

**Translation Safety relief valves**

**Operating manual 32500 - 32504, 32524, 32603,  
32604, 32624, 32010**



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## **0 Foreword**

These instructions contain instructions, notes and advice worth knowing, which are necessary for the installation and/or operation.

Read the instructions to ensure trouble-free operation.

The technical data, descriptions and design specifications correspond to the state at the time of printing. Intermediate design changes are possible in the interest of continuous further development.

Pictures and drawings shown are only complete to the extent that they are required for understanding.

The instructions serve to inform the operating personnel, the operator and, if applicable, trained qualified personnel. The instructions are part of the system delivery. Removing chapters from these instructions is prohibited. Missing instructions or missing pages thereof must be replaced immediately.

Any person who is instructed to set up, commission, operate, maintain and repair the system is required to read these instructions, specifically the safety notes, and have an understanding of its content and language.

If necessary, internal instructions under consideration of the technical qualification of the respective personnel must be provided.

To prevent operating errors and ensure the correct performance of necessary testing measures, the instructions must be accessible to operating personnel at all times.

Handtmann Armaturenfabrik GmbH & Co. KG is not liable for damages and malfunctions resulting from non-compliance with these instructions.

## 1 General

### 1.1 Manufacturer

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### 1.2 Proper application

- Safety relief valves protect a pressurized system (tanks, containers, pipelines) against impermissible pressure exceedance.
- Safety relief valves may be used for the intended purpose only. In this case, special attention must be paid to the permissible pressure and temperature ranges, the type of fluids to be discharged and the installation situation.
- Safety relief valves are intended for application in the beverage and food processing as well as in the chemical-pharmaceutical industries.
- Safety relief valves are subject to the Pressure Equipment Directive 2014/68/EC.
- Safety relief valves comply with the requirements of DIN EN ISO 4126-1.

### 1.3 Improper application

Improper use is considered if:

- there are different operating conditions or uses than those intended for the type,
- unauthorized changes or modifications are made to the component/assembly/plant,
- unqualified personnel carry out installation, operation and maintenance,
- shut-off devices are installed in front of the safety valves, which can then override them,
- instructions in the operating instructions are not observed.

Improper use will result in the loss of any warranty services as well as statutory liability claims.






### 1.4 Duties of operator

The operator must ensure in particular that

- the component/assembly/plant is operated in accordance with its intended purpose and in correct functional condition.
- the legal requirements for operation and maintenance are observed.
- only sufficiently qualified authorised personnel performs maintenance on the component/assembly/plant.
- the personnel responsible for operation and maintenance is familiar with and observes the operating and assembly instructions and particularly the safety instructions contained in them.
- the attached safety and warning signs are not removed and remain legible.

## 2 Safety Information

### 2.1 Symbols

	<b>DANGER</b>
<p><b>Danger - endangerment caused by product-specific and process-specific conditions!</b> This symbol identifies an extremely dangerous situation that may result in severe bodily injury or even death if the relevant safety instructions are disregarded.</p>	
	<b>WARNING</b>
<p><b>Warning – general dangers!</b> This symbol identifies dangerous situations that may result in light to severe bodily injury if the relevant safety instructions are disregarded.</p>	
	<b>CAUTION</b>
<p><b>Caution – damage to components!</b> This symbol points out that special care must be taken during installation, operation or maintenance.</p>	
<b>NOTICE</b>	
	<p><b>Note</b> This symbol refers to issues requiring special attention.</p>
<b>NOTICE</b>	
	<p><b>Note</b> This symbol identifies an environmentally friendly procedure or disposal method.</p>

### 2.2 Hazards and Safety Instructions

Endangerment to service personnel	
Explanations	Measures
<p><b>Squeezing danger for fingers, hands and feet</b> Unintentional opening and closing of the safety relief valve must be prevented during maintenance work.</p>	<ul style="list-style-type: none"> <li>• Disconnect the pneumatic connection with the safety valve.</li> <li>• Do not reach into the seat area of the valve disk with your hands.</li> </ul>
<p>The safety relief valve can weigh several kilograms.</p>	<ul style="list-style-type: none"> <li>• Secure the valve against slipping and falling during assembly, disassembly and in maintenance work.</li> </ul>
<b>Shock and impact danger</b>	

Before taking out the upper valve part and loosening the screws, the safety valve must be lifted manually or pneumatically.	<ul style="list-style-type: none"> <li>Turn the counter nut on the valve rod by 2-3 rotations against the valve housing or apply compressed air to the valve actuator.</li> </ul>
<b>Danger of thermal burns, chemical burns and scalding</b> If the safety relief valve in a system is operated with hot media, the surface temperature of the safety valve can also reach this value.	<ul style="list-style-type: none"> <li>Make sure that the piping system has cooled to a value below 50°C.</li> <li>Attach warning signs (W026) for hot surfaces.</li> <li>The piping area in question must be sealed off from the rest of the piping system.</li> </ul>
When discharging fluid from the safety relief valve, there is a risk of burns, scalding or chemical burns for the operating and service personnel.	<ul style="list-style-type: none"> <li>Make sure that the fluids are discharged properly and safely (exhaust line).</li> <li>Make sure that the valve is not opened in an uncontrolled manner during maintenance work.</li> </ul>
<b>Chemical burns</b> If the safety valve in a system is operated with acidic or alkaline media, your hands and fingers may suffer chemical burns when disassembling the valve.	<ul style="list-style-type: none"> <li>Before removing the safety relief valve, check which fluid the piping was conducting. If necessary, rinse the piping again beforehand with water.</li> <li>Check the system pressure before removing the safety relief valve.</li> </ul>
<b>Malfunction due to incorrect handling</b>	
<b>Explanations</b>	<b>Measures</b>
The valve must be switched off in the case of noticeable malfunctions.	<ul style="list-style-type: none"> <li>Faults must be eliminated immediately.</li> </ul>
The switching process of the valve is faulty or takes place jerkily.	<ul style="list-style-type: none"> <li>Remove residues or loose small parts from the valve seat area.</li> <li>Ventilate the valve periodically to prevent jamming of the seat sealing (clean seat).</li> </ul>
If the valve is not checked or maintained at regular intervals, this can lead to malfunction or major functional disruption.	<ul style="list-style-type: none"> <li>Check the valve during operational maintenance cycles.</li> <li>Inspection and maintenance work should only be carried out by qualified staff.</li> </ul>
<b>Malfunction through improper use</b>	
The range of application of the valve is intended for specific operating states (pressure, temperature, media).	<ul style="list-style-type: none"> <li>Ensure proper use.</li> </ul>
Installation of faulty or non-specified parts or using the same as replacement parts may disable or disrupt functionality considerably.	<ul style="list-style-type: none"> <li>Only use parts approved by the manufacturer.</li> </ul>

### 3 Notes

#### 3.1 Notes on transport

#### **DANGER**

##### **Danger - Danger of injury to persons!**

There is a risk of accident during transport due to the high weight.

- Do not walk or stand under suspended loads.
- When unloading the assembly, always use inspected and approved lifting gear (e.g., forklift truck, pallet truck, crane) and suitable aids with a sufficient load carrying capacity.
- Shackles, e.g., in accordance with DIN 82101
- Lashing chains, e.g., in accordance with DIN 5687 quality class 8
- Transport must be performed only by instructed personnel.

#### **CAUTION**

##### **Warning - General dangers**

The danger areas must be cordoned off during transport and assembly (barrier tape).

#### **ATTENTION**

##### **Note**

Observe the information signs for transport.



Fig. 1: Transport signs

### 3.2 Instructions for Delivery and Performance

- Check the delivery note data for factual correctness.
- Check the delivery for completeness. Later complaints will not be accepted.
- Perform visual inspection of the packaging system for external transport damage. These must be reported to the forwarder immediately.
- Claims due to transport damage not visible right away must be made within a week.

### 3.3 Storage Instructions

- The goods should remain in the delivered packaging systems until assembly.
- The goods must be stored in dry, closed rooms. Exposure to UV radiation and direct sunlight must be avoided. The maximum moisture must not exceed 60 %; the maximum storage temperature must not exceed 40 °C.
- It is vital to read the manual after unpacking the goods and before assembly.

## 4 Technical Description

### 4.1 Technical Data

#### Valve data

Type	Safety valve
Type of functioning	Opens with pressure/closes with spring force
Order code	325xx/326xx

#### Product range

Materials	Stainless steel 1.4404
Seals	EPDM, optionally FKM/FPM (all FDA proof)
Surface	≤ 0.8 µm

#### Other parts

Materials	Stainless steel 1.4301, 1.4307
Seals	EPDM
Surface	Precision-turned, matte

#### Production / CIP

Applications	Free outflow
Fluids (nontoxic)	Fluids/gases/vapours (Group II, PED 2014/68/EU) Readily commercially-available CIP cleaning media with 2-4 % lye/acid
Performance data	Performance data within 10 % pressure increase
Operating pressure	PS min/max 0/10 bar-g
Temperature	TS min/max 0/140 °C
Control air pressure	5 – 7 bar, compressed air connection Ø 6/4 mm

4.2 Identification of components

All safety relief valves are marked with a nameplate and a marking on the housing.

Marking of the nameplate

(The values on the nameplate shown below are example values.)

Albert Handtmann Armaturenfabrik GmbH & Co. KG			
set pressure 1,0 bar		Serial no. 123456	
<div><div>CE</div><div>0062</div><div>EAC</div></div>	SV Type 33501	Size DN80	Date 04/19
	d <sub>0</sub> 38,00 mm	a <sub>w</sub>	stroke
	Steam	0,18	2,4 mm
	Gas	0,18	
	Liquid	0,18	

Marking of the housing

AH / DNXX / PNXX / T 0°C - 140°C / 1.4404 / Heat no.

### 4.3 Valve types

Type	Lifting man                      pneu		Fluids	Nominal size per type [DN]	Set pressure [bar-g]	Counterforce	Installation position	Weight [kg]
32500, 32501 32502	X		D/G	15 25	0.5 - 5.0 0.5 - 4.0	Pressure spring	standing or horizontal	0.5 - 2.0
32503 32603	X	X	D/G	15 25 40	0.5 - 7.0 0.5 - 10.0 0.5 - 6.0	Pressure spring	standing or horizontal	1.5 - 7.0
32504 32604	X	X	F/D/G	25 40	0.5 - 10.0 0.5 - 5.0	Pressure spring	standing or horizontal	2.5 - 7.0
32524 32624	X	X	F/D/G	25	0.5 - 10.0	Pressure spring	standing or horizontal	2.5 - 3.0
320 10	X	X	F/D/G	65 80 100 125	0.5 - 5.0 0.5 - 5.0 0.5 - 3.5 0.5 - 3.0	Weight	vertical	30 - 60

#### Notes

- Fluids (F), air/gases (G), vapour (D)
- Lifting: Manual (man) or pneumatic (pneu)
- 32524/32624 type in DN25 with special flanges DN40 at inflow and outflow
- Sealing material: EPDM / optionally FKM (FPM)

#### Optional equipment

- Scaling and restraint
- Heating cartridges, plugging, proximity switch

## 5 Performance Data

Fluid: Air			Fluid: Steam		
32500/32501/32502					
Pressure [bar-g]	Throughput [Nm³/h]		Pressure [bar-g]	Throughput [kg/h]	
	DN 15	DN 25		DN 15	DN 25
1	32	89	1	24	68
2	49	135	2	37	102
3	65	182	3	49	135
4	82	228	4	61	169
5	99	---	---	---	---

Fluid: Water					
32503/32603				32504/32604 32524/32624	32504/32604
Pressure [bar-g]	Throughput [kg/h]				
	DN 15	DN 25	DN 40	DN 25	DN 40
1	---	---	---	6,795	13,656
2	---	---	---	9,609	19,313
3	---	---	---	11,768	23,653
4	---	---	---	13,589	27,312
5	---	---	---	15,193	30,536
6	---	---	---	16,643	---
7	---	---	---	17,977	---
8	---	---	---	19,218	---
9	---	---	---	20,384	---
10	---	---	---	21,486	---

Fluid: Steam					
32503/32603				32504/32604 32524/32624	32504/32604
Pressure [bar-g]	Throughput [kg/h]				
	DN 15	DN 25	DN 40	DN 25	DN 40
1	26	79	160	79	160
2	40	123	243	123	243
3	54	161	326	161	326
4	67	202	409	202	409

Fluid: Air					
32503/32603				32504/32604 32524/32624	32504/32604
Pressure [bar-g]	Throughput [Nm³/h]				
	DN 15	DN 25	DN 40	DN 25	DN 40
1	35	104	211	104	211
2	53	158	321	158	321
3	71	213	430	213	430
4	89	267	540	267	540
5	107	321	650	321	650
6	---	375	760	375	----
7	---	430	---	430	----
8	---	484	---	484	----
9	---	538	---	538	----
10	---	592	---	592	----

Fluid: Water				
32010				
Pressure [bar-g]	Throughput [kg/h]			
	DN 65	DN 80	DN 100	DN 125
0.5	33,795	49,297	68,140	87,947
1	47,794	69,717	96,365	124,375
2	67,591	98,595	136,281	175,893
3	82,782	120,754	166,909	215,424
3.5	89,414	130,429	180,282	---
4	95,588	139,434	---	---
5	106,871	155,892	---	---

Fluid: Air				
32010				
Pressure [bar-g]	Throughput [Nm³/h]			
	DN 65	DN 80	DN 100	DN 125
0.5	815	1,235	1,754	2,330
1	1,102	1,670	2,372	3,150
2	1,676	2,539	3,606	4,789
3	2,250	3,408	4,841	6,429
3.5	2,537	3,843	5,458	---
4	2,824	4,277	---	---
5	3,398	5,147	---	---

## 6 Operation



### WARNING



#### Warning – General hazards!

If the pressure system is exposed to a higher fluid temperature, the surface temperature of the assembly can reach this value as well.

- Attach warning signs for hot surfaces.



### CAUTION

#### Caution - **Damage to components!**

If the valve is not checked and serviced at certain intervals, the function may be overridden or significantly disturbed.

- It is recommended to carry out regular checks.

### 6.1 Valve actuator

- Safety relief valves protect a pressurised system against impermissible pressure exceedance.
- Fluids (F), gases (G) and vapours (D) can be discharged via the safety relief valves.
- During normal operation the safety relief valve should not be activated / opened. (Always ensure sufficient allowance between the operating pressure and the set pressure).
- Safety relief valves open within an opening pressure difference of 10 % of the response pressure. At a response pressure of < 1 bar, the opening pressure difference can be up to 0.1 bar. The specified exhaust performance is achieved here.
- The lifting itself can be performed according to the process requirements. The duration of lifting should be about 5-20 seconds and can take place during different cleaning steps. Lifting takes place during the startup phase of the pump with reduced power.

### 6.2 Valve Tightness / Leak

If the area of the valve seat is not sealed properly (seal defective, foreign object trapped, valve disk lifted manually, spring broken), the valve will exhaust in normal position (valve closed).

This also results in pressure not being built up or only with difficulty in a pressurized system.



#### Note

Heed the pressure difference between operating pressure and response pressure!

### 6.3 Operating Characteristics

- All the safety relief valves are checked ex works and set to the required pressure. The setting or the set value is documented in a setting test log.
- The pressure setting occurs at ambient pressure.
- A change of the set pressure is prevented through positive locking inside the upper valve part. An optional lead sealing provides an additional safety measure on the outside.



#### CAUTION

##### Caution – functional impairment or material damage!

Mechanical manipulations may cause malfunctions.

- Mechanical modifications to the safety relief valves that influence the set pressure or functionality are impermissible.
- Required modifications should only be carried out by the manufacturer.

Operating pressure:	Working pressure under normal operating conditions (lower than set pressure)
Set pressure:	Excess pressure at which the safety relief valve starts opening
Response pressure:	Excess pressure at the safety relief valve starts opening during operation (abnormal operating condition)
Closing pressure:	Pressure at which the safety relief valve is closed again

### 6.4 Valve cleaning / CIP

Safety relief valves should be cleaned within a defined time period.

- Manual safety relief valves must be disassembled.  
The seat area and the seal are cleaned manually.
- Safety relief valves with pneumatic actuator are lifted via compressed air.  
The seat area and the seal are cleaned within an automated CIP process.  
The safety relief valve should be alternately opened and closed.



#### CAUTION

##### Caution – functional impairment or material damage!

Jamming hazard for valve seat/valve disk!

- If the safety relief valve opens upon tank overfilling, especially with viscous, sugary media, the valve seat must always be cleaned.

Safety valves with pneumatic actuator can be opened for CIP cleaning. For this purpose, a control air pressure of 5-7 bar are required independent of the set pressure.

Pneumatic connection G 1/8" with plug connection for compressed air hose Ø 6/4 mm

## 7 Disassembly

### 7.1 Assembly instructions

Before starting work:

- Read the operating instructions and, in particular, the safety information.
- Check the current system status, e.g., pressure, temperature, medium, operating status.
- Clean, empty and/or depressurise the piping system.
- Disconnect pneumatic and electric connections from the actuator.



#### CAUTION

##### Caution – damage to components!

Installation of faulty or non-specified parts or using the same as replacement parts may disable or disrupt functionality considerably.

- Only use parts and equipment approved by the manufacturer.
- After the work has been carried out, the function of the valve must be checked.



#### WARNING

##### Warning – Welding hazards!

When dismantling valves or setting up a system, pipes must be welded. This can lead to a fire. The fire can seriously injure people.

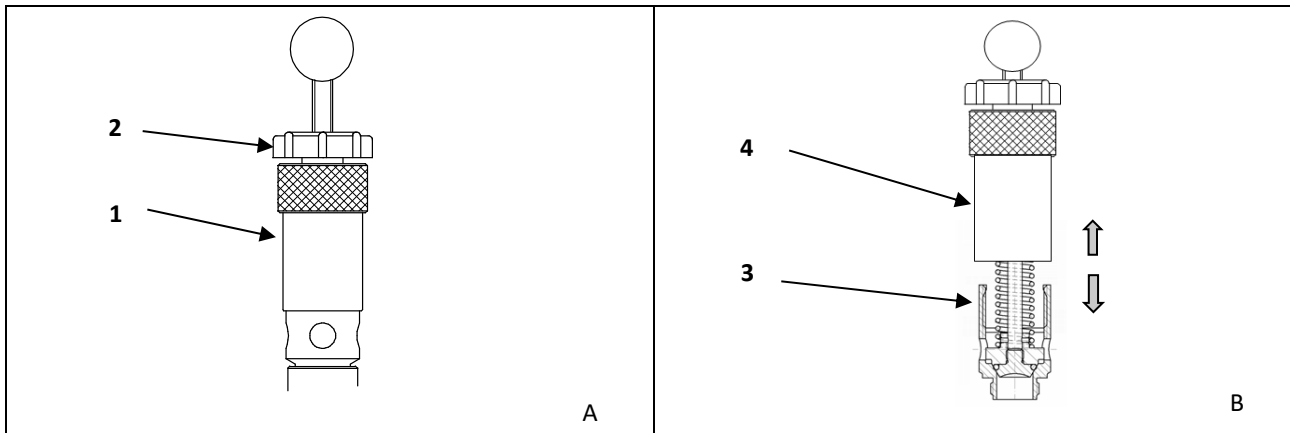
During disassembly/assembly, sharp-edged pipe ends may be present. The staff can cut themselves at the sharp edges.

Welding or cutting pipes creates hot surfaces. These can lead to burns.

Therefore, please note the following before welding:

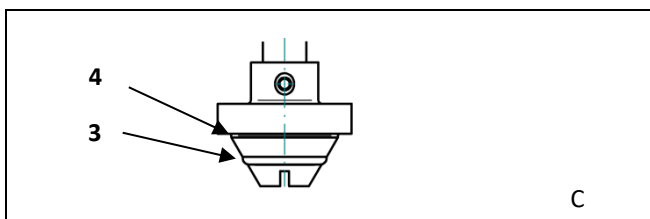
- Welding work may only be carried out by qualified personnel.
- Remove all flammable parts from the environment before welding.
- Cover combustible parts that cannot be removed.
- Prior to commencement of flame, welding, soldering and/or grinding operations, approval must be obtained from the plant manager for open fire/welding work.
- Work only with a release certificate.
- Have fire extinguishing agents, e.g. powder extinguishers ready.
- Organize fire stations.
- Check the workplace for fire nests several times up to 24 hours after completion of the work.
- Wear personal protective clothing during welding.
  - cut-resistant, heat-resistant hand protection
  - Foot protection
  - Head protection

## 7.2 Disassembly of Manual Safety Valves - Type 32500, 32501, 32502



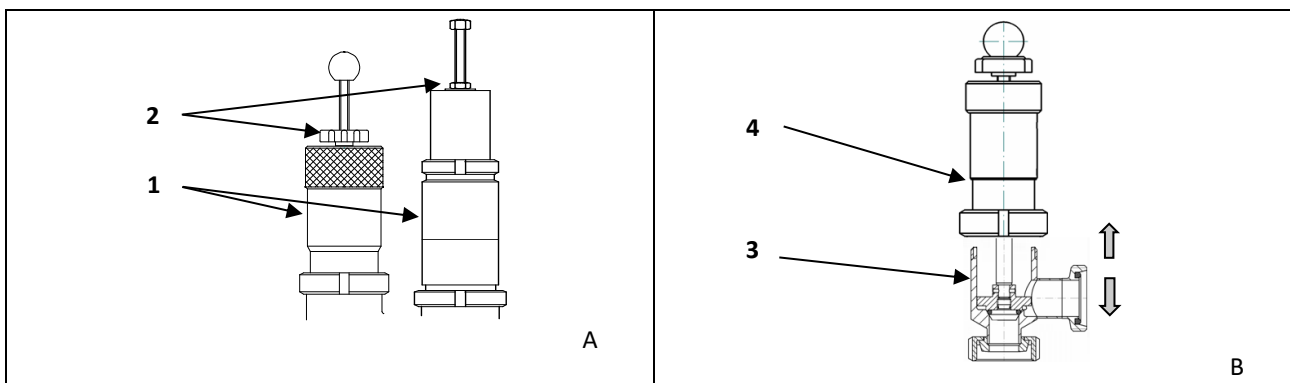
A) Turn the star grip (2) clockwise against the upper part (1), add two further turns.

B) Turn the upper part (4) anticlockwise and extract it from the lower part (3) (O-ring is exposed)



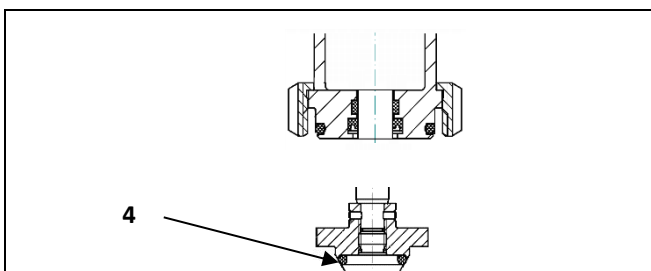
C) Unscrew the valve stem (3) and remove the seal (4) (adhesive joint - heat up in advance if necessary!)

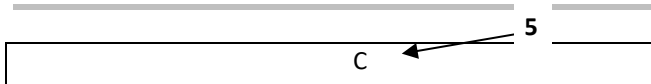
## 7.3 Disassembly of Manual Safety Valves - Type 32503, 32504, 32524



A) Turn the star grip/lifting nut (2) clockwise against the upper part (1), add two further turns.

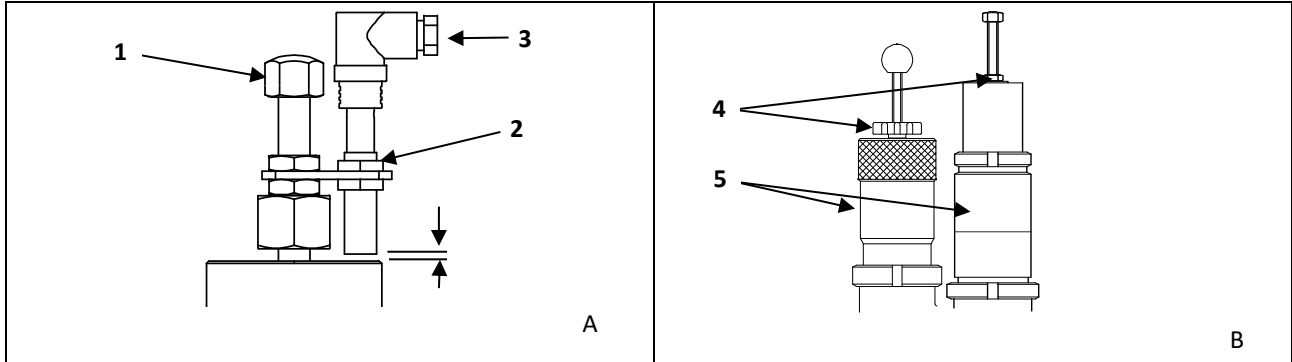
B) Turn the upper part (4) anticlockwise and extract it from the lower part (3). (O-ring is exposed)





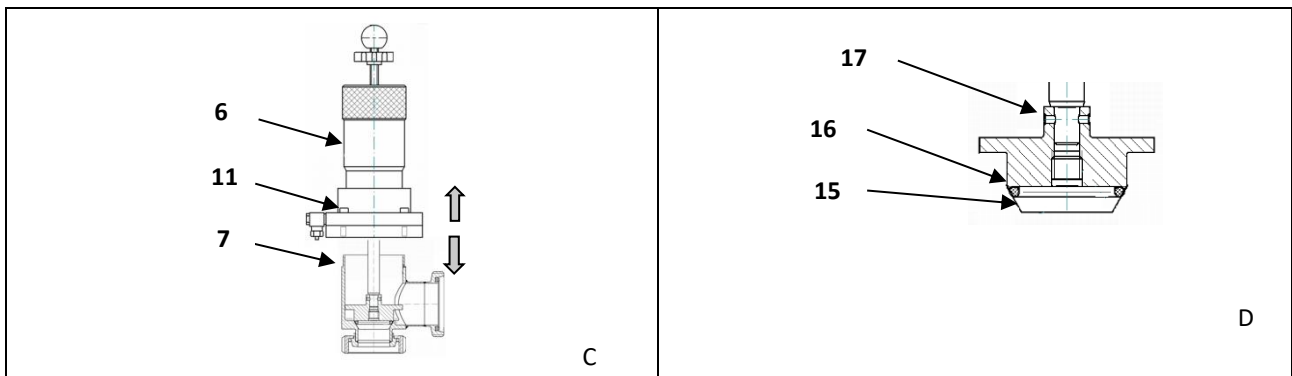
C) Unscrew the valve stem (5) and remove the seal (4) (adhesive joint - heat up in advance if necessary!)

### 7.4 Disassembly of Pneumatic Safety Valves - Type 32603, 32604, 32624



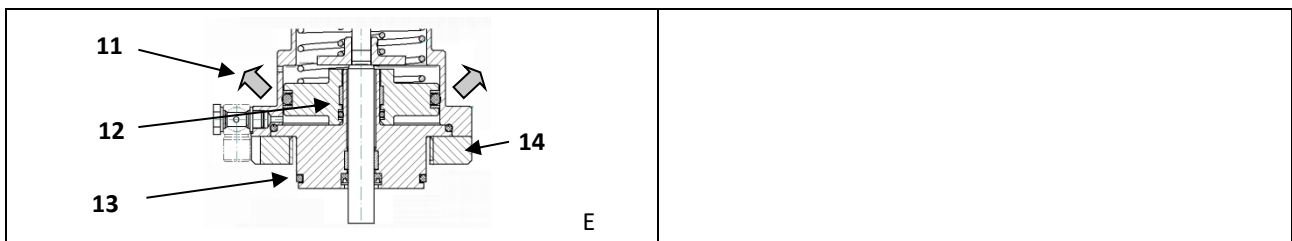
A) Loosen pneumatic/electrical connections, remove counter nut (2) and proximity switch (3).

B) Turn the star grip/lifting nut (4) clockwise against the upper part (5), add two further turns.



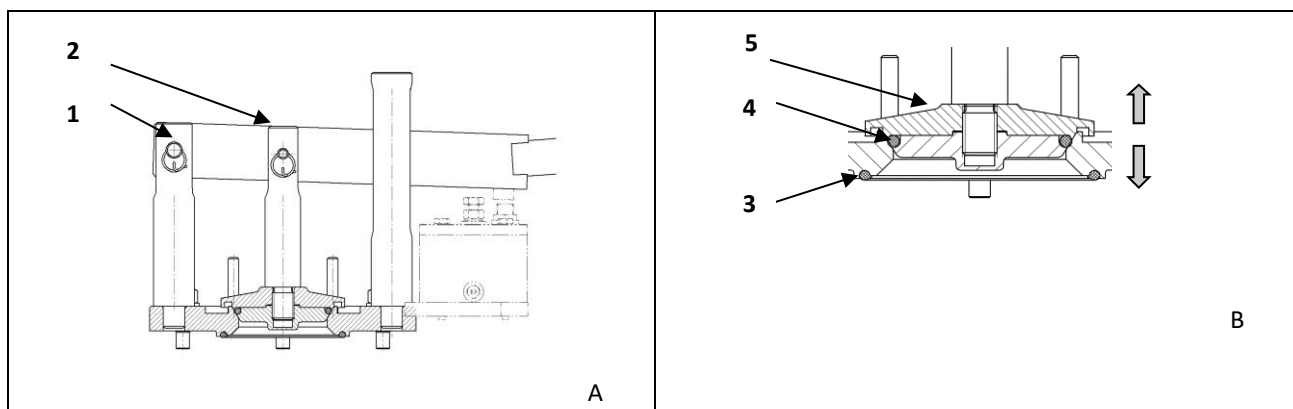
C) Unscrew the screws (11) in the upper part, turn the upper part (6) and extract it from the lower part (7). (O-ring is exposed)

D) Remove spiral pin (17). Unscrew the valve stem (15) and remove the O-ring (16) (adhesive joint - heat up in advance if necessary!)



E) Remove the piston (12) and centring flange (13) (pneumatic unit). Remove the sealings.

### 7.5 Disassembling Weight-loaded Safety Valves - Type 32010



- A) Remove the securing rings (1) and bolts, remove the weight lever (2), remove the valve stem from the seat.  
B) Unscrew the valve stem (5) and remove the seals (2+3) (adhesive joint - heat up in advance if necessary!)

## 8 Installation and Commissioning

Before you start with the installation and commissioning:

- Check the current system status (pressure, temperature, medium) against the technical data.
- Check the valve for external and internal damage.
- Check the valve body in the area of the valve disc for dirt.

### ATTENTION



#### Note

To avoid risks to life and health, be sure to read the general safety instructions.

The function of the valve must always be checked

- after the work has been carried out,
- before the system is put into operation for the first time, and
- after each disassembly and assembly of the valve.

### 8.1 Installation Instructions

- Safety relief valves are installed in a vertical or horizontal position.  
For pressures of < 1 bar, the factory pressure setting also occurs in this installation position.
- Safety relief valves with a detachable connection are installed in the piping system free of tension.
- Safety relief valves for welding in must be disassembled first. For this purpose, the upper part of the valve is removed from the housing. The housing is then welded into the piping system free of tension.
- The welding work (TIG, forming gas) should only be carried out by qualified welders (EN 287-1).
- There must be sufficient free space around the installed valve for assembly and maintenance tasks later on.
- Shut-off devices that impair the function must not be installed on the upstream and downstream sides of the safety relief valve.
- The pipe cross-section of the supply and outflow pipes must at least correspond to that of the valve inlet and outlet.
- When the safety relief valves are installed horizontally, the exhaust manifold must face downward (draining).
- Exhausting must be performed without pressure. An exhaust line should empty into corresponding draining or collecting facilities without constituting a hazard.
- Exhaust lines for fluids must be routed downward and must empty into a receptacle without constituting a hazard (provide for complete draining).
- Exhaust lines for vapours and gases must be routed upward and must empty into a receptacle without constituting a hazard (provide for a condensate separator).
- If an extended supply line to the safety relief valve is used, the supply line must be self-draining.
- Pay attention to the direction of flow (marking arrow).

## 8.2 Assembly

### NOTICE



#### Note


**Before starting installation and commissioning:**


- Check the current system status (pressure, temperature, medium).
- Check the valve for visible external and internal damage.
- Check the valve function through manual lifting.
- Check the valve housing inside for residues.

Proceed as follows to install the safety valve:

1. Prior to installation, clean all the dismantled individual parts of the safety valve.
2. Remove the rests of the screw locking fluid from the threads of the valve rod.
3. Mount the safety valve analogously in reverse order to the removal procedure.

## 9 Trouble shooting

 **DANGER**



**Danger - Dangers of electric current!**

During assembly work, the power supply may malfunction.

- A regular inspection of the electrical components must be carried out by a qualified electrician.

- All faults must be checked and repaired immediately.
- The work required may only be carried out by qualified personnel in compliance with the safety instructions.

Fault	Possible cause	Measures
Safety relief valve does not open  (pneumatic)	<ul style="list-style-type: none"> <li>• Valve seat jammed</li> <li>• Pressure not sufficient for opening.</li> <li>• Lifting/opening process is blocked</li> <li>• Compressed air supply not sufficient.</li> <li>• Malfunction of solenoid valve or electrical control faulty.</li> </ul>	<ul style="list-style-type: none"> <li>• Lift valve manually and clean valve seat</li> <li>• Check the pressure setting</li> <li>• Check the mobility of the valve rod (lift valve manually)</li> <li>• Compressed air with a pressure of at least 5 bar should be applied.</li> <li>• Check the compressed air hose.</li> <li>• Check the solenoid valve.</li> </ul>
Safety relief valve does not close  (pneumatic)	<ul style="list-style-type: none"> <li>• Lifting nut is screwed against the housing</li> <li>• Solid body in the valve seat out of line.</li> <li>• Actuator spring blocked or broken</li> <li>• Pressure bleeding defective</li> <li>• Sealing defective</li> </ul>	<ul style="list-style-type: none"> <li>• Screw the lifting nut upwards</li> <li>• Clean valve housing and seat</li> <li>• The defective actuator may only be repaired by the manufacturer</li> <li>• Check the solenoid valve</li> <li>• Change sealings</li> </ul>

## 10 Maintenance

### 10.1 Maintenance

#### ATTENTION



##### Note

Inspection and maintenance work must be carried out by properly trained personnel only.

Use only original spare parts and original accessories to yield full functionality of the system/component. Damage resulting from the use of non-original parts and non-original accessories will void any warranty or liability on the part of Albert Handtmann Armaturenfabrik GmbH & Co. KG.



#### WARNING

##### Warning – general danger!

Pressurised liquid, steam or gas constitutes a danger at connection points.

- Check the current system status (pressure, temperature, medium).
- All maintenance work must always be performed while depressurised and cleaned.



#### CAUTION

##### Caution – functional impairment or material damage!

Jamming will impair the switching process of the valve.

- Safety relief valves must be lifted manually or pneumatically at periodical intervals.
- The pressure springs are designed for load changes > 1 month.  
Based on experience this corresponds to an operating time of 10-15 years.  
The condition of the pressure springs should be checked in this time.
- A function check must be performed.

### 10.2 Inspection and Maintenance Intervals



#### CAUTION

##### Caution – functional impairment or material damage!

If the valve is not checked or maintained at regular intervals, this can lead to malfunction or major functional disruption.

- Visual inspections must be carried out on an ongoing basis every 1-2 weeks.  
>> Check electrical power supply and pneumatic supply  
>> Check for leakage, check valve functions.
- To ensure that the safety relief valve is ready for operation and functionally reliable, it should be checked every six months as part of the general internal

maintenance procedure. The maintenance intervals depend on the operating conditions and must be determined by the plant operator.

- If, for maintenance purposes, protection devices have been attached or if supply and exhaust lines to the safety relief valve blocked, the protection devices must be disassembled and line blockages must be removed.
- **Ensure that a function check is always performed on the safety relief valve following maintenance work.**

### 10.3 Function Checks



#### **Warning - general hazards!**

Make sure that there aren't any persons in the hazardous area of the exhaust line. (Attach a warning sign if required).

Also refer to the chapter "Safety Instructions".

#### **Pneumatic lifting**

1. Apply compressed air to the pneumatic actuator to lift the safety valve.  
The safety valve must open (lifting motion) and blow off.
2. Relieve the pneumatic actuator of pressure.  
The test has been completed.

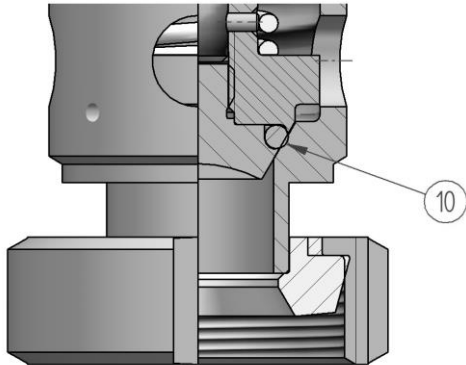
#### **Pressurizing**

1. Pressurize the piping system / tank with a gas pressure slightly above the set pressure of the safety valve.  
The safety valve must open (lifting motion) and blow off.
2. Reduce the gas pressure of the piping system / tank to the normal or operating pressure.  
The test has been completed.

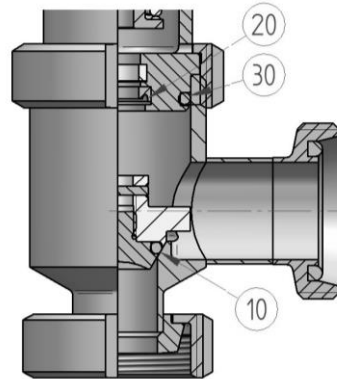
#### **Manual lifting**

1. First, turn the lifting nut clockwise against the actuator and then turn another 1-2 turns.  
This will lift the valve disk and the valve will blow off.
2. To close the valve, turn the lifting nut anticlockwise up to the cap nut (or to the proximity switch).  
The test has been completed.

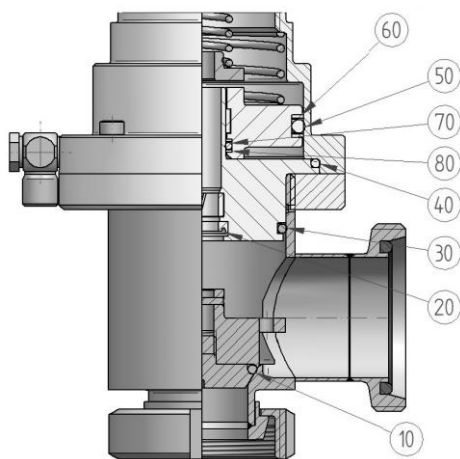
## 10.4 Seals



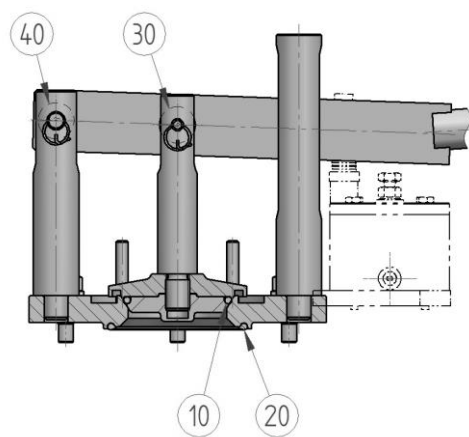
Manual safety relief valves - Type 32500, 32501, 32502



Manual safety relief valves - Type 32503, 32504



Pneumatic safety relief valves - Type 32603, 32604



Pneumatic/manual safety relief valve - Type 32010

Pos.	Designation	Qty.
Manual safety relief valves - 32500, 32501, 32502		
10	O-ring valve disk	1
Manual safety relief valves - 32503, 32504		
10	O-ring valve disk	1
20	Lip-sealing, upper part	1
30	O-ring, upper part	1
Safety relief valve manual/pneumatic - 32010		
10	O-ring valve disk	1
20	O-ring for housing	1
30	Sealing ring	2
40	Sealing ring	2

Pos.	Designation	Qty.
Pneumatic safety relief valves - 32603, 32604		
10	O-ring valve disk	1
20	Lip sealing, upper part	1
30	O-ring for housing	1
40	O-ring for housing	1
50	O-ring for piston	1
60	Support rings	2
70	O-ring for valve rod	1
80	Support rings	2

## 10.5 Spare parts

**ATTENTION****Note**

Use only manufacturer-approved spare parts.

Type	DN 15	DN 25	DN 40	DN 65	DN 80	DN 100
<b>32500</b>	032500.00015LE 032500.00015LV	032500.00025LE 032500.00025LV	---	---	---	---
<b>32501</b>	032500.00015LE 032500.00015LV	032500.00025LE 032500.00025LV	---	---	---	---
<b>32502</b>	032500.00015LE 032500.00015LV	032500.00025LE 032500.00025LV	---	---	---	---
<b>32503</b>	032503.00015LE 032503.00015LV	032504.00025LE 032504.00025LV	032504.00040LE 032504.00040LV	---	---	---
<b>32504</b>	---	032504.00025LE 032504.00025LV	032504.00040LE 032504.00040LV	032504.00065LE	032504.00080LE	032504.00100LE

Type	DN 15	DN 25	DN 40	DN 65	DN 80	DN 100
<b>32603</b>	032603.00015LE 032603.00015LV	032604.00025LE 032604.00025LV	032604.00040LE 032604.00040LV	---	---	
<b>32604</b>	---	032604.00025LE 032604.00025LV	032604.00040LE 032604.00040LV	032604.00065LE	032604.00080LE	032604.00100LE

Type			DN 65	DN 80	DN 100	DN 125
<b>32010</b>	---	---	032010.00065LE 032010.00065LV	032010.00080LE 032010.00080LV	032010.00100LE 032010.00100LV	032010.00125LE 032010.00125LV

**Note:**      **LE - EPDM**  
                  **LV - FKM / FPM / Viton**

## 11 Additional Equipment

### 11.1 Heating insets

Activation of the heating cartridge:  $\leq 0^{\circ}\text{C}$  Ambient temperature

Valve type	DN	Wiring diagram No	Heating capacity [W]	Amperage [A]	Heating insets			
					Quantity	Connection voltage [V]	Rated power [W]	Part No
32503 / 32603	25, 40	11 125E23	11.5	0.48	2 <sup>1)</sup>	24	23	105373
32504 / 32604	25, 40							
32524 / 32624	25							
32010	65	11 125E29	23	0.96	1 <sup>1)</sup>	24	23	105373
32010	80, 100, 125	11 125E31	46	1.92	2 <sup>1)</sup>			

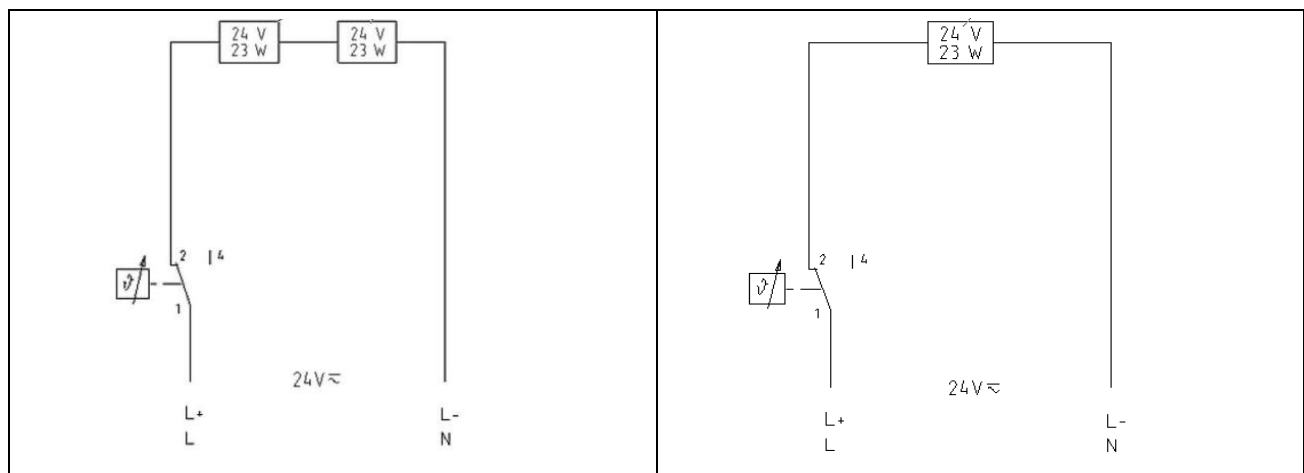


Fig. 2: 11 125E23

11 125E29

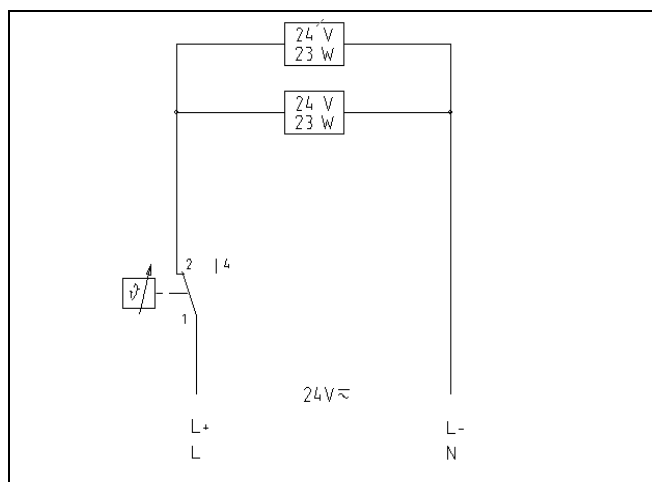


Fig. 3: 11 125E31

Symbols:



Heating inset (Ø 6,5 x 40) <sup>1)</sup>



Temperature control <sup>2)</sup>

<sup>1)</sup> The heating insets are accommodated in corresponding heating segments.

<sup>2)</sup> The thermostat, part no. 106838, cannot turn on / off the heaters directly at 24V DC (direct current). Therefore, the switching process needs to be decoupled technically.

## 12 Disposal

### ATTENTION



#### Note

Dispose of the component/assembly/system in an environmentally friendly manner according to country-specific specifications.

Find out how to dispose of the individual materials.

Dispose of all resulting parts in such a way that damage to health and the environment is excluded.

If necessary, ask your environmental officer.

### ATTENTION



#### Note

Dispose of the packaging materials in an environmentally safe manner according to country-specific specifications.

Packaging can consist of the following materials:

Wood/polyethylene foil (PE foil)/paper and or cardboard/plastic/steel strips.

