

# Suction pads for handling sheet metal



## Flat suction pads SAF



Sheet-metal suction pads SAF

### Our highlights...

- Wide range of diameters
- Large-area structured inner support
- Soft and flexible sealing lip
- Various material hardness values
- Nipple vulcanised to the suction pad

### Your advantages...

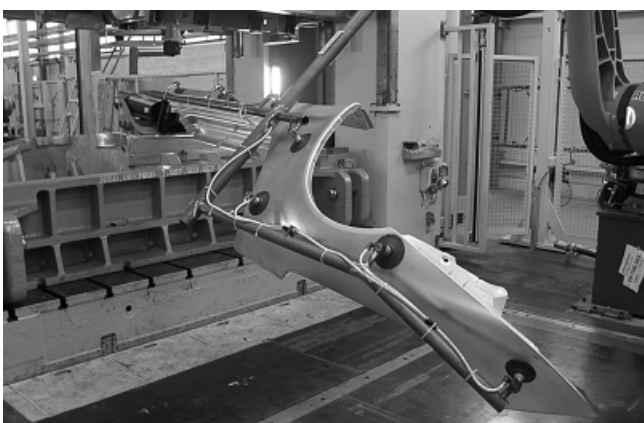
- >For a wide range of workpiece sizes and shapes
- >Prevention of deep-drawing and handling of high lateral forces, even with oily metal sheets
- >Excellent sealing, even on slightly curved surfaces
- >Optimum adaptation to varying workpieces
- >Prevention of damage and downtimes as the result of lost suction pads



Vacuum spider with flat suction pads SAF for automatic loading of a folding press with sheets of metal

### Applications

- Handling of metal sheets with very dynamic movements (shorter cycle times)
- Handling of thin steel sheets and aluminum sheets without deformation
- For use e.g. in feeder systems for press lines in the automobile industry
- Special slot on the bottom prevents oily sheets from slipping, permitting precise positioning in laser-cutting machines and stamping presses
- Handling of sheet-metal parts with small curvature radii



Vacuum spider with flat suction pads SAF for handling bodywork parts in the automobile industry



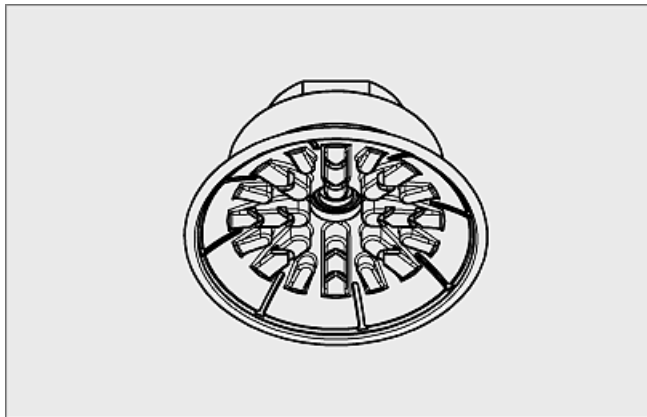
Flat suction pad SAF mounted on a vacuum spider for lifting pressed sheet-metal parts

# Suction pads for handling sheet metal



## Flat suction pads SAF

Vacuum suction pads  
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### Construction

- Robust and hard-wearing suction pad SAF with single sealing lip, special slot and inner support
- Suction pad SAF vulcanised to the connection nipple (very high strength)
- Suction pad available with various connection types
- Available in two material hardness values (45 Shore, 60 Shore)
- Suction pads are delivered assembled



### Suitability for branch-specific applications

#### Designation code Flat suction pads SAF

Short designation	Diameter in mm	Material and shore hardness	Connection thread
Example: SAF	50	NBR-60	G1/4-AG
SAF	30 to 125	NBR-60 NBR-45	G1/4-AG (AG = male) G1/4-IG (IG = female) G3/8-IG M10-AG M14x1.5-AG RA...rectangular adapter

#### Ordering data Flat suction pads SAF

Type	Connection					
	G1/4" (male)	G1/4" (female)	G3/8" (female)	M10 (male)	M14x1.5 (male)	Rectangular adapt.
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 30 NBR-45	10.01.01.11421	10.01.01.11400	10.01.01.11420	10.01.01.11425	10.01.01.11426	10.01.01.11423
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 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 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 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 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 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 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 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 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 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 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
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

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## Flat suction pads SAF

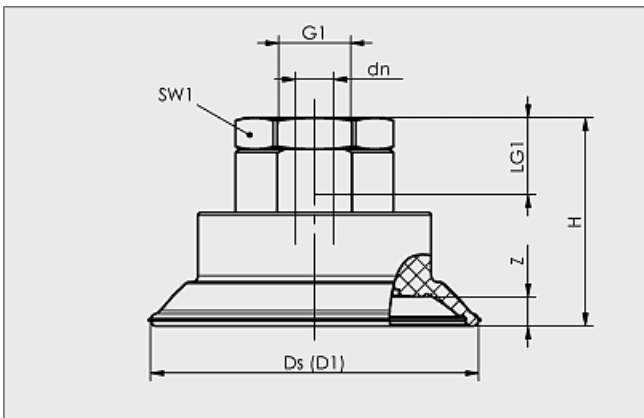
### Technical data Flat suction pads SAF

Type	Suction 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]
SAF 30	38	30	28	1,7	40	4
SAF 40	69	52	50	3,8	50	4
SAF 50	100	80	76	7,0	65	4
SAF 60	150	105	85	13,0	75	6
SAF 80	272	205	180	36,0	100	6
SAF 100	430	310	300	58,0	135	6
SAF 125	660	475	400	115,0	165	9

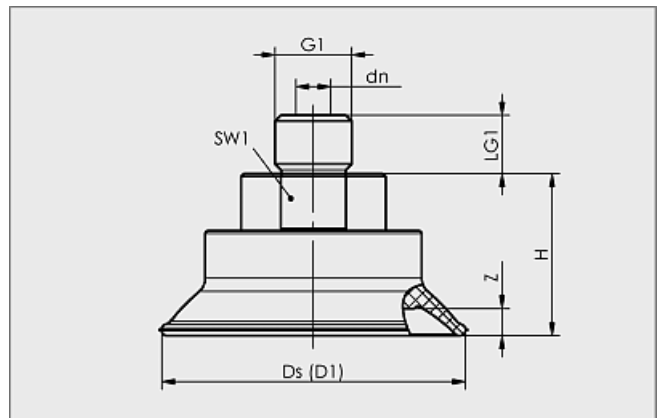
\*The specified suction forces are theoretical values at a vacuum of -0.6 bar and with a smooth, dry workpiece surface - they do not include a safety factor

\*\*The specified 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.

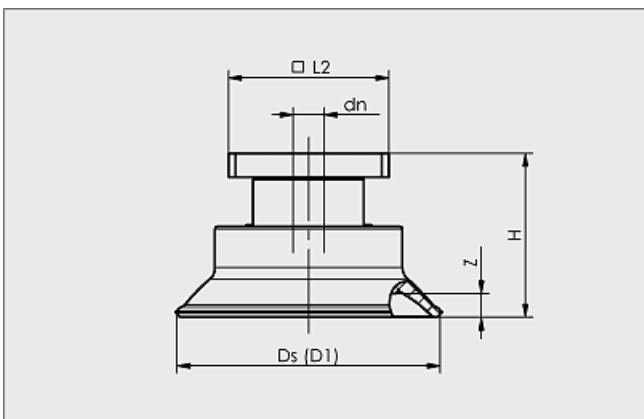
### Design data Flat suction pads SAF



SAF 30 to 125 IG



SAF 30 to 125 AG



SAF 30 to 125 RA (rectangular adapter)

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### Design data Flat suction pads SAF

Type	Dimensions in mm*								
	D1**	dn	Ds	G1	H	LG1	L2	SW1	Z
SAF 30 G1/4-AG	34	4	32	G1/4"-M	20,0	10	-	17	3,0
SAF 30 G1/4-IG	34	4	32	G1/4"-F	20,0	12	-	17	3,0
SAF 30 G3/8-IG	34	4	32	G3/8"-F	36,0	9	-	22	3,0
SAF 30 M10-AG	34	4	32	M10-M	20,0	12	-	17	3,0
SAF 30 M14x1.5-AG	34	4	32	M14x1.5-M	20,0	12	-	17	3,0
SAF 30 RA	34	4	32	-	23,2	-	32	-	3,0
SAF 40 G1/4-AG	46	4	42	G1/4"-M	22,0	10	-	17	4,0
SAF 40 G1/4-IG	46	4	42	G1/4"-F	22,0	12	-	17	4,0
SAF 40 G3/8-IG	46	4	42	G3/8"-F	38,0	9	-	22	4,0
SAF 40 M10-AG	46	4	42	M10-M	22,0	12	-	17	4,0
SAF 40 M14x1.5-AG	46	4	42	M14x1.5-M	22,0	12	-	17	4,0
SAF 40 RA	46	4	42	-	25,0	-	32	-	4,0
SAF 50 G1/4-AG	56	6	52	G1/4"-M	28,0	10	-	22	5,0
SAF 50 G1/4-IG	56	6	52	G1/4"-F	33,0	15	-	22	5,0
SAF 50 G3/8-IG	56	6	52	G3/8"-F	28,0	15	-	22	5,0
SAF 50 M10-AG	56	4	52	M10-M	28,0	12	-	22	5,0
SAF 50 M14x1.5-AG	56	6	52	M14x1.5-M	28,0	12	-	22	5,0
SAF 50 RA	56	6	52	-	27,5	-	32	-	5,0
SAF 60 G1/4-AG	67	6	63	G1/4"-M	31,0	10	-	22	6,0
SAF 60 G1/4-IG	67	6	63	G1/4"-F	36,0	15	-	22	6,0
SAF 60 G3/8-IG	67	6	63	G3/8"-F	31,0	15	-	22	6,0
SAF 60 M10-AG	67	4	63	M10-M	31,0	12	-	22	6,0
SAF 60 M14x1.5-AG	67	6	63	M14x1.5-M	31,0	12	-	22	6,0
SAF 60 RA	67	6	63	-	30,5	-	32	-	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	-	32	-	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	-	32	-	9,5
SAF 125 G1/4-AG	135	6	128	G1/4"-M	43,0	10	-	22	12,5
SAF 125 G1/4-IG	135	6	128	G1/4"-F	48,0	20	-	22	12,5
SAF 125 G3/8-IG	135	9	128	G3/8"-F	43,0	15	-	22	12,5
SAF 125 M10-AG	135	4	128	M10-M	43,0	12	-	22	12,5
SAF 125 M14x1.5-AG	135	6	128	M14x1.5-M	43,0	12	-	22	12,5
SAF 125 RA	135	9	128	-	42,5	-	32	-	12,5

\*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