

Suction cup accessories



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Suction cup accessories



Mounting Elements



Level compensators



Ball joints



Suction cup valves



Fittings



Other

Features and benefits

The mounting element program consists of mounting brackets, height adjusters and suction cup extensions. The parts are designed to fit together for different sizes and applications. The parts are easily mounted on several standard extruded profile systems, not just suitable for one brand of profile. All parts of the same size-category fit perfectly together and thereby create an easy-to-use, compact and flexible/adjustable mounting “assembly kit” for cups.

Adjust differences in levels, for example on lifting devices with several suction cups. There is then less demand for exact positioning of vacuum handling device. Level compensators will also provide a certain degree of shock and vibration absorption.

To avoid bending stress, a suction cup can be fitted with a ball joint.

Valves to minimize the energy consumption. Gives a flexibility on number of objects to be handled.

A variety of fittings for suction cups.

Angle adaptors, t-slot adaptors etc.

Mounting Elements



Mounting bracket MB

- Mounting brackets suitable for extruded profile systems.
- Level compensators and height adjusters with external thread in sizes M12, M16, M20 and M25 are ideal for clamping on the mounting brackets.
- Facilitates the installation of a suction cup and positioning in X-direction.
- Long and short versions available.



Height adjuster HA

- Facilitates the positioning (y-direction) of a suction cup.
- Provides an adjustable height extension between a mounting bracket (MB) and a suction cup.
- Can be used with a suction cup / rod extension to further elongate the cup position.
- Key handle to avoid rotation when connecting vacuum ports.



Suction cup extension SE

- Solid rod extension with air/vacuum channel.
- For mounting a suction cup.
- Available in several sizes.
- Can be used with a height adjuster (HA) or level compensator (LC).

Technical Data

Description	Load, vertical, max.	Load, torque, max.	Load, horizontal, max.	Action range/ Stroke
Mounting bracket MB12S, MB16S, MB20S	45.0 lbf	5.16 lb ft	–	–
Mounting bracket MB12L, MB16L, MB20L	45.0 lbf	5.16 lb ft	–	–
Mounting bracket MB25S, MB25L	67.4 lbf	11.1 lb ft	–	–
Height adjuster HA12	9.89 lbf	–	6.97 lbf	1.97 in
Height adjuster HA16	19.6 lbf	–	13.7 lbf	1.97 in
Height adjuster HA20	48.1 lbf	–	33.7 lbf	1.97 in
Suction cup extension 50, G3/8" male x G3/8" female	157 lbf	–	89.9 lbf	–
Suction cup extension SE12	9.89 lbf	–	6.97 lbf	–
Suction cup extension SE16	19.6 lbf	–	13.7 lbf	–
Suction cup extension SE20	48.1 lbf	–	33.7 lbf	–

Ordering information

For a complete list of available mounting elements visit piab.com. On our webpage you will also be able to find dimensional drawings, CAD-drawings and much more. Register to receive full access to all resources available.

Level Compensators



Level compensator LC

- Adjust differences in levels, for example on lifting devices with several suction cups.
- Less demand for exact positioning of vacuum handling device.
- Provides a certain degree of shock and vibration absorption.
- Allows for soft placement of cups on sensitive or thin objects.
- Non-rotational design, suitable for use with oval suction cups.
- Wide range of thread connections and stroke lengths.

Level compensators

- Adjust differences in levels, for example on lifting devices with several suction cups on a frame.
- A level compensator is often advantageous since it places less demand on exact vertical positioning, for example on a handling robot.
- The level compensator provides a certain degree of shock absorption.

Level compensator LC30

- Tailor made for the Vacuum Gripper System, VGS™, but can also be used together with other Piab products.
- Developed for use with standard profile systems.
- Easy installation with the option of fine adjustments and positioning of the suction cup.
- Non-rotational for use with, for example, oval suction cups. Can easily be made rotational.
- Quiet and reliable level compensation with load protection and shock absorption.

Technical Data

Description	Load, vertical, max.	Spring force	Action range/ Stroke	Thread
Level compensator LC12-F0510 / LC12-M0510	–	0.43–0.92 lbf	0.39 in	M5
Level compensator LC12-F0525 / LC12-M0525	–	0.45–1.12 lbf	0.98 in	M5
Level compensator LC16-F1820 / LC16-M1820	–	0.81–2.02 lbf	0.79 in	G1/8"
Level compensator LC16-F1835 / LC16-M1835	–	0.97–2.14 lbf	1.38 in	G1/8"
Level compensator LC20-F1425 / LC20-M1425	–	0.92–2.47 lbf	0.98 in	G1/4"
Level compensator LC20-F1450 / LC20-M1450	–	0.97–2.56 lbf	1.97 in	G1/4"
Level compensator LC25-F3840 / LC25-M3840	–	1.26–3.71 lbf	1.57 in	G3/8"
Level compensator LC25-F3880 / LC25-M3880	–	1.35–3.82 lbf	3.15 in	G3/8"
Level compensator G1/2" with stiffer spring	110 lbf	20.2–33.7 lbf	0.59 in	G1/2"
Level compensator M5	6.61 lbf	0.45–1.12 lbf	0.28 in	M5
Level compensator G1/8"	55.1 lbf	0.67–2.11 lbf	0.79 in	G1/8"
Level compensator G1/2"	110 lbf	5.4–8.32 lbf	0.59 in	G1/2"
Level compensator LC30	157 lbf	1.12–9.44 lbf	1.18 in	G3/8"

Ordering information

For a complete list of available level compensators visit piab.com. On our webpage you will also be able to find dimensional drawings, CAD-drawings and much more. Register to receive full access to all resources available.



Level compensator LC30 EOAT

- Easy installation with the option of fine adjustments and positioning of the suction cup.
- Conical spring means very low total height in relation to stroke. For example, that can help increase cycle speed in sheet metal press-to-press stamping applications.
- Non-rotational for use with, for example, oval suction cups. Can easily be made rotational.
- Mounting interfaces for standard flexible end-of-arm-tooling (EOAT) systems.
- Quiet and reliable level compensation with load protection and shock absorption.



Level compensator – profile mount

- Compensates for differences in height.
- Provides certain degree of shock absorption.
- Fits on standard size extrusion.



Vactivator V18

- Actuated by vacuum only.
- Automatic extension and retraction.
- Self-adjusting stroke, the piston with a suction cup returns home as soon as it seals off the object.
- Suction cup ordered separately.
- Simple solution for high picking speed.
- Easy installation.
- Designed for millions of cycles under normal industrial conditions.

Technical Data

Description	Load, vertical, max.	Action range/Stroke	Thread
Level compensator LC30 EOAT	157 lbf	1.18 in	G3/8" / 1/8"NPSF
Level compensator – profile mount	157 lbf	1.97 in	G3/8" / 3/8" NPT
Vactivator V18/20	1.10 lbf	0.79 in	G1/8"
Vactivator V18/40	1.10 lbf	1.57 in	G1/8"

Ordering information

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Ball Joints



Ball joints

- Ball joint fittings could be used when lifting sheet metal with a device using several suction cups.
- To avoid bending stress a suction cup can be fitted with a balljoint.



Ball joint fitting

- Fitted to a suction cup to avoid bending stress.
- Non-leaking design to work with Vacuum Check Valve and Vacustat.
- Available in a loose-fit, a locking version or one with 5° movement.

Technical Data

Description	Load, max.	Movement, angular
Ball joint G1/8"	55.0 lb	±12 °
Ball joint G1/2"	110 lb	±12 °
Ball joint G3/4"	330 lb	±12 °
Ball joint fitting G3/8"	–	±20 °
Ball joint fitting G3/8", locking	–	±20 °
Ball joint fitting G3/8", limited movement	–	±5 °

Ordering information

For a complete list of available ball joints visit piab.com. On our webpage you will also be able to find dimensional drawings, CAD-drawings and much more. Register to receive full access to all resources available.

Suction Cup Valves



piSAVE sense

- Vacuum check valves which allows a few suction cups to miss the object(s) and still maintain enough vacuum level in the system with quick response and release times.
- The vacuum check valves shall be used in a centralized vacuum system, one for each suction cup.
- Designing with vacuum check valves will require a smaller vacuum pump and save energy.
- Suitable for handling different size or different number of leaking or sealed objects such as MDF boards, corrugated cardboards or metal sheets with a flexible handling device.
- Also suitable for objects with surface leakage around the lip of the suction cup.
- The smallest sizes are mainly suitable for sealed and smooth materials, such as metal and glass (02/06 for small cups and 03/60 for large cups).
- The valves are supplied separately for integration or mounted in an AI-fitting with female and male threaded connections to facilitate installation.

piSAVE restrict

- Vacuum flow restrictors which allows a few suction cups to miss the object(s) and still maintain enough vacuum level in the system.
- Suitable for handling different size sealed sheets/objects with the same flexible lifting device.
- The vacuum flow restrictors shall be used in a centralized vacuum system, one for each suction cup.
- Designing with flow restrictors will require a smaller vacuum pump and save energy.
- Available in three sizes with different flow performance/characteristics to suit different size suction cups.
- The restrictors are integrated in an AI-fitting with female and male threaded connections to facilitate installation.

Technical Data

Description	Pump flow/cup min.	Pump flow/cup to close valve	Leakage flow, max.
piSAVE sense 02/60 (yellow)	0.002 (@ 13.3 -inHg) scfm	0.44 (@ 0.9 -inHg) scfm	–
piSAVE sense 03/60 (green)	0.13 (@ 13.3 -inHg) scfm	0.78 (@ 0.9 -inHg) scfm	–
piSAVE sense 04/60 (blue)	0.32 (@ 13.3 -inHg) scfm	1.17 (@ 2.1 -inHg) scfm	–
piSAVE sense 05/60 (red)	0.53 (@ 13.3 -inHg) scfm	1.53 (@ 3.3 -inHg) scfm	–
piSAVE restrict multiple port fitting 0.7	–	–	0.17 scfm
piSAVE restrict multiple port fitting 1.0	–	–	0.34 scfm
piSAVE restrict multiple port fitting 1.3	–	–	0.57 scfm

Ordering information

For a complete list of available suction cup valves visit piab.com. On our webpage you will also be able to find dimensional drawings, CAD-drawings and much more. Register to receive full access to all resources available.



piSAVE release

- Equalizes pressure in the suction cups to provide fast release of the product.
- Extra fast release by accumulating and utilising the feed-air pressure as a boost.
- ON/OFF activated simultaneously with the ejector.
- No additional controls required — use a single 3/2 control valve for the ejector and piSAVE release.



AQR (Atmospheric Quick-Release Valve)

- Equalizes pressure in vacuum gripper systems to provide fast release of product.
- Consumes no additional compressed air.
- ON/OFF activated simultaneously with the ejector.
- No additional controls required — use a single 3/2 control valve for the pump and AQR.



Blow-off Check Valve G1/8"

- Prevents vacuum from being pulled through the blow-off lines, which means faster response time and completely independent vacuum units.
- Reliable quick-release function even in larger systems with several units, due to the very low feed pressure required to break away for blow-off.
- Suitable in applications where cleaning of the suction cup filters or cooling of the object to be picked is important.

Technical Data

Description	Flow, atmospheric	Flow rate
piSAVE release G1/8"	8.16 scfm	–
piSAVE release G1/4"	16.6 scfm	–
Atmospheric quick-release valve – AQR	6.99 scfm	–
Blow-off Check valve G1/8"	–	3.18–5.93 scfm (@ 44–101.5 psi)

Ordering information

For a complete list of available suction cup valves visit piab.com. On our webpage you will also be able to find dimensional drawings, CAD-drawings and much more. Register to receive full access to all resources available.

Suction Cup Fittings

Suction cup shape

F	FC	FCF	B	B-MF	BL-2	BX	BFF	D	U	OBF	BL-3P	BL-4	BL-5	BF-P	OB	OC	OCF	OF
									2-3									
15			5-15	15		10-15		15	4-15									
20-30	20-25		20	20	20	20-25		20-30	20-30									
						35												
40-50	35		30-50*	30-50	30-50*	52		50*	40-50*									
	50-75	25				75	30											
		35-125					40-110			All								
75	100		75															
110	150		110															
150			150															
XLF																		
						110												
																		10x30
												30	30					
											30-40	40	40					
											50	50	50					
															20x60			15x45
															OBL			25x70
														80		35x90		
														110	35x90-65x170			40x110-70x175
																60x140		
																	All	

M2,5 Male	M5 Male	M5 Female	5xM5 Female	M10x1,5 Male	G3/4" Female	G1/2" Female	G1/2" Male	G3/8" Female	G3/8" Male	G1/4" Male	G1/8" Male	G1/8" M. / M5 F.	3/8" NPSF Female	1/8" NPSF Female	5x1/8" NPSF F.	3/8" NPT Female	3/8" NPT Male	1/2" NPT Male	1/4" NPT Female	1/4" NPT Male	1/8" NPT Male	G3/8" M. / 1/8" NPSF F.
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Other



Angle Adaptors

- Angle adaptors facilitate vacuum connections when space and headroom are limited.
- Can also be used as T-connectors.



T-slot Adapters

- The Piab T-slot adapter enables Piab suction cups to mount to existing boom assemblies and end-of-arm tooling used in the automotive industry. The T-slot adapter threads into the Piab cup fitting and can then be mounted accordingly.
- The suction cups can be changed quickly and with great ease.
- Non-rotating feature — good when using oval suction cups.

Ordering information

For a complete list of available adaptors visit piab.com. On our webpage you will also be able to find dimensional drawings, CAD-drawings and much more. Register to receive full access to all resources available.

