

Bellows Suction Cups SAB (1.5 Folds)

Suction area (Ø) from 22 mm to 125 mm



Suitability for industry specific applications



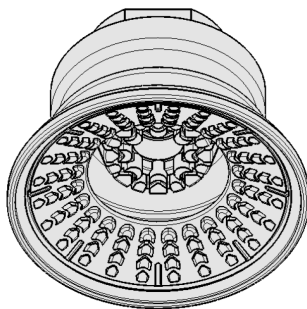
Bellows Suction Cups SAB (1.5 Folds)

Applications

- Round bellows suction cup with 1.5 folds for dynamic handling of metal sheets (short cycle times)
- Handling of thin steel sheets and aluminum sheets without deformation or deep-drawing
- Handling of pre-shaped metal sheet parts, since bellows shape permits optimum adaptation
- Suitable for use in, for example, 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 etc.

Design

- Robust and wear-resistant suction cup SAB made of NBR with 1.5 folds, special slot and inner support
- Suction cup SAB vulcanized to the connection nipple (very high strength)
- Suction cups available with various connection types



System design Bellows Suction Cups SAB (1.5 Folds)



Bellows suction cups SAB being used for handling car bodywork parts

Product highlights

- Optimum adaptation and sealing even with curved workpieces and very good damping effect during placement on the workpiece
- Large, structured inner support prevents deep drawing and withstands the highest lateral forces
- High stiffness of the upper fold provides very good stability under horizontal forces and lateral acceleration

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Designation code Bellows Suction Cups SAB (1.5 Folds)

SAB	–	30	–	NBR-60	–	G1/4-AG
1		2		3		4

1 – Abbreviated designation

Code	Version
SAB	1.5 folds

2 – Suction area

Code	Diameter in mm
22...125	ø 22 to 125

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 SAB, available in various diameters, is delivered with connection nipple vulcanized to elastomer part.

Ordering data Bellows Suction Cups SAB (1.5 Folds)

Type*	Vacuum connection:					
	G1/4"-F	G1/4"-M	G3/8"-F	M10-M	M14x1.5-M	Rectangular adapter
SAB 22	10.01.06.01533 	10.01.06.01653 	10.01.06.01650 	10.01.06.01654	10.01.06.01655	10.01.06.01663
SAB 30	10.01.06.01196 	10.01.06.01197 	10.01.06.01198 	10.01.06.01200	10.01.06.01201	10.01.06.01203
SAB 40	10.01.06.00670 	10.01.06.00803 	10.01.06.00924 	10.01.06.00994	10.01.06.01006	10.01.06.01054
SAB 50	10.01.06.00851 	10.01.06.00804 	10.01.06.00672 	10.01.06.00996	10.01.06.01008	10.01.06.01055
SAB 60	10.01.06.00852 	10.01.06.00805 	10.01.06.00674 	10.01.06.00998	10.01.06.01010	10.01.06.01056
SAB 80	10.01.06.00850 	10.01.06.00806 	10.01.06.00676 	10.01.06.01000	10.01.06.01012	10.01.06.01057
SAB 100	10.01.06.00853 	10.01.06.00807 	10.01.06.00678 	10.01.06.01002	10.01.06.01014	10.01.06.01058
SAB 125	10.01.06.00854 	10.01.06.00825 	10.01.06.00680 	10.01.06.01004	10.01.06.01016	10.01.06.01059

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

Technical data Bellows Suction Cups SAB (1.5 Folds)

Type		Suction force (-600 mbar) [N]*	Pull-off force [N]	Lateral force [N]**	Lateral force oily surface [N]***	Volume [cm³]	Workpiece radius min. (convex) [mm]	Hose diameter (recom.) d [mm]****
SAB	22	16	24	18	6	2.5	20	4
SAB	30	22	33	30	13	5.8	40	4
SAB	40	38	59	58	33	8.7	40	4
SAB	50	53	87	95	52	16.1	50	4
SAB	60	82	130	145	77	28.8	65	6
SAB	80	135	221	205	140	67.6	75	6
SAB	100	190	357	295	214	115.0	90	6
SAB	125	250	558	410	335	220.0	140	9

*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.

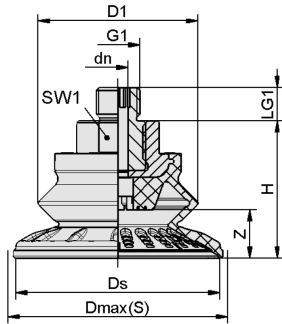
***The specified lateral forces are values measured at a vacuum of -0.6 bar with a dry or oiled and smooth, flat workpiece surface. Depending on the workpiece surface and its quality the actual values may deviate from these values.

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

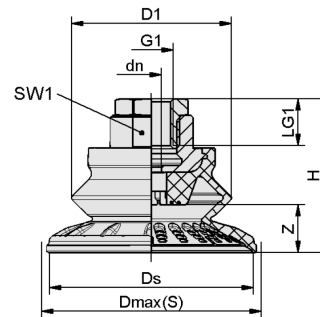
Bellows Suction Cups SAB (1.5 Folds)

Suction area (\emptyset) from 22 mm to 125 mm

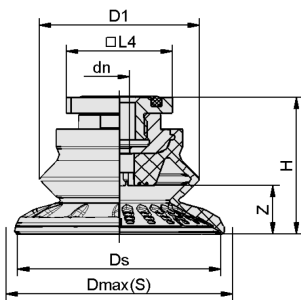
Design data Bellows Suction Cups SAB (1.5 Folds)



SAB 22-125 AG



SAB 22-125 IG



SAB 22-125 RA

Bellows Suction Cups SAB (1.5 Folds)

Suction area (\emptyset) from 22 mm to 125 mm

Design data Bellows Suction Cups SAB (1.5 Folds)

Type*	D1 [mm]	Dmax(S) [mm]**	dn [mm]	Ds [mm]	G1	H [mm]	LG1 [mm]	L4 [mm]	SW1 [mm]	Z (Stroke) [mm]
SAB 22 NBR-60 G1/4-AG	22	24	3.5	20.6	G1/4"-M	25.0	10	-	16	5.8
SAB 22 NBR-60 G1/4-IG	22	24	3.5	20.6	G1/4"-F	25.0	12	-	16	5.8
SAB 22 NBR-60 G3/8-IG	22	24	3.5	20.6	G3/8"-F	41.0	10	-	22	5.8
SAB 22 NBR-60 M10-AG	22	24	3.5	20.6	M10-M	25.0	12	-	16	5.8
SAB 22 NBR-60 M14x1.5-AG	22	24	3.5	20.6	M14x1.5-M	25.0	12	-	16	5.8
SAB 22 NBR-60 RA	22	24	3.5	20.6	-	28.2	-	31.8	-	5.8
SAB 30 NBR-60 G1/4-AG	32	34	4.0	30.6	G1/4"-M	28.0	10	-	17	9.0
SAB 30 NBR-60 G1/4-IG	32	34	4.0	30.6	G1/4"-F	28.0	12	-	17	9.0
SAB 30 NBR-60 G3/8-IG	32	34	4.0	30.6	G3/8"-F	44.0	10	-	22	9.0
SAB 30 NBR-60 M10-AG	32	34	4.0	30.6	M10-M	28.0	12	-	17	9.0
SAB 30 NBR-60 M14x1.5-AG	32	34	4.0	30.6	M14x1.5-M	28.0	12	-	17	9.0
SAB 30 NBR-60 RA	32	34	4.0	30.6	-	31.2	-	31.8	-	9.0
SAB 40 NBR-60 G1/4-AG	32	45	4.0	40.1	G1/4"-M	28.8	10	-	17	10.0
SAB 40 NBR-60 G1/4-IG	32	45	4.0	40.1	G1/4"-F	28.8	12	-	17	10.0
SAB 40 NBR-60 G3/8-IG	32	45	4.0	40.1	G3/8"-F	44.8	10	-	22	10.0
SAB 40 NBR-60 M10-AG	32	45	4.0	40.1	M10-M	28.8	12	-	17	10.0
SAB 40 NBR-60 M14x1.5-AG	32	45	4.0	40.1	M14x1.5-M	28.8	12	-	17	10.0
SAB 40 NBR-60 RA	32	45	4.0	40.1	-	31.2	-	31.8	-	10.0
SAB 50 NBR-60 G1/4-AG	40	56	6.0	50.1	G1/4"-M	36.9	10	-	22	11.5
SAB 50 NBR-60 G1/4-IG	40	56	6.0	50.1	G1/4"-F	42.0	20	-	22	11.5
SAB 50 NBR-60 G3/8-IG	40	56	6.0	50.1	G3/8"-F	36.9	15	-	22	11.5
SAB 50 NBR-60 M10-AG	40	56	4.0	50.1	M10-M	36.9	12	-	22	11.5
SAB 50 NBR-60 M14x1.5-AG	40	56	6.0	50.1	M14x1.5-M	36.9	12	-	22	11.5
SAB 50 NBR-60 RA	40	56	6.0	50.1	-	36.6	-	31.8	-	11.5
SAB 60 NBR-60 G1/4-AG	48	67	6.0	61.1	G1/4"-M	41.3	10	-	22	14.5
SAB 60 NBR-60 G1/4-IG	48	67	6.0	61.1	G1/4"-F	46.3	20	-	22	14.5
SAB 60 NBR-60 G3/8-IG	48	67	6.0	61.1	G3/8"-F	41.3	15	-	22	14.5

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Type*	D1 [mm]	Dmax(S) [mm]**	dn [mm]	Ds [mm]	G1	H [mm]	LG1 [mm]	L4 [mm]	SW1 [mm]	Z (Stroke) [mm]
SAB 60 NBR-60 M10-AG	48	67	4.0	61.1	M10-M	41.3	12	-	22	14.5
SAB 60 NBR-60 M14x1.5-AG	48	67	6.0	61.1	M14x1.5-M	41.3	12	-	22	14.5
SAB 60 NBR-60 RA	48	67	6.0	61.1	-	41.0	-	31.8	-	14.5
SAB 80 NBR-60 G1/4-AG	64	89	6.0	81.1	G1/4"-M	49.9	10	-	22	22.1
SAB 80 NBR-60 G1/4-IG	64	89	6.0	81.1	G1/4"-F	54.9	20	-	22	22.1
SAB 80 NBR-60 G3/8-IG	64	89	6.0	81.1	G3/8"-F	49.9	15	-	22	22.1
SAB 80 NBR-60 M10-AG	64	89	4.0	81.1	M10-M	49.9	12	-	22	22.1
SAB 80 NBR-60 M14x1.5-AG	64	89	6.0	81.1	M14x1.5-M	49.9	12	-	22	22.1
SAB 80 NBR-60 RA	64	89	6.0	81.1	-	49.6	-	31.8	-	22.1
SAB 100 NBR-60 G1/4- AG	77	110	6.0	100.8	G1/4"-M	56.6	10	-	22	25.8
SAB 100 NBR-60 G1/4- IG	77	110	6.0	100.8	G1/4"-F	61.8	20	-	22	25.8
SAB 100 NBR-60 G3/8- IG	77	110	6.0	100.8	G3/8"-F	56.6	15	-	22	25.8
SAB 100 NBR-60 M10- AG	77	110	4.0	100.8	M10-M	56.6	12	-	22	25.8
SAB 100 NBR-60 M14x1.5-AG	77	110	6.0	100.8	M14x1.5-M	56.6	12	-	22	25.8
SAB 100 NBR-60 RA	77	110	6.0	100.8	-	56.3	-	31.8	-	25.8
SAB 125 NBR-60 G1/4- AG	94	135	6.0	126.0	G1/4"-M	67.8	10	-	22	32.0
SAB 125 NBR-60 G1/4- IG	94	135	6.0	126.0	G1/4"-F	72.8	20	-	22	32.0
SAB 125 NBR-60 G3/8- IG	94	135	9.0	126.0	G3/8"-F	67.8	15	-	22	32.0
SAB 125 NBR-60 M10- AG	94	135	4.0	126.0	M10-M	67.8	12	-	22	32.0
SAB 125 NBR-60 M14x1.5-AG	94	135	6.0	126.0	M14x1.5-M	67.8	12	-	22	32.0
SAB 125 NBR-60 RA	94	135	6.0	126.0	-	67.5	-	31.8	-	32.0

*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