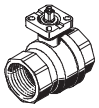
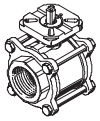
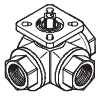
Ball valves VAPB, VZBA

FESTO

- Ball valves
- Connecting thread to DIN 2999 or DIN ISO 228-1
- Mounting flange to ISO 5211
- Length to DIN 3202-M3
- Corrosion and acid resistant designs
- Blow-out proof shaft assembled from inside

Ball valves VAPB, VZBA, mechanically actuated

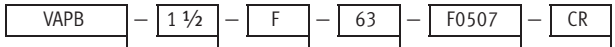
Product range overview

Function	Version	Type	Connection[1]	Internal dia. [mm]	Flanged connection to ISO 5211	Max. operating pressure [bar]	→ Page
Ball valve 2-way	**Brass**						
		VAPB	Rp¼	15	F03	40	7 / 2.2-4
			Rp⅜	15	F03	40	
			Rp½	15	F03	40	
			Rp¾	20	F03	40	
			Rp1	25	F0304	40	
			Rp1¼	32	F0405	40	
			Rp1½	40	F0405	25	
			Rp2	50	F05	25	
			Rp2½	63	F07	25	
	Stainless steel, corrosion-resistant						
		VAPB-...-CR	Rp¼	15	F0304	63	7 / 2.2-7
			Rp⅜	15	F0304		
			Rp½	15	F0304		
			Rp¾	20	F0304		
			Rp1	25	F0405		
			Rp1¼	32	F0405		
			Rp1½	40	F0507		
			Rp2	50	F0507		
			Rp2½	63	F0710		
			Rp3	80	F0710		
			Rp4	100	F10		
Ball valve 3-way	**Stainless steel, corrosion-resistant**						
		VZBA	Rp¼	11.6	F0304	63	7 / 2.2-11
			Rp⅜	12.5	F0304		
			Rp½	12.5	F0304		
			Rp¾	15	F0405		
			Rp1	20	F0405		
			Rp1¼	25	F0405		
			Rp1½	32	F0405		
			Rp2	40	F0507		

1) Cylindrical barrel with female thread to DIN 2999

Ball valves VAPB, mechanically actuated

Type codes



Type	
VAPB	Ball valve for process automation

Connection to DIN 2999	
¼	Barrel with female thread Rp¼
⅜	Barrel with female thread Rp⅜
½	Barrel with female thread Rp½
¾	Barrel with female thread Rp¾
1	Barrel with female thread Rp1
1 ¼	Barrel with female thread Rp1¼
1 ½	Barrel with female thread Rp1½
2	Barrel with female thread Rp2
2 ½	Barrel with female thread Rp2½
3	Barrel with female thread Rp3
4	Barrel with female thread Rp4

Connection type	
F	Female thread

Max. operating pressure	
25	25 bar
40	40 bar
63	63 bar

Flanged connection to ISO 5211	
F03	1 pitch circle diameter of 36 mm
F0304	2 pitch circle diameters of 36 and 42 mm
F0405	2 pitch circle diameters of 42 and 50 mm
F05	1 pitch circle diameter of 50 mm
F0507	2 pitch circle diameters of 50 and 70 mm
F07	1 pitch circle diameter of 70 mm
F0710	2 pitch circle diameters of 70 and 102 mm
F10	1 pitch circle diameter of 102 mm

Material	
	Brass
CR	Special steel casting

Ball valves VAPB, mechanically actuated

Technical data – Brass design

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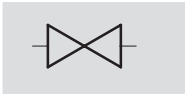


- Connecting thread Rp¼ ... Rp2½
- Flow rate Kv 5.9 ... 535 m^3/h

- Connecting thread to DIN 2999
- Mounting flange to ISO 5211
- Blow-out proof shaft assembled from inside
- Centring attachment for simple automation
- O-ring seal for use with a vacuum

General technical data										
Connection		Rp¼	Rp⅜	Rp½	Rp¾	Rp1	Rp1¼	Rp1½	Rp2	Rp2½
Valve function		2/2								
Design		2-way ball valve								
Sealing principle		Soft								
Actuation type		Mechanical								
Direction of flow		Reversible								
Type of mounting		In-line installation								
Assembly position		Any								
Working port 1, 2		¼	⅜	½	¾	1	1¼	1½	2	2½
Internal dia.	[mm]	15	15	15	20	25	32	40	50	63
Flow rate Kv	[m^3/h]	5.9	9.4	17	41	70	121	200	292	535
Product weight	[g]	500	500	400	500	800	1,300	1,900	3,100	3,100

Operating and environmental conditions										
Connection		Rp¼	Rp⅜	Rp½	Rp¾	Rp1	Rp1¼	Rp1½	Rp2	Rp2½
Operating medium		Compressed air, water, neutral gases, neutral fluids Vacuum								
Nominal pressure pN	[bar]	40	40	40	40	40	40	25	25	25
Temperature of medium	[°C]	–20 ... +150								
Corrosion resistance class CRC		1[1)]								
Approved for use in the food industry		No								

1) Corrosion resistance class 1 according to Festo standard 940 070
Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Materials		
Housing		Brass
Ball		Brass
Seals	Housing	Polytetrafluoroethylene, fibreglass reinforced
	Shaft	Viton

Torque[1)] [Nm]									
Connection	Rp¼	Rp⅜	Rp½	Rp¾	Rp1	Rp1¼	Rp1½	Rp2	Rp2½
Δp = 0 bar	3.1	3.1	3.1	4.6	6.5	10.8	13.5	20	30
Δp = 10 bar	3.5	3.5	3.5	5.1	7.2	11.9	14.9	22	33
Δp = pN	5	5	5	6	8.5	15	19	29	45

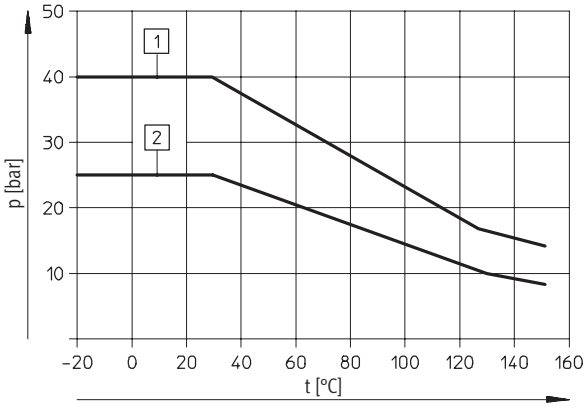
1) Torque required for actuating the ball valve

Ball valves VAPB, mechanically actuated

Technical data – Brass design

FESTO

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



1 Rp¼ ... Rp1¼
2 Rp1½ ... Rp2½

Dimensions

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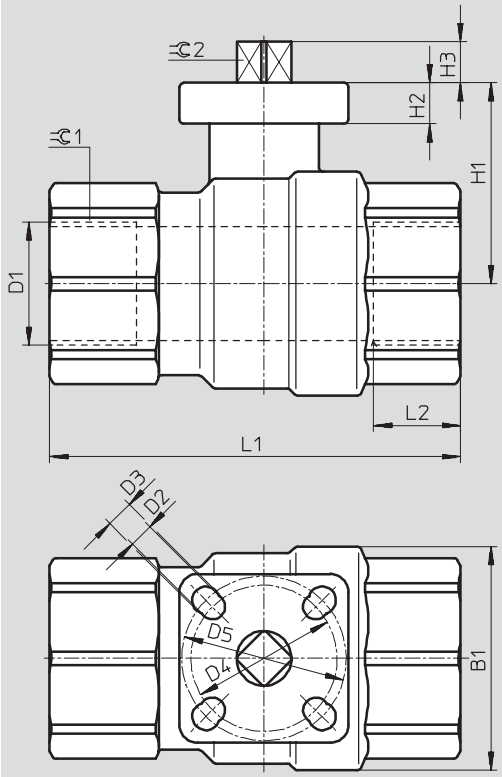


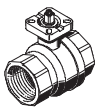
Connection D1[1]	B1	D ∅ ±0.15	D2 ∅	D3 ∅	D4 ∅	D5 ∅	H1	H2	H3	L1 ±2	L2 max.	⌀1	⌀2 -0.1
Rp¼	35	15	5.5	–	36	–	40	9	9	75	15	26	9
Rp⅜	35	15	5.5	–	36	–	40	9	9	75	15	26	9
Rp½	35	15	5.5	–	36	–	40	9	9	75	15	26	9
Rp¾	45	20	5.5	–	36	–	45	9	9	80	16	32	9
Rp1	55	25	5.5	5.5	36	42	45	9	9	90	19	41	9
Rp1¼	65	32	5.5	6.5	42	50	60	10	11	110	21	50	11
Rp1½	75	40	5.5	6.5	42	50	65	10	11	120	21	55	11
Rp2	90	50	6.5	–	50	–	75	12	14	140	25	70	14
Rp2½	110	63	8.5	–	70	–	85	10	15.5	143	24	83	14

1) Cylindrical barrel with female thread to DIN 2999

Ball valves VAPB, mechanically actuated

Technical data – Brass design

FESTO

Ordering data			
Version	Connection[1)]	Part No.	Type
	Rp¼	**534 302**	**VAPB-¼-F-40-F03**
	Rp⅜	**534 303**	**VAPB-⅜-F-40-F03**
	Rp½	**534 304**	**VAPB-½-F-40-F03**
	Rp¾	**534 305**	**VAPB-¾-F-40-F03**
	Rp1	**534 306**	**VAPB-1-F-40-F0304**
	Rp1¼	**534 307**	**VAPB-1 ¼-F-40-F0405**
	Rp1½	**534 308**	**VAPB-1 ½-F-25-F0405**
	Rp2	**534 309**	**VAPB-2-F-25-F05**
	Rp2½	**534 310**	**VAPB-2 ½-F-25-F07**

1) Cylindrical barrel with female thread to DIN 2999

Ball valves VAPB, mechanically actuated

Technical data – Stainless steel design

- Connecting thread Rp¼ … Rp4
- Flow rate Kv 16 … 1,414 m³/h

- Connecting thread to DIN 2999
- Mounting flange to ISO 5211
- Blow-out proof shaft assembled from inside
- Centring attachment for simple automation
- O-ring seal for use with a vacuum

General technical data												
Connection		Rp¼	Rp⅜	Rp½	Rp¾	Rp1	Rp1¼	Rp1½	Rp2	Rp2½	Rp3	Rp4
Valve function		2/2										
Design		2-way ball valve										
Sealing principle		Soft										
Actuation type		Pneumatic										
Direction of flow		Reversible										
Type of mounting		In-line installation										
Assembly position		Any										
Internal dia.	[mm]	10	12	16	20	25	32	40	50	63	80	100
Flow rate Kv	[m³/h]	16	21	35	46	72	105	170	275	507	905	1,414
Product weight	[g]	200	200	700	800	1,200	1,900	2,800	4,500	9,200	13,900	22,300

Operating and environmental conditions												
Connection		Rp¼	Rp⅜	Rp½	Rp¾	Rp1	Rp1¼	Rp1½	Rp2	Rp2½	Rp3	Rp4
Operating medium		Compressed air, water, neutral gases, neutral fluids Vacuum										
Nominal pressure	[bar]	63										
Temperature of medium[1]	[°C]	–10 … +180										
Corrosion resistance class CRC		3[2]										

1) As a function of operating pressure ➔ 7 / 2.2-8

2) Corrosion resistance class 3 according to Festo standard 940 070
Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface

Materials		
Housing		High-alloy stainless steel
Ball		High-alloy stainless steel
Seals	Housing	Polytetrafluoroethylene, fibreglass reinforced
	Shaft	Viton

Torque[1] [Nm]											
Connecting thread	Rp¼	Rp⅜	Rp½	Rp¾	Rp1	Rp1¼	Rp1½	Rp2	Rp2½	Rp3	Rp4
Δp = 0 bar	5	5	7	9	13	20	28	37	49	54	62
Δp = 10 bar	5.5	5.5	7.7	9.9	14.3	22	30.8	40.7	53.9	59.4	68.2
Δp = pN	7	7	10	13	17	28	43	64	69	78	95

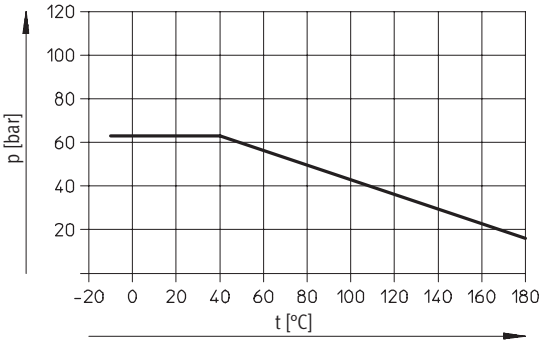
1) Torque required for actuating the ball valve

Ball valves VAPB, mechanically actuated

Technical data – Stainless steel design

FESTO

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



Dimensions

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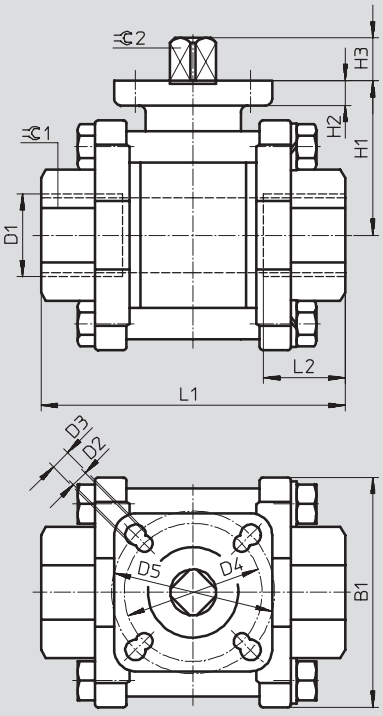

Connection D1[1]	B1	D ∅ ±0.15	D2 ∅	D3 ∅	D4 ∅	D5 ∅	H1	H2	H3	L1 ±2	L2 max.	⌀1	⌀2 -0.1
Rp¼	50	10	5.5	5.5	36	42	40	9	7	60	14	19	9
Rp⅜	50	12	5.5	5.5	36	42	40	9	7	60	14	24	9
Rp½	50	16	5.5	5.5	36	42	40	9	7	75	18	29	9
Rp¾	55	20	5.5	5.5	36	42	44	9	9	80	16	35	9
Rp1	65	25	5.5	6.5	42	50	52	10	12	90	18	41	11
Rp1¼	75	32	5.5	6.5	42	50	58	10	12	110	21	50	11
Rp1½	85	40	6.5	9	50	70	68	13	16	120	21	58	14
Rp2	100	50	6.5	9	50	70	77	13	16	140	23	73	14
Rp2½	170	65	9	11	70	102	98	13	19	185	36	90	17
Rp3	200	80	9	11	70	102	110	13	19	205	40	105	17
Rp4	250	100	11	–	102	–	138	20	24	240	40	135	22

1) Cylindrical barrel with female thread to DIN 2999

Ball valves VAPB, mechanically actuated

Technical data – Stainless steel design

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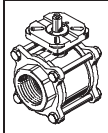
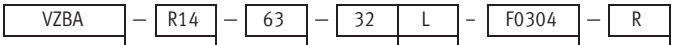
Ordering data			
Version	Connection[1)]	Part No.	Type
	Rp¼	**534 311**	**VAPB-¼-F-63-F0304-CR**
	Rp⅜	**534 312**	**VAPB-⅜-F-63-F0304-CR**
	Rp½	**534 313**	**VAPB-½-F-63-F0304-CR**
	Rp¾	**534 314**	**VAPB-¾-F-63-F0304-CR**
	Rp1	**534 315**	**VAPB-1-F-63-F0405-CR**
	Rp1¼	**534 316**	**VAPB-1 ¼-F-63-F0405-CR**
	Rp1½	**534 317**	**VAPB-1 ½-F-63-F0507-CR**
	Rp2	**534 318**	**VAPB-2-F-63-F0507-CR**
	Rp2½	**534 319**	**VAPB-2 ½-F-63-F0710-CR**
	Rp3	**534 320**	**VAPB-3-F-63-F0710-CR**
	Rp4	**534 321**	**VAPB-4-F-63-F10-CR**

1) Cylindrical barrel with female thread to DIN 2999

Ball valves VZBA, mechanically actuated

Type codes



Type	
VZBA	Ball valve for process automation

Connection to DIN 2999	
R14	Barrel with female thread Rp¼
R38	Barrel with female thread Rp⅜
R12	Barrel with female thread Rp½
R34	Barrel with female thread Rp¾
R1	Barrel with female thread Rp1
R114	Barrel with female thread Rp1¼
R112	Barrel with female thread Rp1½
R2	Barrel with female thread Rp2

Operating pressure	
63	63 bar

Valve function	
32	3/2-way valve

Hole in ball	
L	L-shaped
T	T-shaped

Flanged connection to ISO 5211	
F0304	2 pitch circle diameters of 36 and 42 mm
F0405	2 pitch circle diameters of 42 and 50 mm
F0507	2 pitch circle diameters of 50 and 70 mm

Material	
R	High-alloy stainless steel

Ball valves VZBA, mechanically actuated

Technical data – Stainless steel design

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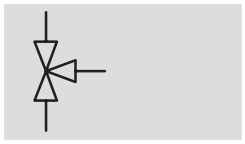


- Connecting thread Rp¼ ... Rp2
- Flow rate Kv 4.5 ... 1,000 m³/h

- Connecting thread to DIN 2999
- Mounting flange to ISO 5211
- Blow-out proof shaft assembled from inside
- Centring attachment for simple automation
- O-ring seal for use with a vacuum

General technical data									
Connection		Rp¼	Rp⅜	Rp½	Rp¾	Rp1	Rp1¼	Rp1½	Rp2
Valve function		3/2							
Design		3-way ball valve							
Sealing principle		Soft							
Actuation type		Mechanical							
Direction of flow		Reversible							
Type of mounting		In-line installation							
Assembly position		Any							
Working port 1, 2, 3		¼	⅜	½	¾	1	1¼	1½	2
Internal dia.	[mm]	11.6	12.5	12.5	15	20	25	32	40
Flow rate Kv Type L[1]	[m³/h]	4.5	4.5	4.7	5.1	11.8	19.6	33.2	53.7
Type T[2]	[m³/h]	8	8	8.3	8.3	22.4	36.5	62	100
Type T[3]	[m³/h]	4.5	4.5	4.9	4.8	10.9	18	30	48.8
Product weight	[g]	700	700	700	1,000	1,600	2,800	3,800	7,400

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

Operating and environmental conditions									
Connection		Rp¼	Rp⅜	Rp½	Rp¾	Rp1	Rp1¼	Rp1½	Rp2
Operating medium		Compressed air, water, neutral gases, neutral fluids Vacuum							
Nominal pressure	[bar]	63							
Temperature of medium[1]	[°C]	–10 ... +140							
Corrosion resistance class CRC		3[2]							

1) As a function of operating pressure ➔ 7 / 2.2-12
2) Corrosion resistance class 3 according to Festo standard 940 070
Components requiring higher corrosion resistance. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

Materials	
Housing	High-alloy stainless steel
Ball	High-alloy stainless steel
Seals	Polytetrafluoroethylene, fibreglass reinforced

Torque[1] at 63 bar									
Connection		Rp¼	Rp⅜	Rp½	Rp¾	Rp1	Rp1¼	Rp1½	Rp2
Δp = 1 bar	[Nm]	8	8	8	11	18	26	32	37

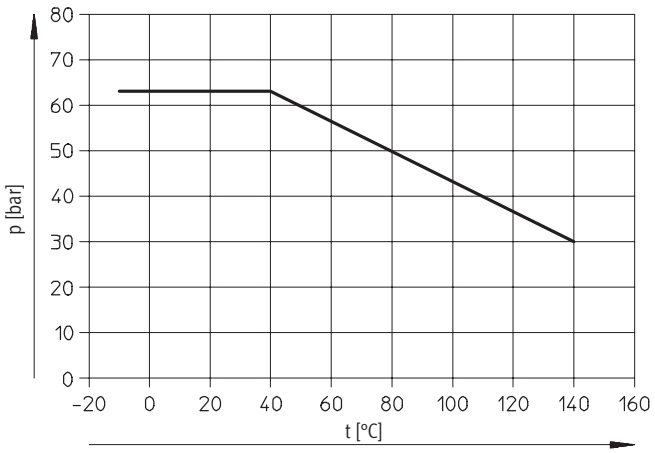
1) Torque required for actuating the ball valve

Ball valves VZBA, mechanically actuated

Technical data – Stainless steel design

FESTO

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



Dimensions

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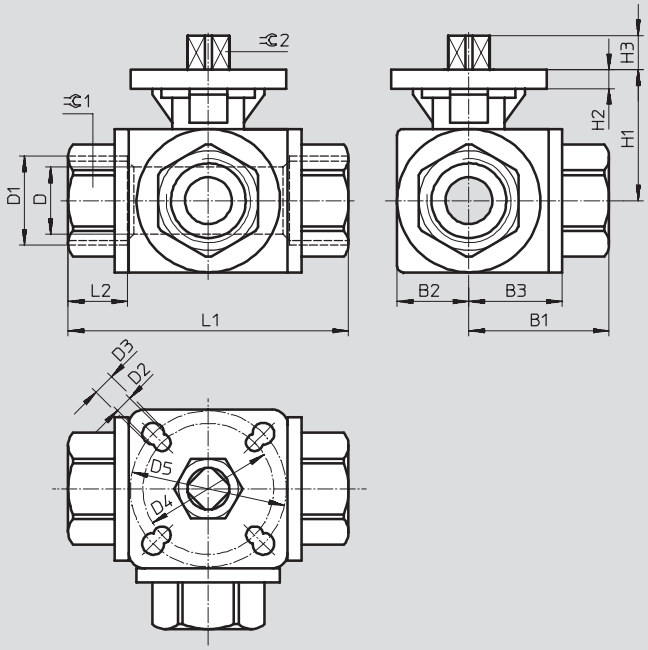


Connection D1[1]	B1 ±2	B2	B3	D ∅ ±0.15	D2 ∅	D3 ∅	D4 ∅	D5 ∅	H1	H2	H3	L1 ±2	L2	⫧1	⫧2 -0.1
Rp¼	40	22.4	30	11.6	5.5	5.5	36	42	36	6	7.4	80	16	24	9
Rp⅜	40	22.4	30	12.5	5.5	5.5	36	42	36	6	7.4	80	16	24	9
Rp½	40	22	31	12.5	5.5	5.5	36	42	36	6	8.4	80	17.4	27	9
Rp¾	44	23	34.7	15	5.5	6.5	42	50	42	6.2	12	88	20	34	11
Rp1	51	32	40	20	5.5	6.5	42	50	47	6.3	12	100	20.5	41	11
Rp1¼	62	36	47.2	25	5.5	6.5	42	50	53	6.7	11	123	24	50	11
Rp1½	71	43	53	32	5.5	6.5	42	50	59	7	10.8	142	26.6	58	11
Rp2	86	55	63.5	40	6.5	8.5	50	70	66	6.2	15.8	171	27.6	70	14

1) Cylindrical barrel with female thread to DIN 2999

Ball valves VZBA, mechanically actuated

Technical data – Stainless steel design

Ordering data					
Version	Connection[1]	L-shaped ball valve		T-shaped ball valve	
		Part No.	Type	Part No.	Type
	Rp¼	**542 005**	**VZBA-R14-63-32L-F-F0304-R**	**542 006**	**VZBA-R14-63-32T-F-F0304-R**
	Rp⅜	**542 007**	**VZBA-R38-63-32L-F-F0304-R**	**542 008**	**VZBA-R38-63-32T-F-F0304-R**
	Rp½	**542 009**	**VZBA-R12-63-32L-F-F0304-R**	**542 010**	**VZBA-R12-63-32T-F-F0304-R**
	Rp¾	**542 011**	**VZBA-R34-63-32L-F-F0405-R**	**542 012**	**VZBA-R34-63-32T-F-F0405-R**
	Rp1	**542 013**	**VZBA-R1-63-32L-F-F0405-R**	**542 014**	**VZBA-R1-63-32T-F-F0405-R**
	Rp1¼	**542 015**	**VZBA-R114-63-32L-F-F0405-R**	**542 016**	**VZBA-R114-63-32T-F-F0405-R**
	Rp1½	**542 017**	**VZBA-R112-63-32L-F-F0405-R**	**542 018**	**VZBA-R112-63-32T-F-F0405-R**
	Rp2	**542 019**	**VZBA-R2-63-32L-F-F0507-R**	**542 020**	**VZBA-R2-63-32T-F-F0507-R**

1) Cylindrical barrel with female thread to DIN 2999

Hand lever for ball valves

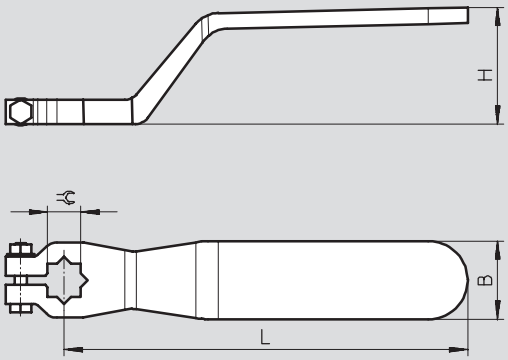
Accessory

FESTO

Hand lever

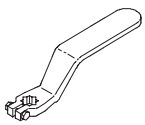
Note on materials:
- High-alloy stainless steel
- Free of copper and PTFE
- Contains paint wetting impairment substances

Dimensions Download CAD data ➔ **www.festo.com/en/engineering**



Type	⌯ ±0.5	L ±10	H ±5	W ±5
VAOH-9-H9	9	120	36	21
VAOH-11-H9	11	140	40	26
VAOH-14-H9	14	180	46	31
VAOH-17-H9	17	240	55	36
VAOH-22-H9	22	280	70	36

Ordering data

Version	Weight [g]	Part No.	Type
	100	**542 702**	**VAOH-9-H9**
	200	**542 703**	**VAOH-11-H9**
	300	**542 704**	**VAOH-14-H9**
	450	**542 705**	**VAOH-17-H9**
	750	**542 706**	**VAOH-22-H9**