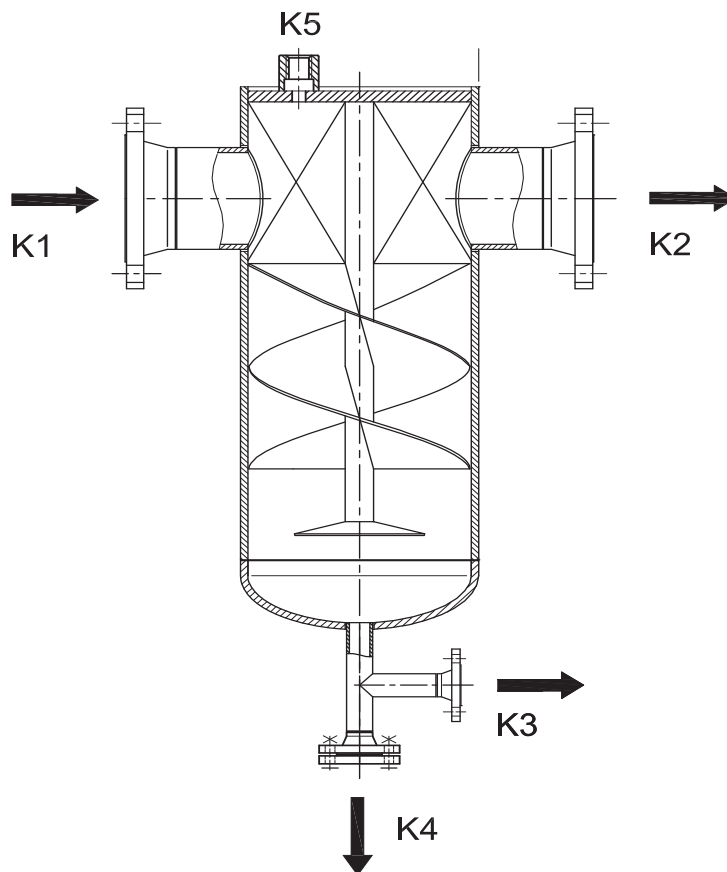


# Operating and installation instructions

## Separator Z21-112



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## 1.0 General information on operating instructions

These operating instructions provide information on mounting and maintaining the separator. 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 and are only valid in connection with the plant specification sheets. The operating an installation instructions of all components must be observed.

## 2.0 Notes on possible dangers

### 2.1 Significance of symbols



Warning of general danger.

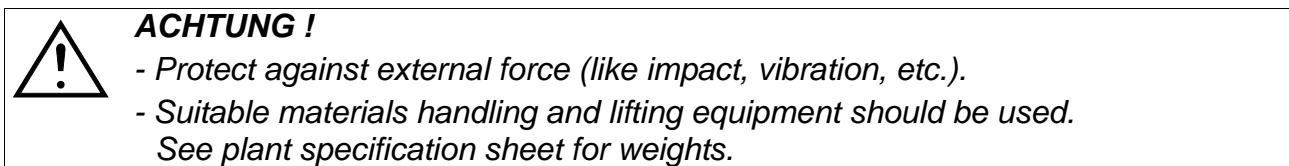
### 2.2 Explanatory notes on safety information

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

Separators are used to separate the condensate contained in steam from the pipe flow.



#### **ATTENTION !**

- Refer to the plant specification sheet for applications, limits on use and possibilities.
- Certain media require or preclude the use of special materials.
- The separator is 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.
- Use only media in fluid group 2 as per the Pressure Equipment Directive 2014/68/EU.
- The unit may also be used in hazardous areas (ATEX).

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

It is the responsibility of the system operator to ensure compliance.

The special markings on the separator and its components must be taken into account.

Refer to the plant specification 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

Separators are installed in steam pipes in order to separate condensate. The steam entering the pipe acquires a rotary motion as it encounters a spiral structure. This causes a centrifugal force, propelling the droplets to the outer wall before they collect at the bottom of the vessel. The separator must be equipped with an automatic steam trap to enable the condensate to be discharged.



#### **ATTENTION !**

*When selecting the steam trap for installation downstream, it is important to ensure that the condensate which collects does not back up into the separator but is discharged directly.*

### 4.3 Diagram

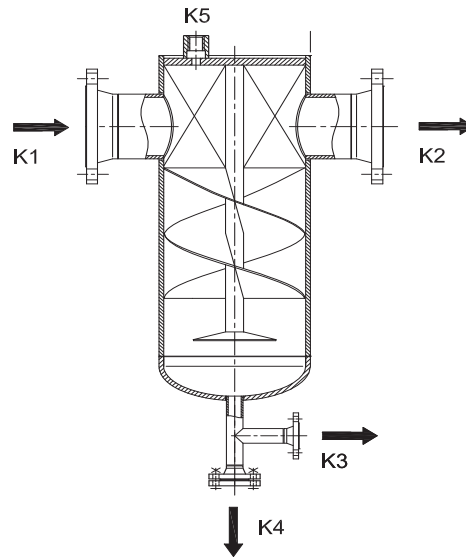


Fig. 1: Separator

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 datasheet.

### 4.5 Marking




Details of the CE-marking on the valve:

|            |                                   |   |
|------------|-----------------------------------|---|
| <b>CE</b>  | CE-marking                        |   |
| 0045       | Notified body (Example)           |   |
| GH         | Manufacturer (Example)            | Address of manufacturer:<br>refer to item 11.0 Warranty / Guarantee |
| Type       | Separator design                  |   |
| Year       | 2013 (Example)                    | (stamped on body)   |
| Serial-No. | Serial number of the manufacturer |   |



**Separator / Dampftrockner**

|          |                                      |           |  |
|----------|--------------------------------------|-----------|--|
| Objekt   | <input type="text"/>                 |           |  |
| Typ      | <input type="text" value="Z21-112"/> | Medium    | <input type="text" value="Dampf/Steam"/> |
| DN / PN  | <input type="text" value="/"/>       |           |  |
| V        | <input type="text"/> Liter           | PS/Tsmax  | <input type="text"/> bar/ °C             |
| Material | <input type="text"/>                 |           |  |
| Bj. Year | <input type="text" value="2013"/>    | Serial-No | <input type="text"/>                     |
|          | <input type="text" value="GH"/>      |           |  |

## 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 the separators must be free from foreign particles.
- Note installation position with reference to flow, see mark on the separator.
- Steam line systems should be designed to prevent water accumulation.
- Lay pipelines so that damaging transverse, bending and torsional forces are avoided.
- Protect separator from dirt during construction work.
- Connection flanges must mate exactly.
- Suitable materials handling and lifting equipment should be used.  
See plant specification sheet for weights.
- Centre gaskets between the flanges.
- Any thermal expansion in the pipe must be compensated by expansion joints.

- Planners / construction companies or operators are responsible for positioning and installing the pressure reducing station.
- The separators 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 separator 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 ( $> 50^{\circ}\text{C}$ ) or low ( $< 0^{\circ}\text{C}$ ) 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 separator is in the correct position for its function.
- Safety devices have been attached.
- Check the flange gasket and valve seals directly when the unit is put into operation or restarted.

## 7.0 Care and maintenance


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



**ATTENTION !**  
- Before taking out of operation observe point 10.0!

## 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 12.0 prior to dismantling and repair work !  
- read point 5.0 and 6.0 before restarting the plant !

| Fault                | Possible cause        | Corrective measures     |
|----------------------|-----------------------|-------------------------|
| No flow              | Flange covers present | Remove flange covers    |
| Insufficient dryness | Flow velocity too low | Reduce nominal diameter |

## 10.0 Dismantling



### **ATTENTION !**

*The following points must be observed:*

- *Pressureless pipe system.*
- *Medium must be cool.*
- *Plant must be drained.*
- *Purge piping systems 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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