

GENERAL CHARACTERISTICS OF RUBBER COMPOUNDS

TRADE NAME	INTERN. CODE	VT CODE	POSITIVE CHARACTERISTICS	NEGATIVE CHARACTERISTICS	COLOUR	TEMPERATURE OF USE	HARDNESS	CHEMICAL RESISTANCE	FOOD STANDARDS	USE
NITRILE OR OIL-RESISTANT RUBBER	NBR	A	Highly resistant to oil, heat and ageing. Low permanent deformation and low gas permeability.	Limited ozone resistance, if untreated. Low dielectric strength, Low resilience.	Black	From -40 to + 130°C	60 - 70° Sh.A	Resistance to mineral oils, hydrocarbons, water, vapour, gas and vegetable oils.	Non-toxic vacuum cups can be produced upon request.	The excellent mechanical characteristics of this compound allow the vacuum cups to withstand heavy-duty work such as tears, crushing, bumps, etc. They are suitable for gripping metal plates, glass and loads with a smooth surface.
BENZ RUBBER	H-NBR	B	Excellent resistance to wear, ageing, chlorine-containing oils, grease and petrol. Low permanent deformation. Does not leave marks on the gripping surfaces of the vacuum cups.	Low dielectric strength, Low resilience.	Black Red	From -40 to + 170°C	60 - 75° Sh.A	Resistance to chlorine-containing mineral oils, hydrocarbons, water, vapour, gas and vegetable oils.	Production of non-toxic vacuum cups not recommended.	The vacuum cups produced with this compound are able to withstand heavy-duty work such as tears, crushing, bumps, etc. They are suitable for gripping metal plates, glass and loads with a smooth surface. Especially recommended for the AUTOMOTIVE sector.
BOND NON-MARKING RUBBER	---	BA	Bond compound with good elastic yield and resistance to wear, cutting and tearing. Has the property of not leaving stains, marks or prints on the gripping surfaces.	Poor resistance to oils and heat.	Grey	From -30 to + 80°C	45 - 60° Sh.A	Fair resistance to sea water, acids and medium concentration alkalis.	Non-toxic vacuum cups can be produced upon request.	Vacuum cups produced with this compound are suitable for gripping marble, wood, glass, metal sheets etc., without leaving marks or prints on the gripping surfaces.
ANTI-STATIC NITRILE RUBBER	NBR-AS	AS	Highly resistant to oil, heat and ageing. Low permanent deformation. Highly conductive and anti-static compound.	Limited ozone resistance if untreated. Low resilience.	Black	From -40 to + 130°C	60 - 70° Sh.A	Excellent resistance to mineral oils, hydrocarbons, water, vapour, gas and vegetable oils.	Production of non-toxic vacuum cups not recommended.	In addition to the normal use of the NBR compound, the vacuum cups made with this compound can be used in all those cases where it is necessary to dissipate electrostatic charges accumulated on the gripping surfaces.
PARA RUBBER	NIR	N	Excellent elastic yield and resistance to wear, cutting and tearing. Exceptional elongation at break.	Poor resistance to oils and heat.	Black	From -70 to + 80°C	45 - 50° Sh.A	Fair resistance to sea water, acids and medium concentration alkalis.	Non-toxic vacuum cups can be produced upon request.	The flexibility of the compound allows these vacuum cups to grip on rough and irregular surfaces. They are suitable for wood, cardboard, marble, bricks, glass and plastic.

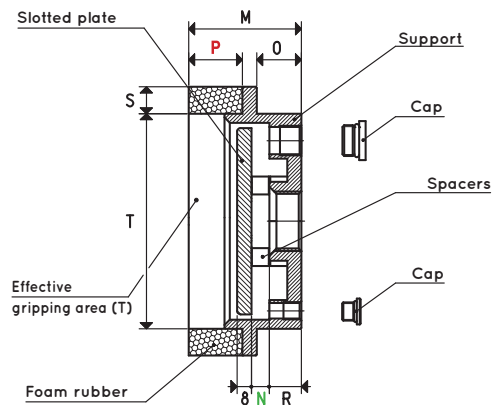
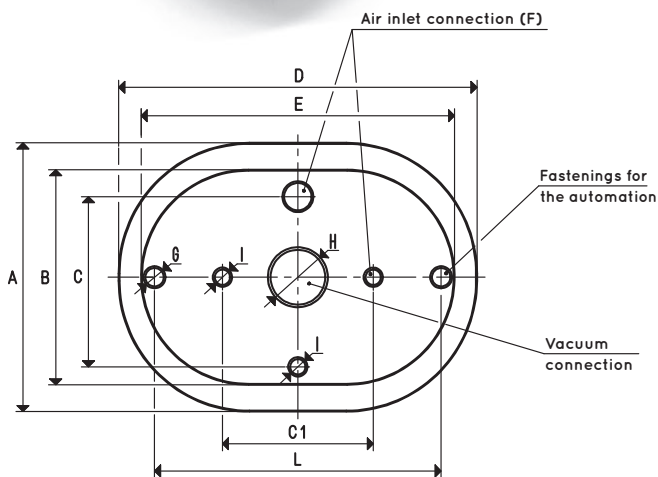
TRADE NAME	INTERN. CODE	VT CODE	POSITIVE CHARACTERISTICS	NEGATIVE CHARACTERISTICS	COLOR	TEMPERATURE OF USE	HARDNESS	CHEMICAL RESISTANCE	FOOD STANDARDS	USE
NATURAL RUBBER	NR	NG	The same compound described above, untreated.	Poor resistance to ageing, oils and heat.	Beige	From -50 to + 70°C	40 - 45° Sh.A	As NR described above.	Non-toxic vacuum cups can be produced upon request.	The higher flexibility of the compound allows these vacuum cups to grip on very rough and irregular surfaces. The vacuum cups made with this compound are recommended for gripping paper, cardboard, plastic, plastic film for packaging, etc.
GERANIUM FOAM RUBBER	NR	OF	Excellent elastic yield and resistance to tearing. Exceptional elongation at break.	Poor resistance to ageing, oils and heat.	Orange	From -40 to + 80°C	25 - 30° Sh.A	Fair resistance to sea water, acids and medium concentration alkalis.	Compound not recommended for food use.	The softness of the foam rubber makes it possible to create vacuum cups for gripping loads with raw or very rough surfaces.
SILICON	VMQ	S	Perfect performance at high and low temperatures. Conductive compound.	Modest mechanical properties. Can leave marks on the gripping surfaces of vacuum cups.	Neutral White Red	From -50 to +300°C	40 - 45° Sh.A	Excellent resistance to chlorinates, solvents, ozone, oxygen and UV.	It is possible to produce vacuum cups according to FDA, BGA, TSCA, etc, food standards.	Silicon vacuum cups are used in the food and electronics industry, in packaging and in all those cases where the contact surface has very high or very low temperatures.
ANTI-STATIC SILICON	VMQ-AS	SAS	Perfect performance at low and high temperatures. Highly conductive and anti-static compound.	Modest mechanical properties. Can leave marks on the gripping surfaces of vacuum cups.	Neutral White	From -50 to + 200°C	40 - 45° Sh.A	Similar to VMQ silicon compound.	Compound not recommended for food use.	Anti-static silicon vacuum cups are used in the electronics, the recording industry and in all those cases where it is necessary to dissipate electrostatic charges from the gripping surface.
STABILISED SILICON	VMQ-SS	SS	Perfect performance at high and low temperatures. Conductive and non-marking compound. Does not leave marks or prints on the gripping surfaces.	Modest mechanical properties.	Neutral White	From -50 to + 300°C	40 - 45° Sh.A	Similar to VMQ silicon compound.	It is possible to produce vacuum cups for food use.	The stabilised silicon vacuum cups are widely used in the ceramic industry and in all those cases where, in addition to withstanding high temperatures, marks or prints must not be left on the gripping surfaces.
MAGNETIC SILICON	----	SMG	Perfect performance at high and low temperatures. Highly conductive, magnetically detectable compound.	Modest mechanical properties. Can leave marks on the gripping surfaces of vacuum cups if not stabilised.	Black	From -50 to + 250°C	45 - 50° Sh.A	Excellent resistance to chlorinates, solvents, ozone, oxygen and UV.	The chemical composition of the compound contains exclusively substances authorised by regulation FDA CFR 21: 177-2600 " METAL DETECTABLE COMPOUND - HEAT CONDUCTIVITY COMPOUND "	Magnetic silicon vacuum cups are used in the food industry and have the characteristic of being easily detectable by metal detectors used for food protection in case of breakage or accidental detachment.

TRADE NAME	INTERN. CODE	VT CODE	POSITIVE CHARACTERISTICS	NEGATIVE CHARACTERISTICS	COLOUR	TEMPERATURE OF USE	HARDNESS	CHEMICAL RESISTANCE	FOOD STANDARDS	USE
VITON®	FKM	V	Excellent resistance to chemical deterioration; perfect for lubricants and heat. Good compression performance and elastic yield. Does not leave marks.	Poor resistance to alkalis and ketones.	Green Brown	From -20 to + 300°C	50 - 60° Sh.A	Excellent resistance to sunlight, flame and high temperatures, to aromatic and aliphatic hydrocarbons, to chemical agents and chlorinated solvents.	Production of non-toxic vacuum cups not recommended.	This compound is used to produce vacuum cups that are highly qualified for the mechanical, oil, chemical, pharmaceutical, aeronautical and nuclear industries.
VULKOLLAN® POLYURE- THANE	AU-EU	PU	Very high resistance to abrasion, traction, bending and oils. Does not leave marks.	Poor resistance to water, alkalis and acids.	Ivory Blue	From -30 to + 100°C	60 - 70° Sh.A	Excellent resistance to petroleum products.	Production of non-toxic vacuum cups not recommended.	Suitable for producing vacuum cups subjected to heavy-duty, intense and continuous use.
DUTRAL®	EPDM	EPDM	Excellent resistance to heat, atmospheric agents and ageing. Excellent resistance to low temperatures.	Poor elasticity.	Black	From -60 to + 150°C	50 - 70° Sh.A	Good resistance to aggressive chemicals and oxygen.	Production of non-toxic vacuum cups not recommended.	EPDM vacuum cups are recommended for machines operating outdoors, in contact with atmospheric agents and sea water. Excellent performance in contact with printing inks and solvents.
NEOPRENE®	CR	NE	Fair resistance to oils. Excellent resistance to ozone, sea water and ageing. Good resistance to cutting, abrasion and combustion.	Poor elastic yield. Risk of permanent deformation over time.	Black	From -20 to + 120°C	50 - 70° Sh.A	Excellent resistance to petroleum products, sunlight, atmospheric agents, ozone and flames.	Production of non-toxic vacuum cups not recommended.	Vacuum cups made with this compound are used in the electrical industry and on handling systems that operate outside, in contact with atmospheric agents.
NEOPRENE® FOAM RUBBER	CR	NF	Fair resistance to oils. Excellent resistance to ozone, sea water and ageing. Good resistance to cutting, abrasion and combustion.	Poor elasticity. Tendency to deform over time.	Black	From -20 to + 80°C	30 - 35 Sh.A	Excellent resistance to oil products, sunlight, atmospheric agents, and ozone.	Not recommended for food use.	The softness that characterises this foam rubber allows for the use of vacuum cups for gripping coarse or very rough surfaces operating outside in contact with atmospheric agents.
EXTRA SOFT FOAM RUBBER	EPDM	SB	Excellent resistance to heat, atmospheric agents, low temperatures and ageing.	Low resistance to oils and modest mechanical properties.	Black	From -40 to + 130°C	8 ÷ 10 Sh.A	Good resistance to aggressive chemicals and oxygen.	Not advised for direct contact with food products.	The softness of this rubber foam makes it suitable for use on grip surfaces for loads with coarse or very rough surfaces.



VACUPREDATOR VACUUM CUPS FOR GRIPPING BAGS, PACKS AND FLEXIBLE CONTAINERS

3D drawings are available on vuototecnica.net



ELLIPTICAL VACUPREDATOR VACUUM CUPS

Item	Force Kg	A	B	C	C1	D	E	F Ø	G Ø	H Ø	I Ø	L	M	N	O	P	R	S	T	Weight Kg
VP 06 12 OF 10 15	9.4	60	40	--	--	120	111	--	M8	G3/8"	--	100	49	10	29	15	14	10	40 x 100	0.36
VP 09 16 OF 10 30	17.9	90	60	--	80	160	145	G1/4"	M8	G1/2"	G1/8"	130	63	10	25	30	18	15	60 x 130	0.63
VP 09 21 OF 10 30	27.4	95	60	--	80	210	185	G1/4"	M12	G1/2"	G1/8"	160	63	10	25	30	18	15	65 x 180	0.80
VP 15 20 OF 10 30	43.8	150	120	95	--	200	175	G3/8"	M12	G1"	G1/8"	160	63	10	25	30	18	15	120 x 170	1.10
VP 20 30 OF 15 30	82.5	200	150	115	--	300	250	G3/8"	M12	G1"	G1/8"	200	78	15	40	30	20	25	150 x 250	2.24
VP 30 40 OF 15 30	174.4	300	250	160	--	400	350	G3/8"	M12	G2"	G1/8"	300	78	15	40	30	20	30	240 x 340	3.85

CODING EXAMPLE:

VP 06 12 OF 10 15

Model:
Vacu Predator

Dimensions:

- 06 12 (60 x 120 mm)
- 09 16 (90 x 160 mm)
- 09 21 (95 x 210 mm)
- 15 20 (150 x 200 mm)
- 20 30 (200 x 300 mm)
- 30 40 (300 x 400 mm)
- 12 (ø 134 mm)
- 22 (ø 220 mm)

Foam rubber (P) height:
for VP0612-VP0916-VP0921-VP12-VP22
15-20-25-30 mm

for VP1520-VP2030-VP3040
20-25-30-40 mm

Spacer (N) height:
5 mm
10 mm
15 mm

Type of Foam
Rubber compound:
OF: ORANGE FOAM
SB: EXTRA SOFT
NF: NEOPRENE

Note: 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 = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

Adapters for GAS - NPT threading available on page 1.130

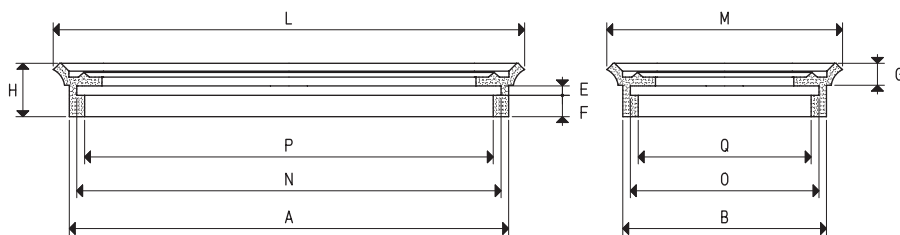


RECTANGULAR FLAT VACUUM CUPS WITH SUPPORTS

These cups are recommended for working surfaces for clamping wooden panels, marble, granite, ceramic, glass and other similar surfaces. They are naturally also used to handle these same materials. Their vertical and low lip allows for a firm grip on the surface to be clamped or handled, eliminating any oscillations and considerably reduces the air volume contained within, thus ensuring quicker gripping and release. They are normally available in the three standard compounds but, upon request and for minimum amounts defined in the order, can be ordered in special compounds, listed on pg. 31.

These cups can be cold fitted with no adhesives onto their anodised aluminium support equipped with a threaded hole in the centre to facilitate their fastening to the automation.

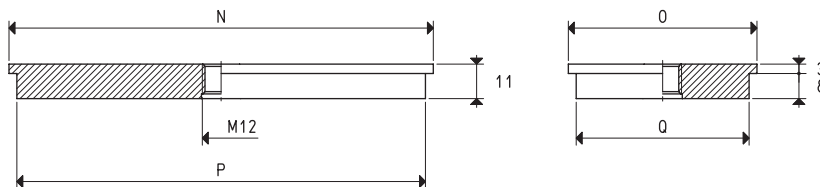
Larger supports are provided with two threaded holes equidistant from the centre, to allow for any necessary insertion of guiding anti-rotation pins. These cups are extremely easy to replace; simply request the cup indicated in the table in the desired compound when requesting the spare part.



VACUUM CUPS

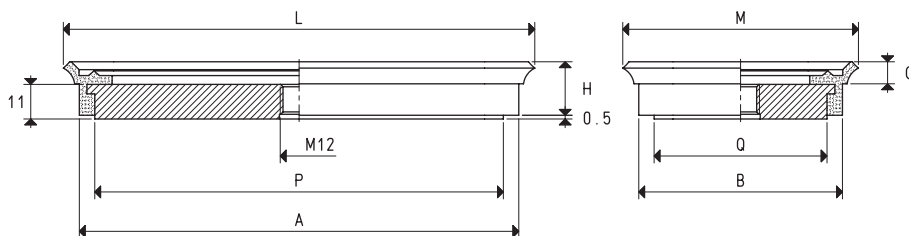
Item	Force Kg	Volume cm ³	A	B	E	F	G	H	L	M	N	O	P	Q
01 40 75 *	6.7	9.2	64	29	3	7.5	6.5	16.0	75	40	59	24	54	19
01 120 90 *	24.0	42.9	107	78	3	7.5	7.5	17.5	117	87	102	73	97	68
01 150 65 A	21.5	36.6	137	52	3	7.5	7.5	16.5	147	62	132	47	127	42
01 150 75 *	25.0	43.5	137	62	3	7.5	7.5	16.5	147	72	132	57	127	52

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon



SUPPORTS

Item	N	O	P	Q	Support material	For vacuum cup item	Weight g
00 08 31	60	25	55	20	aluminium	01 40 75	34.1
00 08 34	107	75	102	70	aluminium	01 120 90	215.5
00 08 144	135	50	130	45	aluminium	01 150 65	176.1
00 08 59	135	60	130	55	aluminium	01 150 75	218.4



VACUUM CUPS WITH SUPPORT

Item	Force Kg	A	B	C	H	L	M	P	Q	Vacuum cup item	Support item	Weight g
08 40 75 *	6.7	66	31	6.5	16.0	76	41	55	20	01 40 75	00 08 31	49.7
08 120 90 *	24.0	112	80	7.5	17.5	120	90	102	70	01 120 90	00 08 34	254.3
08 150 65 A	21.5	140	55	7.5	16.5	150	65	130	45	01 150 65	00 08 144	217.3
08 150 75 *	25.0	140	65	7.5	16.5	150	75	130	55	01 150 75	00 08 59	259.6

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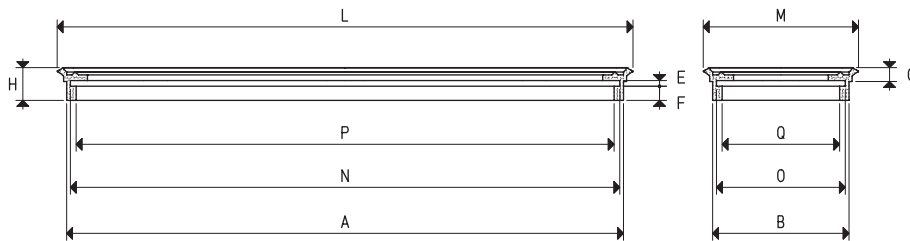
Note: The force of the vacuum cups indicated in the table represents 1/3 of the value of the theoretical force calculated at a level of vacuum of -75 KPa and a factor of safety 3.

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



RECTANGULAR FLAT VACUUM CUPS WITH SUPPORTS

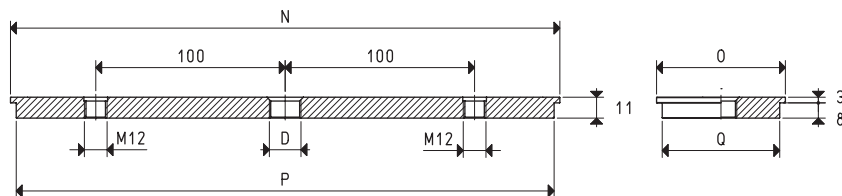
3D drawings are available on vuototecnica.net



VACUUM CUPS

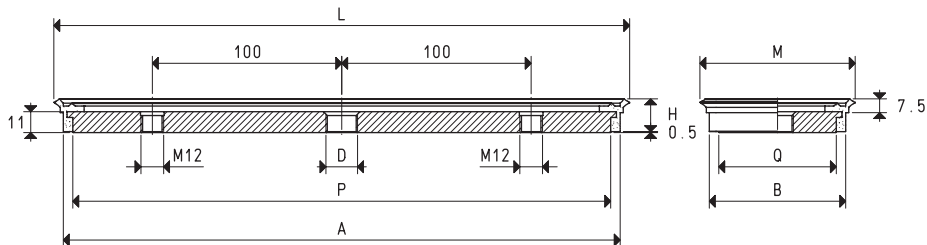
Item	Force Kg	Volume cm ³	A	B	E	F	G	H	L	M	N	O	P	Q
01 300 80 *	60.0	117.6	288	68	3	7.5	7.5	17.5	297	77	284	64	278	58
01 300 150 *	113.0	268.5	288	138	3	7.5	7.5	17.5	297	147	284	134	278	128

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon



SUPPORTS

Item	D Ø	N	O	P	Q	Support material	For vacuum cup item	Weight Kg
00 08 116	G3/8"	290	68	284	62	aluminium	01 300 80	0.53
00 08 117	G1/2"	290	140	284	134	aluminium	01 300 150	1.13



VACUUM CUPS WITH SUPPORT

Item	Force Kg	A	B	D Ø	H	L	M	P	Q	Vacuum cup item	Support item	Weight Kg
08 300 80 *	60.0	290	70	G3/8"	17.5	300	80	284	62	01 300 80	00 08 116	0.61
08 300 150 *	113.0	290	140	G1/2"	17.5	300	150	284	134	01 300 150	00 08 117	1.22

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Note: 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 = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

Adapters for GAS - NPT threading available on page 1.130

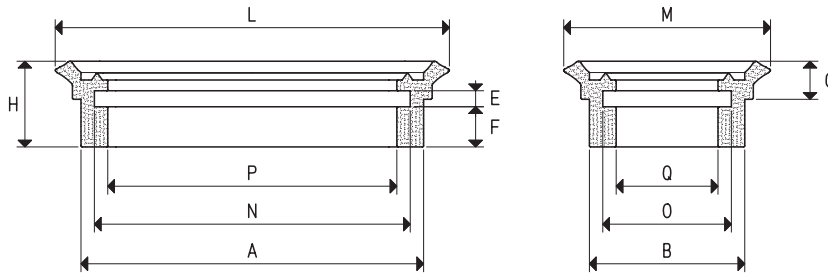
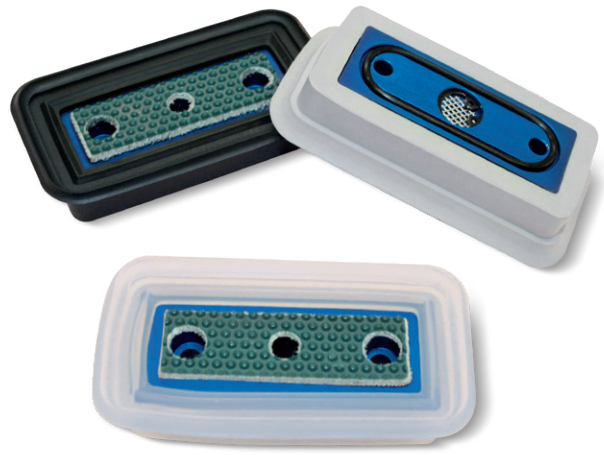


RECTANGULAR FLAT VACUUM CUPS WITH ANTI-SLIP SUPPORT

These cups share the same technical and mechanical features with the ones described above, but their support has a special non-slip plastic coating that make them particularly suited for clamping glass and smooth marble.

A built-in stainless steel mesh filter in the suction hole and an O-ring seal at the base of their support are the other special features of these cups.

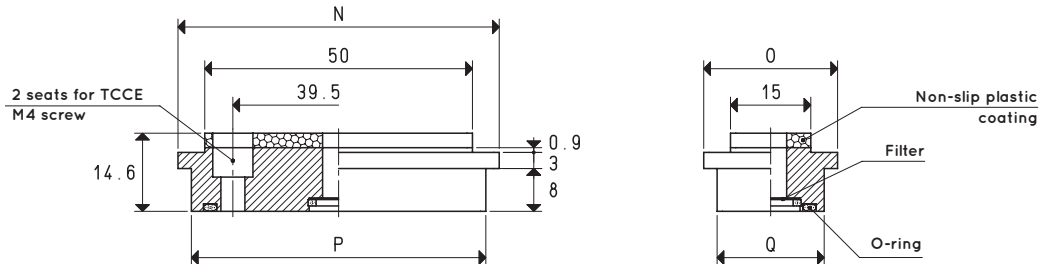
They are also provided with two or for housings for TCCE screws, according to their size, for fixing them to the work surface.



VACUUM CUP

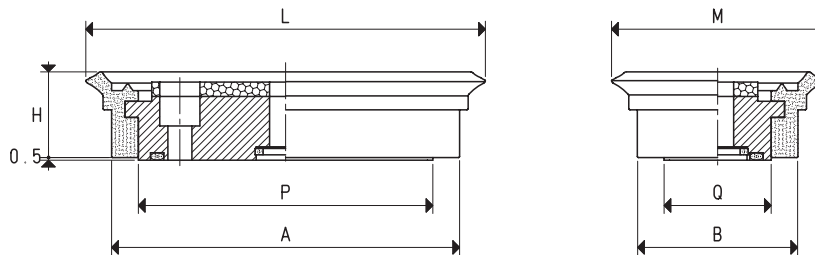
Item	Force Kg	Volume cm ³	A	B	E	F	G	H	L	M	N	O	P	Q
01 40 75 *	6.7	9.2	64	29	3	7.5	6.5	16.0	75	40	59	24	54	19

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon



SUPPORT

Item	N	O	P	Q	Support material	For vacuum cup item	Weight g
00 08 184	60	25	55	20	aluminium	01 40 75	38.7



VACUUM CUP WITH SUPPORT

Item	Force Kg	A	B	H	L	M	P	Q	Vacuum cup item	Support item	Weight g
08 40 75 M1 *	6.7	66	31	16.0	76	41	55	20	01 40 75	00 08 184	53.5

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon

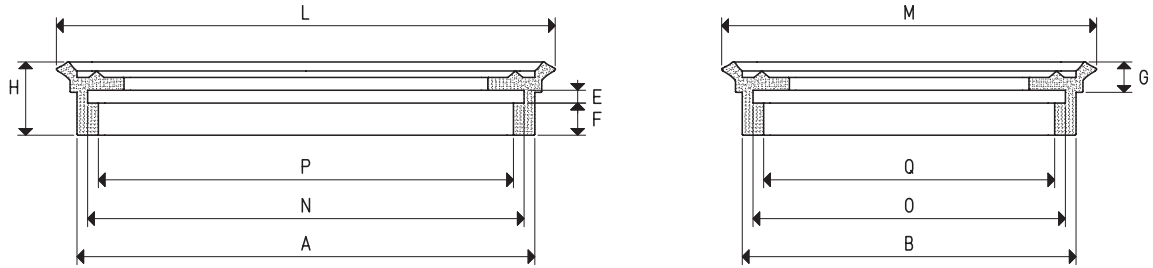
Note: The force of the vacuum cups indicated in the table represents 1/3 of the value of the theoretical force calculated at a level of vacuum of -75 KPa and a factor of safety 3.

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



RECTANGULAR FLAT VACUUM CUPS WITH ANTI-SLIP SUPPORT

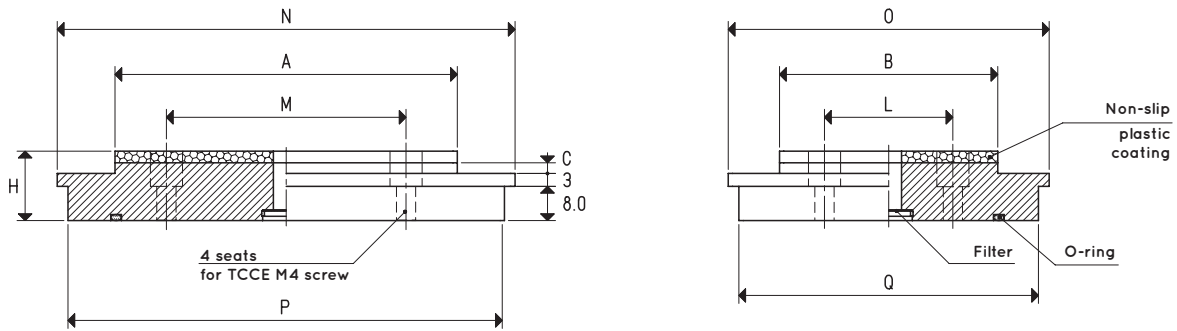
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VACUUM CUPS

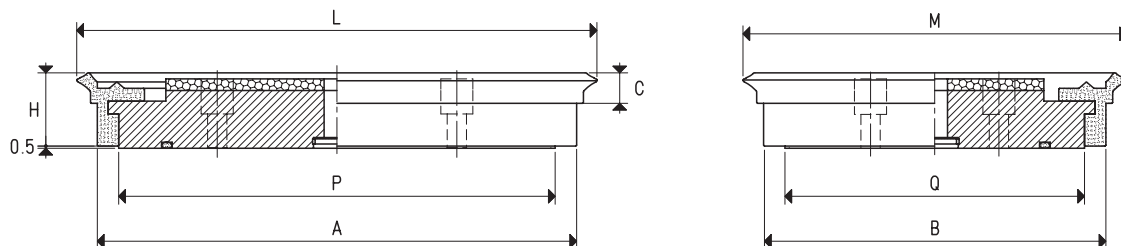
Item	Force Kg	Volume cm ³	A	B	E	F	G	H	L	M	N	O	P	Q
01 120 90 *	24.0	42.9	107	78	3	7.5	7.5	17.5	117	87	102	73	97	68
01 150 75 *	25.0	36.6	137	62	3	7.5	7.5	16.5	147	72	132	57	127	52

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon



SUPPORTS

Item	A	B	C	H	L	M	N	O	P	Q	Support material	For vacuum cup item	Weight g
00 08 256	82	50	2.5	16.2	30	56	107	75	102	70	aluminium	01 120 90	244.5
00 08 257	110	35	2.3	16.4	20	92	135	60	130	55	aluminium	01 150 75	247.9



VACUUM CUPS WITH SUPPORT

Item	Force Kg	A	B	C	H	L	M	P	Q	Vacuum cup item	Support item	Weight g
08 120 90 M1 *	24.0	112	80	7.5	17.5	120	90	102	70	01 120 90	00 08 256	283.3
08 150 75 M1 *	25.0	140	65	7.5	16.5	150	75	130	55	01 150 75	00 08 257	289.1

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon

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



RECTANGULAR FLAT FOAM RUBBER VACUUM CUPS WITH SUPPORTS

These foam rubber cups are made with a special compound called GERANIUM, with code OF, with a density that allows them to grip even uneven and very rough surfaces maintaining their elasticity also after many working cycles.

They are provided with self-adhesive side for a quick fixing to their support.

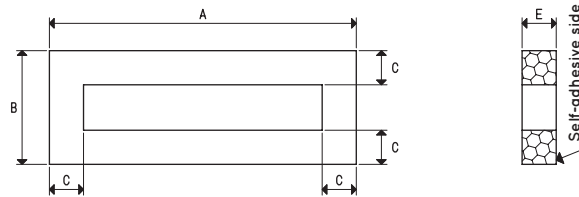
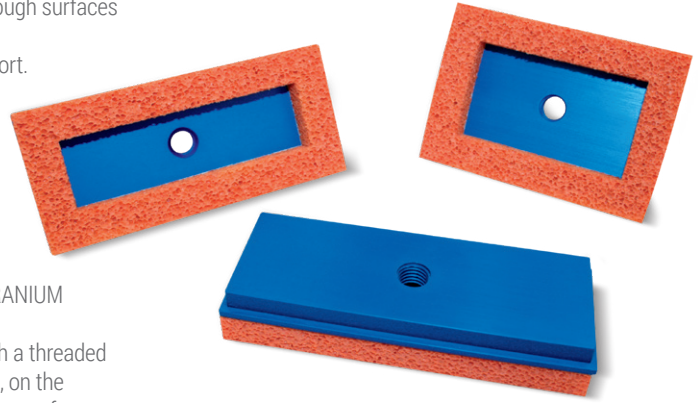
This series of cups has been designed for handling loads with raw or very rough surfaces (sawn, bush-hammered or flamed marble, textured, non-slip or profiled metal sheets, striped Plexiglass, raw cement manufactures, garden tiles with fret, etc.) and in all those cases in which traditional cups cannot be used.

In case of lubricated gripping surfaces, we recommend using NF neoprene foam rubber.

The working temperature range is between -40°C and +80°C for OF GERANIUM foam rubber and between -20°C and +80°C for NF neoprene.

Their supports are made with anodised aluminium and are provided with a threaded hole in the centre for fastening them to the automation. The larger ones, on the other hand, are provided with two threaded holes equidistant from the centre for any necessary insertion of guiding anti-rotation pins.

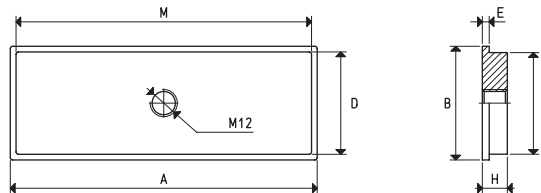
For the spare part, all you have to do is request the self-adhesive foam rubber cup indicated in the table in the required compound.



VACUUM CUPS

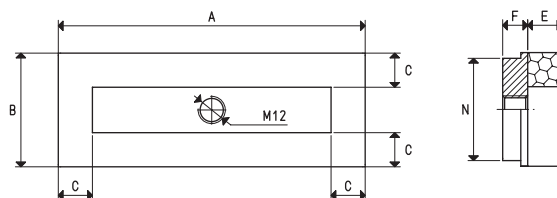
Item	Force Kg	Volume cm ³	A	B	C	E
01 107 75 *	9.0	55.6	107	75	15	15
01 135 50 *	6.0	34.0	135	50	15	15
01 135 60 *	8.0	50.0	135	60	15	15

* Complete the code indicating the compound: OF= geranium foam rubber; NF= neoprene foam rubber



SUPPORTS

Item	A	B	D	E	H	M	N	Support material	For vacuum cup item	Weight g
00 08 34	107	75	70	3	11	102	70	aluminium	01 107 75	215.5
00 08 144	135	50	45	3	11	130	45	aluminium	01 135 50	176.1
00 08 59	135	60	55	3	11	130	55	aluminium	01 135 60	218.4



VACUUM CUPS WITH SUPPORT

Item	Force Kg	A	B	C	E	F	N	Vacuum cup item	Support item	Weight g
08 107 75 *	9	107	75	15	15	11	70	01 107 75	00 08 34	229.5
08 135 50 *	6	135	50	15	15	11	45	01 135 50	00 08 144	190.6
08 135 60 *	8	135	60	15	15	11	55	01 135 60	00 08 59	233.0

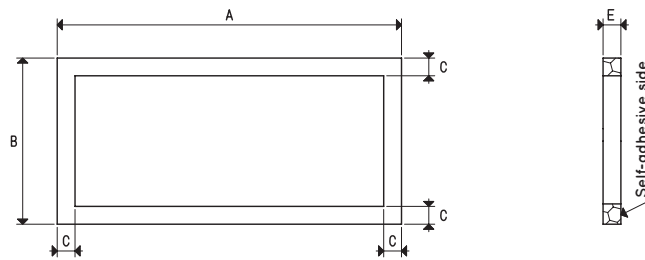
* Complete the code indicating the compound: OF= geranium foam rubber; NF= neoprene foam rubber

Note: 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 = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$



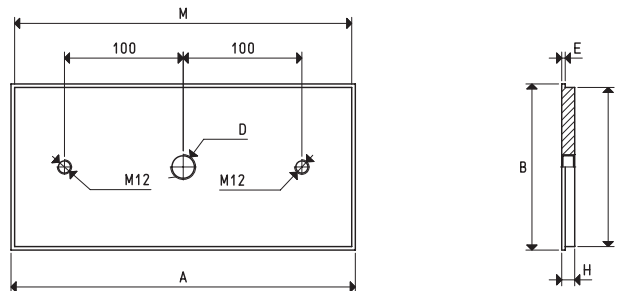
RECTANGULAR FLAT FOAM RUBBER VACUUM CUPS WITH SUPPORTS



VACUUM CUPS

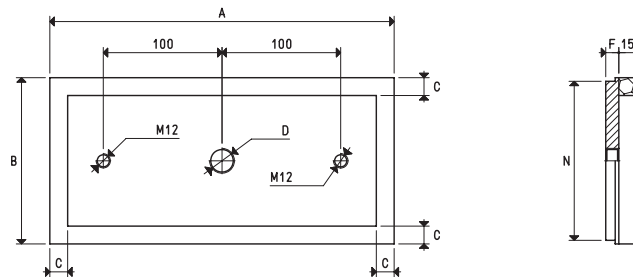
Item	Force Kg	Volume cm ³	A	B	C	E
01 290 68 *	25	152.6	290	68	15	15
01 290 140 *	72	434.5	290	140	15	15

* Complete the code indicating the compound: OF= geranium foam rubber; NF= neoprene foam rubber



SUPPORTS

Item	A	B	D Ø	E	H	M	N	Support material	For vacuum cup item	Weight Kg
00 08 116	290	68	G3/8"	3	11	284	62	aluminium	01 290 68	0.53
00 08 117	290	140	G1/2"	3	11	284	134	aluminium	01 290 140	1.13



VACUUM CUPS WITH SUPPORT

Item	Force Kg	A	B	C	D Ø	F	N	Vacuum cup item	Support item	Weight Kg
08 290 68 *	25	290	68	15	G3/8"	11	62	01 290 68	00 08 116	0.56
08 290 140 *	72	290	140	15	G1/2"	11	134	01 290 140	00 08 117	1.15

* Complete the code indicating the compound: OF= geranium foam rubber; NF= neoprene foam rubber

Note: 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 = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

Adapters for GAS - NPT threading available on page 1.130

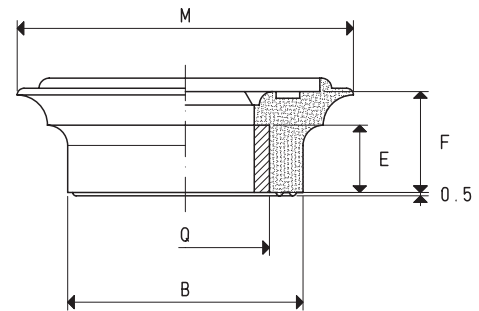
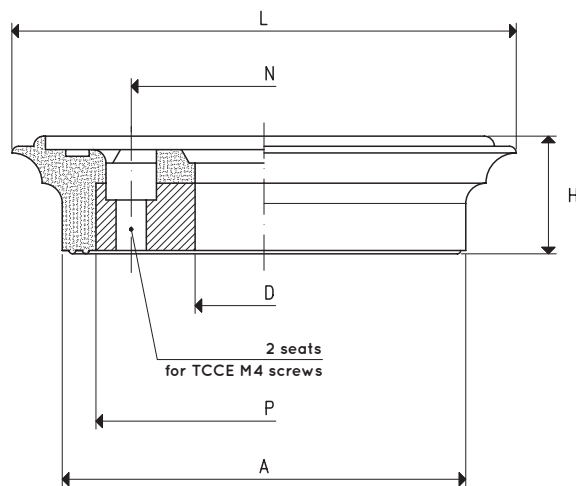
FLAT RECTANGULAR VACUUM CUPS WITH VULCANISED SUPPORT, FOR CLAMPING GLASS AND MARBLE

Glass and marble manufacturers' machining centres require increasingly accurate and safe clamping systems. This has led us to creating this new series of cups.

They are vulcanised onto a steel support and are provided with a hole in the centre for vacuum connection or for a ball valve, as well as with 2 holes on the internal circumference for housing Allen screws. Their extremely flexible lip allows them to easily adapt to the sheets to be held, with no risk of deformation or rupture, even for the thinnest ones.

The particular shape of the internal support plane of these cups ensures a high friction coefficient with the gripping surface and especially a considerable grip on wet glass and marble sheets, thanks to the water drainage. All this guarantees a firm, safe grip. Furthermore, these cups feature the highest accuracy of their thickness, whose nominal height has a tolerance of only five hundredths of millimetre.

They are normally produced with oil-resistant rubber A, but they can be ordered in other compounds, listed on pg. 31, upon request and in minimum quantities to be defined in the order.



VACUUM CUP WITH VULCANISED SUPPORT

Item	Force Kg	Volume cm ³	A	B	D ∅	E	F	H	L	M	N	P	Q	Support material	Weight g
08 50 75 A	7.5	6.1	60	35	20.5	10	15	17.5	75	50	39.5	50	25	steel	92

Compound: A = oil-resistant rubber

Note: 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 = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$



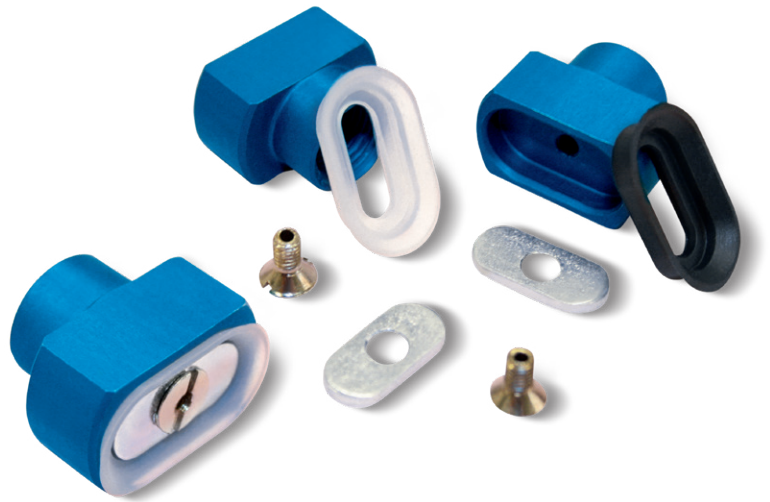
ELLIPTICAL FLAT VACUUM CUPS WITH SUPPORTS

3D drawings are available on vuototecnica.net

These oval cups are recessed on moulders in order to hold a side of the cardboard box during the moulding process by means of traditional cups on the opposite side. Once assembled with their support, however, they can be used for handling boxes, plastic objects or anything with a limited gripping surface.

Their anodised aluminium support has a central threaded hole to fasten it to the automation. They are also provided with a nickel-plated brass plate to hold the cup in its housing and with one or two stainless steel screws for fixing them.

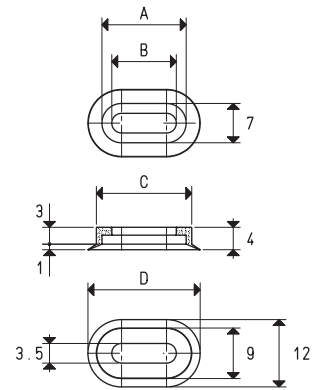
To replace, simply request the single vacuum cup indicated in the table in the desired compound.



VACUUM CUP

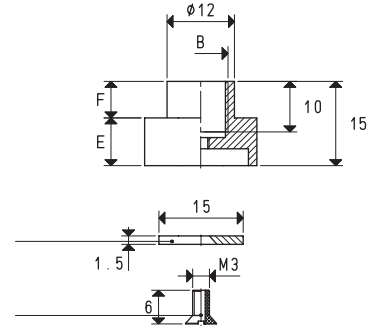
Item	Force Kg	Volume cm ³	A	B	C	D
01 12 20 *	0.52	0.3	15	11.5	17	20

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon



SUPPORT

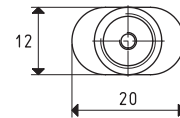
Item	B Ø	E	F	Support material	For vacuum cup item	Weight g
00 08 70	G1/8"	8.5	6.5	aluminium	01 12 20	5.4



fixing plate item 00 08 97

perforated TSP M3x5 screw item 00 08 103

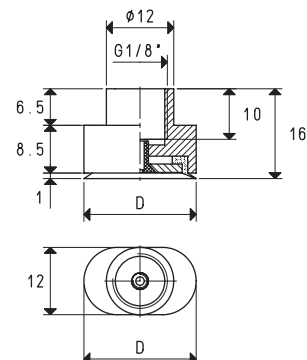
Note: Supplied automatically also with the fixing plate and the perforated TSP screw when ordering item 00 08 70



VACUUM CUP WITH SUPPORT

Item	Force Kg	D	Vacuum cup item	Support item	Weight g
08 12 20 *	0.52	20	01 12 20	00 08 70	5.8

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon



Note: 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 = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

Adapters for GAS - NPT threading available on page 1.130

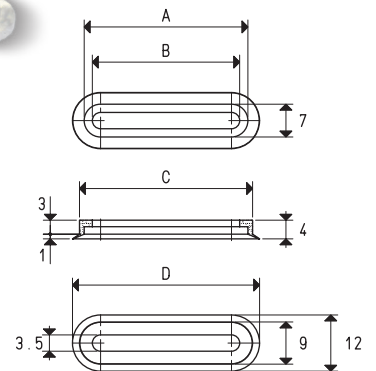
ELLIPTICAL FLAT VACUUM CUPS WITH SUPPORTS



VACUUM CUPS

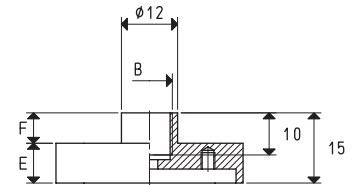
Item	Force Kg	Volume cm ³	A	B	C	D
01 12 30 *	0.82	0.5	25	21.5	27	30
01 12 40 *	1.12	0.7	35	31.5	37	40
01 12 50 *	1.57	1.0	50	46.5	52	55

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon



SUPPORTS

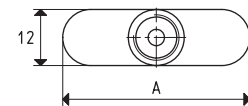
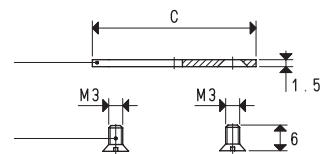
Item	A	B Ø	C	E	F	Support material	For vacuum cup item	Weight g
00 08 71	30	G1/8"	25	8.5	6.5	aluminium	01 12 30	7.8
00 08 75	40	G1/8"	35	8.5	6.5	aluminium	01 12 40	11.4
00 08 76	55	G1/8"	50	8.5	6.5	aluminium	01 12 50	15.5



fixing plate item 00 08 98 for supp. 00 08 71
 item 00 08 99 for supp. 00 08 75
 item 00 08 100 for supp. 00 08 76

2 TSP screws M3x5 item 00 08 102

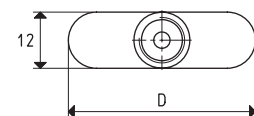
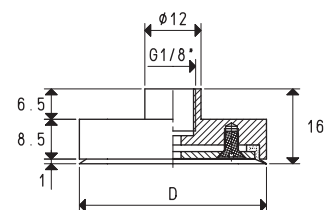
Note: Supplied automatically also with the fixing plate and the perforated TSP screw when ordering the item relative to the support



VACUUM CUPS WITH SUPPORT

Item	Force Kg	D	Vacuum cup item	Support item	Weight g
08 12 30 *	0.82	30	01 12 30	00 08 71	8.3
08 12 40 *	1.12	40	01 12 40	00 08 75	12.0
08 12 50 *	1.57	55	01 12 50	00 08 76	16.2

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon



Note: 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 = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

Adapters for GAS - NPT threading available on page 1.130



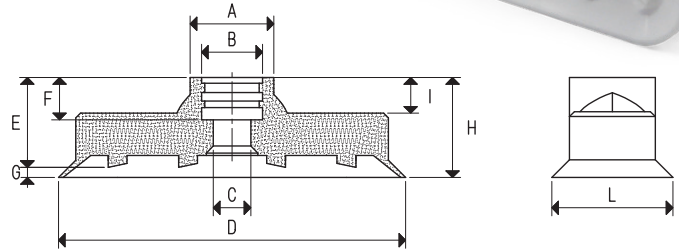
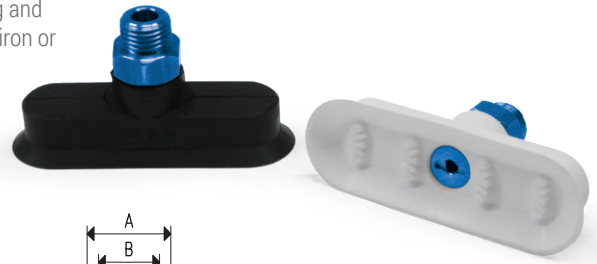
FLAT AND BELLOWS ELLIPTICAL VACUUM CUPS WITH SUPPORTS

Complete range of flat elliptical vacuum cups, normally used for gripping, handling and clamping cardboard cases and boxes, wood shingles, small ceramic or brick tiles, iron or stainless steel profiles, sheets and anything else present on long, narrow gripping surfaces.

Instead, bellows elliptical vacuum cups, in addition to having the same function as the flat cups described above, are able to adapt to the gripping plane, even if not perfectly perpendicular to the axis of the vacuum cup, and can recover evident unevenness of the loads to be lifted.

They are normally available in the three standard compounds but can be supplied in special compounds listed on pg. 31 and in a minimum amount to be defined in the order, upon request.

Both items can be supplied with or without automation fastening support. Upon request, special non-rotating vacuum cup holders on which to assemble them are able to prevent their rotation during use.



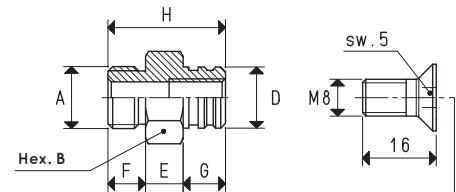
VACUUM CUPS

Item	Force Kg	A Ø	B Ø	C Ø	D	E	F	G	H	I	L	Volume cm ³
VOP 08 24 SR *	0.44	12.2	7.3	2.5	24	11.2	5.5	0.8	12.0	6.7	8.0	0.191
VOP 10 30 SR *	0.69	12.2	7.3	4.5	30	11.3	5.5	0.7	12.0	7.0	10.0	0.214
VOP 12 36 SR *	0.98	12.0	7.3	5.0	36	12.1	5.5	0.9	13.0	6.4	12.0	0.498
VOP 15 45 SR *	1.56	16.4	13.0	4.0	45	20.1	8.8	1.9	22.0	14.3	15.0	1.203
VOP 20 60 SR *	2.73	18.0	13.0	8.0	60	20.0	9.0	1.5	21.5	10.0	20.0	2.026
VOP 25 75 SR *	4.30	17.8	13.0	8.0	75	19.1	9.0	2.2	21.3	7.6	25.0	5.026
VOP 28 85 SR *	5.53	18.6	13.0	8.0	85	18.9	9.7	2.8	21.7	8.7	28.0	6.761
VOP 35 100 SR *	8.09	18.8	13.0	8.0	100	18.9	9.7	3.3	22.2	8.7	35.0	11.989

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon

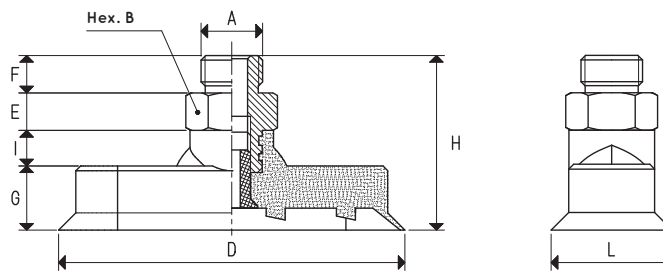
MALE SUPPORTS

Item	A Ø	B	D Ø	E	F	G	H	Support material	For vacuum cup item	Weight g
00 08 344	G1/8"	14	7.3	7	7	5.5	19.5	aluminium	VOP 08 24 SR VOP 10 30 SR VOP 12 36 SR	18.5
00 08 346	G1/4"	17	13.0	8	8	9.0	25.0	aluminium	VOP 15 45 SR	25.0
00 08 404	G1/4"	17	13.0	8	8	9.0	25.0	aluminium	VOP 20 60 SR VOP 25 75 SR	29.8
00 08 402	G1/4"	17	13.0	8	8	9.0	25.0	aluminium	VOP 28 85 SR VOP 35 100 SR	30.7



screw
item 00 08 347 for supp.00 08 402
item 00 08 348 for supp.00 08 404

Note: Supplied automatically also with the screw when ordering the item relative to the support



VACUUM CUPS WITH MALE SUPPORT

Item	Force Kg	A Ø	B	D	E	F	G	H	I	L	Vacuum cup item	Support item	Weight g
VOP 08 24 *	0.44	G1/8"	14	24	7	7	5.3	26.0	6.7	8.0	VOP 08 24 SR	00 08 344	19.7
VOP 10 30 *	0.69	G1/8"	14	30	7	7	5.0	26.0	7.0	10.0	VOP 10 30 SR	00 08 344	19.8
VOP 12 36 *	0.98	G1/8"	14	36	7	7	6.6	27.0	6.4	12.0	VOP 12 36 SR	00 08 344	20.6
VOP 15 45 *	1.56	G1/4"	17	45	8	8	7.7	38.0	14.3	15.0	VOP 15 45 SR	00 08 346	29.2
VOP 20 60 *	2.73	G1/4"	17	60	8	8	11.5	37.5	10.0	20.0	VOP 20 60 SR	00 08 404	38.3
VOP 25 75 *	4.30	G1/4"	17	75	8	8	13.7	37.3	7.6	25.0	VOP 25 75 SR	00 08 404	43.5
VOP 28 85 *	5.53	G1/4"	17	85	8	8	13.0	37.7	8.7	28.0	VOP 28 85 SR	00 08 402	50.7
VOP 35 100 *	8.09	G1/4"	17	100	8	8	13.5	38.2	8.7	35.0	VOP 35 100 SR	00 08 402	62.7

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon

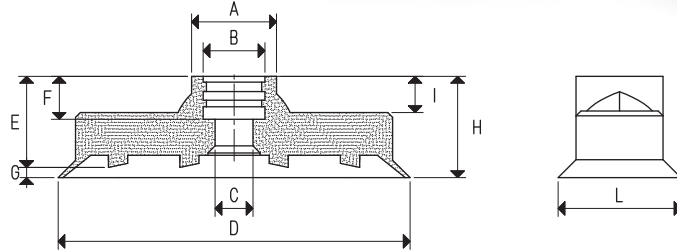
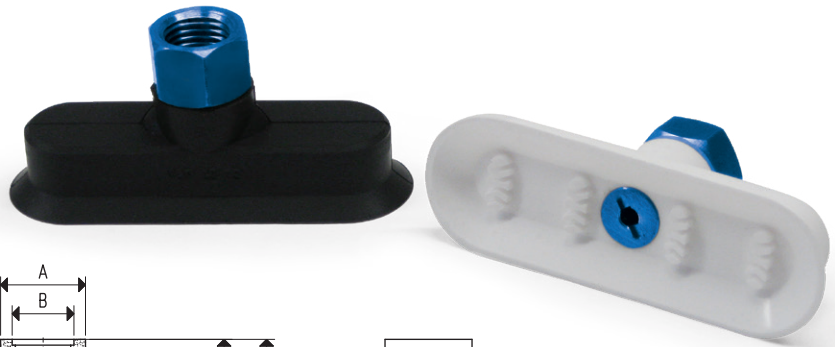
Note: The force of the vacuum cups indicated in the table represents 1/3 of the value of the theoretical force calculated at a level of vacuum of -75 KPa and a factor of safety 3.

Transformation ratio: N (newton) = Kg x 9.81 (force of gravity)

inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

Adapters for GAS - NPT threading available on page 1.130

ELLIPTICAL FLAT VACUUM CUPS WITH FEMALE SUPPORTS



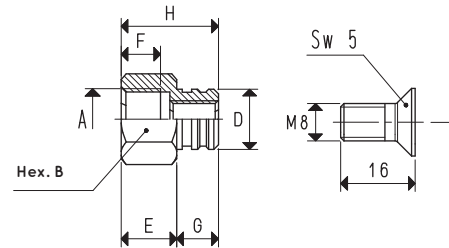
VACUUM CUPS

Item	Force Kg	A Ø	B Ø	C Ø	D	E	F	G	H	I	L	Volume cm ³
VOP 08 24 SR *	0.44	12.2	7.3	2.5	24	11.2	5.5	0.8	12.0	6.7	8.0	0.191
VOP 10 30 SR *	0.69	12.2	7.3	4.5	30	11.3	5.5	0.7	12.0	7.0	10.0	0.214
VOP 12 36 SR *	0.98	12.0	7.3	5.0	36	12.1	5.5	0.9	13.0	6.4	12.0	0.498
VOP 15 45 SR *	1.56	16.4	13.0	4.0	45	20.1	8.8	1.9	22.0	14.3	15.0	1.203
VOP 20 60 SR *	2.73	18.0	13.0	8.0	60	20.0	9.0	1.5	21.5	10.0	20.0	2.026
VOP 25 75 SR *	4.30	17.8	13.0	8.0	75	19.1	9.0	2.2	21.3	7.6	25.0	5.026
VOP 28 85 SR *	5.53	18.6	13.0	8.0	85	18.9	9.7	2.8	21.7	8.7	28.0	6.761
VOP 35 100 SR *	8.09	18.8	13.0	8.0	100	18.9	9.7	3.3	22.2	8.7	35.0	11.989

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon

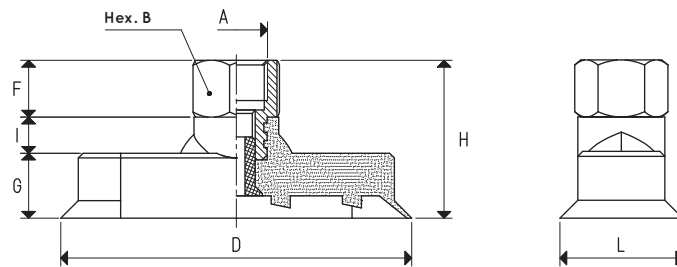
FEMALE SUPPORTS

Item	A Ø	B	D Ø	E	F	G	H	Support material	For vacuum cup item	Weight g
00 08 343	G1/8"	14	7.3	10	8.0	5.5	15.5	aluminium	VOP 08 24 SR VOP 10 30 SR VOP 12 36 SR	16.8
00 08 345	G1/4"	17	13.0	12	8.5	9.0	21.0	aluminium	VOP 15 45 SR	19.9
00 08 405	G1/4"	17	13.0	12	8.5	9.0	21.0	aluminium	VOP 20 60 SR VOP 25 75 SR	24.7
00 08 403	G1/4"	17	13.0	12	8.5	9.0	21.0	aluminium	VOP 28 85 SR VOP 35 100 SR	25.6



screw
item 00 08 347 for supp.00 08 403
item 00 08 348 for supp.00 08 405

Note: Supplied automatically also with the screw when ordering the item relative to the support



VACUUM CUPS WITH FEMALE SUPPORT

Item	Force Kg	A Ø	B	D	F	G	H	I	L	Vacuum cup item	Support item	Weight g
VOP 08 24 F *	0.44	G1/8"	14	24	10	5.3	22.0	6.7	8.0	VOP 08 24 SR	00 08 343	18.0
VOP 10 30 F *	0.69	G1/8"	14	30	10	5.0	22.0	7.0	10.0	VOP 10 30 SR	00 08 343	18.1
VOP 12 36 F *	0.98	G1/8"	14	36	10	6.6	23.0	6.4	12.0	VOP 12 36 SR	00 08 343	18.9
VOP 15 45 F *	1.56	G1/4"	17	45	12	7.7	24.0	14.3	15.0	VOP 15 45 SR	00 08 345	23.9
VOP 20 60 F *	2.73	G1/4"	17	60	12	11.5	33.5	10.0	20.0	VOP 20 60 SR	00 08 405	33.2
VOP 25 75 F *	4.30	G1/4"	17	75	12	13.7	33.3	7.6	25.0	VOP 25 75 SR	00 08 405	38.4
VOP 28 85 F *	5.53	G1/4"	17	85	12	13.0	33.7	8.7	28.0	VOP 28 85 SR	00 08 403	45.6
VOP 35 100 F *	8.09	G1/4"	17	100	12	13.5	34.2	8.7	35.0	VOP 35 100 SR	00 08 403	57.6

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon

Note: 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 = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

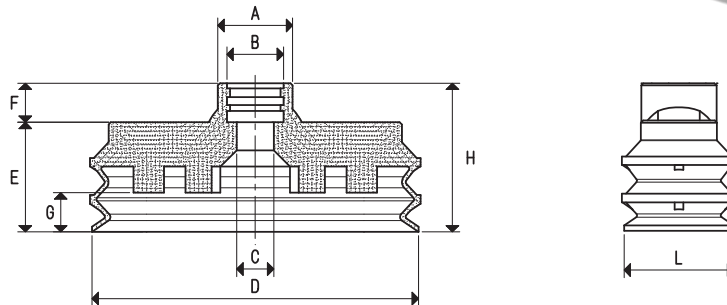
Adapters for GAS - NPT threading available on page 1.130



ELLIPTICAL BELLOWS VACUUM CUPS WITH MALE SUPPORTS

3D drawings are available on vuototecnica.net

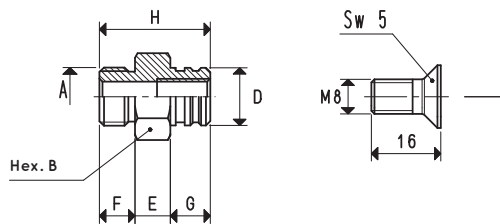
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VACUUM CUPS

Item	Force Kg	A Ø	B Ø	C Ø	D	E	F	G bellows stroke	H	L	Volume cm ³
VOS 08 25 *	0.51	10.0	7.3	1.3	25.0	12.4	6.0	3.0	18.4	8.0	0.852
VOS 15 45 *	1.56	17.2	13.0	4.0	45.0	18.6	10.0	6.5	28.6	15.0	4.978
VOS 25 75 *	4.30	17.2	13.0	9.0	75.0	25.2	9.0	8.5	34.2	25.0	23.083

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon

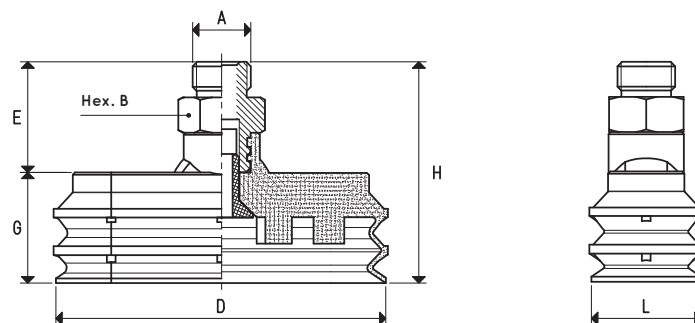


screw
item **00 08 347** for supp. **00 08 402**

Note: Supplied automatically also with the screw when ordering the item relative to the support

MALE SUPPORTS

Item	A Ø	B	D Ø	E	F	G	H	Support material	For vacuum cup item	Weight g
00 08 344	G1/8"	14	7.3	7	7	5.5	19.5	aluminium	VOS 08 25	18.5
00 08 346	G1/4"	17	13.0	8	8	9.0	25.0	aluminium	VOS 15 45	25.0
00 08 402	G1/4"	17	13.0	8	8	9.0	25.0	aluminium	VOS 25 75	30.7



VACUUM CUPS WITH MALE SUPPORT

Item	Force Kg	A Ø	B	D	E	G	H	L	Vacuum cup item	Support item	Weight g
VOS 08 25 M *	0.51	G1/8"	14	25.0	20.0	12.4	32.4	8.0	VOS 08 25	00 08 344	20.0
VOS 15 45 M *	1.56	G1/4"	17	45.0	26.0	18.6	44.6	15.0	VOS 15 45	00 08 346	31.4
VOS 25 75 M *	4.30	G1/4"	17	75.0	25.0	25.2	50.2	25.0	VOS 25 75	00 08 402	47.3

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon

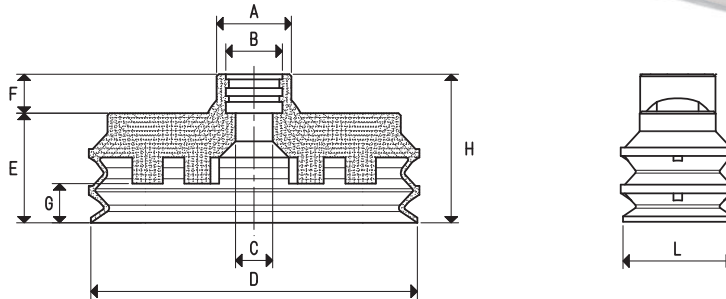
Note: The force of the vacuum cups indicated in the table represents 1/3 of the value of the theoretical force calculated at a level of vacuum of -75 KPa and a factor of safety 3.

Transformation ratio: N (newton) = Kg x 9.81 (force of gravity)

inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

Adapters for GAS - NPT threading available on page 1.130

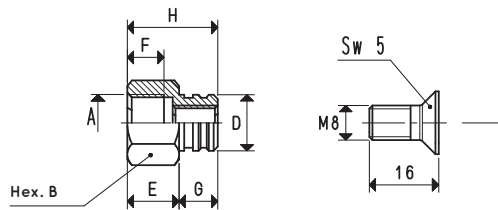
ELLIPTICAL BELLOWS VACUUM CUPS WITH FEMALE SUPPORTS



VACUUM CUPS

Item	Force Kg	A Ø	B Ø	C Ø	D	E	F	G bellows stroke	H	L	Volume cm ³
VOS 08 25 *	0.51	10.0	7.3	1.3	25.0	12.4	6.0	3.0	18.4	8.0	0.852
VOS 15 45 *	1.56	17.2	13.0	4.0	45.0	18.6	10.0	6.5	28.6	15.0	4.978
VOS 25 75 *	4.30	17.2	13.0	9.0	75.0	25.2	9.0	8.5	34.2	25.0	23.083

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon

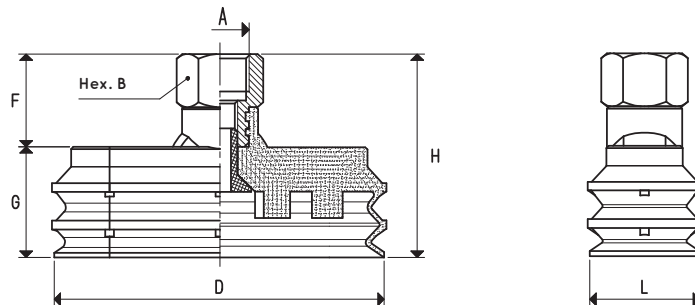


screw
item 00 08 347 for supp.00 08 403

Note: Supplied automatically also with the screw when ordering the item relative to the support

FEMALE SUPPORTS

Item	A Ø	B	D Ø	E	F	G	H	Support material	For vacuum cup item	Weight g
00 08 343	G1/8"	14	7.3	10	8.0	5.5	15.5	aluminium	VOS 08 25	16.8
00 08 345	G1/4"	17	13.0	12	8.5	9.0	21.0	aluminium	VOS 15 45	19.9
00 08 403	G1/4"	17	13.0	12	8.5	9.0	21.0	aluminium	VOS 25 75	25.6



VACUUM CUPS WITH FEMALE SUPPORT

Item	Force Kg	A Ø	B	D	F	G	H	L	Vacuum cup item	Support item	Weight g
VOS 08 25 F *	0.51	G1/8"	14	25.0	16.0	12.4	28.4	8.0	VOS 08 25	00 08 343	18.3
VOS 15 45 F *	1.56	G1/4"	17	45.0	22.0	18.6	40.6	15.0	VOS 15 45	00 08 345	26.3
VOS 25 75 F *	4.30	G1/4"	17	75.0	21.0	25.2	46.2	25.0	VOS 25 75	00 08 403	42.2

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon

Note: 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 = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$ Adapters for GAS - NPT threading available on page 1.130



ELLIPTICAL VACUUM CUPS WITH VULCANISED SUPPORT

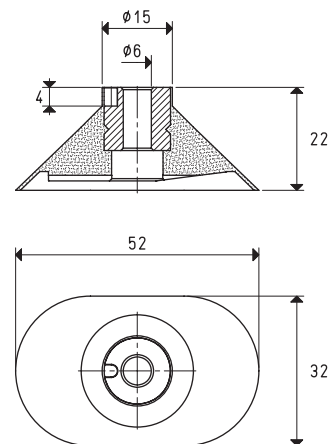
The cups described on this page have been designed for for handling X-ray sheets in hospital or other electrostatically charged films. Their original shape allows them to pick up one sheet at a time without deforming or crumpling the gripping surface and without leaving stains or prints, thanks to the special compound with which they are made. Their aluminium supports are vulcanised onto the cups. One with a smooth hole for fixing the cup to the machine with an Allen screw, with the housing on the inside and one with a threaded hole. A side slot on the support prevents the cup from rotating. These cups are recommended for gripping and handling magnetic sheets, plastic sheets, thin rubber sheets, laminated cardboard, etc.



VACUUM CUP WITH VULCANISED SUPPORT

Item	Force Kg	Volume cm ³	Support material	Weight g
08 32 52 A	3.00	3.1	aluminium	12.1

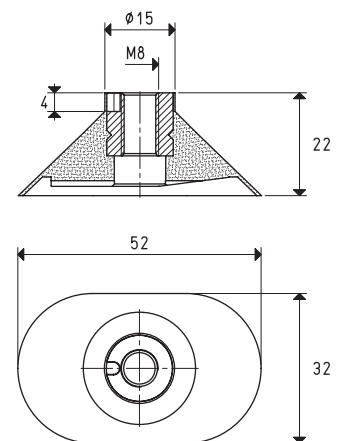
Compound: A = oil-resistant rubber



VACUUM CUP WITH VULCANISED SUPPORT

Item	Force Kg	Volume cm ³	Support material	Weight g
08 32 99 A	3.00	3.1	aluminium	11.9

Compound: A = oil-resistant rubber



Note: 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 = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

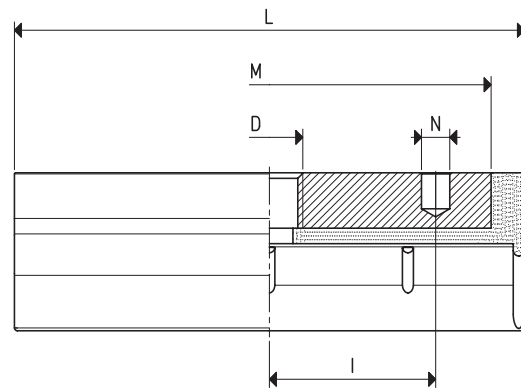
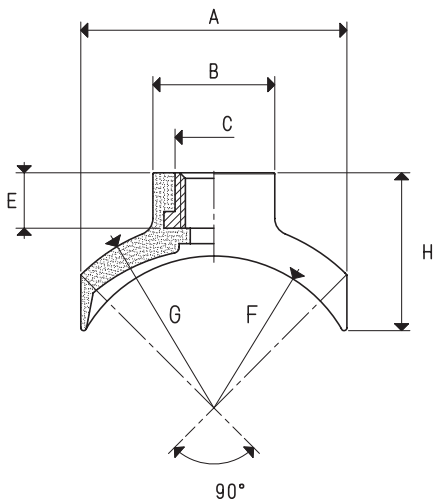


CONCAVE VACUUM CUPS WITH VULCANISED SUPPORT

These cups have been designed for gripping and handling cylindrical objects, such as pipes, bottles, round profiles, etc.

Their aluminium support is vulcanised onto the cup and it is provided with a central threaded hole to ease its fastening to the automation and with a side hole for insertion of an anti-rotation guide pin.

These cups can be provided in the three standard compounds: oil-resistant rubber A, natural para rubber N and silicon S.



CONCAVE VACUUM CUPS WITH VULCANISED SUPPORT

Item	Force Kg	Volume cm ³	gripping Ø		A	B	C	D	E	F	G	H	I	L	M	N	Support material	Weight g
			min	max				Ø								Ø		
08 30 60 *	3.5	2.1	30	45	26	15	10	M8	8	16	19	20.0	20	60	50	4.1	aluminium	20.3
08 40 90 *	8.6	5.5	50	80	40	20	14	M12	10	23	28	25.0	30	92	80	5.1	aluminium	54.8
08 50 90 *	10.5	11.1	60	95	48	22	14	M12	10	28	34	28.5	30	92	80	5.1	aluminium	62.5

* Complete the code indicating the compound: A= oil-resistant rubber; N= natural para rubber; S= silicon

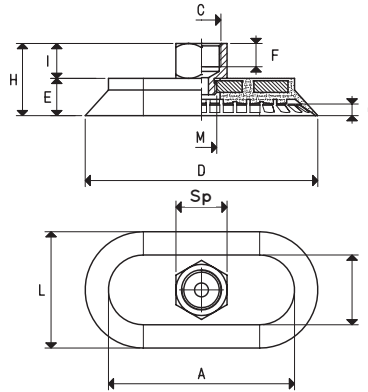
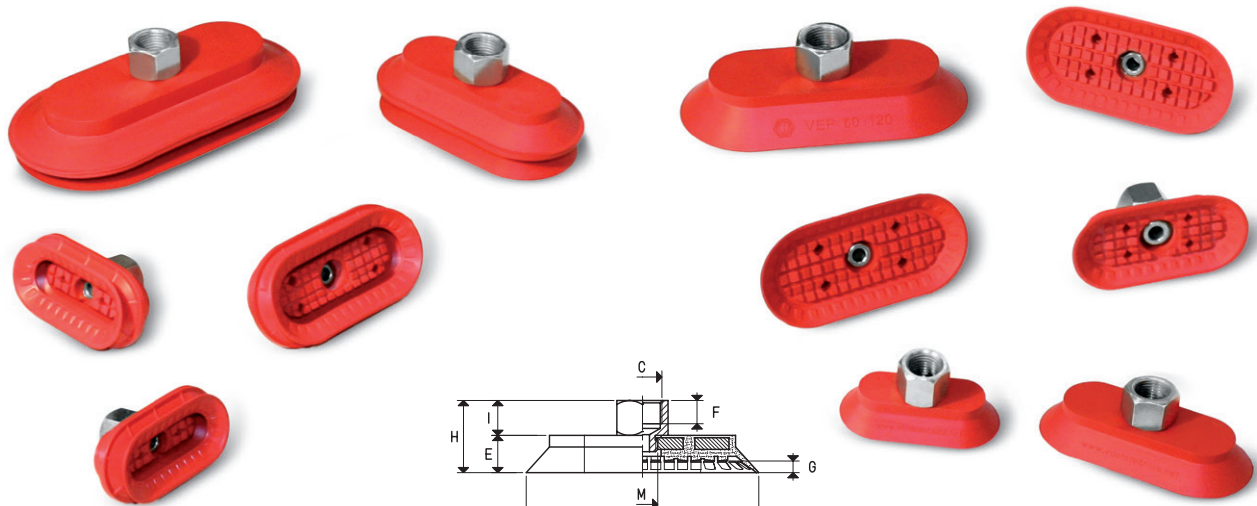
Note: The force of the vacuum cups indicated in the table represents 1/3 of the value of the theoretical force calculated at a level of vacuum of -75 KPa and a factor of safety 3.

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



FLAT AND BELLOWS ELLIPTICAL VACUUM CUPS

3D drawings are available on vuotecnica.net

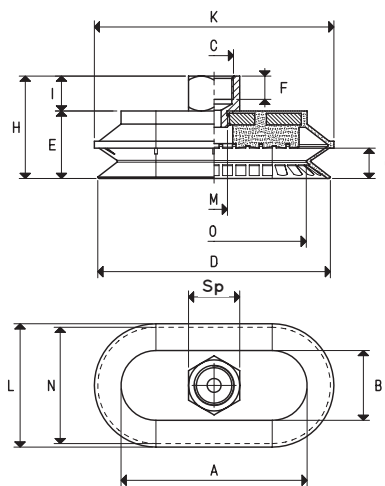


ELLIPTICAL VACUUM CUPS WITH VULCANISED SUPPORT

Item	Force Kg	Volume cm ³	A	B	C Ø	Sp	D	E	F	G	H	I	L	M Ø	Support material	Weight g
VEP 30 60 *	4.01	4.5	47	17	G1/4"	17	60	13	10	3	27	14	30	G1/8"	aluminium	42.6
VEP 30 90 *	6.26	7.0	77	17	G1/4"	17	90	13	10	3	27	14	30	G1/8"	aluminium	63.5
VEP 40 80 *	7.14	13.2	70	30	G1/4"	17	80	14	10	4	28	14	40	G1/8"	aluminium	68.0
VEP 50 100 *	11.15	15.0	80	30	G3/8"	22	100	16	10	5	31	15	50	G1/4"	aluminium	110.0
VEP 60 120 *	16.06	32.1	95	35	G3/8"	22	120	18	10	6	33	15	60	G1/4"	aluminium	156.1
VEP 70 140 *	21.86	53.5	110	40	G3/8"	22	140	19	10	7	34	15	70	G1/4"	aluminium	199.4

* Complete the code indicating the compound: B= BENZ rubber; N= natural para rubber; S = silicon

Note: Height "C" available with NPT threading. Ordering example: VEP 40 80 NPT B



BELLOWS ELLIPTICAL VACUUM CUPS WITH VULCANISED SUPPORT

Item	Force Kg	Volume cm ³	A	B	C Ø	Sp	D	E	F	G	H	K	I	L	M Ø	N	O	Support material	Weight g
VES 30 60 *	4.01	12.6	50	20	G1/4"	17	60	21	10	7.0	35	63	14	33	G1/8"	30	44.5	aluminium	49.5
VES 40 80 *	7.14	24.8	70	30	G1/4"	17	80	23	10	9.0	37	83	14	43	G1/8"	40	64.0	aluminium	91.9
VES 50 100 *	11.15	57.6	80	30	G3/8"	22	100	29	10	13.0	44	103	15	53	G1/4"	50	79.0	aluminium	125.3
VES 70 140 *	21.86	122.8	110	40	G3/8"	22	140	33	10	16.5	48	143	15	73	G1/4"	70	109.0	aluminium	227.8

* Complete the code indicating the compound: B= BENZ rubber; N= natural para rubber; S = silicon

Note: Height "C" available with NPT threading. Ordering example: VES 40 80 NPT B

Note: 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 = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

Adapters for GAS - NPT threading available on page 1.130



ADAPTERS FOR MAXIGRIP VACUUM CUPS

These standard accessories provide various MAXIGRIP CUP assembly options. The galvanised steel adapters transform the female standard support thread connections into male and the gas ones into metric. The internal hexagonal housing allows for an easy screwing on the supports.



MF ADAPTER FOR VRP VACUUM CUPS

Item	D ∅	d ∅	F	H	SW	Weight g
00 08 215	G3/8"	G1/4"	8	14	6	11.5

MF ADAPTER FOR VRS - VEP - VES VACUUM CUPS

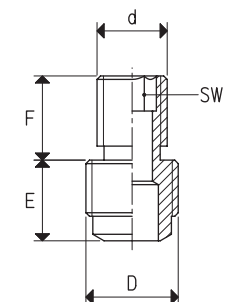
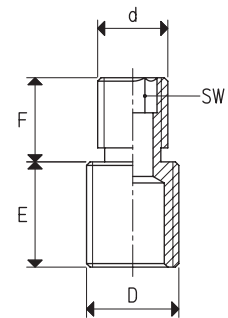
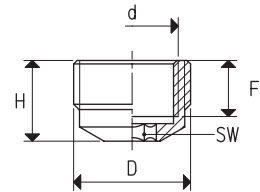
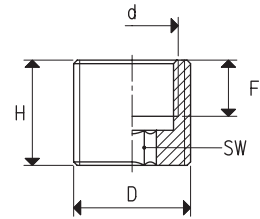
Item	D ∅	d ∅	F	H	SW	Weight g
00 08 216	G3/8"	G1/4"	8	11.5	6	6.0

MM ADAPTER FOR VRP VACUUM CUPS

Item	D ∅	d ∅	E	F	SW	Weight g
00 08 217	G1/4"	G1/4"	15	10	6	16.7
00 08 218	G1/4"	M10 x 1.5	15	12	6	10.2
00 08 219	G1/4"	M14 x 1.5	15	12	6	16.0
00 08 220	G3/8"	G1/4"	14	10	6	18.4
00 08 221	G3/8"	M10 x 1.5	14	12	6	16.3
00 08 222	G3/8"	M14 x 1.5	14	12	6	22.5

MM ADAPTER FOR VRS - VEP - VES VACUUM CUPS

Item	D ∅	d ∅	E	F	SW	Weight g
00 08 223	G1/4"	G1/4"	11.5	10	6	13.9
00 08 224	G1/4"	M10 x 1.5	13.0	12	6	10.1
00 08 225	G1/4"	M14 x 1.5	13.0	12	6	15.8
00 08 226	G3/8"	G1/4"	10.5	11	6	16.6
00 08 227	G3/8"	M10 x 1.5	10.5	13	6	14.2
00 08 228	G3/8"	M14 x 1.5	10.5	13	6	20.2





ACCESSORIES FOR MAXIGRIP VACUUM CUPS

The accessories shown on this page are suitable for the previously described MAXIGRIP CUPS.

MF adapters are suitable for increasing female connections of 1/8" and 1/4" gas threaded connection vacuum cups to a larger size, still female, of 1/4" or 3/8" with gas or NPT threading, upon request.

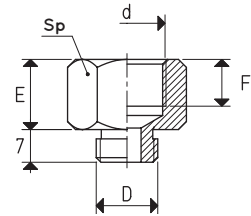
Those that are galvanised steel and with gas threading and those with NPT threading are made of aluminium.

AQ adapters with square flange and male or female threaded connections made of anodised aluminium are suitable for robotic gripping systems to allow for quick installation of vacuum cups on the special profiles, used in the AUTOMOTIVE sector. The built-in seal guarantees perfect vacuum seal.



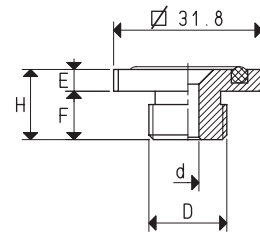
MF ADAPTER FOR VRP-VRS-VEP-VES VACUUM CUPS

Item	E	F	D ∅	d ∅	Sp	Adapter material	Weight g
00 08 207	14	10	G1/8"	G1/4"	17	aluminium	17.6
00 08 208	15	10	G1/4"	G3/8"	22	aluminium	31.0
00 08 329	17	12	G1/8"	1/4" NPT	17	steel	17.6
00 08 328	22	16	G1/4"	3/8" NPT	22	steel	31.0



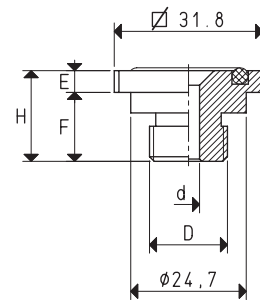
SQUARE ADAPTER FOR VRP-VRS-VEP-VES VACUUM CUPS

Item	H	E	F	D ∅	d ∅	Material	Weight g	O-ring spare part item
AQ 32 1/8"	13	4.6	8.4	G1/8"	5	aluminium	11.8	00 08 214
AQ 32 1/4"	13	4.6	8.4	G1/4"	5	aluminium	13.2	00 08 214
AQ 32 3/8"	13	4.6	8.4	G3/8"	5	aluminium	15.6	00 08 214
AQ 32 1/2"	13	4.6	8.4	G1/2"	5	aluminium	17.2	00 08 214



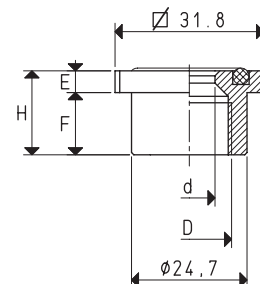
SQUARE ADAPTER FOR VRP-VRS-VEP-VES VACUUM CUPS

Item	H	E	F	D ∅	d ∅	Material	Weight g	O-ring spare part item
AQS 32 1/8"	16.1	4.6	11.5	G1/8"	5	aluminium	12.2	00 08 214
AQS 32 1/4"	20.0	4.6	15.4	G1/4"	5	aluminium	13.6	00 08 214
AQS 32 3/8"	20.0	4.6	15.4	G3/8"	5	aluminium	16.2	00 08 214
AQS 32 1/2"	20.0	4.6	15.4	G1/2"	5	aluminium	17.8	00 08 214



SQUARE ADAPTER FOR VRP-VRS-VEP-VES VACUUM CUPS

Item	H	E	F	D ∅	d ∅	Material	Weight g	O-ring spare part item
AQ 32 1/4" F	17.9	4.6	13.3	G1/4"	11	aluminium	15.2	00 08 214
AQ 32 3/8" F	17.9	4.6	13.3	G3/8"	11	aluminium	14.1	00 08 214





OF FOAM RUBBER SHEETS AND STRIPS

The foam rubber used for our cups can be provided in sheets or strips of the sizes indicated in the table.

Both the OF foam rubber strips and the sheets have a self-adhesive side which allows a quick and easy fixing to the metal support.

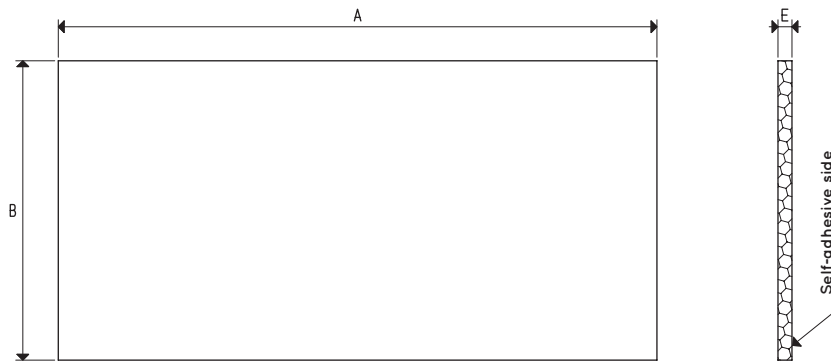
These sheets and strips can be used to make cups of every shape and to handle loads with raw or very rough surfaces. They can be supplied in different sizes and density upon request and in quantities to be defined in the order.

The working temperature ranges from -40°C to +80°C.

Excellent compressive and breaking strength, with elongation up to 350%. Poor resistance to oils, ozone and flame.

NOTE: OF foam rubber is obtained by the expansion of a natural rubber, subjected to leavening through a chemical-thermal treatment.

Surface porosity with the same density, therefore, can vary, not compromising its effectiveness.

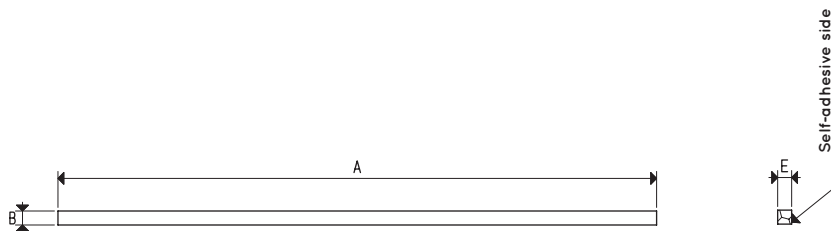


OF FOAM RUBBER SHEETS

Item	A	B	E
LGS 10 OF	2050/1950	920/880	10 ± 1.50
LGS 15 OF	2050/1950	920/880	15 ± 1.60
LGS 20 OF	2050/1950	920/880	20 ± 1.90
LGS 25 OF	2050/1950	920/880	25 ± 1.90
LGS 30 OF	2050/1950	920/880	30 ± 2.00
LGS 40 OF	2050/1950	920/880	40 ± 2.50
LGS 45 OF	2050/1950	920/880	45 ± 2.50

Note: The minimum size available is half a sheet.

Note: Considering the nature of OF rubber foam, the size of slabs in the table may vary, even beyond tolerances.



OF FOAM RUBBER STRIPS

Item	A	B	E
SGS 10 10 OF	2050/1950	10 ± 1.50	10 ± 0,50
SGS 15 10 OF	2050/1950	15 ± 1.60	10 ± 0,50
SGS 20 10 OF	2050/1950	20 ± 1.90	10 ± 0,50
SGS 20 15 OF	2050/1950	20 ± 1.90	15 ± 0,75

Note: Considering the nature of OF rubber foam, the size of strips in the table may vary.

Transformation ratio: N (newton) = Kg x 9.81 (force of gravity)

inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$



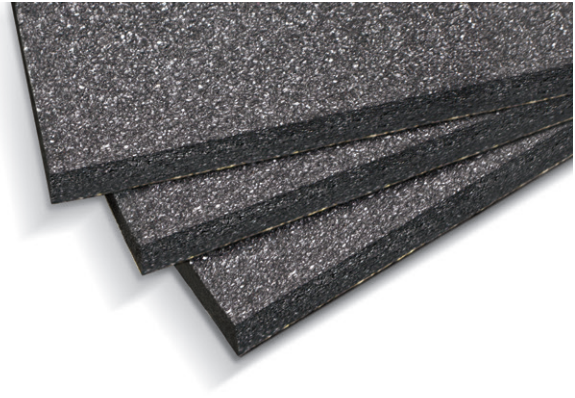
SB EXTRA SOFT FOAM RUBBER SHEETS

Specifically designed for the production of OCTOPUS system gripping surface. This black foam rubber has an open cellular structure and is made of EPDM rubber.

SB extra soft foam rubber sheets have a self-adhesive side for quick, easy fixing to metal supports.

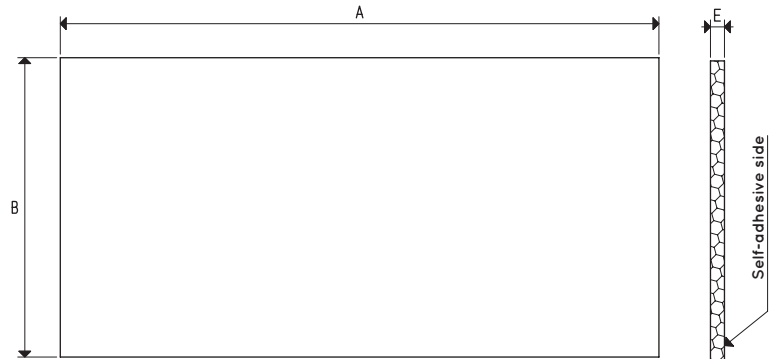
The temperature of use ranges from -40°C to +130°C and it offers excellent resistance to heat, atmospheric agents, low temperatures and ageing.

The low density and softness of this foam rubber allows gripping surfaces to adapt to any kind of surface.



SB EXTRA SOFT FOAM RUBBER SHEETS			
Item	A	B	E
LGS 10 SB	2050/1950	920/880	10 ± 1.50
LGS 15 SB	2050/1950	920/880	15 ± 1.60
LGS 20 SB	2050/1950	920/880	20 ± 1.90
LGS 30 SB	2050/1950	920/880	30 ± 2.00
LGS 40 SB	2050/1950	920/880	40 ± 2.50

Note: The minimum size available, half a sheet, is 1000 x 900 mm.



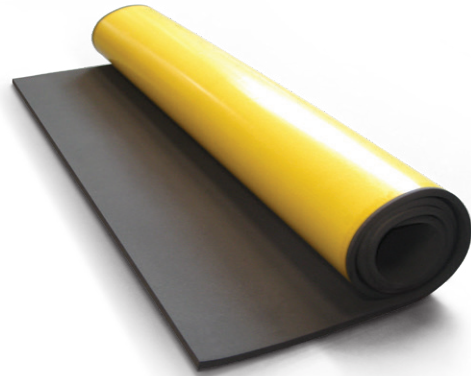
NF NEOPRENE FOAM RUBBER SHEETS

This type of foam rubber made with Neoprene rubber is black in colour and has a closed cellular structure, allowing it to offer greater compressive strength at the cost of less elasticity and a tendency to deform over time.

NF Neoprene foam rubber sheets have a self-adhesive side for quick, easy fixing to metal supports. Excellent resistance to oil products, sunlight, atmospheric agents, and ozone. Not recommended for food use.

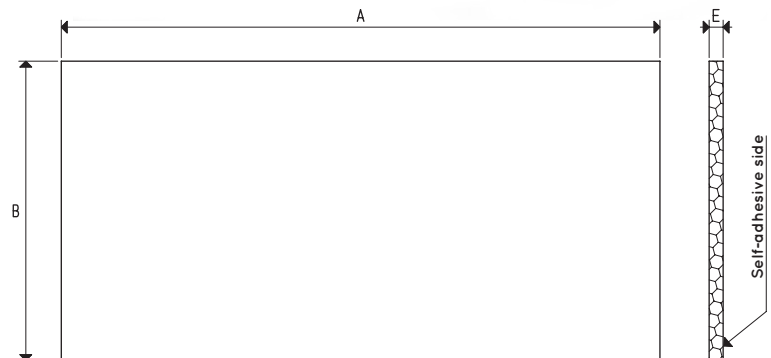
This type of foam rubber allows for the use of vacuum cups for gripping coarse or very rough surfaces operating outside in contact with atmospheric agents.

The working temperature ranges for the foam are from -40°C to +100 °C.



NF NEOPRENE FOAM RUBBER SHEETS			
Item	A	B	E
LGS 10 NF	2050/1950	920/880	10 ± 1.50
LGS 15 NF	2050/1950	920/880	15 ± 1.60
LGS 20 NF	2050/1950	920/880	20 ± 1.90
LGS 30 NF	2050/1950	920/880	30 ± 2.00
LGS 40 NF	2050/1950	920/880	40 ± 2.50

Note: The minimum size available, half a sheet, is 1000 x 900 mm.



Transformation ratio: N (newton) = Kg x 9.81 (force of gravity)

inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$