Non-return valves

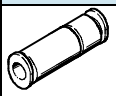
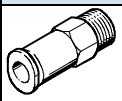
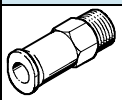
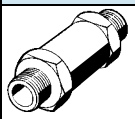
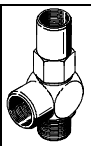
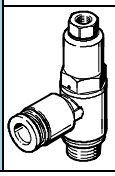
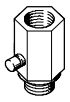
FESTO

- Non-return valves with or without pneumatic pilot signal
- With push-in connector at one or both ends for pipe O.D. of 4 ... 12 mm
- With connecting thread at one or both ends, M5 ... R1/2 or M5 ... G3/4
- Wide choice of variants

Non-return valves

Product range overview

FESTO

Function	Design	Type	Description	Port 1	Port 2					Free of copper and PTFE	→ Page
				Thread	For tubing O.D. [mm]						
					4	6	8	10	12		
Non-return valves	**QS push-in connector[1] at both ends**										
		H	–	–	■	■	■	■	■	■	2 / 5.1-4
	With connecting thread and QS push-in connector[1]										
	Flow direction: thread ⇢ push-in connector										
		HA	With metric thread and sealing ring and QS push-in connector	M5	■	–	–	–	–	–	2 / 5.1-4
			With PTFE-coated pipe thread and QS push-in connector	R1/8	■	■	■	–	–	–	
				R1/4	–	■	■	–	–	–	
				R3/8	–	–	–	■	■	–	
				R1/2	–	–	–		■	–	
	Flow direction: push-in connector ⇢ thread										
		HB	With metric thread and sealing ring and QS push-in connector	M5	■	–	–	–	–	–	2 / 5.1-4
			With PTFE-coated pipe thread and QS push-in connector	R1/8	■	■	■	–	–	–	
				R1/4	–	■	■	–	–	–	
				R3/8	–	–	–	■	■	–	
				R1/2	–	–	–		■	–	
	Connecting thread at both ends										
		H	With metric thread and sealing rings	M5[2]	–					–	2 / 5.1-7
			With pipe thread and sealing rings	G1/8[3]						–	
				G1/4[4]						–	
				G3/8[4]						–	
				G1/2[4]						–	
				G3/4[4]						–	
Non-return valves, piloted		HGL	With metric thread and sealing ring	M5	–					–	2 / 5.1-9
			Withpipe thread and sealing ring	G1/8						–	
				G1/4						–	
				G3/8						–	
				G1/2						–	
		HGL-B	Withpipe thread and sealing ring	G1/8	–					–	2 / 5.1-12
				G1/4						–	
				G3/8						–	
				G1/2						–	
		HGL-QS	With pipe thread and sealing ring and QS push-in connector	G1/8	■	■	–	–	–	–	2 / 5.1-14
				G1/4	–	–	■	■	–	–	
				G3/8	–	–	■	■	–	–	
				G1/2	–	–	–	–	■	–	
Manual override for exhaust air		HAB	With pipe thread	G1/8	–					–	2 / 5.1-16
				G1/4						–	
				G3/8						–	
				G1/2						–	

1) For standard O.D. plastic tubing
2) 2 female threads
3) 1 male thread, 1 female thread
4) 2 male threads

Non-return valves

Type codes

Type codes – Non-return valve

HA – ⅛ – QS-6 –

Type	
H	Non-return valve, with connecting thread or QS push-in connector at both ends
HA	Non-return valve with connecting thread and QS push-in connector
HB	Non-return valve with connecting thread and QS push-in connector

Screw-in and connecting thread	
M5	Metric thread M5
⅛-A/I	Pipe thread G⅛, 1 male thread, 1 female thread
⅛	Pipe thread G⅛ or R⅛
¼	Pipe thread G¼ or R¼
⅜	Pipe thread G⅜ or R⅜
½	Pipe thread G½ or R½
¾	Pipe thread G¾ or R¾

Tubing connection	
Type of connection	
QS	Push-in connector for standard O.D. tubing to CETOP RP 54 P
For tubing O.D.	
4	4 mm
6	6 mm
8	8 mm
10	10 mm
12	12 mm

Generation	
	Series A
B	Series B

Type codes – Non-return valves, piloted

HGL – ⅜ – QS-8

Type	
HGL	Non-return valve, piloted
HAB	Manual override for exhaust air

Screw-in and connecting thread	
M5	Metric thread M5
⅛	Pipe thread G⅛
¼	Pipe thread G¼
⅜	Pipe thread G⅜
½	Pipe thread G½

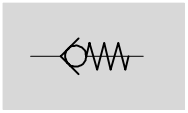
Push-in fitting	
4	4 mm
6	6 mm
8	8 mm
10	10 mm
12	12 mm

Non-return valves H-QS/HA/HB

Technical data

FESTO

Function



- Flow rate
  140 ... 1720 l/min

- Non-return valves without pneumatic pilot signal
- QS push-in connector at one or both ends

H-QS-...

General technical data		
Valve function		Non-return function
Type of mounting	QS push-in connector, both ends	In-line installation
	QS push-in connector, one end	Can be screwed in

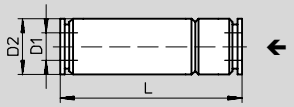
Operating and environmental conditions	
Operating medium	Filtered compressed air, lubricated or unlubricated.
Ambient temperature	0 ... +60 °C
Temperature of medium	0 ... +60 °C

Materials		
Housing	QS push-in connector, both ends	Aluminium, black anodized; Brass, nickel-plated
	QS push-in connector, one end	Brass, nickel-plated
Seals		Nitrile rubber
Material note		Free of copper and PTFE ➔ Ordering data

Technical data – QS push-in connector at both ends						
Tubing O.D.	[mm]	4	6	8	10	12
Nominal size	[mm]	3.2	5	7	8.5	11
Standard nominal flow rate	[l/min]	140	280	680	1,480	1,720
Weight	[g]	5	10	20	62	68
Operating pressure	[bar]	–1 ... +10				

Dimensions – QS push-in connector, both ends Download CAD data ➔ **www.festo.com/en/engineering**

H-QS-...



← Flow direction

Tubing O.D. D1	D2 ∅	L
4	9	35
6	12	39
8	15	55.5
10	25	82.5
12	25	87.5

Non-return valves H-QS/HA/HB

Technical data

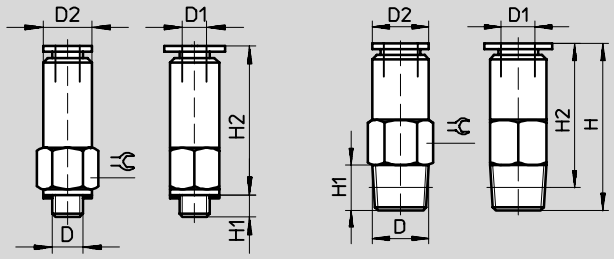
Technical data – Connecting thread and QS push-in connector										
Connecting thread		M5	R⅛			R¼		R⅜		R½
Tubing O.D.	[mm]	4	4	6	8	6	8	10	12	12
Nominal size	[mm]	2.4	3.2	5	5	5	7	8.5	11	11
Standard nominal flow rate	[l/min]	150	140	310	330	300	670	1,740	1,880	2,230
Weight	[g]	7	10	10	20	20	20	46	49	69
Operating pressure	[bar]	–0.75 ... +10								

Dimensions – Connecting thread and QS push-in connector

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

HA-M5-QS-...
HB-M5-QS-...

HA-...-QS-...
HB-...-QS-...



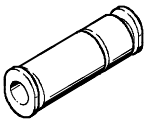
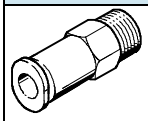
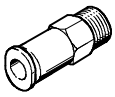
Flow direction
↑ HA
↓ HB

Connecting thread D	Tubing O.D. D1	D2 ∅	H	H1	H2	⫧
M5	4	8	28	3.5	24.5	8
R⅛	4	9	24.5	8	20	10
	6	10	29.5	8	25	10
	8	13.5	35.5	8	29.5	14
R¼	6	12	29.5	11	23	14
	8	13.5	39.5	11	33.5	14
R⅜	10	25	71	12	55.5	24
	12	25	64.5	12	58	24
R½	12	28	71	15	63	27

Non-return valves H-QS/HA/HB

Technical data

FESTO

Ordering data					
	Description	Connecting thread	For tubing O.D. [mm]	Part No.	Type
Non-return valves with QS push-in connector for standard O.D. plastic tubing					
	QS push-in connector, both ends	–	4	**153 462**	**H-QS-4**[1]
			6	**153 463**	**H-QS-6**[1]
			8	**153 464**	**H-QS-8**[1]
			10	**153 465**	**H-QS-10**[1]
			12	**153 466**	**H-QS-12**[1]
Flow direction: thread ⇢ push-in connector					
	With metric thread and sealing ring and QS push-in connector	M5	4	**153 444**	**HA-M5-QS-4**
	With PTFE-coated pipe thread and QS push-in connector	R⅛	4	**153 446**	**HA-⅛-QS-4**
			6	**153 448**	**HA-⅛-QS-6**
			8	**153 452**	**HA-⅛-QS-8**
		R¼	6	**153 450**	**HA-¼-QS-6**
			8	**153 454**	**HA-¼-QS-8**
		R⅜	10	**153 456**	**HA-⅜-QS-10**
			12	**153 458**	**HA-⅜-QS-12**
		R½	12	**153 460**	**HA-½-QS-12**
Flow direction: push-in connector ⇢ thread					
	With metric thread and sealing ring and QS push-in connector	M5	4	**153 445**	**HB-M5-QS-4**
	With PTFE-coated pipe thread and QS push-in connector	R⅛	4	**153 447**	**HB-⅛-QS-4**
			6	**153 449**	**HB-⅛-QS-6**
			8	**153 453**	**HB-⅛-QS-8**
		R¼	6	**153 451**	**HB-¼-QS-6**
			8	**153 455**	**HB-¼-QS-8**
		R⅜	10	**153 457**	**HB-⅜-QS-10**
			12	**153 459**	**HB-⅜-QS-12**
		R½	12	**153 461**	**HB-½-QS-12**

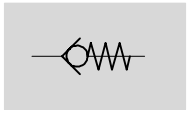
1) Free of copper and PTFE

Non-return valves H

Technical data

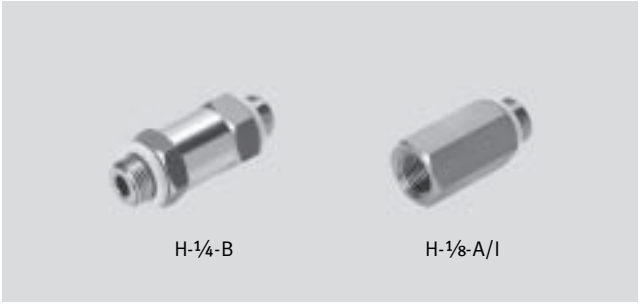
FESTO

Function



- Flow rate
  140 ... 5,500 l/min

- Non-return valves without pneumatic pilot signal
- Connecting thread at both ends

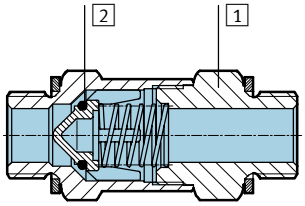


General technical data	
Valve function	Non-return function
Type of mounting	Can be screwed in

Operating and environmental conditions	
Operating medium	Filtered compressed air, lubricated or unlubricated.
Ambient temperature	–10 ... +60 °C
Temperature of medium	–10 ... +60 °C

Materials

Sectional view



Non-return valve		
1	Housing	Brass
2	Seals	Nitrile rubber

Non-return valves H

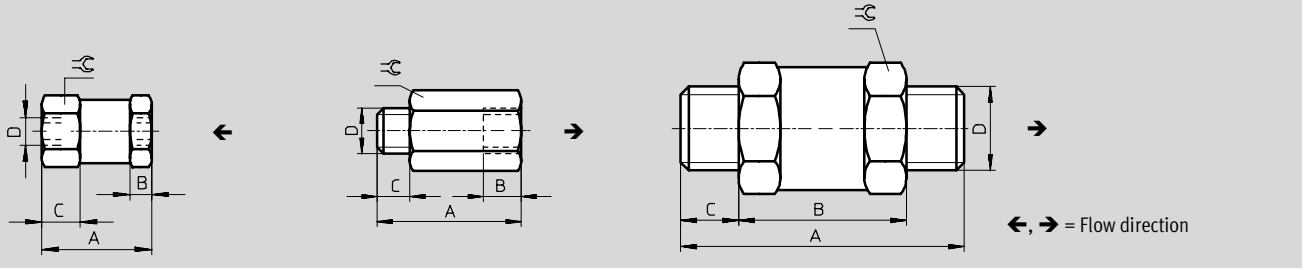
Technical data

FESTO

Technical data – Connecting thread at both ends							
Connecting thread		M5	G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4
Nominal size	[mm]	2.2	4	6	8	13	16
Standard nominal flow rate	[l/min]	140	280	850	1,650	4,600	5,500
Weight	[g]	15	25	70	75	150	425
Operating pressure	[bar]	0.4 ... 8		0.4 ... 12			

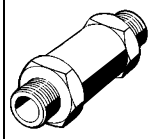
Dimensions – Connecting thread at both ends Download CAD data ➔ **www.festo.com/en/engineering**

M5 G1⁄8 G1⁄4 ... G3⁄4



Connecting thread D	A	B	C	⫧
M5	20	4	7	11
G1⁄8	28.5	7.5	6.5	14
G1⁄4	50	32	9	22
G3⁄8	54	32	11	22
G1⁄2	70	44	13	27
G3⁄4	77	50	13.5	32

Ordering data

	Description	Connecting thread	For tubing O.D. [mm]	Part No.	Type
Non-return valves, with connecting thread at both ends					
	Metric thread at both ends and 2 sealing rings	M5[1]	–	**3 671**	**H-M5**
	With pipe thread at both ends and 2 sealing rings	G1⁄8[2]		**3 324**	**H-1⁄8-A/I**
		G1⁄4[3]		**11 689**	**H-1⁄4-B**
		G3⁄8[3]		**11 690**	**H-3⁄8-B**
		G1⁄2[3]		**11 691**	**H-1⁄2-B**
		G3⁄4[3]		**11 692**	**H-3⁄4-B**

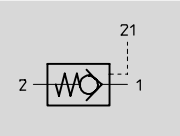
1) 2 female threads
2) 1 male thread, 1 female thread
3) 2 male threads

Non-return valves HGL, piloted

Technical data

FESTO

Function



■ Non-return valve with pneumatic pilot function

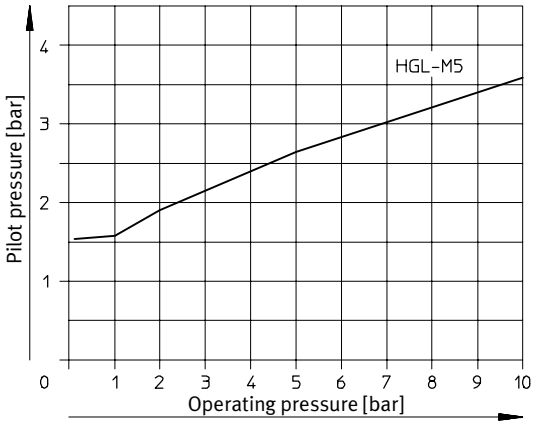

HGL-¼

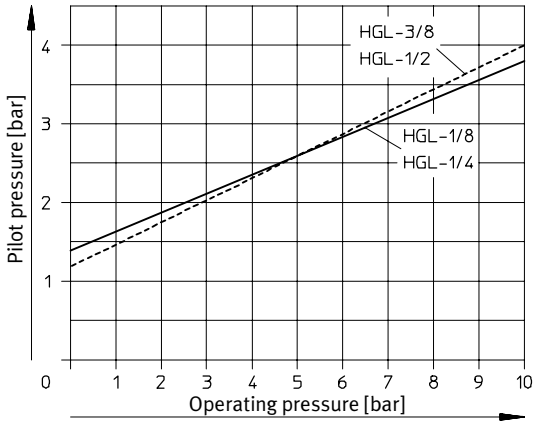
- Flow rate
  108 ... 1,540 l/min

General technical data						
Pneumatic connection		M5	G⅛	G¼	G⅜	G½
Valve function		Non-return function, piloted				
Type of mounting		Can be screwed in				
Standard nominal flow rate 1 → 2	[l/min]	108	260	540	900	1,540
Weight	[g]	20	24	43	78	148

Operating and environmental conditions						
Pneumatic connection		M5	G⅛	G¼	G⅜	G½
Operating medium		Dried air, lubricated or unlubricated				
Operating pressure	[bar]	0.5 ... 10	0.5 ... 10	0.3 ... 10	0.2 ... 10	0.5 ... 10
Ambient temperature	[°C]	–10 ... +60	–20 ... +80			
Temperature of medium	[°C]	–10 ... +60	–20 ... +80			

Minimum pilot pressure as a function of operating pressure





- Note

In safety-relevant applications the HGL product family and all of its design variants must ONLY be used in combination with additional measures according to EN 954-1.

A supplementary risk analysis by the user/designer is essential.
The instructions and notices on the enclosed product leaflets must be observed.

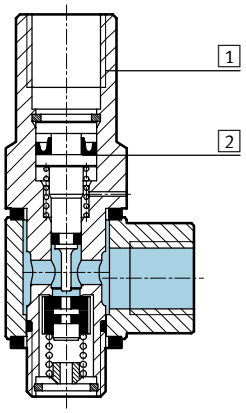
Non-return valves HGL, piloted

Technical data

FESTO

Materials

Sectional view

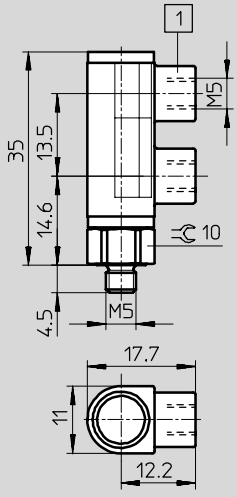


Non-return valve, piloted	
1 Housing	Die-cast zinc
2 Seals	Nitrile rubber

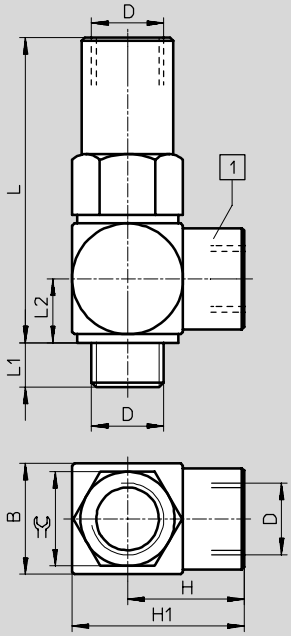
Dimensions

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

Pneumatic connection M5

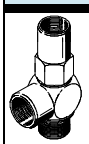


Pneumatic connection G⅛ ... G½



Pneumatic connection D	B	H	H1	L	L1	L2	⌀
G⅛	16	15.5	23.5	46	5.5	9	14
G¼	20	21	31	55	8	11.5	17
G⅜	25	24	36.5	59.5	9.5	14	22
G½	30	29	44	78.5	12	16.7	27

Ordering data

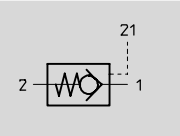
Non-return valve, piloted	Pneumatic connection	Pilot port	Part No.	Type
	M5	M5	**161 779**	**HGL-M5**
	G⅛	G⅛	**12 938**	**HGL-⅛**
	G¼	G¼	**12 939**	**HGL-¼**
	G⅜	G⅜	**12 940**	**HGL-⅜**
	G½	G½	**12 941**	**HGL-½**

Non-return valves HGL-B, piloted

Technical data

FESTO

Function



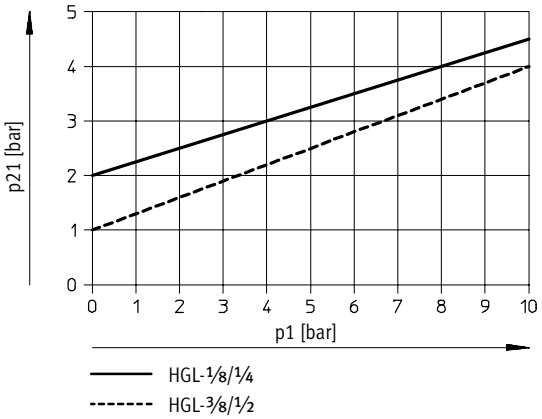
- Flow rate
  300 ... 1,600 l/min

■ Non-return valve with pneumatic pilot function

General technical data					
Pneumatic connection		G⅛	G¼	G⅜	G½
Valve function		Non-return function, piloted			
Type of mounting		Can be screwed in			
Pilot air connection 21		M5	G⅛	G¼	G⅜
Standard nominal flow rate 1 → 2	[l/min]	300	550	1,100	1,600
Weight	[g]	20.8	41.2	62.9	129.4

Operating and environmental conditions					
Pneumatic connection		G⅛	G¼	G⅜	G½
Operating medium		Dried air, lubricated or unlubricated			
Operating pressure	[bar]	0.5 ... 10			
Pilot pressure	[bar]	2 ... 10		1 ... 10	
Ambient temperature	[°C]	–10 ... +60			
Temperature of medium	[°C]	–10 ... +60			

Minimum pilot pressure as a function of operating pressure



- Note

In safety-relevant applications the HGL product family and all of its design variants must ONLY be used in combination with additional measures according to EN 954-1.

A supplementary risk analysis by the user/designer is essential.
The instructions and notices on the enclosed product leaflets must be observed.

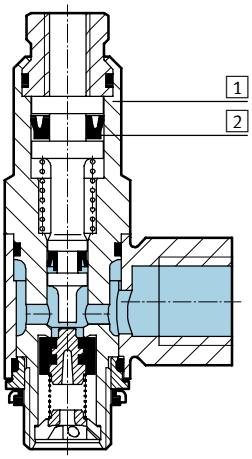
Non-return valves HGL-B, piloted

Technical data

FESTO

Materials

Sectional view

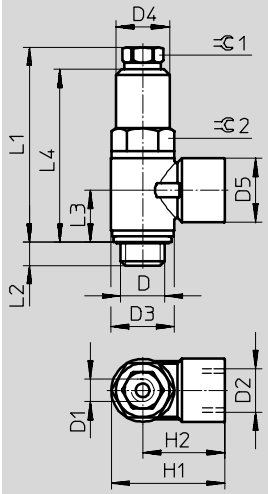


Non-return valve, piloted	
1 Housing	Die-cast zinc
2 Seals	Nitrile rubber

Dimensions

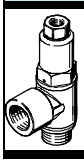
Download CAD data ➔ **www.festo.com/en/engineering**

Pneumatic connection G⅛ ... G½



Pneumatic connection D	D1	D2	D3 ∅	D4 ∅	D5 ∅	H1	H2	L1	L2	L3	L4	⌀1	⌀2
G⅛	M5	G⅛	14	11.8	14	25.1	18.1	48	5.4	11.2	37.8	12	8
G¼	G⅛	G¼	18	16	17.5	34	25	57.3	6.5	13.5	44.6	16	12
G⅜	G¼	G⅜	23.8	18.8	20	39.3	27.4	63.2	7	15.1	49.6	19	15
G½	G⅜	G½	30	23.5	25	47.8	32.8	84.5	8.8	17.7	66.2	24	22

Ordering data

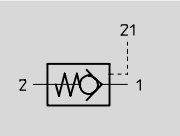
Non-return valve, piloted	Pneumatic connection	Pilot port	Part No.	Type
	G⅛	M5	**530 030**	**HGL-⅛-B**
	G¼	G⅛	**530 031**	**HGL-¼-B**
	G⅜	G¼	**530 032**	**HGL-⅜-B**
	G½	G⅜	**530 033**	**HGL-½-B**

Non-return valves HGL-QS, piloted

Technical data

FESTO

Function



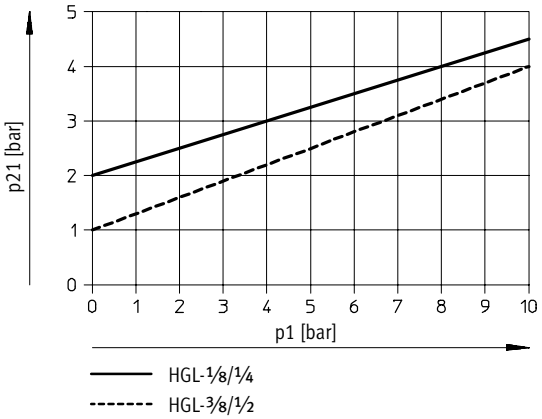
- Flow rate
  300 ... 1,600 l/min

■ Non-return valve with pneumatic pilot function

General technical data					
Pneumatic connection 2		G⅛	G¼	G⅜	G½
Valve function		Non-return function, piloted			
Type of mounting		Can be screwed in			
Pneumatic connection 1 for tubing O.D.	[mm]	4, 6	8, 10	8, 10	12
Pilot air connection 21		M5	G⅛	G¼	G⅜
Standard nominal flow rate 1 → 2	[l/min]	300	550	1,100	1,600

Operating and environmental conditions					
Pneumatic connection		G⅛	G¼	G⅜	G½
Operating medium		Dried air, lubricated or unlubricated			
Operating pressure	[bar]	0.5 ... 10			
Pilot pressure	[bar]	2 ... 10		1 ... 10	
Ambient temperature	[°C]	–10 ... +60			
Temperature of medium	[°C]	–10 ... +60			

Minimum pilot pressure as a function of operating pressure



- Note

In safety-relevant applications the HGL product family and all of its design variants must ONLY be used in combination with additional measures according to EN 954-1.

A supplementary risk analysis by the user/designer is essential.
The instructions and notices on the enclosed product leaflets must be observed.

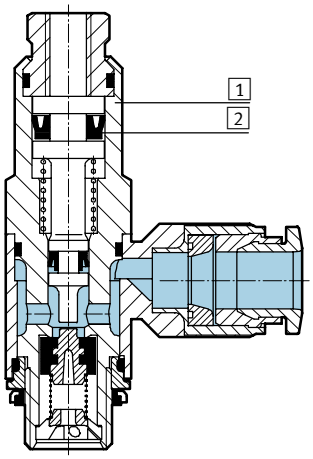
Non-return valves HGL-QS, piloted

Technical data

FESTO

Materials

Sectional view

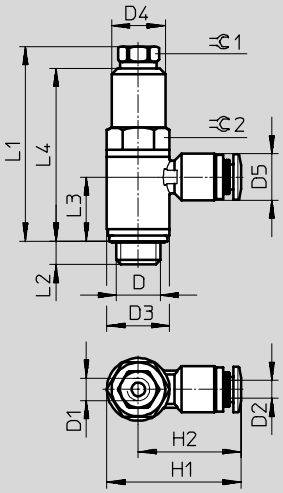


Non-return valve, piloted	
1 Housing	Die-cast zinc
2 Seals	Nitrile rubber

Dimensions

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

Pneumatic connection G⅛ ... G½



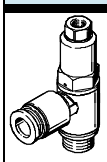
Pneumatic connection D	D1	D2	D3 ∅	D4 ∅	D5 ∅	H1	H2	L1	L2	L3	L4	⫷1	⫷2
G⅛	M5	QS-4	13.8	11.8	10.2	29.4	22.5	48	5.4	13.9	37.8	12	8
		QS-6			12.5	32.6	25.7			13.2			
G¼	G⅛	QS-8	17.8	16	14.5	39.6	30.7	57.3	6.5	16.6	44.6	16	12
		QS-10			17.5	42	33.1			15.5			
G⅜	G¼	QS-8	22.4	18.8	14.5	44.1	32.9	63.2	7	18.2	49.6	19	15
		QS-10			17.5	46.7	35.5			18.2			
G½	G⅜	QS-12	27.8	23.5	20.5	55.3	41.4	84.5	8.8	22.4	66.2	24	22

Non-return valves HGL-QS, piloted

Technical data

FESTO

Ordering data

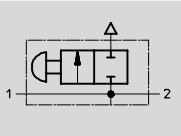
Non-return valve, piloted	Pneumatic connection	For tubing outside∅ [mm]	Weight [g]	Part No.	Type
	G1/8	4	18.4	**530 039**	**HGL-1/8-QS-4**
	G1/8	6	21.4	**530 040**	**HGL-1/8-QS-6**
	G1/4	8	38.7	**530 041**	**HGL-1/4-QS-8**
	G1/4	10	45	**530 042**	**HGL-1/4-QS-10**
	G3/8	8	54.7	**530 043**	**HGL-3/8-QS-8**
	G3/8	10	60.3	**530 044**	**HGL-3/8-QS-10**
	G1/2	12	116.9	**530 045**	**HGL-1/2-QS-12**

Non-return valves HGL, piloted

Technical data – Manual override HAB

FESTO

Function



- Flow rate
  165 l/min

- The manual override module HAB can be used to manually exhaust air locked in the cylinder.

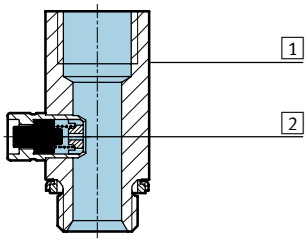
HAB-1/8

General technical data					
Pneumatic connection		G1/8	G1/4	G3/8	G1/2
Type of mounting		Can be screwed in			
Nominal size 1 ⇢ 2	[mm]	4.1	7	11	14
Exhaust flow rate	[l/min]	165			
Actuating force	[N]	16			
Tightening torque	[Nm]	4	11	40	50

Operating and environmental conditions					
Pneumatic connection		G1/8	G1/4	G3/8	G1/2
Operating medium		Filtered compressed air, lubricated or unlubricated			
Operating pressure range	[bar]	0 ... 10			
Temperature range	[°C]	–20 ... +80			

Materials

Sectional view

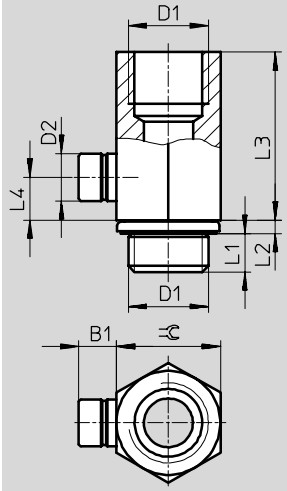


Manual override	
1 Housing	Aluminium
2 Seals	Nitrile rubber

Non-return valves HGL, piloted

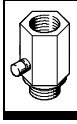
Technical data – Manual override HAB

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



Pneumatic connection D1	B1	D2 ∅	L1	L2	L3	L4	⫧
G1/8	6.2	7.6	4.7	1.8	19.1	5	13
G1/4	6.2	7.6	6.3	2.2	27.5	7	17
G3/8	6.2	7.6	7.5	3	27.3	7	22
G1/2	6.2	7.6	10.9	2.6	32	7	24

Ordering data

Manual override	Pneumatic connection	Part No.	Type
	G1/8	**184 585**	**HAB-1/8**
	G1/4	**184 586**	**HAB-1/4**
	G3/8	**184 587**	**HAB-3/8**
	G1/2	**184 588**	**HAB-1/2**