

# Proportional pressure relief valve

## Type PDV700

NG 6  
up to 25 l/min

### Features

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



### Design

- Force controlled proportional solenoid of robust design

### Applications

- As modular valve, for electrical control of supply or working pressure.
- for remote pressure setting
  - maintaining pressure within small limits, independent of disturbance (especially at closed control circuit)
  - generating any pressure time curves, as ramps, pressure steps, sine curves, etc.
  - for controlled decompression of large oil volumes, for example in presses and accumulators

### 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 <sup>2</sup> /s
Porting	NG 6 according to DIN 24340/ Size 03 according to ISO 4401:2005/ CETOP RP 121 H
Nominal pressure rating	400, 550, 700 bar
Max. operating pressure connection P, A, B	700 bar
Max. operating pressure connection T	max. 200 bar / recommended pressure at T < 2 bar / External T-connections provided for optimum stability and full control range
Max. flow rate	2 l/min direct operated version 25 l/min pilot operated version
Filtration	according to NAS 1638, class 6 or ISO/DIN 4406:1999, class 17/15/12
Switch-on time	100%
Hysteresis	≤ 5% with optimal dither signal
Werkstoffe	housing: steel, galvanized/black chromate solenoid: galvanized

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**Ordering code**

<b>Example</b>	<b>PDV</b>	<b>700</b>	-	<b>6</b>	-	<b>P</b>	-	<b>400</b>	-	<b>2</b>	-	<b>24</b>	-	<b>V</b>	-	<b>B</b>		<b>00</b>
<b>Proportional relief valve</b>																		
<b>Type</b>	BV700																	
<b>Porting</b>	6																	
<b>Pressure relief</b>	P	In port P																
<b>Operating pressure max. [bar]</b>	400																	
	550																	
	700																	
<b>Flow rate max. [l/min]</b>	2	direct operated																
	25	pilot operated																
<b>Solenoid</b>	24	24 VDC																
<b>Seals</b>	V	(FPM) other seals on request																
																		<b>Special design</b> 01 ... 99 (00 for standard)
																		<b>Part index</b> Please leave it blank (small letters a-z; different letters do not effect interchangeability)
																		<b>Design revision</b> See dimension drawings (Capital letters A-Z; identical letters mean equal connecting dimensions )

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### Spare parts (included in delivery)

Type	Part description	Part no.
direct operated, pilot operated	O-ring, 9,25 x 1,78 mm, FPM	4 x 4003217
direct operated	Plug ③ (see symbol)	3778885
pilot operated	Throttle $\varnothing$ 0.4 (① /see symbol)	3891841
pilot operated	Throttle $\varnothing$ 0.5 (② / see symbol)	3688099
pilot operated	End plate / EP700-6-Z-V-B*00	4001384

### Accessories

Part description	Part no.
Orifice $\varnothing$ 0.2 mm (① und ②)	3688087
Orifice $\varnothing$ 0.3 mm (① und ②)	3985507
Orifice $\varnothing$ 0.4 mm (① und ②)	3891841
Orifice $\varnothing$ 0.5 mm (① und ②)	3688099
Orifice $\varnothing$ 0.6 mm (① und ②)	3985546
Orifice $\varnothing$ 0.7 mm (① und ②)	3985547
Orifice $\varnothing$ 0.8 mm (① und ②)	3985549
Orifice $\varnothing$ 0.9 mm (① und ②)	3985550
Tie bolt , M5x152 mm, 12.9	4x 3689062
Hexagonal nut, M5x2d, 12.9	4x 3661157
Connector for solenoid (black)	3728850

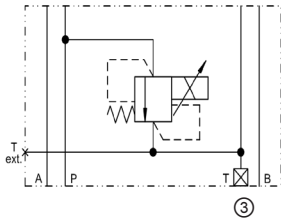
## Type PDV700

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### Product information direct operated

Pressure relief	Op. pressure max. [bar]	Max. Flow rate [l/min]	Part no.	Weight ca. [kg]
In connection P	400	2	3743498	2,5
In connection P	550	2	3743500	2,5
In connection P	700	2	3743502	2,5

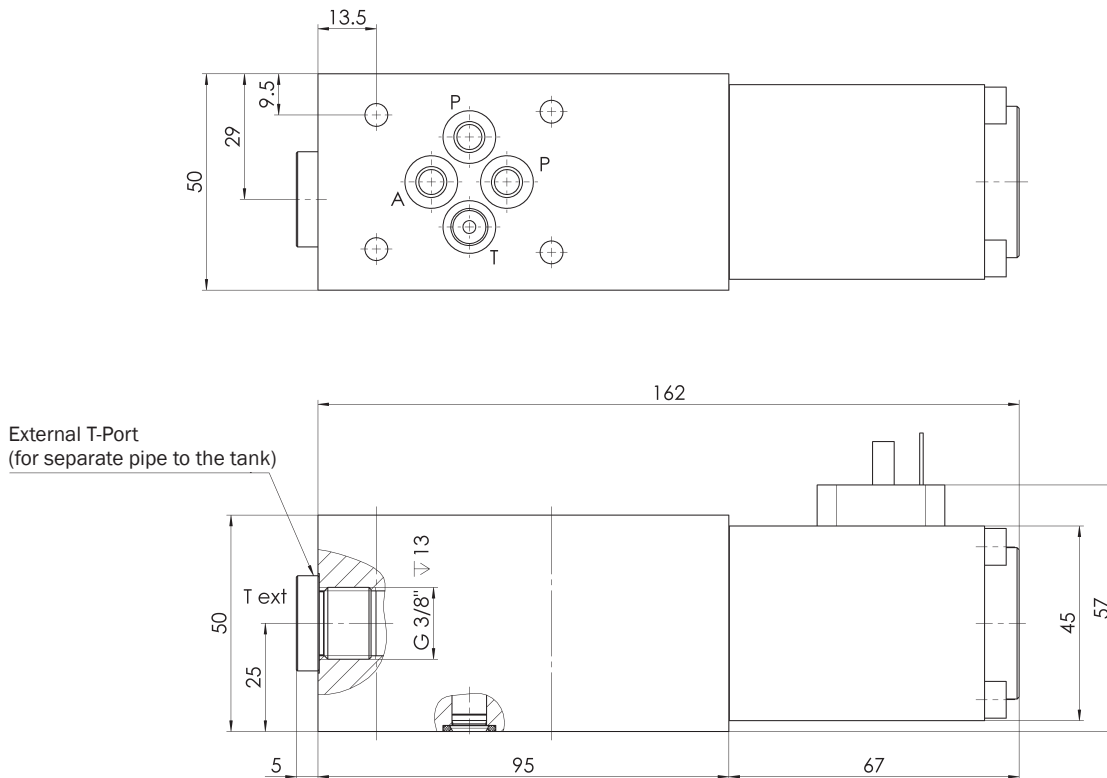
### Symbol



#### Legend:

③ Plug

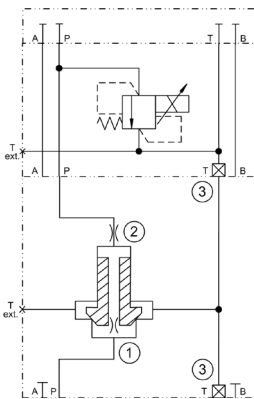
### Dimensional drawing



**Product information pilot operated**

Pressure relief	Op. pressure max. [bar]	Max. flow rate [l/min]	Part no.	weight ca. [kg]
In connection P	400	25	3990837	3,5
In connection P	550	25	3985587	3,5
In connection P	700	25	4001463	3,5

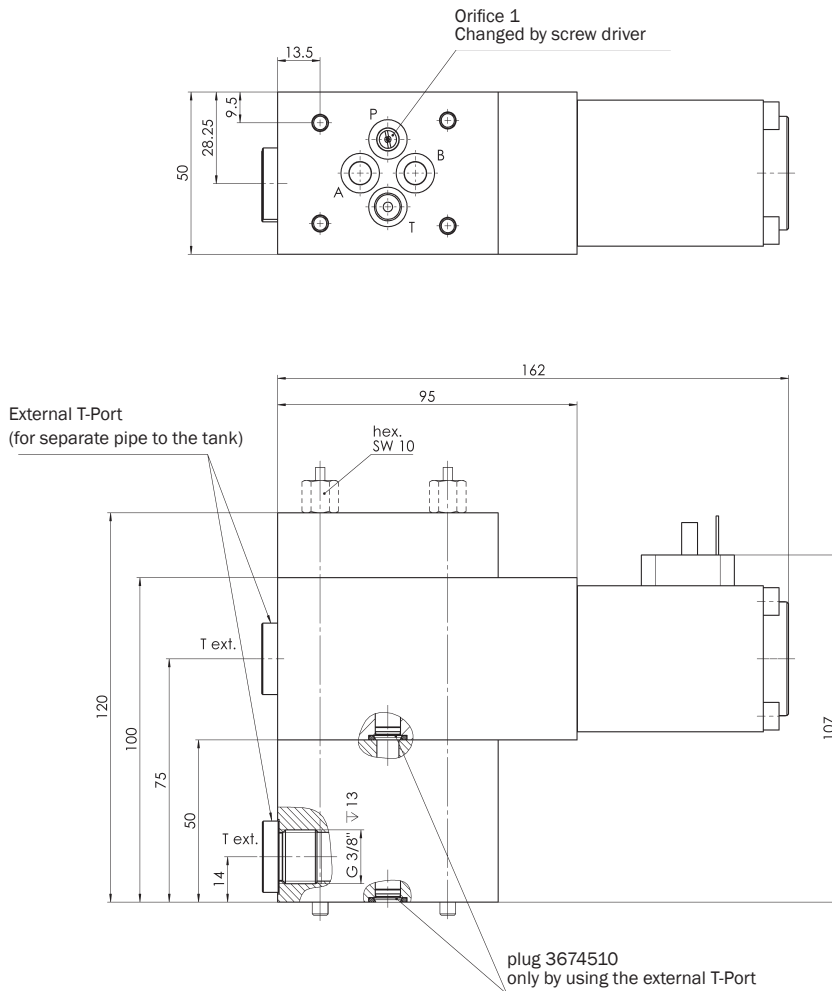
**Symbol**



**Legend:**

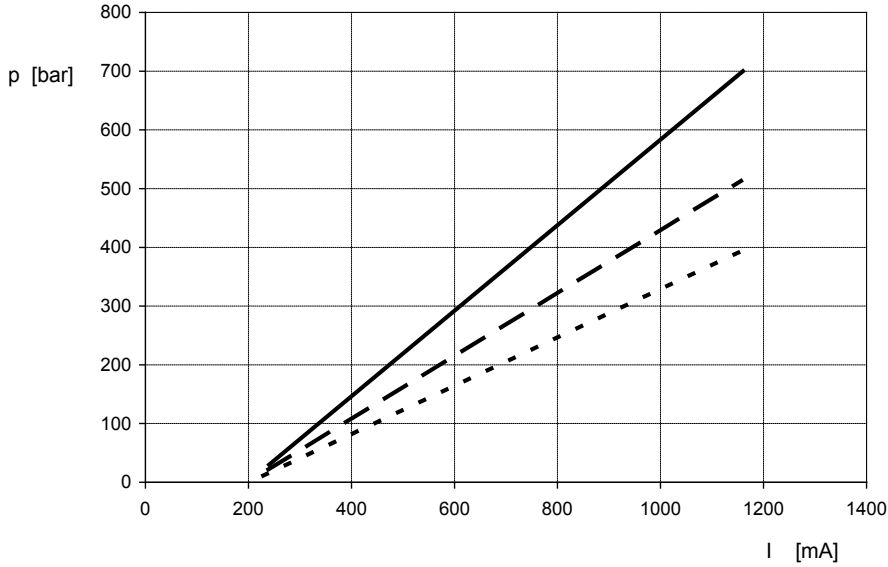
- ③ Plug
- ② Throttle
- ① Throttle

**Dimensional drawing**



## Characteristics

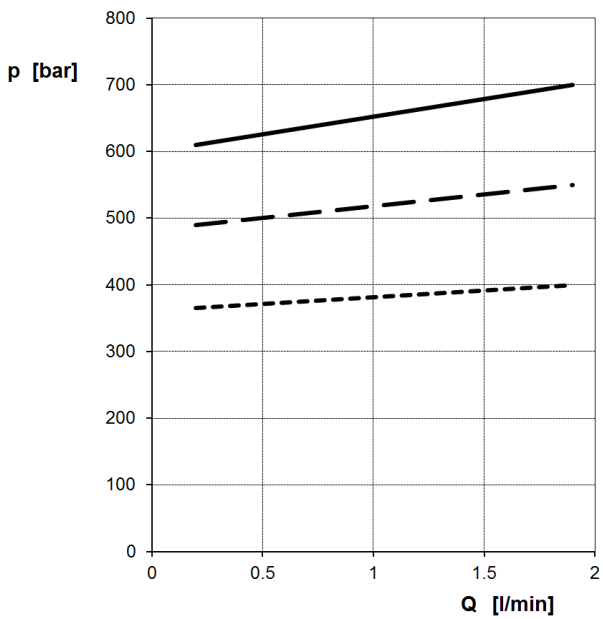
**p (I)** typic, for all types (Q = 1 l/min)



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

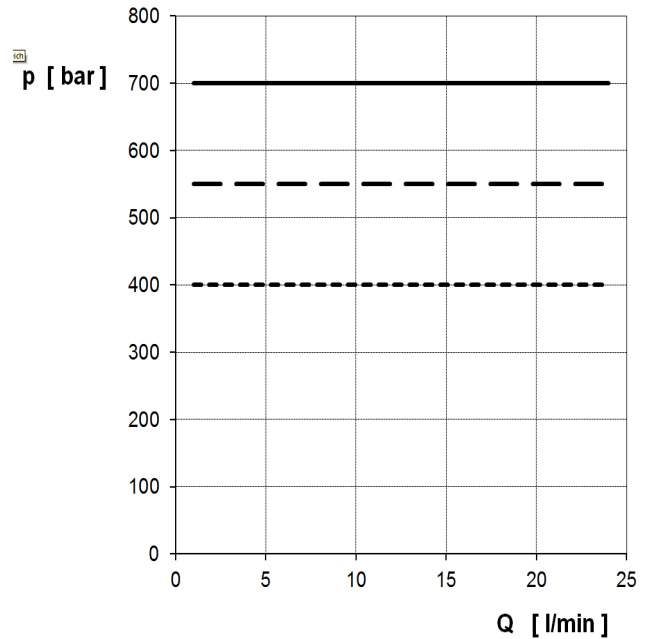
## Flowrate dependent on pressure p (Q)

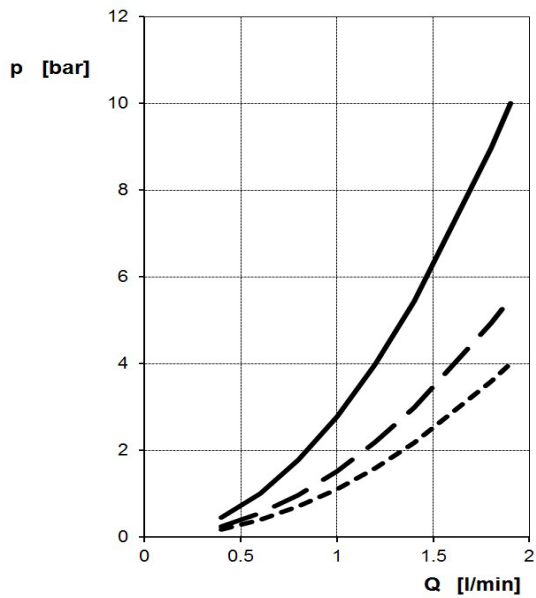
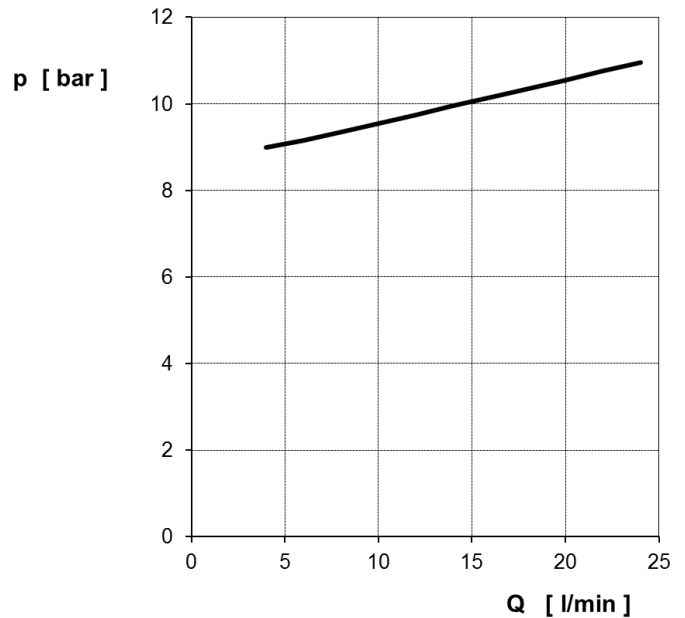
**Directly operated valves**



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

**Pilot-operated valves**



**Minimum pressure  $P_{min}$  (Q)****Directly operated valves****Pilot-operated valves**

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

**Electronical datas**

Solenoid type	Proportional solenoid
Nominal voltage solenoid	24 VDC
Nominal current solenoid	1,33 A
Nominal resistance	11 Ohm
Duty cycle	100 %
Degree of protection acc. DIN 40050	IP65
Dither frequency	60-150 Hz-recommended

## 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.

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The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.