

**WE ALSO  
THINK COLD!**



**PREMIUM QUALITY**

# CRYOGEN

'The new cryogenic valves from Goetze KG Armaturen are pioneering in their application and can be used in many industries.'

# IC VALVE

# TECHNOLOGY

MADE BY GOETZE

For over 65 years Goetze KG Armaturen has impressed with its 'Made in Germany' technical expertise. Safety in extreme situations has always been our strength. This expertise of our development teams has been built systematically into our new range of cryogenic valves. Gases at low temperatures

are used in many industries, ranging from food industry through medical technology to energy production.

Valves from Goetze are the right choice for all areas of application.



# GUARANTEE

Wherever our valves are used, maximum safety is of paramount importance. Our individual products are tested at every step in their development. The outstanding quality of the new cryogenic valves from Goetze has been confirmed by their approval for use with both gases and vapours, as well as liquids. For the first time a safety valve that is also ideally suitable for mixed phases is available in the low-temperature industrial sector. For all applications we use the most modern materials and high-alloy, corrosion-resistant stainless steels. This enables our products to function and perform optimally also under the most extreme conditions.

# SAFETY

# IN EXTREME SITUATIONS!

# OPTIMISE FUNCTION, GUARANTEE SAFETY!

## CRYOGENIC SAFETY VALVES SERIES 2400



Neutral  
Non-neutral



### Threaded connections

From G ¼" to G 1"



### Temperatures

From -200 °C to +200 °C



### Pressures

From 0.2 bar to 70.0 bar

### Approvals

TÜV-Type test approval 2091

D/G, F

EC type examination

S/G, L

TR ZU 032/2013 - TR ZU 010/2011

D/G (S/G), F (L)

### Requirements

AD 2000 Data sheet A2

DIN EN ISO 4126-1

PED 2014/68/EU

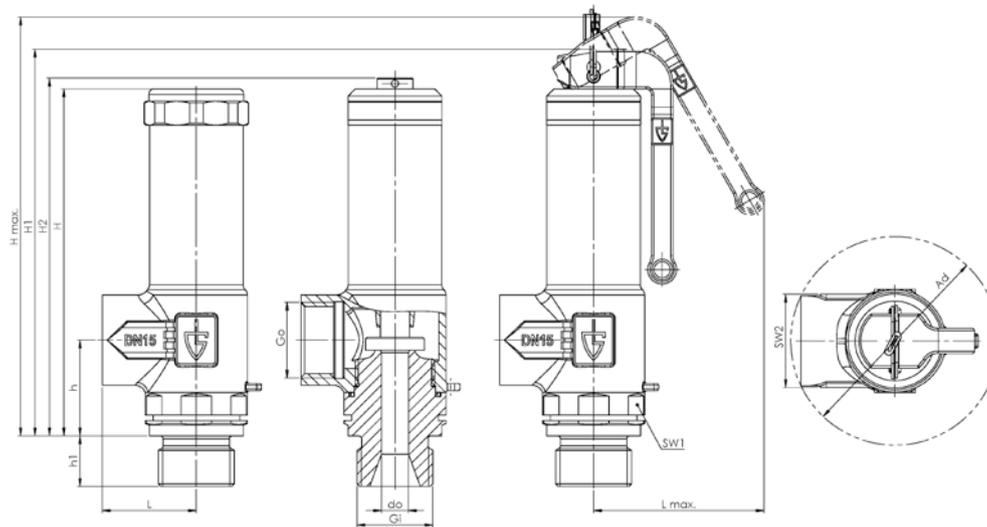
DIN EN 13648-1

MEDIA



LIQUID

GAS



## SAFETY VALVES WITH A VERSATILE RANGE OF APPLICATIONS

The safety valves of this series received full approval for vapours, gases and liquids. All valve components are specially cleaned during the manufacturing process and are therefore generally oil- and grease free in compliance with DIN EN 12300. As a result, every valve is suitable for use in oxygen systems and marked accordingly. The use of high-alloy stainless steels 1.4404 and 1.4408 ensure that the safety

valves are highly resistant in extremely cold temperature ranges. A FDA-compliant sealing material has been used for applications with gases that come into contact with food. The valve setting and seat inserts can be sealed separately, so an unauthorised adjustment is easily traceable. Over-pressure from 0.2 to 70.0 bar is safely discharged with a constantly high level of performance.



# DON'T PUT UP WITH PRESSURE LOSS!

## CRYOGENIC BALL DIVERTER VALVE SERIES 2700



Neutral  
Non-neutral



### Threaded connections

From G 3/4" to G 1 1/4"



### Temperatures

From -200 °C to +120 °C



### Pressures

PN 63

### Approvals

TR ZU 032/2013 - TR ZU 010/2011

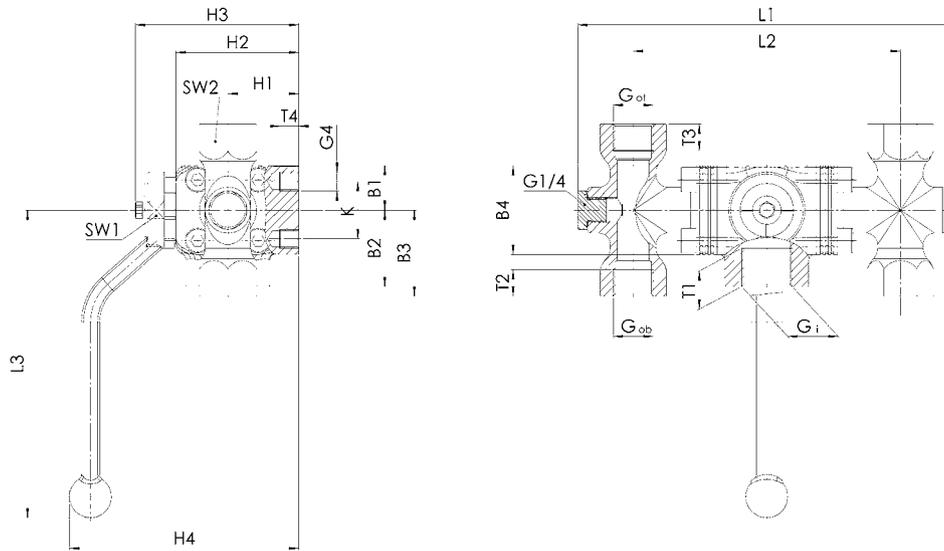
D/G (S/G), F (L)

### Requirements

AD 2000 Data sheet A2

PED 2014/68/EU

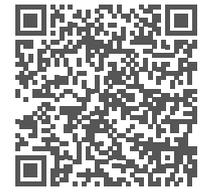




## BALL DIVERTER VALVE – THE PERFECT MAINTENANCE FITTING

The optimal design of the flow channels inside the ball diverter valve achieves particularly high flow rates, significantly reducing flow pressure losses at the safety valves whilst ensuring safe functioning. The use of high-alloy stainless steels 1.4404 and 1.4408 ensures high resistance to internal and external influences. A FDA-compliant sealing material has

been used for applications with gases that come into contact with food. Thanks to the oil- and grease free manufacturing process, the ball diverter valves are generally suitable for use in oxygen systems. With its ergonomically shaped handle and separate test connections, the ball diverter valve is optimally prepared for the maintenance of safety valves.



# APPLICATIONS

FOR SAFETY VALVES AND BALL DIVERTER VALVES



## ▶ TUNNEL COOLING SYSTEMS

The low storage temperature for liquid nitrogen, at down to  $-196\text{ }^{\circ}\text{C}$ , is used to freeze food-stuffs to around  $-70\text{ }^{\circ}\text{C}$  using precise temperature regulation. In addition, protective nitrogen atmospheres to prevent oxidation are used to increase the shelf-life of food products.

## ▶ GROUND FREEZING

In this method, liquid nitrogen is used to freeze the ground. The gas then escapes back into the atmosphere through the soil and through special evaporator pipes. Excavated pits or tunnel building sites can be made safe in a quick, uncomplicated and environmentally friendly manner.

## ▶ DRY ICE BLASTING

Blasting surfaces with dry ice ( $\text{CO}_2$ ) ensures thorough cleaning with no residue. The  $\text{CO}_2$  pellets used vaporize in the atmosphere, leaving behind a perfectly blasted surface.

## ▶ CRYO CONTAINER SYSTEMS

Cryogenic liquefied gases are stored in various containers ranging in size from 1.000 litres up to  $100\text{m}^3$  and under storage pressures of up to 70.0 bar, depending upon requirements and applications. Possible applications include medical oxygen supply systems or argon containers for welding gas supply in specialist welding companies.

## ▶ 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.

## ▶ 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.



[www.goetze-armaturen.com/cryovalves](http://www.goetze-armaturen.com/cryovalves)