Back pressure valves
Sandwich construction

- Pilot operated:
  \( p_{\text{N\max}} = 350 \text{ bar} \)
  \( p_{\text{max}} = 400 \text{ bar} \)
  \( Q_{\text{max}} = 100 \text{ l/min} \)

- Direct operated:
  \( p_{\text{N\max}} = 32 / 315 \text{ bar} \)
  \( p_{\text{max}} = 100 / 400 \text{ bar} \)
  \( Q_{\text{max}} = 100 / 25 \text{ l/min} \)

**DESCRIPTION**

Back pressure valves in direct or pilot operated versions for sandwich mounting. Mounting interface according to ISO 4401-05. The valves are available in two types of adjustment, the others being fixed. A cover is also available for key adjustment, see data sheet 2.0-50. Three pressure ranges are available for the pilot operated valves, four are available for the directly operated ones. The steel bodies are phosphate coated.

**APPLICATION**

Back pressure valves are applied where a back pressure in the outlet part of a cylinder or motor is necessary to prevent uncontrolled movement. The fields of applications are in machine building, handling system and hydraulic power packs.

**FUNCTION**

When pressure reaches the setting of the back pressure valve main spool will open up the oil passage.

**TYPE CODE**

Back pressure valve

- Direct operated, conical spool A
- Direct operated, control spool D
- Pilot operated S
- Type of adjustment Key S
- Control knob D
- Cover A

**GENERAL SPECIFICATIONS**

- Nominal size NG10 nach ISO 4401-05
- Denomination Pilot- and direct operated pressure valve
- Bauart Sandwich construction
- Mounting 4 holes for socket cap screws M6 or studs screws M6
- Fastening torque \( M_s = 9.5 \text{ Nm (qual. 8.8) for fixing screws} \)
- Connections Threaded connection plates Multi-flange subplates Longitudinal stacking system
- Mounting position any
- Ambient temperature -20…+50 °C
- Weight Depending on the type of valves 1.9…2.9 kg

**SCREW-IN CARTRIDGES INSTALLED**

The following screw-in cartridges are used in either the flange body or the sandwich body:

**HYDRAULIC SPECIFICATIONS**

- Fluid Mineral oil, other fluid on request
- Contamination efficiency ISO 4406:1999, class 18/16/13 (Required filtration grade \( \beta \geq 75 \))
  refer to data sheet 1.0-50/2
- Viscosity range 12 mm²/s...320 mm²/s
- Fluid temperature -20…+70 °C
- Peak pressure \( p_{\text{max}} = 400 \text{ bar} \)
- Nominal pressure \( p_{\text{N\max}} = 350 \text{ bar} \)
  \( p_{\text{max}} = 100 \text{ bar (Dir. op., control spool)} \)
  \( p_{\text{N\max}} = 63 \text{ bar} \)
  \( p_{\text{max}} = 160 \text{ bar} \)
  \( p_{\text{N\max}} = 315 \text{ bar} \)
  \( p_{\text{max}} = 350 \text{ bar} \)
- Minimal Pressure
- Opening pressure over non-return valve \( p_{\text{sp}} = 0.8 \text{ bar} \)
- Max. Volume flow
  - Pilot- direct op. control spool \( Q_{\text{max}} = 100 \text{ l/min} \)
  - Direct operated conical spool \( Q_{\text{max}} = 25 \text{ l/min} \)

**REMARK!**

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

oil viscosity $\nu = 30 \text{ mm}^2/\text{s}$

$p = f (Q)$ Pressure volume flow characteristics
(Maximal adjustable pressure)
1 = pilot operated
2 = direct operated, control spool

\[
p_p = 350 \text{ bar}
\]
\[
p_p = 160 \text{ bar}
\]
\[
p_p = 63 \text{ bar}
\]

\[
0 20 40 60 80 100 \quad Q [\text{l/min}]
\]

\[
p = f (Q)$ Pressure volume flow characteristics
(Maximal adjustable pressure)
1 = pilot operated
2 = direct operated

\[
p_p = 63/10/15 \text{ bar}
\]
\[
p_p = 160/350 \text{ bar}
\]
\[
p_p = 63 \text{ bar}
\]

\[
0 20 40 60 80 100 \quad Q [\text{l/min}]
\]

$p = f (Q)$ Pressure volume flow characteristics
(Maximal adjustable pressure)
direct operated, conical spool

\[
\Delta p = f (Q)$ Pressure drop-volume flow curve over non-return valve

\[
0 20 40 60 80 100 \quad Q [\text{l/min}]
\]

TYPE LIST / DIMENSIONS

Sandwich construction

G..SA10-T

G..SA10-A

G..SA10-B

G..SA10-AB

PARTS LIST

<table>
<thead>
<tr>
<th>Position</th>
<th>Article</th>
<th>Description</th>
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<tbody>
<tr>
<td>10</td>
<td>160.2140</td>
<td>O-Ring ID 14.00x1.78</td>
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* The exterior dimensions of the cartridges can be obtained from the corresponding data sheets 2.1-530, 2.1-540 and 2.1-542.

Technical explanation see data sheet 1.0-100