HIGH-PERFORMANCE VALVES AND FITTINGS

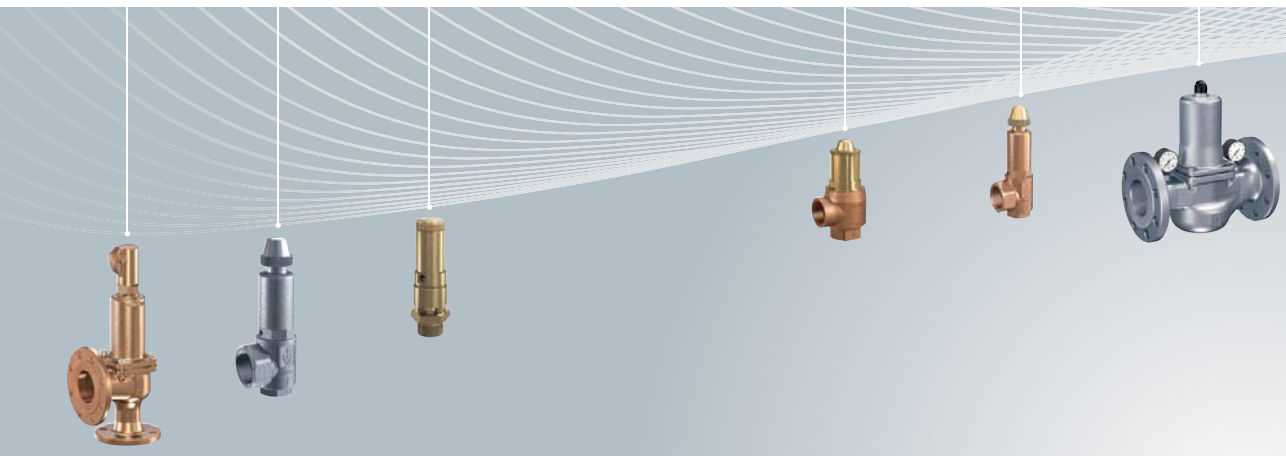
We know how to handle pressure

STAINLESS STEEL
GUNMETAL
BRASS
SPHEROIDAL GRAPHITE CAST IRON

VALVES AND FITTINGS
FOR **INDUSTRIAL APPLICATIONS**

STAINLESS STEEL
GUNMETAL
SPHEROIDAL GRAPHITE CAST IRON

VALVES AND FITTINGS
FOR **BUILDING TECHNOLOGY APPLICATIONS**



ARMATUREN GOETZE

1

Individuality for more safety

The competence of Goetze KG Armaturen has been in demand for more than 60 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: All types of liquids, gases, vapours and steam up to 400°C. Wherever Goetze KG Armaturen fittings are in use, the greatest possible safety is a priority. One thing is certain: we will find the right solution for your needs, take us at our word!

↗ **GOETZE KG** We have been designing and manufacturing safety valves for a highly diversified range of applications for over 60 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.

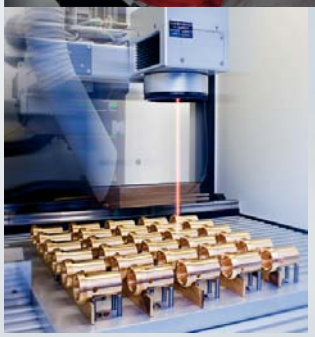
↗ **ADVICE** Our experience and technical know-how make us a competent advisor and technical solution partner. Whether at our premises or at your plant.

↗ **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.

↗ **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".

↗ QUALITY Each individual valve is checked from the incoming goods test through to our factory-own ISO certified quality control department right down to the final inspection test.

↗ 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.

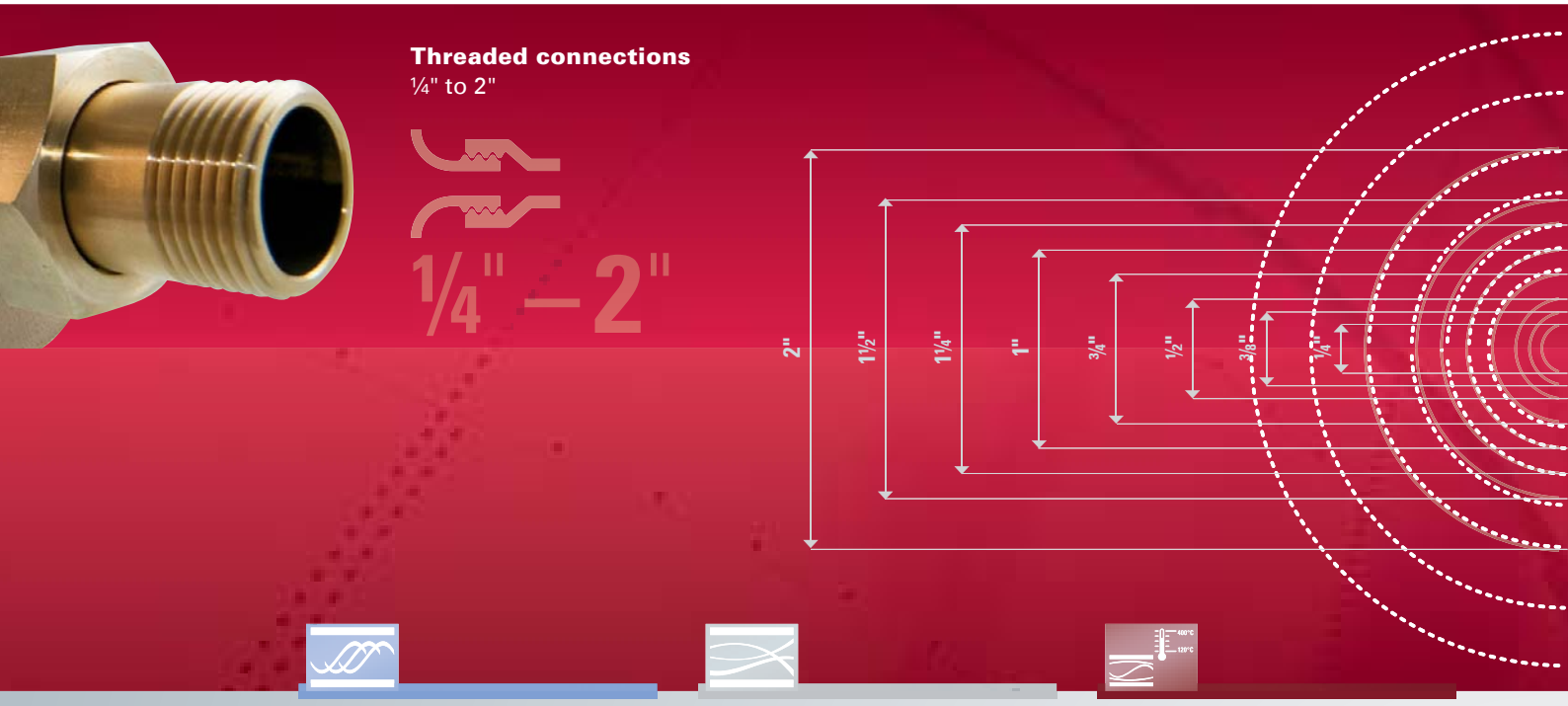


↗ TESTING You can rely on this: Every single valve is tested in our factory. This is not only a random spot check: Each valve is subjected to an ISO-certifed quality control test, before it is allowed to leave the factory.

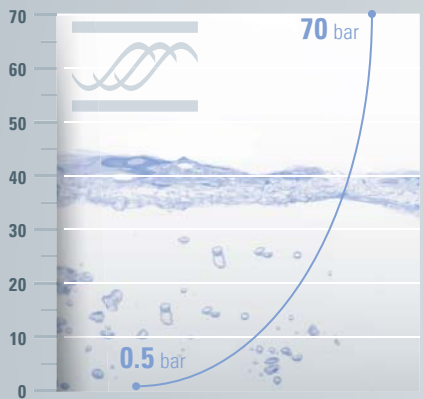
↗ LASER MARKING In order to fit all the necessary information onto the valve, we use precision laser marking technology. This means that we are also able to take individual customized marking requirements of customers into consideration.

2
Technical Basics industrial and commercial

Heat. High pressure. Aggressive fluids, gases and vapours. 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

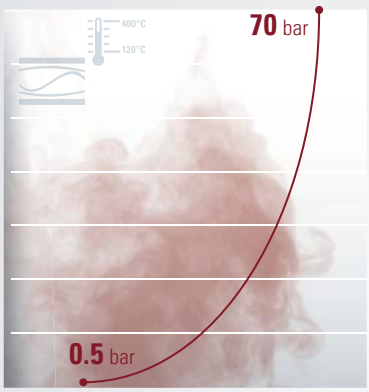


- Pump protection
- Pressure boosters (water-side)
- Sprinkler systems
- Cooling circuits

Air, gases and vapours

- Compressors
- Pressure vessels
- Pressure boosters (air-side)
- Silo container
- Bulk transport vehicles

Steam > 120–400 °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.

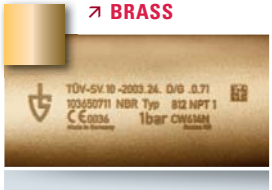
↗ STAINLESS STEEL

- ↗ 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

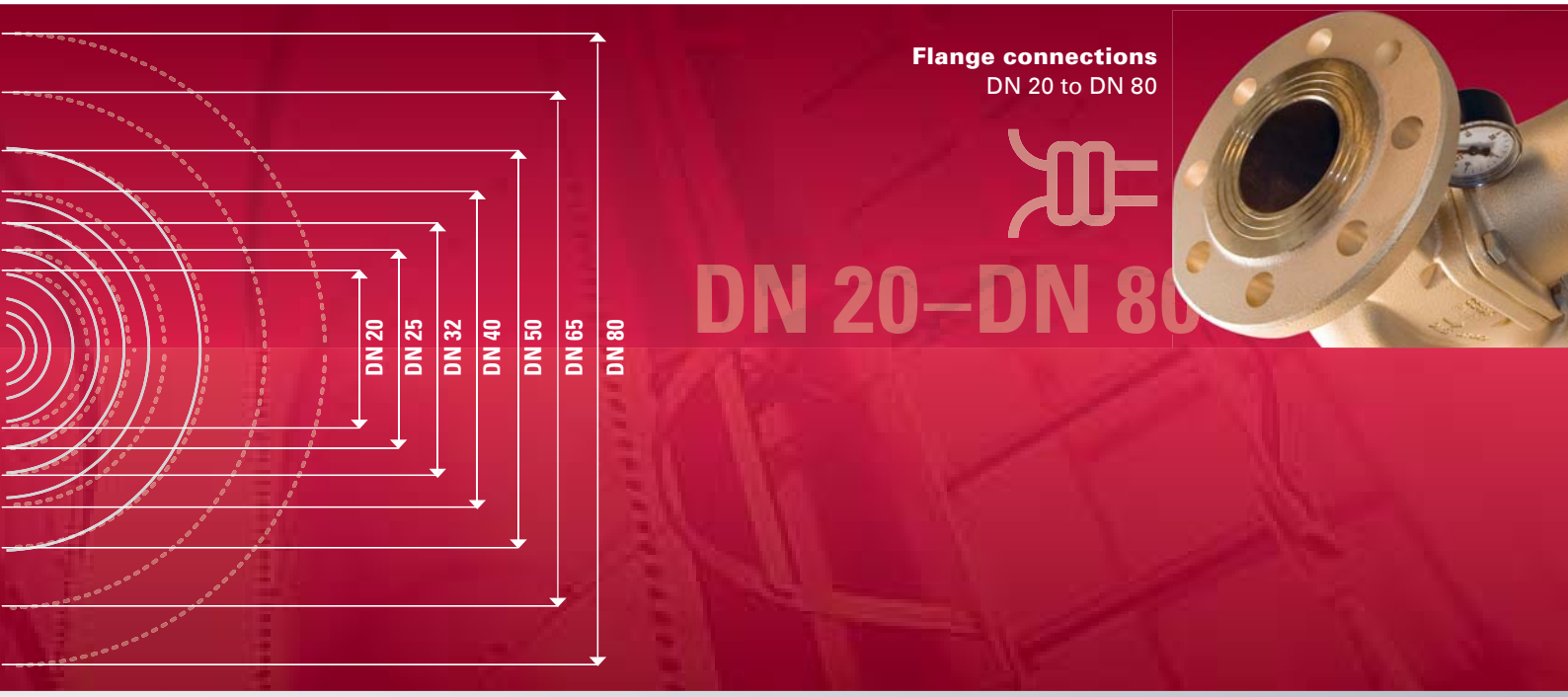
↗ BRASS



- ↗ 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.


TÜV-SV07-665Z3.0 · D/G/H · 0,56
h=6,1 10% A=415mm²
p= 6 bar
EPDM
100871212
Typ 851H4
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

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, Germanischer Lloyd, GOST, SINTEF, ACS. 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

↗ GOST-R, RTN (RUSSIA)

Applications: Potable water and building technology

↗ TYPE APPROVAL (DE)

↗ TYPE APPROVAL (FR)

↗ TYPE APPROVAL (EN)

↗ TYPE APPROVAL NORWAY (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 97/23 / EC

↗ QUALITY MANAGEMENT DIN EN ISO 9001

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					■		

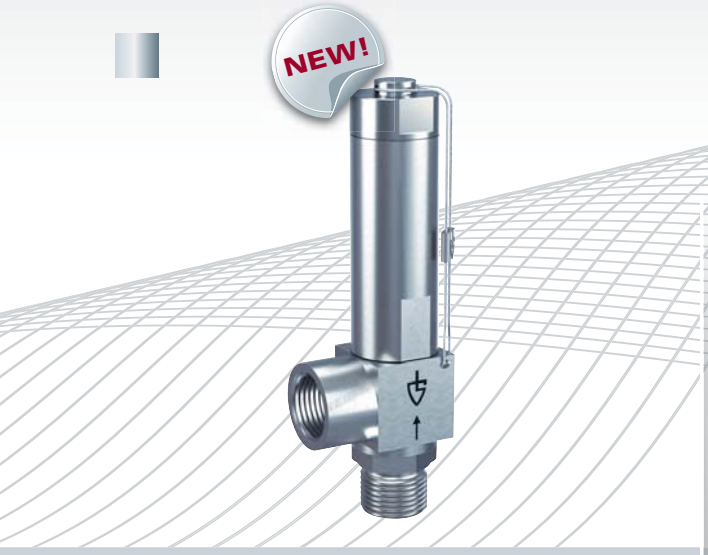
MEDIA:
- LIQUID
- GAS
- STEAM

Available in 2014

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 –60 °C to +400 °C

Pressures from 0.2 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								

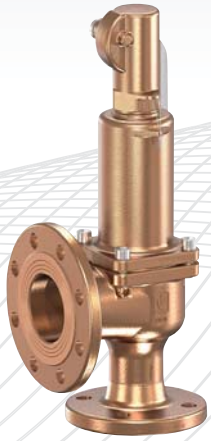
MEDIA:

- 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 50 bar

Media

Threaded connection
from G ¼" to G 2"

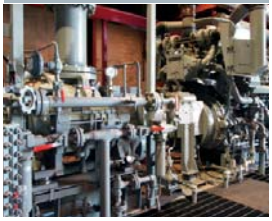
Through new innovations in our range of high performance safety valves for air, we are continually expanding our product range and setting new standards in the field of safety. These innovative new developments of atmospheric discharge safety valves are particularly suitable for the protection of compressors, 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 50 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

Neutral	■	■	■
Non-neutral			
Gastight			
Bellows			
Diaphragm			

MEDIA:

■ GAS

Our smallest and most compact atmospheric discharge safety valve made completely of stainless steel with a stainless steel spring. Due to the huge blow-off capacity compared to its size, this valve can be used to protect high-performance compressors.
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.

Threaded connections from G ¼" to G 1"	**Threaded connections** from G ¼" to G 1"	**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 +200°C
Pressures from 0.2 bar to 50 bar	**Pressures** from 0.2 bar to 50 bar	**Pressures** from 0.2 bar to 45 bar

High performance safety valves Series 812

made of brass, atmospheric discharge, with threaded connection

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 ½" to G 2"

Temperatures
from –60°C to +225°C

Pressures
from 0.2 bar to 45 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


bar
4408
DS11
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:

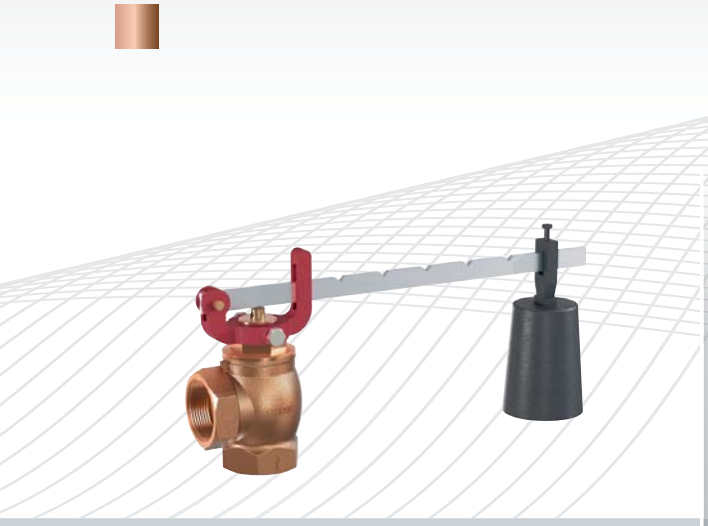
- LIQUID
- GAS
- STEAM

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.

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.

418	
Threaded connections	from G ⅜" to G 1¼"
Temperatures	from –60°C to +225°C
Pressures	from 0.2 bar to 30 bar

618	
Threaded connections	from G ⅜" to G 2"
Temperatures	from –60°C to +225°C
Pressures	from 0.2 bar to 20 bar



Pressure relief valves Series 601

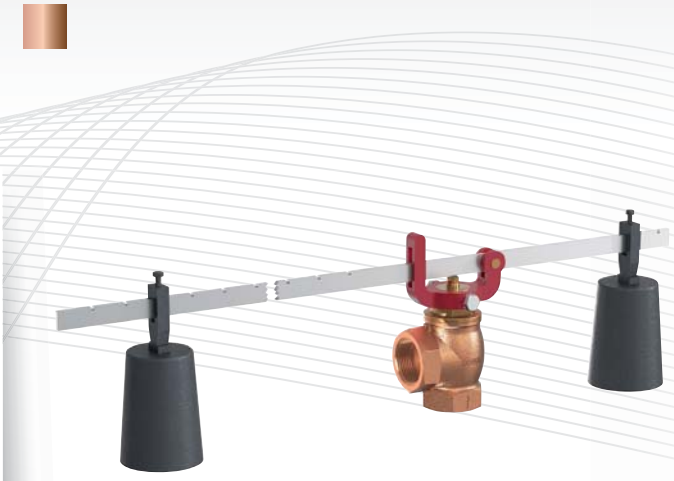
made of gunmetal, with lever and weight, angle-type with threaded connections

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

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
– external adjustment –

Overflow and pressure control valves Series 617

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

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

MEDIA:

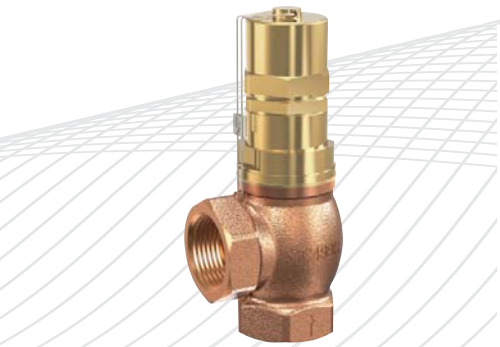
- LIQUID
- GAS
- STEAM

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 0.5 bar to 20 bar	**Pressures** from 0.2 bar to 30 bar	**Pressures** from 0.5 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.

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"

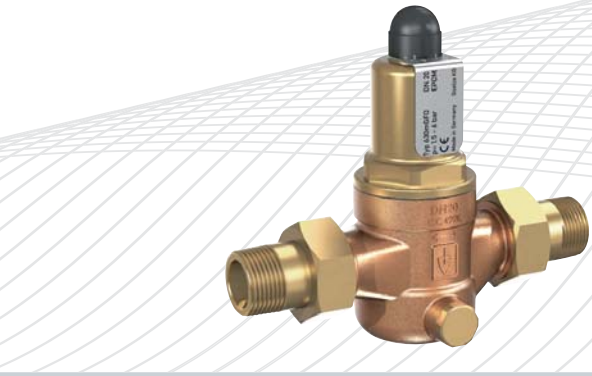
Temperatures
from –10 °C to +95 °C

Pressures
from 0.5 bar to 10 bar

Flange connections
from DN 20 to DN 80

Temperatures
from –10 °C to +95 °C

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.

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.

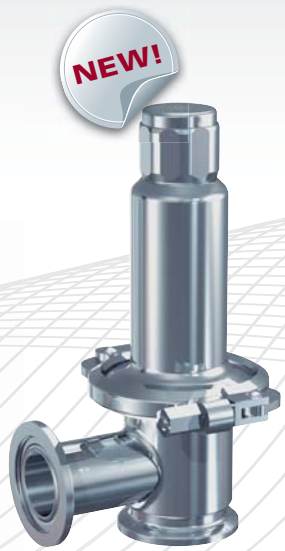
Industries which rely on Goetze valves

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

↗ PHARMACEUTICAL

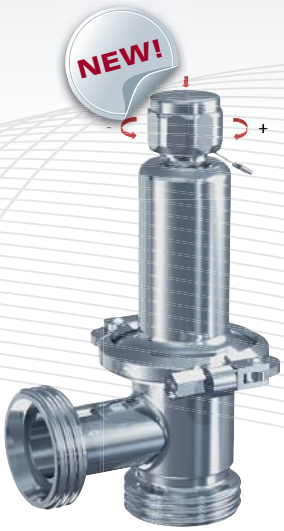
↗ BREWERY

↗ 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


DN25/PN40
DN32/PN40

3.6 Pressure reducing valves

Materials

Temperatures
from –10 °C to +95 °C

Pressures
Primary pressure up to 50 bar, down-stream pressure adjustable

Media

Threaded connection
from G ⅜" to G 2"

Flange connection
from DN 20 to DN 80

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 95°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

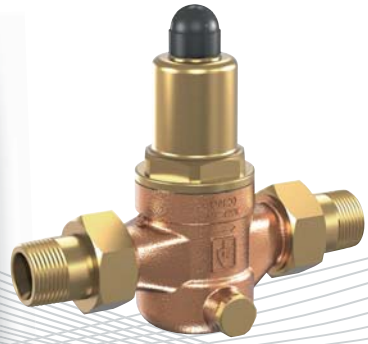
↗ HYDRAULIC CONTROL SYSTEMS

↗ SPRINKLER SYSTEMS

3.6 Pressure reducing valves

Pressure reducing valves Series 481

made of stainless steel,
with threaded connections



Pressure reducing valves Series 681

made of gunmetal,
with threaded connections

Pressure reducing valves Series 482

made of stainless steel,
with flange connections

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

MEDIA:

■ LIQUID
■ GAS

New applications can now be covered by Goetze's well-proven, robust pressure reducing valve with threaded connections now that they have extended their gunmetal series 681 to include a stainless steel version. The new 481 offers all the advantages of the 681 – while at the same time withstanding very critical and aggressive media and environments. Additional outlet pressure ranges of 0.5 to 2 bar and 5 to 15 bar make this valve suitable for an even wider range of applications.

Threaded connections
from G ½" to G 2"

Temperatures
from –10 °C to +95 °C

Inlet pressures up to 30 bar
Outlet pressures adjustable
from 0.5 bar to 15 bar

A particularly robust pressure reducing valve in all-metal design, which has proven itself not only in drinking water applications but also in harsh operating conditions in industrial applications or in cases of fluctuating environmental temperatures. This pressure reducing valve is also suitable for warm water applications. Stability and reliability: The set outlet pressure at zero-usage is held constant even in the case of greatly varying inlet pressures.

Threaded connections
from G ½" to G 2"

Temperatures
from –10 °C to +95 °C

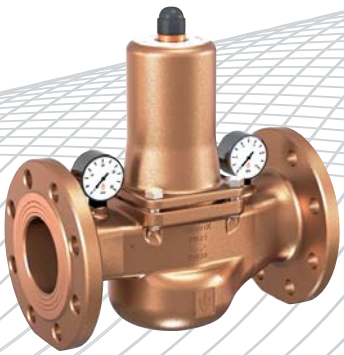
Inlet pressures up to 30 bar
Outlet pressures adjustable
from 0.5 bar to 15 bar

In addition to the standard version made of stainless steel, both high- and low-pressure reducing valves are available. As well as this, stainless steel pressure gauges are available as an optional extra. Also in the case of the flange pressure reducing valves, an extremely service-friendly replacement internal cartridge with integrated dirt-trap is available.

Flange connections
from DN 20 to DN 80

Temperatures
from –10 °C to +95 °C

Inlet pressures up to 30 bar
Outlet pressures adjustable
from 0.5 bar to 15 bar



Pressure reducing valves Series 682

made of gunmetal,
with flange connections

Often flange pressure reducing valves with smaller connection sizes are required. For this reason, this type is now not only available in sizes DN65 and DN80, but also in sizes DN20 to DN50, as well as in a high- and low-pressure version. The body is made completely of corrosion-proof and seawater-resistant gunmetal. All wetted parts are made either of gunmetal or corrosion-resistant stainless steel.
All technical features of the stainless steel version have also been consistently incorporated into this version.

Flange connections
from DN 20 to DN 80

Temperatures
from –10 °C to +95 °C

Inlet pressures up to 30 bar
Outlet pressures 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"

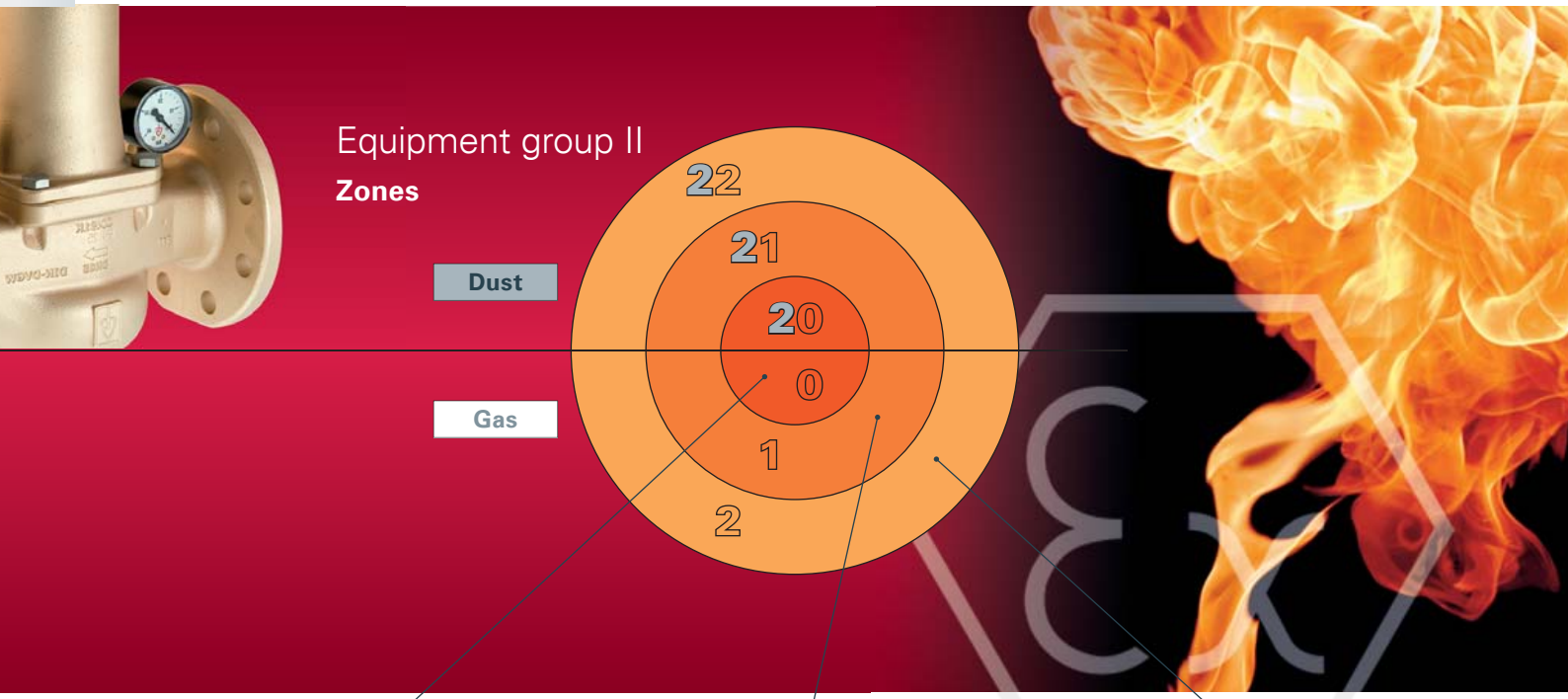
Temperatures
from –10 °C to +95 °C

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

4

Valves and ATEX!

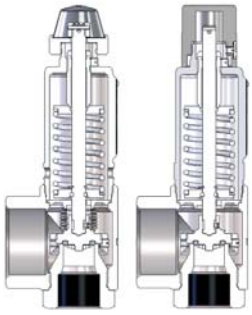
Goetze valves are fundamentally suitable for use in potentially explosive areas. Consequently they were subjected to a conformity assessment according to the ATEX Product Directive 9479/EC. As an indepedant, notified body, the TÜV Süd was commissioned with the assessment of our products.



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) 451tGO; tFO; tGFO 851tGO; tFO; tGFO 451bG(K,L); bF(K,L); bGF(K,L) 851bG(K,L); bF(K,L); bGF(K,L) 460tGF(O,L) 461tGFO 861tGFO 452tG(L); tF(L); tGF(L) 852tG(L); tF(L); tGF(L) 452bG(L); bF(L); bGF(L) 852bG(L); bF(L); bGF(L)	420tbGFO 451tbGO; tbFO; tbGFO 851tbGO; tbFO; tbGFO 452tbGO; tbFO; tbGFO 852tbGO; tbFO; tbGFO	420tGF(O,L) 420bGF(O,L) 451tGO; tFO; tGFO 851tGO; tFO; tGFO 451bG(K,L); bF(K,L); bGF(K,L) 851bG(K,L); bF(K,L); bGF(K,L) 460tGF(O,L) 461tGFO 861tGFO 452tG(L); tF(L); tGF(L) 852tG(L); tF(L); tGF(L) 452bG(L); bF(L); bGF(L) 852bG(L); bF(L); bGF(L)	851G(K,L), F(K,L), GF(K,L) 451G(K,L), F(K,L), GF(K,L) 452G(L); F(L) 852G(L); F(L) 652 861sGF(K,L) 461sGF(K,L) 810 / 410 812 / 412 813 / 413
Overflow and pressure control valves				
451tbGFU 851tbGFU 452tbGFU 852tbGFU	451tGFU; 851tGFU 452tGFU; 852tGFU 453bGFO; 853bGFO 452bGFU; 852bGFU 418tGFO 617tGFO; 618tGFO	451tbGFU 851tbGFU 452tbGFU 852tbGFU	451tGFU; 851tGFU 452tGFU; 852tGFU 453bGFO; 853bGFO 452bGFU; 852bGFU 418tGFO 617tGFO; 618tGFO	610 630 / 430 631 / 431
Pressure reducing valves				
	681 / 481 682 / 482		681 / 481 682 / 482	681 / 481 683 682 / 482

With Goetze you can rest assured.

Certified explosion protection.

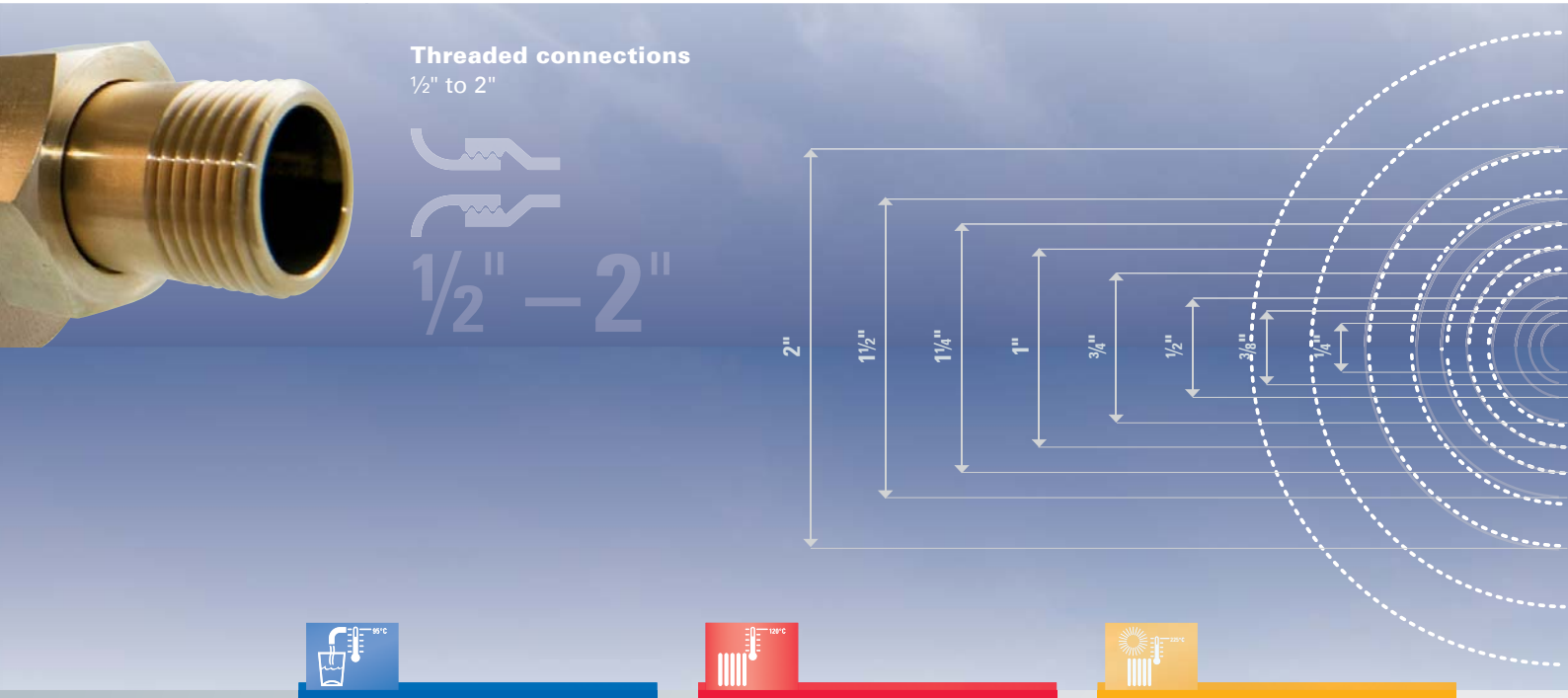
The safety of our customers is of paramount importance to Goetze. That's why Goetze offers more:

- 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

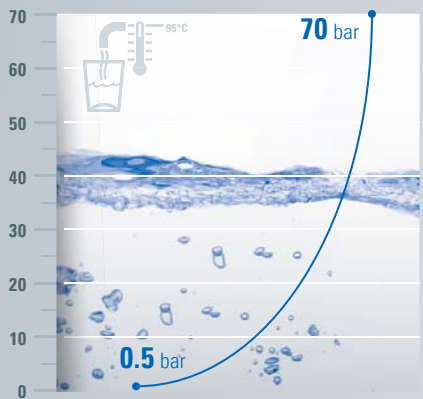
5

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

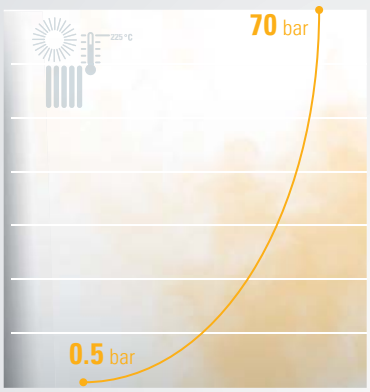


- Boiler protection
- Pressure booster plants (water side)
- Sprinkler systems
- Cooling circuits
- Water utilities

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

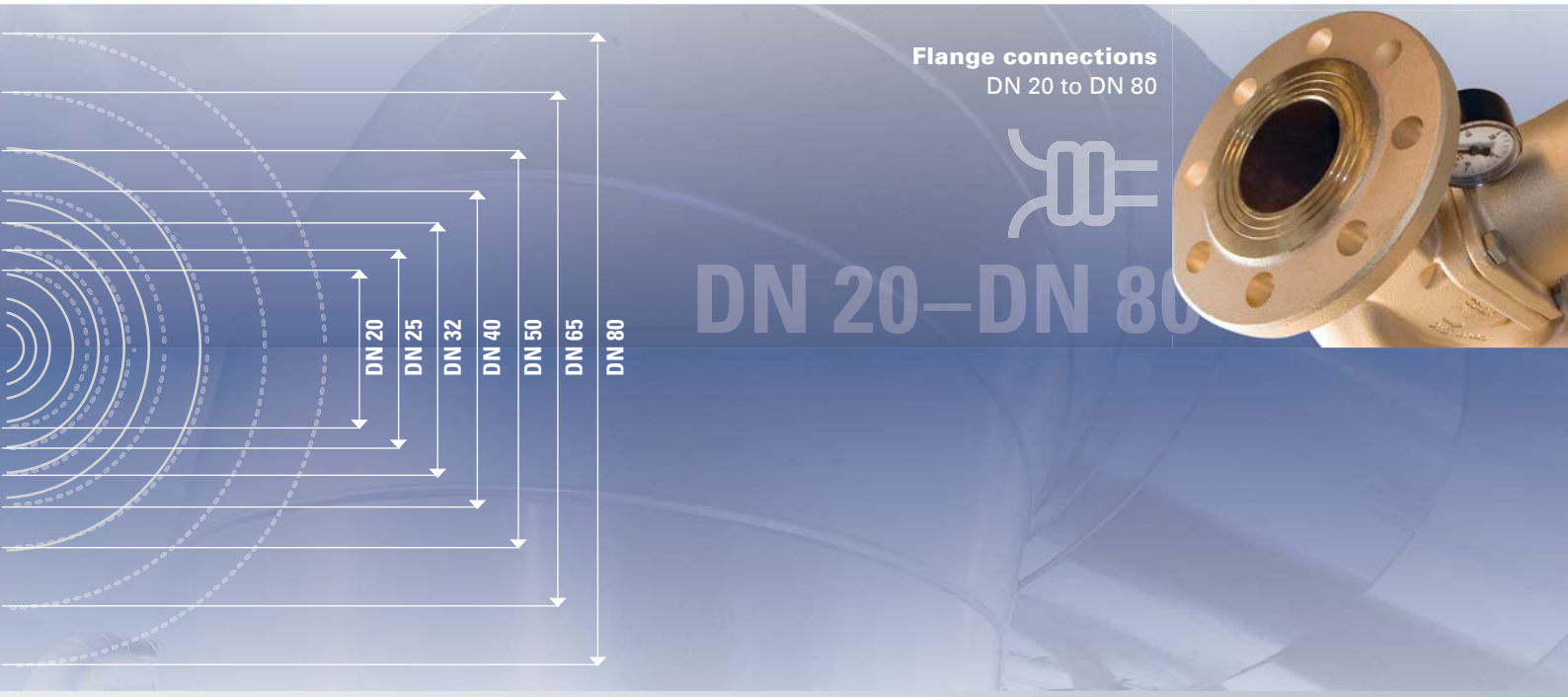
- ↗ highest quality material
- ↗ corrosion resistant

↗ 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
DN15

6.1 TÜV/CE safety valves for heating and cooling

Materials

Temperatures

from –50 °C to +120 °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

	651mH	451bH	851bH	352bHL
Neutral	■	■	■	■
Non-neutral	■	■	■	■
Gastight				
Bellows		■	■	■
Diaphragm	■			

MEDIA:

■ HOT WATER UP TO 120 °C

■ LIQUID

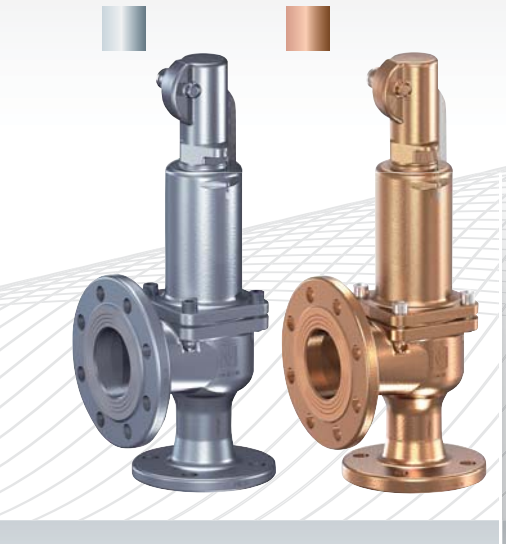
651mHNK with enlarged outlet (TÜV/CE)
651mHIK with inlet and outlet diameter equal
Robust safety valve with diaphragm with an all-metal construction. Designed to protect hot-water- and heating-systems.
This unmatched design, which does not have any plastic parts, means that these valves are also suitable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

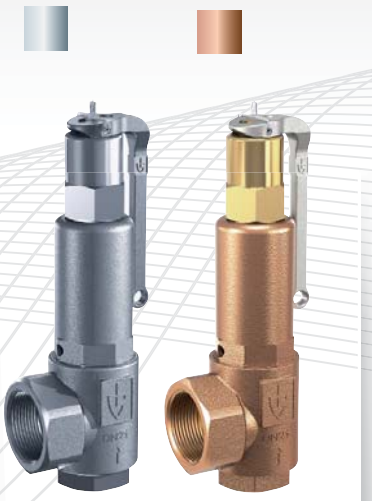
For demanding requirements in hot-water and heating-systems, there is also a version available made of high-quality corrosion- and acid-resistant stainless steel. This valve is suitable for all hot- water systems, where protection cannot be achieved by using a standard safety valve with diaphragm with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

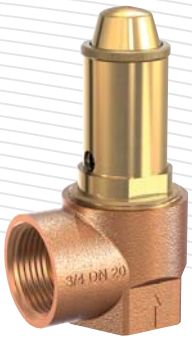
High performance safety valve with bellows, made of high quality, corrosion-resistant gunmetal. Heating systems with set pressures other than 2,5 or 3 bar are required to be protected by such safety valves. Apart from indirectly heated plants, the sizing of the valves is based on the heating output of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

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.

	651mH	451bH	851bH	352bHL
Threaded connections	from G ½" to G 2"	from G ½" to G 2"	from G ½" to G 2"	
Flange connections				in DN 40 and DN 50
Temperatures	from –10 °C to +120 °C	from –10 °C to +120 °C	from –10 °C to +120 °C	from –10 °C to +120 °C
Pressures	2.5 bar, 3 bar and 3,5 bar (for 651mHIK only)	from 0.5 bar to 25 bar	from 0.5 bar to 25 bar	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

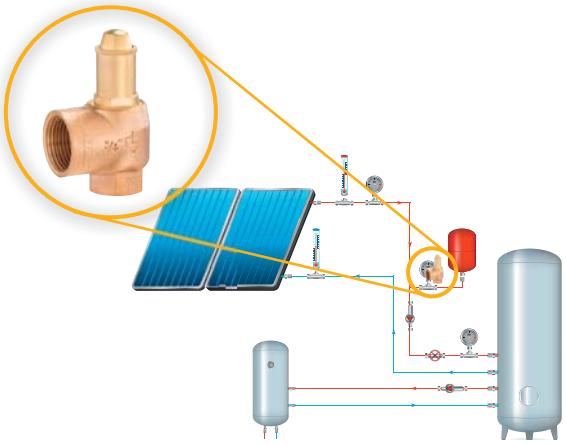
Media

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.

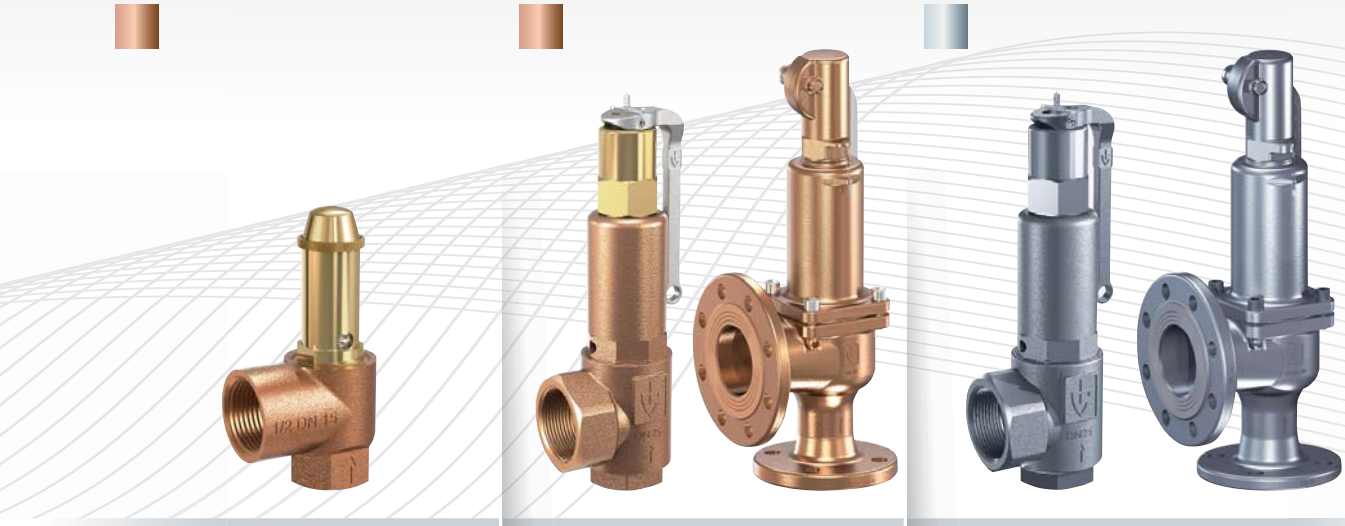


* **When do we speak of an intrinsically safe solar heating system?**
- expansion vessel takes up thermal volume expansion
- expansion vessel will absorb the volume change by forming steam
- there is no automatic refilling of the heat carrier (media)
- accordingly this is referred to as the typical small-scale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

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

Safety valves with bellows Series 851bG/852bGL

made of gunmetal, angle type with threaded or flange connections

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

Safety valves with bellows Series 451bG/452bGL

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

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

	651mSK	851bG/852bGL	451bG/452bGL
Neutral			
Non-neutral			
Gastight			
Bellows			
Diaphragm			

MEDIA:
- HOT WATER UP TO 120 °C
- 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
Inlet pressures up to 30 bar
Outlet pressures adjustable

Media

Threaded connection
from G ½" to G 2"

Flange connection
from DN 20 to DN 80

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**

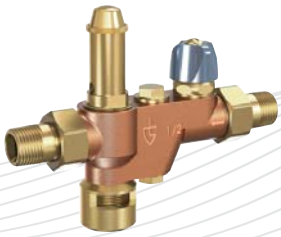
↗ **POTABLE WATER PURIFICATION**

↗ **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

	651mW	669
Neutral	■	■
Non-neutral		
Gastight		
Bellows		
Diaphragm	■	

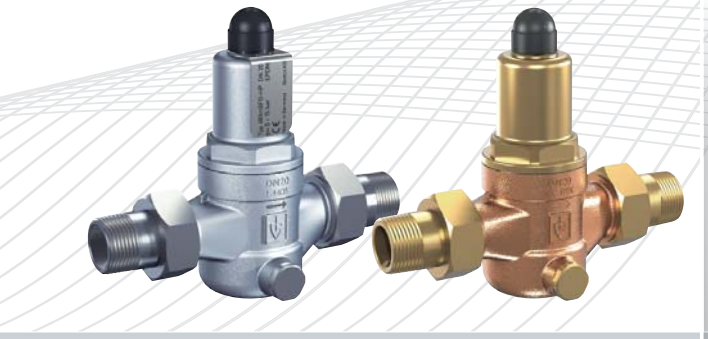
MEDIA:

■ 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.

651mW	669
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

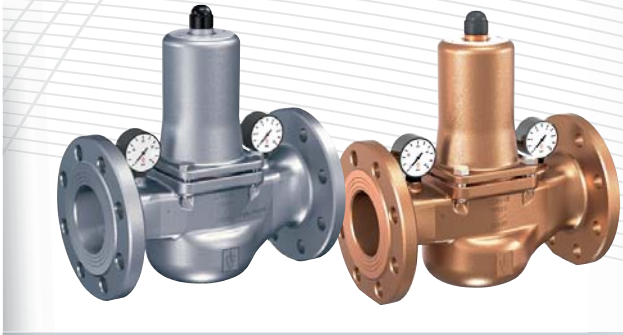
made of stainless steel and gunmetal with threaded connections

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.

Threaded connections
from G ½" to G 2"

Temperatures
from –10 °C to +95 °C

Inlet pressure up to 30 bar
Outlet pressure adjustable
from 0.5 bar to 15 bar



Pressure reducing valves Series 482 and 682

made of stainless steel and gunmetal with flange connections

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 20 to DN 80

Temperatures
from –10 °C to +95 °C

Inlet pressure up to 30 bar
Outlet pressure adjustable
from 0.5 bar to 15 bar

Checklist for Enquiries
Safety Valves

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

☐ Potable water heater ☐ Heating System ☐ Chiller plant
☐ Cooling circuit ☐ Pressure vessel ☐ Steam boiler
☐ Others: _____

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

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

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

c.) What is the **temperature** of the medium? _____ °C

d.) What is the required **set pressure**? _____ bar

e.) What **blow-off capacity** is required? Steam: _____ kg/h Air: _____ Standard m³/h
Heat output: _____ kW Water: _____ m³/h

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

Thread: ☐ DN 8 (¼") ☐ DN 10 (⅜") ☐ DN 15 (½") ☐ DN 20 (¾") ☐ DN 25 (1") ☐ DN 32 (1¼") ☐ DN 40 (1½") ☐ DN 50 (2")
Flange: ☐ DN 40 ☐ DN 50

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

☐ Female thread BSPP ☐ Male thread BSPP
☐ Flange DIN ☐ Special connection
☐ Description: _____

h) Required **approvals**:

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

i) 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

j) Other / remarks: _____

_____

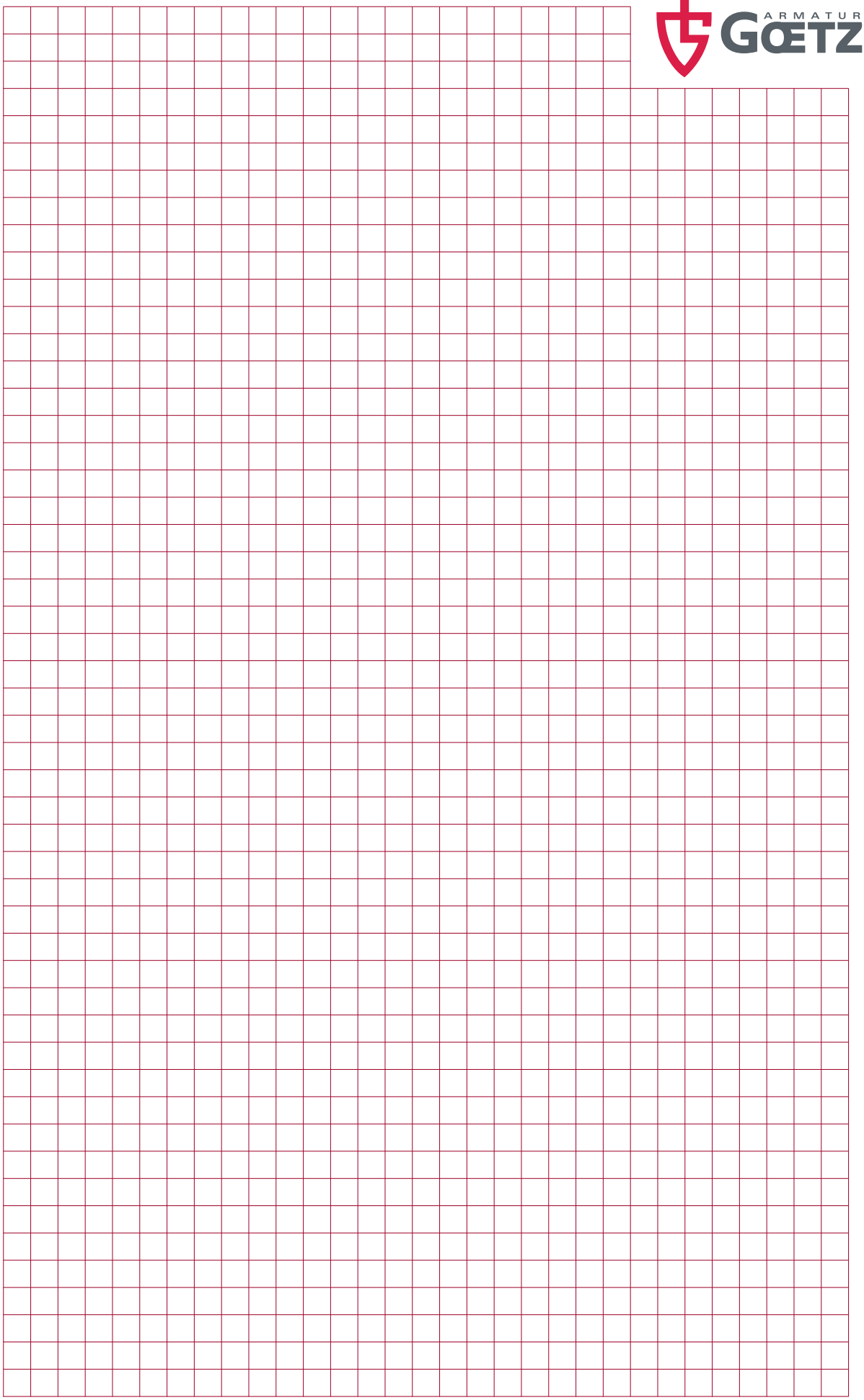
_____

k.) Sender:

Name: _____ Company: _____
E-Mail: _____

Copy me / fax me ➔ +49 (0) 71 41.4 88 94 88 / Online: www.goetze-armaturen.de/product-enquiry

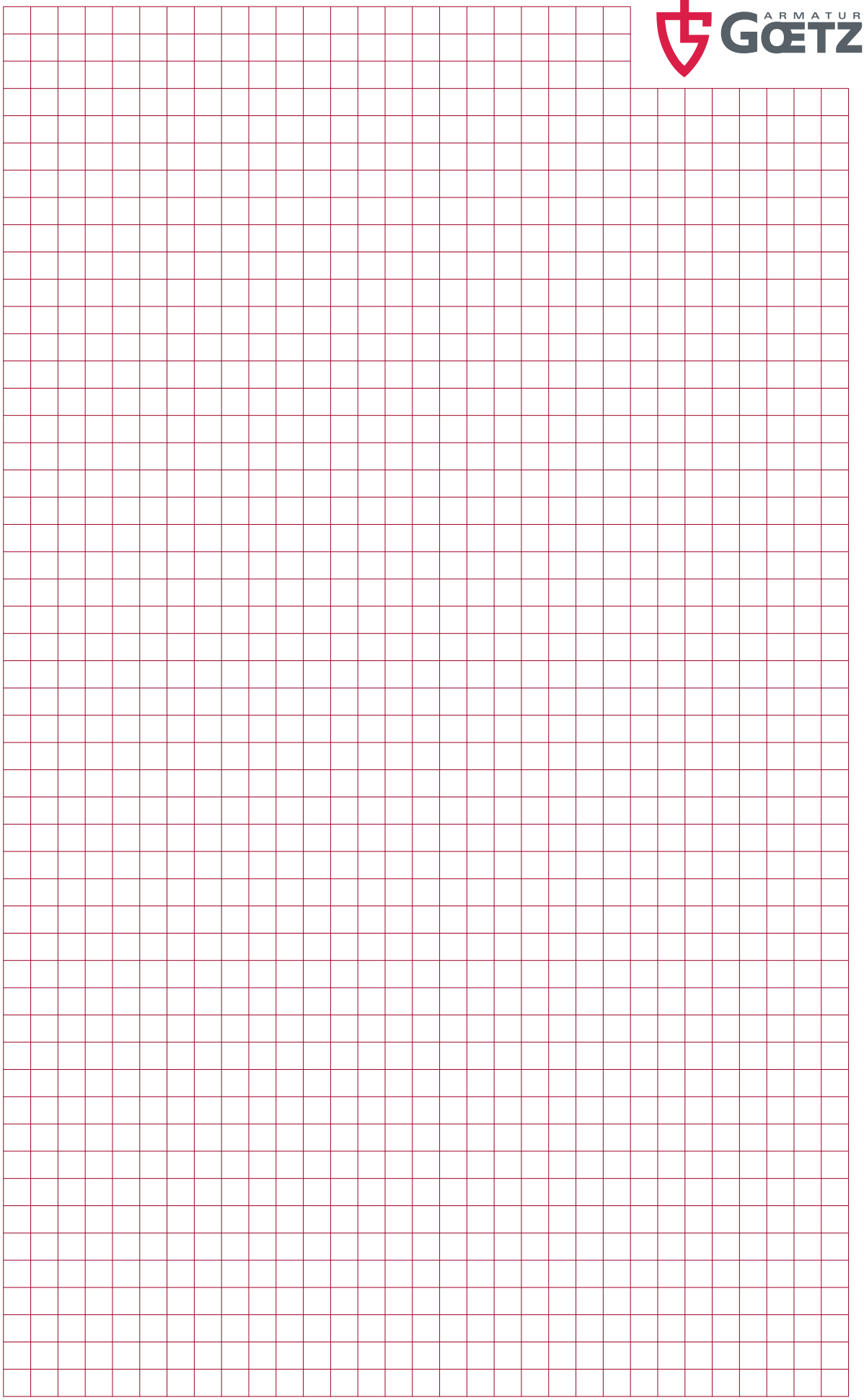
Memos



Memos

ARMATUREN GOETZE

Memos



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