

# Ball valves



Festo core product range  
Covers 80% of your automation tasks

Worldwide:  
Superb:  
Easy:

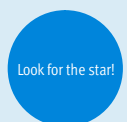
Always in stock  
Festo quality at an attractive price  
Reduces procurement and storing complexity



Generally ready for shipping ex works in 24 hours  
Held in stock in 13 service centres worldwide  
More than 2200 product



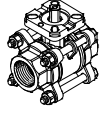
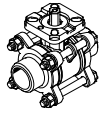
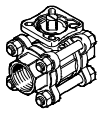
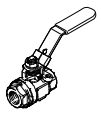
Generally ready for shipping ex works in 5 days  
Assembled for you in 4 service centres worldwide  
Up to  $6 \times 10^{12}$  variants per product series



# Ball valves





Key features and product range overview

FESTO

Version		Type	Process valve connection	Nominal width DN	Flange hole pattern to ISO 5211	Process valve nominal pressure PN	→ Page/Internet	
Stainless steel	<b>2-way, with pipe thread to EN 10226-1</b>							
		VZBA...-GG	Rp1/4	8	F0304	63	7	
			Rp3/8	10	F0304			
			Rp1/2	15	F0304			
			Rp3/4	20	F0304			
			Rp1	25	F0405			
			Rp1 1/4	32	F0405			
			Rp1 1/2	40	F0507			
			Rp2	50	F0507			
			Rp2 1/2	65	F0710			
			Rp3	80	F0710			
	Rp4	100	F10					
	<b>2-way, with welded ends to EN 12627</b>							
		VZBA...-WW	Welded end	8	F0304	63	7	
				10	F0304			
				15	F0304			
				20	F0304			
				25	F0405			
				32	F0405			
				40	F0507			
				50	F0507			
				65	F0710			
				80	F0710			
	100	F10						
	<b>2-way, with pipe thread to ASME B1.20.1</b>							
		VZBE	1/4 NPT	8	F0304	63	13	
			3/8 NPT	10	F0304			
			1/2 NPT	15	F0304			
			3/4 NPT	20	F0304			
			1 NPT	25	F0405			
			1 1/4 NPT	32	F0405			
			1 1/2 NPT	40	F0507			
			2 NPT	50	F0507			
			2 1/2 NPT	65	F0710			
			3 NPT	80	F0710			
	4 NPT	100	F1012					
	<b>2-way, manual, with pipe thread to ASME B1.20.1</b>							
		VZBE	1/4 NPT	8	-	63	19	
			3/8 NPT	10				
			1/2 NPT	15				
			3/4 NPT	20				
			1 NPT	25				
1 1/4 NPT			32					
1 1/2 NPT			40					
2 NPT			50					
2 1/2 NPT			65					
3 NPT			80					

# Ball valves







Key features and product range overview

Version		Type	Process valve connection	Nominal width DN	Flange hole pattern to ISO 5211	Process valve nominal pressure PN	→ Page/Internet	
Stainless steel	<b>3-way, L-shaped bore, with pipe thread to EN 10226-1</b>							
		VZBA	Rp1/4	8	F0304	63	23	
			Rp3/8	10	F0304			
			Rp1/2	15	F0304			
			Rp3/4	20	F0405			
			Rp1	25	F0405			
			Rp1 1/4	32	F0405			
			Rp1 1/2	40	F0405			
			Rp2	50	F05			
	<b>3-way, T-shaped bore, with pipe thread to EN 10226-1</b>							
		VZBA	Rp1/4	8	F0304	63	23	
			Rp3/8	10	F0304			
			Rp1/2	15	F0304			
			Rp3/4	20	F0405			
			Rp1	25	F0405			
			Rp1 1/4	32	F0405			
			Rp1 1/2	40	F0405			
			Rp2	50	F05			
	<b>3-way, L-shaped bore, with pipe thread to ASME B1.20.1</b>							
		VZBE	1/4 NPT	8	F04	-	29	
3/8 NPT			10	F04				
1/2 NPT			15	F04				
3/4 NPT			20	F04				
1 NPT			25	F05				
1 1/4 NPT			32	F05				
1 1/2 NPT			40	F0507				
2 NPT			50	F0507				
<b>3-way, T-shaped bore, with pipe thread to ASME B1.20.1</b>								
	VZBE	1/4 NPT	8	F04	-	29		
		3/8 NPT	10	F04				
		1/2 NPT	15	F04				
		3/4 NPT	20	F04				
		1 NPT	25	F05				
		1 1/4 NPT	32	F05				
		1 1/2 NPT	40	F0507				
		2 NPT	50	F0507				

# Ball valves

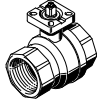
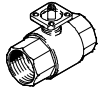

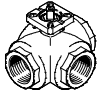

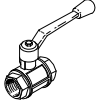
Key features and product range overview

FESTO

Version		Type	Process valve connection	Nominal width DN	Flange hole pattern to ISO 5211	Process valve nominal pressure PN	→ Page/Internet	
Stainless steel	<b>2-way, with extended welded ends to EN 1127</b>							
		VZBD	Welded end	15	F0304	16	35	
				20	F0304			
				25	F0405			
				32	F0405			
				40	F0507			
				50	F0507			
				65	F0710			
	<b>2-way, with extended welded ends to ASME-BPE</b>							
		VZBD	Welded end	15	F0304	16	35	
				20	F0304			
				25	F0405			
				40	F0507			
				50	F0507			
				65	F0710			
				80	F0710			
				100	F1012			
	<b>2-way, with clamp ferrule to DIN 32676-B</b>							
		VZBD	Clamp ferrule	15	F0304	16	35	
				20	F0304			
				25	F0405			
				32	F0405			
				40	F0507			
				50	F0507			
				65	F0710			
	<b>2-way, with clamp ferrule to ASME-BPE</b>							
		VZBD	Clamp ferrule	15	F0304	16	35	
				20	F0304			
			25	F0405				
			40	F0507				
			50	F0507				
			65	F0710				
			80	F0710				
			100	F1012				
<b>2-way, with flange to ANSI B16.5 class 150</b>								
	VZBF	Ring housing with threaded flange	1/2"	F0304	20	42		
			3/4"	F0304				
			1"	F0405				
			1 1/4"	F0405				
			1 1/2"	F0507				
			2"	F0507				
			2 1/2"	F0710				
			3"	F0710				
			4"	F1012				
			6"	F1012				
			8"	F14				
<b>2-way, compact design with flange to DIN EN 1092-1</b>								
	VZBC...-FF	Ring housing with threaded flange	15	F0304	40	48		
			20	F0304				
			25	F0405				
			32	F0405				
			40	F0507				
			50	F0507				
			65	F07				
			80	F07				
			100	F0710	16			

# Ball valves

Key features and product range overview

Version		Type	Process valve connection	Nominal width DN	Flange hole pattern to ISO 5211	Process valve nominal pressure PN	→ Page/Internet
Brass	<b>2-way, with pipe thread to EN 10226-1</b>						
		VAPB	Rp1/4	8	F03	40	54
			Rp3/8	10	F03		
			Rp1/2	15	F03		
			Rp3/4	20	F03		
			Rp1	25	F0304		
			Rp1 1/4	32	F0405		
			Rp1 1/2	40	F0405	25	
			Rp2	50	F05		
			Rp2 1/2	65	F07		
	<b>2-way, with pipe thread to EN 10226-1</b>						
		VZBM	Rp1/4	8	F03	40	59
			Rp3/8	10	F03		
			Rp1/2	15	F03		
			Rp3/4	20	F03	25	
			Rp1	25	F03		
			Rp1 1/4	32	F03		
			Rp1 1/2	40	F0305		
			Rp2	50	F0305		
			<b>3-way, L-shaped bore, with pipe thread to EN 10226-1</b>				
		VZBM	Rp1/4	8	F03	40	65
			Rp3/8	10	F03		
			Rp1/2	15	F03		
			Rp3/4	20	F03		
			Rp1	25	F0304		
			Rp1 1/4	32	F0405		
			Rp1 1/2	40	F0405	25	
			Rp2	50	F05		
<b>3-way, T-shaped bore, with pipe thread to EN 10226-1</b>							
	VZBM	Rp1/4	8	F03	40	65	
		Rp3/8	10	F03			
		Rp1/2	15	F03			
		Rp3/4	20	F03			
		Rp1	25	F0304			
		Rp1 1/4	32	F0405			
		Rp1 1/2	40	F0405	25		
		Rp2	50	F05			
		<b>2-way, manual, with pipe thread to EN 10226-1</b>					
	VZBM	Rp1/4	8	-	50	71	
		Rp3/8	10				
		Rp1/2	15				
		Rp3/4	20				
		Rp1	25				
		Rp1 1/4	32				
		Rp1 1/2	40		40		
<b>2-way, manual, with pipe thread to ISO 228-1</b>							
	QH	G1/4	10	-	-	76	
		G3/8	10				
		G1/2	15				
		G3/4	20				
		G1	25				
		G1 1/2	40				

# Ball valves VZBA, 2-way

Type codes

FESTO

VZBA - 1/4" - G G - 63 - T - 22 - F0304 - V4 V4 - T

Type	
VZBA	Ball valve

Nominal width DN	
1/4"	DN8
3/8"	DN10
1/2"	DN15
3/4"	DN20
1"	DN25
1 1/4"	DN32
1 1/2"	DN40
2"	DN50
2 1/2"	DN65
3"	DN80
4"	DN100

Connection type 1	
G	Pipe thread to EN 10226-1
W	Welded end to EN 12627

Connection type 2	
G	Pipe thread to EN 10226-1
W	Welded end to EN 12627

Process valve nominal pressure PN	
63	63 bar

Design	
T	Three parts

Valve function	
22	2/2-way

Flanged connection to ISO 5211	
F0304	Hole pattern 03 and 04
F0405	Hole pattern 04 and 05
F0507	Hole pattern 05 and 07
F07	Hole pattern 07
F0710	Hole pattern 07 and 10
F10	Hole pattern 10

Housing material	
V4	Stainless steel 1.4408

Shut-off element material	
V4	Stainless steel 1.4408

Sealing material	
T	PTFE

# Ball valves VZBA, 2-way

Technical data



- With pipe thread or welded end



- - Connecting thread  
Rp1/4 ... Rp4
- - Flow rate  
7 ... 1414 m<sup>3</sup>/h

General technical data												
Process valve pipe thread connection	Rp1/4	Rp3/8	Rp1/2	Rp3/4	Rp1	Rp11/4	Rp11/2	Rp2	Rp21/2	Rp3	Rp4	
Nominal width DN	8	10	15	20	25	32	40	50	65	80	100	
Valve function	2/2											
Design	2-way ball valve											
Sealing principle	Soft											
Actuation type	Mechanical											
Manual override	None											
Switching position indication	Slot direction = flow direction											
Flow direction	Reversible											
Type of mounting	In-line installation											
Assembly position	Any											
Based on standard	ISO 5211											
	EN 10226-1											
	EN 558											
	EN 12627											
Actuating torque [Nm]	6	6	10	14	17	24	29	44	78	112	140	
Internal diameter [mm]	10	12	16	20	25	32	38	50	65	80	100	
Flow rate Kv [m <sup>3</sup> /h]	7	10	19.4	45.6	71.5	105	170	275	507	905	1414	

Operating and environmental conditions												
Process valve pipe thread connection	Rp1/4	Rp3/8	Rp1/2	Rp3/4	Rp1	Rp11/4	Rp11/2	Rp2	Rp21/2	Rp3	Rp4	
Medium <sup>1)</sup>	Compressed air to ISO 8573-1:2010 [-:--]											
	Neutral liquids											
	Inert gases											
	Water – no water vapour											
Process valve nominal pressure	PN 63											
Temperature of medium [°C]	-10 ... +200											
Corrosion resistance class CRC <sup>2)</sup>	3											
CE marking (see declaration of conformity) → <a href="http://www.festo.com">www.festo.com</a>	-					To EU Pressure Equipment Directive						

1) Other media on request

2) Corrosion resistance class CRC 3 to Festo standard FN 940070

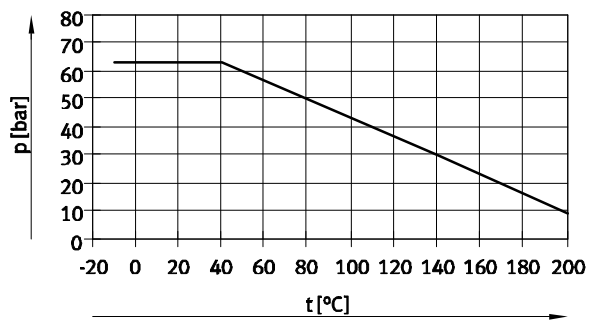
High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional requirements for the surface and which are in direct contact with a normal industrial environment.

# Ball valves VZBA, 2-way

Technical data

Materials		Material number
Housing	High-alloy stainless steel	1.4408
Ball		1.4408
Shaft		1.4401
Seals	PTFE	
	PTFE-reinforced	
Note on materials	RoHS compliant	
	Contains paint-wetting impairment substances	

## Permissible operating pressure p as a function of the temperature of the medium t





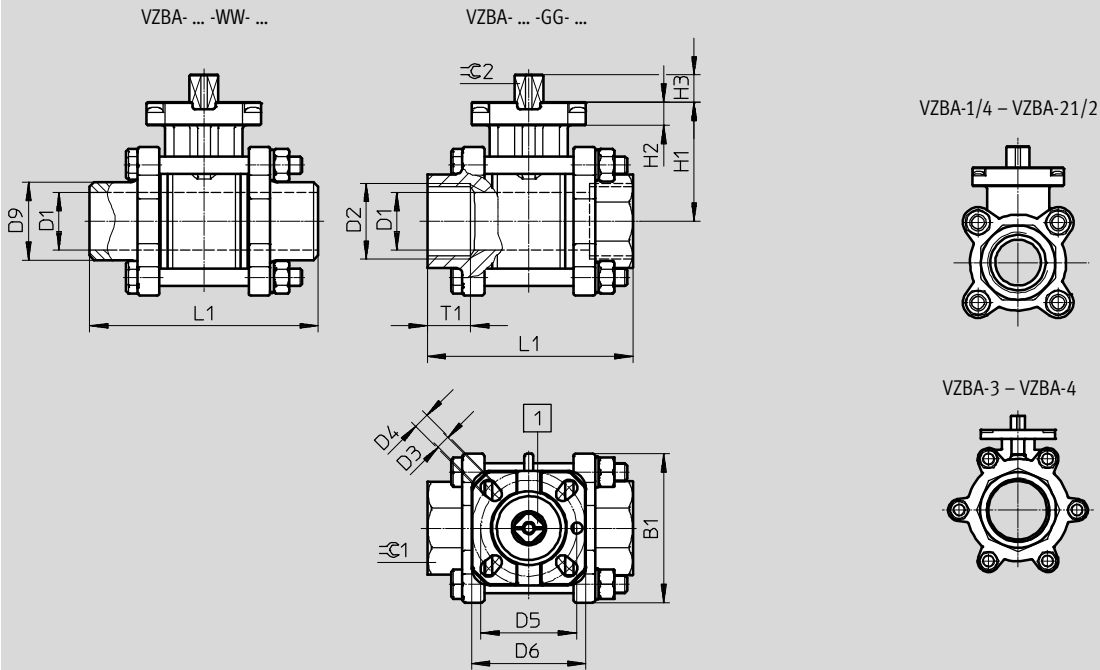
# Ball valves VZBA, 2-way

Technical data

FESTO

## Dimensions

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



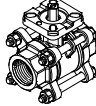

1 Switching position indication: the slot direction corresponds to the flow direction.

Type	B1	D1 ∅ ±0.15	D2	D3 ∅	D4 ∅	D5 ∅	D6 ∅	D9 ∅	H1	H2	H3 ±0.5	L1 ±2	T1	≡ 1	≡ 2 -0.1
VZBA-1/4"-GG-63-T-22-F0304-V4V4T	42	10	Rp1/4	6	6	36	42	-	40	9	8.5	65	14.5	24	9
VZBA-3/8"-GG-63-T-22-F0304-V4V4T	42	12	Rp3/8	6	6	36	42	-	40	9	8.5	65	14.5	24	9
VZBA-1/2"-GG-63-T-22-F0304-V4V4T	49	16	Rp1/2	6	6	36	42	-	40	9	8.5	75	16	29	9
VZBA-3/4"-GG-63-T-22-F0304-V4V4T	54	20	Rp3/4	6	6	36	42	-	44	9	8.5	80	17	35	9
VZBA-1"-GG-63-T-22-F0405-V4V4T	60.5	25	Rp1	6	7	42	50	-	52	10	11.5	90	19	41	11
VZBA-1 1/4"-GG-63-T-22-F0405-V4V4T	71.5	32	Rp1 1/4	6	7	42	50	-	58	10	11.5	110	23	50	11
VZBA-1 1/2"-GG-63-T-22-F0507-V4V4T	80.5	38	Rp1 1/2	7	9	50	70	-	68	13	15.5	120	24	58	14
VZBA-2"-GG-63-T-22-F0507-V4V4T	99.5	50	Rp2	7	9	50	70	-	77	13	15.5	140	25.8	73	14
VZBA-2 1/2"-GG-63-T-22-F0710-V4V4T	127	65	Rp2 1/2	9	11	70	102	-	98	13	18.5	185	34	90	17
VZBA-3"-GG-63-T-22-F0710-V4V4T	191	80	Rp3	9	11	70	102	-	110	13	18.5	205	36	105	17
VZBA-4"-GG-63-T-22-F10-V4V4T	222	100	Rp4	-	11	-	102	-	138	16	23.5	240	38	135	22
VZBA-1/4"-WW-63-T-22-F0304-V4V4T	42	10	-	6	6	36	42	16	40	9	8.5	70	-	-	9
VZBA-3/8"-WW-63-T-22-F0304-V4V4T	42	12	-	6	6	36	42	18	40	9	8.5	70	-	-	9
VZBA-1/2"-WW-63-T-22-F0304-V4V4T	49	16	-	6	6	36	42	22	40	9	8.5	75	-	-	9
VZBA-3/4"-WW-63-T-22-F0304-V4V4T	54	20	-	6	6	36	42	28	44	9	8.5	90	-	-	9
VZBA-1"-WW-63-T-22-F0405-V4V4T	60.5	25	-	6	7	42	50	35	52	10	11.5	100	-	-	11
VZBA-1 1/4"-WW-63-T-22-F0405-V4V4T	71.5	32	-	6	7	42	50	44	58	10	11.5	110	-	-	11
VZBA-1 1/2"-WW-63-T-22-F0507-V4V4T	80.5	38	-	7	9	50	70	50	68	13	15.5	125	-	-	14
VZBA-2"-WW-63-T-22-F0507-V4V4T	99.5	50	-	7	9	50	70	62	77	13	15.5	150	-	-	14
VZBA-2 1/2"-WW-63-T-22-F0710-V4V4T	127	65	-	9	11	70	102	77	98	13	18.5	190	-	-	17
VZBA-3"-WW-63-T-22-F0710-V4V4T	191	80	-	9	11	70	102	91	110	13	18.5	220	-	-	17
VZBA-4"-WW-63-T-22-F10-V4V4T	222	100	-	-	11	-	102	117	138	16	23.5	270	-	-	22

# Ball valves VZBA, 2-way

Technical data

**FESTO**

Ordering data					
	Version	Process valve connection	Weight [g]	Part No.	Type
	With pipe thread	Rp1/4	650	<b>1686625</b>	VZBA-1/4"-GG-63-T-22-F0304-V4V4T
		Rp3/8	650	<b>1686632</b>	VZBA-3/8"-GG-63-T-22-F0304-V4V4T
		Rp1/2	650	<b>1686636</b>	VZBA-1/2"-GG-63-T-22-F0304-V4V4T
		Rp3/4	850	<b>1686639</b>	VZBA-3/4"-GG-63-T-22-F0304-V4V4T
		Rp1	1250	<b>1686640</b>	VZBA-1"-GG-63-T-22-F0405-V4V4T
		Rp11/4	1850	<b>1686641</b>	VZBA-11/4"-GG-63-T-22-F0405-V4V4T
		Rp11/2	2800	<b>1686643</b>	VZBA-11/2"-GG-63-T-22-F0507-V4V4T
		Rp2	4550	<b>1686646</b>	VZBA-2"-GG-63-T-22-F0507-V4V4T
		Rp21/2	9200	<b>1686648</b>	VZBA-21/2"-GG-63-T-22-F0710-V4V4T
		Rp3	13950	<b>1686651</b>	VZBA-3"-GG-63-T-22-F0710-V4V4T
	With welded ends	Welded end	650	<b>1686656</b>	VZBA-1/4"-WW-63-T-22-F0304-V4V4T
			650	<b>1686662</b>	VZBA-3/8"-WW-63-T-22-F0304-V4V4T
			650	<b>1686663</b>	VZBA-1/2"-WW-63-T-22-F0304-V4V4T
			850	<b>1686665</b>	VZBA-3/4"-WW-63-T-22-F0304-V4V4T
			1250	<b>1686689</b>	VZBA-1"-WW-63-T-22-F0405-V4V4T
			1850	<b>1686696</b>	VZBA-11/4"-WW-63-T-22-F0405-V4V4T
			2800	<b>1686697</b>	VZBA-11/2"-WW-63-T-22-F0507-V4V4T
			4550	<b>1686699</b>	VZBA-2"-WW-63-T-22-F0507-V4V4T
			9200	<b>1686702</b>	VZBA-21/2"-WW-63-T-22-F0710-V4V4T
			13950	<b>1686704</b>	VZBA-3"-WW-63-T-22-F0710-V4V4T
22300	<b>1686705</b>	VZBA-4"-WW-63-T-22-F10-V4V4T			

# Ball valves VZBA, 2-way

Accessories

## Hand lever VAOH

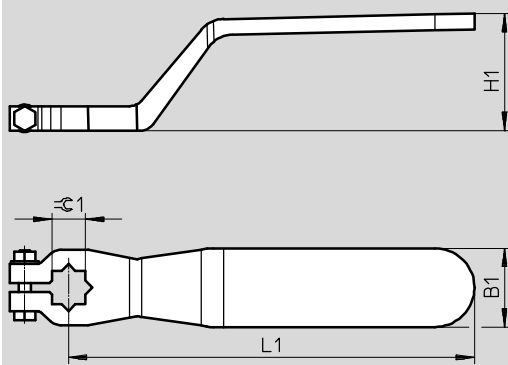
Information on materials:

- High-alloy stainless steel
- Free of copper and PTFE
- Contains paint-wetting impairment substances



### Dimensions and ordering data

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



For connection	B1 ±5	H1 ±5	L1 ±10	≈∅1 ±0.5	Weight [g]	Part No.	Type
Rp1/4 ... Rp3/4	21	36	120	9	100	542702	VAOH-9-H9
Rp1 ... Rp1 1/4	26	40	140	11	200	542703	VAOH-11-H9
Rp1 1/2 ... Rp2	31	46	180	14	300	542704	VAOH-14-H9
Rp2 1/2 ... Rp3	36	55	240	17	450	542705	VAOH-17-H9
Rp4	36	70	280	22	750	542706	VAOH-22-H9

# Ball valves VZBE, 2-way

Type codes

FESTO

VZBE - 1/4 - T - 63 - T - 2 - F0304 - - V15 V15

Type	
VZBE	Ball valve

Nominal width DN	
1/4	1/4"
3/8	3/8"
1/2	1/2"
3/4	3/4"
1	1"
1 1/4	1 1/4"
1 1/2	1 1/2"
2	2"
2 1/2	2 1/2"
3	3"
4	4"

Process valve connection type	
T	NPT female thread

Nominal pressure	
63	63 bar

Design	
T	Three parts

Valve function	
2	2/2-way

Flanged connection to ISO 5211	
F0304	Hole pattern 03 and 04
F0405	Hole pattern 04 and 05
F0507	Hole pattern 05 and 07
F0710	Hole pattern 07 and 10
F1012	Hole pattern 10 and 12

Actuation type	
-	Via drive

Housing material	
V15	Stainless steel ASTM A351-CF8M/1.4408

Shut-off element material	
V15	Stainless steel ASTM A351-CF8M/1.4408
V16	Stainless steel ASTM A240-316/1.4401

# Ball valves VZBE, 2-way

Technical data

Function



- 2-way ball valve made from stainless steel
- NPT version



- - Connecting thread  
1/4 NPT ... 4 NPT
- - Flow rate  
5.1 ... 435.2 m<sup>3</sup>/h

General technical data											
Process valve connection	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1" NPT	1 1/4 NPT	1 1/2 NPT	2" NPT	2 1/2 NPT	3" NPT	4" NPT
Nominal width DN	8	10	15	20	25	32	40	50	65	80	100
Valve function	2/2										
Design	2-way ball valve										
Sealing principle	Soft										
Actuation type	Mechanical										
Switching position indication	Slot direction = flow direction										
Flow direction	Reversible										
Type of mounting	In-line installation										
Mounting position	Any										
Based on standard	ISO 5211 ASME B1.20.1										
Breakaway torque at differential pressure, nominal pressure, process valve PN [Nm]	7	7	7	9	15	18	25	35	55	70	90
Inside diameter [mm]	11.6	12.5	15	20	25	32	38	50	63	76	96
Flow rate Kv [m <sup>3</sup> /h]	5.1	5.8	8.5	15.6	25.1	42.6	61.6	111.8	181.9	264.5	435.2

Operating and environmental conditions											
Process valve connection	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1" NPT	1 1/4 NPT	1 1/2 NPT	2" NPT	2 1/2 NPT	3" NPT	4" NPT
Nominal pressure of process valve PN	63										
Temperature of medium [°C]	-20 ... +200										
Medium <sup>1)</sup>	Compressed air to ISO 8573-1:2010 [:-:-] Inert gases Water Vapour Neutral fluids										
Certification	CRN										
Corrosion resistance class CRC <sup>2)</sup>	4										
CE marking (see declaration of conformity) <sup>3)</sup>	-						To EU Pressure Equipment Directive				

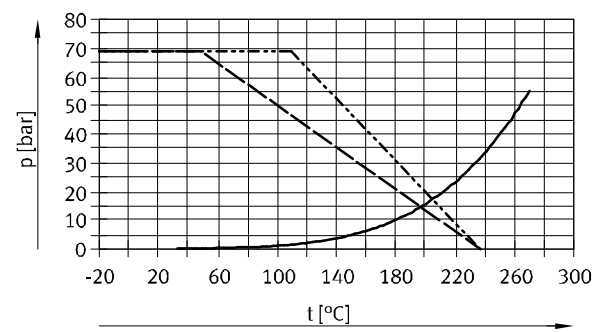
1) Other media on request  
 2) Corrosion resistance class CRC 4 to Festo standard FN 940070  
 Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, for instance in the chemical or food industries. These applications may need to be supported by special tests (→ also FN 940082) using appropriate media.  
 3) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

# Ball valves VZBE, 2-way

Technical data

Materials		Material number
Housing	Stainless steel casting	1.4408
Ball	2 1/2 NPT ... 4 NPT	1.4401
	1 1/4 NPT ... 2 NPT	1.4408
Shaft	High-alloy stainless steel	1.4401
Seals	FPM	
	PTFE	
Note on materials	RoHS compliant	
	Contains paint-wetting impairment substances	

## Permissible operating pressure p as a function of the temperature of the medium t



- Saturated water vapour
- - - - - PTFE-reinforced
- · - · - PTFE, modified

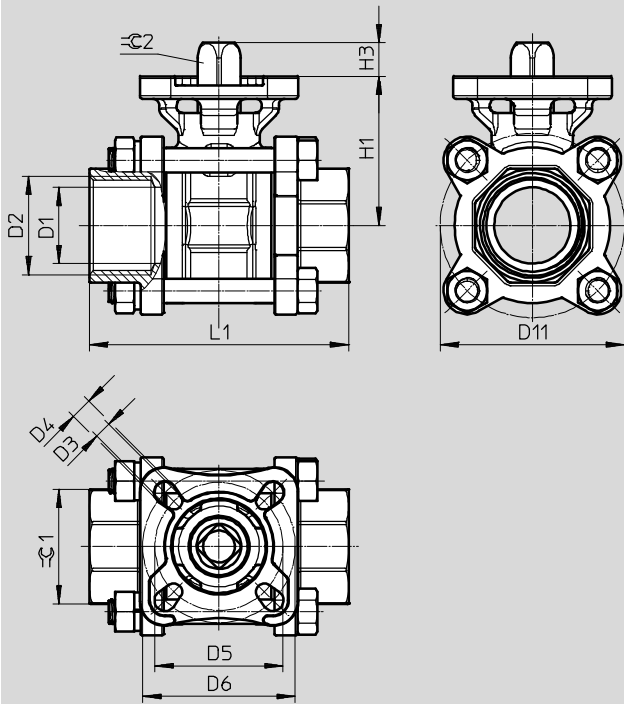
# Ball valves VZBE, 2-way

Technical data

FESTO

## Dimensions

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



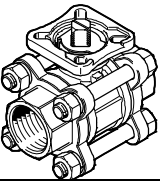
Type	D1 Ø	D2	D3 Ø	D4 Ø	D5 Ø	D6 Ø	D11 Ø	H1	H3	L1 ±2	≙C1	≙C2
VZBE-1/4-...	11.6	1/4 NPT	5.5	5.5	36	42	38	35.3	7.5	65	19.2	9
VZBE-3/8-...	12.5	3/8 NPT	5.5	5.5	36	42	38	35.3	7.5	65	22.5	9
VZBE-1/2-...	15	1/2 NPT	5.5	5.5	36	42	44	36.4	7.1	65	26	9
VZBE-3/4-...	20	3/4 NPT	5.5	5.5	36	42	52	39.5	7.3	75	32	9
VZBE-1-...	25	1" NPT	5.5	7	42	50	60.5	49	11	85	37.5	11
VZBE-11/4-...	32	1 1/4 NPT	5.5	7	42	50	74	54.2	11.5	101	48	11
VZBE-11/2-...	38	1 1/2 NPT	7	9	50	70	86	64.6	12.4	112	55	14
VZBE-2-...	50	2" NPT	7	9	50	70	102.5	72.5	13.6	130	67	14
VZBE-2 1/2-...	63	2 1/2 NPT	9	11	70	102	129	92	16.3	162	85	17
VZBE-3-...	76	3" NPT	9	11	70	102	146.5	100	16.3	188	100	17
VZBE-4-...	96	4" NPT	11	13	102	125	186.4	130	20.5	224	130	22

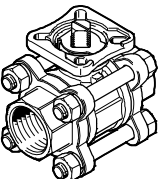
# Ball valves VZBE, 2-way

Technical data



## ★ Core product range

Ordering data				
	Process valve connection	Weight	Part No.	Type
		[g]		
	1/2 NPT	560	★ 4809117 <sup>1)</sup>	VZBE-1/2-T-63-T-2-F0304-V15V15
	3/4 NPT	660	★ 4809118 <sup>1)</sup>	VZBE-3/4-T-63-T-2-F0304-V15V15
	1 NPT	1000	★ 4809119 <sup>1)</sup>	VZBE-1-T-63-T-2-F0405-V15V15
	1 1/2 NPT	2420	★ 4809121 <sup>1)</sup>	VZBE-11/2-T-63-T-2-F0507-V15V15
	2 NPT	3520	★ 4809122 <sup>1)</sup>	VZBE-2-T-63-T-2-F0507-V15V15

Ordering data				
	Process valve connection	Weight	Part No.	Type
		[g]		
	1/4 NPT	460	4836917 <sup>1)</sup>	VZBE-1/4-T-63-T-2-F0304-V15V15
	3/8 NPT	460	4836918 <sup>1)</sup>	VZBE-3/8-T-63-T-2-F0304-V15V15
	1 1/4 NPT	1600	4809120 <sup>1)</sup>	VZBE-11/4-T-63-T-2-F0405-V15V15
	2 1/2 NPT	5050	4809123 <sup>1)</sup>	VZBE-21/2-T-63-T-2-F0710-V15V16
	3 NPT	7750	4809124 <sup>1)</sup>	VZBE-3-T-63-T-2-F0710-V15V16
	4 NPT	15800	4809126 <sup>1)</sup>	VZBE-4-T-63-T-2-F1012-V15V16

1) Festo is only a retailer of this product, not the manufacturer.



# Ball valves VZBE, 2-way

Accessories

FESTO

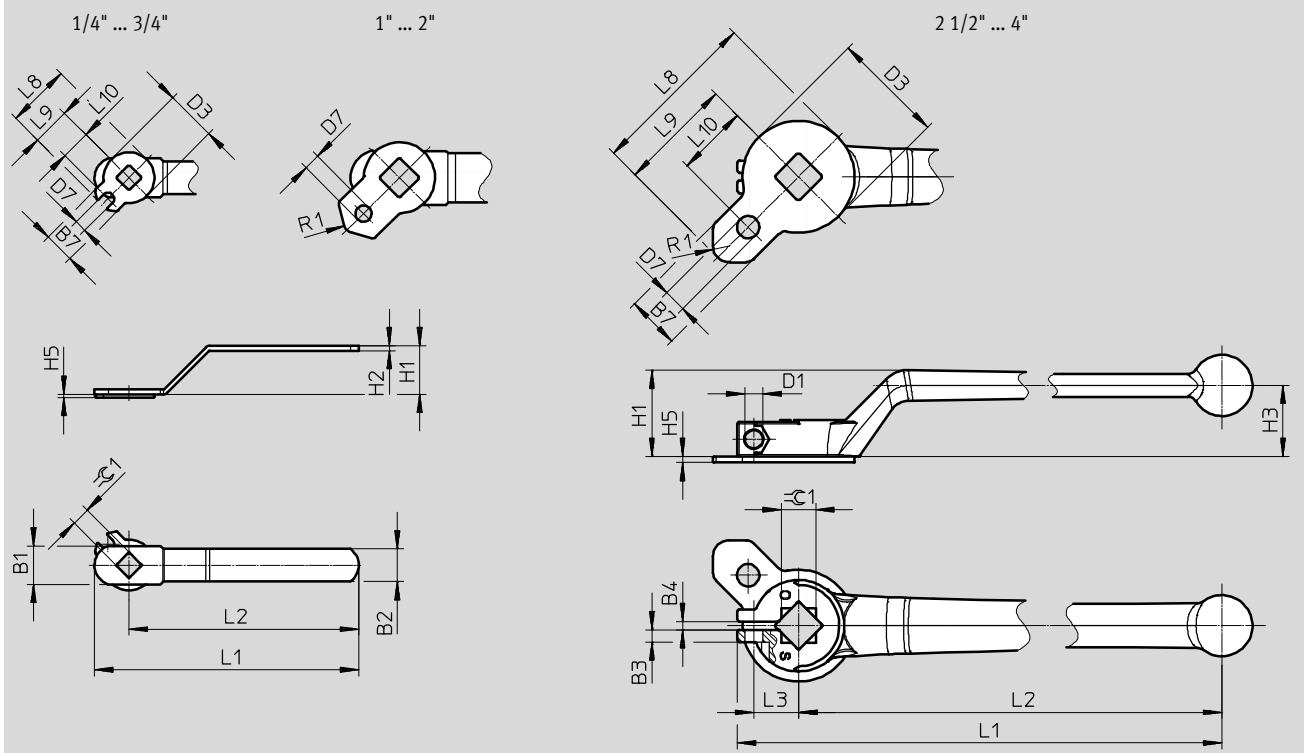
## Hand lever VAOH

- High-alloy stainless steel
- Free of copper and PTFE
- RoHS compliant
- Contains paint-wetting impairment substances
- Lockable



### Dimensions and ordering data

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



### Dimensions and ordering data

For connection	B1	B2	B3	B4	B7	D1	D3	D7	H1	H2	H3	H5	L1
						∅	∅	∅					
1/4" ... 3/4"	19	16	-	-	15.8	-	25	6	24	2.5	-	1.5	130
1" ... 1 1/4"	22.5	20	-	-	17.8	-	29	7	26	4	-	1.8	160
1 1/2" ... 2"	26.5	24	-	-	26	-	35	8	34.5	5	-	2	194
2 1/2" ... 3"	-	-	6	4	27.5	9	55	11	42.5	-	35	3	355
4"	-	-	6	4	27.5	9	70	12	42.5	-	38	3	355

For connection	L2	L3	L8	L9	L10	R1	≅C1 ±0.5	CRC <sup>(2)</sup>	Weight [g]	Part No.	Type
1/4" ... 3/4"	113	-	33.5	21.1	18	-	9	3	40	4895383 <sup>1)</sup>	VAOH-F7-9-H9-A-22
1" ... 1 1/4"	138.5	-	41.5	27	21	6	11	3	100	4895384 <sup>1)</sup>	VAOH-F7-11-H9-A-22
1 1/2" ... 2"	170	-	54	36.5	25	5	14	3	180	4895385 <sup>1)</sup>	VAOH-F7-14-H9-A-22
2 1/2" ... 3"	325	22	83.6	56.1	35	8	17	3	850	4895386 <sup>1)</sup>	VAOH-F7-17-H9-A-22
4"	325	22	102.7	67.7	51	7	22	3	900	4895387 <sup>1)</sup>	VAOH-F7-22-H9-A-22

1) Festo is only a retailer of this product, not the manufacturer.

2) Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional requirements for the surface and which are in direct contact with a normal industrial environment.

# Ball valves VZBE, manual

Type codes

FESTO

VZBE - 1/4 - T - 63 - D - 2 - - M - V15 V15

Type	
VZBE	Ball valve

Nominal width DN	
1/4	1/4"
3/8	3/8"
1/2	1/2"
3/4	3/4"
1	1"
1 1/4	1 1/4"
1 1/2	1 1/2"
2	2"
2 1/2	2 1/2"
3	3"

Process valve connection type	
T	NPT female thread

Nominal pressure	
63	63 bar

Design	
D	Two parts

Valve function	
2	2/2-way

Flanged connection to ISO 5211	
-	Without

Actuation type	
M	With hand lever

Housing material	
V15	Stainless steel ASTM A351-CF8M/1.4408

Shut-off element material	
V15	Stainless steel ASTM A351-CF8M/1.4408
V16	Stainless steel ASTM A240-316/1.4401


# Ball valves VZBE, manual


Technical data



- 2-way ball valve made from stainless steel
- With hand lever
- NPT version



-  - Connecting thread  
1/4NPT ... 3NPT

-  - Flow rate  
5 ... 264.5 m<sup>3</sup>/h

General technical data										
Process valve connection	1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT	1 1/4NPT	1 1/2NPT	2NPT	2 1/2NPT	3NPT
Nominal width DN	8	10	15	20	25	32	40	50	65	80
Valve function	2/2									
Design	2-way ball valve									
Sealing principle	Soft									
Actuation type	Mechanical									
Switching position indication	Slot direction = flow direction									
Flow direction	Reversible									
Type of mounting	In-line installation									
Mounting position	Any									
Based on standard	ASME B1.20.1									
Breakaway torque at differential pressure, nominal pressure, process valve PN [Nm]	3.5	4	5.5	7.5	11	15	20	40	60	85
Internal diameter [mm]	11.6	12.5	15	20	25	32	38	50	63	76
Flow rate Kv [m <sup>3</sup> /h]	5	5.8	8.5	15.6	25.1	42.6	61.6	111.8	181.9	264.5

Operating and environmental conditions										
Process valve connection	1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT	1 1/4NPT	1 1/2NPT	2NPT	2 1/2NPT	3NPT
Medium <sup>1)</sup>	Compressed air to ISO 8573-1:2010 [---]									
	Inert gases									
	Water									
	Vapour									
	Neutral liquids									
Process valve nominal pressure PN	63									
Temperature of medium [°C]	-20 ... +200									
Certification	CRN									
Corrosion resistance class CRC <sup>2)</sup>	3									
CE marking (see declaration of conformity) <sup>3)</sup>	-					To EU Pressure Equipment Directive				

1) Other media on request

2) Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional requirements for the surface and which are in direct contact with a normal industrial environment.

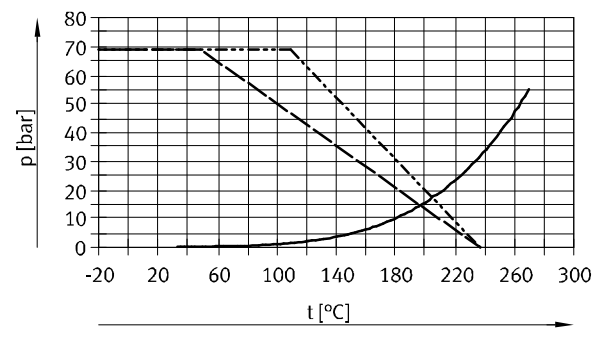
3) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

# Ball valves VZBE, manual

Technical data

Materials		Material number
Housing	Stainless steel casting	1.4408
Ball	Stainless steel casting	1.4408
	High-alloy stainless steel	1.4401
Shaft	High-alloy stainless steel	1.4401
Seals	PTFE	
Note on materials	RoHS compliant	
	Contains paint-wetting impairment substances	

## Permissible operating pressure p as a function of the temperature of the medium t



- Saturated water vapour
- - - - - PTFE-reinforced
- · - · - PTFE, modified

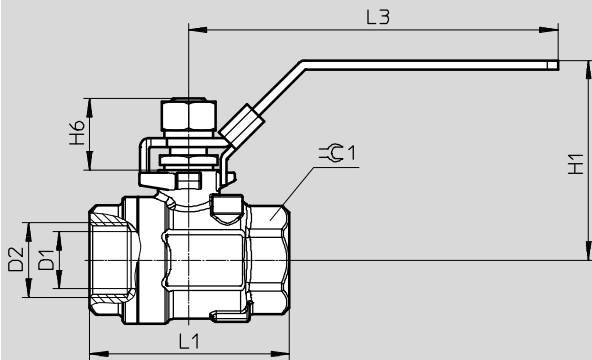
# Ball valves VZBE, manual

Technical data

FESTO

## Dimensions

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



Type	D1 ∅	D2	H1	H6	L1 ±2	L3	⊖C1
VZBE-1/4-...	11.6	1/4 NPT	58.5	18.5	50.8	99.5	19
VZBE-3/8-...	12.5	3/8 NPT	58.5	18.5	50.8	99.5	22.5
VZBE-1/2-...	15	1/2 NPT	60.5	18.8	58	99.5	26
VZBE-3/4-...	20	3/4 NPT	63	23.4	65.6	123	32
VZBE-1-...	25	1 NPT	79.5	26.2	78.7	149	38
VZBE-11/4-...	32	1 1/4 NPT	86	23.6	90	149	48
VZBE-11/2-...	38	1 1/2 NPT	101.7	28.2	105	190	54.8
VZBE-2-...	50	2 NPT	109.3	23.4	124	190	67
VZBE-21/2-...	63	2 1/2 NPT	140	39.4	146	247	85
VZBE-3-...	76	3 NPT	148.5	39.4	163.2	247	100

## ★ Core product range

Ordering data		Process valve connection	Weight [g]	Part No.	Type
		1/2 NPT	300	★ 4745216 <sup>1)</sup>	VZBE-1/2-T-63-D-2-M-V15V15
		3/4 NPT	500	★ 4745218 <sup>1)</sup>	VZBE-3/4-T-63-D-2-M-V15V15
		1 NPT	800	★ 4745219 <sup>1)</sup>	VZBE-1-T-63-D-2-M-V15V15
		1 1/2 NPT	1800	★ 4745221 <sup>1)</sup>	VZBE-11/2-T-63-D-2-M-V15V15
		2 NPT	2700	★ 4745223 <sup>1)</sup>	VZBE-2-T-63-D-2-M-V15V15

Ordering data		Process valve connection	Weight [g]	Part No.	Type
		1/4 NPT	200	4745214 <sup>1)</sup>	VZBE-1/4-T-63-D-2-M-V15V15
		3/8 NPT	200	4745215 <sup>1)</sup>	VZBE-3/8-T-63-D-2-M-V15V15
		1 1/4 NPT	1100	4745220 <sup>1)</sup>	VZBE-11/4-T-63-D-2-M-V15V15
		2 1/2 NPT	5600	4745224 <sup>1)</sup>	VZBE-21/2-T-63-D-2-M-V15V16
		3 NPT	7500	4745225 <sup>1)</sup>	VZBE-3-T-63-D-2-M-V15V16

1) Festo is only a retailer of this product, not the manufacturer.

# Ball valves VZBA, 3-way

Type codes

FESTO

VZBA - 1/4" - G G G - 63 - 32T - F0304 - V4 V4 T

## Type

VZBA	Ball valve
------	------------

## Nominal width DN

1/4"	DN8
3/8"	DN10
1/2"	DN15
3/4"	DN20
1"	DN25
1 1/4"	DN32
1 1/2"	DN40
2"	DN50

## Connection type 1

G	Pipe thread to EN 10226-1
---	---------------------------

## Connection type 2

G	Pipe thread to EN 10226-1
---	---------------------------

## Connection type 3

G	Pipe thread to EN 10226-1
---	---------------------------

## Process valve nominal pressure PN

63	63 bar
----	--------

## Valve function

32T	3/2-way, T-shaped bore
32L	3/2-way, L-shaped bore

## Flanged connection to ISO 5211

F0304	Hole pattern 03 and 04
F0405	Hole pattern 04 and 05
F0507	Hole pattern 05 and 07

## Housing material

V4	Stainless steel 1.4408
----	------------------------

## Shut-off element material

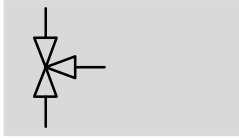
V4	Stainless steel 1.4408
----	------------------------

## Sealing material

T	PTFE-reinforced
---	-----------------

# Ball valves VZBA, 3-way

Technical data



- With L-shaped bore or T-shaped bore



- - Connecting thread  
Rp1/4 ... Rp2
- - Flow rate  
4.5 ... 100 m<sup>3</sup>/h

General technical data																			
Process valve connection	Rp1/4		Rp3/8		Rp1/2		Rp3/4		Rp1		Rp11/4		Rp11/2		Rp2				
Nominal width DN	8		10		15		20		25		32		40		50				
Valve function	3/2																		
Design	3-way ball valve																		
Sealing principle	Soft																		
Actuation type	Mechanical																		
Manual override	None																		
Switching position indication	Slot direction = flow direction																		
Flow direction	Reversible																		
Type of mounting	In-line installation																		
Mounting position	Any																		
Based on standard	EN 10226-1 ISO 5211																		
Actuating torque [Nm]	13		13		13		18		22		35		42		68				
Internal diameter [mm]	11.6		12.7		12.7		16		20		25.4		31.8		38.1				
Flow rate Kv	Type L <sup>1)</sup>	[m <sup>3</sup> /h]		4.5		4.5		4.7		5.1		11.8		19.6		33.2		53.7	
	Type T <sup>2)</sup>	[m <sup>3</sup> /h]		8		8		8.3		8.3		22.4		36.5		62		100	
	Type T <sup>3)</sup>	[m <sup>3</sup> /h]		4.5		4.5		4.8		4.8		10.9		18		30		48.8	
Flow rate tolerance Kv [%]	± 20																		
Product weight [g]	700		700		700		1000		1600		2800		3800		7400				

- 1) Ball with L-shaped bore
- 2) Ball with T-shaped bore, straight flow
- 3) Ball with T-shaped bore, flow around corner

Operating and environmental conditions																
Process valve connection	Rp1/4		Rp3/8		Rp1/2		Rp3/4		Rp1		Rp11/4		Rp11/2		Rp2	
Medium <sup>1)</sup>	Compressed air to ISO 8573-1:2010 [:-:-] Neutral liquids Inert gases Water – no water vapour															
Process valve nominal pressure	PN 63															
Temperature of medium [°C]	-10 ... +200															
Corrosion resistance class CRC <sup>2)</sup>	3															
CE marking (see declaration of conformity)	-											To EU Pressure Equipment Directive				
→ www.festo.com																

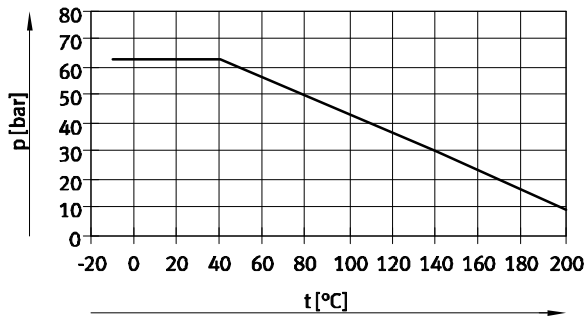
- 1) Other media on request
- 2) Corrosion resistance class CRC 3 to Festo standard FN 940070  
High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional requirements for the surface and which are in direct contact with a normal industrial environment.

# Ball valves VZBA, 3-way

Technical data

Materials		Material number
Housing	High-alloy stainless steel	1.4408
Ball		1.4408
Shaft		1.4401
Seals	PTFE	
	PTFE-reinforced	
Note on materials	RoHS compliant	
	Contains paint-wetting impairment substances	

Permissible operating pressure p as a function of the temperature of the medium t





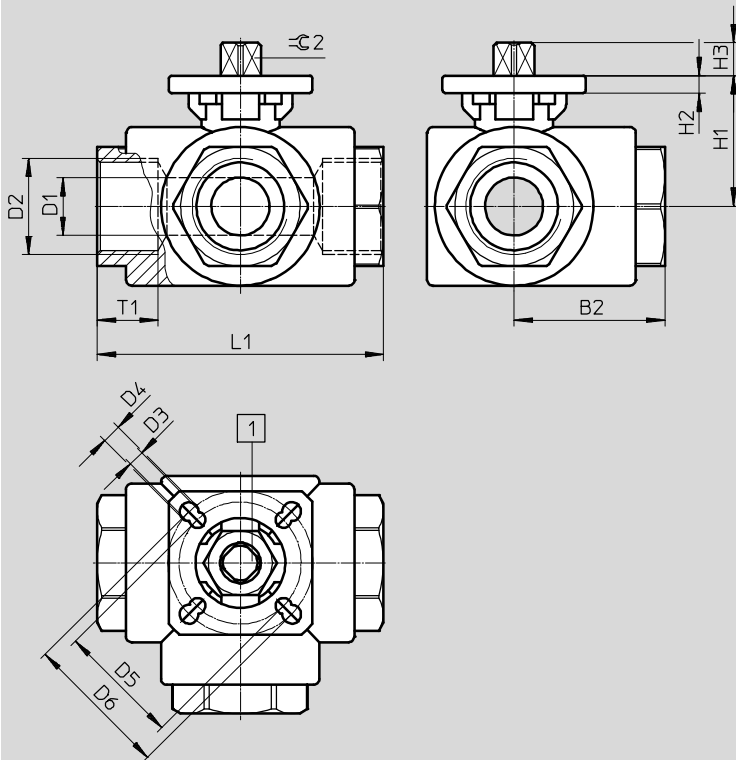
# Ball valves VZBA, 3-way

Technical data

FESTO

## Dimensions

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



1 Switching position indication: the slot direction corresponds to the flow direction → page 26

Type	B2	D1 ∅	D2	D3 ∅	D4 ∅	D5 ∅	D6 ∅	H1	H2	H3	L1	T1	2 -0.1
	±2	±0.15							±1		±1		
VZBA-1/4"-GGG-63-32L-F0304-V4V4T	40	11.6	Rp1/4	5.5	5.5	36	42	35.9	6	7.4	80	15	9
VZBA-1/4"-GGG-63-32T-F0304-V4V4T													
VZBA-3/8"-GGG-63-32L-F0304-V4V4T	40	12.7	Rp3/8	5.5	5.5	36	42	35.9	6	7.4	80	18	9
VZBA-3/8"-GGG-63-32T-F0304-V4V4T													
VZBA-1/2"-GGG-63-32L-F0304-V4V4T	40	12.7	Rp1/2	5.5	5.5	36	42	35.9	6	7.4	80	17.5	9
VZBA-1/2"-GGG-63-32T-F0304-V4V4T													
VZBA-3/4"-GGG-63-32L-F0405-V4V4T	43.8	16	Rp3/4	5.5	6.5	42	50	40.9	6	12.8	87.5	20	11
VZBA-3/4"-GGG-63-32T-F0405-V4V4T													
VZBA-1"-GGG-63-32L-F0405-V4V4T	50	20	Rp1	5.5	6.5	42	50	45.2	6	11.4	100	21	11
VZBA-1"-GGG-63-32T-F0405-V4V4T													
VZBA-1 1/4"-GGG-63-32L-F0405-V4V4T	61.5	25.4	Rp1 1/4	5.5	6.5	42	50	51	6	12.6	123	21	11
VZBA-1 1/4"-GGG-63-32T-F0405-V4V4T													
VZBA-1 1/2"-GGG-63-32L-F0405-V4V4T	71.1	31.8	Rp1 1/2	5.5	6.5	42	50	55.5	6	12.6	142.2	23	11
VZBA-1 1/2"-GGG-63-32T-F0405-V4V4T													
VZBA-2"-GGG-63-32L-F0507-V4V4T	85.3	38.1	Rp2	6.5	8.5	50	70	66	6	14.3	170.6	26	14
VZBA-2"-GGG-63-32T-F0507-V4V4T													

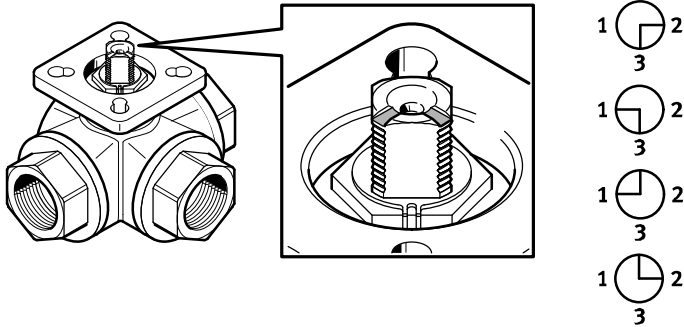
# Ball valves VZBA, 3-way

Technical data

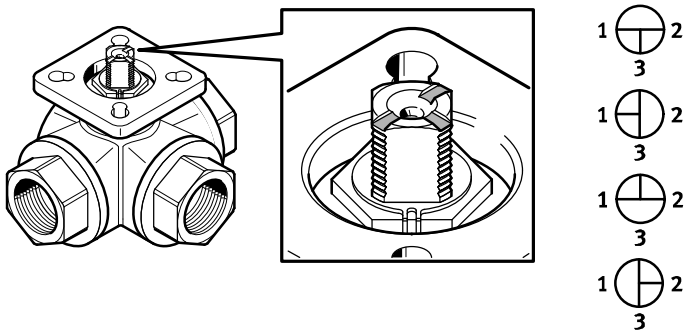
FESTO

## Switching position indication

L-shaped bore



T-shaped bore



Ordering data					
	Version	Connecting thread	Weight [g]	Part No.	Type
	L-shaped bore	Rp1/4	700	1692210	VZBA-1/4"-GGG-63-32L-F0304-V4V4T
		Rp3/8	700	1692211	VZBA-3/8"-GGG-63-32L-F0304-V4V4T
		Rp1/2	700	1692212	VZBA-1/2"-GGG-63-32L-F0304-V4V4T
		Rp3/4	1000	1692214	VZBA-3/4"-GGG-63-32L-F0405-V4V4T
		Rp1	1600	1692215	VZBA-1"-GGG-63-32L-F0405-V4V4T
		Rp1 1/4	2800	1692217	VZBA-1 1/4"-GGG-63-32L-F0405-V4V4T
		Rp1 1/2	3800	1692218	VZBA-1 1/2"-GGG-63-32L-F0405-V4V4T
		Rp2	7400	1692219	VZBA-2"-GGG-63-32L-F0507-V4V4T
	T-shaped bore	Rp1/4	700	1692220	VZBA-1/4"-GGG-63-32T-F0304-V4V4T
		Rp3/8	700	1692221	VZBA-3/8"-GGG-63-32T-F0304-V4V4T
		Rp1/2	700	1692224	VZBA-1/2"-GGG-63-32T-F0304-V4V4T
		Rp3/4	1000	1692226	VZBA-3/4"-GGG-63-32T-F0405-V4V4T
		Rp1	1600	1692227	VZBA-1"-GGG-63-32T-F0405-V4V4T
		Rp1 1/4	2800	1692228	VZBA-1 1/4"-GGG-63-32T-F0405-V4V4T
Rp1 1/2		3800	1692229	VZBA-1 1/2"-GGG-63-32T-F0405-V4V4T	
	Rp2	7400	1692230	VZBA-2"-GGG-63-32T-F0507-V4V4T	

# Ball valves VZBA, 3-way

Accessories

## Hand lever VAOH

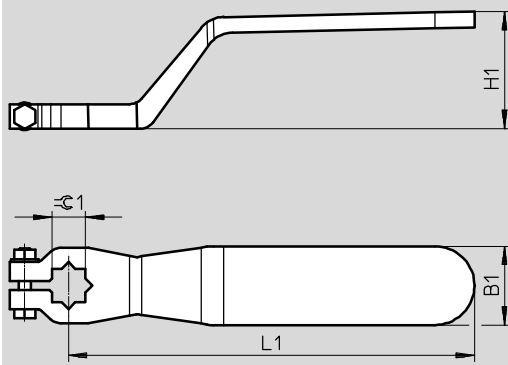
Information on materials:

- High-alloy stainless steel
- Free of copper and PTFE
- Contains paint-wetting impairment substances



### Dimensions and ordering data

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



For connection	B1 ±5	H1 ±5	L1 ±10	rC1 ±0.5	Weight [g]	Part No.	Type
Rp1/4 ... Rp1/2	21	36	120	9	100	542702	VAOH-9-H9
Rp3/4 ... Rp1 1/2	26	40	140	11	200	542703	VAOH-11-H9
Rp2	31	46	180	14	300	542704	VAOH-14-H9

# Ball valves VZBE, 3-way

Type codes

FESTO

VZBE - 1/4 - T - 63 - F - 3L - F04 - - V15 V15

Type	
VZBE	Ball valve

Nominal width DN	
1/4	1/4"
3/8	3/8"
1/2	1/2"
3/4	3/4"
1	1"
1 1/4	1 1/4"
1 1/2	1 1/2"
2	2"

Process valve connection type	
T	NPT female thread

Nominal pressure	
63	63 bar

Design	
F	Four parts

Valve function	
3L	3/2-way, L-shaped bore
3T	3/2-way, T-shaped bore

Flanged connection to ISO 5211	
F04	Hole pattern 04
F05	Hole pattern 05
F0507	Hole pattern 05 and 07

Actuation type	
-	Via drive

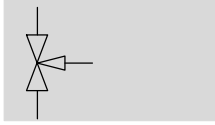
Housing material	
V15	Stainless steel ASTM A351-CF8M/1.4408

Shut-off element material	
V15	Stainless steel ASTM A351-CF8M/1.4408

# Ball valves VZBE, 3-way

Technical data

Function



- With L-shaped bore or T-shaped bore
- NPT version



- - Connecting thread  
1/4NPT ... 2NPT

- - Flow rate  
1.2 ... 22.5 m<sup>3</sup>/h

General technical data									
Process valve connection		1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT	1 1/4NPT	1 1/2NPT	2NPT
Nominal width DN		8	10	15	20	25	32	40	50
Valve function		3/2							
Design		3-way ball valve							
Sealing principle		Soft							
Actuation type		Mechanical							
Switching position indication		Slot direction = flow direction							
Flow direction		Reversible							
Type of mounting		In-line installation							
Mounting position		Any							
Based on standard		ISO 5211							
		ASME B1.20.1							
Breakaway torque at differential pressure, nominal pressure, process valve PN	[Nm]	9.6	9.6	9.6	14.3	25.2	33	45.5	85
Inside diameter	[mm]	11	11	12.7	16	20	25	32	38.1
Flow rate Kv	Type L [m <sup>3</sup> /h]	1.2	1.2	2.5	3.2	4.1	9.9	19.3	20.7
	Type T [m <sup>3</sup> /h]	1.4	1.4	2.8	3.7	4.6	10.6	20.2	22.5

Operating and environmental conditions									
Process valve connection		1/4NPT	3/8NPT	1/2NPT	3/4NPT	1NPT	1 1/4NPT	1 1/2NPT	2NPT
Temperature of medium	[°C]	-20 ... +200							
Medium <sup>1)</sup>		Compressed air to ISO 8573-1:2010 [:-:-]							
		Inert gases							
		Water							
		Vapour							
		Neutral fluids							
Certification		CRN							
Corrosion resistance class CRC <sup>2)</sup>		4							
CE marking (see declaration of conformity) <sup>3)</sup>		-					To EU Pressure Equipment Directive		

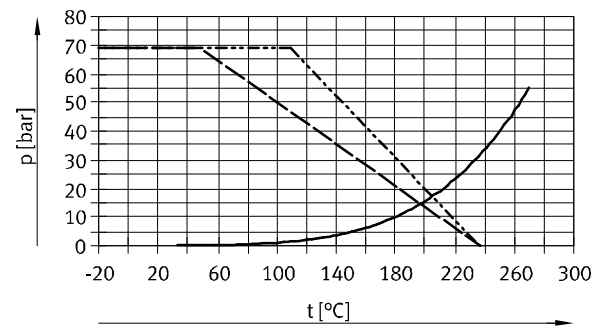
1) Other media on request  
 2) Corrosion resistance class CRC 4 to Festo standard FN 940070  
 Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, for instance in the chemical or food industries. These applications may need to be supported by special tests (→ also FN 940082) using appropriate media.  
 3) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

# Ball valves VZBE, 3-way

Technical data

Materials	Material number	
Housing	Stainless steel casting	1.4408
Ball	Stainless steel casting	1.4408
Shaft	High-alloy stainless steel	1.4401
Seals	PTFE	
Note on materials	RoHS compliant	
	Contains paint-wetting impairment substances	

## Permissible operating pressure p as a function of the temperature of the medium t



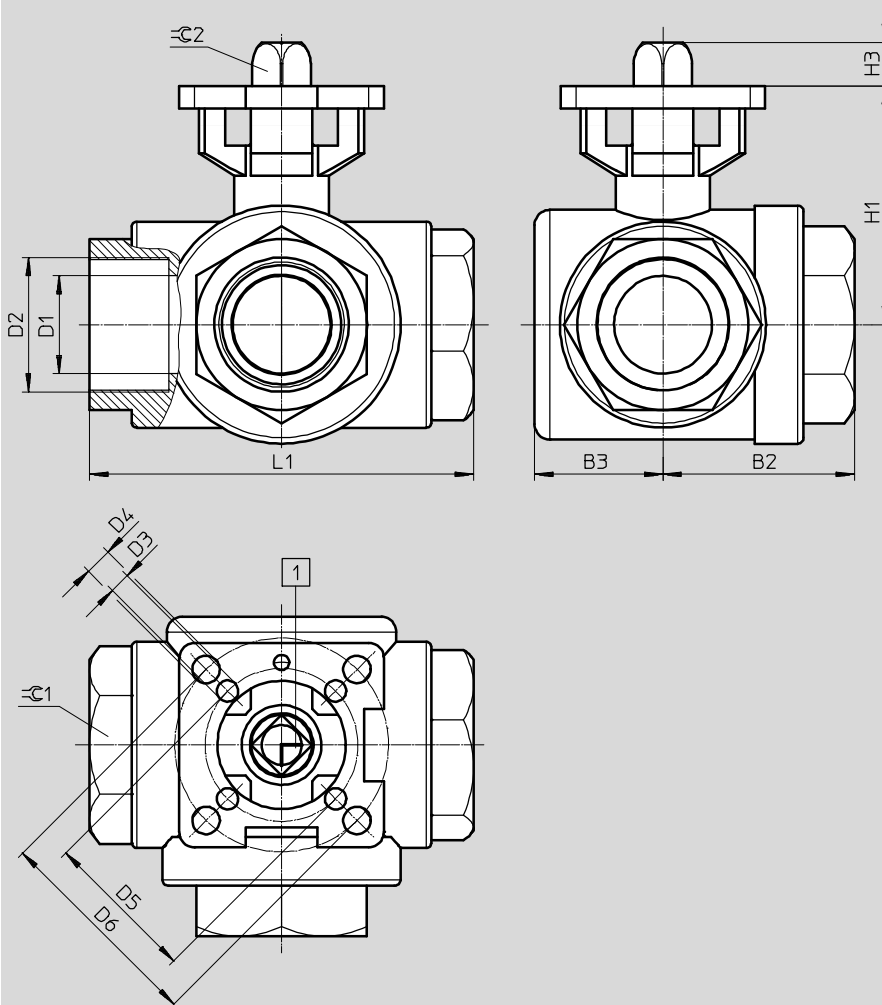
- Saturated water vapour
- - - - - PTFE-reinforced
- · - · - PTFE, modified

# Ball valves VZBE, 3-way

Technical data

## Dimensions

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



1 Switching position indication: the slot direction corresponds to the flow direction → page 32

Type	B2	B3	D1	D2	D3	D4	D5	D6	H1	H3	L1	☉1	☉2
	±2		∅		∅	∅	∅	∅			±2		
VZBE-1/4-...-F04-...	37.3	22.5	11	1/4 NPT	-	6	-	42	38.2	9	75.7	26	9
VZBE-3/8-...-F04-...	37.3	22.5	11	3/8 NPT	-	6	-	42	38.2	9	75.7	26	9
VZBE-1/2-...-F04-...	37.3	22.5	12.7	1/2 NPT	-	6	-	42	38.2	9	75.7	26	9
VZBE-3/4-...-F04-...	44.7	28	16	3/4 NPT	-	6	-	42	45.2	9	86.6	33	9
VZBE-1-...-F05-...	51.4	32.7	20	1 NPT	-	7.1	-	50	56.5	11	102.4	39	11
VZBE-1 1/4-...-F05-...	57.7	37	25	1 1/4 NPT	-	7.1	-	50	61.9	11	118.2	49.5	11
VZBE-1 1/2-...-F0507-...	62.7	42.5	32	1 1/2 NPT	7.1	9.2	50	70	78.3	14.3	125.8	56	14
VZBE-2-...-F0507-...	74.6	50.5	38.1	2 NPT	7.1	9.2	50	70	87.4	14	149	70	14

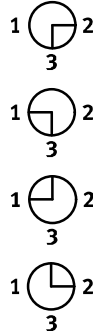
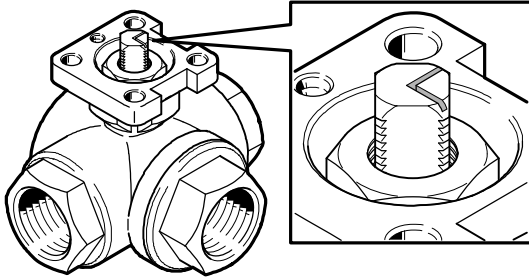
# Ball valves VZBE, 3-way

Technical data

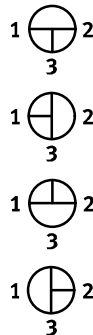
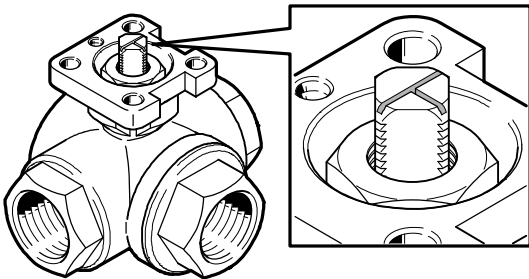
FESTO

## Switching position indication

### L-shaped bore



### T-shaped bore



## Ordering data

	Version	Process valve connection	Weight [g]	Part No.	Type
	L-shaped bore	1/4NPT	724	4834288 <sup>1)</sup>	VZBE-1/4-T-63-F-3L-F04-V15V15
		3/8NPT	624	4834289 <sup>1)</sup>	VZBE-3/8-T-63-F-3L-F04-V15V15
		1/2NPT	624	4834290 <sup>1)</sup>	VZBE-1/2-T-63-F-3L-F04-V15V15
		3/4NPT	1024	4834291 <sup>1)</sup>	VZBE-3/4-T-63-F-3L-F04-V15V15
		1NPT	1618	4834292 <sup>1)</sup>	VZBE-1-T-63-F-3L-F05-V15V15
		1 1/4NPT	2212	4834293 <sup>1)</sup>	VZBE-1 1/4-T-63-F-3L-F05-V15V15
		1 1/2NPT	3360	4834294 <sup>1)</sup>	VZBE-1 1/2-T-63-F-3L-F0507-V15V15
		2NPT	5560	4834295 <sup>1)</sup>	VZBE-2-T-63-F-3L-F0507-V15V15
	T-shaped bore	1/4NPT	724	4834296 <sup>1)</sup>	VZBE-1/4-T-63-F-3T-F04-V15V15
		3/8NPT	624	4834297 <sup>1)</sup>	VZBE-3/8-T-63-F-3T-F04-V15V15
		1/2NPT	624	4834298 <sup>1)</sup>	VZBE-1/2-T-63-F-3T-F04-V15V15
		3/4NPT	1024	4834299 <sup>1)</sup>	VZBE-3/4-T-63-F-3T-F04-V15V15
		1NPT	1618	4834300 <sup>1)</sup>	VZBE-1-T-63-F-3T-F05-V15V15
		1 1/4NPT	2212	4834301 <sup>1)</sup>	VZBE-1 1/4-T-63-F-3T-F05-V15V15
1 1/2NPT	3360	4834302 <sup>1)</sup>	VZBE-1 1/2-T-63-F-3T-F0507-V15V15		
2NPT	5560	4834303 <sup>1)</sup>	VZBE-2-T-63-F-3T-F0507-V15V15		

1) Festo is only a retailer of this product, not the manufacturer.



# Ball valves VZBE, 3-way

Accessories

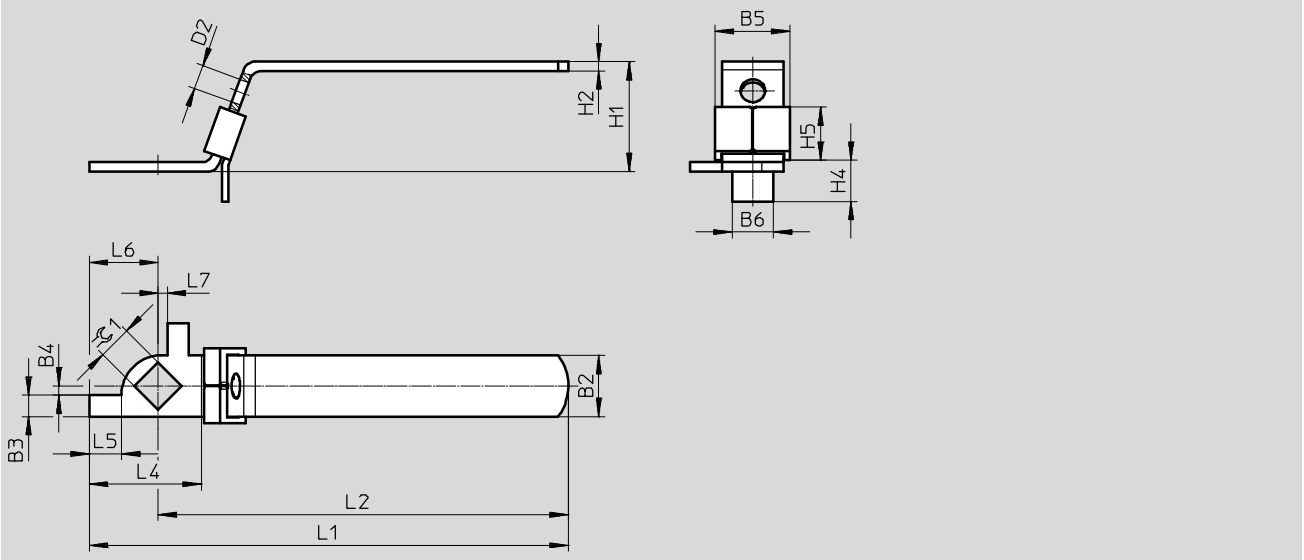
## Hand lever VAOH

- High-alloy stainless steel
- Free of copper and PTFE
- Contains paint-wetting impairment substances
- Lockable



### Dimensions and ordering data

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



### Dimensions and ordering data

For connection	B2	B3	B4	B5	B6	D2 Ø	H1	H2	H4	H5	L1
1/4" ... 3/4"	20	7	3	25	14.5	8	35	3	15	15.2	131
1"	20	7	3	24.5	13.5	8	36	3	13.5	15.3	157
1 1/4"	25	9.5	3	30	15	8	38	4	11.5	15	211
1 1/2" ... 2"	30	12	3	35	22	8	39	4	17	17	233

For connection	L2	L4	L5	L6	L7	⊖1	CRC <sup>2)</sup>	Weight [g]	Part No.	Type
1/4" ... 3/4"	112	39	8.5	19	3	9	3	76	4896014 <sup>1)</sup>	VAOH-F7-9-H9-A-32
1"	134.5	40	10.5	25.5	3	11	3	82	4896015 <sup>1)</sup>	VAOH-F7-11-H9-A-32
1 1/4"	186	48	10.5	25	3	11	3	188	4896017 <sup>1)</sup>	VAOH-F7-11-211-H9-A-32
1 1/2" ... 2"	197.9	59	19.5	35.1	3	14	3	240	4896016 <sup>1)</sup>	VAOH-F7-14-H9-A-32

1) Festo is only a retailer of this product, not the manufacturer.

2) Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional requirements for the surface and which are in direct contact with a normal industrial environment.

# Ball valves VZBD, 2-way

Type codes

FESTO

VZBD - 1/2 - W1 - 16 - T - 2 - F0304 - - V14 V14

Type	
VZBD	Ball valve

Nominal width DN	
1/2	1/2"
3/4	3/4"
1	1"
1 1/2	1 1/2"
2	2"
2 1/2	2 1/2"
3	3"
4	4"

Process valve connection type	
S1	Clamp ferrule to ASME-BPE
S5	Clamp ferrule to DIN 32676-B
W1	Extended welded ends to ASME-BPE
W3	Extended welded ends to ISO 1127

Nominal pressure	
16	16 bar

Design	
T	Three parts

Valve function	
2	2/2-way

Flanged connection to ISO 5211	
FH	Interface for hand lever
F0304	Hole pattern 03 and 04
F0405	Hole pattern 04 and 05
F0507	Hole pattern 05 and 07
F0710	Hole pattern 07 and 10
F1012	Hole pattern 10 and 12

Actuation type	
-	Via drive

Housing material	
V14	Stainless steel ASTM A351-CF3M/1.4409

Shut-off element material	
V14	Stainless steel ASTM A351-CF3M/1.4409

# Ball valves VZBD, 2-way

Technical data

Function



- 2-way ball valve made from stainless steel
- Optionally with extended welded ends to ISO 1127 or to ASME BPE or clamp ferrules to DIN 32676-B or to ASME BPE



- - Nominal width DN  
DN15 ... DN100

- - Flow rate  
3.5 ... 436.3 m<sup>3</sup>/h

General technical data										
Nominal width DN	15	20	25	32	40	50	65	80	100	
Process valve connection	Welded end to ISO 1127									
	Welded end to ASME-BPE									
	Clamp ferrule to DIN 32676-B									
	Clamp ferrule to ASME-BPE									
Valve function	2/2									
Design	2-way ball valve									
Sealing principle	Soft									
Type of actuation	Mechanical									
Switching position indication	Slot direction = flow direction									
Flow direction	Reversible									
Type of mounting	In-line installation									
Mounting position	Any									
Based on standard	ISO 5211									
	ISO 1127									
	DIN 32676-B									
	ASME BPE									
Welded end to ISO 1127 and clamp ferrule to DIN 32676-B										
Breakaway torque at differential pressure, nominal pressure, process valve PN	[Nm]	7	9	15	22	25	45	82	-	-
Inside Ø	[mm]	18.1	23.7	29.7	38.4	44.3	56.3	72.1	-	-
Flow rate Kv	[m <sup>3</sup> /h]	12.2	21.9	35.9	61.2	83.3	141.5	238.5	-	-
Welded end to ASME-BPE and clamp ferrule to ASME-BPE										
Breakaway torque at differential pressure, nominal pressure, process valve PN	[Nm]	7	9	15	-	18	35	55	70	90
Inside Ø	[mm]	9.6	15.8	22.1	-	34.8	47.7	60.3	72.9	97.5
Flow rate Kv	[m <sup>3</sup> /h]	3.5	9.7	19.8	-	50.1	96.8	161.7	243.8	436.3

# Ball valves VZBD, 2-way

Technical data

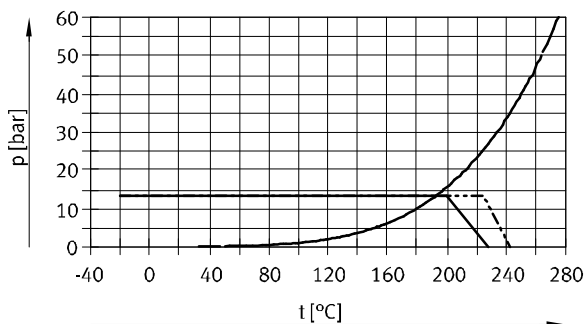
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Operating and environmental conditions									
Nominal width DN	15	20	25	32	40	50	65	80	100
Nominal pressure of process valve PN	63								
Temperature of medium [°C]	-20 ... +200								
Medium	Compressed air to ISO 8573-1:2010 [::-:]								
	Inert gases								
	Vapour								
	Water								
	Neutral fluids								
Certification	CRN								
Corrosion resistance class CRC <sup>1)</sup>	4								
CE marking (see declaration of conformity) <sup>2)</sup>	-				To EU Pressure Equipment Directive				

- 1) Corrosion resistance class CRC 4 to Festo standard FN 940070  
Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, for instance in the chemical or food industries. These applications may need to be supported by special tests (→ also FN 940082) using appropriate media.
- 2) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

Materials		Material number
Housing	Stainless steel casting	1.4409 (ASTM A351-CF3M)
Ball	Stainless steel casting	1.4409 (ASTM A351-CF3M)
Shaft	High-alloy stainless steel	1.4401 (ASTM A240-316)
Seat seal	PTFE, modified	
Seals	PTFE	
	FPM	
Note on materials	RoHS compliant	
	Contains paint-wetting impairment substances	

## Permissible operating pressure p as a function of the temperature of the medium t



- PTFE  
 - - - - - PTFE, modified  
 - · - · - Saturated water vapour

# Ball valves VZBD, 2-way

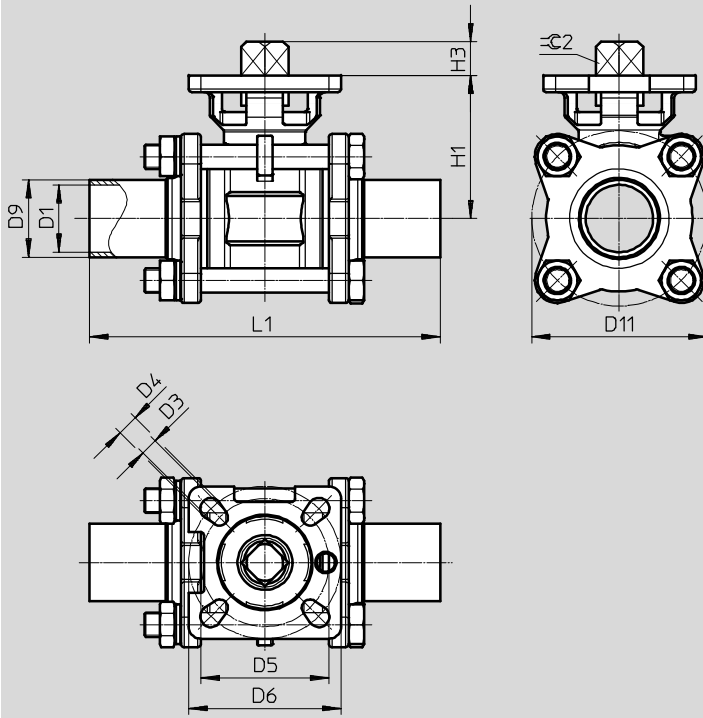
Technical data

FESTO

## Dimensions

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

With extended welded ends to ISO 1127 (W3) or to ASME BPE (W1)



Type	D1 ∅	D3 ∅	D4 ∅	D5 ∅	D6 ∅	D9 ∅	D11 ∅	H1	H3	L1 ±2	⊖C2
VZBD-1/2-W3-...	18.1	5.5	5.5	36	42	21.3	52	38.5	9	130	9
VZBD-3/4-W3-...	23.7	5.5	5.5	36	42	26.9	61.9	42.7	9	150	9
VZBD-1-W3-...	29.7	5.5	7	42	50	33.7	70	53.5	11	160	11
VZBD-11/4-W3-...	38.4	5.5	7	42	50	42.4	85	60.1	11	180	11
VZBD-11/2-W3-...	44.3	7	9	50	70	48.3	98.8	70.6	14	200	14
VZBD-2-W3-...	56.3	7	9	50	70	60.3	120	79.8	14	230	14
VZBD-21/2-W3-...	72.1	9	11	70	102	76.1	147	99.4	17	290	17

Type	D1 ∅	D3 ∅	D4 ∅	D5 ∅	D6 ∅	D9 ∅	D11 ∅	H1	H3	L1 ±2	⊖C2
VZBD-1/2-W1-...	9.6	5.5	5.5	36	42	12.7	45.5	34	9	90.7	9
VZBD-3/4-W1-...	15.8	5.5	5.5	36	42	19.1	47	35.3	11	103	9
VZBD-1-W1-...	22.1	5.5	7	42	50	25.4	57.5	47	11	115	11
VZBD-11/2-W1-...	34.8	7	9	50	70	38.1	83	63.5	14	139	14
VZBD-2-W1-...	47.7	7	9	50	70	50.8	100	72	14	158	14
VZBD-21/2-W1-...	60.3	9	11	70	102	63.5	126	90	17	197	17
VZBD-3-W1-...	72.9	9	11	70	102	76.2	148	99	17	228	17
VZBD-4-W1-...	97.5	11	13	102	125	101.6	183	127.5	22	241.8	22

# Ball valves VZBD, 2-way

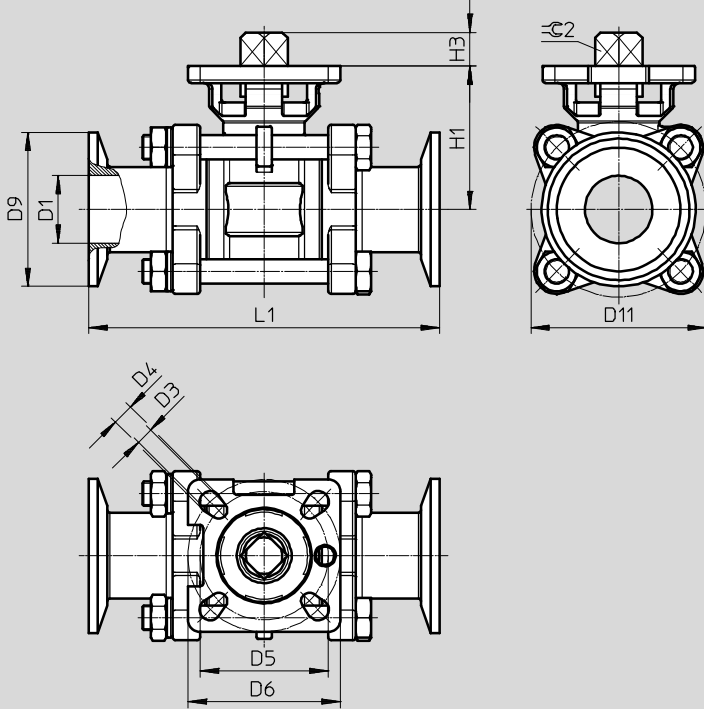
Technical data

FESTO

## Dimensions

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

With clamp ferrule to DIN 32676-B (S5) or to ASME-BPE (S1)



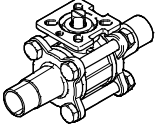
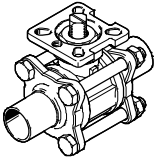
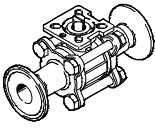
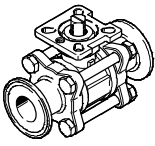
Type	D1 Ø	D3 Ø	D4 Ø	D5 Ø	D6 Ø	D9 Ø	D11 Ø	H1	H3	L1	⌀2
VZBD-1/2-S5-...	18.1	5.5	5.5	36	42	50.5	52	38.5	9	130	±2
VZBD-3/4-S5-...	23.7	5.5	5.5	36	42	50.5	61.9	42.7	9	150	9
VZBD-1-S5-...	29.7	5.5	7	42	50	50.5	70	53.5	11	160	11
VZBD-11/4-S5-...	38.4	5.5	7	42	50	64	85	60.1	11	180	11
VZBD-11/2-S5-...	44.3	7	9	50	70	64	98.8	70.6	14	200	14
VZBD-2-S5-...	56.3	7	9	50	70	77.5	120	79.8	14	230	14
VZBD-21/2-S5-...	72.1	9	11	70	102	91	147	99.4	17	290	17

Type	D1 Ø	D3 Ø	D4 Ø	D5 Ø	D6 Ø	D9 Ø	D11 Ø	H1	H3	L1	⌀2
VZBD-1/2-S1-...	9.6	5.5	5.5	36	42	25.4	45.5	34	9	90.7	±2
VZBD-3/4-S1-...	15.8	5.5	5.5	36	42	25.4	47	35.3	11	103	9
VZBD-1-S1-...	22.1	5.5	7	42	50	50.5	57.5	47	11	115	11
VZBD-11/2-S1-...	34.8	7	9	50	70	50.5	83	63.5	14	139	14
VZBD-2-S1-...	47.7	7	9	50	70	64	100	72	14	158	14
VZBD-21/2-S1-...	60.3	9	11	70	102	77.5	126	90	17	197	17
VZBD-3-S1-...	72.9	9	11	70	102	91	148	99	17	228	17
VZBD-4-S1-...	97.5	11	13	102	125	119	183	127.5	22	241.8	22

# Ball valves VZBD, 2-way

Technical data

FESTO

Ordering data						
	Standard	Nominal width DN	Flange hole pattern	Weight [g]	Part No.	Type
<b>Extended welded ends</b>						
	ISO 1127	15	F0304	730	4783595 <sup>1)</sup>	VZBD-1/2-W3-16-T-2-F0304-V14V14
		20	F0304	930	4783596 <sup>1)</sup>	VZBD-3/4-W3-16-T-2-F0304-V14V14
		25	F0405	1350	4783597 <sup>1)</sup>	VZBD-1-W3-16-T-2-F0405-V14V14
		32	F0405	2050	4783598 <sup>1)</sup>	VZBD-11/4-W3-16-T-2-F0405-V14V14
		40	F0507	3270	4783599 <sup>1)</sup>	VZBD-11/2-W3-16-T-2-F0507-V14V14
		50	F0507	5470	4783600 <sup>1)</sup>	VZBD-2-W3-16-T-2-F0507-V14V14
		65	F0710	10080	4783601 <sup>1)</sup>	VZBD-21/2-W3-16-T-2-F0710-V14V14
	ASME-BPE	1/2"	F0304	430	4762847 <sup>1)</sup>	VZBD-1/2-W1-16-T-2-F0304-V14V14
		3/4"	F0304	530	4762848 <sup>1)</sup>	VZBD-3/4-W1-16-T-2-F0304-V14V14
		1"	F0405	950	4762849 <sup>1)</sup>	VZBD-1-W1-16-T-2-F0405-V14V14
		1 1/2"	F0507	1970	4762850 <sup>1)</sup>	VZBD-11/2-W1-16-T-2-F0507-V14V14
		2"	F0507	3070	4762851 <sup>1)</sup>	VZBD-2-W1-16-T-2-F0507-V14V14
		2 1/2"	F0710	6180	4762852 <sup>1)</sup>	VZBD-21/2-W1-16-T-2-F0710-V14V14
		3"	F0710	9080	4762853 <sup>1)</sup>	VZBD-3-W1-16-T-2-F0710-V14V14
		4"	F1012	16180	4762854 <sup>1)</sup>	VZBD-4-W1-16-T-2-F1012-V14V14
<b>Clamp ferrule</b>						
	DIN 32676-B	15	F0304	830	4802244 <sup>1)</sup>	VZBD-1/2-S5-16-T-2-F0304-V14V14
		20	F0304	1130	4802245 <sup>1)</sup>	VZBD-3/4-S5-16-T-2-F0304-V14V14
		25	F0405	1550	4802246 <sup>1)</sup>	VZBD-1-S5-16-T-2-F0405-V14V14
		32	F0405	2250	4802247 <sup>1)</sup>	VZBD-11/4-S5-16-T-2-F0405-V14V14
		40	F0507	3370	4802248 <sup>1)</sup>	VZBD-11/2-S5-16-T-2-F0507-V14V14
		50	F0507	5670	4802249 <sup>1)</sup>	VZBD-2-S5-16-T-2-F0507-V14V14
		65	F0710	10680	4802250 <sup>1)</sup>	VZBD-21/2-S5-16-T-2-F0710-V14V14
	ASME-BPE	1/2"	F0304	430	4795666 <sup>1)</sup>	VZBD-1/2-S1-16-T-2-F0304-V14V14
		3/4"	F0304	530	4795667 <sup>1)</sup>	VZBD-3/4-S1-16-T-2-F0304-V14V14
		1"	F0405	950	4795668 <sup>1)</sup>	VZBD-1-S1-16-T-2-F0405-V14V14
		1 1/2"	F0507	1970	4795669 <sup>1)</sup>	VZBD-11/2-S1-16-T-2-F0507-V14V14
		2"	F0507	3070	4795670 <sup>1)</sup>	VZBD-2-S1-16-T-2-F0507-V14V14
		2 1/2"	F0710	6180	4795671 <sup>1)</sup>	VZBD-21/2-S1-16-T-2-F0710-V14V14
		3"	F0710	9080	4795672 <sup>1)</sup>	VZBD-3-S1-16-T-2-F0710-V14V14
		4"	F1012	16180	4795673 <sup>1)</sup>	VZBD-4-S1-16-T-2-F1012-V14V14

1) Festo is only a retailer of this product, not the manufacturer.

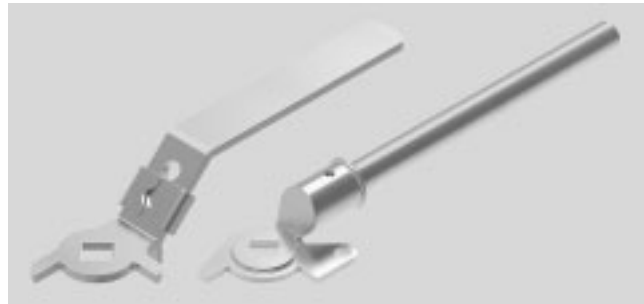
# Ball valves VZBD, 2-way

Accessories



## Hand lever VAOH

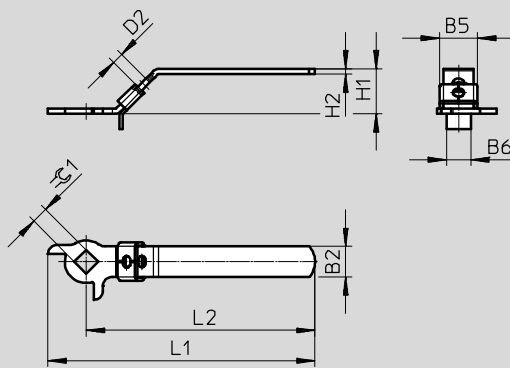
- High-alloy stainless steel
- Free of copper and PTFE
- RoHS compliant
- Contains paint-wetting impairment substances
- Lockable



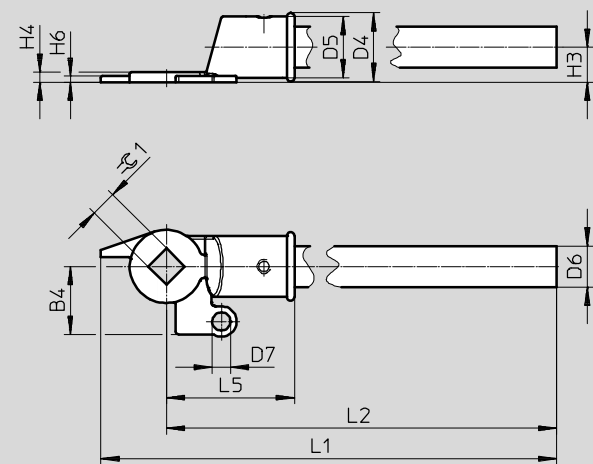
### Dimensions and ordering data

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

DN15 ... DN50



DN65 ... DN100



### Dimensions and ordering data

For connection	B2	B5	B6	D2 Ø	H1	H2	L1	L2	≙C1	CRC <sup>2)</sup>	Weight [g]	Part No.	Type
DN15 ... DN20	19	23.8	13	7.5	29	3	144.2	123	9	3	170	4895358 <sup>1)</sup>	VAOH-F8-9-H9-A
DN25 ... DN32	20	24.8	16	7.5	30	3.5	176.5	151.5	11	3	250	4895359 <sup>1)</sup>	VAOH-F8-11-H9-A
DN40 ... DN50	25	31	22	7.5	31	4	214	182	14	3	530	4895360 <sup>1)</sup>	VAOH-F8-14-H9-A

### Dimensions and ordering data

For connection	B4	D4 Ø	D5 Ø	D6 Ø	D7 Ø	H3	H4	H6	L1	L2	L5	≙C1	CRC <sup>2)</sup>	Weight [g]	Part No.	Type
DN65 ... DN80	44.5	45	40	27	12	23	6.5	4	387	344	84	17	3	820	4895361 <sup>1)</sup>	VAOH-F8-17-H9-A
DN100	53.5	45	40	27	14	25	8	5	442.5	389	89.5	22	3	920	4895363 <sup>1)</sup>	VAOH-F8-22-H9-A

1) Festo is only a retailer of this product, not the manufacturer.

2) Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional requirements for the surface and which are in direct contact with a normal industrial environment.



# Ball valves VZBF, 2-way

Type codes

VZBF - 1/2 - P1 - 20 - D - 2 - F0304 - - V15 V15

Type	
VZBF	Ball valve

Nominal width DN	
1/2	1/2"
3/4	3/4"
1	1"
1 1/4	1 1/4"
1 1/2	1 1/2"
2	2"
2 1/2	2 1/2"
3	3"
4	4"
6	6"
8	8"

Process valve connection type	
P1	Flange to ANSI 150

Nominal pressure	
20	20 bar

Design	
D	Two parts

Valve function	
2	2/2-way

Flanged connection to ISO 5211	
F0304	Hole pattern 03 and 04
F0405	Hole pattern 04 and 05
F0507	Hole pattern 05 and 07
F0710	Hole pattern 07 and 10
F1012	Hole pattern 10 and 12
F14	Hole pattern 14

Actuation type	
-	Via drive

Housing material	
V15	Stainless steel ASTM A351-CF8M/1.4408

Shut-off element material	
V15	Stainless steel ASTM A351-CF8M/1.4408
V16	Stainless steel ASTM A240-316/1.4401

# Ball valves VZBF, 2-way

Technical data



FESTO

Function



- 2-way ball valve made from stainless steel



-  Ring housing  
DN15 ... DN200
-  Flow rate  
8.5 ... 2078.3 m<sup>3</sup>/h

General technical data												
Nominal width DN	15	20	25	32	40	50	65	80	100	150	200	
Process valve connection	Flange to ANSI B16.5 class 150											
Valve function	2/2											
Design	2-way ball valve											
Sealing principle	Soft											
Type of actuation	Mechanical											
Switching position indication	Slot direction = flow direction											
Flow direction	Reversible											
Type of mounting	In-line installation											
Mounting position	Any											
Based on standard	ISO 5211 ANSI B16.5 class 150											
Breakaway torque at differential pressure, nominal pressure, process valve PN	[Nm]	8	10	12	20	30	40	60	90	130	250	500
Inside Ø	[mm]	15	20	24	30	38	50	64	76	98	150	200
Flow rate Kv	[m <sup>3</sup> /h]	8.5	15.6	23.2	37.3	61.6	111.8	187.9	264.5	453.8	1132.3	2078.3

Operating and environmental conditions												
Nominal width DN	15	20	25	32	40	50	65	80	100	150	200	
Nominal pressure of process valve PN	20											
Temperature of medium	[°C]	-20 ... +200										
Medium	Compressed air to ISO 8573-1:2010 [:::] Inert gases Water Vapour Neutral fluids											
Certification	CRN											
Corrosion resistance class CRC <sup>1)</sup>	4											
CE marking (see declaration of conformity) <sup>2)</sup>	-				To EU Pressure Equipment Directive							

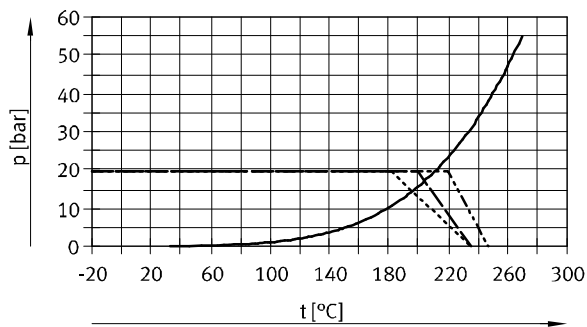
- 1) Corrosion resistance class CRC 4 to Festo standard FN 940070  
Particularly high corrosion stress. Outdoor exposure under extreme corrosive conditions. Parts exposed to aggressive media, for instance in the chemical or food industries. These applications may need to be supported by special tests (→ also FN 940082) using appropriate media.
- 2) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

# Ball valves VZBF, 2-way

Technical data

Materials		Material number
Housing	Stainless steel casting	1.4408 (ASTM A351-CF8M)
Ball	DN15 ... DN100	1.4408 (ASTM A351-CF8M)
	DN150 ... DN200	1.4401 (ASTM A240-316)
Shaft	High-alloy stainless steel	1.4401 (ASTM A240-316)
Seals	FPM	
	Graphite	
	PCTFE	
	PTFE	
Note on materials	RoHS compliant	
	Contains paint-wetting impairment substances	

## Permissible operating pressure p as a function of the temperature of the medium t



- Saturated water vapour
- - - - - PTFE, modified
- · - · - PTFE-reinforced
- · · · · PTFE

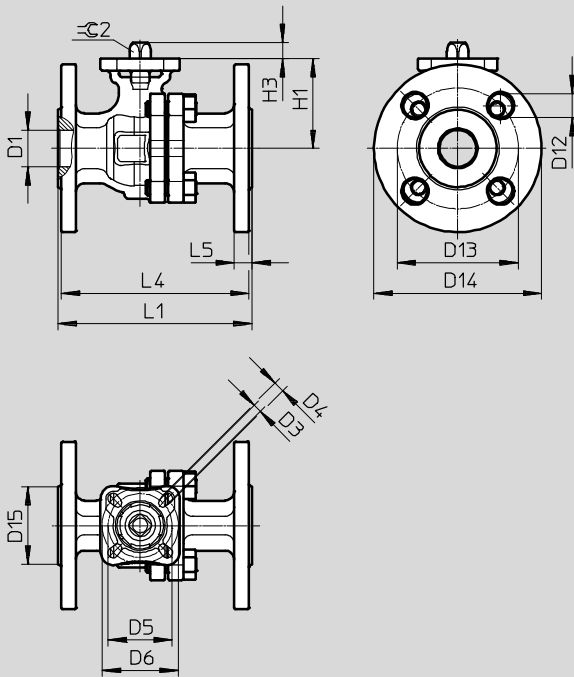
# Ball valves VZBF, 2-way

Technical data

FESTO

## Dimensions

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



Type	D1 Ø	D3 Ø	D4 Ø	D5 Ø	D6 Ø	D12 Ø	D13 Ø	D14 Ø	D15 Ø	H1	H3	L1 ±2	L4	L5	≡C2
VZBF-1/2-...	15	5.5	5.5	36	42	16	60.5	89	35	50.5	8.5	108	104.8	11.1	9
VZBF-3/4-...	20	5.5	5.5	36	42	16	70	98	43	55	8.5	117	113.8	11.6	9
VZBF-1-...	24	5.5	7	42	50	16	79.5	108	51	59	10.5	127.5	124.3	11.6	11
VZBF-11/4-...	30	5.5	7	42	50	16	89	117	64	62	10.5	140.5	137.3	12.7	11
VZBF-11/2-...	38	7	9	50	70	16	98.5	127	73	76	14	165	161.8	14.3	14
VZBF-2-...	50	7	9	50	70	19	120.5	152	92	84.5	14	178	174.8	16	14
VZBF-21/2-...	64	9	11	70	102	19	139.5	178	105	104.5	17	190.5	187.3	17.5	17
VZBF-3-...	76	9	11	70	102	19	152.5	190.5	127	111.5	17	203	199.8	19.1	17
VZBF-4-...	98	11	13	102	125	19	190.5	229	157	135.5	23	229	225.8	24	22
VZBF-6-...	150	11	13	102	125	22.4	241.5	279	216	201	27.5	394	390.8	25.4	27
VZBF-8-...	200	17	-	140	-	22.4	298.5	343	270	259	36	457	453.8	28.6	36

## Ordering data

	Nominal width DN	Weight [g]	Part No.	Type
	15	1550	4810851 <sup>1)</sup>	VZBF-1/2-P1-20-D-2-F0304-V15V15
	20	1950	4810852 <sup>1)</sup>	VZBF-3/4-P1-20-D-2-F0304-V15V15
	25	3050	4810853 <sup>1)</sup>	VZBF-1-P1-20-D-2-F0405-V15V15
	32	3550	4810854 <sup>1)</sup>	VZBF-11/4-P1-20-D-2-F0405-V15V15
	40	5630	4810855 <sup>1)</sup>	VZBF-11/2-P1-20-D-2-F0507-V15V15
	50	7630	4810856 <sup>1)</sup>	VZBF-2-P1-20-D-2-F0507-V15V15
	65	13650	4810857 <sup>1)</sup>	VZBF-21/2-P1-20-D-2-F0710-V15V15
	80	17350	4810859 <sup>1)</sup>	VZBF-3-P1-20-D-2-F0710-V15V15
	100	28100	4810860 <sup>1)</sup>	VZBF-4-P1-20-D-2-F1012-V15V15
	150	50200	4810861 <sup>1)</sup>	VZBF-6-P1-20-D-2-F1012-V15V16
	200	84200	4810862 <sup>1)</sup>	VZBF-8-P1-20-D-2-F14-V15V16

1) Festo is only a retailer of this product, not the manufacturer.

# Ball valves VZBF, 2-way

Accessories

FESTO

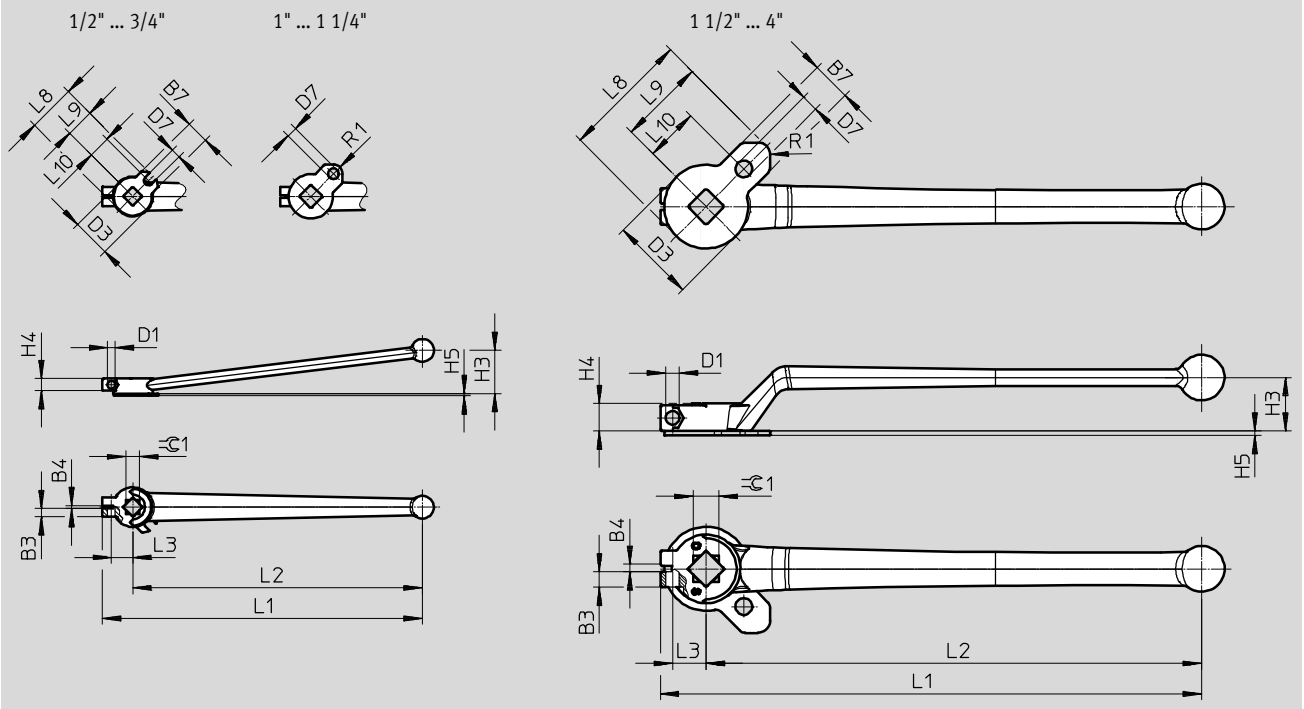
## Hand lever VAOH

- High-alloy stainless steel
- Free of copper and PTFE
- RoHS compliant
- Contains paint-wetting impairment substances
- Lockable



### Dimensions and ordering data

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



### Dimensions and ordering data

For connection	B3	B4	B7	D1	D3	D7	H3	H4	H5	L1	L2
1/2" ... 3/4"	5.5	2	15.8	5.2	25	6	28.3	8	1.5	210	190
1" ... 1 1/4"	5.5	2	17.8	5.2	29	7	28.3	8	1.8	210	190
1 1/2" ... 2"	5.5	3	26	6.2	35	8	30.5	13.5	2	260	235
2 1/2" ... 3"	10	4	27.5	9	55	11	35	18	3	355	325
4"	10	4	27.5	9	70	12	38	21	3	355	325

For connection	L3	L8	L9	L10	R1	⊖C1	CRC <sup>2)</sup>	Weight [g]	Part No.	Type
1/2" ... 3/4"	14	33.5	21.1	18	–	9	3	150	4895982 <sup>1)</sup>	VAOH-F9-9-H9-A
1" ... 1 1/4"	14	41.5	27	21	6	11	3	150	4895983 <sup>1)</sup>	VAOH-F9-11-H9-A
1 1/2" ... 2"	16.2	54	36.5	25	5	14	3	370	4895984 <sup>1)</sup>	VAOH-F9-14-H9-A
2 1/2" ... 3"	22	83.6	56.1	35	8	17	3	850	4895985 <sup>1)</sup>	VAOH-F9-17-H9-A
4"	22	102.7	67.7	51	7	22	3	900	4895986 <sup>1)</sup>	VAOH-F9-22-H9-A

1) Festo is only a retailer of this product, not the manufacturer.

2) Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional requirements for the surface and which are in direct contact with a normal industrial environment.

# Ball valves VZBF, 2-way

Accessories



## Hand lever VAOH

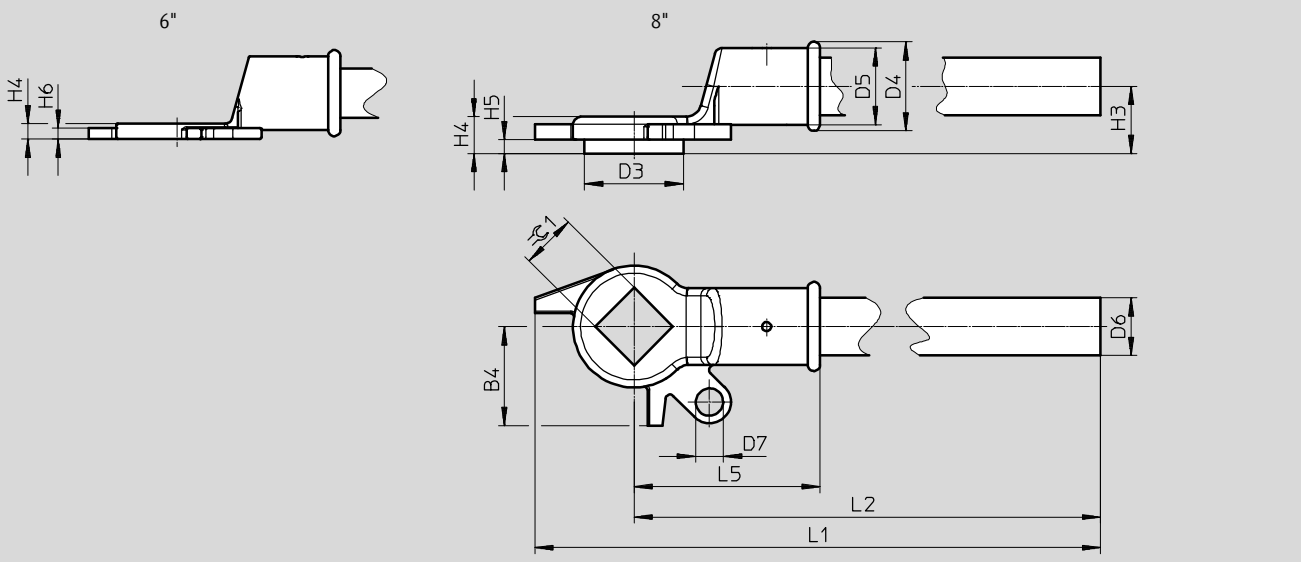
Information on materials:

- High-alloy stainless steel
- Free of copper and PTFE
- RoHS compliant
- Contains paint-wetting impairment substances



### Dimensions and ordering data

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



Dimensions and ordering data									
For connection	B4	D3	D4	D5	D6	D7	H3	H4	H5
6"	58	∅	∅ 56,5	∅ 48,5	∅ 32	∅ 14	30	10	-
8"	65	65	58,5	50,5	38	18	43,1	15	9

For connection	H6	L1	L2	L5	≈C1	CRC <sup>2)</sup>	Weight [g]	Part No.	Type
6"	7	815,1	757,1	107	27	3	1800	4895987 <sup>1)</sup>	VAOH-F9-27-H14-A
8"	10	928	863	122	36	3	3800	4895988 <sup>1)</sup>	VAOH-F9-36-H14-A

1) Festo is only a retailer of this product, not the manufacturer.

2) Corrosion resistance class CRC 3 to Festo standard FN 940070

High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional requirements for the surface and which are in direct contact with a normal industrial environment.

# Ball valves VZBC, 2-way, compact design

Type codes

VZBC – 15 – F F – 40 – 22 – F0304 – V4 V4 T

**Type**

VZBC	Ball valve
------	------------

**Nominal width DN**

15	DN15
20	DN20
25	DN25
32	DN32
40	DN40
50	DN50
65	DN65
80	DN80
100	DN100

**Connection type 1**

F	Flange to EN 1092-1
---	---------------------

**Connection type 2**

F	Flange to EN 1092-1
---	---------------------

**Process valve nominal pressure PN**

40	40 bar
16	16 bar

**Valve function**

22	2/2-way
----	---------

**Flanged connection to ISO 5211**

F0304	Hole pattern 03 and 04
F0405	Hole pattern 04 and 05
F0507	Hole pattern 05 and 07
F07	Hole pattern 07
F0710	Hole pattern 07 and 10

**Housing material**

V4	Stainless steel 1.4408
----	------------------------

**Shut-off element material**

V4	Stainless steel 1.4408
----	------------------------

**Sealing material**

T	PTFE-reinforced
---	-----------------

# Ball valves VZBC, 2-way, compact design



Technical data

FESTO



- 2-way ball valve made from stainless steel



-  - Ring housing  
DN15 ... DN100
-  - Flow rate  
19.4 ... 1414 m<sup>3</sup>/h

General technical data									
Process valve connection	Ring housing with threaded flange								
Nominal width DN	15	20	25	32	40	50	65	80	100
Valve function	2/2								
Design	2-way ball valve								
Sealing principle	Soft								
Actuation type	Mechanical								
Manual override	None								
Switching position indication	Slot direction = flow direction								
Flow direction	Reversible								
Type of mounting	In-line installation								
Mounting position	Any								
Based on standard	EN 1092-1 ISO 5211								
Actuating torque [Nm]	10	13	17	24	35	54	85	117	148
Inside diameter [mm]	15	20	25	32	38	50	64	76	96
Flow rate Kv [m <sup>3</sup> /h]	19.4	45.6	71.5	105	170	275	507	905	1414

Operating and environmental conditions									
Process valve connection	Ring housing with threaded flange								
Nominal width DN	15	20	25	32	40	50	65	80	100
Operating medium	Compressed air to ISO 8573-1:2010 [:-:-]								
Process valve operating medium	Neutral liquids								
	Inert gases								
	Water – no water vapour								
Process valve nominal pressure	PN 40						PN 16		
Temperature of medium [°C]	-10 ... +200								
Corrosion resistance class CRC <sup>1)</sup>	3								
CE marking (see declaration of conformity)	-			To EU Pressure Equipment Directive					
→ <a href="http://www.festo.com">www.festo.com</a>									

1) Corrosion resistance class CRC 3 to Festo standard FN 940070  
High corrosion stress. Outdoor exposure under moderate corrosive conditions. External visible parts with primarily functional requirements for the surface and which are in direct contact with a normal industrial environment.

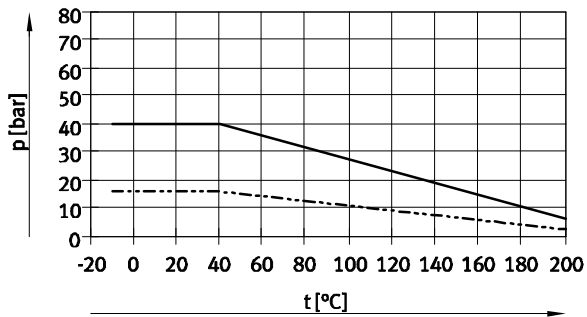


# Ball valves VZBC, 2-way, compact design

Technical data

Materials		Material number
Housing	High-alloy stainless steel	1.4408
Ball		1.4408
Shaft		1.4401
Seals	PTFE	
	PTFE-reinforced	
Note on materials	RoHS compliant	
	Contains paint-wetting impairment substances	

Permissible operating pressure p as a function of the temperature of the medium t



- DN15 ... DN50
- - - - - DN65 ... DN100

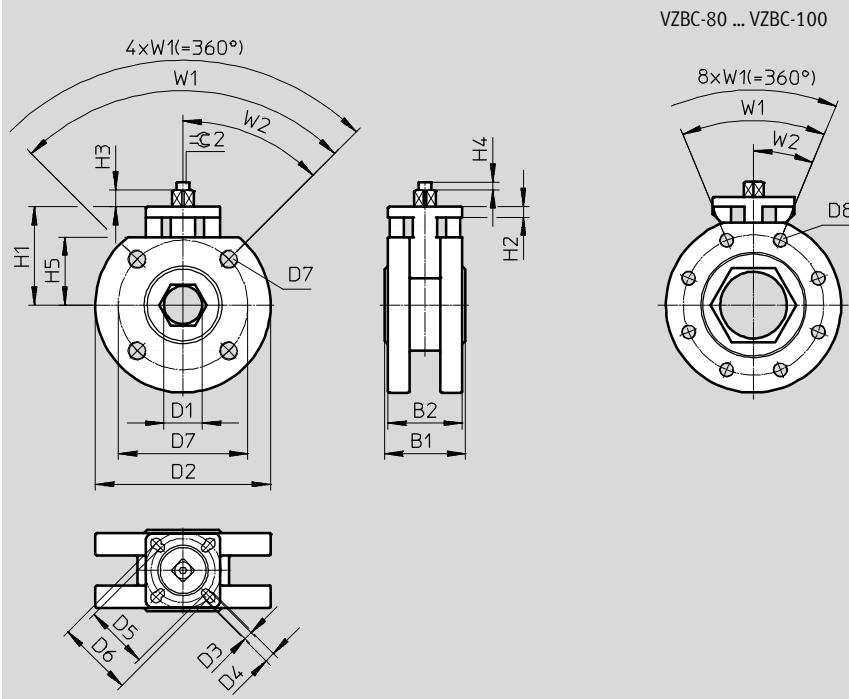
# Ball valves VZBC, 2-way, compact design

Technical data



## Dimensions

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




Type	B1	B2	D1	D2	D3	D4	D5	D6	D7
	+1.6		∅	∅	∅	∅	∅	∅	∅
				+5					
VZBC-15-FF-40-22-F0304-V4V4T	40	36	15	95	6	5.5	36	42	65
VZBC-20-FF-40-22-F0304-V4V4T	44	40	20	105	6	5.5	36	42	75
VZBC-25-FF-40-22-F0405-V4V4T	53	49	25	115	5.5	7	42	50	85
VZBC-32-FF-40-22-F0405-V4V4T	58.4	54.4	32	140	5.5	7	42	50	100
VZBC-40-FF-40-22-F0507-V4V4T	62	56	38	150	7	8.5	50	70	110
VZBC-50-FF-40-22-F0507-V4V4T	78	72	50	165	7	8.5	50	70	125
VZBC-65-FF-16-22-F07-V4V4T	100	94	64	185	-	9	-	70	145
VZBC-80-FF-16-22-F07-V4V4T	120	114	76	200	-	9	-	70	160
VZBC-100-FF-16-22-F0710-V4V4T	152	146	96	220	9	10.5	70	102	180

Type	D8	H1	H2	H3	H4	H5	W1	W2	≡C2
				+1.5 -0.5					-0.1
VZBC-15-FF-40-22-F0304-V4V4T	M12	60	6.3	7.86	5	34.5	90°	45°	9
VZBC-20-FF-40-22-F0304-V4V4T	M12	64.3	7	11	5	38.5	90°	45°	9
VZBC-25-FF-40-22-F0405-V4V4T	M12	64.6	7	11	5	44.6	90°	45°	11
VZBC-32-FF-40-22-F0405-V4V4T	M16	69	7	11	-	51	90°	45°	11
VZBC-40-FF-40-22-F0507-V4V4T	M16	76.3	7.2	17	-	55	90°	45°	14
VZBC-50-FF-40-22-F0507-V4V4T	M16	85.5	7.2	15.3	-	63	90°	45°	14
VZBC-65-FF-16-22-F07-V4V4T	M16	105	10.6	14	-	73.5	90°	45°	17
VZBC-80-FF-16-22-F07-V4V4T	M16	123	10.6	18	-	94	45°	22.5°	17
VZBC-100-FF-16-22-F0710-V4V4T	M16	132	12.6	15	-	105	45°	22.5°	17

## Ball valves VZBC, 2-way, compact design

FESTO

Technical data

Ordering data				
	Process valve connection	Weight [g]	Part No.	Type
	Ring housing with threaded flange	1500	<b>1692198</b>	VZBC-15-FF-40-22-F0304-V4V4T
		2100	<b>1692200</b>	VZBC-20-FF-40-22-F0304-V4V4T
		2600	<b>1692201</b>	VZBC-25-FF-40-22-F0405-V4V4T
		3700	<b>1692202</b>	VZBC-32-FF-40-22-F0405-V4V4T
		4400	<b>1692204</b>	VZBC-40-FF-40-22-F0507-V4V4T
		6200	<b>1692206</b>	VZBC-50-FF-40-22-F0507-V4V4T
		10000	<b>1692207</b>	VZBC-65-FF-16-22-F07-V4V4T
		14400	<b>1692208</b>	VZBC-80-FF-16-22-F07-V4V4T
		20600	<b>1692209</b>	VZBC-100-FF-16-22-F0710-V4V4T

# Ball valves VZBC, 2-way, compact design

Accessories

FESTO

## Hand lever VAOH

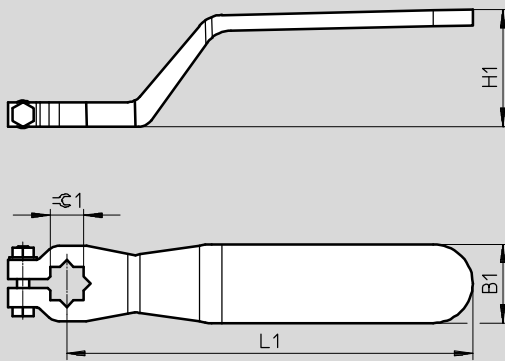
Information on materials:

- High-alloy stainless steel
- Free of copper and PTFE
- Contains paint-wetting impairment substances



### Dimensions and ordering data

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



For connection	B1 ±5	H1 ±5	L1 ±10	≈C1 ±0.5	Weight [g]	Part No.	Type
DN15 ... DN20	21	36	120	9	100	542702	VAOH-9-H9
DN25 ... DN32	26	40	140	11	200	542703	VAOH-11-H9
DN40 ... DN50	31	46	180	14	300	542704	VAOH-14-H9
DN65 ... DN100	36	55	240	17	450	542705	VAOH-17-H9

# Ball valves VAPB, 2-way

Type codes

VAPB - 1/2 - F - 40 - F03 -

Type	
VAPB	Ball valve

Connection to EN 10226-1	
1/4	Barrel with female thread Rp1/4
3/8	Barrel with female thread Rp3/8
1/2	Barrel with female thread Rp1/2
3/4	Barrel with female thread Rp3/4
1	Barrel with female thread Rp1
1 1/4	Barrel with female thread Rp1 1/4
1 1/2	Barrel with female thread Rp1 1/2
2	Barrel with female thread Rp2
2 1/2	Barrel with female thread Rp2 1/2

Connection type	
F	Female thread

Process valve nominal pressure PN	
25	PN 25
40	PN 40

Flange hole pattern to ISO 5211	
F03	1 bolt hole circle with $\varnothing$ 36 mm
F0304	2 bolt hole circles with $\varnothing$ 36 and 42 mm
F0405	2 bolt hole circles with $\varnothing$ 42 and 50 mm
F05	1 bolt hole circle with $\varnothing$ 50 mm
F07	1 bolt hole circle with $\varnothing$ 70 mm

Material	
-	Brass

# Ball valves VAPB, 2-way

Technical data

FESTO



- Blow-out proof shaft assembled from inside



- - Connecting thread  
Rp1/4 ... Rp21/2
- - Flow rate  
5.9 ... 535 m<sup>3</sup>/h

General technical data									
Connecting thread	Rp1/4	Rp3/8	Rp1/2	Rp3/4	Rp1	Rp11/4	Rp11/2	Rp2	Rp21/2
Nominal width DN	15	15	15	20	25	32	40	50	63
Valve function	2/2								
Design	2-way ball valve								
Sealing principle	Soft								
Actuation type	Mechanical								
Switching position indication	Slot direction = flow direction								
Flow direction	Reversible								
Type of mounting	In-line installation								
Mounting position	Any								
Based on standard	ISO 5211 EN 10226-1								
Working port 1, 2	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2
Internal 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	Rp11/4	Rp11/2	Rp2	Rp21/2	
Medium	Compressed air to ISO 8573-1:2010 [---] Neutral fluids Inert gases Water									
Process valve nominal pressure	PN 40	PN 40	PN 40	PN 40	PN 40	PN 40	PN 25	PN 25	PN 25	
Temperature of medium [°C]	-20 ... +150									
Breakaway torque at a differential pressure of 0 bar	3.1	3.1	3.1	4.6	6.5	10.8	13.5	20	30	
Breakaway torque at a differential pressure of 10 bar	3.5	3.5	3.5	5.1	7.2	11.9	14.9	22	33	
Breakaway torque at process valve differential pressure PN	5	5	5	6	8.5	15	19	29	45	
CE mark (see declaration of conformity) <sup>1)</sup>	-							To EU Pressure Equipment Directive		

1) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

# Ball valves VAPB, 2-way

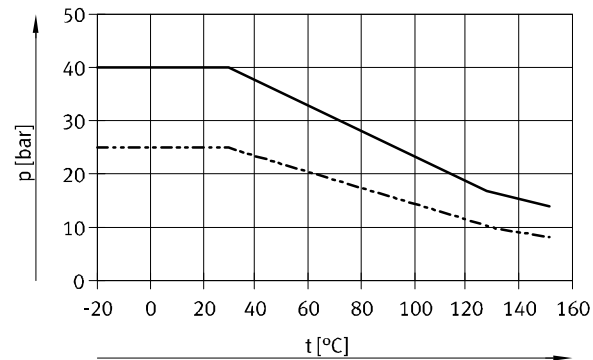
Technical data

Materials		Material number
Housing	Nickel-plated brass	CW617N
Ball	Brass, hard-chromium plated	Up to Rp1/2 CW614N, and above Rp3/4 CW617N
Shaft	Nickel-plated brass	CW614N
Seals	Ball	PTFE
		HNBR
	Shaft	PTFE
Note on materials	RoHS compliant	
	Contains paint-wetting impairment substances	

Torque <sup>1)</sup> [Nm]									
Connecting thread	Rp1/4	Rp3/8	Rp1/2	Rp3/4	Rp1	Rp11/4	Rp11/2	Rp2	Rp21/2
$\Delta p = 0$ bar	3.1	3.1	3.1	4.6	6.5	10.8	13.5	20	30
$\Delta p = 10$ bar	3.5	3.5	3.5	5.1	7.2	11.9	14.9	22	33
$\Delta p = p_N$	5	5	5	6	8.5	15	19	29	45

1) Torque required for actuating the ball valve

## Permissible operating pressure p as a function of the temperature of the medium t



— Rp1/4 ... Rp11/4  
 - - - Rp11/2 ... Rp21/2

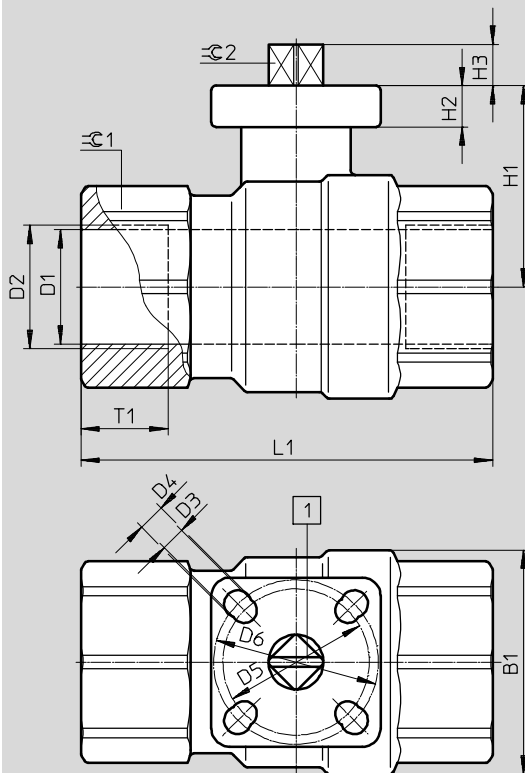
# Ball valves VAPB, 2-way

Technical data

FESTO

## Dimensions

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



1 Switching position indication: the slot direction corresponds to the flow direction.

Type	B1	D1 ∅ ±0.15	D2	D3 ∅	D4 ∅	D5 ∅	D6 ∅	H1	H2	H3	L1	T1	⌀1	⌀2
VAPB-1/4-F-40-F03	35	15	Rp1/4	5.5	-	36	-	40	9	9	75	15	26	9
VAPB-3/8-F-40-F03	35	15	Rp3/8	5.5	-	36	-	40	9	9	75	15	26	9
VAPB-1/2-F-40-F03	35	15	Rp1/2	5.5	-	36	-	40	9	9	75	15	26	9
VAPB-3/4-F-40-F03	45	20	Rp3/4	5.5	-	36	-	45	9	9	80	16	32	9
VAPB-1-F-40-F0304	55	25	Rp1	5.5	-	36	42	45	9	9	90	19	41	9
VAPB-1 1/4-F-40-F0405	65	32	Rp1 1/4	5.5	6.5	42	50	60	10	11	110	21	50	11
VAPB-1 1/2-F-40-F0405	75	40	Rp1 1/2	5.5	6.5	42	50	65	10	11	120	21	55	11
VAPB-2-F-25-F05	90	50	Rp2	6.5	-	50	-	75	12	14	140	25	70	14
VAPB-2 1/2-F-25-F07	110	65	Rp2 1/2	8.5	-	70	-	85	10	15.5	143	24	83	14

## Ordering data

Version	Process valve connection	Weight [g]	Part No.	Type
	Rp1/4	500	534302	VAPB-1/4-F-40-F03
	Rp3/8	500	534303	VAPB-3/8-F-40-F03
	Rp1/2	400	534304	VAPB-1/2-F-40-F03
	Rp3/4	500	534305	VAPB-3/4-F-40-F03
	Rp1	800	534306	VAPB-1-F-40-F0304
	Rp1 1/4	1300	534307	VAPB-1 1/4-F-40-F0405
	Rp1 1/2	1900	534308	VAPB-1 1/2-F-25-F0405
	Rp2	3100	534309	VAPB-2-F-25-F05
	Rp2 1/2	3100	534310	VAPB-2 1/2-F-25-F07



# Ball valves VAPB, 2-way

Accessories

## Hand lever VAOH

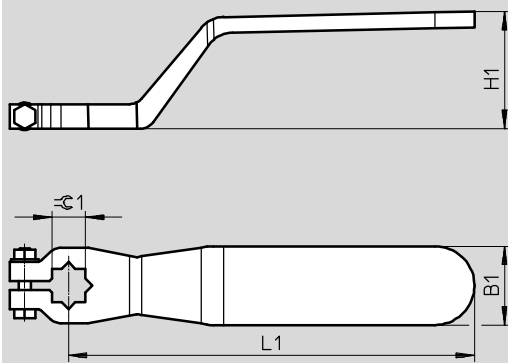
Information on materials:

- High-alloy stainless steel
- Free of copper and PTFE
- Contains paint-wetting impairment substances



### Dimensions and ordering data

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



For connection	B1 ±5	H1 ±5	L1 ±10	$\approx \text{C}1$ ±0.5	Weight [g]	Part No.	Type
Rp1/4 ... Rp1	21	36	120	9	100	542702	VAOH-9-H9
Rp11/4 ... Rp11/2	26	40	140	11	200	542703	VAOH-11-H9
Rp2 ... Rp21/2	31	46	180	14	300	542704	VAOH-14-H9

# Ball valves VZBM, 2-way

Type codes

FESTO

VZBM - 1/4 - RP - 40 - D - 2 - F03 - - B2 B3

Type	
VZBM	Ball valves

Nominal width DN	
1/4	DN8
3/8	DN10
1/2	DN15
3/4	DN20
1	DN25
1 1/4	DN32
1 1/2	DN40
2	DN50

Process valve connection type	
RP	Pipe thread to EN 10226-1

Nominal pressure	
25	25 bar
40	40 bar

Design	
D	Two parts

Valve function	
2	2/2-way

Flanged connection to ISO 5211	
F03	Hole pattern 03
F0305	Hole pattern 03 and 05

Actuation type	
-	Via drive

Housing material	
B2	Nickel-plated brass

Shut-off element material	
B3	Chrome-plated brass

# Ball valves VZBM, 2-way


Technical data


Function



- 2-way ball valve made from brass



-  - Connecting thread  
Rp1/4 ... Rp2

-  - Flow rate  
5.9 ... 243 m<sup>3</sup>/h

General technical data								
Connecting thread	Rp1/4	Rp3/8	Rp1/2	Rp3/4	Rp1	Rp11/4	Rp11/2	Rp2
Nominal width DN	8	10	15	20	25	32	40	50
Valve function	2/2							
Design	2-way ball valve							
Sealing principle	Soft							
Actuation type	Mechanical							
Switching position indication	Slot direction = flow direction							
Flow direction	Reversible							
Type of mounting	In-line installation							
Mounting position	Any							
Based on standard	ISO 5211 EN 10226-1							
Breakaway torque at differential pressure, nominal pressure, process valve PN [Nm]	2	2	3	3.5	4	5	7	10
Inside diameter [mm]	10	10	15	20	25	32	40	50
Flow rate Kv [m <sup>3</sup> /h]	5.9	9.4	15	28	39	84	156	243

Operating and environmental conditions								
Connecting thread	Rp1/4	Rp3/8	Rp1/2	Rp3/4	Rp1	Rp11/4	Rp11/2	Rp2
Process valve nominal pressure PN	40	40	25	25	25	25	25	25
Temperature of medium [°C]	-15 ... +90							
Medium	Compressed air to ISO 8573-1:2010 [:::]							
	Inert gases							
	Water – no water vapour							
	Neutral fluids							
CE mark (see declaration of conformity) <sup>1)</sup>	To EU Pressure Equipment Directive							

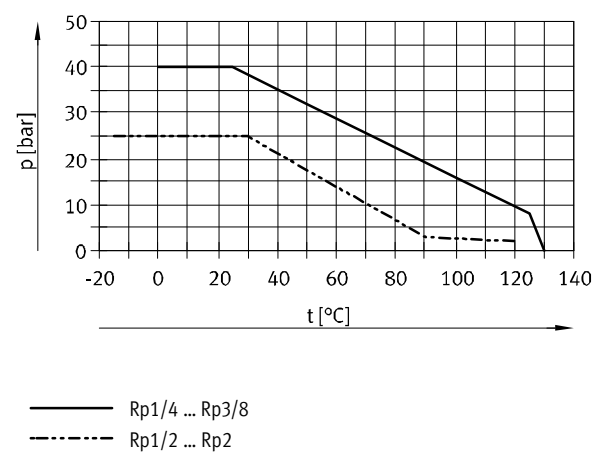
1) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

# Ball valves VZBM, 2-way

Technical data

Materials		Material number
Housing	Nickel-plated brass	CW617N
Ball	Rp1/4 ... Rp3/8	Chrome-plated brass
	Rp1/2 ... Rp2	Chrome-plated brass
Shaft	Rp1/4 ... Rp3/8	Brass
	Rp1/2 ... Rp2	Brass
Seals	Rp1/4 ... Rp3/8	PTFE
	Rp1/2 ... Rp2	PTFE
		FPM
Note on materials	RoHS compliant	
	Contains paint-wetting impairment substances	

## Permissible operating pressure p as a function of the temperature of the medium t



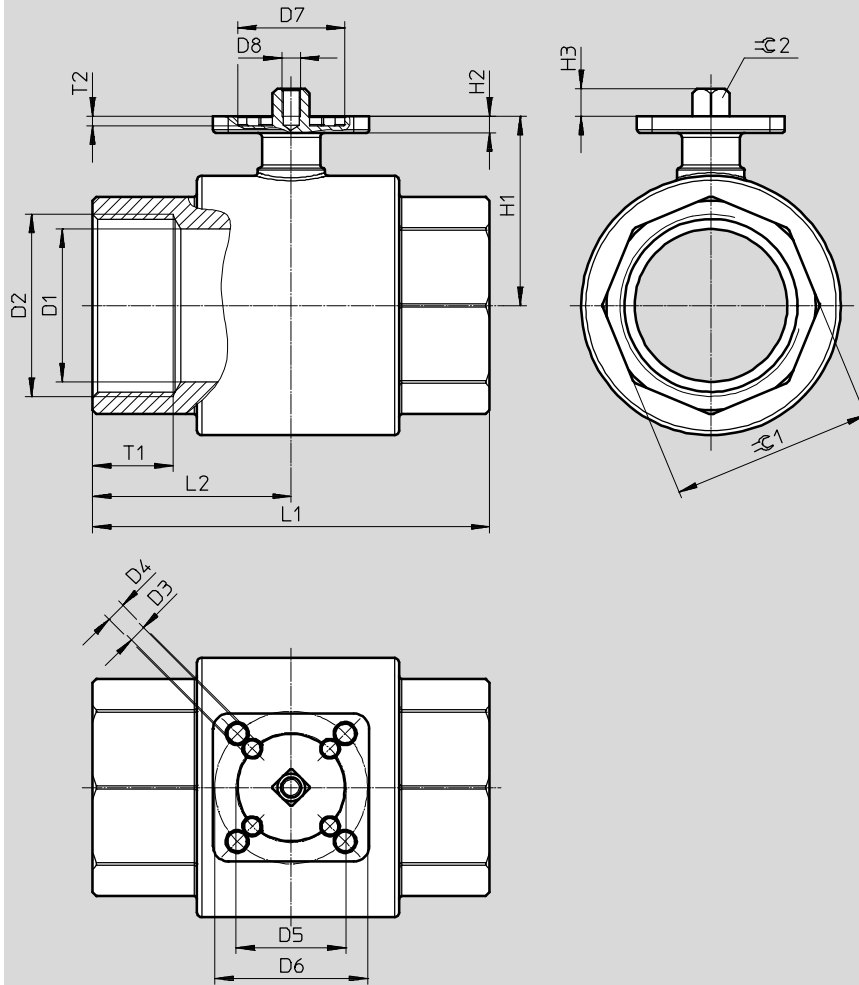
# Ball valves VZBM, 2-way

Technical data

FESTO

## Dimensions

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



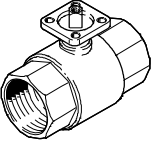
Type	D1 ∅ ±0.15	D2	D3 ∅ +0.2	D4 ∅ +0.2	D5 ∅ ±0.15	D6 ∅ ±0.15	D7 ∅	D8
VZBM-1/4-RP-40-D-2-F03-B2B3	10	Rp1/4	5.5	-	36	-	25 <sup>H8</sup>	M4
VZBM-3/8-RP-40-D-2-F03-B2B3	10	Rp3/8					25 <sup>H8</sup>	M4
VZBM-1/2-RP-25-D-2-F03-B2B3	15	Rp1/2					25.2±0.1	M6
VZBM-3/4-RP-25-D-2-F03-B2B3	20	Rp3/4					25.2±0.1	
VZBM-1-RP-25-D-2-F03-B2B3	25	Rp1					25.2±0.1	
VZBM-11/4-RP-25-D-2-F03-B2B3	32	Rp11/4					25.2±0.1	
VZBM-11/2-RP-25-D-2-F0305-B2B3	40	Rp11/2					35.2±0.1	
VZBM-2-RP-25-D-2-F0305-B2B3	50	Rp2					35.2±0.1	

Type	H1	H2	H3	L1 ±2	L2	T1 Min.	T2 ±0.1	⌀C1 ±1	⌀C2 h11
VZBM-1/4-RP-40-D-2-F03-B2B3	38	9	9	75	32.5	15	3.2	26	9
VZBM-3/8-RP-40-D-2-F03-B2B3	38	9		75	32.5				
VZBM-1/2-RP-25-D-2-F03-B2B3	32	5.5		61	30.5				
VZBM-3/4-RP-25-D-2-F03-B2B3	36			70	35	16.3			
VZBM-1-RP-25-D-2-F03-B2B3	44			84	42	19.1			
VZBM-11/4-RP-25-D-2-F03-B2B3	49			97	48.5	21.4			
VZBM-11/2-RP-25-D-2-F0305-B2B3	54			108	54	22			
VZBM-2-RP-25-D-2-F0305-B2B3	62			130	65	26.3			

## Ball valves VZBM, 2-way

Technical data

**FESTO**

Ordering data				
	Connecting thread	Weight [g]	Part No.	Type
	Rp1/4	412	4405646 <sup>1)</sup>	VZBM-1/4-RP-40-D-2-F03-B2B3
	Rp3/8	390	4405647 <sup>1)</sup>	VZBM-3/8-RP-40-D-2-F03-B2B3
	Rp1/2	206	4405648 <sup>1)</sup>	VZBM-1/2-RP-25-D-2-F03-B2B3
	Rp3/4	306	4405649 <sup>1)</sup>	VZBM-3/4-RP-25-D-2-F03-B2B3
	Rp1	473	4405650 <sup>1)</sup>	VZBM-1-RP-25-D-2-F03-B2B3
	Rp1 1/4	730	4405651 <sup>1)</sup>	VZBM-1 1/4-RP-25-D-2-F03-B2B3
	Rp1 1/2	1135	4405652 <sup>1)</sup>	VZBM-1 1/2-RP-25-D-2-F0305-B2B3
	Rp2	1770	4405653 <sup>1)</sup>	VZBM-2-RP-25-D-2-F0305-B2B3

1) Festo is only a retailer of this product, not the manufacturer.

# Ball valves VZBM, 2-way

Accessories

## Hand lever VAOH

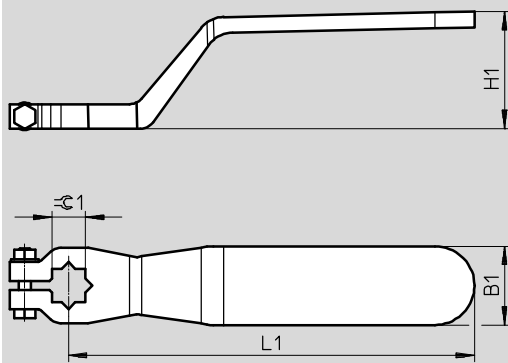
Information on materials:

- High-alloy stainless steel
- Free of copper and PTFE
- Contains paint-wetting impairment substances



### Dimensions and ordering data

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



For connection	B1	H1	L1	∅	Weight [g]	Part No.	Type
Rp1/4 ... Rp2	±5	±5	±10	±0.5	100	542702	VAOH-9-H9

# Ball valves VZBM, 3-way

Type codes

FESTO

VZBM - 2 - RP - 25 - F - 3L - F05 - - B2 B3

### Type

VZBM	Ball valves
------	-------------

### Nominal width DN

1/4	DN8
3/8	DN10
1/2	DN15
3/4	DN20
1	DN25
1 1/4	DN32
1 1/2	DN40
2	DN50

### Process valve connection type

RP	Pipe thread to EN 10226-1
----	---------------------------

### Nominal pressure

25	25 bar
40	40 bar

### Design

F	Four-part
---	-----------

### Valve function

3L	3/2-way, L-shaped bore
3T	3/2-way, T-shaped bore

### Flanged connection to ISO 5211

F03	Hole pattern 03
F0304	Hole pattern 03 and 04
F0405	Hole pattern 04 and 05
F05	Hole pattern 05

### Actuation type

-	Via drive
---	-----------

### Housing material

B2	Brass, nickel-plated/CW617N
----	-----------------------------

### Shut-off element material

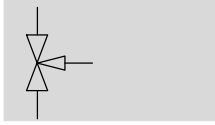
B3	Brass, chrome-plated/CW614N
----	-----------------------------



# Ball valves VZBM, 3-way

Technical data

Function



- With L-shaped bore or T-shaped bore



- - Connecting thread  
Rp1/4 ... Rp2

- - Flow rate  
5.9 ... 292 m<sup>3</sup>/h

General technical data								
Connecting thread	Rp1/4	Rp3/8	Rp1/2	Rp3/4	Rp1	Rp1 1/4	Rp1 1/2	Rp2
Nominal width DN	8	10	15	20	25	32	40	50
Valve function	3/2							
Design	3-way ball valve							
Sealing principle	Soft							
Type of actuation	Mechanical							
Switching position indication	Slot direction = flow direction							
Flow direction	Reversible							
Type of mounting	In-line installation							
Mounting position	Any							
Based on standard	ISO 5211 EN 10226-1							
Breakaway torque at differential pressure, nominal pressure, process valve PN [Nm]	6	6	6.9	8	11	16.7	26.7	36
Inside diameter [mm]	8	10	14.1	17.6	25	32	38	45
Flow rate Kv [m <sup>3</sup> /h]	5.9	9.4	17	41	70	121	200	292

Operating and environmental conditions								
Connecting thread	Rp1/4	Rp3/8	Rp1/2	Rp3/4	Rp1	Rp1 1/4	Rp1 1/2	Rp2
Process valve nominal pressure PN	40	40	40	40	40	40	25	25
Temperature of medium [°C]	-20 ... +130							
Medium	Compressed air to ISO 8573-1:2010 [:-:-] Inert gases Water – no water vapour Neutral fluids							
CE mark (see declaration of conformity) <sup>1)</sup>	To EU Pressure Equipment Directive							

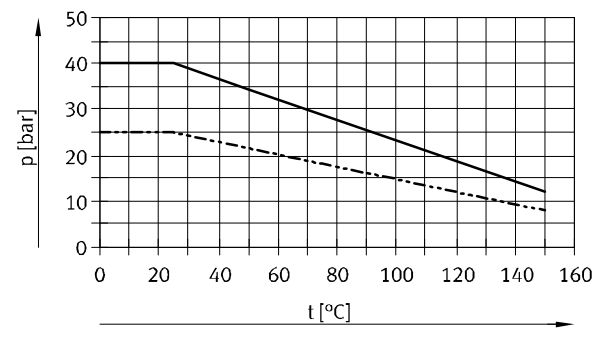
1) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

# Ball valves VZBM, 3-way

Technical data

Materials		Material number
Housing	Brass, nickel-plated	CW617N
Ball	Brass, chrome-plated	CW614N
Shaft	Brass	CW614N
Seals	PTFE	
	HNBR	
Note on materials	RoHS-compliant	
	Contains paint-wetting impairment substances	

## Permissible operating pressure p as a function of the temperature of the medium t



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

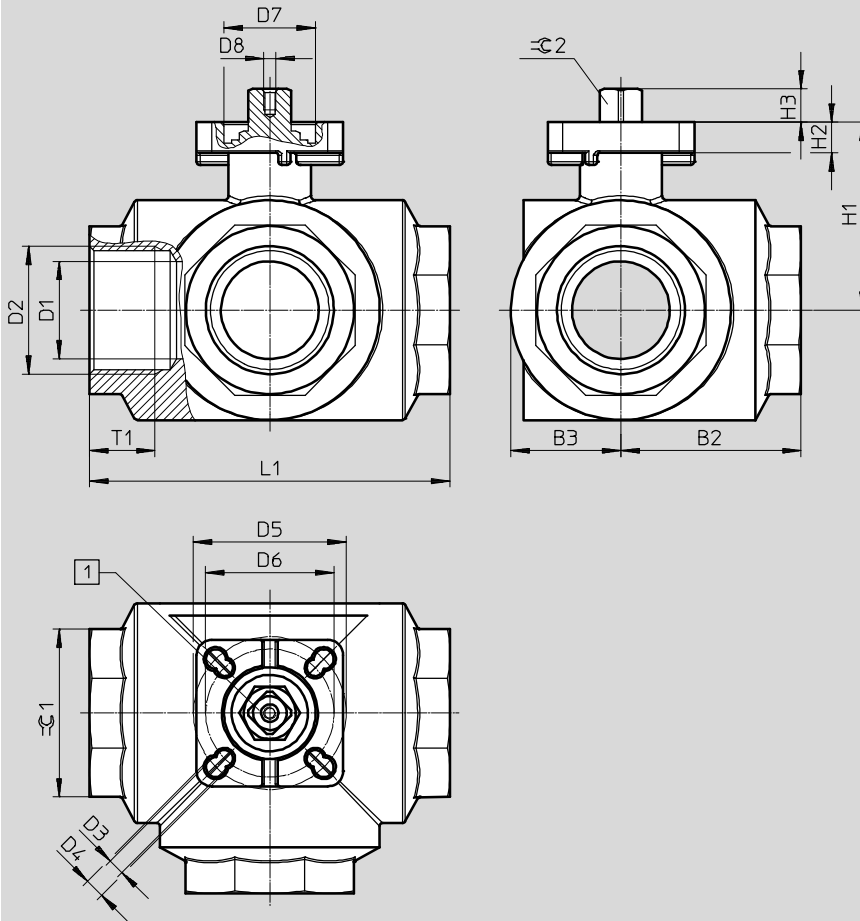
# Ball valves VZBM, 3-way

Technical data

FESTO

## Dimensions

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



1 Switching position indication: the slot direction corresponds to the flow direction → page 68

Type	B2	B2	D1 ∅	D2	D3 ∅	D4 ∅	D5 ∅	D6 ∅	D7 ∅ H8	D8				
VZBM-1/4-RP-40-F-3...-F03-B2B3	32.5	17	8	Rp1/4	5.5	-	36	-	25	M4				
VZBM-3/8-RP-40-F-3...-F03-B2B3			10	Rp3/8										
VZBM-1/2-RP-40-F-3...-F03-B2B3			14.1	Rp1/2										
VZBM-3/4-RP-40-F-3...-F03-B2B3	38	21.5	17.6	Rp3/4							42			
VZBM-1-RP-40-F-3...-F0304-B2B3	48.5	26	25	Rp1										
VZBM-11/4-RP-40-F-3...-F0405-B2B3	59	36.5	32	Rp1 1/4							5.5	42	50	30
VZBM-11/2-RP-25-F-3...-F0405-B2B3	67.5	38	38	Rp1 1/2							6.5	50	-	35
VZBM-2-RP-25-F-3...-F05-B2B3	78.5	43	45	Rp2										

Type	H1	H2	H3	L1	T1	$\approx C1$	$\approx C2$				
				±2	Min.		-0.1				
VZBM-1/4-RP-40-F-3...-F03-B2B3	38	9	9	64.5	15	25	9				
VZBM-3/8-RP-40-F-3...-F03-B2B3				76	16.3	31					
VZBM-1/2-RP-40-F-3...-F03-B2B3											
VZBM-3/4-RP-40-F-3...-F03-B2B3	42	10	11	97	21.4	55	11				
VZBM-1-RP-40-F-3...-F0304-B2B3	46.5			118							
VZBM-11/4-RP-40-F-3...-F0405-B2B3	61.3			134.5							
VZBM-11/2-RP-25-F-3...-F0405-B2B3	63.5			157							
VZBM-2-RP-25-F-3...-F05-B2B3	74			12				14	25.7	67	14

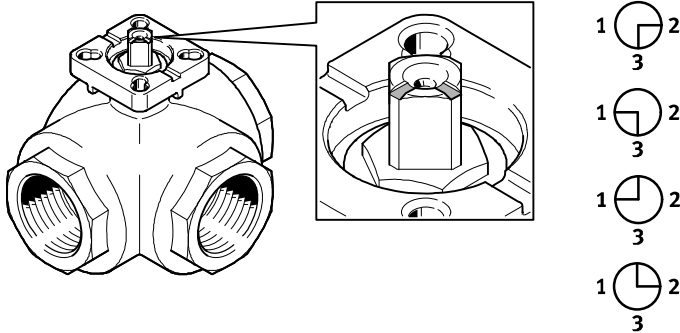
# Ball valves VZBM, 3-way

Technical data

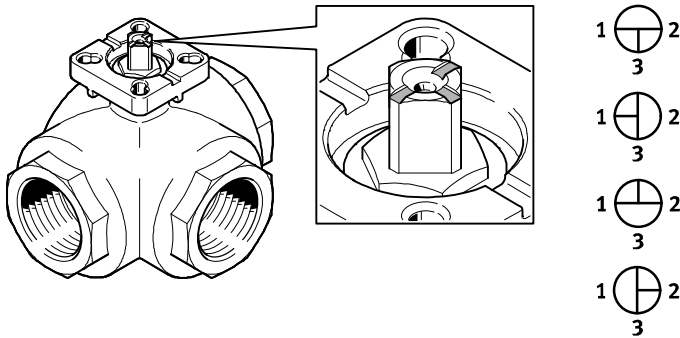
FESTO

## Switching position indication

L-hole



T-hole



## Ordering data

	Version	Connecting thread	Weight [g]	Part No.	Type
	L-hole	Rp1/4	530	4451869 <sup>1)</sup>	VZBM-1/4-RP-40-F-3L-F03-B2B3
		Rp3/8	500	4451868 <sup>1)</sup>	VZBM-3/8-RP-40-F-3L-F03-B2B3
		Rp1/2	460	4451867 <sup>1)</sup>	VZBM-1/2-RP-40-F-3L-F03-B2B3
		Rp3/4	720	4451866 <sup>1)</sup>	VZBM-3/4-RP-40-F-3L-F03-B2B3
		Rp1	1280	4451862 <sup>1)</sup>	VZBM-1-RP-40-F-3L-F0304-B2B3
		Rp1 1/4	3000	4451863 <sup>1)</sup>	VZBM-11/4-RP-40-F-3L-F0405-B2B3
		Rp1 1/2	3260	4451864 <sup>1)</sup>	VZBM-11/2-RP-25-F-3L-F0405-B2B3
		Rp2	4470	4451865 <sup>1)</sup>	VZBM-2-RP-25-F-3L-F05-B2B3
	T-hole	Rp1/4	530	4451861 <sup>1)</sup>	VZBM-1/4-RP-40-F-3T-F03-B2B3
		Rp3/8	460	4451854 <sup>1)</sup>	VZBM-3/8-RP-40-F-3T-F03-B2B3
		Rp1/2	460	4451855 <sup>1)</sup>	VZBM-1/2-RP-40-F-3T-F03-B2B3
		Rp3/4	710	4451856 <sup>1)</sup>	VZBM-3/4-RP-40-F-3T-F03-B2B3
		Rp1	1250	4451857 <sup>1)</sup>	VZBM-1-RP-40-F-3T-F0304-B2B3
		Rp1 1/4	2930	4451858 <sup>1)</sup>	VZBM-11/4-RP-40-F-3T-F0405-B2B3
		Rp1 1/2	3190	4451859 <sup>1)</sup>	VZBM-11/2-RP-25-F-3T-F0405-B2B3
Rp2	4320	4451860 <sup>1)</sup>	VZBM-2-RP-25-F-3T-F05-B2B3		

1) Festo is only a retailer of this product, not the manufacturer.

# Ball valves VZBM, 3-way

Accessories



## Hand lever VAOH

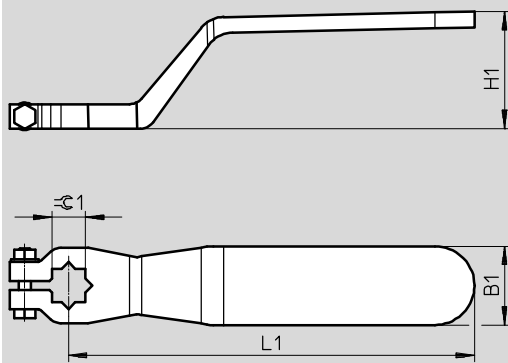
Information on materials:

- High-alloy stainless steel
- Free of copper and PTFE
- Contains paint-wetting impairment substances



### Dimensions and ordering data

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



For connection	B1 ±5	H1 ±5	L1 ±10	$\varnothing C1$ ±0.5	Weight [g]	Part No.	Type
Rp1/4 ... Rp1	21	36	120	9	100	542702	VAOH-9-H9
Rp1 1/4 ... Rp1 1/2	26	40	140	11	200	542703	VAOH-11-H9
Rp2	31	46	180	14	300	542704	VAOH-14-H9

# Ball valves VZBM, manual

Type codes

VZBM - 1/4 - RP - 40 - D - 2 - - M - B2 B3

**Type**

VZBM	Ball valves
------	-------------

**Nominal width DN**

1/4	DN8
3/8	DN10
1/2	DN15
3/4	DN20
1	DN25
1 1/4	DN32
1 1/2	DN40

**Process valve connection type**

RP	Pipe thread to EN 10226-1
----	---------------------------

**Nominal pressure**

40	40 bar
50	50 bar

**Design**

D	Two parts
---	-----------

**Valve function**

2	2/2-way
---	---------

**Flanged connection to ISO 5211**

-	Without
---	---------

**Actuation type**

M	With hand lever
---	-----------------

**Housing material**

B2	Nickel-plated brass
----	---------------------

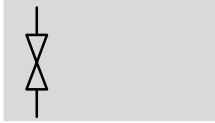
**Shut-off element material**

B3	Chrome-plated brass
----	---------------------

# Ball valves VZBM, manual


Technical data


Function



- With hand lever



-  - Connecting thread  
Rp1/4 ... Rp11/2

-  - Flow rate  
6 ... 156 m<sup>3</sup>/h

General technical data							
Process valve connection	Rp1/4	Rp3/8	Rp1/2	Rp3/4	Rp1	Rp11/4	Rp11/2
Nominal width DN	8	10	15	20	25	32	40
Valve function	2/2						
Design	2-way ball valve						
Sealing principle	Soft						
Actuation type	Mechanical						
Switching position indication	Slot direction = flow direction						
Flow direction	Reversible						
Type of mounting	In-line installation						
Mounting position	Any						
Based on standard	EN 10226-1						
Actuating torque at differential pressure, nominal pressure, process valve [Nm]	7.5	7.5	9	20	25	37	50
Inside diameter [mm]	10	10	15	20	25	32	40
Flow rate Kv [m <sup>3</sup> /h]	6	8	15	28	39	84	156

Operating and environmental conditions							
Process valve connection	Rp1/4	Rp3/8	Rp1/2	Rp3/4	Rp1	Rp11/4	Rp11/2
Process valve nominal pressure PN	50	50	50	50	40	40	40
Temperature of medium [°C]	-15 ... +120						
Medium	Compressed air to ISO 8573-1:2010 [:-:-]						
	Inert gases						
	Water – no water vapour						
	Neutral fluids						
Certification	DVGW Gas						
	DVGW Water						
CE mark (see declaration of conformity) <sup>1)</sup>	To EU Pressure Equipment Directive						

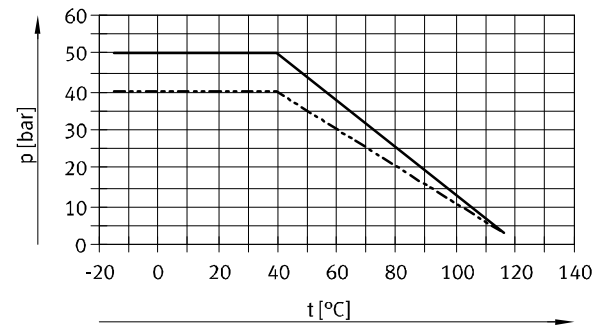
1) Additional information [www.festo.com/sp](http://www.festo.com/sp) → Certificates.

# Ball valves VZBM, manual

Technical data

Materials		Material number
Housing	Nickel-plated brass	CW617N
Ball	Chrome-plated brass	CW617N
Shaft	Brass	CW617N
Seals	PTFE	
	NBR	
Note on materials	RoHS compliant	
	Contains paint-wetting impairment substances	

## Permissible operating pressure p as a function of the temperature of the medium t



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



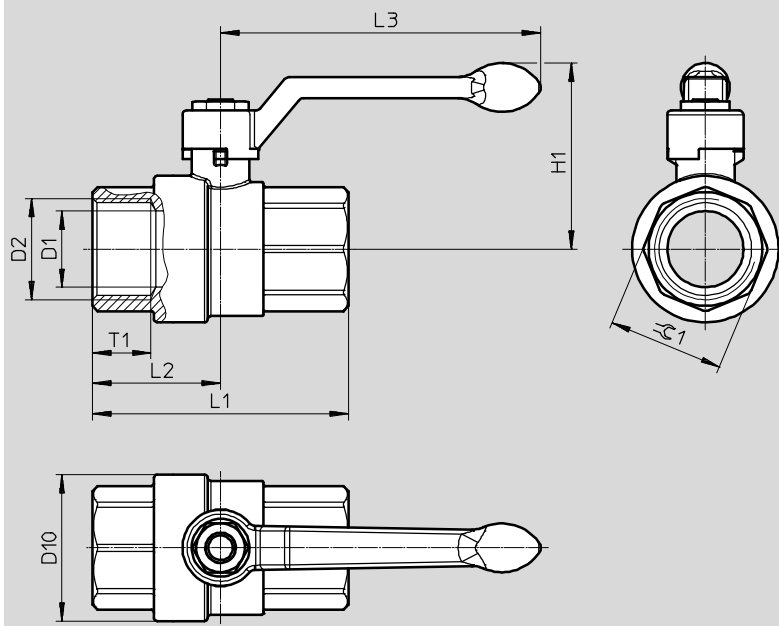
# Ball valves VZBM, manual

Technical data

FESTO

## Dimensions

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



Type	D1 ∅	D2	D10 ∅	H1	L1	L2	L3	T1 Min.	$\varnothing C1$
VZBM-1/4-RP-50-D-2-M-B2B3	10	Rp1/4	23	41	49	23	85	12	18
VZBM-3/8-RP-50-D-2-M-B2B3	10	Rp3/8	24	41	50.5	23.5	85	12	21
VZBM-1/2-RP-50-D-2-M-B2B3	15	Rp1/2	32	49	61	30.5	85	15	26
VZBM-3/4-RP-50-D-2-M-B2B3	20	Rp3/4	40	57	69.5	35	105	16.3	32
VZBM-1-RP-50-D-2-M-B2B3	25	Rp1	48	61	84	42	105	19.1	38
VZBM-11/4-RP-40-D-2-M-B2B3	32	Rp11/4	60	75	98	49	130	21.4	47
VZBM-11/2-RP-40-D-2-M-B2B3	40	Rp11/2	72.5	81	108	54	130	22	54

## Ordering data

	Connecting thread	Weight [g]	Part No.	Type
	Rp1/4	130	4405684 <sup>1)</sup>	VZBM-1/4-RP-50-D-2-M-B2B3
	Rp3/8	120	4405685 <sup>1)</sup>	VZBM-3/8-RP-50-D-2-M-B2B3
	Rp1/2	200	4405686 <sup>1)</sup>	VZBM-1/2-RP-50-D-2-M-B2B3
	Rp3/4	335	4405687 <sup>1)</sup>	VZBM-3/4-RP-50-D-2-M-B2B3
	Rp1	480	4405689 <sup>1)</sup>	VZBM-1-RP-50-D-2-M-B2B3
	Rp11/4	770	4405690 <sup>1)</sup>	VZBM-11/4-RP-40-D-2-M-B2B3
	Rp11/2	1116	4405691 <sup>1)</sup>	VZBM-11/2-RP-40-D-2-M-B2B3

1) Festo is only a retailer of this product, not the manufacturer.

# Ball valves VZBM, manual

Accessories



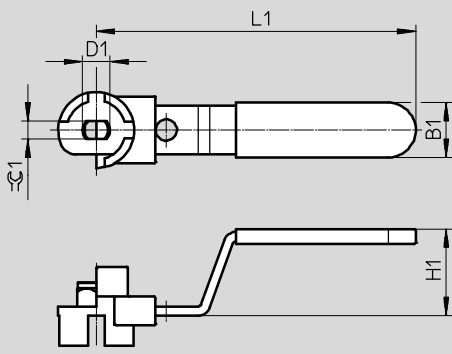
## Hand lever VAOH

- Galvanised steel
- Free of copper and PTFE
- Contains paint-wetting impairment substances
- RoHS compliant
- Lockable for VZBM, manual



### Dimensions and ordering data

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



For connection	B1	D1 ∅	H1	L1	≈ 1	Weight [g]	Part No.	Type
Rp1/4 ... Rp1/2	16	7	24.5	89	5	50	4650069 <sup>1)</sup>	VAOH-F10-D7-H9-A
Rp3/4 ... Rp1	18	9	28.5	105	6	75	4650070 <sup>1)</sup>	VAOH-F10-D9-H9-A
Rp11/4 ... Rp11/2	22	12	32	130	8	145	4650071 <sup>1)</sup>	VAOH-F10-D12-H9-A

1) Festo is only a retailer of this product, not the manufacturer.

# Ball valves QH, manual

Type codes

		QH	-	1/4	-	
<b>Type</b>						
QH	Ball valve					
<b>Pneumatic port 1</b>						
1/4	Female thread G1/4					
3/8	Female thread G3/8					
1/2	Female thread G1/2					
3/4	female thread G3/4					
1	Female thread G1					
1 1/2	Female thread G1 1/2					
<b>Pneumatic port 2</b>						
-	Same connection size as pneumatic port 1					

# Ball valves QH, manual


## Technical data


### Function



- With hand lever
- Pipe thread to ISO 228-1




-  - Connecting thread  
G1/4 ... G11/2

-  - Standard nominal flow rate  
3400 ... 84000 l/min

General technical data						
Pneumatic port 1	G1/4	G3/8	G1/2	G3/4	G1	G11/2
Pneumatic port 2	G1/4	G3/8	G1/2	G3/4	G1	G11/2
Nominal width [mm]	10	10	15	20	25	40
Design	Ball valve					
Type of mounting	In-line installation					
Mounting position	Any					
Valve function	2/2-way valve, double solenoid					
Type of actuation	Manual					
Sealing principle	Soft					
Standard nominal flow rate [l/min] qnN	3400	7500	11500	21000	33000	84000

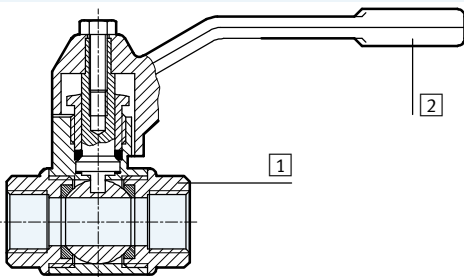
Operating and environmental conditions	
Medium <sup>1)</sup>	Compressed air according to ISO 8573-1:2010 [7:-:-] Water
Note on operating/pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)
Ambient temperature [°C]	-20 ... +180

1) Other media on request

-  - Note  
Not permitted for toxic gases such as natural gas, mains gas etc.

## Materials

### Sectional view



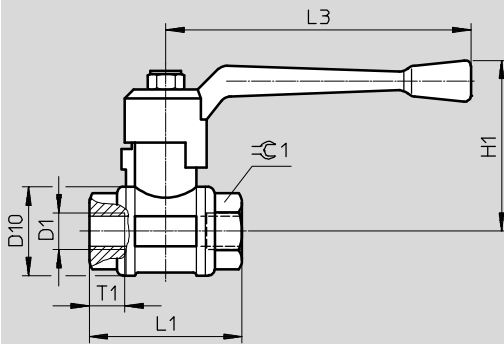
Ball valve		
1	Housing	Brass
2	Lever	Aluminium

# Ball valves QH, manual

Technical data

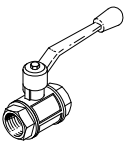
## Dimensions – Female thread at both ends

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



Type	D1	D10 Ø	H1	L1	L3	T1	∠ 1
QH-1/4	G1/4	30	56	52	100	11.5	21.5
QH-3/8	G3/8	30	56	52	100	11.5	21.5
QH-1/2	G1/2	35	59	64	100	15	27
QH-3/4	G3/4	44	72	74	120	16.3	32
QH-1	G1	51	77	88	120	19.1	41
QH-11/2	G1 1/2	73	100	105.5	150	21.4	55

## Ordering data

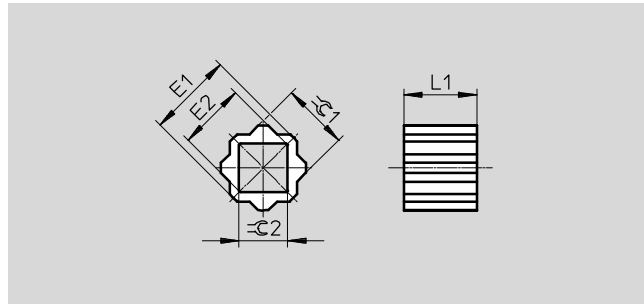
Version	Pneumatic port	Pneumatic port		Weight [g]	Part No.	Type
		1	2			
	Female thread at both ends	G1/4	G1/4	175	9541	QH-1/4
		G3/8	G3/8	180	9542	QH-3/8
		G1/2	G1/2	340	9543	QH-1/2
		G3/4	G3/4	590	9544	QH-3/4
		G1	G1	815	9545	QH-1
		G1 1/2	G1 1/2	1750	6837	QH-11/2

# Ball valves

Accessories

## Reducing sleeve square DARQ

- Connection 1, function drive outlet
- Connection 2, function reducing outlet
- Material: Sintered stainless steel
- RoHS-compliant
- Contains paint-wetting impairment substances



DARQ-R-A-...	E1 +0.1/-0.3	E2 +0.3/-0.1	L1 ±0.2	⌀ 1 -0.02/-0.12	⌀ 2 +0.04/+0.18
S11-S8-...	14	11	12	11	8
S11-S9-...	14	12.3	11	11	9
S14-S8-...	18	11	16	14	8
S14-S9-...	18	12.3	16	14	9
S14-S10-...	18	13.3	16	14	10
S14-S11-...	18	14.3	16	14	11
S14-S12-...	18	16.3	16	14	12
S17-S8-...	22	11	17	17	8
S17-S11-...	22	14.3	17	17	11
S17-S12-...	22	16.3	17	17	12
S17-S14-...	22	18.3	17	17	14
S22-S11-...	28	14.3	22	22	11
S22-S14-...	28	18.3	22	22	14
S22-S16-...	28	21.3	22	22	16
S22-S17-...	28	22.3	22	22	17
S27-S17-...	36	22.3	27	27	17
S27-S22-...	36	28.5	27	27	22
S36-S27-...	48	36.1	36	36	27
S46-S36-...	59	48	46	46	36

# Ball valves

Accessories

FESTO

Ordering data									
Design	Connection		Length [mm]	CRC <sup>1)</sup>	Weight/piece [g]	Part No.	Type	PU <sup>2)</sup>	
	Drive outlet	Reducing outlet							
Internal square and external octagon	Size 11	Size 8	12	2	7	8082116	DARQ-R-A-S11-S8-12	1	
	Size 11	Size 9	11		5	8082117	DARQ-R-A-S11-S9-11		
	Size 14	Size 8	16		20	8086383	DARQ-R-A-S14-S8-16		
	Size 14	Size 9	16		18	8082118	DARQ-R-A-S14-S9-16		
	Size 14	Size 10	16		16	8082119	DARQ-R-A-S14-S10-16		
	Size 14	Size 11	16		13	8082120	DARQ-R-A-S14-S11-16		
	Size 14	Size 12	16		10	8082121	DARQ-R-A-S14-S12-16		
	Size 17	Size 8	17		36	8086384	DARQ-R-A-S17-S8-17		
	Size 17	Size 11	17		29	8082122	DARQ-R-A-S17-S11-17		
	Size 17	Size 12	17		25	8086385	DARQ-R-A-S17-S12-17		
	Size 17	Size 14	17		19	8082123	DARQ-R-A-S17-S14-17		
	Size 22	Size 11	22		75	8086386	DARQ-R-A-S22-S11-22		
	Size 22	Size 14	22		62	8082124	DARQ-R-A-S22-S14-22		
	Size 22	Size 16	22		52	8082125	DARQ-R-A-S22-S16-22		
	Size 22	Size 17	22		46	8082126	DARQ-R-A-S22-S17-22		
	Size 27	Size 17	27		121	8086387	DARQ-R-A-S27-S17-27		
	Size 27	Size 22	27		80	8082127	DARQ-R-A-S27-S22-27		
	Size 36	Size 27	36		215	8082128	DARQ-R-A-S36-S27-36		
	Size 46	Size 36	46		410	8082129	DARQ-R-A-S46-S36-46		
	Size 11	Size 8	12		35	8082130	DARQ-R-A-S11-S8-12-P5	5	
	Size 11	Size 9	11		25	8082131	DARQ-R-A-S11-S9-11-P5		
	Size 14	Size 8	16		100	8086388	DARQ-R-A-S14-S8-16-P5		
	Size 14	Size 9	16		90	8082132	DARQ-R-A-S14-S9-16-P5		
	Size 14	Size 11	16		65	8082133	DARQ-R-A-S14-S11-16-P5		
	Size 17	Size 11	17		145	8082134	DARQ-R-A-S17-S11-17-P5		
	Size 17	Size 12	17		125	8086389	DARQ-R-A-S17-S12-17-P5		
	Size 17	Size 14	17		95	8082135	DARQ-R-A-S17-S14-17-P5		
	Size 22	Size 14	22		310	8082136	DARQ-R-A-S22-S14-22-P5		
	Size 22	Size 17	22		230	8082137	DARQ-R-A-S22-S17-22-P5		
	Size 27	Size 22	27		400	8082138	DARQ-R-A-S27-S22-27-P5		
	Size 36	Size 27	36		1075	8082139	DARQ-R-A-S36-S27-36-P5		
	Size 11	Size 9	11		50	8082140	DARQ-R-A-S11-S9-11-P10		10
	Size 14	Size 9	16		180	8082141	DARQ-R-A-S14-S9-16-P10		
	Size 14	Size 11	16		130	8082142	DARQ-R-A-S14-S11-16-P10		
	Size 17	Size 14	17		190	8082143	DARQ-R-A-S17-S14-17-P10		
	Size 22	Size 17	22		460	8082144	DARQ-R-A-S22-S17-22-P10		
	Size 11	Size 9	11		250	8082145	DARQ-R-A-S11-S9-11-P50	50	
	Size 14	Size 9	16		900	8082146	DARQ-R-A-S14-S9-16-P50		
	Size 14	Size 11	16		650	8082147	DARQ-R-A-S14-S11-16-P50		
	Size 17	Size 11	17		1450	8082148	DARQ-R-A-S17-S11-17-P50		
	Size 22	Size 17	22		2300	8082149	DARQ-R-A-S22-S17-22-P50		

1) Corrosion resistance class CRC 2 to Festo standard FN 940070

Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

2) Packaging unit