Non-return valves H/HA/HB/HGL





Non-return valves H/HA/HB/HGL Product range overview

Version	Valve function	Version	Туре	Pneumatic connection 1	Pneumatic connection 2	qnN [l/min]	→ Page/ Internet
Non-return valves	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	5
		5)	M5, G1⁄8, G1⁄4, G3⁄8, G1⁄2, G3⁄4	M5, G1⁄8, G1⁄4, G3⁄8, G1⁄2, G3⁄4	115 5,900	7
			HA	M5, R ¹ /8, R ¹ /4, R ³ /8, R ¹ /2	QS-4, QS-6, QS-8, QS-10, QS-12	138 2,230	9
			HB	QS-4, QS-6, QS-8, QS-10, QS-12	M5, R1⁄8, R1⁄4, R3⁄8, R1⁄2	142 2,206	9
Non-return	Compact design						
valves, piloted	Piloted non-return function		HGL	QS-4, QS-6, QS-8, QS-10, QS-12	M5, G1⁄8, G1⁄4, G3⁄8, G1⁄2	130 1,400	12
			_	M5, G1⁄8, G1⁄4, G3⁄8, G1⁄2	M5, G1⁄8, G1⁄4, G3⁄8, G1⁄2	130 1,600	15
	Flat design						
	Piloted non-return function		VBNF	QS-6, QS-8	G1/8, G1/4	260 620	vbnf
		a					

Non-return valves H/HA/HB/HGL Type codes

Type Non-return function H Non-return valve flow direction: male thread \rightarrow push-in connector QS HB Non-return valve, flow direction: male thread \rightarrow push-in connector QS HB Non-return valve, flow direction: push-in connector QS \rightarrow male thread Ploted non-return function HGL Non-return valve, ploted Preumatic connection 1 with H/HA. preumatic connector for tubing 0.0.4 mm QS-6 Push-in connector for tubing 0.0.4 mm QS-6 Push-in connector for tubing 0.0.8 mm QS-12 Push-in connector for tubing 0.0.12 mm MS female thread (SA Ye-A/I Male thread GA Ye-A/I Male thread GA Ya Male thread RA Ya Male thread GA Ya			HA	A I	-	1/8]- [QS-6	٦- ٢	
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QS-12 Push-in connector for tubing O.D. 12 mm Generation				-						
Generation				-						
	Q3-12									
	Generation									
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Non-return valves H

Technical data – Push-in connector QS

Non-return function

Flow rate 136 ... 1,715 l/min Temperature range 0 ... +60 °C Pressure -1 ... +10 bar

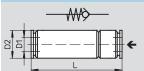


General technical data							
Valve function	Non-return fun	ction					
Pneumatic connection 1	QS-4	QS-6	QS-8	QS-10	QS-12		
Pneumatic connection 2	QS-4	QS-6	QS-8	QS-10	QS-12		
Type of mounting	In-line installat	tion			·		
Mounting position	Any						

Operating and environmental conditions							
Operating pressure [bar]	-1 +10						
Operating medium	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 temperature [°C]	0 +60						

Materials						
Housing	Aluminium					
Note on materials	Free of copper and PTFE					

Dimensions



← Flow direction

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

	ing	

Ordering data						
	Pneumat		Standard nominal flow rate qnN	Weight	Part No.	Туре
	1	12	[1/min]	[]		
	I	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
0)	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

Download CAD Data **→ www.festo.com/us/cad**

Non-return valves H

Technical data – Female/male thread

Non-return function



Flow rate 115 ... 5,900 l/min Temperature range -10 ... +60 °C Pressure 0.4 ... 12 bar



General technical data									
Valve function		Non-return function							
Pneumatic connection 1		M5	G1/8	G1⁄4	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 Screw-in								
Mounting position Any									
Max. tightening torque [Nm	ן]	-	-	11	20	40	60		

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

Operating and environmental conditions									
Pneumatic connection 1 M5 G ¹ /8 G ¹ /4 G ³ /8 G ¹ /2 G ³ /4						G3⁄4			
Operating pressure	Operating pressure [bar] 0.4 8 0.4 12								
Operating medium	medium Compressed air in accordance with ISO 8573-1:2010 [7:4:4] ISO 8573-1:2010 [7:-:-]								
Note on operating/pilot med	lium	Operation with lubr	icated medium poss	ible (in which case lu	bricated operation w	ill always be required	d)		
Ambient temperature	[°C]	-10 +60							
Temperature of medium	[°C]	-10 +60							
Storage temperature	[°C]	-		-10 +60					
Corrosion resistance class CRC ¹⁾ – 2									

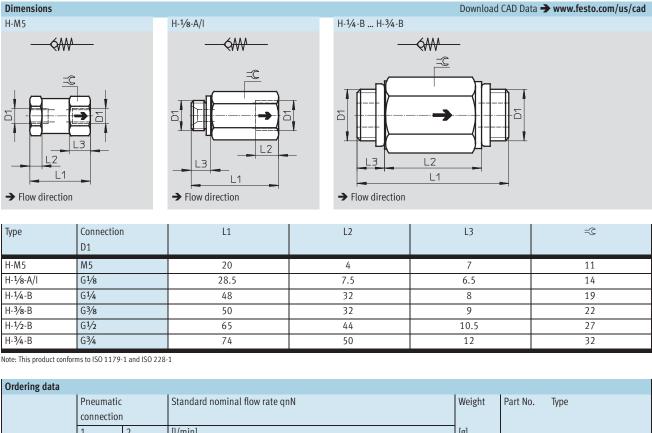
1) Corrosion resistance class 2 according to Festo standard 940 070 Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Materials							
Pneumatic connection 1	M5	G1⁄8	G1⁄4	G3⁄8	G1⁄2	G3⁄4	
Housing	Brass		Anodised wrought a	t aluminium alloy			
Seals	NBR						
Note on materials	– Free of copper and PTFE						

Non-return valves H

Technical data – Female/male thread

FESTO



connectio	JII				
1	2	[l/min]	[g]		
M5	M5	115	15	3671	H-M5
G1⁄8	G1⁄8	280	21	3324	H-1/8-A/I ¹⁾
G1/4	G1⁄4	1,000	25.4	11689	H-1/4-B ¹⁾
G ³ /8	G3⁄8	2,000	34	11690	H-3⁄8-B ¹⁾
G1/2	G1⁄2	5,500	58.3	11691	H-1/2-B ¹⁾
G3⁄4	G3⁄4	5,900	101	11692	H-3⁄4-B ¹⁾

1) Sealing rings for male thread are included in the scope of delivery.

Non-return valves HA/HB Technical data

Non-return function

₩

Flow rate 138 ... 2,230 l/min Temperature range 0 ... +60 °C Pressure -1 ... +10 bar



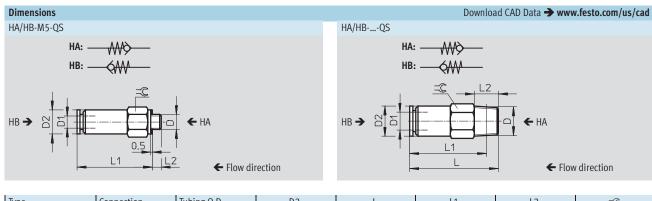
General technical data										
Valve function	Non-retu	on-return function								
Туре	HA	HB								
Pneumatic connection 1	M5	R1⁄8	R1⁄4	R3⁄8	R1/2	QS-4	QS-6	QS-8	QS-10	QS-12
Pneumatic connection 2	QS-4	QS-4,	QS-6,	QS-10,	QS-12	M5, R ¹ ⁄8	R1⁄8, R1⁄4	R1⁄8, R1⁄4	R3⁄8	R ³ /8, R ¹ /2
		QS-6,	QS-8	QS-12						
		QS-8								
Type of mounting	Screw-in	Screw-in								
Mounting position	Any	ny								

Operating and environmental conditions							
Operating pressure [bar]	-1 +10						
Operating medium	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 temperature [°C]	0 +60						

Materials

Housing

Nickel-plated brass



Туре	Connection	Tubing O.D.	D2	L	L1	L2	D=
	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	1	6	10	29.3	25.3	8	10
HA/HB-1/8-QS-8	1	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	1	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	1	12	25	64.3	58	12	24
HA/HB-1/2-QS-12	R1/2	12	28	70.8	62.6	15	27

Non-return valves HA/HB

.

Ordering data						
	Pneumat connecti		Standard nominal flow rate qnN	Weight	Part No.	Туре
	1	2	[l/min]	[g]		
Flow direction:	male thread	\rightarrow push-in	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
O		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 R3/8 QS-10 QS-12		670	24	153454	HA-1⁄4-QS-8
			1,740	47	153456	HA-3/8-QS-10
			1,876	50	153458	HA-3/8-QS-12
	R1/2	QS-12	2,230	69	153460	HA-1⁄2-QS-12
Flow direction:	oush-in conn	iector QS —;	→ male thread			
	QS-4	M5	144	7.2	153445	HB-M5-QS-4
		R1⁄8	142	11	153447	HB-1⁄8-QS-4
0	QS-6	R1⁄8	335	11	153449	HB-1/8-QS-6
Ŭ		R1⁄4	292	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

Non-return valves HGL, piloted

Technical data – Push-in connector QS

Function



Flow rate

130 ... 1,400 l/min Temperature range −10 ... +60 °C Pressure 0.5 ... 10 bar



The piloted non-return 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

General technical data

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		G1⁄4	G3⁄8	G1⁄2			
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	G¾			
Valve function	Piloted non-return function							
Actuation type	Pneumatic							
Type of mounting	Screw-in, via male thread							
Mounting position	Any							
Max. tightening torque [Nm]	1.5	5	12	15	18			

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

Operating and environmental conditions								
Pneumatic connection 2		M5	G1⁄8	G1⁄4	G3⁄8	G1⁄2		
Operating pressure	[bar]	0.5 10						
Pilot pressure	[bar]	2 10	2 10 1 10					
Operating/pilot medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]						
Note on operating/pilot me	dium	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	-10 +60					
Storage temperature	[°C]	-10 +60						
Corrosion resistance class (CRC ¹⁾	2						

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

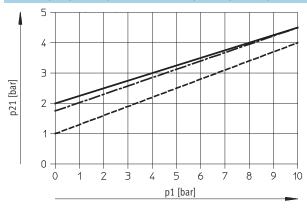
Components subject to moderate corrosion stress. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Note

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.

Non-return valves HGL, piloted Technical data – Push-in connector QS

Minimum pilot pressure p21 as a function of operating pressure p1

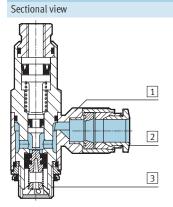


- HGL-1/8/1/4

—----- HGL-M5

— — — — HGL-3/8/1/2

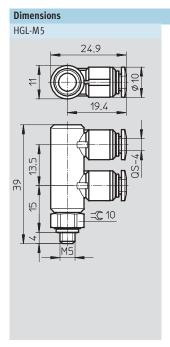
Materials

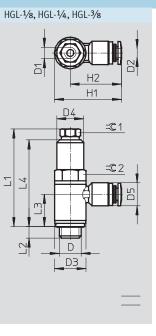


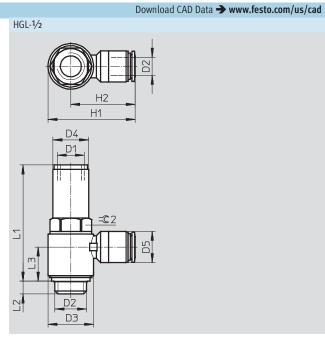
Non-return valve, piloted						
1 Swivel connection	Die-cast zinc					
2 Releasing ring	POM					
3 Hollow bolt	Anodised wrought aluminium alloy					
 Seals, non-return collar 	NBR					
Note on materials	RoHS-compliant					
	Free of copper and PTFE					

Non-return valves HGL, piloted Technical data – Push-in connector QS

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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	M5	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	IVID 13.8		10.0 11.0	12.5	32.6	25.7	42.0	5.4	13.2	5/.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	50.0	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	074	22.4 10.0	17.5	46.7	35.5	50.5	,	18.2	49.5	1)	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

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

Ordering data	l .							
	Pneumatic Pilot air		Pilot air	Standard nominal flow rate	Standard flow rate qn	Weight	Part No.	Туре
	connectio	n	connection	qnN at 6 5 bar	at 6 0 bar			
	2	1	21	[l/min]	[l/min]	[g]		
K)	M5	QS-4	QS-4	130	200	21	530038	HGL-M5-QS-4 ¹⁾
Ĵ.	G1⁄8	QS-4	M5	200	300	18.4	530039	HGL-1/8-QS-4 ¹⁾
		QS-6	M5	270	400	21.4	530040	HGL-1/8-QS-6 ¹⁾
	G1⁄4	QS-8	G1⁄8	390	640	38.7	530041	HGL-1⁄4-QS-8 ¹⁾
		QS-10	G1⁄8	400	670	45	530042	HGL-1⁄4-QS-10 ¹⁾
	G3⁄8	QS-8	G1⁄4	830	1,200	54.7	530043	HGL-3⁄8-QS-8 ¹⁾
		QS-10	G1⁄4	890	1,300	60.3	530044	HGL-3⁄8-QS-10 ¹⁾
	G1⁄2	QS-12	G3⁄8	1,400	2,100	116.9	530045	HGL-½-QS-12 ¹⁾

1) Sealing ring for male thread is included in the scope of delivery.

2013/05 - Subject to change

Non-return valves HGL, piloted

Technical data – Female thread

Function



Flow rate 130 ... 1,600 l/min Temperature range -10 ... +60 °C Pressure 0.5 ... 10 bar



The piloted non-return 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 \rightarrow 15 as an accessory

General technical data								
Pneumatic connection 2	M5	G1/8	G1⁄4	G3⁄8	G1⁄2			
Pneumatic connection 1	M5	G1⁄8	G1⁄4	G3⁄8	G1⁄2			
Pilot air connection 21	M5	M5, G1⁄8	G1⁄8	G1⁄4	G3⁄8			
Valve function	Piloted non-return function							
Actuation type	Pneumatic							
Type of mounting	Screw-in, via male thread							
Mounting position	Any							
Max. tightening torque [Nm]	1.5	5	12	15	18			

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

Operating and environmental conditions									
Pneumatic connection 2		M5	G1⁄8	G1⁄4	G3⁄8	G1⁄2			
Operating pressure	[bar]	0.5 10							
Pilot pressure	[bar]	2 10	2 10 1 10						
Operating/pilot medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]							
Note on operating/pilot mee	dium	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	-10 +60						
Storage temperature	[°C]	-10 +60							
Corrosion resistance class (CRC ¹⁾	2							

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

Components subject to moderate corrosion stress. 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.

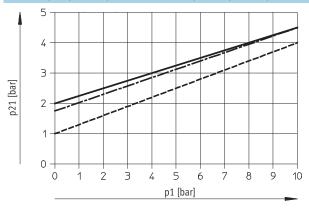
Note

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.

Non-return valves HGL, piloted Technical data – Female thread

Minimum pilot pressure p21 as a function of operating pressure p1

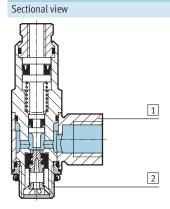


- HGL-1/8/1/4

_____ HGL-M5

— — — — HGL-3/8/1/2

Materials



Non-return valve, piloted						
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					

Non-return valves HGL, piloted Technical data – Female thread

Dimensions Download CAD Data -> www.festo.com/us/cad HGL-M5-B HGL-1/8-B, HGL-1/4-B, HGL-3/8-B HGL-1/8-1/8-B HGL-1/2-B D4 D4 D4 **=**©1 D1 ШÐ 13.5 **=©**2 96 6 5 **=©** 2 4 \Box б Ъ **=**©2 = 10 Ы m 5 = DS D 2 Ď 2 DЗ 19 D3 2 D2 DЗ À 5 Б 13.5 H2 H2 62 . H1 H1 H2 H1

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	G1⁄2	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 ISO 228-1

Ordering data Pneumatic Pilot air Standard nominal flow rate Standard flow rate qn Weight Part No. Туре connection connection qnN at 6 ----- 5 bar at 6 ----- 0 bar 2 21 [l/min] [l/min] [g] 1 M5 M5 Μ5 130 200 21 530029 HGL-M5-B¹⁾ HGL-1/8-B1) G1⁄/8 G1⁄8 Μ5 300 430 20.8 530030 430 HGL-1/8-1/8-B1) G1⁄8 300 26.2 543253 HGL-1/4-B1) G1⁄4 G1⁄4 G1⁄8 550 680 41.2 530031 HGL-3/8-B1) G3⁄8 G1⁄4 1,100 1,500 530032 G3⁄8 62.9 HGL-1/2-B1) G1/2 G1/2 G3⁄8 1,600 2,100 129.4 530033

1) Sealing ring for male thread is included in the scope of delivery.

Non-return valves HGL, piloted

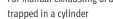
Accessories

Manual override HAB

for non-return valve HGL

Material: Housing: Anodised wrought aluminium alloy

• For manual exhausting of air





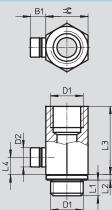
General technical data					
Pneumatic connection 2		G1/8	G1⁄4	G3⁄8	G1/2
Pneumatic connection 1		G1/8	G1⁄4	G3⁄8	G1/2
Nominal size	[mm]	4.1	7	11	14
Valve function		Exhaust component			
Type of mounting		Screw-in			
Mounting position		Any			
Standard nominal flow rate,	[l/min]	165			
exhausting, at 6					
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 ¹⁾	2				

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

Components subject to moderate corrosion stress. 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.

Dimensions



Dimensions and ordering data Connection D2 L1 L2 L3 L4 Part No. B1 =C Туре D1 Ø G1⁄8 HAB-1/8 6.2 7.7 4.7 1.8 19.1 5 13 184585 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-1/2

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

Download CAD Data **→ www.festo.com/us/cad**

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