

## Non-return valves

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
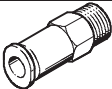
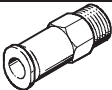
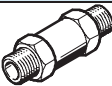




# Non-return valves

Product range overview

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Function	Version	Type	Description	Port 1	Port 2					Free of copper and PTFE	→ Page/Internet
				Thread	for tubing Ø [mm]						
					4	6	8	10	12		
Non-return valves	QS push-in connector <sup>1)</sup> at both ends										
		H	–	–	■	■	■	■	■	■	6
	With connecting thread and QS push-in connector <sup>1)</sup>										
	Flow direction: thread → push-in connector										
		HA	With thread and sealing ring and QS push-in connector	M5	■	–	–	–	–	–	6
			With PTFE-coated thread and QS push-in connector	R1/8	■	■	■	–	–	–	
				R1/4	–	■	■	–	–	–	
				R3/8	–	–	–	■	■	–	
				R1/2	–	–	–	–	■	–	
	Flow direction: push-in connector → thread										
		HB	With thread and sealing ring and QS push-in connector	M5	■	–	–	–	–	–	6
			With PTFE-coated thread and QS push-in connector	R1/8	■	■	■	–	–	–	
				R1/4	–	■	■	–	–	–	
				R3/8	–	–	–	■	■	–	
				R1/2	–	–	–	–	■	–	
Connecting thread at both ends											
	H	With thread and sealing rings	M5 <sup>2)</sup>	–						–	9
			G1/8 <sup>3)</sup>							–	
			G1/4 <sup>4)</sup>							–	
			G3/8 <sup>4)</sup>							–	
			G1/2 <sup>4)</sup>							–	
			G3/4 <sup>4)</sup>							–	

1) For standard O.D. plastic tubing

2) 2 female thread

3) 1 male thread, 1 female thread


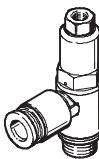

4) 2 male thread



# Non-return valves

Product range overview

**FESTO**

Function	Version	Type	Description	Port 1	Port 2					→ Page/In- ternet
				Thread	for tubing Ø [mm]					
					4	6	8	10	12	
Non-return valves, piloted		HGL-B	With thread and sealing ring	M5	—					12
				G1/8						
				G1/4						
				G3/8						
				G1/2						
		HGL-QS	With thread, sealing ring and QS push-in connector	M5	■	—	—	—	—	15
				G1/8	■	■	—	—	—	
				G1/4	—	—	■	■	—	
				G3/8	—	—	■	■	—	
				G1/2	—	—	—	—	■	
Manual override for exhaust air		HAB	With thread	G1/8	—					17
				G1/4						
				G3/8						
				G1/2						



# Non-return valves

Type codes

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## Type codes – Non-return valves

		HA	–	1/8	–	QS-6	–	B
<b>Type</b>								
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							
<b>Screw-in and connecting thread</b>								
M5	Thread M5							
1/8-A/I	Thread G1/8, 1 male thread, 1 female thread							
1/8	Thread G1/8 and/or R1/8							
1/4	Thread G1/4 and/or R1/4							
3/8	Thread G3/8 and/or R3/8							
1/2	Thread G1/2 and/or R1/2							
3/4	Thread G3/4 and/or R3/4							
<b>Push-in connector</b>								
QS-4	4 mm							
QS-6	6 mm							
QS-8	8 mm							
QS-10	10 mm							
QS-12	12 mm							
<b>Generation</b>								
	A series							
B	B series							



# Non-return valves

Type codes

## Type codes – Piloted non-return valves, threaded connection

		HGL	–	3/8	–	B
<b>Type</b>						
HGL	Non-return valve, piloted					
<b>Screw-in and connecting thread</b>						
M5	Metric thread M5					
1/8	G1/8 thread					
1/8÷1/8	G1/8 thread, pilot port G1/8					
1/4	G1/4 thread					
3/8	G3/8 thread					
1/2	G1/2 thread					
<b>Generation</b>						
B	B series					

## Type codes – Piloted non-return valves, QS connection

		HGL	–	3/8	–	QS-8
<b>Type</b>						
HGL	Non-return valve, piloted					
<b>Screw-in and connecting thread</b>						
M5	Metric thread M5					
1/8	G1/8 thread					
1/4	G1/4 thread					
3/8	G3/8 thread					
1/2	G1/2 thread					
<b>Push-in connector</b>						
QS-4	4 mm					
QS-6	6 mm					
QS-8	8 mm					
QS-10	10 mm					
QS-12	12 mm					

## Type code – Functional combination with one-way flow control valve and piloted non-return valve

		GRXA-HG	–	1/4	–	QS-6
<b>Type</b>						
GRXA-HG	GRXA: One-way flow control valve HG: Non-return valve, piloted					
<b>Screw-in and connecting thread</b>						
1/8	G1/8 thread					
1/4	G1/4 thread					
<b>Push-in connector</b>						
QS-4	4 mm					
QS-6	6 mm					
QS-8	8 mm					

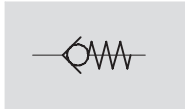


# Non-return valves H-QS/HA/HB

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Technical data

Function



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

Flow rate

140 ... 1720 l/min



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

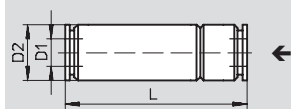
Materials		
Housing	QS push-in connector, both ends	Aluminium, black anodized; Brass, nickel-plated
	QS push-in connector, one end	Brass, nickel-plated
Seals		Nitrile rubber
Material note		Free of copper and PTFE → Ordering data

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/us/cad](http://www.festo.com/us/cad)

H-QS-...



← Flow direction

Tubing O.D. D1	D2 Ø	L
4	9	34.8
6	12	38.8
8	15	54.9
10	25	73.4
12	25	78.6



# Non-return valves H-QS/HA/HB

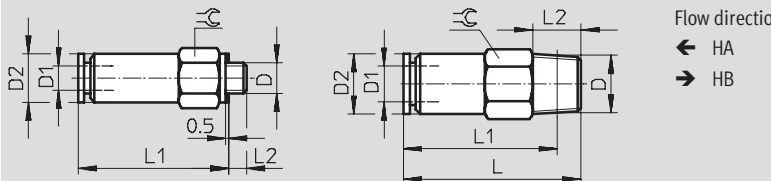
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Technical data

Technical data – Connecting thread and QS push-in connector									
Connecting thread	M5	R $\frac{1}{8}$			R $\frac{1}{4}$		R $\frac{3}{8}$		R $\frac{1}{2}$
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]	7.2	9.5	9.5	20	20	22	46	49	68.5
Operating pressure [bar]	-0.75 ... +10								

## Dimensions – Connecting thread and QS push-in connector Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)

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



Flow direction

← HA

→ HB

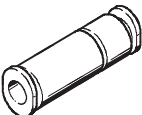
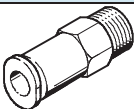
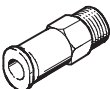
Connecting thread D	Tubing O.D. D1	D2 Ø	L	L1	L2	≡
M5	4	8	–	25.4	3	8
R $\frac{1}{8}$	4	9	24.5	20.5	8	10
	6	10	29.5	25.3	8	10
	8	13.5	35.5	31.5	8	14
R $\frac{1}{4}$	6	12	29.3	23.3	11	14
	8	13.5	39.2	33.2	11	14
R $\frac{3}{8}$	10	25	61.7	55.4	12	24
	12	25	64.3	58	12	24
R $\frac{1}{2}$	12	28	70.8	62.6	15	27



# Non-return valves H-QS/HA/HB

Technical data

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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	153462	H-QS-4 <sup>1)</sup>
			6	153463	H-QS-6 <sup>1)</sup>
			8	153464	H-QS-8 <sup>1)</sup>
			10	153465	H-QS-10 <sup>1)</sup>
			12	153466	H-QS-12 <sup>1)</sup>
Flow direction: thread → push-in connector					
	With metric thread and sealing ring and QS push-in connector	M5	4	153444	HA-M5-QS-4
	With PTFE-coated pipe thread and QS push-in connector	R <sup>1</sup> / <sub>8</sub>	4	153446	HA- <sup>1</sup> / <sub>8</sub> -QS-4
			6	153448	HA- <sup>1</sup> / <sub>8</sub> -QS-6
			8	153452	HA- <sup>1</sup> / <sub>8</sub> -QS-8
		R <sup>1</sup> / <sub>4</sub>	6	153450	HA- <sup>1</sup> / <sub>4</sub> -QS-6
			8	153454	HA- <sup>1</sup> / <sub>4</sub> -QS-8
		R <sup>3</sup> / <sub>8</sub>	10	153456	HA- <sup>3</sup> / <sub>8</sub> -QS-10
			12	153458	HA- <sup>3</sup> / <sub>8</sub> -QS-12
		R <sup>1</sup> / <sub>2</sub>	12	153460	HA- <sup>1</sup> / <sub>2</sub> -QS-12
Flow direction: push-in connector → thread					
	With metric thread and sealing ring and QS push-in connector	M5	4	153445	HB-M5-QS-4
	With PTFE-coated pipe thread and QS push-in connector	R <sup>1</sup> / <sub>8</sub>	4	153447	HB- <sup>1</sup> / <sub>8</sub> -QS-4
			6	153449	HB- <sup>1</sup> / <sub>8</sub> -QS-6
			8	153453	HB- <sup>1</sup> / <sub>8</sub> -QS-8
		R <sup>1</sup> / <sub>4</sub>	6	153451	HB- <sup>1</sup> / <sub>4</sub> -QS-6
			8	153455	HB- <sup>1</sup> / <sub>4</sub> -QS-8
		R <sup>3</sup> / <sub>8</sub>	10	153457	HB- <sup>3</sup> / <sub>8</sub> -QS-10
			12	153459	HB- <sup>3</sup> / <sub>8</sub> -QS-12
		R <sup>1</sup> / <sub>2</sub>	12	153461	HB- <sup>1</sup> / <sub>2</sub> -QS-12

1) Free of copper and PTFE

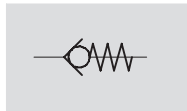


# Non-return valves H

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## Technical data

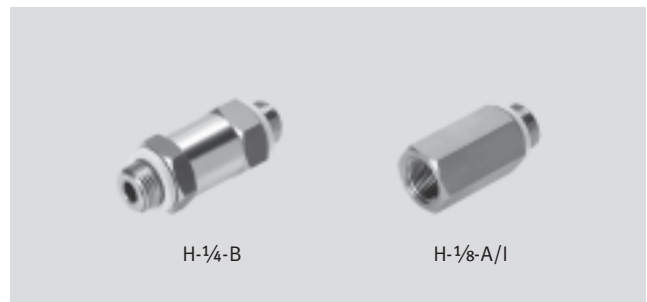
### Function



- Non-return valves
- Connecting thread at both ends

### Flow rate

115 ... 5,900 l/min



General technical data						
Pneumatic connection	M5	G1/8	G1/4	G3/8	G1/2	G3/4
Valve function	Non-return function					
Type of mounting	Can be screwed in					
Max. tightening torque [Nm]	–	–	11	20	40	60

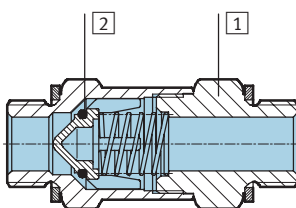
Note: This product conforms to ISO 1179-1 and to ISO 228-1

Operating and environmental conditions						
Pneumatic connection	M5	G1/8	G1/4	G3/8	G1/2	G3/4
Operating medium	Filtered compressed air, lubricated or unlubricated					
Storage temperature [°C]	–	–	–10 ... +60 °C			
Ambient temperature [°C]	–10 ... +60 °C					
Temperature of medium [°C]	–10 ... +60 °C					
Corrosion resistance class CRC	–	–	2 <sup>1)</sup>			

- 1) Corrosion resistance class 2 according to Festo standard 940 070  
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

## Materials

### Sectional view



Non-return valve M5, G1/8		
1	Housing	Brass, nickel-plated
2	Seals	Nitrile rubber

Non-return valve G1/4, G3/8, G1/2, G3/4		
1	Housing	Wrought aluminium alloy, anodised
2	Seals	Nitrile rubber
–		Free of copper and PTFE

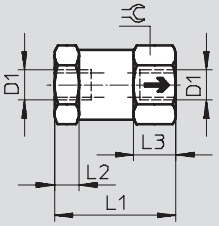
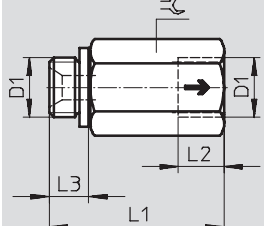
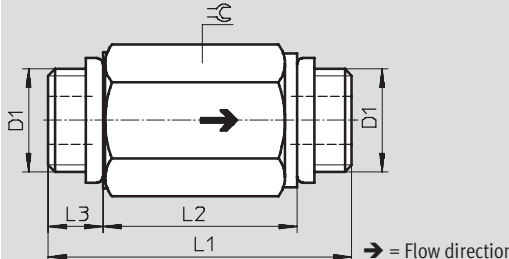


# Non-return valves H

Technical data

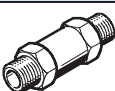
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Technical data – Connecting thread at both ends						
Connecting thread	M5	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$	G $\frac{1}{2}$	G $\frac{3}{4}$
Standard nominal flow rate [l/min]	115	280	1,000	2,000	5,500	5,900
Weight [g]	15	21	25.4	34	58.3	101
Operating pressure [bar]	0.4 ... 8		0.4 ... 12			

Dimensions – Connecting thread at both ends			Download CAD Data → <a href="http://www.festo.com/us/cad">www.festo.com/us/cad</a>
M5	G $\frac{1}{8}$	G $\frac{1}{4}$ ... G $\frac{3}{4}$	
			

Connecting thread D1	L1	L2	L3	≡
M5	20	4	7	11
G $\frac{1}{8}$	28.5	7.5	6.5	14
G $\frac{1}{4}$	48	32	8	19
G $\frac{3}{8}$	50	32	9	22
G $\frac{1}{2}$	65	44	10.5	27
G $\frac{3}{4}$	74	50	12	32

Note: This product conforms to ISO 1179-1 and to ISO 228-1

Ordering data				
	Description	Connecting thread	Part No.	Type
Non-return valves, with connecting thread at both ends				
	Metric thread at both ends and 2 sealing rings	M5 <sup>1)</sup>	3671	H-M5
	With pipe thread at both ends and 2 sealing rings	G $\frac{1}{8}$ <sup>2)</sup>	3324	H- $\frac{1}{8}$ -A/I
		G $\frac{1}{4}$ <sup>3)</sup>	11689	H- $\frac{1}{4}$ -B
		G $\frac{3}{8}$ <sup>3)</sup>	11690	H- $\frac{3}{8}$ -B
		G $\frac{1}{2}$ <sup>3)</sup>	11691	H- $\frac{1}{2}$ -B
		G $\frac{3}{4}$ <sup>3)</sup>	11692	H- $\frac{3}{4}$ -B

1) 2 female threads

2) 1 male thread, 1 female thread

3) 2 male threads



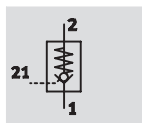
# Non-return valves HGL-B, piloted

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Technical data

Function

- Pneumatic piloted non-return valve



Flow rate

130 ... 1,600 l/min



General technical data						
Pneumatic connection	M5	G1/8	G1/8	G1/4	G3/8	G1/2
Valve function	Piloted non-return function					
Type of mounting	Screw in via male thread					
Max. tightening torque [Nm]	1.5	5	5	12	15	18
Actuation type	Pneumatic					
Pilot air connection 21	M5	M5	G1/8	G1/8	G1/4	G3/8
Standard nominal flow rate 1 → 2 [l/min]	130	300	300	550	1,100	1,600
Weight [g]	21	20.8	26.2	41.2	62.9	129.4

Note: This product conforms to ISO 1179-1 and to ISO 228-1

Operating and environmental conditions							
Pneumatic connection		M5	G1/8	G1/8	G1/4	G3/8	G1/2
Operating medium		Dried air, lubricated or unlubricated					
Operating pressure [bar]		0.5 ... 10					
Pilot pressure [bar]		2 ... 10				1 ... 10	
Storage temperature [°C]		−10 ... +60					
Ambient temperature [°C]		−10 ... +60					
Temperature of medium [°C]		−10 ... +60					
Corrosion resistance class		CRC	2 <sup>1)</sup>				

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

## 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.

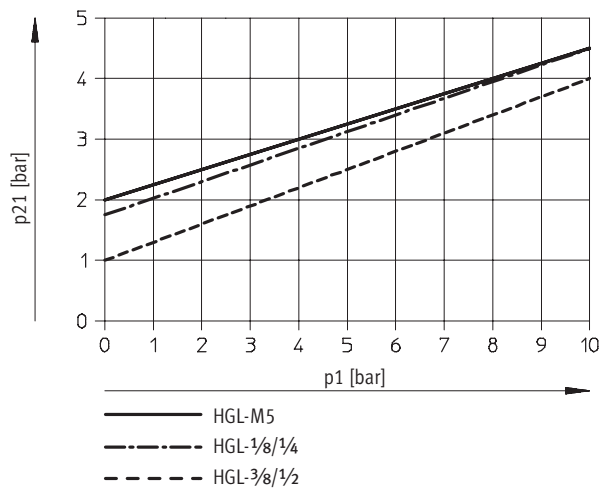


# Non-return valves HGL-B, piloted

Technical data

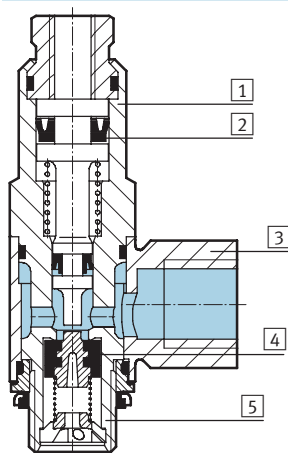
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## Minimum pilot pressure as a function of operating pressure



## Materials

Sectional view



### Non-return valve, piloted

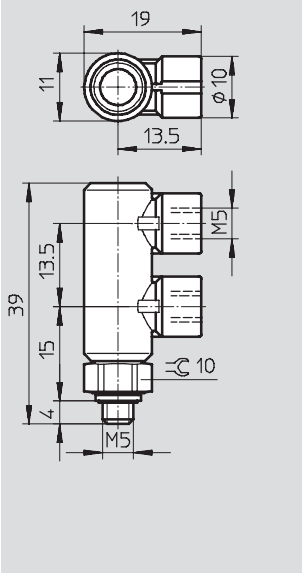
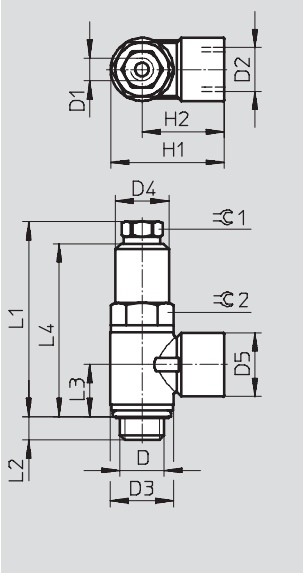
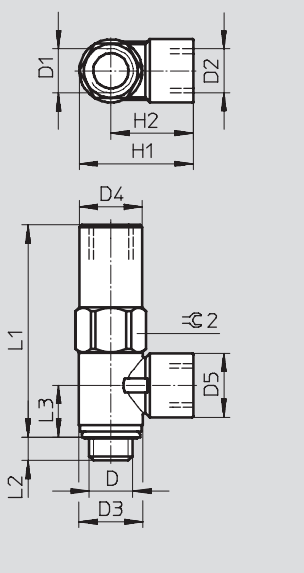
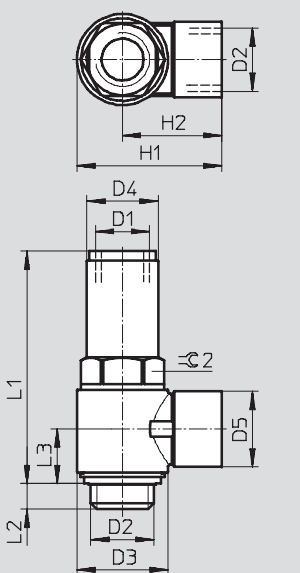
1	Body	Wrought aluminium alloy, anodised
2	Seals	Nitrile rubber
3	Rotatable connection	Die-cast zinc
4	Non-return collar	Nitrile rubber
5	Hollow bolt	Wrought aluminium alloy, anodised
Note on materials		Free of copper and PTFE
		RoHS-compliant (only HGL-1/8-1/8-B)



# Non-return valves HGL-B, piloted

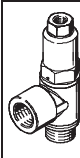
Technical data

**FESTO**

Dimensions		Download CAD Data → <a href="http://www.festo.com/us/cad">www.festo.com/us/cad</a>	
Type	Type	Type	Type
HGL-M5-B	HGL-1/8..., HGL-1/4..., HGL-3/8...	HGL-1/8-1/8-B	HGL-1/2-B
			

Pneumatic connection D	D1	D2	D3 Ø	D4 Ø	D5 Ø	H1	H2	L1	L2	L3	L4	1 °	2 °
G1/8	M5	G1/8	14	11.8	14	25.1	18.1	42.6	5.4	11.2	37.8	8	12
G1/8	G1/8	G1/8	14	13.8	14	25.1	18.1	46.7	5.2	11.2	—	—	14
G1/4	G1/8	G1/4	18	16	17.5	34	25	50.8	6.5	13.5	44.6	12	16
G3/8	G1/4	G3/8	23.8	18.8	20	39.3	27.4	56.3	7	15.1	49.6	15	19
G1/2	G3/8	G1/2	30	23.5	25	47.8	32.8	75.8	8.8	17.7	—	—	24

Note: This product conforms to ISO 1179-1 and to ISO 228-1

Ordering data				
Non-return valve, piloted	Pneumatic connection	Pilot port	Part No.	Type
	M5	M5	530029	HGL-M5-B
	G1/8	M5	530030	HGL-1/8-B
	G1/8	G1/8	543253	HGL-1/8-1/8-B
	G1/4	G1/8	530031	HGL-1/4-B
	G3/8	G1/4	530032	HGL-3/8-B
	G1/2	G3/8	530033	HGL-1/2-B



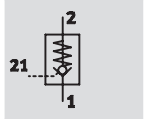
# Non-return valves HGL-QS, piloted

FESTO

Technical data

Function

- Pneumatic piloted non-return valve



Flow rate

130 ... 1,600 l/min



General technical data					
Pneumatic connection 2	M5	G1/8	G1/4	G3/8	G1/2
Valve function	Piloted non-return function				
Type of mounting	Screw in via male thread				
Max. tightening torque [Nm]	1.5	5	12	15	18
Actuation type	Pneumatic				
Pneumatic connection 1 for tubing O.D. [mm]	4	4, 6	8, 10	8, 10	12
Pilot air connection 21	M5	M5	G1/8	G1/4	G3/8
Standard nominal flow rate 1 → 2 [l/min]	130	300	550	1,100	1,600
Weight [g]	21	18.4/21.4	38.7/45	54.7/60.3	116.9

Note: This product conforms to ISO 1179-1 and to ISO 228-1

Operating and environmental conditions						
Pneumatic connection		M5	G1/8	G1/4	G3/8	G1/2
Operating medium		Dried air, lubricated or unlubricated				
Operating pressure [bar]		0.5 ... 10				
Pilot pressure [bar]		2 ... 10			1 ... 10	
Storage temperature [°C]		−10 ... +60				
Ambient temperature [°C]		−10 ... +60				
Temperature of medium [°C]		−10 ... +60				
Corrosion resistance class CRC		2 <sup>1)</sup>				

1) Corrosion resistance class 2 according to Festo standard 940 070

Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

## 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.

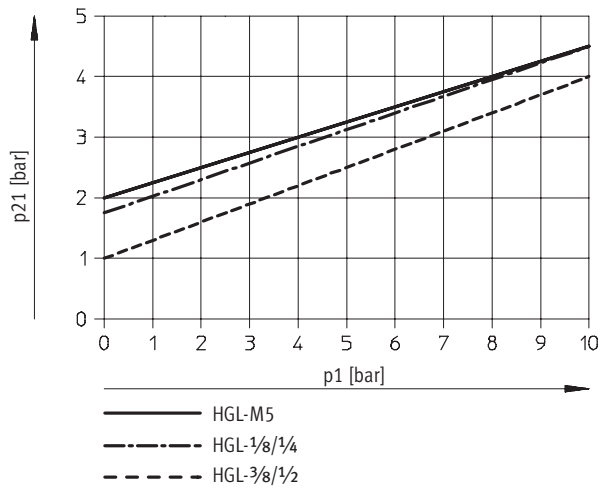


# Non-return valves HGL-QS, piloted

Technical data

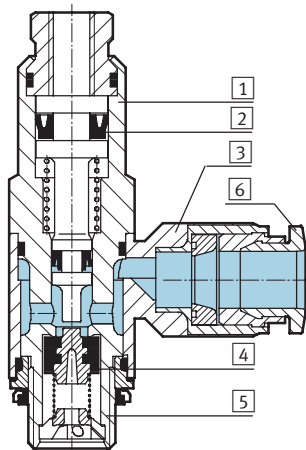
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## Minimum pilot pressure as a function of operating pressure



## Materials

Sectional view



### Non-return valve, piloted

1	Body	Wrought aluminium alloy, anodised
2	Seals	Nitrile rubber
3	Rotatable connection	Die-cast zinc
4	Non-return collar	Nitrile rubber
5	Hollow bolt	Wrought aluminium alloy, anodised
6	Release ring	Polyacetate
-		Free of copper and PTFE



# Non-return valves HGL-QS, piloted

Technical data

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Dimensions		Download CAD Data → <a href="http://www.festo.com/us/cad">www.festo.com/us/cad</a>	
Type	Type	Type	
HGL-M5-QS4	HGL-1/8 ... , HGL-1/4 ... , HGL-3/8 ...	HGL-1/2-QS-12	

Pneumatic connection D	D1	D2	D3 Ø	D4 Ø	D5 Ø	H1	H2	L1	L2	L3	L4	≈C 1	≈C 2
G1/8	M5	QS-4	13.8	11.8	10.2	29.4	22.5	42.6	5.4	13.9	37.8	8	12
		QS-6			12.5	32.6	25.7						
G1/4	G1/8	QS-8	17.8	16	14.5	39.6	30.7	50.8	6.5	16.6	44.6	12	16
		QS-10			17.5	42	33.1						
G3/8	G1/4	QS-8	22.4	18.8	14.5	44.1	32.9	56.3	7	18.2	49.6	15	19
		QS-10			17.5	46.7	35.5						
G1/2	G3/8	QS-12	27.8	23.5	20.5	55.3	41.4	75.8	8.8	22.4	–	–	24

Note: This product conforms to ISO 1179-1 and to ISO 228-1

Ordering data				
Non-return valve, piloted	Pneumatic connection	For tubing O.D.	Pilot port	Part No. Type
		[mm]		
	M5	4	M5	530038 HGL-M5-QS-4
	G1/8	4	M5	530039 HGL-1/8-QS-4
	G3/8	6	M5	530040 HGL-1/8-QS-6
	G1/4	8	G1/8	530041 HGL-1/4-QS-8
	G1/4	10	G1/8	530042 HGL-1/4-QS-10
	G3/8	8	G1/4	530043 HGL-3/8-QS-8
	G3/8	10	G1/4	530044 HGL-3/8-QS-10
	G1/2	12	G3/8	530045 HGL-1/2-QS-12

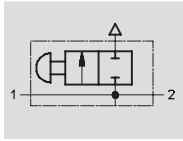


# Manual override HAB for HGL

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Technical data – Manual override HAB

Function



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

Flow rate

165 l/min



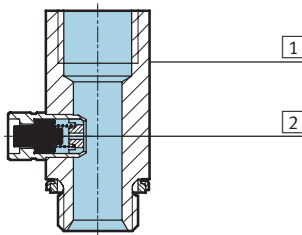
General technical data					
Pneumatic connection	G1/8	G1/4	G3/8	G1/2	
Type of mounting	Can be screwed in				
Nominal size 1 > 2	[mm]	4.1	7	11	14
Exhaust flow rate	[l/min]	165			
Actuating force	[N]	16			
Tightening torque	[Nm]	4	11	40	50

Note: This product conforms to ISO 1179-1 and to ISO 228-1

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



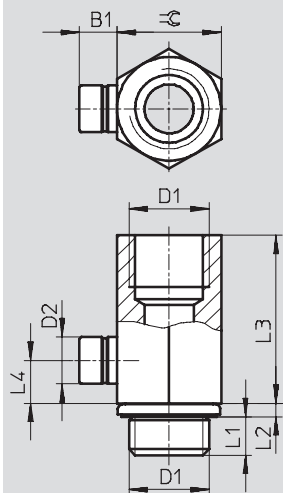
# Manual override HAB for HGL

Technical data – Manual override HAB

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## Dimensions

Download CAD Data → [www.festo.com/us/cad](http://www.festo.com/us/cad)



Pneumatic connection D1	B1	D2 Ø	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

Note: This product conforms to ISO 1179-1 and to ISO 228-1

## Ordering data

Manual override	Pneumatic connection	Part No.	Type
	G1/8	<b>184585</b>	<b>HAB-1/8</b>
	G1/4	<b>184586</b>	<b>HAB-1/4</b>
	G3/8	<b>184587</b>	<b>HAB-3/8</b>
	G1/2	<b>184588</b>	<b>HAB-1/2</b>



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