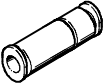
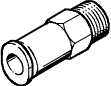
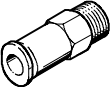
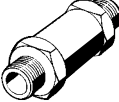
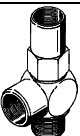
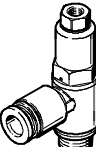





- **Non-return valves
with or without pneumatic pilot
signal**
- **With push-in connector at one
or both ends for pipe O.D.
of 4 ... 12 mm**
- **With connecting thread at one
or both ends,
M5 ... R $\frac{1}{2}$ or M5 ... G $\frac{3}{4}$**
- **Wide choice of variants**

Non-return valves

Product range overview

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	R $\frac{1}{8}$	■	■	■	–	–	–	–	
				R $\frac{1}{4}$	–	■	■	–	–	–	–	
				R $\frac{3}{8}$	–	–	–	■	■	–	–	
				R $\frac{1}{2}$	–	–	–	–	■	–	–	
	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	R $\frac{1}{8}$	■	■	■	–	–	–	–	
				R $\frac{1}{4}$	–	■	■	–	–	–	–	
				R $\frac{3}{8}$	–	–	–	■	■	–	–	
				R $\frac{1}{2}$	–	–	–	–	■	–	–	
Connecting thread at both ends												
	H	With metric thread and sealing rings	M5 ²⁾	–	–	–	–	–	–	–	2 / 5.1-7	
		With pipe thread and sealing rings	G $\frac{1}{8}$ ³⁾	–	–	–	–	–	–	–		
			G $\frac{1}{4}$ ⁴⁾	–	–	–	–	–	–	–		
			G $\frac{3}{8}$ ⁴⁾	–	–	–	–	–	–	–		
			G $\frac{1}{2}$ ⁴⁾	–	–	–	–	–	–	–		
			G $\frac{3}{4}$ ⁴⁾	–	–	–	–	–	–	–		
Non-return valves, piloted		HGL	With metric thread and sealing ring	M5	–	–	–	–	–	–	2 / 5.1-9	
			With pipe thread and sealing ring	G $\frac{1}{8}$	–	–	–	–	–	–		
				G $\frac{1}{4}$	–	–	–	–	–	–		
				G $\frac{3}{8}$	–	–	–	–	–	–		
				G $\frac{1}{2}$	–	–	–	–	–	–		
		HGL-B	With pipe thread and sealing ring	G $\frac{1}{8}$	–	–	–	–	–	–	2 / 5.1-12	
				G $\frac{1}{4}$	–	–	–	–	–			
				G $\frac{3}{8}$	–	–	–	–	–			
				G $\frac{1}{2}$	–	–	–	–	–			
		HGL-QS	With pipe thread and sealing ring and QS push-in connector	G $\frac{1}{8}$	■	■	–	–	–	–	2 / 5.1-14	
				G $\frac{1}{4}$	–	–	■	■	–	–		
				G $\frac{3}{8}$	–	–	■	■	–	–		
	G $\frac{1}{2}$			–	–	–	–	■	–			
Manual override for exhaust air		HAB	With pipe thread	G $\frac{1}{8}$	–	–	–	–	–	–	2 / 5.1-16	
				G $\frac{1}{4}$	–	–	–	–	–			
				G $\frac{3}{8}$	–	–	–	–	–			
				G $\frac{1}{2}$	–	–	–	–	–			

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	–	1/8	–	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							
1/8-A/I	Pipe thread G1/8, 1 male thread, 1 female thread							
1/8	Pipe thread G1/8 or R1/8							
1/4	Pipe thread G1/4 or R1/4							
3/8	Pipe thread G3/8 or R3/8							
1/2	Pipe thread G1/2 or R1/2							
3/4	Pipe thread G3/4 or R3/4							
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

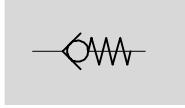
		HGL	–	3/8	–	QS-8	–	
Type								
HGL	Non-return valve, piloted							
HAB	Manual override for exhaust air							
Screw-in and connecting thread								
M5	Metric thread M5							
1/8	Pipe thread G1/8							
1/4	Pipe thread G1/4							
3/8	Pipe thread G3/8							
1/2	Pipe thread G1/2							
Push-in fitting								
4	4 mm							
6	6 mm							
8	8 mm							
10	10 mm							
12	12 mm							

Non-return valves H-QS/HA/HB

Technical data



Function



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

Flow rate
140 ... 1720 l/min



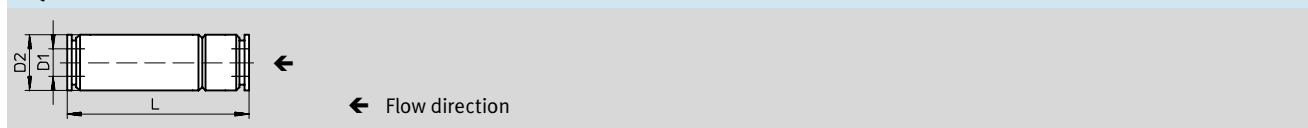
General technical data		
Valve function		Non-return function
Type of mounting	QS push-in connector, both ends	In-line installation
	QS push-in connector, one end	Can be screwed in

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/en/engineering



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	R1/8		R1/4		R3/8		R1/2
Tubing O.D. [mm]		4	4	6	8	6	8	10	12
Nominal size [mm]		2.4	3.2	5	5	5	7	8.5	11
Standard nominal flow rate [l/min]		150	140	310	330	300	670	1,740	2,230
Weight [g]		7	10	10	20	20	20	46	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-... HA-...-QS-...
 HB-M5-QS-... HB-...-QS-...

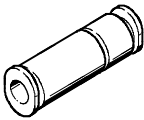
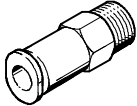
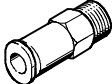
Flow direction
 ↑ HA
 ↓ HB

Connecting thread D	Tubing O.D. D1	D2 ∅	H	H1	H2	⊘
M5	4	8	28	3.5	24.5	8
R1/8	4	9	24.5	8	20	10
	6	10	29.5	8	25	10
	8	13.5	35.5	8	29.5	14
R1/4	6	12	29.5	11	23	14
	8	13.5	39.5	11	33.5	14
R3/8	10	25	71	12	55.5	24
	12	25	64.5	12	58	24
R1/2	12	28	71	15	63	27

Non-return valves H-QS/HA/HB

Technical data



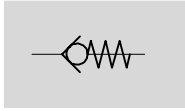
Ordering data					
	Description	Connecting thread	For tubing O.D. [mm]	Part No.	Type
Non-return valves with QS push-in connector for standard O.D. plastic tubing					
	QS push-in connector, both ends	-	4	153 462	H-QS-4 ¹⁾
			6	153 463	H-QS-6 ¹⁾
			8	153 464	H-QS-8 ¹⁾
			10	153 465	H-QS-10 ¹⁾
			12	153 466	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	R ¹ / ₈	4	153 446	HA- ¹ / ₈ -QS-4
			6	153 448	HA- ¹ / ₈ -QS-6
		R ¹ / ₄	8	153 452	HA- ¹ / ₈ -QS-8
			6	153 450	HA- ¹ / ₄ -QS-6
		R ³ / ₈	8	153 454	HA- ¹ / ₄ -QS-8
			10	153 456	HA- ³ / ₈ -QS-10
	R ¹ / ₂	12	153 458	HA- ³ / ₈ -QS-12	
		12	153 460	HA- ¹ / ₂ -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	R ¹ / ₈	4	153 447	HB- ¹ / ₈ -QS-4
			6	153 449	HB- ¹ / ₈ -QS-6
		R ¹ / ₄	8	153 453	HB- ¹ / ₈ -QS-8
			6	153 451	HB- ¹ / ₄ -QS-6
		R ³ / ₈	8	153 455	HB- ¹ / ₄ -QS-8
			10	153 457	HB- ³ / ₈ -QS-10
	R ¹ / ₂	12	153 459	HB- ³ / ₈ -QS-12	
		12	153 461	HB- ¹ / ₂ -QS-12	

1) Free of copper and PTFE

Non-return valves H

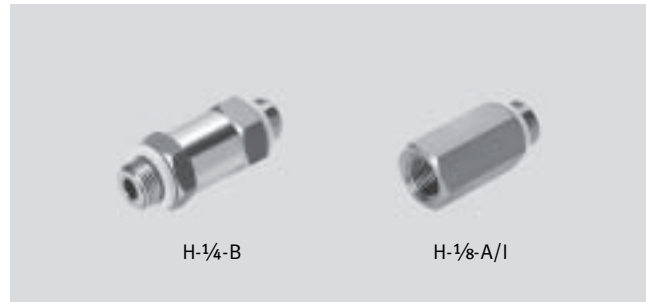
Technical data

Function



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

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

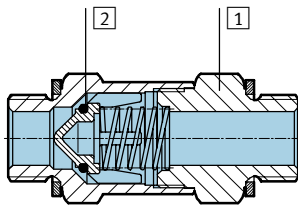


General technical data	
Valve function	Non-return function
Type of mounting	Can be screwed in

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

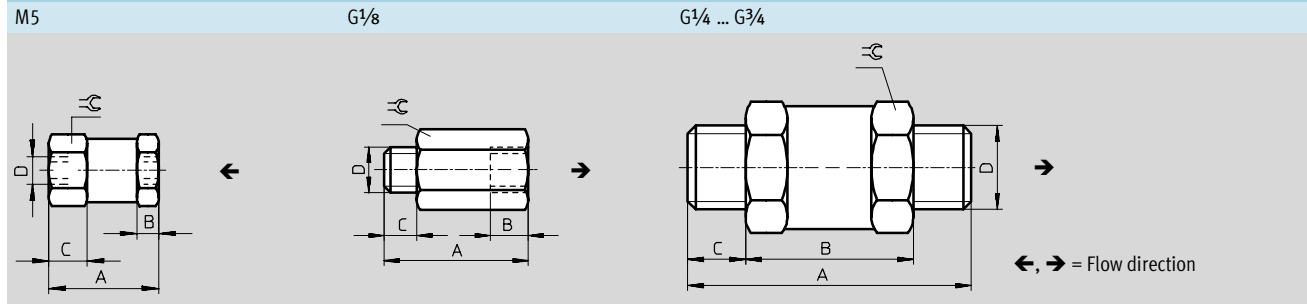


Flow, non-return and regulating valves
Non-return valves

5.1

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 $\frac{3}{4}$
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



Connecting thread D	A	B	C	≡
M5	20	4	7	11
G $\frac{1}{8}$	28.5	7.5	6.5	14
G $\frac{1}{4}$	50	32	9	22
G $\frac{3}{8}$	54	32	11	22
G $\frac{1}{2}$	70	44	13	27
G $\frac{3}{4}$	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	G $\frac{1}{8}$ ²⁾		3 324	H- $\frac{1}{8}$ -A/I
		G $\frac{1}{4}$ ³⁾		11 689	H- $\frac{1}{4}$ -B
		G $\frac{3}{8}$ ³⁾		11 690	H- $\frac{3}{8}$ -B
		G $\frac{1}{2}$ ³⁾		11 691	H- $\frac{1}{2}$ -B
		G $\frac{3}{4}$ ³⁾		11 692	H- $\frac{3}{4}$ -B

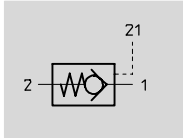
- 1) 2 female threads
- 2) 1 male thread, 1 female thread
- 3) 2 male threads

Non-return valves HGL, piloted

Technical data

FESTO

Function



■ Non-return valve with pneumatic pilot function

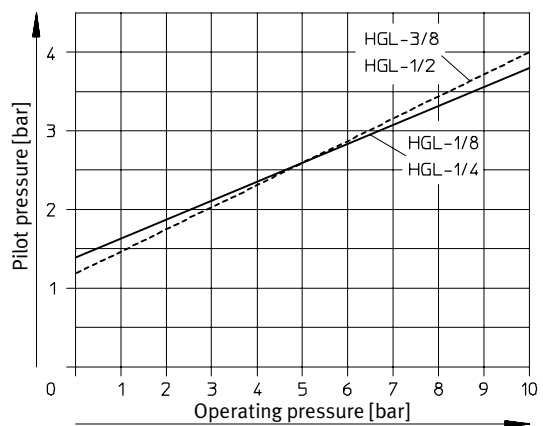
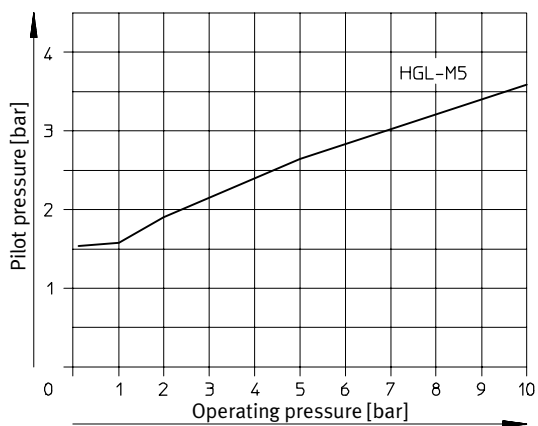
Flow rate
 108 ... 1,540 l/min



General technical data					
Pneumatic connection	M5	G1/8	G1/4	G3/8	G1/2
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	G1/8	G1/4	G3/8	G1/2
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.

 Type to be discontinued
Available until 2005

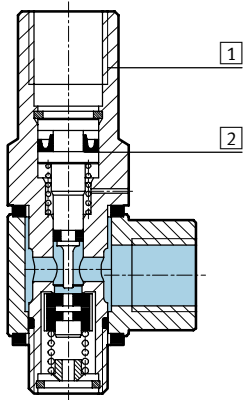
FESTO

Non-return valves HGL, piloted

Technical data

Materials

Sectional view



Non-return valve, piloted

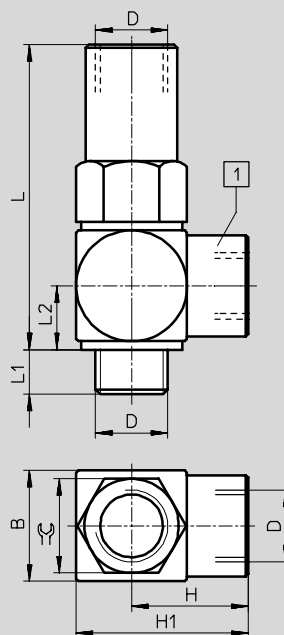
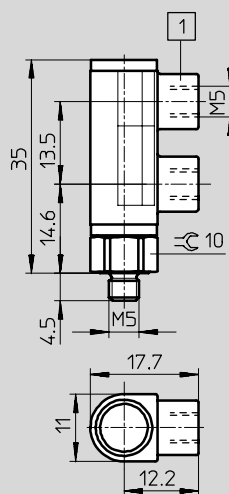
1	Housing	Die-cast zinc
2	Seals	Nitrile rubber

Dimensions

Pneumatic connection M5


Pneumatic connection G $\frac{1}{8}$... G $\frac{1}{2}$

Download CAD data → www.festo.com/en/engineering



Pneumatic connection D	B	H	H1	L	L1	L2	⌀
G $\frac{1}{8}$	16	15.5	23.5	46	5.5	9	14
G $\frac{1}{4}$	20	21	31	55	8	11.5	17
G $\frac{3}{8}$	25	24	36.5	59.5	9.5	14	22
G $\frac{1}{2}$	30	29	44	78.5	12	16.7	27

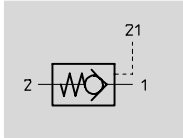
Ordering data

Non-return valve, piloted	Pneumatic connection	Pilot port	Part No.	Type
	M5	M5	161 779	HGL-M5
	G $\frac{1}{8}$	G $\frac{1}{8}$	12 938	HGL- $\frac{1}{8}$
	G $\frac{1}{4}$	G $\frac{1}{4}$	12 939	HGL- $\frac{1}{4}$
	G $\frac{3}{8}$	G $\frac{3}{8}$	12 940	HGL- $\frac{3}{8}$
	G $\frac{1}{2}$	G $\frac{1}{2}$	12 941	HGL- $\frac{1}{2}$

Non-return valves HGL-B, piloted


Technical data

Function



■ Non-return valve with pneumatic pilot function

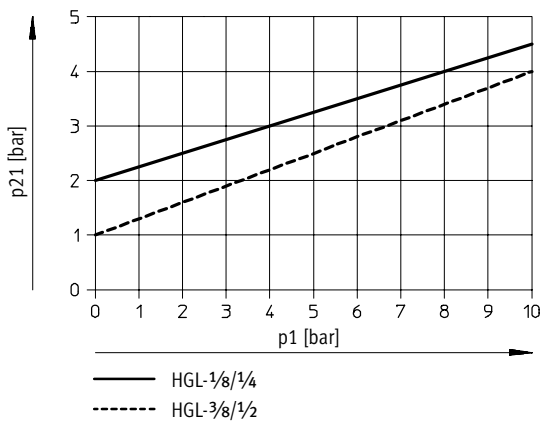



 Flow rate
300 ... 1,600 l/min

General technical data				
Pneumatic connection	G1/8	G1/4	G3/8	G1/2
Valve function	Non-return function, piloted			
Type of mounting	Can be screwed in			
Pilot air connection 21	M5	G1/8	G1/4	G3/8
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	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	
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.

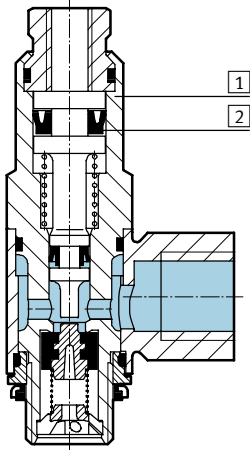
A supplementary risk analysis by the user/designer is essential. The instructions and notices on the enclosed product leaflets must be observed.

Non-return valves HGL-B, piloted

Technical data

Materials

Sectional view



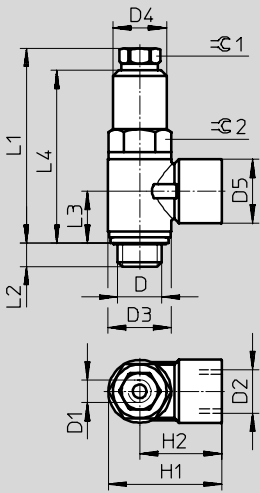
Non-return valve, piloted

1	Housing	Die-cast zinc
2	Seals	Nitrile rubber

Dimensions

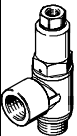
Pneumatic connection G $\frac{1}{8}$... G $\frac{1}{2}$

Download CAD data → www.festo.com/en/engineering



Pneumatic connection D	D1	D2	D3 Ø	D4 Ø	D5 Ø	H1	H2	L1	L2	L3	L4	∅ 1	∅ 2
G $\frac{1}{8}$	M5	G $\frac{1}{8}$	14	11.8	14	25.1	18.1	48	5.4	11.2	37.8	12	8
G $\frac{1}{4}$	G $\frac{1}{8}$	G $\frac{1}{4}$	18	16	17.5	34	25	57.3	6.5	13.5	44.6	16	12
G $\frac{3}{8}$	G $\frac{1}{4}$	G $\frac{3}{8}$	23.8	18.8	20	39.3	27.4	63.2	7	15.1	49.6	19	15
G $\frac{1}{2}$	G $\frac{3}{8}$	G $\frac{1}{2}$	30	23.5	25	47.8	32.8	84.5	8.8	17.7	66.2	24	22

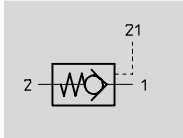
Ordering data

Non-return valve, piloted	Pneumatic connection	Pilot port	Part No.	Type
	G $\frac{1}{8}$	M5	530 030	HGL- $\frac{1}{8}$ -B
	G $\frac{1}{4}$	G $\frac{1}{8}$	530 031	HGL- $\frac{1}{4}$ -B
	G $\frac{3}{8}$	G $\frac{1}{4}$	530 032	HGL- $\frac{3}{8}$ -B
	G $\frac{1}{2}$	G $\frac{3}{8}$	530 033	HGL- $\frac{1}{2}$ -B


Non-return valves HGL-QS, piloted

Technical data

Function



■ Non-return valve with pneumatic pilot function

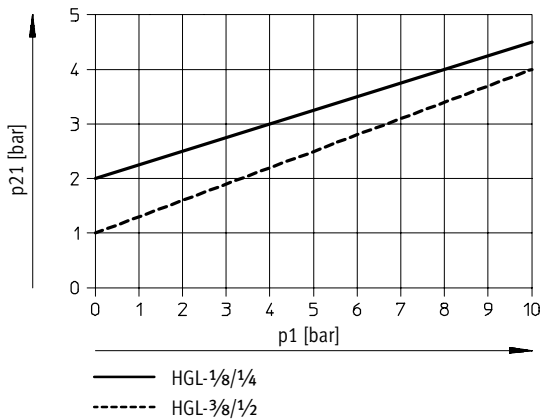
 Flow rate
300 ... 1,600 l/min




General technical data				
Pneumatic connection 2	G1/8	G1/4	G3/8	G1/2
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	G1/8	G1/4	G3/8
Standard nominal flow rate 1 → 2 [l/min]	300	550	1,100	1,600

Operating and environmental conditions				
Pneumatic connection	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	
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.

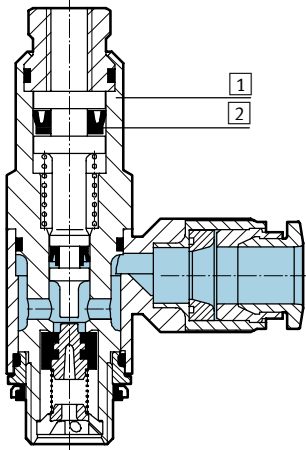
A supplementary risk analysis by the user/designer is essential. The instructions and notices on the enclosed product leaflets must be observed.

Non-return valves HGL-QS, piloted

Technical data

Materials

Sectional view



Non-return valve, piloted

1	Housing	Die-cast zinc
2	Seals	Nitrile rubber

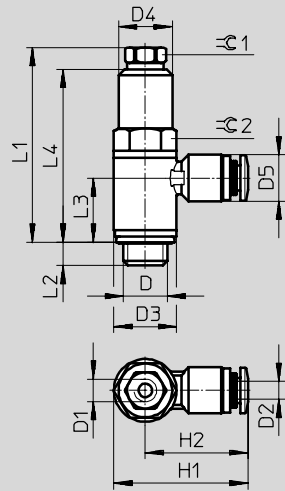
Flow, non-return and regulating valves
Non-return valves

5.1

Dimensions

Download CAD data → www.festo.com/en/engineering

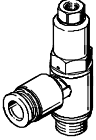
Pneumatic connection G $\frac{1}{8}$... G $\frac{1}{2}$



Pneumatic connection D	D1	D2	D3 Ø	D4 Ø	D5 Ø	H1	H2	L1	L2	L3	L4	≈C 1	≈C 2
G $\frac{1}{8}$	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			
G $\frac{1}{4}$	G $\frac{1}{8}$	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			
G $\frac{3}{8}$	G $\frac{1}{4}$	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			
G $\frac{1}{2}$	G $\frac{3}{8}$	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

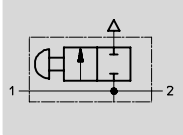
Ordering data					
Non-return valve, piloted	Pneumatic connection	For tubing outside∅	Weight	Part No.	Type
		[mm]	[g]		
	G ¹ / ₈	4	18.4	530 039	HGL-¹/₈-QS-4
	G ¹ / ₈	6	21.4	530 040	HGL-¹/₈-QS-6
	G ¹ / ₄	8	38.7	530 041	HGL-¹/₄-QS-8
	G ¹ / ₄	10	45	530 042	HGL-¹/₄-QS-10
	G ³ / ₈	8	54.7	530 043	HGL-³/₈-QS-8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

Non-return valves HGL, piloted

Technical data – Manual override HAB



Function



Flow rate
165 l/min

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

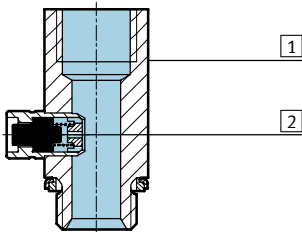


General technical data					
Pneumatic connection		G1/8	G1/4	G3/8	G1/2
Type of mounting		Can be screwed in			
Nominal size 1 → 2	[mm]	4.1	7	11	14
Exhaust flow rate	[l/min]	165			
Actuating force	[N]	16			
Tightening torque	[Nm]	4	11	40	50

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

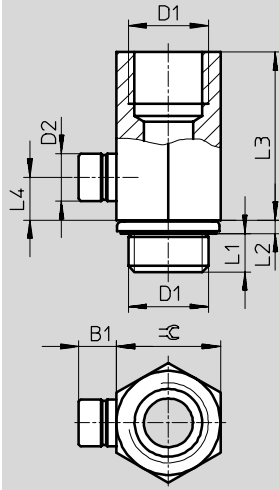
Non-return valves HGL, piloted

Technical data – Manual override HAB



Dimensions

Download CAD data → www.festo.com/en/engineering



Pneumatic connection D1	B1	D2 Ø	L1	L2	L3	L4	≅
G ¹ / ₈	6.2	7.6	4.7	1.8	19.1	5	13
G ¹ / ₄	6.2	7.6	6.3	2.2	27.5	7	17
G ³ / ₈	6.2	7.6	7.5	3	27.3	7	22
G ¹ / ₂	6.2	7.6	10.9	2.6	32	7	24

Ordering data

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