

# Universal family (U)



This family is designed for flat or slightly curved surfaces. They are available in a number of different materials such as DURAFLEX®, silicone and also a material that is compliant by FDA (FDA 21 CFR 177.2600) and meets EU's regulation EU 1935/2004.

## LIFTING FORCES

	Lifting force vertical to the surface, N, at vacuum level			Lifting force parallell to the surface, N, at vacuum level		
	20 -kPa	60 -kPa	90 -kPa	20 -kPa	60 -kPa	90 -kPa
U2	0.03	0.1	0.15	—	—	—
U3	0.09	0.42	0.65	—	—	—
U4	0.2	0.9	1.3	0.2	0.8	1
U6	0.5	1.7	2.5	0.5	1.5	2
U8	1	2.9	3.9	1	2.9	3.4
U10	1.5	4.4	6.9	1.5	4.4	4.9
U15	3.5	8.4	11	3.5	5.4	5.9
U20	5.9	12	16	5.9	8.8	9.8
U30	12	25	30	7.8	9.8	11
U40-2	20	39	49	14	22	27
U50-2	35	73	92	20	37	44

	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
U15-3	3.5	8.4	11	3.5	5.4	5.9
U20-2P	3/3/3*	10.5/11.5/14*	14/15/21*	1.5/1.5/3*	3/3/6*	6/6/8*

\* PU40° / PU50° / PU60°.

#### GENERAL SPECIFICATIONS

	Outer diameter, mm	Height, mm	Min. curve radius, mm	Max. vertical movement, mm	Volume, cm <sup>3</sup>
U2	2.6	3.5	4	0.1	0.003
U3	3.8	4.5	5	0.15	0.005
U4	5	6.1	3	0.2	0.03
U6	7	7	5	0.3	0.05
U8	9	7	6	0.5	0.1
U10	11	10.5	8	0.5	0.18
U15	16.5	11.5	8	1.5	0.5
U20	22	8	13	2.5	1
U30	32	9.5	20	3.5	2
U40-2	41	13	30	4.5	5.5
U50-2	51.4	17.5	35	6	12
U15-3	16.5	11.5	8	1.5	0.5
U20-2P	8.7	14	9/9/12*	5	0.7

\* PU40° / PU50° / PU60°.

**AVAILABLE MATERIALS AND INDUSTRIES**

An explanation of the industry icons is available on the cover fold out.

Cup	Material							MSF
U2	Conductive Silicone, CSIL			●				
U3	Conductive Silicone, CSIL			●				
U4	Chloroprene, CR	●			●		●	●
U4	Silicone, SIL	●	●					
U4	Silicone, SIL FDA EU	●	●					
U6	Chloroprene, CR	●			●		●	●
U6	HNBR	●				●	●	
U6	Silicone, SIL	●	●					
U6	Silicone, SIL FDA EU	●	●					
U8	Chloroprene, CR	●			●		●	●
U8	Silicone, SIL	●	●					
U8	Silicone, SIL FDA EU	●	●					
U10	Chloroprene, CR	●			●		●	●
U10	HNBR	●				●	●	
U10	Silicone, SIL	●	●					
U10	Silicone, SIL FDA EU	●	●					
U15	Chloroprene, CR	●			●		●	●
U15	HNBR	●				●	●	
U15	Silicone, SIL	●	●					

Cup	Material							MSF
U15	Silicone, SIL FDA EU	●	●					
U20	Chloroprene, CR	●			●		●	●
U20	HNBR	●				●	●	
U20	Silicone, SIL	●	●					
U20	Silicone, SIL FDA EU	●	●					
U30	Nitrile-PVC, NPV	●			●		●	●
U30	Silicone, SIL	●	●					
U30	Silicone, SIL FDA EU	●	●					
U40-2	Nitrile-PVC, NPV	●			●		●	●
U40-2	Silicone, SIL	●	●					
U40-2	Silicone, SIL FDA EU	●	●					
U50-2	Nitrile-PVC, NPV	●			●		●	●
U50-2	Silicone, SIL	●	●					
U50-2	Silicone, SIL FDA EU	●	●					
U15-3	Silicone, SIL	●	●					
U20-2P	PU40°	●						
U20-2P	PU50°	●						
U20-2P	PU60°	●						

**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](https://piab.com).

	Dry sheet metal	FDA EU-standard compliant	Electronic / semiconductor	Plastic injection molded parts	Mark Free	High/low temp cup (plastic)	Glass handling	Bag opening/thin paper - slip sheets/film
U2			●					
U3			●					
U4	●	●		●				
U6	●	●		●	●			
U8	●	●		●				
U10		●		●	●	●	●	
U15		●		●	●	●	●	
U20		●		●	●	●	●	
U30	●	●		●				
U40-2	●	●		●				
U50-2	●	●		●				
U15-3								●
U20-2P					●			●

## FITTINGS

For a table of possible fittings to use go to pages 198–200, for technical information on all fittings visit [piab.com](https://piab.com).

## ORDERING INFORMATION

Description	Item no.
Suction cup U2 Conductive silicone	3150284SC
Suction cup U2 Conductive silicone, M2.5 male	3250080SC
Suction cup U3 Conductive silicone	3150285SC

Description	Item no.
Suction cup U3 Conductive silicone, M2.5 male	3250081SC
Suction cup U4 Chloroprene	3150114
Suction cup U4 Chloroprene, M5 male	3150059
Suction cup U4 Silicone	3150114S
Suction cup U4 Silicone FCM	0200254
Suction cup U4 Silicone FCM, M5 male	9909632
Suction cup U4 Silicone, M5 male	3150059S
Suction cup U6 Chloroprene	3150115
Suction cup U6 Chloroprene, M5 male	3150003
Suction cup U6 HNBR	0200888
Suction cup U6 HNBR, M5 male	9914275
Suction cup U6 Silicone	3150115S
Suction cup U6 Silicone FCM	0200255
Suction cup U6 Silicone FCM, M5 male	9909633
Suction cup U6 Silicone, M5 male	3150003S
Suction cup U8 Chloroprene	3150116
Suction cup U8 Chloroprene, M5 male	3150004
Suction cup U8 Silicone	3150116S
Suction cup U8 Silicone FCM	0200256
Suction cup U8 Silicone FCM, M5 male	9909634
Suction cup U8 Silicone, M5 male	3150004S

Description	Item no.
Suction cup U10 Chloroprene	3150117
Suction cup U10 Chloroprene, M5 male	3150005
Suction cup U10 HNBR	0128689
Suction cup U10 HNBR, M5 male	9906863
Suction cup U10 Silicone	3150117S
Suction cup U10 Silicone FCM	0200257
Suction cup U10 Silicone FCM, M5 male	9909635
Suction cup U10 Silicone, M5 male	3150005S
Suction cup U15 Chloroprene	3150118
Suction cup U15 Chloroprene, M5 male	3150006
Suction cup U15 HNBR	0128690
Suction cup U15 HNBR, M5 male	9906864
Suction cup U15 Silicone	3150118S
Suction cup U15 Silicone FCM	0200258
Suction cup U15 Silicone FCM, M5 male	9909636
Suction cup U15 Silicone, M5 male	3150006S
Suction cup U20 Chloroprene, 5xM5 female	0101377
Suction cup U20 Chloroprene, G1/8" male, with mesh filter	0101374
Suction cup U20 Chloroprene, G1/8" male, with mesh filter and dual flow control valve	0101380
Suction cup U20 Chloroprene, G1/8" male/M5 female, PA	0110956
Suction cup U20 Chloroprene, G1/8" male/M5 female, with dual flow control valve	0101382

Description	Item no.
Suction cup U20 Chloroprene, G1/8" male/M5 female, with mesh filter	0101378
Suction cup U20 Chloroprene, M5 female	0101373
Suction cup U20 Chloroprene, M5 female, with dual flow control valve	0101379
Suction cup U20 HNBR	0128711
Suction cup U20 HNBR, 5xM5 female	9906890
Suction cup U20 HNBR, 5xM5 female, with dual flow control valve	9906891
Suction cup U20 HNBR, G1/8" male, with mesh filter	9906869
Suction cup U20 HNBR, G1/8" male, with mesh filter and dual flow control valve	9906870
Suction cup U20 HNBR, G1/8" male/M5 female, with dual flow control valve	9906872
Suction cup U20 HNBR, G1/8" male/M5 female, with mesh filter	9907052
Suction cup U20 HNBR, M5 female	9906867
Suction cup U20 HNBR, M5 female, with dual flow control valve	9906868
Suction cup U20 Silicone	0101145
Suction cup U20 Silicone FCM	0200440
Suction cup U20 Silicone FCM, G1/8" male, with mesh filter	9909717
Suction cup U20 Silicone FCM, G1/8" male/M5 female, with mesh filter	9909718
Suction cup U20 Silicone, 5xM5 female	0101388
Suction cup U20 Silicone, 5xM5 female, with dual flow control valve	0101394
Suction cup U20 Silicone, G1/8" male, with mesh filter	0101385
Suction cup U20 Silicone, G1/8" male, with mesh filter and dual flow control valve	0101391
Suction cup U20 Silicone, G1/8" male/M5 female, PA	0110328



Description	Item no.
Suction cup U20 Silicone, G1/8" male/M5 female, with mesh filter	0101389
Suction cup U20 Silicone, M5 female, with dual flow control valve	0101390
Suction cup U20-2P Polyurethane 40	0119994
Suction cup U20-2P Polyurethane 40, 1/8" Male	0205721
Suction cup U20-2P Polyurethane 50	0119995
Suction cup U20-2P Polyurethane 50, 1/8" Male	0205722
Suction cup U20-2P Polyurethane 60	0119996
Suction cup U20-2P Polyurethane 60, 1/8" Male	0205723
Suction cup U30 Nitrile-PVC	0101146
Suction cup U30 Nitrile-PVC, G1/8" male / M5 female, PA	0109839
Suction cup U30 Nitrile-PVC, G1/8" male / M5 female, with dual flow control valve	0101415
Suction cup U30 Nitrile-PVC, G1/8" male / M5 female, with mesh filter	0101411
Suction cup U30 Nitrile-PVC, G1/8" male, with mesh filter	0101407
Suction cup U30 Nitrile-PVC, G1/8" male, with mesh filter and dual flow control valve	0101413
Suction cup U30 Nitrile-PVC, M5 female	0101406
Suction cup U30 Silicone	0101147
Suction cup U30 Silicone FCM	0200441
Suction cup U30 Silicone FCM, G1/8" male / M5 female, with mesh filter	9909721
Suction cup U30 Silicone FCM, G1/8" male, with mesh filter	9909720
Suction cup U30 Silicone, 5xM5 female, with mesh filter	0101399
Suction cup U30 Silicone, G1/8" male / M5 female, with mesh filter	0101400

Description	Item no.
Suction cup U30 Silicone, G1/8" male, with mesh filter	0101396
Suction cup U30 Silicone, G1/8" male, with mesh filter and dual flow control valve	0101402
Suction cup U30 Silicone, M5 female, with mesh filter	0101395
Suction cup U40-2 Nitrile-PVC	0101148
Suction cup U40-2 Nitrile-PVC, 1/8" NPSF female, with mesh filter	0101623
Suction cup U40-2 Nitrile-PVC, G1/4" male, with mesh filter	0101618
Suction cup U40-2 Nitrile-PVC, G1/4" male, with mesh filter and dual flow control valve	0101625
Suction cup U40-2 Nitrile-PVC, G3/8" male, with dual flow control valve	0101627
Suction cup U40-2 Silicone	0101149
Suction cup U40-2 Silicone FCM	0200442
Suction cup U40-2 Silicone FCM, 1/8" NPSF female, with mesh filter	9909723
Suction cup U40-2 Silicone FCM, G1/4" male, with mesh filter	9909722
Suction cup U40-2 Silicone, 1/8" NPSF female, PA	0110338
Suction cup U40-2 Silicone, 1/8" NPSF female, with mesh filter	0101610
Suction cup U40-2 Silicone, 5x1/8" NPSF female	0101609
Suction cup U40-2 Silicone, G1/4" male, with mesh filter	0101605
Suction cup U40-2 Silicone, G3/8" male, with mesh filter	0101607
Suction cup U50-2 Nitrile-PVC	0101150
Suction cup U50-2 Nitrile-PVC, 1/8" NPSF female, with mesh filter	0101823
Suction cup U50-2 Nitrile-PVC, 5x1/8" NPSF female	0101822
Suction cup U50-2 Nitrile-PVC, G1/4" male, with mesh filter	0101818

Description	Item no.
Suction cup U50-2 Nitrile-PVC, G3/8" male, with mesh filter	0101820
Suction cup U50-2 Silicone	0101151
Suction cup U50-2 Silicone FCM	0200443
Suction cup U50-2 Silicone FCM, 1/8" NPSF female, with mesh filter	9909726
Suction cup U50-2 Silicone FCM, G1/4" male, with mesh filter	9909725
Suction cup U50-2 Silicone, 1/8" NPSF female, PA	0110330
Suction cup U50-2 Silicone, 1/8" NPSF female, with dual flow control valve	0101811
Suction cup U50-2 Silicone, 1/8" NPSF female, with mesh filter	0101810
Suction cup U50-2 Silicone, G1/4" male, with mesh filter	0101805
Suction cup U50-2 Silicone, G3/8" male, with mesh filter	0101807
Suction cup U50-2 Silicone, G3/8" male, with mesh filter and dual flow control valve	0101814
Suction cup U15-3 Silicone	0114981
Suction cup U15-3 Silicone, M5 male	0117947
Suction cup U20-2P Polyurethane 40	0119994
Suction cup U20-2P Polyurethane 40, 1/8" Male	0205721
Suction cup U20-2P Polyurethane 50	0119995
Suction cup U20-2P Polyurethane 50, 1/8" Male	0205722
Suction cup U20-2P Polyurethane 60	0119996
Suction cup U20-2P Polyurethane 60, 1/8" Male	0205723