



- Any combination of suction cup holder and suction cup is possible in the same holder size
- 15 different suction cup diameters from 2 ... 200 mm
- 6 different suction cup materials
- 6 different suction cup shapes
- 14 different suction cup holders
- Suitable for a wide variety of applications with various temperature ranges and workpiece surfaces

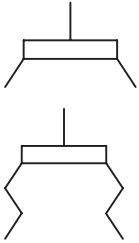
Suction grippers

Key features

FESTO

Product overview

Suction gripper and suction cup



Festo vacuum suction grippers offer outstanding functionality and quality.

An extensive range of modular suction cups in different shapes, materials and sizes, plus a wide selection of suction cup holders, angle and height compensators and filters within the

modular suction gripper system, provide users with a huge range of possible combinations for a wide variety of applications.

Suction gripper ESG

→ 6 / 2.1-7

Modular products with over 2000 variants

- The ideal solution for the transport of workpieces of different weights, surfaces and shapes
- Choose from:
 - 15 suction cup diameters
 - 5 different materials – including antistatic types
 - 5 suction cup shapes
 - Various suction cup holders
 - Optional accessories (filters and angle compensators)
- Wide range of variants
- A suitable solution for every task
- Wide range to suit applications with various temperature ranges and workpiece surfaces
- Suction cups made from silicone are approved for use in the food industry

Suction gripper ESG, consisting of suction cup ESS and suction cup holder ESH

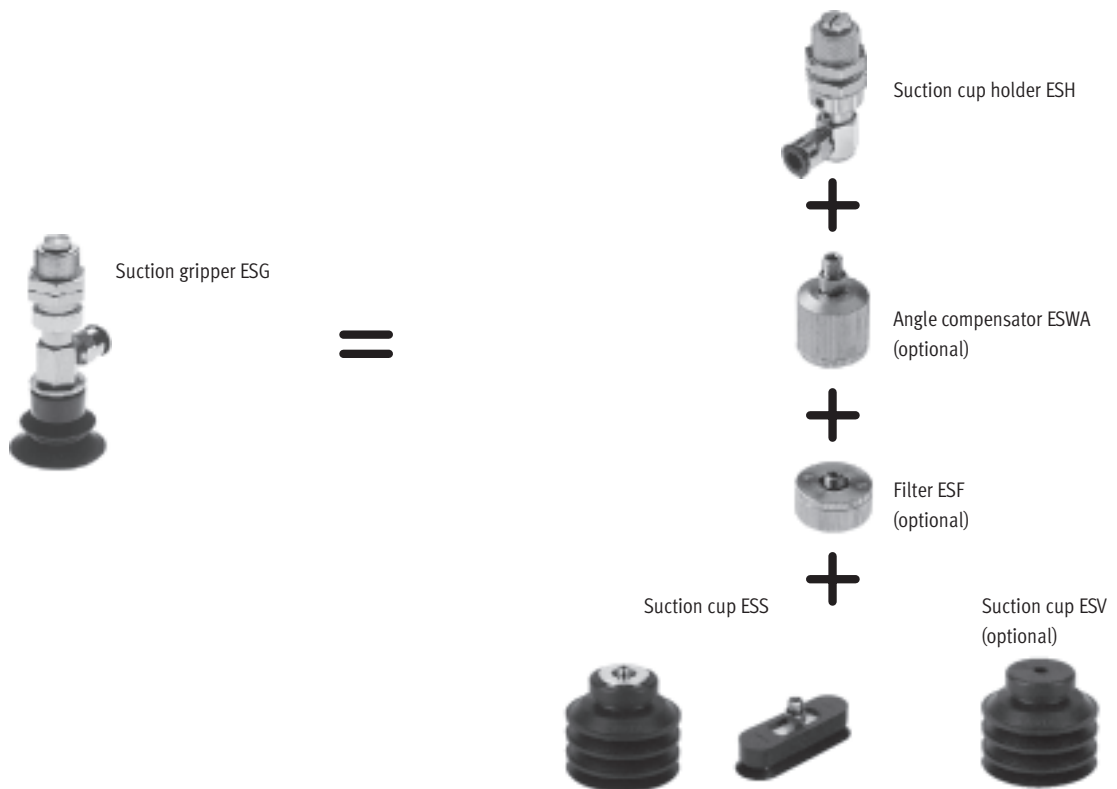
→ www.festo.com

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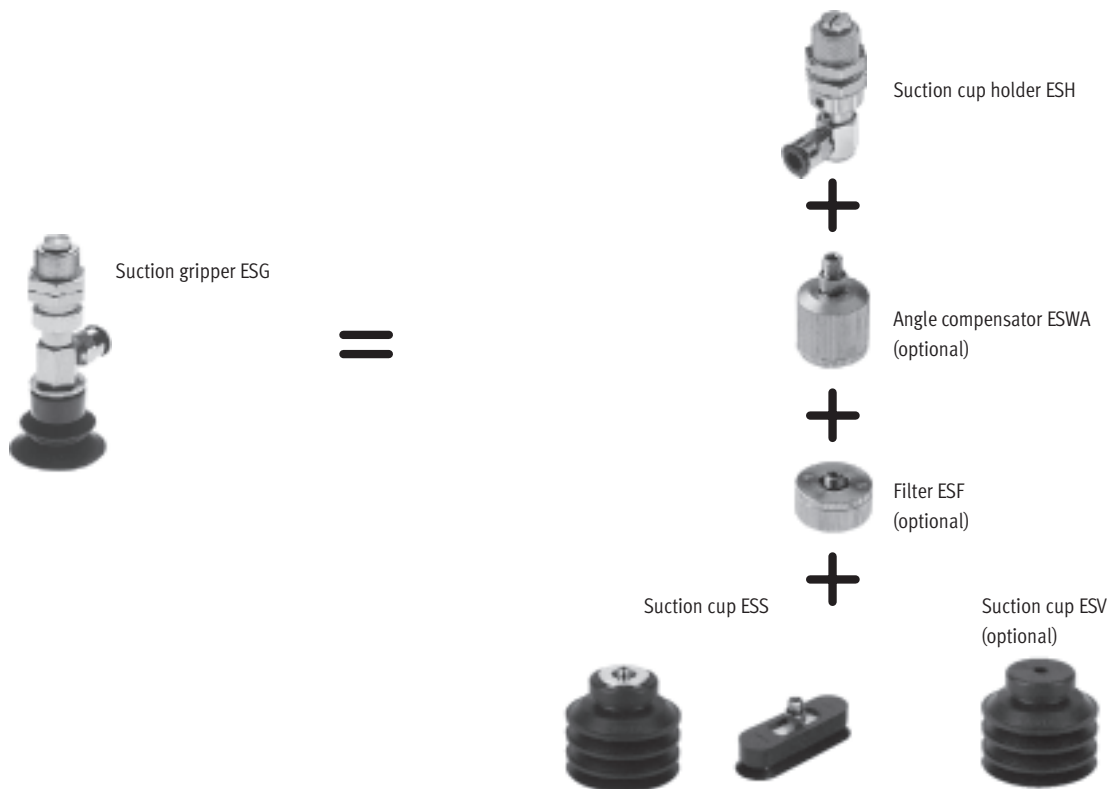
Suction grippers as a complete solution

Suction grippers made from individual components



Suction grippers as a complete solution
→ www.festo.com

Suction grippers made from individual components
→ 6 / 2.1-33



Suction grippers

Key features

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Suction cups VAS/VASB

→ 6 / 2.1-78

Sturdy and reliable

- The ideal solution for the transport of workpieces of different weights, surfaces and shapes
- Choose from:
 - 12 suction cup diameters
 - 2 suction cup shapes: round and bellows design
 - 3 suction cup materials: nitrile rubber, polyurethane and silicone for use in a wide variety of applications
- Wide range to suit applications with various temperature ranges and workpiece surfaces
- Suction cups made from silicone are approved for use in the food industry
- All tubing connector sizes correspond to a holder size

Suction cups VAS/VASB

→ www.festo.com

Sturdy and reliable

- The ideal solution for the transport of workpieces of different weights, surfaces and shapes
- Choose from:
 - 15 suction cup diameters: standard, extra deep and bellows designs
 - 2 suction cup shapes: round and oval
 - 5 suction cup materials: nitrile rubber, antistatic nitrile rubber, polyurethane, silicone and viton for use in a wide variety of applications
- Wide range to suit applications with various temperature ranges and workpiece surfaces
- Suction cups made from silicone are approved for use in the food industry
- All tubing connector sizes correspond to a holder size



Suction grippers

Key features

At a glance

The Festo suction gripper range offers a wide variety of possible combinations with a modular product system containing more than 2000 variants.

Choose from:

- 2 suction cup shapes:
 - Round, 15 different diameters
 - Oval, 11 different diameters
- 6 suction cup designs
- 6 different suction cup materials
- Various suction cup holders:
 - With and without height compensators
 - With different tubing connectors: Push-in fitting, barbed fitting, or threaded
- Optional accessories: Filters and angle compensators

Even extremely small workpieces, e.g. in the electronics industry, can be accurately and gently transported. Additionally, all components included in the modular range are easily and quickly interchangeable in the event that requirements change. Suction grippers can be ordered complete, or as individual components.

Cost savings thanks to:

- Modular range
- The handy suction cup can be replaced easily (wearing part)
- Reduced warehousing
- Long service life
- Low investment costs
- Large range – including industry-related solutions

The complete solution

The suction gripper ESG comes already assembled to meet your specific requirements and is ready to use.

The suction cup shape and dimensions together form a part number. You can then expand this part number to form a personalised type code by adding your own choice of suction cup material, holder type, tubing connector and accessories.

Your benefits:

With just one part number and type code you can order your own complete suction gripper system.



The individual components

If, for instance, you have to handle a different workpiece surface finish, all you need to do is add the right suction cup.

Your benefits:

By adding individual components you can create new areas of application for your suction gripper ESG.

Suction cup holder ESH

6 / 2.1-33

The area of application determines which is the right suction cup holder to use.

The suction cup or accessories are attached directly to the suction cup holder.

- 6 holder sizes
- 8 holder types
- 3 tubing connectors



Suction cup with mounting ESS

6 / 2.1-54

The suction cup consists of the suction cup itself, plus the support plate with mounting.

Here too, the area of application of the suction gripper determines which is the right suction cup to use.

- 6 connection sizes: a tubing connector for every holder size
- 2 suction cup shapes
- 6 suction cup designs
- 6 suction cup materials



Accessories

Filter ESF

6 / 4.1-4

- For protecting vacuum generators from contamination or damage



Angle compensator ESWA

6 / 4.1-5

- The angle compensator ensures maximum suction cup grip for workpieces with sloping surfaces.



Suction grippers

Product range overview



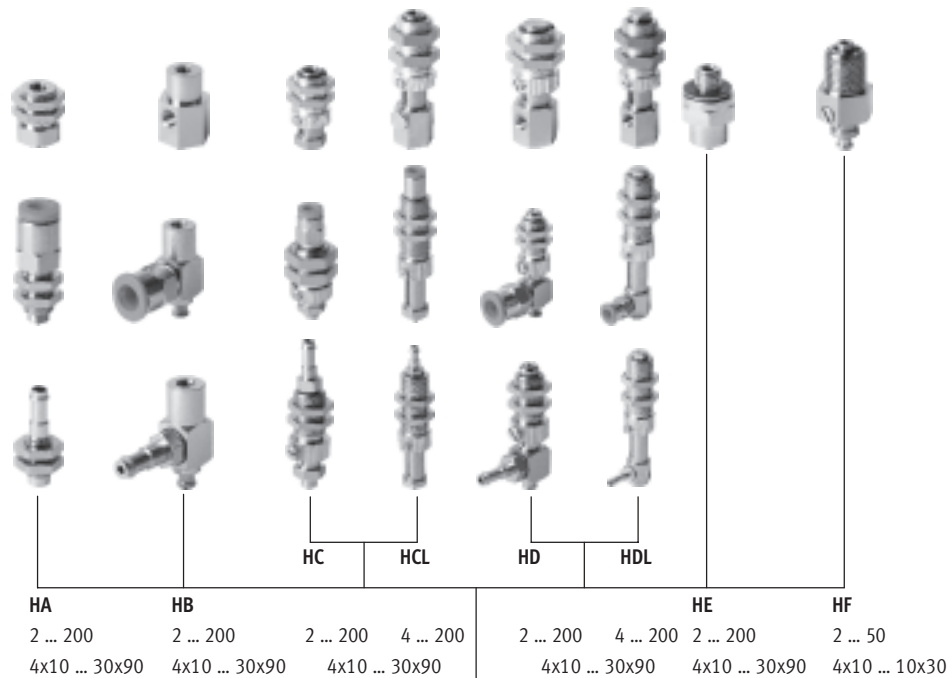
Suction cup holders

Connection with G thread
for suction cup \varnothing 60 ... 200 mm
for suction cup size 15x45 ... 30x90 mm

Push-in fitting QS
for suction cup \varnothing 2 ... 50 mm
for suction cup size 4x10 ... 10x30 mm

Barbed fitting PK
for suction cup \varnothing 2 ... 50 mm
for suction cup size 4x10 ... 10x30 mm

Holder type
for suction cup \varnothing [mm]
for suction cup size [mm]



Angle compensators

for suction cup \varnothing 10 ... 100 mm
only holder sizes 3, 4 and 5

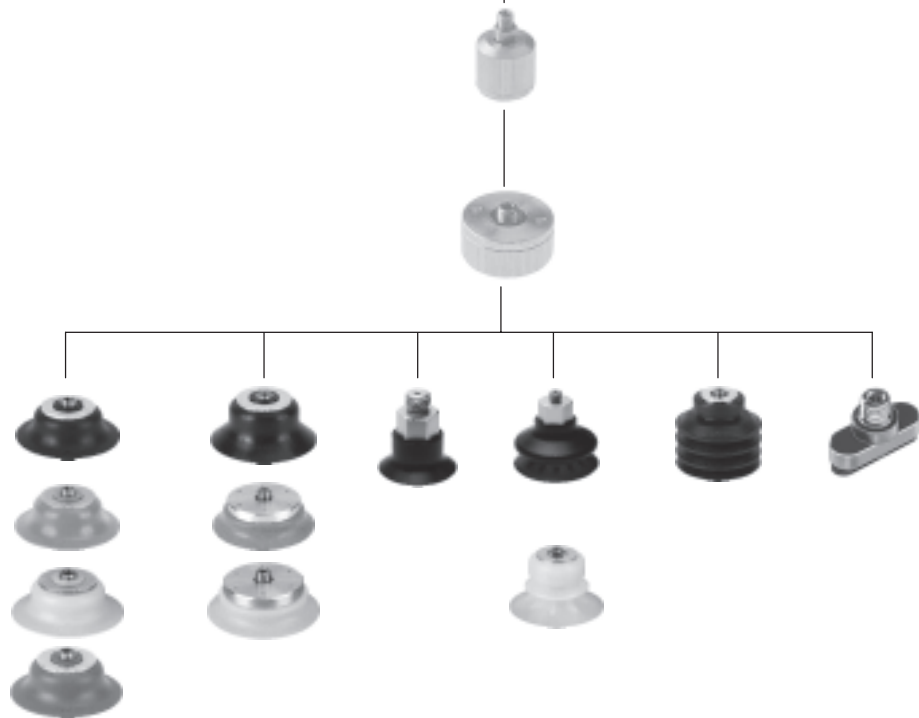
Filters

for suction cup \varnothing 10 ... 50 mm
for suction cup size 4x10 ... 30x90 mm
only holder sizes 3 and 4

Suction cups

Materials:

- Nitrile rubber (NBR)
for suction cup \varnothing 2 ... 200 mm
- Nitrile rubber (NBR)
antistatic
for suction cup \varnothing 2 ... 50 mm
- Polyurethane (PU)
for suction cup \varnothing 2 ... 200 mm
- Silicone (SI)
for suction cup \varnothing 2 ... 200 mm
- Fluoro rubber (FPM)
for suction cup \varnothing 2 ... 200 mm
- Vulkollan® (GT/BT)
for suction cup \varnothing 30 ... 100 mm



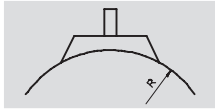
Suction cup shape
for suction cup \varnothing [mm]

Round	Round, extra deep	Bell-shaped	Bellows 1.5 convolutions	Bellows 3.5 convolutions	Oval
2 ... 200	15 ... 100	30 ... 100	10 ... 80	10 ... 50	4x10 ... 30x90

Suction grippers ESG for suction cup \varnothing 2 and 4

Technical data

Function



-  - Temperature range
-30 ... +200 °C



Suction cup type:

- Standard, round

General technical data – Suction cup						
Suction cup \varnothing [mm]	Suction cup connection [mm]	Effective suction cup \varnothing [mm]	Breakaway force at -0.7 bar [N]	Suction cup volume ²⁾ [cm ³]	Min. radius R ³⁾ of workpiece [mm]	Weight [g]
Standard, round						
2	3 ¹⁾	1.4	0.1	0.002	10	0.1
4	3 ¹⁾	3.3	0.4	0.008	10	0.1

- 1) Is plugged onto or into the suction cup
- 2) Volume to be evacuated
- 3) Minimum arc radius of the workpiece to be gripped

Material types – Suction cup					
Material	N	U	S	F	NA
Shore hardness	50 ±5	60 ±5	50 ±5	60 ±5	50 ±5
Material	Nitrile rubber	Polyurethane	Silicone	Fluoro rubber	Nitrile rubber, antistatic
	Free of copper, PTFE and silicone				
Colour	Black	Blue	Transparent	Grey	Black with white dot

Ambient conditions – Suction cup					
Material	N	U	S	F	NA
Ambient temperature [°C]	-10 ... +70	-20 ... +60	-30 ... +180	-10 ... +200	-10 ... +70
Corrosion resistance 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 grippers ESG for suction cup \varnothing 2 and 4

Technical data



Suction grippers

2.1

Suction cup holder size 1 Holder type HA		Vacuum port 1	
		QS4	PK-3
	Mounting thread 2	M6x0.75	M5x0.5
	Max. tightening torque [Nm]	3	2
	Suction cup connection 3 [mm]	3	3
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	6	3

Holder type HB		Vacuum port 1	
		QS4	PK-3
	Mounting thread 2	M3x0.5	M3x0.5
	Suction cup connection 3 [mm]	3	3
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	5	4

Holder type HC		Vacuum port 1	
		QS4	PK-3
	Mounting thread 2	M12x1	M8x0.75
	Max. tightening torque [Nm]	14	3.5
	Suction cup connection 3 [mm]	3	3
	Height compensation [mm]	3	3
	Max. spring force [N]	0.1	0.1
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	17	8

Holder type HCL		Vacuum port 1	
		QS4	PK-3
	Mounting thread 2	M12x1	M12x1
	Max. tightening torque [Nm]	14	14
	Suction cup connection 3 [mm]	3	3
	Height compensation [mm]	10	10
	Max. spring force [N]	0.1	0.1
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	20	19

Holder type HD		Vacuum port 1	
		QS4	PK-3
	Mounting thread 2	M8x0.75	M8x0.75
	Max. tightening torque [Nm]	3.5	3.5
	Suction cup connection 3 [mm]	3	3
	Height compensation [mm]	3	3
	Max. spring force [N]	0.1	0.1
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	13	11

Suction grippers ESG for suction cup \varnothing 2 and 4

Technical data

Suction cup holder size 1		Vacuum port 1	
Holder type HDL		QS4	PK-3
	Mounting thread 2	M12x1	M12x1
	Max. tightening torque [Nm]	14	14
	Suction cup connection 3 [mm]	3	3
	Height compensation [mm]	10	10
	Max. spring force [N]	0.1	0.1
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	29	28

Holder type HE		Vacuum port 1	
		Direct	
	Mounting thread 2	M3x0.5	
	Max. tightening torque [Nm]	0.7	
	Suction cup connection 3 [mm]	3	
	Temperature range [°C]	-10 ... +60	
	Materials	Steel, polyacetate	
	Weight [g]	1	

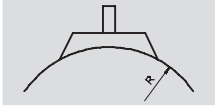
Holder type HF		Vacuum port 1	
		Direct	
	Mounting thread 2	M10x1	
	Max. tightening torque [Nm]	7	
	Suction cup connection 3 [mm]	3	
	Height compensation [mm]	2.6	
	Min. spring force [N]	2	
	Max. spring force [N]	4	
	Temperature range [°C]	-10 ... +60	
	Materials	Steel, polyacetate, nitrile rubber	
	Weight [g]	14	

Suction grippers ESG for suction cup \varnothing 6 and 8

Technical data



Function



- - Temperature range
-30 ... +200 °C

Suction cup type:

- Standard, round



General technical data – Suction cup						
Suction cup \varnothing [mm]	Suction cup connection [mm]	Effective suction cup \varnothing [mm]	Breakaway force at -0.7 bar [N]	Suction cup volume ²⁾ [cm ³]	Min. radius R ³⁾ of workpiece [mm]	Weight [g]
Standard, round						
6	4 ¹⁾	5.2	1.1	0.015	15	0.2
8	4 ¹⁾	7.2	2.3	0.030	20	0.2

- 1) Is plugged onto or into the suction cup
- 2) Volume to be evacuated
- 3) Minimum arc radius of the workpiece to be gripped

Material types – Suction cup					
Material	N	U	S	F	NA
Shore hardness	50 ±5	60 ±5	50 ±5	60 ±5	50 ±5
Material	Nitrile rubber	Polyurethane	Silicone	Fluoro rubber	Nitrile rubber, antistatic
	Free of copper, PTFE and silicone				
Colour	Black	Blue	Transparent	Grey	Black with white dot

Ambient conditions – Suction cup					
Material	N	U	S	F	NA
Ambient temperature [°C]	-10 ... +70	-20 ... +60	-30 ... +180	-10 ... +200	-10 ... +70
Corrosion resistance 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.

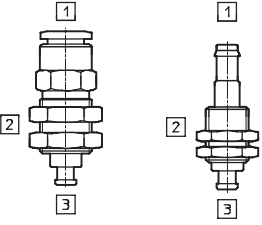
Suction grippers ESG for suction cup \varnothing 6 and 8

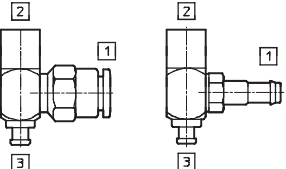
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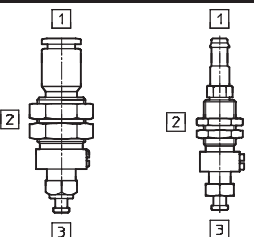
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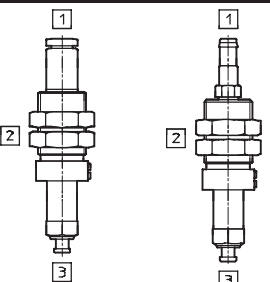
Suction grippers

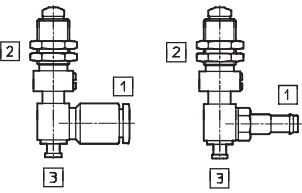
2.1

Suction cup holder size 2		Vacuum port 1	
Holder type HA		QS6	PK-4
	Mounting thread 2	M10x1	M8x0.75
	Max. tightening torque [Nm]	7	3.5
	Suction cup connection 3 [mm]	4	4
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	12	7

Holder type HB		Vacuum port 1	
		QS6	PK-4
	Mounting thread 2	M4x0.7	M4x0.7
	Suction cup connection 3 [mm]	4	4
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	13	11

Holder type HC		Vacuum port 1	
		QS6	PK-4
	Mounting thread 2	M12x1	M8x0.75
	Max. tightening torque [Nm]	14	3.5
	Suction cup connection 3 [mm]	4	4
	Height compensation [mm]	3	3
	Max. spring force [N]	0.1	0.1
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	18	8

Holder type HCL		Vacuum port 1	
		QS6	PK-4
	Mounting thread 2	M12x1	M12x1
	Max. tightening torque [Nm]	14	14
	Suction cup connection 3 [mm]	4	4
	Height compensation [mm]	10	10
	Max. spring force [N]	0.1	0.1
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	20	19

Holder type HD		Vacuum port 1	
		QS6	PK-3
	Mounting thread 2	M8x0.75	M8x0.75
	Max. tightening torque [Nm]	3.5	3.5
	Suction cup connection 3 [mm]	4	4
	Height compensation [mm]	3	3
	Max. spring force [N]	0.1	0.1
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	15	12

Suction grippers ESG for suction cup \varnothing 6 and 8

Technical data



Suction grippers

2.1

Suction cup holder size 2		Holder type HDL		Vacuum port 1	
				QS6	PK-3
		Mounting thread 2		M12x1	M12x1
Max. tightening torque	[Nm]	14	14		
Suction cup connection 3	[mm]	4	4		
Height compensation	[mm]	10	10		
Max. spring force	[N]	0.1	0.1		
Temperature range	[°C]	0 ... +60	-10 ... +60		
Materials		Steel, polyacetate, nitrile rubber	Steel		
Weight	[g]	33	32		

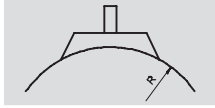
Holder type HE		Vacuum port 1	
		Direct	
		Mounting thread 2	
Max. tightening torque	[Nm]	1.9	
Suction cup connection 3	[mm]	4	
Temperature range	[°C]	-10 ... +60	
Materials		Steel, polyacetate	
Weight	[g]	3	

Holder type HF		Vacuum port 1	
		Direct	
		Mounting thread 2	
Max. tightening torque	[Nm]	7	
Suction cup connection 3	[mm]	4	
Height compensation	[mm]	2.6	
Min. spring force	[N]	2	
Max. spring force	[N]	4	
Temperature range	[°C]	-10 ... +60	
Materials		Steel, polyacetate, nitrile rubber	
Weight	[g]	14	

Suction grippers ESG for suction cup \varnothing 10 and 15

Technical data

Function



- - Temperature range
-30 ... +200 °C



Suction cup type:

- Standard, round
- Round, extra deep
- Bellows, round, 1.5 convolutions
- Bellows, round, 3.5 convolutions

General technical data – Suction cup							
Suction cup \varnothing [mm]	Suction cup connection [mm]	Effective suction cup \varnothing [mm]	Breakaway force at -0.7 bar [N]	Suction cup volume ¹⁾ [cm ³]	Min. radius R ²⁾ of workpiece [mm]	Max. height compensation [mm]	Weight [g]
Standard, round							
10	M4x0.7	8.3	3.9	0.050	30	–	1.5
15	M4x0.7	13.5	8.5	0.208	35	–	2
Round, extra deep							
15	M4x0.7	13.8	9.8	0.350	20	–	2
Bellows, round, 1.5 convolutions							
10	M4x0.7	7.4	4.7	0.380	20	4	2
Bellows, round, 3.5 convolutions							
10	M4x0.7	6.9	3.9	0.290	25	3.3	2

- 1) Volume to be evacuated
2) Minimum arc radius of the workpiece to be gripped

Material types – Suction cup					
Material	N	U	S	F	NA
Shore hardness	50 ±5	60 ±5	50 ±5	60 ±5	50 ±5
Material	Nitrile rubber	Polyurethane	Silicone	Fluoro rubber	Nitrile rubber, antistatic
	Free of copper, PTFE and silicone				
Colour	Black	Blue	Transparent	Grey	Black with white dot

Ambient conditions – Suction cup					
Material	N	U	S	F	NA
Ambient temperature [°C]	-10 ... +70	-20 ... +60	-30 ... +180	-10 ... +200	-10 ... +70
Corrosion resistance 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.

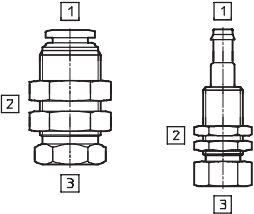
Suction grippers ESG for suction cup \varnothing 10 and 15

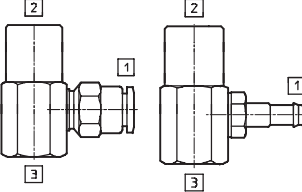
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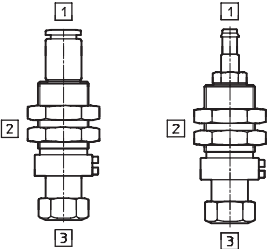
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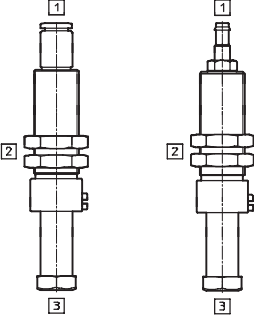
Suction grippers

2.1

Suction cup holder size 3 Holder type HA		Vacuum port 1			
		QS6	PK-4		
	Mounting thread 2	M12x1	M8x0.75		
	Max. tightening torque [Nm]	14	3.5		
	Suction cup connection 3	M4x0.7	M4x0.7		
	Temperature range [°C]	0 ... +60	-10 ... +60		
	Materials	Steel, polyacetate, nitrile rubber		Steel	
	Weight [g]	20	10		

Holder type HB		Vacuum port 1			
		QS6	PK-4		
	Mounting thread 2	M6x1	M6x1		
	Suction cup connection 3	M4x0.7	M4x0.7		
	Temperature range [°C]	0 ... +60	-10 ... +60		
	Materials	Steel, polyacetate, nitrile rubber		Steel	
	Weight [g]	29	27		

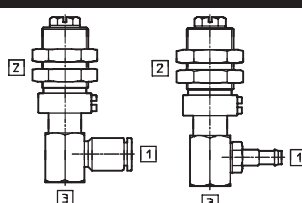
Holder type HC		Vacuum port 1			
		QS6	PK-4		
	Mounting thread 2	M14x1	M14x1		
	Max. tightening torque [Nm]	21	21		
	Suction cup connection 3	M4x0.7	M4x0.7		
	Height compensation [mm]	6	6		
	Min. spring force [N]	2	2		
	Max. spring force [N]	5	5		
	Temperature range [°C]	0 ... +60	-10 ... +60		
	Materials	Steel, polyacetate, nitrile rubber		Steel	
	Weight [g]	34	32		

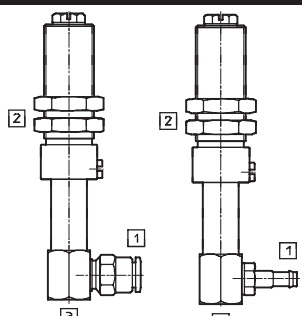
Holder type HCL		Vacuum port 1			
		QS6	PK-4		
	Mounting thread 2	M14x1	M14x1		
	Max. tightening torque [Nm]	21	21		
	Suction cup connection 3	M4x0.7	M4x0.7		
	Height compensation [mm]	20	20		
	Min. spring force [N]	2	2		
	Max. spring force [N]	5	5		
	Temperature range [°C]	0 ... +60	-10 ... +60		
	Materials	Steel, polyacetate, nitrile rubber		Steel	
	Weight [g]	34	32		

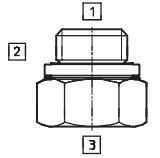
Suction grippers ESG for suction cup \varnothing 10 and 15

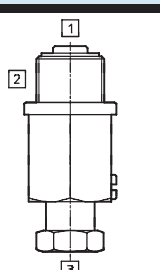
Technical data

FESTO

Suction cup holder size 3		Vacuum port 1	
Holder type HD		QS6	PK-3
	Mounting thread 2	M14x1	M14x1
	Max. tightening torque [Nm]	21	21
	Suction cup connection 3	M4x0.7	M4x0.7
	Height compensation [mm]	6	6
	Min. spring force [N]	2	2
	Max. spring force [N]	5	5
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	46	44

Holder type HDL		Vacuum port 1	
		QS6	PK-3
	Mounting thread 2	M14x1	M14x1
	Max. tightening torque [Nm]	21	21
	Suction cup connection 3	M4x0.7	M4x0.7
	Height compensation [mm]	20	20
	Min. spring force [N]	1	1
	Max. spring force [N]	3	3
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	65	63

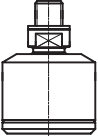
Holder type HE		Vacuum port 1	
		Direct	
	Mounting thread 2	G1/8	
	Max. tightening torque [Nm]	9	
	Suction cup connection 3	M4x0.7	
	Temperature range [°C]	-10 ... +60	
	Materials	Steel, polyacetate	
	Weight [g]	11	

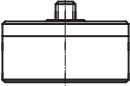
Holder type HF		Vacuum port 1	
		Direct	
	Mounting thread 2	M14x1	
	Max. tightening torque [Nm]	21	
	Suction cup connection 3	M4x0.7	
	Height compensation [mm]	6	
	Min. spring force [N]	6	
	Max. spring force [N]	12	
	Temperature range [°C]	-10 ... +60	
	Materials	Steel, polyacetate, nitrile rubber	
	Weight [g]	54	

Suction grippers ESG for suction cup \varnothing 10 and 15

FESTO

Technical data

Angle compensator ESWA		
Mounting thread		M4x0.7
	Design	Ball joint with $\pm 15^\circ$ swivel angle
	Max. tightening torque [Nm]	0.4
	Temperature range [°C]	0 ... +60
	Materials	Housing: Nickel plated aluminium; Filter: Polyvinylfluoride; Seals: Nitrile rubber
	Weight [g]	9

Vacuum filter ESF		
Holder size		3
	Max. flow rate [l/min]	100
	Grade of filtration [μ m]	10
	Pressure range [bar]	-0.95 ... +4
	Temperature range [°C]	0 ... +60
	Materials	Housing: Nickel plated aluminium; Filter: Polyvinylfluoride; Seals: Nitrile rubber
	Weight [g]	9

Suction grippers

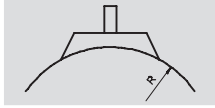
2.1

Suction grippers ESG for suction cup \varnothing 20 ... 50

Technical data

FESTO

Function



-  - Temperature range
-30 ... +200 °C



Suction cup type:

- Standard, round
- Round, extra deep
- Bellows, round, 1.5 convolutions
- Bellows, round, 1.5 convolutions, Vulkollan®
- Bellows, round, 3.5 convolutions
- Oval
- Bell-shaped

General technical data – Suction cup							
Suction cup \varnothing [mm]	Suction cup connection [mm]	Effective suction cup \varnothing [mm]	Breakaway force at -0.7 bar [N]	Suction cup volume ¹⁾ [cm ³]	Min. radius R ²⁾ of workpiece [mm]	Max. height compensation [mm]	Weight [g]
Standard, round							
20	M6x1	17.6	16.3	0.318	60	–	6
30	M6x1	18.4	40.8	0.867	110	–	9
40	M6x1	26.5	69.6	1.566	230	–	16
50	M6x1	33.3	105.8	2.387	330	–	22
Round, extra deep							
20	M6x1	17.2	17	0.840	30	–	6
30	M6x1	20.9	37.2	2.120	50	–	9
40	M6x1	28.1	67.6	4.040	80	–	17
50	M6x1	36.9	103.6	7.900	100	–	23
Bellows, round, 1.5 convolutions							
20	M6x1	14.3	12.9	1.600	40	6.0	7
30	M6x1	20.3	26.2	4.070	80	8.0	10
40	M6x1	25.2	52.3	8.870	90	9.5	19
50	M6x1	31.8	72.6	14.230	150	11	25
Bellows, round, 1.5 convolutions, Vulkollan®							
40	M6x1	–	59	–	35	9	18
50	M6x1	–	100	–	40	10	24
Bellows, round, 3.5 convolutions							
20	M6x1	14.5	8.2	2.750	50	7.0	7
30	M6x1	20.9	20.8	9.470	80	10.5	12
40	M6x1	28.2	42.4	19.720	100	12.8	22
50	M6x1	32.8	63.4	38.920	180	17.5	32
Oval							
4x10	M6x1	0.29	2	0.064	–	–	2
4x20	M6x1	0.57	3.4	0.112	–	–	3
6x10	M6x1	0.35	2.9	0.106	–	–	2
6x20	M6x1	0.74	5.9	0.196	–	–	3
8x20	M6x1	0.89	8	0.256	–	–	3
8x30	M6x1	1.36	10.9	0.376	–	–	3
10x30	M6x1	2.23	15.2	0.350	–	–	3

1) Volume to be evacuated

2) Minimum arc radius of the workpiece to be gripped

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Suction grippers ESG for suction cup \varnothing 20 ... 50

FESTO

Technical data

General technical data – Suction cup							
Suction cup \varnothing [mm]	Suction cup connection [mm]	Effective suction cup \varnothing [mm]	Breakaway force at -0.7 bar [N]	Suction cup volume ¹⁾ [cm ³]	Min. radius R ²⁾ of workpiece [mm]	Max. height compensation [mm]	Weight [g]
Bell-shaped							
30	M6x1	–	36	–	26	3.5	12
40	M6x1	–	64	–	35	5.5	14
50	M6x1	–	97	–	40	8	17

- 1) Volume to be evacuated
2) Minimum arc radius of the workpiece to be gripped

Material types – Suction cup						
Material	N	U	S	F	NA	T
Shore hardness	50 ±5	60 ±5	50 ±5	60 ±5	50 ±5	72
Material	Nitrile rubber	Polyurethane	Silicone	Fluoro rubber	Nitrile rubber, antistatic	Vulkollan®
	Free of copper, PTFE and silicone					
Colour	Black	Blue	Transparent	Grey	Black with white dot	Reddish brown

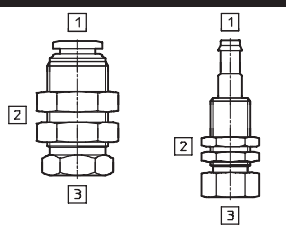
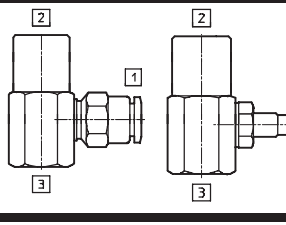
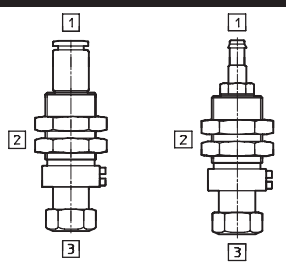
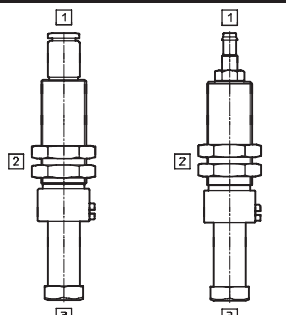
Ambient conditions – Suction cup						
Material	N	U	S	F	NA	T
Ambient temperature [°C]	-10 ... +70	-20 ... +60	-30 ... +180	-10 ... +200	-10 ... +70	-10 ... +80
Corrosion resistance CRC ¹⁾	1					2

- 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.
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 surrounding industrial atmosphere or media such as cooling or lubricating agents.

Suction grippers ESG for suction cup \varnothing 20 ... 50

FESTO

Technical data

Suction cup holder size 4		Vacuum port 1	
Holder type HA		QS6	PK-4
	Mounting thread 2	M14x1	M12x1
	Max. tightening torque [Nm]	21	14
	Suction cup connection 3	M6x1	M6x1
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	30	23
Holder type HB		Vacuum port 1	
		QS6	PK-4
	Mounting thread 2	M6x1	M6x1
	Suction cup connection 3	M6x1	M6x1
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	27	25
Holder type HC		Vacuum port 1	
		QS6	PK-4
	Mounting thread 2	M14x1	M14x1
	Max. tightening torque [Nm]	21	21
	Suction cup connection 3	M6x1	M6x1
	Height compensation [mm]	6	6
	Min. spring force [N]	5	5
	Max. spring force [N]	10	10
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	33	31
Holder type HCL		Vacuum port 1	
		QS6	PK-4
	Mounting thread 2	M14x1	M14x1
	Max. tightening torque [Nm]	21	21
	Suction cup connection 3	M6x1	M6x1
	Height compensation [mm]	20	20
	Min. spring force [N]	1	1
	Max. spring force [N]	9	9
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	47	46

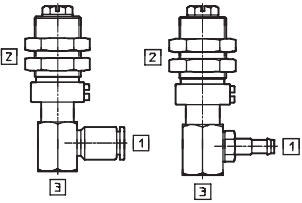
Suction grippers ESG for suction cup \varnothing 20 ... 50

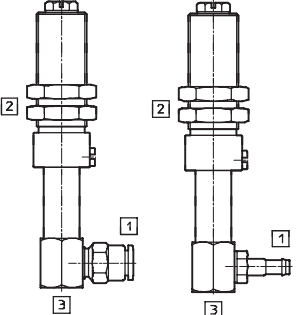
Technical data

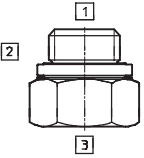
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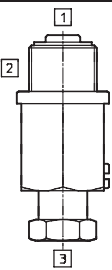
Suction grippers

2.1

Suction cup holder size 4		Vacuum port 1	
Holder type HD		QS6	PK-3
	Mounting thread 2	M14x1	M14x1
	Max. tightening torque [Nm]	21	21
	Suction cup connection 3	M6x1	M6x1
	Height compensation [mm]	6	6
	Min. spring force [N]	5	5
	Max. spring force [N]	10	10
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	45	43

Holder type HDL		Vacuum port 1	
		QS6	PK-3
	Mounting thread 2	M14x1	M14x1
	Max. tightening torque [Nm]	21	21
	Suction cup connection 3	M6x1	M6x1
	Height compensation [mm]	20	20
	Min. spring force [N]	1	1
	Max. spring force [N]	9	9
	Temperature range [°C]	0 ... +60	-10 ... +60
	Materials	Steel, polyacetate, nitrile rubber	Steel
	Weight [g]	65	63

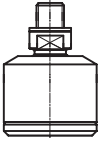
Holder type HE		Vacuum port 1	
		Direct	
	Mounting thread 2	G1/8	
	Max. tightening torque [Nm]	9	
	Suction cup connection 3	M6x1	
	Temperature range [°C]	-10 ... +60	
	Materials	Steel, polyacetate	
	Weight [g]	11	

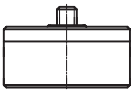
Holder type HF		Vacuum port 1	
		Direct	
	Mounting thread 2	M14x1	
	Max. tightening torque [Nm]	21	
	Suction cup connection 3	M6x1	
	Height compensation [mm]	6	
	Min. spring force [N]	6	
	Max. spring force [N]	12	
	Temperature range [°C]	-10 ... +60	
	Materials	Steel, polyacetate, nitrile rubber	
	Weight [g]	52	

Suction grippers ESG for suction cup \varnothing 20 ... 50

Technical data

FESTO

Angle compensator ESWA		
Mounting thread		M6x1
	Design	Ball joint with $\pm 15^\circ$ swivel angle
	Max. tightening torque [Nm]	2.4
	Temperature range [°C]	0 ... +60
	Materials	Housing: Nickel plated aluminium; Filter: Polyvinylfluoride; Seals: Nitrile rubber
	Weight [g]	19

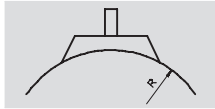
Vacuum filter ESF			
Holder size		4A	4B
	Max. flow rate [l/min]	260	270
	Grade of filtration [μ m]	10	
	Pressure range [bar]	-0.95 ... +4	
	Temperature range [°C]	0 ... +60	
	Materials	Housing: Nickel plated aluminium; Filter: Polyvinylfluoride; Seals: Nitrile rubber	
	Weight [g]	19	


Suction grippers ESG for suction cup \varnothing 60 ... 100

FESTO

Technical data

Function



-  - Temperature range
-30 ... +200 °C

Suction cup type:

- Standard, round
- Round, extra deep
- Bellows, round, 1.5 convolutions
- Bellows, round, 1.5 convolutions, Vulkollan®
- Oval
- Bell-shaped



General technical data – Suction cup							
Suction cup \varnothing [mm]	Suction cup connection [mm]	Effective suction cup \varnothing [mm]	Breakaway force at -0.7 bar [N]	Suction cup volume ¹⁾ [cm ³]	Min. radius R ²⁾ of workpiece [mm]	Max. height compensation [mm]	Weight [g]
Standard, round							
60	M12x1.5	42	166.1	3.953	60	–	6
80	M12x1.5	57.8	309.7	19.312	110	–	9
100	M12x1.5	75.2	503.6	29.779	330	–	22
Round, extra deep							
60	M10x1.5	40.5	162.5	19.770	120	–	48
80	M10x1.5	62.7	275	51.610	160	–	141
100	M10x1.5	78.5	440.8	84.660	200	–	228
Bellows, round, 1.5 convolutions							
80	M10x1.5	55	213.9	63.900	430	10	139
Bellows, round, 1.5 convolutions, Vulkollan®							
80	M10	–	237	–	100	10.5	84.5
Oval							
15x45	M10x1.5	4.84	32	1.570	–	–	24
20x60	M10x1.5	9.12	62.2	3.690	–	–	31
25x75	M10x1.5	14.67	92.5	6.700	–	–	47
30x90	M10x1.5	21.83	134.4	10.170	–	–	55
Bell-shaped							
60	M10	–	134	–	75	6	20
80	M10	–	245	–	100	7.5	28
100	M10	–	375	–	135	9	86.5

1) Volume to be evacuated

2) Minimum arc radius of the workpiece to be gripped

Suction grippers ESG for suction cup \varnothing 60 ... 100

Technical data

Material types – Suction cup					
Material	N	U	S	F	T
Shore hardness	50 ±5	60 ±5	50 ±5	60 ±5	72
Material	Nitrile rubber	Polyurethane	Silicone	Fluoro rubber	Vulkollan®
	Free of copper, PTFE and silicone				
Colour	Black	Blue	Transparent	Grey	Reddish brown

Ambient conditions – Suction cup					
Material	N	U	S	F	T
Ambient temperature [°C]	-10 ... +70	-20 ... +60	-30 ... +180	-10 ... +200	-10 ... +80
Corrosion resistance CRC ¹⁾	1				2

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.
 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 surrounding industrial atmosphere or media such as cooling or lubricating agents.

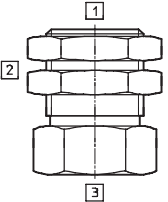
Suction grippers ESG for suction cup \varnothing 60 ... 100

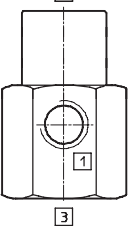
Technical data

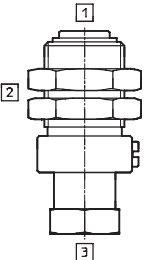
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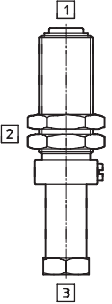
Suction grippers

2.1

Suction cup holder size 5		Vacuum port 1
Holder type HA		G $\frac{1}{8}$
	Mounting thread 2	M20x1
	Max. tightening torque [Nm]	21
	Suction cup connection 3	M10x1.5
	Temperature range [°C]	-10 ... +60
	Materials	Steel
	Weight [g]	84

Holder type HB		Vacuum port 1
		G $\frac{1}{8}$
	Mounting thread 2	M8x1.25
	Suction cup connection 3	M10x1.5
	Temperature range [°C]	-10 ... +60
	Materials	Steel
	Weight [g]	91

Holder type HC		Vacuum port 1
		G $\frac{1}{8}$
	Mounting thread 2	M22x1
	Max. tightening torque [Nm]	50
	Suction cup connection 3	M10x1.5
	Height compensation [mm]	10
	Min. spring force [N]	8
	Max. spring force [N]	18
	Temperature range [°C]	-10 ... +60
	Materials	Steel
	Weight [g]	112

Holder type HCL		Vacuum port 1
		G $\frac{1}{8}$
	Mounting thread 2	M22x1
	Max. tightening torque [Nm]	50
	Suction cup connection 3	M10x1.5
	Height compensation [mm]	30
	Min. spring force [N]	10
	Max. spring force [N]	16
	Temperature range [°C]	-10 ... +60
	Materials	Steel
	Weight [g]	129

Suction grippers ESG for suction cup \varnothing 60 ... 100

Technical data

FESTO

Suction cup holder size 5		Vacuum port 1
Holder type HD		G $\frac{1}{8}$
	Mounting thread 2	M22x1
	Max. tightening torque [Nm]	50
	Suction cup connection 3	M10x1.5
	Height compensation [mm]	10
	Min. spring force [N]	8
	Max. spring force [N]	18
	Temperature range [°C]	-10 ... +60
	Materials	Steel
	Weight [g]	195

Holder type HDL		Vacuum port 1
		G $\frac{1}{8}$
	Mounting thread 2	M22x1
	Max. tightening torque [Nm]	50
	Suction cup connection 3	M10x1.5
	Height compensation [mm]	30
	Min. spring force [N]	10
	Max. spring force [N]	16
	Temperature range [°C]	-10 ... +60
	Materials	Steel
	Weight [g]	273

Holder type HE		Vacuum port 1
		Direct
	Mounting thread 2	G $\frac{1}{4}$
	Max. tightening torque [Nm]	14
	Suction cup connection 3	M10x1.5
	Temperature range [°C]	-10 ... +60
	Materials	Steel, polyacetate
	Weight [g]	24

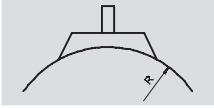
Angle compensator ESWA		Mounting thread
		M10x1.5
	Design	Ball joint with $\pm 15^\circ$ swivel angle
	Max. tightening torque [Nm]	9.4
	Temperature range [°C]	0 ... +60
	Materials	Housing: Nickel plated aluminium; Filter: Polyvinylfluoride; Seals: Nitrile rubber
	Weight [g]	57

Suction grippers ESG for suction cup \varnothing 150 and 200

Technical data


FESTO

Function



Suction cup type:

- Standard, round

-  - Temperature range
-30 ... +200 °C



General technical data – Suction cup						
Suction cup \varnothing [mm]	Suction cup connection [mm]	Effective suction cup \varnothing [mm]	Breakaway force at -0.7 bar [N]	Suction cup volume ¹⁾ [cm ³]	Min. radius R ²⁾ of workpiece [mm]	Weight [g]
Standard, round						
150	M20x2	114	900	173.826	480	720
200	M20x2	151	1,610	245.454	680	1,200

- 1) Volume to be evacuated
- 2) Minimum arc radius of the workpiece to be gripped

Material types – Suction cup				
Material	N	U	S	F
Shore hardness	50 ±5	60 ±5	50 ±5	60 ±5
Material	Nitrile rubber	Polyurethane	Silicone	Fluoro rubber
	Free of copper, PTFE and silicone			
Colour	Black	Blue	Transparent	Grey

Ambient conditions – Suction cup				
Material	N	U	S	F
Ambient temperature [°C]	-10 ... +70	-20 ... +60	-30 ... +180	-10 ... +200
Corrosion resistance 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.

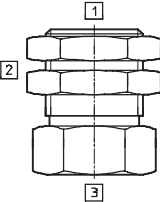
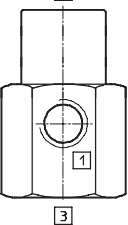
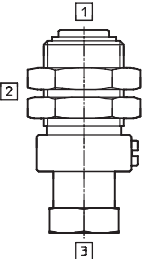
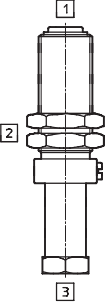
Suction grippers

2.1

Suction grippers ESG for suction cup \varnothing 150 and 200

FESTO

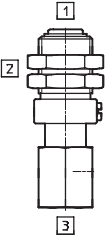
Technical data

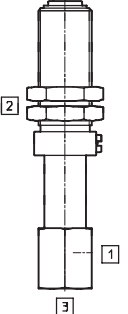
Suction cup holder size 6		Vacuum port 1
Holder type HA		G $\frac{1}{4}$
	Mounting thread 2	M24x2
	Max. tightening torque [Nm]	50
	Suction cup connection 3	M20x2
	Temperature range [°C]	-10 ... +60
	Materials	Steel
	Weight [g]	200
	Holder type HB	
		G $\frac{1}{4}$
	Mounting thread 2	M16x2
	Suction cup connection 3	M20x2
	Temperature range [°C]	-10 ... +60
	Materials	Steel
	Weight [g]	271
Holder type HC		Vacuum port 1
		G $\frac{1}{4}$
	Mounting thread 2	M30x2
	Max. tightening torque [Nm]	50
	Suction cup connection 3	M20x2
	Height compensation [mm]	20
	Min. spring force [N]	12
	Max. spring force [N]	22
	Temperature range [°C]	-10 ... +60
	Materials	Steel
	Weight [g]	472
	Holder type HCL	
		G $\frac{1}{4}$
	Mounting thread 2	M30x2
	Max. tightening torque [Nm]	50
	Suction cup connection 3	M20x2
	Height compensation [mm]	40
	Min. spring force [N]	15
	Max. spring force [N]	32
	Temperature range [°C]	-10 ... +60
	Materials	Steel
	Weight [g]	560

Suction grippers ESG for suction cup \varnothing 150 and 200

Technical data

FESTO

Suction cup holder size 6		
Holder type HD		Vacuum port 1
		G $\frac{1}{4}$
	Mounting thread 2	M30x2
	Max. tightening torque [Nm]	50
	Suction cup connection 3	M20x2
	Height compensation [mm]	20
	Min. spring force [N]	12
	Max. spring force [N]	22
	Temperature range [°C]	-10 ... +60
	Materials	Steel
	Weight [g]	472

Holder type HDL		
Holder type HDL		Vacuum port 1
		G $\frac{1}{4}$
	Mounting thread 2	M30x2
	Max. tightening torque [Nm]	50
	Suction cup connection 3	M20x2
	Height compensation [mm]	40
	Min. spring force [N]	15
	Max. spring force [N]	32
	Temperature range [°C]	-10 ... +60
	Materials	Steel
	Weight [g]	560

Suction grippers

2.1

Suction grippers ESG – Round design

Ordering data – Modular product system



M Mandatory data					
Holder size	Module No.	Gripper function	Suction cup Ø	Suction cup design/suction cup material	
1	189 167 189 168	ESG	2 4	SN, SU, SS, SF, SNA EN, EU, ES, EF	
2	189 169 189 170		6 8	BN, BU, BS, BT CN, CS	
3	189 171 189 172		10 15	GT	
4	189 173 189 174 189 175 189 176		20 30 40 50		
5	189 177 189 178 189 179		60 80 100		
6	189 180 189 181		150 200		
	Ordering example 189 167		ESG	2	SN

Ordering table – Suction cup -Ø 2 ... 50 mm														
Size	Ø 2	Ø 4	Ø 6	Ø 8	Ø 10	Ø 15	Ø 20	Ø 30	Ø 40	Ø 50	Condi- tions	Code	Enter code	
Holder size	1	2	3	4										
M Module No.	189 167	189 168	189 169	189 170	189 171	189 172	189 173	189 174	189 175	189 176				
Gripper function	Vacuum suction gripper, round design											ESG	ESG	
Suction cup Ø [mm]	2	4	6	8	10	15	20	30	40	50		-...		
Standard suction cup	Nitrile rubber (NBR)											-SN		
	Polyurethane (PU)											-SU		
	Silicone (SI)											-SS		
	Fluoro rubber (FPM)											-SF		
	Nitrile rubber (NBR) antistatic											-SNA		
Extra deep suction cup						Nitrile rubber (NBR)					-EN			
						Polyurethane (PU)					-EU			
						Silicone (SI)					-ES			
						Fluoro rubber (FPM)					-EF			
Bellows, 1.5 convolutions					(NBR)					Nitrile rubber (NBR)	-BN			
					(PU)					Polyurethane (PU)	-BU			
					(SI)					Silicone (SI)	-BS			
									Thermoplastic	-BT				
Bellows, 3.5 convolutions					(NBR)					Nitrile rubber (NBR)	-CN			
					(SI)					Silicone (SI)	-CS			
Bell-shaped								Thermoplastic				-GT		
Suction cup holder	Male thread, 2 nuts, connection on top												-HA	
	Female thread, connection on side												-HB	
	Male thread, 2 nuts, connection on top, short height compensator												-HC	
	Male thread, 2 nuts, connection on top, long height compensator												-HCL	
	Male thread, 2 nuts, connection on side, short height compensator												-HD	
	Male thread, 2 nuts, connection on side, long height compensator												-HDL	
	Male thread, connection on top, screw-in thread												-HE	
	Male thread, connection on top, short height compensator, screw-in thread												-HF	
Connection	Push-in connector for plastic tubing										1	-QS		
	Barbed fitting connector for plastic tubing										1	-PK		
O Angle compensator						Ball joint with ±30° deflection					-WA			
Filter						Filter					-F			

1 QS, PK Not with suction cup holder HE, HF.

Suction grippers ESG – Round design

Ordering data – Modular product system



M Mandatory data

Suction cup holder	Connection
HA	QS
HB	PK
HC	G
HCL	
HD	
HDL	
HE	
HF	
- HA	- QS

O Options

Angle compensator	Filter
WA	F
- WA	- F

Ordering table – Suction cup Ø 60 ... 200 mm

Size	Ø 60	Ø 80	Ø 100	Ø 150	Ø 200	Condi- tions	Code	Enter code
Holder size	5				6			
M Module No.	189 177	189 178	189 179	189 180	189 181			
Gripper function	Vacuum suction gripper, round design						ESG	ESG
Suction cup Ø [mm]	60	80	100	150	200		-...	
Standard suction cup	Nitrile rubber (NBR)						-SN	
	Polyurethane (PU)						-SU	
	Silicone (SI)						-SS	
	Fluoro rubber (FPM)						-SF	
Extra deep suction cup	Nitrile rubber (NBR)			-	-		-EN	
	Polyurethane (PU)			-	-		-EU	
	Silicone (SI)			-	-		-ES	
	Fluoro rubber (FPM)			-	-		-EF	
Bellows, 1.5 convolutions	-	Nitrile rubber (NBR)	-	-	-		-BN	
	-	Polyurethane (PU)	-	-	-		-BU	
	-	Silicone (SI)	-	-	-		-BS	
	-	Thermoplastic	-	-	-		-BT	
Bell-shaped	Thermoplastic			-	-		-GT	
Suction cup holder	Male thread, 2 nuts, connection on top						-HA	
	Female thread, connection on side						-HB	
	Male thread, 2 nuts, connection on top, short height compensator						-HC	
	Male thread, 2 nuts, connection on top, long height compensator						-HCL	
	Male thread, 2 nuts, connection on side, short height compensator						-HD	
	Male thread, 2 nuts, connection on side, long height compensator						-HDL	
	Male thread, connection on top, screw-in thread					-	-HE	
	Threaded connection						-G	
O Angle compensator	Ball joint with ±30° deflection			-	-		-WA	

Suction grippers ESG – Oval design

Ordering data – Modular product system



M Mandatory data						
Holder size	Module No.	Gripper function	Suction cup Ø	Suction cup design/suction cup material		
4	189 182 189 183 189 184 189 185 189 186 189 187 189 188	ESG	4x10 4x20 6x10 6x20 8x20 8x30 10x30	ON		
5	189 189 189 190 189 191 189 192		15x45 20x60 25x75 30x90			
	Ordering example		ESG		-	ON

Order table – Suction cup dimensions 4x10 ... 10x30 mm										
Size (suction cup dimensions)	4x10	4x20	6x10	6x20	8x20	8x30	10x30	Condi- tions	Code	Enter code
Holder size	4									
M Module No.	189 182	189 183	189 184	189 185	189 186	189 187	189 188			
Gripper function	Vacuum suction gripper, oval design								ESG	ESG
Size [mm]	4x10	4x20	6x10	6x20	8x20	8x30	10x30		-...	
Oval suction cup	Nitrile rubber (NBR)								-ON	-ON
Suction cup holder	Male thread, 2 nuts, connection on top								-HA	
	Female thread, connection on side								-HB	
	Male thread, 2 nuts, connection on top, short height compensator								-HC	
	Male thread, 2 nuts, connection on top, long height compensator								-HCL	
	Male thread, 2 nuts, connection on side, short height compensator								-HD	
	Male thread, 2 nuts, connection on side, long height compensator								-HDL	
	Male thread, connection on top, screw-in thread								-HE	
	Male thread, connection on top, short height compensator, screw-in thread								-HF	
Connection	Push-in connector for plastic tubing							1	-QS	
	Barbed fitting connector for plastic tubing							1	-PK	
O Filter	Filter								-F	

1 QS, PK Not with suction cup holder HE, HF.

Suction grippers
2.1

Transfer order code
 ESG - - ON

Suction grippers ESG – Oval design

Ordering data – Modular product system



M Mandatory data

Suction cup holder

HA
HB
HC
HCL
HD
HDL
HE
HF

Connection

QS
PK
G

O Options

Filter

F

Order table – Suction cup dimensions 15x45 ... 30x90 mm								
Size (suction cup dimensions)	15x45	20x60	25x75	30x90	Condi- tions	Code	Enter code	
Holder size	5							
M Module No.	189 189	189 190	189 191	189 192				
Gripper function	Vacuum suction gripper, oval design						ESG	ESG
Size [mm]	15x45	20x60	25x75	30x90		-...		
Oval suction cup	Nitrile rubber (NBR)						-ON	-ON
Suction cup holder	Male thread, 2 nuts, connection on top						-HA	
	Female thread, connection on side						-HB	
	Male thread, 2 nuts, connection on top, short height compensator						-HC	
	Male thread, 2 nuts, connection on top, long height compensator						-HCL	
	Male thread, 2 nuts, connection on side, short height compensator						-HD	
	Male thread, 2 nuts, connection on side, long height compensator						-HDL	
	Male thread, connection on top, screw-in thread						-HE	
Connection	Threaded connection						-G	

Transfer order code

- - -

Suction cup holders ESH

Technical data

- 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 [cm ³]	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	∅ 3 mm	3	6
		PK-3	0.090	M5x0.5		2	3
	2	QS4	0.501	M10x1	∅ 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
	5	G ¹ / ₈	1.862	M20x1	M10x1.5	21	84
G	6	G ¹ / ₄	7.234	M24x2	M20x2	50	200




General technical data						
ESH-HB-... without height compensation						
	Holder size	Vacuum connection	Volume [cm ³]	Mounting thread Female thread	Suction cup connection	Weight [g]
Female thread, vacuum connection on side						
QS	1	QS4	0.228	M3x0.5	∅ 3 mm	5
		PK-3	0.108			4
	2	QS6	0.418	M4x0.75	∅ 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
	5	G ¹ / ₈	1.921	M8x1.25	M10x1.5	91
G	6	G ¹ / ₄	7.250	M16x2	M20x2	271

Suction cup holders ESH

Technical data






General technical data										
ESH-HC-... with height compensation										
	Holder size	Vacuum connection	Volume [cm ³]	Mounting thread	Suction cup connection	Height compensation [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	∅ 3 mm	3	0	0.1	14	17
		PK-3	0.117	M8x0.75					3.5	8
	2	QS6	0.551	M12x1	∅ 4 mm	3	0	0.1	14	18
		PK-4	0.192	M8x0.75					3.5	8
PK 	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	G ³ / ₈	3.327	M22x1	M10x1.5	10	8	18	50	112
	6	G ¹ / ₄	11.537	M30x2	M20x2	20	12	22		472




General technical data										
ESH-HCL-... with height compensation, long										
	Holder size	Vacuum connection	Volume [cm ³]	Mounting thread	Suction cup connection	Height compensation [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	∅ 3 mm	10	0	0.1	14	20
		PK-3	0.360							19
	2	QS6	0.519	M12x1	∅ 4 mm	10	0	0.1	14	20
		PK-4	0.398							19
PK 	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	G ³ / ₈	6.060	M22x1	M10x1.5	30	10	16	50	169
	6	G ¹ / ₄	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 [cm ³]	Mounting thread	Suction cup connection	Height compensation [mm]	Spring force		Max. tightening torque [Nm]	Weight [g]
							min. [N]	max. [N]		
Male thread, 2 nuts, vacuum connection on side										
QS 	1	QS4	0.241	M8x0.75	∅ 3 mm	3	0	0.1	3.5	13
		PK-3	0.120							11
	2	QS6	0.417	M8x0.75	∅ 4 mm	3	0	0.1	3.5	15
		PK-4	0.183							12
PK 	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
G 	5	G ¹ / ₈	2.072	M22x1	M10x1.5	10	8	18	50	195
		6	G ¹ / ₄							13.171

General technical data										
ESH-HDL-... with height compensation, long										
	Holder size	Vacuum connection	Volume [cm ³]	Mounting thread	Suction cup connection	Height compensation [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	∅ 3 mm	10	0	0.1	14	29
		PK-3	0.150							28
	2	QS6	0.260	M12x1	∅ 4 mm	10	0	0.1	14	33
		PK-4	0.138							32
PK 	3	QS6	0.474	M14x1	M4x0.7	20	1	3	21	65
		PK-4	0.252							63
	4	QS6	0.370	M14x1	M6x1	20	1	9	21	65
		PK-4	0.448							63
G 	5	G ¹ / ₈	1.667	M22x1	M10x1.5	30	10	16	50	273
		6	G ¹ / ₄							16.968


Suction grippers


2.1

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	∅ 3 mm	0.7	1
	2	M5x0.8	∅ 4 mm	1.9	3
	3	G1/8	M4x0.7	9	11
	4	G1/8	M6x1	9	11
	5	G1/4	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	∅ 3 mm	2.6	2	4	7	14
	2	M10x1	∅ 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 grippers

2.1

Suction cup holders ESH

Technical data

Materials								
	ESH-...-							
	HA-...	HB-...	HC-...	HCL-...	HD-...	HDL-...	HE-...	HF-...
	Steel							
QS connection	Steel, polyacetate, nitrile rubber						-	

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

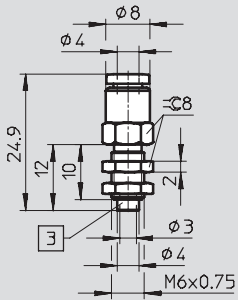
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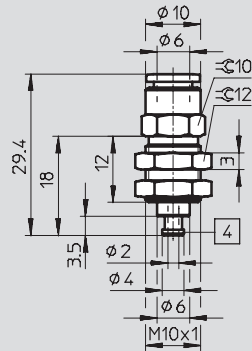
Dimensions – ESH-HA

Push-in connector QS

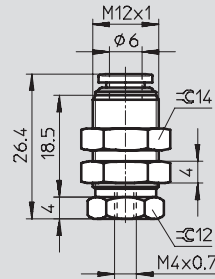
Holder size 1



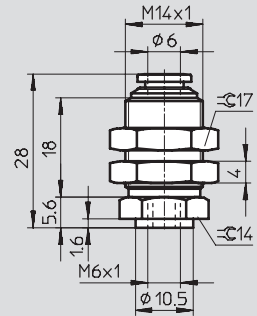
Holder size 2



Holder size 3

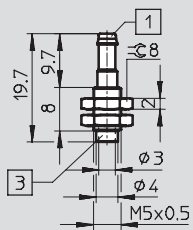


Holder size 4

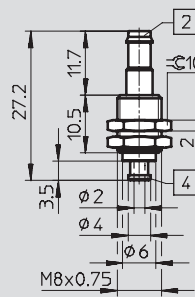


Barbed fitting connector PK

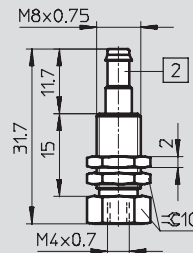
Holder size 1



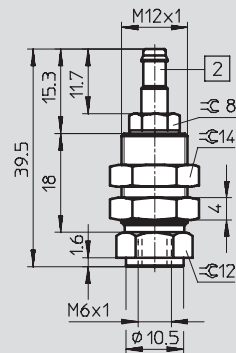
Holder size 2



Holder size 3



Holder size 4

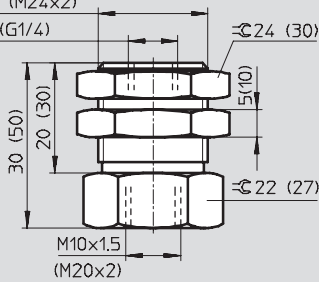


Threaded connection G

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

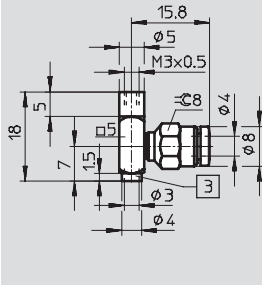
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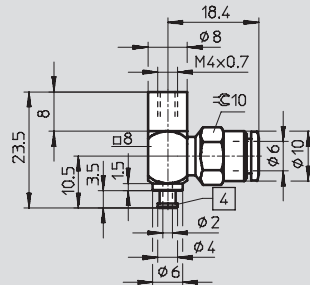
Dimensions – ESH-HB

Push-in connector QS

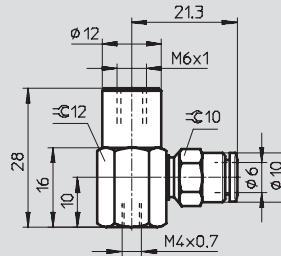
Holder size 1



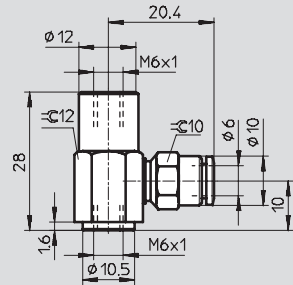
Holder size 2



Holder size 3

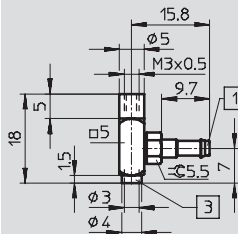


Holder size 4

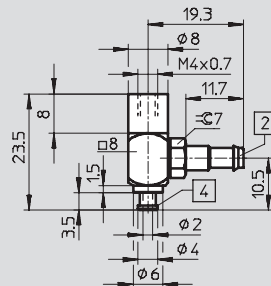


Barbed fitting connector PK

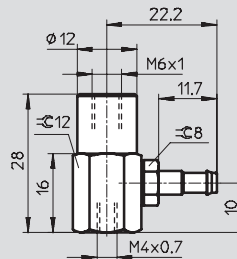
Holder size 1



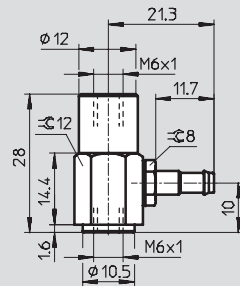
Holder size 2



Holder size 3

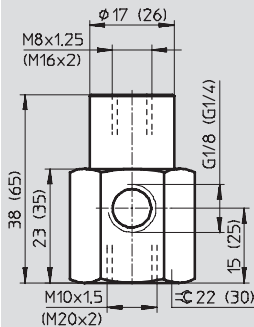


Holder size 4



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

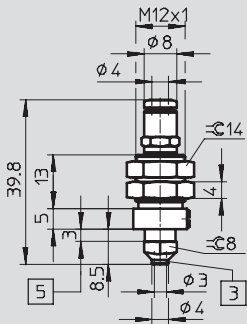
Technical data



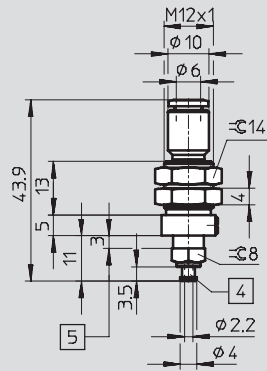
Dimensions – ESH-HC

Push-in connector QS

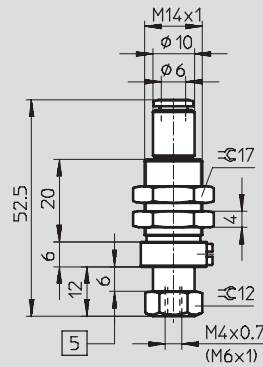
Holder size 1



Holder size 2

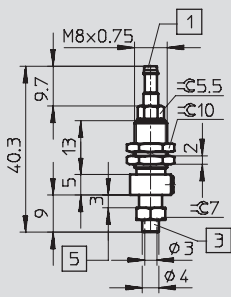


Holder size 3/Holder size 4*

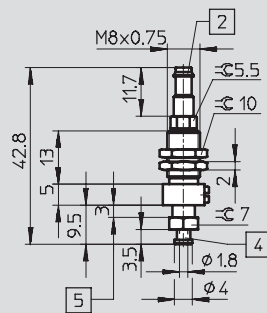


Barbed fitting connector PK

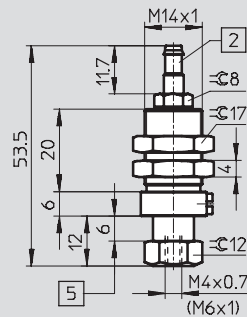
Holder size 1



Holder size 2

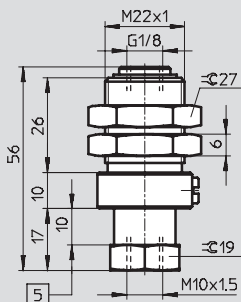


Holder size 3/Holder size 4*

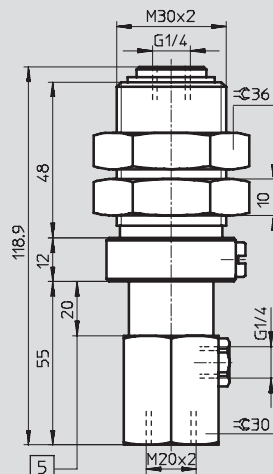


Threaded connection G

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

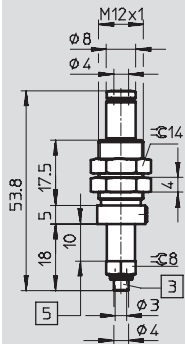
Suction cup holders ESH

Technical data

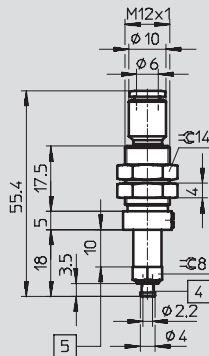
Dimensions – ESH-HCL

Push-in connector QS

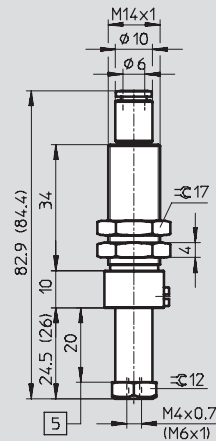
Holder size 1



Holder size 2

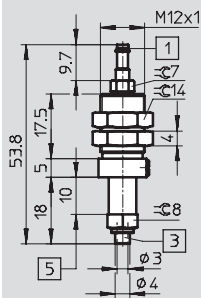


Holder size 3/Holder size 4*

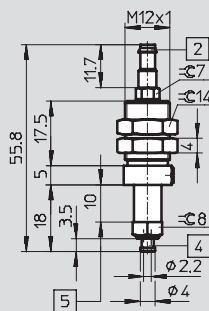


Barbed fitting connector PK

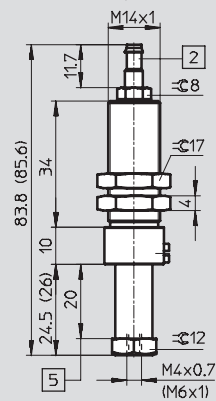
Holder size 1



Holder size 2

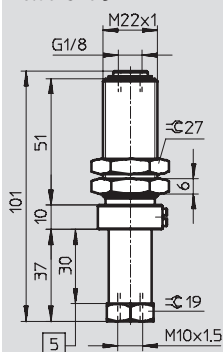


Holder size 3/Holder size 4*

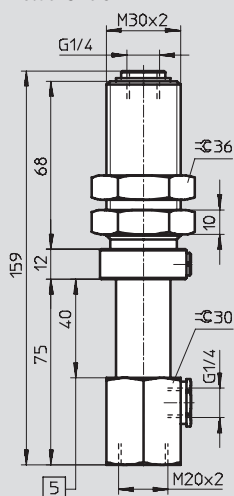


Threaded connection G

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

1) Dimensions in brackets

Suction cup holders ESH

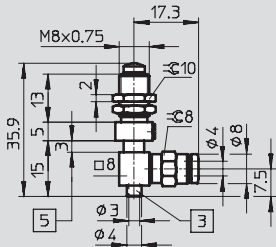
Technical data



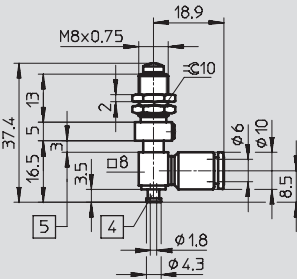
Dimensions – ESH-HD

Push-in connector QS

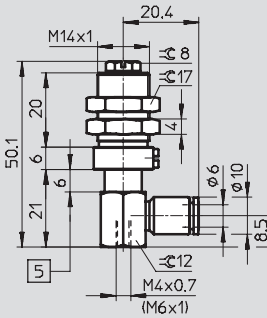
Holder size 1



Holder size 2

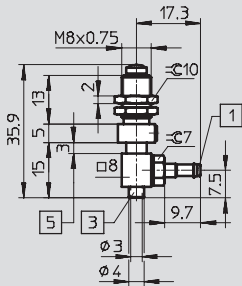


Holder size 3/Holder size 4*

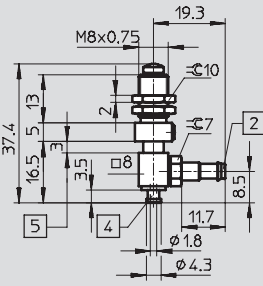


Barbed fitting connector PK

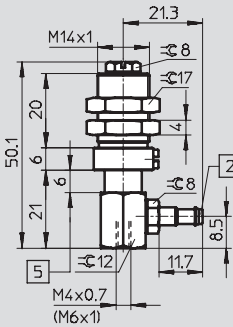
Holder size 1



Holder size 2

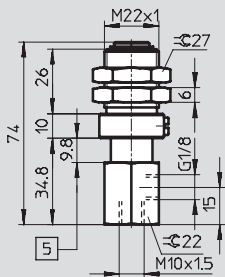


Holder size 3/Holder size 4*

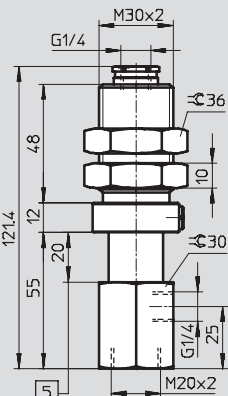


Threaded connection G

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

Suction cup holders ESH

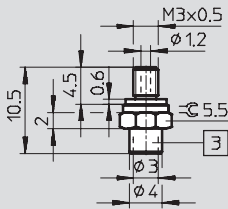
Technical data



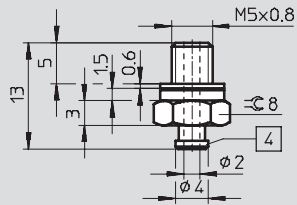
Dimensions – ESH-HE

G and M thread

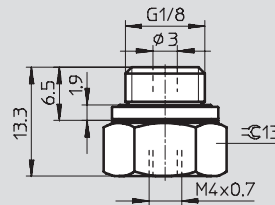
Holder size 1



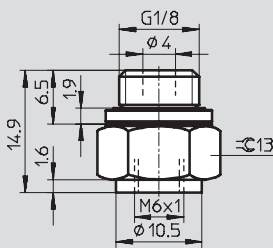
Holder size 2



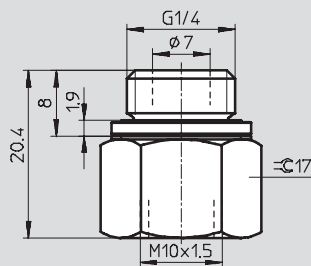
Holder size 3



Holder size 4



Holder size 5



3 Hole for vacuum generator

4 Barbed fitting for vacuum generator

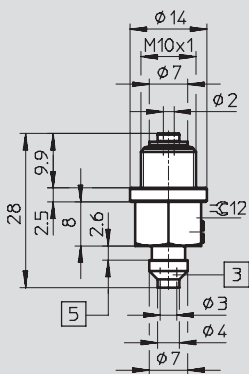
Suction grippers

2.1

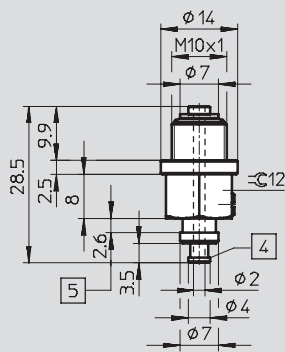
Dimensions – ESH-HF

M thread

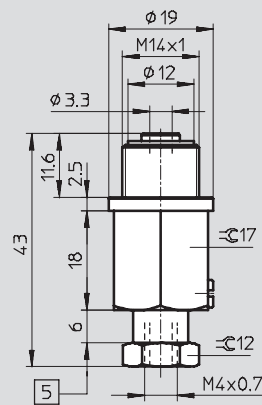
Holder size 1



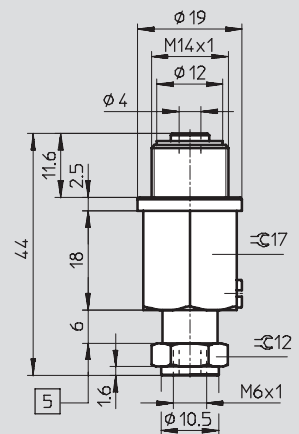
Holder size 2



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	189 193	ESH-HA-1-QS	–	–	–	–
	PK-3	–	–	189 194	ESH-HA-1-PK	–	–
2	QS4	189 195	ESH-HA-2-QS	–	–	–	–
	PK-4	–	–	189 196	ESH-HA-2-PK	–	–
3	QS6	189 197	ESH-HA-3-QS	–	–	–	–
	PK-4	–	–	189 198	ESH-HA-3-PK	–	–
4	QS6	189 199	ESH-HA-4-QS	–	–	–	–
	PK-4	–	–	189 200	ESH-HA-4-PK	–	–
5	G1/8	–	–	–	–	189 201	ESH-HA-5-G
6	G1/4	–	–	–	–	189 202	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	189 203	ESH-HB-1-QS	–	–	–	–
	PK-3	–	–	189 204	ESH-HB-1-PK	–	–
2	QS6	189 205	ESH-HB-2-QS	–	–	–	–
	PK-4	–	–	189 206	ESH-HB-2-PK	–	–
3	QS6	189 207	ESH-HB-3-QS	–	–	–	–
	PK-4	–	–	189 208	ESH-HB-3-PK	–	–
4	QS6	189 209	ESH-HB-4-QS	–	–	–	–
	PK-4	–	–	189 210	ESH-HB-4-PK	–	–
5	G1/8	–	–	–	–	189 211	ESH-HB-5-G
6	G1/4	–	–	–	–	189 212	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	189 213	ESH-HC-1-QS	–	–	–	–
	PK-3	–	–	189 214	ESH-HC-1-PK	–	–
2	QS6	189 215	ESH-HC-2-QS	–	–	–	–
	PK-4	–	–	189 216	ESH-HC-2-PK	–	–
3	QS6	189 217	ESH-HC-3-QS	–	–	–	–
	PK-4	–	–	189 218	ESH-HC-3-PK	–	–
4	QS6	189 219	ESH-HC-4-QS	–	–	–	–
	PK-4	–	–	189 220	ESH-HC-4-PK	–	–
5	G1/8	–	–	–	–	189 221	ESH-HC-5-G
6	G1/4	–	–	–	–	189 222	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	189 223	ESH-HCL-1-QS	–	–	–	–
	PK-3	–	–	189 224	ESH-HCL-1-PK	–	–
2	QS6	189 225	ESH-HCL-2-QS	–	–	–	–
	PK-4	–	–	189 226	ESH-HCL-2-PK	–	–
3	QS6	189 227	ESH-HCL-3-QS	–	–	–	–
	PK-4	–	–	189 228	ESH-HCL-3-PK	–	–
4	QS6	189 229	ESH-HCL-4-QS	–	–	–	–
	PK-4	–	–	189 230	ESH-HCL-4-PK	–	–
5	G1/8	–	–	–	–	189 231	ESH-HCL-5-G
6	G1/4	–	–	–	–	189 232	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	189 233	ESH-HD-1-QS	–	–	–	–
	PK-3	–	–	189 234	ESH-HD-1-PK	–	–
2	QS6	189 235	ESH-HD-2-QS	–	–	–	–
	PK-4	–	–	189 236	ESH-HD-2-PK	–	–
3	QS6	189 237	ESH-HD-3-QS	–	–	–	–
	PK-4	–	–	189 238	ESH-HD-3-PK	–	–
4	QS6	189 239	ESH-HD-4-QS	–	–	–	–
	PK-4	–	–	189 240	ESH-HD-4-PK	–	–
5	G1/8	–	–	–	–	189 241	ESH-HD-5-G
6	G1/4	–	–	–	–	189 242	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	189 243	ESH-HDL-1-QS	–	–	–	–
	PK-3	–	–	189 244	ESH-HDL-1-PK	–	–
2	QS6	189 245	ESH-HDL-2-QS	–	–	–	–
	PK-4	–	–	189 246	ESH-HDL-2-PK	–	–
3	QS6	189 247	ESH-HDL-3-QS	–	–	–	–
	PK-4	–	–	189 248	ESH-HDL-3-PK	–	–
4	QS6	189 249	ESH-HDL-4-QS	–	–	–	–
	PK-4	–	–	189 250	ESH-HDL-4-PK	–	–
5	G1/8	–	–	–	–	189 251	ESH-HDL-5-G
6	G1/4	–	–	–	–	189 252	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	189 253	ESH-HE-1-M3
2	M5	189 254	ESH-HE-2-M5
3	G $\frac{1}{8}$	189 255	ESH-HE-3-G $\frac{1}{8}$
4	G $\frac{1}{8}$	189 256	ESH-HE-4-G $\frac{1}{8}$
5	G $\frac{1}{4}$	189 257	ESH-HE-5-G $\frac{1}{4}$

Ordering data			
ESH-HF			
Holder size	Connection	Part No.	Type
Threaded connection for direct attachment, height compensator			
1	M10	189 260	ESH-HF-1-M10x1
2	M10	189 261	ESH-HF-2-M10x1
3	M14	189 262	ESH-HF-3-M14x1
4	M14	189 263	ESH-HF-4-M14x1