

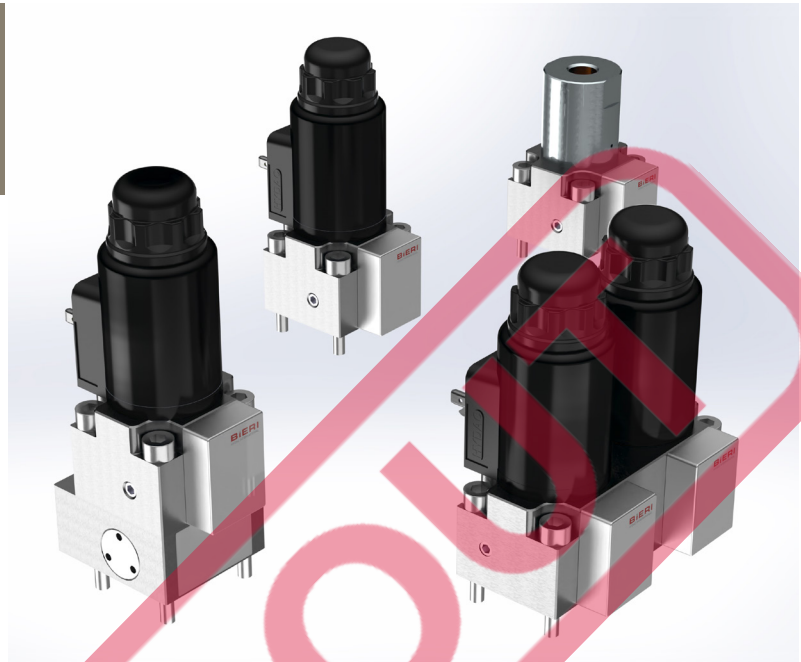
## Directional poppet valves

### Type WVH-4B

NG 4 Bieri  
up to 12 l/min, up to 700 bar

#### Features

- Directly operated
- Poppet tight
- Good corrosion resistance
- Compact
- Low weight



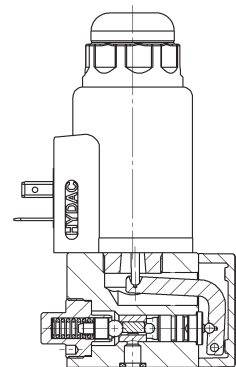
#### Applications

- Controlling of cylinders in higher pressure ranges as full replacement for spool valve technology (especially for poppet tight holding and bending)
- In machine tools, hoisting technology, test stands and rescue devices
- Power units

#### Design

- With hardened balls
- 360° turnable and exchangeable plug-in coil
- Mounting on single subplates as "stand-alone" valves or in valve banks with subplates (see technical data sheets EAP-4B and APH/X-4B)
- As 2/2, 3/2, 4/2\* or 3/3 valve with solenoid or pneumatic actuation
- With sealed manual override

\* pilot-operated



#### Technical data

Hydraulic fluid	mineral oil according to DIN 51524 (other fluids on request)
Fluid temperature range	-20 to 80 °C
Ambient temperature range	-30 to 50 °C
Viscosity range	5 to 400 mm <sup>2</sup> /s
Porting	NG 4 according to Bieri standard
Max. operating pressure connection P, A, B	700 bar pressure difference from P to A, B to T must be adhered! ( $p_p \geq p_A$ ( $p_B$ ) $\geq p_T$ )
Max. operating pressure connection T	700 bar
Max. flow rate	12 l/min
Filtration (recommendation)	according to NAS 1638 class 6 resp. ISO/DIN 4406 17/15/12
Duty cycle DC	100%
Solenoid voltage (nominal power)	24 VDC (27.2 W) / 110 VAC (25 W) / 230 VAC (25 W)
Voltage tolerance	+/- 10%
Switching time	40 - 120 ms
Degree of protection	IP 65 according to EN 60529 / DIN 40050 (solenoid IP 65)
Weight	see overview "Product information"
Materials	corrosion-resistant steel and aluminium (coil housing: ZnFe - corrosion protection)

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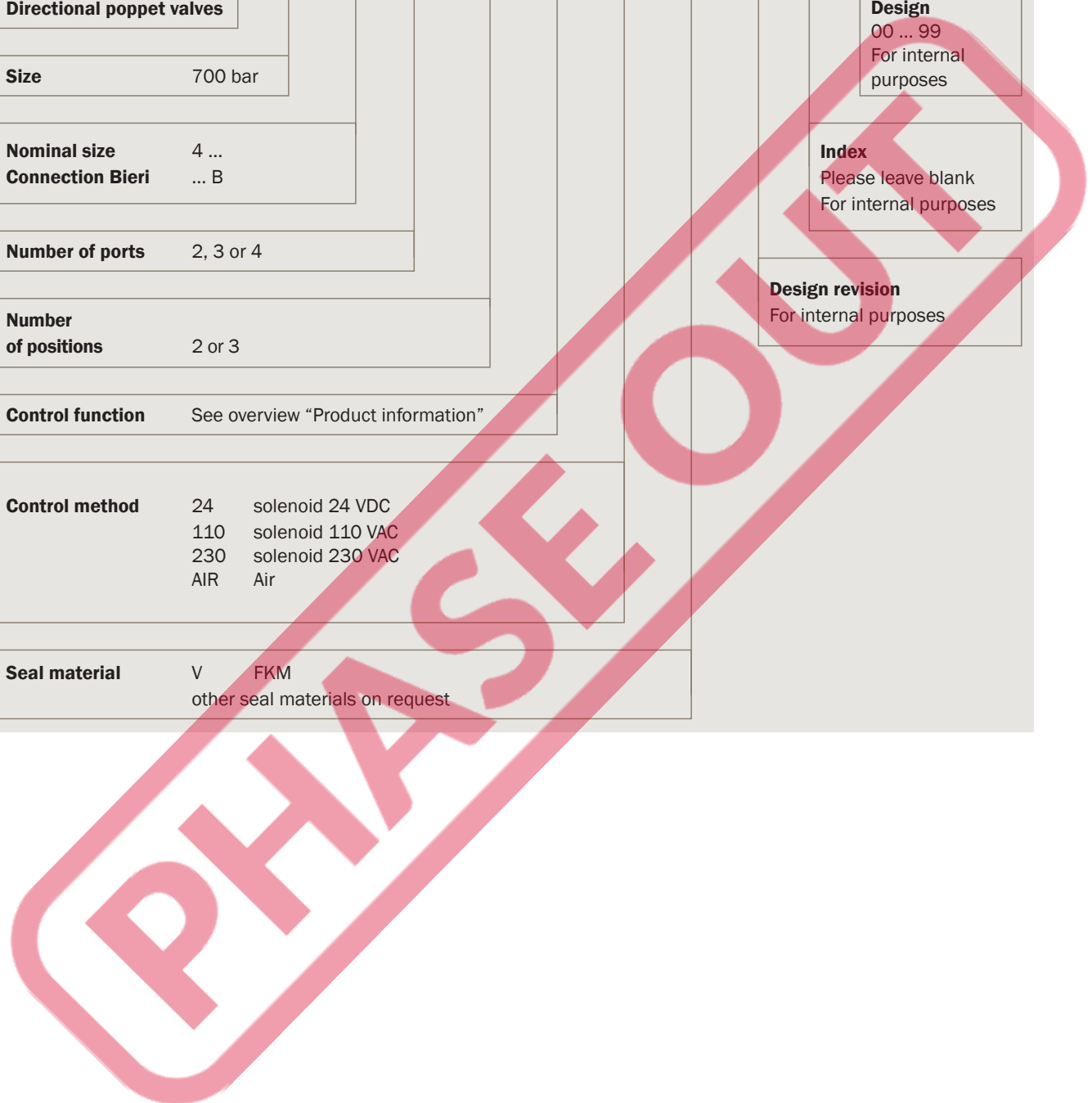
Type code

<b>Example</b>	WV	H	-	4B	-	2	/	2	-	WS	-	24	-	V	-	B		00
<b>Directional poppet valves</b>																		
<b>Size</b>	700 bar																	
<b>Nominal size</b>	4 ...																	
<b>Connection Bieri</b>	... B																	
<b>Number of ports</b>	2, 3 or 4																	
<b>Number of positions</b>	2 or 3																	
<b>Control function</b>	See overview "Product information"																	
<b>Control method</b>	24	solenoid 24 VDC																
	110	solenoid 110 VAC																
	230	solenoid 230 VAC																
	AIR	Air																
<b>Seal material</b>	V	FKM																
	other seal materials on request																	

**Design**  
00 ... 99  
For internal purposes

**Index**  
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For internal purposes


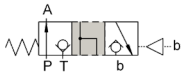
**Design revision**  
For internal purposes



**Product information (solenoid actuation)**

<b>Valve type</b>	<b>2/2</b>	
<b>Control function</b>	<b>W0</b>	<b>WS</b>
Part No. 24 VDC	on request	on request
Part No. 110 VAC	on request	on request
Part No. 230 VAC	on request	on request
Symbol		
Weight	0,85 kg	0,85 kg
<b>Valve type</b>	<b>3/2</b>	
<b>Control function</b>	<b>L</b>	<b>N</b>
Part No. 24 VDC	on request	on request
Part No. 110 VAC	on request	on request
Part No. 230 VAC	on request	on request
Symbol		
Weight	0,85 kg	0,85 kg
<b>Valve type</b>	<b>4/2</b>	
<b>Control function</b>	<b>D</b>	<b>C</b>
Part No. 24 VDC	on request	on request
Part No. 110 VAC	on request	on request
Part No. 230 VAC	on request	on request
Symbol		
Symbol simplified		
Weight	1,2 kg	1,2 kg
<b>Valve type</b>	<b>3/3</b>	
<b>Control function</b>	<b>K</b>	
Part No. 24 VDC	on request	
Part No. 110 VAC	on request	
Part No. 230 VAC	on request	
Symbol		

NG 4 Bieri  
up to 12 l/min, up to 700 bar**Product information (pneumatic actuation)**

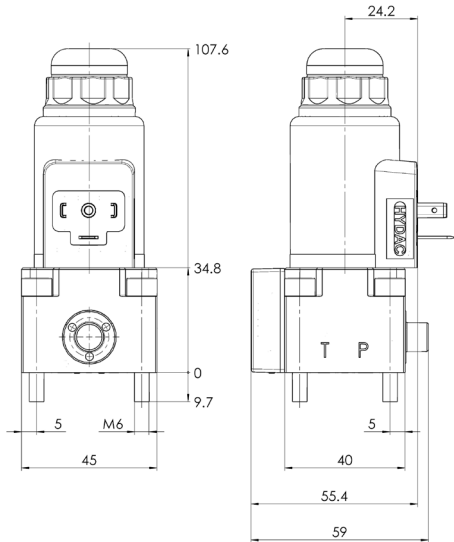
Valve type	3/2	
Control function	L	N
Part No. AIR	on request	on request
Symbol		

PHASE OUT

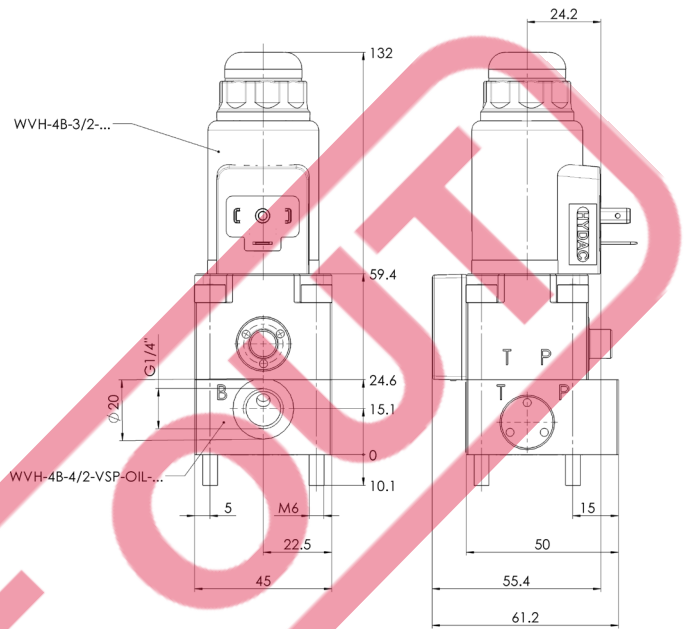
**Dimensional drawings**

**Solenoid actuation**

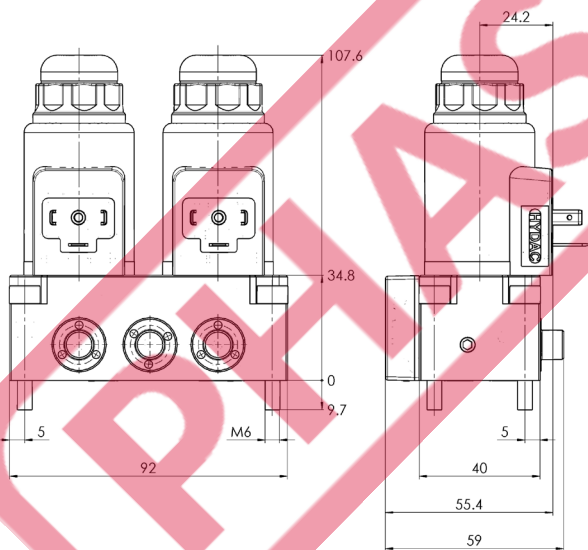
**2/2 and 3/2 directional poppet valves**



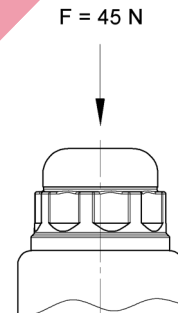
**4/2 directional poppet valves**



**3/3 directional poppet valves**

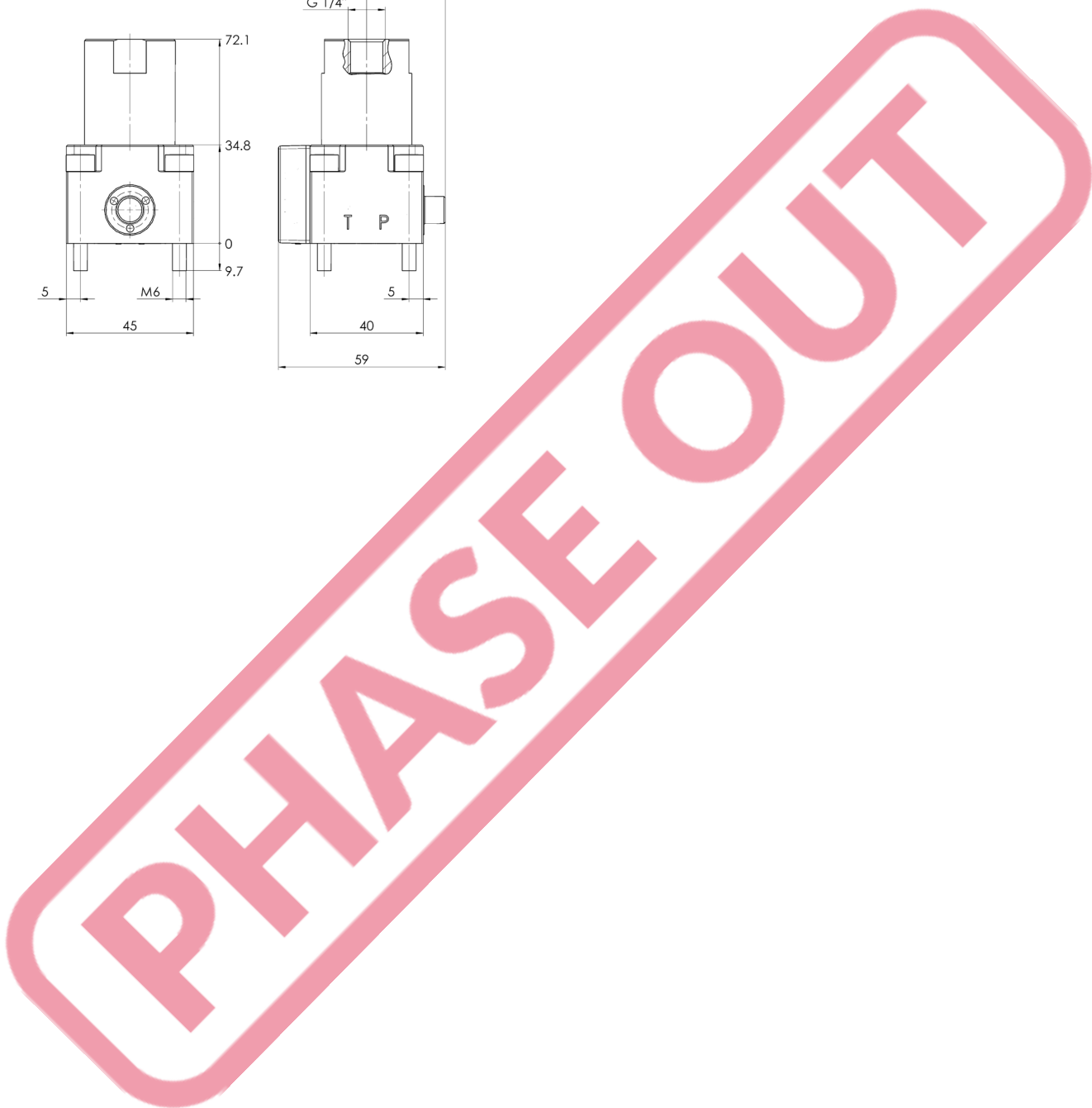
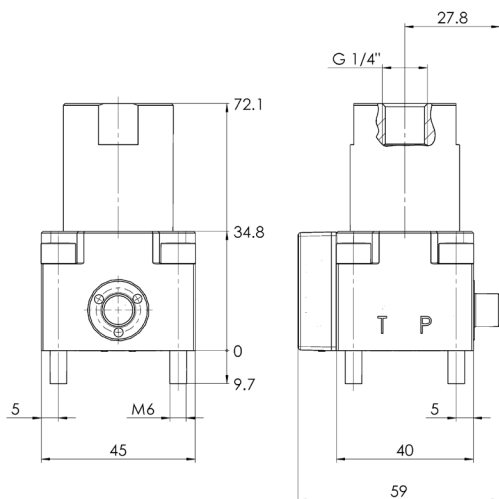


**Manual override**

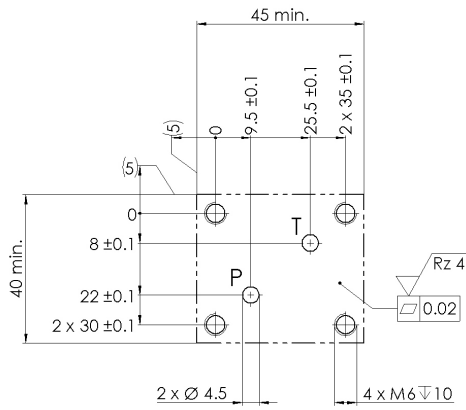


**Pneumatic actuation**

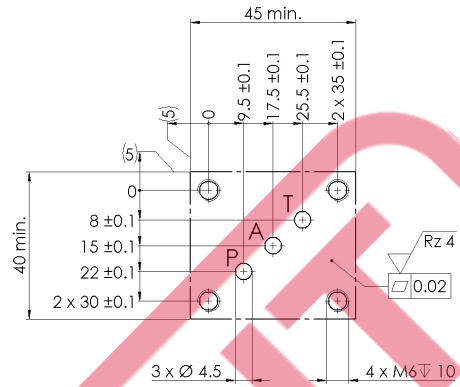
**3/2 directional poppet valves**



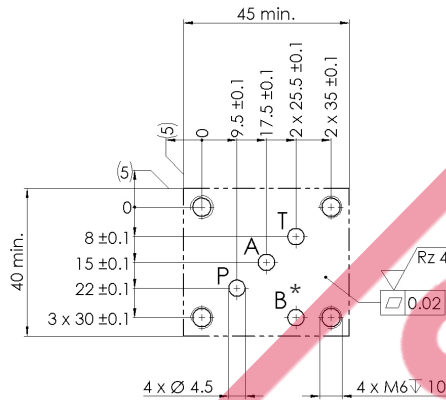
**Drilling pattern 2/2 directional poppet valves**



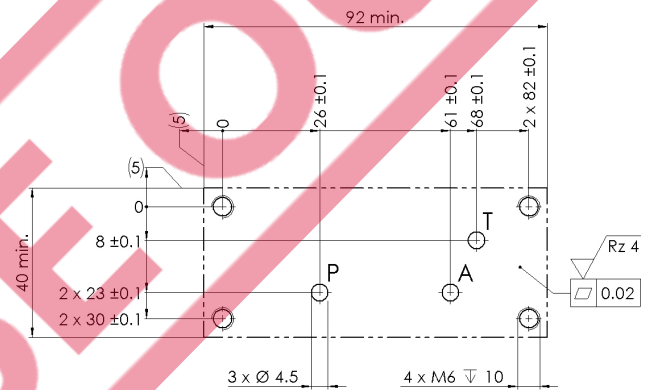
**Drilling pattern 3/2 directional poppet valves**



**Drilling pattern 4/2 directional poppet valves**



**Drilling pattern 3/3 directional poppet valves**

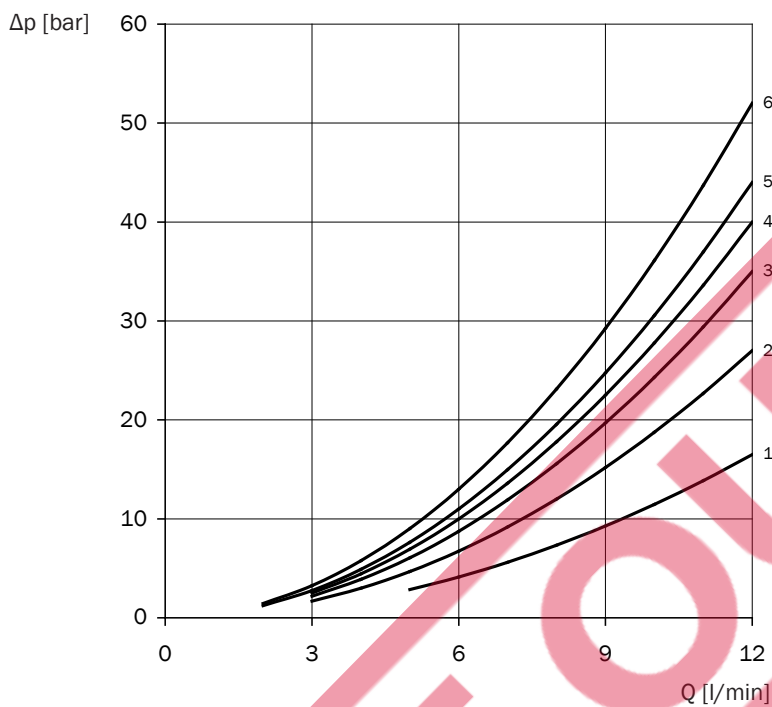


\* The B hole in the connecting plate is only necessary if the pipe connection (delivered condition) is not used. When using the sub-base, the plug in the B-port of the valve must be removed.

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**Pressure drop**

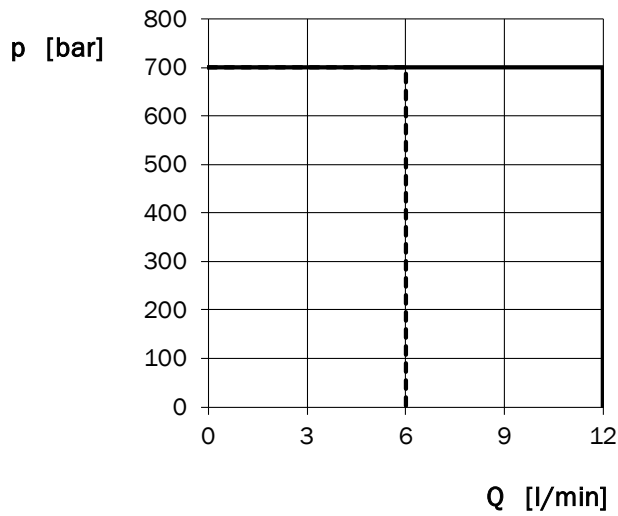
( $v = 32 \text{ mm}^2/\text{s}$ )



Valve type	Control function	P - A	P - B	A - T	B - T	P - T
2/2	WO					1
2/2	WS					2
3/2	L	4		6		
3/2	N	3		4		
4/2	C	5	3	6	5	
4/2	D	5	5	5	6	
3/3	K	5		2		



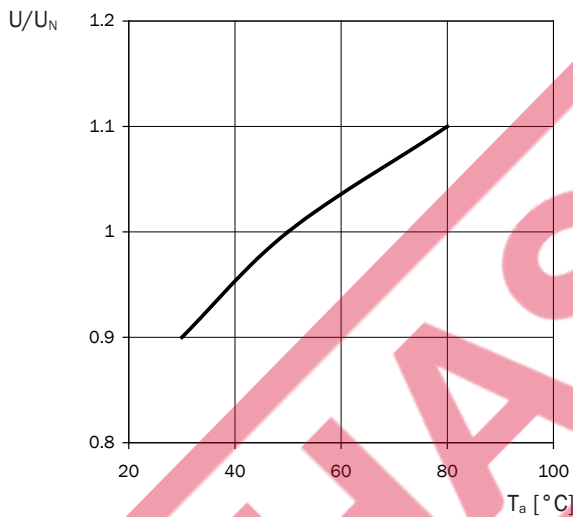
**Hydraulic switching capacity (solenoid operated)**



Hydraulic switching capacity at rated voltage and ambient temperature  $T_a = 50^\circ\text{C}$   
 $v = 32\text{ mm}^2/\text{s}$

— C, D, K, L, N, WO,  
 - - - WS

**Operating voltage (solenoid operated)**



Operating voltage for reaching the hydraulic switching capacity at deviating ambient temperatures

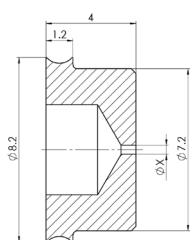
**Pneumatic actuation**

The actuating force is provided by a single acting spool with spring return.  
 The piston is sealed to prevent leakage.  
 Connection: G1/8".  
 Min. pilot pressure: 3 bar  
 Max. pilot pressure: 8 bar

## Accessories

Item description	Type code	For valve type	Part No.
Orifice insert $\varnothing$ 0,4 (fitting in connection T)	BLM-4-0,4-A*00	2/2, 3/2	on request
Orifice insert $\varnothing$ 0,5 (fitting in connection T)	BLM-4-0,5-A*00	2/2, 3/2	on request
Orifice insert $\varnothing$ 0,6 (fitting in connection T)	BLM-4-0,6-A*00	2/2, 3/2	on request
Orifice insert $\varnothing$ 0,7 (fitting in connection T)	BLM-4-0,7-A*00	2/2, 3/2	on request
Orifice insert $\varnothing$ 0,8 (fitting in connection T)	BLM-4-0,8-A*00	2/2, 3/2	on request
Orifice insert $\varnothing$ 1,0 (fitting in connection T)	BLM-4-1,0-A*00	2/2, 3/2	on request

## Dimensional drawing



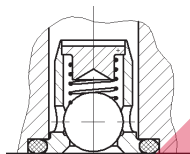
## Symbol



Item description	Type code	For valve type	Part No.
Check valve (fitting in connection P)	RVH700-4B-D6,5-X-A*00	All	on request
Return pressure stop (fitting in connection T)	RDH700-4B-D6,5-X-A*00	All	on request

## Dimensional drawing

Check valve



P

Return pressure stop



T

## Symbol

Check valve



Return pressure stop



Item description	Part No.
1 x Plug for solenoid grey	6132484
1 x Plug for solenoid black	on request
1 x Power reduction plug LRS2 KPL Z4 TR 2POL LED	4747017

### Spare parts

Item description	Part No.
5 x O-Ring 5 x 1,5, FKM	
5 x O-Ring 8 x 1,5, FKM	
4 x Socket head screw ISO 4762-M6 x 35 - A2-70	3853409
4 x Socket head screw ISO 4762-M6 x 60 - A2	
1 x Seal cover plate (Port B for 4/2 valves)	
1 x Solenoid 24 VDC	915142
1 x Solenoid 110 VAC	3547372
1 x Solenoid 230 VAC	3547373
1 x Pole tube nut	on request
1 x O-Ring for pole tube nut	on request

Further fastening elements, tie bolts, subplates and single subplates please see technical data sheets APH/X-4B or EAP-4B.

