**Pressure Relief Valve DHV 712**

**Nominal size DN 65-100**  
**Nominal size 2 1/2“–4”**  
**Nominal pressure PN 6-10 bar**

### Advantages
- Pressure setting range 0.3 to 10 bar
- EPDM diaphragm, PTFE-coated on the medium side
- Most powerful thermoplastic pressure relief valve for large nominal diameters
- Two optional pressure ranges per nominal diameter
- Reliable reduction of pressure peaks and pulsations
- For constant working pressures even with counter-pressure in the system
- Constant, low vibration control behaviour
- Simple pressure setting possible at any time, even during operation
- 100% back pressure free in the resting position

### Additional options on request
- Free of paint wetting impairment substances
- Pressure presetting
- Pressure gauge hole
- Sealed

Pressure Relief Valve DHV 712

Connection Material (pipe connection)

1. PVC-U spigot fix
   PP/St. flange DIN, ANSI
   GFK flange DIN

2. PP spigot fix
   PP/St. flange DIN, ANSI
   GFK flange DIN

3. PVDF spigot fix
   PP/St. flange DIN, ANSI

Diaphragm PTFE (EPDM)

<table>
<thead>
<tr>
<th>Pressure setting*</th>
<th>DN 65</th>
<th>DN 80</th>
<th>DN 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3 - 4.0 bar</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>0.5 - 10.0 bar</td>
<td>●</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>0.5 - 6.0 bar</td>
<td>○</td>
<td>○</td>
<td>●</td>
</tr>
</tbody>
</table>

* Pressure settings in 0.5 bar steps.

On Demand
- Pressure Gauge Bore 2x G1/2"
- Sealing
- Cleaning
  (Free of Surface Disturbing Substances)

Basic Nominal Sizes:

- DN 5
- DN 10
- DN 15
- DN 20
- DN 25
- DN 32
- DN 40
- DN 50
- DN 65
- DN 80
- DN 100
- DN 125
- DN 150
- DN 200
- DN 250
- DN 300
- DN 350
- DN 400

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Use

- chemical plant engineering
- industrial plant engineering
- water treatment

Flow medium

- Technically pure, neutral and aggressive fluids, provided that the selected valve materials coming into contact with the media are resistant at the operating temperature according to the ASV resistance guide.

Note

For nitric or sulphuric acid, please contact us and indicate the exact operating conditions!

Flow direction

- always in the direction of the arrow, see sectional drawing

ASV resistance guide

www.asv-stuebbe.de/pdf_resistance/300051.pdf

Process temperature

- see pressure/temperature diagram

Process pressure

- see pressure/temperature diagram

Nominal pressure (H₂O, 20 °C)

- PN 6-10 bar

Size

- DN 65-100

Pressure setting range

- DN 65/PN 10 bar: 0.3–4.0/0.5–10 bar
- DN 80/PN 10 bar: 0.3–4.0/0.5–10 bar
- DN 100/PN 6 bar: 0.3–4.0/0.5–6 bar

Working pressure

- equals set pressure plus flow-dependent pressure increase (see characteristic curves): approx. 0.3-10 bar

Opening pressure

- approx. 0.3–0.5 bar

Hysteresis

- Difference between opening and closing pressure approx. 1 bar
Actuation
• medium controlled

Device connection
• Spigot end for solvent welding DIN/ISO (housing: PVC-U)
• Fusion spigot end DIN/ISO (housing: PP)
• Fusion spigot end DIN/ISO (housing: PVDF)
• Backing flange DIN 2501 PN 10/16

Material with medium contact
Housing/bonnet:
• PVC-U
• PP
• PVDF
Diaphragm:
• PTFE
  (EPDM diaphragm, PTFE-coated on the medium side)
Sealing:
• FPM
• EPDM

Material without medium contact
Screws:
• stainless steel (1.4301)

Mounting position
• as required

Fastening
• via threaded inserts (metal inserts) in the valve body

Colour, housing/bonnet
• PVC-U: grey, RAL 7011
• PP: grey, RAL 7032
• PVDF: opaque, yellowish-white

Pressure gauge connection
• The pressure relief valve can be factory fitted with a pressure gauge for neutral medium types. The resistance of the pressure gauge material has to be taken into consideration for other medium types.

The pressure/temperature limits of the materials are applicable for the stated nominal pressures and a computed operating life factor of 25 years. The values are a guide for flow media (DIN 2403), to which the valve material is resistant. For other fluids please refer to the ASV resistance guide; reduction ratios may have to be taken into account. The operating life of the wear parts depends on the conditions of use. For temperatures below 0 °C (PP < +10 °C) please specify the precise operating conditions of the application. The rated pressure (PN) depends on the valve size and material of the housing.

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Print No. 300516
TR MA DE Rev001
**Operating behaviour**

The valve is set tight at 5 bar.
A flow of approx. 25 000 l/h is reached at a pressure increase of 1 bar.
According to the curve, this results in the following values:
- Set pressure \( p_E \): 5 bar
- Working pressure \( p_A \): 6 bar
- Opening pressure \( p_O \): 5.4 bar
- Closing pressure \( p_S \): 4.5 bar

**Characteristic curve, design example**

The description table includes:
- \( p_E \): set pressure
- \( p_A \): working pressure
- \( p_{max} \): maximum pressure
- \( p_O \): opening pressure
- \( p_S \): closing pressure
- \( p_O - p_S \): hysteresis
- \( p_A - p_E \): flow-dependent pressure increase
- \( Q \): Flow

<table>
<thead>
<tr>
<th>Description</th>
<th>( p_A )</th>
<th>( Q )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working pressure</td>
<td></td>
<td>Flow</td>
</tr>
</tbody>
</table>
Pressure Relief Valve DHV 712

Characteristic curve, set range

DN 65/PN 10 bar: 0.3–4.0 bar

DN 80/PN 10 bar: 0.3–4.0 bar

DN 100/PN 6 bar: 0.3–4 bar

DN 65/PN 10 bar: 0.5–10 bar

DN 80/PN 10 bar: 0.5–10 bar

DN 100/PN 6 bar: 0.5–6 bar
### Applications for pressure relief valves

**Example 1:** Constant system pressure

**Example 2:** Consumer 1 and/or 2 opens, pressure relief valve closes.

**Example 3:** Pressure relief valve as backflow preventer

**Example 4:** Pressure relief valve as overflow valve; container pressure must not exceed max. pressure

**Example 5:** Use in connection with pulsation damper for low-pulsation dosing.

**Example 6:** Use with high primary pressure

<table>
<thead>
<tr>
<th>Description</th>
<th>Symbols</th>
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<tr>
<td>X</td>
<td>Valve opens</td>
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<tr>
<td>Y</td>
<td>Valve closed</td>
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<tr>
<td>$p_A$</td>
<td>Working pressure</td>
</tr>
<tr>
<td>$p_{\text{max}}$</td>
<td>maximum pressure</td>
</tr>
<tr>
<td>$p_P$</td>
<td>Pump pressure</td>
</tr>
<tr>
<td>$p_O$</td>
<td>Opening pressure</td>
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Issue: 2015.11.09-en
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### Connection spigot

![Connection spigot diagram]

### Connection flange

![Connection flange diagram]

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<th>90</th>
<th>110</th>
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<td>80</td>
<td>100</td>
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<tr>
<td>DN (inch)</td>
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<td>3</td>
<td>4</td>
</tr>
<tr>
<td>h (mm)</td>
<td>68</td>
<td>75</td>
<td>93</td>
</tr>
<tr>
<td>H (mm)</td>
<td>306</td>
<td>324</td>
<td>352</td>
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<td>L1 (mm)</td>
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<table>
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<tr>
<td>DN (mm)</td>
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<td>80</td>
<td>100</td>
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<tr>
<td>DN (inch)</td>
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<td>3</td>
<td>4</td>
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<tr>
<td>b (mm)</td>
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Sectional drawing

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<td>A</td>
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<tr>
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<td>diaphragm</td>
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<td>flat sealing ring</td>
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<td>7</td>
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### Components

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<td>piston point</td>
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</table>