Back pressure valve

**Description**

Pilot or direct operated backpressure valve in sandwich construction. The backpressure valve, also called pre-loading valve, opens the main spool when the adjusted pressure is reached.

**Application**

Backpressure valves with pressure adjustment in A, B or T, are used for pre-loading of cylinders / motors, resp. for reaching a back pressure.

**Symbol**

Sandwich execution

- G..SA..-A
- G..SA..-B
- G..SA..-T

**Note!**

- Direct operated execution drawn
- All variants are also available pilot operated

**Type Code**

- Back-pressure valve
- Direct operated: A
- Pilot operated: V
- Type of adjustment:
  - Key: S
  - Control knob: D
  - Cover: A
- Sandwich construction
- Mounting interface acc. to ISO, NG10
- Type list / Function:
  - in T: in A
  - in B: B
- Nominal pressure range ($p_N$) of the built-in screw-in cartridge
- Sealing material:
  - NBR
  - FKM (Viton)
- Design index (subject to change): 2.1-760
**GENERAL SPECIFICATIONS**

- **Designation**: Back pressure valve
- **Construction**: Direct or pilot operated
- **Mounting**: Sandwich construction
- **Nominal size**: NG10 according to ISO 4401-05
- **Actuation**: Manually
- **Ambient temperature**: -25...+70 °C
- **Weight**: 2.3 kg

**HYDRAULIC SPECIFICATIONS**

- **Working pressure**: $p_{\text{max}} = 400$ bar
- **Nominal pressure range**
  - A: 63, 210, 315 bar
  - V: 63, 160, 350 bar
- **Minimum pressure**: See characteristics
- **Maximum volume flow**: $Q_{\text{max}} = 100$ l/min
- **Fluid**: Mineral oil, other fluid on request
- **Viscosity range**: $12 \text{ mm}^2/\text{s}...320 \text{ mm}^2/\text{s}$
- **Temperature range fluid**: -25...+70 °C (NBR), -20...+70 °C (FKM)
- **Contamination efficiency**: Class 18 / 16 / 13
- **Filtration**: Required filtration grade $\beta$ 6...10 ≥ 75, see data sheet 1.0-50

**ACTUATION**

- **Actuation**:
  - S = lockable key adjustment
  - D = lockable knob adjustment

**STANDARDS**

- **Mounting interface**: ISO 4401-05
- **Contamination efficiency**: ISO 4406

**SEALING MATERIAL**

- NBR or FKM (Viton) as standard, choice in the type code

**SURFACE TREATMENT**

- The sandwich bodies made of steel are zinc-phosphated

**PERFORMANCE SPECIFICATIONS**

- **Pressure volume flow characteristic over the non-return valve**

**VALVES INSTALLED**

- The following screw-in cartridges are used in the sandwich body.

<table>
<thead>
<tr>
<th>Article</th>
<th>Description</th>
<th>Data sheet no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BV.PM22</td>
<td>Pressure relief cartridge pilot operated</td>
<td>2.1-530</td>
</tr>
<tr>
<td>BA.PM22</td>
<td>Pressure relief cartridge direct operated</td>
<td>2.1-540</td>
</tr>
</tbody>
</table>

**Note!**

Other specifications, see data sheet of the screw-in cartridges

**Note!**

Detailed performance limits and additional hydraulic specifications may by drawn from the data sheets of the corresponding installed pressure relief cartridge.

**Attention!**

The performance data especially the „pressure-flow characteristic“ on the data sheets of the screw-in cartridges refer to the screw-in cartridges only. The additional pressure drop of the sandwich body must be taken into consideration.
### Dimensions

**Sandwich execution**

<table>
<thead>
<tr>
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<th>Description</th>
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<tbody>
<tr>
<td>160.2140</td>
<td>O-ring ID 14.00 x 1.78 (NBR)</td>
</tr>
<tr>
<td>160.6141</td>
<td>O-ring ID 14.00 x 1.78 (FKM)</td>
</tr>
</tbody>
</table>

**HYDRAULIC CONNECTION**

**ACCESSORIES**

<table>
<thead>
<tr>
<th>Type of adjustment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of adjustment for screw-in cartridges</td>
<td>Data sheet 2.0-50</td>
</tr>
<tr>
<td>Threaded subplates</td>
<td>Data sheet 2.9-40</td>
</tr>
<tr>
<td>Multi-station subplates</td>
<td>Data sheet 2.9-70</td>
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<tr>
<td>Module type manifold blocks</td>
<td>Data sheet 2.9-110</td>
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<tr>
<td>Technical explanations</td>
<td>Data sheet 1.0-100</td>
</tr>
<tr>
<td>Filtration</td>
<td>Data sheet 1.0-50</td>
</tr>
</tbody>
</table>

**INSTALLATION NOTES**

- **Mounting type**: Sandwich mounting
  - 4 fixing holes for socket head screws or studs M6
- **Mounting position**: Any, preferably horizontal
- **Tightening torque**: Fixing screws \( M_6 = 8.9 \) Nm (quality 8.8, zinc coated)
  - Screw-in cartridge \( M_6 = 60 \) Nm

**PARTS LIST**

<table>
<thead>
<tr>
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