

# Suction pads for handling sheet metal

Bellows suction pads SAB (1.5 folds)



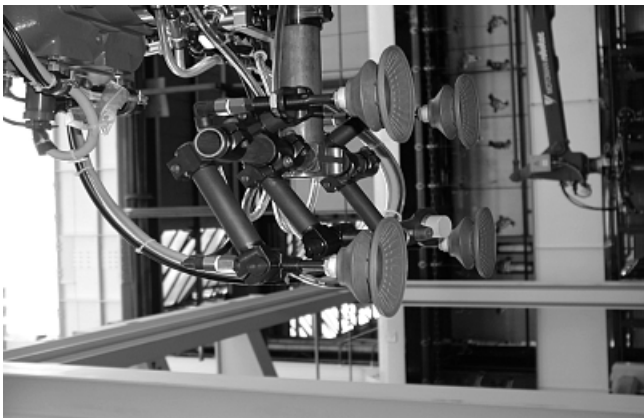
Sheet-metal suction pads SAB

## Our highlights...

- Wide range of diameters
- Optimized shape with 1.5 folds
- Very stiff top fold
- Large-area structured inner support
- Nipple vulcanised to pad

## Your advantages...

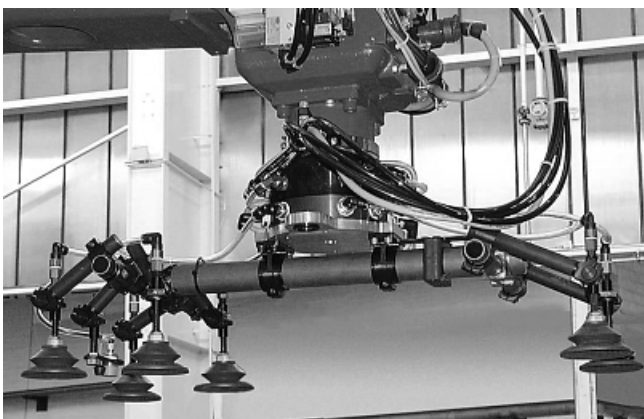
- >For a wide range of workpiece sizes and shapes
- >Optimum adaptation and sealing to curved workpieces, very good damping during placement on workpiece
- >Very good resistance to horizontal forces and lateral acceleration
- >Prevents deep-drawing of the workpiece; capable of handling high lateral forces with oily metal sheets
- >Prevention of damage and downtimes as the result of lost suction pads



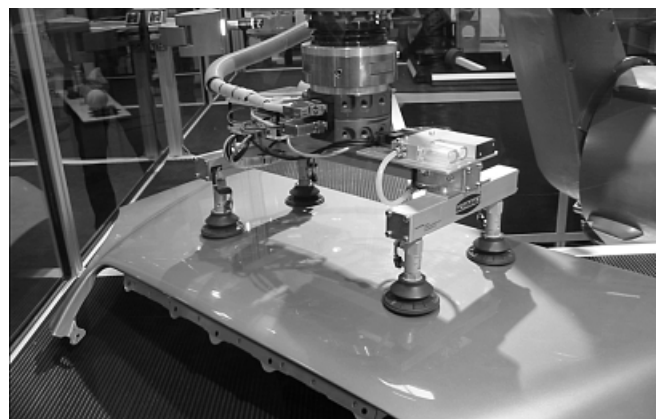
Bellows suction pads SAB on a vacuum spider for handling car bodywork parts

## Applications

- Handling of metal sheets with very dynamic movements (shorter cycle times)
- Handling of thin steel sheets and aluminum sheets without deformation
- Handling of pre-shaped sheet-metal parts, since bellows shape permits optimum adaptation
- For use e.g. in feeder systems for press lines in the automobile industry
- Special slot on the bottom of the pad prevents the oily metal sheets from slipping and permits precise positioning in laser-cutting machines and punching presses



Vacuum spider equipped with bellows suction pads SAB for handling bodywork parts in the automobile industry



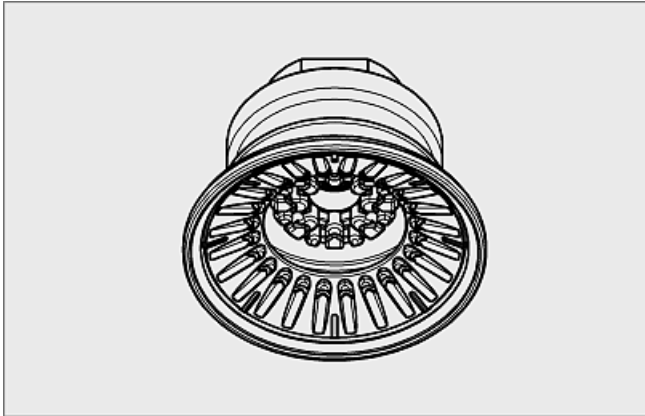
Bellows suction pads SAB on a vacuum spider for handling car bodywork parts

# Suction pads for handling sheet metal



Bellows suction pads SAB (1.5 folds)

Vacuum suction pads  
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## Construction

- Robust and hard-wearing suction pad SAB with 1.5 folds, special slot and inner support
- Suction pad SAB vulcanised to the connection nipple (very high strength)
- Suction pads available with various connection types
- Suction pads are delivered assembled



## Suitability for branch-specific applications

### Designation code Bellows suction pads SAB (1.5 folds)

Short designation	Diameter in mm	Material and shore hardness	Connection thread
Example: SAB	60	NBR-60	G3/8-IG
SAB	22 to 125	NBR-60	G1/4-AG (AG = male) G1/4-IG (IG = female) G3/8-IG M10-AG M14x1.5-AG RA...rectangular adapter

### Ordering data Bellows suction pads SAB (1.5 folds)

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

# Suction pads for handling sheet metal

## Bellows suction pads SAB (1.5 folds)



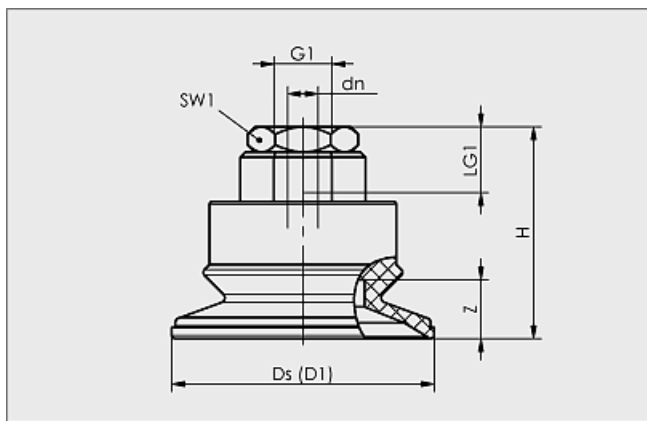
### Technical data Bellows suction pads SAB (1.5 folds)

Type	Suction force [N]*	Pull-off force [N]	Lateral force [N]**	Lateral force oily surface [N]**	Volume [cm <sup>3</sup> ]	Min. curve radius [mm] (convex)	Recom. internal hose diameter d [mm]
SAB 22 NBR-60	16	24	18	6	1,5	20	4
SAB 30 NBR-60	22	33	30	13	5,9	40	4
SAB 40 NBR-60	38	59	36	33	7,0	40	4
SAB 50 NBR-60	53	87	55	52	11,5	50	4
SAB 60 NBR-60	82	130	82	77	24,0	45	6
SAB 80 NBR-60	135	221	145	140	56,5	75	6
SAB 100 NBR-60	190	357	220	214	92,5	90	6
SAB 125 NBR-60	250	558	352	335	191,0	140	9

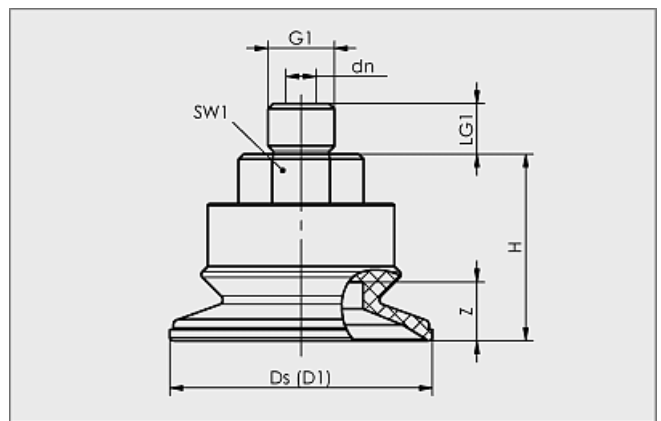
\*The specified suction forces are theoretical values at a vacuum of -0.6 bar and with a smooth, dry workpiece surface - they do not include a safety factor

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

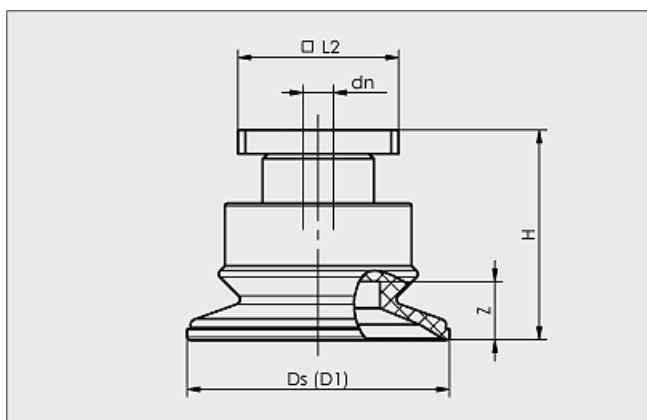
### Design data Bellows suction pads SAB (1.5 folds)



SAB 22 to 125 IG (female)



SAB 22 to 125 AG (male)



SAB 22 to 125 RA (rectangular adapter)

# Suction pads for handling sheet metal



## Bellows suction pads SAB (1.5 folds)

Vacuum suction pads  
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 Design data Bellows suction pads SAB (1.5 folds)

Type	Dimensions in mm*								
	D1**	dn	Ds	G1	H	LG1	L2	SW1	Z (Stroke)
SAB 22 NBR-60 G1/4-AG	22	3,5	21	G1/4"-M	25,0	10,0	-	16	5,8
SAB 22 NBR-60 G1/4-IG	22	3,5	21	G1/4"-F	25,0	12,0	-	16	5,8
SAB 22 NBR-60 G3/8-IG	22	3,5	21	G3/8"-F	41,0	9,5	-	22	5,8
SAB 22 NBR-60 M10-AG	22	3,5	21	M10-M	25,0	12,0	-	16	5,8
SAB 22 NBR-60 M14x1.5-AG	22	3,5	21	M14x1.5-M	25,0	12,0	-	16	5,8
SAB 22 NBR-60 RA	22	3,5	21	-	28,2	-	32	-	5,8
SAB 30 NBR-60 G1/4-AG	34	4,0	32	G1/4"-M	28,0	10,0	-	17	9,0
SAB 30 NBR-60 G1/4-IG	34	4,0	32	G1/4"-F	28,0	12,0	-	17	9,0
SAB 30 NBR-60 G3/8-IG	34	4,0	32	G3/8"-F	44,0	9,5	-	22	9,0
SAB 30 NBR-60 M10-AG	34	4,0	32	M10-M	28,0	12,0	-	17	9,0
SAB 30 NBR-60 M14x1.5-AG	34	4,0	32	M14x1.5-M	28,0	12,0	-	17	9,0
SAB 30 NBR-60 RA	34	4,0	32	-	31,2	-	32	-	9,0
SAB 40 NBR-60 G1/4-AG	45	4,0	42	G1/4"-M	29,0	10,0	-	17	10,0
SAB 40 NBR-60 G1/4-IG	45	4,0	42	G1/4"-F	29,0	12,0	-	17	10,0
SAB 40 NBR-60 G3/8-IG	45	4,0	42	G3/8"-F	44,0	9,5	-	22	10,0
SAB 40 NBR-60 M10-AG	45	4,0	42	M10-M	29,0	12,0	-	17	10,0
SAB 40 NBR-60 M14x1.5-AG	45	4,0	42	M14x1.5-M	29,0	12,0	-	17	10,0
SAB 40 NBR-60 RA	45	4,0	42	-	31,2	-	32	-	10,0
SAB 50 NBR-60 G1/4-AG	56	6,0	52	G1/4"-M	37,0	10,0	-	22	11,5
SAB 50 NBR-60 G1/4-IG	56	6,0	52	G1/4"-F	42,0	20,0	-	22	11,5
SAB 50 NBR-60 G3/8-IG	56	6,0	52	G3/8"-F	37,0	15,0	-	22	11,5
SAB 50 NBR-60 M10-AG	56	4,0	52	M10-M	37,0	12,0	-	22	11,5
SAB 50 NBR-60 M14x1.5-AG	56	6,0	52	M14x1.5-M	37,0	12,0	-	22	11,5
SAB 50 NBR-60 RA	56	6,0	52	-	36,5	-	32	-	11,5
SAB 60 NBR-60 G1/4-AG	67	6,0	63	G1/4"-M	41,5	10,0	-	22	14,5
SAB 60 NBR-60 G1/4-IG	67	6,0	63	G1/4"-F	46,5	20,0	-	22	14,5
SAB 60 NBR-60 G3/8-IG	67	6,0	63	G3/8"-F	41,5	15,0	-	22	14,5
SAB 60 NBR-60 M10-AG	67	4,0	63	M10-M	41,5	12,0	-	22	14,5
SAB 60 NBR-60 M14x1.5-AG	67	6,0	63	M14x1.5-M	41,5	12,0	-	22	14,5
SAB 60 NBR-60 RA	67	6,0	63	-	41,0	-	32	-	14,5
SAB 80 NBR-60 G1/4-AG	89	6,0	83	G1/4"-M	50,0	10,0	-	22	22,0
SAB 80 NBR-60 G1/4-IG	89	6,0	83	G1/4"-F	55,0	20,0	-	22	22,0
SAB 80 NBR-60 G3/8-IG	89	6,0	83	G3/8"-F	50,0	15,0	-	22	22,0
SAB 80 NBR-60 M10-AG	89	4,0	83	M10-M	50,0	12,0	-	22	22,0
SAB 80 NBR-60 M14x1.5-AG	89	6,0	83	M14x1.5-M	50,0	12,0	-	22	22,0
SAB 80 NBR-60 RA	89	6,0	83	-	49,5	-	32	-	22,0
SAB 100 NBR-60 G1/4-AG	110	6,0	103	G1/4"-M	57,0	10,0	-	22	26,0
SAB 100 NBR-60 G1/4-IG	110	6,0	103	G1/4"-F	62,0	20,0	-	22	26,0
SAB 100 NBR-60 G3/8-IG	110	6,0	103	G3/8"-F	57,0	15,0	-	22	26,0
SAB 100 NBR-60 M10-AG	110	4,0	103	M10-M	57,0	12,0	-	22	26,0
SAB 100 NBR-60 M14x1.5-AG	110	6,0	103	M14x1.5-M	57,0	12,0	-	22	26,0
SAB 100 NBR-60 RA	110	6,0	103	-	56,5	-	32	-	26,0
SAB 125 NBR-60 G1/4-AG	135	6,0	128	G1/4"-M	68,0	10,0	-	22	32,0
SAB 125 NBR-60 G1/4-IG	135	6,0	128	G1/4"-F	73,0	20,0	-	22	32,0
SAB 125 NBR-60 G3/8-IG	135	9,0	128	G3/8"-F	68,0	15,0	-	22	32,0
SAB 125 NBR-60 M10-AG	135	4,0	128	M10-M	68,0	12,0	-	22	32,0
SAB 125 NBR-60 M14x1.5-AG	135	6,0	128	M14x1.5-M	68,0	12,0	-	22	32,0
SAB 125 NBR-60 RA	135	6,0	128	-	67,5	-	32	-	32,0

\*Acceptable dimensional tolerances for rubber parts concerning to M3 - DIN 7715

\*\*D1 is the external dimension of the suction pad when it is pressed against the workpiece by the vacuum