

Proportional pressure relief valve

Type PDV700

NG 6 ISO

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

Features

- Direct 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 4406:1999, class 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

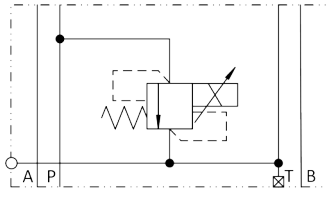
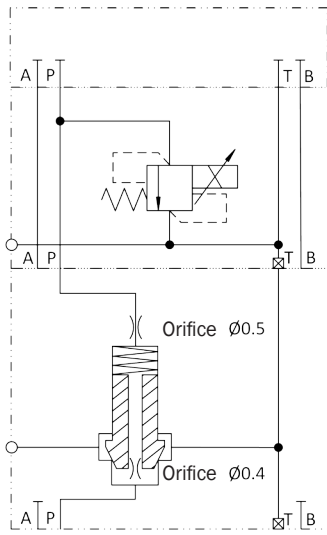
Type PDV700

NG 6 ISO
up to 25 l/min, up to 700 bar

Type code

Example		PDV	700	-	6	-	P	-	400	-	2	-	24	-	V	-	B		00	
Proportional pressure relief valve																				Special design 01 ... 99 (00 for standard)
Size	700 bar																			
Nominal size	6																			
Pressure relief	P						In connection P													
Max. operating pressure	400 bar 550 bar 700 bar																			
Max. flow rate	2 l/min direct operated 25 l/min pilot operated																			
Actuation type	24 solenoid 24 VDC																			
Seal material	V FKM other seal materials on request																			
																				Part index Please leave blank For internal purposes
																				Design revision For internal purposes

Standard design

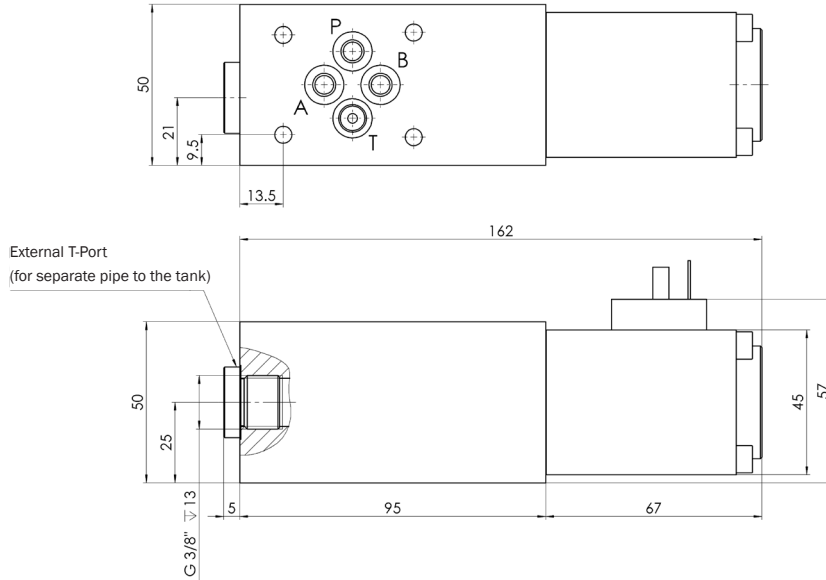
Max. operating pressure	400 bar	550 bar	700 bar
Max. flow rate	2 l/min		
Part no.	3743498	3743500	3743502
Symbol			
Max. flow rate	25 l/min		
Part no.	3990837	3985587	4001463
Symbol			

Type PDV700

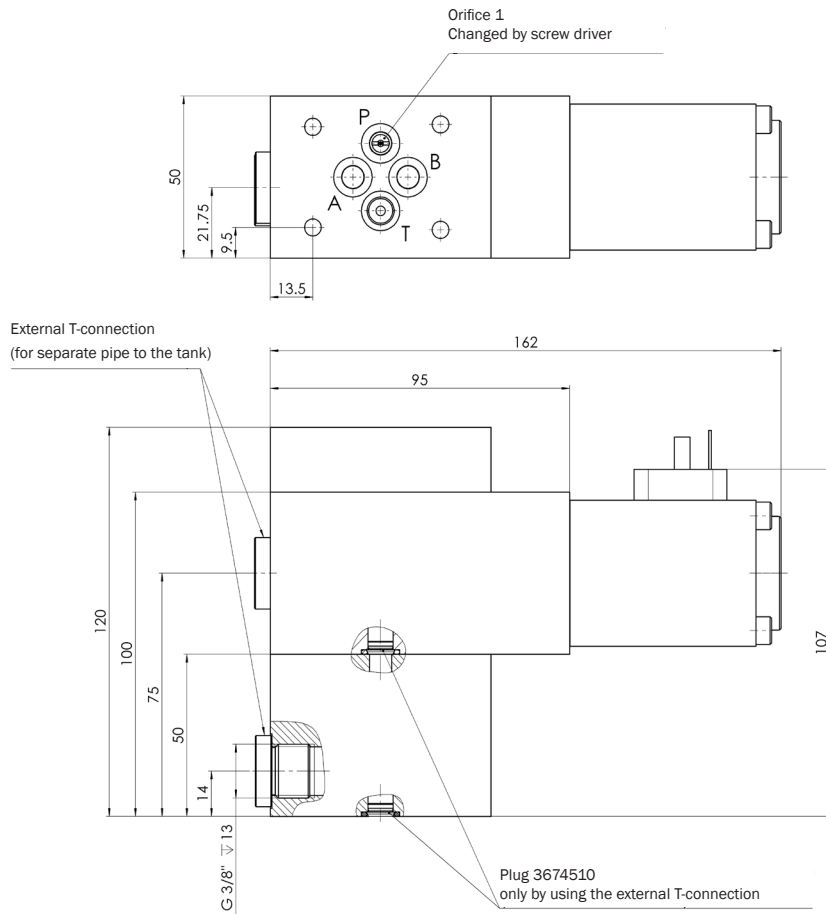
NG 6 ISO
up to 25 l/min, up to 700 bar

Dimensional drawings

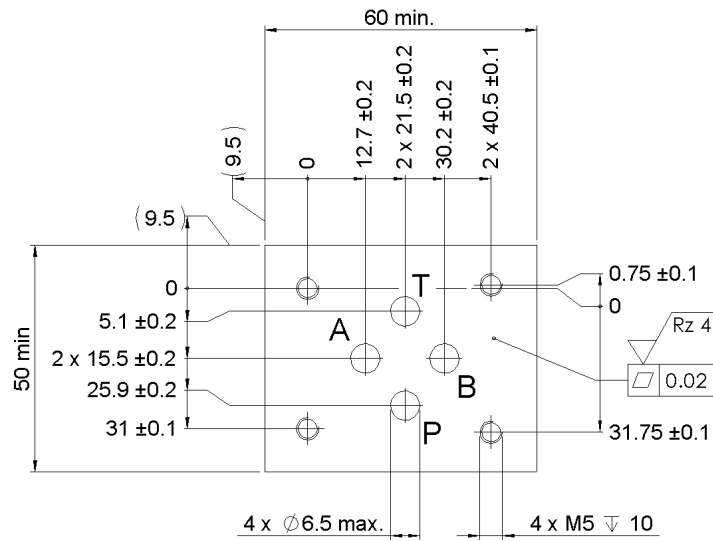
Direct operated



Pilot operated

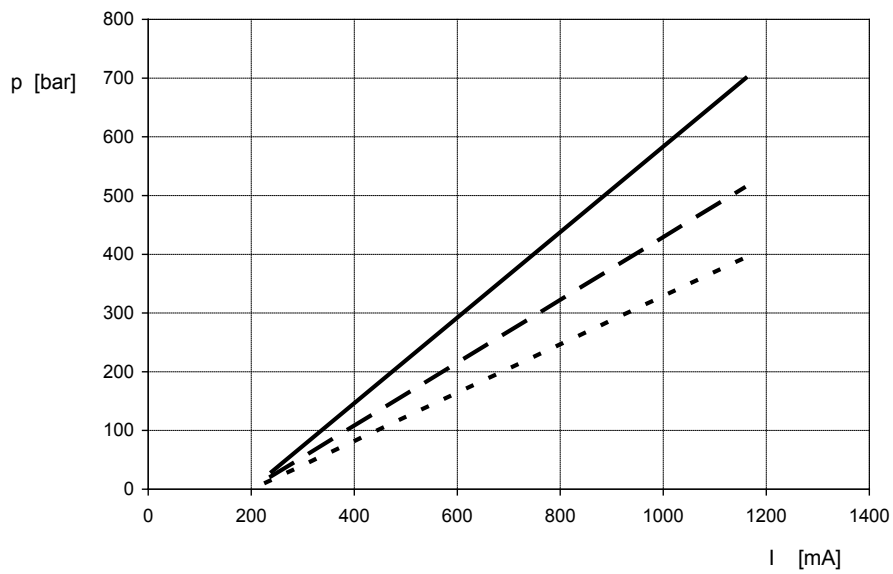


Drilling pattern



Current dependent on pressure p(I)

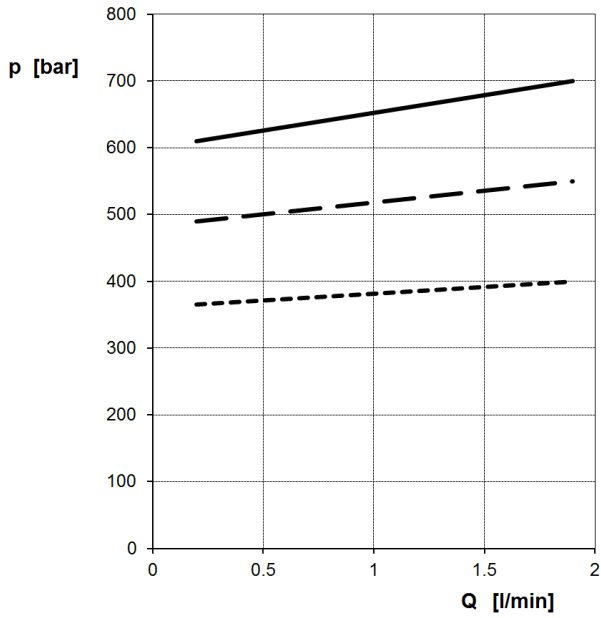
(Q = 1 l/min)



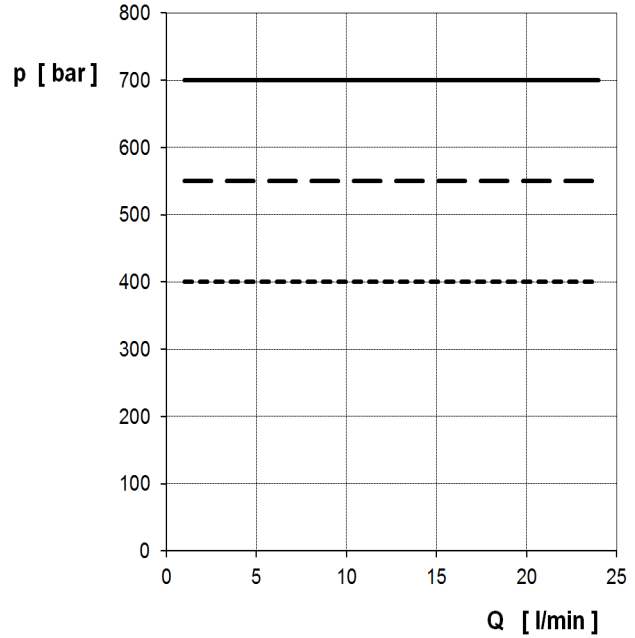
Key: - - - - 400 bar / - - - - 550 bar / ——— 700 bar

Flow rate dependent on pressure p(Q)

Direct operated



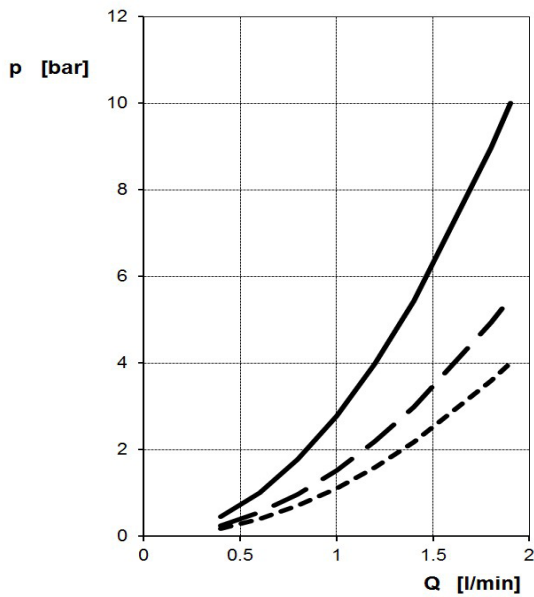
Pilot operated



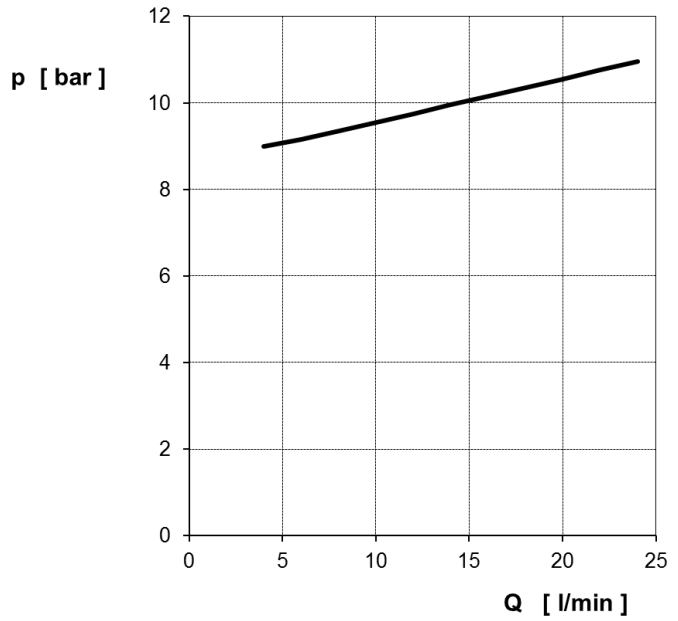
Key: ---- 400 bar / -.-.- 550 bar / — 700 bar

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

Direct operated



Pilot operated



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

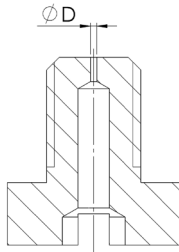
Type PDV700

NG 6 ISO
up to 25 l/min, up to 700 bar

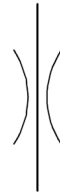
Accessories

Part description	Type code	Part no.
Orifice insert Ø 0.2 (fitting in connection T)	BL700-6-D5,5-0,2-A*00	3688087
Orifice insert Ø 0.3 (fitting in connection T)	BL700-6-D5,5-0,3-A*00	3985507
Orifice insert Ø 0.4 (fitting in connection T)	BL700-6-D5,5-0,4-A*00	3891841
Orifice insert Ø 0.5 (fitting in connection T)	BL700-6-D5,5-0,5-A*00	3688099
Orifice insert Ø 0.6 (fitting in connection T)	BL700-6-D5,5-0,6-A*00	3985546
Orifice insert Ø 0.7 (fitting in connection T)	BL700-6-D5,5-0,7-A*00	3985547
Orifice insert Ø 0.8 (fitting in connection T)	BL700-6-D5,5-0,8-A*00	3985549
Orifice insert Ø 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
1 x Tie bolt, M5 x 152-12.9	3689062
1 x Hex nut-M5x2d-12.9	3661157

Spare parts

Part description	Part no.
1 x O-ring, 9,25 x 1,78 mm, FKM	4003217
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.