CLAMPING SUCTION CUPS

Our clamping suction cups, entirely designed and manufactured in Italy, are true mobile vacuum systems ideal for securely fixing workpieces during mechanical or industrial processing. Thanks to the use of a vacuum, these devices guarantee a stable, precise and non-invasive grip.
The systems are particularly suitable for materials with irregular shapes and smooth surfaces such as marble, glass, metals (ferrous and non-ferrous) and plastic. The suction cups can be easily installed on CNC machining centres. They are especially designed for all those cases where the use of a magnetic plane is not possible. Our product line includes various types of products.

Series 23 SUPPORTS WITH RETRACTABLE STRIKING PIN:
Designed to allow quick centring and positioning of the load to be clamped. The striking pin is activated by vacuum during the retraction phase.

Series 05 BUILT-IN VACUUM CUPS WITH BALL VALVE:
Specially designed to make vacuum-operated work surfaces. The gripping surface is delimited by a silicone O-ring seal or a flat suction cup.

Series 16 ROUND AND RECTANGULAR VACUUM CUPS WITH SELF-LOCKING SUPPORT:
Consisting of a flat suction cup fitted cold onto the top of the support and silicone O-rings on the bottom.

Series 18 ROUND AND RECTANGULAR VACUUM CUPS WITH BALL SHUTTER AND SELF-LOCKING SUPPORT, FOR GLASS:
These consist of a flat suction cup fitted cold onto the top of the support and silicone O-rings on the bottom. Equipped with a ball shutter, these ensure that the vacuum is activated only upon contact with the workpiece to be held.

Series 18 ROUND AND RECTANGULAR VACUUM CUPS WITH BALL SHUTTER AND SELF-LOCKING SUPPORT AND NON-SLIP PLASTIC COATING:
Same as the previous version, with the addition of a non-slip plastic mat, ideal for clamping glass and smooth marble.

Series 21 ROUND AND RECTANGULAR VACUUM CUPS WITH BALL SHUTTER, SELF-LOCKING SUPPORT AND RELEASE BUTTON, FOR GLASS:
These have the same characteristics as the 18 series but are equipped with a release button, which allows the support to be positioned or moved even when the vacuum is already activated.

Series 28 ROUND AND RECTANGULAR VACUUM CUPS WITH BALL SHUTTER:
All clamping supports in the 18 series versions can be manufactured without a self-locking system. They are therefore suitable for mechanical clamping on reference surfaces using T-slots.

To meet the increasingly demanding requirements of glass processing machine manufacturers, we have developed a line of high-precision suction cups with a guaranteed height tolerance of ±0.05 mm. Standard flat suction cups are available in three different compounds: NBR, Para and Silicone.
The lower perimeter seal is delimited by an O-ring made exclusively of silicone.
All suction cups, both with self-locking support and mechanical clamping, are manufactured to maintain a constant gripping height, allowing them to be used in combination with different shaped and sized models.
Upon request, we also manufacture supports with non-standard heights to adapt to particularly complex or specialised CNC machining operations.
Please refer to the following pages for more details on the technical specifications of models.
For the best choice of clamping system for your application, our Technical Department is available to provide advice and personalised support.
Note: sales may be subject to minimum purchase quantities, depending on the type requested.

Transformation ratio: N (newton) = Kg x 9.81 (force of gravity) inch = $\frac{mm}{25.4}$; pounds = $\frac{g}{453.6} = \frac{Kg}{0.4536}$

CLAMPING SUCTION CUPS

Technical data sheets

To meet the increasingly demanding requirements of glass processing machine manufacturers, we have developed a line of high-precision suction cups with a guaranteed height tolerance of ±0.05 mm.

Standard flat suction cups are available in three different compounds: NBR, Para and Silicone.

The lower perimeter seal is delimited by an O-ring made exclusively of silicone.

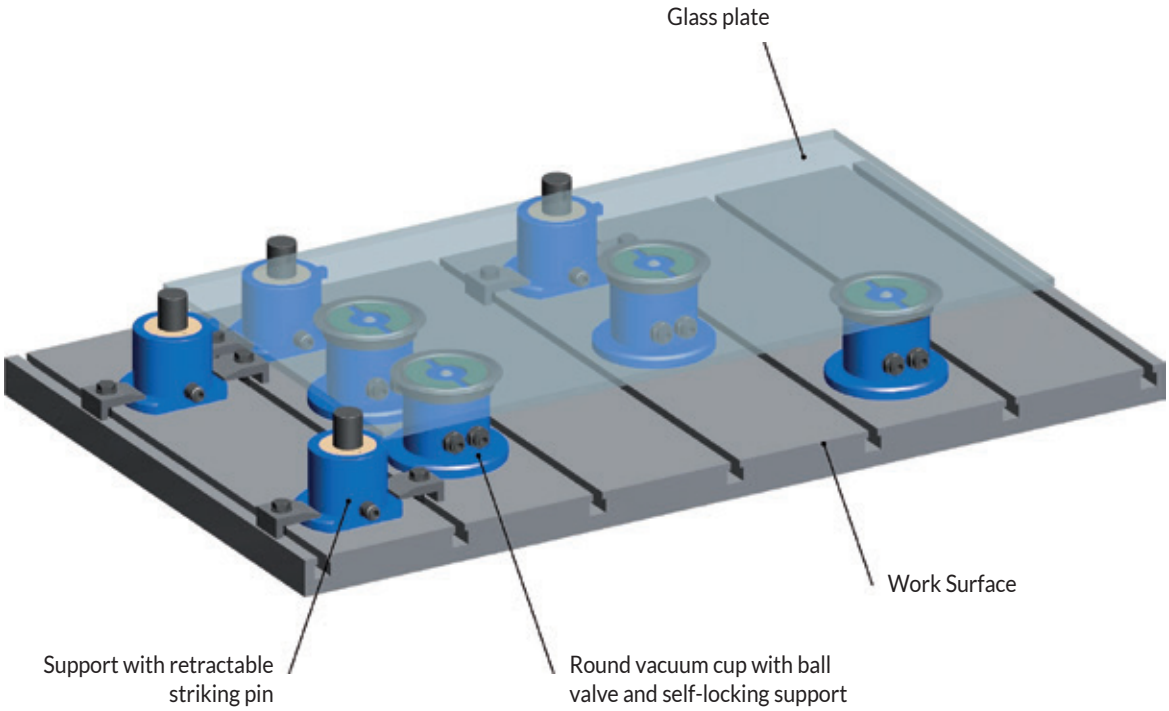
All suction cups, both with self-locking support and mechanical clamping, are manufactured to maintain a constant gripping height, allowing them to be used in combination with different shaped and sized models.

Upon request, we also manufacture supports with non-standard heights to adapt to particularly complex or specialised CNC machining operations.

Please refer to the following pages for more details on the technical specifications of models.

For the best choice of clamping system for your application, our Technical Department is available to provide advice and personalised support.

Note: sales may be subject to minimum purchase quantities, depending on the type requested.



Series 23 SUPPORTS WITH RETRACTABLE STRIKING PIN

These supports with retractable striking pins have been designed to allow a quick centring of the load to be clamped to the machine work surface via the cups.
The striking pin is solidly connected to a piston and it is activated by the vacuum while retracting and while remaining in its housing and also by a stainless steel spring while coming out.
These supports are mechanically fixed to the work surface.
The striking pin is made of plastic material, while the support is made of anodised aluminium.
They are supplied standard with a quick coupling for vacuum connection.

Transformation ratio: N (newton) = Kg x 9.81 (force of gravity) inch = $\frac{mm}{25.4}$; pounds = $\frac{g}{453.6} = \frac{Kg}{0.4536}$

Series 05 BUILT-IN VACUUM CUPS WITH BALL VALVE

The main feature of these cups is that they open, and therefore they produce a vacuum, only when the load to be handled activates the sealing ball.
In this version, the gripping surface is limited by a silicone O-ring which guarantees the vacuum seal.
They have been specially designed for vacuum beds and they are fully made with anodised aluminium.

Series 05 BUILT-IN VACUUM CUPS WITH BALL VALVE

The main feature of the these cups is the same as described above; they differ only in the seal which, in these, consists of the flat vacuum cups listed in the table.
They are especially designed for the glass industry vacuum and in all those cases where the use of a magnetic plane is not possible.
They are made of anodised aluminium but can be manufactured with other metals upon request.

Series 05 SPECIAL BUILT-IN VACUUM CUPS WITH BALL VALVE

Their main feature is that they open suction and therefore they produce a vacuum, only when the load to be handled activates the sealing ball.
Especially designed for the vacuum operated beds of woodworking machines, they differ from the previously described ones because of the high precision of their cylindrical support, which is ground to size, and because of their square closing block, which prevents the cup from rotating and enables connection to vacuum.
The cold fitted cups are the flat ones listed in the table, in the various compounds.
The support of these cups is made of anodised aluminium, while the closing block is made of brass.

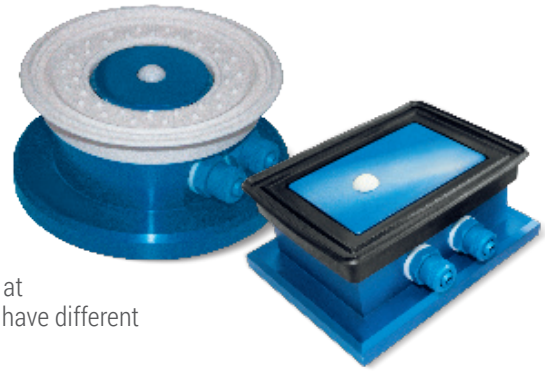
Transformation ratio: N (newton) = Kg x 9.81 (force of gravity) inch = $\frac{mm}{25.4}$; pounds = $\frac{g}{453.6} = \frac{Kg}{0.4536}$

Series 16 ROUND AND RECTANGULAR VACUUM CUPS WITH SELF-LOCKING SUPPORT

These cups represent a true mobile clamping system. They are composed of:
- A sturdy anodised aluminium support with a wide surface at the base limited by a seal whose purpose is to fix it to the bearing surface;
- A standard circular flat cup which is cold fitted onto the upper part of the support for gripping the load;
- Two quick couplings for vacuum connection.

The detection of vacuum for gripping and releasing the support from the bearing surface and gripping and releasing the load can be made via three-way vacuum valves or solenoid valves.
All cups with self-locking support of this and other ranges with the gripping plane at the same height can be used simultaneously, even if they are of different types or have different sizes.

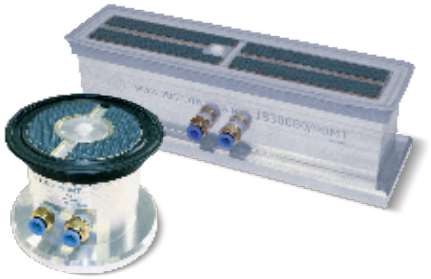
Series 18 ROUND AND RECTANGULAR VACUUM CUPS WITH BALL SHUTTER AND SELF-LOCKING SUPPORT



These cups represent a true mobile clamping system. They are composed of:
- A sturdy anodised aluminium support with a wide surface at the base limited by a seal whose purpose is to fix it to the bearing surface;
- A standard circular flat cup which is cold fitted onto the upper part of the support for gripping the load;
- A ball valve that opens up creating vacuum, only when activated by the load to be gripped;
- Two quick couplings for vacuum connection.

The detection of vacuum, for gripping and releasing the support, can be made via three-way vacuum valves or solenoid valves.
All cups with self-locking support of this and other ranges with the gripping plane at the same height can be used simultaneously, even if they are of different types or have different sizes.

Series 18 ROUND AND RECTANGULAR VACUUM CUPS WITH BALL SHUTTER AND SELF-LOCKING SUPPORT AND NON-SLIP PLASTIC COATING



These cups represent a true mobile clamping system.
They are composed of:
- A sturdy aluminium support with a wide surface at the base limited by a seal whose purpose is to fix it to the bearing surface;
- A standard circular flat cup which is cold fitted onto the upper part of the support for gripping the load;
- A ball valve that opens up creating vacuum, only when activated by the load to be gripped;
- Two quick couplings for vacuum connection.

The gripping plane of these cups is covered with a special non-slip plastic coating, which is particularly suited for clamping glass and smooth marble.
The detection of vacuum, for gripping and releasing the support, can be made via three-way vacuum valves or solenoid valves.
All cups with self-locking support of this and other ranges with the gripping plane at the same height can be used simultaneously, even if they are of different types or have different sizes.
Note: Available with support for mechanical fixing with code 28, instead of 18.

Note: Cups in special compounds, listed on page 31 can be provided upon specific request in minimum quantities to be defined in the order.

The force of the vacuum cups indicated in the table represents 1/3 of the value of the theoretical force calculated at a level of vacuum of -75 KPa and a factor of safety 3.

Transformation ratio: N (newton) = Kg x 9.81 (force of gravity) inch = $\frac{mm}{25.4}$; pounds = $\frac{g}{453.6} = \frac{Kg}{0.4536}$

Series 18 SERIES ROUND VACUUM CUPS WITH BALL VALVE AND HIGH SELF-LOCKING SUPPORT, FOR GLASS

Glass machinery manufacturers require increasingly accurate and safe clamping machines. This has led us to the creation of this series of cups.
The specially designed shape of this cup guarantees a firm grip. The other main feature is the utmost precision in the height, whose nominal size has a tolerance of only five hundredths of millimetre.
They are composed of:
- A sturdy aluminium support with a wide surface at the base limited by a seal whose purpose is to fix it to the bearing surface;
- A standard round flat cup which is cold-assembled onto the upper part of the support for gripping the load;
- A ball valve that opens up creating vacuum, only when activated by the load to be gripped;
- Two quick couplings for vacuum connection.

The detection of vacuum, for gripping and releasing the support from the bearing surface and for gripping and release of glass can be made via three-way vacuum valves or solenoid valves.

Series 21 ROUND VACUUM CUPS WITH BALL SHUTTER, SELF-LOCKING SUPPORT AND RELEASE BUTTON, FOR GLASS

Glass machinery manufacturers require increasingly accurate and safe clamping machines. This has led us to the creation of this series of cups.
The specially designed shape of this cup guarantees a firm grip. The other main feature is the utmost precision in the height, whose nominal size has a tolerance of only five hundredths of millimetre.
They are composed of:
- A sturdy anodised aluminium support with a wide surface at the base limited by a seal whose purpose is to fix it to the bearing surface;
- A standard round flat cup which is cold-assembled onto the upper part of the support for gripping the load;
- A ball valve that opens up creating vacuum, only when activated by the load to be gripped;
- A release button that allows placing the support even with the vacuum inserted;
- Two quick couplings for vacuum connection.

The detection of vacuum, for gripping and releasing the support from the bearing surface and for gripping and release of glass can be made via three-way vacuum valves or solenoid valves.

Series 21 ROUND AND RECTANGULAR VACUUM CUPS WITH BALL SHUTTER, SELF-LOCKING SUPPORT AND RELEASE BUTTON

These cups represent a true mobile clamping system.
They are composed of:
- A sturdy anodised aluminium support with a wide surface at the base limited by a seal whose purpose is to fix it to the bearing surface;
- A standard circular flat cup which is cold fitted onto the upper part of the support for gripping the load;
- A ball valve that opens up creating vacuum, only when activated by the load to be gripped;
- A release button that allows placing the support even with the vacuum inserted;
- Two quick couplings for vacuum connection.

The detection of vacuum for gripping and releasing the support from the bearing surface and gripping and releasing the load can be made via three-way vacuum valves or solenoid valves.
All cups with self-locking support of this and other ranges with the gripping plane at the same height can be used simultaneously, even if they are of different types or have different sizes.

Note: Cups in special compounds, listed on page 31 can be provided upon specific request in minimum quantities to be defined in the order.

The force of the vacuum cups indicated in the table represents 1/3 of the value of the theoretical force calculated at a level of vacuum of -75 KPa and a factor of safety 3.

Transformation ratio: N (newton) = Kg x 9.81 (force of gravity) inch = $\frac{mm}{25.4}$; pounds = $\frac{g}{453.6} = \frac{Kg}{0.4536}$