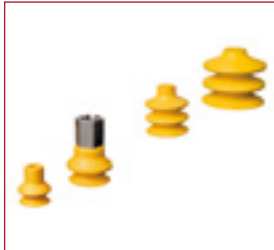
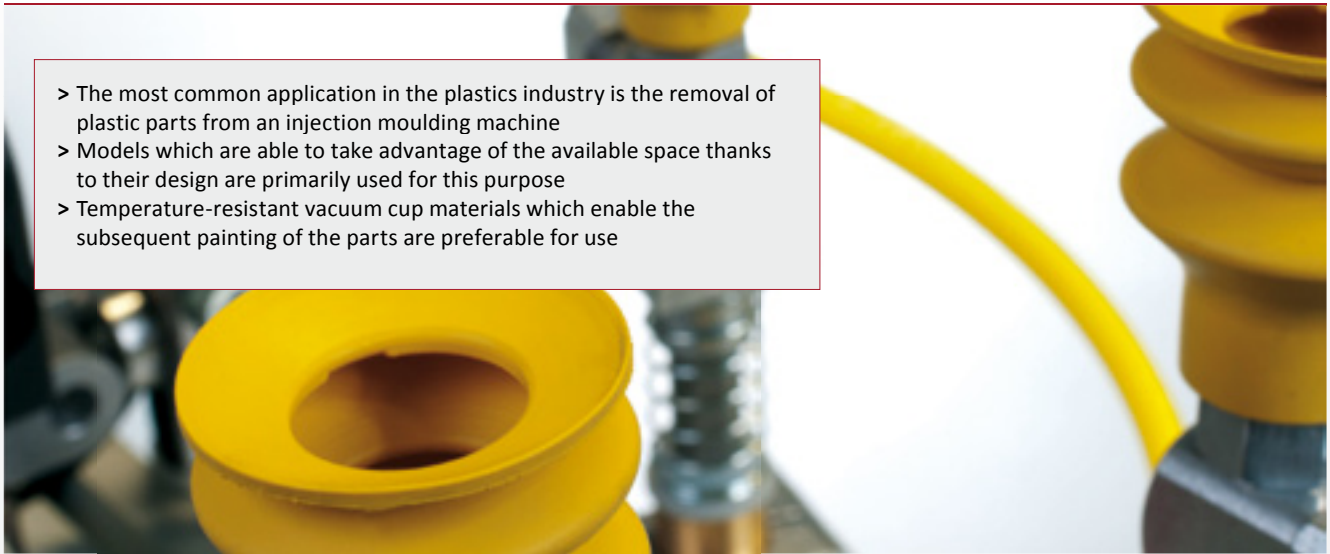


Vacuum cups for demoulding	108
Further industry solutions	132



FIPA Vacuum cups for demoulding

- > The most common application in the plastics industry is the removal of plastic parts from an injection moulding machine
- > Models which are able to take advantage of the available space thanks to their design are primarily used for this purpose
- > Temperature-resistant vacuum cup materials which enable the subsequent painting of the parts are preferable for use



HNBR vacuum cups - SKH-B1, SKH-B2 and SKH-O

Bellows cups 1.5 and 2.5 folds, flat vacuum cups and oval vacuum cups

- > Standard material for removing hot plastic parts from an injection moulding machine
- > Heat-resistant up to 160 °C
- > No silicones or other adhesive-repelling substances, enabling later painting of the products
- > Low-marking
- > Wear-resistant material
- > Good adaptation to uneven product surfaces
- > Diameter: 5 - 60 mm

> See page 110



Flat silicone vacuum cups with curved lip - SFU-D

- > Universal flat vacuum cups with tapering curved sealing lip
- > Pre-tension of the sealing lip enables gripping of uneven, slightly curved products
- > Diameter: 4 - 85 mm

> See page 116



Bellows silicone vacuum cups, universal - SBU 1 and SBU 2 1.5 and 2.5 folds

- > Universal bellows vacuum cups for handling sensitive or uneven products
- > Bellows compensates for differences in height and enables good adaptation to curved or uneven product surfaces
- > Diameter: 4 - 88 mm

> See page 119



FIPA Vacuum cups for demoulding



Thermalon® vacuum cups

- > Optimised material for less marking
- > Heat-resistant up to 160 °C
- > No silicones or other adhesive-repelling substances, enabling later painting of the products

Bellows vacuum cups, 1.5 folds - SKT-B1

- > Good adaptation to uneven product surfaces
- > Diameter: 11 - 63 mm

> See page 125

Bellows vacuum cups, 2.5 folds - SKT-B2

- > Very good adaptation to uneven product surfaces
- > Large range of height and angle adjustment
- > Particularly gentle placement on product surfaces
- > Diameter: 5 - 62 mm

> See page 127



Flat vacuum cups - SKT-F (not shown in the catalogue)

- > Flat vacuum cups with a flexible single sealing lip
- > Low internal volume saves energy
- > Diameter: 5 - 60 mm

Oval vacuum cups - SKH-O (not shown in the catalogue)

- > Oval-shaped flat vacuum cups for the handling of narrow products
- > Narrow width enables the gripping of ribbed surfaces
- > Significantly greater suction power than round vacuum cups of equal width
- > Dimensions: 4x2 - 45x15 mm



Varioflex® bellows cups, 1.5 and 2.5 folds - SP-BX

- > Excellent service life and superior retention force
- > Special polyurethane in two degrees of hardness (60° Shore A black, 30° Shore A red)
- > Soft lip for optimal sealing
- > Short cycle times and high process reliability
- > Operating temperature: 10 - 50 °C
- > Low-marking

1.5 folds - SP-BX1 (not shown in the catalogue)

- > Good adaptation to uneven product surfaces
- > Supports (Ø 20 - 75 mm) stabilise the product
- > Diameter: 15 - 75 mm



2.5 folds - SP-BX2

- > Excellent adaptation to uneven product surfaces
- > Large range of height and angle adjustment
- > Diameter: 15 - 75 mm

> See page 129

For the full range of vacuum cups please refer to the FIPA vacuum technology catalogue or our website www.fipa.com.



Vacuum cups | Vacuum cups for demoulding

High temperature HNBR bellows cups, 1.5 folds - SKH-B1

High temperature HNBR bellows cups, 1.5 folds - SKH-B1



UP TO 160 °C & MINIMUM MARKING



Product description

Bellows vacuum cups for uneven surfaces with suitability for removing hot plastic parts to be painted from an injection moulding machine. Connection via plug-in nipple.

Advantage

- > Free of silicone and other paint-wetting-impairment substances (PWIS)
- > Minimum-marking
- > Bellows compensate differences in height and enable good adaptation to curved or uneven product surfaces

Technical data

Item no.	Model / Lip dimensions		Number of folds	Material / Colour	Usage temperature [°C]
23.005.178._*	SKH-B1-5	2	1.5	HNBR (ge)	0 - 160
23.008.166._*	SKH-B1-8	3.5	1.5	HNBR (ge)	0 - 160
23.011.008._*	SKH-B1-11	4.5	1.5	HNBR (ge)	0 - 160
23.015.122._*	SKH-B1-15	5	1.5	HNBR (ge)	0 - 160
23.016.016._*	SKH-B1-16	6	1.5	HNBR (ge)	0 - 160
23.020.124._*	SKH-B1-20	8	1.5	HNBR (ge)	0 - 160
23.030.125._*	SKH-B1-30	9	1.5	HNBR (ge)	0 - 160
23.043.096._*	SKH-B1-43	12	1.5	HNBR (ge)	0 - 160

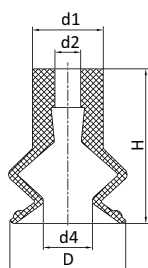
Accessories

Item no.	 Suitable mounting brackets						
	M5-male	M5-female	M6-male	G1/8-male	G1/8-female	G1/4-male	G1/4-female
23.005.178._*	270.153	--	--	--	--	--	--
23.008.166._*	270.153	--	--	--	--	--	--
23.011.008._*	270.013	270.005	270.103	270.003	270.015	--	--
23.015.122._*	270.010	270.005	--	270.009	270.007	--	--
23.016.016._*	270.013	270.005	270.103	270.003	270.015	--	--
23.020.124._*	270.311	--	--	270.063	270.061	--	--
23.030.125._*	--	--	270.312/19	270.030	270.019	270.274	270.275
23.043.096._*	--	--	270.315	270.196	270.114	270.190	270.192

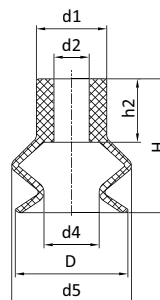
* When ordering please add the appropriate material code to item no. You will find it on page 133.



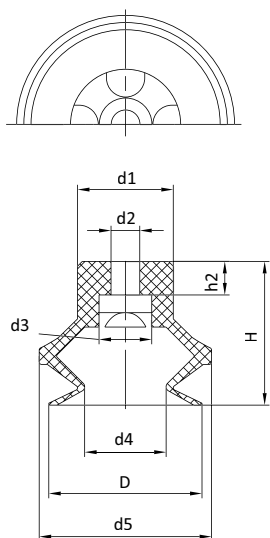
Dimensions



Drawing A



Drawing B



Drawing C

Item no.	Drawing	Ø D [mm]	Ø d1 [mm]	Ø d2 [mm]	Ø d3 [mm]	Ø d4 [mm]	Ø d5 [mm]	H [mm]	h2 [mm]
23.005.178._*	A	6	5	2	--	2.2	--	9	--
23.008.166._*	A	9	5.5	2	--	3.8	--	12	--
23.011.008._*	B	12	10	5	--	4.5	12	16	9
23.015.122._*	C	15	8.5	3.6	6	8	17	16	1.7
23.016.016._*	B	16	10	5	--	8	17	19	9
23.020.124._*	C	21.5	15	4.5	11	10	23.5	20	4.6
23.030.125._*	C	32	20	6	11	17	36	30	7
23.043.096._*	B	43	18	8	--	23	45	27	12

* When ordering please add the appropriate material code to item no. You will find it on page 133.



Vacuum cups | Vacuum cups for demoulding

High temperature HNBR bellows cups, 2.5 folds - SKH-B2

High temperature HNBR bellows cups, 2.5 folds - SKH-B2



UP TO 160 °C & MINIMUM MARKING



Product description

Bellows vacuum cups for uneven surfaces with suitability for removing hot plastic parts to be painted from an injection moulding machine. Connection via plug-in nipple.

Advantage

- > Free of silicone and other paint-wetting-impairment substances (PWIS)
- > Minimum-marking
- > Long vacuum cup lift and good adaptation to curved or uneven product surfaces

Technical data

Item no.	Model / Lip dimensions		Number of folds	Material / Colour	Usage temperature [°C]
21.005.057.*	SKH-B2-5	3	2.5	HNBR (ge)	0 - 160
21.007.089.*	SKH-B2-7	3	2.5	HNBR (ge)	0 - 160
21.009.002.*	SKH-B2-9	2	2.5	HNBR (ge)	0 - 160
21.012.135.*	SKH-B2-12	7	2.5	HNBR (ge)	0 - 160
21.014.053.*	SKH-B2-14	9	2.5	HNBR (ge)	0 - 160
21.018.010.*	SKH-B2-18	8	2.5	HNBR (ge)	0 - 160
21.020.016.*	SKH-B2-20	9	2.5	HNBR (ge)	0 - 160
21.032.075.*	SKH-B2-32	13	2.5	HNBR (ge)	0 - 160
21.043.049.*	SKH-B2-43	19	2.5	HNBR (ge)	0 - 160
21.060.051.*	SKH-B2-60	25	2.5	HNBR (ge)	0 - 160

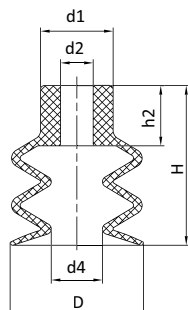
Accessories

Item no.	 Suitable mounting brackets						
	M5-male	M5-female	M6-male	G1/8-male	G1/8-female	G1/4-male	G1/4-female
21.005.057.*	270.134	270.347	270.104	270.033	270.478	--	--
21.007.089.*	270.010	270.005	--	270.009	270.007	--	--
21.009.002.*	270.013	270.005	270.103	270.003	270.015	--	--
21.012.135.*	270.013	270.005	270.103	270.003	270.015	--	--
21.014.053.*	270.134	270.347	270.104	270.033	270.478	--	--
21.018.010.*	270.013	270.005	270.103	270.003	270.015	--	--
21.020.016.*	270.013	270.005	270.103	270.003	270.015	270.194	--
21.032.075.*	--	--	270.315	270.196	270.114	270.190	270.192
21.043.049.*	--	--	270.315	270.196	270.114	270.190	270.192
21.060.051.*	--	--	270.315	--	--	270.540	270.539

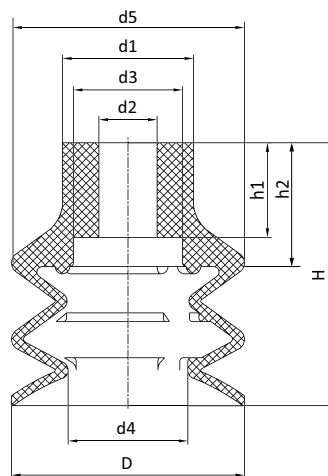
* When ordering please add the appropriate material code to item no. You will find it on page 133.



Dimensions



Drawing A



Drawing B

Item no.	Drawing	Ø D [mm]	Ø d1 [mm]	Ø d2 [mm]	Ø d3 [mm]	Ø d4 [mm]	Ø d5 [mm]	H [mm]	h1 [mm]	h2 [mm]
21.005.057._*	A	5.5	7	4	--	2.5	--	14	--	8.5
21.007.089._*	B	7	7.5	4	5.5	3	7	10	2	3.5
21.009.002._*	A	9	9	5	--	4	--	15	--	7
21.012.135._*	A	12	10	5	--	5	--	21	--	9
21.014.053._*	A	14	8	4	--	5.5	--	18	--	5.5
21.018.010._*	A	18	10	4.5	--	7	--	22	--	8.5
21.020.016._*	A	20	10	4.5	--	10	--	23	--	9
21.032.075._*	B	32	18	8	15	16.5	32	36	13	--
21.043.049._*	B	42	20	8	15	15.5	42	46	13	17
21.060.051._*	B	61	22	8	14	28	61	57	14	18.5

* When ordering please add the appropriate material code to item no. You will find it on page 133.



Vacuum cups | Vacuum cups for demoulding

High temperature HNBR oval cups - SKH-O

High temperature HNBR oval cups - SKH-O

UP TO 160 °C & MINIMUM MARKING



Product description

Oval vacuum cups for smooth surfaces suitable for removing hot plastic parts to be painted from an injection moulding machine. Connection via plug-in nipple.

Advantage

- > Free of silicone and other paint-wetting-impairment substances (PWIS)
- > Minimum-marking
- > Significantly increased suction force compared to round vacuum cups of the same width
- > Soft sealing lip also allows adhesion to curved products

Ordering notes:

From size 15x5 mm upward, a gripper clamp (available separately) is recommended to prevent inadvertent rotation

Technical data

Item no.	Model / Lip dimensions		Material / Colour	Usage temperature [°C]
132.4x2.031._*	SKH-O-4x2A	0.5	HNBR (ge)	0 - 160
132.7x4.034._*	SKH-O-7x4	0.8	HNBR (ge)	0 - 160
132.15x5.067._*	SKH-O-15x5	1	HNBR (ge)	0 - 160
132.24x8.066._*	SKH-O-24x8	1	HNBR (ge)	0 - 160
132.36x12.068._*	SKH-O-36x12	2	HNBR (ge)	0 - 160
132.45x15.064._*	SKH-O-45x15	3	HNBR (ge)	0 - 160

Accessories

Clamp

--
--
78.030
78.032
78.032
78.033

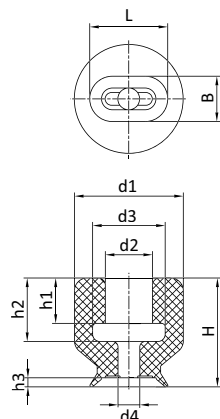
Accessories

Item no.	 Suitable mounting brackets					
	M3-male	M4-male	M5-male	G1/8-male	G1/4-male	G1/4-female
132.4x2.031._*	270.014	270.111	270.300	--	--	--
132.7x4.034._*	270.014	270.111	270.300	--	--	--
132.15x5.067._*	--	--	--	270.431	--	--
132.24x8.066._*	--	--	--	270.431	--	--
132.36x12.068._*	--	--	--	270.431	--	--
132.45x15.064._*	--	--	--	--	270.097	270.098

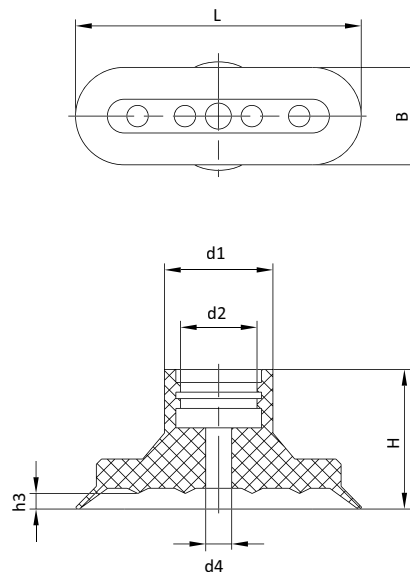
* When ordering please add the appropriate material code to item no. You will find it on page 133.



Dimensions



Drawing A



Drawing B

Item no.	Drawing	L [mm]	B [mm]	Ø d1 [mm]	Ø d2 [mm]	Ø d3 [mm]	Ø d4 [mm]	H [mm]	h1 [mm]	h2 [mm]	h3 [mm]
132.4x2.031._*	A	4.3	2.5	6	2.6	4	1.2	6	2.5	3.5	0.5
132.7x4.034._*	A	7.5	4	6	2.4	3	1.4	6	2.3	3	0.7
132.15x5.067._*	B	15	5	9	5	--	2	12	--	--	0.8
132.24x8.066._*	B	24	8.5	12.5	5	--	3	13	--	--	1.5
132.36x12.068._*	B	36	12	12	5	--	4	12	--	--	1.6
132.45x15.064._*	B	44	15	16.5	12	--	4	22	--	--	2.4

* When ordering please add the appropriate material code to item no. You will find it on page 133.



Vacuum cups | Vacuum cups for demoulding

Flat silicone vacuum cups with curved lip - SFU-D

Flat silicone vacuum cups with curved lip - SFU-D



Product description

Universal flat vacuum cups with tapering curved sealing lip. Connection via plug-in nipple.

Advantage

- > Pre-tension of the sealing lip enables gripping of uneven and slightly curved products
- > Large lift

Technical data

Item no.	Model / Lip dimensions		Material / Colour
112.004.001.*	SFU-D-4	0.5	SI (r)
112.005.002.*	SFU-D-5	0.7	SI (r)
112.006.003.*	SFU-D-6	1	SI (r)
112.008.007.*	SFU-D-8	1.5	SI (w)
112.010.011.*	SFU-D-10	2	SI (w)
112.012.015.*	SFU-D-12	2	SI (w)
112.015.022.*	SFU-D-15	2	SI (w)
112.018.024.*	SFU-D-18	2.3	SI (w)
112.020.031.*	SFU-D-20	2.3	SI (w)
112.022.037.*	SFU-D-22	2.5	SI (w)
112.025.042.*	SFU-D-25	4.5	SI (w)
112.030.052.*	SFU-D-30	4.5	SI (w)
112.035.060.*	SFU-D-35	5	SI (w)
112.040.071.*	SFU-D-40	4	SI (tr)
112.045.077.*	SFU-D-45	7	SI (w)
112.060.091.*	SFU-D-60	9	SI (tr)
112.085.102.*	SFU-D-85	12	SI (tr)

* When ordering please add the appropriate material code to item no. You will find it on page 133.



Accessories

Item no.	 Suitable mounting brackets							
	M3-male	M5-male	M5-female	M6-male	G1/8-male	G1/8-female	G1/4-male	G1/4-female
112.004.001._*	270.025	--	--	--	--	--	--	--
112.005.002._*	270.025	--	--	--	--	--	--	--
112.006.003._*	270.025	--	--	--	--	--	--	--
112.008.007._*	--	270.536	--	--	--	--	--	--
112.010.011._*	--	270.134	270.347	270.104	270.033	270.478	--	--
112.012.015._*	--	270.134	270.347	270.104	270.033	270.478	--	--
112.015.022._*	--	270.134	--	270.104	270.033	270.478	--	--
112.018.024._*	--	270.134	270.347	270.104	270.033	270.478	--	--
112.020.031._*	--	270.134	270.347	270.104	270.033	270.478	--	--
112.022.037._*	--	270.134	270.347	270.104	270.033	270.478	--	--
112.025.042._*	--	270.443	--	--	270.238	270.110	270.534	--
112.030.052._*	--	270.443	--	--	270.238	270.110	270.534	--
112.035.060._*	--	--	--	--	--	--	270.451	270.452
112.040.071._*	--	--	--	--	--	--	270.451	270.452
112.045.077._*	--	--	--	--	--	--	270.451	270.452
112.060.091._*	--	--	--	--	--	--	270.042	--
112.085.102._*	--	--	--	--	--	--	270.216	--

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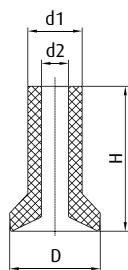
* When ordering please add the appropriate material code to item no. You will find it on page 133.



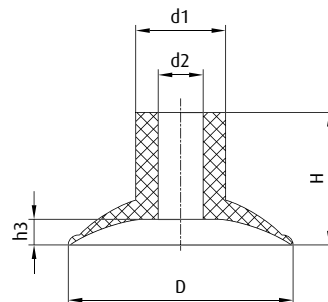
Vacuum cups | Vacuum cups for demoulding

Flat silicone vacuum cups with curved lip - SFU-D

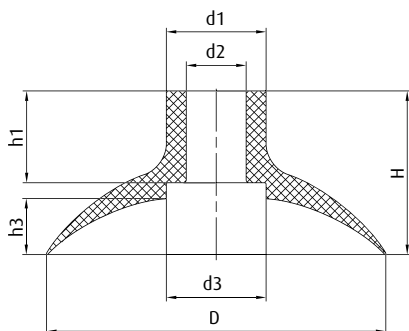
Dimensions



Drawing A



Drawing B



Drawing C

Item no.	Drawing	Ø D [mm]	Ø d1 [mm]	Ø d2 [mm]	Ø d3 [mm]	H [mm]	h1 [mm]	h3 [mm]
112.004.001._*	A	4	3	1.5	--	7.5	--	--
112.005.002._*	A	5	3	1.5	--	8	--	--
112.006.003._*	A	6	3	1.5	--	8	--	--
112.008.007._*	B	8	5	2.8	--	8	--	1.6
112.010.011._*	B	10	6.5	3.8	--	10.5	--	1.9
112.012.015._*	B	12	8	4	--	11	--	1.7
112.015.022._*	B	15	8	4	--	12	--	2.5
112.018.024._*	B	18	8	3.9	--	11.5	--	2.3
112.020.031._*	B	20	8	4	--	12	--	2.3
112.022.037._*	B	22	8	4	--	13	--	2.5
112.025.042._*	B	25	12	6	--	16	--	4.3
112.030.052._*	B	30	12	6	--	17	--	4.4
112.035.060._*	B	35	15	10	--	16.5	--	5.2
112.040.071._*	B	40	15	10	--	16	--	4
112.045.077._*	B	45	15.5	10	--	17	--	7.5
112.060.091._*	C	60	15	10	25	23	10	9
112.085.102._*	C	85	25	15	25	41	23	14

* When ordering please add the appropriate material code to item no. You will find it on page 133.



Bellows silicone vacuum cups, universal, 1.5 folds - SBU 1



Product description

Universal bellows vacuum cups with 1.5 folds for handling sensitive or uneven products.
Connection up to Ø 75 mm by means of plug-in nipple, from Ø 8 mm with vulcanised bracket.

Advantage

- > Bellows compensates for differences in height and enables good adaptation to curved or uneven product surfaces
- > Soft attachment for sensitive products
- > Cost-effective replacement of worn seals

Technical data

Item no.	Model / Lip dimensions		Number of folds	Material / Colour	Connection thread
23.005.181.*	SBU 1-5	2	1.5	SI (tr)	--
23.011.008.*	SBU 1-11	4.5	1.5	SI (tr)	--
23.013.120.*	SBU 1-13	4	1.5	SI (tr)	--
23.016.016.*	SBU 1-16	6	1.5	SI (tr)	--
23.019.119.*	SBU 1-19	4	1.5	SI (tr)	--
23.022.028.*	SBU 1-22	8	1.5	SI (tr)	--
23.025.137.*	SBU 1-25	9	1.5	SI (tr)	--
23.033.039.*	SBU 1-33	12	1.5	SI (tr)	--
23.043.096.*	SBU 1-43	12	1.5	SI (tr)	--
23.053.033.*	SBU 1-53	11	1.5	SI (tr)	--
23.075.151.*	SBU 1-75	20	1.5	SI (tr)	--
22.088.158.*	SBU 1-88	23	1.5	SI (tr)	G1/4-male
22.088.159.*	SBU 1-88	23	1.5	SI (tr)	G1/4-female

Continued on the next page →

* When ordering please add the appropriate material code to item no. You will find it on page 133.



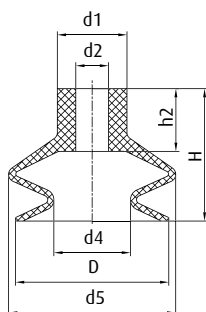
Vacuum cups | Vacuum cups for demoulding

Bellows silicone vacuum cups, universal, 1.5 folds - SBU 1

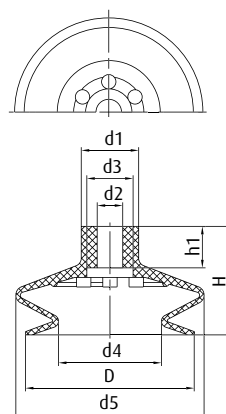
Accessories

Item no.	Suitable mounting brackets							
	M5-male	M5-female	M6-male	M10-male	G1/8-male	G1/8-female	G1/4-male	G1/4-female
23.005.181._*	270.195	--	--	--	--	--	--	--
23.011.008._*	270.013	270.005	270.103	--	270.003	270.015	--	--
23.013.120._*	270.013	270.005	270.103	--	270.003	270.015	--	--
23.016.016._*	270.013	270.005	270.103	--	270.003	270.015	--	--
23.019.119._*	270.013	270.005	270.103	--	270.003	270.015	270.194	--
23.022.028._*	270.013	270.005	270.103	--	270.003	270.015	270.194	--
23.025.137._*	270.013	270.005	270.103	--	270.003	270.015	270.194	--
23.033.039._*	--	--	270.315	--	270.196	270.114	270.190	270.192
23.043.096._*	--	--	270.315	--	270.196	270.114	270.190	270.192
23.053.033._*	--	--	270.315	--	270.196	270.114	270.190	270.192
23.075.151._*	--	--	--	270.177	--	--	270.451	270.452
22.088.158._*	--	--	--	--	--	--	--	--
22.088.159._*	--	--	--	--	--	--	--	--

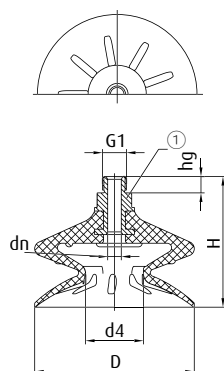
Dimensions



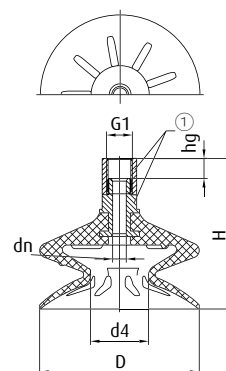
Drawing A



Drawing B



Drawing C



Drawing D

① = Aluminium fitting, vulcanised

* When ordering please add the appropriate material code to item no. You will find it on page 133.

Vacuum cups | Vacuum cups for demoulding

Bellows silicone vacuum cups, universal, 1.5 folds - SBU 1



Item no.	Drawing	Ø D [mm]	Ø d1 [mm]	Ø d2 [mm]	Ø d3 [mm]	Ø d4 [mm]	Ø d5 [mm]	Ø dn [mm]	G1	H [mm]	h1 [mm]	h2 [mm]	hg [mm]
23.005.181._*	A	5	3	1.5	--	2	5	--	--	13	--	9.5	--
23.011.008._*	A	12	10	5	--	4.5	12	--	--	16	--	9	--
23.013.120._*	A	13.5	10	3.8	--	5	13.5	--	--	16	--	9	--
23.016.016._*	A	16	10	5	--	8	17	--	--	19	--	9	--
23.019.119._*	A	18.5	10	4.5	--	11	19.5	--	--	15	--	8.5	--
23.022.028._*	A	22	10	4.5	--	11	24	--	--	19	--	9	--
23.025.137._*	A	24	10	4	--	10	24	--	--	23	--	9	--
23.033.039._*	B	33.5	18	8	16.5	17	36	--	--	28	13	--	--
23.043.096._*	B	43	18	8	14.5	23	45	--	--	27	12	--	--
23.053.033._*	B	53	18	8	14.5	32	59	--	--	34	13	--	--
23.075.151._*	B	75	27	11	--	43	70.5	--	--	52	--	22	--
22.088.158._*	C	88	--	--	--	32	88	7.5	G1/4	72	--	--	9
22.088.159._*	D	88	--	--	--	32	88	7.5	G1/4	83	--	--	11

* When ordering please add the appropriate material code to item no. You will find it on page 133.



Vacuum cups | Vacuum cups for demoulding

Bellows silicone vacuum cups, universal, 2.5 folds - SBU 2

Bellows silicone vacuum cups, universal, 2.5 folds - SBU 2



Product description

Universal bellows vacuum cups with 2.5 folds for handling sensitive or uneven products over large lift movements.
Connection up to Ø 75 mm by means of plug-in nipple, from Ø 88 mm with vulcanised bracket.

Advantage

- > Bellows compensate for differences in height and enable good adaptation to curved or uneven product surfaces
- > Soft attachment for sensitive products
- > Cost-effective replacement of worn seals

Technical data

Item no.	Model / Lip dimensions		Number of folds	Material / Colour	Connection thread
21.004.083._*	SBU 2-4	3	2.5	SI (tr)	--
21.005.057._*	SBU 2-5	3	2.5	SI (g)	--
21.006.093._*	SBU 2-6A	3	2.5	SI (tr)	--
21.006.087._*	SBU 2-6	3.5	2.5	SI (tr)	--
21.008.094._*	SBU 2-8	4	2.5	SI (tr)	--
21.009.002._*	SBU 2-9	2	2.5	SI (tr)	--
21.010.119._*	SBU 2-10	8	2.5	SI (tr)	--
21.012.135._*	SBU 2-12	7	2.5	SI (tr)	--
21.014.133._*	SBU 2-14A	11	2.5	SI (tr)	--
21.014.007._*	SBU 2-14	12	2.5	SI (tr)	--
21.018.010._*	SBU 2-18	8	2.5	SI (tr)	--
21.020.016._*	SBU 2-20	9	2.5	SI (tr)	--
21.025.060._*	SBU 2-25	19	2.5	SI (tr)	--
21.032.075._*	SBU 2-32	13	2.5	SI (tr)	--
21.043.049._*	SBU 2-43	19	2.5	SI (tr)	--
21.062.055._*	SBU 2-62	25	2.5	SI (tr)	--
20.088.123._*	SBU 2-88	36	2.5	SI (tr)	G1/4-male
20.088.124._*	SBU 2-88	36	2.5	SI (tr)	G1/4-female

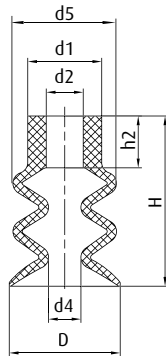
* When ordering please add the appropriate material code to item no. You will find it on page 133.



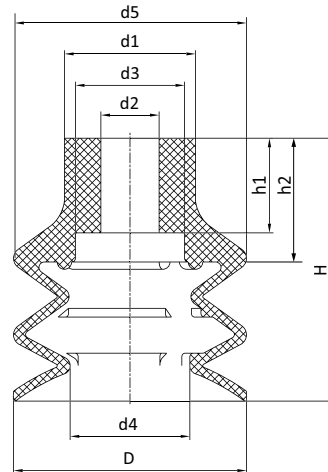
Accessories

Item no.	Suitable mounting brackets						
	M5-male	M5-female	M6-male	G1/8-male	G1/8-female	G1/4-male	G1/4-female
21.004.083._*	270.134	270.347	270.104	270.033	270.478	--	--
21.005.057._*	270.134	270.347	270.104	270.033	270.478	--	--
21.006.093._*	270.134	270.347	270.104	270.033	270.478	--	--
21.006.087._*	270.013	270.005	270.103	270.003	270.015	--	--
21.008.094._*	270.134	270.347	270.104	270.033	270.478	--	--
21.009.002._*	270.013	270.005	270.103	270.003	270.015	--	--
21.010.119._*	270.013	270.005	270.103	270.003	270.015	--	--
21.012.135._*	270.013	270.005	270.103	270.003	270.015	--	--
21.014.133._*	270.134	270.347	270.104	270.033	270.478	--	--
21.014.007._*	270.013	270.005	270.103	270.003	270.015	--	--
21.018.010._*	270.013	270.005	270.103	270.003	270.015	--	--
21.020.016._*	270.013	270.005	270.103	270.003	270.015	270.194	--
21.025.060._*	270.013	270.005	270.103	270.003	270.015	270.194	--
21.032.075._*	--	--	270.315	270.196	270.114	270.190	270.192
21.043.049._*	--	--	270.315	270.196	270.114	270.190	270.192
21.062.055._*	--	--	270.315	--	--	270.540	270.539
20.088.123._*	--	--	--	--	--	--	--
20.088.124._*	--	--	--	--	--	--	--

Dimensions



Drawing A



Drawing B

① = Aluminium fitting, vulcanised

Continued on the next page →

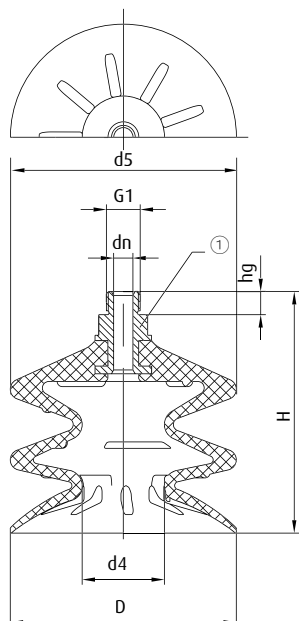
* When ordering please add the appropriate material code to item no. You will find it on page 133.



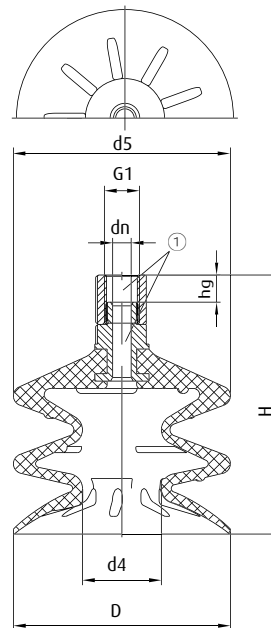
Vacuum cups | Vacuum cups for demoulding

Bellows silicone vacuum cups, universal, 2.5 folds - SBU 2

Dimensions



Drawing C



Drawing D

① = Aluminium fitting, vulcanised

Item no.	Drawing	Ø D [mm]	Ø d1 [mm]	Ø d2 [mm]	Ø d3 [mm]	Ø d4 [mm]	Ø d5 [mm]	Ø dn [mm]	G1	H [mm]	h1 [mm]	h2 [mm]	hg [mm]
21.004.083._*	A	4.5	7	4	--	2	6.5	--	--	14	--	8	--
21.005.057._*	A	5.5	7	4	--	2.5	6.5	--	--	14	--	8.5	--
21.006.093._*	A	6	8	4	--	3	8	--	--	15	--	8	--
21.006.087._*	A	6.5	9	5	--	2.5	6.5	--	--	14.5	--	7.5	--
21.008.094._*	A	7.5	8	4	--	4	7.5	--	--	15	--	8.5	--
21.009.002._*	A	9	9	5	--	4	9	--	--	15	--	7	--
21.010.119._*	A	10	10	5	--	4.5	10	--	--	21	--	7	--
21.012.135._*	A	12	10	5	--	5	12	--	--	21	--	9	--
21.014.133._*	A	14	10	3.8	--	5.5	14	--	--	23	--	7.5	--
21.014.007._*	A	15	10	5	--	4.5	15	--	--	23	--	7	--
21.018.010._*	A	18	10	4.5	--	7	18	--	--	22	--	8.5	--
21.020.016._*	A	20	10	4.5	--	10	20	--	--	23	--	9	--
21.025.060._*	A	25	10	4.8	--	10	25	--	--	33	--	8	--
21.032.075._*	B	32	18	8	15	16.5	32	--	--	36	--	17	--
21.043.049._*	B	42	20	8	15	15.5	42	--	--	46	13	--	--
21.062.055._*	B	62	21	8.5	14.5	27.5	62	--	--	54	13	14.7	--
20.088.123._*	C	88	--	--	--	32	88	7.5	G1/4	94	--	--	9
20.088.124._*	D	88	--	--	--	32	88	7.5	G1/4	105	--	--	11

* When ordering please add the appropriate material code to item no. You will find it on page 133.



UP TO 160 °C & MINIMUM
MARKING



Product description

Bellows vacuum cups for uneven surfaces especially suited for removing hot plastic parts to be painted from an injection moulding machine. Thermalon® is a material mixture specially optimised for the plastics industry with a hardness of 60° Shore A. Connection via plug-in nipple.

Advantage

- > Extremely low-marking
- > Free of silicone and other paint-wetting-impairment substances (PWIS)
- > Bellows compensate differences in height and enable good adaptation to curved or uneven product surfaces

Technical data

Item no.	Model / Lip dimensions		Number of folds	Material / Colour	Usage temperature [°C]
23.011.234._*	SKT-B1-11	5.5	1.5	Thermalon® (bl)	0 - 160
23.014.235._*	SKT-B1-14	5	1.5	Thermalon® (bl)	0 - 160
23.016.236._*	SKT-B1-16	8.5	1.5	Thermalon® (bl)	0 - 160
23.018.237._*	SKT-B1-18	5	1.5	Thermalon® (bl)	0 - 160
23.020.238._*	SKT-B1-20	5	1.5	Thermalon® (bl)	0 - 160
23.022.239._*	SKT-B1-22	8	1.5	Thermalon® (bl)	0 - 160
23.025.240._*	SKT-B1-25	12	1.5	Thermalon® (bl)	0 - 160
23.033.241._*	SKT-B1-33	11	1.5	Thermalon® (bl)	0 - 160
23.043.242._*	SKT-B1-43	12.5	1.5	Thermalon® (bl)	0 - 160
23.053.243._*	SKT-B1-53	15	1.5	Thermalon® (bl)	0 - 160
23.063.244._*	SKT-B1-63	15	1.5	Thermalon® (bl)	0 - 160

Accessories

Item no.	 Suitable mounting brackets						
	M5-male	M5-female	M6-male	G1/8-male	G1/8-female	G1/4-male	G1/4-female
23.011.234._*	270.134	270.347	270.104	270.033	270.478	--	--
23.014.235._*	270.134	270.347	270.104	270.033	270.478	--	--
23.016.236._*	270.134	270.347	270.104	270.033	270.478	--	--
23.018.237._*	270.134	270.347	270.104	270.033	270.478	--	--
23.020.238._*	270.134	270.347	270.104	270.033	270.478	--	--
23.022.239._*	270.134	270.347	270.104	270.033	270.478	--	--
23.025.240._*	270.134	270.347	270.104	270.033	270.478	--	--
23.033.241._*	--	--	270.315	270.196	270.114	270.190	270.192
23.043.242._*	--	--	270.315	270.196	270.114	270.190	270.192

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* When ordering please add the appropriate material code to item no. You will find it on page 133.



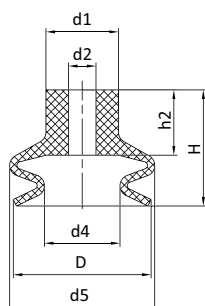
Vacuum cups | Vacuum cups for demoulding

High temperature Thermalon® bellows cups, 1.5 folds - SKT-B1

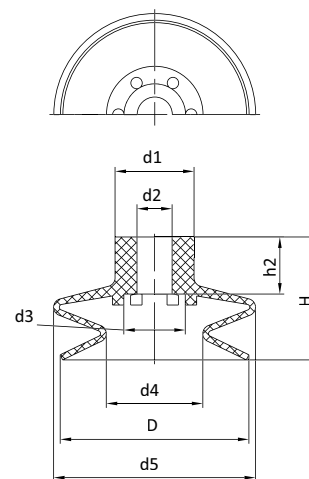
Accessories

Item no.	Suitable mounting brackets						
	M5-male	M5-female	M6-male	G1/8-male	G1/8-female	G1/4-male	G1/4-female
23.053.243._*	--	--	270.315	270.196	270.114	270.190	270.192
23.063.244._*	--	--	270.315	270.196	270.114	270.190	270.192

Dimensions



Drawing A



Drawing B

Item no.	Drawing	Ø D [mm]	Ø d1 [mm]	Ø d2 [mm]	Ø d3 [mm]	Ø d4 [mm]	Ø d5 [mm]	H [mm]	h2 [mm]
23.011.234._*	A	11	10	3.8	--	5	12	16	9
23.014.235._*	A	13	10	3.8	--	5	14	16	9
23.016.236._*	A	16	10	3.8	--	8	17.5	19	9
23.018.237._*	A	18	10	3.8	--	8	18	16.5	9
23.020.238._*	A	19	10	3.8	--	10.5	20	16	9
23.022.239._*	A	22	10	3.8	--	11	24	19	9
23.025.240._*	A	24	10	3.8	--	9.5	25	23	9
23.033.241._*	B	33	18	8	14	17	36	28	13
23.043.242._*	B	43	18	8	14	22	46	28	13
23.053.243._*	B	53	18	8	14	33	59	34	13
23.063.244._*	B	63	18	8	14	44	67	34	13

* When ordering please add the appropriate material code to item no. You will find it on page 133.



UP TO 160 °C & MINIMUM
MARKING



Product description

Bellows vacuum cups for uneven surfaces especially suited for removing hot plastic parts to be painted from an injection moulding machine. Thermalon® is a material mixture specially optimised for the plastics industry with a hardness of 60° Shore A. Connection via plug-in nipple.

Advantage

- > Extremely low-marking
- > Free of silicone and other paint-wetting-impairment substances (PWIS)
- > Long vacuum cup lift and good adaptation to curved or uneven product surfaces

Technical data

Item no.	Model / Lip dimensions		Material / Colour	Number of folds	Usage temperature [°C]
21.005.146._*	SKT-B2-5	3	Thermalon® (bl)	2.5	0 - 160
21.007.147._*	SKT-B2-7	3	Thermalon® (bl)	2.5	0 - 160
21.009.148._*	SKT-B2-9	3	Thermalon® (bl)	2.5	0 - 160
21.012.149._*	SKT-B2-12	7	Thermalon® (bl)	2.5	0 - 160
21.014.150._*	SKT-B2-14	10	Thermalon® (bl)	2.5	0 - 160
21.018.151._*	SKT-B2-18	10	Thermalon® (bl)	2.5	0 - 160
21.020.152._*	SKT-B2-20	10	Thermalon® (bl)	2.5	0 - 160
21.025.153._*	SKT-B2-25	20	Thermalon® (bl)	2.5	0 - 160
21.032.154._*	SKT-B2-32	14.5	Thermalon® (bl)	2.5	0 - 160
21.042.155._*	SKT-B2-42	22	Thermalon® (bl)	2.5	0 - 160
21.052.156._*	SKT-B2-52	27	Thermalon® (bl)	2.5	0 - 160
21.062.157._*	SKT-B2-62	31	Thermalon® (bl)	2.5	0 - 160

Accessories

Item no.	Suitable mounting brackets						
	M5-male	M5-female	M6-male	G1/8-male	G1/8-female	G1/4-male	G1/4-female
21.005.146._*	270.134	270.347	270.104	270.033	270.478	--	--
21.007.147._*	270.134	270.347	270.104	270.033	270.478	--	--
21.009.148._*	270.134	270.347	270.104	270.033	270.478	--	--
21.012.149._*	270.134	270.347	270.104	270.033	270.478	--	--
21.014.150._*	270.134	270.347	270.104	270.033	270.478	--	--
21.018.151._*	270.134	270.347	270.104	270.033	270.478	--	--
21.020.152._*	270.134	270.347	270.104	270.033	270.478	--	--
21.025.153._*	270.134	270.347	270.104	270.033	270.478	--	--

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* When ordering please add the appropriate material code to item no. You will find it on page 133.



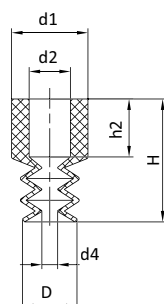
Vacuum cups | Vacuum cups for demoulding

High temperature Thermalon® bellows cups, 2.5 folds - SKT-B2

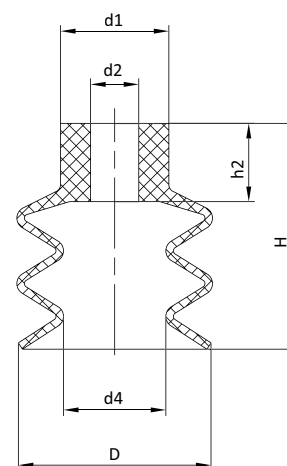
Accessories

Item no.	Suitable mounting brackets						
	M5-male	M5-female	M6-male	G1/8-male	G1/8-female	G1/4-male	G1/4-female
21.032.154.*	--	--	270.315	270.196	270.114	270.190	270.192
21.042.155.*	--	--	270.315	270.196	270.114	270.190	270.192
21.052.156.*	--	--	270.315	270.196	270.114	270.190	270.192
21.062.157.*	--	--	270.315	270.196	270.114	270.190	270.192

Dimensions



Drawing A



Drawing B

Item no.	Drawing	Ø D [mm]	Ø d1 [mm]	Ø d2 [mm]	Ø d4 [mm]	H [mm]	h2 [mm]
21.005.146.*	A	5.5	7	4	2.2	13.5	8
21.007.147.*	A	6	8.5	4.5	1.8	14	6.5
21.009.148.*	A	9.5	9	4.4	4	15	7.5
21.012.149.*	B	12	10	3.8	5	21	9
21.014.150.*	B	14	10	3.8	5	23	9
21.018.151.*	B	17.5	10	3.8	7.5	23	9
21.020.152.*	B	20	10	3.8	10	23	9
21.025.153.*	B	25	10	3.8	10	34	9
21.032.154.*	B	32	18	8	17	38	13
21.042.155.*	B	42	18	8	18.5	46	13
21.052.156.*	B	52	18	8	25	49	13
21.062.157.*	B	62	21	8	30	55	13

* When ordering please add the appropriate material code to item no. You will find it on page 133.



NEW



**POLYURETHANE COMPOSITE
MATERIAL 60° / 30°**



Varioflex® bellows cups, 2.5 folds - SP-BX2

Product description

Bellows vacuum cups with 2.5 bellows made of an extremely wear-resistant polymer.
Soft, flexible sealing lip in 30° Shore A (red).
Stable body in 60° Shore A (black).

Advantage

- > Long life cycle reduces machine downtimes
- > Perfect sealing performance on rough or uneven surface
- > High stability and fast reset
- > Oil and Ozone resistant
- > Extremely low-marking
- > Excellent height and angle compensation
- > Optional: Filter disc from Ø 26 mm installed between the bellows

Notes:

Explanation of the type description:

- > SP-BX2 = series name of the bellows vacuum cup with 2.5 folds
- > -xx = nominal diameter
- > Example: SP-BX2-15 = bellows vacuum cup with 2.5 folds and a nominal diameter of 15 mm

Technical data

Accessories

Model / Lip dimensions	Ø [mm]	Connection thread 1	Item no.	Connection thread 2	Item no.	Connection thread 3	Item no.		Usage temp. [°C]	Spare cup
 Bellows vacuum cups 2.5 bellows - SP-BX2 fully assembled with fitting										
SP-BX2-15	16	M5-male	20.016.145.16	M6-male	20.016.146.16	--	--	5.5	10 - 50	21.016.175.16
SP-BX2-20	21	G1/8-male	20.021.147.16	--	--	--	--	6.5	10 - 50	21.021.176.16
SP-BX2-25	26	G1/8-male	20.026.148.16	--	--	--	--	8	10 - 50	21.026.177.16
SP-BX2-35	37	G1/8-female	20.037.149.16	G1/4-male	20.037.150.16	--	--	14	10 - 50	21.037.177.16
SP-BX2-50	53	G1/8-female	20.053.151.16	G1/4-male	20.053.152.16	G3/8-male	20.053.153.16	19	10 - 50	21.053.178.16
SP-BX2-75	77	G3/8-male	20.077.154.16	G3/8-female	20.077.155.16	--	--	25	10 - 50	--
 Bellows vacuum cups 2.5 bellows - SP-BX2 fully assembled with fitting and filter										
SP-BX2-25	26	G1/8-male	20.026.148.16-FI	--	--	--	--	8	10 - 50	21.026.177.16-FI
SP-BX2-35	37	G1/8-female	20.037.149.16-FI	G1/4-male	20.037.150.16-FI	--	--	14	10 - 50	21.037.177.16-FI
SP-BX2-50	53	G1/8-female	20.053.151.16-FI	G1/4-male	20.053.152.16-FI	G3/8-male	20.053.153.16-FI	19	10 - 50	21.053.178.16-FI
SP-BX2-75	77	G3/8-male	20.077.154.16-FI	G3/8-female	20.077.155.16-FI	--	--	25	10 - 50	--

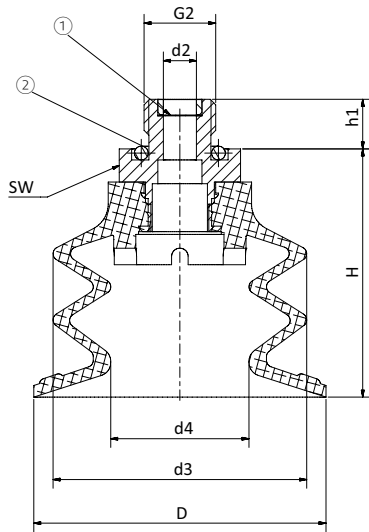
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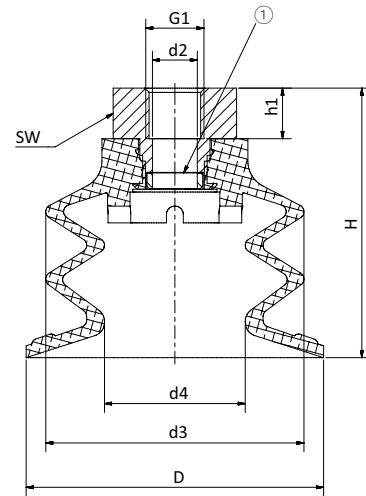
Vacuum cups | Vacuum cups for demoulding

Varioflex® bellows cups, 2.5 folds - SP-BX2

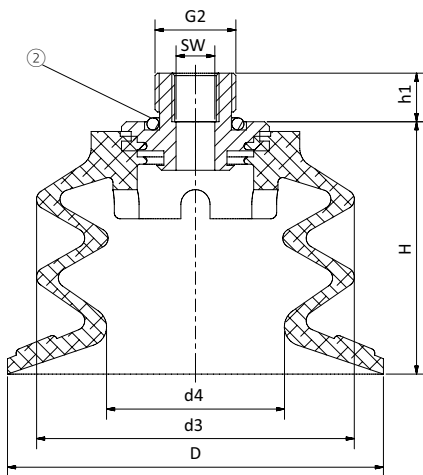
Dimensions



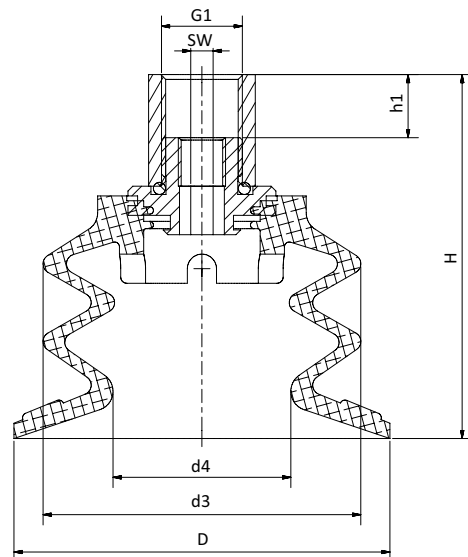
Drawing A



Drawing B



Drawing C

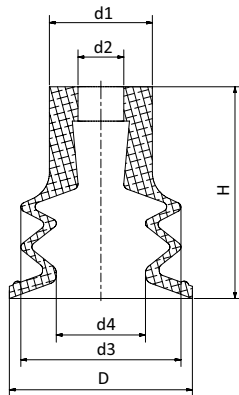


Drawing D

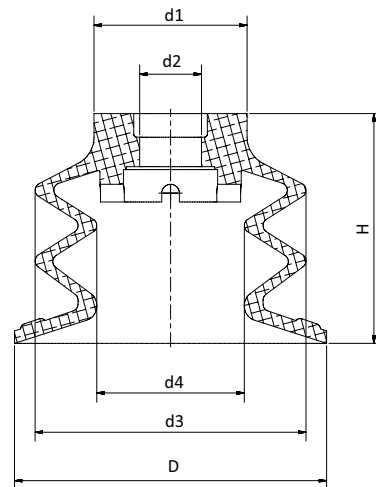
① = Filter screen ② = O-ring



Dimensions



Drawing E



Drawing F

① = Filter screen ② = O-ring

Item no.	Drawing	Ø D [mm]	Ø d1 [mm]	Ø d2 [mm]	Ø d3 [mm]	Ø d4 [mm]	G1 (female)	G2 (male)	H	h1 [mm]	SW
Bel lows vacuum cups 2.5 folds - SP-BX2 fully assembled with fitting											
20.016.145._*	A	16	--	2.8	14	9	--	M5	24	4	8
20.016.146._*	A	16	--	2.5	14	9	--	M6	23	6	13
20.021.147._*	A	21	--	4	20	12	--	G1/8	20.2	7	13
20.026.148._*	A	26	--	4	23	12	--	G1/8	24	7	13
20.037.149._*	B	37	--	5	31	18	G1/8	--	34.8	6.3	19
20.037.150._*	A	37	--	5	31	18	--	G1/4	32.8	9	19
20.053.151._*	B	53	--	8	46	25	G1/8	--	48	9	22
20.053.152._*	A	53	--	6	46	25	--	G1/4	45	9	22
20.053.153._*	A	53	--	6	46	25	--	G3/8	45	10	22
20.077.154._*	C	77.5	--	--	65.5	37	--	G3/8	52	10	8
20.077.155._*	D	77.5	--	--	65.5	37	G3/8	--	75	13	8
Spare cups											
21.016.175._*	E	16	9	4	14	9	--	--	18.5	--	--
21.021.176._*	F	21	11	5	20	12	--	--	15.2	--	--
21.026.177._*	F	26	15	5	23	12	--	--	19	--	--
21.037.177._*	F	37	20	7	31	18	--	--	27	--	--
21.053.178._*	F	53	26	10.5	46	25	--	--	39	--	--



FIPA Vacuum cups - Further industry solutions



> Besides the plastics industry FIPA vacuum cups are also successfully used in other markets for many years.



Vacuum cups for sheet metal handling

- > Flat and bellows vacuum cups for dynamic handling of dry or oiled sheet metal
- > Non-slip handling thanks to "anti-slip" supporting ribs
- > Free of silicone and other paint-wetting-impairment substances (PWIS)



Vacuum cups for the wood and glass industries

- > Flat vacuum cups and oval suction plates for structured surfaces
- > Varioflex® bellows cups for good adaptation to uneven product surfaces
- > Flat vacuum cups for product separation, simultaneous suctioning and punctual blow-off



Vacuum cups for the packaging industry

- > Round, oval and square bellows vacuum cups for gentle product contact
- > Good adaptation to curved or flexible product surfaces
- > Varioflex® bellows cups for good adaptation to uneven product surfaces



Vacuum cups for the food industry

- > Bellows vacuum cups with flexible lip seal for optimum sealing
- > FDA compliant vacuum cups for bakery products, with multiple bellows for large height compensation and gentle product handling
- > FDA compliant special vacuum cups, e.g. for gentle handling of eggs or chocolates

For the full range of vacuum cups please refer to the FIPA vacuum technology catalogue or our website www.fipa.com.



Overview of vacuum cup materials

Short designation	Material code	Hardness [Shore A $\pm$ 5°]	Commercial designation	Commercial name (example)	Short-term working temperature [°C]	Abrasion resistance	Flexibility	Oil-resistance	Fuel resistance	Ozone and weathering resistance	Acid resistance	Leaching resistance
HNBR	14	55	Hydrogenated acrylonitrile-butadiene rubber	Therban®	-30 / +160	++	+	++++	++	+++	+	+
SI	2	50 - 65	Silicone rubber	Elastosil®	-40 / +200	o	+++	o	o	+++	o	o
Thermalon®	19	60			0 / +160	++	+	+++	++	o	+	+
Varioflex®	16	30 / 60	Polyurethane (2 Shore Hardnesses)		+10 / +50	+++	++++	+++	+++	++	o	+++

++++ = Excellent +++ = Very good ++ = Good + = Fair 0 = Low to satisfactory

Ordering example: Flat vacuum cup made of silicone 50° Shore A

Item No.

102.030.222._* > Add material code > 102.030.222.2

Note!

- > Depending on the application, vacuum cups are subject to mechanical and chemical stresses. The data serve therefore only as guidelines.
 - > Special vacuum cups fitted with felt linings are extremely low-marking and can be deployed at temperatures up to a max. of 500 °C.
 - > Material colours may change, but the quality remains unaffected.
- Material colours: bg = beige, bl = blue, br = brown, g = green, ge = yellow, gr = gray, or = orange, r = red, sw = black, tr = transparent, w = white

[illegible]