

Bellows Suction Cups SAOB (Oval, 1.5 Folds)

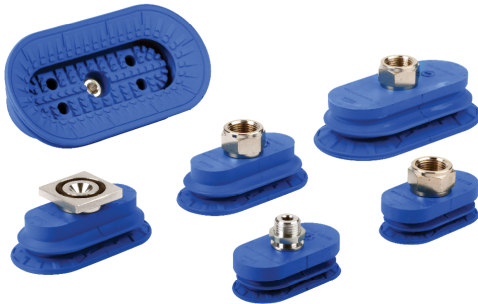
Suction area (LxW) from 60 x 30 mm to 140 x 70 mm



Suitability for industry specific applications

Application

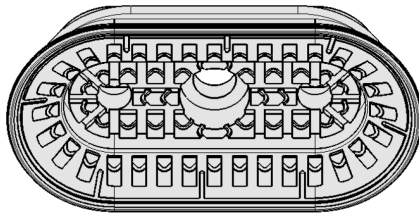
- Oval bellows suction cup with 1.5 folds for dynamic handling of elongated sheet metal parts e.g. reinforcing ribs and plates
- Handling of thin steel sheets and aluminum sheets without deformation or deep-drawing
- For use e.g. in feeder systems for press lines in the automotive industry
- Displacement-free handling of oiled sheets due to special slot on the underside of the suction cup e.g. for precise positioning in punching machines



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Design

- Robust, wear-resistant oval suction cup SAOB made of NBR with 1.5 folds single sealing lip, special slot and inner support
- Connection nipple glued to the reinforcing element of the suction cup (very high strength)
- Suction cups available with various connection types



System design Bellows Suction Cups SAOB (Oval, 1.5 Folds)



Bellows suction cups SAOB being used for handling car bodywork components

Product highlights

- Oval design with 1.5 folds for elongated workpieces or stamped and body parts
- Large, structured inner support prevents deep drawing and withstands the highest lateral forces even on oily sheets
- Wide range of diameters for a large selection of different workpieces
- High stiffness of the upper fold provides stability under horizontal forces and lateral acceleration

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Designation code Bellows Suction Cups SAOB (Oval, 1.5 Folds)

SAOB	–	60x30	–	NBR-60	–	RA
1		2		3		4

1 – Abbreviated designation

Code	Version
SAOB	1.5 folds, oval

2 – Suction area

Code	LxW in mm
60x30...140x70	60x30 to 140x70

3 – Material

Code	Material
NBR-60	Nitrile caoutchuc

4 – Connection

Code	Connection
G1/4-AG	G1/4-AG (AG = male (M))
G1/4-IG	G1/4-IG (IG = female (F))
G3/8-IG	G3/8-IG
M10-AG	M10-AG
M14x1.5-AG	M14x1.5-AG
RA	Rectangular adapter

Suction cup SAOB, available in various diameters, is delivered with connection nipple vulcanized to elastomer part.

Ordering data Bellows Suction Cups SAOB (Oval, 1.5 Folds)

Type*		Vacuum connection:					
		G1/4"-F	G1/4"-M	G3/8"-F	M10-M	M14x1.5-M	Rectangular adapter
SAOB	60x30	10.01.06.00891	10.01.06.00916	10.01.06.00904	10.01.06.01024	10.01.06.01032	10.01.06.00908
SAOB	80x40	10.01.06.00893	10.01.06.00918	10.01.06.00906	10.01.06.01026	10.01.06.01034	10.01.06.00910
SAOB	110x55	10.01.06.00900	10.01.06.00920	10.01.06.00895	10.01.06.01028	10.01.06.01036	10.01.06.00912
SAOB	140x70	10.01.06.00902	10.01.06.00922	10.01.06.00897	10.01.06.01030	10.01.06.01038	10.01.06.00914

*Additional material specifications at beginning of the section "Vacuum Suction Cups"

Technical data Bellows Suction Cups SAOB (Oval, 1.5 Folds)

Type		Suction force (-600 mbar) [N]*	Pull-off force [N]	Lateral force [N]**	Lateral force oily surface [N]***	Volume [cm ³]	Workpiece radius min. (convex) [mm]	Hose inner diameter (recom.) d [mm]****
SAOB	60x30	38	70	73	42	10.5	18	4
SAOB	80x40	65	132	153	74	21.8	25	6
SAOB	110x55	110	234	300	124	53.1	50	6
SAOB	140x70	165	356	473	246	106.0	70	6

*The specified suction forces are theoretical values at a vacuum of -0.6 bar and with a smooth, dry workpiece surface - they do not include a safety factor

**The specified lateral forces are values measured at a vacuum of -0.6 bar with a dry, smooth, flat workpiece surface. Depending on the workpiece surface and its quality, the actual values may deviate from these values.

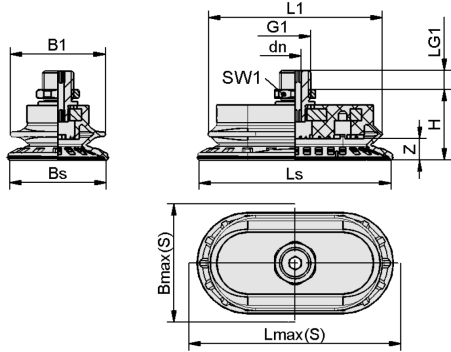
***The specified lateral forces are values measured at a vacuum of -0.6 bar with a dry or oiled and smooth, flat workpiece surface. Depending on the workpiece surface and its quality the actual values may deviate from these values.

****The recommended hose diameter is based on a hose length of approx. 2 m

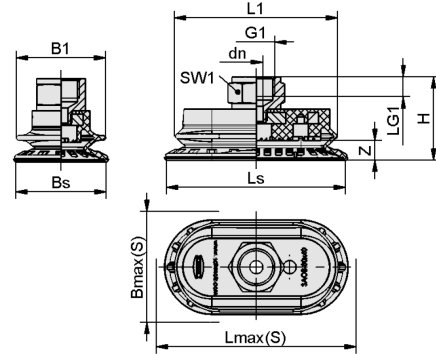
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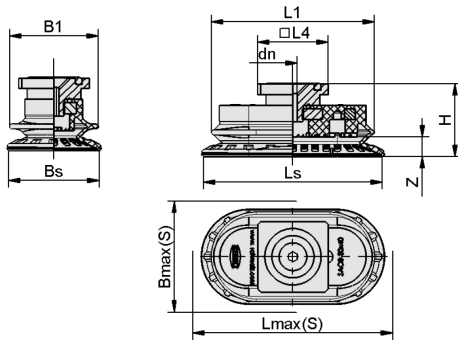
Design data Bellows Suction Cups SAOB (Oval, 1.5 Folds)



SAOB AG



SAOB IG



SAOB RA

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Type*	B1 [mm]	Bmax(S) [mm]**	Bs [mm]	dn [mm]	G1	H [mm]	LG1 [mm]	L1 [mm]	L4 [mm]	Lmax.(S) [mm]***	Ls [mm]	SW1 [mm]	Z (Stroke) [mm]
SAOB 60x30 NBR-60 G1/4-AG	31	33	31	5.0	G1/4"-M	27.0	8	56	-	63	61	17	7
SAOB 60x30 NBR-60 G1/4-IG	31	33	31	5.5	G1/4"-F	34.5	8	56	-	63	61	17	7
SAOB 60x30 NBR-60 G3/8-IG	31	33	31	6.0	G3/8"-F	35.0	9	56	-	63	61	22	7
SAOB 60x30 NBR-60 M10-AG	31	33	31	4.0	M10-M	27.0	10	56	-	63	61	17	7
SAOB 60x30 NBR-60 M14x1.5- AG	31	33	31	5.0	M14x1.5-M	29.0	10	56	-	63	61	22	7
SAOB 60x30 NBR-60 RA	31	33	31	4.0	-	30.0	-	56	31.8	63	61	-	7
SAOB 80x40 NBR-60 G1/4-AG	40	43	41	5.0	G1/4"-M	29.7	8	74	-	83	81	17	9
SAOB 80x40 NBR-60 G1/4-IG	40	43	41	6.0	G1/4"-F	37.2	8	74	-	83	81	17	9
SAOB 80x40 NBR-60 G3/8-IG	40	43	41	6.0	G3/8"-F	37.7	9	74	-	83	81	22	9
SAOB 80x40 NBR-60 M10-AG	40	43	41	4.0	M10-M	29.7	10	74	-	83	81	17	9
SAOB 80x40 NBR-60 M14x1.5- AG	40	43	41	5.0	M14x1.5-M	31.7	10	74	-	83	81	22	9
SAOB 80x40 NBR-60 RA	40	43	41	4.0	-	32.7	-	74	31.8	83	81	-	9
SAOB 110x55 NBR-60 G1/4-AG	53	59	56	6.0	G1/4"-M	35.5	8	99	-	114	111	17	12
SAOB 110x55 NBR-60 G1/4-IG	53	59	56	8.0	G1/4"-F	43.0	8	99	-	114	111	17	12
SAOB 110x55 NBR-60 G3/8-IG	53	59	56	8.0	G3/8"-F	43.5	9	99	-	114	111	22	12
SAOB 110x55 NBR-60 M10-AG	53	59	56	4.0	M10-M	35.5	10	99	-	114	111	17	12
SAOB 110x55 NBR-60 M14x1.5- AG	53	59	56	6.0	M14x1.5-M	37.5	10	99	-	114	111	22	12

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Type*	B1 [mm]	Bmax(S) [mm]**	Bs [mm]	dn [mm]	G1	H [mm]	LG1 [mm]	L1 [mm]	L4 [mm]	Lmax.(S) [mm]***	Ls [mm]	SW1 [mm]	Z (Stroke) [mm]
SAOB 110x55 NBR-60 RA	53	59	56	6.0	-	38.5	-	99	31.8	114	111	-	12
SAOB 140x70 NBR-60 G1/4-AG	67	75	71	6.0	G1/4"-M	39.5	8	126	-	146	142	17	17
SAOB 140x70 NBR-60 G1/4-IG	67	75	71	8.0	G1/4"-F	47.0	8	126	-	146	142	17	17
SAOB 140x70 NBR-60 G3/8-IG	67	75	71	8.0	G3/8"-F	47.5	9	126	-	146	142	22	17
SAOB 140x70 NBR-60 M10-AG	67	75	71	4.0	M10-M	39.5	10	126	-	146	142	17	17
SAOB 140x70 NBR-60 M14x1.5- AG	67	75	71	6.0	M14x1.5-M	41.5	10	126	-	146	142	22	17
SAOB 140x70 NBR-60 RA	67	75	71	6.0	-	42.5	-	126	31.8	146	142	-	17

*Acceptable dimensional tolerances for rubber parts concerning to DIN ISO 3302-1 E3

**External dimension of the suction cup when it is pressed against the workpiece by the vacuum

***External dimension of the suction cup when it is pressed against the workpiece by the vacuum