



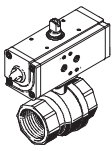
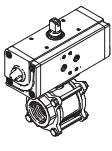
# Ball valve actuators VZPR



# Ball valve actuators VZPR

Key features and product range overview

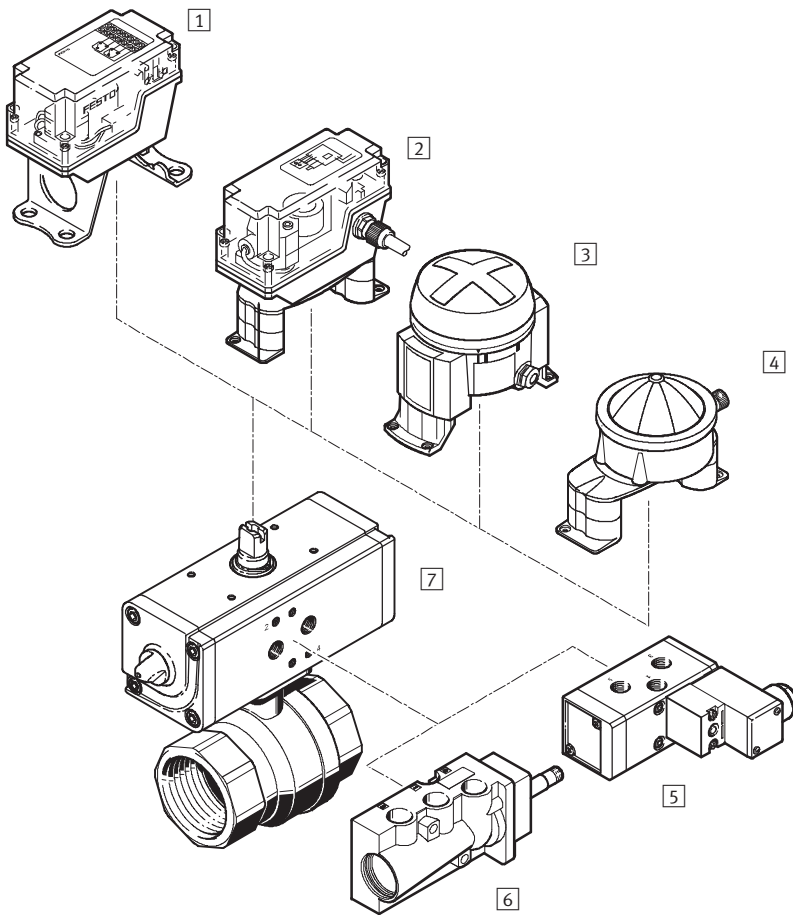
General	Construction	Characteristics	
<ul style="list-style-type: none"> <li>-  - Connecting thread Rp<math>\frac{1}{4}</math> ... Rp<math>2\frac{1}{2}</math></li> <li>-  - Flow rate Kv 5.9 ... 535 m<sup>3</sup>/h</li> </ul>	<ul style="list-style-type: none"> <li>• Brass design VZPR ...</li> <li>• Stainless steel design VZPR ...-R</li> <li>• Port pattern to Namur VDI/VDE 3845</li> <li>• PN class to DIN EN 1333</li> </ul>	<ul style="list-style-type: none"> <li>• Combination of a pneumatic quarter-turn actuator and a ball valve</li> <li>• Flow is fully opened or closed in both directions</li> <li>• 5/2-way valve with Namur port pattern can be mounted directly on the drive unit</li> <li>• Limit switch attachments for end-position sensing can be mounted directly on the drive unit</li> </ul>	<p>Valves with Namur port pattern → Internet: namur</p> <p>Limit switch attachments with Namur mounting-hole pattern → Internet: dapz</p>

Version	Type	Connecting thread <sup>1)</sup>	Nominal diameter [mm]	Nominal pressure of process valve [bar]	→ Page/Internet
<b>Brass</b>					
	VZPR-BPD-...	Rp $\frac{1}{4}$	15	PN 40	5
		Rp $\frac{3}{8}$	15	PN 40	
		Rp $\frac{1}{2}$	15	PN 40	
		Rp $\frac{3}{4}$	20	PN 40	
		Rp1	25	PN 40	
		Rp $1\frac{1}{4}$	32	PN 40	
		Rp $1\frac{1}{2}$	40	PN 25	
		Rp2	50	PN 25	
		Rp $2\frac{1}{2}$	63	PN 25	
<b>Stainless steel</b>					
	VZPR-BPD-...-R	Rp $\frac{1}{4}$	10	PN 63	10
		Rp $\frac{3}{8}$	12		
		Rp $\frac{1}{2}$	16		
		Rp $\frac{3}{4}$	20		
		Rp1	25		
		Rp $1\frac{1}{4}$	32		
		Rp $1\frac{1}{2}$	40		
		Rp2	50		
		Rp $2\frac{1}{2}$	65		

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

# Ball valve actuators VZPR

Peripherals overview



Mounting attachments and accessories		
	Brief description	→ Page/Internet
1	Limit switch attachment QH-DR-E Square design Pneumatic, electrical or inductive sensing	qh-dr-e
2	Limit switch attachment DAPZ Square design Electrical, electrically explosion-proof or inductive sensing	dapz
3	Limit switch attachment DAPZ Round design, variant AR Electrical, inductive or inductively explosion-proof sensing	dapz
4	Limit switch attachment DAPZ Round design, variant RO	dapz
5	Solenoid valve MFH Basic valve with pilot control valve for F solenoid coil	9
	Solenoid valve MN1H Basic valve with pilot control valve for N1 solenoid coil	9
	Solenoid valve MGTBH Basic valve with pilot control valve, solenoid coil and socket	9
6	Solenoid valve NVF3 For F solenoid coil and explosion-proof F solenoid coil	9
7	Ball valve actuator VZPR Combination of quarter-turn actuator and ball valve Variants: Brass or stainless steel	8

# Ball valve actuators VZPR

Type codes



		VZPR	-	B	P	D	H	-	22	-	R	38	R
<b>Type</b>													
VZPR	Ball valve actuator												
<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	Stainless steel version												

# Ball valve actuators VZPR-BPD



## Technical data

### Function



-  Swivel angle  
0 ... 90°
-  Flow rate Kv  
5.9 ... 535 m<sup>3</sup>/h



-  Connecting thread  
Rp1/4 ... Rp2 1/2
-  Torque  
15 ... 180 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								
Constructional design	Scotch yoke mechanism, double-acting								
Type of mounting	Via female threads								
Mounting 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								
Constructional design	2-way ball valve								
Sealing principle	Soft								
Actuation type	Pneumatic								
Direction of flow	Reversible								
Nominal diameter [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>1)</sup>	1								
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 pressure of process valve <sup>3)</sup>	PN 40	PN 40	PN 40	PN 40	PN 40	PN 40	PN 25	PN 25	PN 25
Operating medium	Compressed air, water, neutral gasses, neutral fluids, vacuum								

1) Corrosion resistance class 1 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.

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

3) PN class to DIN EN 1333.

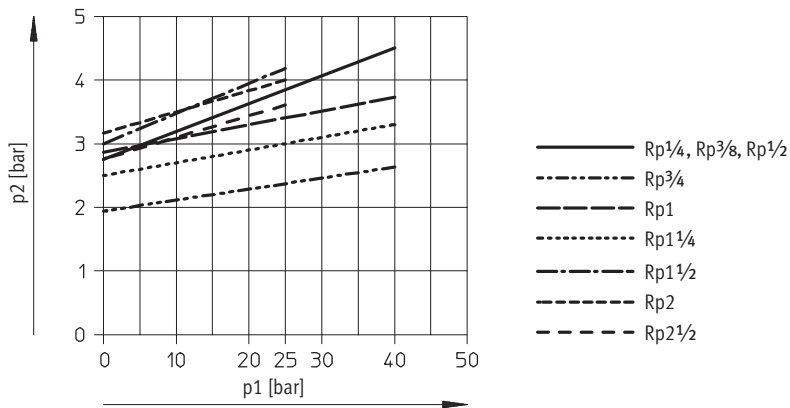
# Ball valve actuators VZPR-BPD

Technical data

Materials		
Housing		Brass
Ball		Brass
Seals	Housing	Polytetrafluoroethylene, fibre glass reinforced
	Shaft	Fluoro elastomer

Weight [g]			
Connecting thread		Connecting thread	
Rp1/4	1300	Rp1 1/4	3200
Rp3/8	1300	Rp1 1/2	3800
Rp1/2	1200	Rp2	5400
Rp3/4	1500	Rp2 1/2	7300
Rp1	1800		

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



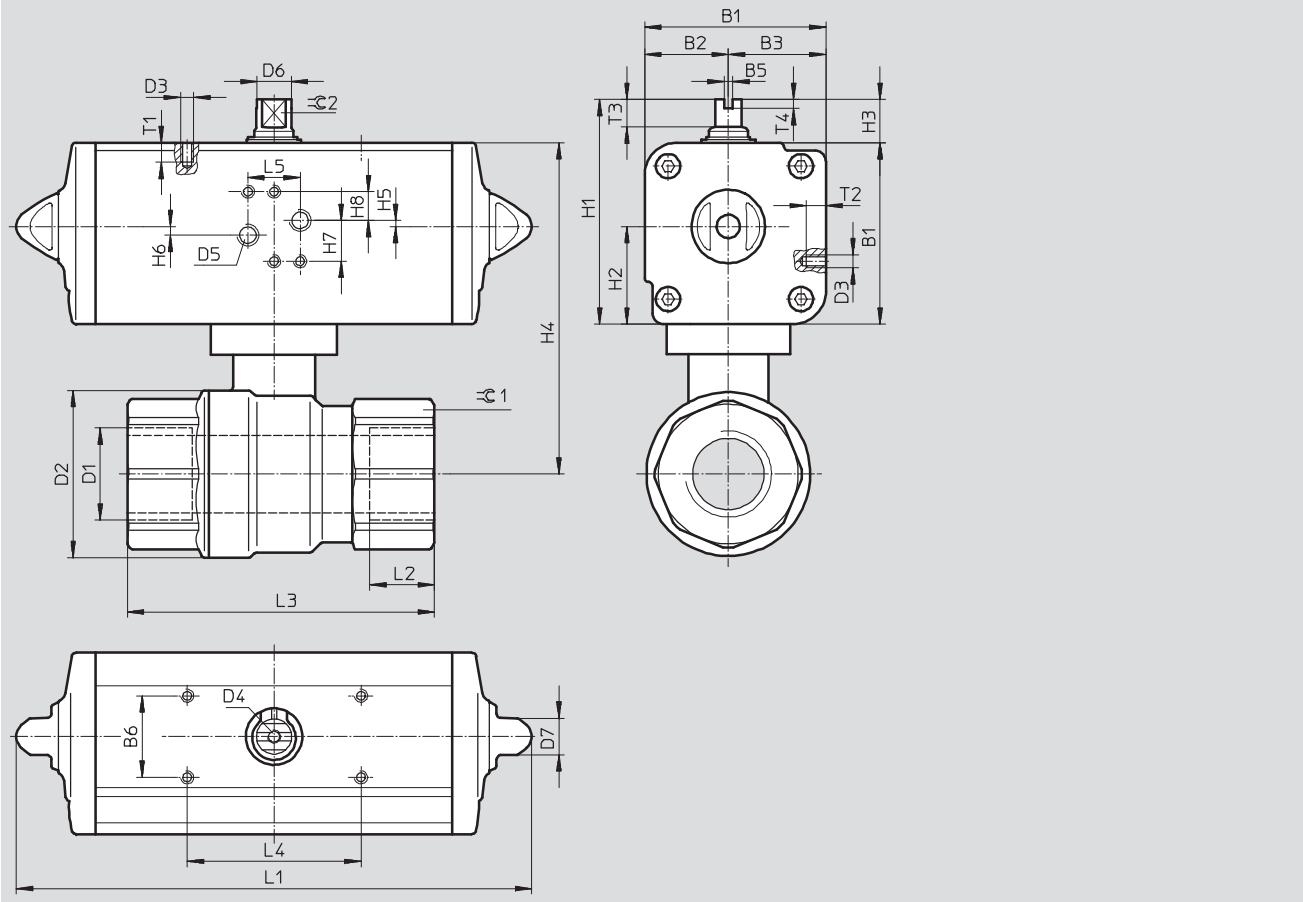
# Ball valve actuators VZPR-BPD

Technical data

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## Dimensions

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



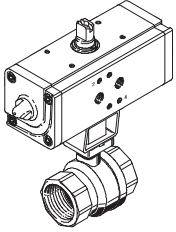
Connecting thread D1	B1	B2	B3	B5	B6	D2 ∅ max.	D3	D4	D5	D6 ∅	D7 ∅	H1	H2	H3	H4							
Rp1/4	52.2	24.2	28	4	30	35	M5	M6	G1/8	9.2	13	72.2	28	20	92.2							
Rp3/8																						
Rp1/2																						
Rp3/4	59.2	27.7	31.5													45	10.9	13	79.2	31.5	20	104.2
Rp1																						
Rp1 1/4	70.4	32.7	37.7													65	14.5	13	90.4	37.7	20	130.2
Rp1 1/2																						
Rp2	83.3	38.5	44.8	75	16.2	17	103.3	44.8	20	158.3												
Rp2 1/2											107.5	51	56.5	90	20.2	22	137.5	56.5	30	192.5		

Connecting thread D1	H5	H6	H7	H8	L1	L2	L3	L4	L5	T1	T2	T3	T4	⊕C1	⊕C2		
Rp1/4	0.8	3.2	18	14	159	15	75	80	24	6	7	10	4	26	8		
Rp3/8																	
Rp1/2																	
Rp3/4					174	16	80									10	9
Rp1																	
Rp1 1/4					198	21	110									10	10
Rp1 1/2																	
Rp2	236.5	25	140	13	12												
Rp2 1/2						289.9	24	143	16	15							

# Ball valve actuators VZPR-BPD

Technical data

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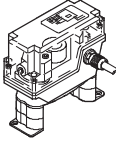
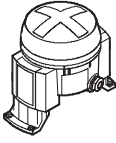
Ordering data – Ball valve actuators		Part No.	Type
	Connecting thread		
	Rp1/4	540 510	VZPR-BPD-22-R14
	Rp3/8	540 511	VZPR-BPD-22-R38
	Rp1/2	540 512	VZPR-BPD-22-R12
	Rp3/4	540 513	VZPR-BPD-22-R34
	Rp1	540 514	VZPR-BPD-22-R1
	Rp1 1/4	540 515	VZPR-BPD-22-R114
	Rp1 1/2	540 516	VZPR-BPD-22-R112
	Rp2	540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

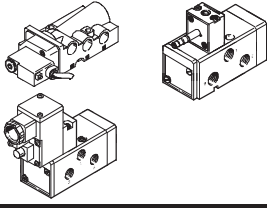


# Ball valve actuators VZPR-BPD

Technical data

**FESTO**

Ordering data – Limit switch attachments (Namur)			Technical data → Internet: dapz, qh-dr	
	Sensing principle	Explosion-proof	Part No.	Type
<b>Square design</b>				
	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
<b>Round design</b>				
	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-30DC-DR-AR
	Inductive	■	534 476	DAPZ-SB-I-25DC-EXDR-AR

Ordering data – Solenoid valves (Namur)			Technical data → Internet: solenoid valves	
	Standard nominal flow rate	For coil type	Part No.	Type
	900	F solenoid coil	535 987	NVF3-MOH-5/2-K-1/4-EX
		V solenoid coil	535 988	NVF3-MOH-5/2-K-1/4-IA-EX
	1000	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

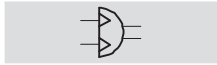
1) Solenoid coil included in scope of delivery


# Ball valve actuators VZPR-BPD, stainless steel

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Technical data

Function



-  - Swivel angle  
0 ... 90°

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

-  - Flow rate Kv  
16 ... 507 m<sup>3</sup>/h

-  - Torque  
30 ... 240 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	
Drive										
Pneumatic connection	G1/8									
Constructional design	Scotch yoke mechanism, double-acting									
Type of mounting	Via female threads									
Mounting 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									
Constructional design	2-way ball valve									
Sealing principle	Soft									
Actuation type	Pneumatic									
Direction of flow	Reversible									
Nominal diameter [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 valve actuators with different torques available for selection.

Operating and environmental conditions	
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 pressure of process valve <sup>3)</sup>	PN 63
Operating medium	Compressed air, water, neutral gasses, neutral fluids, vacuum

1) Corrosion resistance class 3 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.

3) PN class to DIN EN 1333.

# Ball valve actuators VZPR-BPD, stainless steel

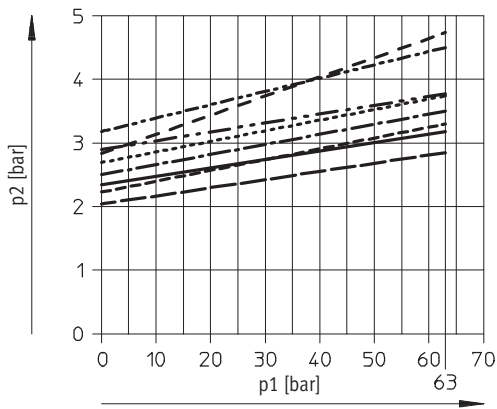
Technical data

Materials		Material number
Housing	High-alloy stainless steel	1.4408
Ball	High-alloy stainless steel	1.4401
Shaft	High-alloy stainless steel	1.4401
Seals	Housing	Polytetrafluoroethylene, fibre glass reinforced
	Shaft	Fluoro elastomer

Weight [g]			
Connecting thread		Connecting thread	
Rp1/4	1200	Rp1/4, torque: 60 Nm	3800
Rp3/8	1200	Rp1/4, torque: 100 Nm	4200
Rp1/2	1700	Rp1/2, torque: 100 Nm	5100
Rp3/4, torque: 30 Nm	1800	Rp1/2, torque: 180 Nm	7000
Rp3/4, torque: 60 Nm	2700	Rp2	8700
Rp1	3100	Rp2 1/2	14400

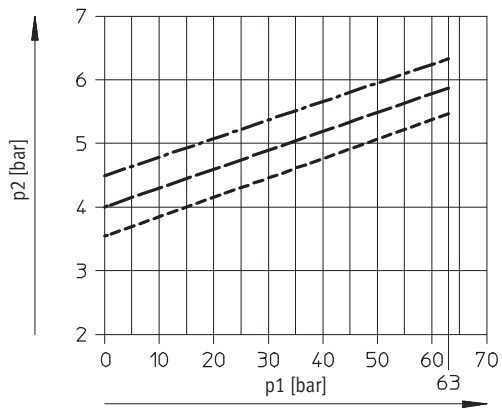
## Operating pressure p2 as a function of nominal operating pressure p1

Standard torque



- Rp1/4, Rp3/8, Rp1/2
- Rp3/4
- Rp1
- ..... Rp1 1/4
- Rp1 1/2
- Rp2
- Rp2 1/2

High torque



- Rp3/4
- Rp1 1/4
- Rp1 1/2

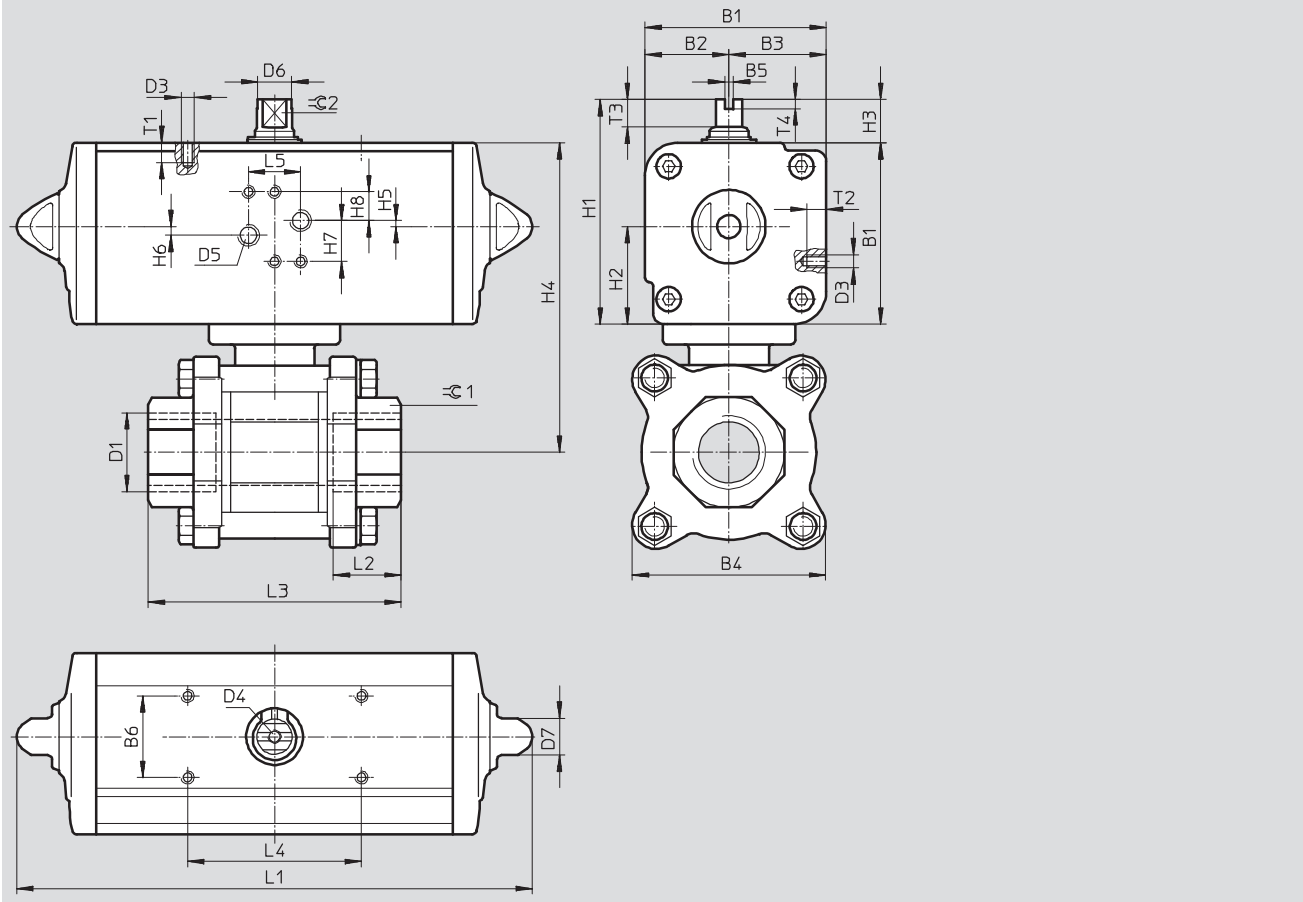
# Ball valve actuators VZPR-BPD, stainless steel

Technical data

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## Dimensions

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



# Ball valve actuators VZPR-BPD, stainless steel

Technical data

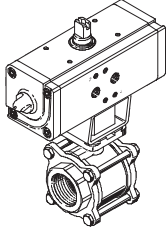
Connecting thread D1	Torque [Nm]	B1	B2	B3	B4 max.	B5 +0.1	B6	D3	D4	D5	D6 ∅	D7 ∅	H1	H2	H3	H4 ±2
Rp1/4	30	59.2	27.7	31.5	50	4	30	M5	M6	G1/8	10.9	13	79.2	31.5	20	101.2
Rp3/8	30															
Rp1/2	30															
Rp3/4	30															
Rp3/4	60	70.4	32.7	37.7	55						14.5	13	90.4	37.7	20	115.4
Rp1	60				65											122.4
Rp1 1/4	60				75											128.4
Rp1 1/4	106	83.3	38.5	44.8	75						16.2	17	103.3	44.8	20	141.3
Rp1 1/2	106				85											151.3
Rp1 1/2	180	107.5	51	56.5	85						20.2	22	137.5	56.5	30	175.5
Rp2	180				100											185.5
Rp2 1/2	240				111.1											51

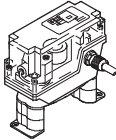
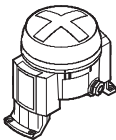
Connecting thread D1	Torque [Nm]	H5	H6 ±0.1	H7	H8	L1	L2	L3 ±2	L4	L5	T1	T2	T3	T4	≈C1	≈C2	
Rp1/4	30	0.8	3.2	18	14	174.3	14	65	80	24	6	7	10	4	19	9	
Rp3/8	30						20	75							24		
Rp1/2	30						19	80							29		
Rp3/4	30						19	80							35		
Rp3/4	60	-	-			198.1	21	90					13		41	10	
Rp1	60						23	110									50
Rp1 1/4	60						23	110									50
Rp1 1/4	106	-	-			237.1	25	120					13		58	12	
Rp1 1/2	106						25	120									58
Rp1 1/2	180	-	-			289.9	28	140					16		58	15	
Rp2	180						28	140									73
Rp2 1/2	240						313.6	38									185

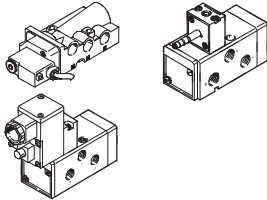
# Ball valve actuators VZPR-BPD, stainless steel

FESTO

Technical data

Ordering data		Part No.	Type
	Connecting thread		
	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 (Namura)			Technical data → Internet: dapz, qh-dr	
	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-30DC-DR-AR
	Inductive	■	534 476	DAPZ-SB-I-25DC-EXDR-AR

Ordering data – Solenoid valves (Namura)		Technical data → Internet: solenoid valves		
	Standard nominal flow rate	For coil type	Part No.	Type
	900	F solenoid coil	535 987	NVF3-MOH-5/2-K-1/4-EX
		V solenoid coil	535 988	NVF3-MOH-5/2-K-1/4-IA-EX
	1000	F solenoid coil	183 973	MFH-5/2K-FR-NA
		N1 solenoid coil	183 974	MN1H-5/2K-FR-NA
		<sup>1)</sup>	184 105	MGTBH-3/2-1,2-24DC
		<sup>1)</sup>	185 246	MGTBH-3/2-1,2-110AC
		<sup>1)</sup>	185 248	MGTBH-3/2-1,2-230AC

1) Solenoid coil included in scope of delivery