

Suction cup holders ESH

Technical data

FESTO

- With or without height compensation
- 6 holder sizes
- 8 holder types
- 3 tubing connectors

Temperature range
-10 ... +60






General technical data							
ESH-HA-... without height compensation							
	Holder size	Vacuum connection	Volume [cm³]	Mounting thread	Suction cup connection	Max. tightening torque [Nm]	Weight [g]
Male thread, 2 nuts, vacuum connection on top							
QS	1	QS4	0.239	M6x0.75	Ø 3 mm	3	6
		PK-3	0.090	M5x0.5		2	3
	2	QS4	0.501	M10x1	Ø 4 mm	7	12
		PK-4	0.169	M8x0.75		3.5	7
PK	3	QS6	0.520	M12x1	M4x0.7	14	20
		PK-4	0.274	M8x0.75		3.5	10
	4	QS6	0.719	M14x1	M6x1	21	30
		PK-4	0.668	M12x1		14	23
G	5	G1/8	1.862	M20x1	M10x1.5	21	84
	6	G1/4	7.234	M24x2	M20x2	50	200




General technical data						
ESH-HB-... without height compensation						
	Holder size	Vacuum connection	Volume [cm³]	Mounting thread Female thread	Suction cup connection	Weight [g]
Female thread, vacuum connection on side						
QS	1	QS4	0.228	M3x0.5	Ø 3 mm	5
		PK-3	0.108			4
	2	QS6	0.418	M4x0.75	Ø 4 mm	13
		PK-4	0.188			11
PK	3	QS6	0.539	M6x1	M4x0.7	29
		PK-4	0.313			27
	4	QS6	0.646	M6x1	M6x1	27
		PK-4	0.416			25
G	5	G1/8	1.921	M8x1.25	M10x1.5	91
	6	G1/4	7.250	M16x2	M20x2	271

Suction cup holders ESH

Technical data

FESTO




General technical data										
ESH-HC-... with height compensation										
	Holder size	Vacuum connection	Volume [cm³]	Mounting thread	Suction cup connection	Height compensati on [mm]	Spring force		Max. tightening torque [Nm]	Weight [g]
							min. [N]	max. [N]		
Male thread, 2 nuts, vacuum connection on top										
QS 	1	QS4	0.385	M12x1	Ø 3 mm	3	0	0.1	14	17
		PK-3	0.117	M8x0.75					3.5	8
PK 	2	QS6	0.551	M12x1	Ø 4 mm	3	0	0.1	14	18
		PK-4	0.192	M8x0.75					3.5	8
	3	QS6	1.041	M14x1	M4x0.7	6	2	5	21	34
		PK-4	0.789							32
	4	QS6	1.153	M14x1	M6x1	6	5	10	21	33
		PK-4	0.911							31
G 	5	G1/8	3.327	M22x1	M10x1.5	10	8	18	50	112
	6	G1/4	11.537	M30x2	M20x2	20	12	22		472




General technical data										
ESH-HCL-... with height compensation, long										
	Holder size	Vacuum connection	Volume [cm³]	Mounting thread	Suction cup connection	Height compensati on [mm]	Spring force		Max. tightening torque [Nm]	Weight [g]
							min. [N]	max. [N]		
Male thread, 2 nuts, vacuum connection on top										
QS 	1	QS4	0.489	M12x1	Ø 3 mm	10	0	0.1	14	20
		PK-3	0.360							19
PK 	2	QS6	0.519	M12x1	Ø 4 mm	10	0	0.1	14	20
		PK-4	0.398							19
	3	QS6	1.616	M14x1	M4x0.7	20	1	3	21	48
		PK-4	1.383							46
4		QS6	1.780	M14x1	M6x1	20	1	9	21	47
		PK-4	1.535							45
G 	5	G¾	6.060	M22x1	M10x1.5	30	10	16	50	169
	6	G¾	16.325	M30x2	M20x2	40	15	32		560

Suction cup holders ESH

Technical data

FESTO


General technical data										
ESH-HD-... with height compensation										
	Holder size	Vacuum connection	Volume [cm³]	Mounting thread	Suction cup connection	Height compensati on [mm]	Spring force		Max. tightening torque [Nm]	Weight [g]
							min. [N]	max. [N]		
Male thread, 2 nuts, vacuum connection on side										
	1	QS4	0.241	M8x0.75	Ø 3 mm	3	0	0.1	3.5	13
		PK-3	0.120							11
	2	QS6	0.417	M8x0.75	Ø 4 mm	3	0	0.1	3.5	15
		PK-4	0.183							12
	3	QS6	0.573	M14x1	M4x0.7	6	2	5	21	46
		PK-4	0.343							44
	4	QS6	0.678	M14x1	M6x1	6	5	10	21	45
		PK-4	0.449							43
	5	G1/8	2.072	M22x1	M10x1.5	10	8	18	50	195
	6	G1/4	13.171	M30x2	M20x2	20	12	22		472


General technical data										
ESH-HDL... with height compensation, long										
	Holder size	Vacuum connection	Volume [cm³]	Mounting thread	Suction cup connection	Height compensati on [mm]	Spring force		Max. tightening torque [Nm]	Weight [g]
							min. [N]	max. [N]		
Male thread, 2 nuts, vacuum connection on side										
QS 	1	QS4	0.272	M12x1	Ø 3 mm	10	0	0.1	14	29
		PK-3	0.150							28
PK 	2	QS6	0.260	M12x1	Ø 4 mm	10	0	0.1	14	33
		PK-4	0.138							32
	3	QS6	0.474	M14x1	M4x0.7	20	1	3	21	65
		PK-4	0.252							63
G 	4	QS6	0.370	M14x1	M6x1	20	1	9	21	65
		PK-4	0.448							63
	5	G1/8	1.667	M22x1	M10x1.5	30	10	16	50	273
	6	G1/4	16.968	M30x2	M20x2	40	15	32	50	560

Suction cup holders ESH

Technical data

FESTO

General technical data					
ESH-HE-... without height compensation					
	Holder size	Vacuum connection Male thread	Suction cup connection	Max. tightening torque [Nm]	Weight [g]
With threaded connection for direct attachment					
	1	M3x0.5	Ø 3 mm	0.7	1
	2	M5x0.8	Ø 4 mm	1.9	3
	3	G $\frac{1}{8}$	M4x0.7	9	11
	4	G $\frac{1}{8}$	M6x1	9	11
	5	G $\frac{1}{4}$	M10x1.5	14	24

General technical data								
ESH-HF-... with height compensation								
	Holder size	Vacuum connection Male thread	Suction cup connection	Height compensator [mm]	Spring force		Max. tightening torque [Nm]	Weight [g]
					min. [N]	max. [N]		
With threaded connection for direct attachment								
	1	M10x1	Ø 3 mm	2.6	2	4	7	14
	2	M10x1	Ø 4 mm	2.6	2	4	7	14
	3	M14x1	M4x0.7	6	6	12	21	54
	4	M14x1	M6x1	6	6	12	21	52

Suction cup holders ESH

Technical data



Materials								
	ESH-...-	HA-...	HB-...	HC-...	HCL-...	HD-...	HDL-...	HE-... HF-...
Threaded plug	Steel							
QS connection	Steel, polyacetate, nitrile rubber							–
Note on materials	RoHS-compliant							

Ambient conditions		
	ESH-...-...	
Ambient temperature	[°C]	–10 ... +60
Corrosion resistance class	CRC ¹⁾	1

- 1) Corrosion resistance class 1 according to Festo standard 940 070
Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Suction cup holders ESH

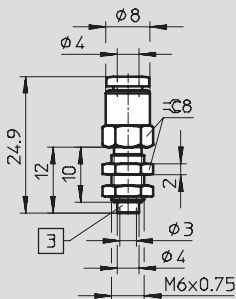
Technical data

FESTO

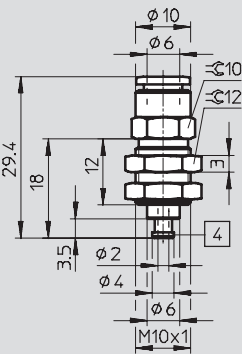
Dimensions – ESH-HA

Push-in connector QS

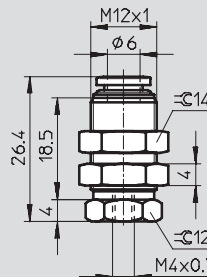
Holder size 1



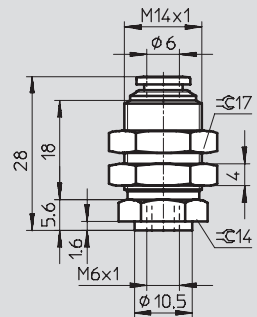
Holder size 2



Holder size 3

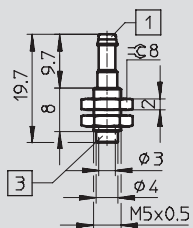


Holder size 4

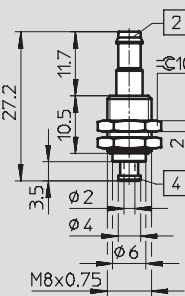


Barbed fitting connector PK

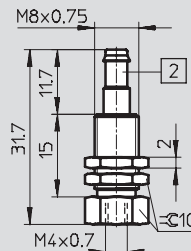
Holder size 1



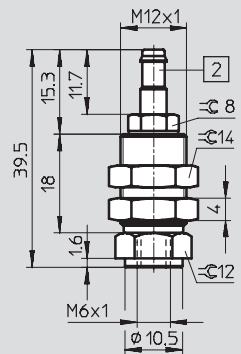
Holder size 2



Holder size 3



Holder size 4

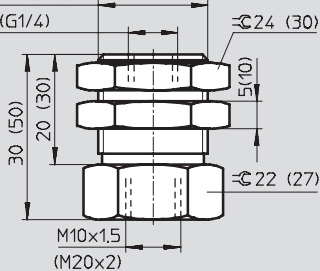


Threaded connection G

Holder size 5/Holder size 6*

M20x1 (M24x2)

G1/8 (G1/4)



1 Barbed fitting for 3 mm plastic tubing

2 Barbed fitting for 4 mm plastic tubing

3 Hole for vacuum generator

4 Barbed fitting for vacuum generator

* Dimensions in brackets

Suction cup holders ESH

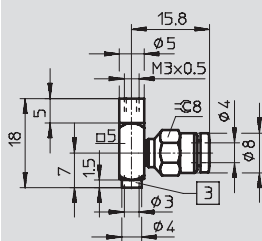
Technical data

FESTO

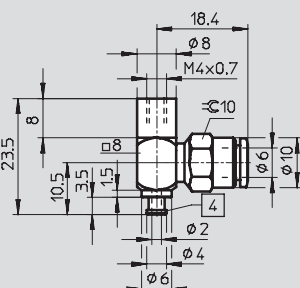
Dimensions – ESH-HB

Push-in connector QS

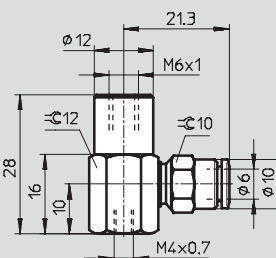
Holder size 1



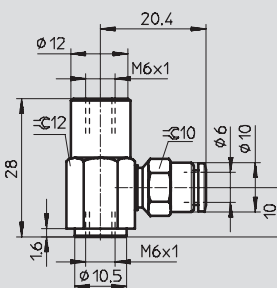
Holder size 2



Holder size 3

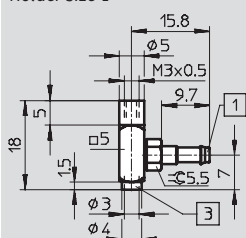


Holder size 4

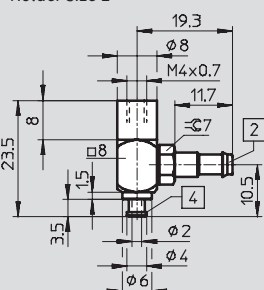


Barbed fitting connector PK

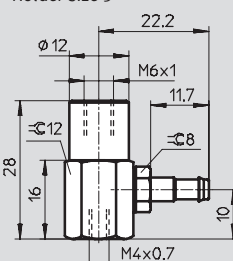
Holder size 1



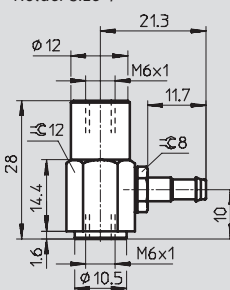
Holder size 2



Holder size 3

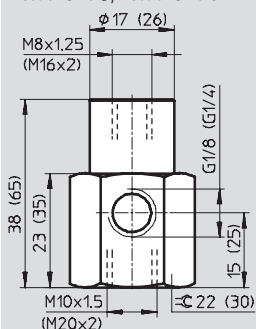


Holder size 4



Threaded connection G

Holder size 5/Holder size 6*



1 Barbed fitting for 3 mm plastic tubing

2 Barbed fitting for 4 mm plastic tubing

3 Hole for vacuum generator tubing

4 Barbed fitting for vacuum generator

* Dimensions in brackets

Suction cup holders ESH

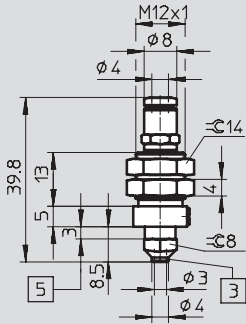
Technical data

FESTO

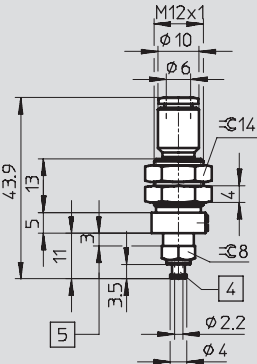
Dimensions – ESH-HC

Push-in connector QS

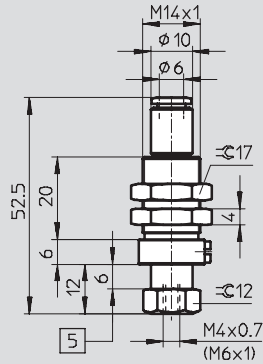
Holder size 1



Holder size 2

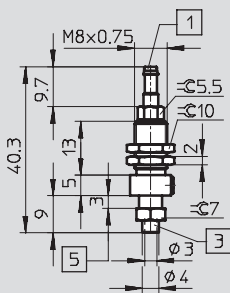


Holder size 3/Holder size 4*

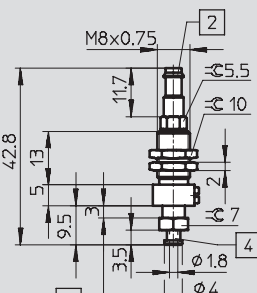


Barbed fitting connector PK

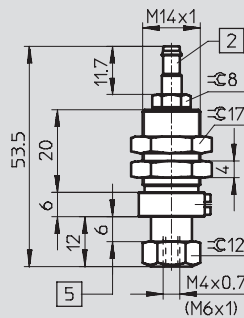
Holder size 1



Holder size 2

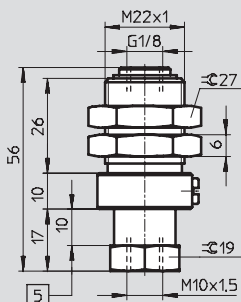


Holder size 3/Holder size 4*

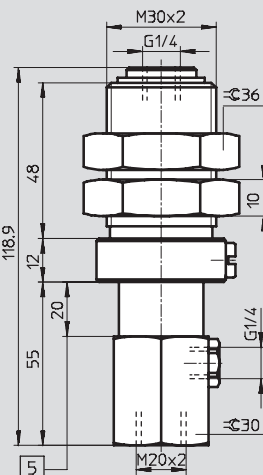


Threaded connection G

Holder size 5



Holder size 6



1 Barbed fitting for 3 mm plastic tubing

2 Barbed fitting for 4 mm plastic tubing

3 Hole for vacuum generator
4 Barbed fitting for vacuum generator

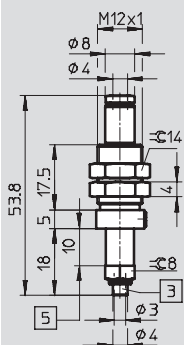
5 Stroke

* Dimensions in brackets

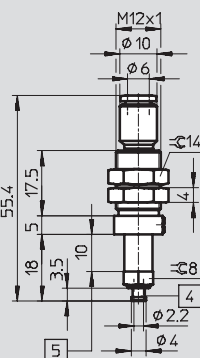
Technical data

Push-in connector QS

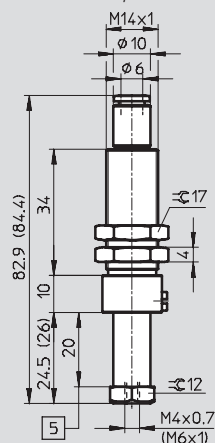
Holder size 1



Holder size 2

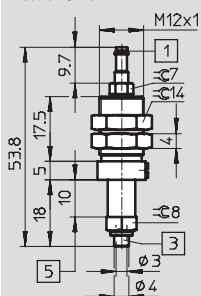


Holder size 3/Holder size 4*

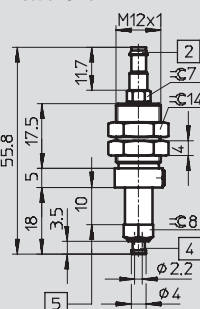


Barbed fitting connector PK

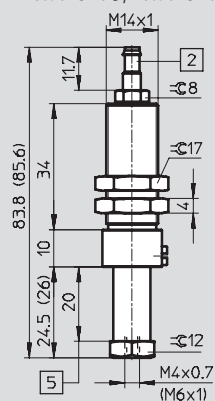
Holder size 1



Holder size 2

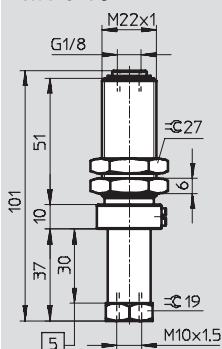


Holder size 3/Holder size 4*

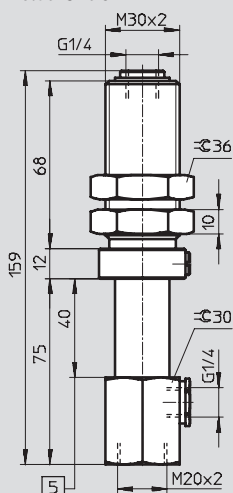


Threaded connection G

Holder size 5



Holder size 6



- 1 Barbed fitting for 3 mm plastic tubing
- 2 Barbed fitting for 4 mm plastic tubing
- 3 Hole for vacuum generator
- 4 Barbed fitting for vacuum generator
- 5 Stroke

* Dimensions in brackets

Suction cup holders ESH

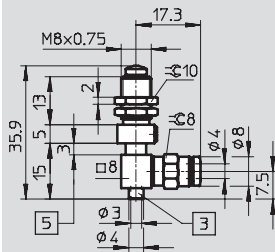
Technical data

FESTO

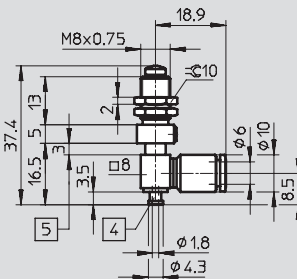
Dimensions – ESH-HD

Push-in connector QS

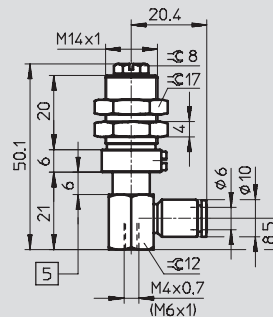
Holder size 1



Holder size 2

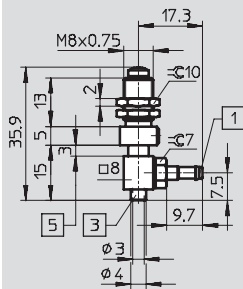


Holder size 3/Holder size 4*

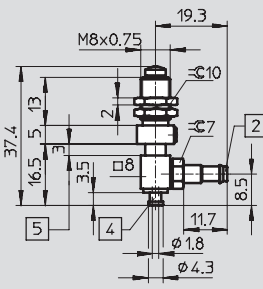


Barbed fitting connector PK

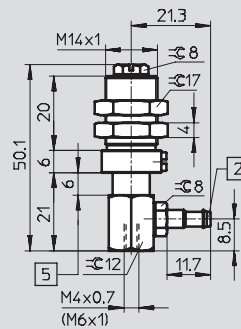
Holder size 1



Holder size 2

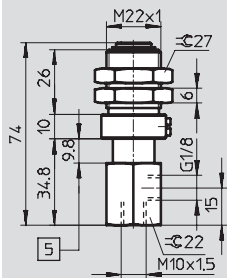


Holder size 3/Holder size 4*

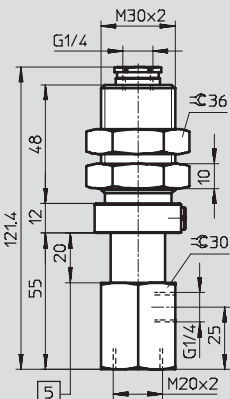


Threaded connection G

Holder size 5



Holder size 6



1 Barbed fitting for 3 mm plastic tubing

2 Barbed fitting for 4 mm plastic tubing

3 Hole for vacuum generator
4 Barbed fitting for vacuum generator

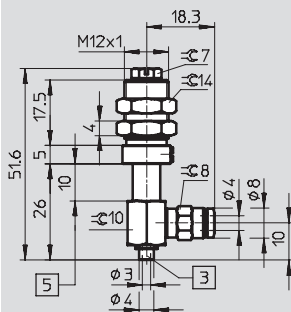
5 Stroke

* Dimensions in brackets

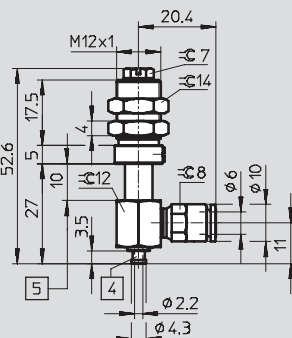
Technical data

Push-in connector QS

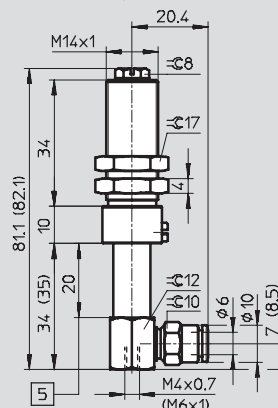
Holder size 1



Holder size 2

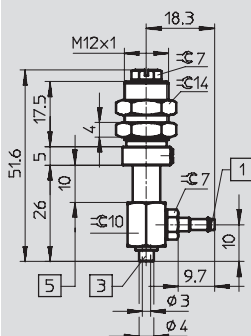


Holder size 3/Holder size 4*

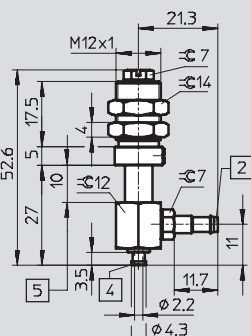


Barbed fitting connector PK

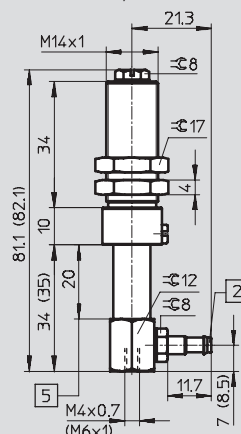
Holder size 1



Holder size 2

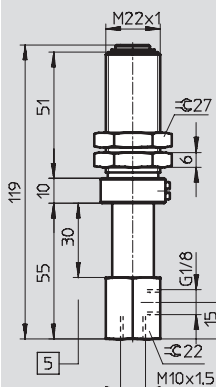


Holder size 3/Holder size 4*

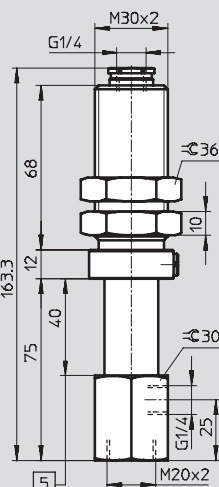


Threaded connection G

Holder size 5



Holder size 6



- 1 Barbed fitting for 3 mm plastic tubing
- 2 Barbed fitting for 4 mm plastic tubing
- 3 Hole for vacuum generator
- 4 Barbed fitting for vacuum generator
- 5 Stroke

* Dimensions in brackets

Suction cup holders ESH

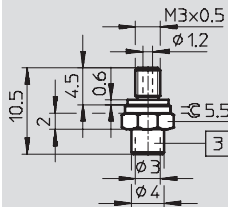
Technical data

FESTO

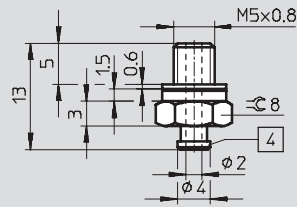
Dimensions – ESH-HE

G and M thread

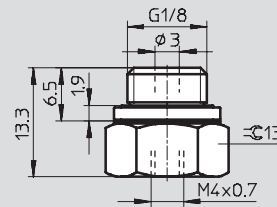
Holder size 1



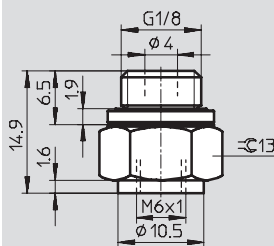
Holder size 2



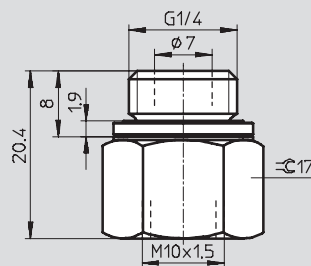
Holder size 3



Holder size 4



Holder size 5



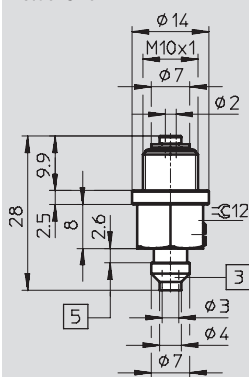
3 Hole for vacuum generator

4 Barbed fitting for vacuum generator

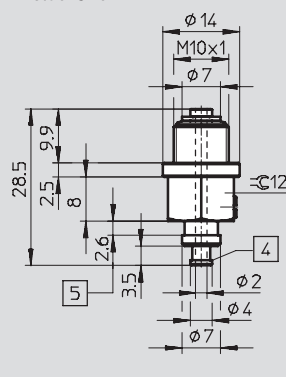
Dimensions – ESH-HF

M thread

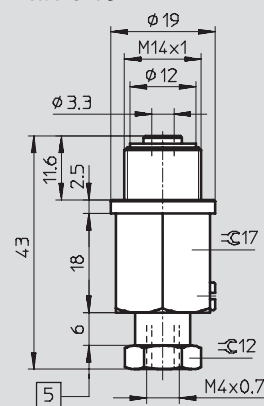
Holder size 1



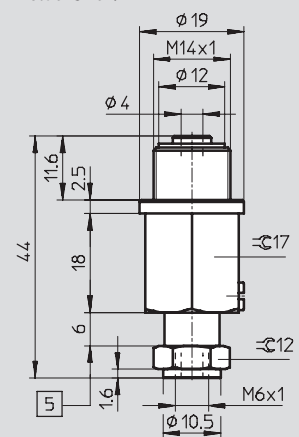
Holder size 2



Holder size 3



Holder size 4



3 Hole for vacuum generator

4 Barbed fitting for vacuum generator

5 Stroke

Suction cup holders ESH

Technical data

FESTO

Ordering data							
ESH-HA							
Holder size	Connection	Push-in connector		Barbed fitting connector		Threaded connection	
		Part No.	Type	Part No.	Type	Part No.	Type
Male thread, 2 nuts, vacuum connection on top							
1	QS4	189193	ESH-HA-1-QS	–		–	
	PK-3	–		189194	ESH-HA-1-PK	–	
2	QS4	189195	ESH-HA-2-QS	–		–	
	PK-4	–		189196	ESH-HA-2-PK	–	
3	QS6	189197	ESH-HA-3-QS	–		–	
	PK-4	–		189198	ESH-HA-3-PK	–	
4	QS6	189199	ESH-HA-4-QS	–		–	
	PK-4	–		189200	ESH-HA-4-PK	–	
5	G1/8	–		–		189201	ESH-HA-5-G
6	G1/4	–		–		189202	ESH-HA-6-G

Ordering data							
ESH-HB							
Holder size	Connection	Push-in connector		Barbed fitting connector		Threaded connection	
		Part No.	Type	Part No.	Type	Part No.	Type
Female thread, vacuum connection on side							
1	QS4	189203	ESH-HB-1-QS	–		–	
	PK-3	–		189204	ESH-HB-1-PK	–	
2	QS6	189205	ESH-HB-2-QS	–		–	
	PK-4	–		189206	ESH-HB-2-PK	–	
3	QS6	189207	ESH-HB-3-QS	–		–	
	PK-4	–		189208	ESH-HB-3-PK	–	
4	QS6	189209	ESH-HB-4-QS	–		–	
	PK-4	–		189210	ESH-HB-4-PK	–	
5	G1/8	–		–		189211	ESH-HB-5-G
6	G1/4	–		–		189212	ESH-HB-6-G

Ordering data							
ESH-HC							
Holder size	Connection	Push-in connector		Barbed fitting connector		Threaded connection	
		Part No.	Type	Part No.	Type	Part No.	Type
Male thread, 2 nuts, vacuum connection on top, height compensator							
1	QS4	189213	ESH-HC-1-QS	–		–	
	PK-3	–		189214	ESH-HC-1-PK	–	
2	QS6	189215	ESH-HC-2-QS	–		–	
	PK-4	–		189216	ESH-HC-2-PK	–	
3	QS6	189217	ESH-HC-3-QS	–		–	
	PK-4	–		189218	ESH-HC-3-PK	–	
4	QS6	189219	ESH-HC-4-QS	–		–	
	PK-4	–		189220	ESH-HC-4-PK	–	
5	G1/8	–		–		189221	ESH-HC-5-G
6	G1/4	–		–		189222	ESH-HC-6-G

Suction cup holders ESH

Technical data

FESTO

Ordering data							
ESH-HCL							
Holder size	Connection	Push-in connector		Barbed fitting connector		Threaded connection	
		Part No.	Type	Part No.	Type	Part No.	Type
Male thread, 2 nuts, vacuum connection on top, height compensator, long							
1	QS4	189223	ESH-HCL-1-QS	–		–	
	PK-3	–		189224	ESH-HCL-1-PK	–	
2	QS6	189225	ESH-HCL-2-QS	–		–	
	PK-4	–		189226	ESH-HCL-2-PK	–	
3	QS6	189227	ESH-HCL-3-QS	–		–	
	PK-4	–		189228	ESH-HCL-3-PK	–	
4	QS6	189229	ESH-HCL-4-QS	–		–	
	PK-4	–		189230	ESH-HCL-4-PK	–	
5	G1/8	–		–		189231	ESH-HCL-5-G
6	G1/4	–		–		189232	ESH-HCL-6-G

Ordering data							
ESH-HD							
Holder size	Connection	Push-in connector		Barbed fitting connector		Threaded connection	
		Part No.	Type	Part No.	Type	Part No.	Type
Male thread, 2 nuts, vacuum connection on side, height compensator							
1	QS4	189233	ESH-HD-1-QS	–		–	
	PK-3	–		189234	ESH-HD-1-PK	–	
2	QS6	189235	ESH-HD-2-QS	–		–	
	PK-4	–		189236	ESH-HD-2-PK	–	
3	QS6	189237	ESH-HD-3-QS	–		–	
	PK-4	–		189238	ESH-HD-3-PK	–	
4	QS6	189239	ESH-HD-4-QS	–		–	
	PK-4	–		189240	ESH-HD-4-PK	–	
5	G1/8	–		–		189241	ESH-HD-5-G
6	G1/4	–		–		189242	ESH-HD-6-G

Ordering data							
ESH-HDL							
Holder size	Connection	Push-in connector		Barbed fitting connector		Threaded connection	
		Part No.	Type	Part No.	Type	Part No.	Type
Male thread, 2 nuts, vacuum connection on side, height compensator, long							
1	QS4	189243	ESH-HDL-1-QS	–		–	
	PK-3	–		189244	ESH-HDL-1-PK	–	
2	QS6	189245	ESH-HDL-2-QS	–		–	
	PK-4	–		189246	ESH-HDL-2-PK	–	
3	QS6	189247	ESH-HDL-3-QS	–		–	
	PK-4	–		189248	ESH-HDL-3-PK	–	
4	QS6	189249	ESH-HDL-4-QS	–		–	
	PK-4	–		189250	ESH-HDL-4-PK	–	
5	G1/8	–		–		189251	ESH-HDL-5-G
6	G1/4	–		–		189252	ESH-HDL-6-G

Suction cup holders ESH

Technical data

FESTO

Ordering data			
ESH-HE			
Holder size	Connection	Part No.	Type
Threaded connection for direct attachment			
1	M3	189253	ESH-HE-1-M3
2	M5	189254	ESH-HE-2-M5
3	G1/8	189255	ESH-HE-3-G1/8
4	G1/8	189256	ESH-HE-4-G1/8
5	G1/4	189257	ESH-HE-5-G1/4

Ordering data			
ESH-HF			
Holder size	Connection	Part No.	Type
Threaded connection for direct attachment, height compensator			
1	M10	189260	ESH-HF-1-M10x1
2	M10	189261	ESH-HF-2-M10x1
3	M14	189262	ESH-HF-3-M14x1
4	M14	189263	ESH-HF-4-M14x1

Product Range and Company Overview

A Complete Suite of Automation Services

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



Custom Automation Components
Complete custom engineered solutions



Custom Control Cabinets
Comprehensive engineering support and on-site services



Complete Systems
Shipment, stocking and storage services

The Broadest Range of Automation Components

With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.



Electromechanical
Electromechanical actuators, motors, controllers & drives



Pneumatics
Pneumatic linear and rotary actuators, valves, and air supply



PLCs and I/O Devices
PLC's, operator interfaces, sensors and I/O devices

Supporting Advanced Automation... As No One Else Can!

Festo is a leading global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation, with more than 12,000 employees in 56 national headquarters serving more than 180 countries. For more than 80 years, Festo has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment. Our dedication to the advancement of automation extends beyond technology to the education and development of current and future automation and robotics designers with simulation tools, teaching programs, and on-site services.

Quality Assurance, ISO 9001 and ISO 14001 Certifications

Festo Corporation is committed to supply all Festo products and services that will meet or exceed our customers' requirements in product quality, delivery, customer service and satisfaction.

To meet this commitment, we strive to ensure a consistent, integrated, and systematic approach to management that will meet or exceed the requirements of the ISO 9001 standard for Quality Management and the ISO 14001 standard for Environmental Management.



© Copyright 2008, Festo Corporation. While every effort is made to ensure that all dimensions and specifications are correct, Festo cannot guarantee that publications are completely free of any error, in particular typing or printing errors. Accordingly, Festo cannot be held responsible for the same. For Liability and Warranty conditions, refer to our "Terms and Conditions of Sale", available from your local Festo office. All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, electronic, mechanical, photocopying or otherwise, without the prior written permission of Festo. All technical data subject to change according to technical update.



Printed on recycled paper at New Horizon Graphic, Inc., FSC certified as an environmentally friendly printing plant.

Festo North America

Festo Regional Contact Center

5300 Explorer Drive
Mississauga, Ontario L4W 5G4
Canada

USA Customers:

For ordering assistance,

Call: 1.800.99.FESTO (1.800.993.3786)

Fax: 1.800.96.FESTO (1.800.963.3786)

Email: customer.service@us.festo.com

For technical support,

Call: 1.866.GO.FESTO (1.866.463.3786)

Fax: 1.800.96.FESTO (1.800.963.3786)

Email: product.support@us.festo.com

Canadian Customers:

Call: 1.877.GO.FESTO (1.877.463.3786)

Fax: 1.877.FX.FESTO (1.877.393.3786)

Email: festo.canada@ca.festo.com

USA Headquarters

Festo Corporation
395 Moreland Road
P.O. Box 18023
Hauppauge, NY 11788, USA
www.festo.com/us

USA Sales Offices

Appleton

North 922 Tower View Drive, Suite N
Greenville, WI 54942, USA

Boston

120 Presidential Way, Suite 330
Woburn, MA 01801, USA

Chicago

1441 East Business Center Drive
Mt. Prospect, IL 60056, USA

Dallas

1825 Lakeway Drive, Suite 600
Lewisville, TX 75057, USA

Detroit – Automotive Engineering Center

2601 Cambridge Court, Suite 320
Auburn Hills, MI 48326, USA

New York

395 Moreland Road
Hauppauge, NY 11788, USA

Silicon Valley

4935 Southfront Road, Suite F
Livermore, CA 94550, USA

United States



USA Headquarters, East: Festo Corp., 395 Moreland Road, Hauppauge, NY 11788

Phone: 1.631.435.0800; Fax: 1.631.435.8026;

Email: info@festo-usa.com

www.festo.com/us

Canada



Headquarters: Festo Inc., 5300 Explorer Drive, Mississauga, Ontario L4W 5G4

Phone: 1.905.624.9000; Fax: 1.905.624.9001;

Email: festo.canada@ca.festo.com

www.festo.ca

Mexico



Headquarters: Festo Pneumatic, S.A., Av. Ceylán 3, Col. Tequesquahuac,
54020 Tlalneapantla, Edo. de México

Phone: 011 52 [55] 53 21 66 00; Fax: 011 52 [55] 53 21 66 65;

Email: festo.mexico@mx.festo.com

www.festo.com/mx

Central USA

Festo Corporation
1441 East Business
Center Drive
Mt. Prospect, IL 60056, USA
Phone: 1.847.759.2600
Fax: 1.847.768.9480



Western USA

Festo Corporation
4935 Southfront Road,
Suite F
Livermore, CA 94550, USA
Phone: 1.925.371.1099
Fax: 1.925.245.1286



Festo Worldwide

Argentina Australia Austria Belarus Belgium Brazil Bulgaria Canada Chile China Colombia Croatia Czech Republic Denmark
Estonia Finland France Germany Great Britain Greece Hong Kong Hungary India Indonesia Iran Ireland Israel Italy Japan Latvia
Lithuania Malaysia Mexico Netherlands New Zealand Norway Peru Philippines Poland Romania Russia Serbia Singapore
Slovakia Slovenia South Africa South Korea Spain Sweden Switzerland Taiwan Thailand Turkey Ukraine United States Venezuela

www.festo.com