We know how to handle pressure

With high performance valves and fittings
for industry and building technology use.

ARMATUREN GŒTZE

"When it comes to manufacturing our safety valves and fittings, nothing is more important to us here at Goetze KG than the highest **precision**, **trustworthiness** and **quality**. Our experience and professional know-how makes us your specialist and partner for technical solutions regarding all types of over-pressure valves. We have now added **cryogenic valves** to our range. Their outstanding quality has been confirmed by them receiving special approval for use with both gases and vapours and for liquids too. This means that for the first time we can offer our clients a low-temperature safety valve that is also very suitable for mixed phases. We would gladly hear from you if you have any questions or suggestions."

Detlef Weimann · Managing Director

Industrial products

Building technology products

Individuality for more safety

The competence of Goetze KG Armaturen has been in demand for more than 65 years. Our wealth of experience is as broad and varied as our areas of application for our high-performance fittings. Our well thought-out family of products covers every industrial application: Liquids of all kinds, gases, technical vapours and steam. Goetze valves are used with temperatures ranging from –200°C up to 400°C and the greatest possible safety is a priority. We have the right solution for you: Take us at our word!

Development

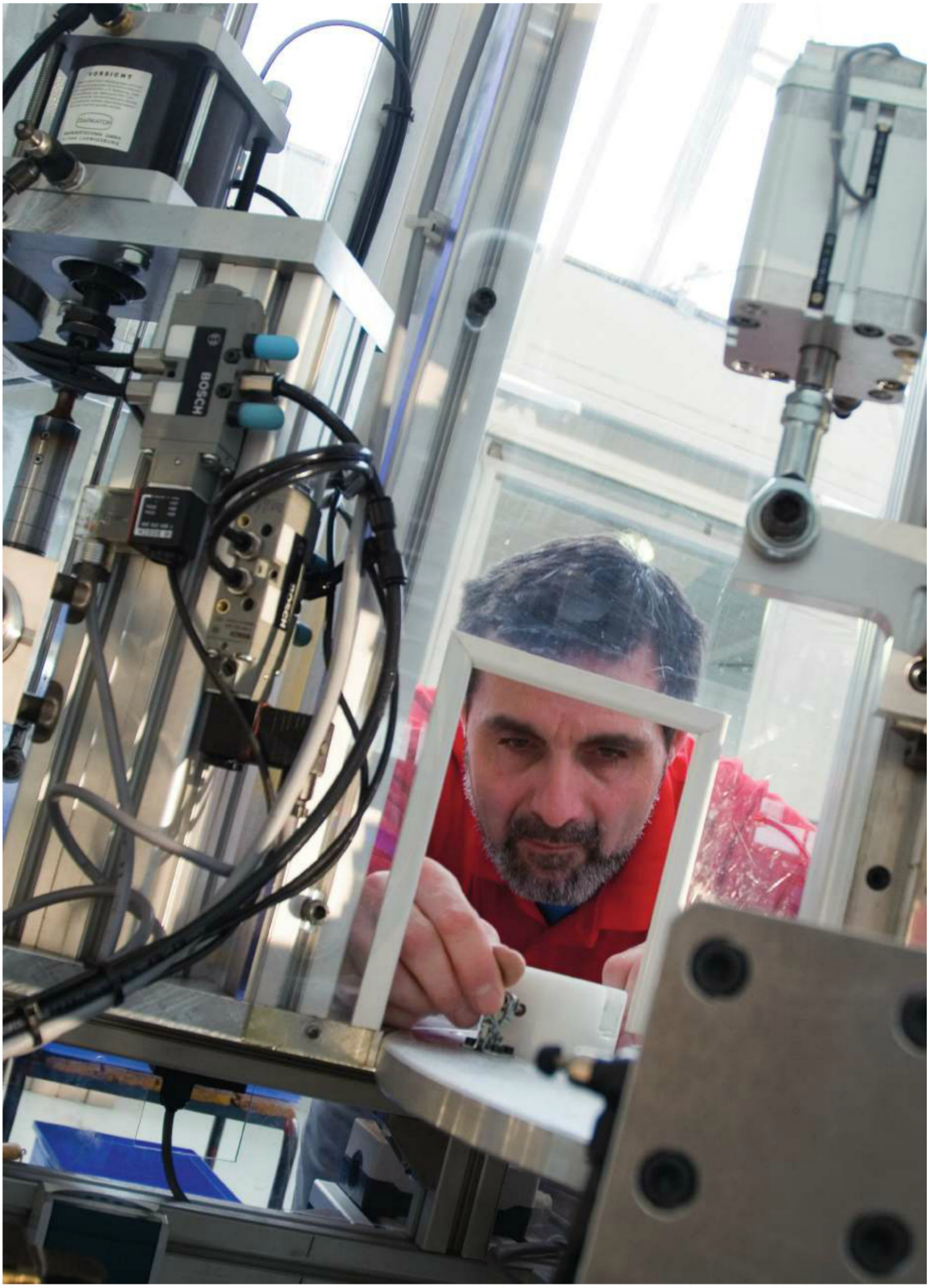
Flexible structures mean that the route to a customized product is short. With our technical expertise we realize new and enhanced designs in the shortest time possible.

Advice

Our team of consultants who come to you. We are your competent advisor and partner for technical solutions with experience and professional know-how.

Goetze KG

We have been designing and manufacturing safety valves for a highly diversified range of applications for over 65 years.
With over 200.000 valves per year "Made in Germany", we are your competent partner for all matters relating to the handling of pressure.

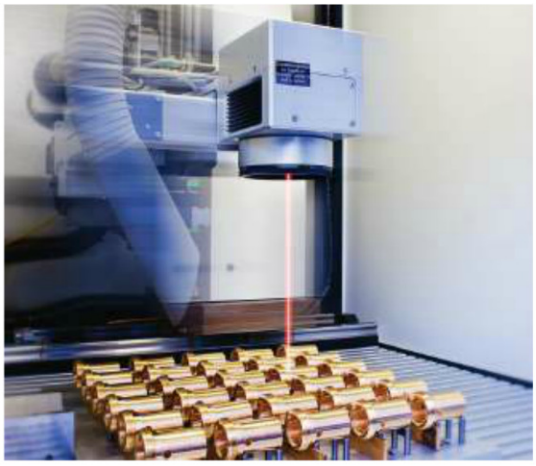

BOSCH

Assembly

The "work station": manageable units, short set-up times and employees with the necessary know-how, skill and experience. Not any anonymous assembly line production. We are always proud to hear when the Goetze KG is referred to as a "manufactory".

Laser marking

In order to fit all the necessary information onto the valve, we use precision laser marking technology. This means that we are also able to take individual customized marking requirements of customers into consideration.



Testing

You can rely on this: Every single valve is tested in our factory. This is not only a random spot check: Each valve is subjected to an ISO-certifed quality control test, before it is allowed to leave the factory.

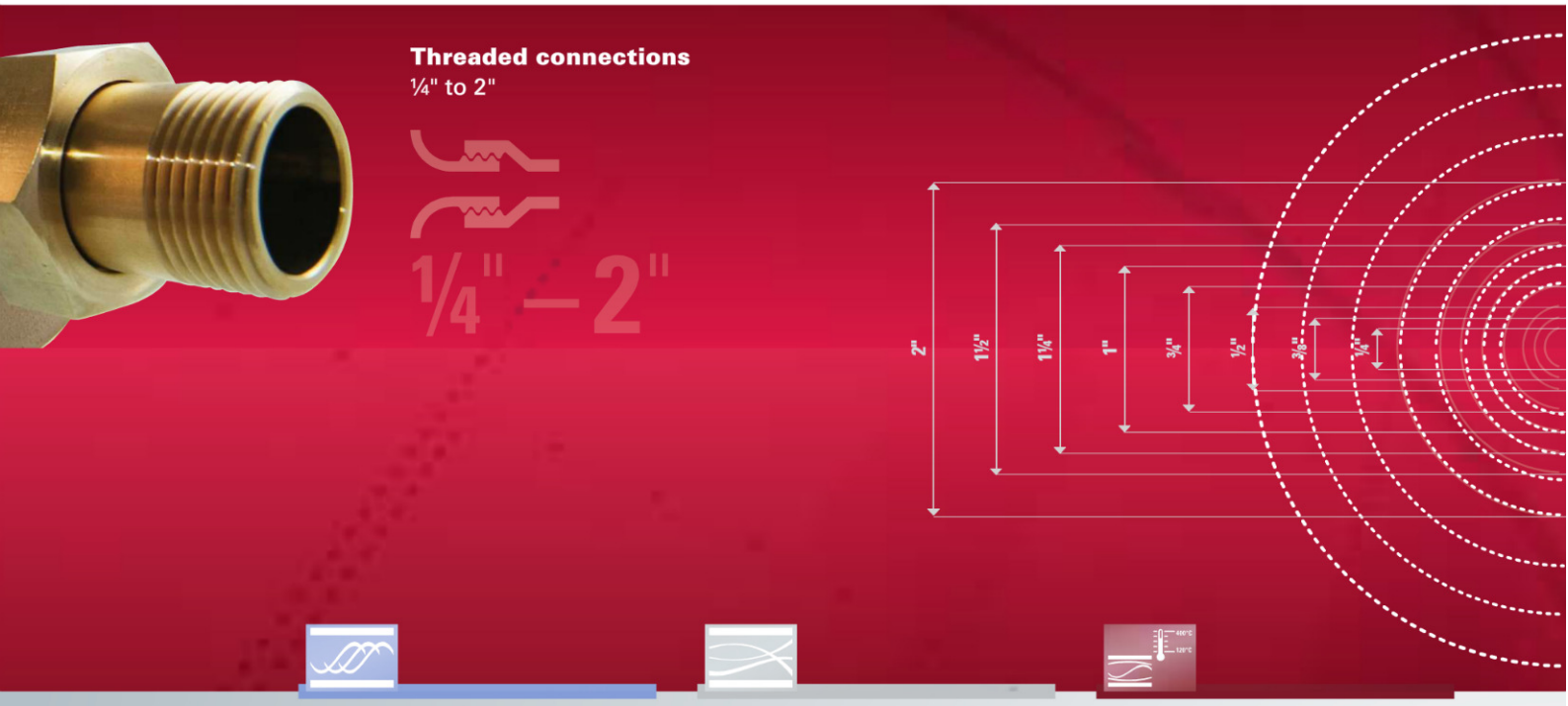
High Tech

Intelligent minds and skilled hands are the one thing – however for the manfacturing process at Goetze KG nothing can beat the highest level of precision achieved through the use of high-tech production equipment: Computer controlled CNC machines.

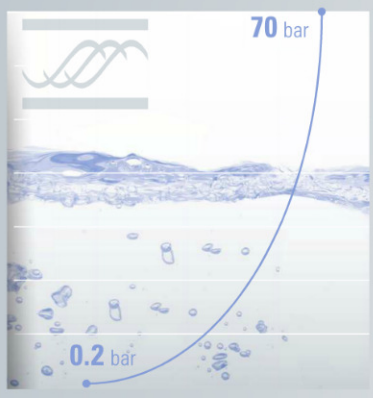
2

Technical Basics industrial and commercial

Heat. High pressure. Aggressive fluids, gases, vapours and cryogenic media. Highly sensitive fields of application in industrial and commercial plants. This is where our valves are to be found. Even where plastic would be permissible, we use solid metal. For boilers and compressors, for pumps and pipelines, marine engines, solar plants and bulk transport vehicles. Our comprehensive range of high-quality, innovative and reliable valves covers all industrial applications.



Liquids
from –200°C to +400°C

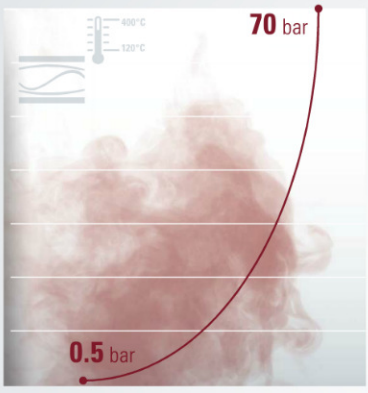


- Pump protection
- Pressure boosters (water-side)
- Sprinkler systems
- Cooling circuits
- Cryogenic machining
- Tunnel cooling systems

Air, gases and vapours
from –200°C to +400°C

- Compressors
- Pressure vessels
- Pressure boosters (air-side)
- Silo container
- Bulk transport vehicles
- Cryogenic gas storage
- LNG applications

Steam
from +120°C to +400°C



- Steam boiler of the groups I, II, IV
- Steam plants
- Sterilizers
- Autoclaves
- Boilers

HIGH-QUALITY MATERIALS

Continous material tests are the first pre-requisite to our particularly high quality. For example, our gunmetal components are already lead-reduced and as a matter of principle we do not use hot-forged brass. Our brass components are always turned from solid material.

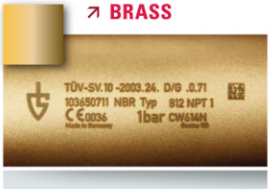
↗ STAINLESS STEEL

- ↗ high-quality material
- ↗ corrosion-resistant
- ↗ for plants with particularly aggressive media

↗ GUNMETAL

- ↗ robust and of high quality
- ↗ potable-/sea-water resistant
- ↗ wide range of applications

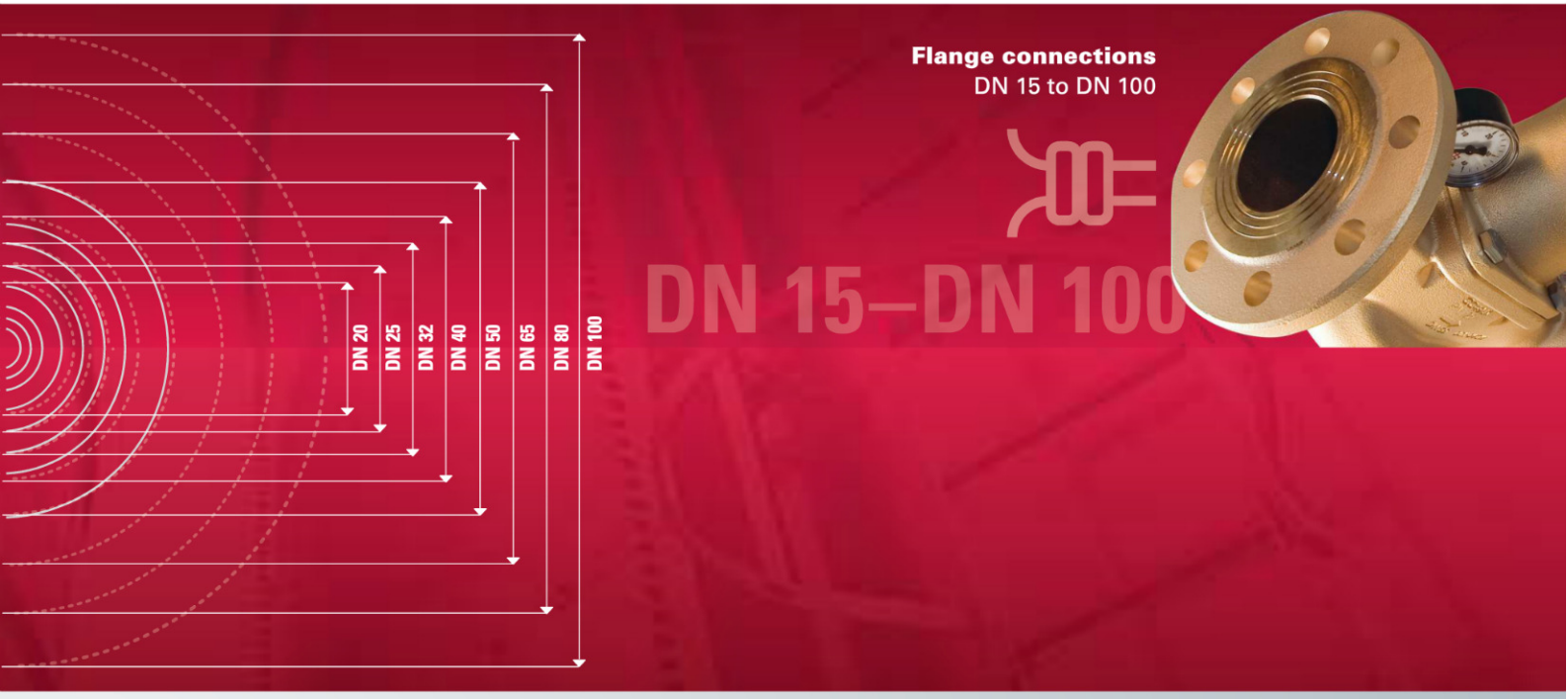
↗ BRASS



- ↗ brass turned from solid material
- ↗ good price/performance ratio

↗ SPHEROIDAL GRAPHITE CAST IRON

- ↗ robust material
- ↗ cost-effective material for standard applications



The fittings and valves manufactured by the Goetze KG are available in brass or in stainless steel, in spheroidal graphite cast iron or gunmetal depending on the application and medium. In addition, numerous connection versions are available: threaded- or flange-connections in various sizes as well as special connections according to specific customer demands. The Goetze KG always orientates itself in the execution of the valve according to customer demands: from customized versions to lot quantities of just one unit.

All fittings are manufactured under the the premise "Individuality for more safety". This has developed to become the basis for a comprehensive, innovative high-quality product range which leaves nothing to wish for and which is continually being extended and improved.


EPDM
p= 6 bar
Typ 851H4
CE
0036 EN ISO 4126-1
DN 40/65

3.1 TÜV/CE angle-type safety valves for industrial applications

Materials

Temperatures
from –60 °C to +400 °C

Pressures
from 0.2 bar to 70 bar

Media

Threaded connection
from G ¼" to G 2"

Flange connection
in DN 40 and DN 50

You can choose from a wide range of safety valves for many different applications, media and temperatures. There is a technically and economically optimal version for each and every application. Our valves distinguish themselves through exceptional performance combined with a compact design.

No matter what media our customers use – our comprehensive product range covers practically every application. Hereby, the sealing materials play a particularly important role: These can be selected not only according to their suitabilty for a very wide variety of media – even aggressive ones – but also for thermal loads up to 400°C.

Industries that rely on Goetze valves

- Industrial applications
- Process equipment construction
- Chemical plants
- Power plants
- Biogas plants
- Shipbuilding and repair
- Plant engineering
- Energy industry
- Secondary areas in the food, beverage, pharmaceutical and cosmetics industry

↗ PLANT ENGINEERING

↗ PRESSURE VESSELS IN SHIPBUILDING

↗ STEAM GENERATORS

↗ POWER GENERATION

TÜV/CE valves with Type Test Approval of the highest level for your safety

TÜV/CE safety valves are subjected to rigorous component testing by an independent inspection agency – the TÜV. This not only includes verification of the suitability of materials used, but especially also the verification of performance parameters as well as safe operation when the valve is fully opened. Only after all spring ranges have been thoroughly checked are the valves awarded the TÜV Type Test Approval with EU type examination for CE identification in accordance with Pressure Equipment Directive 2014/68/EU, and final approval for series production is given.

Testing room

3.1 TÜV/CE angle-type safety valves for industrial applications

Safety valves Series 451

made of stainless steel,
angle-type with threaded connections

Safety valves Series 851

made of gunmetal,
angle-type with threaded connections

■	■	■	■	■	■	**Neutral**
■	■	■	■	■	■	**Non-neutral**
■	■	■	■	■	■	**Gastight**
■	■	■	■	■	■	**Bellows**
						Diaphragm

MEDIA:
- LIQUID
- GAS
- STEAM

The benefits and applications of this series made of high-alloyed stainless steel begin, where versions made of gunmetal are at their limits. The flexibility of the various versions offer the optimal configuration for every application.
In addition to the basic version the numerous sealing possibilities and materials, back-pressure compensating metal bellows and/or a gastight cap offer the necessary optional extras required to fulfill the highest safety requirements.

A proven series with an extremely compact design: with its very good price/performance ratio this valve has been proving its reliabiity for many years. In addition to the flexible basic version, according to the version and sealing material in question, this valve can be used for a varied range of applications, media and temperatures. As an optional extra, these valves can be fitted with metal bellows and/or a gastight cap. Consequently, these valves can be configured for applications involving non-neutral, inflammable, toxic and viscous media.

Threaded connections
from G ½" to G 2"

Temperatures
from –60 °C to +400 °C

Pressures
from 0.5 bar to 70 bar

Threaded connections
from G ½" to G 2"

Temperatures
from –60 °C to +225 °C

Pressures
from 0.5 bar to 50 bar

3.1 TÜV/CE angle-type safety valves for industrial applications

Safety valves Series 460

made of stainless steel, angle-type with threaded connections

Safety valves Series 652

made of gunmetal, angle-type with threaded connections

Neutral	■	■	■	■	■	■
Non-neutral	■	■	■			
Gastight	■	■	■			
Bellows						
Diaphragm				■		

MEDIA:

- LIQUID
- GAS
- STEAM

If the high capacity safety valves with their numerous feature variations for standard applications are technically too complex and oversized from a capacity point of view, but a particular emphasis is placed on quality and corrosion resistance, this stainless steel all-round talent is the perfect solution. Whether with or without lifting device, the gas tightness of the spring housing is always guaranteed.

This safety valve made of gunmetal is an economical alternative to high-performance safety valves, in cases where only small blow-off capacities are required.
The version **652mFK** for neutral liquids is ideal for the protection of pumps and pressure vessel systems, in cases where boiling point is never reached or if no evaporation of the media can occur. A diaphragm protects the moving parts and compression spring against the medium. The version without diaphragm, type **652sGK** is ideal for protecting small compressed air systems. Depending on the sealing material, this valve can be used for neutral, non-toxic compressible media with varying temperatures. Fitted with an EPDM seal, this can be used for steam boilers with a volume of less than 10 liters up to a set pressure of 3 bar.

Threaded connections from G ⅜" to G 1"	**Threaded connections** from G ½" to G 2"
Temperatures from –60 °C to +225 °C	**Temperatures** from –60 °C to +200 °C
Pressures from 0.2 bar to 25 bar	**Pressures** from 1.0 bar to 16 bar

Safety valves Series 420

made of stainless steel, angle-type with threaded connections or cutting ring threaded connections

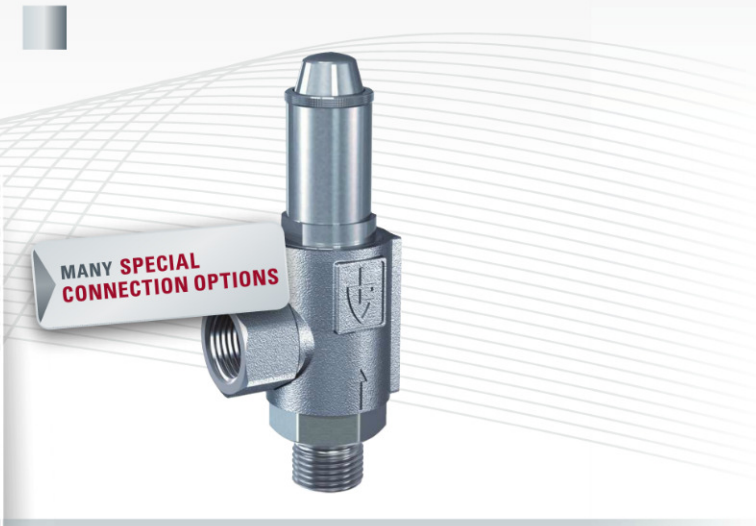
These angle-type safety valves are available for the first time with TÜV and European component approval. This allows the use of tested and approved quality on the smallest pressure tanks and small steam boilers with neutral and non-neutral gas and liquid mediums. The cutting ring threaded connections available as an option make this valve quick and easy to install for use in small pipelines.

Threaded connections from G ¼" to G ⅜"

Cutting ring threaded connections from 8 to 12 mm

Temperatures
from –40 °C to +260 °C

Pressures
from 0.5 bar to 50 bar



Safety valves Series 461

made of stainless steel, angle-type with threaded connections

The consequential expansion of the valve series 451 with smaller nominal diameters now allows the best and therefore most efficient design of safety valves with smaller discharge volumes. The proven versatility in different variations leads to use for a variety of media with different aggregate conditions. The possibilities for use are in medical process equipment construction and in the food, beverage, pharmaceutical and cosmetics industries in secondary areas.

Threaded connections
from G ¼" to G ½"

Temperatures
from –60 °C to +225 °C

Pressures
from 0.5 bar to 70 bar

3.1 TÜV/CE angle-type safety valves for industrial applications

Safety valves Series 861

made of gunmetal, angle-type with threaded connections

Safety valves Series 452

made of stainless steel, angle-type with flange connections

Neutral	■	■	■		■	■	■	
Non-neutral	■	■	■		■	■	■	
Gastight	■	■	■		■	■	■	
Bellows					■	■	■	
Diaphragm								

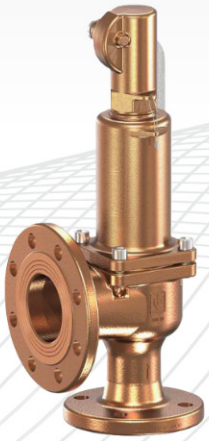
MEDIA:

- LIQUID
- GAS
- STEAM

Efficiency was the main focus of this development. For the optimum protection of small steam generators, smaller sterilisers and autoclaves, compact and component tested safety valves in increasingly smaller nominal diameters are required in many cases. The tried and tested and versatile 851 series was therefore extended with additional smaller nominal diameters to meet the demands of the market.

This multi-talent which is made completely of high-alloy stainless steel fulfills even the highest demands when it comes to the protection of pressurized systems. The range of designs for various media includes a wide range of sealing options, which even includes metal to metal sealing. These valves can be used under high temperatures and are thus also suitable for the protection of large steam boilers and solar plants.

Threaded connections from G ¼" to G ½"	**Flange connections** in DN 40 and DN 50
Temperatures from –60 °C to +225 °C	**Temperatures** from –60 °C to +400 °C
Pressures from 0.5 bar to 50 bar	**Pressures** from 0.5 bar to 25 bar



Safety valves Series 852

made of gunmetal,
angle-type with flange connections

This safety valve range is also completely made of corrosion-resistant materials. The body is made of gunmetal and the stainless steel spring and internal parts, which are made of stainless steel, are hard to beat in terms of corrosion-resistance, especially when confronted with agressive watery solutions, salt water or a saline atmosphere.
The best possible version is available for virtually every application imaginable, whether this requires metal to metal sealing to meet highest tightness requirements or a metal supported o-ring seal made of a variety of materials or even back-pressure compensating gastight metal bellows or a gastight spring housing.

Flange connections
in DN 40 and DN 50

Temperatures
from –60 °C to +225 °C

Pressures
from 0.5 bar to 25 bar

Safety valves Series 352

made of GGG 40.3 spheroidal graphite cast iron,
with flange connections

These safety valves with flange connections and made of spheroidal graphite cast iron, are an economcial alternative for applications where corrosion-resistance is not required. The external valve surfaces are powder-coated. A large number of versions for a wide range of applications, such as metal to metal sealing or metal supported elastomere seals, are available as optional extras.

Flange connections
in DN 40 and DN 50

Temperatures
from –10 °C to +350 °C

Pressures
from 0.5 bar to 16 bar

3.2 TÜV/CE atmospheric discharge safety valves for industrial applications

Materials

Temperatures
from –60 °C to +225 °C

Pressures
from 0.2 bar to 630 bar

Media

Threaded connection
from G ¼" to G 2"

Through new innovations in our range of high performance safety valves for air, we are continually expanding our product range and setting new standards in the field of safety. These innovative new developments of atmospheric discharge safety valves are particularly suitable for the protection of compressors, air-receivers and bulk transport vehicles.

Inspite of their small size and compact design these atmospheric discharge safety valves are able to achieve huge blow-off capacities. Thus, they are even suitable for large pressure vessels and enable their protection for trouble-free filling or emptying. The occurance of dangerous overpressures in the range of 0.2 to 630 bar are prevented by atmospheric discharge.

Industries that rely on Goetze valves

- Industrial applications
- Compressors
- Bulk transport vehicle manfuacturers and service companies
- Stationary silos, silo systems, tank manufacturing
- Railway applications for passenger- and freight transport

↗ BULK TRANSPORT VEHICLES

↗ COMPRESSORS

↗ TANK MANUFACTURING

↗ PANTOGRAPHS

3.2 TÜV/CE atmospheric discharge safety valves for industrial applications

	Safety valves Series 410 made of stainless steel, atmospheric discharge, with threaded connection	**Safety valves Series 810** made of brass, atmospheric discharge, with threaded connection	**High performance safety valves Series 412** made of stainless steel, atmospheric discharge, with threaded connection	**High performance safety valves Series 812** made of brass, atmospheric discharge, with threaded connection
Neutral	■	■	■	■
Non-neutral				
Gastight				
Bellows				
Diaphragm				
MEDIA: ■ GAS	Our smallest and most compact compressed air safety valve with enormous blow-off capacity, so that high-performance compressors can be protected. This safety valve is also ideally suited for the protection of large stainless steel pressure vessels and air systems made of stainless steel in aggressive environments or in secondary areas in the food-, beverage-, pharmaceutical- and cosmetics industries.	The basic model within the range of small safety valves for compressed air. It is compact and due to its good blow-off capacities is particularly suitable for the protection of pressure vessels and compressors. However, even for large pressure vessels this valve can be employed due to its excellent price / performance ratio. This valve is equipped as standard with a stainless steel spring and FPM seal.	This high performance safety valve made of stainless steel is unique in its class. Its slim and elegant exterior conceals the highest level of precision and performance. At the same time, this valve can be ordered with a set pressure up to 45 bar. It is suitable for air and gases which can be freely discharged into the environment.	The basic model within the range of high performance safety valves. Up to date technology and highest precision, high-quality components such as a stainless spindle and spring fitted into a slender body made of brass. This valve is suitable for air and gaseous media up to a set pressure of 45 bar, which can be freely discharged into the atmosphere.
	Threaded connections from G ¼" to G 1"	**Threaded connections** from G ¼" to G 1"	**Threaded connections** from G ½" to G 2"	**Threaded connections** from G ½" to G 2"
	Temperatures from –60°C to +225°C	**Temperatures** from –60°C to + 225°C	**Temperatures** from –60°C to +225°C	**Temperatures** from –60°C to +225°C
	Pressures from 0.2 bar to 50 bar	**Pressures** from 0.2 bar to 50 bar	**Pressures** from 0.2 bar to 50 bar	**Pressures** from 0.2 bar to 50 bar

High performance safety valves Series 413

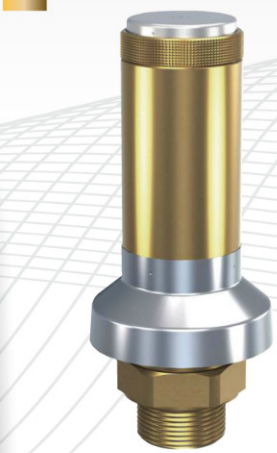
made of stainless steel, atmospheric discharge, with threaded connection

The discharge of air from pressure vessels filled with liquid, granular or powdery media requires additional safety precautions with so-called "FKS" safety valves. This valve is fitted with a weather shroud and all moving or guided parts as well as the spring housing are protected against soiling.
This makes this valve suitable for the rough conditions on bulk transport vehicles or stationary silos.

Threaded connections
from G ½" to G 2"

Temperatures
from –60°C to + 225°C

Pressures
from 0.2 bar to 6 bar



High performance safety valves Series 813

made of brass, atmospheric discharge, with threaded connection

All aspects and special safety features of the "FKS" valves made of stainless steel have been fully implemented in this series. However all technical and safety features are contained in a brass body. These valves are an optimal solution with respect to their price / performance ratio for use on bulk transport vehicles and stationary silos.
Standard version with weather shroud, stainless steel spring and FPM (Viton) seal.

Threaded connections
from G ½" to G 2"

Temperatures
from –60°C to + 225°C

Pressures
from 0.2 bar to 6 bar

High-pressure safety valves Series 492

made of stainless steel, atmospheric discharge, with threaded connection

A safety valve which impresses with its small dimensions and design for the protection of high-pressure air systems and high-pressure compressors. Can optionally be ordered with a gas-tight rotatable angled housing for guided flow-off or for connecting a discharge pipe for non-neutral gaseous media. Through its special technical construction and design the series covers a pressure range that has not been catered for up to now.

Threaded connections
from G ¼" to G ¾"

Temperatures
from –60 °C to +180 °C

Pressures
from 50 bar to 630 bar


4408
DN64
PN64

3.3 Pressure relief valves

Materials

Temperatures

from –60 °C to +225 °C

Pressures

from 0.1 bar to 30 bar

Media

Threaded connection

from G ⅜" to G 2"

These pressure relief valves are valves which have a proportional opening and closing characteristic. They guarantee perfect operation even though they do not have a TÜV Type Test Approval.

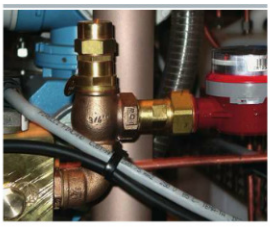
Pressure relief valves are suitable for equipment which does not fall under the Pressure Equipment Directive and in cases where only small blow-off capacities are required. In additon, due to their large setting ranges per spring, they are ideally suited to be held in stock for various applications and set pressures. The set pressure can be set and altered by the user.

Industries which rely on Goetze valves

- Industrial applications
- Chemical plants
- Process equipment construction
- Test rig construction
- Shipbuilding and -repair
- Laboratories
- Mechanical engineering
- Pump protection
- Fuel systems
- Secondary areas in the food, beverage, pharmaceutical and cosmetic industries

↗ FUEL SYSTEM

↗ BEVERAGE INDUSTRY



↗ LABORATORY

↗ PUMPS

3.3 Pressure relief valves

Pressure relief valves Series 418

made of stainless steel, angle-type, with threaded connections

Pressure relief valves Series 618

made of gunmetal, angle-type, with threaded connections

	418			618		
Neutral	■	■	■	■	■	■
Non-neutral	■	■	■	■	■	■
Gastight	■	■	■	■	■	■
Bellows						
Diaphragm						

MEDIA:

- LIQUID
- GAS
- STEAM

These pressure relief valves for liquids, vapours and gases are extremely versatile and very easy to use. They are suitable both for neutral and non-neutral (inflammable, toxic) media. By means of the stainless steel compression spring either the dealer or the user can set or adjust the required setpressure. This is also possible when the valve is installed and under pressure. Furthermore, the exchangeable cartridge can easily be replaced without having to dismantle the valve from the piping system. In addition, like in all other Goetze valves, this valve has high quality internals, because not only the casing of the valve is made of stainless steel.

Threaded connections
from G 3/8" to G 1¼"

Temperatures
from –60°C to +225°C

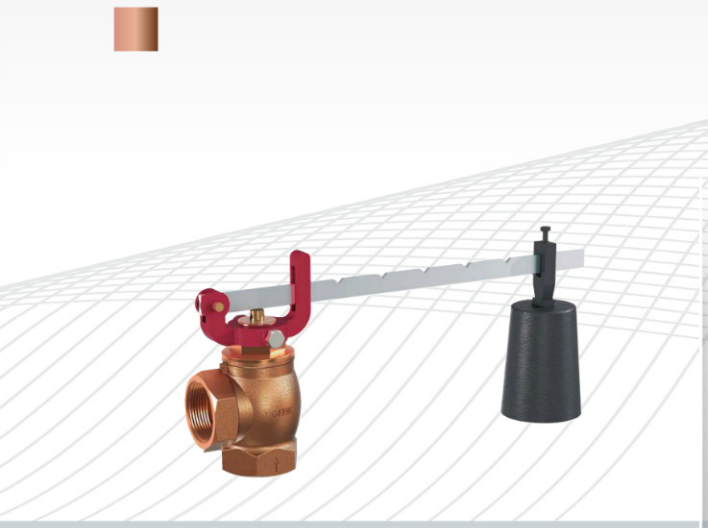
Pressures
from 0.2 bar to 30 bar

A proven all-round valve with proportional operating characteristics and an extremely compact design. In addition to the basic version, these valves are also available for the most varied customer requirements as a gastight version or with lifting lever. The various sealing materials available mean that this valve is suitable for a wide range of media and temperatures.
As a closed, gastight version without lifting mechanism it is suitable for all media. This makes this series an economcially interesting alternative for plants which do not require any approval or which do not fall under the PED. In addition, due to its relatively large setting range per spring, it is ideally suited in cases where either a stock valve for various applications and set pressures is required or if the customer is looking for an adjustable pressure relief valve.

Threaded connections
from G 3/8" to G 2"

Temperatures
from –60°C to +225°C

Pressures
from 0.2 bar to 20 bar



Pressure relief valves Series 601

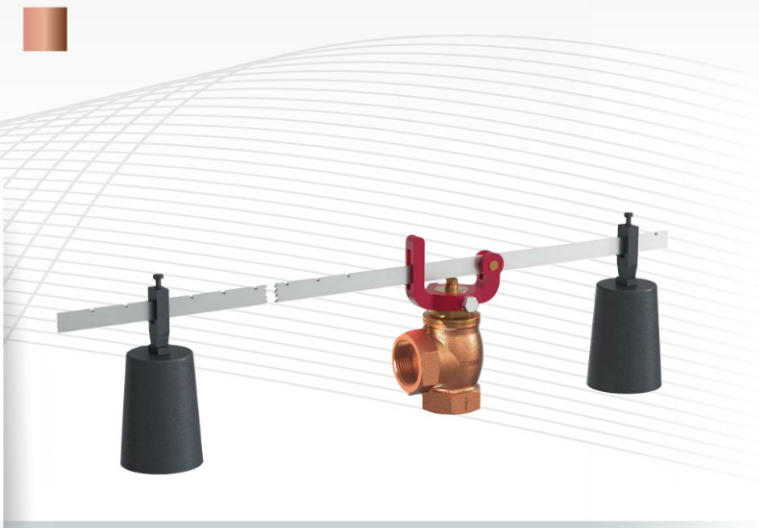
made of gunmetal, with lever and weight, angle-type with threaded connections

This angle-type pressure relief valve with lever and weight is an ideal alternative when in the case of low capacities a TÜV Type Tested safety valve is not necessary. The set pressure can very easily be adjusted by the user. Provided the valve is used correctly, then its simple and robust design guarantee a high degree of reliability.

Threaded connections
from G ½" to G 2"

Temperatures
from –60°C to +225°C

Pressures
from 1.5 bar to 6 bar



Pressure relief valves Series 612

made of gunmetal, with double lever and weights, angle-type with threaded connections

This angle-type pressure relief valve with double lever and weights offers precise protection against overpressure in the case of low set pressures.
This is a versatile alternative if the system to be protected does not fall under PED and a compact version is not necessary. The set pressure can be very easily adjusted by the user.

Threaded connections
from G ½" to G 2"

Temperatures
from –60°C to +225°C

Pressures
from 0.1 bar to 4 bar


617 3/4"
2–8 bar PTFE
CE
1185505 11

3.4 Overflow and pressure control valves

Materials

Temperatures
from –60 °C to +225 °C

Pressures
from 0.2 bar to 30 bar

Media

Threaded connection
from G ⅜" to G 2"

Flange connection
from DN 20 to DN 80

These overflow and pressure control valves with proportional opening and closing characteristic are particularly suitable for test rigs, pump circuits or as pressure control or pressure relief valves. They are usually used to protect an existing pump in a closed-circuit from overloading and overheating. The medium can then circulate through the bypass system of the pump or through the piping network.

Due to their flexible setting options these overflow and pressure control valves offer clear advantages for a huge range of applications. In the case of those versions with an external adjustment feature, the set pressure can be adjusted by the user under operating conditions and back-pressure without the media entering into the atmosphere.
Depending on the type of sealing material, the valves can be used for temperatures up to 225°C. Overflow valves cannot be a replacement for safety valves. Each plant must be protected against overpressure by means of a safety valve.

Industries which rely on Goetze valves

- Industrial applications
- Process equipment construction
- Pump protection
- Test rig construction
- Mining
- Workboats
- De-icing technology

↗ MINING

↗ WORKBOATS

↗ DE-ICING TECHNOLOGY

↗ WATER TREATMENT

3.4 Overflow and pressure control valves

Overflow and pressure control valves Series 417

made of stainless steel, angle-type with threaded connections
– externally adjustable –

Overflow and pressure control valves Series 418

made of stainless steel, angle-type, with threaded connection
– externally adjustment –

Overflow and pressure control valves Series 617

made of gunmetal, angle-type, with threaded connections
– externally adjustment –

Neutral	■ ■ ■	■ ■ ■	■ ■ ■
Non-neutral	■ ■ ■	■ ■ ■	■ ■ ■
Gastight	■ ■ ■	■ ■ ■	■ ■ ■
Bellows			
Diaphragm			

MEDIA:

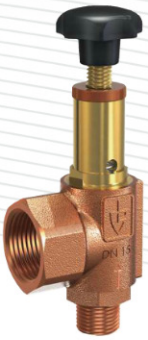
- LIQUID
- GAS
- STEAM

If the 617 series made of gunmetal and brass cannot be used due to an aggressive medium or an aggressive environment, the new 417 series made of highly corrosion resistant stainless steel provides a solution. The sealed and gas-tight design covers an even wider application range. The valves can be conveniently adjusted or aligned using the external adjustment, which means that perfect alignment to the operating conditions of the system is possible. They can, however, also be set and sealed at the factory.

Highly corrosion-resistant overflow valve – closed, gastight version. This is suitable for all media and due to its large spring range is suitable for a wide range of applications. Therefore it is also ideally suitable, when a customer wants to stock a valve suitable for a wide range of applications and varying set pressures. This valve is particularly maintenance-friendly due to an easily replaced valve cartridge. The valve can also be easily set or adjusted during operation.

By means of an external setting mechanism this valve can be set or adjusted by the operator during operation. The closed, gastight version with large spring ranges offers a wide range of application possibilities. This valve is also widely used as an overflow valve in applications where the plant pressure often changes. Due to its versatility and large spring ranges, this valve can be highly recommended as a stock item.

Threaded connections from G ⅜" to G 2"	**Threaded connections** from G ⅜" to G 1¼"	**Threaded connections** from G ⅜" to G 2"
Temperatures from –60 °C to +225 °C	**Temperatures** from –60°C to +225°C	**Temperatures** from –60°C to + 225°C
Pressures from 0.2 bar to 20 bar	**Pressures** from 0.2 bar to 30 bar	**Pressures** from 0.2 bar to 20 bar



Overflow and pressure control valves Series 618

made of gunmetal, angle-type, with threaded connections

Robust, proportional overflow valve – gastight version. Allround overflow valve for pump protection and bypass control applications, due to its compact design, possibility of user-adjustment within the soring ranges as well as various sealing materials.

Threaded connections
from G ⅜" to G 2"

Temperatures
from –60°C to + 225°C

Pressures
from 0.2 bar to 20 bar

Overflow and pressure control valves Series 453

made of stainless steel, angle-type with threaded connections – externally adjustable by hand wheel –

These overflow or control valves have been developed for complex applications with, for example, large overflow volumes, viscose media and counter pressures etc. With the stainless steel bellows that compensate counter pressures, a counter pressure affecting the outlet side does not influence the setting of the valve. The springs, designed precisely for the setting ranges, with the complex technical design of function parts in the flow range and the housing lead to the unusually high flow volumes for overflow valves despite the very proportional control reactions.

Threaded connections
from G ½" to G 2"

Temperatures
from –60 °C to +225 °C

Pressures
from 0.5 bar to 25 bar

Overflow and pressure control valves Series 853

made of gunmetal, angle-type with threaded connections – externally adjustable by hand wheel –

The alternative to the stainless steel version made of corrosion resistant gunmetal. Apart from the medium resistance of the housing material, the design is identical to the stainless steel series 453. A suitable sealing material can be chosen for almost every medium. The valves can be set to the required pressure and sealed in the factory, or can be conveniently adjusted by the customer in the corresponding spring range using the hand wheel. The setting or adjustment can also be made during operation.

Threaded connections
from G ½" to G 2"

Temperatures
from –60 °C to +225 °C

Pressures
from 0.5 bar to 25 bar

3.4 Overflow and pressure control valves

Overflow and pressure control valves Series 430

made of stainless steel, straightway form, with threaded connections

Overflow and pressure control valves Series 431

made of stainless steel, straightway form, with flange connections

Neutral	■	■	■	■
Non-neutral	■	■	■	■
Gastight	■	■	■	■
Bellows				
Diaphragm	■	■	■	■

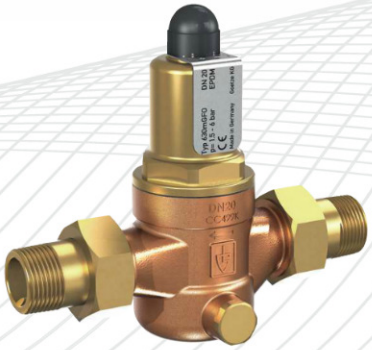
MEDIA:

- LIQUID
- GAS
- STEAM

This diaphragm-controlled overflow valve allows high flow rates at low differential pressure. In its closed, gastight version it is suitable for liquid and gaseous media. Fitted with Viton seals, its range of applications is extended so that it is suitable for media such as oil, petrol, kerosine or oil-laden compressed air. Extremely service-friendly due to replacement valve cartridge. The set pressure can easily be read-off the (optional) pressure gauge.
Optionally available with female thread.

High flow rates at low differential pressures. Can be adjusted and set externally during operation, for liquid and gaseous media, service friendly due to replacement cartridge. This overflow valve made of high-alloyed stainless steel combines all of these advantages. According to the sealing- and diaphragm materials employed, these valves can be used for neutral and non-neutral media.

Threaded connections from G ½" to G 2"	**Flange connections** from DN 20 to DN 80
Temperatures from –10 °C to +95 °C	**Temperatures** from –10 °C to +95 °C
Pressures from 0.5 bar to 10 bar	**Pressures** from 0.5 bar to 10 bar



Overflow and pressure control valves Series 630

made of gunmetal, straightway form, with threaded connections

The alternative to stainless steel made of corrosion-resistant gunmetal. The advantages of an external adjustment possbility during operation, high flow rates at low differential pressures, suitability for liquid and gaseous media. Easy service due to the replacement valve cartridge make this diaphragm-controlled overflow valve suitable for a wide range of applications. Optionally available with female thread.

Threaded connections
from G ½" to G 2"

Temperatures
from –10 °C to +95 °C

Pressures
from 0.5 bar to 10 bar

Overflow and pressure control valves Series 631

made of gunmetal, straightway form, with flange connections

In cases where flange connections are required, this valve offers the same features as the 630 version. The robust all-metal design makes this valve ideal for harsh operating- and environmental conditions, when sensitive control is required.
The set pressure can easily be read-off the (optional) pressure gauge.

Flange connections
from DN 20 to DN 80

Temperatures
from –10 °C to +95 °C

Pressures
from 0.5 bar to 10 bar

3.5 Safety fittings for hygienic applications

Materials

Temperatures

from –40 °C to +200 °C

Pressures

from 0.4 bar to 16 bar

Media

Special connections

from DN 20 to DN 32

The new safety valves from the hygienic series are made fully of stainless steel and are equipped with clamping connections and food-safe threaded connections. Angle-type valves, tested and certified by the DGUV and the EHEDG, fulfil numerous international regulations and are concept designed for worldwide use in systems deployed in the pharmaceutical and food industry.

These valves are characterised by the particularly smooth, fault-free surfaces. This makes them perfect for cleaning. Our engineers also made sure there were no gaps when constructing these valves: whether it be at the valve inlet or when fixing all elastomere parts.

Industries which rely on Goetze valves

- Food industry
- Breweries industry
- Beverages industry
- Pharmaceutical industry
- Medical technology
- Clean service applications
- Cosmetics Industry

↗ PHARMACEUTICAL

↗ BREWERY

↗ FOOD INDUSTRY

Safety valve
Series 400

made of stainless steel, angle-type
with clamp connections and food connections

Overflow / pressure control valve
Series 400.5

made of stainless steel, angle-type
with clamp connections and food connections

■	■	■	■	■	■	**Neutral**
■	■	■	■	■	■	**Non-neutral**
						Gastight
■	■	■	■	■	■	**Bellows**
						Diaphragm

MEDIA:
- LIQUID
- GAS
- STEAM

The valves in the Goetze Hygienic series are constructed in compliance with the construction features of hygienic design. This includes smooth, fault-free and optimal surfaces for cleaning, minimum dead space, no gaps and lots of other details. Difficult to clean components are protected against impurities with stainless steel bellows.
The fulfilment of these construction features are proven and confirmed by tests and certificates from the DGUV Committee for Foods and Luxury Items and the EHEDG (European Hygienic Engineering & Design Group). The safety valves are approved for worldwide use in accordance with numerous regulations.

Just like the hygienic safety valves, these overflow/control valves are also implemented in line with the construction features of hygienic design and confirmed in tests by the DGUV Committee for Foods and Luxury Items. Depending on the use and medium, the seals are available with approvals in accordance with FDA, USP, 3-A and ADI-FREE.
The valves are particularly used to control processes and systems in the food and pharmaceutical industries. Suitability of the medium ranges from air to various neutral and non-neutral vapours, gases and liquids.

Special connections
from DN 20 to DN 32

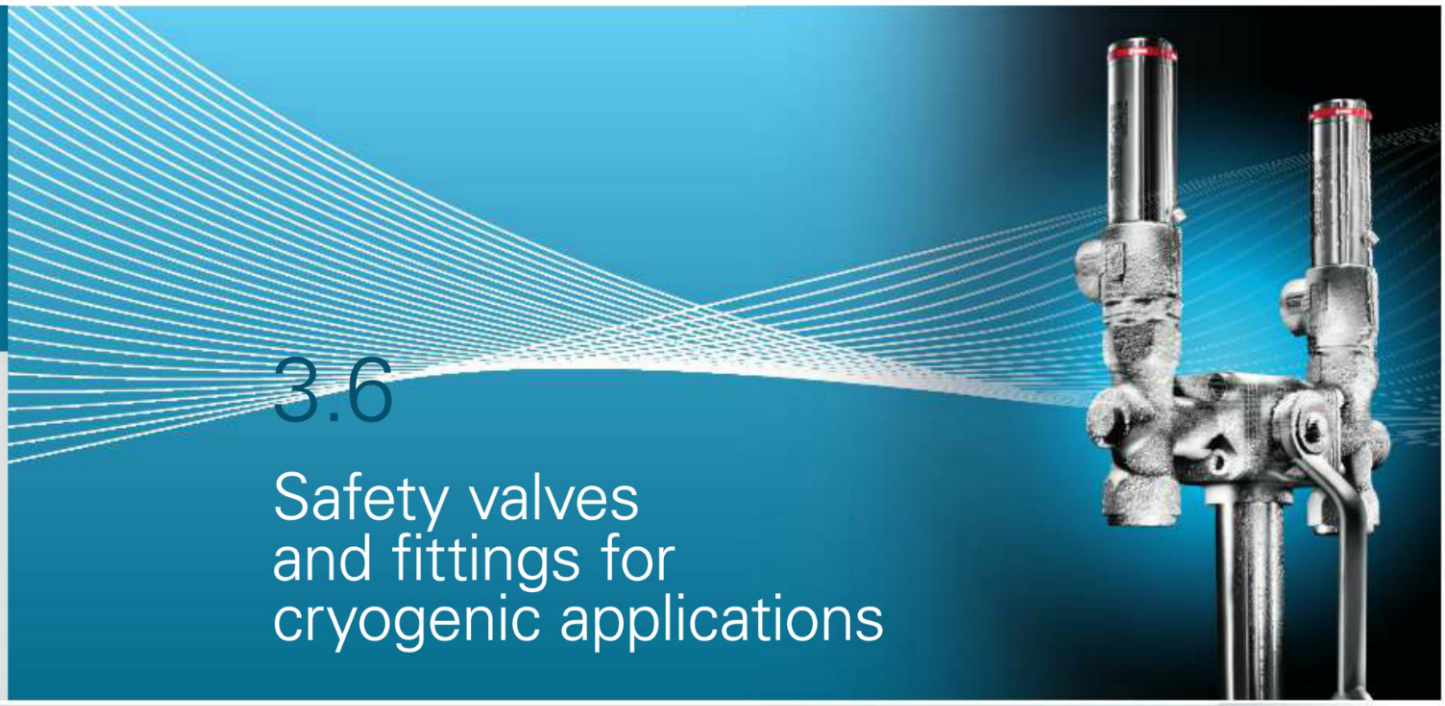
Temperatures
from –40 °C to +200 °C

Pressures
from 0.4 bar to 16 bar

Special connections
from DN 20 to DN 32

Temperatures
from –40 °C to +200 °C

Pressures
from 0.4 bar to 16 bar



3.6 Safety valves and fittings for cryogenic applications

Materials

Temperatures
from –200 °C to +200 °C

Pressures
from 0.2 bar to 70 bar

Media

Threaded connections
from ¼" to 1¼"

The new cryogenic valves by Goetze KG are pioneering in their application and can be used in many industries. Low-temperature gases are used in many industries, ranging from food processing to medical technology all the way to energy production. The outstanding quality of the new cryogenic valves by Goetze has been confirmed by their approval for use with both gases and vapours – and for liquids too. This means that for the first time a low-temperature safety valve is available, that is also ideally suited for mixed phases.

A typical application, for example, is increasing the shelf life of food which sees nitrogen being used as a protective atmosphere against oxidation. With liquid nitrogen's low storage temperature of –196°C it is exactly controlled in order to shock-freeze frozen food at –70°C.

Industries which rely on Goetze valves

- Nitrogen storage systems
- Tunnel cooling systems
- LNG applications
- Ground freezing
- Cryogenic machining
- Dry ice blasting

↗ **TUNNEL COOLING SYSTEMS** The low storage temperature for liquid nitrogen, at down to –196°C, is used to freeze foodstuffs to around –70°C using precise temperature regulation. In addition, protective nitrogen atmospheres to prevent oxidation are used to increase the shelf-life of food products.

↗ **LNG APPLICATIONS** Facilities to handle liquefied natural gas are being built on a small scale for the energy markets of tomorrow. Cryo valves are being used in distribution, transport, regasification or for consumer use, creating an infrastructure that provides an interim solution on the way to hydrogen-based energy supply.

↗ **CRYO CONTAINER SYSTEMS** Cryogenic liquefied gases are stored in various containers ranging in size from 1.000 litres up to 100 m³ and under storage pressures of up to 70 bar, depending upon reqirements and applications. Possible applications include medical oxygen supply systems or argon containers for welding gas supply in specialist welding companies.

↗ **CRYOGENIC MACHINING** Materials that are hard to work, such as titanium or superalloys, require new tool-cooling technologies due to the high temperatures that are created. Advantages of cooling with liquid nitrogen include significantly improved tool stability and no further need to use drilling emulsions that afterwards must be regenerated or disposed of.

Safety valve Series 2400

made of stainless steel,
angle-type with threaded connections

Ball diverter valve Series 2700

made of stainless steel
with threaded connections

■	■	Neutral
■	■	Non-neutral
■	■	Gastight
		Bellows
		Diaphragm

MEDIA:
■ LIQUID
■ GAS

The safety valves of this series have been awarded full approval for vapours and gases as well as for liquids. All components of the valve are specially cleaned during the production process and are thus oil- and grease free in accordance with DIN EN 12300. Because of this every valve is suitable for use in systems using oxygen and is accordingly marked. The use of 1.4404 and 1.4408 high-alloy stainless steels renders the safety valves particularly resistant to extremely cold temperatures. For the use with gases that are in contact with food an FDA-compliant sealing material has been used.
The valve setting and seat insert are separately sealable which makes unauthorised adjustments easily noticeable. Overpressure from 0.2 bar up to 70.0 bar is purged safely with a consistently high level of performance.

Threaded connections
from G ¼" to G 1"

Temperatures
from –200 °C to +200°C

Pressures
from 0.2 bar to 70 bar

The optimal design of the flow channels within the ball diverter valve enable particularly high flow rates. This significantly reduces flow pressure losses to the safety valves and safe operation remains ensured.
The use of 1.4404 and 1.4408 high-alloy stainless steels enables high resistance against internal and external influences. For the use with gases that are in contact with food an FDA-compliant sealing material has been used. Thanks to the oil- and grease-free manufacturing process, the ball diverter valves are suitable for use in systems using oxygen. With the ergonomically shaped handle and the separate testing connections, the ball diverter valve is optimally prepared for the maintenance of the safety valves.

Threaded connections
from G ¾" to G 1 ¼"

Temperatures
from –200 °C to +120 °C

Pressures
PN 63


DN25/PN40
H
DN32 / PN40

3.7 Pressure reducing valves

Materials

Temperatures
from –40 °C to +120 °C

Pressures
Inlet pressure up to 60 bar,
Outlet pressure adjustable

Media

Threaded connection
from G ¼" to G 2"

Flange connection
from DN 15 to DN 100

Pressure reducing valves from the Goetze KG are available in a wide range of sizes, in order to offer the right solution for a wide variety of applications and connection types. Whether stainless steel or gunmetal in all-metal design. Flange- or threaded connection, you will find that we can offer you the optimum combination for your application.

Our pressure reducing valves are suitable for applications involving water up to 120°C, compressed air, neutral gases and non-adhesive liquids. Furthermore, they can easily be used in commercial, industrial and private applications. A special feature is the simple handling in case of servicing or repair. The complete set of functional parts, in the form of a valve cartridge can be replaced or cleaned without removal of the valve itself.

Industries which rely on Goetze valves

- Industrial applications
- Chemical plants
- Process equipment construction
- Building technology
- Shipbuilding
- Snow-making equipment
- Fire-fighting equipment
- Hydraulic control systems
- Sprinkler systems

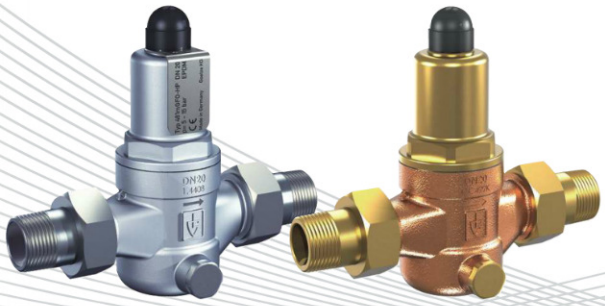
↗ SNOW-MAKING EQUIPMENT

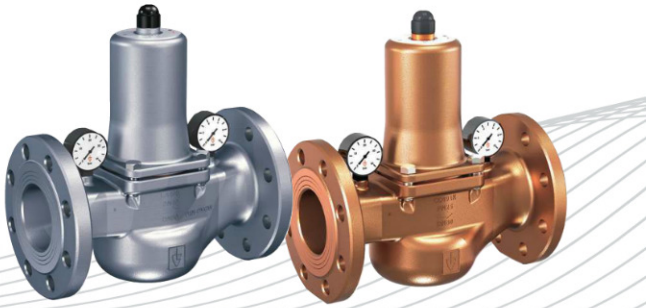
↗ SHIPBUILDING

↗ HYDRAULIC CONTROL SYSTEMS

↗ SPRINKLER SYSTEMS

3.7 Pressure reducing valves





Pressure reducing valves Series 481 and 681

made of stainless steel and gunmetal with threaded connections

Pressure reducing valves Series 482 and 682

made of stainless steel and gunmetal with flange connections

Neutral	■	■	■	■
Non-neutral	■	■	■	■
Gastight				
Bellows				
Diaphragm	■	■	■	■

MEDIA:

■ LIQUID
■ GAS

The proven, robust pressure reducing valves in full-metal-version with threaded connectors have not only proven themselves in drinking water application, but especially also in rough industrial operating conditions with many different, also aggressive substances and at fluctuating environmental temperatures. The materials used are optimised for water of different qualities and for warm water applications. Besides the standard range of adjustment of 1 to 8 bar the additional outlet pressure ranges of 0.5 bar to 2 bar and 5 bar to 15 bar cover a wide application range.
Optionally available with female thread.

Threaded connections
from G ½" to G 2"

Temperatures
from –10 °C to +95 °C

Inlet pressure up to 40 bar
Outlet pressure adjustable
from 0.5 bar to 15 bar

Fittings often require flange connections. This is the exact reason for our series in the nominal diameter ranges of DN15 to DN80, series 682 up to DN100. Besides the standard versions of these pressure reducing valves made of stainless steel and gunmetal, the valves are also available in nominal diameters from DN20 to DN50 in high-pressure and a low-pressure version. Upon request we can also equip the stainless steel pressure reducing valves for various pressure ranges with stainless steel pressure gauges.
For highest service-friendliness also in the case of the flange versions, a replacement internal cartridge with integrated dirt trap is available.

Flange connections
from DN 15 to DN 100

Temperatures
from –10 °C to +95 °C

Inlet pressure up to 40 bar
Outlet pressure adjustable
from 0.5 bar to 15 bar

Pressure reducing valves Series 683

made of gunmetal, with female threaded connections

This pressure reducing valve is an alternative to the larger versions, in cases where only small flow volumes are required or the medium in question is compressed air. With an outlet pressure of max. 50 bar the pressure reducing valve is used, for example, to control the starter air on ships. It goes without saying, that it holds all the necessary marine approvals of the various bodies such as Germanischer Lloyd etc. This valve is used in many industrial applications particularly for compressed air and neutral gases.

Threaded connections
from G ⅜" to G 1¼"

Temperatures
from –10 °C to +95 °C

Inlet pressures up to 50 bar
Outlet pressures adjustable from 1.5 bar to 10 bar

Pressure reducing valves Series 484

made of stainless steel, with female threaded connections

These diaphragm and piston pressure reducing valves made of stainless steel and with female threaded connections for pneumatic and hydraulic applications are distinguished particularly by high flow rates and low pressure losses even in situations of high performance demands. Their extremely precise control characteristics, the inlet pressure of up to 60 bar and the wide outlet pressure range make these pressure reducing valves the optimal solution for almost all technically demanding applications.

Threaded connections
from G ¼" to G 2"

Temperatures
from –40 °C to +120 °C

Inlet pressures up to 60 bar
Outlet pressures adjustable from 0,5 bar to 50 bar

Pressure reducing valves Series 684

made of gunmetal, with female threaded connections

All characteristics and technical features of the stainless steel versions also apply to the series 684 made of corrosion-resistant gunmetal. The fully relieved valves which therefore even out inlet pressure variations are available with and without secondary venting and each in a diaphragm or a piston version. Pressure adjustment is carried out without tools via the ergonomically formed hand-wheel. The extremely small pressure loss in the pressure adjusting area leads to these high-performance pressure reducing valves having almost no competition.

Threaded connections
from G ¼" to G 2"

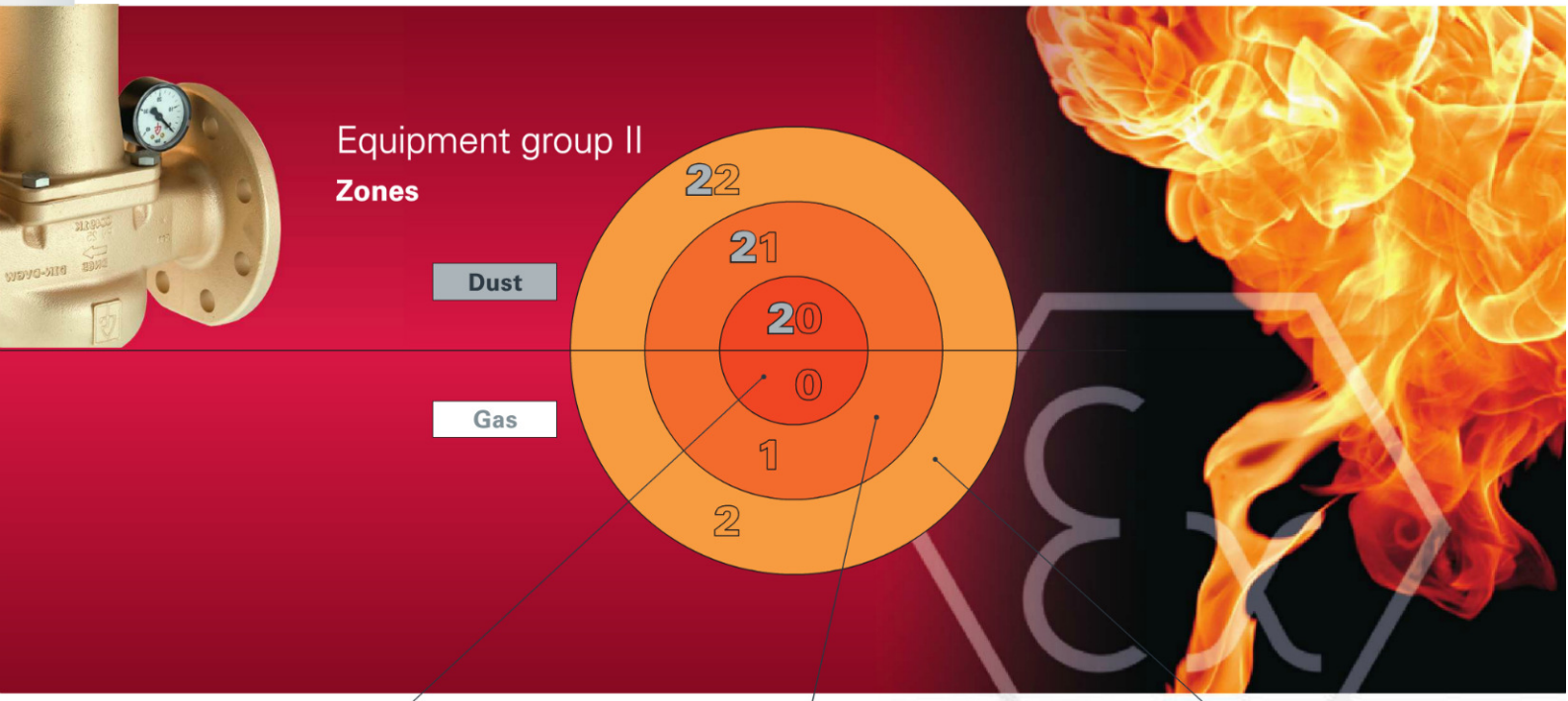
Temperatures
from –40 °C to +120 °C

Inlet pressures up to 60 bar
Outlet pressures adjustable from 0,5 bar to 50 bar

4

Valves and ATEX!

Goetze valves are fundamentally suitable for use in potentially explosive areas. Consequently they were subjected to a conformity assessment according to the ATEX Product Directive 94/9/EC (new 2014/34/EU). As an indepedant, notified body, the TÜV Süd was commissioned with the assessment of our products.



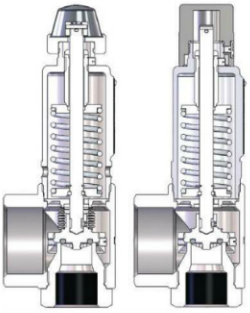
Category 1

Example: Within a fuel tank or gas tank

Valve with bellows **and** gastight cap

Category 2

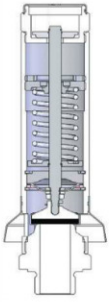
Example: Sewage treatment plant – condensate collecting tank for biogas



Valve with bellows **or** gastight cap

Category 3

Example: Paint shop after extraction system



All valve types possible

Equipment Groups / Categories / Zones / Products

Selection Chart for Goetze ATEX Products

Equipment group I		Equipment group II		
Equipment for use in ○ The mining industry ○ Open cast mining ○ Deep mining		Equipment for use in other potentially explosive areas		
Category M1	**Category M2**	**Category 1**	**Category 2**	**Category 3**
Requirement: **extremely high level of safety**	Requirement: **high level of safety**	Requirement: **extremely high level of safety**	Requirement: **high level of safety**	Requirement: **normal level of safety**
Operation guaranteed even in the case of rare incidences	Shutdown in case of occurence of a potentially explosive atmosphere possible	Danger: **continuously, frequently, long-term**	Danger: **occasionally**	Danger: **rarely or short-term**
		Zone 0 **G** Gas / **Zone 20** **D** Dust	**Zone 1** **G** Gas / **Zone 21** **D** Dust	**Zone 2** **G** Gas / **Zone 22** **D** Dust
Safety valves				
420tbGFO 451tbGO; tbFO; tbGFO 851tbGO; tbFO; tbGFO 452tbGO; tbFO; tbGFO 852tbGO; tbFO; tbGFO	420tGF(O;L) 420bGF(O;L) 492tGO 451tGO; tFO; tGFO 851tGO; tFO; tGFO 2400tGFO 451bG(O,K,L); bF(O,K,L); bGF(O,K,L) 851bG(O,K,L); bF(O,K,L); bGF(O,K,L) 460tGF(O,L) 461tGFO 861tGFO 452tG(O,L); tF(O,L); tGF(O,L) 852tG(O,L); tF(O,L); tGF(O,L) 452bG(O,L); bF(O,L); tGF(O,L) 852bG(O,L); bF(O,L); bGF(O,L)	420tbGFO 451tbGO; tbFO; tbGFO 851tbGO; tbFO; tbGFO 452tbGO; tbFO; tbGFO 852tbGO; tbFO; tbGFO	420tGF(O,L) 420bGF(O,L) 492tGO 451tGO; tFO; tGFO 851tGO; tFO; tGFO 2400tGFO 451bG(O,K,L); bF(O,K,L); bGF(O,K,L) 851bG(O,K,L); bF(O,K,L); bGF(O,K,L) 460tGF(O,L) 461tGFO 861tGFO 452tG(O,L); tF(O,L); tGF(O,L) 852tG(O,L); tF(O,L); tGF(O,L) 452bG(O,L); bF(O,L); tGF(O,L) 852bG(O,L); bF(O,L); bGF(O,L)	451sG(K,L); 451sF(K,L); 451sGF(K,L) 851sG(K,L); 851sF(K,L); 851sGF(K,L) 452sG(O,L); 452sF(O,L); 452sGF(O,L) 852sG(O,L); 852sF(O,L); 852sGF(O,L) 652 861sGF(K,L) 461sGF(K,L) 810 / 410 812 / 412 813 / 413 492sGK 2400sGF(K, L)
Overflow and pressure control valves				
451tbGFU 851tbGFU 452tbGFU 852tbGFU	451tGFU; 851tGFU 452tGFU; 852tGFU 453bGFO; 853bGFO 452bGFU; 852bGFU 417tGFO; 418tGFO 617tGFO; 618tGFO; 608tGFO	453tbGFO 853tbGFO	451tGFU; 851tGFU 452tGFU; 852tGFU 453tGFO; 853tGFO 453bGFO; 853bGFO 453bGF(K,L,0); 853bGF(K,L,O) 452bGFU; 852bGFU 417tGFO; 418tGFO 617tGFO; 618tGFO; 608tGFO	630 / 430 631 / 431
Pressure reducing valves				
	681 / 481 682 / 482 684mGO; 684mGFO; 684kGO; 684kGFO		681 / 481 682 / 482 684mGO; 684mGFO; 684kGO; 684kGFO	681 / 481 683 682 / 482 684mGS; 684mGFS; 684kGS; 684kGFS

With Goetze you can rest assured.

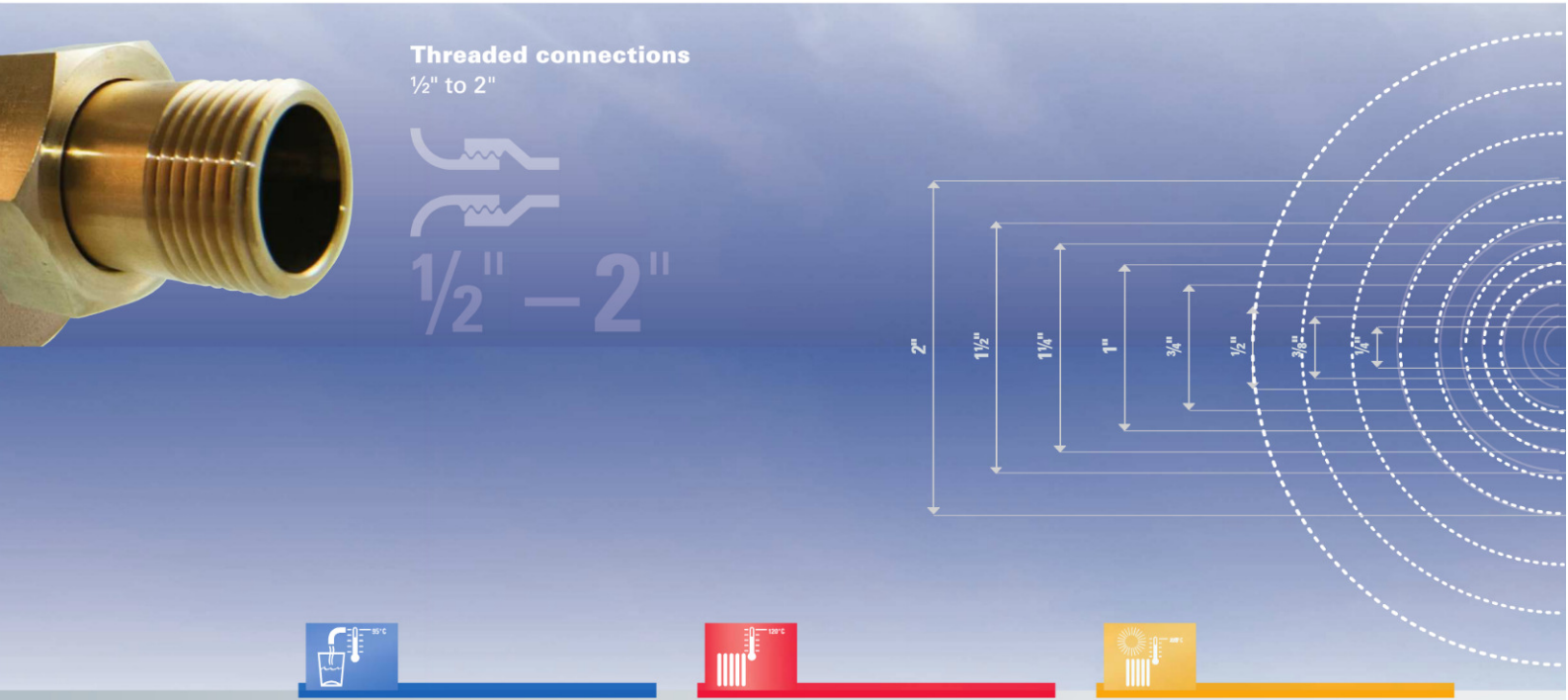
Certified explosion protection.

The safety of our customers is of paramount importance to Goetze. That's why Goetze offers more:

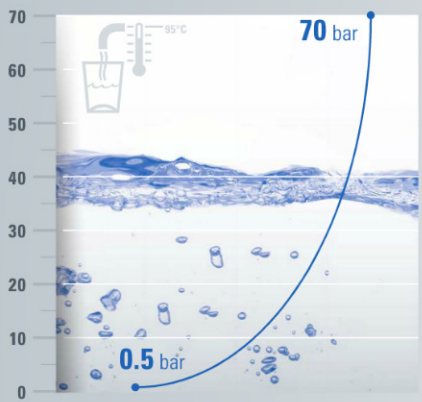
- the highest level of safety in all ATEX zones
- reliable advice: which products meet your requirements?
- safe products for each ATEX zone according to TÜV criteria

5
Technical Basics
Building Technology

The requirements of products for building technology applications are becoming increasingly complex. Whereas the customer always expects the perfect function combined with a maximum degree of comfort, the installer demands robust, pre-configured systems, which he can install for the customer with peace of mind. The Goetze KG contributes to the fact that customers and installers alike can rely on their system. All safety valves and pressure reducing valves are made completely of metal in either gunmetal, stainless steel or spheroidal graphite cast iron.

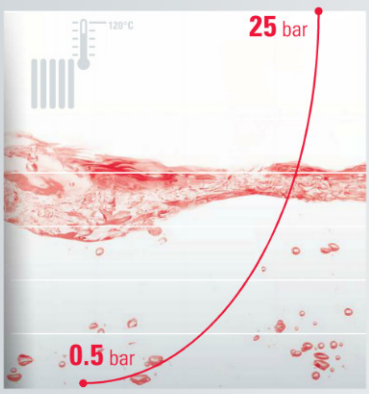


Warm water up to 95 °C



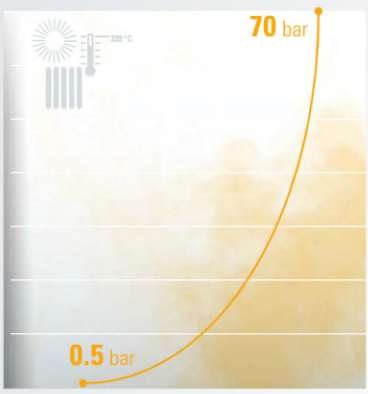
- Boiler protection
- Pressure booster plants (water side)
- Sprinkler systems
- Cooling circuits
- Water utilities

Hot water up to 120 °C



- Heating systems
- Intrinsically safe solar plants
- Heating, ventilation, air conditioning, cooling
- Co-generation plants (CHP)

Solar plants up to 225°C



- Steam boilers Groups I, III and IV
- Steam plants
- Solar plants

HIGH-QUALITY MATERIALS

Continuous material tests are the first pre-requisite for our outstanding quality. For example our gunmetal components are already lead-reduced, consequently, according to prevailing potable water regulations, our gunmetal can be used for all water qualities without any restrictions.

↗ STAINLESS STEEL

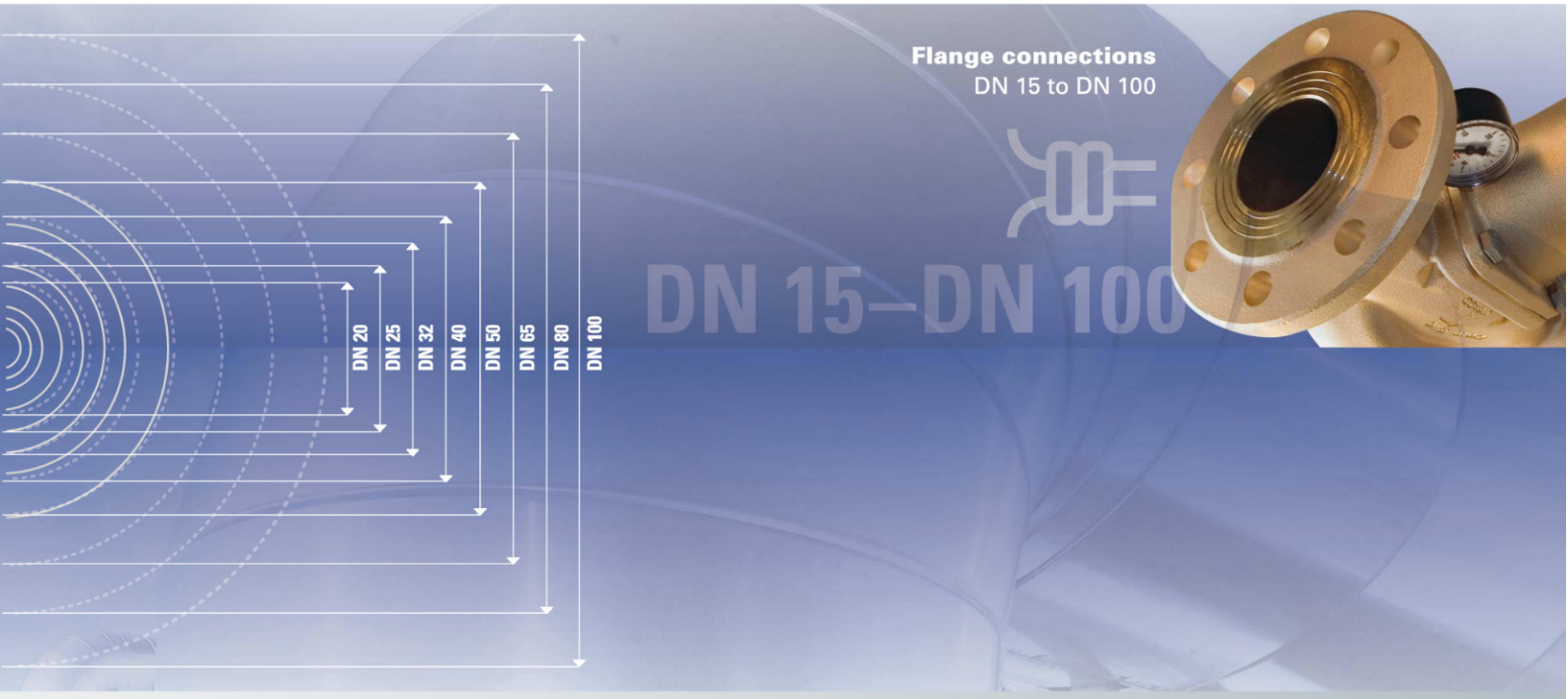
- ↗ highest quality material
- ↗ corrosion resistant

↗ GUNMETAL

- ↗ robust and of high quality
- ↗ potable / seawater resistant
- ↗ hygienic potable water suitability

↗ SPHEROIDAL GRAPHITE CAST IRON

- ↗ robust material
- ↗ cost-effective material for standard applications



The fittings and valves manufactured by the Goetze KG are, according to the application and medium in question, available in stainless steel, spheroidal graphite cast iron or gunmetal. In addition, a wide range of connection options are available: Threaded or flange connection in various sizes, as well as special connections according to customers' requirements. When designing the valves, we always take the requirements of the customer into account: from customized solutions to a batch size of one unit.

Chilled, warm or very hot? Hot water, potable water or solar liquid? We offer solutions for the most varied range of applications in the building technology sector. Whether it is for domestic hot water production and supply, heating systems, sprinkler systems, irrigation systems, solar plants or heating boilers, we offer the market a comprehensive range of fittings and safety- and pressure reducing-valves – which are always designed to meet the requirements of a specific application. All our valves are manufactured according to the principle: "Individuality for more safety". Based on this, we have developed a comprehensive, innovative and high-quality product range, which leaves almost nothing to be desired and which is being continuously expanded and developed further.


TÜV-SV-07-665-23.0 · D/G/H · 0,56
h=6,1 10% A=415mm² p= 6 bar
Typ 851H4
EPDM
0036 EN ISO 4126-1
100871212
Made in Germany
DN 25

6.1 TÜV/CE safety valves for heating and cooling

Materials

Temperatures

from –50 °C to +150 °C

Pressures

from 0.5 bar to 25 bar

Media

Threaded connection

from G ½" to G 2"

Flange connection

in DN 40 and DN 50

The Goetze KG product range is designed for hot water and heating systems as well as for cooling and air conditioning systems in single homes and multidwelling buildings and large building complexes. As an example, the safety valves for such installations are fitted with special sealing materials, which are suitable for glycol concentrations of up to 100%. A maximum degree of safety is of paramount importance when we develop new products. Even for combined plants, so-called "Combined Heating and Cooling Systems", safety valves with the necessary approvals are available from our product range.

Each heat generator of a heating plant must be safeguarded by means of at least one safety valve.
In the case of direct heating, the safety valves must be dimensioned in such a way that the nominal heat output of the heat generator can be safely discharged in the form of saturated steam.
In the case of indirectly heated heat generators, under certain circumstances, the safety valves may be dimensioned according to the flow volume of the expansion water.

In today's technical tenders it is often stipulated that the required valves must be suitable for the protection of both heating- and cooling-circuits.
On the market these are referred to as "Combined Heating and Cooling Systems". These systems are able to fulfill a number of functions. More and more frequently, these are used for cooling purposes in Summer and heating in Winter.

Due to the design criteria of the prevailing standards and regulations, until now a special valve for hot water for the heating circuit and a second one for cold water or coolant was required.
Due to the new valve model type 851bHF made of best-quality gunmetal and 451bHF made of stainless steel, the regulations can be fulfilled by just one single GOETZE safety valve. These valves are marked with two type test approval markings as well as the letter codes D/G/H. Consequently, the valves are suitable for hot water and steam. They are also suitable and approved for liquid media.

6.1 TÜV/CE safety valves for heating and cooling

Safety valves with diaphragm Series 651mH

made of gunmetal, all-metal construction angle type with threaded connections

Safety valves with bellows Series 451bH

made of stainless steel,angle type with threaded connections

Safety valves with bellows Series 851bH

made of gunmetal, angle type with threaded connections

Safety valves with bellows Series 352bHL

made of GGG 40.3 spheroidal graphite cast iron with flange connections

Neutral	■	■	■	■
Non-neutral	■	■	■	■
Gastight				
Bellows		■	■	■
Diaphragm	■			

MEDIA:

- HOT WATER UP TO 120 °C
- LIQUID

651mHNK with enlarged outlet (TÜV/CE)
651mHIK with inlet and outlet diameter equal
Robust safety valve with diaphragm with an all-metal construction. Designed to protect hot-water- and heating-systems.
This unmatched design, which does not have any plastic parts, means that these valves are also suitable for very high external temperatures.

Threaded connections from G ½" to G 2"

Temperatures from –10 °C to +120 °C

Pressures 2.5 bar, 3 bar and 3,5 bar (for 651mHIK only)

For demanding requirements in hot-water and heating-systems, there is also a version available made of high-quality corrosion- and acid-resistant stainless steel. This valve is suitable for all hot- water systems, where protection cannot be achieved by using a standard safety valve with diaphragm with the standard set pressures of 2,5 or 3 bar, for example in the case of all large building complexes.

Threaded connections from G ½" to G 2"

Temperatures from –10 °C to +120 °C

Pressures from 0.5 bar to 25 bar

High performance safety valve with bellows, made of high quality, corrosion-resistant gunmetal. Heating systems with set pressures other than 2,5 or 3 bar are required to be protected by such safety valves. Apart from indirectly heated plants, the sizing of the valves is based on the heating output of the boiler.

Threaded connections from G ½" to G 2"

Temperatures from –10 °C to +120 °C

Pressures from 0.5 bar to 25 bar

Proven technology comprising of various materials for the most varied requirements:
This valve made of spheroidal graphite cast iron GGG40.3 is a cost-effective alternative to the corrosion-resistant versions made of gunmetal or stainless steel.
These safety valves are not only used for the protection of large-scale heating plants in building technology but also for industrial applications and power stations.

Flange connections in DN 40 and DN 50

Temperatures from –10 °C to +120 °C

Pressures from 0.5 bar to 16 bar

Safety valves with bellows Series 452bHL / 852bHL

made of stainless steel/gunmetal, angle type with flange connections

Where highest material and quality standards are important, then safety valves made of stainless steel with flange connections can be an option. Also, this type of safety valve made of corrosion- and seawater-resistant gunmetal for the protection of large heating plants in the shipbuilding industry as well as in building technology applications represents a necessary addition to the comprehensive range of Goetze products.

Flange connections
in DN 40 and DN 50

Temperatures
from –10 °C to +120 °C

Pressures
from 0.5 bar to 25 bar

Safety valves with bellows Series 451bHF / 851bHF

made of stainless steel/ gunmetal, angle type with threaded connections

Universal high performance safety valve made of extremely corrosion resistant stainless steel or gunmetal with metal bellows, to meet the highest demands. Suitable and approved for heating plants and cooling- and chilling plants. The sizing of the valve is based on the heating output of the boiler. In the case of indirectly heated heating generators and closed chilling circuits this is based on the flow volume of the expansion water.

Threaded connections
from G ½" to G 2"

Temperatures
from –40 °C to +120 °C

Pressures
from 0.5 bar to 25 bar

Safety valves with diaphragm Series 652mFK

made of gunmetal, all-metal construction, angle type with threaded connections

The safety valve with diaphragm in the version 652mFK-EPDM is especially designed for the protection of closed cooling circuits. This valve made of corrosion-resistant gunmetal with an all-metal construction is resistant for plants and cooling media with a glycol content of up to 100%. The unbeatable price/performance ratio makes these the standard valves stipulated in tenders for cooling and air-conditioning plants.

Threaded connections
from G ½" to G 2"

Temperatures
from –50 °C to +150 °C

Pressures
from 1 bar to 16 bar

6.2 TÜV/CE safety valves for solar plants and district heating

Materials

Temperatures
from – 60 °C to + 400 °C

Pressures
from 0.5 bar to 70 bar

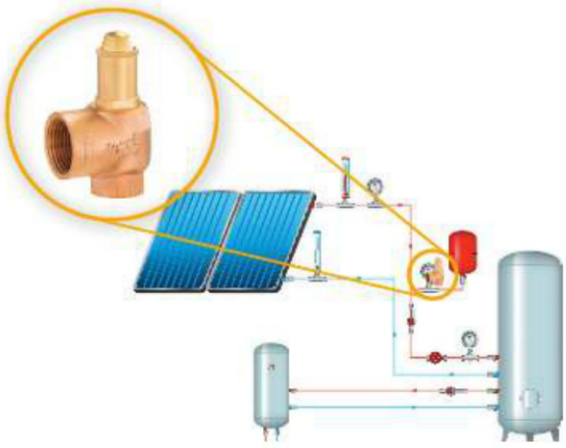
Media

Threaded connection
from G ½" to G 2"

Flange connection
in DN 40 and DN 50

The safety valves for solar plants are designed and tested for high media temperatures. Even for the SOL-valves for intrinsically safe plants, the materials have been tested up to 160°C.

Solar heating plant
Thermal solar plants are technical systems, which absorb solar radiation and with the help of a carrier media transport the energy to heating systems or hot water boilers and make it utilizable.
Media temperatures well above 160 °C are common in larger systems.



*** When do we speak of an intrinsically safe solar heating system?**
- expansion vessel takes up thermal volume expansion
- expansion vessel will absorb the volume change by forming steam
- there is no automatic refilling of the heat carrier (media)
- accordingly this is referred to as the typical small-scale system

Type 651mSK with identification code SOL for closed, **intrinsically safe solar heating systems*** with initial temperatures of up to 120°C.

for higher temperatures

Type 851/451bG and 852/452bGL with EPDM special compound up to 170°C (glycol mixture) or with PTFE up to 225°C.

Safety valves with diaphragm Series 651mSK

made of gunmetal, angle type with threaded connections

Safety valves with bellows Series 851bG/852bGL

made of gunmetal, angle type with threaded or flange connections

Safety valves with bellows Series 451bG/452bGL

made of stainless steel, angle type with threaded or flange connections

		Neutral
		Non-neutral
		Gastight
		Bellows
		Diaphragm

Diaphragm safety valve for the protection of small and medium-sized, intrinsically safe solar plants. The valve is characterized by a number of special features: Temperature resistance tested up to 160 °C, 100% metal design and available with different connection types up to a size of one inch. The valve is type tested according to TÜV standards for closed, intrinsically safe solar heating systems with a flow temperatures of up to 120 °C. Depending on the connection size, it is suitable for a heating output of up to 200 kW.

Threaded connections
from G ½" to G 1"

Temperatures
from –10 °C to +120 °C

Pressures
from 2 bar to 10 bar

High performance safety valves with bellows to protect non-intrinsically safe solar plants with temperatures above 200 °C as well as district heating systems, boilers and pressure vessels. The metal bellows protects sliding and moving parts from the medium and thus from dangerous soiling. The spring housing and spring are protected against the ingress of steam and high temperatures.

Flange connections
in DN 40 and DN 50

Threaded connections
from G ½" to G 2"

Temperatures
from –60 °C to +225 °C

Pressures
from 0.5 bar to 50 bar / 25 bar

For highest standards and requirements made completely of highly corrosion and heat resistant stainless steel to protect solar plants, which have temperatures above 200 °C, as well as district heating systems and steam plants. The stainless steel bellows protect sliding and moving parts as well as the spring housing from media deposits and high temperatures.

Flange connections
in DN 40 and DN 50

Threaded connections
from G ½" to G 2"

Temperatures
from –60 °C to +400 °C

Pressures
from 0.5 bar to 70 bar / 25 bar

MEDIA:

- SOLAR PLANTS UP TO 160 °C
- GAS
- STEAM UP TO 225 °C

6.3 Safety fittings for the water supply in the building technology sector

6.3 Safety fittings for the water supply in the building technology sector

Materials

Temperatures
from –10 °C to +95 °C

Pressures
from 3 bar to 10 bar
Inlet pressures up to 40 bar
Outlet pressures adjustable

Media

Threaded connection
from G ½" to G 2"

Flange connection
from DN 15 to DN 100

Our pressure reducing valves with potable water approvals, with either threaded or flange connections do not only cover all classical areas of the water supply sector: They are often used for applications in sprinkler systems, in water-treatment or desalination plants. The materials for all wetted parts do not only fulfill the stringent national DGVW regulations but also those in France (ACS), the UK (WRAS) and Norway (SINTEF).

Especially for sanitary applications corrosion resistant gunmetal is required. Bodies made of gunmetal guarantee an excellent resistance to the most varied drinking-water qualities and degrees of hardness. Particularly for valves which are used in potable water applications, the Goetze KG accepts no compromises with regard to the materials used. Only the highest quality materials, which are recommended and approved for potable water applications are accepted.

Industries which rely on Goetze valves

- Building technology engineering
- Fire-fighting equipment
- Sprinkler systems
- Potable water systems
- Potable water supply
- Sewage plants
- Protection of closed-circuit water heaters for drinking water and process water

↗ **BUILDINGS**

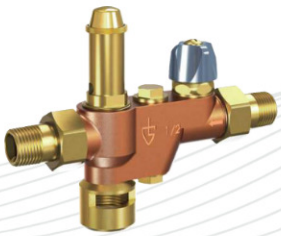
↗ **POTABLE WATER PURIFICATION**

↗ **SEWAGE PLANTS**

↗ **SPRINKLER SYSTEMS**

SINTEF
WRAS APPROVED PRODUCT
ACS
DIN DVGW

6.3 Safety fittings for the water supply in the building technology sector



Safety valves with diaphragm Series 651mW

made of gunmetal, angle type with threaded connections

Safety valve assemblies Series 669

made of gunmetal, straight way form with threaded connections

Neutral	■	■
Non-neutral		
Gastight		
Bellows		
Diaphragm	■	

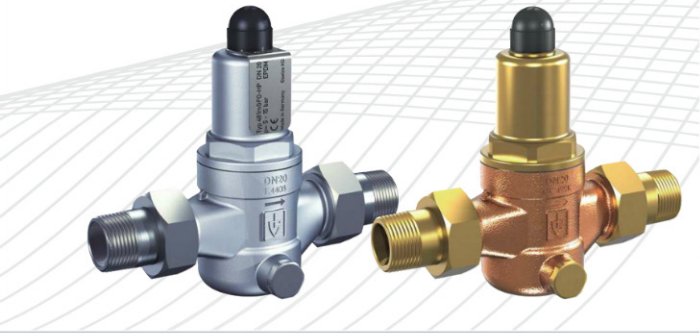
MEDIA:

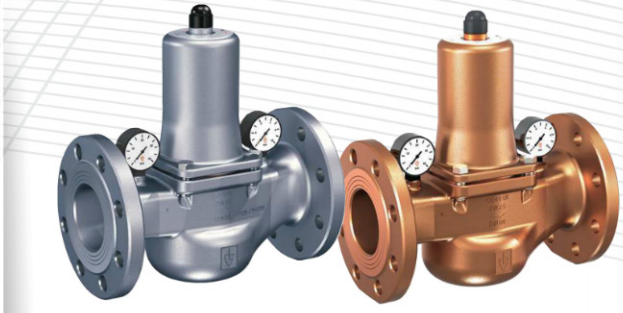
■ WARM WATER UP TO 95 °C

651mWNK enlarged outlet (TÜV/CE)
651mWIK with inlet and outlet diameter equal
Particularly in the case of valves which are employed in potable water installations, we do not accept any compromises regarding the materials used. Only the highest quality materials suitable and approved for potable water applications are used in these valves. These types of safety valves with diaphragm are installed in the cold water pipe before the hot water heater to protect it from inadmissible overpressure.

The combination of shut-off valve, strainer, dirt trap and diaphragm safety valve the 669sWK version, as well as the additional pressure reducing valve in the 669pWK, in a space-saving body guarantees adherence to the mandatory order for all valves required in a drinking water circuit heaters. This eliminates the necessity for time-consuming individual installation. The body made of gunmetal guarantees an excellent resistance to the most varying qualities of potable water.

Threaded connections from G ½" to G 2"	**Threaded connections** G ½" and G 3/4"
Temperatures from –10 °C to +95 °C	**Temperatures** from –10 °C to +95 °C
Pressures from 3 bar to 10 bar	**Pressures** from 3 bar to 10 bar





Pressure reducing valves Series 481 and 681

made of stainless steel and gunmetal with threaded connections

Pressure reducing valves Series 482 and 682

made of stainless steel and gunmetal with flange connections

An all-metal construction with no plastic parts, the highest level of corrosion resistance and special approvals for potable water applications characterize these products. The pressure reducing valves can also be used for warm water applications. The control unit is fully relieved, meaning that the set outlet pressure is always held constant even in the case of greatly fluctuating inlet pressures. An additional advantage: The complete valve insert can be serviced or relaced without having to remove the valve itself. As an accessory, we recommend fitting a pressure gauge on the outlet side, only then is it possible to check beyond doubt the actual outlet pressure and correct functioning of the pressure reducing valve.
Optionally available with female thread.

Threaded connections
from G ½" to G 2"

Temperatures
from –10 °C to +95 °C

Inlet pressure up to 40 bar
Outlet pressure adjustable
from 0.5 bar to 15 bar

Proven products are optimized for new application areas: For highest demands in water supply systems our premium model is made completely of high corrosion resistant and acid-proof stainless steel (AST/AISI 316). For fully desalinated as well as softened water, due to its excellent material properties stainless steel is ideally suited to these applications. Gunmetal is the ideal material for potable water installations; the alloy used fulfills the most modern hygienic requirements and is dezincification-proof. The complete valve insert including strainer can be exchanged. The use of a pressure reducing valve prevents pressure damage and reduces water consumption.

Flange connections
from DN 15 to DN 100

Temperatures
from –10 °C to +95 °C

Inlet pressure up to 40 bar
Outlet pressure adjustable
from 0.5 bar to 15 bar

Our certificates – Proof of the safety and reliability we offer nationally and internationally

CE Certification according to the European Pressure Equipment Directive is mandatory for many products and markets. Additional certificates are however proof of our individual quality, such as: TÜV, DVGW, WRAS, ACS, EAC, SINTEF. Last but not least, DIN ISO 9001 stands for the internal quality management process, with its comprehensive functionality and performance assessment. The particularly strict regulations of the national rules guarantee the highest possible degree of safety – especially when it comes to the reliability of your plant.

General Type Test Approvals

- ↗ EUROPEAN PED
- ↗ NATIONAL TYPE TEST (TÜV)
- ↗ EC-TYPE TEST
- ↗ TYPE TEST
- ↗ TR ZU 032/2013 (RU)

Applications: Potable water and building technology

- ↗ TYPE APPROVAL (DE)
- ↗ TYPE APPROVAL (FR)
- ↗ TYPE APPROVAL (EN)
- ↗ TYPE APPROVAL (NO)

Applications: Shipbuilding and railway

- ↗ TYPE APPROVAL
- ↗ TYPE APPROVAL
- ↗ TYPE APPROVAL
- ↗ TYPE APPROVAL
- ↗ TYPE APPROVAL
- ↗ DEUTSCHE BAHN

- ↗ ENVIRONMENTAL MANAGEMENT DIN EN ISO14001
- ↗ PRESSURE EQUIPMENT DIRECTIVE 2014/68/EU
- ↗ QUALITY MANAGEMENT DIN EN ISO 9001

Quickfinder based on certificate required

SAFETY VALVES

Series	Type Test Approvals					Potable water and buildings				Shipbuilding						Railway
		CE 1)			EAC 2)		ACS	WRAS	SINTEF	DNV	GL					
352	■	■	■		■					■	■	■	■	■	■	
352bHL	■	■	■		■					■	■	■	■	■	■	
410	■	■	■		■					■	■	■	■	■	■	
412	■	■	■	■	■					■	■	■	■	■	■	
413	■	■	■		■					■	■	■	■	■	■	
420	■	■	■		■					■	■		■		■	
451	■	■	■		■					■	■	■	■	■	■	
451bH	■	■	■		■					■	■	■	■	■	■	
451bHF	■	■	■		■					■	■	■	■	■	■	
452	■	■	■		■					■	■	■	■	■	■	
452bHL	■	■	■		■					■	■	■	■	■	■	
460	■	■	■		■					■	■		■		■	
461	■	■	■		■					■	■		■		■	
492	■	■	■		■					■	■				■	
651mWIK		■			■		■			■			■	■	■	
651mWNK	■	■			■		■			■			■	■	■	
651mHNK	■	■	■		■					■			■	■	■	
651mHIK		■	■		■					■			■	■	■	
651mSK	■	■	■		■					■			■	■	■	
652	■	■	■		■					■	■	■	■	■	■	
810	■	■	■		■					■	■	■	■	■	■	■
812	■	■	■	■	■					■	■	■	■	■	■	■
813	■	■	■		■					■	■	■	■	■	■	
851	■	■	■		■					■	■	■	■	■	■	
851bH	■	■	■		■					■	■	■	■	■	■	
851bHF	■	■	■		■					■	■	■	■	■	■	
852	■	■	■		■					■	■	■	■	■	■	
852bHL	■	■	■		■					■	■	■	■	■	■	
861	■	■	■		■					■	■		■	■	■	

PRESSURE RELIEF VALVES

Series	CE 1)	EAC 2)	3)		ABS		
418	■	■	■	■	■	■	■
601	■	■					
612	■	■	DNV·GL				
618	■	■	GL	■	■	■	■

OVERFLOW AND PRESSURE CONTROL VALVES

Series	CE 1)	EAC 2)	3)		ABS		
417	■	■	■		■	■	■
418	■	■	■	■	■	■	■
430	■	■	■		■	■	■
431	■	■	■		■	■	■
453	■	■	DNV·GL		■	■	■
617	■	■	GL ■	■	■	■	■
618	■	■	■	■	■	■	■
630	■	■	■		■	■	■
631	■	■	■		■	■	■
853	■	■	■		■	■	■

■ HYGIENIC VALVES

Series	TÜV SÜD	CE [1]		EAC [2]	DNV·GL DNV	DNV·GL GL			
Hygienic 400	■	■	■	■	■	■	■	■	■
Hygienic 400.5		■		■		■		■	■

■ SAFETY VALVES AND FITTINGS FOR CRYOGENIC APPLICATIONS.

Series	TÜV SÜD	CE [1]		EAC [2]
2400	■	■	■	■
2700		■		■

■ PRESSURE REDUCING VALVES

Series	CE [1]	EAC [2]	DIN DVGW	ACS	WRAS	SINTEF	DNV·GL GL [3]	Lloyd's Register	ABS		
481	■	■	■	■	■		■	■	■	■	■
482	■	■	■	■	■		■	■	■	■	■
681	■	■	■	■	■	■	■	■	■	■	■
682	■	■	■	■	■		■	■	■	■	■
683	■	■					■	■	■	■	■
484	■	■									
684	■	■					■				■

■ NOTE

1.) As of 19.07.2016 the PED 2014/68/EU comes into force.
This replaces the PED 97/23/EC. The exisiting certificates remain valid.

2.) As of 01.08.2015 for goods supplied to Russia or other states of the Eurasian Customs Union a certification according to EAC-TR or – according to product type and customs' tariff number – a TR Declaration is required. The old logo (GOST) has been replaced (EAC).

OLD: NEW:

3.) Due to the merger of DNV and GL a uniform logo will be used however the type test approvals remain separate.

OLD: OLD: NEW:

Quickfinder Valve

■ TÜV/CE ANGLE-TYPE SAFETY VALVES FOR INDUSTRIAL APPLICATIONS

Series	Materials	Connection type	Medium						Temperature in °C	Set pressure bar
			neutral			non-neutral				
			liquid	air/gases	steam	liquid	air/gases	steam	–100 –50 0 50 100 150 200 250 300 350 400	0 0,5 1 5 10 15 20 30 50 70
451			■		■	■		■		
851			■		■	■		■		
460			■		■	■		■		
652			■		■					
420			■		■	■		■		
461			■		■	■		■		
861			■		■	■		■		
452			■		■	■		■		
852			■		■	■		■		
352			■		■	■		■		

■ TÜV/CE ATMOSPHERIC DISCHARGE SAFETY VALVES FOR INDUSTRIAL APPLICATIONS

Series	Materials	Connection type	Medium						Temperature in °C	Set pressure bar
			neutral			non-neutral				
			liquid	air/gases	steam	liquid	air/gases	steam	–100 –50 0 50 100 150 200 250 300 350 400	0 0,5 1 5 10 15 20 30 50 70
410				■						
810				■						
412				■						
812				■						
413				■						
813				■						

■ TÜV/CE ATMOSPHERIC DISCHARGE SAFETY VALVES FOR INDUSTRIAL APPLICATIONS **WITH HIGH PRESSURE RATINGS**

Series	Materials	Connection type	Medium						Temperature in °C	Set pressure bar
			neutral			non-neutral				
			liquid	air/gases	steam	liquid	air/gases	steam	–100 –50 0 50 100 150 200 250 300 350 400	0 50 100 150 200 300 400 500 600 700
492				■			■			

■ PRESSURE RELIEF VALVES

Series	Materials	Connection type	Medium						Temperature in °C	Set pressure bar
			neutral			non-neutral				
			liquid	air/gases	steam	liquid	air/gases	steam	–100 –50 0 50 100 150 200 250 300 350 400	0 0,5 1 5 10 15 20 30 50 70
418			■		■	■		■		
618			■		■	■		■		
601			■		■					
612			■		■					

OVERFLOW AND PRESSURE CONTROL VALVES

Series	Materials	Connection type	Medium						Temperature in °C	Set pressure bar
			neutral			non-neutral				
			liquid	air/gases	steam	liquid	air/gases	steam	–200 –100 –50 0 50 100 150 200 250 300 350 400	0 0,5 1 5 10 15 20 30 50 70
417			■	■	■	■	■	■		
418			■	■	■	■	■	■		
617			■	■	■	■	■	■		
618			■	■	■	■	■	■		
453			■	■	■	■	■	■		
853			■	■	■	■	■	■		
608			■	■	■	■	■	■		
430			■	■		■	■			
431			■	■		■	■			
630			■	■		■	■			
631			■	■		■	■			

SAFETY FITTINGS FOR HYGIENIC APPLICATIONS

Series	Materials	Connection type	Medium						Temperature in °C	Set pressure bar
			neutral			non-neutral				
			liquid	air/gases	steam	liquid	air/gases	steam	–200 –100 –50 0 50 100 150 200 250 300 350 400	0 0,5 1 5 10 15 20 30 50 70
400		Special connections	■	■	■	■	■	■		
400.5		Special connections	■	■	■	■	■	■		

SAFETY VALVES AND FITTINGS FOR CRYOGENIC APPLICATIONS

Series	Materials	Connection type	Medium						Temperature in °C	Set pressure bar
			neutral			non-neutral				
			liquid	air/gases	warm water	liquid	air/gases	warm water	–200 –100 –50 0 50 100 150 200 250 300 350 400	0 0,5 1 5 10 15 20 30 50 70
2400			■	■		■	■			
2700			■	■		■	■			

PRESSURE REDUCING VALVES

Series	Materials	Connection type	Medium						Temperature in °C	Set pressure bar
			neutral			non-neutral				
			liquid	air/gases	warm water	liquid	air/gases	warm water	–200 –100 –50 0 50 100 150 200 250 300 350 400	0 0,5 1 5 10 15 20 30 50 70
481			■	■	■	■	■	■		Inlet pressure / Outlet pressure
681			■	■	■	■	■	■		Inlet pressure / Outlet pressure
482			■	■	■	■	■	■		Inlet pressure / Outlet pressure
682			■	■	■	■	■	■		Inlet pressure / Outlet pressure
683				■						Inlet pressure / Outlet pressure
484			■	■		■	■			Inlet pressure / Outlet pressure
684			■	■		■	■			Inlet pressure / Outlet pressure

■ TÜV/CE SAFETY VALVES FOR HEATING AND COOLING

Series	Materials	Connection type	Medium: neutral solar	neutral hot water	neutral steam	neutral liquid	non-neutral solar	non-neutral hot water	non-neutral steam	non-neutral liquid	Temperature in °C	Set pressure bar
											–100 –50 0 50 100 150 200 250 300 350 400	0 0,5 1 5 10 15 20 30 50 70
651mHNK				■				■				II
651mHIK				■				■				III
451bH				■				■				
851bH				■				■				
452bHL				■				■				
852bHL				■				■				
352bHL				■				■				
451bHF				■		■		■		■		
851bHF				■		■		■		■		
652mFK						■				■		

■ TÜV/CE SAFETY VALVES FOR SOLAR PLANTS AND DISTRICT HEATING

Series	Materials	Connection type	Medium: neutral solar	neutral hot water	neutral steam	neutral air/gases	non-neutral solar	non-neutral hot water	non-neutral steam	non-neutral air/gases	Temperature in °C	Set pressure bar
											–100 –50 0 50 100 150 200 250 300 350 400	0 0,5 1 5 10 15 20 30 50 70
651mSK			■				■					
451bG			■		■	■	■		■	■		
851bG			■		■	■	■		■	■		
452bGL			■		■	■	■		■	■		
852bGL			■		■	■	■		■	■		
451bH				■				■				
851bH				■				■				

■ SAFETY FITTINGS FOR WATER SUPPLY IN THE BUILDING TECHNOLOGY SECTOR

Series	Materials	Connection type	Medium: neutral solar	neutral hot water	neutral steam	neutral warm water	non-neutral solar	non-neutral hot water	non-neutral steam	non-neutral warm water	Temperature in °C	Set pressure bar
											–100 –50 0 50 100 150 200 250 300 350 400	0 0,5 1 5 10 15 20 30 50 70
651mWNK						■				■		
651mWIK						■				■		
669						■				■		

Checklist for enquiries
Safety/Pressure relief and Overflow valves

a.) Which **type of plant** should be protected by the safety valves?

_____

_____

b.) Required **function:**

☐ Safety valves *(protection of the plant/the vessel/the system according to Pressure Equipment Directive)*

☐ Pressure-relief-valves *(pressure relief, with a spring range or set and sealed at a fixed pressure)*

☐ Overflow-valves *(bypass valve/pump protection/pressure limitation)*

c.) Which **medium** is involved?

☐ compressible (air, gas, steam) ○ neutral ○ non-neutral (flammable, toxic, ...)

☐ non-compressible (liquids) ○ neutral ○ non-neutral (flammable, toxic, ...)

Description/ type of medium (e.g. water, heating oil, fuels, nitrogen,...): _____

d.) What is the **temperature** of the medium? min. _____ °C to max. _____ °C

e.) What is the **required material** of the product?

☐ Stainless steel ☐ Brass

☐ Gunmetal ☐ Spheroidal graphite cast iron

f.) What range of **adjustment / set pressure** is required?

☐ Set pressure safety valve: _____bar overpressure

☐ Range of adjustment/set pressure
Overflow-/pressure relief valve: _____ to _____ bar overpressure

Remark: Type tested safety valves are set and sealed at the factory. If changes are made to the product by the operator, the warranty shall not apply.

g.) What **blow-off capacity or flow volume** is required?

Steam: _____ kg/h Air: _____ Standard m³/h

Heat output: _____ kW Water: _____ m³/h

h.) Which **connection size** is required?
(the required blow-off capacity defines the connection size necessary)

Thread: ☐ DN 8 (¼") ☐ DN10 (⅜") ☐ DN15 (½") ☐ DN 20 (¾") ☐ DN 25 (1") ☐ DN 32 (1¼") ☐ DN 40 (1½") ☐ DN 50 (2")

Flange: ☐ DN 40 ☐ DN 50 ☐ DN 65 ☐ DN 80

i.) What **connection type** is required?

☐ Female thread BSPP ☐ Male thread BSPP

☐ Flange DIN ☐ Special connection

☐ Description: _____

j.) Required **approvals**:

- ☐ None
- ☐ TÜV and CE
- ☐ Others
- ☐ Which? _____

see page 55 "Quickfinder based on certificate required"

k.) Special **approval certificates** according to DIN EN 10204:

For the valve setting:

- ☐ Factory Test Report 2.2
- ☐ Factory Inspection Certificate 3.1
- ☐ TÜV Inspection Certificate 3.2

For the material of the pressure-bearing body parts:

- ☐ Inspection certificate 3.1

l.) Other **documentation** required: _____

_____

_____

m.) **Other** important information concerning installation situation and plant:

1.) Maximum **required operating pressure** in the plant or in the process: _____

2.) What causes **excessive pressure in the plant**?

- ☐ Expansion of the medium due to heating
- ☐ Defective pressure switch or non switching-off of the compressor or pump
- ☐ Closed valve due to operating error

3.) What **plant-specific characteristics** have to be considered?

- ☐ Plant-specific standards and regulations
- ☐ Hygienic standards (food- and pharmaceutical applications)
- ☐ Explosion protection (Ex, ATEX)
- ☐ Environmental conditions (cold, heat, radiant heat,...)
- ☐ Vibrations
- ☐ Back pressure

4.) **Specific features of the installation situation** (supply pipe, discharge pipe):

Description or photo

_____

_____

_____

n.) Sender:

Name: _____ Company: _____

E-Mail: _____

Copy me /fax me →+49 (0)7141.488 94 88

Checklist for enquiries
Pressure reducing valves

a.) Which **function** should be achieved with the valve?

- ☐ Reduction of a higher or varying inlet pressure to a lower outlet pressure (= resting pressure at zero-usage)
- ☐ Reduction of higher or varying inlet pressure to a lower flow pressure (= prevailing flow pressure at usage)

b.) **Type of application**:

- ☐ Building technology (potable water supply)
- ☐ Compressed air supply
- ☐ Pump stations and Pressure booster plants
- ☐ Fire fighting- and sprinkler systems
- ☐ Shipbuilding
  - ○ Water supply ○ General air supply ○ Starter- or control air
- ☐ Others: _____

c.) Which **medium** is involved?

- ☐ compressible (air, gas, steam) ○ neutral ○ non-neutral (flammable, toxic, ...)
- ☐ non-compressible (liquids) ○ neutral ○ non-neutral (flammable, toxic, ...)

Description/ type of medium (e.g. seawater, heating oil, fuel, nitrogen...): _____

d.) What is the **temperature** of the medium? min. _____ °C to max. _____ °C

e.) What is the **required material** of the product?

- ☐ Gunmetal / Brass ☐ Stainless steel

f.) **Pressures**:

- ☐ Inlet pressure: _____ bar (gauge)
- ☐ Outlet pressure: Pressure range _____ bar to _____ bar (gauge)

g.) The **outlet pressure** required as:

- ☐ Resting pressure (no flow; draw-off point closed)
- ☐ Flow pressure (flow; draw-off point open)

h.) **Fixed setting** and **sealing** of the outlet pressure is required: _____ bar (gauge) at zero-usage

i.) Required **flow volume**:

- ☐ Water _____ m³/h
- ☐ Air _____ Standard m³/h

j.) **Max. permissible pressure drop of the outlet pressure** at the required flow volume (pressure difference between resting pressure and flow pressure):

Delta-p _____ bar (gauge) at zero-usage

k.) Required **kv value**: _____

l.) Which **connection size** is required?
(the required blow-off capacity defines the connection size necessary)

Thread: ☐ DN 8 (¼") ☐ DN10 (⅜") ☐ DN15 (½") ☐ DN 20 (¾") ☐ DN 25 (1") ☐ DN 32 (1¼") ☐ DN 40 (1½") ☐ DN 50 (2")

Flange: ☐ DN 15 ☐ DN 20 ☐ DN 25 ☐ DN 32 ☐ DN 40 ☐ DN 50 ☐ DN 65 ☐ DN 80 ☐ DN 100

m.) What **connection type** is required?

☐ Female thread BSPP
☐ Flange DIN
☐ Union joints with male BSPT threaded connection
☐ Special connection
Description: _____

n.) Required **approvals**:

☐ None
☐ Others
☐ DVGW
☐ Which? _____
see page 55 "Quickfinder based on certificate required"

o.) Special **approval certificates** according to DIN EN 10204:

For the valve setting:

☐ Factory Test Report 2.2
☐ Factory Inspection Certificate 3.1

For the material of the pressure-bearing body parts:

☐ Inspection certificate 3.1

p.) Other **documentation** required: _____

_____

_____

q.) Important information concerning installation situation and plant:

1.) Specific features of the installation situation: Description or photo

2.) What **plant-specific characteristics** have to be considered?

☐ Plant-specific standards and regulations
☐ Hygienic standards (food- and pharmaceutical applications)
☐ Explosion protection (Ex, ATEX)
☐ Environmental conditions (cold, heat, radiant heat,...)
☐ Vibrations, pressure surges, etc.
☐ Heating up of the medium within a confined space on the outlet side

r.) Sender:

Name: _____ Company: _____

E-Mail: _____

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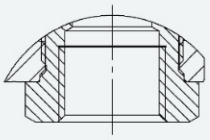
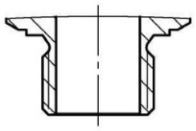
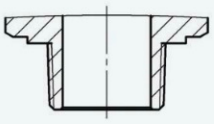
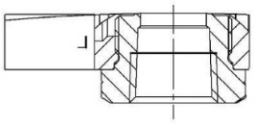
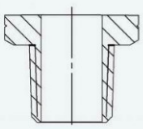
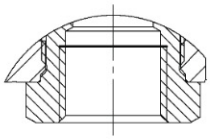
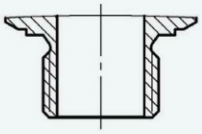
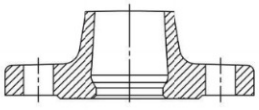
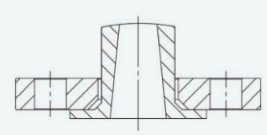
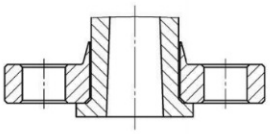
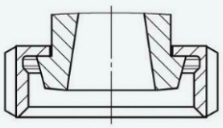
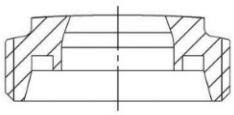
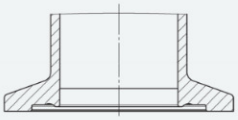
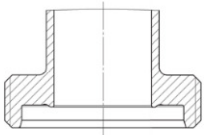
Connection possibilities

OVERVIEW OF THE GOETZE CONNECTIONS

Connection type	Drawing	Description
f		Whitworth threaded cylindrical pipe connection – female – seal not made on thread BSP-P according to DIN ISO 228
m		Whitworth threaded cylindrical pipe connection – male – seal not made on thread BSP-P according to DIN ISO 228
BSP-Tm		Whitworth threaded tapered pipe connection – female – seal made on thread female connection BSP-T according to DIN EN 10226
NPTf		US standard tapered pipe thread NPT threaded pipe connection NPT – female – according to ANSI / ASME B 1.20.1 seal made on thread
NPTm		US standard tapered pipe thread NPT threaded pipe connection NPT – male – according to ANSI / ASME B 1.20.1 seal made on thread
METf		Metric ISO female connection according to DIN 13 seal not made on thread
METm		Metric ISO male connection according to DIN 13 seal not made on thread
FL		cast flange connection according to DIN EN 1092-1

Connection type	Drawing	Description
FLDIN		loose flange connection according to DIN EN 1092-1 up to max. PN 40
FLANSI		loose flange connection according to ASME B 16.5 up to max. 600 lbs
KSDIN		taper nipple (diary coupling screw joint) according to DIN 11887 valves for food, chemical and pharmaceutical industry standard threaded connections
GSDIN		threaded ferule connection – male – (diary coupling screw joint) according to DIN 11887 valves for food, chemical and pharmaceutical industry standard threaded connections
KLSDIN		clamp connection according to DIN 32676 valves for food, chemical and pharmaceutical industry
KLSISO		clamp connection according to ISO 2852 valves for food, chemical and pharmaceutical industry
A-KLSDIN		aseptic clamp ferrule connection DIN 11864-3 valves made of stainless steel for aseptic, chemical and pharmaceutical industry
A-GSDIN		aspetic threaded ferule connection – male – form A DIN 11864-1 aseptic threaded pipe connection for the food, chemical and pharmaceutical industry

Definitions

SAFETY VALVES

Safety valve
A safety valve is a valve that automatically enables a quantity of medium to discharge without the assistance of any other energy than the medium itself, thus providing protection against a predetermined excessive pressure, and is designed in such a way that it closes again to prevent the further discharge of the medium once normal operating pressure conditions are restored.

Direct-loaded safety valve
Safety valve in which the load resulting from the medium pressure under the valve disk is only counteracted by a direct mechanical load, such as a weight, a lever with weight or a spring, for example.

Standard safety valve
A standard safety valve is a fitting which, af ter the response (beginning of lift), attains the lift required to release the mass flow within a pressure increase of max. 10 %. There are no further requirements put to the opening characteristics.

Full-lift safety valve
A full-lift safety valve is a fitting which, after the response (beginning of lift), abruptly opens to the lift stopper within a pressure increase of 5 %. The portion of the lift up to the abrupt opening (proportional range) is not to be more than 20 % of the entire lift.

Proportional safety valve
A proportional safety valve is a fitting which opens almost continuously as a function of the increase in pressure. In this respect, there is no abrupt opening without an increase in pressure over a range of more than 10 % of the lift. After the response (beginning of lift) these safety valves reach the lift required for discharging the mass flow within a maximum pressure increase of 10 %.

Diaphragm safety valve
A diaphragm safety valve is a direct-loaded safety valve in which the sliding and rotary parts as well as springs are protected against the impact of the medium by a diaphragm.

Bellows safety valve
A bellows safety valve is a direct-loaded safety valve in which sliding parts (partially or completely) as well as springs are protected against the impact of the medium by bellows. The bellows can be designed in such a way that backpressure influences are compensated to a large extent.

MISCELLANEOUS VALVES

Pressure reducer
A pressure reducer (or pressure reducing valve) is a fitting for installation in a pipe system, which makes sure that a defined outlet pressure is not exceeded at the outlet side in spite of different pressures at the inlet side (inlet pressure).

Overflow/control valve
An overflow/control valve is a valve with proportional control characteristics for pressure maintenance, pressure control and for protecting pumps or plant systems against excessive pressures.

LIFTING DEVICE

Twist-type lifting mechanism
By twisting the knurled nut anticlockwise the valve spindle and the connected valve disc get lifted from the valve seat. The valve can be tested for correct functioning and operability.

Lifting lever
The valve gets tested by opening the valve. The valve cone gets lifted from the valve seat by pulling the lifting lever.

SEALS

Nitrile Butadiene Rubber (NBR)
Sealing material with good technological properties and a wide range of applications.

Good non-swelling properties in aliphatic hydrocarbons like propane or butan.

Ethylene-Propylene-Diene-Monomere Rubber (EPDM + EPDM Spezial) Elastomere seals made of EPDM and peroxied cross-linked EPDM have a very good resistance against ozone, aging and wheatering. Good non-swelling properties in hot water and steam, suds and acids and chemical bases.

Fluorcarbon-polymere (FPM)
Elastomere made of FKM are highly resistant at high temperatures, have chemical stability and low permeability to gas.

Good non-swelling properties for mineral oils, greases, fuels and aromatic hydrocarbons.

Perfluorelastomeres (FFPM)
Perfluorelastomeres have the advantage of excellent chemical resitance and a large temperature range. FFKM-seals offer the highest chemical resistance of all elastomeres.

Polytetrafluorethylene (PTFE)
Non-elastic, physiologically harmless Polymere with excellent properties. Thermic application, an extremely high chemical resistanceand a repellent, non-adhesive surface.

Polytetrafluorethylen Compound (PTFE Cpd)
PTFE and TFM-PTFE can be adapted to the various applications by the help of filling materials like glass, carbon and graphite. By adding carbon, the compressive strength can be increased.

PRESSURE

Working pressure/ operating pressure
The working pressure / operating pressure is the prevailing overpressure in the protected system under normal operating conditions, e.g. the required overpressure for carrying out a process step.

Response pressure
The response pressure is the set pressure at which a safety valve starts to open under operating conditions.

Set pressure
The set pressure is the overpressure at which a safety valve starts to audibly open under test bench conditions (atmospheric back-pressure).

Opening pressure/ blow-off pressure
The opening pressure / blow-off pressure is the overpressure at which the safety valve reaches the lift required for discharging the mass flow; it equals the response pressure plus the opening pressure difference.

Closing pressure
The closing pressure is the static pressure on the inlet side at which the valve disk comes into contact with the seat again or at zero lift.

■ GENERAL NOTES

Information relating to the placing of an order
When ordering a safety fitting please make sure to include the following details:
- Article number
- Size of connection
- Set pressure
- Flow medium
- Temperature of medium
- Required blow-off capacity

Please also note our general terms of sale in our catalogue and on our website.

■ ATEX – EXPLOSIONS PREVENTION

European Directive 2014/34/EU for "Equipment- and Protective Systems intended for use in potentially explosive atmospheres": The directive is to be applied to products which are to be used in a potentially explosive area or in connection with a potentially explosive area.

A potentially explosive area or potentially explosive atmosphere is a combination of

I) a flammable media in the form of gasses, vapours, haze or dusts

II) and air

III) under atmospheric conditions,

IV) in which after ignition has taken place, the combustion process is transferred to the whole of the unburned mixture.

Goetze valves are in principle suitable for use in Exzones and for this purpose have been subjected to a conformity valuation process according to Directive 94/9/EC. Within the scope of these examinations an analysis of the danger as a potential source of ignition according to EN 13463-1 was carried out with the following results:

- The valves do not have a potential source of ignition and therefore do not fall in the scope of application of ATEX.
- Provided that the individual operating conditions in the Ex-zone are taken into account, the valves may be used in specific applications.

A report and certificate from the TÜV SÜD about the special examination of our valves according to European test specifications exists.

According to the zone the equipment is to be used in, then they must be fitted with corresponding protective mechanisms.

For each category and zone within equipment group II, specially suitable safety valves, overflow valves and pressure reducing valves from our product range are available. Please contact our technical sales for applications in potentially explosive areas.

■ MARKING OF APPROVED SAFETY VALVES

All of our approved safety valves which have been tested by the TÜV Inspection Authority and in accordance with the European Pressure Equipment Directive are marked on the bonnet or on an affixed type plate with the full TÜV approval number and the CE mark including the identification number of the notified body.

TÜV SV xx-xxx xx D xx x

or D/G
or H
or D/G/H
or W
or F
or F/K/S
or SOL

TÜV symbol

Safety valve

Year of the component test

Component test number

With code letters
D, D/G, D/G/H and F, F/K/S
smallest diameter d_0
in front of the valve seat in mm
with code letter H: no information
with code letterW: connection size in mm

Code letters:

G	suitable for gasses
D	suitable for steam
H	suitable for heating systems according to DIN 4751 and DIN EN 12828
D/G/H	suitable for heating systems according to DIN 4751 and DIN EN 12828
W	suitable for water heating systems according to DIN 4753
F	suitable for liquids
F/K/S	suitable for stationary pressure vessels for granular or powdery materials and for vehicle containers for liquid, granular or powdery materials
SOL	designed for the blowing-off of water and water mixtures from closed, intrinsically safe solar heating systems

coefficient of discharge α_w (K_{dr})

or discharge mass flow rate

or with code letter H and SOL: kW
with code letter W: kW (for valve sizes > DN 25)

Set pressure p in bar

CE Mark with notified body: CE 0036

Product key

■ THIS IS HOW YOU WILL FIND THE VALVE DESCRIPTION YOU ARE USED TO

The implementation of the new Goetze type description means that you can easily understand the article codes as they include all relevant specifications. For example you are able to identify immediately the inlet and outlet connection sizes of the valve, the valve version and for what kind of medium the valve is suitable.

For further questions or queries please call us on
+49 (0) 71 41.4 88 94 60

Wherever valves made by Goetze KG are in use, the highest degree of safety is of paramount importance.

We have the solution which meets your requirements:
Take us at our word.

How to order the correct valve:

This is what the valve looks like for this example:

851	= TÜV/CE Safety valve made of gunmetal
tb	= gastight version with bellows
GF	= for gaseous and liquid media
L	= with lifting lever
25	= DN 25
m/f	= male thread BSP-P, Female thread BSP-P
25/40	= inlet DN 25, outlet DN 40
PTFE	= polytetrafluoroethylene seal

Example

851 tbGFL – 25 – m/f – 25/40 PTFE

- 851 – Series
- tb – Version
- GF – Medium
- L – Type of lifting mechanism
- 25 – Nominal valve size
- m/f – Type of inlet/ type of outlet
- 25/40 – Size of inlet/ size of outlet
- PTFE – Seal

Ordering information

CERTIFICATES

Valves with TÜV test certificate have been approved according to the European Pressure Equipment Directive and carry the CE mark and number of the notified body.

CE 0036

PLEASE NOTE

All descriptions and technical details given in this catalogue have been checked thoroughly and correspond to the technical features of the products at the time of print. However, they are not binding for us.

Subject to product changes resulting from technical development.

Offers and deliveries according to our general terms of business only.

CERTIFICATION

Since January 2002 our company has been ISO 9001 approved and certified according to the European Pressure Equipment Directive. Successful Environmental Management certification according to ISO 14001 since 2011.

ADDITIONAL DELIVERY OPTIONS ARE AVAILABLE AGAINST SURCHARGE

REPORTS AND CERTIFICATES

- Factory certificate acc. EN 10204 2.2 (WKZ 2.2)
- Test certificate acc. EN 10204 3.1 (WPZ 3.1)
- Material certificate (MPZ 3.1)
- TÜV individual inspection acc. EN 10204 3.2 (TÜV-APZ) 1 to 10 valves
- TÜV individual inspection acc. EN 10204 3.2 (TÜV-APZ) 11 to 20 valves
- Sealing material - Manufacturer certification (FDA, USP 3, 3-A,...)
- EAC – certificate/declaration with passport for the valve and laser marking of the valve
- ASME laser marking (if applicable/available)
- ATEX certificate

SHIPBUILDING – TYPE APPROVALS

- DNV, BV, LR, ABS, GL, RS (if applicable / available) Including laser marking of each valve
- Individual inspection

MISCELLANEOUS

- 24h-express production
- Special thread und special connections
- Special thread/ connections for gunmetal/brass (except clamp- and loose flange connections)
- Individual marking (laser marking)
- Setting and/or sealing of pressure reducing valves
- Oil- and grease-free
- Chemically nickel plated
- Galvanically nickel plated
- Chrome-plated

Online order form
for urgent requests

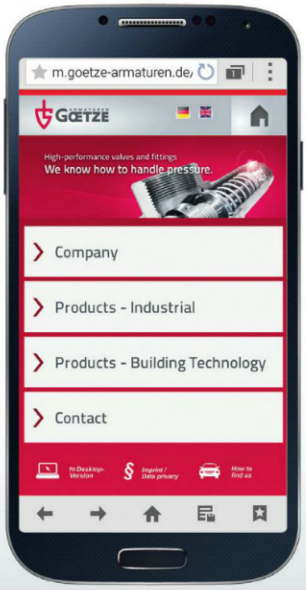
ONLINE SOON

Do you need a product at short notice?
We deliver quickly from our immediately available stock.
For urgent, small-quantity requests.

Benefit from many advantages of our online order form:

- Fast and uncomplicated
- For urgent requests
- Immediate delivery from our warehouse

Upon receiving your request we will send you a non-binding offer as quickly as possible.



Mobile Website

As of late our website is also available in a smartphone-friendly version. Just as you are accustomed to, you will find the products you need quickly and easily – also while you are on the go.

Curious? Why not just have a look...

Notes

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