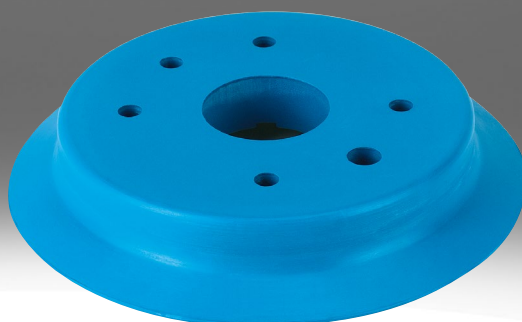


Suction cup without connector ESV

FESTO



Characteristics

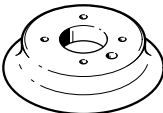
At a glance

- Wearing part for suction cup
- Easily interchangeable
- Suction cup volume: 0.318 ... 245 cm³
- Min. workpiece radius: 10 ... 680 mm

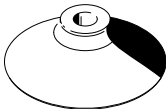
For assignment to ESS vacuum suction cups, see downloadable additional document.

Suction cup shape

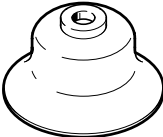
[S] Round, standard



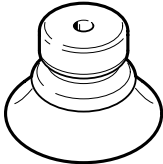
[G] Round, bell shape



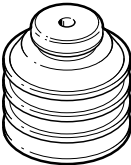
[E] Round, extra-deep



[B] Round, bellows, 1.5 convolutions



[C] Round, bellows, 3.5 convolutions



Type code

001	Series	
ESV	Vacuum suction cup	
002	Suction cup size	
20	20 mm diameter	
30	30 mm diameter	
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	

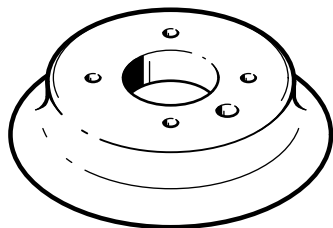
003	Suction cup shape	
B	Round, bellows, 1.5 convolutions	
C	Round, bellows, 3.5 convolutions	
E	Round, extra-deep	
G	Round, bell shape	
S	Round, standard	

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	

Datasheet

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



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

Suction cup diameter	20 mm	30 mm	40 mm	50 mm
Suction cup shape	Round, flat			
Position of connection	Top			
Mounting position	optional			
Holding force at nominal operating pressure	16.3 N	40.8 N	69.6 N	105 N
Suction cup volume	0.318 cm ³	0.867 cm ³	1.566 cm ³	2.387 cm ³
Min. workpiece radius	–	110 mm	230 mm	330 mm
Product weight	1.6 g	2.7 g	7.4 g	11.2 g

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

Suction cup diameter	60 mm	80 mm	100 mm	150 mm	200 mm
Suction cup shape	Round, flat				
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 cm ³	19.312 cm ³	29.779 cm ³	173.826 cm ³	245.454 cm ³
Min. workpiece radius	350 mm	400 mm	460 mm	480 mm	680 mm
Product weight	22 g	33 g	59 g	361 g	840 g

Operating and environmental conditions – ESV-...-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
Special characteristics	–	Antistatic	–	
Suitable for use with food ²⁾	See supplementary material information			

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

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

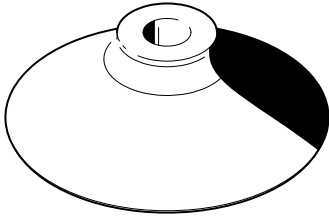
Material suction cup	FPM	NBR	PUR	VMQ (silicone)
Shore hardness ¹⁾	60 +/- 5	50 +/- 5 60 +/- 5	60 +/- 5	50 +/- 5
Colour ²⁾	grey	Black Black/white dot	Blue	Transparent
Note on materials	RoHS-compliant			
LABS (PWIS) conformity	VDMA24364-A1-L		VDMA24364 zone III	

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

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

Datasheet

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



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

Suction cup diameter	30 mm	40 mm	50 mm
Height compensator for suction-cup holder	3.5 mm	5.5 mm	8 mm
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 cm ³	5.4 cm ³	11.2 cm ³
Min. workpiece radius	26 mm	35 mm	40 mm
Product weight	4.2 g	5.7 g	9.2 g

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

Suction cup diameter	60 mm	80 mm	100 mm
Height compensator for suction-cup holder	6	7.5	9
Suction cup shape	Round deep		
Type of mounting	Via vacuum port		
Mounting position	optional		
Holding force at nominal operating pressure	134 N	245 N	100 N
Suction cup volume	11.3 cm ³	28.6 cm ³	53.9 cm ³
Min. workpiece radius	75 mm	100 mm	135 mm
Product weight	10.7 g	30.9 g	58.9 g

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

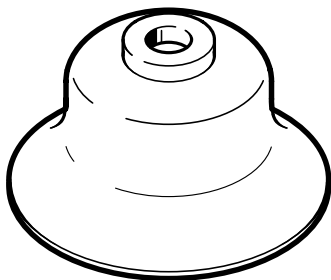
Material suction cup	Vulkollan
Operating pressure	-0.95 ... 0 bar
Nominal operating pressure	-0.7 bar
Operating medium	Atmospheric air based on ISO 8573-1:2010 [7:-:-]
Ambient temperature	-10 ... 80°C

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

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

Datasheet

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



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

Suction cup diameter	30 mm	40 mm	50 mm	60 mm	80 mm
Suction cup shape	Round extra deep				
Mounting position	optional				
Nominal operating pressure	-0.7 bar				
Holding force at nominal operating pressure	37.2 N	67.6 N	103.6 N	162.5 N	275 N
Suction cup volume	1.952 cm ³	3.733 cm ³	8.168 cm ³	14.445 cm ³	44.18 cm ³
Min. workpiece radius	50 mm	80 mm	100 mm	120 mm	160 mm
Product weight	2.9 g	8 g	12.6 g	21 g	41 g

Operating and environmental conditions – ESV-...-C... (round, extra deep)

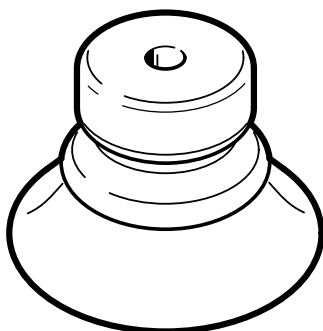
Material suction cup	FPM	NBR	PUR	VMQ (silicone)
Operating pressure	-95 ... 0 kPa			
Operating pressure	-0.95 ... 0 bar			
Operating pressure	-13.775 ... 0 psi			
Nominal operating pressure	-70 kPa			
Nominal operating pressure	-0.7 bar			
Nominal operating pressure	-10.15 psi			
Operating medium	Atmospheric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

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

Materials – ESV-...-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	–			
Note on materials	RoHS-compliant			
LABS (PWIS) conformity	VDMA24364-A1-L		VDMA24364 zone III	

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



Datasheet

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

Suction cup diameter	20 mm	30 mm	40 mm	50 mm	80 mm
Height compensator for suction cup	6 mm	8 mm	9.5 mm	11 mm	10 mm
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	12.9 N	26.2 N	52.3 ... 59 N	72.6 ... 100 N	213.6 ... 237 N
Suction cup volume	1.6 cm ³	4.07 cm ³	9.8 ... 11.699 cm ³	14.23 ... 17.6 cm ³	59.1 ... 63.9 cm ³
Min. workpiece radius	40 mm	80 mm	35 ... 90 mm	40 ... 150 mm	100 ... 430 mm
Product weight	1.9 g	3.6 g	9.8 ... 10.5 g	13.9 ... 16.2 g	39 ... 57.2 g

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

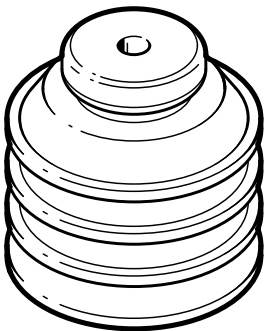
Material suction cup	NBR	PUR	VMQ (silicone)	Vulkollan
Operating pressure	-95 ... 0 kPa			–
Operating pressure	-0.95 ... 0 bar			–
Operating pressure	-13.775 ... 0 psi			–
Nominal operating pressure	-70 kPa			–
Nominal operating pressure	-0.7 bar			–
Nominal operating pressure	-10.15 psi			–
Operating medium	Atmospheric air based on ISO 8573-1:2010 [7:::]			
Ambient temperature	-10 ... 70°C	-20 ... 60°C	-30 ... 180°C	-10 ... 80°C
Suitable for use with food ²⁾	See supplementary material information			–

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

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

Material suction cup	NBR	PUR	VMQ (silicone)	Vulkollan
Shore hardness	50 +/- 5	60 +/- 5	50 +/- 5	72 +/- 5
Colour	Black	Blue	Transparent	Red-brown
Note on materials	RoHS-compliant			
LABS (PWIS) conformity	VDMA24364-A1-L	VDMA24364 zone III	VDMA24364-A1-L	

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



Datasheet

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

Suction cup diameter	20 mm	30 mm	40 mm	50 mm
Height compensator for suction cup	7 mm	10.5 mm	12.8 mm	17.5 mm
Suction cup shape	Round bellows 3.5 convolutions			
Position of connection	Top			
Mounting position	optional			
Nominal operating pressure	-0.7 bar			
Holding force at nominal operating pressure	8.2 N	20.8 N	42.4 N	63.4 N
Suction cup volume	2.75 cm ³	9.47 cm ³	19.72 cm ³	38.92 cm ³
Min. workpiece radius	50 mm	80 mm	100 mm	180 mm
Product weight	2.1 g	5.8 g	13 g	21.3 g

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

Operating and environmental conditions - ISO 14139 (round, protective bellows 915 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
Suitable for use with food ²⁾	See supplementary material information	

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

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

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

Ordering data

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	Product weight	Part no.	Type
	Polyurethane high-performance elastomer	30 mm	36 N	4.2 g	526000	ESV-30-GT
		40 mm	64 N	5.7 g	526001	ESV-40-GT
		50 mm	97 N	9.2 g	526002	ESV-50-GT
		60 mm	134 N	10.7 g	526003	ESV-60-GT
		80 mm	245 N	30.9 g	526004	ESV-80-GT
		100 mm	100 N	58.9 g	526005	ESV-100-GT

Ordering data

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	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	10.5 g	526006	ESV-40-BT
		50 mm	100 N	16.2 g	526007	ESV-50-BT
		80 mm	237 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

Ordering data

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