Back Pressure and Pressure Relief Valves
Operating Instructions

Read the Operating Instructions!
The user is responsible for installation and operation related mistakes!
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1 Notes for the Reader

These operating instructions contain information and behaviour rules for the safe and designated operation of the product.

Observe the following principles:
- read the entire operating instructions prior to starting-up the product.
- ensure that everyone who works with or on the product has read the operating instructions and follows it.
- maintain the operating instructions throughout the service life of the product.
- pass the operating instructions on to any subsequent owner of the product.

1.1 General non-discrimination

In these operating instructions, only the male gender is used where grammar allows gender allocation. The purpose of this is to make the text easy to read. Men and women are always referred to equally. We would like to ask female readers for understanding of this text simplification.

1.2 Explanation of the signal words

Different signal words in combination with warning signs are used in this operating manual. Signal words illustrate the gravity of possible injuries if the risk is ignored:

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANGER</td>
<td>Refers to imminent danger. Ignoring this sign may lead to death or the most serious injuries.</td>
</tr>
<tr>
<td>WARNING</td>
<td>Refers to a potentially hazardous situation. Failure to follow this instruction may lead to death or severe injuries.</td>
</tr>
<tr>
<td>CAUTION</td>
<td>Refers to a potentially hazardous situation. Failure to follow this instruction may lead to minor injury or damage to property.</td>
</tr>
<tr>
<td>NOTICE</td>
<td>Refers to a danger which, if ignored, may lead to risk to the machine and its function.</td>
</tr>
</tbody>
</table>

1.3 Explanation of the warning signs

Warning signs represent the type and source of a danger:

<table>
<thead>
<tr>
<th>Warning sign</th>
<th>Type of danger</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Exclamation mark]</td>
<td>General danger zone</td>
</tr>
<tr>
<td>![Lightning bolt]</td>
<td>Danger of electric shock</td>
</tr>
<tr>
<td>![Warning triangle]</td>
<td>Danger of caustic or other burns.</td>
</tr>
<tr>
<td>![Exclamation mark with hammer]</td>
<td>Danger of damage to machine or functional influences</td>
</tr>
</tbody>
</table>

1.4 Identification of warnings

Warnings are intended to help you recognise risks and avoid negative consequences.

This is how warnings are identified:

<table>
<thead>
<tr>
<th>Warning sign</th>
<th>SIGNAL WORD</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Exclamation mark]</td>
<td>Description of danger.</td>
</tr>
<tr>
<td>![Lightning bolt]</td>
<td>Consequences if ignored.</td>
</tr>
<tr>
<td>![Warning triangle]</td>
<td>The arrow signals a safety precaution to be taken to eliminate the danger.</td>
</tr>
</tbody>
</table>

1.5 Identification of instructions for action

This is how pre-conditions for action are identified:

- Pre-condition for action which must be met before taking action.

This is how instructions for action are identified:

- Separate step with no follow-up action.
- First step in a series of steps.
- Second step in a series of steps.
- Result of the above action.
- Action completed, aim achieved.
2 Safety

The following warnings are intended to help you to eliminate the dangers that can arise while handling the product. Risk prevention measures always apply regardless of any specific action.

Safety instructions warning against risks arising from specific activities or situations can be found in the respective sub-chapters.

**DANGER**

Danger to life through explosions!

When using devices and fittings without ATEX certification in a potentially explosive area, explosions can occur that result in fatal injuries.

⇒ Never use devices and fittings without ATEX certification in a potentially explosive area.

**WARNING**

Caustic burns or other burns through dosing media!

While working on the dosing head, valves and connections, you may come into contact with dosing media.

⇒ Use sufficient personal protective equipment.

⇒ Rinse the dosing pump with a non-hazardous liquid (e.g. water).

⇒ Release pressure in hydraulic parts.

⇒ Never look into open ends of plugged pipelines and valves.

⇒ Ensure that the liquid is compatible with the dosing medium.

**WARNING**

Caustic burns or other burns through dosing media!

After the connection with voltage supply, dosing media may spray out.

⇒ Before connecting the voltage supply, connect all hydraulic lines.

⇒ Check that all the screw connections have been tightened correctly and are leak-proof.

**WARNING**

Caustic burns or other burns through dosing media!

The materials of the dosing pump and hydraulic parts of the system must be suitable for the dosing medium that is used. Should this not be the case, the dosing media may leak.

⇒ Make sure that the materials you use are suitable for the dosing medium.

⇒ Make sure that the lubricants, adhesives, sealants, etc. that you use are suitable for the dosing medium.

**WARNING**

Caustic burns or other burns through dosing media!

If back pressure and pressure relief valves with default pretension pressure are installed in the system, the default setting may be incorrect. If the peak pressure applied is too high, system parts may burst, and leaking dosing media may cause injury.

⇒ Do not use back pressure and pressure relief valves with freely adjustable pretension pressure in dosing systems with operating conditions different to those specified in the order. Observe the information on the type plate for this purpose.

⇒ Adjust back pressure and pressure relief valves to the operating conditions of the systems after installation.

**WARNING**

Caustic burns or other burns through dosing media!

If back pressure and pressure relief valves with default pretension pressure are installed in the system, the default setting may be incorrect. If the peak pressure applied is too high, system parts may burst, and leaking dosing media may cause injury.

⇒ Do not adjust the pretension pressure of the back pressure and pressure relief valves higher than admissible for the dosing pump and further devices at maximum flow.

**WARNING**

Caustic burns or other burns through dosing media!

All devices and hydraulic fittings of the dosing system must be operated below the maximum permissible pressure. If the peak pressure applied is too high, system parts may burst, and leaking dosing media may cause injury.

⇒ Do not adjust the pretension pressure of the back pressure and pressure relief valves higher than admissible for the dosing pump and further devices at maximum flow.

**CAUTION**

Increased risk of accidents due to insufficient qualification of personnel!

Dosing pumps and their accessories must only be installed, operated and maintained by personnel with sufficient qualifications. Insufficient qualification will increase the risk of accidents.

⇒ Ensure that all action is taken only by personnel with sufficient and corresponding qualifications.

⇒ Prevent access to the system for unauthorised persons.

**CAUTION**

Danger of personal injury and material damage!

Changing dosing media can lead to unpredictable reactions.

⇒ Thoroughly clean the dosing pump and appropriate sections of the plant in order to avoid chemical reactions.
2.1 Hazards due to non-compliance with the safety instructions

Failure to follow the safety instructions may endanger not only persons, but also the environment and the device.

The specific consequences can be:
- Failure of major equipment functions
- Failure of required maintenance and repair methods,
- Danger for individuals through dangerous dosing media,
- Danger to the environment due to substances leaking from the system.

2.2 Working in a safety-conscious manner

Besides the safety instructions specified in this operating manual, further safety rules apply and must be followed:
- Accident prevention regulations
- Safety and operating provisions,
- Safety provisions for handling dangerous substances (mostly the safety data sheets to dosing media),
- Environmental protection provisions,
- Applicable standards and legislation.

2.3 Personal protective equipment

Based on the degree of risk posed by the dosing medium and the type of work you are carrying out, you must use corresponding protective equipment. Read the Accident Prevention Regulations and the Safety Data Sheets of the dosing media to find out which protective equipment you need.

As a minimum, the following protective equipment is recommended:

- Protective clothing
- Protective gloves
- Goggles

Corresponding protective equipment must be used during these tasks:
- Commissioning,
- Working on the product while running,
- Shutter-down,
- Maintenance work,
- Disposal.

2.4 Personnel qualification

Any personnel who work on the product must have appropriate special knowledge and skills.

Anybody who works on the product must meet the conditions below:
- Attendance at all the training courses offered by the owner,
- Personal suitability for the respective activity,
- Sufficient qualification for the respective activity,
- Training into the handling of the device,
- Knowledge of safety equipment and the way this equipment functions,
- Knowledge of this operating manual, particularly of safety instructions and sections relevant for the activity,
- Knowledge of fundamental regulations regarding health and safety and accident prevention.

All persons must generally have the following minimum qualification:
- Training as specialists to carry out unsupervised work on the product,
- Sufficient training that they can work on the product under the supervision and guidance of a trained specialist.

These Operating instructions differentiate these user groups:

2.4.1 Specialist staff

Specialist staff are able, thanks to their professional training, knowledge and experience as well as knowledge of the respective provisions, to do the job allocated to them and recognise and/or eliminate any possible dangers by themselves.

2.4.2 Trained persons

Trained persons have been trained by the operator into the tasks they are supposed to perform and into the dangers stemming from improper behaviour.

In the table below you can check what qualifications are the pre-condition for the respective tasks. Only people with appropriate qualifications are allowed to perform these tasks.

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialist staff</td>
<td>■ Assembly</td>
</tr>
<tr>
<td></td>
<td>■ Hydraulic installations</td>
</tr>
<tr>
<td></td>
<td>■ Maintenance</td>
</tr>
<tr>
<td></td>
<td>■ Repairs</td>
</tr>
<tr>
<td></td>
<td>■ Commissioning</td>
</tr>
<tr>
<td></td>
<td>■ Taking out of operation</td>
</tr>
<tr>
<td></td>
<td>■ Disposal</td>
</tr>
<tr>
<td></td>
<td>■ Fault rectification</td>
</tr>
<tr>
<td>Trained persons</td>
<td>■ Storage</td>
</tr>
<tr>
<td></td>
<td>■ Transportation</td>
</tr>
<tr>
<td></td>
<td>■ Control</td>
</tr>
<tr>
<td></td>
<td>■ Fault rectification</td>
</tr>
</tbody>
</table>

Table 3: Personnel qualification
3 Intended use

3.1 Notes to product warranty

Any non-designated use of the product can compromise its function or intended protection. This leads to invalidation of any warranty claims!

Please note that liability is on the side of the user in the following cases:

- the product is operated in a manner which is not consistent with these operating instructions, particularly safety instructions, handling instructions and chapter “Intended use”
- if people operate the product who are not adequately qualified to carry out their respective activities.
- no original spare parts or accessories of Lutz-Jesco GmbH are used.
- Unauthorised changes are made to the product by the user,
- The user uses different dosing media than those indicated in the order.
- The user does not use dosing media under the conditions agreed with the manufacturer such as modified concentration, density, temperature, contamination, etc.
- Maintenance and inspection intervals are not observed as specified or not observed at all.
- The product is commissioned before the product or the corresponding system has been installed correctly and completely.
- Safety devices are bridged, removed or made ineffective in any other way.

3.2 Intended purpose

Back pressure and pressure relief valves are fittings for dosing systems. Depending on the application, they are used to increase dosing accuracy or to protect the system against excessive pressure.

3.2.1 Application as back pressure valve

When applied for the dosing of liquids, back pressure valves are used to generate a defined counter-pressure on the discharge side of dosing pumps.

This is required in the following cases:

- For widely varying pressures. Exact dosing results can only be achieved with a back pressure valve.
- The pressure at the suction side is higher than at the discharge side.
- Liquid is to be dosed into depressurised pipes.

3.2.2 Application as pressure relief valve

Pressure relief valves have an important safety function for protecting the dosing pump and the associated pipes and fittings. The dosing pump can generate a pressure that is many times the rated one. Due to various reasons, e.g. contamination or operating errors, pressure lines may block. At an appropriate pressure, a pressure relief valve opens a bypass line and protects the system in this way from damage caused by over-pressure.

3.3 Explosive risk zones

Type DN6, 200bar and DN10, 250bar spring-loaded seat valves may be used in potentially explosive zones. They may only be used as pressure relief valves.

Any other back pressure and pressure relief valves must not be used in potentially explosive zones.

3.4 Basic principles

- Back pressure and pressure relief valves are not suited for the application as non-return valves.
- Back pressure and pressure relief valves are not suited for the application as shut-off valves.
- Information on the usage and environment (see „Technical data“ on page 8) must be observed.
- Any restrictions regarding the viscosity, temperature and density of dosing media must be observed. You must only use dosing media at temperatures above freezing point or below the boiling point of the respective medium.
- The specified flow capacity (see “Technical data” on page 8) is only applicable for the constant flow of water and other liquids which are comparable to water with regard to viscosity and density and when dosed with an adequately designed pulsation damper. In case of inconstant flow without pulsation damper, the flow capacity may be considerably lower.
- The materials of the product and hydraulic parts of the system must be suitable for the dosing medium that is used. In this connection, note that the resistance of these components can change in dependence on the temperature of the media and the operating pressure.

Information on the suitability of materials combined with different dosing media can be found in the Chemical Resistance List of Lutz-Jesco GmbH.

The information in this resistance list is based on information from the material manufacturers and on expertise obtained by Lutz-Jesco from handling the materials.

As the durability of the materials depends on many factors, this list only constitutes initial guidance on selecting material. In all cases, test the equipment with the chemicals you use under operating conditions.
4 Product description

4.1 Rating plate

There is information on the equipment about safety or the product’s way of functioning. The information must stay legible for the duration of the service life of the product.

![Rating plate diagram]

Fig. 1: Rating plate

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nominal width</td>
</tr>
<tr>
<td>2</td>
<td>Nominal pressure</td>
</tr>
<tr>
<td>3</td>
<td>Connections</td>
</tr>
<tr>
<td>4</td>
<td>Part number</td>
</tr>
<tr>
<td>5</td>
<td>Material used for connections</td>
</tr>
<tr>
<td>6</td>
<td>Material used for the casing</td>
</tr>
<tr>
<td>7</td>
<td>Maximum flow capacity in litres per hour</td>
</tr>
<tr>
<td>8</td>
<td>Material used for the diaphragm</td>
</tr>
<tr>
<td>9</td>
<td>Pretension pressure in bar (only for valves with not freely adjustable pretension pressure)</td>
</tr>
<tr>
<td>10</td>
<td>Month of manufacture</td>
</tr>
<tr>
<td>11</td>
<td>Year of manufacture</td>
</tr>
</tbody>
</table>
## Technical data

<table>
<thead>
<tr>
<th>Valve type</th>
<th>Nominal width</th>
<th>Material (casing)</th>
<th>Permitted operating pressure</th>
<th>Adjustable pressure</th>
<th>Maximum temperature</th>
<th>Flow capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back pressure and pressure relief valve (diaphragm valve with spring load)</td>
<td>DN6</td>
<td>PVC, PP, PVDF, 1.4571 stainless steel</td>
<td>16 bar</td>
<td>0.5 – 16 bar</td>
<td>PVC: 35 °C PP and PVDF: 50 °C Stainless steel: 50 °C</td>
<td>75 l/h</td>
</tr>
<tr>
<td></td>
<td>DN10</td>
<td></td>
<td>10 bar</td>
<td>0.5 – 10 bar</td>
<td></td>
<td>200 l/h</td>
</tr>
<tr>
<td></td>
<td>DN15</td>
<td></td>
<td>10 bar</td>
<td>0.5 – 10 bar</td>
<td></td>
<td>500 l/h</td>
</tr>
<tr>
<td></td>
<td>DN25</td>
<td>PP</td>
<td>10 bar</td>
<td>0.5 – 10 bar</td>
<td>PP: 50 °C Stainless steel: 50 °C</td>
<td>850 l/h</td>
</tr>
<tr>
<td></td>
<td>DN25</td>
<td>Stainless steel 1.4571</td>
<td>16 bar</td>
<td>0.5 – 16 bar</td>
<td></td>
<td>850 l/h</td>
</tr>
<tr>
<td></td>
<td>DN32</td>
<td>PP, 1.4581 stainless steel</td>
<td>10 bar</td>
<td>0.5 – 10 bar</td>
<td></td>
<td>1400 l/h</td>
</tr>
<tr>
<td></td>
<td>DN40</td>
<td>PP, 1.4581 stainless steel</td>
<td>10 bar</td>
<td>0.5 – 10 bar</td>
<td></td>
<td>2250 l/h</td>
</tr>
<tr>
<td></td>
<td>DN50</td>
<td>PP, 1.4581 stainless steel</td>
<td>10 bar</td>
<td>0.5 – 10 bar</td>
<td></td>
<td>3600 l/h</td>
</tr>
<tr>
<td></td>
<td>DN65</td>
<td>PP</td>
<td>10 bar</td>
<td>0.5 – 10 bar</td>
<td></td>
<td>5000 l/h</td>
</tr>
<tr>
<td>Pressure relief valve (spring-loaded seat valve)</td>
<td>DN6</td>
<td>Stainless steel 1.4571</td>
<td>200 bar</td>
<td>0.9 – 1.7 bar ... 121 – 200 bar (observe the information on the type plate for this purpose)</td>
<td>120 °C</td>
<td>40 l/h</td>
</tr>
<tr>
<td></td>
<td>DN10</td>
<td></td>
<td>250 bar</td>
<td>16 – 33.9 bar ... 200 – 250 bar (observe the information on the type plate for this purpose)</td>
<td>280 °C</td>
<td>480 l/h at 10 bar 1500 l/h at 100 bar</td>
</tr>
</tbody>
</table>

Table 4: Technical data
6 Dimensions

6.1 DN6 – DN15 back pressure and pressure relief valves (spring-loaded diaphragm valves)

All dimensions in mm.

![Dimensional drawing](image)

<table>
<thead>
<tr>
<th>Nominal width</th>
<th>Material</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>H</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN6</td>
<td>Plastic</td>
<td>-</td>
<td>-</td>
<td>21.5</td>
<td>5</td>
<td>60</td>
<td>71</td>
<td>125 – 140 bar</td>
<td>140</td>
</tr>
<tr>
<td></td>
<td>Stainless steel*</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>Stainless steel G1/4</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DN10</td>
<td>Plastic</td>
<td>G3/8</td>
<td>12</td>
<td>18.5</td>
<td>7</td>
<td>92</td>
<td>112</td>
<td>125 – 150 bar</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Grommet Ø13</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>Ø20</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stainless steel G3/8</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>49</td>
<td>107</td>
</tr>
<tr>
<td></td>
<td>G1/2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>72</td>
<td>90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DN15</td>
<td>Plastic</td>
<td>G1/2</td>
<td>17</td>
<td>21</td>
<td>7</td>
<td>92</td>
<td>112</td>
<td>130 – 160 bar</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>Grommet Ø16</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>156</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ø20</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>112</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ø25</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>120</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stainless steel G1/2</td>
<td>25</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>140 – 165 bar</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>G3/4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>130</td>
<td></td>
</tr>
</tbody>
</table>

* with hose clamp connections made of PVDF
6.2 DN25 – DN65 back pressure and pressure relief valves (spring-loaded diaphragm valves)

All dimensions in mm

<table>
<thead>
<tr>
<th>Nominal width</th>
<th>Material</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>d</th>
<th>F</th>
<th>H</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN25 Plastic</td>
<td>G1</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>140</td>
</tr>
<tr>
<td>Ø32 Stainless</td>
<td>G1</td>
<td>32</td>
<td></td>
<td>31</td>
<td></td>
<td></td>
<td>149</td>
<td>220</td>
<td>255</td>
</tr>
<tr>
<td>Ø40 Stainless</td>
<td>G1</td>
<td>30</td>
<td></td>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>140</td>
</tr>
<tr>
<td>DN32 Plastic</td>
<td>G1 1/4</td>
<td>22</td>
<td></td>
<td>31</td>
<td></td>
<td></td>
<td>149</td>
<td>220</td>
<td>255</td>
</tr>
<tr>
<td>Stainless</td>
<td>DN32</td>
<td>24</td>
<td></td>
<td>100</td>
<td>18</td>
<td></td>
<td>140</td>
<td>160</td>
<td>200</td>
</tr>
<tr>
<td>DN40 Plastic</td>
<td>G1 1/2</td>
<td>22</td>
<td></td>
<td>38</td>
<td></td>
<td></td>
<td>159</td>
<td>240</td>
<td>270</td>
</tr>
<tr>
<td>Stainless</td>
<td>DN40</td>
<td>30</td>
<td></td>
<td>110</td>
<td>18</td>
<td></td>
<td>150</td>
<td>180</td>
<td>235</td>
</tr>
<tr>
<td>DN50 Plastic</td>
<td>G2</td>
<td>27</td>
<td></td>
<td>38</td>
<td></td>
<td></td>
<td>170</td>
<td>240</td>
<td>270</td>
</tr>
<tr>
<td>Stainless</td>
<td>DN50</td>
<td>38</td>
<td></td>
<td>125</td>
<td>18</td>
<td></td>
<td>165</td>
<td>185</td>
<td>260</td>
</tr>
<tr>
<td>DN65 Plastic</td>
<td>G2 1/2</td>
<td>28</td>
<td></td>
<td>46</td>
<td></td>
<td></td>
<td>190</td>
<td>260</td>
<td>295</td>
</tr>
</tbody>
</table>

Fig. 3: Dimensional drawing for DN25 – DN65 back pressure and pressure relief valves (spring-loaded diaphragm valves)
6.3 DN6 pressure relief valves (spring-loaded seat valves)

All dimensions in mm

![Dimensional drawing for DN6 pressure relief valves (spring-loaded seat valves)](image)

Fig. 4: Dimensional drawing for DN6 pressure relief valves (spring-loaded seat valves)

6.4 DN10 pressure relief valves (spring-loaded seat valves)

All dimensions in mm

![Dimensional drawing for DN10 pressure relief valves (spring-loaded seat valves)](image)

Fig. 5: Dimensional drawing for DN10 pressure relief valves (spring-loaded seat valves)

7 Installation

- The flow direction of the back pressure and pressure relief valve must be observed.

![Valve with flow direction arrow](image)

Fig. 6: Valve with flow direction arrow

- Spring-loaded seat valves must be mounted vertically. Any other back pressure and pressure relief valve may be mounted in any position.

- A pressure gauge must be mounted upstream of the valve to adjust the pretension pressure of the back pressure and pressure relief valve to the operating conditions of the dosing system.

In the following installation examples, a back pressure valve and a pressure relief valve is used. The dosing media is returned to the suction line. In this case, there must not be a non-return valve or a foot valve in the suction line. You should install the pressure relief valve as close as possible to the dosing head.

![Installation with a back pressure valve and a pressure relief valve](image)

Fig. 7: Installation with a back pressure valve and a pressure relief valve

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Main line</td>
</tr>
<tr>
<td>2</td>
<td>Injection nozzle with shut-off valve</td>
</tr>
</tbody>
</table>

Table 5: Designation of components
It is also possible to install a pressure relief valve with returning to the dosing tank. The pressure in the dosing tank must not be too high so that it is possible to accommodate the returned dosing medium.

Perform the following working steps:

1. Loosen the counter nut at the back pressure and pressure relief valve (see fig. 9 and fig. 11).
2. Turn the pressure setting screw counter-clockwise until it is free-moving.
3. Open all shut-off valves.
4. Commission the dosing pump. Slowly increase the delivery capacity to the desired value.
5. Slowly turn the pressure setting screw clockwise.
   - The operating pressure increases.
6. As soon as the desired operating pressure has been achieved, you must turn the counter nut clockwise until the pressure setting screw cannot be easily loosened.
7. Check whether the set operating pressure remains constant over a longer period of time.
8. Increase pretension until the pressure relief valve does not open anymore.
9. Turn the pressure setting screw by approx. one turn in order to avoid possible overflow caused by varying operating pressures.

Pretension pressure adjusted.
9 Maintenance

Lutz-Jesco products are produced to the highest quality standards, and have a long service life. However, some parts are subject to operational wear. Regular inspections are therefore necessary in order to ensure a long operating life. Regular maintenance will protect the product from operation interruptions.

9.1 Renewal of diaphragms

9.1.1 DN6 – DN15 back pressure and pressure relief valves (spring-loaded diaphragm valves)

Perform the following working steps:

1. Loosen counter nut \( \text{1} \) until the pressure setting screw \( \text{2} \) is free-moving.
2. Unscrew the pressure setting screw \( \text{2} \) from the valve cap \( \text{4} \).
3. Loosen union nut \( \text{6} \).
4. Remove valve cap \( \text{4} \).
5. Remove diaphragm \( \text{8} \), spring plate \( \text{7} \), pressure spring \( \text{6} \) and washer \( \text{5} \). Back-pressure and pressure relief valves DN6 with diaphragms made of FPM (Viton) and EPDM contain one diaphragm. Back-pressure and pressure relief valves DN6 with diaphragms made of EPDM PTFE contain two diaphragms \( \text{10} \) and \( \text{11} \).
6. Clean valve housing \( \text{9} \).
7. Insert a new diaphragm \( \text{8} \) or \( \text{11} \) into the valve body \( \text{9} \) with the coated side facing downwards. Then place an uncoated diaphragm \( \text{10} \) on top if your back-pressure and pressure relief valve has two diaphragms.
8. Insert washer \( \text{5} \), pressure spring \( \text{6} \) and spring plate \( \text{7} \) into valve cap \( \text{4} \).
9. Insert valve cap \( \text{4} \) in valve housing \( \text{9} \).
10. Screw union nut \( \text{6} \) onto the valve housing \( \text{9} \).
11. Screw pressure setting screw \( \text{2} \) with counter nut \( \text{3} \) into valve cap \( \text{4} \).
12. Adjust the correct pretension pressure.

Diaphragms are renewed.

---

**NOTICE**

**Functional influences on the valve**

Tightening the union nut by hand does not ensure adequate diaphragm tightness. High pressures cannot be maintained.

Use an appropriate tool to tighten the union nut. Do not use tools such as water pump pliers which could damage the components. If no appropriate tool is available, the valve must be pre-tensioned in longitudinal direction, e.g. in a bench vice. Then you can tighten the union nut by hand.

---

**CAUTION**

**Increased risk of accidents due to insufficient qualification of personnel!**

Dosing pumps and their accessories must only be installed, operated and maintained by personnel with sufficient qualifications. Insufficient qualification will increase the risk of accidents.

Ensure that all action is taken only by personnel with sufficient and corresponding qualifications.

Prevent access to the system for unauthorised persons.

---

Measure the distance between pressure control valve and valve housing and note down the value. Thus, the same pretension pressure can be adjusted after diaphragm replacement.
9.1.2 DN25 – DN65 back pressure and pressure relief valves
(spring-loaded diaphragm valves)

Perform the following working steps:
1. Loosen counter nut ②, until the pressure setting screw ① is free-moving.
2. Unscrew pressure setting screw ① from valve cap ⑥.
3. Remove all four protective caps ③.
4. Loosen all four hexagon nuts ④.
5. Remove all four washers ⑤.
6. Remove valve cap ⑥.
7. Remove diaphragm ⑧, diaphragm plate ⑨, pressure spring ⑩ as well as spring plate ⑩.
8. Clean valve housing ⑪.
9. Insert new diaphragm ⑧ into the valve housing.
10. Insert spring plate ⑩, pressure spring ⑩ and diaphragm plate ⑨ into valve cap ⑥.
11. Mount valve cap ⑥ onto valve housing ⑪.
12. Insert all four washers ⑤.
13. Screw all four hexagon nuts ④ in place. Tighten the hexagon nuts crosswise. Recommended torque: 5 Nm
14. Mount all four protective caps ③ onto the hexagon nuts.
15. Screw pressure setting screw ① with counter nut ② into valve cap ⑥.
16. Adjust the correct pretension pressure.
✓ Diaphragms are renewed.

10 Spare parts
10.1 Diaphragms

<table>
<thead>
<tr>
<th>Nominal width</th>
<th>Material (casing)</th>
<th>Material (diaphragm)</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN6</td>
<td>PVC, PP, PVDF, 1.4571 stainless steel</td>
<td>PTFE</td>
<td>81654</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EPDM</td>
<td>81898</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FPM</td>
<td>81899</td>
</tr>
<tr>
<td>DN10</td>
<td>PP</td>
<td>PTFE</td>
<td>81655</td>
</tr>
<tr>
<td></td>
<td></td>
<td>81657 (for PVDF design)</td>
<td></td>
</tr>
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<td>DN15</td>
<td>PTFE</td>
<td>81656</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EPDM</td>
<td>81562</td>
<td></td>
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<tr>
<td></td>
<td>FPM</td>
<td>26394</td>
<td></td>
</tr>
<tr>
<td>DN25 – DN65</td>
<td>PTFE</td>
<td>81662</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EPDM</td>
<td>81263</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FPM</td>
<td>81264</td>
<td></td>
</tr>
</tbody>
</table>

Table 7: Diaphragm spare parts

10.2 Seals for DN6 back pressure and pressure relief valves (plastic)

<table>
<thead>
<tr>
<th>Material</th>
<th>Part number</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPDM</td>
<td>81824</td>
<td>black</td>
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<tr>
<td>FPM</td>
<td>81825</td>
<td>green</td>
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<tr>
<td>PTFE</td>
<td>81841</td>
<td>white</td>
</tr>
</tbody>
</table>

Table 8: Seal spare parts

10.3 Seats for DN6 pressure relief valves

For stainless steel pressure relief valves (see "DN6 pressure relief valves (spring-loaded seat valves)" on page 11).

<table>
<thead>
<tr>
<th>Pressure range</th>
<th>Material</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 – 90</td>
<td>FPM</td>
<td>80085</td>
</tr>
<tr>
<td>91 – 199</td>
<td>FPM</td>
<td>80792</td>
</tr>
</tbody>
</table>

Table 9: Seat spare parts
11 EC declaration of incorporation

(EN) Declaration of Incorporation according to EC directive 2006/42/EC on machinery (Annex II B)

Herewith we declare, that the partly completed machinery described below is complying with all essential requirements of the Machinery Directive 2006/42/EC, as far as the scope of delivery allows. Additional we declare that the relevant technical documentation is compiled in accordance with part B of Annex VII. We commit to transmit, in response to a reasoned request by the market surveillance authorities, relevant documents on the partly completed machinery by our documentation department. The partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of Directive 2006/42/EC on Machinery, where appropriate, and until the EC Declaration of Conformity according to Annex II A is issued.

(FR) Notice de montage dans le cadre de la directive européenne 2006/42/CE relative aux machines (annexe II B)

Nous expliquons ici que la machine incomplète décrite ci-après répond à toutes les exigences fondamentales de la directive relative aux machines 2006/42/CE, pour autant que cela soit possible dans le cadre du volume de livraison. Plus loin nous expliquons que les documents techniques spéciaux sont établis conformément à l’annexe VII partie B de cette directive. Pour ce qui est de notre service de documentation, nous nous engagons à communiquer aux autorités de surveillance du marché les explications fondées des documents spéciaux pour la machine incomplète. La machine incomplète doit d’abord être mise en service, quand il est constaté que la machine ou l’installation dans laquelle la machine incomplète doit être montée répond aux dispositions de la directive 2006/42/CE relative aux machines, et que la notice de conformité européenne est présentée conformément à l’annexe II A.

(ES) Declaración de incorporación según la Directiva 2006/42/CE sobre máquinas (Anexo II B)

Por la presente declaramos que la siguiente cuasi máquina cumple con todas las disposiciones pertinentes de la Directiva 2006/42/CE de máquinas, siempre y cuando lo permita el volumen de suministro. También declaramos que la documentación técnica descrita en el anexo VII parte B se ha elaborado conforme a la presente Directiva. Nos comprometemos a enviar los documentos de la cuasi máquina a las autoridades de vigilancia del mercado a través de nuestro departamento de documentación en respuesta a una previa solicitud motivada. La cuasi máquina no puede ponerse en servicio sin antes verificar que la máquina o el sistema en el que se instale la cuasi máquina, cumpla con las disposiciones de la Directiva 2006/42/CE de máquinas y con la declaración CE de conformidad según el anexo II A.

(PT) Declaração de Construção de acordo com a Directiva-CE 2006/42/CE de máquinas (Anexo II B)

Esclarecemos por meio deste que a máquina incompleta descrita a seguir segue os requisitos da diretiva de máquinas 2006/42/CE, contudo que sua utilização seja mantida dentro do escopo original. Esclarecemos ainda que a documentação técnica especial segue o disposto no Anexo VII parte B de tal diretiva. Comprometemo-nos a a cumprir com as exigências das autoridades de fiscalização que forem feitas a nosso departamento de documentação que estejam relacionadas a qualquer documentação da máquina incompleta. A máquina poderá ser colocada em operação, se necessário para, desde que seja verificado que o sistema ou a máquina na qual a máquina incompleta será instalada foi montada, em conformidade com a diretiva 2006/42/CE de máquinas e com a declaração de conformidade 2006/42/CE.

Bezeichnung des Gerätes: Druckhalteventile
Description of the unit: Back-pressure valves
Désignation du matériel: Soupape de contre-pression
Typ / Type DN6 PN10, DN10 PN10, DN15 PN10, DN6 PN16, DN25 – DN65 PN10, DN25 PN16

Die unvollständige Maschine entspricht allen Bestimmungen der Richtlinie(n):
The partly completed machine is in conformity with all requirements of the directive(s):

| 2006/42/EG | Maschinenrichtlinie | Machinery Directive |
| 97/23/EG | Druckgeräterichtlinie | Pressure Equipment Directive |

Folgende harmonisierte Normen wurden angewandt: The following harmonised standards were applied:

- 

Lutz-Jesco GmbH Am Bostelberge 19 30900 Wedemark Germany

Lutz-Jesco GmbH Am Bostelberge 19 30900 Wedemark Germany

Lucjan Gogolin
Leiter Dosiertechnik
Head of Dosing Department
Lutz-Jesco, Wedemark, 01.03.2013

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12 Declaration of harmlessness

Please copy and send in with your device! Please display on the outer packaging!

---

**Declaration of no objection**

Please fill out a separate form for each appliance!

We forward the following device for repairs:

Device and device type: .......................................................... Part-no.: ..........................................................

Order No.: .......................................................... Date of delivery: ..........................................................

Reason for repair: ......................................................................................................................................................................................
..................................................................................................................................................................................................................
..................................................................................................................................................................................................................

**Dosing medium**

Description: .......................................................... Irritating: □ Yes □ No

Properties: .......................................................... Corrosive: □ Yes □ No

We hereby certify, that the product has been cleaned thoroughly inside and outside before returning, that it is free from hazardous material (i.e. chemical, biological, toxic, flammable, and radioactive material) and that the lubricant has been drained.

If the manufacturer finds it necessary to carry out further cleaning work, we accept the charge will be made to us.

We assure that the aforementioned information is correct and complete and that the unit is dispatched according to the legal requirements.

Company / address: .......................................................... Phone: ..........................................................

.......................................................... Fax: ..........................................................

.......................................................... Email: ..........................................................

Customer No.: .......................................................... Contact person: ..........................................................

Date, Signature: ..........................................................
13 Warranty claim

Warranty Application

Please copy and send it back with the unit!

If the device breaks down within the period of warranty, please return it in a cleaned condition with the complete warranty application, filled out.

Sender

Company: ................................................................. Phone: .................................. Date: ..........................
Address: ...................................................................................................................................................
Contact person: ..............................................................................................................................................
Manufacturer order no.: .................................. Date of delivery: ..............................................................
Device type: ................................................................. Serial number: ..........................................................
Nominal capacity / nominal pressure: ...................................................................................................
Description of fault: ....................................................................................................................................
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Service conditions of the device

Point of use / system designation: ..................................................................................................................
.................................................................................................................................................................................................................................
.................................................................................................................................................................................................................................
Accessories used (suction line etc.): ..................................................................................................................
.................................................................................................................................................................................................................................
.................................................................................................................................................................................................................................
Commissioning (date): ..........................................................................................................................................
Duty period (approx. operating hours): .............................................................................................................

Please describe the specific installation and enclose a simple drawing or picture of the chemical feed system, showing materials of construction, diameters, lengths and heights of suction and discharge lines.
The Lutz-Jesco App for iPads is available from the iTunes App Store. Additional information can be found at www.lutz-jesco.com