

Proportional pressure relief valves

Type PDV700

NG 6 ISO

up to 25 l/min, up to **700 bar**

Features

- Directly operated for low flow
- Pilot operated for high flow
- High degree of pressure stability
- Linear curve



Applications

Electrical control of supply or working pressure in open or closed control loop:

- remote pressure setting
- maintaining pressure within small limits, independent of disturbance
- generating any pressure time curves
- controlled decompression of large oil volumes

Design

- Robust, smooth-running proportional solenoid
- Low friction, direct force transmission to the valve needle
- Supplied plugs allow separate tank discharge via lateral threaded connections
- The pilot operated valve consists of the direct operated valve, main stage and end plate
- Integrated orifices available
- Easy exchangeability of orifice from the flange surface

Technical data

Hydraulic fluid	Mineral oil according to DIN 51524 (other fluids on request)
Fluid temperature range	- 20 bis 80 °C
Ambient temperature range	- 30 to 50 °C
Viscosity range	5 to 400 mm ² /s
Porting	NG 6 according to DIN 24340 / ISO 4401 / CETOP RP 121 H
Max. operating pressure connection P, A, B	700 bar
Max. operating pressure connection T	200 bar / recommended operating pressure T < 2 bar for optimum stability and full control range external T-connections are available
Max. flow rate	Direct operated: 2 l/min / Pilot operated: 25 l/min
Filtration (recommendation)	According to NAS 1638 class 6 or ISO/DIN 4406 17/15/12
Duty cycle DC	100%
Solenoid voltage (nominal resistance)	24 VDC (11 Ohm)
Degree of protection	IP 65 nach EN 60529 / DIN 40050
Weight	Direct operated: 2.5 kg / Pilot operated: 3.5 kg
Dither frequency (recommendation)	60 - 150 Hz
Hysteresis	≤ 5% with optimal dither signal
Material	Housing: galvanized/black chromate Solenoid: galvanized

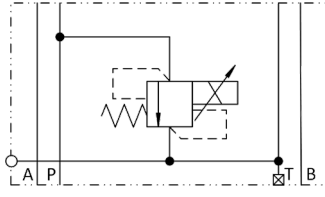
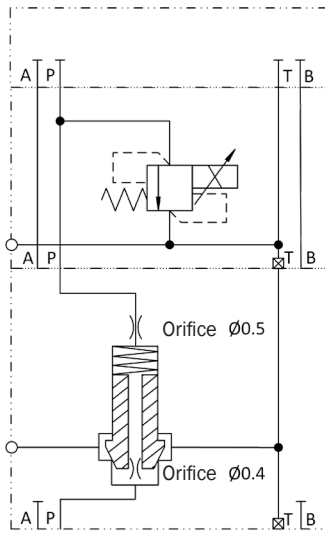
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Type code

Example		PDV	700	-	6	-	P	-	400	-	2	-	24	-	V	-	B		00	
Proportional pressure relief valve																				Design 00 ... 99 For internal purposes
Size	700 bar																			
Nominal size	6																			
Pressure relief	P						In connection P													Index Please leave blank For internal purposes
Max. operating pressure	400 bar 550 bar 700 bar																			
Max. flow rate	2 l/min direct operated 25 l/min pilot operated																			
Control method	24 solenoid 24 VDC																			
Seal material	V FKM other seal materials on request																			
																				Design revision For internal purposes

Product information

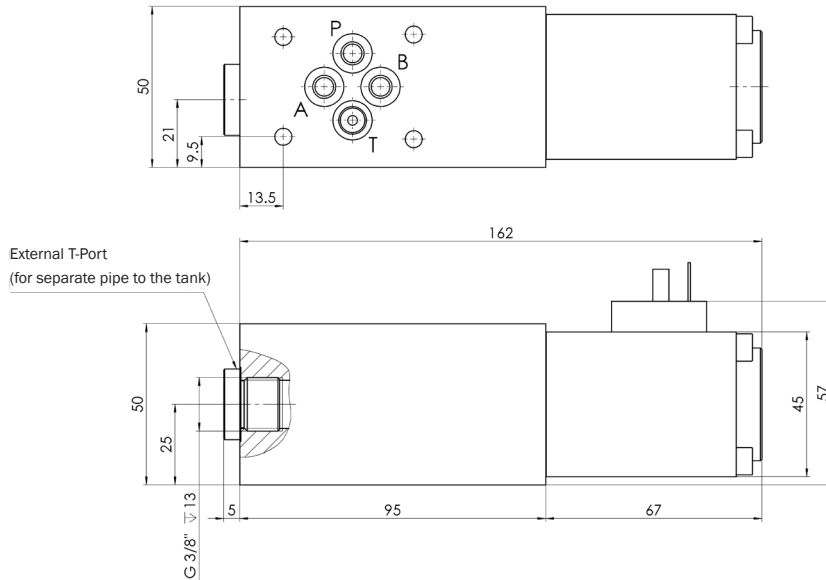
Max. operating pressure	400 bar	550 bar	700 bar
Max. flow rate	2 l/min		
Part No.	3743498	3743500	3743502
Symbol			
Max. flow rate	25 l/min		
Part No.	3990837	3985587	4001463
Symbol			

Type PDV700

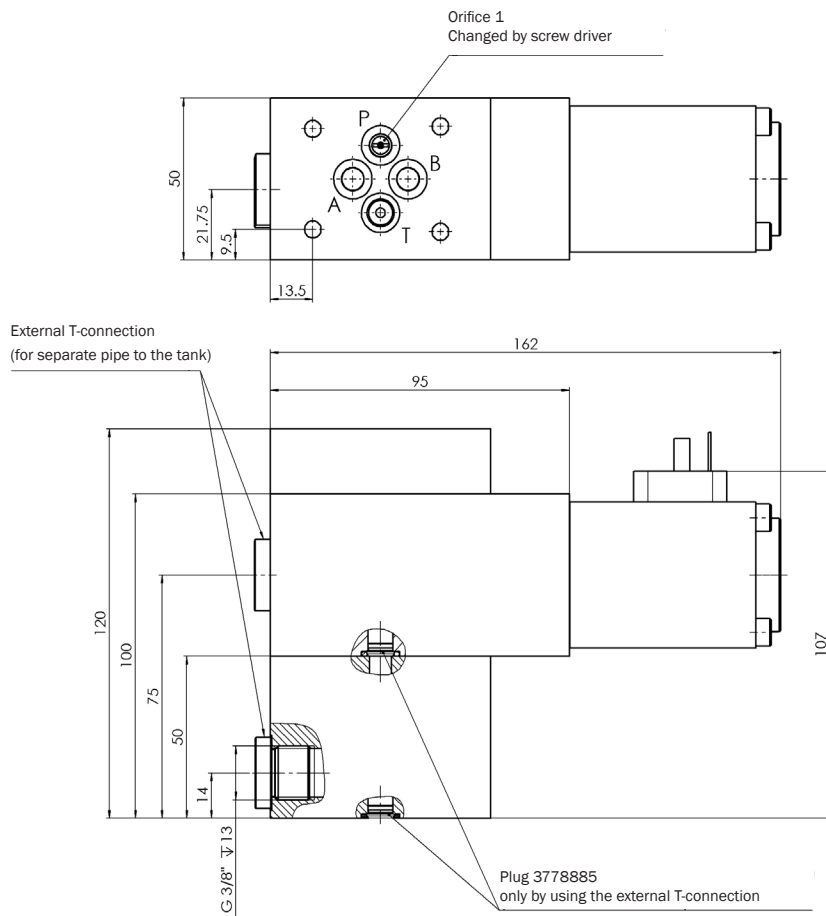
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Dimensional drawings

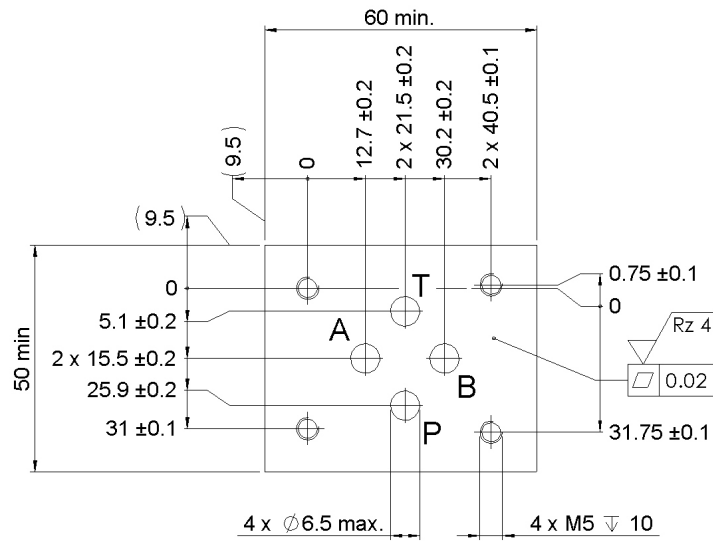
Direct operated



Pilot operated

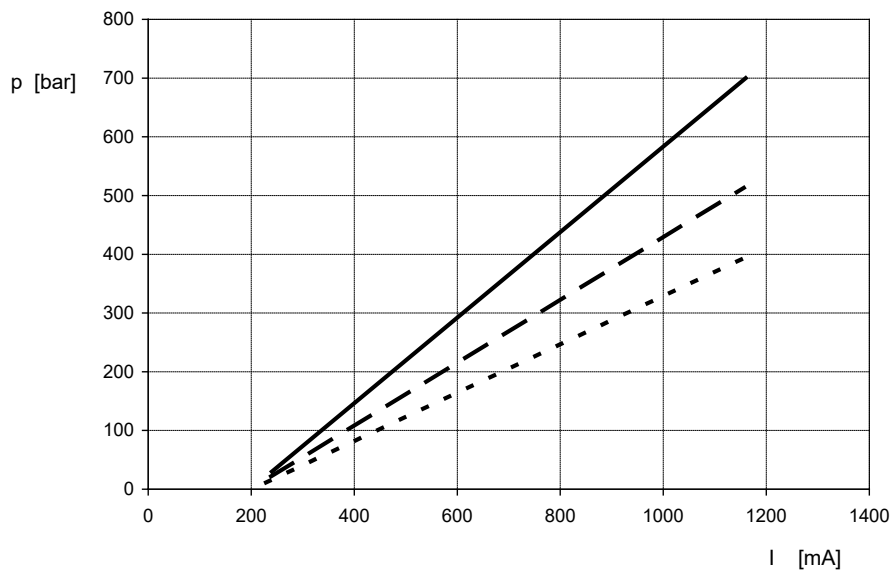


Drilling pattern



Current dependent on pressure p(I)

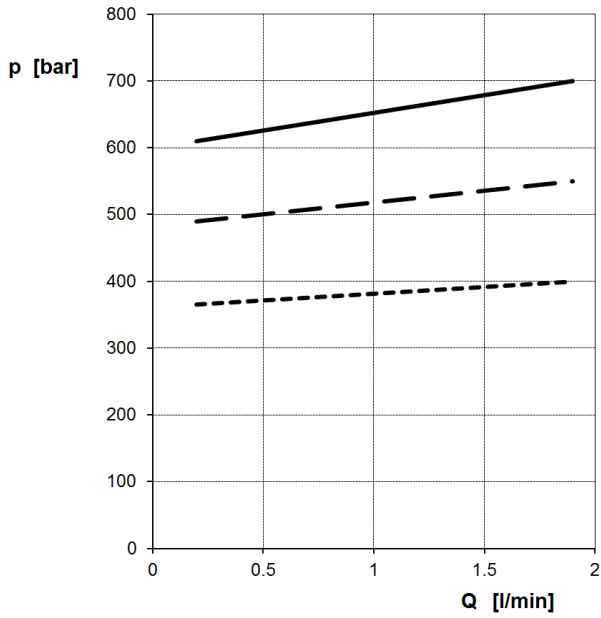
(Q = 1 l/min)



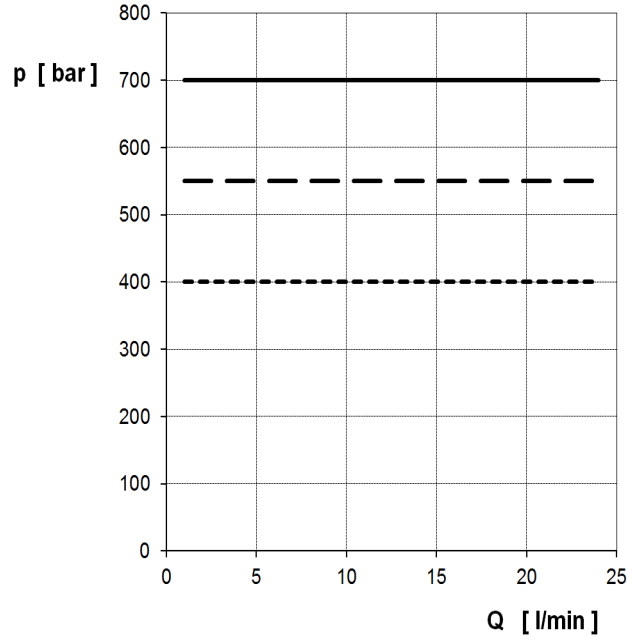
Key: - - - - 400 bar / - - - - 550 bar / ——— 700 bar

Flow rate dependent on pressure p(Q)

Direct operated



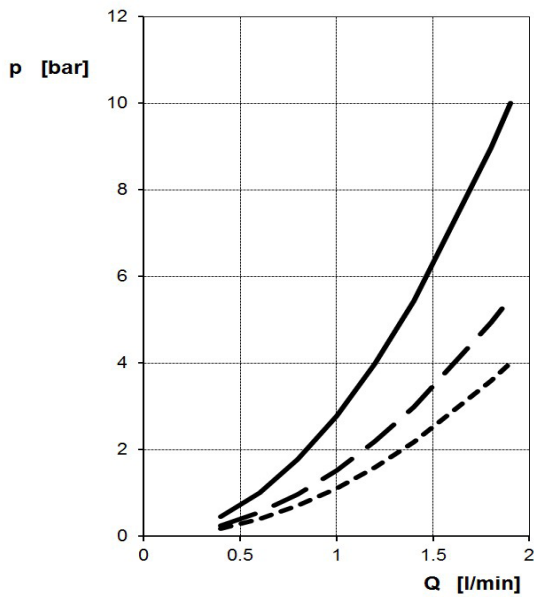
Pilot operated



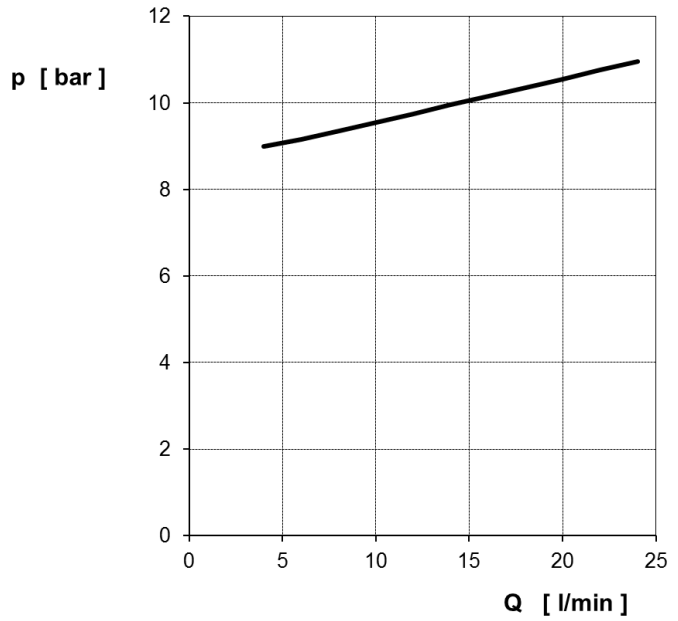
Key: - - - - 400 bar / - - - - 550 bar / ——— 700 bar

Flow rate dependent on minimum pressure p_{min}(Q)

Direct operated



Pilot operated



Key: - - - - 400 bar / - - - - 550 bar / ——— 700 bar

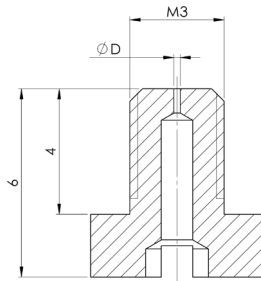
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Accessories

Part description	Type code	Part No.
Orifice insert \varnothing 0.2 (fitting in connection T)	BL700-6-D5,5-0,2-A*00	3688087
Orifice insert \varnothing 0.3 (fitting in connection T)	BL700-6-D5,5-0,3-A*00	3985507
Orifice insert \varnothing 0.4 (fitting in connection T)	BL700-6-D5,5-0,4-A*00	3891841
Orifice insert \varnothing 0.5 (fitting in connection T)	BL700-6-D5,5-0,5-A*00	3688099
Orifice insert \varnothing 0.6 (fitting in connection T)	BL700-6-D5,5-0,6-A*00	3985546
Orifice insert \varnothing 0.7 (fitting in connection T)	BL700-6-D5,5-0,7-A*00	3985547
Orifice insert \varnothing 0.8 (fitting in connection T)	BL700-6-D5,5-0,8-A*00	3985549
Orifice insert \varnothing 0.9 (fitting in connection T)	BL700-6-D5,5-0,9-A*00	3985550

Dimensional drawing



Symbol



Part description	Part No.
1 x Plug for solenoid grey	6132484
1 x Plug for solenoid black	3728850
4 x Tie bolt, M5 x 152-12.9	4455766
4 x Hex nut-M5x2d-12.9	4455768

Spare parts

Part description	Part No.
4 x O-ring, 9,25 x 1,78 mm, FKM	4455692
1 x Plug (fitting in external T-connection)	3778885

Electronic controllers

Open loop control (without actual system pressure feedback)

- manual adjustment of the actual pressure
- pressure adjustment with manual operated potentiometer or PLC-control

Closed loop control (with actual system pressure or force feedback)

- for automatic adjustment of system pressure to the pre-selected pressure
- for pressure setting with PLC, manual operated potentiometer or via BUS-system

Electronic selection table

design	HYDAC Part No.	HYDAC ordering code	amplifier mode („open loop control“)	controller mode („closed loop control“)	setpoint signal 0 ...10 V	setpoint signal 4 ... 20 mA	oscilloscope function	resolution (% current range)	solenoids in sectable form indep.	status monitoring control range	accessoires for the parameterization
Amplifier connector	6112594	EHCD-AP011XXXD	•		•		•	0,1	1		Interface box for amplifier connector (HYDAC - EHCD-APIFB) = 6108514
	6108508	EHCD-AP012XXXD	•			•	•	0,1	1		
Snap in module according EN50022	6158999	EHCD-AM005XXXU	•		•	•	•	0,01	2		USB-cable Typ B (Standard printer cable)
	6174133	EHCD-CUPREXAXPA	•	•	•	•	•	0,006	1		
	6174135	EHCD-CUPREXHXP	•	•	•	•	•	0,0025	1	•	

Safety

We recommend to operate the proportional pressure relief valves only in combination with a separate pressure relief valve to limit the pressure to the max. allowed value.