

Directional poppet valves bidirectional

Type WVH-4B-Bi

NG 4 Bieri

up to 12 l/min, up to **700 bar**

Features

- Directly operated
- Poppet tight
- Good corrosion resistance
- Bidirectional (flow in both directions, independent of pressure port)
- Low pressure drop
- Dead space optimized (for applications with grease)
- Compact
- Low weight



Applications

- Controlling of cylinders in higher pressure ranges as full replacement for spool valve technology (especially for seat tight holding and bending)
- In machine tools, hoisting technology, test stands and rescue devices
- Power units (e.g. as with limited space conditions or weight reduction)
- Use of high viscosity fluids / grease
- Use in lubrication systems

Design

- With hardened 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 valve with solenoid actuation

Technical data

Hydraulic fluid	mineral oil according to DIN 51524 / Grease according to class NLGI 2
Fluid temperature range	-20 to 80 °C (down to -40 °C on request)
Ambient temperature range	-30 to 50 °C (down to -40 °C on request)
Viscosity range	5 mm ² /s to class NLGI 2
Porting	NG 4 according to Bieri standard
Max. operating pressure	700 bar
Max. flow rate / mass flow	12 l/min (Grease: approx. 2.5 kg/min)
Filtration (recommendation)	according 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 63 according to EN 60529 / DIN 40050 (IP 65 on request)
Weight	0,85 kg
Material	corrosion-resistant steel (coil housing: ZnFe - corrosion protection)

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Type code

Example	WV	H	4B	2	/	2	WS	24	BI	V	A		00	
Directional poppet valves														Design 00 ... 99 For internal purposes
Size	700 bar													
Nominal size	4 ...													
Connection Bieri	... B													
Number of ports	2 or 3													
Number of positions	2													
Control function	See overview "Product informations"													
Control method	24	solenoid 24 VDC												
	110	solenoid 110 VAC												
	230	solenoid 230 VAC												
Technical design	Bidirectional													
Seal material	V	FKM												
	other seal materials on request													

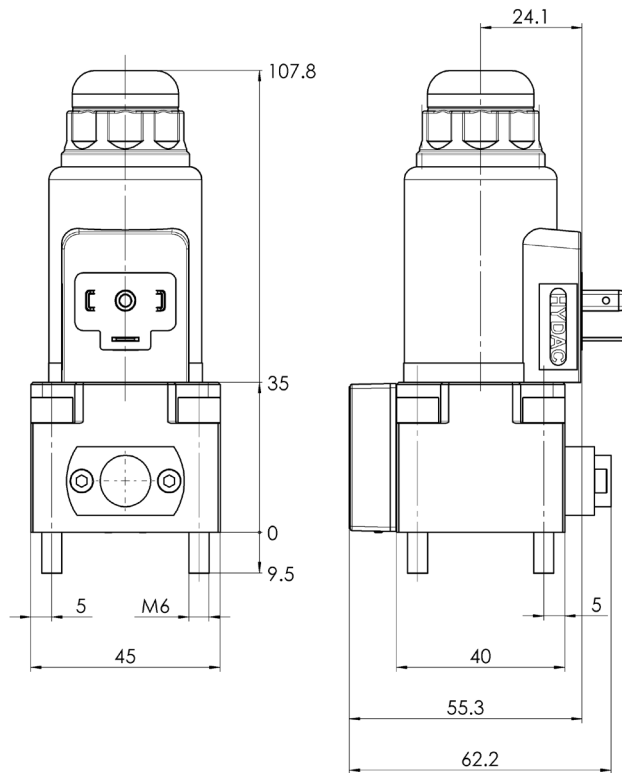
Product information

Valve type	2/2		3/2 ¹⁾	
Control function	WO	WS	N	L
Part No. 24 VDC	4002620	4002624	4002628	4002628
Part No. 110 VDC	4014031	4014033	4014048	4014048
Part No. 230 VDC	4002891	4014034	4002892	4002892
Symbol				

¹⁾ **Attention:** Valve body needs to be turned 180° to change over control position N or L

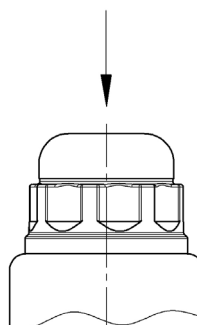
To achieve function „L“, connection **3** (valve side) must be mounted to **P** (connecting plate), respectively connection **1** (valve) to **T** (plate). To achieve function „N“, connection **1** (valve side) must be mounted to **P** (connecting plate), respectively connection **3** (valve) to **T** (plate)

Dimensional drawings

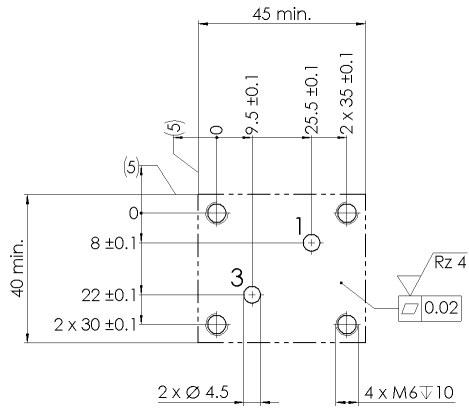


Manual override

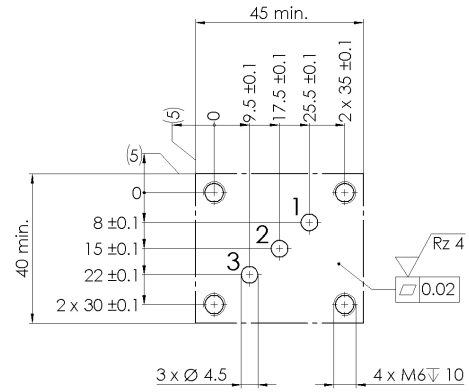
F = 45 N



Drilling pattern 2/2 directional poppet valves

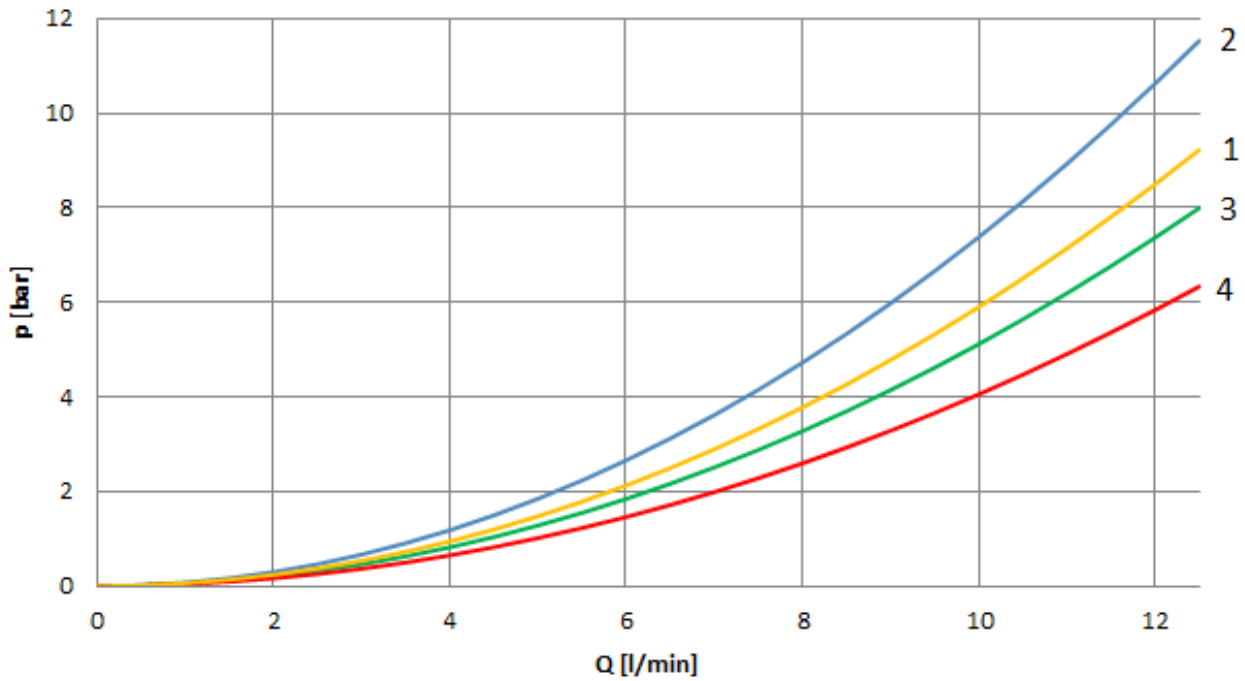


Drilling pattern 3/2 directional poppet valves



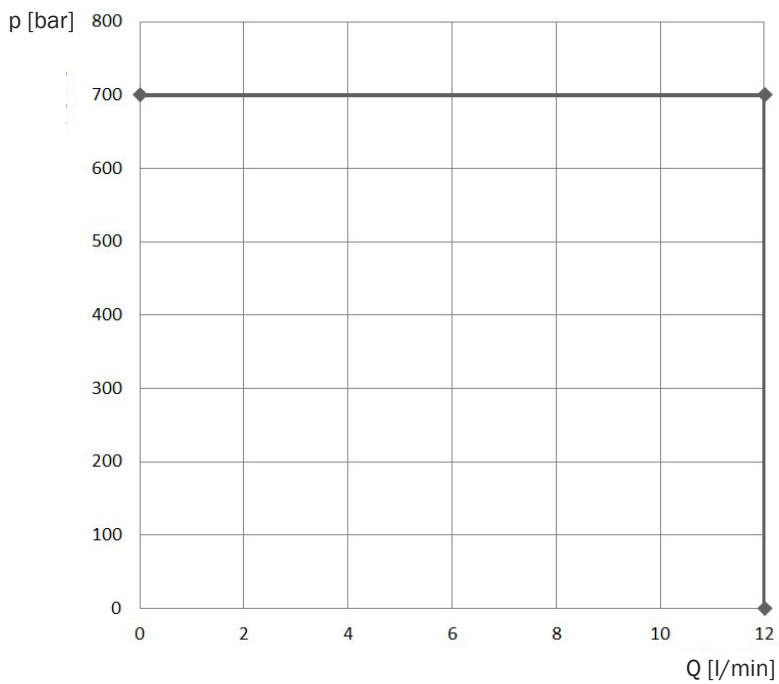
Pressure drop

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



Valve type	Control function	1 - 2	2 - 1	2 - 3	3 - 2	1 - 3	3 - 1
2/2	WO					1	1
2/2	WS					1	1
3/2	L	2	4	3	2		
3/2	N	2	4	3	2		

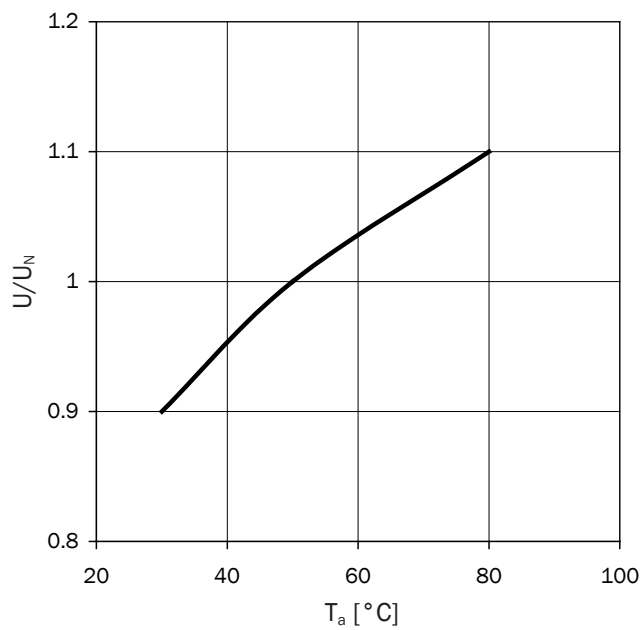
Hydraulic switching capacity



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

Applies to all control functions!

Operating voltage



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

Type WVH-4B-Bi

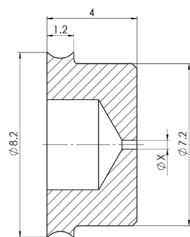
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Accessoires

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

* Orifice insert and check valves cannot be installed directly in the valve (**ZP700 required**).

Dimensional drawing



Symbol

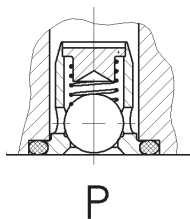


Item description	Type code	For valve type	Part-Nr.
Adapter plate	ZP700-4-X-X-V-A*00	All	4400112
4 x socket head screw ISO 4762-M6 x 65 for ZP700	-	All	4362502

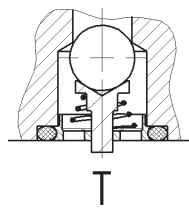
Item description	Type code	For valve type	Part No.
Check valve (fitting in connection P)	RVH700-4B-D6,5-X-A*00	2/2, 3/2-N	3680704
Return pressure stop (fitting in connection T)	RDH700-4B-D6,5-X-A*00	2/2, 3/2-N	3687580

Dimensional drawing

Check valve



Return pressure stop



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.
3 x O-Ring 6,07 x 1,78, FKM	
1 x O-Ring 26,7 x 1,78, FKM	4477135
1 x O-Ring 17,96 x 2,62, FKM	
4 x Socket head screw ISO 4762-M6 x 35 - A2-70	4478218
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.

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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.