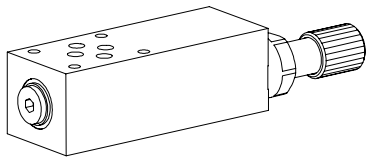
Accumulator unloading valve
Sandwich construction
- **1-point adjustment**
- **Pilot operated**
- **Q_{max} = 24 l/min**
- **p_{max} = 400 bar**
- **$p_{N\ max}$ = 350 bar**

NG6

ISO 4401-03



DESCRIPTION

Sandwich type pilot operated accumulator unloading valve. Mounting interface acc. to ISO 4401-03. 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 perfor-mance 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 aerea, 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. **Note**: An additional relief valve for system protection must be installed. Please refere to the set-up and connection exemple on page 2.

CONTENT

TYPE CODE

US ☐ S A06 - P ☐ # ☐

- Accumulator unloading valve
- Settings versions: screw [S], knob [D]
- Sandwich construction
- International standard interface ISO, NG6
- Accumulator loading in P
- Standard nominal pressure ranges: p_N = 100 bar [100], p_N = 160 bar [160], p_N = 350 bar [350]
- Design-Index (Subject to change)

GENERAL SPECIFICATIONS

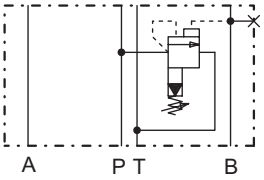
Description	Pilot operated accumulator unloading valve
Norminal size	NG6 according to ISO 4401-03
Construction	Sandwich construction
Mounting	4 holes for socket cap screw M5 or studs M5
Connections	Connection plates Multi-station flange subplate Longitudinal stacking system
Mounting position	any
Ambient temperature	-20...+50°C
Fastening torque	M_D = 5,5 Nm (Qual 8.8) for fixing screw M_D = 50 Nm for screw cartridge
Weight	m = 1,7 kg

HYDRAULIC SPECIFICATIONS

Fluid	Mineral oil, other fluid on request
Contamination efficiency	ISO 4406:1999, class 18/16/13 (Required filtration grade ß6…10≥75) refer to data sheet 1.0-50/2
Viskosity range	12 mm²/s…320 mm²/s
Fluid temperature	-20…+70°C
Peak pressure	p_{max} = 400 bar
Norminal pressure	p_N = 100 bar, p_N = 160 bar, p_N = 350 bar
Minimum pressure	p_{min} = 50 bar for p_N 160 / 350 bar p_{min} = 25 bar for p_N 100 bar
Diff. unloading/loading	15 ± 3 % for p_N = 160 / 350 bar 25 ± 3 % for p_N = 100 bar
Volume flow	Q_{min} = 1…24 l/min (over 24 l/min on request)
Leakage volume flow	Maximum 4 drops/min in accumulator operation P - T

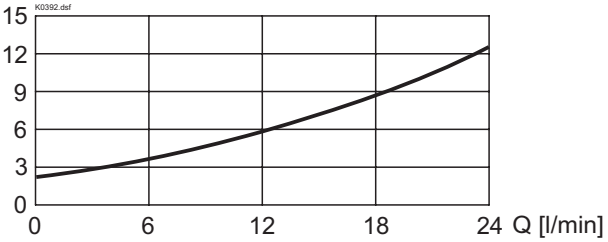
For further hydraulic characteristics refer to data sheet: 2.1-548

SYMBOL

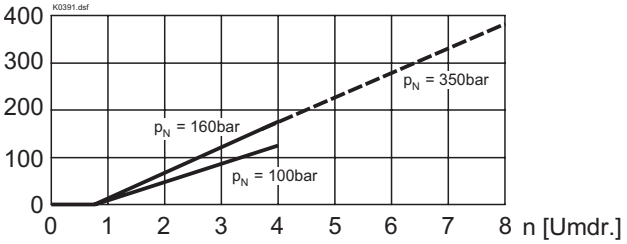


CHARACTERISTICS oilviskosity $\upsilon = 30mm^2/s$

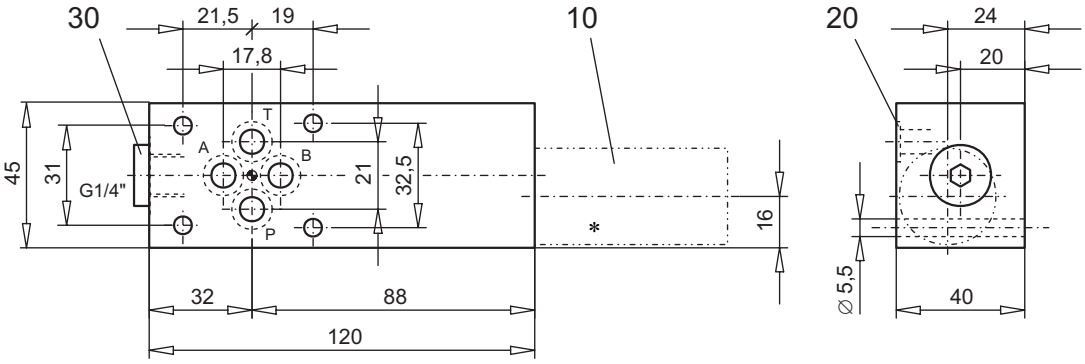
$\Delta p = f(Q)$ Pressure drop-volume flow curve
(Accumulator operation -pump unloading P-T)



p = f (n) Turns pressure adjustment characteristics
(at Q = 2 l/min)



DIMENSIONS



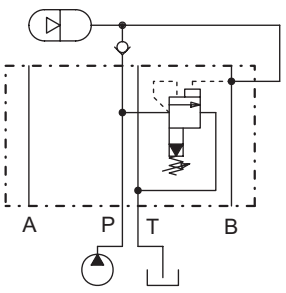
* The exterior dimensions of the cartridge can be obtained from the corresponding data sheet 2.1-548

PARTS LIST

Position	Article	Description
10	597.	Accumulator loading cartridge M22x1,5 acc. to data sheet 2.1-548
20	160.2093	O-ring ID 9,25x1,78
30	238.2406	Plug VSTI G1/4"-ED

SET-UP AND CONNECTION EXEMPLES

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 1.0-100E