » Hardwares materials: CS/SS or customized.



KLINGER DISTRICT HEATING EXPANSION JOINTS

BENEFITS / PROPERTIES

The KLINGER District Heating Expansion Joint is great for large displacements inside buildings. The shroud for external protection from external damage to bellows. The liner for a smooth medium flow internally. Standard material for bellows is 316/316L and the balancer is carbon steel painted in white color. These are also available in complete stainless steel. Threaded connections up to DN 65 and socket weld connections above DN 65. They can be axially pre-set for movements. The liner minimizes pressure loss and "whistling" of the flow. Installation is easy & quick. Typically, one unit is sufficient for a 30-meter-high building.

SPECIFICATIONS

- » Size: DN 25-1000 (for other sizes - check with us)
- » Design pressure: Up to 16 bar(g)
- » Design temperature: Up to 400°C
- » Bellows material: AISI 304, 316, 321 or nickel alloys
- » Connections: Carbon-/ Stainless steel, Customized
- » Quick connection.



KLINGER VIBRATION ABSORBERS

BENEFITS / PROPERTIES

These types are best in vibration systems. They are made as multi-layer bellows, which are good to dampen high frequency and low amplitude vibrations. They can be both with flanges and pipe connections. Typically also provided with limit-/ tie-rods to restrain pressure thrust of bellows or limit excessive design movements. They are great where temperatures or pressures are too high for rubber expansion joints. Rubber washers can be used to reduce noise.

SPECIFICATIONS

- » Size: DN 50-500.
- » Design pressure: Up to 16 bar(g).
- » Design temperature: Up to 400°C.
- » Bellows materials: AISI 304, 316L, 321.
- » Flanged materials: Carbon steel, stainless steel.



KLINGER METAL HOSES

BENEFITS / PROPERTIES

Our flexible metal hoses are long-lasting as they are manufactured from stainless steel, as braided and non-braided. The hoses can be used in multiple applications and purposes. They can be supplied with various types of fittings/connections. They provide extremely good flexibility in terms of connecting, and transferring various types of process fluids, from different installations and displacements, having very high lifespan and requires minimum amount of services.

SPECIFICATIONS

- » Size: DN 6-150 (for other sizes check with us).
- » Design pressure: Up to 245 bar(g).
- » Design temperature: Up to 400°C.
- » Bellows material: AISI 304, 316/316L, 321.
- » Flanged & hardware material: CS/SS/Customized.

INSTRUMENTATION

KLINGER ULTRASONIC FLOWMETER US201

BENEFITS / PROPERTIES

KLINGER US201 is a wall-mount, clamp on type ultrasonic flow meter which uses the transfer time technology. Clamp on type ultrasonic flow meter is easy to install and no need to cut off the pipe that saves you lots of troubles and cost. At the same time US201 has our unique calculate software to ensure the high accuracy and low velocity response. US201 ultrasonic flow meter widely application in the oil industry, water treatment, pure water, chemical and etc. US201 could add the RTD model and temperature sensor become an energy meter to monitoring the energy use, help to save the energy.

SPECIFICATIONS

- » Dimensions: DN 25 to DN 1200.
- » Process connections: Clamp on. Standard 9 m.
- » Wetted parts: Non.
- » Transmitter: PC/ABS, IP65.
- » Sensor type: Transducer encapsulated design.
- » Accuracy: Liquid +/- 1% FS.
- » Output signal: 4-20 mA. Max load 750 Ohm, OCT (min. and max. frequency is adjustable).
- » Scaled pulse output: 0-9999Hz.
- » Communication RS232 & RS485.





KLINGER ULTRASONIC FLOWMETER DS 116

BENEFITS / PROPERTIES

KLINGER DS116 can be mounted on all pipes, made of steel, stainless steel or PVC. It is independent of the media's viscosity, density and speed of sound in the media.

SPECIFICATIONS

- » Dimensions: DN 25 to DN 1200.
- » Process connections: Clamp on.
- » Wetted parts: Non.
- » Sensor type: Transducer IP68.
- » Accuracy: Liquid +/- 1% of measurement value.
- » Output signal: 4-20 mA MA 750 Ohm.
- » Scaled pulse output: 0-5000Hz.
- » Communication RS232 (Modbus)



LABOM CA1600

BENEFITS / PROPERTIES

The COMPACT HYDROGEN pressure transmitter is suitable for the relative pressure measurement of hydrogen and hydrogen-containing media. The thin-film sensor ensures very good resistance to hydrogen embrittlement and at the same time offers high long-term stability.

SPECIFICATIONS

- » Range: 10 to 1050 bar.
- » Process connections: G1/2B/ G1/4B per EN837-1. G1/4A per DIN EN ISO 1179-2. 1/4 and 1/2 NPT.
- » Wetted parts: Stainless steel for H2 applications.
- » Media temperature: -40°C to 120°C.



BARKSDALE BHyT

BENEFITS / PROPERTIES

Our latest design addresses the industry's need for an accurate and reliable pressure transducer for hydrogen applications that mitigates hydrogen permeation, embrittlement and leakage providing long term safety and stability even at high pressures. The compact construction in our BHyT Cell hydrogen pressure transducers are designed for applications like fuel cells and electrolyzers, where space is a premium while offering reliability in high pressure applications.

SPECIFICATIONS

- » Range: 0-650 bar.
- » Process connections: 12 different possibilities.
- » Wetted parts: 316 L monolithic construction.
- » Media temperature: -40°C to 100°C.



KLINGER FLOWSWITCH

BENEFITS / PROPERTIES

Mounting a flow meter will be the immediate solution, but in many applications it is "just" an alarm that is needed, and a flow switch will therefore be an attractive solution - not least because of the price, that will be more attractive than a complete meter with electrical output signals.

SPECIFICATIONS

- » Dimensions: DN 15 to DN 50.
- » T-piece: Nickelplated brass, Stainless steel, PVC or copper.
- » Paddle: Brass or stainless steel.
- » Process connections: Thread female/male, glue sleeve (PVC), solder sleeve (Cu).
- » Electrical connection: Plug DIN 43650A or cable PVC 1m.
- » Microswitch: Max 250VAC, 24VDC / 3A.
- » Ingress protection: IP65.
- » Media Temperature: -20 to 90°C.
- » Pressure: Max 25 bar (brass/stainless T-piece).



KLINGER LUGB-G VORTEX FLOWMETER

BENEFITS / PROPERTIES

KLINGER LUGB is a Vortex flow meter used for liquid, gas and steam measurement. It will be delivered either with flanges or as wafer. For steam and gas measurement a model with integrated pressure and temperature sensors are available.

SPECIFICATIONS

- » Dimensions: DN 15 to DN 300.
- » Process connections: Flange or wafer.
- » Wetted parts: Stainless steel (304 or 316).
- » Sensor type: Piezoceramic sensor.
- » Accuracy: Liquid +/- 1% of measurement value (Re ≥ 2000).
- » Gas / vapor: +/- 1.5% of measured value (Re ≥ 2000).
- » Output signal: 4-20 mA max. load 300 Ohm.
- » Scaled pulse output.
- » Communication RS485 (Modbus).



KLINGER LDG MAGNETIC FLOWMETER

BENEFITS / PROPERTIES

KLINGER LDG is a magnetic inductive flow meter for accurate measurement of liquid in all kinds of industrial plants, as well as in water, wastewater and cooling systems. The program is primarily for application in water, wastewater, refrigeration and energy sector, but can also be used within many industrial tasks.

SPECIFICATIONS

- » Dimensions: DN 06 to DN 2200.
- » Process connections: Flange EN 1092-1, JIS B2220 or ANSI 16.5.
- » Output signal: 4-20 mA, scaled pulse output, 2 x contact for alarm/status.
- » Liner: Hard rubber, PTFE or PPO.
- » Electrodes: SS 1,457, Hastelloy C, Tantalum or Platinum-Uridium.
- » Communication: HART, Modbus RS485 or GPRS.



HONEYWELL SENSEPOINT XCD

BENEFITS / PROPERTIES

The Sensepoint XCD range provides comprehensive monitoring of flammable, toxic and oxygen gas hazards in potentially explosive atmospheres, both indoors and outdoors. Users can modify detector operation using the LCD and magnet switches without ever needing to open the unit.

SPECIFICATIONS

- » Used for: All types of gases.
- » Sensor types: Electrochemical, catalytic, and infrared.
- » Output: 4-20 mA or RS485 modbus.
- » Power supply: 12 – 32V DC.
- » Housing: Epoxy painted aluminium or 316 SS.
- » Classification: ATEX Ex II 2 GD Ex d IIC Gb T6 (Ta -40°C to 65°C)
Ex tb IIIC T85°C Db IP66
IEC Ex d IIC Gb T6 (Ta -40°C to 65°C) Ex tb IIIC T85°C Db IP66.



HONEYWELL TRANSMITTER XNX

BENEFITS / PROPERTIES

XNX is an extremely flexible transmitter that can be configured to accept an input from any of the Honeywell Analytics range of gas sensor technologies. It can also be configured to provide a wide variety of industry standard output signals.

SPECIFICATIONS

- » Used for: All types of gases.
- » Sensor types: Electrochemical, catalytic, and infrared.
- » Output: 4-20 mA or RS485 modbus.
- » Power supply: 12 – 32V DC.
- » Housing: Epoxy painted aluminium or 316 SS.
- » Classification: ATEX Ex II 2 GD Ex d IIC Gb T6 (Ta -40°C to 65°C)
Ex tb IIIC T85°C Db IP66 IEC Ex d IIC Gb T6 (Ta -40°C to 65°C)
Ex tb IIIC T85°C Db IP66.



HONEYWELL FLS100 FLAMEDETEKTOR

BENEFITS / PROPERTIES

The FSL100 Series of flame detectors from Honeywell delivers robust, fast and reliable detection of flaming fire in a wide range of applications. The range consists of UV, UVIR, IR3 flame detectors. All utilize sophisticated sensing and signal analysis.

SPECIFICATIONS

- » Range: 25 - 35 m depending on type.
- » Cone of vision: 90° minimum horizontal and vertical.
- » Response time: Better than 10 sek. For 0.1m² n-heptane.
- » Output: 4-20 mA, Relay SPDT 30VDC – 2A.
- » Housing: Reinforced polyester (GRP).
- » Classification: ATEX Zone 2/22. FM3611 Noncentive (non sparkling) Class 1,2,3 Div2.
- » Output signal: 4-20 mA max. load 300 Ohm.



KLINGER REFLEX GAUGE

BENEFITS / PROPERTIES

Reflex systems are based on the reflection of light from a specially designed surface on the glass. In the gas or vapor phase, the light is reflected 100% by the prismatic grooves, while the liquid phase absorbs the light, which to the eye will appear as a dark indication of the level.

SPECIFICATIONS

- » Application: Water, liquids, liquefied gases and steam.
- » Good light/dark contrast provides a clear reading.
- » Can be supplied with both left- and right-facing handle operation.
- » Resistant to high temperatures.
- » Can be rotated 360°.
- » Pressure class up to 180 bar.
- » Design temperature up to 400°C.



KLINGER TRANSPARENT GAUGE

BENEFITS / PROPERTIES

Translucent gauges are the most widespread type, and are used in all standard applications, especially where the medium is not transparent. For steam applications with pressure above 35 bar, where mica sheets are used to protect the glasses, the only option is to be able to see through the construction. Finally, the translucency of the systems can be improved with an artificial light source that is mounted on the back and thereby improves visibility.

SPECIFICATIONS

- » Application: Water, liquids and steam.
- » Resistant to high temperatures.
- » Can be rotated 360°.
- » Pressure class up to 180 bar.
- » Design temperature up to 400°C.



