

## Seated valve

### Type WVH-4B

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

#### Features

- Directly operated
- Leakage free
- Good corrosion resistance

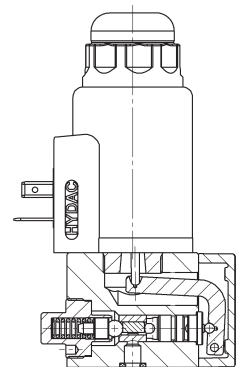


#### Applications

- Controlling of cylinders in higher pressure ranges as full replacement for spool valve technology (especially for leakage free holding and bending)
- In machine tools, hoisting technology, test stands and rescue devices
- Power units (e.g. with limited space conditions or weight reduction)

#### Design

- With hardened balls or cones and seats
  - 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\*, 3/3 or 4/3 valve with solenoid or alternative actuation
- \* 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 (4/3 seated valves max. 500 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 (4/3 seated valves max. 350 bar)
Max. flow rate	12 l/min
Filtration (recommendation)	According to NAS 1638 class 6 resp. ISO/DIN 4406 17/15/12
Duty cycle ED	100%
Solenoid voltage (nominal power)	24 VDC (23 W) / 110 VAC (25 W) / 230 VAC (25 W)
Voltage tolerance	+/- 10%
Switching time	40 - 120 ms
Degree of protection	IP 63 according to EN 60529 / DIN 40050 (solenoid IP 65)
Weight	See standard design
Material	Corrosion-resistant steel and aluminium (coil housing: ZnFe - corrosion protection)

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### Type code

Example	WV	H	-	4B	-	2	/	2	-	WS	-	24	-	V	-	B		00	
<b>Seated valve</b>																			<b>Special design</b> 01 ... 99 (00 for standard)
<b>Size</b>																			
<b>Nominal size</b> <b>Connection Bieri</b>																			
<b>Number of ports</b>																			
<b>Number of positions</b>																			
<b>Switching function</b>																			
<b>Actuation type</b>																			
<b>Seal material</b>																			

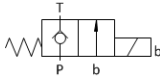
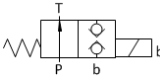

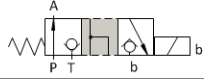
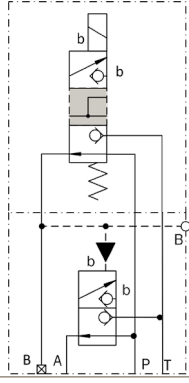
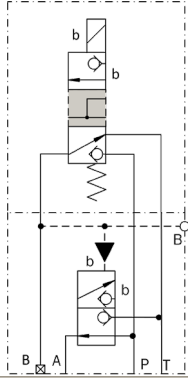
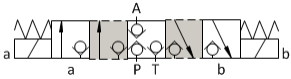
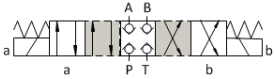
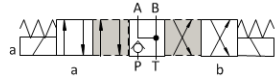
**Actuation type**

24	solenoid 24 VDC
110	solenoid 110 VAC
230	solenoid 230 VAC
HF	manual lever / spring return
HR	manual lever / detent
AIR	pneumatic
OIL	hydraulic

**Seal material**

V	FKM
	other seal materials on request

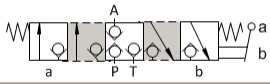
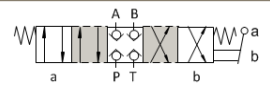
**Standard design (solenoid actuation)**

Valve type	2/2		
Switching function	W0	WS	
Part No. 24 VDC	3665428	3661076	
Part No. 110 VAC	3678640	3678665	
Part No. 230 VAC	3665427	3678669	
Symbol			
Weight	0,85 kg	0,85 kg	
Valve type	3/2		
Switching function	L	N	
Part No. 24 VDC	3661077	3665430	
Part No. 110 VAC	3678679	3742968	
Part No. 230 VAC	3678684	3678715	
Symbol			
Weight	0,85 kg	0,85 kg	
Valve type	4/2		
Switching function	C	D	
Part No. 24 VDC	3665431	3665432	
Part No. 110 VAC	3678752	3678755	
Part No. 230 VAC	3678753	3678756	
Symbol			
Weight	1,2 kg	1,2 kg	
Valve type	3/3	4/3 (max. 500 bar)	
Switching function	K	E	J
Part No. 24 VDC	3678751	3832536	3832544
Part No. 110 VAC	3678720	3832537	3832545
Part No. 230 VAC	3678750	3832538	3832546
Symbol			
Weight	1,75 kg	1,9 kg	1,9 kg

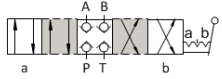
**Type WVH-4B**

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


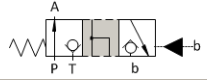
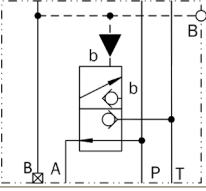
**Standard design (manual actuation, spring return)**

<b>Valve type</b>	<b>3/3</b>
<b>Switching function</b>	<b>K</b>
Part No.	3839873
Symbol	
Weight	1,7 kg
<b>Valve type</b>	<b>4/3 (max. 500 bar)</b>
<b>Switching function</b>	<b>E</b>
Part No.	3839885
Symbol	
Weight	1,85 kg

**Standard design (manual actuation, detent)**

<b>Valve type</b>	<b>4/3 (max. 500 bar)</b>
<b>Switching function</b>	<b>E</b>
Part No.	3839886
Symbol	
Weight	1,85 kg

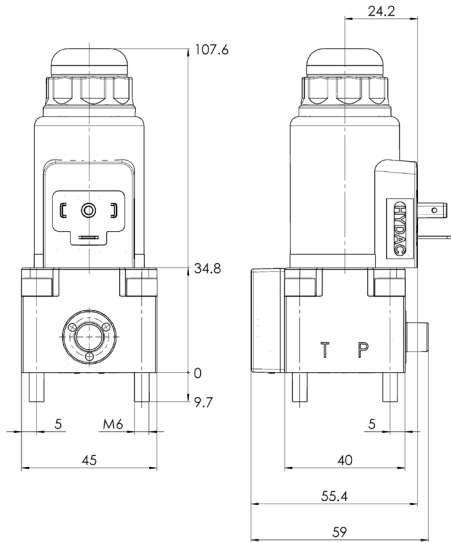
**Standard design (air and oil actuation)**

<b>Valve type</b>	<b>3/2</b>	
<b>Switching function</b>	<b>L</b>	<b>N</b>
Part No. AIR	on request!	3832491
Part No. OIL	3832483	3832492
Symbol		
Weight	0,8 kg	0,8 kg
<b>Valve type</b>	<b>4/2</b>	
<b>Switching function</b>	<b>VSP</b>	
Part No. AIR	-	
Part No. OIL	3726984	
Symbol		
Weight	1.25 kg	

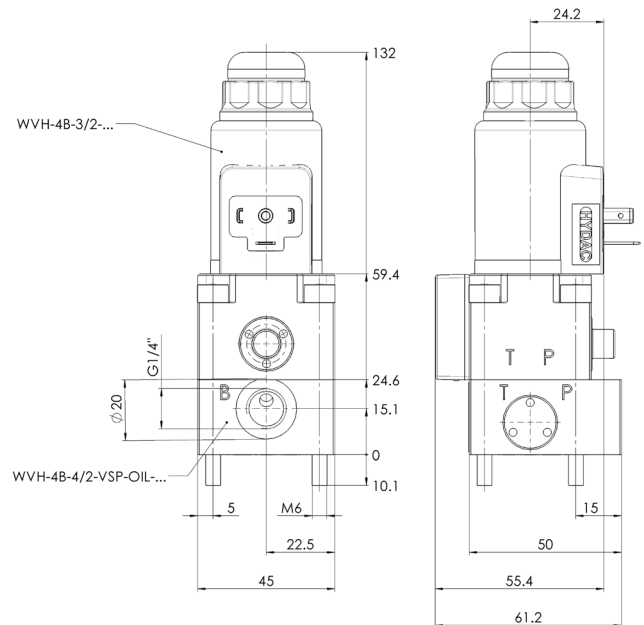
**Dimensional drawings**

**Solenoid actuated**

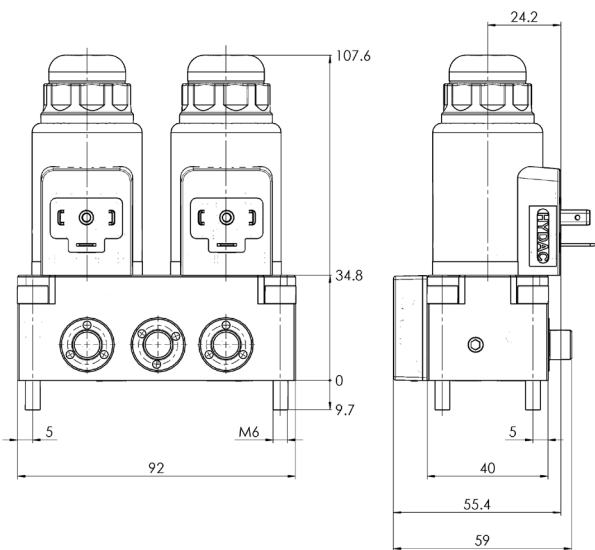
**2/2 and 3/2 seated valves**



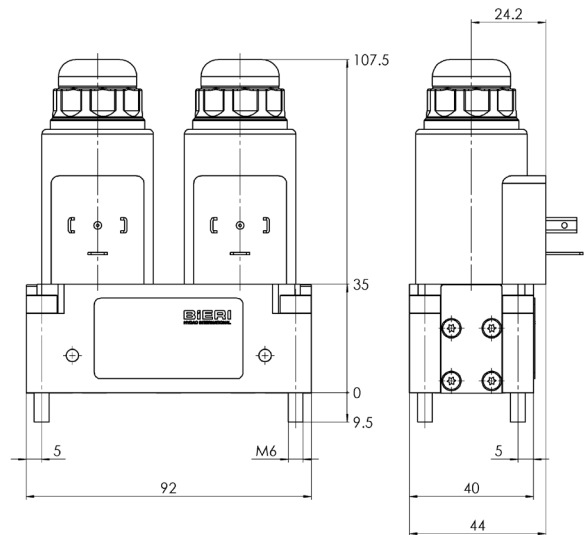
**4/2 seated valves**



**3/3 seated valves**

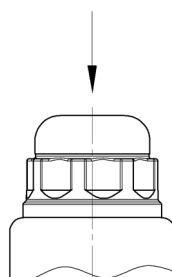


**4/3 seated valves**



**Manual override**

F = 45 N

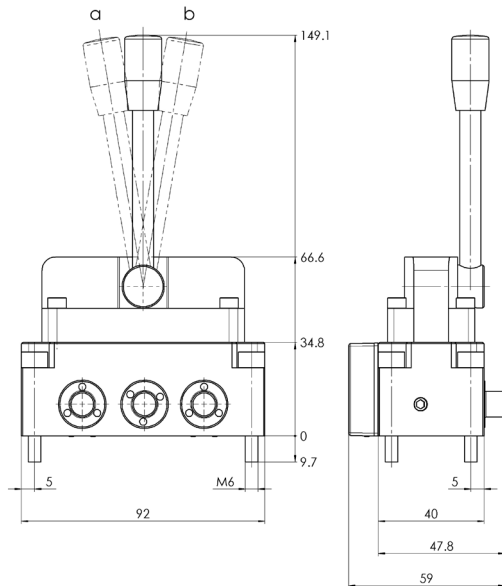


**Type WVH-4B**

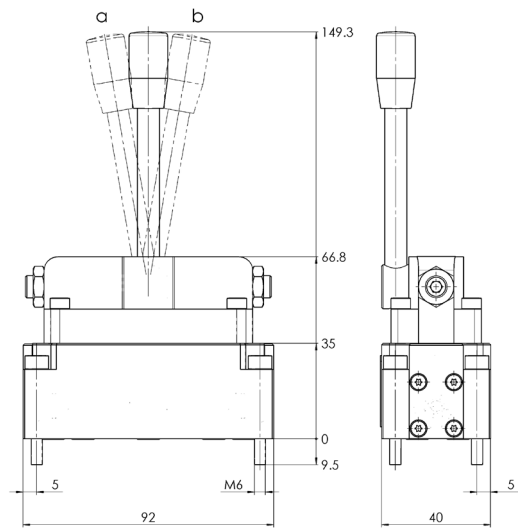
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**Manual actuation**

**3/3 seated valves**

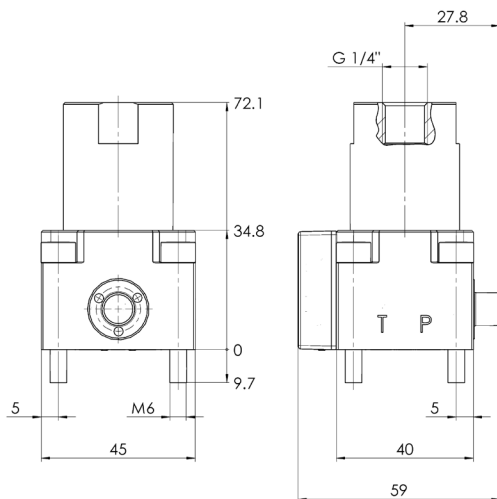


**4/3 seated valves**

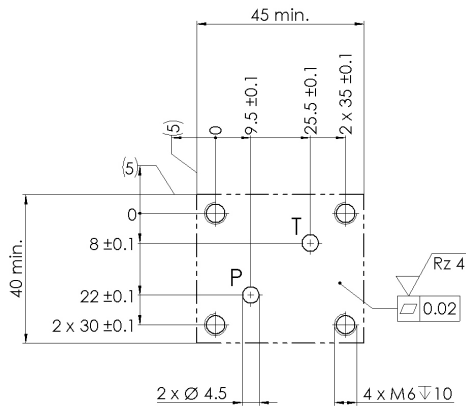


**Air and oil actuation**

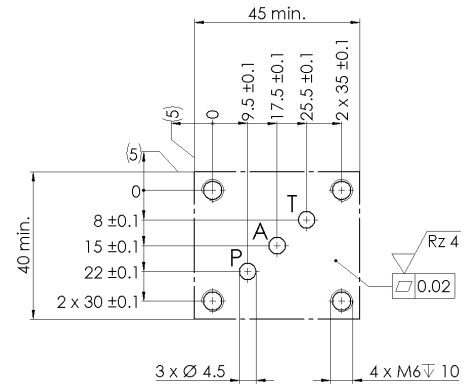
**3/2 seated valves**



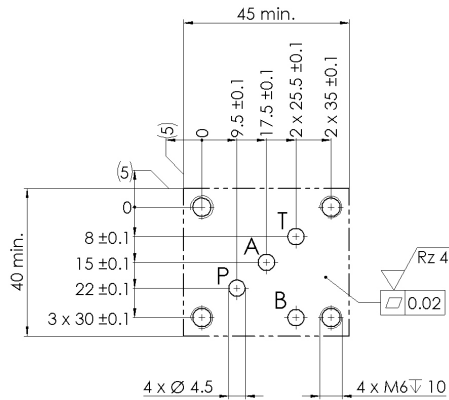
**Drilling pattern 2/2 seated valves**



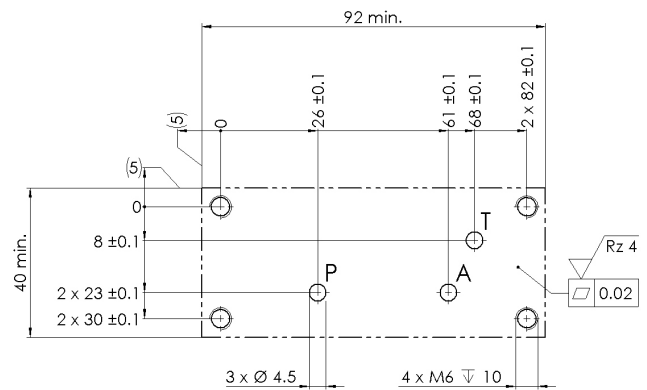
**Drilling pattern 3/2 seated valves**



**Drilling pattern 4/2 seated valves**

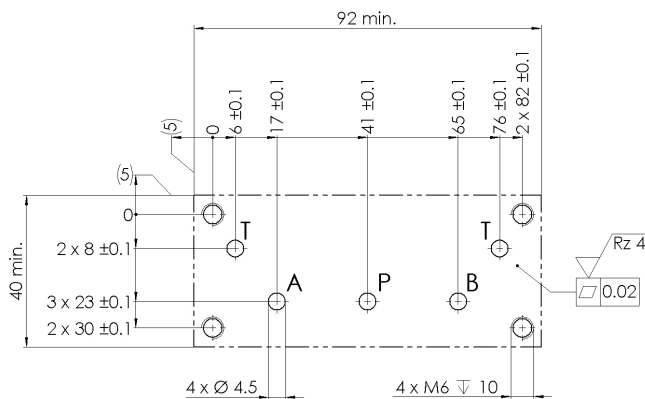


**Drilling pattern 3/3 seated valves**



B bore in connection plate only necessary if the pipe connection (delivery condition) is not used. If the connection plate is used, the plug in the B channel of the valve must be removed.

**Drilling pattern 4/3 seated valves**

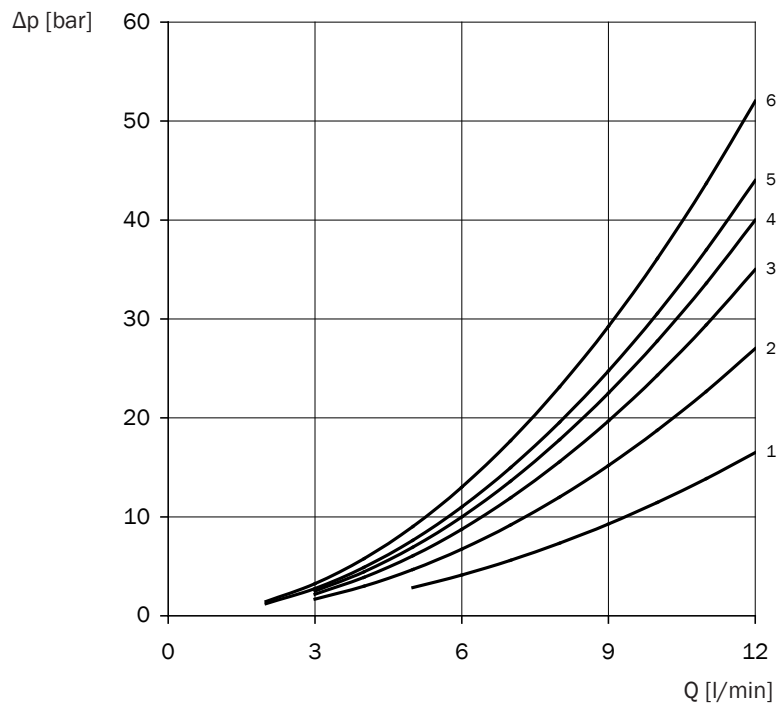


**Type WVH-4B**

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**Pressure drop**

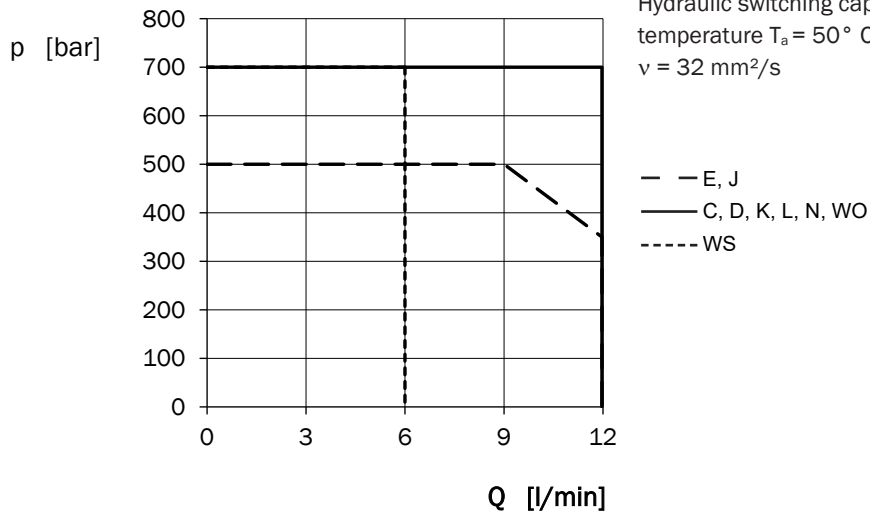
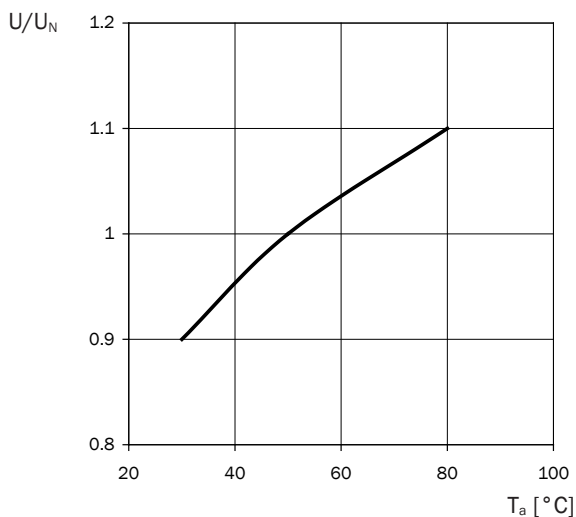
( $v = 32 \text{ mm}^2/\text{s}$ )



Valve type	Switching 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		
4/3	E	2	2	1	1	
4/3	J	6	6	1 (6)	1 (6)	

( ) = for neutral position



**Hydraulic switching capacity (solenoid actuated)****Operating voltage (solenoid actuated)****Alternative actuation types (without solenoid)**

<b>Manual lever / spring returned (HF)</b>	The actuating force is transmitted to the stylus elements by a hand lever. (Spring return by stylus springs and return springs) Leverage force: 15 - 25 N
<b>Manual lever / with detent (HR)</b>	The actuating force is transmitted to the stylus elements by a hand lever. (latching element in actuated position) Leverage force: 15 - 25 N
<b>Pneumatic (AIR)</b>	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
<b>Hydraulic (OIL)</b>	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: 11 bar Max. pilot pressure: 700 bar

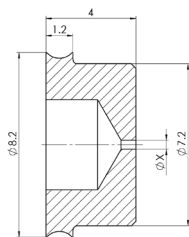
**Type WVH-4B**

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**Accessories**

Item description	Type code	For valve type	Part No.
Orifice insert Ø 0,4 (fitting in connection T)	BLM-4-0,4-A*00	2/2, 3/2	4002279
Orifice insert Ø 0,5 (fitting in connection T)	BLM-4-0,5-A*00	2/2, 3/2	4002353
Orifice insert Ø 0,6 (fitting in connection T)	BLM-4-0,6-A*00	2/2, 3/2	4002354
Orifice insert Ø 0,7 (fitting in connection T)	BLM-4-0,7-A*00	2/2, 3/2	4002355
Orifice insert Ø 0,8 (fitting in connection T)	BLM-4-0,8-A*00	2/2, 3/2	4002356
Orifice insert Ø 1,0 (fitting in connection T)	BLM-4-1,0-A*00	2/2, 3/2	4002357

**Dimensional drawing**



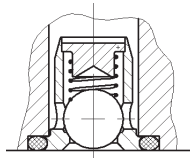
**Symbol**



Item description	Type code	For valve type	Part No.
Check valve (fitting in connection P)	RVH700-4B-D6,5-X-A*00	All	3680704
Return pressure stop (fitting in connection T)	RDH700-4B-D6,5-X-A*00	All	3687580

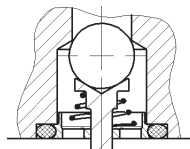
**Dimensional drawing**

**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	3728850
1 x Plug for solenoid with integrated reduction of performance	3689354

## 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	3546095
1 x Solenoid 110 VAC	3547372
1 x Solenoid 230 VAC	3547373
1 x Pole tube nut	4422997
1 x O-Ring for pole tube nut	629833

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

### Bieri Hydraulik AG

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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.