Flat Suction Cups SAF

Suction area (Ø) from 30 mm to 125 mm

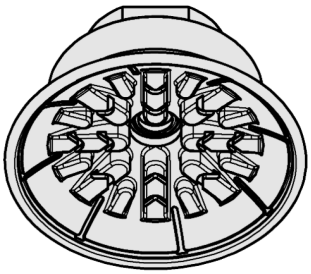
METAL

Flat Suction Cups SAF

Suitability for industry specific applications

Applications

- Round suction cup for dynamic handling of metal sheets with very short cycle times
- Handling of thin steel sheets and aluminum sheets without deformation or deep-drawing
- Use 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 etc.



System design Flat Suction Cups SAF

Design

- Robust and wear-resistant suction cup SAF made of NBR with single sealing lip, special slot and inner support
- Suction cup SAF vulcanized to the connection nipple (very high strength)
- Suction cups available with various connection types
- Available in two material hardness values (45 Shore, 60 Shore)

Flat suction cups SAF being used for handling sheet metal parts

Product highlights

- Wide range of diameters for a large selection of different workpieces
- Large, structured inner support prevents deep drawing and withstands the highest lateral forces even on oily sheets
- Soft, flexible sealing lip seals optimally, even on slightly curved surfaces
- Optimum adaptation to different workpieces thanks to suction cups with different hardnesses

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Designation code Flat Suction Cups SAF

SAF	–	80	–	NBR-60	–	G3/8-IG
1		2		3		4

1 – Abbreviated designation

Code	Version
SAF	Flat

2 – Suction area

Code	Diameter in mm
30…125	ø 30 to 125

3 – Material

Code	Material
NBR-45	Nitrile caoutchuc
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 SAF, available in various diameters, is delivered with connection nipple vulcanized to elastomer part.

Ordering data Flat Suction Cups SAF

Type				Vacuum connection:					
				G1/4"-M	G1/4"-F	G3/8"-F	M10-M	M14x1.5-M	Rectangular adapter
SAF	30	NBR	45	10.01.01.11421	10.01.01.11400	10.01.01.11420	10.01.01.11425	10.01.01.11426	-
SAF	30	NBR	60	10.01.01.10646	10.01.01.10506	10.01.01.10705	10.01.01.10713	10.01.01.10730	10.01.01.10790
SAF	40	NBR	45	10.01.01.11430	10.01.01.11401	10.01.01.11431	10.01.01.11435	10.01.01.11436	10.01.01.11433
SAF	40	NBR	60	10.01.01.10647	10.01.01.10508	10.01.01.10708	10.01.01.10716	10.01.01.10733	10.01.01.10793
SAF	50	NBR	45	10.01.01.11440	10.01.01.11441	10.01.01.11402	10.01.01.11444	10.01.01.11445	10.01.01.11442
SAF	50	NBR	60	10.01.01.10635	10.01.01.10688	10.01.01.10510	10.01.01.10719	10.01.01.10736	10.01.01.10796
SAF	60	NBR	45	10.01.01.11450	10.01.01.11451	10.01.01.11403	10.01.01.11454	10.01.01.11455	10.01.01.11452
SAF	60	NBR	60	10.01.01.10622	10.01.01.10689	10.01.01.10512	10.01.01.10721	10.01.01.10739	10.01.01.10799
SAF	80	NBR	45	10.01.01.11460	10.01.01.11461	10.01.01.11404	10.01.01.11466	10.01.01.11467	10.01.01.11464
SAF	80	NBR	60	10.01.01.10623	10.01.01.10690	10.01.01.10514	10.01.01.10724	10.01.01.10742	10.01.01.10802
SAF	100	NBR	45	10.01.01.11470	10.01.01.11471	10.01.01.11405	10.01.01.11476	10.01.01.11477	10.01.01.11474
SAF	100	NBR	60	10.01.01.10624	10.01.01.10691	10.01.01.10516	10.01.01.10726	10.01.01.10745	10.01.01.10805
SAF	125	NBR	45	10.01.01.11480	10.01.01.11481	10.01.01.11406	10.01.01.11485	10.01.01.11486	10.01.01.11483
SAF	125	NBR	60	10.01.01.10666	10.01.01.10692	10.01.01.10518	10.01.01.10728	10.01.01.10748	10.01.01.10808

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Technical data Flat Suction Cups SAF

Type		Suction force (-600 mbar) [N]*	Lateral force [N]**	Lateral force oily surface [N]***	Volume [cm³]	Workpiece radius min. (convex) [mm]	Hose diameter (recom.) d [mm]****
SAF	30	38	30	28	2.8	40	4
SAF	40	69	52	50	5.3	50	4
SAF	50	100	80	76	9.5	65	4
SAF	60	150	105	85	16.7	75	6
SAF	80	272	205	180	36.7	100	6
SAF	100	430	310	300	59.9	135	6
SAF	125	660	475	400	119.0	165	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

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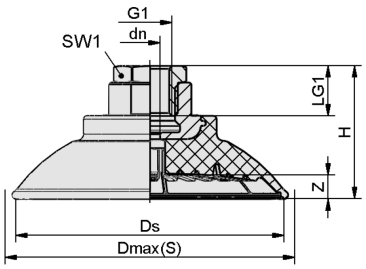
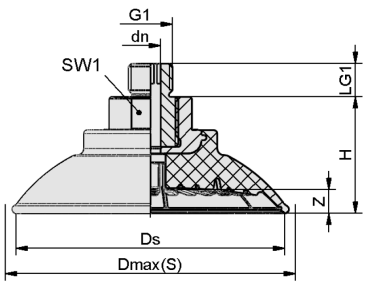
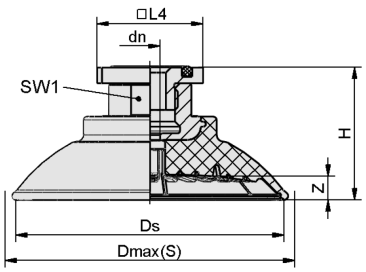
Design data Flat Suction Cups SAF



SAF IG



SAF AG



SAF RA

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Type*			Dmax(S) [mm]**	dn [mm]	Ds [mm]	G1	H [mm]	LG1 [mm]	L4 [mm]	SW1 [mm]	Z (Stroke) [mm]
SAF	30	G1/4-AG	34	4	31	G1/4"-M	20.0	10	-	17	3.0
SAF	30	G1/4-IG	34	4	31	G1/4"-F	20.0	12	-	17	3.0
SAF	30	G3/8-IG	34	4	31	G3/8"-F	36.0	9	-	22	3.0
SAF	30	M10-AG	34	4	31	M10-M	20.0	12	-	17	3.0
SAF	30	M14x1.5-AG	34	4	31	M14x1.5-M	20.0	12	-	17	3.0
SAF	30	RA	34	4	31	-	23.2	-	31.8	17	3.0
SAF	40	G1/4-AG	46	4	41	G1/4"-M	22.0	10	-	17	4.0
SAF	40	G1/4-IG	46	4	41	G1/4"-F	22.0	12	-	17	4.0
SAF	40	G3/8-IG	46	4	41	G3/8"-F	38.0	9	-	22	4.0
SAF	40	M10-AG	46	4	41	M10-M	22.0	12	-	17	4.0
SAF	40	M14x1.5-AG	46	4	41	M14x1.5-M	22.0	12	-	17	4.0
SAF	40	RA	46	4	41	-	25.0	-	31.8	17	4.0
SAF	50	G1/4-AG	56	6	50	G1/4"-M	28.0	10	-	22	5.0
SAF	50	G1/4-IG	56	6	50	G1/4"-F	33.0	15	-	22	5.0
SAF	50	G3/8-IG	56	6	50	G3/8"-F	28.0	15	-	22	5.0
SAF	50	M10-AG	56	4	50	M10-M	28.0	12	-	22	5.0
SAF	50	M14x1.5-AG	56	6	50	M14x1.5-M	28.0	12	-	22	5.0
SAF	50	RA	56	6	50	-	27.5	-	31.8	22	5.0
SAF	60	G1/4-AG	67	6	61	G1/4"-M	31.0	10	-	22	6.0
SAF	60	G1/4-IG	67	6	61	G1/4"-F	36.0	15	-	22	6.0
SAF	60	G3/8-IG	67	6	61	G3/8"-F	31.0	15	-	22	6.0
SAF	60	M10-AG	67	4	61	M10-M	31.0	12	-	22	6.0
SAF	60	M14x1.5-AG	67	6	61	M14x1.5-M	31.0	12	-	22	6.0
SAF	60	RA	67	6	61	-	30.7	-	31.8	22	6.0
SAF	80	G1/4-AG	89	6	83	G1/4"-M	35.0	10	-	22	7.6
SAF	80	G1/4-IG	89	6	83	G1/4"-F	40.0	20	-	22	7.6
SAF	80	G3/8-IG	89	6	83	G3/8"-F	35.0	15	-	22	7.6
SAF	80	M10-AG	89	4	83	M10-M	35.0	12	-	22	7.6
SAF	80	M14x1.5-AG	89	6	83	M14x1.5-M	35.0	12	-	22	7.6
SAF	80	RA	89	6	83	-	34.5	-	31.8	22	7.6
SAF	100	G1/4-AG	110	6	103	G1/4"-M	36.0	10	-	22	9.5
SAF	100	G1/4-IG	110	6	103	G1/4"-F	41.0	20	-	22	9.5
SAF	100	G3/8-IG	110	6	103	G3/8"-F	36.0	15	-	22	9.5
SAF	100	M10-AG	110	4	103	M10-M	36.0	12	-	22	9.5
SAF	100	M14x1.5-AG	110	6	103	M14x1.5-M	36.0	12	-	22	9.5
SAF	100	RA	110	6	103	-	35.5	-	31.8	22	9.5
SAF	125	G1/4-AG	135	6	125	G1/4"-M	43.0	10	-	22	12.5
SAF	125	G1/4-IG	135	6	125	G1/4"-F	48.0	20	-	22	12.5
SAF	125	G3/8-IG	135	9	125	G3/8"-F	43.0	15	-	22	12.5
SAF	125	M10-AG	135	4	125	M10-M	43.0	12	-	22	12.5
SAF	125	M14x1.5-AG	135	6	125	M14x1.5-M	43.0	12	-	22	12.5
SAF	125	RA	135	9	125	-	42.5	-	31.8	22	12.5

*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

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