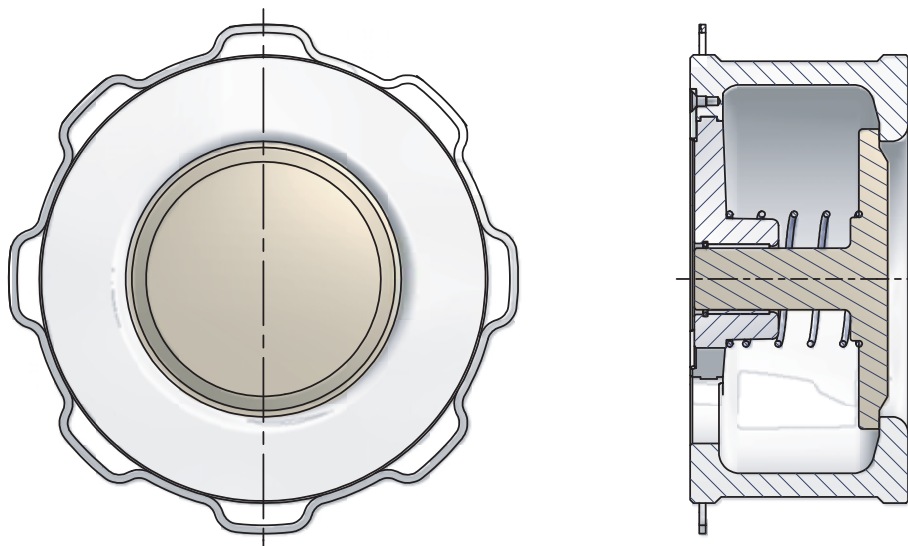


# Operating and installation instructions

## Disc check valves

### CHECKO<sup>®</sup>-D DN125-350



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## 1.0 General information on operating instructions

These operating instructions provide information on mounting and maintaining the fittings. Please contact the supplier or the manufacturer in case of problems which cannot be solved by reference to the operating instructions.

They are binding on the transport, storage, installation, start-up, operation, maintenance and repair.

The notes and warnings must be observed and adhered to.

- Handling and all work must be carried out by expert personnel or all activities must be supervised and checked.

It is the owner's responsibility to define areas of responsibility and competence and to monitor the personnel.

- In addition, current regional safety requirements must be applied and observed when taking the fittings out of service as well as when maintaining and repairing them.

The manufacturer reserves the right to introduce technical modifications at any time.

These Operating Instructions comply with the requirements of EU Directives.

## 2.0 Notes on possible dangers

### 2.1 Significance of symbols



Warning of general danger.

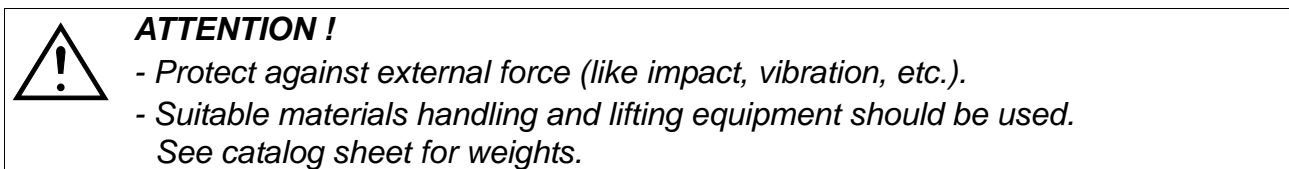
### 2.2 Explanatory notes on safety information

In these Operating and Installation Instructions dangers, risks and items of safety information are highlighted to attract special attention.

Information marked with the above symbol and "**ATTENTION!**" describe practices, a failure to comply with which can result in serious injury or danger of death for users or third parties or in material damage to the system or the environment. It is vital to comply with these practices and to monitor compliance.

All other information not specifically emphasised such as transport, installation, operating and maintenance instructions as well as technical data (in the operating instructions, product documentation and on the device itself) must also be complied with to the fullest extent in order to avoid faults which in turn can cause serious injury to persons or damage to property.

## 3.0 Storage and transport



- At -20°C to +65°C.

## 4.0 Description

### 4.1 Scope of applications

Valves are used for „preventing mediums from flowing back along pipe lines“.



#### **ATTENTION !**

- Refer to the data sheet for applications, limits on use and possibilities.
- Certain media require or preclude the use of special materials.
- The valves are designed for standard operating conditions. If conditions exceed these requirements, e.g. aggressive or abrasive media, the operator should state the higher requirements when ordering.
- The use in areas subject to explosion hazards is possible.

The information complies to the Pressure Equipment Directive 2014/68/EU.

It is the responsibility of the machine planner to ensure compliance.

The special markings on the valve must be taken into account.

Refer to the catalogue sheet to see which materials are used in standard versions.

Please contact the supplier or the manufacturer if you have any questions.

### 4.2 Operating principles

The flowing medium presses against the bottom of the plug (opening pressure: refer to the data sheet), thereby lifting it. The valve closes when the pressure drops below the opening pressure.

This prevents the medium above the plug resp. behind the valve plate from flowing back.



#### **ATTENTION !**

*When sizing the check valves please note, that a particular volume flow is necessary to bring the valve into a stable full-opened position (refer to data sheet).*

*If this full-opened position is not achieved, the valve is oversized and will result chattering noises. This means a higher abrasion and causes a valve malfunction.*

### 4.3 Diagram

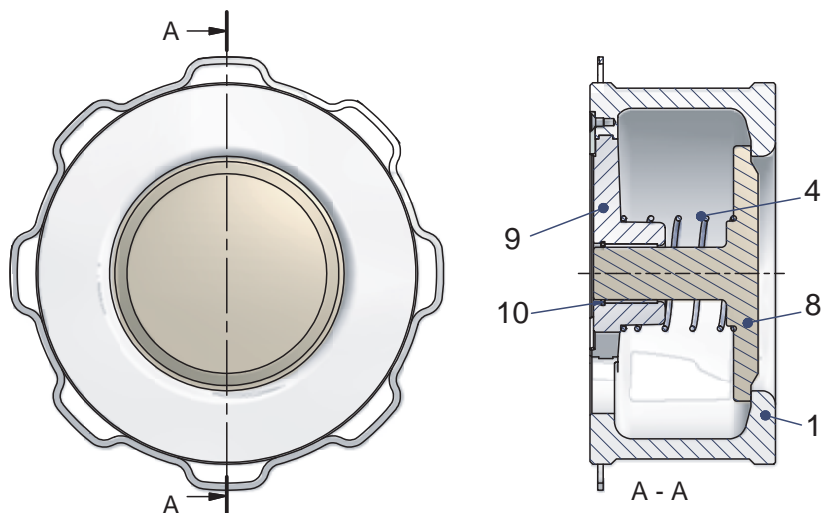


Fig. 1: CHECKO<sup>®</sup>-D - Disc check valve  
(1.4408)

Refer to the data sheet for information about materials with designations and figure numbers.

### 4.4 Technical data - remarks

for

- Principal dimensions
- Pressure-temperature-ratings
- Valves with butt weld ends, etc. refer to data sheet.

### 4.5 Marking

Details of the CE-marking on the valve:



CE-marking

1250

Notified body

Manufacturer

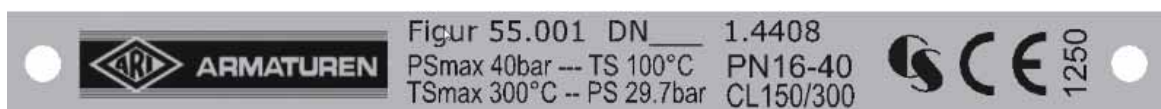
Address of manufacturer:

refer to item 11.0 Warranty / Guarantee

Figur

Type

CS1316265 Year of manufacture (example) (stamped on the body)



## 5.0 Installation

### 5.1 General notes on installation

The following points should be taken into account besides the general principles governing installation work:



#### **ATTENTION !**

- Remove flange covers if present.
- The interior of valve and pipeline must be free from foreign particles.
- Note installation position with reference to flow, see mark on valve. The pressure of the medium must press against the bottom of the plug.
- Steam line systems should be designed to prevent water accumulation.
- Lay pipelines so that damaging transverse, bending and torsional forces are avoided.
- Protect valves from dirt during construction work.
- Connection flanges must mate exactly.
- Suitable materials handling and lifting equipment should be used. See data sheet for weights.
- Centering between the flanges is achieved on the centering collar integrated in the body and by the flange connection screws or the loose enclosed centering ring (see product data sheet, table „Dimensions“)
- Centre gaskets between the flanges.
- Install compensators to compensate for thermal expansion of the piping.
- Critical applications, immediately downstream of pumps, compressors, etc., where severe turbulence and pulsating pressure surges may occur, may affect the valve's function.
- Inner parts with sharp edges may cause cut injuries to the hands. Use work gloves when changing the valve.

- Planners / construction companies or operators are responsible for positioning and installing products.
- The valves are designed for application, not influenced from weather.
- For application outside or in adverse environments like corrosion-promoting conditions (sea water, chemical vapours, etc.), special constructions or protective measures are recommended.

## 6.0 Putting the valve into operation



### **ATTENTION !**

- Before putting the valve into operation, check material, pressure, temperature and direction of flow.
- Regional safety instructions must be adhered to.
- Residues in piping and valves (dirt, weld beads, etc.) inevitably lead to leakage.
- Touching the valve when it is operating at high (> 50°C) or low (< 0°C) media temperatures can cause injury.

*Affix warning notice or protective insulation as appropriate!*

*Before putting a new plant into operation or restarting a plant after repairs or modification, always make sure that:*

- All works has been completed!
- The valve is in the correct position for its function.
- Safety devices have been attached.
- The leak-tightness of the flange gaskets of the valve has to be checked directly during commissioning / recommissioning.

## 7.0 Care and maintenance

Maintenance and maintenance-intervals have to be defined by the operator according to the requirements.



**ATTENTION !**

- See point 10.0 before dismantling the valve.

## 8.0 Troubleshooting

In the event of malfunction or faulty operating performance check that the installation and adjustment work has been carried out and completed in accordance with these Operating Instructions.



**ATTENTION !**

It is essential that the safety regulations are observed when identifying faults.

If malfunctions cannot be eliminated with the help of the following table "9.0 Troubleshooting table", the supplier or manufacturer should be consulted.

## 9.0 Troubleshooting table



**ATTENTION !**

- read point 10.0 and 11.0 prior to dismantling and repair work!  
 - read point 6.0 before restarting the plant !

Fault	Possible cause	Corrective measures
No flow	Wrong flow direction	Correct the installation
Little flow	Dirt sieve clogged.	Clean / replace sieve.
	Piping system clogged.	Check piping system.
Leakage across valve seat.	Body (pos.1) / valve plate (pos. 8) damaged by foreign particles (Fig. 1)	Replaced valve, consult supplier/manufacturer.
	Medium contaminated (suspended solids).	Clean valve. Install dirt screen upstream of valve.
Rattling / banging of the plug resp. of the valve plate	Nominal diameter of the valve in compliance to the flow rate is <u>too big</u>	Choose smaller nominal diameter
	<ul style="list-style-type: none"> <li>- high flow turbulences;</li> <li>- the check valve is mounted directly by a centrifuged pump;</li> <li>- behind pressure reduction stations;</li> <li>- behind pipe elbows;</li> <li>- in compact plants;</li> <li>- expansion joints are missing;</li> <li>- the pump is not mounted on a damper;</li> <li>- there is no flow stabilizing pipe length;</li> <li>- there is no start-up bypass line</li> </ul>	Alter the system

## 10.0 Dismantling the valve or the top part



### **ATTENTION !**

*The following points must be observed:*

- *Pressureless pipe system.*
- *Medium must be cool.*
- *Plant must be drained.*
- *Purge piping systems and compartments in case of caustic, inflammable, aggressive or toxic media.*

## 11.0 Warranty / Guarantee

The extent and period of warranty cover are specified in the "Standard Terms and Conditions of Albert Richter GmbH & Co. KG" valid at the time of delivery or, by way of departure, in the contract of sale itself.

We guarantee freedom of faults in compliance with state-of-the-art technology and the confirmed application.

No warranty claims can be made for any damage caused as the result of incorrect handling or disregard of operating and installation instructions, datasheets and relevant regulations.

This warranty also does not cover any damage which occurs during operation under conditions deviating from those laid down by specifications or other agreements.

Justified complaints will be eliminated by repair carried out by us or by a specialist appointed by us.

No claims will be accepted beyond the scope of this warranty. The right to replacement delivery is excluded.

The warranty shall not cover maintenance work, installation of external parts, design modifications or natural wear.

Any damage incurred during transport should not be reported to us but *rather* to the competent cargo-handling depot, the railway company or carrier company immediately or else claims for replacements from these companies will be invalidated.



### **Technology for the Future. GERMAN QUALITY VALVES**

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