

Oval Bellows family (OB)



The oval bellows suction cups are suitable for handling of long and narrow objects and surfaces when maximum lifting force is desired. Oval bellows suction cups are specially suitable for irregular surfaces and when level compensation is desired. The oval bellows suction cup family has characteristics that are specially suited for handling of metal-sheet material.

LIFTING FORCES

	Lifting force vertical to the surface, N, at vacuum level					Lifting force parallel to the surface, N, at vacuum level				
	10 -kPa	20 -kPa	40 -kPa	60 -kPa	90 -kPa	10 -kPa	20 -kPa	40 -kPa	60 -kPa	90 -kPa
F-OB 10x30	1.4	2.4	5.2	—	—	1.5	2.3	4.6	—	—
F-OB 20x40	3.3	6.9	12	—	—	2.9	6	12.6	—	—
F-OB 30x60	8	17.2	31.1	—	—	8.1	13.4	27.5	—	—
OB20x60P	—	13	—	34	57	—	13	—	37	48
OB35x90P (PU30°/60°)	—	42	—	119	174	—	48	—	73	100
OB35x90P (PU60°)	—	42	—	117	185	—	32	—	85	111
OB50x140P (PU30°/60°)	—	58	—	235	366	—	110	—	260	349
OB50x140P (PU60°)	—	77	—	231	368	—	122	—	292	396
OB65x170P (PU30°/60°)	—	119	—	335	541	—	141	—	379	532
OB65x170P (PU60°)	—	130	—	310	533	—	170	—	440	600

	Lifting force vertical to the surface, N, at vacuum level					Lifting force parallel to the surface, N, at vacuum level				
	10 -kPa	20 -kPa	40 -kPa	60 -kPa	90 -kPa	10 -kPa	20 -kPa	40 -kPa	60 -kPa	90 -kPa
OBF15×35P H	—	—	—	25/19*	31/24*	—	—	—	21/5*	25/6*
OBF15×35P L	—	—	—	25/19*	31/24*	—	—	—	21/5*	25/6*
OBF15×65P	—	—	—	41/31*	52/41*	—	—	—	31/7*	35/8*
OBF30×60P	—	—	—	60/43*	80/65*	—	—	—	74/32*	99/45
OBF35×90P	—	—	—	140/108*	198/157*	—	—	—	125/105*	179/151*
OBF50×140P	—	—	—	325/246*	438/372*	—	—	—	328/271*	415/347*
OBF65×170P	—	—	—	397/403*	570/502*	—	—	—	437/538*	619/665*
OBL40×90P (PU60°)	—	44	—	105	160	—	40	—	87	121
OBL40×90P (PU70°)	—	49	—	117	178	—	45	—	97	135

* Dry metal sheet/Oily metal sheet.

GENERAL SPECIFICATIONS

	Outer diameter, mm	Height, mm	Min. curve radius, mm	Max. vertical movement, mm	Volume, cm ³
F-OB 10x30	11×31	26.2	4	4	1
F-OB 20x40	40.8×20.8	36–41.2	9	7.6	5
F-OB 30x60	62×32	44.8–49.9	9	10.9	17.5
OB20x60P	62×23.5	23.6	7	4.5	24
OB35x90P	95.6×42.4	27.2	30	10.5	38
OB50x140P	146×59	34.5	23/26**	11.3	95
OB65x170P	177×76	41.5	38	16	175
OBF15×35P H	36×15	21.9–28.9	20	2.9	1.8
OBF15×35P L	36×15	37.7–44.8	20	2.9	1.3
OBF15×65P	66×15	21.9–28.9	20	2.9	2.6

	Outer diameter, mm	Height, mm	Min. curve radius, mm	Max. vertical movement, mm	Volume, cm ³
OBF30×60P	60×30	32.3–43.6	25	7	9.1
OBF35×90P	105×50	39–47.9*	30	11	36
OBF50×140P	157×67	47–55.8*	50	13	95
OBF65×170P	187×82	54–62.8*	50	15	200
OBL40×90P	92.6×45	63–73*	28	31	105

* Height range includes fittings, ** PU30°/PU60° / PU60°.

AVAILABLE MATERIALS AND INDUSTRIES

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

Cup	Material							MSF
F-OB 10x30	Silicone (SIL non-detectable FCM)	●	●					
F-OB 10x30	Silicone (SIL detectable FCM)	●	●					
F-OB 20x40	Silicone (SIL non-detectable FCM)	●	●					
F-OB 20x40	Silicone (SIL detectable FCM)	●	●					
F-OB 30x60	Silicone (SIL non-detectable FCM)	●	●					
F-OB 30x60	Silicone (SIL detectable FCM)	●	●					
OB20x60P	PU60°	●		●	●	●	●	●
OB35x90P	PU30°/PU60°	●		●				
OB35x90P	PU60°	●		●	●	●	●	●
OB50x140P	PU30°/PU60°	●		●				
OB50x140P	PU60°	●		●	●	●	●	●
OB65x170P	PU30°/PU60°	●		●				
OB65x170P	PU60°	●		●	●	●	●	●

Cup	Material							MSF
OBF15×35P H	PU60°			●				●
OBF15×35P L	PU60°			●				●
OBF15×65P	PU60°			●				●
OBF30×60P	PU60°			●				●
OBF35×90P	PU55°/PU60°			●				●
OBF50×140P	PU55°/PU60°			●				●
OBF65×170P	PU55°/PU60°			●				●
OBL40×90P	PU60°	●		●	●	●	●	●
OBL40×90P	PU70°	●		●	●	●	●	●

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.

	FDA EU-standard compliant	Corrugated / cardboard	Glass handling	Mark Free	Oily sheet metal
F-OB 10x30	●				
F-OB 20x40	●				
F-OB 30x60	●				
OB20x60P				●	
OB35x90P		●		●	
OB50x140P		●		●	
OB65x170P		●		●	
OBF15×35P H				●	●

	FDA EU-standard compliant	Corrugated / cardboard	Glass handling	Mark Free	Oily sheet metal
OBF15×35P L				●	●
OBF15×65P				●	●
OBF30×60P				●	●
OBF35×90P				●	●
OBF50×140P				●	●
OBF65×170P				●	●
OBL40×90P			●	●	●

FITTINGS

For a table of possible fittings to use go to pages 198–200, for technical information on all fittings visit piab.com.

ORDERING INFORMATION

Description	Item no.
Suction cup F-OB 10x30 Silicone, G1/8" male SS, detectable, FCM	0205912
Suction cup F-OB 10x30 Silicone, G1/8" male SS, FCM	0207044
Suction cup F-OB 20x40 Silicone, G1/4" male SS, detectable, FCM	0205915
Suction cup F-OB 20x40 Silicone, G1/4" male SS, FCM	0207045
Suction cup F-OB 20x40 Silicone, G1/8" male SS, detectable, FCM	0205918
Suction cup F-OB 20x40 Silicone, G1/8" male SS, FCM	0207046
Suction cup F-OB 30x60 Silicone, G1/4" male SS, detectable FCM	0205923
Suction cup F-OB 30x60 Silicone, G1/4" male SS, FCM	0207048
Suction cup F-OB 30x60 Silicone, G1/8" male SS, detectable, FCM	0205920
Suction cup F-OB 30x60 Silicone, G1/8" male SS, FCM	0207047
Suction cup OB20x60P Polyurethane 60, G1/8" male	0115291

Description	Item no.
Suction cup OB35x90P Polyurethane 30/60	0109913
Suction cup OB35x90P Polyurethane 30/60, 3/8" NPSF female	0109857
Suction cup OB35x90P Polyurethane 30/60, thread insert G3/8" male, with mesh filter	0109856
Suction cup OB35x90P Polyurethane 60	0109912
Suction cup OB35x90P Polyurethane 60, 3/8" NPSF female	0108672
Suction cup OB35x90P Polyurethane 60, thread insert G3/8" male, with mesh filter	0108673
Suction cup OB50x140P Polyurethane 30/60	0109915
Suction cup OB50x140P Polyurethane 30/60, 3/8" NPSF female	0109859
Suction cup OB50x140P Polyurethane 30/60, thread insert G3/8" male, with mesh filter	0109858
Suction cup OB50x140P Polyurethane 60	0109914
Suction cup OB50x140P Polyurethane 60, 3/8" NPSF female	0108674
Suction cup OB50x140P Polyurethane 60, thread insert G3/8" male, with mesh filter	0108675
Suction cup OB65x170P Polyurethane 30/60	0109917
Suction cup OB65x170P Polyurethane 30/60, 3/8" NPSF female	0109861
Suction cup OB65x170P Polyurethane 30/60, thread insert G3/8" male, with mesh filter	0109860
Suction cup OB65x170P Polyurethane 60	0109916
Suction cup OB65x170P Polyurethane 60, 3/8" NPSF female	0108676
Suction cup OB65x170P Polyurethane 60, thread insert G3/8" male, with mesh filter	0108677
Suction cup OBF15x35P H Polyurethane 60, G1/4" female	0207579
Suction cup OBF15x35P H Polyurethane 60, G1/4" male	0207581
Suction cup OBF15x35P H Polyurethane 60, G3/8" female	0207577

Description	Item no.
Suction cup OBF15×35P H Polyurethane 60, G3/8" female plastic	0207587
Suction cup OBF15×35P H Polyurethane 60, G3/8" male	0207585
Suction cup OBF15×35P H Polyurethane 60, G3/8" female, 17 mm thread	0209500
Suction cup OBF15×35P H Polyurethane 60, M10×1.5 male	0207583
Suction cup OBF15×35P H Polyurethane 60, NPT3/8" female	0207571
Suction cup OBF15×35P H Polyurethane 60, T-slot	0207575
Suction cup OBF15×35P L Polyurethane 60, G1/4" female	0207594
Suction cup OBF15×35P L Polyurethane 60, G1/4" male	0207595
Suction cup OBF15×35P L Polyurethane 60, G3/8" female	0207593
Suction cup OBF15×35P L Polyurethane 60, G3/8" female plastic	0207598
Suction cup OBF15×35P L Polyurethane 60, G3/8" male	0207597
Suction cup OBF15×35P L Polyurethane 60, G3/8" female, 17 mm thread	0209501
Suction cup OBF15×35P L Polyurethane 60, M10×1.5 male	0207596
Suction cup OBF15×35P L Polyurethane 60, NPT3/8" female	0207589
Suction cup OBF15×35P L Polyurethane 60, T-slot	0207592
Suction cup OBF15×65P Polyurethane 60, G1/4" female	0207607
Suction cup OBF15×65P Polyurethane 60, G1/4" male	0207609
Suction cup OBF15×65P Polyurethane 60, G3/8" female	0207605
Suction cup OBF15×65P Polyurethane 60, G3/8" female plastic	0207615
Suction cup OBF15×65P Polyurethane 60, G3/8" male	0207613
Suction cup OBF15×65P Polyurethane 60, G3/8" female, 17 mm thread	0209502

Description	Item no.
Suction cup OBF15×65P Polyurethane 60, M10×1.5 male	0207611
Suction cup OBF15×65P Polyurethane 60, NPT3/8" female	0207599
Suction cup OBF15×65P Polyurethane 60, T-slot	0207603
Suction cup OBF30×60P Polyurethane 55/60/30 G3/8" female with mesh filter, 17 mm thread	0209490
Suction cup OBF30×60P Polyurethane 60, G1/4" female	0207737
Suction cup OBF30×60P Polyurethane 60, G1/4" male	0207738
Suction cup OBF30×60P Polyurethane 60, G3/8" female	0207734
Suction cup OBF30×60P Polyurethane 60, G3/8" female plastic	0207617
Suction cup OBF30×60P Polyurethane 60, G3/8" male	0207735
Suction cup OBF30×60P Polyurethane 60, M10×1.5 male	0207739
Suction cup OBF30×60P Polyurethane 60, NPT3/8" female	0207736
Suction cup OBF30×60P Polyurethane 60, T-slot with mesh filter	0207733
Suction cup OBF35X90P Polyurethane 55/60, 3/8" NPT female	0122287
Suction cup OBF35x90P Polyurethane 55/60, G3/8" female	0119123
Suction cup OBF35x90P Polyurethane 55/60, G3/8" female, 17 mm thread	0200694
Suction cup OBF35x90P Polyurethane 55/60, G3/8" male, with mesh filter	0119121
Suction cup OBF35x90P Polyurethane 55/60, M10x1.5 male	0121436
Suction cup OBF50X140P Polyurethane 55/60, 3/8" NPT female	0122288
Suction cup OBF50x140P Polyurethane 55/60, G3/8" female	0119127
Suction cup OBF50x140P Polyurethane 55/60, G3/8" male, with mesh filter	0119125
Suction cup OBF50x140P Polyurethane 55/60, M10x1.5 male	0121437

Description	Item no.
Suction cup OBF65X170P Polyurethane 55/60, 3/8" NPT female	0122289
Suction cup OBF65x170P Polyurethane 55/60, G3/8" female	0119131
Suction cup OBF65x170P Polyurethane 55/60, G3/8" male, with mesh filter	0119129
Suction cup OBF65x170P Polyurethane 55/60, M10x1.5 male	0121438
Suction cup OBL40x90P Polyurethane 60, with 3 reinforcement plates and load support	0106697
Suction cup OBL40x90P Polyurethane 70, with 3 reinforcement plates and load support with G3/8" male, filter	0107325