

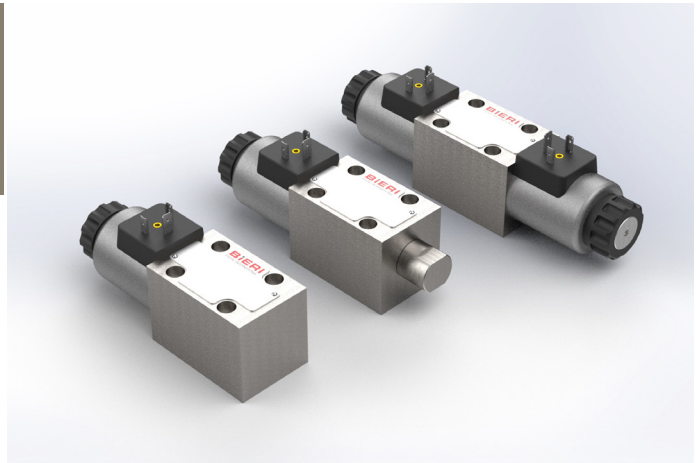
# Directional poppet valves

## Type WVM-6I

NG 6 ISO  
up to 25 l/min, up to **500 bar**

### Features

- Directly operated
- Poppet tight
- Good corrosion resistance
- High operational safety and reliable switching
- High duty cycles and long lifetime

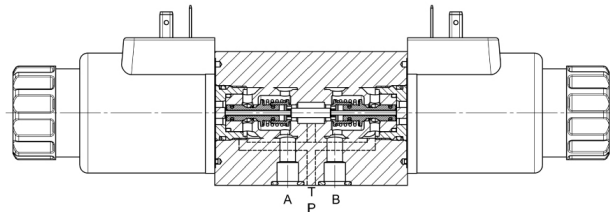


### Applications

- Controlling of cylinders in higher pressure ranges as full replacement for spool valve technology (especially for poppet tight holding and bending)
- Clamping technology & jig construction
- Machine tools - auxiliary functions
- Forming technology - clamping
- Presses, test benches and systems
- Lifting and transport systems
- Hydraulic tools
- Wind turbine hydraulics

### Design

- Pressure compensated, hardened and specially grinded valve cones
- Manual override
- Available as 2/2-, 3/2-, 3/3-, 3/4-, 4/2-, 4/3- or 4/4-valve solenoid actuated
- 360° turnable and exchangeable plug-in coil
- Integrated check valve and orificies available
- Patented functional principle
- Return pressure stop available on request



### 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 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 (WVM-6I-3/2-C = 500 bar)
Max. flow rate	25 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 (32 W)
Voltage tolerance	+/- 10 %
Switching time	40 – 110 ms
Degree of protection	IP 65 according to EN 60529 / DIN 40050 (or according coil choice)
Weight	1.7 kg (1 coil), 2.2 kg (2 coils)
Material	Corrosion resistant steel (Solenoid coil: ZnNi-plated (1000 h salt spray test))

**Type WVM-6I**

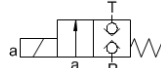
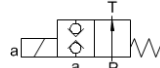
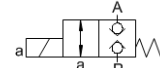
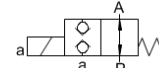


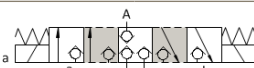
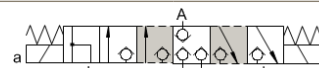

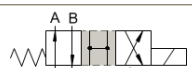
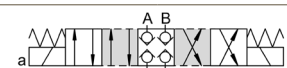

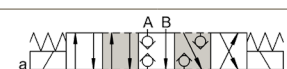
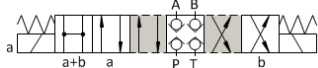
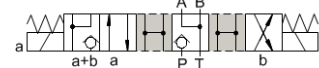
NG 6 ISO  
up to 25 l/min, up to 500 bar

**Type code**

		Additional elements	
Example		WV	M - 6I - 4 / 4 - E+H - 24 - V - A 10 - RV - M - C 00
Directional poppet valves			
Size	500 bar		
Nominal size	6 ...		
Connection ISO	... I		
Intermediate plate valve	... Z		
Number of ports	2, 3 or 4		
Number of positions	2, 3 or 4		
Control function	see overview „Product information“		
Control method	0 without solenoid 24 solenoid 24 VDC		
Seal material	V FKM		
Connection for orifice	P P-connection (pressure) A A-connection B B-connection T T-connection (tank)*		
Orifice-Ø	05 0.5 mm 07 0.7 mm 10 1.0 mm 14 1.4 mm 20 2.0 mm		
Check valve	RV plug in check valve in P-connection		
Measuring ports	M 1/8“ measuring ports in A- and B-connection		
			<b>Design</b> 00 ... 99 For internal purposes
			<b>Index</b> Please leave blank For internal purposes
			<b>Design revision</b> For internal purposes

\* Safety note: Select orifice with regard to permissible tank pressure!

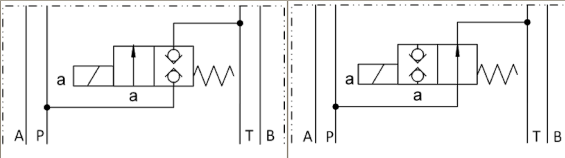
## Product information


Valve type	WVM-6I-2/2					
Control function	E4	BE4	E2	BE2		
Part No. without coil	4112864	4112973	4113026	4113029		
Part No. 24 VDC	4066473	4066728	4066429	4066396		
Symbol						
Valve type	WVM-6I-3/2					
Control function	X	C				
Part No. without coil	4114047	4113037				
Part No. 24 VDC	4068398	4066034				
Symbol						
Valve type	WVM-6I-3/3		WVM-6I-3/4			
Control function	E		E+H			
Part No. without coil	4114051		4113057			
Part No. 24 VDC	4067299		4067552			
Symbol						
Valve type	WVM-6I-4/2		WVM-6I-4/3			
Control function	X	C	E			
Part No. without coil	4113069	4113103	4113107			
Part No. 24 VDC	4070867	4070353	4054700			
Symbol						
Valve type	WVM-6I-4/3					
Control function	H		U			
Part No. without coil	4113135		4441304			
Part No. 24 VDC	4070064		4441475			
Symbol						
Valve type	WVM-6I-4/4		WVM-6I-4/4			
Control function	E+H		J+M			
Part No. without coil	4113193		4113196			
Part No. 24 VDC	4057806		4072509			
Symbol						
Valve type	Position monitored and detent					
	see WVM-6I-R and WVM-6I-OF					

 Usual flow direction

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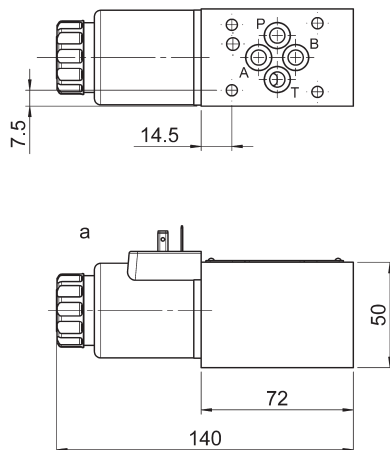
Valve type	WVM-6Z-2/2	
Control function	E4	BE4
Part No. 24 VDC	4444589	4444892
Symbol		

 Usual flow direction

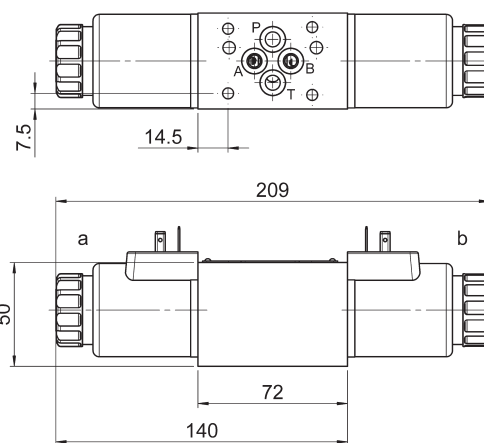
## Dimensional drawings

### WVM-6I directional poppet valves

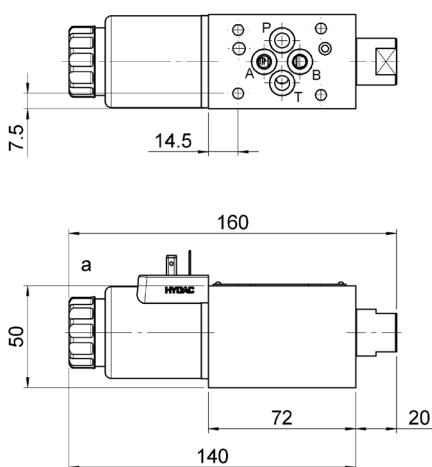
#### 2/2 and 3/2



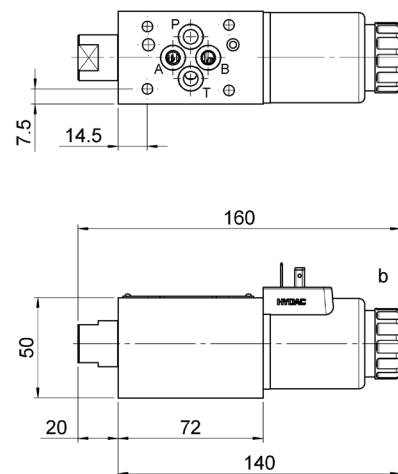
#### 3/2-Y-OF, 3/3, 3/4, 4/3 and 4/4



#### 4/2-X

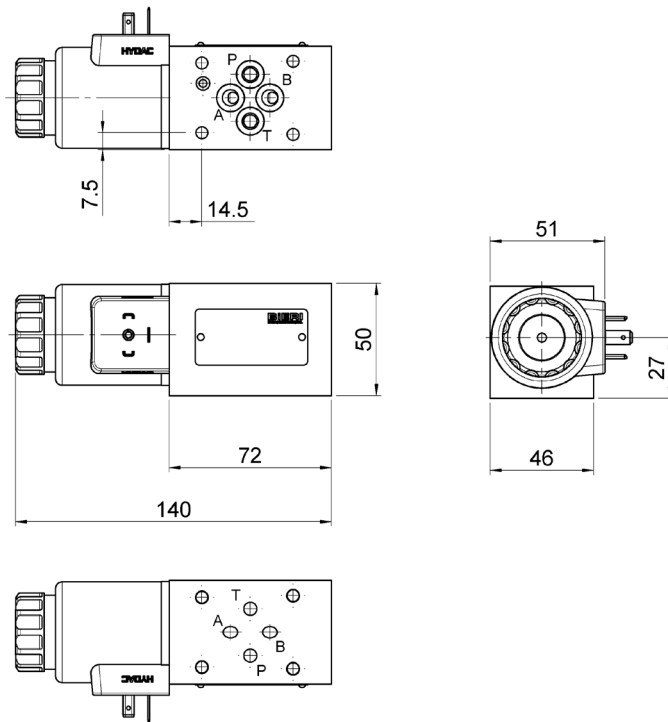
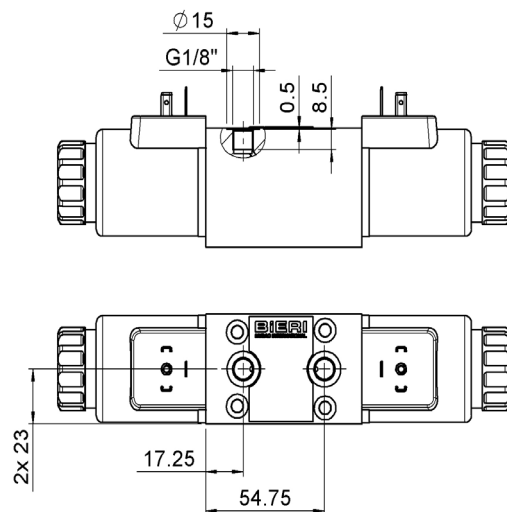
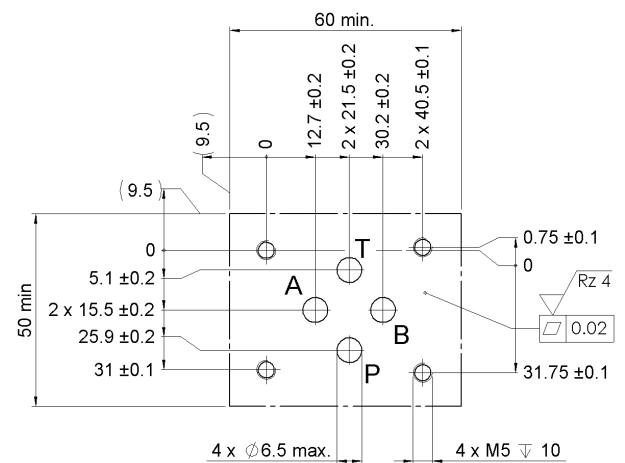
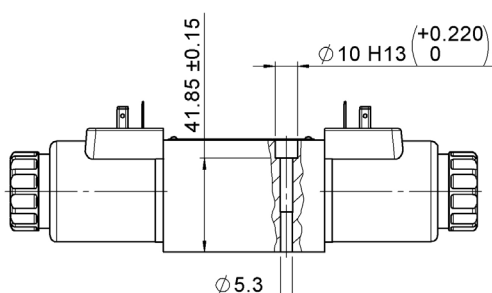


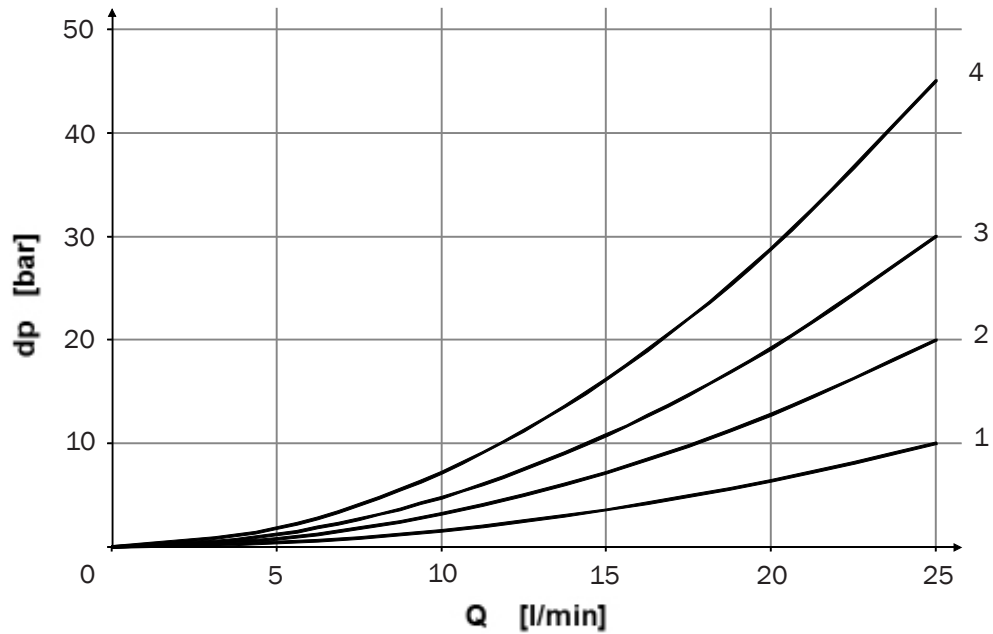
#### 4/2-C



**WVM-6Z Intermediate plates directional poppet valve**

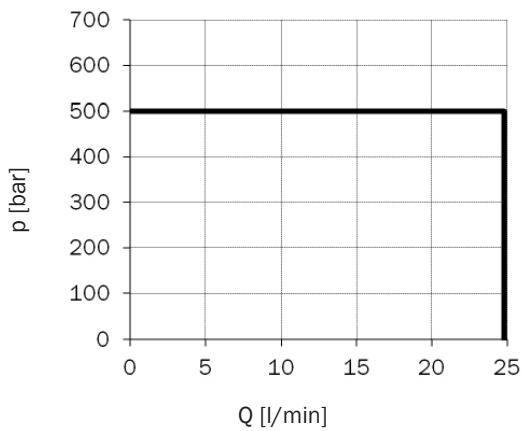
2/2

**With measuring ports****Drilling pattern****Mounting screws / clamping length**

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

Valve type	Control function	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
4/3	U	2		2		4	2		4			
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	

## Hydraulic switching capacity



Hydraulic switching capacity at rated voltage and ambient temperature  $T_a = 50^\circ \text{C}$

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

Applies to all valves (control functions)!

Switch on current  $I_{\text{ON}}$

$$I_{\text{ON}} \geq 0.7 \times I_N$$

Switch off current  $I_{\text{OFF}}$

$$I_{\text{OFF}} \leq 0.07 \times I_N$$

## Switching times

Valve type	Control function	Switching on [ms]*		Switching off [ms]*
		at operating temperature ( $0.7 \times I_N$ )	cold ( $1 \times I_N$ )	
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
4/3	U	$a = 110 / b = 90$	$a = 50 / b = 45$	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

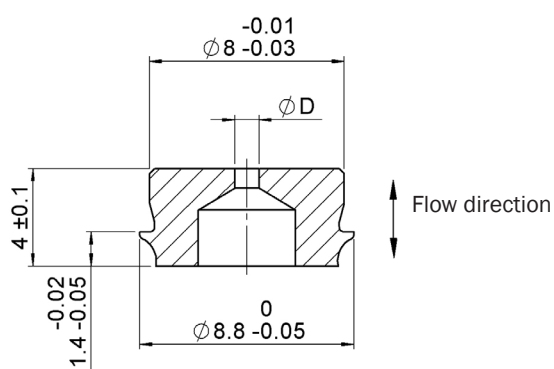
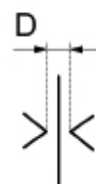
\* indicative values

**Type WVM-6I**

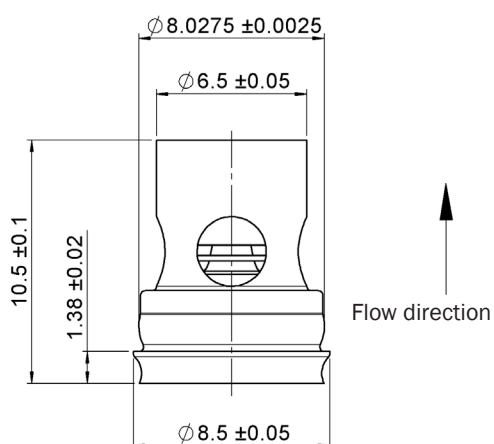
NG 6 ISO  
up to 25 l/min, up to 500 bar

**Accessories****Orifice for P-, A-, B-, T-connection**

Part description	Type code	Part No.
Orifice Ø 0,5	BL700-6-D8-0,5-A*00	3687934
Orifice Ø 0,7	BL700-6-D8-0,7-A*00	3687956
Orifice Ø 1,0	BL700-6-D8-1,0-A*00	3687961
Orifice Ø 1,4	BL700-6-D8-1,4-A*00	3656890
Orifice Ø 2,0	BL700-6-D8-2,0-A*00	3687970

**Dimensional drawing****Symbol****Check valve for P-connection**

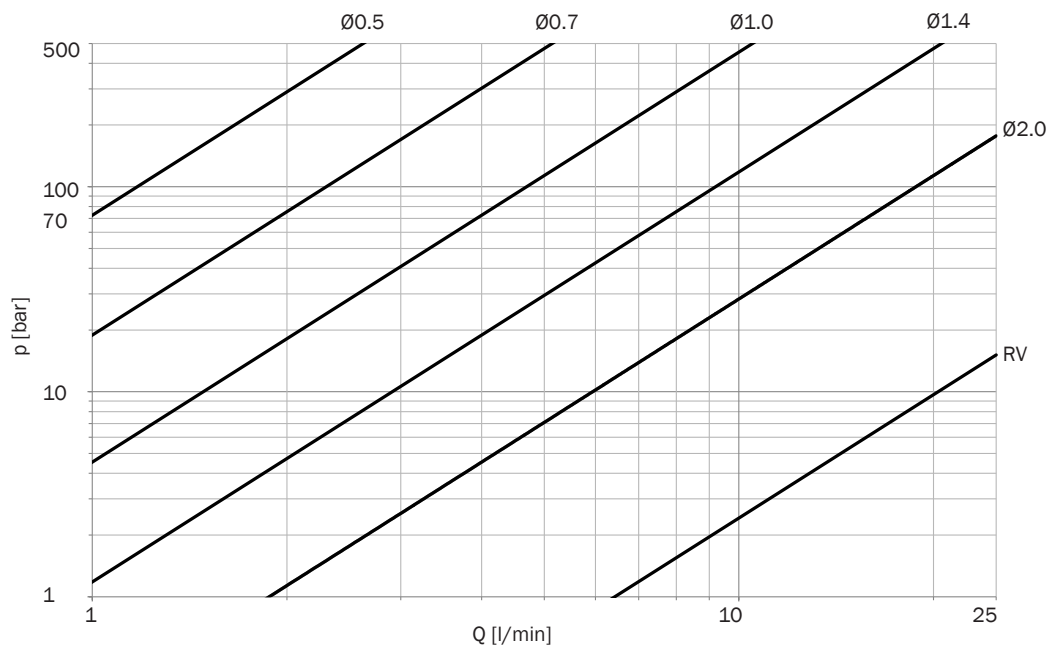
Part description	Type code	Part No.
Check valve (fitting in connection P)	RV500-6-D8-A*00	4269275

**Dimensional drawing****Symbol**

Load change B10d 6 million according to ISO 13849-1



## Pressure drop



<b>Type WVM-6I</b>
NG 6 ISO up to 25 l/min, up to 500 bar

## Solenoid coil

All WVM-6I valves are supplied with solenoid coil 4244171 as standard. Optionally, other solenoid coils of the Coil-50-2345 series according to the table below can also be used.

The valve „without solenoid coil“ (control type „0“ in the type code) and the solenoid coil have separately. Coil nut and O-ring are supplied with the valve.

<b>Connection</b>	DIN 436050 radial IP65	Junior Timer axial IP67	Litz wire 300 mm long IP67	Deutsch DT04 axial IP67
<b>Protection <sup>1</sup></b>				
<b>12 V Part No.</b>	4244169	on request	on request	on request
<b>24 V Part No.</b>	4244171	on request	on request	on request
<b>110 VAC Part No.</b>	3586364 <sup>2</sup>	on request	on request	on request
<b>230 VAC Part No.</b>	3586396 <sup>2</sup>	on request	on request	on request

<sup>1</sup> Important note: The protection class applies to the solenoid coil. The precondition is the proper assembly of the mating connector and the same or better protection class of the mating connector.

<sup>2</sup> Rectifier is integrated in the solenoid coil

<b>Part description</b>	<b>Part No.</b>
1 x Plug for solenoid grey	6132484
1 x Plug for solenoid black	3728850
1 x Plug for solenoid with rectifier / grey	3681390
1 x Plug for solenoid with rectifier / black	3671158
1 x Power reduction plug LRS2 KPL Z4 TR 2POL LED	4747017
4 x Socket head screw ISO 4762-M5 x 50-12.9	4455691

## Spare parts

<b>Part description</b>	<b>Part No.</b>
4 x O-Ring 9,25 x 1,78, FKM	4455692
1 x Pole tube nut	914555
1 x O-Ring for pole tube nut	616992

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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.