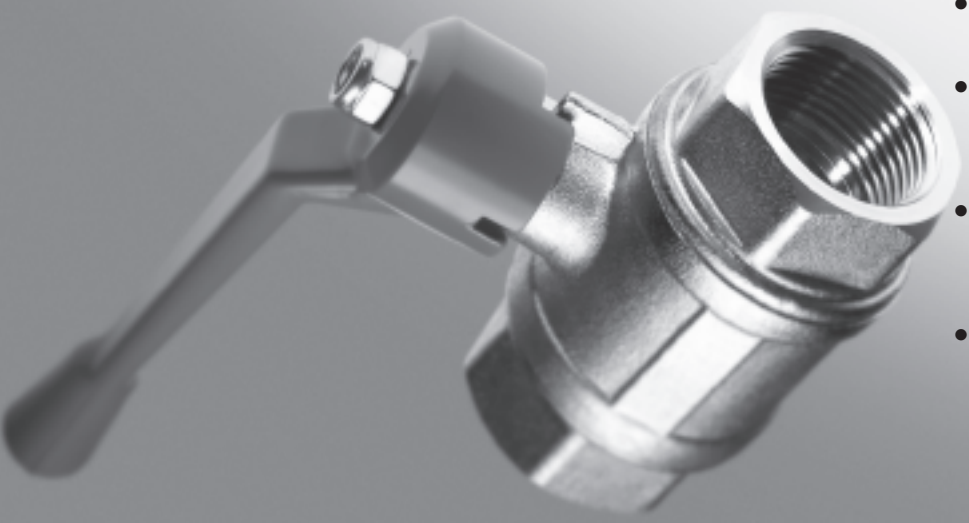
Ball valves and shut-off valves

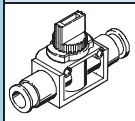
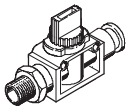
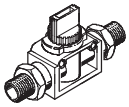
FESTO



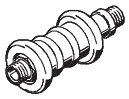
- Shut-off valves HE
- Hand slide valves W
- Ball valves QH, manually actuated
- Ball valves VAPB, mechanically actuated
- Ball valves VAPB-CR, mechanically actuated, corrosion resistant

Ball valves and shut-off valves

Product range overview

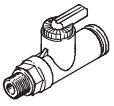
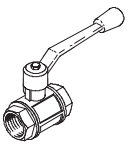
Function	Design	Type	Pneumatic connection		2/2-way valves	3/2-way valves	➔ Page
			Thread	For tubing O.D. [mm]			
Shut-off valves	**With QS push-in connector[1] at both ends**						
		HE	–	6	■	■[2]	2 / 5.2-7
				8	■	■[2]	
				10	■	■[2]	
				12	■	■[2]	
	With PTFE-coated connecting thread and QS push-in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

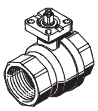
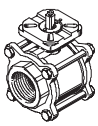
Function	Design	Type	Pneumatic connection		➔ Page
			Thread	For tubing O.D. [mm]	
Hand slide valves	**With connecting thread at both ends**				
		W	M5	–	2 / 5.2-10
			G1/8		
			G1/4		
			G3/8		
			G1/2		
			G3/4		

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 6	2 / 5.2-14
	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	R⅛	4 6	2 / 5.2-14
	With connecting thread at both ends				
		QH	G¼ G⅜ G½ G¾ G1 G1½	–	2 / 5.2-16

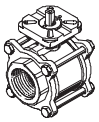
1) for standard O.D. plastic tubing

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	R¼	15	F03	40	2 / 5.2-22
			R⅜	15	F03	40	
			R½	15	F03	40	
			R¾	20	F03	40	
			R1	25	F0304	40	
			R1¼	32	F0405	40	
			R1½	40	F0405	25	
			R2	50	F05	25	
			R2½	63	F07	25	
	Stainless steel, corrosion-resistant						
		VAPB-...-CR	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

Ball valves and shut-off valves

Product range overview

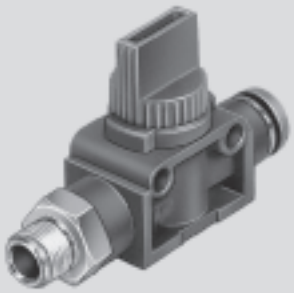
Function	Design	Type	Connecting thread[1]	Nominal size [mm]	Flanged connection to ISO 5211	Max. operating pressure [bar]	→ Page
Ball valves VZBA, 3-way, mechanically actuated[2]	**Stainless steel, corrosion-resistant**						
		VZBA-...-R	R¼	10	F0304	63	2 / 5.2-25
			R⅜	12	F0304		
			R½	16	F0304		
			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-...-...

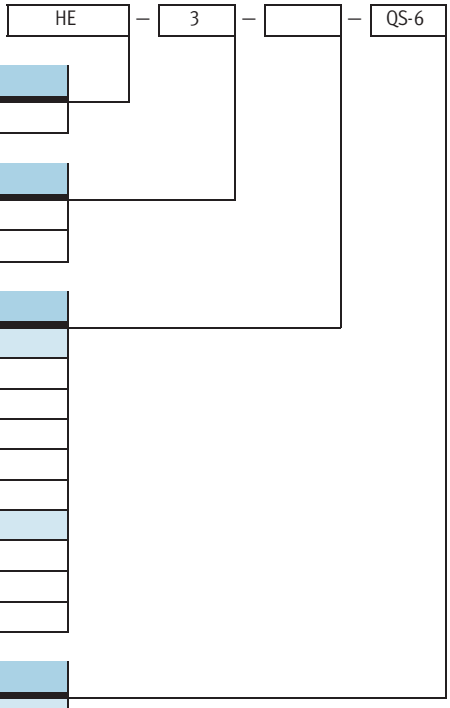
- Flow rate
  300 ... 800 l/min

- 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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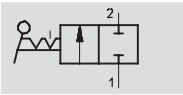
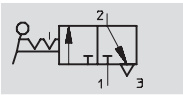
Function

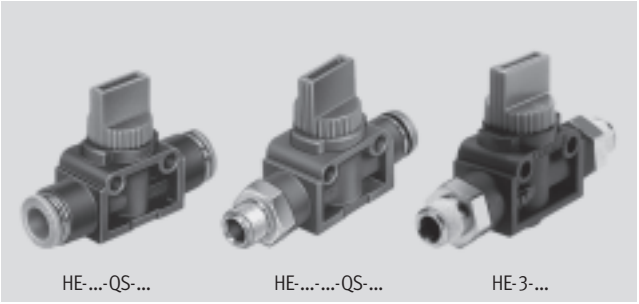


2/2-way



3/2-way

Flow rate
280 ... 840 l/min



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

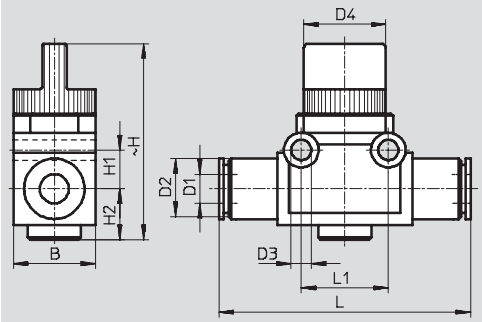
General technical data					
Push-in connector for tubing O.D.	[mm]	6	8	10	12
Type of mounting		2 through-holes in housing			
		In-line installation			
Nominal size	[mm]	5	5	7	7

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

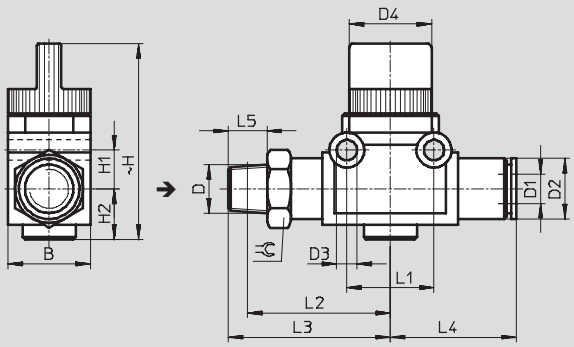
FESTO

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°



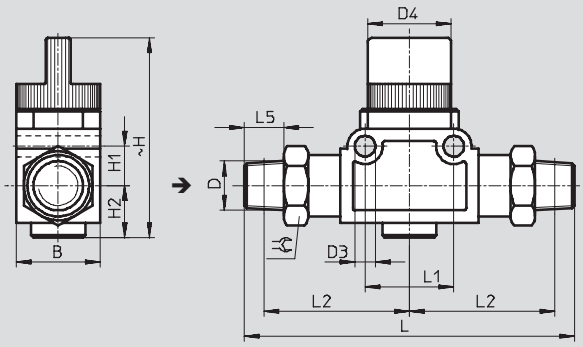
➔ = Flow direction

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

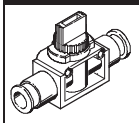
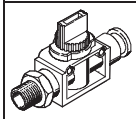
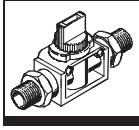
Connecting thread D	B	D3 ∅	D4 ∅	H	H1	H2	L	L1	L2	L5	⇄
R⅛	17	4.2	16.5	40.5	8	10.5	67	18	29.5	8	14
R¼	21	4.2	19.5	41	11	10.5	85	24	36.5	11	17
R⅜	21	4.2	19.5	41	11	10.5	87	24	37	12	17

Shut-off valves HE

Technical data

FESTO

Ordering data

	Description	Connecting thread	For tubing O.D. [mm]	2/2-way valves Part No.	2/2-way valves Type	3/2-way valves Part No.	3/2-way valves 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**

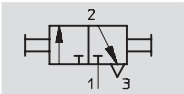
1) Free of copper, PTFE and silicone

Hand slide valves W

Technical data

FESTO

Function



3/2-way

- Flow rate
  280 ... 840 l/min

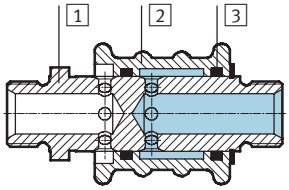
- Valve for pressurising and exhausting pneumatic control systems
- Suitable for a vacuum

W-3-¼

Technical data							
Connecting thread		M5	G⅛	G¼	G⅜	G½	G¾
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

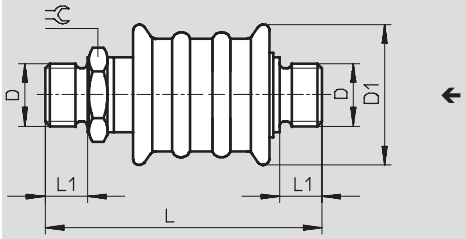


Hand slide valve	
1 Threaded plug	Nickel plated brass
2 Slide sleeve	Blue anodised aluminium
3 Seals	Nitrile rubber

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**

Ball valves QH/QHS, manually actuated

Key features

QH-QS-...

QH-QS-...-⅛

QHS-QS-6

QH-...

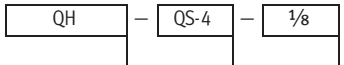
- Flow rate
  148 ... 84,000 l/min

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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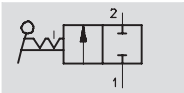
Function



2/2-way

- Flow rate
  148 ... 560 l/min

- Suitable for a vacuum

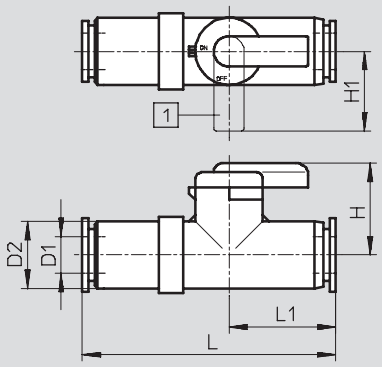
QH-QS-...-⅛ QH-QS-... QHS-QS-6

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

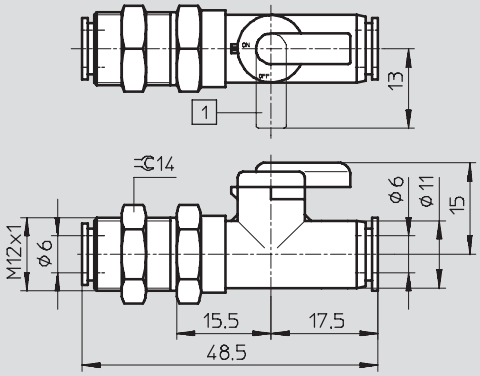
Tubing O.D. D1	D2 ∅	H	H1	L	L1
4	11	15	13	38	17
6	11	15	13	41.5	17.5

Ball valves QH/QHS, manually actuated

Technical data – with QS plug-in connector

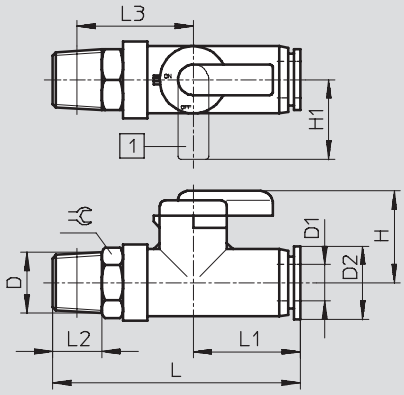
Dimensions Download CAD data ➔ **www.festo.com/en/engineering**

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



1 Closed

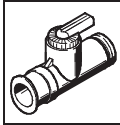
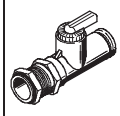
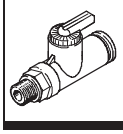
With PTFE-coated connecting thread and QS push-in connector



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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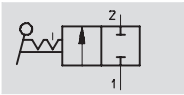
Function



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-3/8

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

Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

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

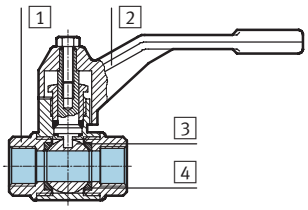
1) Other media upon request

- 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

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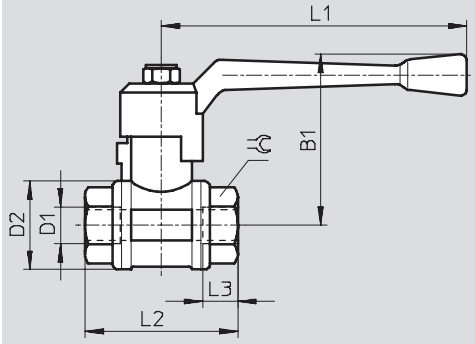
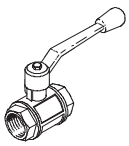
Dimensions Download CAD data ➔ **www.festo.com/en/engineering**



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: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Note

Not permitted for poisonous gas such as natural gas.