

# piGRIP™

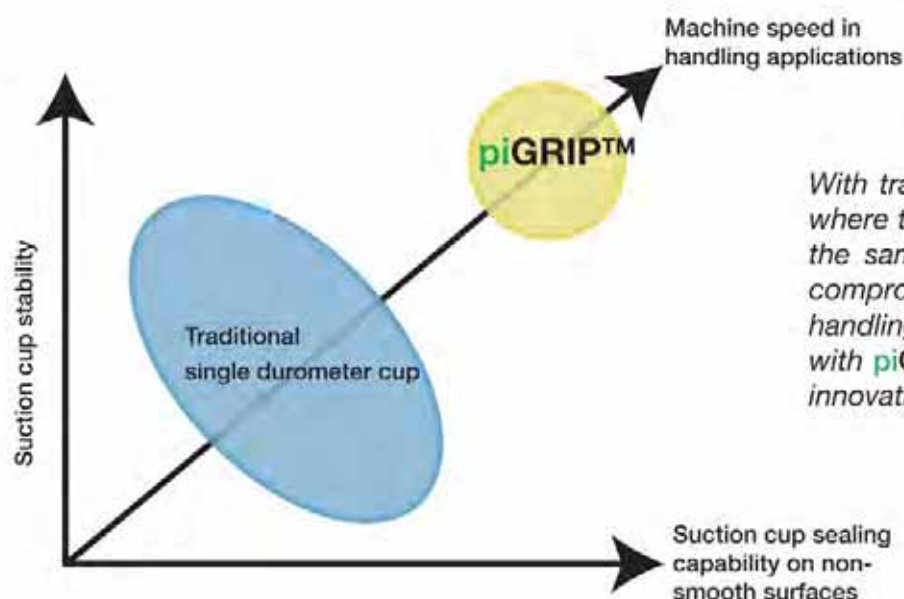
Taking gripping to new dimensions



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# piGRIP™ Versatility and productivity

A modular suction cup that fits most machines and that can be optimized for handling almost all materials. piGRIP™'s five different lip types ensure the right hardness/softness and sealing capability for your material. Combined with the firm bellows, piGRIP™ is stable enough to handle faster accelerations and more high speed lifts as compared to traditional cups.



*With traditional single durometer cups, where the lips and bellows are made of the same material, you either have to compromise on the grip or the machine handling speed. That is now history with piGRIP™, the efficient automation innovation from Piab.*

- ▶ Materials that are in accordance with **FDA** are available for the food industry.
- ▶ **100% Recyclable** and separable material contribute to an environmental friendly and sustainable waste management program as opposed to cup materials like PVC.
- ▶ Can be used in **high temperature** applications such as injection molding. Material options free from silicone and Paint Wetting Impairment Substances (PWIS).





# Configurable products

Product Group		Lip			
piGRIP™		Dimension & Type		Material & Durometer	
Code	Description	Code	Description	Code	Description
G					
S25	Ø 25 mm Standard lip	T60 T50	TPE 60° Shore A TPE 50° Shore A		
S35	Ø 35 mm Standard lip				
S50	Ø 50 mm Standard lip				
S70	Ø 70 mm Standard lip				
FX28	Ø 28 mm Flexible lip	T50 T30	TPE 50° Shore A TPE 30° Shore A		
FX39	Ø 39 mm Flexible lip				
FX55	Ø 55 mm Flexible lip				
FX77	Ø 77 mm Flexible lip				
FLJ25	Ø 25 mm Foam lip	S	Foam EDPM (soft)		
FLJ35	Ø 35 mm Foam lip				
FLJ50	Ø 50 mm Foam lip				
FLJ70	Ø 70 mm Foam lip				

Lips are available as spare parts.

Bellows or Flat Cup	
Code	Description
B1	1 bellows
B3	3 bellows
F	Flat

Support	
Code	Description
S1	Support type 1

Fitting					
Type		Size		Style	
Code	Description	Code	Description	Code	Description
G NT	G-Thread NPT-Thread	18	1/8"	M	Male
		14	1/4"		
		38 12	3/8" 1/2"		
GL NTL	G-Thread low NPT-Thread low	18	1/8"	M	Male
		14	1/4"		
		38	3/8"		
NS G*	NPSF-Thread G-Thread	18	1/8"	F	Female
		14	1/4"		
		38	3/8"		
		12	1/2"		
		518*	5x1/8"		
NT	NPT-Thread	14	1/4"	F	Female
		38	3/8"		
M	M-Thread	M6	M6	M	Male
		MF8	M8x1		
		M10	M10		
		MF14	M14x1		
		MF16	M16x1.5		
M	M-Thread	M5	M5	F	Female
		M6	M6		
		M8	M8		
		M10	M10		
		M12	M12		
		MF16	M16x1.5		
U	UNC-Thread	12	1/2"	F	Female
P	Push-On	D08	Ø 8	X	Female "push-on"
		D10	Ø 10		
		D11	Ø 11		
X	No Type	X	No Size	X	No style

\*) Fitting code G18F and G518F are automatically changed to NS18F and NS518F due to identical threads. Fittings are available as spare parts.

Option	
Code	Description
00	No Filter
01	Filter mesh
02	Filter disc (only bellows cup)



**G . S50T60 . B3 . S1 . G38M . 01**

**piGRIP™**



## Thousands of suction cups ready to improve your machine

A unique modular suction cup concept with individually optimized parts for gripping, lifting and height compensation.

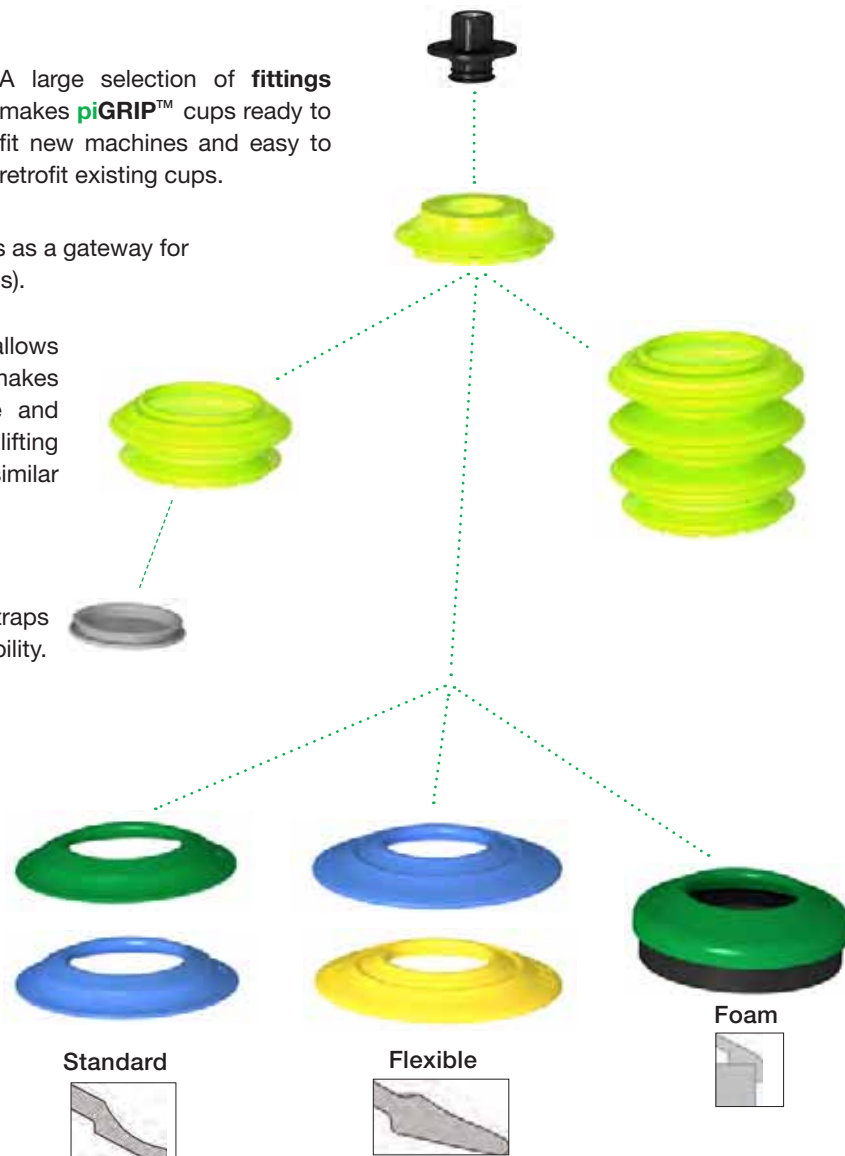
A large selection of **fittings** makes **piGRIP™** cups ready to fit new machines and easy to retrofit existing cups.

One **support** per size works as a gateway for all bellows and lips (flat cups).

Firm and Stable 1- and 3- folded **bellows** allows for faster machine speeds. Thin-wall design makes them faster to compress using less force and energy. The strength of the material increases lifting capacity between 30-50% compared to similar conventional cups.

A low micron **filter disc** inside the bellows traps dust and particles increasing system reliability.

Get an excellent grip on almost anything with the right **lip** for your application. Choose standard lips from 60° shore to extremely flexible, soft lips in 30° shore. Even foam lips for objects which are difficult to grip with traditional cups.



Option

Fitting

Support

Bellows

Lip



80°-87°

TPE, FDA, Oil resistant, Silicone/PWIS free & Mark free

60°

TPE, Oil resistant, Silicone/PWIS free & Mark free

50°

TPE, FDA

30°

TPE, FDA

60°

PU

S

EPDM, Foam

# piGRIP™

Superior performance with individually optimized parts.



## Standard lip (S)

– for versatile use

- ▶ The green standard lip is suitable for relatively even surfaces on sealed materials. It has extra wear resistance.
- ▶ The blue standard lip is recommended if the surface is more uneven or rough, e.g. textured plastic parts. FDA approved material recommended for food handling.



## Flexible lip (FX)

– with extra sealing capability

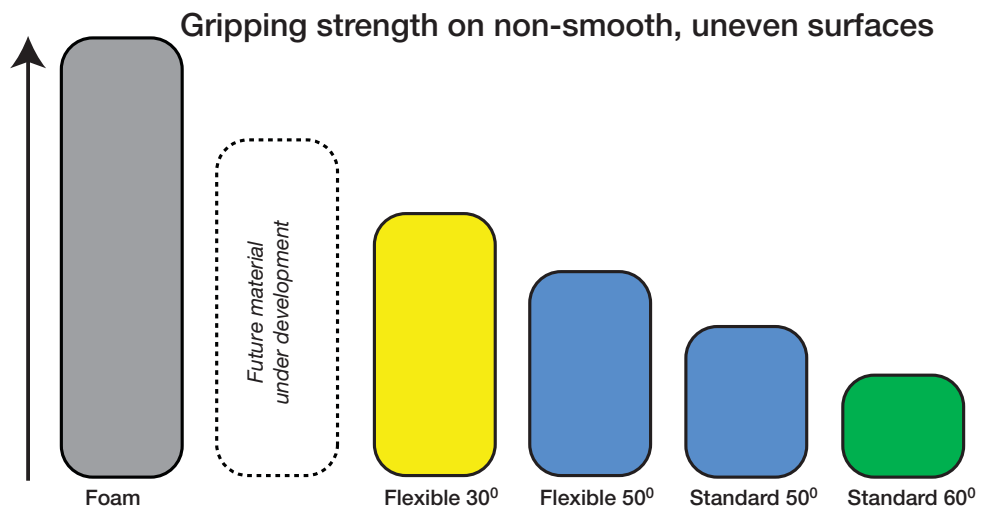
- ▶ The flexible lips are suitable for surface leaking materials (wrinkled or textured) and porous materials, such as corrugated paper.
- ▶ Both the blue and yellow lips have FDA approved material and are recommended for food handling.



## Foam lip (FLI)

– for difficult to handle objects

- ▶ Suitable when conventional lips are not sealing enough.
- ▶ Can replace mechanical grippers.
- ▶ A lip holder excludes the need for glue, worn lips are easy replaced.





### Support – the generic interface

- ▶ Gateway between fittings and bellows or lips (for flat cups).
- ▶ Adds cleats with good wear resistance and friction to flat cups.



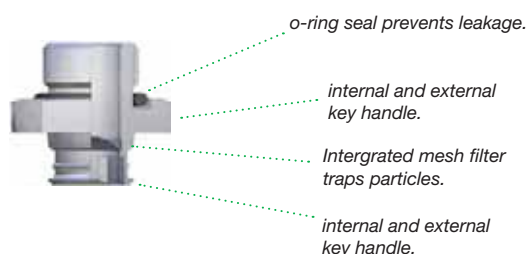
### Bellows – when level compensation is needed

- ▶ Firm/stable bellows allows for high machine speeds.
- ▶ Low spring force with thin-wall design, makes it easy to compress and return, leading to faster evacuations and speeds.
- ▶ Extra high lifting force compared to conventional cups in the same size. The stiff bellows retains its shape even at deep vacuum levels.



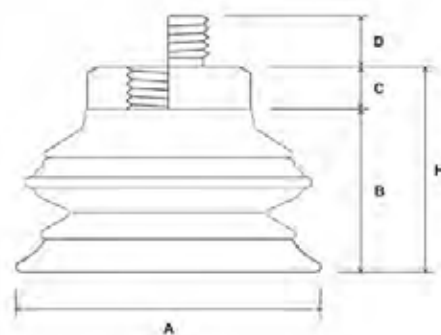
### Fitting - huge selection for many machines and industries

- ▶ All fittings are possible to use for all configurations. Easy to upgrade/change.



Suction cup dimensions, in

Lip type & size		Dim. A	Dim B.		
			F (Flat)	B-1 (1 Bellows)	B-3 (3 Bellows)
	S25	0.98	0.43	0.74	1.17
	S35	1.38	0.49	0.92	1.53
	S50	1.97	0.58	1.19	2.06
	S70	2.76	0.70	1.56	2.78
	FX28	1.10	0.45	0.76	1.19
	FX39	1.54	0.52	0.94	1.56
	FX55	2.17	0.62	1.23	2.10
	FX77	3.03	0.76	1.61	2.83
	FLI25	0.98	1.04	1.35	1.79
	FLI35	1.38	1.09	1.52	2.13
	FLI50	1.97	1.15	1.76	2.63
	FLI70	2.76	1.23	2.09	3.31



Build height:

$$H = B + C = 0.74 + 0.20 = 0.94 \text{ in.}$$

Fitting dimensions, in

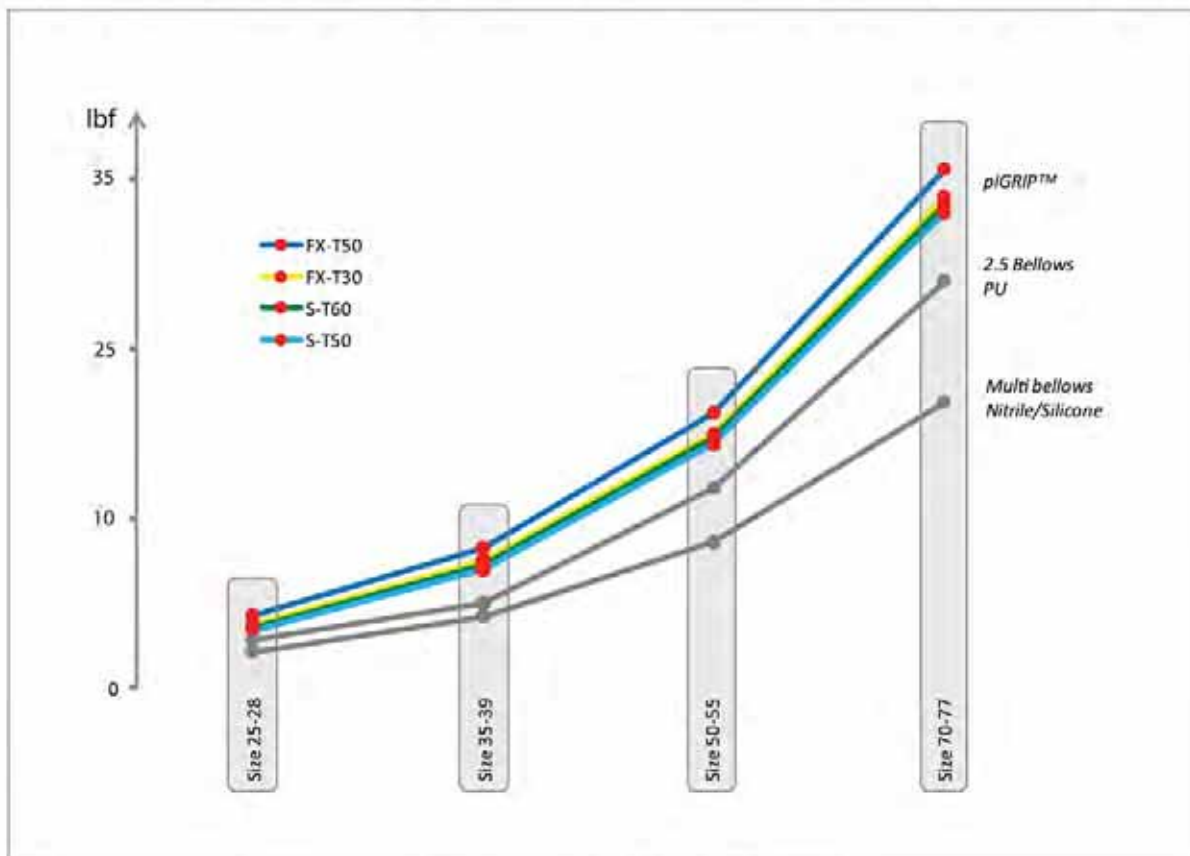
Type	Code	Dim. C	Dim. D	Description	Recommended fitting size for best performance*			
					S25 FX28 FLI25	S35 FX39 FLI35	S50 FX55 FLI50	S70 FX77 FLI70
	G18M	0.20	0.24	Fitting G1/8" male	x	x	x	
	G14M	0.24	0.35	Fitting G1/4" male	x		x	x
	G38M	0.24	0.39	Fitting G3/8" male		x	x	x
	G12M	0.24	0.39	Fitting G1/2" male			x	x
	GL18M	0.06	0.24	Fitting G1/8" low male	x	x	x	
	GL14M	0.06	0.35	Fitting G1/4" low male	x	x	x	x
	GL38M	0.06	0.39	Fitting G3/8" low male		x	x	x
	NT18M	0.20	0.28	Fitting 1/8" NPT male	x	x	x	
	NT14M	0.24	0.43	Fitting 1/4" NPT male	x	x	x	x
	NT38M	0.24	0.45	Fitting 3/8" NPT male		x	x	x
	NT12M	0.24	0.59	Fitting 1/2" NPT male			x	x
	NTL18M	0.20	0.28	Fitting 1/8" NPT low male	x	x	x	
	NTL14M	0.24	0.43	Fitting 1/4" NPT low male	x	x	x	x
	NTL38M	0.24	0.45	Fitting 3/8" NPT low male		x	x	x
	MM6M	0.20	0.24	Fitting M6 male	x	x		
	MMF8M	0.20	0.24	Fitting M8 x 1 male	x	x	x	
	MM10M	0.24	0.39	Fitting M10 male	x	x	x	
	MMF14M	0.24	0.47	Fitting M14 x 1 male	x	x	x	x
	MMF16M	0.24	0.47	Fitting M16 x 1.5 male		x	x	x
	G14F	0.39	-	Fitting G1/4" fem	x	x	x	
	G38F	0.51	-	Fitting G3/8" fem		x	x	x
	G12F	0.55	-	Fitting G1/2" fem			x	x
	NS18F	0.28	-	Fitting 1/8" NPSF fem	x	x	x	
	NS14F	0.39	-	Fitting 1/4" NPSF fem	x	x	x	x
	NS38F	0.51	-	Fitting 3/8" NPSF fem		x	x	x
	NS12F	0.55	-	Fitting 1/2" NPSF fem			x	x
	NS518F	0.71	-	Fitting 5x1/8" NPSF fem	x	x	x	
	NT14F	0.47	-	Fitting 1/4" NPT fem	x	x	x	x
	NT38F	0.51	-	Fitting 3/8" NPT fem		x	x	x
	U12F	0.47	-	Fitting 1/2" UNC fem			x	x
	MM5F	0.24	-	Fitting M5 fem	x	x		
	MM6F	0.24	-	Fitting M6 fem	x	x		
	MM8F	0.28	-	Fitting M8 fem	x	x	x	
	MM10F	0.28	-	Fitting M10 fem	x	x	x	
	MM12F	0.47	-	Fitting M12 fem	x	x	x	
	MMF16F	0.51	-	Fitting M16 x 1.5 fem		x	x	x
	PD08X	0	-	Fitting 3 Push-on 8	x	x		
	PD10X	0	-	Fitting 3 Push-on 10	x	x	x	
	PD11X	0	-	Fitting 3 Push-on 11	x	x	x	

\*) No flow restriction or excessive volume to evacuate, which will deteriorate the performance of the vacuum system.  
 \*\*) Fitting code G18F and G518F are automatically changed to NS18F and NS518F due to identical threads.

# piGRIP™ Material Data



Up to 50% improved lifting force with piGRIP™. Use fewer cups or smaller sizes.



Proven function and lifting capacity within specified area of operation.  
See suction cup selection guide on [www.piab.com](http://www.piab.com) for specified performance data.

## Material Specifications

Material	Hardness Shore A *	Item(s)	Color	Temp. range ° F	Special qualities
TPE	87	Support S1 25mm	Lime	-4-176/248*	FDA, Silicone/PWIS free, Mark free, oil resistant
TPE	80	Support S1 35, 50 and 70mm	Lime	-4-176/248*	FDA, Silicone/PWIS free, Mark free, oil resistant
TPE	87	Bellows	Lime	-4-176/248*	FDA, Silicone/PWIS free, Mark free, oil resistant
TPE	60	Standard Lip (S) T60	Green	-4-176/248*	Silicone/PWIS free, Mark free, oil resistant
TPE	50	Standard Lip (S) T50	Blue	-40-178/248*	FDA
TPE	50	Flexible Lip (FX) T50	Blue	-40-176/248*	FDA
TPE	30	Flexible Lip (FX) T30	Yellow	-40-178/248*	FDA
EPDM	-	Foam Lip (FLI)	Black	-40-248*	Ultra soft cellular rubber
PU	80	Foam Lip holder	Green	50 - 122	

\*Max. Temperature short term contact, <10 seconds and 50% intermittance, ambient temperature 59-86 °F; mechanical properties will start to degrade.

Go to suction cup selection guide on  
[www.piab.com](http://www.piab.com)  
to configure your suction cup.