

## Ball valves with drive unit VZPR

Key features


FESTO




Standard directional control valves  
Ball valves

2.2

VZPR  
VZPR-...-R

-  - Connecting thread  
Rp $\frac{1}{4}$  ... Rp2 $\frac{1}{2}$

-  - Flow rate Kv  
5.9 ... 535 m<sup>3</sup>/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.

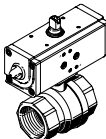
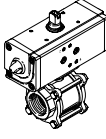
■ Limit switch attachments for end-position sensing can be directly flange-mounted to the valve actuator.

Valves with Namur port pattern  
→ NO TAG

Limit switch attachments with Namur port pattern → NO TAG

## Ball valves with drive unit VZPR

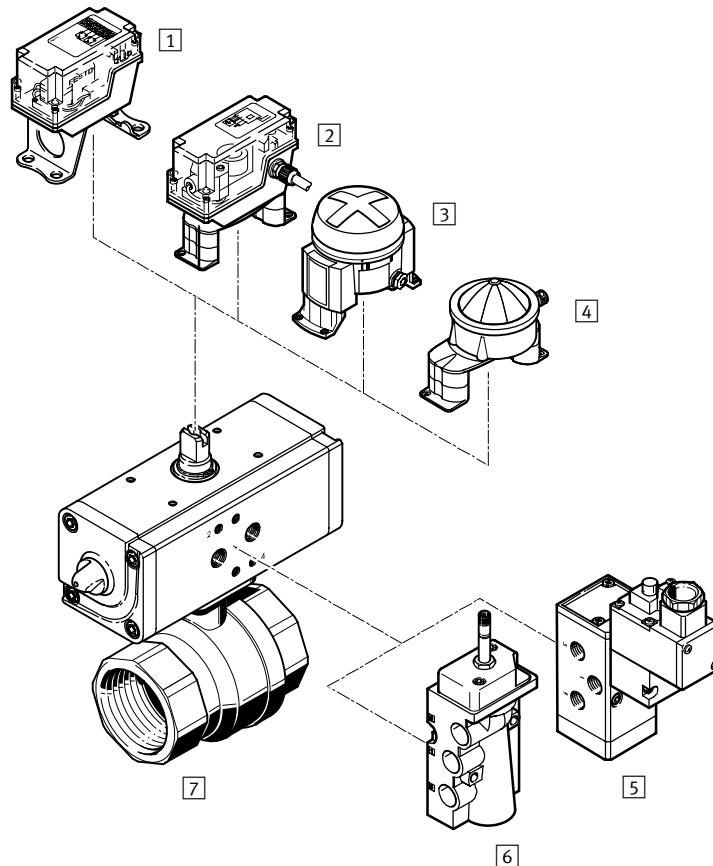
Product range overview

Design	Version	Type	Connecting thread <sup>1)</sup>	Nominal size [mm]	Nominal operating pressure [bar]	→ Page
Ball valve with drive unit	<b>Brass</b>					
		VZPR	Rp1/4	15	40	NO TAG
			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	
	<b>Stainless steel</b>					
		VZPR-...-R	Rp1/4	10	63	NO TAG
			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	Square design pneumatic, electrical or inductive sensing NO TAG
2	End-position sensing attachment DAPZ	Square design electrical, electrically explosion-proof or inductive sensing NO TAG
3	End-position sensing attachment DAPZ	Round design, variant AR electrical, inductive or inductively explosion-proof sensing NO TAG
4	End-position sensing attachment DAPZ	Round design, variant RO NO TAG
5	Solenoid valve MFH	Basic valve with pilot control valve for F solenoid coil NO TAG
	Solenoid valve MN1H	Basic valve with pilot control valve for N1 solenoid coil NO TAG
	Solenoid valve MGTBH	Basic valve with pilot control valve, solenoid coil and socket NO TAG
6	Solenoid valve NVF3	For F solenoid coil and explosion-proof F solenoid coil NO TAG
7	Ball valve with drive unit VZPR	Combination of quarter-turn actuator and ball valve Variants: brass or stainless steel NO TAG

## Ball valves with drive unit VZPR

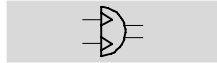
Type codes

VZPR		-	B	P	D	H	-	22	-	R	38	R
<b>Type</b>												
VZPR	Ball valve with drive unit											
<b>Valve</b>												
B	Ball valve											
<b>Drive</b>												
P	Quarter-turn actuator DAPS											
<b>Mode of operation</b>												
D	Double-acting											
<b>Torque</b>												
H	With high torque											
<b>Valve function</b>												
22	2/2-way valve											
<b>Closing direction</b>												
R	Closes to right											
<b>Connecting thread</b>												
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											
<b>Variant</b>												
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 m<sup>3</sup>/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 <sup>3</sup> /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 <sup>2)</sup>		1								
Food industry approval		No								
Quarter-turn actuator										
Operating pressure <sup>1)</sup>	[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

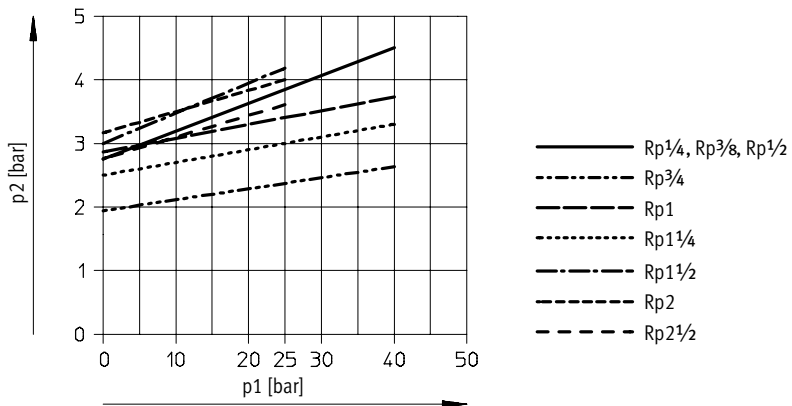
Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

## Ball valves with drive unit VZPR

Technical data

Weights [g]		Connecting thread	
Connecting thread		Connecting thread	
Rp1/4	1,300	Rp1/4	3,200
Rp3/8	1,300	Rp1/2	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

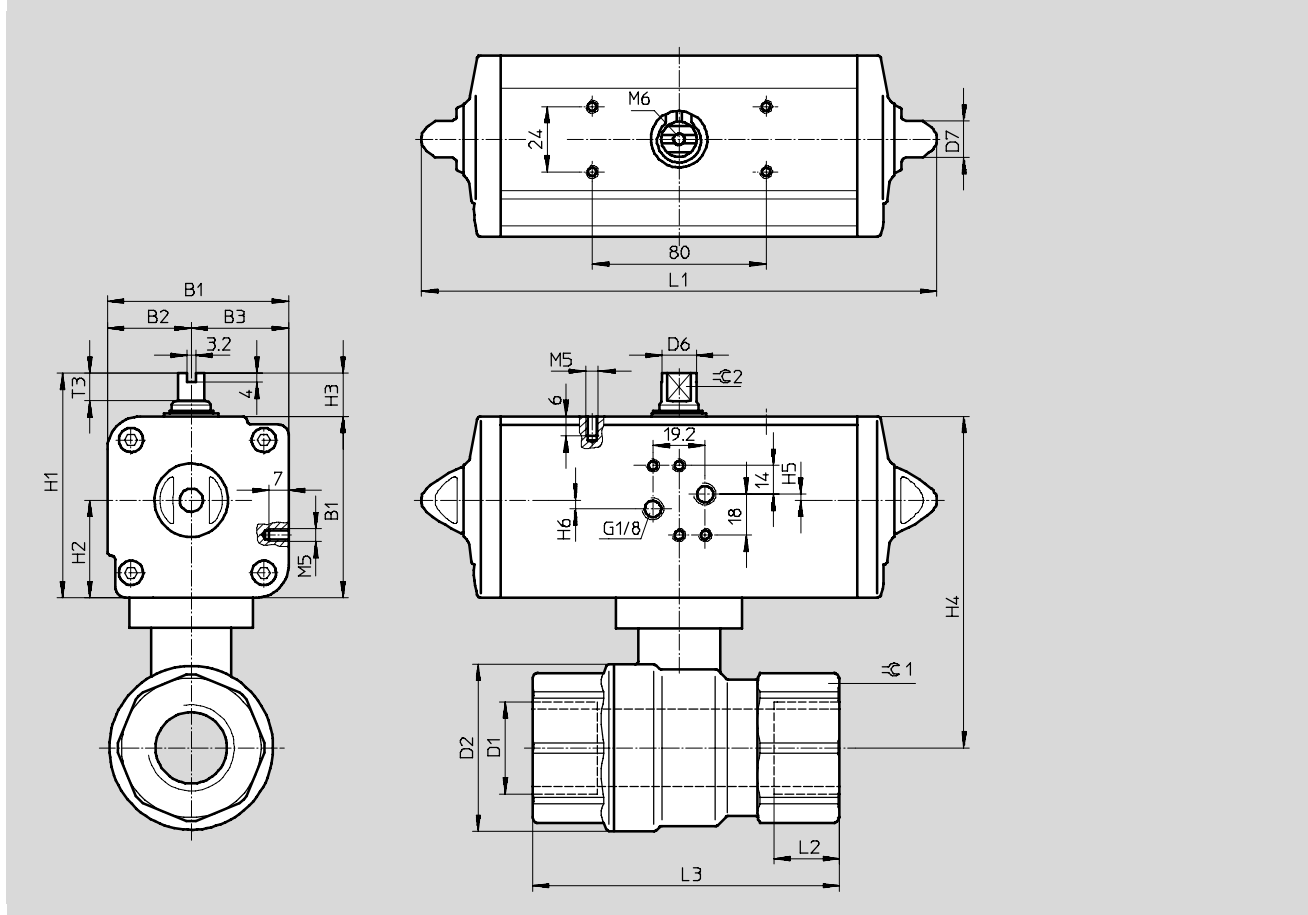
Quarter-turn actuator	
Housing	Wrought aluminium alloy
Cover	Wrought aluminium alloy
Shaft	Stainless steel
External screws	Stainless steel
Seals	Nitrile rubber

# Ball valves with drive unit VZPR

Technical data

Dimensions

Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)



Standard directional control valves  
Ball valves

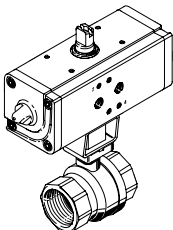
2.2

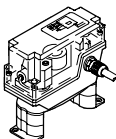
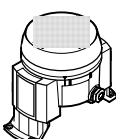
Connecting thread	B1	B2	B3	D2 Ø max.	D6 Ø	D7 Ø	H1	H2	H3
Rp1/4	52.2	24.2	28	35	8.2	13	72.2	28	20
Rp3/8									
Rp1/2									
Rp3/4	59.2	27.7	31.5	45	10.9	13	79.2	31.5	20
Rp1				55					
Rp1 1/4	70.4	32.7	37.7	65	14.5	13	90.4	37.7	20
Rp1 1/2				75					
Rp2	83.3	38.5	44.8	90	16.2	17	103.3	44.8	20
Rp2 1/2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

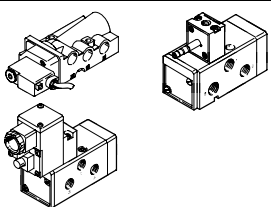
Connecting thread	H4	H5	H6	L1	L2	L3	T3	C1	C2
Rp1/4	92.5	0.8	3.2	159	15	75	10	26	8
Rp3/8									
Rp1/2									
Rp3/4	104.2	-	4	174	16	80	10	32	9
Rp1					19	90		41	
Rp1 1/4	130.2	-	4	198	21	110	13	50	10
Rp1 1/2	135.4				21	120		55	
Rp2	158.3	-	4	236.5	25	140	13	70	12
Rp2 1/2	192.5			289.9	24	143	16	83	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 (Namura)					Data sheets → NO TAG
	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	

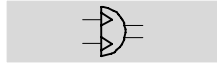
Ordering data – Solenoid valves (Namura)					Data sheets → NO TAG
	Standard nominal flow rate	For coil type	Part No.	Type	
	900	F solenoid coil	535 987	NVF3-MOH-5/2-K-1/4-EX	
		F solenoid coil	535 988	NVF3-MOH-5/2-K-1/4-IA-EX	
	1,000	F solenoid coil	183 973	MFH-5/2K-FR-NA	
		N1 solenoid coil	183 974	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 m<sup>3</sup>/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 <sup>1)</sup>	60	60/106 <sup>1)</sup>	106/180 <sup>1)</sup>	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 <sup>3</sup> /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 <sup>1)</sup>		3								
Food industry approval		No								
Quarter-turn actuator										
Operating pressure <sup>2)</sup>	[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.

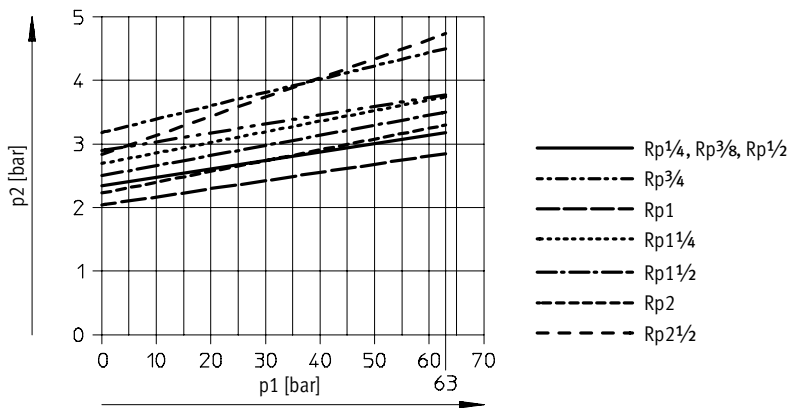
## Ball valves with drive unit VZPR, stainless steel

Technical data

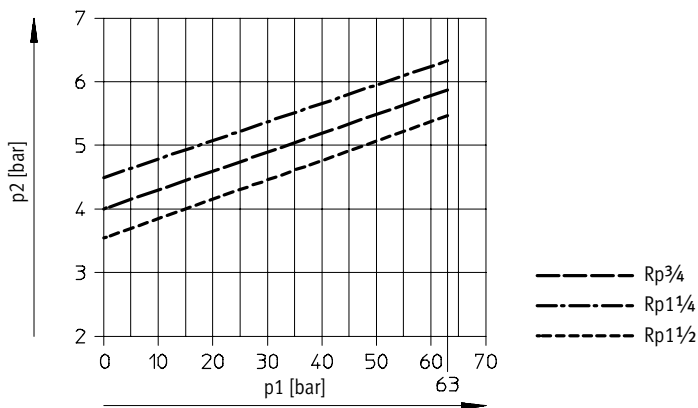
Weights [g]		Connecting thread	
Connecting thread		Connecting thread	
Rp1/4	1,200	Rp1 1/4, torque: 60 Nm	3,800
Rp3/8	1,200	Rp1 1/4, torque: 100 Nm	4,200
Rp1/2	1,700	Rp1 1/2, torque: 100 Nm	5,100
Rp3/4, torque: 30 Nm	1,800	Rp1 1/2, torque: 180 Nm	7,000
Rp3/4, torque: 60 Nm	2,700	Rp2	8,700
Rp1	3,100	Rp2 1/2	14,400

### Operating pressure p2 as a function of nominal operating pressure p1

Standard torque



High torque



### Materials

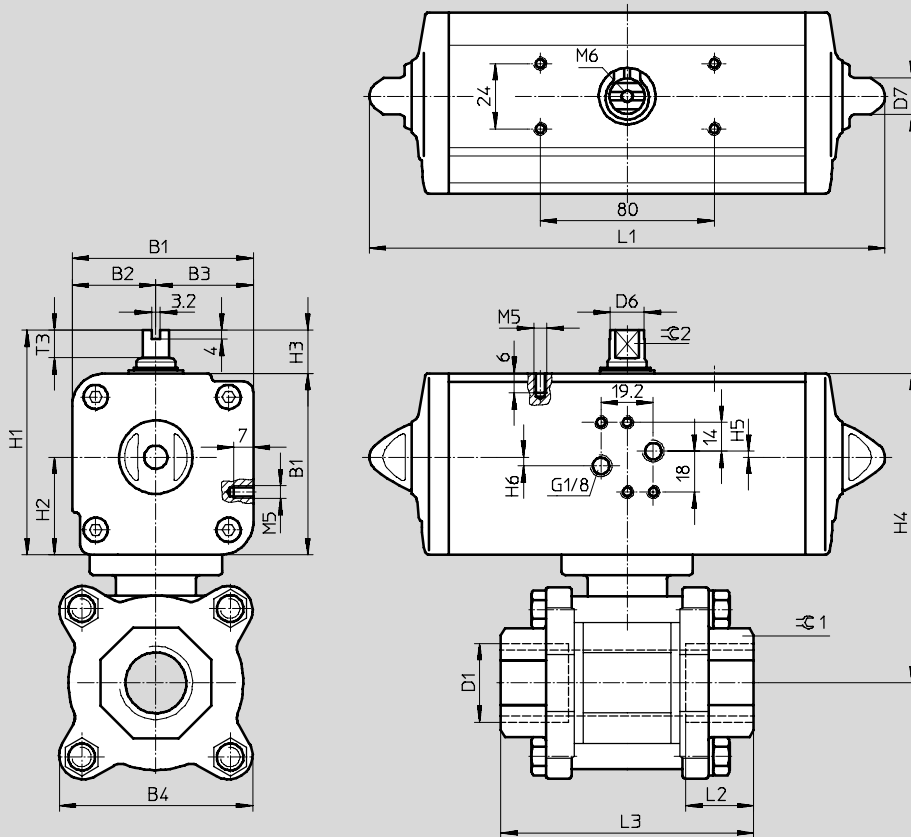
Quarter-turn actuator	
Housing	Wrought aluminium alloy
Cover	Wrought aluminium alloy
Shaft	Stainless steel
External screws	Stainless steel
Seals	Nitrile rubber

# Ball valves with drive unit VZPR, stainless steel

Technical data

Dimensions

Download CAD data → [www.festo.com/en/engineering](http://www.festo.com/en/engineering)



## Ball valves with drive unit VZPR, stainless steel

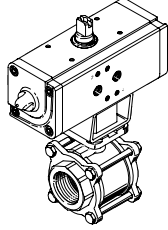
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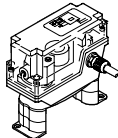
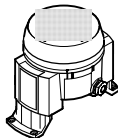
Connecting thread	B1	B2	B3	B4 max.	D6 Ø	D7 Ø	H1	H2	H3
Rp1/4	59.2	27.7	31.5	50	10.9	13	79.2	31.5	20
Rp3/8									
Rp1/2									
Rp3/4									
Rp3/4	70.4	32.7	37.7	50	14.5	13	90.4	37.7	20
Rp1									
Rp1 1/4									
Rp1 1/4	83.3	38.5	44.8	75	16.2	17	103.3	44.8	20
Rp1 1/2				85					
Rp1 1/2	107.5	51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

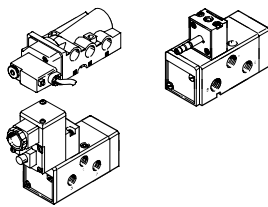
Connecting thread	H4	H5	H6	L1	L2	L3	T3	⌀1	⌀2
Rp1/4	104.2	0.8	4	174	14	60	10	19	9
Rp3/8					20	80		24	
Rp1/2					19	80		29	
Rp3/4					19	80		35	
Rp3/4	111.5	-	-	198	19	80	13	35	10
Rp1	125.4				21	90		41	
Rp1 1/4	130.4				23	110		50	
Rp1 1/4	130.4	-	-	236.5	23	110	13	50	12
Rp1 1/2					25	120		58	
Rp1 1/2	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 (Napur)				Data sheets → NO TAG
	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 (Napur)				Data sheets → NO TAG
	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