# Check valves H/HA/HB/HGL





★/☆ Festo core product range

Covers 80% of your automation tasks

Worldwide: Always in stock

Superb: Festo quality at an attractive price
Easy: Reduces procurement and storing complexity

★ Ready for dispatch from the Festo factory in 24 hours Held in stock in 13 service centres worldwide More than 2200 products

Ready for dispatch in 5 days maximum from stock
Assembled for you in 4 service centres worldwide
Up to 6 x 10<sup>12</sup> variants per product series



# Check valves H/HA/HB/HGL Product range overview

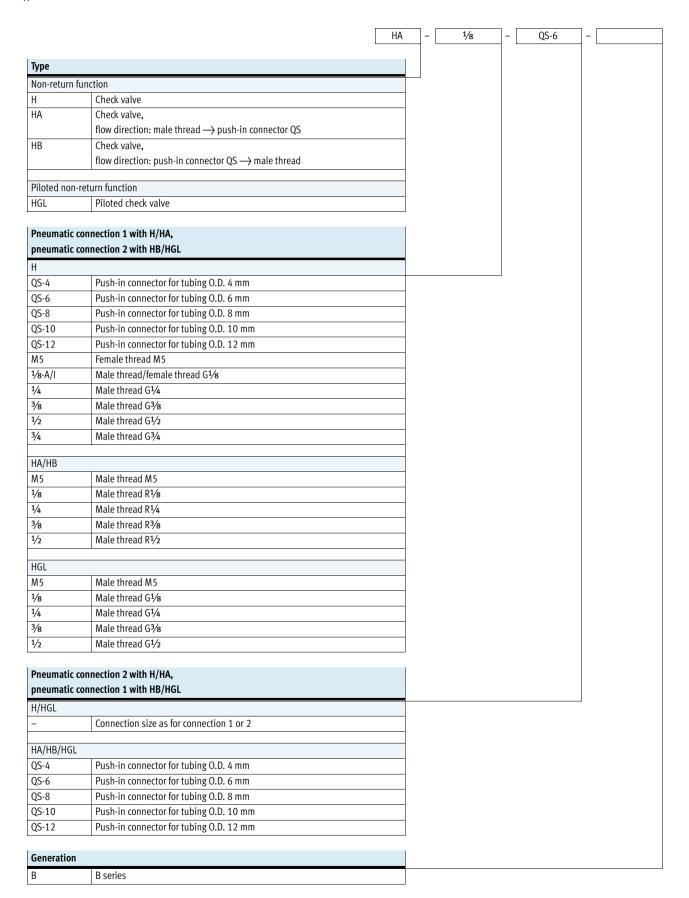


Version	Valve function	Version	Туре	Pneumatic connection 1	Pneumatic connection 2	qnN	→ Page/ Internet
						[l/min]	IIIC
Check valves	Compact design						
	Non-return function		Н	QS-4, QS-6, QS-8, QS-10, QS-12	QS-4, QS-6, QS-8, QS-10, QS-12	136 1,715	4
			)	M5, G1/8, G1/4, G3/8, G1/2, G3/4	M5, G½, G¼, G¾, G¾, G½, G¾	115 5,900	5
	Non-return function		НА	M5, R½, R¼, R¾, R½	QS-4, QS-6, QS-8, QS-10, QS-12	138 2,230	7
			НВ	QS-4, QS-6, QS-8, QS-10, QS-12	M5, R½, R¼, R¾, R½	142 2,206	7
	Flat design	T	\/DNIE	00 ( 00 0	C1/ C1/	2/0 /20	1.6
	Piloted non- return function		VBNF	QS-6, QS-8	G½, G¼	260 620	vbnf
Piloted check	Compact design						
valves	Piloted non- return function		HGL	QS-4, QS-6, QS-8, QS-10, QS-12	M5, G½, G¼, G¾, G¾, G½	130 1,400	9
				M5, G½, G¼, G¾, G½	M5, G½, G¼, G¾, G½, G½	130 1,600	12

# Check valves H/HA/HB/HGL



Type codes

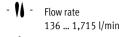


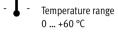
**FESTO** 

Technical data – Push-in connector QS

#### Non-return function











General technical data									
Valve function	Non-return fund	on-return function							
Pneumatic connection 1	QS-4	QS-6	QS-8	QS-10	QS-12				
Pneumatic connection 2	QS-4	QS-6	QS-8	QS-10	QS-12				
Type of mounting	In-line installat	ion	·	·					
Mounting position	Any								

Operating and env	Operating and environmental conditions							
Operating pressure	е	[bar]	-1 +10					
Minimal differ- open [bar]			≥ 0.1					
ential pressure	close	[bar]	≥ 0.2					
Operating medium	1		Compressed air in accordance with ISO 8573-1:2010 [7:-:-]					
Note on operating	/pilot mediun	n	Operation with lubricated medium possible (in which case lubricated operation will always be required)					
Ambient temperat	ure	[°C]	0 +60					

Materials	
Housing	Aluminium
Note on materials	RoHS-compliant
	Free of copper and PTFE



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

Ordering data						
	Pneumati	С	Standard nominal flow rate qnN	Weight	Part No.	Туре
	connection					
	1 2		[l/min]	[g]		
	QS-4	QS-4	136	5.3	153462	H-QS-4
	QS-6	QS-6	282	10	153463	H-QS-6
	QS-8	QS-8	681	21	153464	H-QS-8
	QS-10	QS-10	1,480	63	153465	H-QS-10
	QS-12	QS-12	1,715	69	153466	H-QS-12

# **Check valves H**

Technical data – Female/male thread

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Non-return function



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

- **I** - Temperature range −10 ... +60 °C

Operating pressure 0.4 ... 12 bar



General technical data									
Valve function Non-return function									
Pneumatic connection 1		M5	G1/8	G <sup>1</sup> / <sub>4</sub>	G3/8	G1/2	G3/4		
Pneumatic connection 2		M5	G1/8	G1/4	G3/8	G1/2	G3/4		
Type of mounting		In-line installation	<u> </u>	Screw-in					
Mounting position Any									
Nominal tightening torque	[Nm]	-	-	11 ±10%	12.5 ±20%	14 ±20%	35 ±10%		

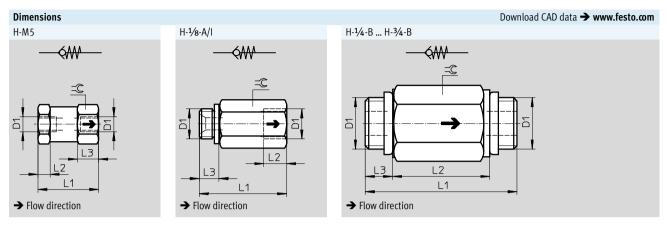
<sup>· ♦</sup> Note: This product conforms to ISO 1179-1 and to ISO 228-1

Operating and environmental conditi	ons							
Pneumatic connection 1	M5	G <sup>1</sup> /8	G1/4	G3/8	G½	G <sup>3</sup> / <sub>4</sub>		
Operating pressure complete [bar] temperature range	0.4 8		0.4 12					
Operating medium		Compressed air in accordance with SO 8573-1:2010 [7:4:4] ISO 8573-1:2010 [7:-:-]						
Note on operating/pilot medium	Operation with lub	Operation with lubricated medium possible (in which case lubricated operation will always be required)						
Ambient temperature [°C]	-10 +60	-10 +60						
Temperature of medium [°C]	-10 +60							
Storage temperature [°C]	-		-10 +60					
Corrosion resistance class CRC <sup>1)</sup>	-		2					

<sup>1)</sup> Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Materials							
Pneumatic connection 1	M5	G1/8	G <sup>1</sup> / <sub>4</sub>	G3/8	G½	G3/4	
Housing	Brass		Anodised wrought a	aluminium alloy			
Seals	NBR						
Note on materials	RoHS-compliant	RoHS-compliant – RoHS-compliant					
	-		Free of copper and F	PTFE			

Technical data – Female/male thread



Туре	Connection D1	L1	L2	L3	<b>-</b> ¢
H-M5	M5	20	4	7	11
H-1/8-A/I	G1/8	28.5	7.5	6.5	13
H-1/4-B	G1/4	48	32	8	19
H-3/8-B	G3/8	50	32	9	22
H-1/2-B	G <sup>1</sup> / <sub>2</sub>	65	44	10.5	27
H-3/4-B	G3/4	74	50	12	32

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

Ordering data						
	Pneumatic connection		Standard nominal flow rate qnN		Part No.	Туре
	1	2	[l/min] [s			
	M5 M5		115		3671	H-M5
	G½8	G½8	280	21	3324	H-1/8-A/I <sup>1)</sup>
	G1/4	G1/4	1,000	25.4	11689	H-1/4-B1)
	G3/8	G3/8	2,000	34	11690	H- <sup>3</sup> /8-B <sup>1)</sup>
	G1/2	G1/2	5,500	58.3	11691	H-1/2-B <sup>1)</sup>
	G3/4	G3/4	5,900	101	11692	H- <sup>3</sup> / <sub>4</sub> -B <sup>1)</sup>

<sup>1)</sup> Sealing rings for male thread are included in the scope of delivery.

# Check valves HA/HB Technical data

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Non-return function



- N - Flow rate 138 ... 2,230 l/min

Temperature range 0 ... +60 °C

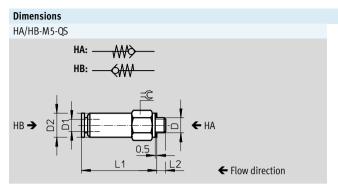
Operating pressure -1 ... +10 bar

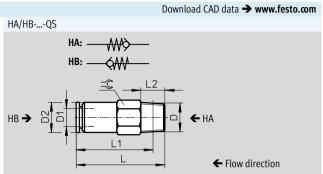


General technical data										
Valve function	Non-retu	on-return function								
Туре	HA	А НВ								
Pneumatic connection 1	M5	R1/8	R1/4	R3/8	R1/2	QS-4	QS-6	QS-8	QS-10	QS-12
Pneumatic connection 2	QS-4	QS-4,	QS-6,	QS-10,	QS-12	M5, R <sup>1</sup> /8	R <sup>1</sup> /8, R <sup>1</sup> /4	R <sup>1</sup> /8, R <sup>1</sup> /4	R <sup>3</sup> /8	R <sup>3</sup> /8, R <sup>1</sup> /2
		QS-6,	QS-8	QS-12						
		QS-8								
Type of mounting	Screw-in	'	'	<u>'</u>				1		<u>'</u>
Mounting position	Any									

Operating and environmental conditions							
Operating pressur	re	[bar]	-1 +10				
Minimal differ-	open	[bar]	≥ 0.1				
ential pressure	close	[bar]	≥ 0.2				
Operating mediur	n		Compressed air in accordance with ISO 8573-1:2010 [7:-:-]				
Note on operating/pilot medium			Operation with lubricated medium possible (in which case lubricated operation will always be required)				
Ambient temperat	ture	[°C]	0 +60				

Materials	
Housing	Nickel-plated brass
Note on materials	RoHS-compliant





Туре	Connection	Tubing O.D.	D2	L	L1	L2	=©
	D	D1	Ø				
HA/HB-M5-QS-4	M5	4	8	-	25.4	3	8
HA/HB-1/8-QS-4	R1/8	4	9	24.5	20.5	8	10
HA/HB-1/8-QS-6		6	10	29.3	25.3	8	10
HA/HB-1/8-QS-8		8	13.5	35.5	31.5	8	14
HA/HB-1/4-QS-6	R1/4	6	12	29.3	23.3	11	14
HA/HB-1/4-QS-8		8	13.5	39.2	33.2	11	14
HA/HB-3/8-QS-10	R3/8	10	25	61.7	55.4	12	24
HA/HB-3/8-QS-12		12	25	64.3	58	12	24
HA/HB-1/2-QS-12	R <sup>1</sup> / <sub>2</sub>	12	28	70.8	62.6	15	27

Ordering data						
	Pneumat connection	on	Standard nominal flow rate qnN	Weight	Part No.	Туре
	1	2	[l/min]	[g]		
Flow direction: n	nale thread -	→ push-in o	connector QS			
	M5	QS-4	148	7.2	153444	HA-M5-QS-4
	R1/8	QS-4	138	11	153446	HA-1/8-QS-4
		QS-6	311	11	153448	HA-1/8-QS-6
		QS-8	331	22	153452	HA-1/8-QS-8
	R1/4	QS-6	302	23	153450	HA-1/4-QS-6
		QS-8	670	24	153454	HA-1/4-QS-8
	R <sup>3</sup> /8	QS-10	1,740	47	153456	HA-3/8-QS-10
		QS-12	1,876	50	153458	HA-3/8-QS-12
	R <sup>1</sup> / <sub>2</sub>	QS-12	2,230	69	153460	HA-1/2-QS-12
Flow direction: p			male thread			
	QS-4	M5	144	7.2	153445	HB-M5-QS-4
		R1/8	142	11	153447	HB-1/8-QS-4
	QS-6	R1/8	335	11	153449	HB-1/8-QS-6
		R1/4	294	23	153451	HB-1/4-QS-6
	QS-8	R1/8	314	22	153453	HB-1/8-QS-8
		R1/4	696	24	153455	HB-1/4-QS-8
	QS-10	R3/8	1,700	47	153457	HB-3/8-QS-10
	QS-12	R3/8	1,886	50	153459	HB-3/8-QS-12
		R1/2	2,206	69	153461	HB-1/2-QS-12

**FESTO** 

Technical data – Push-in connector QS

#### Function



- N - Flow rate 130 ... 1,400 l/min

Operating pressure 0.5 ... 10 bar



The piloted check valve is suitable for short-duration positioning and braking functions in pneumatic drives.

Compressed air flows to and from the drive as long as a pilot signal is

applied to pneumatic connection 21. If no pilot signal is applied, the valve shuts off the exhaust air from the drive in flow direction  $2 \rightarrow 1$  and the movement of the drive is stopped.

- Proven component suitable for use in safety-related systems
- Swivel connection can be swivelled after mounting
- Manual exhausting of air trapped in the cylinder with manual override HAB → 15 as an accessory

General technical data								
Pneumatic connection 2		M5	G1/8	G1/4	G3/8	G½		
Pneumatic connection 1		QS-4	QS-4, QS-6	QS-8, QS-10	QS-8, QS-10	QS-12		
Pilot air connection 21		QS-4	M5	G1/8	G1/4	G3/8		
Valve function		Piloted non-return	Piloted non-return function					
Actuation type		Pneumatic	Pneumatic					
Type of mounting		Screw-in, via male	Screw-in, via male thread					
Mounting position		Any						
Nominal tightening torque	[Nm]	1.25 ±10%	3.5 ±10%	11 ±10%	12.5 ±10%	14 ±10%		

 $<sup>\</sup>parallel$  - Note: This product conforms to ISO 1179-1 and to ISO 228-1

Operating and environmental conditions								
Pneumatic connection 2		M5	G <sup>1</sup> /8	G1/4	G3/8	G1/2		
Operating pressure complete temperature range	[bar]	0.5 10						
Pilot pressure	[bar]	2 10	210 110					
Operating/pilot medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]						
Note on operating/pilot media	ım	Operation with lubricated medium possible (in which case lubricated operation will always be required)						
Ambient temperature	[°C]	-10 +60						
Temperature of medium	[°C]	-10 +60						
Storage temperature	[°C]	-10 +60						
Corrosion resistance class CR	C <sup>1)</sup>	2						

<sup>1)</sup> Corrosion resistance class CRC 2 to Festo standard FN 940070 Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.



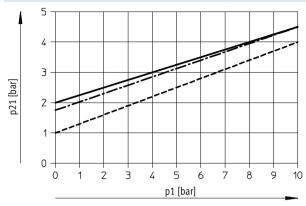
Additional measures are required for use in safety-related applications; in Europe, for example, the standards listed under the EC Machinery Directive must be observed.

Without additional measures in accordance with statutory minimum requirements, the product is not suitable for use in safety-related sections of control systems.

**FESTO** 

Technical data – Push-in connector QS

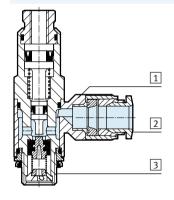
#### Minimum pilot pressure p21 as a function of operating pressure p1



HGL-1/8/1/4
HGL-M5
HGL-3/8/1/2

#### Materials

Sectional view



Piloted check valve						
Swivel connection	Die-cast zinc					
2 Releasing ring	POM					
3 Hollow bolt	Anodised wrought aluminium alloy					
- Seals, non-return collar	NBR					
Note on materials	RoHS-compliant					
	Free of copper and PTFF					

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Technical data – Push-in connector QS

# Download CAD data → www.festo.com HGL-Ms HGL-Ms, HGL-Ms, HGL-Ms, HGL-Ms HGL-

Туре	Connection	Tubing O.D.	D1	D3	D4	D5	H1	H2	L1	L2	L3	L4	=© 1	=© 2
	D	D2		Ø	Ø	Ø								
HGL-1/8-QS-4	G1/8	4	M 5	13.8	11.8	10.2	29.4	22.5	42.6	5.4	13.9	37.8	8	12
HGL-1/8-QS-6	G1/8	6	1015	15.0	11.0	12.5	32.6	25.7	42.0	5.4	13.2	37.0	0	12
HGL-1/4-QS-8	G1/4	8	G1/8	17.8	16	14.5	39.6	30.7	50.8	6.5	16.6	44.5	12	16
HGL-1/4-QS-10	G1/4	10	078	17.0	10	17.5	42	33.1	30.6	0.5	15.5	44.5	12	10
HGL-3/8-QS-8	G3/8	8	G1/4	22.4	18.8	14.5	44.1	32.9	56.3	7	18.2	49.5	15	19
HGL-3/8-QS-10	G3/8	10	0-74	22.4	22.4 10.0	17.5	46.7	35.5	50.5	/	18.2	49.3	13	19
HGL-1/2-QS-12	G1/2	12	G3/8	27.8	23.5	20.5	55.3	41.4	75.8	8.8	22.4	-	-	24

<sup>· ♦ ·</sup> Note: This product conforms to ISO 1179-1 and to ISO 228-1

#### ★ Core product range

Ordering data	3							
	Pneumatic connection		Pilot air connection	Standard nominal flow rate qnN at 6 5 bar	Standard flow rate qn at 6	Weight	Part No.	Туре
	2	1	21	[l/min]	[l/min]	[g]		
S)	M5	QS-4	QS-4	130	200	21	★ 530038	HGL-M5-QS-4 <sup>1)</sup>
	G1/8	QS-4	M5	200	300	18.4	<b>★</b> 530039	HGL-1/8-QS-41)
		QS-6	M5	270	400	21.4	<b>★</b> 530040	HGL-1/8-QS-61)
	G1/4	QS-8	G <sup>1</sup> /8	390	640	38.7	★ 530041	HGL-1/4-QS-81)
		QS-10	G1/8	400	670	45	<b>★</b> 530042	HGL-1/4-QS-10 <sup>1)</sup>
	G3/8	QS-8	G1/4	830	1,200	54.7	<b>★</b> 530043	HGL-3/8-QS-81)
		QS-10	G1/4	890	1,300	60.3	<b>★</b> 530044	HGL-3/8-QS-10 <sup>1)</sup>
	G1/2	QS-12	G3/8	1,400	2,100	116.9	<b>★</b> 530045	HGL-1/2-QS-12 <sup>1)</sup>

<sup>1)</sup> Sealing ring for male thread is included in the scope of delivery.

Festo core product range

- ★ Ready for dispatch from the Festo factory in 24 hours
- ★ Ready for dispatch in 5 days maximum from stock



Technical data - Female thread

Function



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

Temperature range -10 ... +60 °C

Operating pressure 0.5 ... 10 bar



The piloted check valve is suitable for short-duration positioning and braking functions in pneumatic drives. Compressed air flows to and from the drive as long as a pilot signal is applied to pneumatic connection 21. If no pilot signal is applied, the valve shuts off the exhaust air from the drive in flow direction  $2 \rightarrow 1$  and the movement of the drive is stopped.

- Proven component suitable for use in safety-related systems
- Swivel connection can be swivelled after mounting
- Manual exhausting of air trapped in the cylinder with manual override HAB > 15 as an accessory

General technical data									
Pneumatic connection 2		M5	G1/8	G1/4	G3/8	G <sup>1</sup> / <sub>2</sub>			
Pneumatic connection 1		M5	G <sup>1</sup> /8	G1/4	G3/8	G <sup>1</sup> / <sub>2</sub>			
Pilot air connection 21		M5	M5, G½8	G1/8	G1/4	G3/8			
Valve function		Piloted non-retur	Piloted non-return function						
Actuation type		Pneumatic							
Type of mounting		Screw-in, via male thread							
Mounting position		Any							
Nominal tightening torque	[Nm]	1.25 ±10%	3.5 ±10%	11 ±10%	12.5 ±10%	14 ±10%			

 $<sup>\|\</sup>cdot\|$  Note: This product conforms to ISO 1179-1 and to ISO 228-1

Operating and environmental conditions							
Pneumatic connection 2		M5	G½8	G <sup>1</sup> / <sub>4</sub>	G3/8	G½	
Operating pressure complete temperature range	[bar]	0.5 10					
Pilot pressure	[bar]	2 10			1 10		
Operating/pilot medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]					
Note on operating/pilot mediur	n	Operation with lubricated medium possible (in which case lubricated operation will always be required)					
Ambient temperature	[°C]	-10 +60					
Temperature of medium	[°C]	-10 +60					
Storage temperature	[°C]	-10 +60					
Corrosion resistance class CRC	1)	2					

<sup>1)</sup> Corrosion resistance class CRC 2 to Festo standard FN 940070 Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.



Note

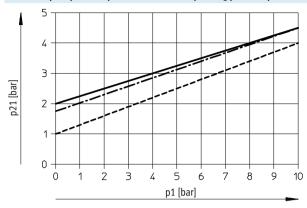
Additional measures are required for use in safety-related applications; in Europe, for example, the standards listed under the EC Machinery Directive must be observed.

Without additional measures in accordance with statutory minimum requirements, the product is not suitable for use in safety-related sections of control systems.

**FESTO** 

Technical data – Female thread

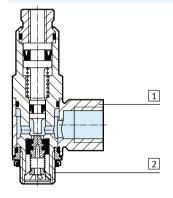
## Minimum pilot pressure p21 as a function of operating pressure p1



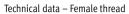
HGL-1/8/1/4
HGL-M5
HGL-3/8/1/2

#### Materials

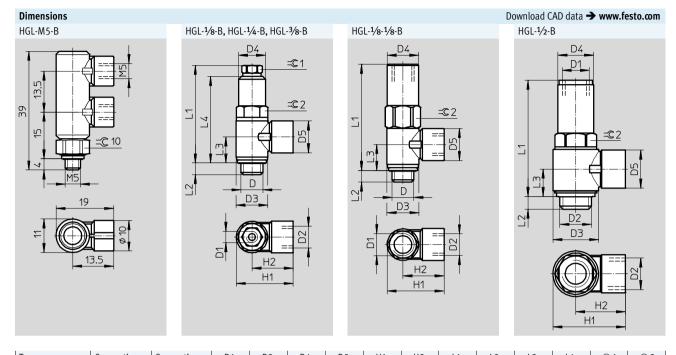
Sectional view



Pilo	Piloted check valve							
1	Swivel connection	Die-cast zinc						
2	Hollow bolt	Anodised wrought aluminium alloy						
-	Seals, non-return collar	NBR						
Note	on materials	RoHS-compliant						
		Free of copper and PTFE						







Туре	Connection	Connection	D1	D3	D4	D5	H1	H2	L1	L2	L3	L4	=©1	=© 2
	D	D2		Ø	Ø	Ø								
HGL-1/8-B	G1/8	G1/8	M5	14	11.8	14	25.1	18.1	42.6	5.4	11.2	37.8	8	12
HGL-1/8-1/8-B	G1/8	G1/8	G1/8	14	13.8	14	25.1	18.1	46.7	5.2	11.2	-	-	14
HGL-1/4-B	G1/4	G1/4	G1/8	18	16	17.5	34	25	50.8	6.5	13.5	44.5	12	16
HGL-3/8-B	G3/8	G3/8	G1/4	23.8	18.8	20	39.3	27.4	56.3	7	15.1	49.5	15	19
HGL-1/2-B	G <sup>1</sup> / <sub>2</sub>	G1/2	G3/8	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

#### ★ Core product range

Ordering data	a							
	connection		Pilot air connection	Standard nominal flow rate gnN at 6 5 bar	Standard flow rate qn at 6 ····· 0 bar	Weight	Part No.	Туре
			21	[l/min]	[l/min]	[g]		
	M5	M5	M5	130	200	21	★ 530029	HGL-M5-B <sup>1)</sup>
	G1/8	G1/8	M5 G½8	300 300	430 430	20.8	★ 530030 543253	HGL-1/8-B <sup>1)</sup> HGL-1/8-1/8-B <sup>1)</sup>
	G1/4	G1/4	G <sup>1</sup> / <sub>8</sub>	550	680	41.2	★ 530031	HGL- <sup>1</sup> / <sub>4</sub> -B <sup>1)</sup>
	G3/8	G3/8	G1/4	1,100	1,500	62.9	★ 530032	HGL- <sup>3</sup> /8-B <sup>1)</sup>
	G1/2	G1/2	G3/8	1,600	2,100	129.4	★ 530033	HGL-1/2-B <sup>1)</sup>

<sup>1)</sup> Sealing ring for male thread is included in the scope of delivery.

Festo core product range

- ★ Ready for dispatch from the Festo factory in 24 hours
- Ready for dispatch in 5 days maximum from stock

**FESTO** 

Accessories

Manual override HAB

for piloted check valve HGL

• For manual exhausting of air trapped in a cylinder

Material:

Housing: Anodised wrought

aluminium alloy

Note on materials: RoHS-compliant



General technical data					
Pneumatic connection 2		G1/8	G1/4	G3/8	G1/2
Pneumatic connection 1		G1/8	G1/4	G3/8	G <sup>1</sup> / <sub>2</sub>
Nominal size	[mm]	4.1	7	11	14
Valve function		Exhaust component			
Type of mounting		Screw-in			
Mounting position		Any			
Standard flow rate,	[l/min]	165			
exhausting, at 6 0 bar					
Max. tightening torque	[Nm]	4	11	40	50

Operating and environmental conditions								
Operating pressure [bar]	010							
Operating medium	Compressed air in accordance with ISO 8573-1:2010 [7:4:4]							
Note on operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)							
Ambient temperature [°C]	-20 +80							
Temperature of medium [°C]	-20 +80							
Corrosion resistance class CRC <sup>1)</sup>	2							

<sup>1)</sup> Corrosion resistance class CRC 2 to Festo standard FN 940070 Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.



Dimensions ar	Dimensions and ordering data										
Connection	B1	D2	L1	L2	L3	L4	=©	Part No. Type			
D1		Ø									
G1/8	6.2	7.7	4.7	1.8	19.1	5	13	184585 HAB-½			
G1/4	6.2	7.7	5.8	2.2	28	7	17	184586 HAB-1⁄4			
G3/8	6.2	7.7	6.05	3.35	28.4	7	19	184587 HAB-3/8			
G1/2	6.2	7.7	7.9	2.6	38.5	7	24	184588 HAB-½			

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