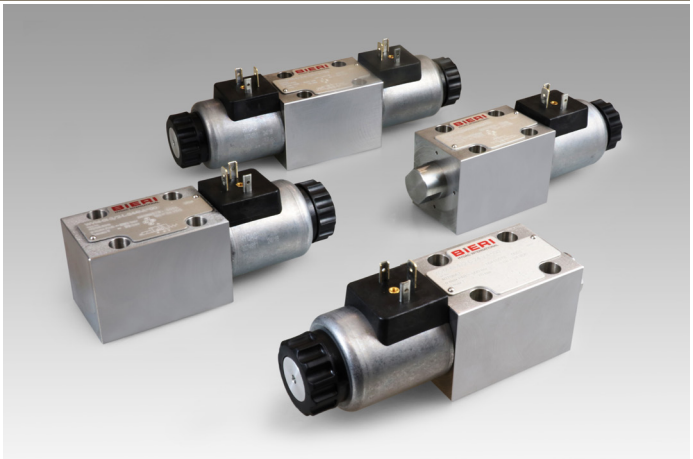
BIERI
HYDAC INTERNATIONAL

Seated valves

Type WVM-6I

NG 6
up to 25 l/min



Features

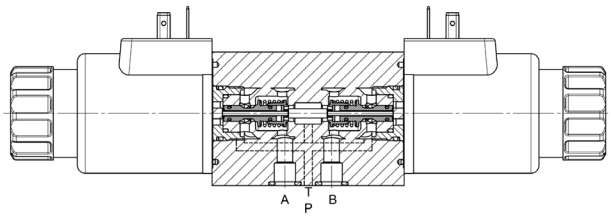
- Solenoid actuated and direct operated
- Leakage free in every direction (double tight)
- High operational safety and reliable switching
- High duty cycles and long lifetime
- High corrosion resistance

Applications

- Control of cylinders and motors as superior and space-saving alternatives to spool valves which require additional leakage free shutoff valves
- Clamping technology & jig construction
- Machine tools - auxiliary functions
- Forming technology - clamping
- Presses, test benches and systems
- Lifting and transport systems
- Hydraulic tools
- Energy efficient circuits
- Accumulator charging circuits
- Construction, recycling
- Seat-tight pilot control of passive and/or active logic valves

Design

- Patented functional principle
- Pressure compensated design of hardened and specially grinded valve cones
- Strong return springs
- Hidden manual override
- Available as 2/2-, 3/2-, 3/3-, 3/4-, 4/2-, 4/3- or 4/4-valve
- Plate mounted valve with pattern according ISO4401-03
- 360° turnable and exchangeable plug-in coil
- Replacement of coils without opening of the pressure tight spaces (slip-in coils)
- Integrated check valve and orifices available



Technical data

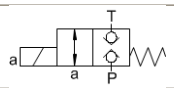
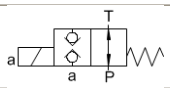
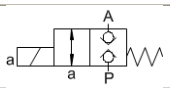
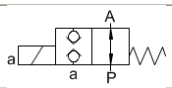
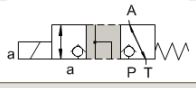
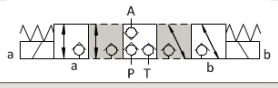
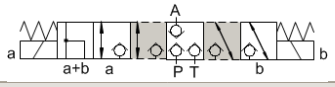
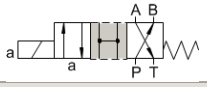
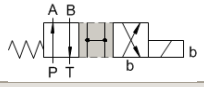
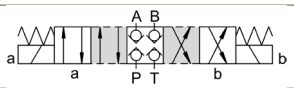
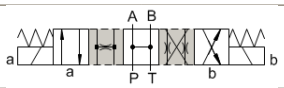
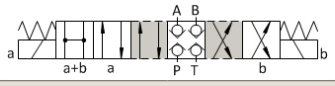
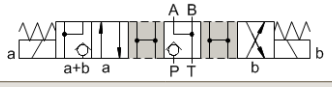
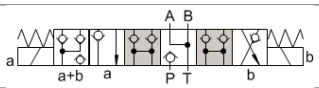
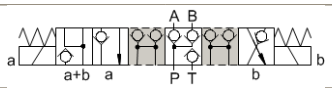
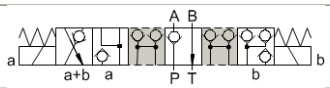
Hydraulic fluid	Mineral oil according to DIN 51524 (other fluids on request)
Fluid temperature range	– 20 to 80 °C
Ambient temperature range	– 30 to 50 °C
Viscosity range	5 to 400 mm^2/s
Porting	NG 6 according to DIN 24340 / ISO 4401 / CETOP RP 121 H
Max. operating pressure connection P, A, B	500 bar
Max. operating pressure connection T	70 bar
Max. flow rate	25 l/min
Filtration (recommendation)	according to NAS 1638, class 6 resp. ISO/DIN 4406 Klasse 17/15/12
Duty cycle ED	100 %
Solenoid voltage	24 VDC (30 W)
Tolerance	+/– 10 %
Switching time	40 – 110 ms
Degree of protection	IP 65 according to DIN 40050 (or according coil choice)
Weight	1.7 kg (1 coil), 2.2 kg (2 coils)
Material/Surface finish	Valve body: Corrosion resistant steel Solenoid coil: ZnNi-plated

Type code

																		supplementary elements					
Example	**WV**	**M**	-	**6I**	-	**4**	/	**4**	-	**E+H**	-	**24**	-	**V**	-	**P**	**10**	-	**RV**	-	**C**		**00**

Seated valve		
Size	500+	
Nominal size **Connection ISO**	6 I	
Number of ports	2, 3 or 4	
Number of positions	2, 3 or 4	
Switching functions	see product information	
Actuation types	0 24	without coil coil 24 VDC
Seal material	V	FKM
Port for orificie	P A B T	P-port (pressure) A-port B-port T-port (tank)
Orificie-Ø	05 07 10 14 20	0.5 mm 0.7 mm 1.0 mm 1.4 mm 2.0 mm
Plug in Check valve	RV	plug in check valve in P-port
Design revision	For internal purposes	
Part index	Please leave blank For internal purposes	
Special design	01 ... 99 (00 for standard)	

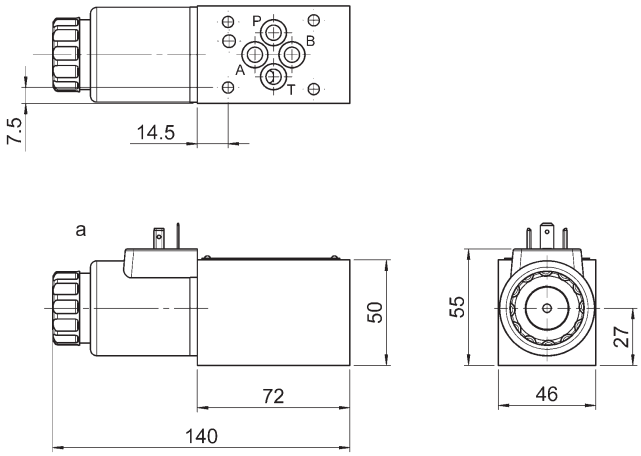
Standard design

Ways	2/2			
Switching function	**E4**	**BE4**	**E2**	**BE2**
Part No. without coil	4112864	4112973	4113026	4113029
Part No. 24 VDC	4066473	4066728	4066429	4066396
Symbol				
Ways	**3/2**		**3/3**	
Switching function	**X**	**C**	**E**	
Part No. without coil	4114047	4113037	4114051	
Part No. 24 VDC	4068398	4066034	4067299	
Symbol				
Ways	**3/4**		**4/2**	
Switching function	**E+H**		**X**	**C**
Part No. without coil	4113057		4113069	4113103
Part No. 24 VDC	4067552		4070867	4070353
Symbol				
Ways	**4/3**			
Switching function	**E**		**H**	
Part No. without coil	4113107		4113135	
Part No. 24 VDC	4054700		4070064	
Symbol				
Ways	**4/4**			
Switching function	**E+H**		**J+M**	
Part No. without coil	4113193		4113196	
Part No. 24 VDC	4057806		4072509	
Symbol				
Ways	**4/4**			
Switching function	**J+M-2RV**		**M+J-2RV**	
Part No. without coil	4369674		4369805	
Part No. 24 VDC	4369885		4369895	
Symbol				
Ways	**4/4**			
Switching function	**Z+X-2RV**			
Part No. without coil	4369807			
Part No. 24 VDC	4369900			
Symbol				

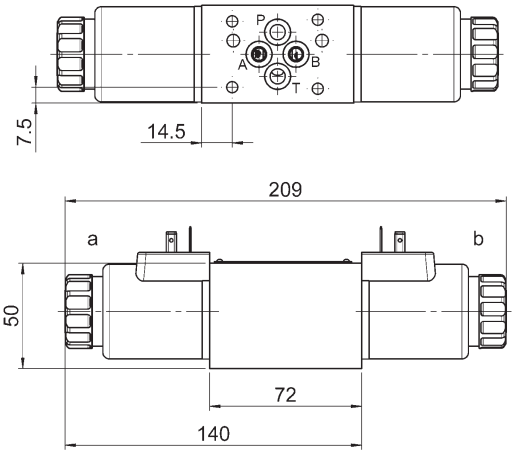
Position during switching process

Dimensional drawings

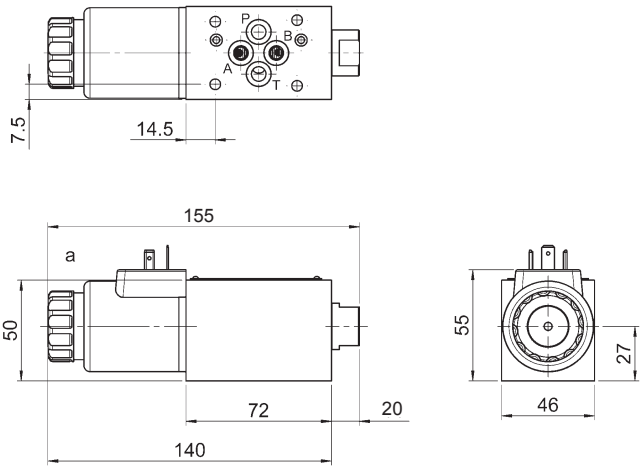
2/2 und 3/2 directional valves



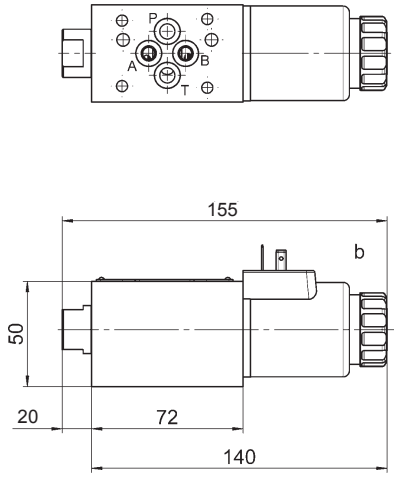
3/3, 3/4, 4/3 und 4/4 directional valves



4/2-X directional valve

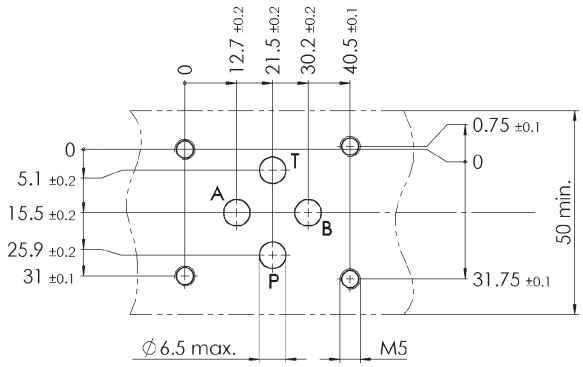


4/2-C directional valve

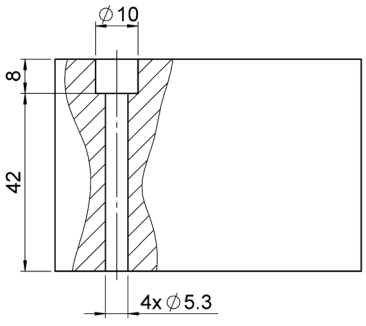


Connection

acc. DIN 24340-A6/ISO 4401-03 (CETOP 03)

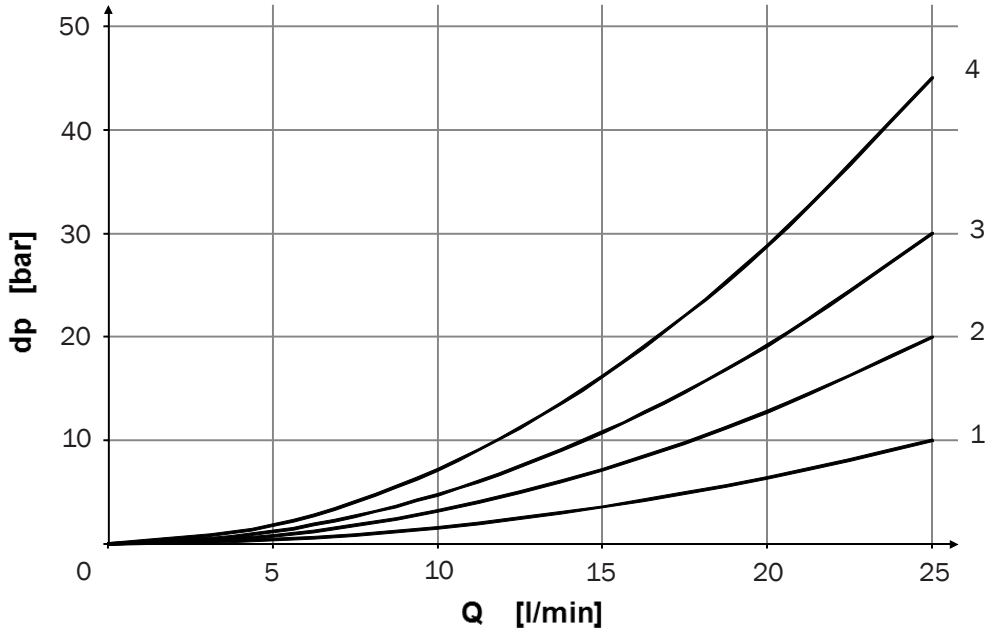


Fixing screws / Clamping length



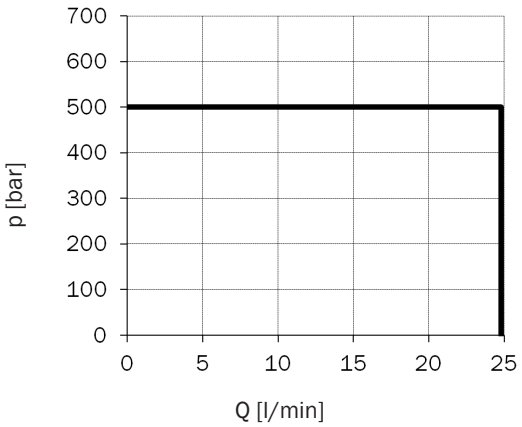
Pressure drop

(v = 32 mm²/s)



Number of ports	Number of positions	Bieri	a				b		0 (+)				
			P-A	A-T	B-T	P-T	P-B	A-T	P-A	B-T	P-B	A-T	P-T
2	2	E2	2										
2	2	BE2							1				
2	2	E4				2							
2	2	BE4											1
3	2	X	2									1	
3	2	C		2					1				
3	3	E	2					1					
3	4	E+H	2					1	(2)			(1)	(3)
4	2	X	2		1						2	1	
4	2	C					2	1	2	1			
4	3	E	2		1		2	1					
4	3	H	2		1		2	1	3	3	3	3	2
4	4	E+H	2		1		2	1	(2)	(1)	(2)	(1)	(1)
4	4	J+M	2		1		2	1	(2)	2	(2)	2	
4	4	J+M-2RV	4		1		4	1	(4)	1	(4)	1	
4	4	M+J-2RV	4		1	4			4	(1)	4	(1)	
4	4	Z+X-2RV		2	1	3	4		3	1	(4)	(2)	

Hydraulic switching capacity



Hydraulic switching capacity at nominal operating voltage and ambient temperatur range
T_a = 50 ° C
v = 32 mm²/s

Applies to all valves!

Switch on current I_{ON}
$I_{ON} \geq 0.7 \times I_N$

Switch off current I_{OFF}
$I_{OFF} \leq 0.07 \times I_N$

Switching times

Number of ports	Number of positions	Valve type (hydraulic schematics)	Switching on [ms]*		Switching off [ms]*
			at operating temperature (0.7 x I_N)	cold (1 x I_N)	
2	2	E4, BE4	60	40	25
2	2	E2, BE2	110	45	25
3	2	X	60	40	25
3	2	C	110	45	25
3	3	E	60	40	25
3	4	E+H	60	40	25
4	2	X, C	110	45	25
4	3	E	90	45	25
4	3	H	60	40	25
4	4	J+M, J+M-2RV	60	40	25
4	4	E+H	90	45	25
4	4	M+J-2RV	110	45	25
4	4	Z+X-2RV	a = 110 / b = 60	a = 45 / b = 40	25

* indicative values

Electrical data (coil)

Voltage	DC voltage
Tolerance	+/- 10%
Nominal power	30 W
Nominal voltage	24 V
Nominal current	1.25 A (valid at R20)
Duty cycle	100%
Protection class (standard version)	IP65 acc. EN 60529, DIN 40050 at correct assembly on cable socket

Accessories

Electrical connection / coil variants

All WVM-6I valves are supplied with solenoid coil 3274861 as standard. Optionally, other solenoid coils of the Coil-50-2345 series according to the table can also be used.
To do this, order the valve „without coil“ (operating type „0“ in the type code) and the coil separately. Coil nut and O-ring are supplied with the valve.

Basic dimensions:
- Inner diameter 23 mm
- Outer diameter 45 mm
- Length 50.5 mm

Connection **Protection** [1]	DIN 436050 radial IP65	Junior Timer axial IP67	Litz wire 300 mm long IP67	Deutsch DT04 axial IP67	Kostal M27 radial IP67
12 V **Part No.**	12DG 3274860	12DU 3274862	12DL 3362418	12DN 3605781	12DK 3804091
24 V **Part No.**	24DG 3274861	24DU 3274863	24DL 3838930	24DN 3927270	24DK 3796358
110 VAC **Part No.**	110AG [2] 3586364	on request	on request	on request	on request
230 VAC **Part No.**	230AG [2] 3586396	on request	on request	on request	on request

[1] Important note: The protection class applies to the coil. The prerequisite for this is the correct assembly of the mating connector and the same or better type of protection of the mating connector itself is a necessity.

[2] Rectifier is integrated in the coil

Plug for solenoid

Part description	Part No.
Plug for solenoid grey	6132484
Plug for solenoid black	3728850
LRS KPL Z4 TR 2Pol LED (Plug for solenoid with integrated reduction of performance)	3689354

Screw

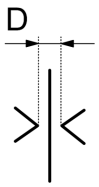
Part description	Part No.
Screw M5 x 50 12.9 (zinc flake coated)	6206138

Various

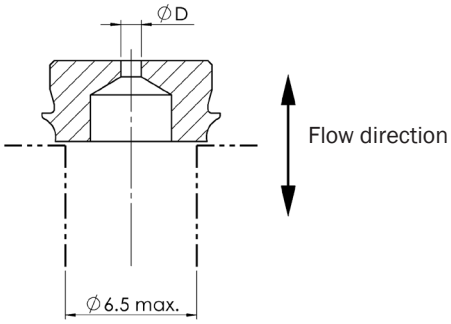
Part description	Part No.
O-Ring, 9.25 x 1.78 mm	4003217
Plastic nut	914555
O-Ring for Plastic nut	616334

Orifice for P-, A-, B-, T-port

Part description	Part No.
Orifice ø D = 0.5 mm	3687934
Orifice ø D = 0.7 mm	3687956
Orifice ø D = 1.0 mm	3687961
Orifice ø D = 1.4 mm	3656890
Orifice ø D = 2.0 mm	3687970



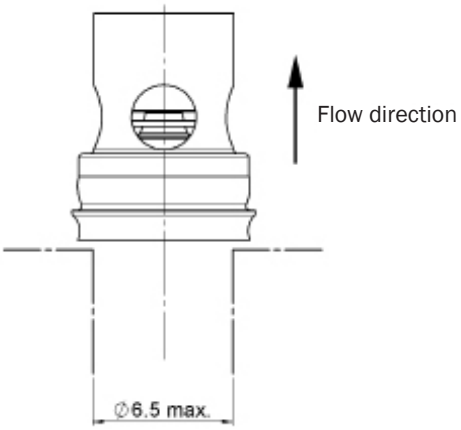
Dimensional drawing



Plug in check valve for P-port

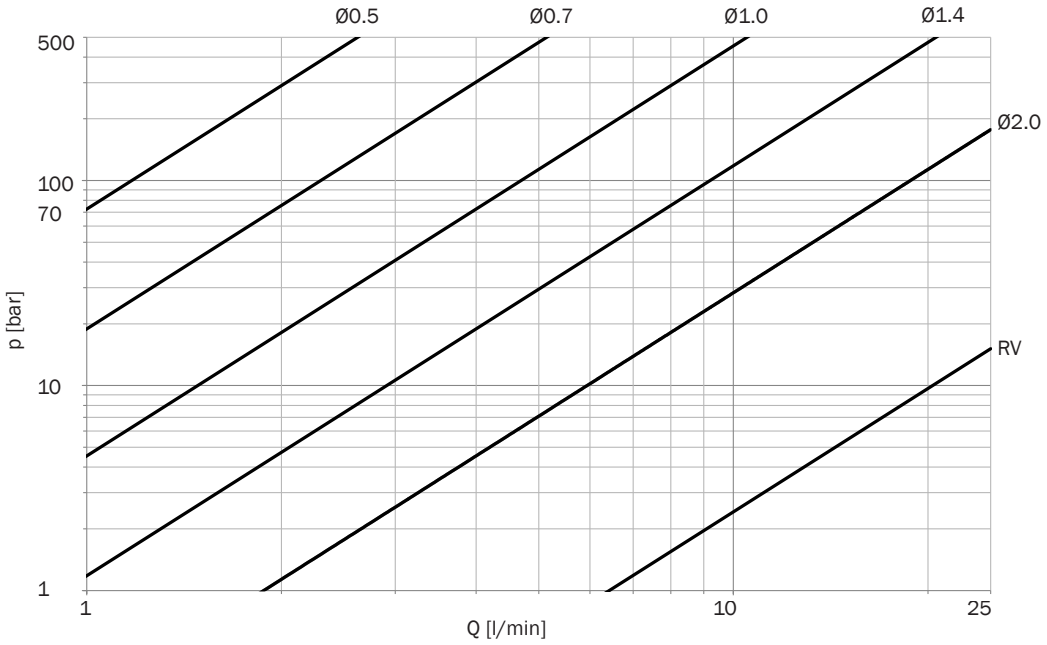
Part description	Part No.
Plug in check valve	4269275

Dimensional drawing



B10 value = 3‘000‘000 switching operations

Drop pressure



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