

piGRIP®

Thousands of suction cups ready to improve your machine

The piGRIP® is a unique configurable suction cup concept with individually optimized parts for gripping, lifting and height compensation. Also a large selection of fittings makes it ready to fit new machines and easy to retrofit existing cups. The fittings available are both threaded and push on fittings.



Fitting & Flow Restrictors

A large selection of fittings makes piGRIP® cups ready to fit new machines and easy to retrofit existing cups. Available are both threaded and push on fittings. There is also a fitting that has an ejector integrated, the COAX® in piGRIP® for creating a decentralized pump. piSAVE restrict and piSAVE sense are options that are suitable for handling different sized or a variable number of objects.



Filters

A low micron filter disc inside the bellows traps dust and particles increasing system reliability. A mesh filter is available in the fitting.



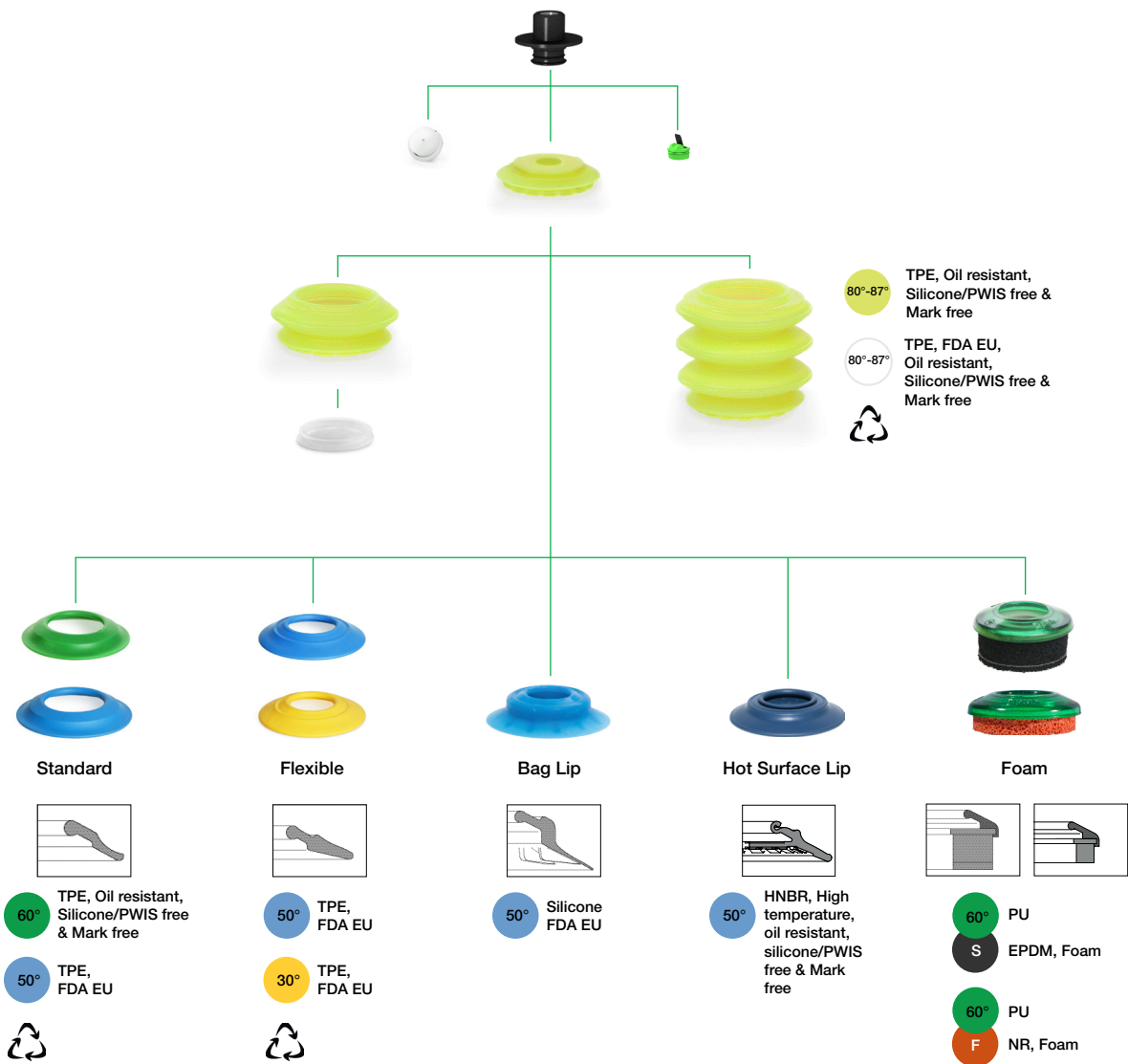
Bellows

Firm and Stable 1-, 3- and 6- 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. FDA-approved (EU 1935/2004) material available (transparent).



Lips

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. Tailor-made Bag lips for handling bags and pouches. Foam lips for objects which are difficult to grip rough surfaces with traditional cups. High temperature lips are also available when so needed.



Product Group

piGRIP®

G



Lip		Material & Durometer	
Dimension & Type			
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		
FLI25S	Ø 25 mm Foam lip	S	Foam EPDM (soft)
FLI35S	Ø 35 mm Foam lip		
FLI50S	Ø 50 mm Foam lip		
FLI70S	Ø 70 mm Foam lip		
FLI25F	Ø 25 mm Foam lip	F	Foam NR (firm)
FLI35F	Ø 35 mm Foam lip		
FLI50F	Ø 50 mm Foam lip		
FLI70F	Ø 70 mm Foam lip		
BGI25	Ø 25 mm Bag lip with retainer	S50	Silicone 50° Shore A
BGI34	Ø 34 mm Bag lip with retainer		
BGI41	Ø 41 mm Bag lip with retainer		
BGI48	Ø 48 mm Bag lip with retainer		
BGI63	Ø 63 mm Bag lip with retainer		
BGI80	Ø 80 mm Bag lip with retainer		
HS29	Ø 29 mm HS29	HN50	HNBR 50° Shore A
HS39	Ø 39 mm HS39		
HS58	Ø 58 mm HS58		
HS79	Ø 79 mm HS79		

Lips are available as spare parts.



Bellows or Flat Cup	
B1	1 bellows
B3	3 bellows
B6	6 bellows (3+3)
F	No bellows



Support	
S1	Support type 1

G . S50T60 . B3 . S1 . G38M . 01 . ()



FDA EU approved option includes material certificate

FDA	No*
	US Food and Drug Administration

* Leave blank for no certificate.

Fitting

Option

Type		Size		Style	
G NT	G-Thread NPT-Thread	18	1/8"	M	Male
		14	1/4"		
		38	3/8"		
		12	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		
		M12	M12		
		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
C	COAX® in piGRIP®	S	High flow	X	No style
		T	Extra high flow		
X	No type	X	No size	X	No style

00	No Filter
01	Filter mesh
02	Filter disc (only bellows cup)
03	piSAVE restrict Ø 0.7
04	piSAVE restrict Ø 1.0
05	piSAVE restrict Ø 1.3
06	piSAVE restrict Ø 0.7 and filter disc
07	piSAVE restrict Ø 1.0 and filter disc
08	piSAVE restrict Ø 1.3 and filter disc
13	piSAVE sense 03/60, C/M*-flow: 0,38/0,10 NI/s
14	piSAVE sense 04/60, C/M*-flow: 0,53/0,17 NI/s
15	piSAVE sense 05/60, C/M*-flow: 0,73/0,27 NI/s
16	piSAVE sense 03/60, C/M*-flow: 0,38/0,10 NI/s & filter disc
17	piSAVE sense 04/60, C/M*-flow: 0,53/0,17 NI/s & filter disc
18	piSAVE sense 05/60, C/M*-flow: 0,73/0,27 NI/s & filter disc

* C/M = Closing/Minimum.

* Steel material. Push-on fitting sold separately.

Lifting forces and general specifications – piGRIP® F

Lip	Lifting force vertical to the surface, N, at vacuum level		Lifting force parallel to the surface, N, at vacuum level		Outer diameter mm	Min. curve radius at 60 -kPa mm	Max vertical movement mm	Volume cm ³
	40 -kPa	60 -kPa	40 -kPa	60 -kPa				
S25T50	11.4	17	5.7	8.5	25	25	2	0.8
S25T60	11.7	17.9	5.9	9	25	25	1.8	0.8
S35T50	24	34.5	12	17.2	35	40	2.8	1.4
S35T60	25	36	12.5	18	35	40	2.6	1.4
S50T50	50	71.8	25	35.9	50	75	4	4
S50T60	52.2	73.6	26.1	36.8	50	75	3.7	4
S70T50	101	145.6	50.5	72.8	70	80	5.6	11
S70T60	103.5	148	51.8	74	70	80	5.1	11
FX28T30	13.5	18.9	6.7	9.5	28	25	2.7	0.5
FX28T50	14.9	21.3	7.4	10.7	28	25	2.6	0.5
FX39T30	26.8	37.3	13.4	18.7	39	40	3.8	1.3
FX39T50	28.9	41	14.5	20.5	39	40	3.7	1.3
FX55T30	54.2	75	27.1	37.5	55	75	5.4	3.9
FX55T50	56.6	81.1	28.3	40.5	55	75	5.3	3.9
FX77T30	107	150.4	53.5	75.2	77	90	7.6	10.7
FX77T50	112	159	56	79.5	77	90	7.4	10.7
FLI25F	2.2	3.8	1.1	1.9	25.5	*	3.8	0.86
FLI25S	*	*	*	*	25.5	*	5	0.51
FLI35F	5.8	11	2.9	5.5	35.6	*	3.8	1.65
FLI35S	*	*	*	*	35.6	*	7.2	0.87
FLI50F	10	16	5	8	51	*	5.6	5.2
FLI50S	*	*	*	*	51	*	16.2	5.1
FLI70F	32	60	16	30	71	*	5.6	15.3
FLI70S	*	*	*	*	71	*	16.5	19.3
HS29HN50	15.9	23.3	13.5	19.8	29	18	2.3	0.9
HS39HN50	29.6	42.2	25.2	35.9	41	25	2.7	2.1
HS58HN50	65.8	94.5	55.9	80.3	59	38	4.9	7
HS79HN50	125.2	177.8	106.4	151.1	80	51	6.4	17.3

* Dependent on application.

Lifting forces and general specifications – piGRIP® B1

Lip	Lifting force vertical to the surface, N, at vacuum level		Lifting force parallel to the surface, N, at vacuum level		Outer diameter mm	Min. curve radius at 60 -kPa mm	Max vertical movement mm	Volume cm ³
	40 -kPa	60 -kPa	40 -kPa	60 -kPa				
S25T50	11.4	17	5.7	8.5	25	12	5.1	2.1
S25T60	11.7	17.9	5.9	9	25	12	4.9	2.1
S35T50	24	34.5	12	17.2	35	17	7.2	5.4
S35T60	25	36	12.5	18	35	17	7	5.4
S50T50	50	71.8	25	35.9	50	30	10.2	15.7
S50T60	52.2	73.6	26.1	36.8	50	30	9.9	15.7
S70T50	101	145.6	50.5	72.8	70	50	14.3	43
S70T60	103.5	148	51.8	74	70	50	13.8	43
FX28T30	13.5	18.9	6.7	9.5	28	15	5.8	1.8
FX28T50	14.9	21.3	7.4	10.7	28	15	5.7	1.8
FX39T30	26.8	37.3	13.4	18.7	39	20	8.2	5.3
FX39T50	28.9	41	14.5	20.5	39	20	8.1	5.3
FX55T30	54.2	75	27.1	37.5	55	40	11.6	15.6
FX55T50	56.6	81.1	28.3	40.5	55	40	11.5	15.6
FX77T30	107	150.4	53.5	75.2	77	55	16.3	42.7
FX77T50	112	159	56	79.5	77	55	16.1	42.7
FLI25F	2.2	3.8	1.1	1.9	25.5	*	6.9	2.16
FLI25S	*	*	*	*	25.5	*	8.1	1.81
FLI35F	5.8	11	2.9	5.5	35.6	*	8.2	5.65
FLI35S	*	*	*	*	35.6	*	11.6	4.87
FLI50F	10	16	5	8	51	*	11.8	16.9
FLI50S	*	*	*	*	51	*	22.4	16.8
FLI70F	32	60	16	30	71	*	14.3	47.3
FLI70S	*	*	*	*	71	*	25.2	51.3
BGI25S50	5.1	7.4	2.6	3.7	25	11	4.2	2.2
BGI34S50	10.3	15	5.2	7.5	34	16	4.5	3.3
BGI41S50	16.1	23.5	8.1	11.8	41	19	5.7	7.9
BGI48S50	20.9	30.5	10.5	15.3	48	35	6.1	12.5
BGI63S50	39.9	58.2	20.0	29.1	63	39	7.8	26.9
BGI80S50	66.2	96.6	33.1	48.3	80	58	10	65.1
HS29HN50	15.9	23.3	13.5	19.8	29	15	5.4	2.2
HS39HN50	29.6	42.2	25.2	35.9	41	20	7.1	6.1
HS58HN50	65.8	94.5	55.9	80.3	59	27	11.1	18.7
HS79HN50	125.2	177.8	106.4	151.1	80	40	15.1	49.3

* Dependent on application.

Lifting forces and general specifications – piGRIP® B3

Lip	Lifting force vertical to the surface, N, at vacuum level		Lifting force parallel to the surface, N, at vacuum level		Outer diameter mm	Min. curve radius at 60 -kPa mm	Max vertical movement mm	Volume cm ³
	40 -kPa	60 -kPa	40 -kPa	60 -kPa				
S25T50	11.4	17	5.7	8.5	25	12	13.7	5.2
S25T60	11.7	17.9	5.9	9	25	12	13.5	5.2
S35T50	24	34.5	12	17.2	35	17	19.2	14
S35T60	25	36	12.5	18	35	17	19	14
S50T50	50	71.8	25	35.9	50	30	27.4	40.6
S50T60	52.2	73.6	26.1	36.8	50	30	27.1	40.6
S70T50	101	145.6	50.5	72.8	70	50	38.4	111.3
S70T60	103.5	148	51.8	74	70	50	37.9	111.3
FX28T30	13.5	18.9	6.7	9.5	28	15	14.4	4.9
FX28T50	14.9	21.3	7.4	10.7	28	15	14.3	4.9
FX39T30	26.8	37.3	13.4	18.7	39	20	20.2	13.9
FX39T50	28.9	41	14.5	20.5	39	20	20.1	13.9
FX55T30	54.2	75	27.1	37.5	55	40	28.8	40.5
FX55T50	56.6	81.1	28.3	40.5	55	40	28.7	40.5
FX77T30	107	150.4	53.5	75.2	77	55	40.4	111
FX77T50	112	159	56	79.5	77	55	40.2	111
FLI25F	2.2	3.8	1.1	1.9	25.5	*	15.5	5.26
FLI25S	*	*	*	*	25.5	*	16.7	4.91
FLI35F	5.8	11	2.9	5.5	35.6	*	20.2	14.25
FLI35S	*	*	*	*	35.6	*	23.6	13.47
FLI50F	10	16	5	8	51	*	29	41.8
FLI50S	*	*	*	*	51	*	39.6	41.7
FLI70F	32	60	16	30	71	*	38.4	115.6
FLI70S	*	*	*	*	71	*	49.3	119.6
BGI25S50	5.1	7.4	2.6	3.7	25	11	12.8	5.3
BGI34S50	10.3	15	5.2	7.5	34	30	13.4	7.4
BGI41S50	16.1	23.5	8.1	11.8	41	19	17.7	16.5
BGI48S50	20.9	30.5	10.5	15.3	48	35	18.1	21.1
BGI63S50	39.9	58.2	20	29.1	63	39	25	51.8
BGI80S50	66.2	96.6	33.1	48.3	80	58	34.1	133.4
HS29HN50	15.9	23.3	13.5	19.8	29	15	14	5.3
HS39HN50	29.6	42.2	25.2	35.9	41	20	19.1	14.7
HS58HN50	65.8	94.5	55.9	80.3	59	27	28.3	43.6
HS79HN50	125.2	177.8	106.4	151.1	80	40	39.2	117.6

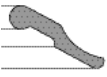



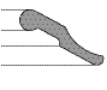
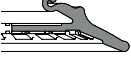
* Dependent on application.

Lifting forces and general specifications – piGRIP® B6

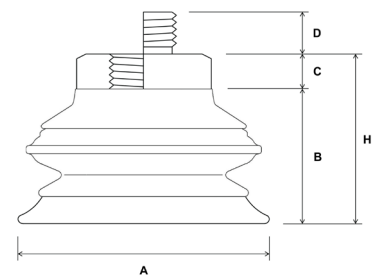
Lip	Lifting force vertical to the surface, N, at vacuum level		Lifting force parallel to the surface, N, at vacuum level		Outer diameter mm	Min. curve radius at 60 -kPa mm	Max vertical movement mm	Volume cm ³
	40 -kPa	60 -kPa	40 -kPa	60 -kPa				
S25T50	11.4	17	5.7	8.5	25	12	25.4	9.6
S25T60	11.7	17.9	5.9	9	25	12	25.2	9.6
S35T50	24	34.5	12	17.2	35	17	35.6	26.6
S35T60	25	36	12.5	18	35	17	35.4	26.6
S50T50	50	71.8	25	35.9	50	30	50.8	77.2
S50T60	52.2	73.6	26.1	36.8	50	30	50.5	77.2
S70T50	101	145.6	50.5	72.8	70	50	71.2	211.6
S70T60	103.5	148	51.8	74	70	50	70.7	211.6
FX28T30	13.5	18.9	6.7	9.5	28	15	26.1	9.3
FX28T50	14.9	21.3	7.4	10.7	28	15	26	9.3
FX39T30	26.8	37.3	13.4	18.7	39	20	36.6	26.5
FX39T50	28.9	41	14.5	20.5	39	20	36.5	26.5
FX55T30	54.2	75	27.1	37.5	55	40	52.2	77.1
FX55T50	56.6	81.1	28.3	40.5	55	40	52.1	77.1
FX77T30	107	150.4	53.5	75.2	77	55	73.2	211.3
FX77T50	112	159	56	79.5	77	55	73	211.3
FLI25F	2.2	3.8	1.1	1.9	25.5	*	27.2	9.66
FLI25S	*	*	*	*	25.5	*	28.4	9.31
FLI35F	5.8	11	2.9	5.5	35.6	*	36.6	26.85
FLI35S	*	*	*	*	35.6	*	40	26.07
FLI50F	10	16	5	8	51	*	52.4	78.4
FLI50S	*	*	*	*	51	*	63	78.3
FLI70F	32	60	16	30	71	*	71.2	215.9
FLI70S	*	*	*	*	71	*	82.1	219.9
BGI25S50	5.1	7.4	2.6	3.7	25	11	24.5	9.7
BGI34S50	10.3	15	5.2	7.5	34	30	25.1	11.8
BGI41S50	16.1	23.5	8.1	11.8	41	19	34.1	29.1
BGI48S50	20.9	30.5	10.5	15.3	48	35	34.5	33.7
BGI63S50	39.9	58.2	20	29.1	63	39	48.4	88.4
BGI80S50	66.2	96.6	33.1	48.3	80	58	66.9	233.7
HS29HN50	15.9	23.3	13.5	19.8	29	15	25.7	9.7
HS39HN50	29.6	42.2	25.2	35.9	41	20	35.5	27.3
HS58HN50	65.8	94.5	55.9	80.3	59	27	51.7	80.2
HS79HN50	125.2	177.8	106.4	151.1	80	40	72	217.9

* Dependent on application.

Suction cup dimensions, mm

Lip type & size		Dim. A	Dim. B			
			F (Flat)	B-1 (1 Bellows)	B-3 (3 Bellows)	B-6 (3+3 Bellows)
	S25	25	10.9	18.7	29.8	48.7
	S35	35	12.4	23.3	38.8	65.2
	S50	50	14.7	30.3	52.4	90.1
	S70	70	17.8	39.6	70.6	123.4
	FX28	28	11.4	19.2	30.3	49.2
	FX39	38	13.1	24.0	39.5	65.9
	FX55	55	15.7	31.3	53.4	91.1
	FX77	77	19.2	41	72	124.8
	FLI25S	25	17.5	25.3	36.4	55.3
	FLI35S	35	21.5	32.4	47.9	74.3
	FLI50S	50	32.1	47.7	69.8	107.5
	FLI70S	70	34.1	55.9	86.9	139.7
	FLI25F	25	16	23.8	34.9	53.8
	FLI35F	35	17	27.9	43.4	69.8
	FLI50F	50	21.1	36.7	58.8	96.5
	FLI70F	70	23.1	44.9	75.9	128.7
	BGI25	25	—	22.7	33.8	52.7
	BGI34	34	—	24.8	35.9	54.8
	BGI41	41	—	29.5	45.0	71.4
	BGI48	48	—	30.9	46.4	72.8
	BGI63	63	—	39.9	62.0	99.7
	BGI80	80	—	49.4	80.4	133.2
	HS29	29	13.4	14.2	25.3	44.2
	HS39	39	15.6	19.5	35	61.4
	HS58	58	19.5	27.5	50.2	87.9
	HS79	79	24.3	39.1	70.1	122.9

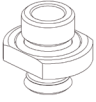

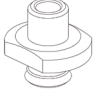

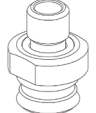
Build height:








$$B + C = H$$

Ex. 18.7 + 5 = 23.7

Fitting dimensions, mm

					Recommended fitting size for best performance*			
					S25	S35	S50	S70
					FX28	FX39	FX55	FX77
					FLI25	FLI35	FLI50	FLI70
					BGI25	BGI41	BGI63	HS79
					BGI34	BGI48	BGI63	HS79
					HS29	HS39	HS58	BGI80
Type	Code	Dim. C	Dim. D	Description				
	G18M	5	6	Fitting G1/8" male	●	●	●	
	G14M	6	9	Fitting G1/4" male	●	●	●	●
	G38M	6	10	Fitting G3/8" male		●	●	●
	G12M	6	10	Fitting G1/2" male			●	●
	GL18M	1.5	6	Fitting G1/8" low male	●	●	●	
	GL14M	1.5	9	Fitting G1/4" low male	●	●	●	●
	GL38M	1.5	10	Fitting G3/8" low male		●	●	●
	NT18M	5	7	Fitting 1/8" NPT male	●	●	●	
	NT14M	6	11	Fitting 1/4" NPT male	●	●	●	●
	NT38M	6	11.5	Fitting 3/8" NPT male		●	●	●
	NT12M	6	15	Fitting 1/2" NPT male			●	●
	NTL18M	1.5	7	Fitting 1/8" NPT low male	●	●	●	
	NTL14M	1.5	11	Fitting 1/4" NPT low male	●	●	●	●
	NTL38M	1.5	11.5	Fitting 3/8" NPT low male		●	●	●
	MM6M	5	6	Fitting M6 male	●	●		
	MMF8M	5	6	Fitting M8 x 1 male	●	●	●	
	MM10M	6	10	Fitting M10 male	●	●	●	
	MM12M	6	10	Fitting M12 male	●	●	●	
	MMF14M	6	12	Fitting M14 x 1 male	●	●	●	●
	MMF16M	6	12	Fitting M16 x 1.5 male		●	●	●

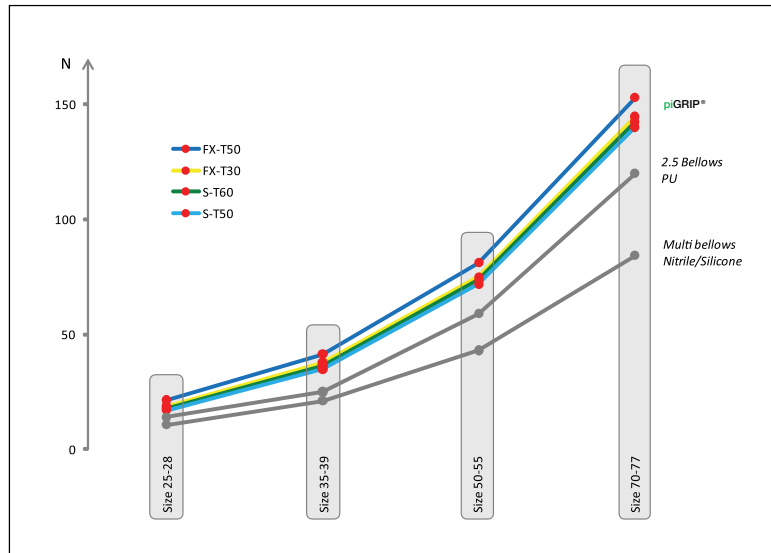
					Recommended fitting size for best performance*			
Type	Code	Dim. C	Dim. D	Description	S25 FX28 FLI25 BGI25 BGI34 HS29	S35 FX39 FLI35 BGI41 BGI48 HS39	S50 FX55 FLI50 BGI63 HS58	S70 FX77 FLI70 HS79 BGI80
	G14F	10	—	Fitting G1/4" fem	●	●	●	
	G38F	13	—	Fitting G3/8" fem		●	●	●
	G12F	14	—	Fitting G1/2" fem			●	●
	NS18F**	7	—	Fitting 1/8" NPSF fem	●	●	●	
	NS14F	10	—	Fitting 1/4" NPSF fem	●	●	●	●
	NS38F	13	—	Fitting 3/8" NPSF fem		●	●	●
	NS12F	14	—	Fitting 1/2" NPSF fem			●	●
	NS518F**	18	—	Fitting 5x1/8" NPSF fem	●	●	●	
	NT14F	12	—	Fitting 1/4" NPT fem	●	●	●	●
	NT38F	13	—	Fitting 3/8" NPT fem		●	●	●
	U12F	12	—	Fitting 1/2" UNC fem			●	●
	MM5F	6	—	Fitting M5 fem	●	●		
	MM6F	6	—	Fitting M6 fem	●	●		
	MM8F	7	—	Fitting M8 fem	●	●	●	
	MM10F	7	—	Fitting M10 fem	●	●	●	
	MM12F	12	—	Fitting M12 fem	●	●	●	
	MMF16F	13	—	Fitting M16 x 1.5 fem		●	●	●

* 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.

Go to suction cup selection guide on piab.com to configure your suction cup.

piGRIP® Material Data

Up to 50% improved lifting force with piGRIP®. Use fewer cups or smaller sizes. See suction cup selection guide on piab.com for specified performance data



Proven function and lifting capacity within specified area of operation.

Material Specifications

Material	Hardness, Shore A °	Item(s)	Colour	Temp. range, °C	Special qualities
TPE	80–87	Support S1	Lime/Transparent	-20–60/100*	FDA EU**, silicone/PWIS free, mark free, oil resistant
TPE	87	Bellows	Lime/Transparent	-20–60/100*	FDA EU**, silicone/PWIS free, mark free, oil resistant
TPE	60	Standard Lip (S) T60	Green	-20–60/120*	Silicone/PWIS free, mark free, oil resistant
TPE	50	Standard Lip (S) T50	Blue	-40–60/120*	FDA EU
TPE	50	Flexible Lip (FX) T50	Blue	-40–60/120*	FDA EU
TPE	30	Flexible Lip (FX) T30	Yellow	-40–60/100*	FDA EU
EPDM	–	Foam Lip (FLI-S)	Green/Black	-20–80	Ultra soft cellular rubber
NR	–	Foam Lip (FLI-F)	Green/Orange	-20–80	Firm natural rubber
Silicone	50	Bag Lip (BGI)	Blue	-40–200	FDA EU
HNBR	50	Hot Surface Lip (HS)	Blue	-30–120/150*	PWIS free, mark free
PU	60	Foam Lip holder	Green	10–50	

* Max Temperature short term contact, <10 sec and 50% intermittence, ambient temperature 15–30 °C, mechanical properties will start to degrade.

** FDA EU approved option in transparent material.