

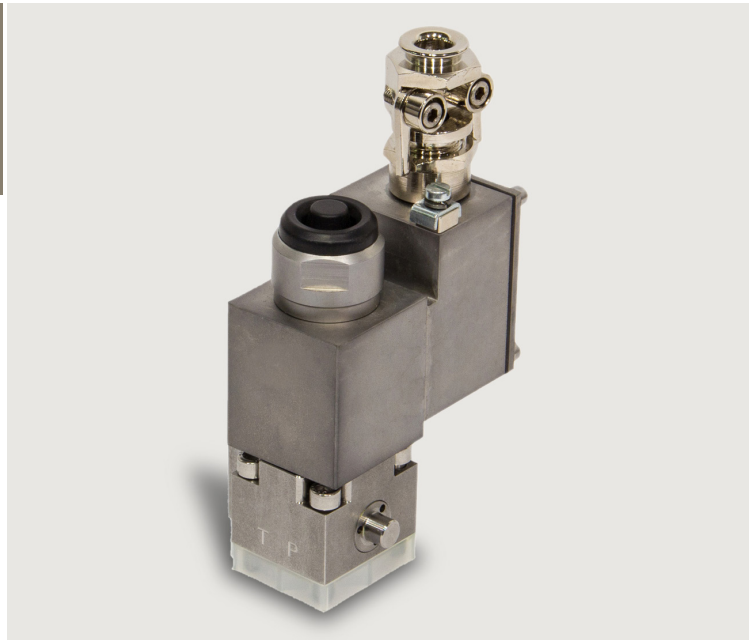
# Directional poppet valves ATEX


## Type WVHX-4B

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

### Features


- Directly operated
- Poppet tight
- Good corrosion resistance
- Explosion-proof



CE  II 2G IIC T4 Gb  
Atex II 2D IIIC T115°C Db

### Applications

- Hydraulic systems in hazardous areas, in which devices of the marking

CE  II 2G IIC T4 Gb  
Atex II 2D IIIC T115°C Db are needed.

### Design

- With hardened balls and seats
- In 90° steps 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 or 4/2\* valve with solenoid actuation available
- With sealed emergency manual override

\* pilot-operated

### Technical Data

Hydraulic fluid	mineral oil according to DIN 51524 with an ignition temperature > 185 °C (other fluids on request)
Fluid temperature range	-20 to 80 °C (supply and drain sides)
Ambient temperature range	-20 to 55 °C (valve banks with min. clearance 14 mm) -20 to 65 °C („stand-alone“ valve)
Viscosity range	5 to 400 mm <sup>2</sup> /s
Porting	NG 4 according to Bieri standard
Max. operating pressure	700 bar observe pressure drops from P to A, B to T ( $p_p \geq p_A$ ( $p_B$ ) $\geq p_T$ )
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 (17 W)
Voltage tolerance	+/- 10%
Switching time	40 - 120 ms
Degree of protection	IP 63 according to EN 60529 / DIN 40050 (solenoid IP 66)
Weight	see overview "Product information"
Material	corrosion-resistant steel and aluminium (coil housing: ZnNi - corrosion protection)

**Example**

Segment	Value	Specification
WV		Directional poppet valves
H		
X		
4B		Nominal size 4 ...
2		
2		
WS		
24		Control method 24 solenoid 24 VDC
V		
B		
00		Design 00 ... 99

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

**Index**  
Please leave blank  
For internal purposes

**Design revision**  
For internal purposes

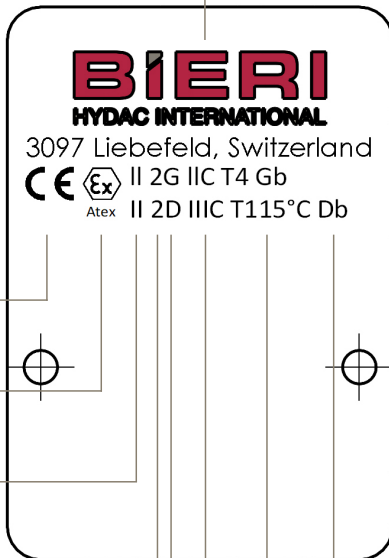
**Technical Specifications:**

- Directional poppet valves**
- Size** 700 bar
- ATEX** X
- Nominal size** 4 ...
- Connection Bieri** ... B
- Number of ports** 2, 3 or 4
- Number of positions** 2
- Control function** see overview „Product information“
- Control method** 24 solenoid 24 VDC
- Seal material** V FKM  
other seal materials on request

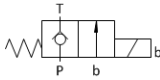
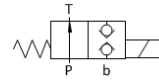

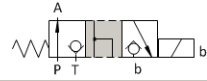
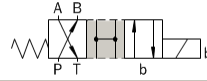
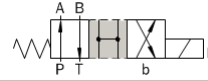
## Type WVHX-4B

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

### Type plate

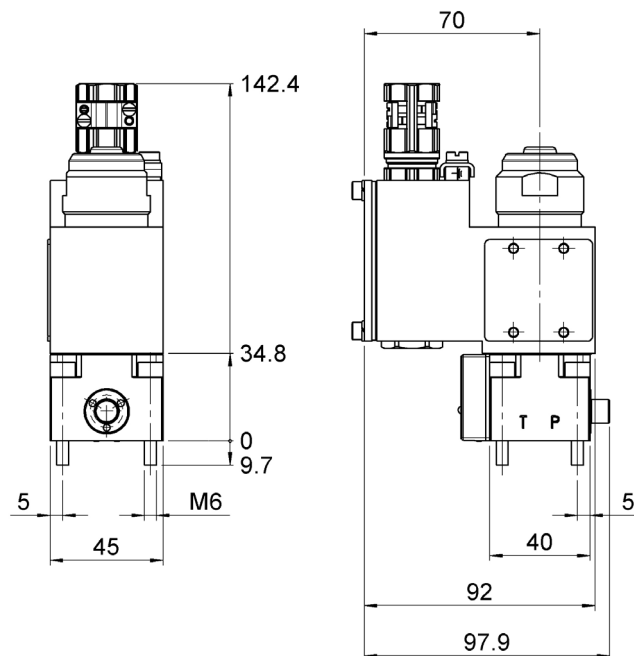
Manufacturer		
CE-marking		
EX-marking		
Device group II	Industrial environment	
Equipment category 2	High degree of safety	
Type of explosive atmosphere	<b>G:</b> Gas <b>D:</b> Dust	
Group	<b>IIC :</b> Suitable for gases and vapours with very low ignition energy <b>IIIC :</b> Suitable for combustible suspended solids, non-conductive dusts and coductive dusts	
Temperature class	<b>T4:</b> Max. surface temperature : 135 °C, for gases and vapours with T4, T3, T2 and T1 <b>T115 °C:</b> Max. surface temperature : 115 °C	
Device protection level (EPL)		Gb, Db

## Product information

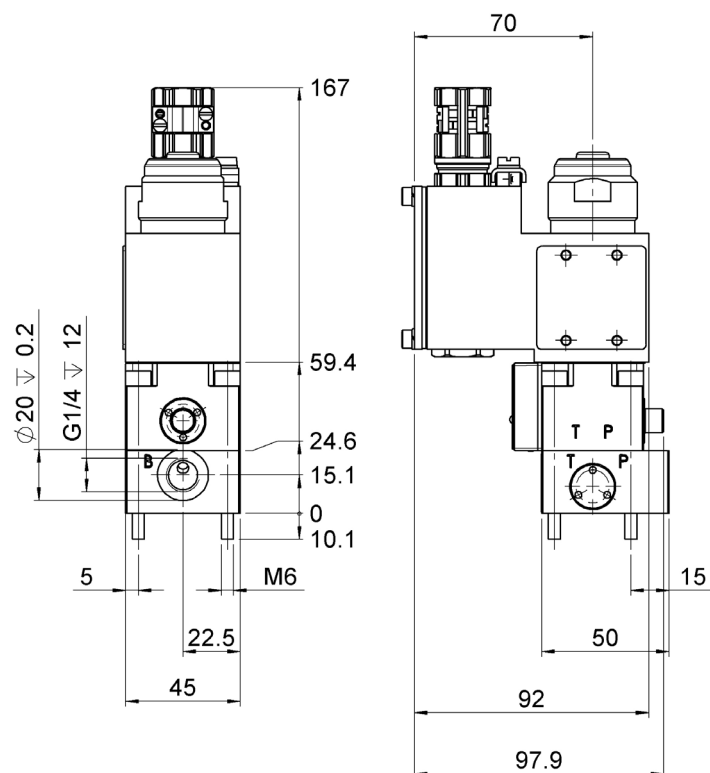
Valve type	2/2		3/2		4/2	
Control function	WO	WS	L	N	C	D
Type code	WVHX-4B-2/2-WO-24-V-B*00	WVHX-4B-2/2-WS-24-V-B*00	WVHX-4B-3/2-L-24-V-B*00	WVHX-4B-3/2-N-24-V-B*00	WVHX-4B-4/2-C-24-V-B*00	WVHX-4B-4/2-D-24-V-B*00
Part No.	on request	on request	on request	on request	on request	on request
Symbol						
Weight	1,9 kg	1,9 kg	1,9 kg	1,9 kg	2,2 kg	2,2 kg

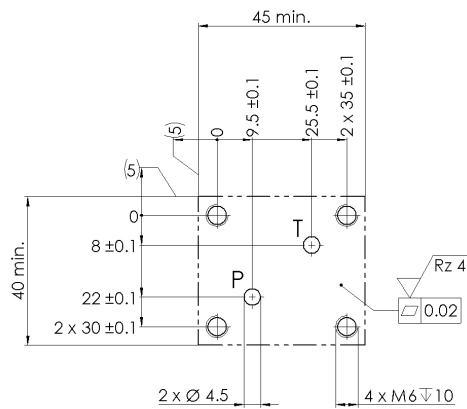
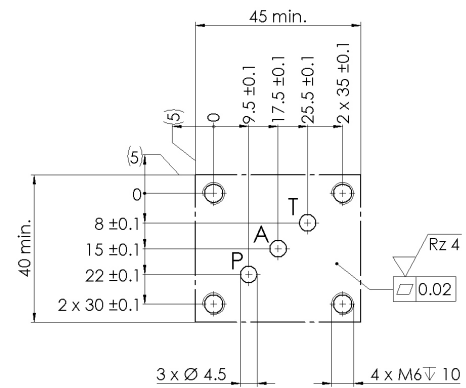
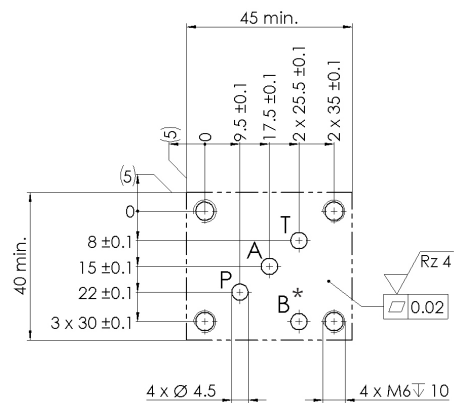
## Dimensional drawings

### 2/2 and 3/2 directional poppet valves



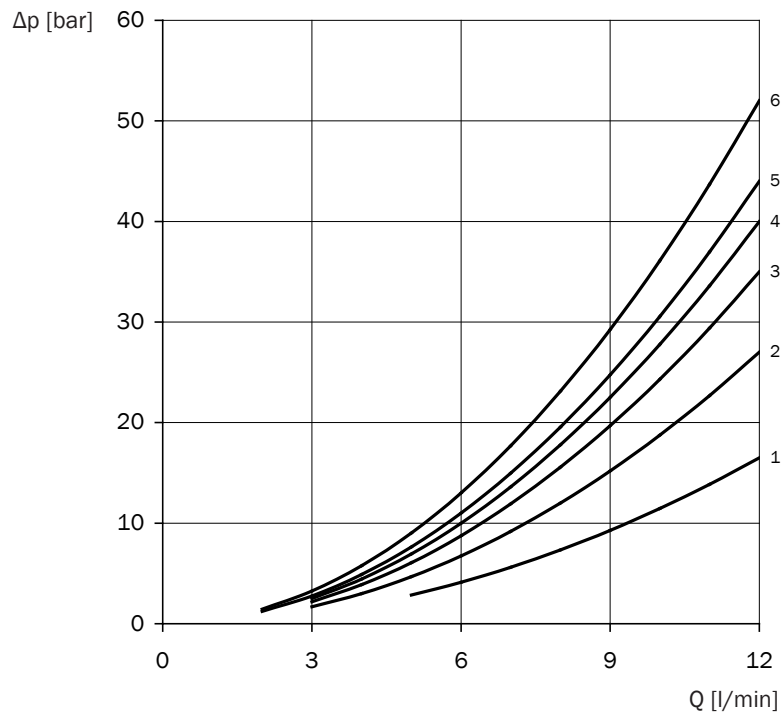
### 4/2 directional poppet valves



**Drilling pattern 2/2 directional poppet valves****Drilling pattern 3/2 directional poppet valves****Drilling pattern 4/2 directional poppet valves**

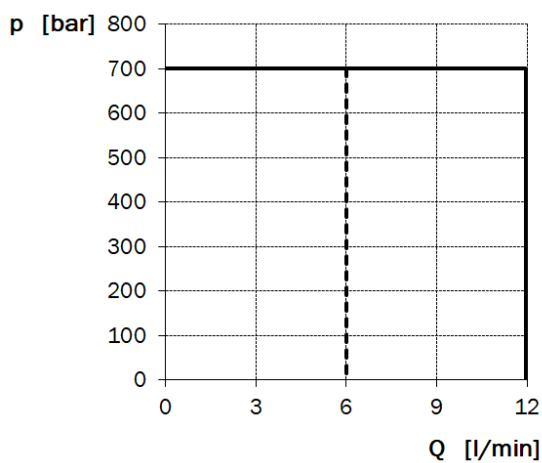
\* The B hole in the connecting plate is only necessary if the pipe connection (delivered condition) is not used. When using the sub-base, the plug in the B-port of the valve must be removed.

## Pressure drop

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


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	

## Hydraulic switching capacity



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

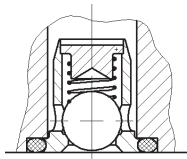
— C, D, L, N, WO  
- - - WS

## Accessories

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

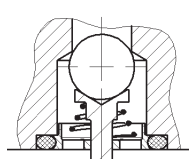
### Dimensional drawing

Check valve



P

Return pressure stop



T

### Symbol

Check valve



Return pressure stop



## Spare parts

Item description	Part No.
5 x O-Ring 5 x 1,5, FKM	3853409
5 x O-Ring 8 x 1,5, FKM	
4 x Socket head screw ISO 4762-M6 x 35 - A2-70	
4 x Socket head screw ISO 4762-M6 x 60 - A2	
1 x Seal cover plate (Port B for 4/2 valves)	3738750
1 x Pole tube nut with manual override	
1 x O-ring for pole tube nut, FKM	
1 x Ex-1516-106 Solenoid 24 VDC	4522223

Further fastening elements, tie bolts, subplates and single subplates  
see technical data sheets APH/X-4B (for valve banks) or EAP-4B (for single mounting).

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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.