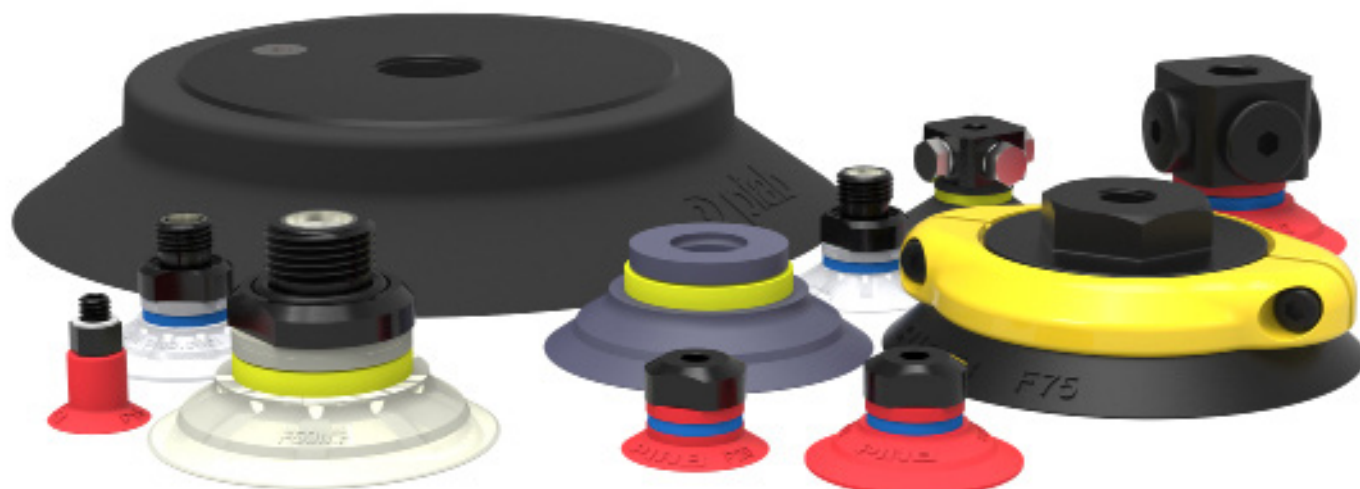


Flat family (F)



There is a variety of cups in this family to suit a number of different flat surfaces, e.g. cardboard, glass and metal sheets. The cleats stop deformation by preventing suction of the object into the cup. The suction cup has good stability and very little movement. Also suitable when the lifting force is parallel to the surface as the cleats increase friction. There is also a variety in materials from mark-free to high temperature applications and FDA compliant material (FDA 21 CFR 177.2600) that meets EU's regulation EU 1935/2004.

Lifting forces

	Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level		
	20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa
F15	3.5	8.5	11	3.5	6.5	7.5
F20	6	14.5	19	5	8	8.5
F25	9	19.5	25	8	9	10
F30-2	12	25	31	11	16	20
F40-2	20	40	50	15	25	30
F50-2	36	74	96	24	40	50
F75	80	200	270	60	110	140
F110	140	420	560	140	250	300
F150	300	850	1100	250	600	800
F26 FDA	11	25	31	9	21	26
F33 FDA	16	38	49	13.5	32.5	41.5
F75P	70/82*	193/231*	273/330*	44/47*	176/113*	308/169*
F110P	167/191*	432/498*	591/705*	149/297*	441/523*	617/664*
F15MF	4	8	12	4.5	9	14.5
F20MF	3.6	14.5	22	8	14.5	21
F25MF	6.3	24.5	65.5	9	24.5	36.3
F30MF	11	34.5	48	13.6	28	42
F40MF	18	57	83	16	49	57
F50MF	24.5	92	141	31	82	107
XLF150	330/520**	500/770**	780/1130**	281	425	663
XLF200	760/1030**	1130/1510**	1720/2200**	646	961	1462

	Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level		
	20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa
XLF250	1310/1640**	1950/2460**	2870/3540**	1114	1658	2440
XLF300	2150/2620**	3200/3760**	4630/5450**	1828	2720	3936

* PU30°/PU60° / PU60°, **Inner/Outer lip.

General specifications

	Outer diameter, mm	Height, mm	Min. curve radius, mm	Max. vertical movement, mm	Volume, cm ³
F15	15.7	11	13	1	0.37
F20	22	8	18	1.5	1
F25	27	9	22	1.5	1.1
F30-2	32	10.4	25	2	2
F40-2	42	13	52	2.5	4.8
F50-2	53	17.5	55	3	10
F75	77	13	150	3	20
F110	112	20	250	4	70
F150	152	26.4	500	6	160
F26 FDA	26	23.5	25	1.5	1.6
F33 FDA	33	23.5	35	1.5	2.1
F75P	77	13	150	2	19
F110P	115	20	250	4	60
F15MF	16.5	11	17	1	0.37
F20MF	22	8	18	2	1
F25MF	27	9	23	1.5	1.1
F30MF	32	10	44	1.5	2
F40MF	42	13	60	2	4.8
F50MF	53	17.5	95	2	10
XLF150	153	27	500	8	145
XLF200	204	27	800	8	275
XLF250	250	27	1300	8	435
XLF300	304	27	1900	8	666

Available materials

	Chloroprene, CR	HNBR	Nitrile-PVC, NPV	PU30°/PU60°	PU60°	Silicone, SIL	Silicone FDA EU, SIL FDA	Thermoplastic Polyurethane, TPE-U
F15	●					●	●	
F20	●					●	●	
F25	●					●	●	
F75		●	●			●	●	
F110		●	●			●	●	
F150			●			●	●	
F26 FDA							●	

	Chloroprene, CR	HNBR	Nitrile-PVC, NPV	PU30°/PU60°	PU60°	Silicone, SIL	Silicone FDA EU, SIL FDA	Thermoplastic Polyurethane, TPE-U
F33 FDA							●	
F30-2	●					●	●	
F40-2			●			●	●	
F50-2		●	●			●	●	
F75P				●	●			
F110P				●	●			
F15MF								●
F20MF								●
F25MF								●
F30MF								●
F40MF								●
F50MF								●
XLF150			●					
XLF200			●					
XLF250			●					
XLF300			●					

Material resistance

For more material information go to page 23.

Applications

Table shows typical applications for the suction cup. For more detailed information, please visit piab.com.

	Dry sheet metal	Bag opening/ thin paper – slip sheets/ film	FDA EU- standard compliant	Glass handling	High/low temp cup (plastic)	Mark free	Plastic injec- tion molded parts
F15	●		●				
F20	●		●				
F25	●		●				
F75	●		●	●	●	●	●
F110	●		●	●	●	●	●
F150	●		●				
F26 FDA		●	●				
F33 FDA		●	●				
F30-2	●		●				
F40-2	●		●				
F50-2	●		●	●	●	●	●
F75P	●					●	
F110P	●					●	
F15MF						●	

	Dry sheet metal	Bag opening/ thin paper – slip sheets/ film	FDA EU- standard compliant	Glass handling	High/low temp cup (plastic)	Mark free	Plastic injection molded parts
F20MF						●	
F25MF						●	
F30MF						●	
F40MF						●	
F50MF						●	
XLF150	●			●		●	
XLF200	●			●		●	
XLF250	●			●		●	
XLF300	●			●		●	

Fittings

For a table of possible fittings to use go to page 80, for technical information on all fittings visit piab.com.

Ordering information

For a complete list of available cups and combinations with further information visit piab.com. On our webpage you will also be able to find dimensional drawings, CAD-drawings and much more. Register to receive full access to all resources available.

F15



Flat suction cup with cleats

- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm	Min. curve radius mm	Max. vertical movement mm	Weight rubber part g
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
3.5	8.5	11.0	3.5	6.5	7.5	0.37	13	1.0	0.9

Material specifications

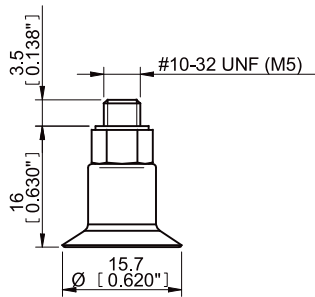
Material	Colour	Hardness °Shore A	Temperature range °C
Chloroprene, CR	Black	50	-40–110
Silicone, SIL	Red	50	-40–200

Material resistance

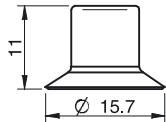
Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Chloroprene, CR	Excellent	Fair	Good	Good	Fair	Poor	Good	Good
Silicone, SIL	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent

Ordering information

Complete suction cups	Art. No.
Suction cup F15 Chloroprene, M5 male	3150014
Suction cup F15 Silicone, M5 male	3150014S



Rubber parts	Art. No.
Suction cup F15 Chloroprene	3150125
Suction cup F15 Silicone	3150125S



Fittings	Art. No.
Fitting M5 male, 10-15	3107030

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F20



Flat suction cup with cleats

- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight rubber part g
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
6.0	14.5	19.0	5.0	8.0	8.5	1.0	18	1.5	1.2

Material specifications

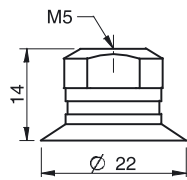
Material	Colour	Hardness °Shore A	Temperature range °C
Chloroprene, CR	Black	50	-40-110
Silicone, SIL	Red	50	-40-200

Material resistance

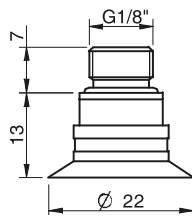
Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Chloroprene, CR	Excellent	Fair	Good	Good	Fair	Poor	Good	Good
Silicone, SIL	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent

Ordering information

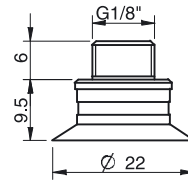
	Complete suction cups	Art. No.
A	Suction cup F20 Chloroprene, M5 female	0101259
A	Suction cup F20 Chloroprene, M5 female, with dual flow control valve	0101265
B	Suction cup F20 Chloroprene, G1/8" male, with mesh filter	0101260
B	Suction cup F20 Chloroprene, G1/8" male, with mesh filter and dual flow control valve	0101266
C	Suction cup F20 Chloroprene, G1/8" male/M5 female, with mesh filter	0101264
C	Suction cup F20 Chloroprene, G1/8" male/M5 female, with dual flow control valve	0101268
D	Suction cup F20 Chloroprene, 5xM5 female	0101263
A	Suction cup F20 Silicone, M5 female	0101270
B	Suction cup F20 Silicone, G1/8" male, with mesh filter	0101271
B	Suction cup F20 Silicone, G1/8" male, with mesh filter and dual flow control valve	0101277
C	Suction cup F20 Silicone, G1/8" male/M5 female, with mesh filter	0101275
D	Suction cup F20 Silicone, 5xM5 female	0101274
E	Suction cup F20 Chloroprene, G1/8" male/M5 female, PA	0110950
E	Suction cup F20 Silicone, G1/8" male/M5 female, PA	0110334



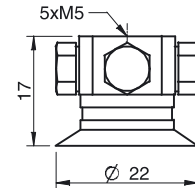
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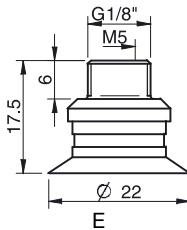
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C

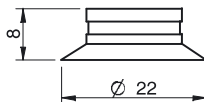


D



E

	Rubber parts	Art. No.
	Suction cup F20 Chloroprene	0101129
	Suction cup F20 Silicone	0101130



	Fittings	Art. No.
	Fitting M5 female	3250003
	Fitting M5 female, with dual flow control valve	3251001
	Fitting G1/8" male, with mesh filter	3250085
	Fitting G1/8" male, with mesh filter and dual flow control valve	3251002
	Fitting G1/8" male/M5 female, with mesh filter	0101152
	Fitting G1/8" male/M5 female, with dual flow control valve	3251004
	Fitting 5xM5 female	0100260
	Fitting 5xM5 female, with dual flow control valve	3251005
	Fitting G1/8" male/M5 female, PA	3150196

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F25



Flat suction cup with cleats

- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight rubber part g
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
9.0	19.5	25	8.0	9.0	10.0	1.1	22	1.5	1.8

Material specifications

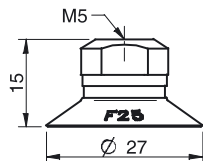
Material	Colour	Hardness °Shore A	Temperature range °C
Chloroprene, CR	Black	50	-40-110
Silicone, SIL	Red	50	-40-200

Material resistance

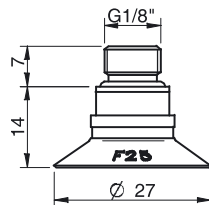
Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Chloroprene, CR	Excellent	Fair	Good	Good	Fair	Poor	Good	Good
Silicone, SIL	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent

Ordering information

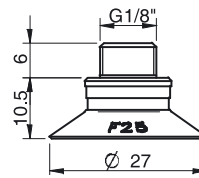
	Complete suction cups	Art. No.
A	Suction cup F25 Chloroprene, M5 female	0101292
B	Suction cup F25 Chloroprene, G1/8" male, with mesh filter	0101293
B	Suction cup F25 Chloroprene, G1/8" male, with mesh filter and dual flow control valve	0101299
C	Suction cup F25 Chloroprene, G1/8" male/M5 female, with mesh filter	0101297
C	Suction cup F25 Chloroprene, G1/8" male/M5 female, with dual flow control valve	0101301
D	Suction cup F25 Chloroprene, 5xM5 female	0101296
A	Suction cup F25 Silicone, M5 female	0101303
B	Suction cup F25 Silicone, G1/8" male, with mesh filter	0101304
C	Suction cup F25 Silicone, G1/8" male/M5 female, with mesh filter	0101308
C	Suction cup F25 Silicone, G1/8" male/M5 female, with dual flow control valve	0101312
D	Suction cup F25 Silicone, 5xM5 female	0101307
E	Suction cup F25 Chloroprene, G1/8" male/M5 female, PA	0109842
E	Suction cup F25 Silicone, G1/8" male/M5 female, PA	0110335



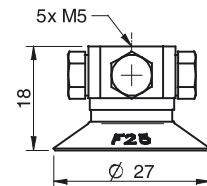
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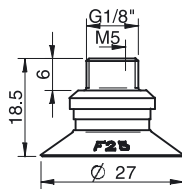
B



C

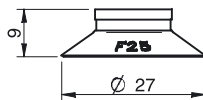


D



E

	Rubber parts	Art. No.
	Suction cup F25 Chloroprene	0101131
	Suction cup F25 Silicone	0101132



	Fittings	Art. No.
	Fitting M5 female	3250003
	Fitting M5 female, with dual flow control valve	3251001
	Fitting G1/8" male, with mesh filter	3250085
	Fitting G1/8" male, with mesh filter and dual flow control valve	3251002
	Fitting G1/8" male/M5 female, with mesh filter	0101152
	Fitting G1/8" male/M5 female, with dual flow control valve	3251004
	Fitting 5xM5 female	0100260
	Fitting 5xM5 female, with dual flow control valve	3251005
	Fitting G1/8" male/M5 female, PA	3150196

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F30-2



Flat suction cup with cleats

- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight rubber part g
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
12.0	25	31	11.0	16.0	20.0	2.0	25	2.0	2.2

Material specifications

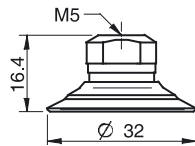
Material	Colour	Hardness °Shore A	Temperature range °C
Chloroprene, CR	Black	50	-40–110
Silicone, SIL	Red	50	-40–200

Material resistance

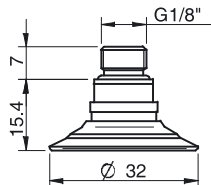
Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Chloroprene, CR	Excellent	Fair	Good	Good	Fair	Poor	Good	Good
Silicone, SIL	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent

Ordering information

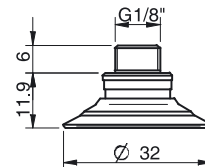
	Complete suction cups	Art. No.
A	Suction cup F30-2 Chloroprene, M5 female	0101325
A	Suction cup F30-2 Chloroprene, M5 female, with dual flow control valve	0101331
B	Suction cup F30-2 Chloroprene, G1/8" male, with mesh filter	0101326
B	Suction cup F30-2 Chloroprene, G1/8" male, with mesh filter and dual flow control valve	0101332
C	Suction cup F30-2 Chloroprene, G1/8" male/M5 female, with mesh filter	0101330
C	Suction cup F30-2 Chloroprene, G1/8" male/M5 female, with dual flow control valve	0101334
E	Suction cup F30-2 Chloroprene, G1/8" male/M5 female PA	0109846
F	Suction cup F30-2 Chloroprene, G1/8" male/M5 female, with cone valve	3250039
D	Suction cup F30-2 Chloroprene, 5xM5 female	0101329
A	Suction cup F30-2 Silicone, M5 female	0101341
B	Suction cup F30-2 Silicone, G1/8" male, with mesh filter	0101342
B	Suction cup F30-2 Silicone, G1/8" male, with mesh filter and dual flow control valve	0101348
C	Suction cup F30-2 Silicone, G1/8" male/M5 female, with mesh filter	0101346
C	Suction cup F30-2 Silicone, G1/8" male/M5 female, with dual flow control valve	0101350
D	Suction cup F30-2 Silicone, 5xM5 female	0101345
E	Suction cup F30-2 Silicone, G1/8" male/M5 female PA	0110344
F	Suction cup F30-2 Silicone, G1/8" male/M5 female, with cone valve	3250039S



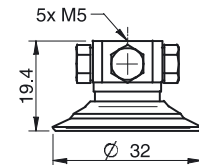
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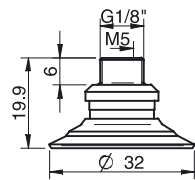
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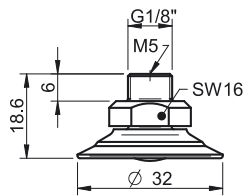
C



D

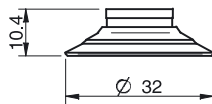


E



F

Rubber parts	Art. No.
Suction cup F30-2 Chloroprene	0101133
Suction cup F30-2 Chloroprene, for fitting with cone valve	3150239
Suction cup F30-2 Silicone	0101134



Fittings	Art. No.
Fitting M5 female	3250003
Fitting M5 female, with dual flow control valve	3251001
Fitting G1/8" male, with mesh filter	3250085
Fitting G1/8" male, with mesh filter and dual flow control valve	3251002
Fitting G1/8" male/M5 female, with mesh filter	0101152
Fitting G1/8" male/M5 female, with dual flow control valve	3251004
Fitting G1/8" male/M5 female, with cone valve	0101155
Fitting 5xM5 female	0100260
Fitting 5xM5 female, with dual flow control valve	3251005
Fitting G1/8" male/M5 female, PA	3150196

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

Spare Part	Material	Temperature range °C	Art. No.
Cone valve for F30-2	Al/SS/NBR	-40-110	3150055

F40-2



Flat suction cup with cleats

- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight rubber part g
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
20.0	40	50	15.0	25	30	4.8	52	2.5	5.5

Material specifications

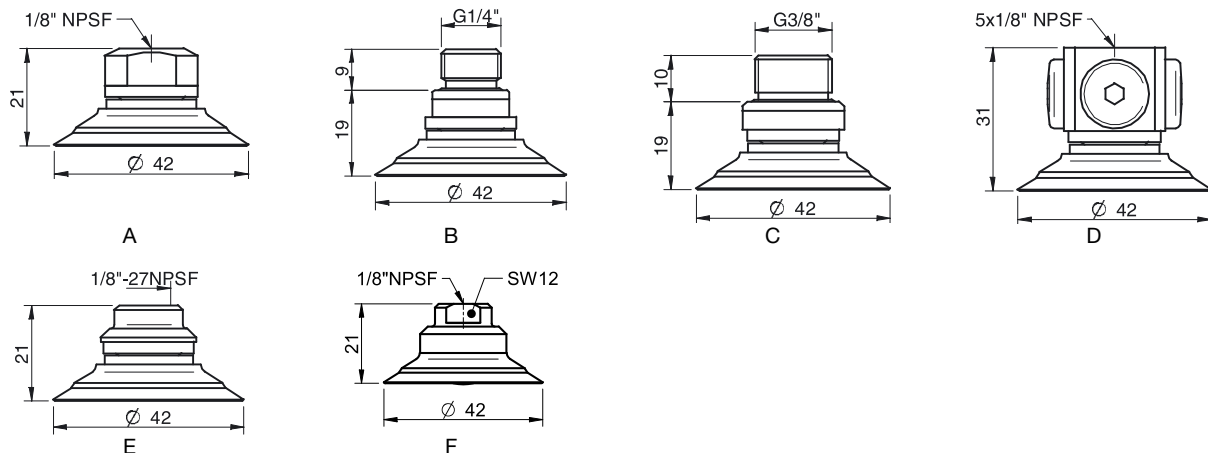
Material	Colour	Hardness °Shore A	Temperature range °C
Nitrile-PVC, NPV	Black	50	0-90
Silicone, SIL	Red	50	-40-200

Material resistance

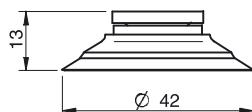
Material	Wear resistance	Oil	Weather & Ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Nitrile-PVC, NPV	Excellent	Excellent	Good	Good	Excellent	Fair	Good	Good
Silicone, SIL	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent

Ordering information

	Complete suction cups	Art. No.
A	Suction cup F40-2 Nitrile-PVC, 1/8" NPSF female, with mesh filter	0101572
A	Suction cup F40-2 Nitrile-PVC, 1/8" NPSF female, with dual flow control valve	0101573
B	Suction cup F40-2 Nitrile-PVC, G1/4" male, with mesh filter	0101567
B	Suction cup F40-2 Nitrile-PVC, G1/4" male, with mesh filter and dual flow control valve	0101574
C	Suction cup F40-2 Nitrile-PVC, G3/8" male, with mesh filter	0101569
C	Suction cup F40-2 Nitrile-PVC, G3/8" male, with mesh filter and dual flow control valve	0101576
D	Suction cup F40-2 Nitrile-PVC, 5x1/8" NPSF female	0101571
E	Suction cup F40-2 Nitrile-PVC, 1/8" NPSF female PA	0109847
F	Suction cup F40-2 Nitrile-PVC, 1/8" NPSF female, with cone valve	3150050P
A	Suction cup F40-2 Silicone, 1/8" NPSF female, with mesh filter	0101553
A	Suction cup F40-2 Silicone, 1/8" NPSF female, with dual flow control valve	0101554
B	Suction cup F40-2 Silicone, G1/4" male, with mesh filter	0101548
C	Suction cup F40-2 Silicone, G3/8" male, with mesh filter	0101550
D	Suction cup F40-2 Silicone, 5x1/8" NPSF female	0101552
E	Suction cup F40-2 Silicone, 1/8" NPSF female PA	0110345
F	Suction cup F40-2 Silicone, 1/8" NPSF female, with cone valve	3150050S



Rubber parts	Art. No.
Suction cup F40-2 Nitrile-PVC	0101135
Suction cup F40-2 Nitrile-PVC, for fitting with cone valve	3150240P
Suction cup F40-2 Silicone	0101136
Suction cup F40-2 Silicone, for fitting with cone valve	3150240S



Fittings	Art. No
Fitting 1/8" NPSF female, 30-40, with mesh filter	0101153
Fitting 1/8" NPSF female, 30-40, with dual flow control valve	3251006
Fitting 1/8" NPSF female, 30-40, with cone valve	0101156
Fitting G1/4" male, 30-40, with mesh filter	3250091
Fitting G1/4" male, 30-40, with mesh filter and dual flow control valve	3251007
Fitting G3/8" male, 30-40, with mesh filter	3250086
Fitting G3/8" male, 30-40, with mesh and dual flow control valve	3251009
Fitting 5x1/8" NPSF female, 30-40	0100261
Fitting 5x1/8" NPSF female, 30-40, with dual flow control valve	3251011
Fitting 1/8" NPSF female, 30-40, PA	3150197

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

Spare Part	Material	Temperature range °C	Art. No.
Cone valve for F40-2	Al/SS/NBR	-40-110	3150056

F50-2



Flat suction cup with cleats

- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight rubber part g
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
36	74	96	24.0	40	50	10	55	3.0	14

Material specifications

Material	Colour	Hardness °Shore A	Temperature range °C
Nitrile-PVC, NPV	Black	50	0–90
Silicone, SIL	Red	50	-40–200
HNBR	Grey-blue	75	-30–140*

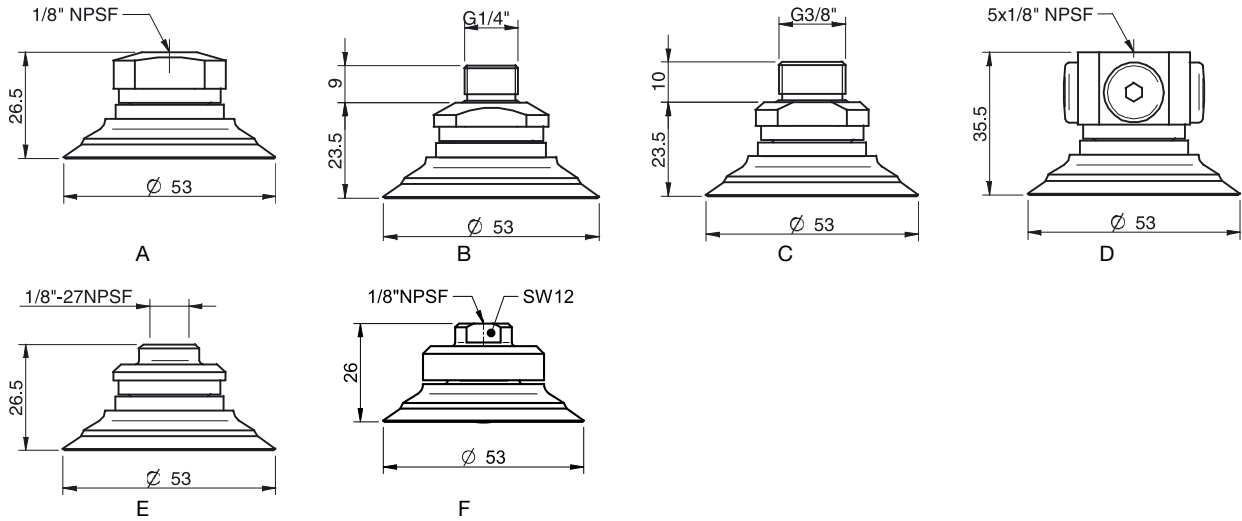
* For a shorter period of time up to +160 °C

Material resistance

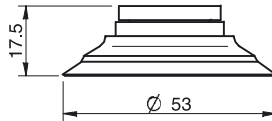
Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Nitrile-PVC, NPV	Excellent	Excellent	Good	Good	Excellent	Fair	Good	Good
Silicone, SIL	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent
HNBR	Excellent	Excellent	Excellent	Good	Excellent	Fair	Good	Excellent

Ordering information

	Complete suction cups	Art. No.
A	Suction cup F50-2 Nitrile-PVC, 1/8" NPSF female, with mesh filter	0101772
A	Suction cup F50-2 Nitrile-PVC, 1/8" NPSF female, with dual flow control valve	0101773
B	Suction cup F50-2 Nitrile-PVC, G1/4" male, with mesh filter	0101767
B	Suction cup F50-2 Nitrile-PVC, G1/4" male, with mesh filter and dual flow control valve	0101774
C	Suction cup F50-2 Nitrile-PVC, G3/8" male, with mesh filter	0101769
C	Suction cup F50-2 Nitrile-PVC, G3/8" male, with mesh filter and dual flow control valve	0101776
D	Suction cup F50-2 Nitrile-PVC, 5x1/8" NPSF female	0101771
D	Suction cup F50-2 Nitrile-PVC, 5x1/8" NPSF female, with dual flow control valve	0101778
E	Suction cup F50-2 Nitrile-PVC, 1/8" NPSF female, PA	0110952
F	Suction cup F50-2 Nitrile-PVC, 1/8" NPSF female, with cone valve	3150051P
A	Suction cup F50-2 Silicone, 1/8" NPSF female, with mesh filter	0101753
A	Suction cup F50-2 Silicone, 1/8" NPSF female, with dual flow control valve	0101754
B	Suction cup F50-2 Silicone, G1/4" male, with mesh filter	0101748
C	Suction cup F50-2 Silicone, G3/8" male, with mesh filter	0101750
D	Suction cup F50-2 Silicone, 5x1/8" NPSF female	0101752
E	Suction cup F50-2 Silicone, 1/8" NPSF female, PA	0110346
F	Suction cup F50-2 Silicone, 1/8" NPSF female, with cone valve	3150051S
A	Suction cup F50-2 HNBR, 1/8" NPSF female	0108181
B	Suction cup F50-2 HNBR, G1/4" male, with mesh filter	0108182
C	Suction cup F50-2 HNBR, G3/8" male, with mesh filter	0108183



Rubber parts	Art. No.
Suction cup F50-2 Nitrile-PVC	0101137
Suction cup F50-2 Nitrile-PVC, for fitting with cone valve	3150241P
Suction cup F50-2 Silicone	0101138
Suction cup F50-2 Silicone, for fitting with cone valve	3150241S
Suction cup F50-2 HNBR	0108166



Fittings	Art. No.
Fitting 1/8" NPSF female, 50	3250017
Fitting 1/8" NPSF female, 50, with mesh filter	0101154
Fitting 1/8" NPSF female, 50, with dual flow control valve	3251012
Fitting 1/8" NPSF female, 50, with cone valve	0101157
Fitting G1/4" male, 50, with mesh filter	3250092
Fitting G1/4" male, with mesh filter and dual flow control valve	3251013
Fitting G3/8" male, 50, with mesh filter	3250087
Fitting G3/8" male, 50, with mesh filter and dual flow control valve	3251015
Fitting 5x1/8" NPSF female, 50	0100262
Fitting 5x1/8" NPSF female, 50, with dual flow control valve	3251017
Fitting 1/8" NPSF female, 50, PA	3150198

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

Spare Part	Material	Temperature range °C	Art. No.
Cone valve for F50-2	Al/SS/NBR	-40-110	3150057

F75



Flat suction cup with cleats

- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight rubber part g
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
80	200	270	60	110	140	20	150	3.0	23

Material specifications

Material	Colour	Hardness °Shore A	Temperature range °C
Nitrile-PVC, NPV	Black	50	0-90
Silicone, SIL	Red	50	-40-200
HNBR	Grey-blue	75	-30-140*

* For a shorter period of time up to +160 °C

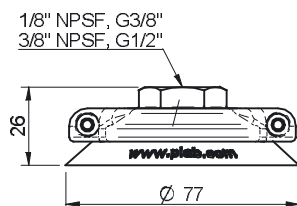
Material resistance

Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Nitrile-PVC, NPV	Excellent	Excellent	Good	Good	Excellent	Fair	Good	Good
Silicone, SIL	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent
HNBR	Excellent	Excellent	Excellent	Good	Excellent	Fair	Good	Excellent

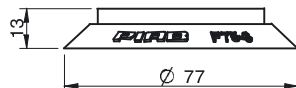
Ordering information

Complete suction cups	Art. No.
Suction cup F75 Nitrile-PVC, 1/8" NPSF female, with mesh filter	0101873
Suction cup F75 Nitrile-PVC, G3/8" female, with mesh filter	0101874
Suction cup F75 Nitrile-PVC, G3/8" female, with cone valve	0101877
Suction cup F75 Nitrile-PVC, 3/8" NPSF female, with mesh filter	0101875
Suction cup F75 Nitrile-PVC, G1/2" female, with mesh filter	0101876
Suction cup F75 Nitrile-PVC, G1/2" female, with cone valve	0101879
Suction cup F75 Silicone, 1/8" NPSF female, with mesh filter	0101866
Suction cup F75 Silicone, G3/8" female, with mesh filter	0101867
Suction cup F75 Silicone, G3/8" female, with cone valve	0101870
Suction cup F75 Silicone, 3/8" NPSF female, with mesh filter	0101868
Suction cup F75 Silicone, G1/2" female, with mesh filter	0101869
Suction cup F75 Silicone, G1/2" female, with cone valve	0101872
Suction cup F75 HNBR, 1/8" NPSF female, with mesh filter	0108184
Suction cup F75 HNBR, G3/8" female, with mesh filter	0108185
Suction cup F75 HNBR, 3/8" NPSF female, with mesh filter	0108186
Suction cup F75 HNBR, G1/2" female, with mesh filter	0108187

When using F75 G1/2" female with cone valve (0101879 and 0101872) with Level compensator G1/2" (3350071 and 0114291) or Ball joint G1/2" (3350066), a Connector G1/2" (3107757) must be used.



Rubber parts	Art. No.
Suction cup F75 Nitrile-PVC	3150131P
Suction cup F75 Silicone	3150131S
Suction cup F75 HNBR	3150131T



Fittings	Art. No.
Fitting 75, 1/8" NPSF female, with mesh filter	0100548
Fitting 75, G3/8" female, with mesh filter	0100551
Fitting 75, G3/8" female, with cone valve	0100552
Fitting 75, 3/8" NPSF female, with mesh filter	0100553
Fitting 75, G1/2" female, with mesh filter	0100555
Fitting 75, G1/2" female, with cone valve	0100556

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F110



Flat suction cup with cleats

- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight rubber part g
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
140	420	560	140	250	300	70	250	4.0	66

Material specifications

Material	Colour	Hardness °Shore A	Temperature range °C
Nitrile-PVC, NPV	Black	50	0–90
Silicone, SIL	Red	50	-40–200
HNBR	Grey-blue	75	-30–140*

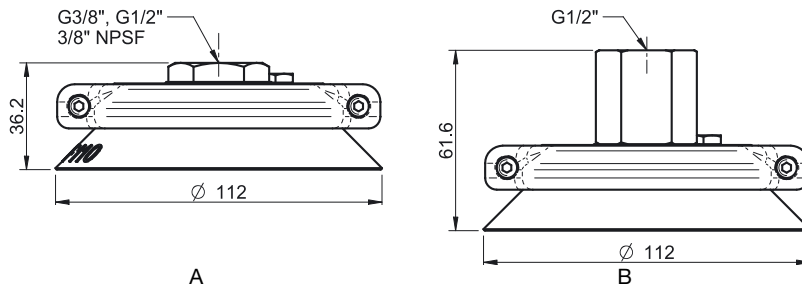
* For a shorter period of time up to +160 °C

Material resistance

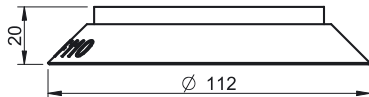
Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Nitrile-PVC, NPV	Excellent	Excellent	Good	Good	Excellent	Fair	Good	Good
Silicone, SIL	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent
HNBR	Excellent	Excellent	Excellent	Good	Excellent	Fair	Good	Excellent

Ordering information

	Complete suction cups	Art. No.
A	Suction cup F110 Nitrile-PVC, G3/8" female, with mesh filter	0101915
A	Suction cup F110 Nitrile-PVC, 3/8" NPSF female, with mesh filter	0101916
A	Suction cup F110 Nitrile-PVC, G1/2" female, with mesh filter	0101917
B	Suction cup F110 Nitrile-PVC, G1/2" female, with cone valve	0101921
A	Suction cup F110 Silicone, G3/8" female, with mesh filter	0101908
A	Suction cup F110 Silicone, 3/8" NPSF female, with mesh filter	0101909
A	Suction cup F110 Silicone, G1/2" female, with mesh filter	0101910
B	Suction cup F110 Silicone, G1/2" female, with cone valve	0101914
A	Suction cup F110 HNBR, G3/8" female, with mesh filter	0108188
A	Suction cup F110 HNBR, 3/8" NPSF female, with mesh filter	0108189
A	Suction cup F110 HNBR, G1/2" female, with mesh filter	0108190



	Rubber part	Art. No.
	Suction cup F110 Nitrile-PVC	3150132P
	Suction cup F110 Silicone	3150132S
	Suction cup F110 HNBR	3150132T



	Fittings	Art. No.
	Fitting 110 G3/8" female, with mesh filter	0100557
	Fitting 110, G1/2" female, with mesh filter	0100561
	Fitting 110, 3/8" NPSF female, with mesh filter	0100559
	Fitting 110, G1/2" female, with cone valve	0100563

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

Spare part	Material	Temperature range °C	Art. No.
Cone valve for Fitting 110 & 150	Al/SS/NBR	-40-110	3350034

F150



Flat suction cup with cleats

- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight rubber part g
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
300	850	1100	250	600	800	160	500	6.0	200

Material specifications

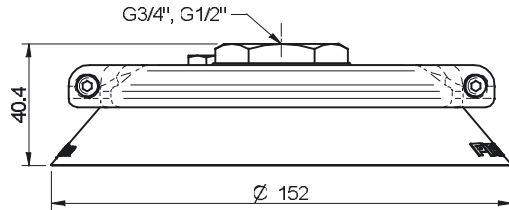
Material	Colour	Hardness °Shore A	Temperature range °C
Nitrile-PVC, NPV	Black	50	0-90
Silicone, SIL	Red	50	-40-200

Material resistance

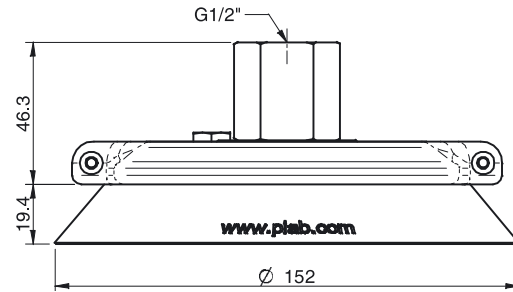
Material	Wear resistance	Oil	Weather & Ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Nitrile-PVC, NPV	Excellent	Excellent	Good	Good	Excellent	Fair	Good	Good
Silicone, SIL	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent

Ordering information

	Complete suction cups	Art. No.
A	Suction cup F150 Nitrile-PVC, G3/4" female, with mesh filter	0101939
A	Suction cup F150 Nitrile-PVC, G1/2" female, with mesh filter	0101938
B	Suction cup F150 Nitrile-PVC, G1/2" female, with cone valve	0101941
A	Suction cup F150 Silicone, G3/4" female, with mesh filter	0101935
A	Suction cup F150 Silicone, G1/2" female, with mesh filter	0101934
B	Suction cup F150 Silicone, G1/2" female, with cone valve	0101937

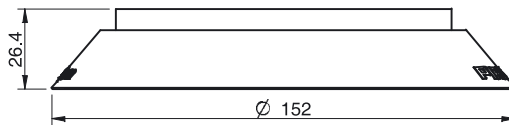


A



B

	Rubber parts	Art. No.
	Suction cup F150 Nitrile-PVC	3150133P
	Suction cup F150 Silicone	3150133S



	Fittings	Art. No.
	Fitting 150, G1/2" female, with mesh filter	0100564
	Fitting 150, G3/4" female, with mesh filter	0100567
	Fitting 150, G1/2" female, with cone valve	0100566

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

Spare part	Material	Temperature range °C	Art. No.
Cone valve for Fitting 110 & 150	Al/SS/NBR	-40-110	3350034

XLF



- ▶ Suitable for handling large and heavy sheets, such as glass and metal, with a flat or slightly concave surface.
- ▶ Friction pattern increases safety and capability to handle tilted or standing glass/metal sheets.
- ▶ Double lip design increases safety against overload or tear on the outer lip.
- ▶ Durable and abrasive resistant material reduces the risk for marks.
- ▶ Flat mounting plate facilitates customized mounting interfaces.
- ▶ Auxiliary port, suitable for vacuum sensing or efficient blow-off/release.

Lifting forces & technical data

Model	Lifting force* vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight g
	40 -kPa	60 -kPa	90 -kPa	40 -kPa	60 -kPa	90 -kPa				
XLF150	330/520	500/770	780/1130	281	425	663	145	500	8	362
XLF200	760/1030	1130/1510	1720/2200	646	961	1462	275	800	8	792
XLF250	1310/1640	1950/2460	2870/3540	1114	1658	2440	435	1300	8	1280
XLF300	2150/2620	3200/3760	4630/5450	1828	2720	3936	666	1900	8	2035

*Inner/Outer lip

Material specifications

Material	Colour	Hardness °Shore A	Temperature range °C
Nitrile-PVC, NPV	Black	60	0-90

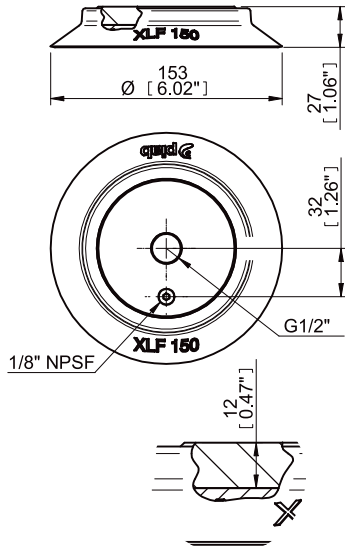
Material resistance

Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Nitrile-PVC, NPV	Excellent	Excellent	Good	Good	Excellent	Fair	Good	Good

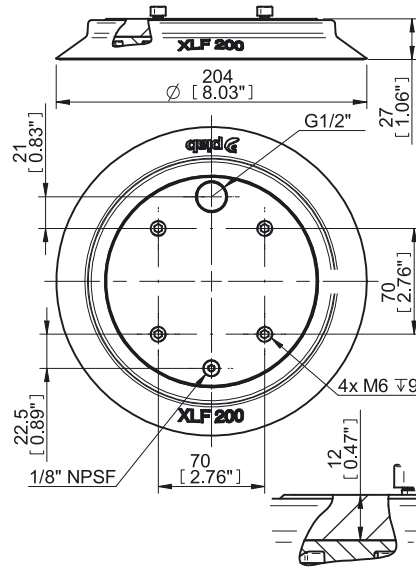
Ordering information

	Complete suction cups	Art. No.
A	XLF150 Extra Large Flat cup, G1/2" female	0127131
B	XLF200 Extra Large Flat cup, G1/2" female	0127132
C	XLF250 Extra Large Flat cup, G1/2" female	0127133
D	XLF300 Extra Large Flat cup, G1/2" female	0127134

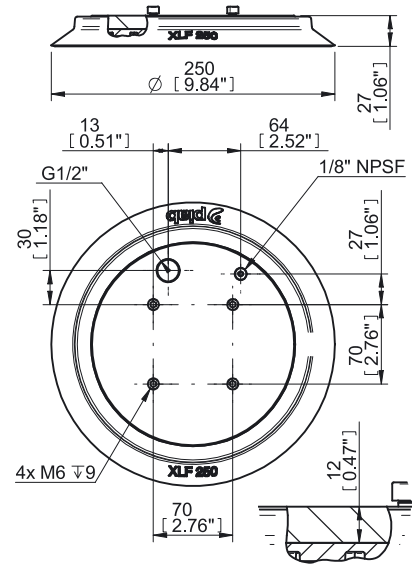
Suction cups/grippers Standard



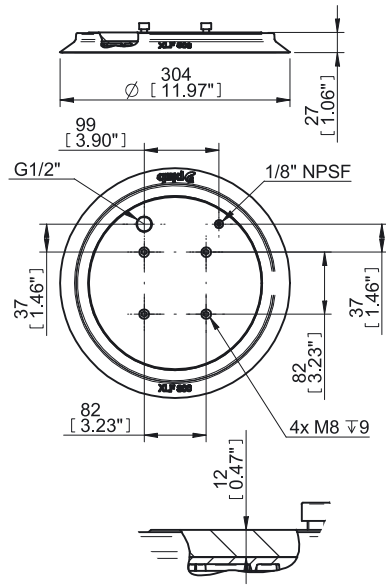
A



B



C



D

F75P



Flat suction cup with cleats

- ▶ Suitable for flat and rough surfaces.
- ▶ Fair stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ In the two-coloured suction cup the bellows and the sealing lip are of different hardnesses, which makes the suction cup strong and stable and, at the same time, soft and flexible.
- ▶ DURAFLEX® suction cups manufactured in a specially developed material that features the elasticity of rubber and wear resistance of polyurethane. The material does not leave any marks on the objects handled.

Lifting forces & Technical data

Material	Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight rubber parts g
	20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
PU30°/60°	70	193	273	44	176	308	19	150	2	28
PU60°	82	231	330	47	113	169	19	150	2	53

Material specifications

Material	Colour	Hardness °Shore A	Temperature range °C
Polyurethane, PU30	Yellow	30	10-50
Polyurethane, PU60	Green transparent	60	10-50

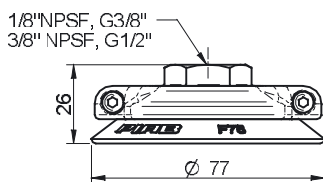
Material resistance

Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Ethanol	Methanol	Oxidation
Excellent	Excellent	Excellent	Fair**	Fair	Fair**	Fair	Poor	Poor

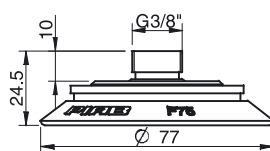
**Please contact Piab.

Ordering information

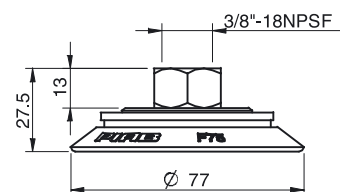
	Complete suction cups	Art. No.
A	Suction cup F75P Polyurethane 30/60, 1/8" NPSF female, with mesh filter	0106349
A	Suction cup F75P Polyurethane 30/60, G3/8" female, with mesh filter	0106350
A	Suction cup F75P Polyurethane 30/60, G3/8" female, with cone valve	0129928
A	Suction cup F75P Polyurethane 30/60, 3/8" NPSF female, with mesh filter	0106351
A	Suction cup F75P Polyurethane 30/60, G1/2" female, with mesh filter	0106352
A	Suction cup F75P Polyurethane 60, 1/8" NPSF female, with mesh filter	0111585
A	Suction cup F75P Polyurethane 60, G3/8" female, with mesh filter	0111586
A	Suction cup F75P Polyurethane 60, G3/8" female, with cone valve	0129929
A	Suction cup F75P Polyurethane 60, 3/8" NPSF female, with mesh filter	0111587
A	Suction cup F75P Polyurethane 60, G1/2" female, with mesh filter	0111588
B	Suction cup F75P Polyurethane 30/60, thread insert G3/8" male, with mesh filter	0106830
B	Suction cup F75P Polyurethane 60, thread insert G3/8" male, with mesh filter	0107321
C	Suction cup F75P Polyurethane 30/60, 3/8" NPSF female	0108800
C	Suction cup F75P Polyurethane 60, 3/8" NPSF female	0108801



A

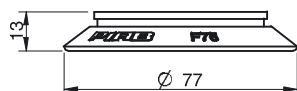


B



C

	Rubber parts	Art. No.
A	Suction cup F75P Polyurethane 30/60	0104724
A	Suction cup F75P Polyurethane 60	0111584
B	Suction cup F75P Polyurethane 30/60, for tread insert	0106829
B	Suction cup F75P Polyurethane 60, for tread insert	0107320



A



B

	Fittings	Art. No.
	Fitting 75, G3/8" female, with mesh filter	0100551
	Fitting 75, G3/8" female, with cone valve	0100552
	Fitting 75, 1/8" NPSF female, with mesh filter	0100548
	Fitting 75, G1/2" female, with mesh filter	0100555
	Fitting 75, 3/8" NPSF female, with mesh filter	0100553
	Thread insert G3/8" male, with O-ring and mesh filter	0107148

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

Spare part	Material	Temperature range °C	Art. No.
Cone Valve for Fitting 75	Al/SS/NBR	-40-110	0100729

F110P



Flat suction cup with cleats

- ▶ Suitable for flat and rough surfaces.
- ▶ Fair stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ In the two-coloured suction cup the bellows and the sealing lip are of different hardnesses, which makes the suction cup strong and stable and, at the same time, soft and flexible.
- ▶ DURAFLEX® suction cups manufactured in a specially developed material that features the elasticity of rubber and wear resistance of polyurethane. The material does not leave any marks on the objects handled.

Lifting forces & Technical data

Material	Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight rubber parts g
	20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
PU30°/60°	167	432	591	149	441	617	60	250	4	82
PU60°	191	498	705	297	523	664	60	250	4	133

Material specifications

Material	Colour	Hardness °Shore A	Temperature range °C
Polyurethane, PU30	Yellow	30	10–50
Polyurethane, PU60	Green transparent	60	10–50

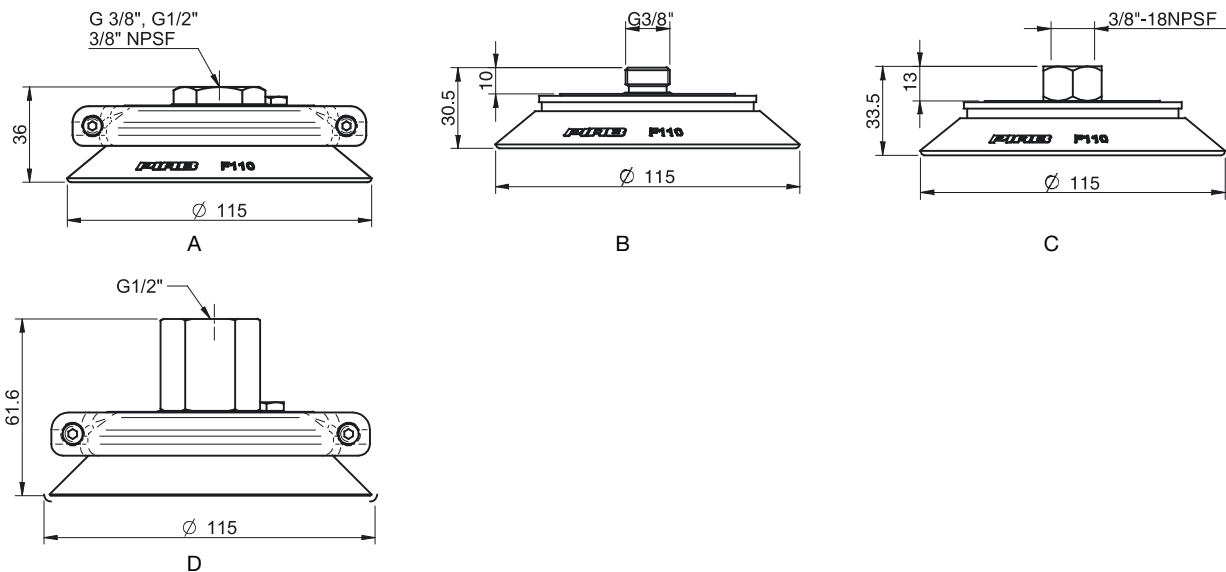
Material resistance

Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Ethanol	Methanol	Oxidation
Excellent	Excellent	Excellent	Fair**	Fair	Fair**	Fair	Poor	Poor

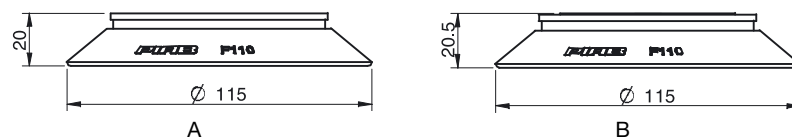
**Please contact Piab.

Ordering information

	Complete suction cups	Art. No.
A	Suction cup F110P Polyurethane 30/60, G3/8" female, with mesh filter	0106353
A	Suction cup F110P Polyurethane 30/60, 3/8" NPSF female, with mesh filter	0106354
A	Suction cup F110P Polyurethane 30/60, G1/2" female, with mesh filter	0106355
D	Suction cup F110P Polyurethane 30/60, G1/2" female, with cone valve	0129927
A	Suction cup F110P Polyurethane 60, G3/8" female, with mesh filter	0111595
A	Suction cup F110P Polyurethane 60, 3/8" NPSF female, with mesh filter	0111596
A	Suction cup F110P Polyurethane 60, G1/2" female, with mesh filter	0111597
D	Suction cup F110P Polyurethane 60, G1/2" female, with cone valve	0129930
B	Suction cup F110P Polyurethane 30/60, thread insert G3/8" with mesh filter	0106798
B	Suction cup F110P Polyurethane 60, thread insert G3/8", with mesh filter	0107323
C	Suction cup F110P Polyurethane 30/60, 3/8" NPSF female	0108802
C	Suction cup F110P Polyurethane 60, 3/8" NPSF female	0108803



	Rubber parts	Art. No.
A	Suction cup F110P Polyurethane 30/60	0104725
A	Suction cup F110P Polyurethane 60	0111593
B	Suction cup F110P Polyurethane 30/60, for thread insert	0106796
B	Suction cup F110P Polyurethane 60, for thread insert	0107322



	Fitting	Art. No.
	Fitting 110 G3/8" female, with mesh filter	0100557
	Fitting 110, 3/8" NPSF female, with mesh filter	0100559
	Fitting 110, G1/2" female, with mesh filter	0100561
	Fitting 110, G1/2" female, with cone valve	0100563
	Thread insert G3/8" male, with O-ring and mesh filter	0107148

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

Spare part	Material	Temperature range °C	Art. No.
Cone valve for Fitting 110 & 150	Al/SS/NBR	-40-110	3350034

F15 FDA



Flat suction cup with cleats

- ▶ The silicone material complies with FDA 21 CFR 177.2600.
- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume	Min. curve radius	Max. vertical movement	Weight rubber part
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa	cm ³	mm	mm	g
3.5	8.5	11.0	3.5	6.5	7.5	0.37	13	1.0	0.9

Material specifications

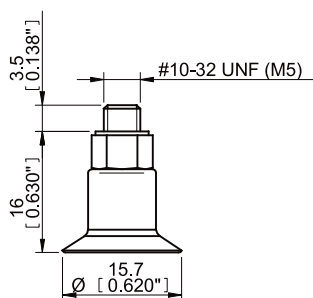
Material	Colour	Hardness °Shore A	Temperature range °C
Silicone, SIL FDA	Transparent	50	-40-200

Material resistance

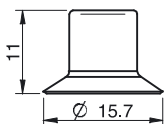
Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Silicone, SIL FDA	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent

Ordering information

Complete suction cups	Art. No.
Suction cup F15 Silicone FDA, M5 male	9909623



Rubber parts	Art. No.
Suction cup F15 Silicone FDA	0200263



Fittings	Art. No.
Fitting M5 male, 10-15	3107030

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F20 FDA



Flat suction cup with cleats

- ▶ The silicone material complies with FDA 21 CFR 177.2600.
- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume	Min. curve radius	Max. vertical movement	Weight rubber part
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa	cm ³	mm	mm	g
6.0	14.5	19.0	5.0	8.0	8.5	1.0	18	1.5	1.2

Material specifications

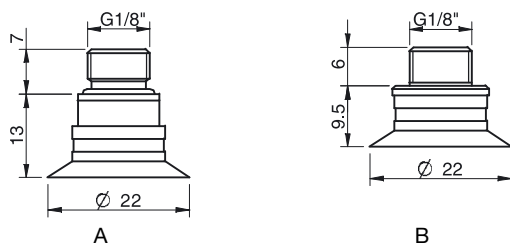
Material	Colour	Hardness °Shore A	Temperature range °C
Silicone, SIL FDA	Transparent	50	-40-200

Material resistance

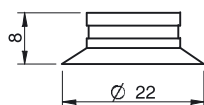
Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Silicone, SIL FDA	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent

Ordering information

	Complete suction cups	Art. No.
A	Suction cup F20 Silicone FDA, G1/8" male, with mesh filter	9909624
B	Suction cup F20 Silicone FDA, G1/8" male/M5 female, with mesh filter	9909710



Rubber parts	Art. No.
Suction cup F20 Silicone FDA	0200417



Fittings	Art. No.
Fitting G1/8" male, with mesh filter	3250085
Fitting G1/8" male/M5 female, with mesh filter	0101152

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F25 FDA



Flat suction cup with cleats

- ▶ The silicone material complies with FDA 21 CFR 177.2600.
- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume	Min. curve radius	Max. vertical movement	Weight rubber part
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa	cm ³	mm	mm	g
9.0	19.5	25	8.0	9.0	10.0	1.1	22	1.5	1.8

Material specifications

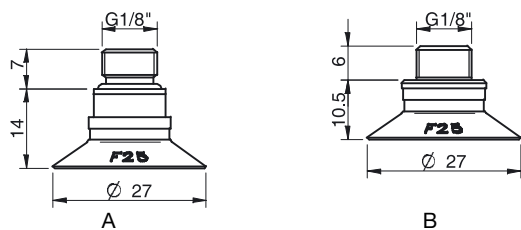
Material	Colour	Hardness °Shore A	Temperature range °C
Silicone, SIL FDA	Transparent	50	-40-200

Material resistance

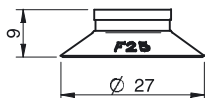
Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Silicone, SIL FDA	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent

Ordering information

	Complete suction cups	Art. No.
A	Suction cup F25 Silicone FDA, G1/8" male, with mesh filter	9909625
B	Suction cup F25 Silicone FDA, G1/8" male/M5 female, with mesh filter	9909711



Rubber parts	Art. No.
Suction cup F25 Silicone FDA	0200439



Fittings	Art. No.
Fitting G1/8" male, with mesh filter	3250085
Fitting G1/8" male/M5 female, with mesh filter	0101152

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F26 FDA



- ▶ Designed for opening bags in bag filling stations.
- ▶ Also suitable to handle thin and sensitive sheets, such as paper and plastic films.
- ▶ The thin, conformable lip and clever cleat pattern prevent sensitive object/sheet to get sucked in and damaged while giving enhanced lifting force.
- ▶ FDA approved silicone material.
- ▶ Push-on cups, only available without fitting.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume	Min. curve radius	Max. vertical movement	Weight rubber part
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa	cm ³	mm	mm	g
11	25	31	9	21	26	1.6	25	1.5	4.1

Material specifications

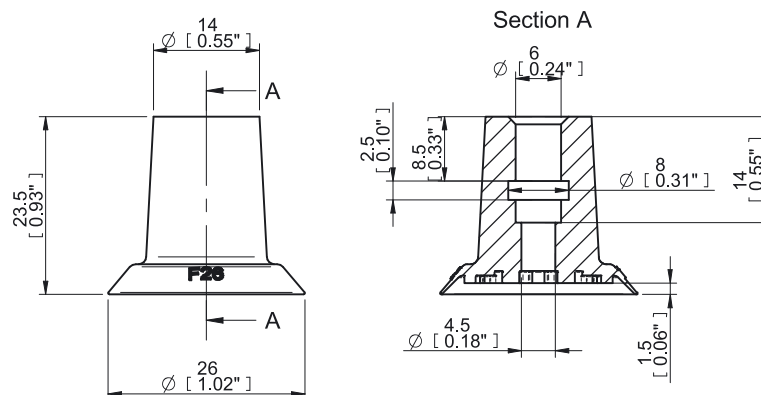
Material	Colour	Hardness °Shore A	Temperature range °C
Silicone, SIL FDA	Blue	50	-40–200

Material resistance

Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Silicone, SIL FDA	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent

Ordering information

Rubber part	Art. No.
Suction cup F26 Silicone FDA	0201216



F30-2 FDA



Flat suction cup with cleats

- ▶ The silicone material complies with FDA 21 CFR 177.2600.
- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume	Min. curve radius	Max. vertical movement	Weight rubber part
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa	cm ³	mm	mm	g
12.0	25	31	11.0	16.0	20.0	2.0	25	2.0	2.2

Material specifications

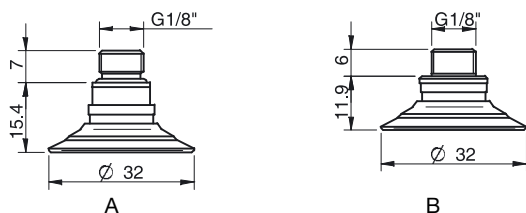
Material	Colour	Hardness °Shore A	Temperature range °C
Silicone, SIL FDA	Transparent	50	-40-200

Material resistance

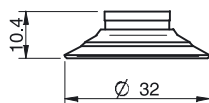
Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Silicone, SIL FDA	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent

Ordering information

	Complete suction cups	Art. No.
A	Suction cup F30-2 Silicone FDA, G1/8" male, with mesh filter	9909626
B	Suction cup F30-2 Silicone FDA, G1/8" male/M5 female, with mesh filter	9909627



Rubber parts	Art. No.
Suction cup F30-2 Silicone FDA	0200418



Fittings	Art. No.
Fitting G1/8" male, with mesh filter	3250085
Fitting G1/8" male/M5 female, with mesh filter	0101152

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F33 FDA



- ▶ Designed for opening bags in bag filling stations.
- ▶ Also suitable to handle thin and sensitive sheets, such as paper and plastic films.
- ▶ The thin, conformable lip and clever cleat pattern prevent sensitive object/sheet to get sucked in and damaged while giving enhanced lifting force.
- ▶ FDA approved silicone material.
- ▶ Push-on cups, only available without fitting.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume	Min. curve radius	Max. vertical movement	Weight rubber part
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa	cm ³	mm	mm	g
16	38	49	13.5	32.5	41.5	2.1	35	1.5	5.4

Material specifications

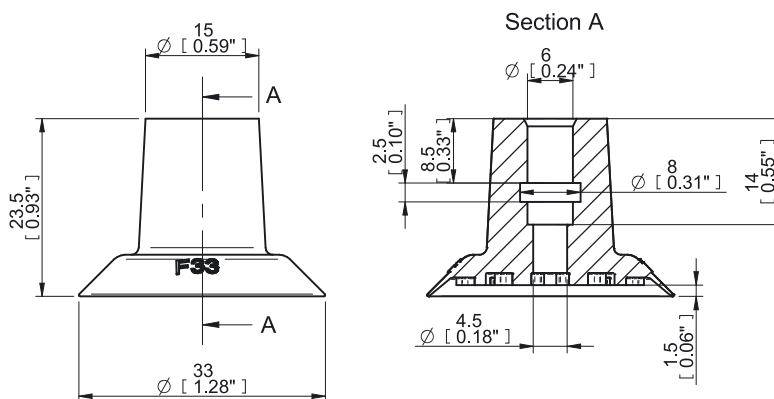
Material	Colour	Hardness °Shore A	Temperature range °C
Silicone, SIL FDA	Blue	50	-40–200

Material resistance

Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Silicone, SIL FDA	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent

Ordering information

Rubber part	Art. No.
Suction cup F33 Silicone FDA	0200328



F40-2 FDA



Flat suction cup with cleats

- ▶ The silicone material complies with FDA 21 CFR 177.2600.
- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight rubber part g
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
20.0	40	50	15.0	25	30	4.8	52	2.5	5.5

Material specifications

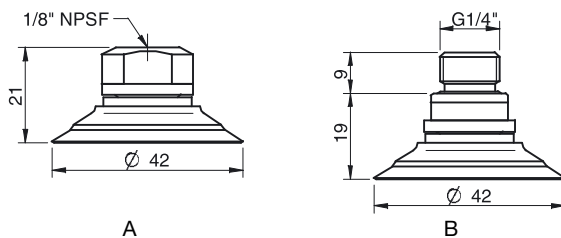
Material	Colour	Hardness °Shore A	Temperature range °C
Silicone, SIL FDA	Transparent	50	-40-200

Material resistance

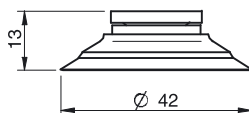
Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Silicone, SIL FDA	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent

Ordering information

	Complete suction cups	Art. No.
A	Suction cup F40-2 Silicone FDA, 1/8" NPSF female, with mesh filter	9909629
B	Suction cup F40-2 Silicone FDA, G1/4" male, with mesh filter	9909628



Rubber parts	Art. No.
Suction cup F40-2 Silicone FDA	0200437



Fittings	Art. No
Fitting 1/8" NPSF female, 30-40, with mesh filter	0101153
Fitting G1/4" male, 30-40, with mesh filter	3250091

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F50-2 FDA



Flat suction cup with cleats

- ▶ The silicone material complies with FDA 21 CFR 177.2600.
- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume	Min. curve radius	Max. vertical movement	Weight rubber part
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa	cm ³	mm	mm	g
36	74	96	24.0	40	50	10	55	3.0	14

Material specifications

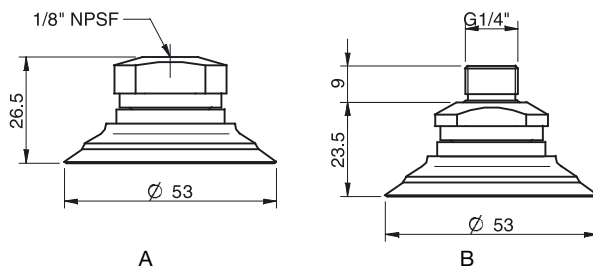
Material	Colour	Hardness °Shore A	Temperature range °C
Silicone, SIL FDA	Transparent	50	-40-200

Material resistance

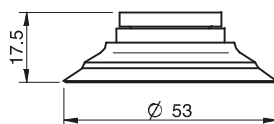
Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Silicone, SIL FDA	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent

Ordering information

	Complete suction cups	Art. No.
A	Suction cup F50-2 Silicone FDA, 1/8" NPSF female, with mesh filter	9909631
B	Suction cup F50-2 Silicone FDA, G1/4" male, with mesh filter	9909630



Rubber parts	Art. No.
Suction cup F50-2 Silicone FDA	0200438



Fittings	Art. No
Fitting 1/8" NPSF female, 50, with mesh filter	0101154
Fitting G1/4" male, 50, with mesh filter	3250092

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F75 FDA



Flat suction cup with cleats

- ▶ The silicone material complies with FDA 21 CFR 177.2600.
- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume	Min. curve radius	Max. vertical movement	Weight rubber part
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa	cm ³	mm	mm	g
80	200	270	60	110	140	20	150	3.0	23

Material specifications

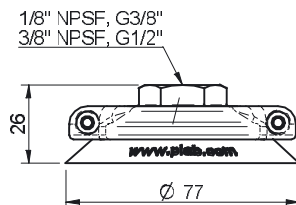
Material	Colour	Hardness °Shore A	Temperature range °C
Silicone, SIL FDA	Transparent	50	-40-200

Material resistance

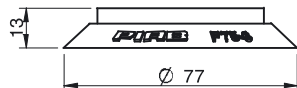
Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Silicone, SIL FDA	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent

Ordering information

Complete suction cups	Art. No.
Suction cup F75 Silicone FDA, G3/8" female, with mesh filter	0200497



Rubber parts	Art. No.
Suction cup F75 Silicone FDA	0200264



Fittings	Art. No.
Fitting 75, G3/8" female, with mesh filter	0100551

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F110 FDA



Flat suction cup with cleats

- ▶ The silicone material complies with FDA 21 CFR 177.2600.
- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume	Min. curve radius	Max. vertical movement	Weight rubber part
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa	cm ³	mm	mm	g
140	420	560	140	250	300	70	250	4.0	66

Material specifications

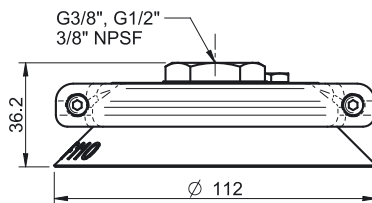
Material	Colour	Hardness °Shore A	Temperature range °C
Silicone, SIL FDA	Transparent	50	-40-200

Material resistance

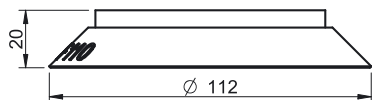
Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Silicone, SIL FDA	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent

Ordering information

Complete suction cups	Art. No.
Suction cup F110 Silicone FDA, G1/2" female, with mesh filter	0200504



Rubber part	Art. No.
Suction cup F110 Silicone FDA	0200302



Fittings	Art. No.
Fitting 110, G1/2" female, with mesh filter	0100561

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F150 FDA



Flat suction cup with cleats

- ▶ The silicone material complies with FDA 21 CFR 177.2600.
- ▶ Suitable for flat objects.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.
- ▶ Cleats prevent thin, sensitive objects from being deformed and gives extra friction when the lifting force is parallel.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume	Min. curve radius	Max. vertical movement	Weight rubber part
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa	cm ³	mm	mm	g
300	850	1100	250	600	800	160	500	6.0	200

Material specifications

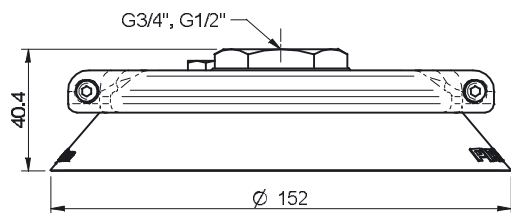
Material	Colour	Hardness °Shore A	Temperature range °C
Silicone, SIL FDA	Transparent	50	-40-200

Material resistance

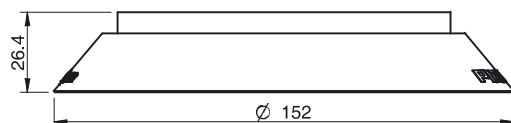
Material	Wear resistance	Oil	Weather & ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Silicone, SIL FDA	Good	Poor	Excellent	Fair	Poor	Poor	Good	Excellent

Ordering information

Complete suction cups	Art. No.
Suction cup F150 Silicone FDA, G1/2" female, with mesh filter	0200507



Rubber parts	Art. No.
Suction cup F150 Silicone FDA	0200265



Fittings	Art. No.
Fitting 150, G1/2" female, with mesh filter	0100564

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F15MF



Flat suction cup with cleats, mark free

- ▶ Suction cup of TPU, a mark free material that leaves no trace on the object being handled.
- ▶ Suitable for flat surfaces.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm	Min. curve radius mm	Max. vertical movement mm	Weight rubber part g
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
4.0	8.0	12.0	4.5	9.0	14.5	0.37	17	1.0	0.8

Material specifications

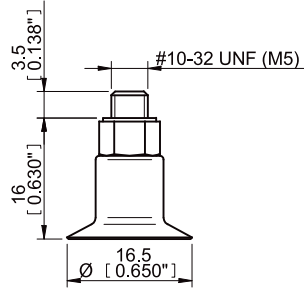
Material	Colour	Hardness °Shore A	Temperature range °C
Thermoelastic polyurethane, TPU	Transparent white	81	-20-80

Material resistance

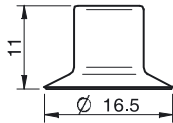
Wear resistance	Oil	Weather & Ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Excellent	Excellent	Excellent	Poor	Poor	Poor	Good	Good

Ordering information

Complete suction cups	Art. No.
Suction cup F15MF Thermoelastic polyurethane, M5 male	3250074



Rubber parts	Art. No.
Suction cup F15MF Thermoelastic polyurethane	3150269



Fittings	Art. No.
Fitting M5 male, 10-15	3107030

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F20MF



Flat suction cup with cleats, **mark free**

- ▶ Suction cup of TPU, a mark free material that leaves no trace on the object being handled.
- ▶ Suitable for flat surfaces.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight rubber part g
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
3.6	14.5	22.0	8.0	14.5	21.0	1.0	18	2.0	1.2

Material specifications

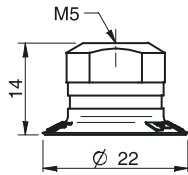
Material	Colour	Hardness °Shore A	Temperature range °C
Thermoelastic polyurethane, TPU	Transparent white	81	-20-80

Material resistance

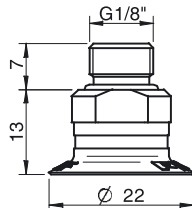
Wear resistance	Oil	Weather & Ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Excellent	Excellent	Excellent	Poor	Poor	Poor	Good	Good

Ordering information

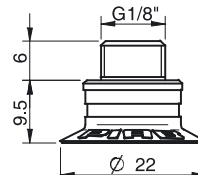
	Complete suction cups	Art. No.
A	Suction cup F20MF Thermoelastic polyurethane, M5 female	0101281
B	Suction cup F20MF Thermoelastic polyurethane, G1/8" male, with mesh filter	0101282
B	Suction cup F20MF Thermoelastic polyurethane, G1/8" male, with mesh filter and dual flow control valve	0101288
C	Suction cup F20MF Thermoelastic polyurethane, G1/8" male / M5 female, with mesh filter	0101286
C	Suction cup F20MF Thermoelastic polyurethane, G1/8" male / M5 fem., with dual flow control valve	0101290
D	Suction cup F20MF Thermoelastic polyurethane, 5xM5 female	0101285
D	Suction cup F20MF Thermoelastic polyurethane, 5xM5 female, with dual flow control valve	0101291



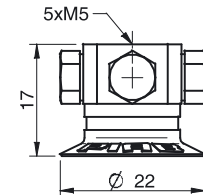
A



B

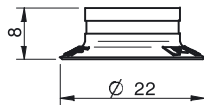


C



D

	Rubber parts	Art. No.
	Suction cup F20MF Thermoelastic polyurethane	0101139



	Fittings	Art. No.
	Fitting M5 female	3250003
	Fitting M5 female, with dual flow control valve	3251001
	Fitting G1/8" male, with mesh filter	3250085
	Fitting G1/8" male, with mesh filter and dual flow control valve	3251002
	Fitting G1/8" male/M5 female, with mesh filter	0101152
	Fitting G1/8" male/M5 female, with dual flow control valve	3251004
	Fitting 5xM5 female	0100260
	Fitting 5xM5 female, with dual flow control valve	3251005
	Fitting G1/8" male/M5 female, PA	3150196

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F25MF



Flat suction cup with cleats, **mark free**

- ▶ Suction cup of TPU, a mark free material that leaves no trace on the object being handled.
- ▶ Suitable for flat surfaces.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume	Min. curve radius	Max. vertical movement	Weight rubber part
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa	cm ³	mm	mm	g
6.3	24.5	35.5	9.0	24.5	36.3	1.1	23	1.5	1.7

Material specifications

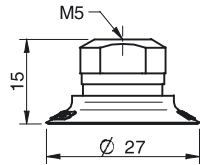
Material	Colour	Hardness °Shore A	Temperature range °C
Thermoelastic polyurethane, TPU	Transparent white	81	-20-80

Material resistance

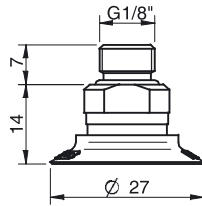
Wear resistance	Oil	Weather & Ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Excellent	Excellent	Excellent	Poor	Poor	Poor	Good	Good

Ordering information

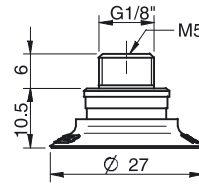
	Complete suction cups	Art. No.
A	Suction cup F25MF Thermoelastic polyurethane, M5 female	0101314
A	Suction cup F25MF Thermoelastic polyurethane, M5 female, with dual flow control valve	0101320
B	Suction cup F25MF Thermoelastic polyurethane, G1/8" male, with mesh filter	0101315
B	Suction cup F25MF Thermoelastic polyurethane, G1/8" male, with mesh filter and dual flow control valve	0101321
C	Suction cup F25MF Thermoelastic polyurethane, G1/8" male/M5 female, with mesh filter	0101319
D	Suction cup F25MF Thermoelastic polyurethane, 5xM5 female	0101318



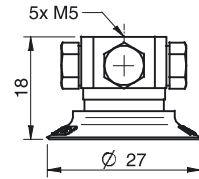
A



B

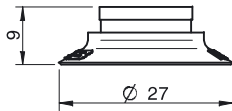


C



D

	Rubber parts	Art. No.
	Suction cup F25MF Thermoelastic polyurethane	0101140



	Fittings	Art. No.
	Fitting M5 female	3250003
	Fitting M5 female, with dual flow control valve	3251001
	Fitting G1/8" male, with mesh filter	3250085
	Fitting G1/8" male, with mesh filter and dual flow control valve	3251002
	Fitting G1/8" male/M5 female, with mesh filter	0101152
	Fitting G1/8" male/M5 female, with dual flow control valve	3251004
	Fitting 5xM5 female	0100260
	Fitting 5xM5 female, with dual flow control valve	3251005
	Fitting G1/8" male/M5 female, PA	3150196

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F30MF



Flat suction cup with cleats, **mark free**

- ▶ Suction cup of TPU, a mark free material that leaves no trace on the object being handled.
- ▶ Suitable for flat surfaces.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight rubber part g
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
11.0	34.5	48	13.6	28	42	2.0	44	1.5	2.2

Material specifications

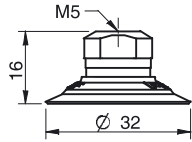
Material	Colour	Hardness °Shore A	Temperature range °C
Thermoelastic polyurethane, TPU	Transparent white	81	-20–80

Material resistance

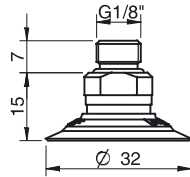
Wear resistance	Oil	Weather & Ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Excellent	Excellent	Excellent	Poor	Poor	Poor	Good	Good

Ordering information

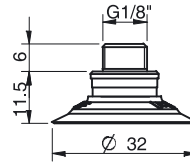
	Complete suction cups	Art. No.
A	Suction cup F30MF Thermoelastic polyurethane, M5 female	0101357
A	Suction cup F30MF Thermoelastic polyurethane, M5 female, with dual flow control valve	0101363
B	Suction cup F30MF Thermoelastic polyurethane, G1/8" male, with mesh filter	0101358
B	Suction cup F30MF Thermoelastic polyurethane, G1/8" male, with mesh filter and dual flow control valve	0101364
C	Suction cup F30MF Thermoelastic polyurethane, G1/8" male/M5 female, with mesh filter	0101362
D	Suction cup F30MF Thermoelastic polyurethane, 5xM5 female	0101361
D	Suction cup F30MF Thermoelastic polyurethane, 5xM5 female, with dual flow control valve	0101367



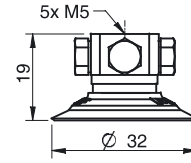
A



B

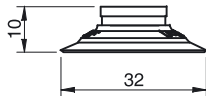


C



D

	Rubber parts	Art. No.
	Suction cup F30MF Thermoelastic polyurethane	0101141



	Fittings	Art. No.
	Fitting M5 female	3250003
	Fitting M5 female, with dual flow control valve	3251001
	Fitting G1/8" male, with mesh filter	3250085
	Fitting G1/8" male, with mesh filter and dual flow control valve	3251002
	Fitting G1/8" male/M5 female, with mesh filter	0101152
	Fitting G1/8" male/M5 female, with dual flow control valve	3251004
	Fitting 5xM5 female	0100260
	Fitting 5xM5 female, with dual flow control valve	3251005
	Fitting G1/8" male/M5 female, PA	3150196

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F40MF



Flat suction cup with cleats, **mark free**

- ▶ Suction cup of TPU, a mark free material that leaves no trace on the object being handled.
- ▶ Suitable for flat surfaces.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight rubber part g
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
18.0	57	83	16.0	49	57	4.8	60	2.0	6

Material specifications

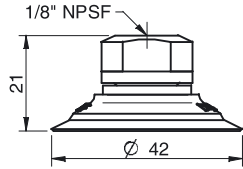
Material	Colour	Hardness °Shore A	Temperature range °C
Thermoelastic polyurethane, TPU	Transparent white	81	-20-80

Material resistance

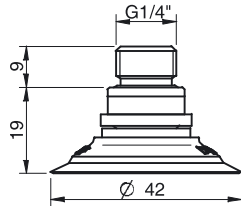
Wear resistance	Oil	Weather & Ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Excellent	Excellent	Excellent	Poor	Poor	Poor	Good	Good

Ordering information

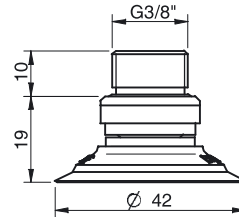
	Complete suction cups	Art. No.
A	Suction cup F40MF Thermoelastic polyurethane, 1/8" NPSF female	0101591
A	Suction cup F40MF Thermoelastic polyurethane, 1/8" NPSF female, with dual flow control valve	0101592
B	Suction cup F40MF Thermoelastic polyurethane, G1/4" male, with mesh filter	0101586
B	Suction cup F40MF Thermoelastic polyurethane, G1/4" male, with mesh filter and dual flow control valve	0101593
C	Suction cup F40MF Thermoelastic polyurethane, G3/8" male, with mesh filter	0101588
C	Suction cup F40MF Thermoelastic polyurethane, G3/8" male, with mesh filter and dual flow control valve	0101595
D	Suction cup F40MF Thermoelastic polyurethane, 5x1/8" NPSF female	0101590



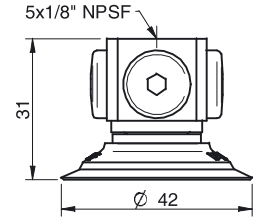
A



B

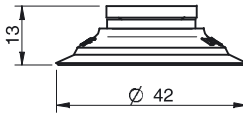


C



D

	Rubber parts	Art. No.
	Suction cup F40MF Thermoelastic polyurethane	0101142



	Fittings	Art. No
	Fitting 1/8" NPSF female, 30-40, with mesh filter	0101153
	Fitting 1/8" NPSF female, 30-40, with dual flow control valve	3251006
	Fitting G1/4" male, 30-40, with mesh filter	3250091
	Fitting G1/4" male, 30-40, with mesh filter and dual flow control valve	3251007
	Fitting G3/8" male, 30-40, with mesh filter	3250086
	Fitting G3/8" male, 30-40, with mesh and dual flow control valve	3251009
	Fitting 5x1/8" NPSF female, 30-40	0100261
	Fitting 5x1/8" NPSF female, 30-40, with dual flow control valve	3251011
	Fitting 1/8" NPSF female, 30-40, PA	3150197

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.

F50MF



Flat suction cup with cleats, mark free

- ▶ Suction cup of TPU, a mark free material that leaves no trace on the object being handled.
- ▶ Suitable for flat surfaces.
- ▶ Good stability and little inherent movement.
- ▶ Recommended when the lifting force is parallel to the surface of the object.

Lifting forces & Technical data

Lifting force vertical to the surface, N, at vacuum level			Lifting force parallel to the surface, N, at vacuum level			Volume cm ³	Min. curve radius mm	Max. vertical movement mm	Weight rubber part g
20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa				
24.5	92	141	31	82	107	10	95	2.0	10

Material specifications

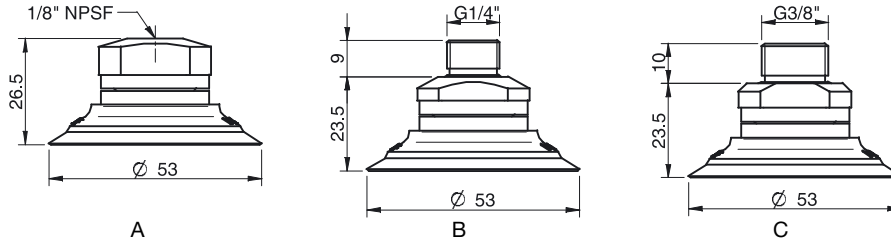
Material	Colour	Hardness °Shore A	Temperature range °C
Thermoelastic polyurethane, TPU	Transparent white	81	-20-80

Material resistance

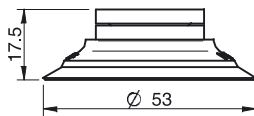
Wear resistance	Oil	Weather & Ozone	Hydrolysis	Petrol	Concentrated acids	Alcohol	Oxidation
Excellent	Excellent	Excellent	Poor	Poor	Poor	Good	Good

Ordering information

	Complete suction cups	Art. No.
A	Suction cup F50MF Thermoelastic polyurethane, 1/8" NPSF female, with mesh filter	0101791
B	Suction cup F50MF Thermoelastic polyurethane, G1/4" male, with mesh filter	0101786
B	Suction cup F50MF Thermoelastic polyurethane, G1/4" male, with mesh filter and dual flow control valve	0101793
C	Suction cup F50MF Thermoelastic polyurethane, G3/8" male, with mesh filter	0101788



	Rubber parts	Art. No.
	Suction cup F50MF Thermoelastic polyurethane	0101143



	Fittings	Art. No.
	Fitting 1/8" NPSF female, 50, with mesh filter	0101154
	Fitting 1/8" NPSF female, 50, with dual flow control valve	3251012
	Fitting G1/4" male, 50, with mesh filter	3250092
	Fitting G1/4" male, with mesh filter and dual flow control valve	3251013
	Fitting G3/8" male, 50, with mesh filter	3250087
	Fitting G3/8" male, 50, with mesh filter and dual flow control valve	3251015
	Fitting 5x1/8" NPSF female, 50	0100262
	Fitting 5x1/8" NPSF female, 50, with dual flow control valve	3251017
	Fitting 1/8" NPSF female, 50, PA	3150198

For further information and dimensioned drawings, see section Suction cups/grippers Fittings.