


Ball valves with drive unit VZPR


Key features

FESTO



VZPR VZPR-...-R

 - Connecting thread
Rp $\frac{1}{4}$... Rp $2\frac{1}{2}$

 - Flow rate Kv
5.9 ... 535 m³/h

■ Brass design
VZPR-...

■ Steel design
VZPR-...-R

■ Namur port pattern
VDI/VDE 3845

■ Combination of a pneumatic quarter-turn actuator and a ball valve.

■ Flow is fully opened or closed in both directions.

■ 5/2-way valve with Namur port pattern can be directly flange-mounted to the valve actuator.

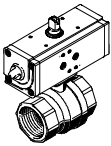
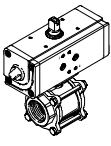
■ Limit switch attachments for end-position sensing can be directly flange-mounted to the valve actuator.

Valves with Namur port pattern
→ 7 / 2.1-6

Limit switch attachments with Namur port pattern → 7 / 1.2-53

Ball valves with drive unit VZPR

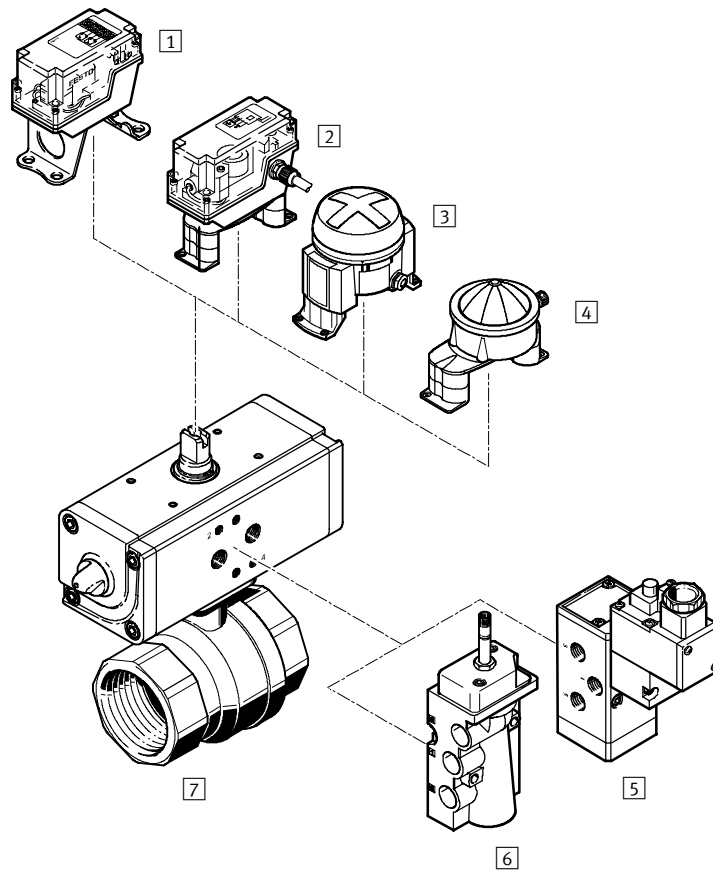
Product range overview

Design	Version	Type	Connecting thread ¹⁾	Nominal size [mm]	Nominal operating pressure [bar]	→ Page
Ball valve with drive unit	Brass					
		VZPR	Rp1/4	15	40	7 / 2.2-5
			Rp3/8	15	40	
			Rp1/2	15	40	
			Rp3/4	20	40	
			Rp1	25	40	
			Rp1 1/4	32	40	
			Rp1 1/2	40	25	
			Rp2	50	25	
			Rp2 1/2	63	25	
	Stainless steel					
		VZPR-...-R	Rp1/4	10	63	7 / 2.2-9
			Rp3/8	12		
			Rp1/2	16		
			Rp3/4	20		
			Rp1	25		
			Rp1 1/4	32		
			Rp1 1/2	40		
			Rp2	50		
			Rp2 1/2	65		

1) Cylindrical barrel with female thread to DIN ISO 228-1

Ball valves with drive unit VZPR

Peripherals overview



Mounting attachments and accessories		
	Brief description	→ Page
1	End-position sensing attachment QH-DR-E	7 / 1.2-61
2	End-position sensing attachment DAPZ	7 / 1.2-54
3	End-position sensing attachment DAPZ	7 / 1.2-58
4	End-position sensing attachment DAPZ	7 / 1.2-56
5	Solenoid valve MFH	7 / 2.1-10
	Solenoid valve MN1H	7 / 2.1-10
	Solenoid valve MGTBH	7 / 2.1-10
6	Solenoid valve NVF3	7 / 2.1-4
7	Ball valve with drive unit VZPR	7 / 2.2-2

Ball valves with drive unit VZPR

Type codes

VZPR – B P D H – 22 – R 38 R

Type	
VZPR	Ball valve with drive unit

Valve	
B	Ball valve

Drive	
P	Quarter-turn actuator DAPS

Mode of operation	
D	Double-acting

Torque	
H	With high torque

Valve function	
22	2/2-way valve

Closing direction	
R	Closes to right

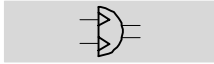
Connecting thread	
14	Rp1/4
38	Rp3/8
12	Rp1/2
34	Rp3/4
1	Rp1
114	Rp1 1/4
112	Rp1 1/2
2	Rp2
212	Rp2 1/2


Variant	
R	Corrosion resistant


Ball valves with drive unit VZPR


Technical data


Function



 Swivel angle
0 ... 90°

 Connecting thread
Rp1/4 ... Rp2 1/2

 Flow rate Kv
5.9 ... 535 m³/h

 Torque
15 ... 1,920 Nm



General technical data									
Connecting thread	Rp1/4	Rp3/8	Rp1/2	Rp3/4	Rp1	Rp1 1/4	Rp1 1/2	Rp2	Rp2 1/2
Quarter-turn actuator									
Pneumatic connection	G1/8								
Design	Scotch yoke system, double-acting								
Type of mounting	Via female threads								
Assembly position	Any								
Swivel angle [°]	90								
Closing direction	Closes to right								
Torque at 5.6 bar and 0° swivel angle [Nm]	15	15	15	30	30	60	60	106	180
Ball valve									
Valve function	2/2								
Design	Ball valve								
Sealing principle	Soft								
Actuation type	Pneumatically actuated								
Direction of flow	Reversible								
Nominal size [mm]	15	15	15	20	25	32	40	50	63
Flow rate Kv [m ³ /h]	5.9	9.4	17	41	70	121	200	292	535

Operating and environmental conditions									
Connecting thread	Rp1/4	Rp3/8	Rp1/2	Rp3/4	Rp1	Rp1 1/4	Rp1 1/2	Rp2	Rp2 1/2
Ambient temperature [°C]	-20 ... +80								
Temperature of medium [°C]	-20 ... +150								
Corrosion resistance class CRC ²⁾	1								
Food industry approval	No								
Quarter-turn actuator									
Operating pressure ¹⁾ [bar]	1 ... 8.4								
Operating medium	Dried air, lubricated or unlubricated								
Ball valve									
Nominal operating pressure [bar]	40	40	40	40	40	40	25	25	25
Operating medium	Compressed air, water, neutral gasses, neutral fluids, vacuum								

1) Minimum operating pressures vary for single-acting quarter-turn actuators depending upon spring quantity.

2) Corrosion resistance class 1 according to Festo standard 940 070

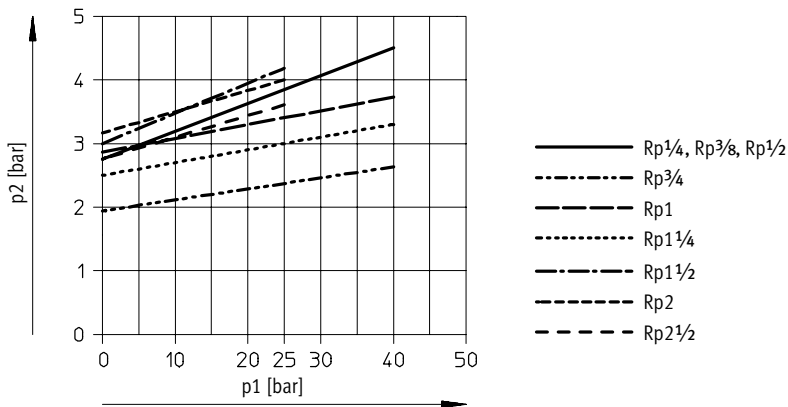
Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Ball valves with drive unit VZPR

Technical data

Weights [g]		Weights [g]	
Connecting thread		Connecting thread	
Rp1/4	1,300	Rp1 1/4	3,200
Rp3/8	1,300	Rp1 1/2	3,800
Rp1/2	1,200	Rp2	5,400
Rp3/4	1,500	Rp2 1/2	7,300
Rp1	1,800		

Operating pressure p2 as a function of nominal operating pressure p1



Materials	
Quarter-turn actuator	
Housing	Wrought aluminium alloy
Cover	Wrought aluminium alloy
Shaft	Stainless steel
External screws	Stainless steel
Seals	Nitrile rubber

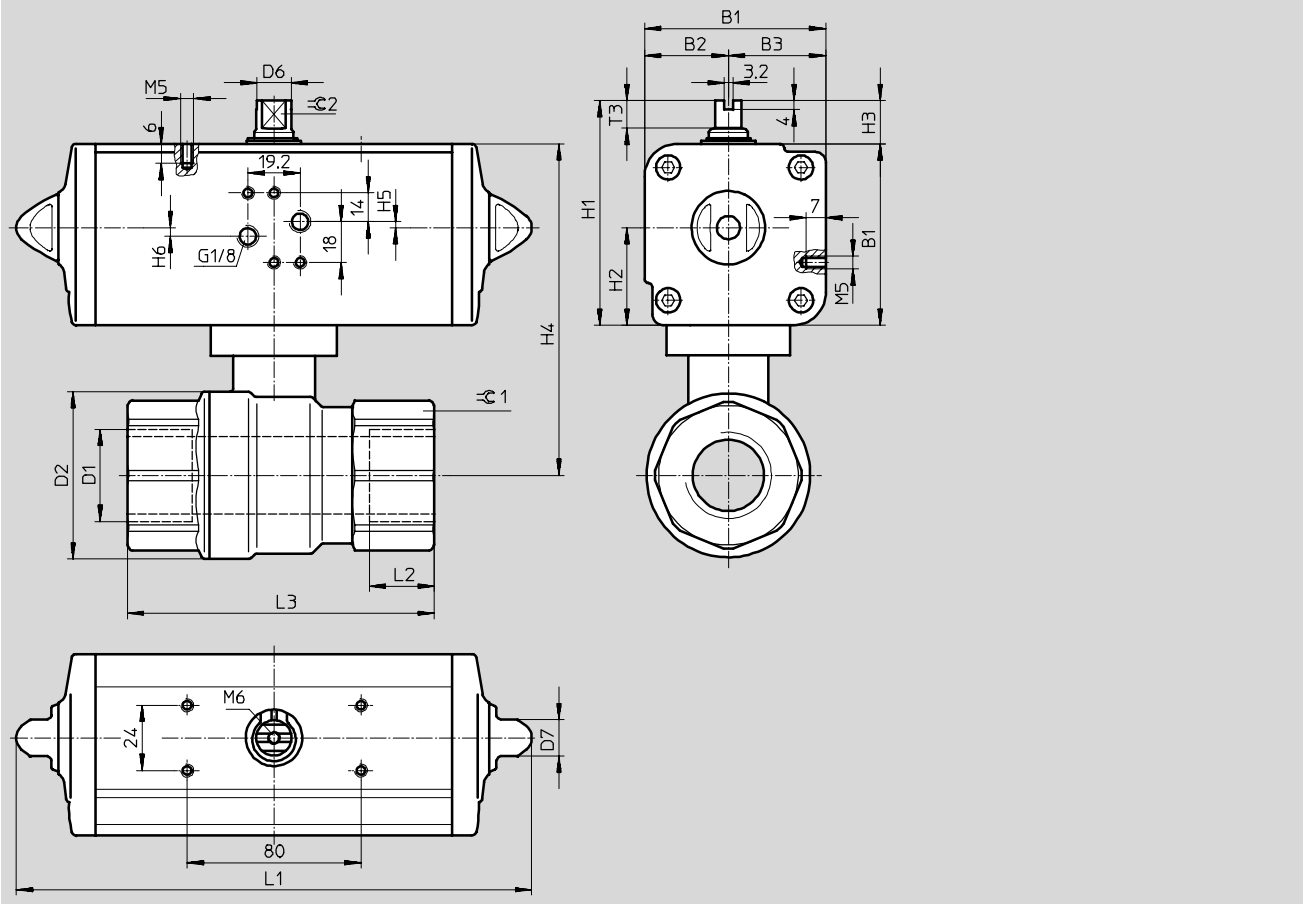
Ball valves with drive unit VZPR

Technical data

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Dimensions

Download CAD data → www.festo.com/en/engineering

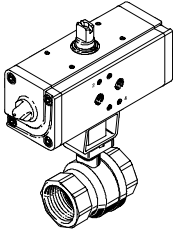


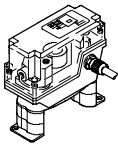
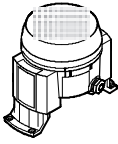
Connecting thread	B1	B2	B3	D2 Ø max.	D6 Ø	D7 Ø	H1	H2	H3
Rp1/4	52.2	24.2	28	35	8.2	13	72.2	28	20
Rp3/8									
Rp1/2									
Rp3/4	59.2	27.7	31.5	45	10.9	13	79.2	31.5	20
Rp1				55					
Rp1 1/4	70.4	32.7	37.7	65	14.5	13	90.4	37.7	20
Rp1 1/2				75					
Rp2	83.3	38.5	44.8	90	16.2	17	103.3	44.8	20
Rp2 1/2	107.5	51	56.5	110	20.2	22	137.5	56.5	30

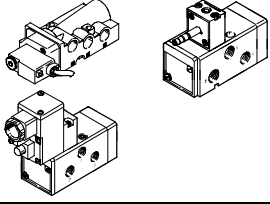
Connecting thread	H4	H5	H6	L1	L2	L3	T3	∠1	∠2
Rp1/4	92.5	0.8	3.2	159	15	75	10	26	8
Rp3/8									
Rp1/2									
Rp3/4	104.2	-	4	174	16	80	10	32	9
Rp1					19	90		41	
Rp1 1/4	130.2	-	4	198	21	110	13	50	10
Rp1 1/2	135.4				21	120		55	
Rp2	158.3	-	4	236.5	25	140	13	70	12
Rp2 1/2	192.5			289.9	24	143	16	83	15

Ball valves with drive unit VZPR

Technical data

Ordering data – Ball valves with drive unit			
	Connecting thread	Part No.	Type
	Rp1/4	540 510	VZPR-BPD-22-R14
	Rp3/8	540 511	VZPR-BPD-22-R38
	Rp1/2	540 512	VZPR-BPD-22-R12
	Rp3/4	540 513	VZPR-BPD-22-R34
	Rp1	540 514	VZPR-BPD-22-R1
	Rp1 1/4	540 515	VZPR-BPD-22-R114
	Rp1 1/2	540 516	VZPR-BPD-22-R112
	Rp2	540 517	VZPR-BPD-22-R2
Rp2 1/2	540 874	VZPR-BPD-22-R212	

Ordering data – Limit switch attachments (Namu)				Data sheets → 7 / 1.2-53	
	Sensing principle	Explosion-proof	Part No.	Type	
	Square design				
	Electrical	–	534 468	DAPZ-SB-M-250AC-DSM-RO	
	Electrical	■	534 470	DAPZ-SB-M-250AC-EXS-RO	
	Inductive	–	534 473	DAPZ-SB-I-30DC-DSAM-RO	
	Pneumatic	–	164 855	QH-DR-E-S3-PK-3-B-B	
	Electrical	–	164 854	QH-DR-E-S3-E-SW-B	
Inductive	–	164 853	QH-DR-E-SIEN-M12-NB-B		
Round design					
 <td>Electrical</td> <td>–</td> <td>534 469</td> <td>DAPZ-SB-M-250AC-DR-RO</td>	Electrical	–	534 469	DAPZ-SB-M-250AC-DR-RO	
	Inductive	–	534 471	DAPZ-SB-I-30DC-DR-RO	
	Inductive	–	534 472	DAPZ-SB-I-25DC-R-RO	
	Electrical	–	534 474	DAPZ-SB-M-250AC-DR-AR	
	Inductive	–	534 475	DAPZ-SB-I-36DC-DR-AR	
	Inductive	■	534 476	DAPZ-SB-I-25DC-EXDR-AR	

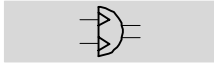
Ordering data – Solenoid valves (Namu)				Data sheets → 7 / 2.1-2	
	Standard nominal flow rate	For coil type	Part No.	Type	
	900	F solenoid coil		535 987	NVF3-MOH-5/2-K-1/4-EX
		F solenoid coil		535 988	NVF3-MOH-5/2-K-1/4-IA-EX
	1,000	F solenoid coil		183 973	MFH-5/2K-FR-NA
		N1 solenoid coil		183 974	MN1H-5/2K-FR-NA
		1)		184 105	MGTBH-3/2-1,2-24DC
		1)		185 246	MGTBH-3/2-1,2-110AC
		1)		185 248	MGTBH-3/2-1,2-230AC


1) Solenoid coil included in scope of delivery


Ball valves with drive unit VZPR, stainless steel


Technical data


Function



 Swivel angle
0 ... 90°

 Connecting thread
Rp1/4 ... Rp2 1/2

 Flow rate Kv
5.9 ... 535 m³/h

 Torque
15 ... 1,920 Nm



General technical data										
Connecting thread	Rp1/4	Rp3/8	Rp1/2	Rp3/4	Rp1	Rp1 1/4	Rp1 1/2	Rp2	Rp2 1/2	
Quarter-turn actuator										
Pneumatic connection	G1/8									
Design	Scotch yoke system, double-acting									
Type of mounting	Via female threads									
Assembly position	Any									
Swivel angle [°]	90									
Closing direction	Closes to right									
Torque at 5.6 bar and 0° swivel angle [Nm]	30	30	30	30/60 ¹⁾	60	60/106 ¹⁾	106/180 ¹⁾	180	240	
Ball valve										
Valve function	2/2									
Design	Ball valve									
Sealing principle	Soft									
Actuation type	Pneumatic									
Direction of flow	Reversible									
Nominal size [mm]	10	12	16	20	25	32	40	50	65	
Flow rate Kv [m ³ /h]	16	21	35	46	72	105	170	275	507	

1) With this connecting thread there are two ball valves with drive unit with different torques available for selection.

Operating and environmental conditions										
Connecting thread	Rp1/4	Rp3/8	Rp1/2	Rp3/4	Rp1	Rp1 1/4	Rp1 1/2	Rp2	Rp2 1/2	
Ambient temperature [°C]	-20 ... +80									
Temperature of medium [°C]	-20 ... +150									
Corrosion resistance class CRC ¹⁾	3									
Food industry approval	No									
Quarter-turn actuator										
Operating pressure ²⁾ [bar]	1 ... 8.4									
Operating medium	Dried air, lubricated or unlubricated									
Ball valve										
Nominal operating pressure [bar]	63									
Operating medium	Compressed air, water, neutral gasses, neutral fluids, vacuum									

- 1) Corrosion resistance class 3 according to Festo standard 940 070
Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.
- 2) Minimum operating pressures vary for single-acting quarter-turn actuators depending upon spring quantity.

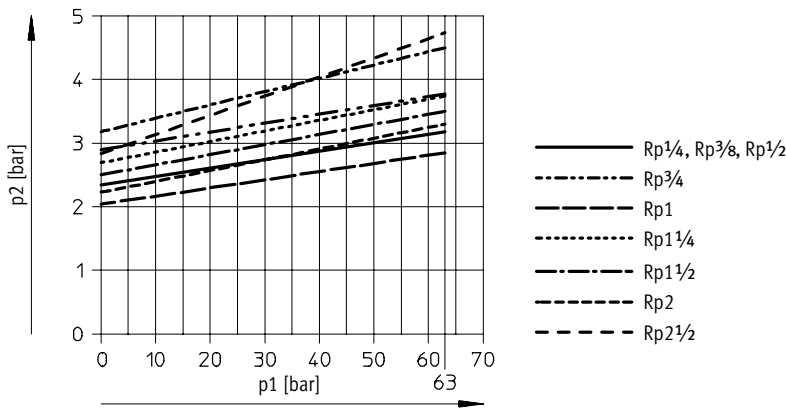
Ball valves with drive unit VZPR, stainless steel

Technical data

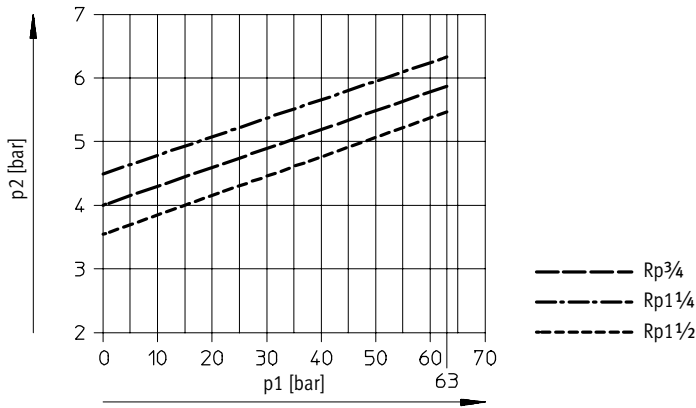
Weights [g]		Connecting thread	
Connecting thread		Connecting thread	
Rp $\frac{1}{4}$	1,200	Rp1 $\frac{1}{4}$, torque: 60 Nm	3,800
Rp $\frac{3}{8}$	1,200	Rp1 $\frac{1}{4}$, torque: 100 Nm	4,200
Rp $\frac{1}{2}$	1,700	Rp1 $\frac{1}{2}$, torque: 100 Nm	5,100
Rp $\frac{3}{4}$, torque: 30 Nm	1,800	Rp1 $\frac{1}{2}$, torque: 180 Nm	7,000
Rp $\frac{3}{4}$, torque: 60 Nm	2,700	Rp2	8,700
Rp1	3,100	Rp2 $\frac{1}{2}$	14,400

Operating pressure p2 as a function of nominal operating pressure p1

Standard torque



High torque



Materials	
Quarter-turn actuator	
Housing	Wrought aluminium alloy
Cover	Wrought aluminium alloy
Shaft	Stainless steel
External screws	Stainless steel
Seals	Nitrile rubber

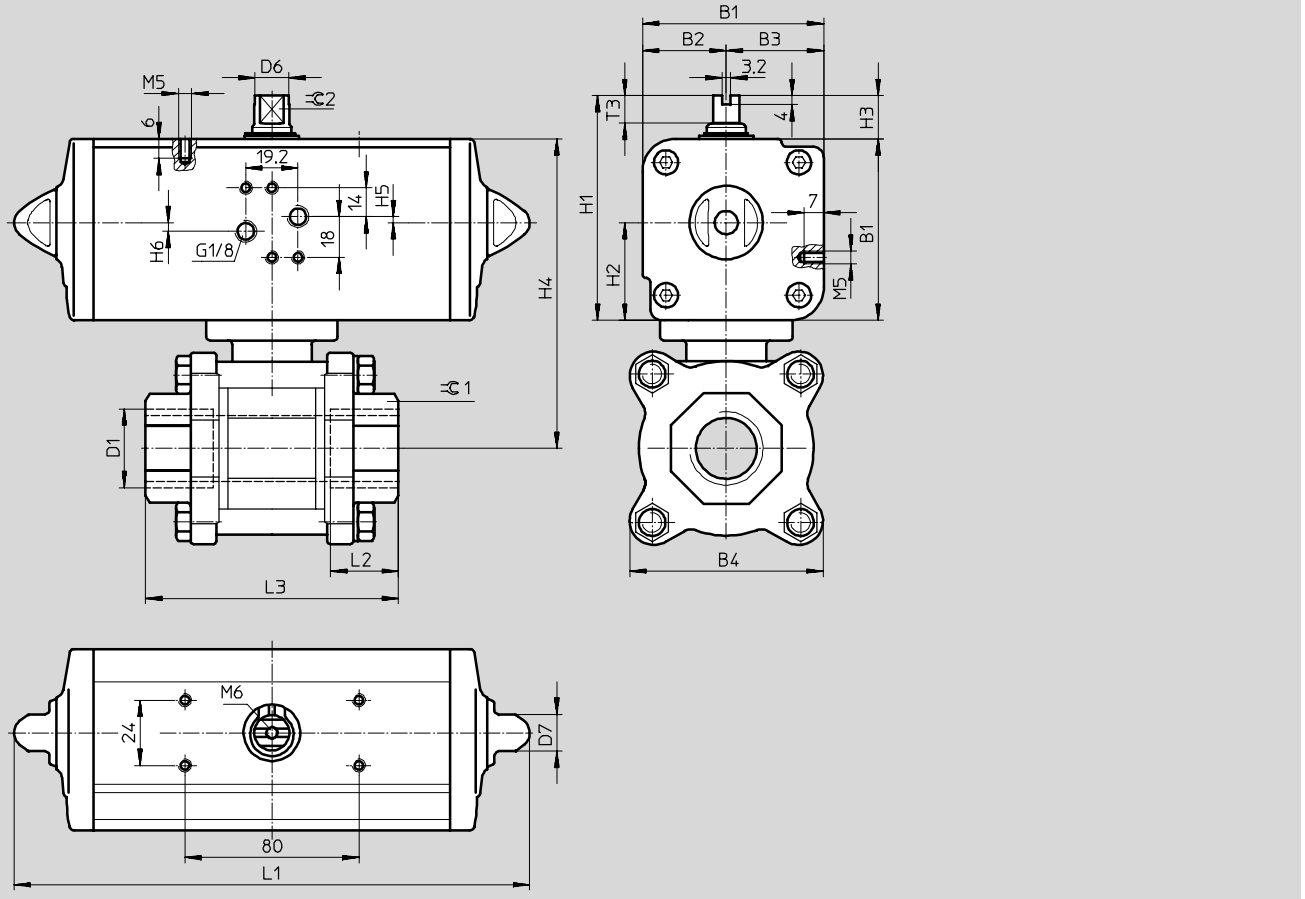
Ball valves with drive unit VZPR, stainless steel

Technical data



Dimensions

Download CAD data → www.festo.com/en/engineering



Standard directional control valves
Ball valves

2.2

Ball valves with drive unit VZPR, stainless steel

Technical data

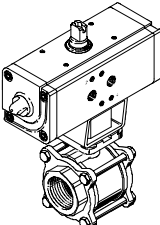
Connecting thread	B1	B2	B3	B4 max.	D6 ∅	D7 ∅	H1	H2	H3
Rp1/4	59.2	27.7	31.5	50	10.9	13	79.2	31.5	20
Rp3/8									
Rp1/2									
Rp3/4									
Rp3/4	70.4	32.7	37.7	50	14.5	13	90.4	37.7	20
Rp1									
Rp1 1/4									
Rp1 1/4	83.3	38.5	44.8	75	16.2	17	103.3	44.8	20
Rp1 1/2				85					
Rp1 1/2	107.5	51	56.5	85	20.2	22	137.5	56.5	30
Rp2				100					
Rp2 1/2				111.1					

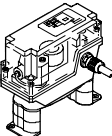
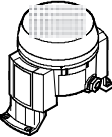
Connecting thread	H4	H5	H6	L1	L2	L3	T3	≈C1	≈C2
Rp1/4	104.2	0.8	4	174	14	60	10	19	9
Rp3/8					20	80		24	
Rp1/2					19	80		29	
Rp3/4					19	80		35	
Rp3/4	111.5	-	-	198	19	80	13	35	10
Rp1	125.4				21	90		41	
Rp1 1/4	130.4				23	110		50	
Rp1 1/4	130.4	-	-	236.5	23	110	13	50	12
Rp1 1/2					25	120		58	
Rp1 1/2	130.4	-	-	289.9	25	120	16	58	15
Rp2					28	140		73	
Rp2 1/2	211.1	-	-	313.6	38	185	17	90	19

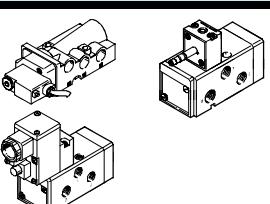
Ball valves with drive unit VZPR, stainless steel

Technical data



Ordering data			
	Connecting thread	Part No.	Type
	Rp1/4	540 526	VZPR-BPD-22-R14R
	Rp3/8	540 527	VZPR-BPD-22-R38R
	Rp1/2	540 528	VZPR-BPD-22-R12R
	Rp3/4, torque: 30 Nm/operating pressure: 5.6 bar	540 529	VZPR-BPD-22-R34R
	Rp3/4, torque: 60 Nm/operating pressure: 5.6 bar	540 875	VZPR-BPDH-22-R34R
	Rp1	540 530	VZPR-BPD-22-R1R
	Rp1 1/4, torque: 60 Nm/operating pressure: 5.6 bar	540 531	VZPR-BPD-22-R114R
	Rp1 1/4, torque: 100 Nm/operating pressure: 5.6 bar	540 876	VZPR-BPDH-22-R114R
	Rp1 1/2, torque: 100 Nm/operating pressure: 5.6 bar	540 532	VZPR-BPD-22-R112R
	Rp1 1/2, torque: 180 Nm/operating pressure: 5.6 bar	540 877	VZPR-BPDH-22-R112R
	Rp2	540 533	VZPR-BPD-22-R2R
	Rp2 1/2	540 878	VZPR-BPD-22-R212R

Ordering data – Limit switch attachments (Namu)				Data sheets → 7 / 1.2-53
	Sensing principle	Explosion-proof	Part No.	Type
Square design				
	Electrical	–	534 468	DAPZ-SB-M-250AC-DSM-RO
	Electrical	■	534 470	DAPZ-SB-M-250AC-EXS-RO
	Inductive	–	534 473	DAPZ-SB-I-30DC-DSAM-RO
	Pneumatic	–	164 855	QH-DR-E-S3-PK-3-B-B
	Electrical	–	164 854	QH-DR-E-S3-E-SW-B
	Inductive	–	164 853	QH-DR-E-SIEN-M12-NB-B
Round design				
	Electrical	–	534 469	DAPZ-SB-M-250AC-DR-RO
	Inductive	–	534 471	DAPZ-SB-I-30DC-DR-RO
	Inductive	–	534 472	DAPZ-SB-I-25DC-R-RO
	Electrical	–	534 474	DAPZ-SB-M-250AC-DR-AR
	Inductive	–	534 475	DAPZ-SB-I-36DC-DR-AR
	Inductive	■	534 476	DAPZ-SB-I-25DC-EXDR-AR

Ordering data – Solenoid valves (Namu)				Data sheets → 7 / 2.1-2
	Standard nominal flow rate	For coil type	Part No.	Type
	900	F solenoid coil	535 987	NVF3-MOH-5/2-K-1/4-EX
		F solenoid coil	535 988	NVF3-MOH-5/2-K-1/4-IA-EX
	1,000	F solenoid coil	183 973	MFH-5/2K-FR-NA
		N1 solenoid coil	183 974	MN1H-5/2K-FR-NA
		1)	184 105	MGTBH-3/2-1,2-24DC
		1)	185 246	MGTBH-3/2-1,2-110AC
		1)	185 248	MGTBH-3/2-1,2-230AC

1) Solenoid coil included in scope of delivery