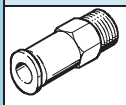
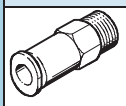
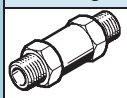
Non-return valves

FESTO

Non-return valves

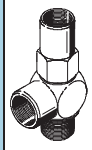
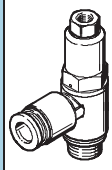
Product range overview

Function	Version	Type	Description	Port 1 Thread	Port 2 for tubing ∅ [mm] 4	6	8	10	12	Free of copper and PTFE	→ Page/Internet
Non-return valves	**QS push-in connector[1] at both ends**										
		H	–	–	■	■	■	■	■	■	6
	With connecting thread and QS push-in connector[1]										
	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[2]	–					–	9
				G1/8[3]						–	
				G1/4[4]						–	
				G3/8[4]						–	
				G1/2[4]						–	
				G3/4[4]						–	

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

Function	Version	Type	Description	Port 1	Port 2					➔ Page/Internet
				Thread	for tubing ∅ [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

Type codes – Non-return valves

HA – ⅛ – QS-6 – B

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

Push-in connector	
QS-4	4 mm
QS-6	6 mm
QS-8	8 mm
QS-10	10 mm
QS-12	12 mm

Generation	
	A series
B	B series

Non-return valves

Type codes

Type codes – Piloted non-return valves, threaded connection

HGL – ⅜ – B

Type	
HGL	Non-return valve, piloted

Screw-in and connecting thread	
M5	Metric thread M5
⅛	G⅛ thread
⅛÷⅛	G⅛ thread, pilot port G⅛
¼	G¼ thread
⅜	G⅜ thread
½	G½ thread

Generation	
B	B series

Type codes – Piloted non-return valves, QS connection

HGL – ⅜ – QS-8

Type	
HGL	Non-return valve, piloted

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

Push-in connector	
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 – ¼ – QS-6

Type	
GRXA-HG	GRXA: One-way flow control valve HG: Non-return valve, piloted

Screw-in and connecting thread	
⅛	G⅛ thread
¼	G¼ thread

Push-in connector	
QS-4	4 mm
QS-6	6 mm
QS-8	8 mm

Non-return valves H-QS/HA/HB

Technical data

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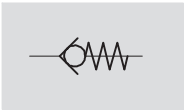
Function



- 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

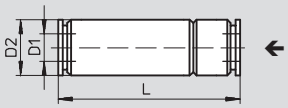
Operating and environmental conditions	
Operating medium	Filtered compressed air, lubricated or unlubricated.
Ambient temperature	0 ... +60 °C
Temperature of medium	0 ... +60 °C

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**

H-QS-...



← Flow direction

Tubing O.D. D1	D2 ∅	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

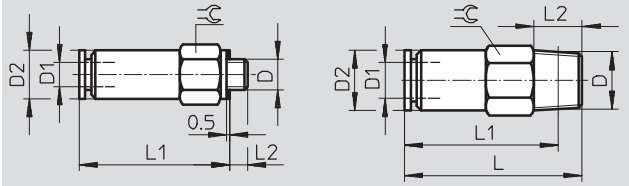
Technical data

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]	7.2	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**

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

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



Flow direction

← HA

→ HB

Connecting thread D	Tubing O.D. D1	D2 ∅	L	L1	L2	⌯
M5	4	8	–	25.4	3	8
R⅛	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
R¼	6	12	29.3	23.3	11	14
	8	13.5	39.2	33.2	11	14
R⅜	10	25	61.7	55.4	12	24
	12	25	64.3	58	12	24
R½	12	28	70.8	62.6	15	27

Non-return valves H-QS/HA/HB

Technical data

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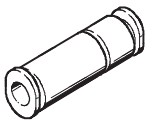
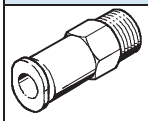
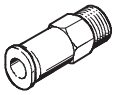
Ordering data					
	Description	Connecting thread	For tubing O.D. [mm]	Part No.	Type
Non-return valves with QS push-in connector for standard O.D. plastic tubing					
	QS push-in connector, both ends	–	4	**153462**	**H-QS-4**[1]
			6	**153463**	**H-QS-6**[1]
			8	**153464**	**H-QS-8**[1]
			10	**153465**	**H-QS-10**[1]
			12	**153466**	**H-QS-12**[1]
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	R1/8	4	**153446**	**HA-1/8-QS-4**
			6	**153448**	**HA-1/8-QS-6**
			8	**153452**	**HA-1/8-QS-8**
		R1/4	6	**153450**	**HA-1/4-QS-6**
			8	**153454**	**HA-1/4-QS-8**
		R3/8	10	**153456**	**HA-3/8-QS-10**
			12	**153458**	**HA-3/8-QS-12**
		R1/2	12	**153460**	**HA-1/2-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	R1/8	4	**153447**	**HB-1/8-QS-4**
			6	**153449**	**HB-1/8-QS-6**
			8	**153453**	**HB-1/8-QS-8**
		R1/4	6	**153451**	**HB-1/4-QS-6**
			8	**153455**	**HB-1/4-QS-8**
		R3/8	10	**153457**	**HB-3/8-QS-10**
			12	**153459**	**HB-3/8-QS-12**
		R1/2	12	**153461**	**HB-1/2-QS-12**

1) Free of copper and PTFE

Non-return valves H

Technical data

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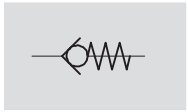
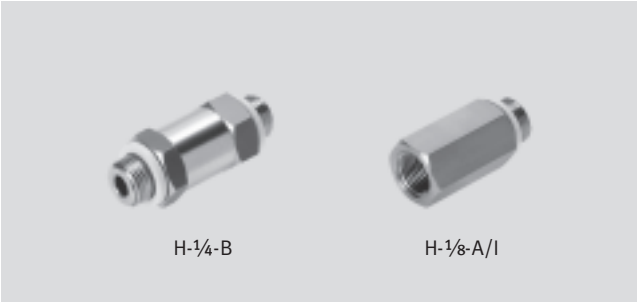
Function



- Flow rate
  115 ... 5,900 l/min

- Non-return valves
- Connecting thread at both ends



General technical data							
Pneumatic connection		M5	G⅛	G¼	G⅜	G½	G¾
Valve function		Non-return function					
Type of mounting		Can be screwed in					
Max. tightening torque	[Nm]	–	–	11	20	40	60

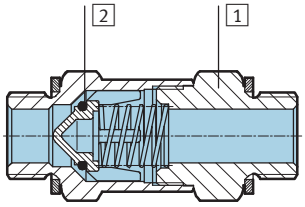
Note: This product conforms to ISO 1179-1 and to ISO 228-1

Operating and environmental conditions							
Pneumatic connection		M5	G⅛	G¼	G⅜	G½	G¾
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[1)]			

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, G⅛	
1 Housing	Brass, nickel-plated
2 Seals	Nitrile rubber

Non-return valve G¼, G⅜, G½, G¾	
1 Housing	Wrought aluminium alloy, anodised
2 Seals	Nitrile rubber
–	Free of copper and PTFE

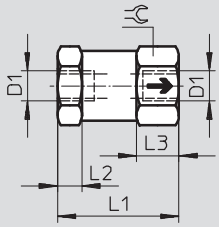
Non-return valves H

Technical data

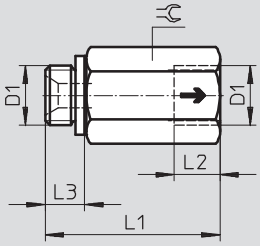
Technical data – Connecting thread at both ends							
Connecting thread		M5	G⅛	G¼	G⅜	G½	G¾
Standard nominal flow rate	[l/min]	115	280	1,000	2,000	5,500	5,900
Weight	[g]	15	21	25.4	34	58.3	101
Operating pressure	[bar]	0.4 ... 8		0.4 ... 12			

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

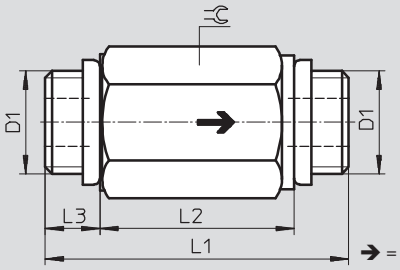
M5



G⅛

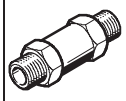


G¼ ... G¾



Connecting thread D1	L1	L2	L3	⌀
M5	20	4	7	11
G⅛	28.5	7.5	6.5	14
G¼	48	32	8	19
G⅜	50	32	9	22
G½	65	44	10.5	27
G¾	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[1]	**3671**	**H-M5**
	With pipe thread at both ends and 2 sealing rings	G⅛[2]	**3324**	**H-⅛-A/I**
		G¼[3]	**11689**	**H-¼-B**
		G⅜[3]	**11690**	**H-⅜-B**
		G½[3]	**11691**	**H-½-B**
		G¾[3]	**11692**	**H-¾-B**

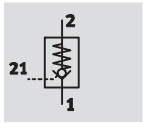
1) 2 female threads
2) 1 male thread, 1 female thread
3) 2 male threads

Non-return valves HGL-B, piloted

Technical data

FESTO

Function



- Flow rate
  130 ... 1,600 l/min

- Pneumatic piloted non-return valve

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[1)]					

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

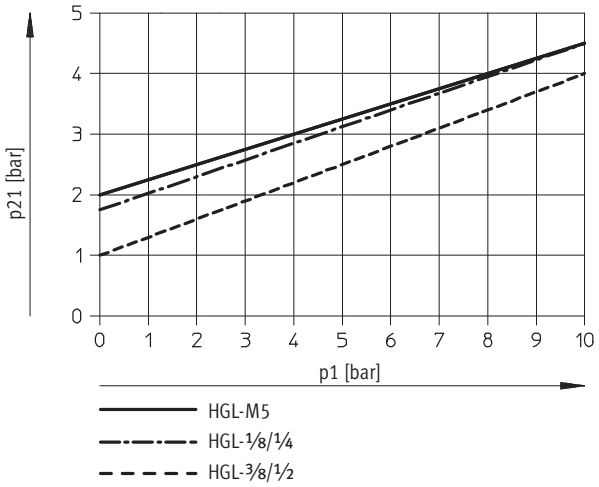
In safety-relevant applications the HGL product family and all of its design variants must ONLY be used in combination with additional measures according to EN 954-1.

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

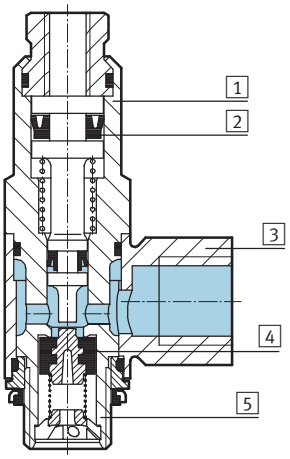
Technical data

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

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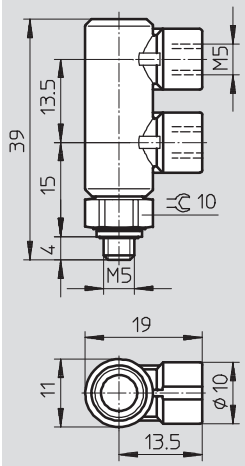
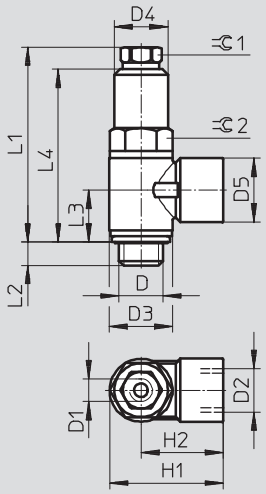
Dimensions

Download CAD data ➔ **www.festo.com**

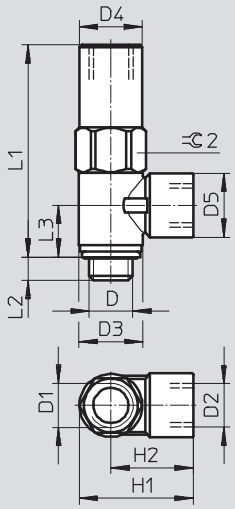
Type HGL-M5-B



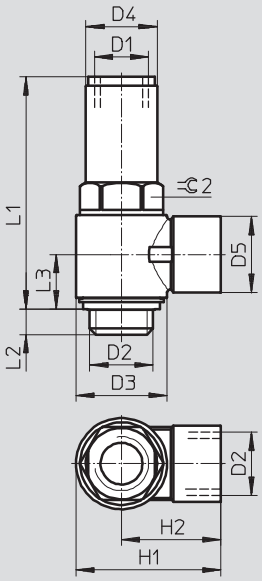
Type HGL-⅛...,HGL-¼..., HGL-⅜...



Type HGL-⅛-⅛-B



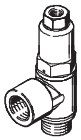
Type HGL-½-B



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	42.6	5.4	11.2	37.8	8	12
G⅛	G⅛	G⅛	14	13.8	14	25.1	18.1	46.7	5.2	11.2	–	–	14
G¼	G⅛	G¼	18	16	17.5	34	25	50.8	6.5	13.5	44.6	12	16
G⅜	G¼	G⅜	23.8	18.8	20	39.3	27.4	56.3	7	15.1	49.6	15	19
G½	G⅜	G½	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**
	G⅛	M5	**530030**	**HGL-⅛-B**
	G⅛	G⅛	**543253**	**HGL-⅛-⅛-B**
	G¼	G⅛	**530031**	**HGL-¼-B**
	G⅜	G¼	**530032**	**HGL-⅜-B**
	G½	G⅜	**530033**	**HGL-½-B**

Non-return valves HGL-QS, piloted

Technical data

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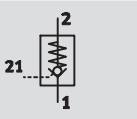
Function



- Flow rate
  130 ... 1,600 l/min

- Pneumatic piloted non-return valve

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 [1)]				

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

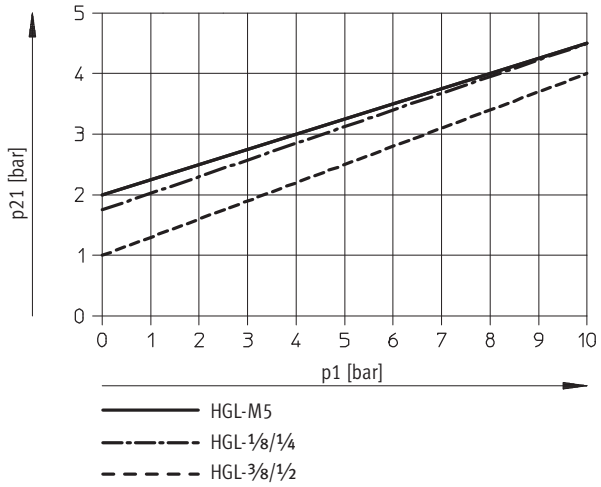
In safety-relevant applications the HGL product family and all of its design variants must ONLY be used in combination with additional measures according to EN 954-1.

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

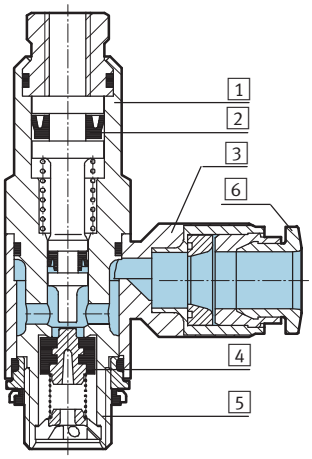
Technical data

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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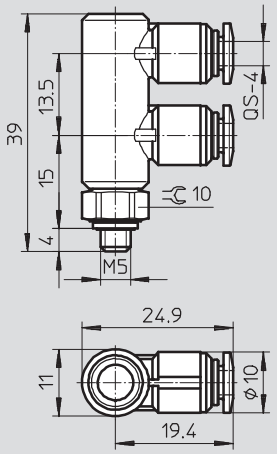
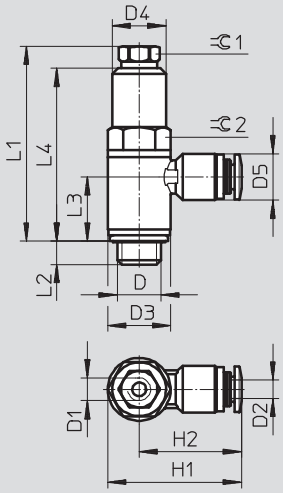
Dimensions

Download CAD data ➔ **www.festo.com**

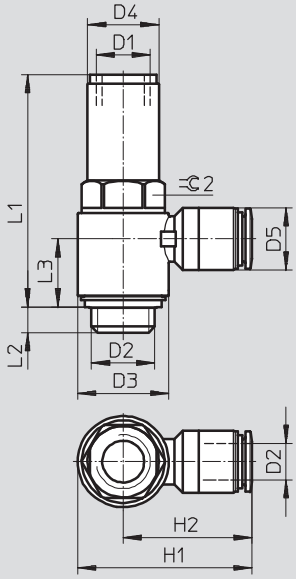
Type
HGL-M5-QS4



Type
HGL-⅛ ... , HGL-¼ ... , HGL-⅜ ...



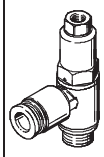
Type
HGL-½-QS-12



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	42.6	5.4	13.9	37.8	8	12
		QS-6			12.5	32.6	25.7			13.2			
G¼	G⅛	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			15.5			
G⅜	G¼	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			18.2			
G½	G⅜	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. [mm]	Pilot port	Part No.	Type
	M5	4	M5	**530038**	**HGL-M5-QS-4**
	G⅛	4	M5	**530039**	**HGL-⅛-QS-4**
	G⅛	6	M5	**530040**	**HGL-⅛-QS-6**
	G¼	8	G⅛	**530041**	**HGL-¼-QS-8**
	G¼	10	G⅛	**530042**	**HGL-¼-QS-10**
	G⅜	8	G¼	**530043**	**HGL-⅜-QS-8**
	G⅜	10	G¼	**530044**	**HGL-⅜-QS-10**
	G½	12	G⅜	**530045**	**HGL-½-QS-12**

Manual override HAB for HGL

Technical data – Manual override HAB

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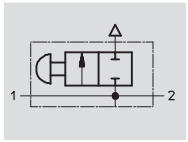
Function



Flow rate
165 l/min

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

HAB-1/8

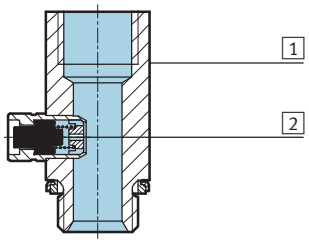
General technical data					
Pneumatic connection		G1/8	G1/4	G3/8	G1/2
Type of mounting		Can be screwed in			
Nominal size 1 › 2	[mm]	4.1	7	11	14
Exhaust flow rate	[l/min]	165			
Actuating force	[N]	16			
Tightening torque	[Nm]	4	11	40	50

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

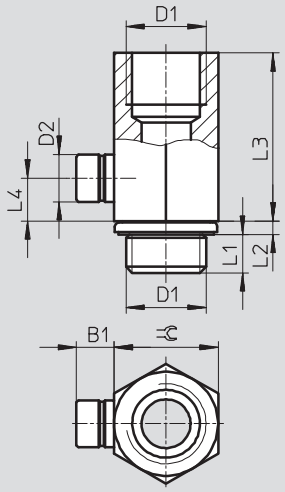


Manual override	
1 Housing	Aluminium
2 Seals	Nitrile rubber

Manual override HAB for HGL

Technical data – Manual override HAB

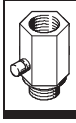
Dimensions Download CAD data ➔ **www.festo.com**



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

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

Ordering data

Manual override	Pneumatic connection	Part No.	Type
	G1⁄8	**184585**	**HAB-1⁄8**
	G1⁄4	**184586**	**HAB-1⁄4**
	G3⁄8	**184587**	**HAB-3⁄8**
	G1⁄2	**184588**	**HAB-1⁄2**