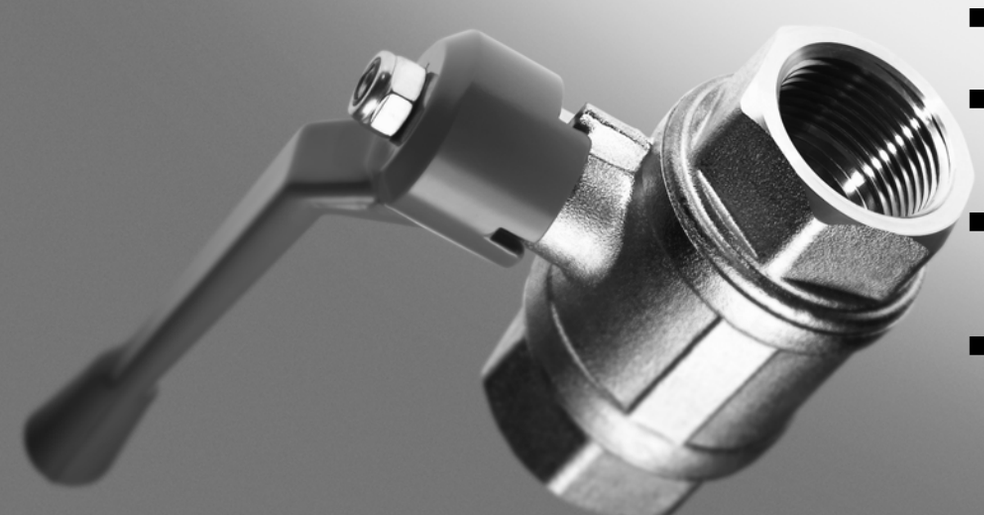
Ball valves and shut-off valves

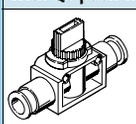
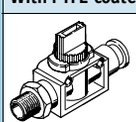
FESTO



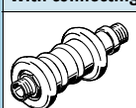
- Shut-off valves HE
- Hand slide valves W
- Ball valves QH, manually actuated
- Ball valves VAPB, mechanically actuated
- Ball valves VAPB-CR, mechanically actuated, corrosion resistant

Ball valves and shut-off valves

Product range overview

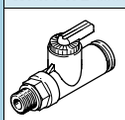
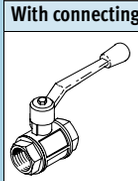
Function	Design	Type	Pneumatic connection		2/2-way valves	3/2-way valves	➔ Page
			Thread	For tubing O.D. [mm]			
Shut-off valves	**With QS push-in connector[1] at both ends**						
		HE	–	6	■	■[2]	2 / 5.2-7
				8	■	■[2]	
				10	■	■[2]	
				12	■	■[2]	
	With PTFE-coated connecting thread and QS push-in connector[1]						
		HE	R1/8	6	■	■	2 / 5.2-8
			R1/4	8	■	■	
			R3/8	10	■	■	
			R1/2	12	■	■	
	With PTFE-coated connecting thread at both ends						
		HE	R1/8	–	■	■	2 / 5.2-8
			R1/4		■	■	
			R3/8		■	■	

1) for standard O.D. plastic tubing
2) Free of copper, PTFE and silicone

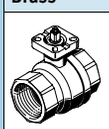
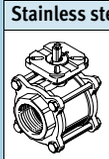
Function	Design	Type	Pneumatic connection		➔ Page
			Thread	For tubing O.D. [mm]	
Hand slide valves	**With connecting thread at both ends**				
		W	M5	–	2 / 5.2-10
			G1/8		
			G1/4		
			G3/8		
			G1/2		
			G3/4		

Ball valves and shut-off valves

Product range overview

Function	Design	Type	Pneumatic connection		→ Page
			Thread	For tubing O.D. [mm]	
Ball valves QH/QHS, manually actuated	**With QS push-in connector[1] at both ends**				
		QH	–	4	2 / 5.2-14
				6	
	With QS push-in connector[1] at both ends, with bulkhead connector at one end				
		QHS	–	6	2 / 5.2-14
	With PTFE-coated connecting thread and QS push-in connector[1]				
		QH	R1/8	4	2 / 5.2-14
				6	
	With connecting thread at both ends				
		QH	G1/4	–	2 / 5.2-16
			G3/8		
			G1/2		
			G3/4		
			G1		
			G1 1/2		

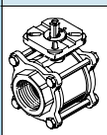
1) for standard O.D. plastic tubing

Function	Design	Type	Connecting thread[1]	Nominal size [mm]	Flanged connection to ISO 5211	Max. operating pressure [bar]	→ Page
Ball valves VAPB, mechanically actuated[2]	**Brass**						
		VAPB	R1/4	15	F03	40	2 / 5.2-22
			R3/8	15	F03	40	
			R1/2	15	F03	40	
			R3/4	20	F03	40	
			R1	25	F0304	40	
			R1 1/4	32	F0405	40	
			R1 1/2	40	F0405	25	
			R2	50	F05	25	
			R2 1/2	63	F07	25	
	Stainless steel, corrosion-resistant						
		VAPB-...-CR	R1/4	10	F0304	63	2 / 5.2-25
			R3/8	12	F0304		
			R1/2	16	F0304		
			R3/4	20	F0304		
			R1	25	F0405		
			R1 1/4	32	F0405		
			R1 1/2	40	F0507		
			R2	50	F0507		
			R2 1/2	63	F0710		
			R3	80	F0710		
			R4	100	F10		

1) Cylindrical barrel with female thread to DIN 2999
2) Ball valve drive units QH-DR → Volume 7

Ball valves and shut-off valves

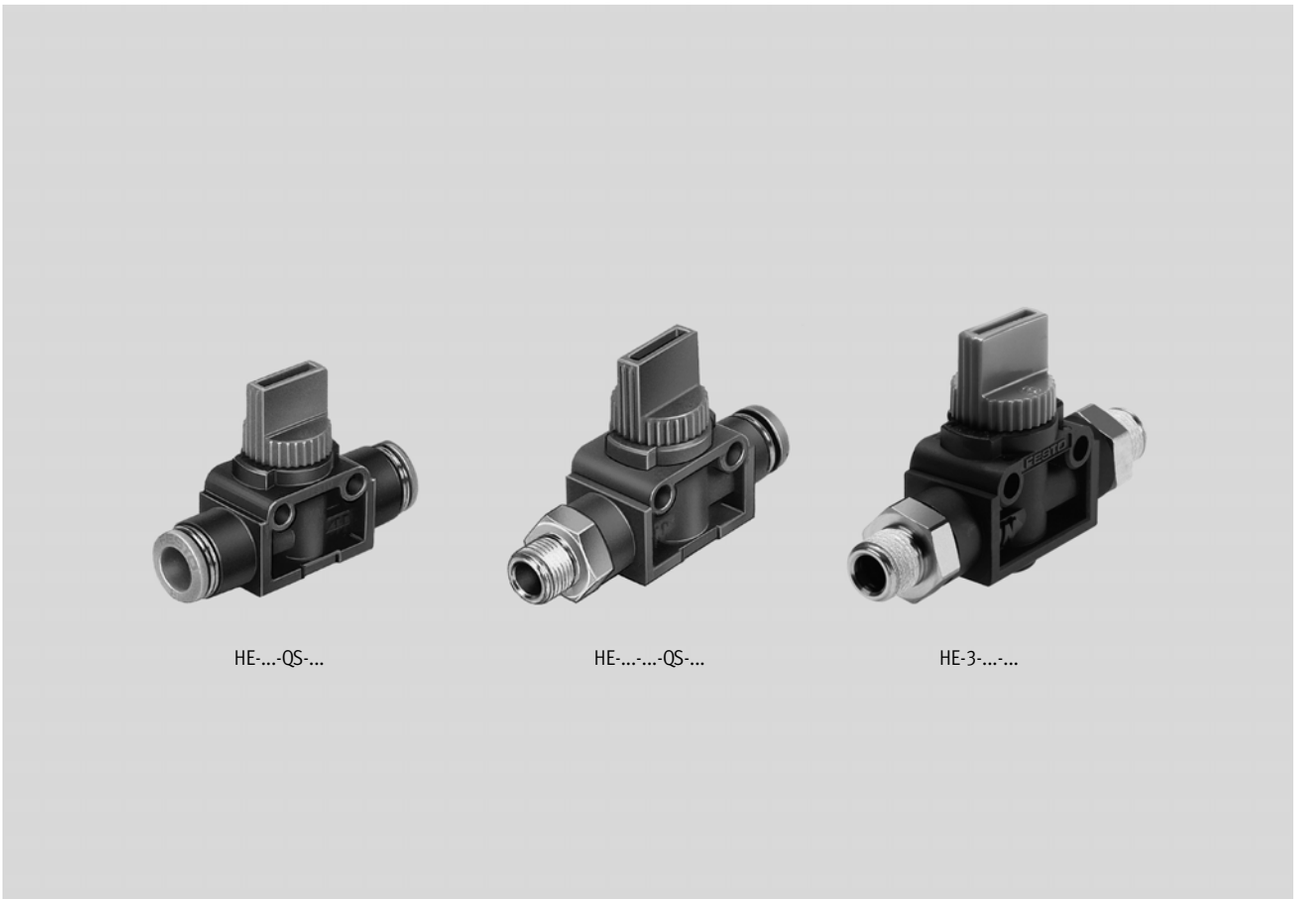
Product range overview

Function	Design	Type	Connecting thread[1]	Nominal size [mm]	Flanged connection to ISO 5211	Max. operating pressure [bar]	→ Page
Ball valves VZBA, 3-way, mechanically actuated[2]	**Stainless steel, corrosion-resistant**						
		VZBA-...-R	R¼	10	F0304	63	2 / 5.2-25
			R⅜	12	F0304		
			R½	16	F0304		
			R¾	20	F0304		
			R1	25	F0405		
			R1¼	32	F0405		
			R1½	40	F0507		
			R2	50	F0507		
			R2½	63	F0710		
			R3	80	F0710		
			R4	100	F10		

1) Cylindrical barrel with female thread to DIN 2999
2) Ball valve drive units QH-DR → Volume 7

Shut-off valves HE

Features



HE-...-QS-...

HE-...-...-QS-...

HE-3-...-...

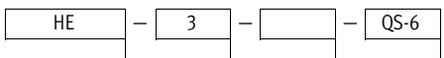
- Flow rate
  300 ... 800 l/min

- Connection R⅛ ... R½
- With QS push-in connector for standard O.D. tubing at both ends
- With connecting thread and push-in connector
- With connecting thread at both ends
- Designs with connecting thread can be turned 360°

Air flow is fully blocked in both directions with this valve.

Shut-off valves HE

Type codes



Type	
HE	Shut-off valve

Function	
2	2/2-way
3	3/2-way

Screw-in and connecting thread	
Connecting thread at one end	
1/8	Pipe thread R1/8
1/4	Pipe thread R1/4
3/8	Pipe thread R3/8
1/2	Pipe thread R1/2
Connecting thread at both ends	
1/8-1/8	Pipe thread R1/8
1/4-1/4	Pipe thread R1/4
3/8-3/8	Pipe thread R3/8

Tubing connection	
Type of connection	
QS	Push-in connector for standard O.D. tubing
For tubing O.D.∅	
6	6 mm
8	8 mm
10	10 mm
12	12 mm

Shut-off valves HE

Technical data

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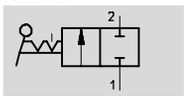
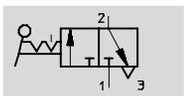
Function

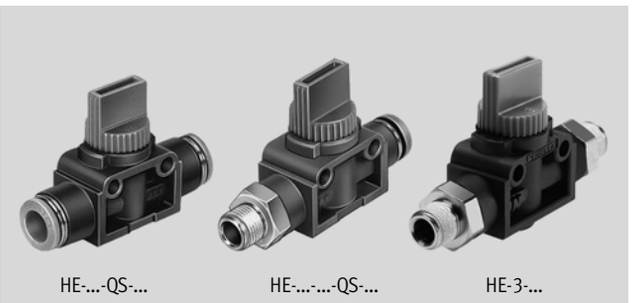


2/2-way



3/2-way

Flow rate
280 ... 840 l/min



HE-...-QS-... HE-...-...-QS-... HE-3-...

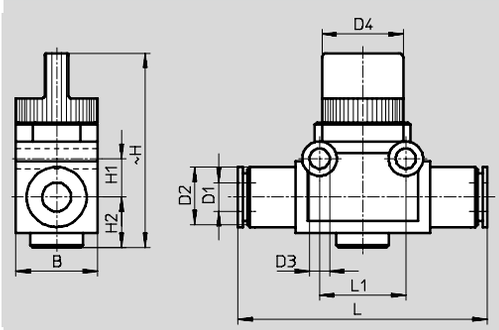
General technical data					
Push-in connector for tubing O.D.	[mm]	6	8	10	12
Type of mounting		2 through-holes in housing			
		In-line installation			
Nominal size	[mm]	5	5	7	7

Operating and environmental conditions		
Operating medium		Filtered compressed air, lubricated or unlubricated
Operating pressure	[bar]	–0.75 ... +10
Temperature of medium	[°C]	0 ... 60

Technical data – QS push-in connector at both ends						
Push-in connector for tubing O.D.		[mm]	6	8	10	12
Standard nominal flow rate	HE-2	[l/min]	280	390	760	830
1→2	HE-3	[l/min]	280	390	780	840
Materials			Housing: Polybutylene terephtalate			
Note on material			Free of copper, PTFE and silicone ➔ Ordering data			
Weight		[g]	25	27	44	50

Dimensions – QS push-in connector, both ends

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



Tubing O.D. D1	B	D2 ∅	D3 ∅	D4 ∅	H	H1	H2	L	L1
6	17	12.5	4.2	16.5	40.5	8	10.5	53.2	18
8	17	15	4.2	16.5	40.5	8	10.5	56	18
10	21	17.5	4.2	19.5	41	11	10.5	65	24
12	21	21	4.2	19.5	41	11	10.5	70.2	24

Shut-off valves HE

Technical data

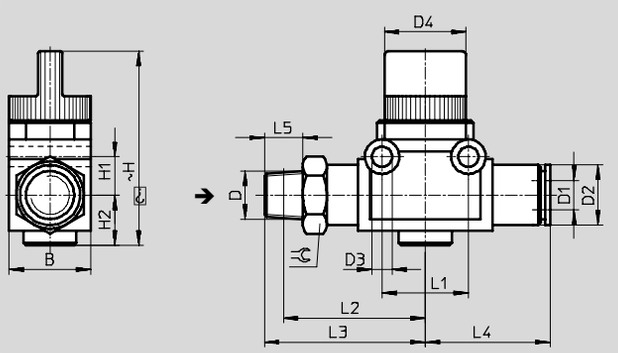
FESTO

Technical data – Connecting thread at one or both ends						
Connecting thread			R⅛	R¼	R⅜	R½
Push-in connector for tubing O.D.		[mm]	6	8	10	12
Standard nominal flow rate	HE-2	[l/min]	310	400	730	780
1 ⇢ 2	HE-3	[l/min]	300	380	730	800
Permissible tightening torque		[Nm]	7 ... 9	12 ... 14	22 ... 24	28 ... 30
Materials			Housing: Polybutylene terephtalate			
			Threaded connection: Nickel-plated brass			
Weight	Connecting thread at one end	[g]	33	45	70	95
	Connecting thread at both ends	[g]	42	80	96	–

Dimensions – Connecting thread at one end

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

With PTFE-coated pipe thread and QS push-in connector, can be rotated 360°



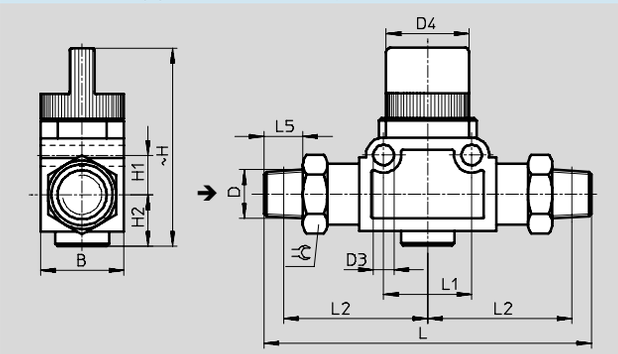
➔ = Flow direction

Connecting thread D	B	D1 ∅	D2 ∅	D3 ∅	D4 ∅	H	H1	H2	L1	L2	L3	L4	L5	⌭
R⅛	17	6	12.5	4.2	16.5	40.5	8	10.5	18	29.5	33.5	26	8	14
R¼	17	8	15	4.2	16.5	40.5	8	10.5	18	30.5	36.5	28	11	14
R⅜	21	10	17.5	4.2	19.5	41	11	10.5	24	37	43.5	32.5	12	17
R½	21	12	21	4.2	19.5	41	11	10.5	24	38.5	46.5	35.5	15	21

Dimensions – Connecting thread at both ends

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

With PTFE-coated pipe thread at both ends, can be rotated 360°



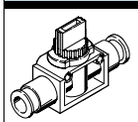
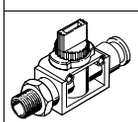
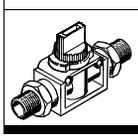
➔ = Flow direction

Connecting thread D	B	D3 ∅	D4 ∅	H	H1	H2	L	L1	L2	L5	⌭
R⅛	17	4.2	16.5	40.5	8	10.5	67	18	29.5	8	14
R¼	21	4.2	19.5	41	11	10.5	85	24	36.5	11	17
R⅜	21	4.2	19.5	41	11	10.5	87	24	37	12	17

Shut-off valves HE

Technical data

FESTO

Ordering data							
	Description	Connecting thread	For tubing O.D. [mm]	2/2-way valves Part No.	Type	3/2-way valves Part No.	Type
	QS push-in connector, both ends	–	6	**153 467**	**HE-2-QS-6**	**153 475**	**HE-3-QS-6[1)]**
			8	**153 468**	**HE-2-QS-8**	**153 476**	**HE-3-QS-8[1)]**
			10	**153 469**	**HE-2-QS-10**	**153 477**	**HE-3-QS-10[1)]**
			12	**153 470**	**HE-2-QS-12**	**153 478**	**HE-3-QS-12[1)]**
	With PTFE-coated pipe thread and QS push-in connector	R⅛	6	**153 471**	**HE-2-⅛-QS-6**	**153 479**	**HE-3-⅛-QS-6**
		R¼	8	**153 472**	**HE-2-¼-QS-8**	**153 480**	**HE-3-¼-QS-8**
		R⅜	10	**153 473**	**HE-2-⅜-QS-10**	**153 481**	**HE-3-⅜-QS-10**
		R½	12	**153 474**	**HE-2-½-QS-12**	**153 482**	**HE-3-½-QS-12**
	With PTFE-coated pipe thread at both ends	R⅛	–	–		**153 296**	**HE-3-⅛-⅛**
		R¼				**153 297**	**HE-3-¼-¼**
		R⅜				**153 298**	**HE-3-⅜-⅜**

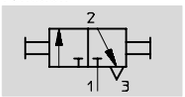
1) Free of copper, PTFE and silicone

Hand slide valves W

Technical data

FESTO

Function



3/2-way

- Flow rate
  280 ... 840 l/min

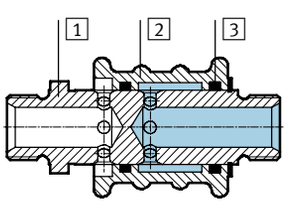
- Valve for pressurising and exhausting pneumatic control systems
- Suitable for a vacuum

W-3-¼

Technical data							
Connecting thread		M5	G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4
Nominal size	[mm]	2.5	3	7	9	12	18
Standard nominal flow rate 1 → 2	[l/min]	120	600	1,000	1,400	2,000	6,800
Pressure range	[bar]	–0.95 ... +8	–0.95 ... +10				
Actuating force at 6 bar operating pressure	[N]	10	10	20	20	20	30
Type of mounting		In-line installation					
Operating medium		Filtered compressed air, lubricated or unlubricated Vacuum					
Temperature range	[°C]	–10 ... +60 °C					
Weight	[g]	25	40	110	280	300	400

Materials

Sectional view



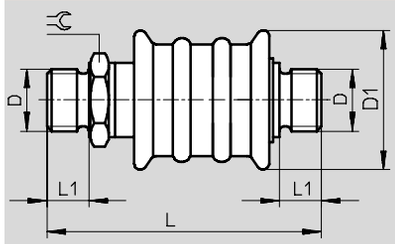
Hand slide valve	
1 Threaded plug	Nickel plated brass
2 Slide sleeve	Blue anodised aluminium
3 Seals	Nitrile rubber

Core Range

Hand slide valves W

Technical data

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



← Flow direction

Connecting thread D	D1 ∅	L	L1	⫧
M5	20	46.4	5	9
G1/8	24	51.3	6.5	14
G1/4	34.5	70.4	8	17
G3/8	45	79.4	9	27
G1/2	45	82.4	10.5	27
G3/4	50	99	12	32

Ordering data

	Connecting thread	Part No.	Type
With metric thread at both ends	M5	**4 451**	**W-3-M5**
With pipe thread at both ends	G1/8	**2 339**	**W-3-1/8**
	G1/4	**2 340**	**W-3-1/4**
	G3/8	**2 341**	**W-3-3/8**
	G1/2	**2 342**	**W-3-1/2**
	G3/4	**4 052**	**W-3-3/4**

Core Range

Ball valves QH/QHS, manually actuated

Key features

QH-QS-...

QH-QS-...-⅛

QHS-QS-6

QH-...

- Flow rate
  148 ... 84,000 l/min

Variants:
- With 2 push-in connectors
- With connecting thread and push-in connector
- With bulkhead connector
- With external thread R⅛, PTFE-coated
- Via female thread G¼ ... G1½

Air flow is fully blocked in both directions with these valves by turning the lever.

Ball valves QH/QHS, manually actuated

Type codes

Type	
QH	Ball valve
QHS	Ball valve with bulkhead fitting

Tubing connection	
Type of connection	
QS	Push-in connector for standard O.D. tubing
For tubing O.D.	
4	4 mm
6	6 mm

Screw-in and connecting thread	
1/8	Pipe thread R1/8
1/4	Pipe thread G1/4
3/8	Pipe thread G3/8
1/2	Pipe thread G1/2
3/4	Pipe thread G3/4
1	Pipe thread G1
1 1/2	Pipe thread G1 1/2

Ball valves QH/QHS, manually actuated

Technical data – with QS plug-in connector

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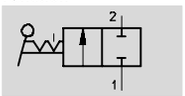
Function



2/2-way

■ Suitable for a vacuum

Flow rate
148 ... 560 l/min

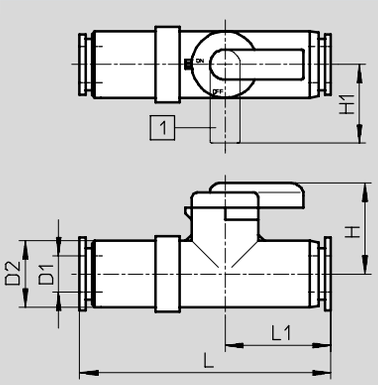
QH-QS-...-⅛ QH-QS-... QHS-QS-6

Technical data							
Pneumatic connection	Thread		–	–	R⅛	R⅛	–
	Tubing O.D.	[mm]	4	6	4	6	6
Design			Ball valve				
Valve function			2/2-way, bi-stable				
Sealing principle			Soft				
Type of mounting			In-line installation		Can be screwed in		Bulkhead fitting
Actuation type			Manual				
Nominal size		[mm]	2.5	4	2.5	2.5	4
Standard nominal flow rate		[l/min]	148	533	235	560	528
Permissible tightening torque		[Nm]	–	–	7 ... 9		–
Materials			Housing: Polybutylene terephtalate				
			Threaded connection: Nickel-plated brass				
Weight		[g]	12	13	14	15	17

Operating and environmental conditions		
Operating pressure	[bar]	–1 ... +10
Operating medium		Filtered compressed air, lubricated or unlubricated
Ambient temperature	[°C]	0 ... +60

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

QS push-in connector, both ends



1 Closed

Tubing O.D. D1	D2 ∅	H	H1	L	L1
4	11	15	13	38	17
6	11	15	13	41.5	17.5

Ball valves QH/QHS, manually actuated

Technical data – with QS plug-in connector

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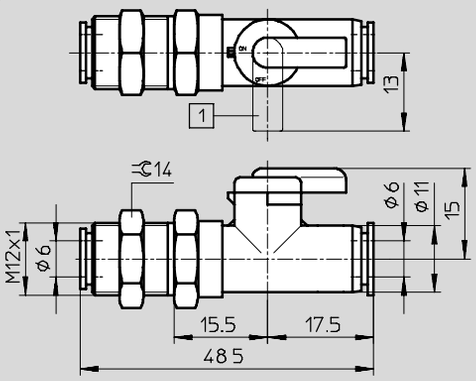
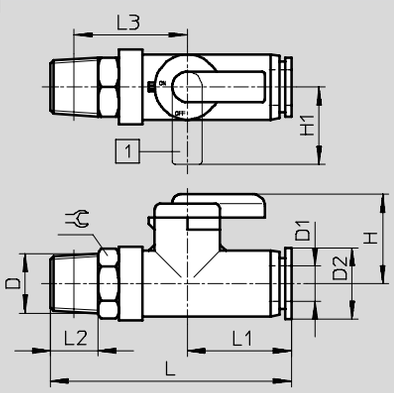
Dimensions Download CAD data ➔ **www.festo.com/en/engineering**

QS push-in connector at both ends, bulkhead connector at one end



1 Closed

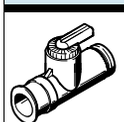
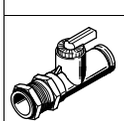
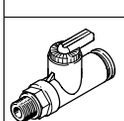
With PTFE-coated connecting thread and QS push-in connector



1 Closed

Tubing O.D. D1	D ∅	D2 ∅	H	H1	L	L1	L2	L3	⌀
4	R1/8	11	15	13	41.5	17	8	20	10
6	R1/8	11	15	13	42	17.5	8	20	10

Ordering data

	Description	Connecting thread	For tubing O.D. [mm]	Part No.	Type
	QS push-in connector, both ends	–	4	**153 483**	**QH-QS-4**
			6	**153 484**	**QH-QS-6**
	QS push-in connector, both ends, buklhead connector at one end	–	6	**153 485**	**QHS-QS-6**
	With PTFE-coated connecting thread and QS push-in connector	R1/8	4	**153 486**	**QH-QS-4-1/8**
			6	**153 487**	**QH-QS-6-1/8**

Ball valves QH/QHS, manually actuated

Technical data – with female thread

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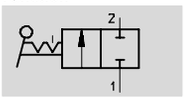
Function



2/2-way

- Flow rate
  3,400 ... 84,000 l/min

- Nominal size 10 ... 40 mm
- Female thread G¼...G1½
- Suitable for a vacuum

QH-⅜

Technical data							
Pneumatic connection		G¼	G⅜	G½	G¾	G1	G1½
Design		Ball valve					
Valve function		2/2-way, bi-stable					
Sealing principle		Soft					
Type of mounting		In-line installation					
Actuation type		Manual					
Nominal size	[mm]	10	12	15	20	25	40
Standard nominal flow rate	[l/min]	3,400	7,500	11,500	21,000	33,000	84,000
Actuation torque	[Nm]	4	4	8	12	15	25
Weight	[g]	175	180	340	600	815	1,750

Operating and environmental conditions		
Operating pressure	[bar]	–0.95 ... +30
Operating medium		Filtered compressed air, lubricated or unlubricated, water, vacuum[1)]
Ambient temperature	[°C]	–20 ... +180

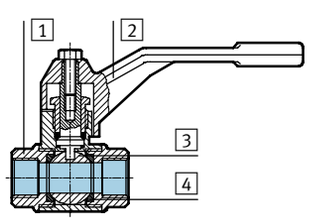
1) Other media upon request

- Note

Not permitted for poisonous gas such as natural gas.

Materials

Sectional view

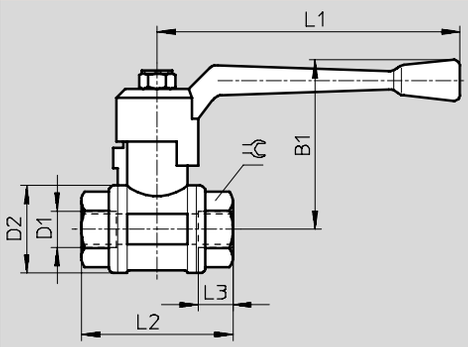


Ball valve		
1	Housing	Brass
2	Lever	Painted aluminium
3	Ball	Hard chrome plated
4	Seals	Polytetrafluoroethylene

Ball valves QH/QHS, manually actuated

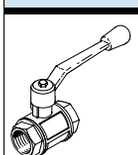
Technical data – with female thread

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



Connecting thread D1	B1	D2 ∅	L1	L2	L3	⌀
G¼	56	30	100	52	11.5	21.5
G⅜	56	30	100	52	11.5	21.5
G½	59	35	100	64	15	27
G¾	72	44	120	74	16.3	32
G1	77	51	120	88	19.1	41
G1½	100	73	150	105.5	21.4	55

Ordering data

	Description	Connecting thread	For tubing O.D. [mm]	Part No.	Type
	With connecting thread at both ends	G¼	–	**9 541**	**QH-¼**
		G⅜		**9 542**	**QH-⅜**
		G½		**9 543**	**QH-½**
		G¾		**9 544**	**QH-¾**
		G1		**9 545**	**QH-1**
		G1½		**6 837**	**QH-1½**

Note

Not permitted for poisonous gas such as natural gas.

Ball valves VAPB, mechanically actuated

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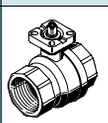
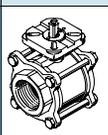
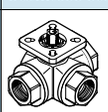
- Connecting thread to DIN 2999
- Mounting flange to ISO 5211
- Length to DIN 3202-M3
- Blow-out proof shaft assembled from inside
- Centering attachment for simple automation
- O-ring seal for use with a vacuum

Ball valves VAPB, VZBA, mechanically actuated

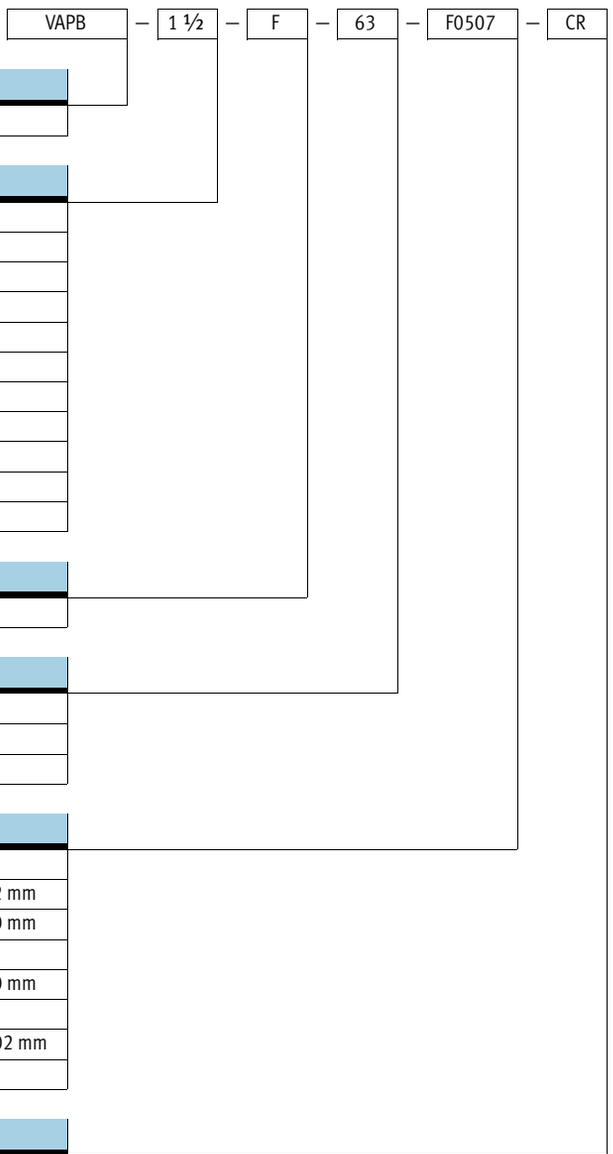
Product range overview

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	2 / 5.2-22
			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	2 / 5.2-25
			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	2 / 5.2-29
			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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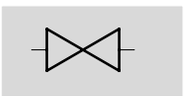


- Connecting thread Rp¼ ... Rp2½
- Flow rate Kv 5.9 ... 535 m³/h

- 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
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	[m³/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

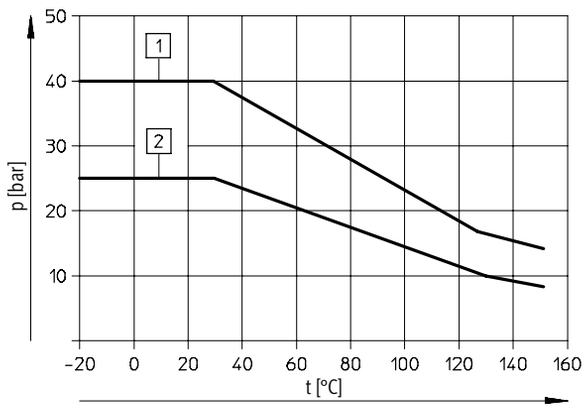
1) Torque required for actuating the ball valve

Ball valves VAPB, mechanically actuated

Technical data – Brass design

FESTO

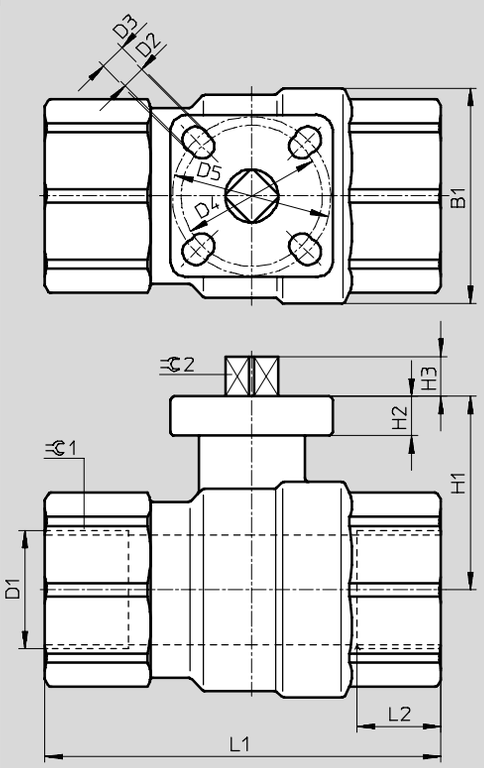
Permissible operating pressure p as a function of the temperature of the medium t



1 Rp¼ ... Rp1¼
2 Rp1½ ... Rp2½

Dimensions

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



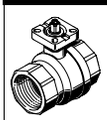
Connection D1[1]	B1	D2 ∅	D3 ∅	D4 ∅	D5 ∅	H1	H2	H3	L1	L2	⌀1	⌀2
Rp¼	35	5.5	5.5	36	36	40	9	9	75	15	26	9
Rp⅜	35	5.5	5.5	36	36	40	9	9	75	15	26	9
Rp½	35	5.5	5.5	36	36	40	9	9	75	15	26	9
Rp¾	45	5.5	5.5	36	36	45	9	9	80	16	32	9
Rp1	55	5.5	5.5	36	42	45	9	9	90	19	41	9
Rp1¼	65	5.5	6.5	42	50	60	10	11	110	21	50	11
Rp1½	75	5.5	6.5	42	50	65	10	11	120	21	55	11
Rp2	90	6.5	6.5	50	50	75	12	14	140	25	70	14
Rp2½	110	8.5	8.5	70	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

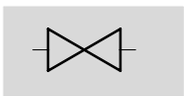
FESTO

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 ➔ 2 / 5.2-26
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		Stainless steel
Ball		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

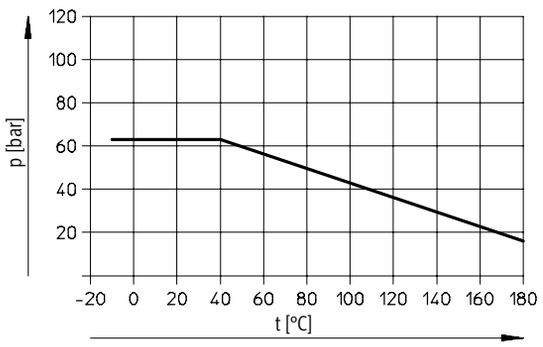
1) Torque required for actuating the ball valve

Ball valves VAPB, mechanically actuated

Technical data – Stainless steel design

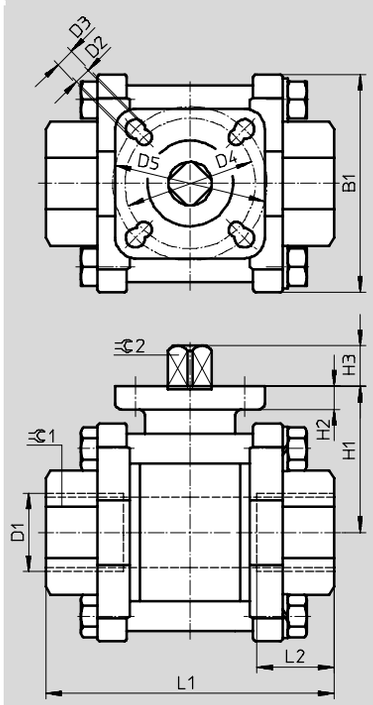
FESTO

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



Dimensions

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



Connection D1[1]	B1	D2 ∅	D3 ∅	D4 ∅	D5 ∅	H1	H2	H3	L1	L2	⌯1	⌯2
Rp¼	50	5.5	5.5	36	42	45	9	7	60	14	19	9
Rp⅜	50	5.5	5.5	36	42	45	9	7	60	14	24	9
Rp½	50	5.5	5.5	36	42	45	9	7	75	20	29	9
Rp¾	55	5.5	5.5	36	42	45	9	8	80	19	35	9
Rp1	65	5.5	6.5	42	50	55	10	10	90	21	41	11
Rp1¼	75	5.5	6.5	42	50	60	10	10	110	23	50	11
Rp1½	85	6.5	9	50	70	70	13	14	120	25	58	14
Rp2	100	6.5	9	50	70	80	13	14	140	28	73	14
Rp2½	170	9	11	70	102	100	13	17	185	38	90	17
Rp3	200	9	11	70	102	120	13	17	205	42	105	17
Rp4	250	11	11	102	102	145	20	22	240	42	135	22

1) Cylindrical barrel with female thread to DIN 2999

Ball valves VAPB, mechanically actuated

Technical data – Stainless steel design

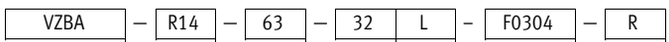
FESTO

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

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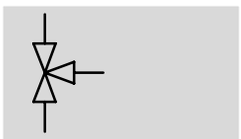
Technical data – Stainless steel design



- 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 → 2 / 5.2-30
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

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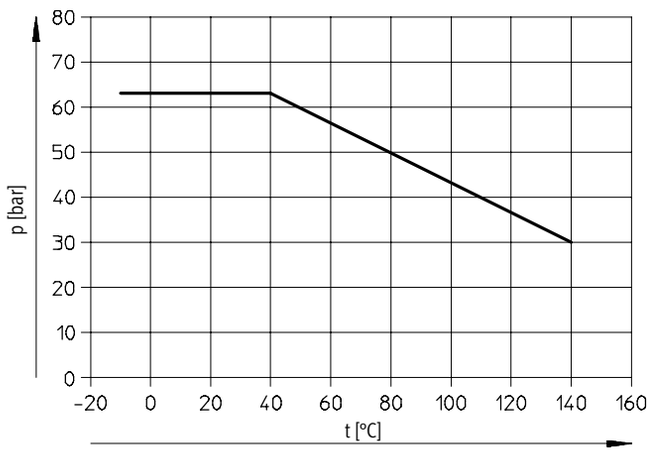
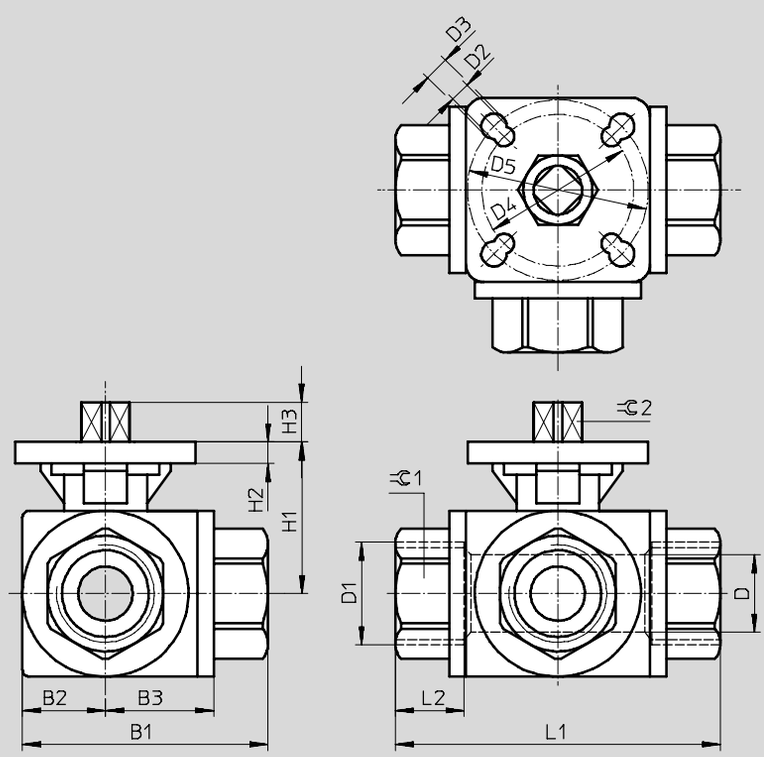
Permissible operating pressure p as a function of the temperature of the medium t



Dimensions

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



Connection D1[1]	B1	B2	B3	D ∅	D2 ∅	D3 ∅	D4 ∅	D5 ∅	H1	H2	H3	L1	L2	⌀1	⌀2
Rp¼	62.4	22.4	30	11.6	5.5	-	36	42	36	6	7.4	80	16	24	9
Rp⅜	62.4	22.4	30	12.7	5.5	-	36	42	36	6	7.4	80	16	24	9
Rp½	62	22	31	12	5.5	-	36	42	36	6	8.4	80	17.4	27	9
Rp¾	67	23	34.7	15	5.5	6.5	42	50	42	6.2	12	88	20	34	11
Rp1	83	32	40	20	5.5	6.5	42	50	47	6.3	12	100	20.5	41	11
Rp1¼	98	36	47.2	25	5.5	6.5	42	50	53	6.7	11	123	24	50	11
Rp1½	114	43	53	32	5.5	6.5	42	50	59	7	10.8	142	26.6	58	11
Rp2	141	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

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Technical data – Stainless steel design

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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