

Suction cup with connector ESS

FESTO



Characteristics

At a glance

[Link](#) [ess](#)

Suction cup consisting of the suction cup itself plus the support plate with mounting

- Suction volume: 0.002 ... 245 cm³
- Min. workpiece radius: 10 ... 680 mm
- Mounting for suction cup holder: Female, male thread, push-in connection
- Suction cup with mounting thread

Additional documents

[Link](#) [ess](#)



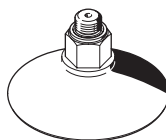
The additional document ESS-ESV-ADD contains further information on using suction cups without connector ESV and suction cups with connector ESS.

Suction cup shape

[S] Round, standard



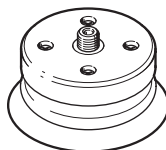
[G] Round, bell shape



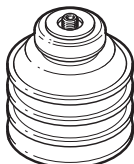
[E] Round, extra-deep



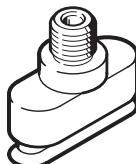
[B] Round, bellows, 1.5 convolutions



[C] Round, bellows, 3.5 convolutions



[O] Oval, flat



Type code

001	Series	
ESS	Suction cup complete	
002	Suction cup size	
2	2 mm diameter	
4	4 mm diameter	
4x10	4x10 mm	
4x20	4x20 mm	
6	6 mm diameter	
6x10	6x10 mm	
6x20	6x20 mm	
8	8 mm diameter	
8x20	8x20 mm	
8x30	8x30 mm	
10	10 mm diameter	
10x30	10x30 mm	
15	15 mm diameter	
15x45	15x45 mm	
20	20 mm diameter	
20x60	20x60 mm	
25x75	25x75 mm	
30	30 mm diameter	
30x90	30x90 mm	
40	40 mm diameter	
50	50 mm diameter	
60	60 mm diameter	
80	80 mm diameter	
100	100 mm diameter	
150	150 mm diameter	
200	200 mm diameter	

003	Suction cup shape	
B	Round, bellows, 1.5 convolutions	
C	Round, bellows, 3.5 convolutions	
E	Round, extra-deep	
G	Round, bell shape	
O	Oval, flat	
S	Round, standard	

004	Material	
F	Fluoro rubber	
N	Nitrile rubber	
S	Silicone	
T	Polyurethane high-performance elastomer	
U	Polyurethane	

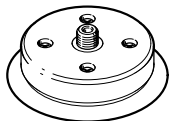
005	Additional features	
	None	
A	Antistatic	
F	Food-safe	

006	Vacuum connection	
M6	Threaded connection M6	
M10	Threaded connection M10	
G1/8	Threaded connection G1/8	
G1/4	Threaded connection G1/4	

007	Thread type	
	Male thread	
I	Female thread	

Datasheet

Technical data – ESS-...-S... (round, flat)



General technical data – ESS-...-S..., suction cup diameter 2-15 mm (round, flat)

Suction cup diameter	2 mm	4 mm	6 mm	8 mm	10 mm	15 mm
Vacuum connection ¹⁾	Outside diameter 3 mm		Inside diameter 4 mm		M4	
Nominal size	0.6 mm	1.2 mm	2 mm			
Correlation to suction-cup holder	Size 1		Size 2		Size 3	
Suction cup shape	Round, flat					
Type of mounting	Via vacuum port					
Position of connection	Top					
Mounting position	optional					
Holding force at nominal operating pressure	0.1 N	0.46 N	1.1 N	2.3 N	3.9 N	8.5 N
Suction cup volume	0.002 cm³	0.008 cm³	0.015 cm³	0.03 cm³	0.05 cm³	0.208 cm³
Min. workpiece radius	10 mm		15 mm	20 mm	30 mm	35 mm
Suitable for ejector pulse	4				—	
Product weight	0.1 g		0.2 g		1.5 g	1.9 g

1) For outside/inside diameter: plugged into or unplugged from the suction cup complete holder

General technical data – ESS-...-S..., suction cup diameter 20-50 mm (round, flat)

Suction cup diameter	20 mm	30 mm	40 mm	50 mm
Vacuum connection	M6			
Nominal size	3 mm			
Correlation to suction-cup holder	Size 4			
Suction cup shape	Round, flat			
Type of mounting	Via vacuum port			
Position of connection	Top			
Mounting position	optional			
Holding force at nominal operating pressure	16.3 N	40.8 N	69.6 N	105.8 N
Suction cup volume	0.318 cm ³	0.867 cm ³	1.566 cm ³	2.387 cm ³
Min. workpiece radius	60 mm	110 mm	230 mm	330 mm
Product weight	6.4 g	9 g	16.3 g	22 g

General technical data – ESS-...-S..., suction cup diameter 60-200 mm (round, flat)

Suction cup diameter	60 mm	80 mm	100 mm	150 mm	200 mm
Vacuum connection ¹⁾	M10			M20x2	
Nominal size	6 mm			10 mm	
Correlation to suction-cup holder	Size 5			Size 6	
Suction cup shape	Round, flat				
Type of mounting	Via vacuum port				
Position of connection	Top				
Mounting position	optional				
Holding force at nominal operating pressure	166.1 N	309.7 N	503.6 N	900 N	1,610 N
Suction cup volume	3.953 cm³	19.312 cm³	29.779 cm³	173.826 cm³	245.454 cm³
Min. workpiece radius	350 mm	400 mm	460 mm	480 mm	680 mm
Product weight	49 g	133 g	222 g	719 g	1,198 g

1) For outside/inside diameter: plugged into or unplugged from the suction cup complete holder

Datasheet

Operating and environmental conditions – ESS-...-S... (round, flat)

Material suction cup	FPM	NBR	PUR	VMQ (silicone)
Operating pressure	-95 ... 0 kPa			
Operating pressure	-0.95 ... 0 bar			
Operating pressure	-13.775 ... 0 psi			
Nominal operating pressure	-70 kPa			
Nominal operating pressure	-0.7 bar			
Nominal operating pressure	-10.15 psi			
Operating medium	Atmospheric air based on ISO 8573-1:2010 [7:::]			
Ambient temperature	-10 ... 200°C	-10 ... 70°C	-20 ... 60°C	-30 ... 180°C
Corrosion resistance class CRC ¹⁾	1 - Low corrosion stress			
Special characteristics	–	Antistatic	–	
Suitable for use with food ²⁾	See supplementary material information			

1) More information www.festo.com/x/topic/crc2) More information: www.festo.com/catalogue/ess → Support/Downloads.

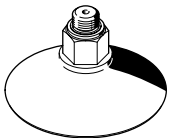
Materials – ESS-...-S... (round, flat)

Material suction cup	FPM	NBR	PUR	VMQ (silicone)
Shore hardness ¹⁾	60 +/- 5	50 +/- 5 60 +/- 5	60 +/- 5	50 +/- 5
Colour ²⁾	grey	Black Black/white dot	Blue	Transparent
Material screwed plug	Nickel-plated wrought aluminium alloy Nickel-plated brass NBR POM Nickel-plated steel Steel, galvanised and chrome-plated			
Note on materials	RoHS-compliant			
LABS (PWIS) conformity	VDMA24364-A1-L		VDMA24364 zone III	

1) Nitrile rubber with additional antistatic properties (ESS-...-SNA): 50 ±5

2) Nitrile rubber with additional antistatic properties (ESS-...-SNA): black/white dot

Technical data – ESS-...-G... (round, bell-shaped)



General technical data – ESS-...-G..., suction cup diameter 30-50 mm (round, bell-shaped)

Suction cup diameter	30 mm			40 mm			50 mm		
Vacuum connection	M6	M10	G1/8	M6	M10	G1/4	M6	M10	G1/4
Height compensator for suction-cup holder	3.5 mm			5.5 mm			8 mm		
Nominal size	2.5 mm								
Correlation to suction-cup holder	Size 4	Size 5	–	Size 4	Size 5	–	Size 4	Size 5	–
Suction cup shape	Round deep								
Type of mounting	Via vacuum port								
Mounting position	optional								
Holding force at nominal operating pressure	36 N			64 N			97 N		
Suction cup volume	2.4 cm³			5.4 cm³			11.2 cm³		
Min. workpiece radius	26 mm			35 mm			40 mm		
Product weight	12 g	13 g	13 ... 14 g	14 g	15 g	14.5 ... 16 g	17 g	18 g	18 ... 21 g

Datasheet

General technical data – ESS-...-G..., suction cup diameter 60-100 mm (round, bell-shaped)

Suction cup diameter	60 mm		80 mm		100 mm	
Vacuum connection ¹⁾	M10	G1/4	M10	G1/4	M10	G1/4
Height compensator for suction-cup holder	6		7.5		9	
Nominal size	2.5 mm		5.5 mm			
Correlation to suction-cup holder	Size 5	–	Size 5	–	Size 5	–
Suction cup shape	Round deep					
Type of mounting	Via vacuum port					
Mounting position	optional					
Holding force at nominal operating pressure	134 N		245 N		375 N	
Suction cup volume	11.3 cm³		28.6 cm³		53.9 cm³	
Min. workpiece radius	75 mm		100 mm		135 mm	
Suitable for ejector pulse	–					
Product weight	20 g	19.5 ... 21 g	28 g	60 ... 61 g	86.5 g	87.5 ... 89.5 g

1) For outside/inside diameter: plugged into or unplugged from the suction cup complete holder

Operating and environmental conditions – ESS-...-G... (round, bell-shaped)

Material suction cup	Vulkollan
Operating pressure	-0.95 ... 0 bar
Nominal operating pressure	-0.7 bar
Operating medium	Atmospheric air based on ISO 8573-1:2010 [7:-:-]
Ambient temperature	-10 ... 80°C
Corrosion resistance class CRC ¹⁾	2 - Moderate corrosion stress

1) More information www.festo.com/x/topic/crc

Materials – ESS-...-G... (round, bell-shaped)

Material suction cup	Vulkollan
Shore hardness	72 +/- 5
Colour	Red-brown
Material screwed plug	Wrought aluminium alloy
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-A1-L

Technical data – ESS-...-E... (round, extra deep)



General technical data – ESS-...-E... (round, extra deep)

Suction cup diameter	15 mm	20 mm	30 mm	40 mm	50 mm	60 mm	80 mm	100 mm
Vacuum connection	M4	M6				M10		
Nominal size	2 mm	3 mm				6 mm		
Correlation to suction-cup holder	Size 3	Size 4				Size 5		
Suction cup shape	Round extra deep							
Type of mounting	Via vacuum port							
Mounting position	optional							
Nominal operating pressure	-0.7 bar							
Holding force at nominal operating pressure	9.8 N	17 N	37.2 N	67.6 N	103.6 N	162.5 N	275 N	440.8 N
Suction cup volume	0.35 cm ³	0.84 cm ³	2.12 cm ³	4.04 cm ³	7.9 cm ³	19.77 cm ³	51.61 cm ³	84.66 cm ³
Min. workpiece radius	20 mm	30 mm	50 mm	80 mm	100 mm	120 mm	160 mm	200 mm
Product weight	1.9 g	6.4 g	9.2 g	16.9 g	23.4 g	48 g	141 g	228 g

Datasheet

Operating and environmental conditions – ESS-...-E... (round, extra deep)

Material suction cup	FPM	NBR	PUR	VMQ (silicone)
Operating pressure	-95 ... 0 kPa			
Operating pressure	-0.95 ... 0 bar			
Operating pressure	-13.775 ... 0 psi			
Nominal operating pressure	-70 kPa			
Nominal operating pressure	-0.7 bar			
Nominal operating pressure	-10.15 psi			
Operating medium	Atmospheric air based on ISO 8573-1:2010 [7:::]			
Ambient temperature	-10 ... 200°C	-10 ... 70°C	-20 ... 60°C	-30 ... 180°C
Corrosion resistance class CRC ¹⁾	1 - Low corrosion stress			
Special characteristics	—			
Suitable for use with food ²⁾	See supplementary material information			

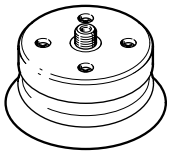
1) More information www.festo.com/x/topic/crc

2) More information: www.festo.com/catalogue/ess → Support/Downloads.

Materials – ESS-...-E... (round, extra deep)

Material suction cup	FPM	NBR	PUR	VMQ (silicone)
Shore hardness	60 +/- 5			50 +/- 5
Colour	grey	Black	Blue	Transparent
Material screwed plug	Nickel-plated wrought aluminium alloy Nickel-plated brass POM Nickel-plated steel Steel, galvanised and chrome-plated			
Note on materials	RoHS-compliant			
LABS (PWIS) conformity	VDMA24364-A1-L		VDMA24364 zone III	

Technical data – ESS-...-B... (round, protective bellows 1.5 convolutions)



General technical data – ESS-...-B... (round, protective bellows 1.5 convolutions)

Suction cup diameter	10 mm	20 mm	30 mm	40 mm	50 mm	80 mm
Vacuum connection	M4	M6				M10
Height compensator for suction cup	4 mm	6 mm	8 mm	9.5 mm	11 mm	10 mm
Nominal size	2 mm	3 mm				6 mm
Correlation to suction-cup holder	Size 3	Size 4				Size 5
Suction cup shape	Round bellows 1.5 convolutions					
Type of mounting	Via vacuum port					
Position of connection	Top					
Mounting position	optional					
Nominal operating pressure	-0.7 bar					
Holding force at nominal operating pressure	4.7 N	12.9 N	26.2 N	52.3 N	72.6 N	213.6 N
Suction cup volume	0.38 cm ³	1.6 cm ³	4.07 cm ³	8.87 cm ³	14.23 cm ³	63.9 cm ³
Min. workpiece radius	20 mm	40 mm	80 mm	90 mm	150 mm	430 mm
Product weight	1.8 g	6.7 g	9.9 g	18.7 g	24.7 g	139 g

Datasheet

Operating and environmental conditions – ESS-...-B... (round, protective bellows 1.5 convolutions)

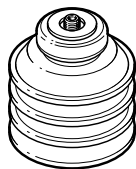
Material suction cup	NBR	PUR	VMQ (silicone)
Operating pressure	-95 ... 0 kPa		
Operating pressure	-0.95 ... 0 bar		
Operating pressure	-13.775 ... 0 psi		
Nominal operating pressure	-70 kPa		
Nominal operating pressure	-0.7 bar		
Nominal operating pressure	-10.15 psi		
Operating medium	Atmospheric air based on ISO 8573-1:2010 [7:::]		
Ambient temperature	-10 ... 70°C	-20 ... 60°C	-30 ... 180°C
Corrosion resistance class CRC ¹⁾	1 - Low corrosion stress		
Suitable for use with food ²⁾	See supplementary material information		

1) More information www.festo.com/x/topic/crc2) More information: www.festo.com/catalogue/ess → Support/Downloads.

Materials – ESS-...-B... (round, protective bellows 1.5 convolutions)

Material suction cup	NBR	PUR	VMQ (silicone)
Shore hardness	50 +/- 5	60 +/- 5	50 +/- 5
Colour	Black	Blue	Transparent
Material screwed plug	Nickel-plated wrought aluminium alloy Nickel-plated brass POM Nickel-plated steel Steel, galvanised and chrome-plated		
Note on materials	RoHS-compliant		
LABS (PWIS) conformity	VDMA24364-A1-L	VDMA24364 zone III	

Technical data – ESS-...-C... (round, protective bellows 3.5 convolutions)



General technical data – ESS-...-C... (round, protective bellows 3.5 convolutions)

Suction cup diameter	10 mm	20 mm	30 mm	40 mm	50 mm
Vacuum connection	M4	M6			
Height compensator for suction cup	3.3 mm	7 mm	10.5 mm	12.8 mm	17.5 mm
Nominal size	2 mm	3 mm			
Correlation to suction-cup holder	Size 3	Size 4			
Suction cup shape	Round bellows 3.5 convolutions				
Type of mounting	Via vacuum port				
Position of connection	Top				
Mounting position	optional				
Nominal operating pressure	-0.7 bar				
Holding force at nominal operating pressure	3.9 N	8.2 N	20.8 N	42.4 N	63.4 N
Suction cup volume	0.29 cm ³	2.75 cm ³	9.47 cm ³	19.72 cm ³	38.92 cm ³
Min. workpiece radius	25 mm	50 mm	80 mm	100 mm	180 mm
Product weight	1.6 g	6.9 g	12.2 g	21.9 g	32.1 g

Datasheet

Operating and environmental conditions – ESS-...-C... (round, protective bellows 3.5 convolutions)

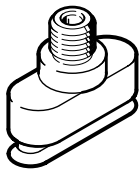
Material suction cup	NBR	VMQ (silicone)
Operating pressure	-95 ... 0 kPa	
Operating pressure	-0.95 ... 0 bar	
Operating pressure	-13.775 ... 0 psi	
Nominal operating pressure	-70 kPa	
Nominal operating pressure	-0.7 bar	
Nominal operating pressure	-10.15 psi	
Operating medium	Atmospheric air based on ISO 8573-1:2010 [7:-:-]	
Ambient temperature	-10 ... 70°C	-30 ... 180°C
Corrosion resistance class CRC ¹⁾	1 - Low corrosion stress	
Suitable for use with food ²⁾	See supplementary material information	

1) More information www.festo.com/x/topic/crc2) More information: www.festo.com/catalogue/ess → Support/Downloads.

Materials – ESS-...-C... (round, protective bellows 3.5 convolutions)

Material suction cup	NBR	VMQ (silicone)
Shore hardness	50 +/- 5	
Colour	Black	Transparent
Material screwed plug	Nickel-plated wrought aluminium alloy Nickel-plated brass Steel, galvanised and chrome-plated	
Note on materials	RoHS-compliant	
LABS (PWIS) conformity	VDMA24364-A1-L	VDMA24364 zone III

Technical data – ESS-...-O... (oval, flat)



General technical data – ESS-...-O...; suction cup size 4x10 to 8x30 mm (oval, flat)

Suction cup size	4x10 mm	4x20 mm	6x10 mm	6x20 mm	8 x 20 mm	8x30 mm
Vacuum connection	M6					
Nominal size	2.5 mm					
Correlation to suction-cup holder	Size 4					
Suction cup shape	Oval, flat					
Type of mounting	Via vacuum port					
Position of connection	Top					
Mounting position	optional					
Nominal operating pressure	-0.7 bar					
Holding force at nominal operating pressure	2 N	3.4 N	2.9 N	5.9 N	8 N	10.9 N
Suction cup volume	0.064 cm ³	0.112 cm ³	0.106 cm ³	0.196 cm ³	0.256 cm ³	0.376 cm ³
Product weight	2 g	2.5 g	2 g	2.5 g		3 g

Datasheet

General technical data – ESS-...-O...; suction cup size 10x30 to 30x90 mm (oval, flat)

Suction cup size	10x30 mm	15x45 mm	20x60 mm	25x75 mm	30x90 mm
Vacuum connection	M6	M10			
Nominal size	2.5 mm	6 mm			
Correlation to suction-cup holder	Size 4	Size 5			
Suction cup shape	Oval, flat				
Type of mounting	Via vacuum port				
Position of connection	Top				
Mounting position	optional				
Nominal operating pressure	-0.7 bar				
Holding force at nominal operating pressure	15.2 N	32 N	62.8 N	92.5 N	134.4 N
Suction cup volume	0.35 cm ³	1.57 cm ³	3.69 cm ³	6.7 cm ³	10.17 cm ³
Product weight	2.9 g	23.8 g	30.8 g	46.8 g	55.3 g

Operating and environmental conditions – ESS-...-O... (oval, flat)

Material suction cup	NBR
Operating pressure	-95 ... 0 kPa
Operating pressure	-0.95 ... 0 bar
Operating pressure	-13.775 ... 0 psi
Nominal operating pressure	-70 kPa
Nominal operating pressure	-0.7 bar
Nominal operating pressure	-10.15 psi
Operating medium	Atmospheric air based on ISO 8573-1:2010 [7:-:-]
Ambient temperature	-10 ... 70°C
Corrosion resistance class CRC ¹⁾	1 - Low corrosion stress
Suitable for use with food ²⁾	See supplementary material information

1) More information www.festo.com/x/topic/crc2) More information: www.festo.com/catalogue/ess → Support/Downloads.

Materials – ESS-...-O... (oval, flat)

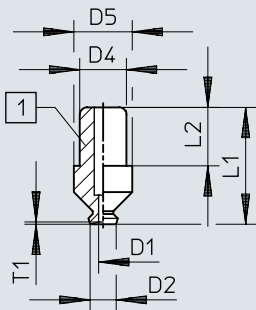
Material suction cup	NBR
Shore hardness	50 +/- 5
Colour	Black
Note on materials	RoHS-compliant
LABS (PWIS) conformity	VDMA24364-A1-L

Dimensions

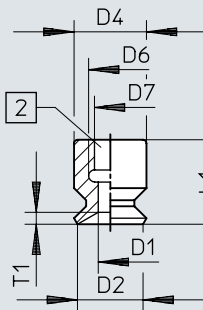
Dimensions – Suction cup with connector ESS-...-S...

Download CAD data www.festo.com

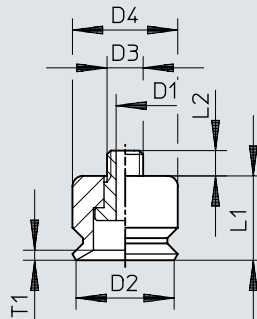
ESS-2/4-S



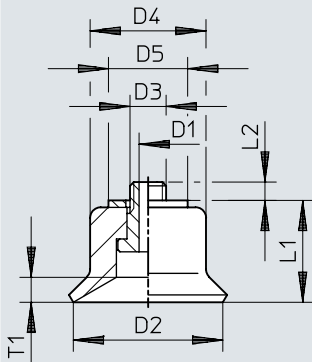
ESS-6/8-S



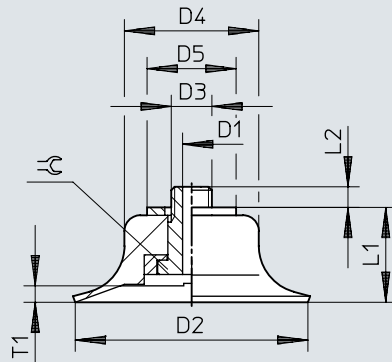
ESS-10/15-S



ESS-20/30-S



ESS-40/50/60-S

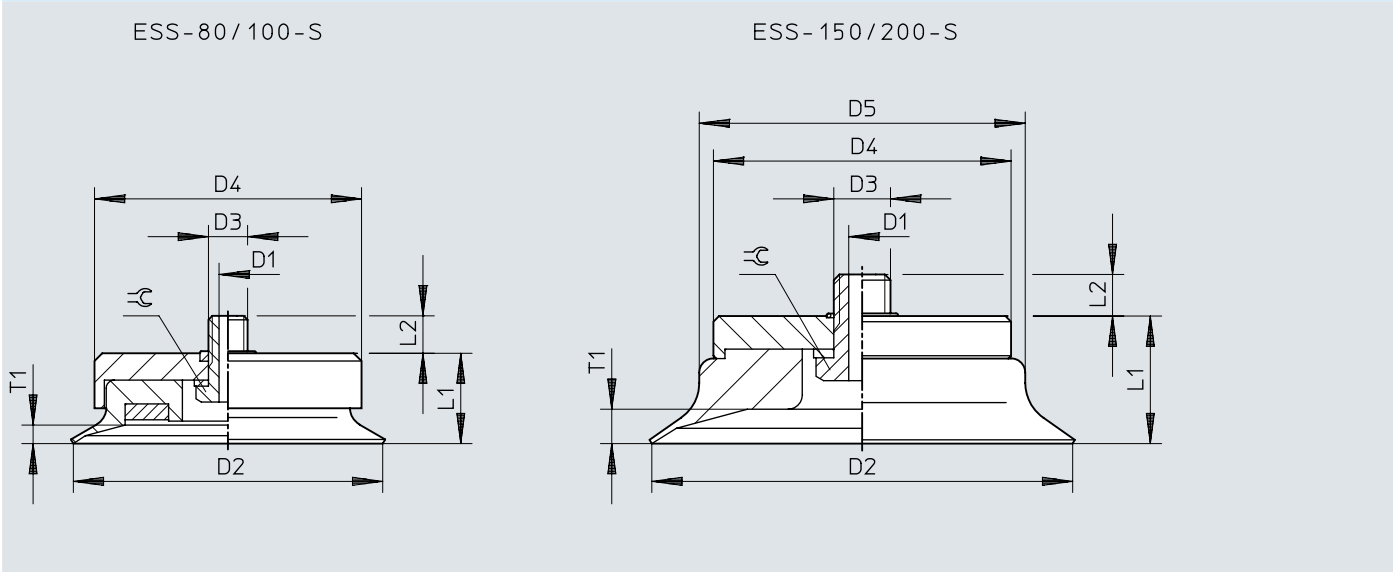


- [1] Trunnion for insertion into retainer
 [2] Drilled hole for pushing onto retainer

	D1 NW	D2 ø	D3	D4 ø	D5 ø	L1	L2	T1	≡
ESS-2-S...	ø 0,6	2	–	3,2	4	8	4	0,2	–
ESS-4-S...	ø 1,2	4	–	3,2	4	8	4	0,6	–
ESS-6-S...	ø 2	6	–	6	–	7	–	1	–
ESS-8-S...	ø 2	8	–	6	–	5,5	–	1,1	–
ESS-10-S...	≡ 2	10	M4x0,7	10	–	8	3	1	–
ESS-15-S...	≡ 2	15	M4x0,7	11	–	9	3	2,4	–
ESS-20-S...	≡ 3	20	M6x1	15	15,5	11,6	2,4	1,8	–
ESS-30-S...	≡ 3	30	M6x1	17	15,5	12,6	3,4	2	–
ESS-40-S...	≡ 3	40	M6x1	25	22	15,6	2,7	1,9	–
ESS-50-S...	≡ 3	50	M6x1	30	22	16,6	3,4	1,9	–
ESS-60-S...	ø 6	60	M10x1,5	40	–	20,6	4,5	2,6	14

Dimensions

Dimensions – Suction cup with connector ESS-...-S... [Download CAD data](#) www.festo.com



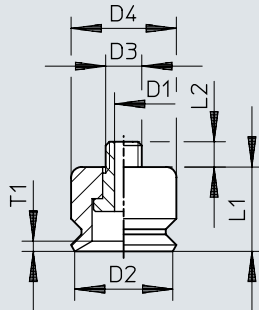
	D1 NW	D2 Ø	D3	D4 Ø	D5 Ø	L1	L2	T1	≅
ESS-80-S...	Ø 6	80	M10x1,5	68	–	23	9,4	4,7	14
ESS-100-S...	Ø 6	100	M10x1,5	85	–	25	8,4	5,5	14
ESS-150-S...	Ø 10	150	M20x2	105	115	45	13	12	27
ESS-200-S...	Ø 10	200	M20x2	105	160	50	13	15	27

Dimensions

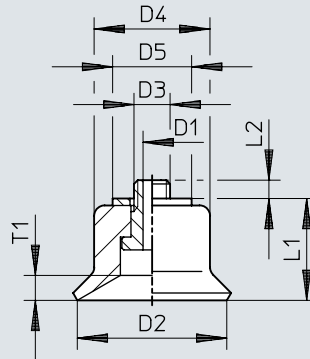
Dimensions – Suction cup with connector ESS-...-E...

[Download CAD data](http://www.festo.com)

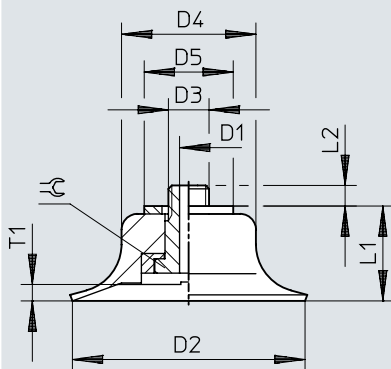
ESS-15-E



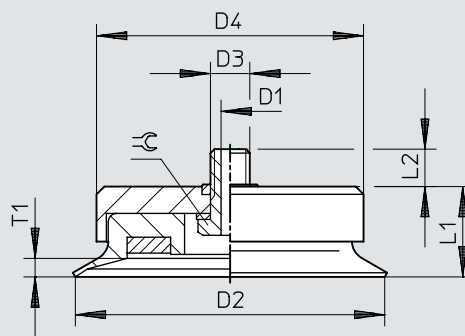
ESS-20/30-E



ESS-40/50/60-E



ESS-80/100-E



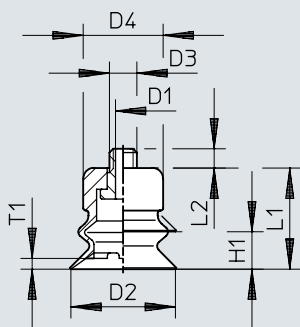
	D1 NW	D2 ø	D3	D4 ø	D5 ø	L1	L2	T1	≡
ESS-15-E...	≡ 2	15	M4x0,7	11	–	10	3	2,9	–
ESS-20-E...	≡ 3	20	M6x1	15	15,5	12,6	2,4	3	–
ESS-30-E...	≡ 3	30	M6x1	17	15,5	15,6	3,4	4,5	–
ESS-40-E...	≡ 3	40	M6x1	25	22	19,1	2,7	4,5	–
ESS-50-E...	≡ 3	50	M6x1	30	22	21,1	3,4	6,5	–
ESS-60-E...	ø 6	60	M10x1,5	40	–	27,6	5,4	9,5	14
ESS-80-E...	ø 6	80	M10x1,5	68	–	33	9,4	8,6	14
ESS-100-E...	ø 6	100	M10x1,5	85	–	33	8,4	10,7	14

Dimensions

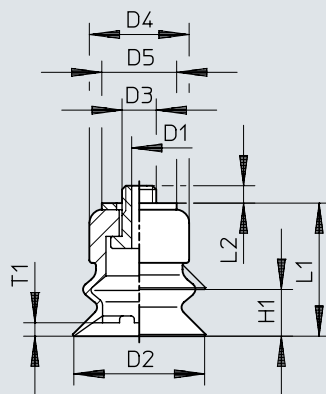
Dimensions – Suction cup with connector ESS-...-B...

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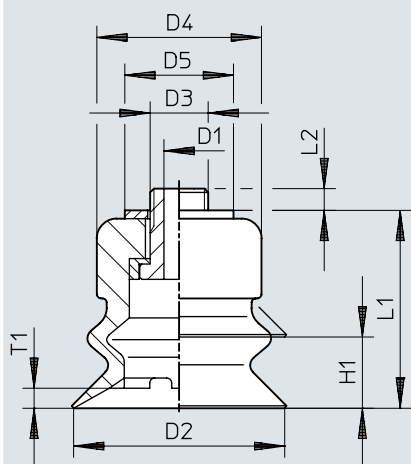
ESS-10-B



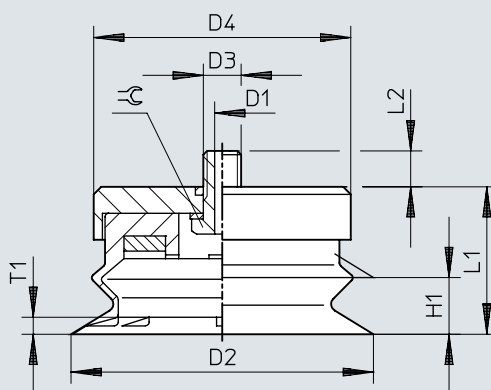
ESS-20/30-B



ESS-40/50-B



ESS-80-B

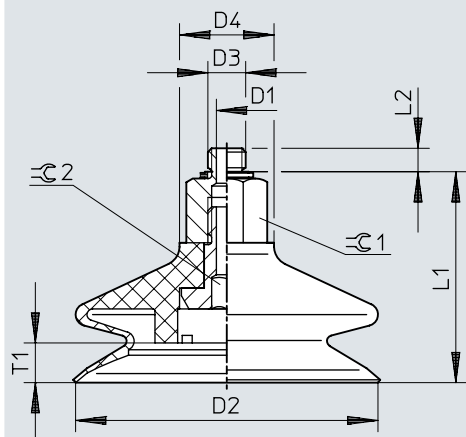


	D1 NW	D2 ø	D3	D4 ø	D5 ø	H1	L1	L2	T1	⌀
ESS-10-B...	⌀ 2	10	M4x0,7	10	–	4	16	3	1	–
ESS-20-B...	⌀ 3	20	M6x1	15	15,5	6	20,6	2,4	2	–
ESS-30-B...	⌀ 3	30	M6x1	17	15,5	8	24,6	3,4	2,5	–
ESS-40-B...	⌀ 3	40	M6x1	25	22	9,5	31,6	2,7	4	–
ESS-50-B...	⌀ 3	50	M6x1	30	22	11	33,6	3,4	4	–
ESS-80-B...	ø 6	80	M10x1,5	68	–	10	39	9,4	2	14

Dimensions

Dimensions – Suction cup with connector ESS-...-BT...

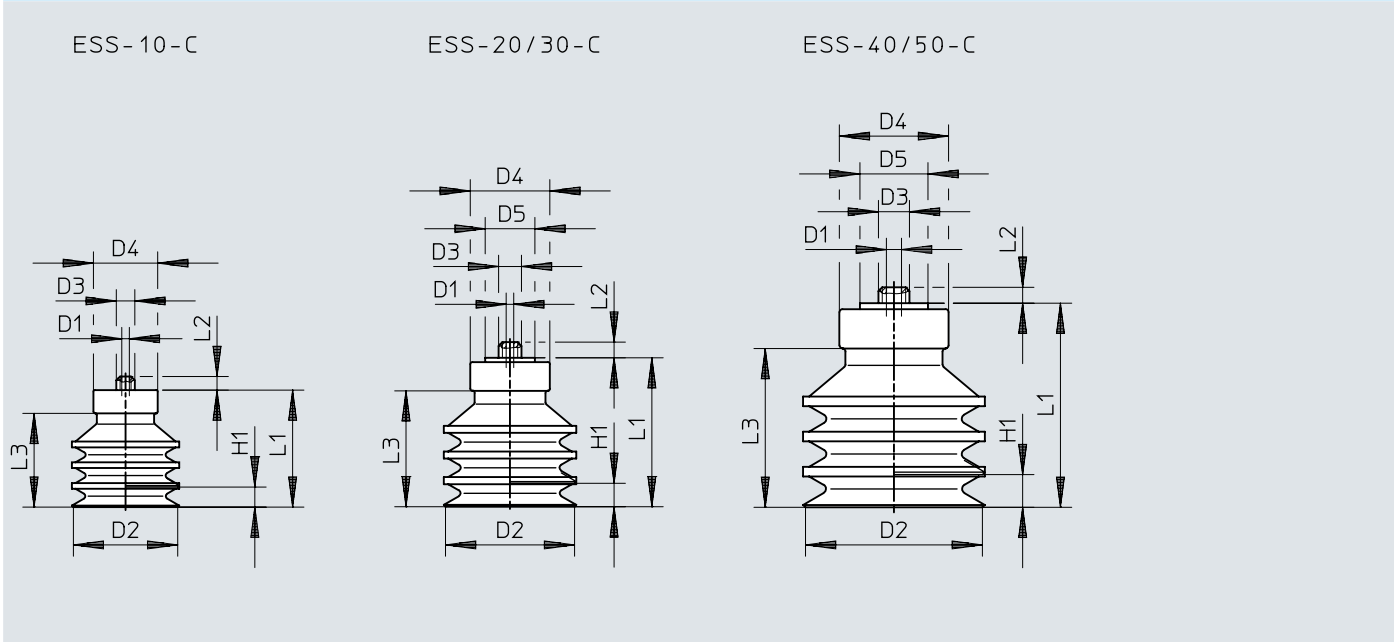
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	D1 Ø NW	D2 Ø	D3	D4 Ø	L1	L2	T1	≧ 1	≧ 2
ESS-40-BT	2,5	40	M6	20	36	3,45	9	15	4
			M10		36,3	6,2		17	
			G1/4		48,3	–			
ESS-40-BT-I			G1/4						
ESS-50-BT	2,5	50	M6	20	38,05	3,45	10	15	4
			M10		38,3	6,2		17	
			G1/4		50,3	–			
ESS-50-BT-I			G1/4						
ESS-80-BT	2,5	80	M10	20	53,3	6,2	10,5	17	8
			G1/4		60,8	–			
ESS-80-BT-I			G1/4						

Dimensions

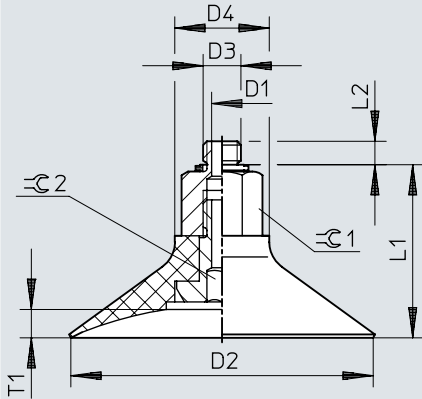
Dimensions – Suction cup with connector ESS-...-C... [Download CAD data](http://www.festo.com) www.festo.com



	D1 ≙ NW	D2 ø	D3	D4 ø	D5 ø	H1	L1	L2	L3
ESS-10-C...	2	10	M4x0,7	10	–	3,3	12,7	3	8,7
ESS-20-C...	3	20	M6x1	15	15,5	7	23	2,4	16,4
ESS-30-C...	3	30	M6x1	18	15,5	10,5	34,3	3,4	26,2
ESS-40-C...	3	40	M6x1	25	22	12,8	39,6	2,7	31
ESS-50-C...	3	50	M6x1	30	22	17,5	48	3,4	39,4

Dimensions

Dimensions – Suction cup with connector ESS-...-GT...

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	D1 Ø NW	D2 Ø	D3	D4 Ø	L1	L2	T1	⊕ 1	⊕ 2
ESS-30-GT	2,5	30	M6	20	27,55	3,45	3,5	15	4
			M10		27,8	6,2		17	
			G1/8			4,7		15	
ESS-30-GT-I			G1/8		36,8	–			
ESS-40-GT	2,5	40	M6	20	29,55	3,45	5,5	15	4
			M10		29,8	6,2		17	
			G1/4			41,8			
ESS-40-GT-I			G1/4						
ESS-50-GT	2,5	50	M6	20	32,05	3,45	8	15	4
			M10		32,3	6,2		17	
			G1/4			44,3			
ESS-50-GT-I			G1/4						
ESS-60-GT	2,5	60	M10	20	29,8	6,2	6	17	4
			G1/4		41,8	–			
ESS-60-GT-I			G1/4						
ESS-80-GT	5,5	80	M10	25	43,3	6,2	7,5	22	8
			G1/4		54,3	–			
ESS-80-GT-I			G1/4						
ESS-100-GT	5,5	100	M10	25	45,8	6,2	9	22	8
			G1/4		56,8	–			
ESS-100-GT-I			G1/4						

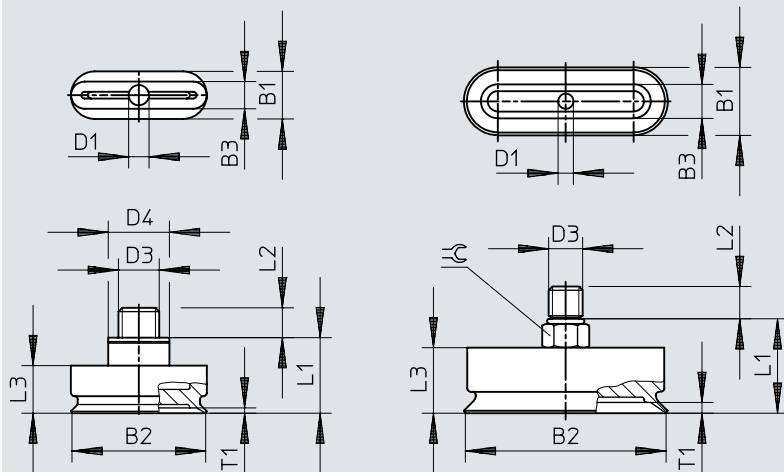
Dimensions

Dimensions – Suction cup with connector ESS-...-0...

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ESS-4x10 bis 10x30-0

ESS-15x45 bis 30x90-0

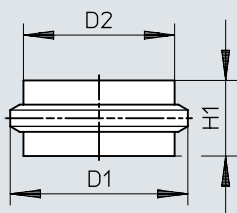


	B1	B2	B3	D1 ø NW	D3	D4 ø	L1	L2	L3	T1	≡
ESS-4x10-0...	7	10	4	2,5	M6x1	9	11,1	4,4	7	0,8	–
ESS-4x20-0...	7	20	4	2,5	M6x1	9	11,1	4,4	7	0,8	–
ESS-6x10-0...	7	10	6	2,5	M6x1	9	11,1	4,4	7	1	–
ESS-6x20-0...	7	20	6	2,5	M6x1	9	11,1	4,4	7	1	–
ESS-8x20-0...	7	20	8	2,5	M6x1	9	11,1	4,4	7	1	–
ESS-8x30-0...	7	30	8	2,5	M6x1	9	11,1	4,4	7	1	–
ESS-10x30-0...	10	30	7	2,5	M6x1	9	11,1	4,4	7	1,1	–
ESS-15x45-0...	15	45	15	6	M10x1,5	–	25,5	8,5	18,5	2,5	12
ESS-20x60-0...	20	60	20	6	M10x1,5	–	26,3	8,5	19,3	3,2	12
ESS-25x75-0...	25	75	25	6	M10x1,5	–	28	8,5	21	3,7	12
ESS-30x90-0...	30	90	30	6	M10x1,5	–	28,5	8,5	21,5	3,7	12

Dimensions

Dimensions – Suction-cup insert OASI

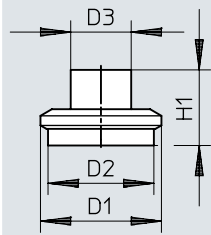
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	D1	D2	H1
OASI-10	7	6	3
OASI-20	16	14	6,5
OASI-30	23,5	20	10
OASI-40	33	27	12
OASI-50	40	32	15

Dimensions

Dimensions – Suction-cup insert OASI-20-E [Download CAD data](http://www.festo.com) www.festo.com



	D1	D2	D3	H1
OASI-20-E	16	14	8	10

Ordering data

ESS-...-S... (round, flat)							
	Material	Correlation to suction-cup holder	Suction cup diameter	Holding force at nominal operating pressure	Lateral force at nominal operating pressure	Part no.	Type
	Fluoro rubber	Size 6	150 mm	900 N	480 N	189329	ESS-150-SF
			200 mm	1,610 N	500 N	189333	ESS-200-SF
		Size 5	60 mm	166.1 N	117.5 N	189317	ESS-60-SF
			80 mm	309.7 N	139.5 N	189321	ESS-80-SF
			100 mm	503.6 N	299 N	189325	ESS-100-SF
		Size 4	20 mm	16.3 N	15.5 N	189297	ESS-20-SF
			30 mm	40.8 N	22 N	189302	ESS-30-SF
			40 mm	69.6 N	25 N	189307	ESS-40-SF
			50 mm	105.8 N	69.5 N	189312	ESS-50-SF
		Size 3	10 mm	3.9 N	4.5 N	189287	ESS-10-SF
			15 mm	8.5 N	10.5 N	189292	ESS-15-SF
		Size 2	6 mm	1.1 N	1.5 N	189277	ESS-6-SF
			8 mm	2.3 N	3.5 N	189282	ESS-8-SF
		Size 1	2 mm	0.1 N	0.5 N	189267	ESS-2-SF
			4 mm	0.46 N		189272	ESS-4-SF
	Nitrile rubber	Size 6	150 mm	900 N	675 N	189326	ESS-150-SN
			200 mm	1,610 N	850 N	189330	ESS-200-SN
		Size 5	60 mm	166.1 N	136 N	189314	ESS-60-SN
			80 mm	309.7 N	315 N	189318	ESS-80-SN
			100 mm	503.6 N	600 N	189322	ESS-100-SN
		Size 4	20 mm	16.3 N	11.5 N	189294	ESS-20-SN
					14.5 N	189298	ESS-20-SNA
			30 mm	40.8 N	19.5 N	189299	ESS-30-SN
					20 N	189303	ESS-30-SNA
			40 mm	69.6 N	49 N	189308	ESS-40-SNA
					60 N	189304	ESS-40-SN
			50 mm	105.8 N	81.5 N	189313	ESS-50-SNA
					135 N	189309	ESS-50-SN
		Size 3	10 mm	3.9 N	3.5 N	189284	ESS-10-SN
					7.5 N	189288	ESS-10-SNA
			15 mm	8.5 N	10.5 N	189289	ESS-15-SN
					13.5 N	189293	ESS-15-SNA
		Size 2	6 mm	1.1 N	2 N	189278	ESS-6-SNA
					3.5 N	189274	ESS-6-SN
			8 mm	2.3 N	4 N	189283	ESS-8-SNA
					9.5 N	189279	ESS-8-SN
		Size 1	2 mm	0.1 N	0.5 N	189264	ESS-2-SN
						189268	ESS-2-SNA
			4 mm	0.46 N		189273	ESS-4-SNA
						189269	ESS-4-SN
	Silicone	Size 6	150 mm	900 N	400 N	189328	ESS-150-SS
			200 mm	1,610 N	425 N	189332	ESS-200-SS
		Size 5	60 mm	166.1 N	85 N	189316	ESS-60-SS
			80 mm	309.7 N	104 N	189320	ESS-80-SS
			100 mm	503.6 N	130 N	189324	ESS-100-SS
		Size 4	20 mm	16.3 N	10.5 N	189296	ESS-20-SS
			30 mm	40.8 N	23.5 N	189301	ESS-30-SS
			40 mm	69.6 N	25 N	189306	ESS-40-SS
			50 mm	105.8 N	84 N	189311	ESS-50-SS
		Size 3	10 mm	3.9 N	4 N	189286	ESS-10-SS
			15 mm	8.5 N	6.5 N	189291	ESS-15-SS
		Size 2	6 mm	1.1 N	2.5 N	189276	ESS-6-SS
			8 mm	2.3 N	3.5 N	189281	ESS-8-SS
		Size 1	2 mm	0.1 N	0.5 N	189266	ESS-2-SS

Ordering data

ESS-...-S... (round, flat)							
	Material	Correlation to suction-cup holder	Suction cup diameter	Holding force at nominal operating pressure	Lateral force at nominal operating pressure	Part no.	Type
	Silicone	Size 1	4 mm	0.46 N	0.5 N	189271	ESS-4-SS
	Polyurethane	Size 6	150 mm	900 N	1,000 N	189327	ESS-150-SU
			200 mm	1,610 N		189331	ESS-200-SU
		Size 5	60 mm	166.1 N	151 N	189315	ESS-60-SU
			80 mm	309.7 N	295 N	189319	ESS-80-SU
			100 mm	503.6 N	482.5 N	189323	ESS-100-SU
		Size 4	20 mm	16.3 N	23 N	189295	ESS-20-SU
			30 mm	40.8 N	19 N	189300	ESS-30-SU
			40 mm	69.6 N	83 N	189305	ESS-40-SU
			50 mm	105.8 N	130 N	189310	ESS-50-SU
		Size 3	10 mm	3.9 N	7 N	189285	ESS-10-SU
			15 mm	8.5 N	9 N	189290	ESS-15-SU
		Size 2	6 mm	1.1 N	3 N	189275	ESS-6-SU
			8 mm	2.3 N	5 N	189280	ESS-8-SU
		Size 1	2 mm	0.1 N	0.5 N	189265	ESS-2-SU
			4 mm	0.46 N		189270	ESS-4-SU

ESS-...-G... (round, bell-shaped)							
	Material	Correlation to suction-cup holder	Suction cup diameter	Holding force at nominal operating pressure	Lateral force at nominal operating pressure	Part no.	Type
	Polyurethane high-performance elastomer		30 mm	36 N	13 N	525971	ESS-30-GT-G1/8
			40 mm	64 N	20 N	525970	ESS-30-GT-G1/8-I
						525975	ESS-40-GT-G1/4
			50 mm	97 N	30 N	525974	ESS-40-GT-G1/4-I
						525979	ESS-50-GT-G1/4
			60 mm	134 N	37 N	525978	ESS-50-GT-G1/4-I
						525982	ESS-60-GT-G1/4
			80 mm	245 N	99 N	525981	ESS-60-GT-G1/4-I
						525984	ESS-80-GT-G1/4-I
			100 mm	375 N	183 N	525985	ESS-80-GT-G1/4
						525987	ESS-100-GT-G1/4-I
			30 mm	36 N	13 N	525988	ESS-100-GT-G1/4
						525969	ESS-30-GT-M10
		Size 5	40 mm	64 N	20 N	525973	ESS-40-GT-M10
			50 mm	97 N	30 N	525977	ESS-50-GT-M10
			60 mm	134 N	37 N	525980	ESS-60-GT-M10
			80 mm	245 N	99 N	525983	ESS-80-GT-M10
			100 mm	375 N	183 N	525986	ESS-100-GT-M10
		Size 4	30 mm	36 N	13 N	525968	ESS-30-GT-M6
			40 mm	64 N	20 N	525972	ESS-40-GT-M6
			50 mm	97 N	30 N	525976	ESS-50-GT-M6

ESS-...-E... (round, extra deep)							
	Material	Correlation to suction-cup holder	Suction cup diameter	Holding force at nominal operating pressure	Lateral force at nominal operating pressure	Part no.	Type
	Fluoro rubber	Size 5	60 mm	162.5 N	62.5 N	189357	ESS-60-EF

Ordering data

ESS-...-E... (round, extra deep)							
	Material	Correlation to suction-cup holder	Suction cup diameter	Holding force at nominal operating pressure	Lateral force at nominal operating pressure	Part no.	Type
	Fluoro rubber	Size 5	80 mm	275 N	148.5 N	189361	ESS-80-EF
			100 mm	440.8 N	254.5 N	189365	ESS-100-EF
		Size 4	20 mm	17 N	15.5 N	189341	ESS-20-EF
			30 mm	37.2 N	18.5 N	189345	ESS-30-EF
			40 mm	67.6 N	22 N	189349	ESS-40-EF
			50 mm	103.6 N	60 N	189353	ESS-50-EF
			15 mm	9.8 N	14.5 N	189337	ESS-15-EF
	Nitrile rubber	Size 5	60 mm	162.5 N	130 N	189354	ESS-60-EN
			80 mm	275 N	216 N	189358	ESS-80-EN
			100 mm	440.8 N	351 N	189362	ESS-100-EN
		Size 4	20 mm	17 N	14 N	189338	ESS-20-EN
			30 mm	37.2 N	24.5 N	189342	ESS-30-EN
			40 mm	67.6 N	53 N	189346	ESS-40-EN
			50 mm	103.6 N	115 N	189350	ESS-50-EN
			15 mm	9.8 N	9 N	189334	ESS-15-EN
	Silicone	Size 5	60 mm	162.5 N	63.5 N	189356	ESS-60-ES
			80 mm	275 N	107.5 N	189360	ESS-80-ES
			100 mm	440.8 N	150 N	189364	ESS-100-ES
		Size 4	20 mm	17 N	13 N	189340	ESS-20-ES
			30 mm	37.2 N	21.5 N	189344	ESS-30-ES
			40 mm	67.6 N	28.5 N	189348	ESS-40-ES
			50 mm	103.6 N	42.5 N	189352	ESS-50-ES
			15 mm	9.8 N	10 N	189336	ESS-15-ES
	Polyurethane	Size 5	60 mm	162.5 N	134 N	189355	ESS-60-EU
			80 mm	275 N	136.5 N	189359	ESS-80-EU
			100 mm	440.8 N	352.5 N	189363	ESS-100-EU
		Size 4	20 mm	17 N	16 N	189339	ESS-20-EU
			30 mm	37.2 N	41.5 N	189343	ESS-30-EU
			40 mm	67.6 N	46.5 N	189347	ESS-40-EU
			50 mm	103.6 N	62 N	189351	ESS-50-EU
			15 mm	9.8 N	15 N	189335	ESS-15-EU

ESS-...-B... (round, protective bellows 1.5 convolutions)							
	Material	Correlation to suction-cup holder	Suction cup diameter	Holding force at nominal operating pressure	Lateral force at nominal operating pressure	Part no.	Type
	Nitrile rubber	Size 5	80 mm	213.6 N	199.5 N	189394	ESS-80-BN
		Size 4	20 mm	12.9 N	9.5 N	189378	ESS-20-BN
			30 mm	26.2 N	24.5 N	189382	ESS-30-BN
			40 mm	52.3 N	32.5 N	189386	ESS-40-BN
			50 mm	72.6 N	55.5 N	189390	ESS-50-BN
			10 mm	4.7 N	4.5 N	189374	ESS-10-BN
	Silicone	Size 5	80 mm	213.6 N	93 N	189396	ESS-80-BS
		Size 4	20 mm	12.9 N	8 N	189380	ESS-20-BS
			30 mm	26.2 N	16 N	189384	ESS-30-BS
			40 mm	52.3 N	32.5 N	189388	ESS-40-BS
			50 mm	72.6 N	38 N	189392	ESS-50-BS
			10 mm	4.7 N	2.5 N	189376	ESS-10-BS
	Polyurethane	Size 5	80 mm	213.6 N	132.5 N	189395	ESS-80-BU

Ordering data

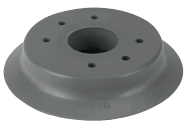
ESS-...-B... (round, protective bellows 1.5 convolutions)							
	Material	Correlation to suction-cup holder	Suction cup diameter	Holding force at nominal operating pressure	Lateral force at nominal operating pressure	Part no.	Type
	Polyurethane	Size 4	20 mm	12.9 N	9.5 N	189379	ESS-20-BU
			30 mm	26.2 N	21.5 N	189383	ESS-30-BU
			40 mm	52.3 N	33 N	189387	ESS-40-BU
			50 mm	72.6 N	47 N	189391	ESS-50-BU
		Size 3	10 mm	4.7 N	3 N	189375	ESS-10-BU

ESS-...-C... (round, protective bellows 3.5 convolutions)							
	Material	Correlation to suction-cup holder	Suction cup diameter	Holding force at nominal operating pressure	Lateral force at nominal operating pressure	Part no.	Type
	Nitrile rubber	Size 4	20 mm	8.2 N	6.5 N	189400	ESS-20-CN
			30 mm	20.8 N	11.5 N	189402	ESS-30-CN
			40 mm	42.4 N	47.5 N	189404	ESS-40-CN
			50 mm	63.4 N	49 N	189406	ESS-50-CN
		Size 3	10 mm	3.9 N	1.5 N	189398	ESS-10-CN
	Silicone	Size 4	20 mm	8.2 N	7 N	189401	ESS-20-CS
			30 mm	20.8 N	11 N	189403	ESS-30-CS
			40 mm	42.4 N	13 N	189405	ESS-40-CS
			50 mm	63.4 N	45.5 N	189407	ESS-50-CS
		Size 3	10 mm	3.9 N	1 N	189399	ESS-10-CS

ESS-...-O... (oval, flat)							
	Correlation to suction-cup holder	Suction cup size	Holding force at nominal operating pressure	Horizontal lateral force at nominal operating pressure	Vertical lateral force at nominal operating pressure	Part no.	Type
	Size 5	15x45 mm	32 N	43 N	35 N	189415	ESS-15X45-ON
		20x60 mm	62.8 N	116 N	63 N	189416	ESS-20X60-ON
		25x75 mm	92.5 N	125.5 N	115 N	189417	ESS-25X75-ON
		30x90 mm	134.4 N	201 N	134.5 N	189418	ESS-30X90-ON
	Size 4	10x30 mm	15.2 N	23 N	16 N	189414	ESS-10X30-ON
		4x10 mm	2 N	3.5 N	5 N	189408	ESS-4X10-ON
		4x20 mm	3.4 N	4.5 N	11 N	189409	ESS-4X20-ON
		6x10 mm	2.9 N	7.5 N	12 N	189410	ESS-6X10-ON
		6x20 mm	5.9 N	9 N	12.5 N	189411	ESS-6X20-ON
		8 x 20 mm	8 N	11 N	13 N	189412	ESS-8X20-ON
		8x30 mm	10.9 N	17 N	13.5 N	189413	ESS-8X30-ON

Accessories

ESV-...-S... (round, flat)

	Material	Suction cup diameter	Holding force at nominal operating pressure	Product weight	Part no.	Type
	Fluoro rubber	20 mm	16.3 N	1.6 g	190982	ESV-20-SF
		30 mm	40.8 N	2.7 g	190987	ESV-30-SF
		40 mm	69.6 N	7.4 g	190992	ESV-40-SF
		50 mm	105 N	11.2 g	190997	ESV-50-SF
		60 mm	166.1 N	22 g	191002	ESV-60-SF
		80 mm	309.7 N	33 g	191006	ESV-80-SF
		100 mm	503.6 N	59 g	191010	ESV-100-SF
		150 mm	900 N	361 g	191014	ESV-150-SF
		200 mm	1,610 N	840 g	191018	ESV-200-SF
	Nitrile rubber	20 mm	16.3 N	1.6 g	190979	ESV-20-SN
					190983	ESV-20-SNA
		30 mm	40.8 N	2.7 g	190984	ESV-30-SN
					190988	ESV-30-SNA
		40 mm	69.6 N	7.4 g	190989	ESV-40-SN
					190993	ESV-40-SNA
		50 mm	105 N	11.2 g	190994	ESV-50-SN
					190998	ESV-50-SNA
		60 mm	166.1 N	22 g	190999	ESV-60-SN
		80 mm	309.7 N	33 g	191003	ESV-80-SN
		100 mm	503.6 N	59 g	191007	ESV-100-SN
		150 mm	900 N	361 g	191011	ESV-150-SN
		200 mm	1,610 N	840 g	191015	ESV-200-SN
	Silicone	20 mm	16.3 N	1.6 g	190981	ESV-20-SS
		30 mm	40.8 N	2.7 g	190986	ESV-30-SS
		40 mm	69.6 N	7.4 g	190991	ESV-40-SS
		50 mm	105 N	11.2 g	190996	ESV-50-SS
		60 mm	166.1 N	22 g	191001	ESV-60-SS
		80 mm	309.7 N	33 g	191005	ESV-80-SS
		100 mm	503.6 N	59 g	191009	ESV-100-SS
		150 mm	900 N	361 g	191013	ESV-150-SS
		200 mm	1,610 N	840 g	191017	ESV-200-SS
	Polyurethane	20 mm	16.3 N	1.6 g	190980	ESV-20-SU
		30 mm	40.8 N	2.7 g	190985	ESV-30-SU
		40 mm	69.6 N	7.4 g	190990	ESV-40-SU
		50 mm	105 N	11.2 g	190995	ESV-50-SU
		60 mm	166.1 N	22 g	191000	ESV-60-SU
		80 mm	309.7 N	33 g	191004	ESV-80-SU
		100 mm	503.6 N	59 g	191008	ESV-100-SU
		150 mm	900 N	361 g	191012	ESV-150-SU
		200 mm	1,610 N	840 g	191016	ESV-200-SU

ESV-...-G... (round, bell-shaped)

	Material	Suction cup diameter	Holding force at nominal operating pressure	Lateral force at nominal operating pressure	Product weight	Part no.	Type
	Polyurethane high-performance elastomer	30 mm	36 N	13 N	4.2 g	526000	ESV-30-GT
		40 mm	64 N	20 N	5.7 g	526001	ESV-40-GT
		50 mm	97 N	30 N	9.2 g	526002	ESV-50-GT
		60 mm	134 N	37 N	10.7 g	526003	ESV-60-GT
		80 mm	245 N	99 N	30.9 g	526004	ESV-80-GT
		100 mm	100 N	183 N	58.9 g	526005	ESV-100-GT

Accessories

ESV-....E... (round, extra deep)

	Material	Suction cup diameter	Holding force at nominal operating pressure	Product weight	Part no.	Type
	Fluoro rubber	30 mm	37.2 N	2.9 g	191030	ESV-30-EF
		40 mm	67.6 N	8 g	191034	ESV-40-EF
		50 mm	103.6 N	12.6 g	191038	ESV-50-EF
		60 mm	162.5 N	21 g	191042	ESV-60-EF
		80 mm	275 N	41 g	191046	ESV-80-EF
	Nitrile rubber	30 mm	37.2 N	2.9 g	191027	ESV-30-EN
		40 mm	67.6 N	8 g	191031	ESV-40-EN
		50 mm	103.6 N	12.6 g	191035	ESV-50-EN
		60 mm	162.5 N	21 g	191039	ESV-60-EN
		80 mm	275 N	41 g	191043	ESV-80-EN
	Silicone	30 mm	37.2 N	2.9 g	191029	ESV-30-ES
		40 mm	67.6 N	8 g	191033	ESV-40-ES
		50 mm	103.6 N	12.6 g	191037	ESV-50-ES
		60 mm	162.5 N	21 g	191041	ESV-60-ES
		80 mm	275 N	41 g	191045	ESV-80-ES
	Polyurethane	30 mm	37.2 N	2.9 g	191028	ESV-30-EU
		40 mm	67.6 N	8 g	191032	ESV-40-EU
		50 mm	103.6 N	12.6 g	191036	ESV-50-EU
		60 mm	162.5 N	21 g	191040	ESV-60-EU
		80 mm	275 N	41 g	191044	ESV-80-EU

ESV-....B... (round, protective bellows 1.5 convolutions)

	Material	Suction cup diameter	Holding force at nominal operating pressure	Lateral force at nominal operating pressure	Product weight	Part no.	Type
	Nitrile rubber	20 mm	12.9 N		1.9 g	191054	ESV-20-BN
		30 mm	26.2 N		3.6 g	191057	ESV-30-BN
		40 mm	52.3 N		9.8 g	191060	ESV-40-BN
		50 mm	72.6 N		13.9 g	191063	ESV-50-BN
		80 mm	213.6 N		39 g	191066	ESV-80-BN
	Silicone	20 mm	12.9 N		1.9 g	191056	ESV-20-BS
		30 mm	26.2 N		3.6 g	191059	ESV-30-BS
		40 mm	52.3 N		9.8 g	191062	ESV-40-BS
		50 mm	72.6 N		13.9 g	191065	ESV-50-BS
		80 mm	213.6 N		39 g	191068	ESV-80-BS
	Polyurethane high-performance elastomer	40 mm	59 N	22 N	10.5 g	526006	ESV-40-BT
		50 mm	100 N	39 N	16.2 g	526007	ESV-50-BT
		80 mm	237 N	102 N	57.2 g	526008	ESV-80-BT
	Polyurethane	20 mm	12.9 N		1.9 g	191055	ESV-20-BU
		30 mm	26.2 N		3.6 g	191058	ESV-30-BU
		40 mm	52.3 N		9.8 g	191061	ESV-40-BU
		50 mm	72.6 N		13.9 g	191064	ESV-50-BU
		80 mm	213.6 N		39 g	191067	ESV-80-BU

ESV-....C.... (round, protective bellows 3.5 convolutions)

	Material	Suction cup diameter	Holding force at nominal operating pressure	Product weight	Part no.	Type
	Nitrile rubber	20 mm	8.2 N	2.1 g	191071	ESV-20-CN

Accessories

ESV-...-C... (round, protective bellows 3.5 convolutions)

	Material	Suction cup diameter	Holding force at nominal operating pressure	Product weight	Part no.	Type
	Nitrile rubber	30 mm	20.8 N	5.8 g	191073	ESV-30-CN
		40 mm	42.4 N	13 g	191075	ESV-40-CN
		50 mm	63.4 N	21.3 g	191077	ESV-50-CN
	Silicone	20 mm	8.2 N	2.1 g	191072	ESV-20-CS
		30 mm	20.8 N	5.8 g	191074	ESV-30-CS
		40 mm	42.4 N	13 g	191076	ESV-40-CS
		50 mm	63.4 N	21.3 g	191078	ESV-50-CS

Suction cup insert OASI (for suction cups / Suction cups without connector 3,5-fold)

	Size ¹⁾	Suitable for ejector pulse	Mounting position	Product weight	Part no.	Type
	10 mm	0 bar	optional	0.1 g	1048645	OASI-10
	20 mm	0.5 bar	Inner trunnion	0.6 g	1072015	OASI-20-E
			optional		1048877	OASI-20
	30 mm	2 bar		2.1 g	1048880	OASI-30
	40 mm	5 bar	Inner recess	2.9 g	1048881	OASI-40
	50 mm			5.9 g	1048884	OASI-50

1) Additional property E: Suction-cup insert with stop