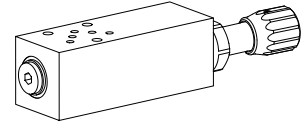


**Accumulator unloading valve**
**Sandwich construction**

- 1-point adjustment
- Pilot operated
- $Q_{max} = 8 \text{ l/min}$
- $p_{max} = 400 \text{ bar}$
- $p_{Nmax} = 350 \text{ bar}$

**NG4-Mini<sup>®</sup>**

**DESCRIPTION**

Sandwich type pilot operated accumulator unloading valve. Mounting interface according to Wandfluh standard. The valve is available with two types of setting, both interlockable. There are three pressure stages to choose from. The valve has an adjustable unloading point and a defined re-switching difference. The steel bodies of the sandwich valve are phosphate coated. Steel cartridge body and adjustment spindle galvanised to protect them against corrosion. The aluminium knob has a natural anodised finish. The quality of this product is reflected in the good performance data and design.

**FUNCTION**

If the P pressure exceeds the adjustable unloading point, the pilot spool is opening the pilot valve. A control flow starts to flow and the back end of the main spool is depressurised. The resultant pressure difference displaces the main spool towards the spring and the valve switches to unloading circulation. Because of the difference in section in the pilot area, the pilot flow is interrupted as soon as the pressure in the accumulator drops by 15% or 25% of the upper switching point. The pressures at the main spool are equilibrated and the spring displaces the main spool to the closed position. The pump can now build up the system pressure again as far as the unloading point and the cycle starts again.

**APPLICATION**

Accumulator loading valves are used in hydraulic systems with accumulators. They allow a low cost, energy saving system design in cases where the cylinder flow demand varies considerably or for retaining pressures over a period of time, e.g. for clamping processes. Mini-4 accumulator unloading valves are used everywhere where lightweight, small hydraulic control systems are required. **Note:** An additional relief valve for system protection must be installed. Please refer to the set-up and connection example on page 2.

**TYPE CODE**

		US	<input type="checkbox"/>	S	A04 - P	<input type="checkbox"/>	#	<input type="checkbox"/>
Accumulator unloading valve, pilot operated								
Type of adjustment	Key	<input type="checkbox"/>		<input checked="" type="checkbox"/>				
	Control knob	<input type="checkbox"/>		<input checked="" type="checkbox"/>				
Sandwich construction								
Mounting interface acc. to Wandfluh standard, NG4-Mini								
Type list / function	in P							
Pressure range $p_N$	100 bar	<input type="checkbox"/>		<input checked="" type="checkbox"/>				
	160 bar	<input type="checkbox"/>		<input checked="" type="checkbox"/>				
	350 bar	<input type="checkbox"/>		<input checked="" type="checkbox"/>				
Design-Index (Subject to change)								

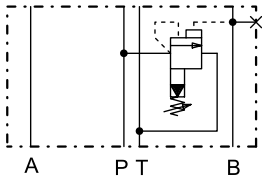
**GENERAL SPECIFICATIONS**

Description	Pilot operated accumulator unloading valve
Nominal size	NG4-Mini acc. to Wandfluh standard
Construction	Sandwich construction
Mounting	3 holes for socket cap screw M5 or studs M5
Connections	Connection plates Multi-station flange subplate Longitudinal stacking system
Mounting position	any
Ambient temperature	-20...+50 °C
Fastening torque	$M_D = 5,5 \text{ Nm}$ (qual 8.8) for fixing screw $M_D = 50 \text{ Nm}$ for screw cartridge
Weight	$m = 1,4 \text{ kg}$

**HYDRAULIC SPECIFICATIONS**

Fluid	Mineral oil, other fluid on request
Contamination efficiency	ISO 4406:1999, class 18/16/13 (Required filtration grade $\beta_{6...10} \geq 75$ ) refer to data sheet 1.0-50/2
Viscosity range	12 mm <sup>2</sup> /s...320 mm <sup>2</sup> /s
Fluid temperature	-20...+70 °C
Peak pressure	$p_{max} = 400 \text{ bar}$
Norminal pressure	$p_N = 100 \text{ bar}$ , $p_N = 160 \text{ bar}$ , $p_N = 350 \text{ bar}$
Minimum pressure	$p_{min} = 50 \text{ bar}$ for $p_N = 160 / 350 \text{ bar}$ $p_{min} = 25 \text{ bar}$ for $p_N = 100 \text{ bar}$
Diff. unloading/loading	$15 \pm 3\%$ for $p_N = 160 / 350 \text{ bar}$ $25 \pm 3\%$ for $p_N = 100 \text{ bar}$
Volume flow	$Q_{min} = 1...8 \text{ l/min}$ (over 8 l/min on request)
Leakage volume flow	Maximum 4 drops/min in accumulator operation P - T

For further hydraulic characteristics refer to data sheet: 2.1-548

**SYMBOL**

**REMARK!**

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

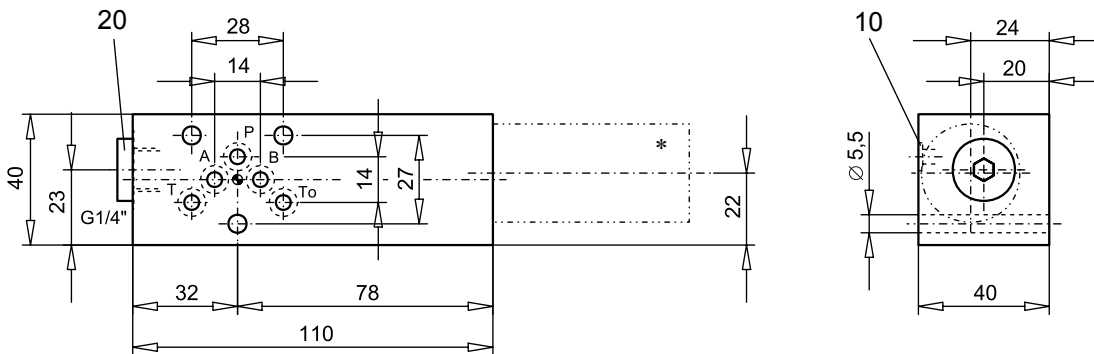
**SCREW-IN CARTRIDGES INSTALLED**

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

Type	Designation	Data sheet no.
US.PM22	Accumulator unloading valve • pilot operated	2.1-548

**CAUTION!**


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 flange body respectively sandwich body must be taken into consideration.

**DIMENSIONS**


\* The exterior dimensions of the cartridge can be obtained from the corresponding data sheet 2.1-548

**PARTS LIST**

Position	Article	Description
10	160.2052	O-ring ID 5,28x1,78
20	238.2406	Plug VSTI G1/4"-ED

**SET-UP AND CONNECTION EXAMPLES**

Unloading point adjusted at 100 bar (OS)

Differential value 15%

Loading point: (US) = OS minus 15% = 85 bar

Gas side of accumulator loaded upto max. 90% of US = 76 bar

Technical explanation see data sheet 1.0-100

