

## Flat Concave family (FC)



The friction cups in flat concave shape and in the material DURAFLEX® suction cups have been developed to meet the strict demands of the automotive industry and designed for flat and curved surfaces. A typical application is the feeding of sheet metal into a press tool. The FCF-P design is especially suitable for oily surfaces, slightly domed and flat surfaces, e.g., such as those encountered when handling metal sheets in press lines. The suction cups have support cleats that prevent thin objects from being disfigured.

### 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
FC20P	4.5	12	16	4.5	9	12
FC25P	8	20	27	9	12	18
FC35P	11/11*	36/34*	51/49*	27/27*	51/41*	62/51*
FC50P	28/28**	77/77**	103/104**	49/52**	82/93**	100/111**
FC75P	73/73**	157/168**	215/225**	107/93**	200/225**	230/255**
FC100P	137/152**	284/328**	377/446**	176/112**	318/264**	420/382**
FC150P	274/284**	647/716**	922/932**	343/215**	765/568**	902/863**
FCF25P	—	19/19***	28/29***	—	7/5***	10/7.2***
FCF35P	—	42/34***	58/50***	—	30/26***	42/32***
FCF50P	—	78/72***	106/101***	—	77/52***	105/70***
FCF75P	—	171/163***	236/228***	—	166/104***	211/139***

	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
FCF100P	—	347/236***	490/298***	—	337/139***	484/205***
FCF125P	—	475/405***	650/442***	—	445/194***	602/236***

\* PU50°/PU60°, \*\* PU40°/PU60°, \*\*\* Dry metal sheet/Oily metal sheet.






## GENERAL SPECIFICATIONS

	Outer diameter, mm	Height, mm	Min. curve radius, mm	Max. vertical movement, mm	Volume, cm <sup>3</sup>
FC20P	21.8	9.4	25	1.9	1
FC25P	28.5	11	45	4	3
FC35P	35	15	32	5.5	5
FC50P	50	33.5	53	5	10
FC75P	75	24	78	6.5	30
FC100P	100	27	110	10.2	80
FC150P	150	40.5	165	14.2	250
FCF25P	25	28	27	—	5.5
FCF35P	35	29–47.8*	40	2	5
FCF50P	50	31–49.9*	50	3	10
FCF75P	75	31–41*	100	4	30
FCF100P	100	36–45*	150	6	70
FCF125P	126	42–51.2*	150	8	100

\* Height range includes fittings.

**AVAILABLE MATERIALS AND INDUSTRIES**

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

Cup	Material						MSF
FC20P	PU50°	●	●	●	●	●	●
FC25P	PU50°	●	●	●	●	●	●
FC35P	PU50°	●	●	●	●	●	●
FC50P	PU40°	●	●	●	●	●	●
FC50P	PU60°	●	●	●	●	●	●
FC75P	PU40°	●	●	●	●	●	●
FC75P	PU60°	●	●	●	●	●	●
FC100P	PU40°	●	●	●	●	●	●
FC100P	PU60°	●	●	●	●	●	●
FC150P	PU40°	●	●	●	●	●	●
FC150P	PU60°	●	●	●	●	●	●
FCF25P	PU55°/PU60°		●				●
FCF35P	PU55°/PU60°		●				●
FCF50P	PU55°/PU60°		●				●
FCF75P	PU55°/PU60°		●				●
FCF100P	PU55°/PU60°		●				●
FCF125P	PU55°/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).

	Oily sheet metal	Dry sheet metal	Mark free
FC20P		●	●
FC25P		●	●
FC35P		●	●
FC50P		●	●
FC75P		●	●
FC100P		●	●
FC150P		●	●
FCF25P	●		
FCF35P	●		
FCF50P	●		
FCF75P	●		
FCF100P	●		
FCF125P	●		

**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 FC20P Polyurethane 50	0106016
Suction cup FC20P Polyurethane 50, G1/8" male / M5 female, with mesh filter	0106718
Suction cup FC20P Polyurethane 50, G1/8" male, with mesh filter	0106722
Suction cup FC20P Polyurethane 50, M5 female	0106717

Description	Item no.
Suction cup FC25P Polyurethane 50	0104803
Suction cup FC25P Polyurethane 50, G1/8" male / M5 female, with mesh filter	0106720
Suction cup FC25P Polyurethane 50, G1/8" male, with mesh filter	0106721
Suction cup FC25P Polyurethane 50, M5 female	0106719
Suction cup FC35P Polyurethane 50	0103290
Suction cup FC35P Polyurethane 50, 1/8" NPSF female, with dual flow control valve	0103709
Suction cup FC35P Polyurethane 50, 1/8" NPSF female, with mesh filter	0103705
Suction cup FC35P Polyurethane 50, G1/4" male, with mesh filter	0103711
Suction cup FC35P Polyurethane 50, G1/4" male, with mesh filter and dual flow control valve	0103713
Suction cup FC35P Polyurethane 50, G3/8" male, with mesh filter	0103719
Suction cup FC35P Polyurethane 60	0103291
Suction cup FC35P Polyurethane 60, 1/8" NPSF female, with mesh filter	0103706
Suction cup FC35P Polyurethane 60, 5x1/8" NPSF female	0103728
Suction cup FC35P Polyurethane 60, G1/4" male, with mesh filter	0103712
Suction cup FC35P Polyurethane 60, G3/8" male, with mesh filter	0103720
Suction cup FC35P Polyurethane 60, G3/8" male, with mesh filter and dual flow control valve	0103722
Suction cup FC50P Polyurethane 40, G3/8" male - 1/8" NPSF female	0103289
Suction cup FC50P Polyurethane 60, G3/8" male - 1/8" NPSF female	0103293
Suction cup FC75P Polyurethane 40, 3/8" NPSF female	0108796
Suction cup FC75P Polyurethane 40, for tread insert	0106948
Suction cup FC75P Polyurethane 40, G3/8" male - 1/8" NPSF female	0103294

Description	Item no.
Suction cup FC75P Polyurethane 40, thread insert G3/8" with mesh filter	0106959
Suction cup FC75P Polyurethane 60, 3/8" NPSF female	0108797
Suction cup FC75P Polyurethane 60, for tread insert	0107302
Suction cup FC75P Polyurethane 60, G3/8" male - 1/8" NPSF female	0103296
Suction cup FC75P Polyurethane 60, thread insert G3/8" with mesh filter	0107303
Suction cup FC100P Polyurethane 40	0103297
Suction cup FC100P Polyurethane 40, 1/8" NPSF female, with mesh filter	0103731
Suction cup FC100P Polyurethane 40, 3/8" NPSF female	0108798
Suction cup FC100P Polyurethane 40, 3/8" NPSF female, with mesh filter	0103737
Suction cup FC100P Polyurethane 40, for tread insert	0106835
Suction cup FC100P Polyurethane 40, G1/2" female, with mesh filter	0103740
Suction cup FC100P Polyurethane 40, thread insert G3/8" male, with mesh filter	0106836
Suction cup FC100P Polyurethane 60	0103299
Suction cup FC100P Polyurethane 60, 1/8" NPSF female, with mesh filter	0103733
Suction cup FC100P Polyurethane 60, 1/8" NPSF female, with mesh filter	0103734
Suction cup FC100P Polyurethane 60, 3/8" NPSF female	0108799
Suction cup FC100P Polyurethane 60, 3/8" NPSF female, with mesh filter	0103739
Suction cup FC100P Polyurethane 60, for tread insert	0107304
Suction cup FC100P Polyurethane 60, G1/2" female, with mesh filter	0103742
Suction cup FC100P Polyurethane 60, G3/8" female, with mesh filter	0103736
Suction cup FC100P Polyurethane 60, thread insert G3/8" male, with mesh filter	0107305

Description	Item no.
Suction cup FC150P Polyurethane 40	0101946
Suction cup FC150P Polyurethane 40, 3/8" NPSF female, with mesh filter	0103749
Suction cup FC150P Polyurethane 40, G1/2" female, with mesh filter	0103755
Suction cup FC150P Polyurethane 40, G3/8" female, with mesh filter	0103743
Suction cup FC150P Polyurethane 60	0103301
Suction cup FC150P Polyurethane 60, 3/8" NPSF female, with mesh filter	0103751
Suction cup FC150P Polyurethane 60, G1/2" female, with mesh filter	0103757
Suction cup FC150P Polyurethane 60, G3/8" female, with mesh filter	0103745
Suction cup FCF25P Polyurethane 55/60, 3/8" NPT female	0206916
Suction cup FCF25P Polyurethane 55/60, G1/4" female	0206919
Suction cup FCF25P Polyurethane 55/60, G3/8" female	0206909
Suction cup FCF25P Polyurethane 55/60, G3/8" female plastic	0206895
Suction cup FCF25P Polyurethane 55/60, G3/8" male, 1/8" NPSF female	0201827
Suction cup FCF25P Polyurethane 55/60, T-slot	0206926
Suction cup FCF35P Polyurethane 55/60, 3/8" NPT female	0122282
Suction cup FCF35P Polyurethane 55/60, G1/4" female	0206921
Suction cup FCF35P Polyurethane 55/60, G3/8" female	0118981
Suction cup FCF35P Polyurethane 55/60, G3/8" female plastic	0206893
Suction cup FCF35P Polyurethane 55/60, G3/8" female, 17 mm thread	0200652
Suction cup FCF35P Polyurethane 55/60, G3/8" male, with mesh filter	0119913
Suction cup FCF35P Polyurethane 55/60, M10x1.5 male	0121431

Description	Item no.
Suction cup FCF35P Polyurethane 55/60, T-slot, with mesh filter	0206927
Suction cup FCF50P Polyurethane 55/60, 3/8" NPT female	0122283
Suction cup FCF50P Polyurethane 55/60, G1/4" female	0206936
Suction cup FCF50P Polyurethane 55/60, G3/8" female	0118986
Suction cup FCF50P Polyurethane 55/60, G3/8" female plastic	0206606
Suction cup FCF50P Polyurethane 55/60, G3/8" female, 17 mm thread	0200685
Suction cup FCF50P Polyurethane 55/60, G3/8" male, with mesh filter	0118985
Suction cup FCF50P Polyurethane 55/60, M10x1.5 male	0121432
Suction cup FCF50P Polyurethane 55/60, T-slot, with mesh filter	0206929
Suction cup FCF75P Polyurethane 55/60, 3/8" NPT female	0122284
Suction cup FCF75P Polyurethane 55/60, G1/4" female	0206937
Suction cup FCF75P Polyurethane 55/60, G3/8" female	0118429
Suction cup FCF75P Polyurethane 55/60, G3/8" female, 17 mm thread	0200687
Suction cup FCF75P Polyurethane 55/60, G3/8" female, plastic thread	0124718
Suction cup FCF75P Polyurethane 55/60, G3/8" male, with mesh filter	0118423
Suction cup FCF75P Polyurethane 55/60, M10x1.5 male	0121433
Suction cup FCF75P Polyurethane 55/60, T-slot, with mesh filter	0206930
Suction cup FCF100P Polyurethane 55/60 G3/8" male, with mesh filter	0118430
Suction cup FCF100P Polyurethane 55/60, 3/8" NPT female	0122285
Suction cup FCF100P Polyurethane 55/60, G1/4" female	0206938
Suction cup FCF100P Polyurethane 55/60, G3/8" female	0118432



Description	Item no.
Suction cup FCF100P Polyurethane 55/60, G3/8" female, 17 mm thread	0200690
Suction cup FCF100P Polyurethane 55/60, M10x1.5 male	0121385
Suction cup FCF100P Polyurethane 55/60, T-slot, with mesh filter	0206931
Suction cup FCF125P Polyurethane 55/60, 3/8" NPT female	0122286
Suction cup FCF125P Polyurethane 55/60, G1/4" female	0206939
Suction cup FCF125P Polyurethane 55/60, G3/8" female	0118437
Suction cup FCF125P Polyurethane 55/60, G3/8" female, 17 mm thread	0200693
Suction cup FCF125P Polyurethane 55/60, G3/8" female, plastic thread	0124787
Suction cup FCF125P Polyurethane 55/60, G3/8" male, with mesh filter	0118435
Suction cup FCF125P Polyurethane 55/60, M10x1.5 male	0121435
Suction cup FCF125P Polyurethane 55/60, T-slot, with mesh filter	0206932