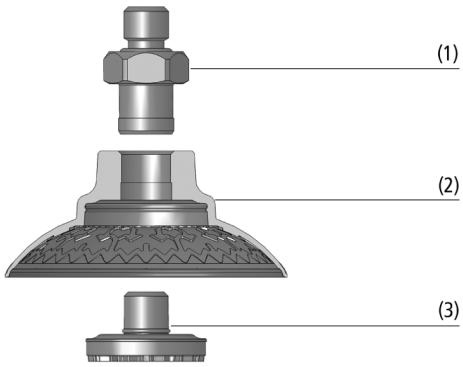
Suction Cups for Handling Sheet Metal

Bell-Shaped Suction Cups SAXM

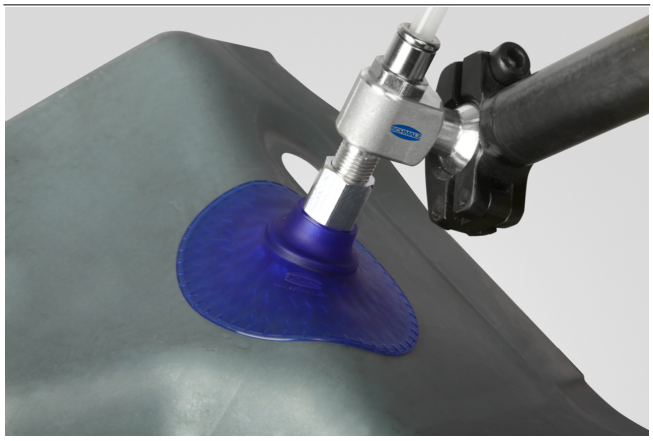
Suction area (Ø) from 20 mm to 115 mm

METAL

Bell-Shaped Suction Cups SAXM



System Design Bell-Shaped Suction Cups SAXM



Bell-shaped suction cups SAXM when handling formed sheet metal parts

Suitability for Industry Specific Applications

Applications

- High-speed suction cups with demands for highest holding and shear absorption forces for fast handling of sheet metal and car body parts
- Handling of workpieces with oily surfaces
- Loading and unloading of CNC metalworking and laser cutting machines
- Handling of blanks at destackers
- Handling of workpieces with convex surfaces

Design

- Round bell-shaped suction cup (2) with flexible sealing lip, optimum internal structure, special oil slot and inner support
- Made of wear-proof material Elastodur of suction cup (ED-85) and friction disc (ED-65)
- Two-part connection element (SC) consisting of connector upper part (1) and lower part including a friction disc (3)
- Connector upper part with protection against lose
- Connection elements with male thread have an integrated seal on the fastening thread
- Available as assembled suction cups or as individual parts

Product Highlights

- Very high suction cup stroke for optimum adaptation to the most varied workpiece contours
- Special inner structure for maximum holding force at high accelerations, especially on oily sheets
- Large, structured inner support prevents deep drawing even with thin sheets
- Extremely wear-resistant material Elastodur, resistant to ozone and aggressive drawing oils
- Modular, recyclable design minimizes costs and enables quick replacement of components

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Bell-Shaped Suction Cups SAXM

Suction area (Ø) from 20 mm to 115 mm

Designation Code Bell-Shaped Suction Cups SAXM

SAXM	–	20	–	ED-85	–	G1/4-IG
1		2		3		4

1 – Abbreviated designation

Code	Version
SAXM	Flat

2 – Suction area

Code	Diameter in mm
20...115	ø 20 to 115

3 – Material

Code	Material
ED-85	Elastodur

4 – Connection

Code	Connection
G1/4-AG	G1/4-AG (AG = male (M))
G1/4-IG	G1/4-IG (IG = female (F))
G3/8-AG	G3/8-AG
M10-AG	M10-AG
M14x1.5-AG	M14x1.5-AG
NPT3/8-IG	NPT3/8-IG
RA	Rectangular adapter

Bell-shaped suction cup SAXM (elastomer part + connection element) is delivered assembled. As an alternative the individual parts can also be ordered separately. To do this, the following ordering steps are required:

- Bell-shaped suction cup of type SAXM (step 1) – elastomer part, available in various diameters
- Connector upper part (step 2) – available with various threads
- Connector lower part (step 3) – including molded friction disc

Ordering Data Bell-Shaped Suction Cups SAXM

Type		Vacuum connection:							
		G1/4"-M	G1/4"-F	G3/8"-M	G3/8"-F	M10-M	M14x1.5-M	NPT3/8-F	Rectangular adapter
SAXM	20	10.01.19.00101	10.01.19.00080	10.01.19.00102	10.01.19.00097	10.01.19.00098	10.01.19.00099	10.01.19.00103	10.01.19.00100
SAXM	30	10.01.19.00049	10.01.19.00014	10.01.19.00050	10.01.19.00015	10.01.19.00016	10.01.19.00017	10.01.19.00063	10.01.19.00018
SAXM	40	10.01.19.00051	10.01.19.00019	10.01.19.00052	10.01.19.00020	10.01.19.00021	10.01.19.00022	10.01.19.00064	10.01.19.00023
SAXM	50	10.01.19.00053	10.01.19.00024	10.01.19.00054	10.01.19.00025	10.01.19.00026	10.01.19.00027	10.01.19.00065	10.01.19.00028
SAXM	60	10.01.19.00055	10.01.19.00029	10.01.19.00056	10.01.19.00030	10.01.19.00031	10.01.19.00032	10.01.19.00066	10.01.19.00033
SAXM	80	10.01.19.00057	10.01.19.00034	10.01.19.00058	10.01.19.00035	10.01.19.00036	10.01.19.00037	10.01.19.00067	10.01.19.00038
SAXM	100	10.01.19.00059	10.01.19.00039	10.01.19.00060	10.01.19.00040	10.01.19.00041	10.01.19.00042	10.01.19.00068	10.01.19.00043
SAXM	115	10.01.19.00061	10.01.19.00044	10.01.19.00062	10.01.19.00045	10.01.19.00046	10.01.19.00047	10.01.19.00069	10.01.19.00048

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Suction area (Ø) from 20 mm to 115 mm

Technical Data Bell-Shaped Suction Cups SAXM

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]****
SAXM	20	20	15	20	1.6	20	5
SAXM	30	39	32	41	3.4	18	5
SAXM	40	69	38	71	7.1	25	5
SAXM	50	109	58	110	14.4	25	6
SAXM	60	154	85	155	24.2	30	6
SAXM	80	270	150	269	51.9	33	6
SAXM	100	412	230	414	95.5	40	6
SAXM	115	549	320	584	141.5	50	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 or oiled and 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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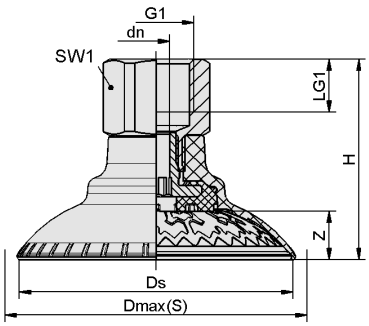
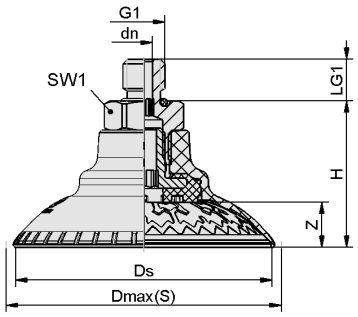
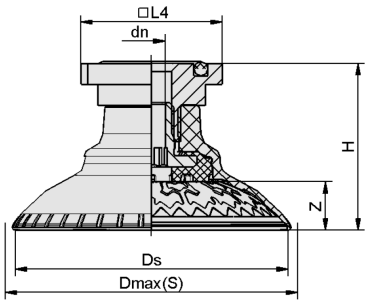
Design Data Bell-Shaped Suction Cups SAXM



SAXM IG



SAXM AG



SAXM RA

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Bell-Shaped Suction Cups SAXM

Suction area (Ø) from 20 mm to 115 mm

Design Data Bell-Shaped Suction Cups SAXM

Type	dn [mm]	Dmax(S) [mm]	Ds	G1	H [mm]	LG1 [mm]	L4 [mm]	SW1 [mm]	Z (Stroke) [mm]
SAXM 20 ED-85 G1/4-AG	5.1	26.0	21.8	G1/4"-M	23.7	10	-	17	3.0
SAXM 20 ED-85 G1/4-IG	5.1	26.0	21.8	G1/4"-F	33.7	12	-	17	3.0
SAXM 20 ED-85 G3/8-AG	5.1	26.0	21.8	G3/8"-M	24.2	10	-	22	3.0
SAXM 20 ED-85 G3/8-IG	5.1	26.0	21.8	G3/8"-F	33.7	12	-	22	3.0
SAXM 20 ED-85 M10-AG	4.1	26.0	21.8	M10-M	23.7	10	-	17	3.0
SAXM 20 ED-85 M14x1.5-AG	5.1	26.0	21.8	M14x1.5-M	23.7	10	-	17	3.0
SAXM 20 ED-85 NPT3/8-IG	5.1	26.0	21.8	NPT3/8"-F	33.7	14	-	22	3.0
SAXM 20 ED-85 RA	5.1	26.0	21.8	-	26.0	-	31.8	-	3.0
SAXM 30 ED-85 G1/4-AG	5.1	35.2	31.6	G1/4"-M	25.0	10	-	17	4.3
SAXM 30 ED-85 G1/4-IG	5.1	35.2	31.6	G1/4"-F	35.0	12	-	17	4.3
SAXM 30 ED-85 G3/8-AG	5.1	35.2	31.6	G3/8"-M	25.5	10	-	22	4.3
SAXM 30 ED-85 G3/8-IG	5.1	35.2	31.6	G3/8"-F	35.0	12	-	22	4.3
SAXM 30 ED-85 M10-AG	4.1	35.2	31.6	M10-M	25.0	10	-	17	4.3
SAXM 30 ED-85 M14x1.5-AG	5.1	35.2	31.6	M14x1.5-M	25.0	10	-	17	4.3
SAXM 30 ED-85 NPT3/8-IG	5.1	35.2	31.6	NPT3/8"-F	35.0	14	-	22	4.3
SAXM 30 ED-85 RA	5.1	35.2	31.6	-	27.3	-	31.8	-	4.3
SAXM 40 ED-85 G1/4-AG	5.1	45.4	41.3	G1/4"-M	27.6	10	-	17	6.9
SAXM 40 ED-85 G1/4-IG	5.1	45.4	41.3	G1/4"-F	37.6	12	-	17	6.9
SAXM 40 ED-85 G3/8-AG	5.1	45.4	41.3	G3/8"-M	28.1	10	-	22	6.9
SAXM 40 ED-85 G3/8-IG	5.1	45.4	41.3	G3/8"-F	37.6	12	-	22	6.9
SAXM 40 ED-85 M10-AG	4.1	45.4	41.3	M10-M	27.6	10	-	17	6.9
SAXM 40 ED-85 M14x1.5-AG	5.1	45.4	41.3	M14x1.5-M	27.6	10	-	17	6.9
SAXM 40 ED-85 NPT3/8-IG	5.1	45.4	41.3	NPT3/8"-F	37.6	14	-	22	6.9
SAXM 40 ED-85 RA	5.1	45.4	41.3	-	29.9	-	31.8	-	6.9
SAXM 50 ED-85 G1/4-AG	6.1	58.4	51.5	G1/4"-M	32.8	10	-	17	8.4
SAXM 50 ED-85 G1/4-IG	6.1	58.4	51.5	G1/4"-F	42.8	15	-	17	8.4
SAXM 50 ED-85 G3/8-AG	6.1	58.4	51.5	G3/8"-M	33.3	10	-	22	8.4
SAXM 50 ED-85 G3/8-IG	6.1	58.4	51.5	G3/8"-F	42.8	12	-	22	8.4

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SAXM 50 ED-85 M10-AG	4.1	58.4	51.5	M10-M	32.8	10	-	17	8.4
SAXM 50 ED-85 M14x1.5-AG	6.1	58.4	51.5	M14x1.5-M	32.8	10	-	17	8.4
SAXM 50 ED-85 NPT3/8-IG	6.1	58.4	51.5	NPT3/8"-F	42.8	14	-	22	8.4
SAXM 50 ED-85 RA	6.1	58.4	51.5	-	35.1	-	31.8	-	8.4
SAXM 60 ED-85 G1/4-AG	6.1	69.7	61.5	G1/4"-M	35.3	10	-	17	10.9
SAXM 60 ED-85 G1/4-IG	6.1	69.7	61.5	G1/4"-F	45.3	15	-	17	10.9
SAXM 60 ED-85 G3/8-AG	6.1	69.7	61.5	G3/8"-M	35.8	10	-	22	10.9
SAXM 60 ED-85 G3/8-IG	6.1	69.7	61.5	G3/8"-F	45.3	12	-	22	10.9
SAXM 60 ED-85 M10-AG	4.1	69.7	61.5	M10-M	35.3	10	-	17	10.9
SAXM 60 ED-85 M14x1.5-AG	6.1	69.7	61.5	M14x1.5-M	35.3	10	-	17	10.9
SAXM 60 ED-85 NPT3/8-IG	6.1	69.7	61.5	NPT3/8"-F	45.3	14	-	22	10.9
SAXM 60 ED-85 RA	6.1	69.7	61.5	-	37.6	-	31.8	-	10.9
SAXM 80 ED-85 G1/4-AG	6.1	92.2	81.0	G1/4"-M	38.3	10	-	17	13.9
SAXM 80 ED-85 G1/4-IG	6.1	92.2	81.0	G1/4"-F	48.3	15	-	17	13.9
SAXM 80 ED-85 G3/8-AG	6.1	92.2	81.0	G3/8"-M	38.8	10	-	22	13.9
SAXM 80 ED-85 G3/8-IG	6.1	92.2	81.0	G3/8"-F	48.3	12	-	22	13.9
SAXM 80 ED-85 M10-AG	4.1	92.2	81.0	M10-M	38.3	10	-	17	13.9
SAXM 80 ED-85 M14x1.5-AG	6.1	92.2	81.0	M14x1.5-M	38.3	10	-	17	13.9
SAXM 80 ED-85 NPT3/8-IG	6.1	92.2	81.0	NPT3/8"-F	48.3	14	-	22	13.9
SAXM 80 ED-85 RA	6.1	92.2	81.0	-	40.6	-	31.8	-	13.9
SAXM 100 ED-85 G1/4-AG	6.1	111.1	99.7	G1/4"-M	47.2	10	-	22	17.1
SAXM 100 ED-85 G1/4-IG	6.1	111.1	99.7	G1/4"-F	57.2	12	-	22	17.1
SAXM 100 ED-85 G3/8-AG	6.1	111.1	99.7	G3/8"-M	47.2	10	-	22	17.1
SAXM 100 ED-85 G3/8-IG	6.1	111.1	99.7	G3/8"-F	57.2	12	-	22	17.1
SAXM 100 ED-85 M10-AG	4.1	111.1	99.7	M10-M	47.2	10	-	22	17.1
SAXM 100 ED-85 M14x1.5-AG	6.1	111.1	99.7	M14x1.5-M	47.2	10	-	22	17.1
SAXM 100 ED-85 NPT3/8-IG	6.1	111.1	99.7	NPT3/8"-F	57.2	14	-	22	17.1
SAXM 100 ED-85 RA	6.1	111.1	99.7	-	48.7	-	31.8	-	17.1
SAXM 115 ED-85 G1/4-AG	6.1	129.4	115.2	G1/4"-M	50.1	10	-	22	20.0

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Type	dn [mm]	Dmax(S) [mm]	Ds	G1	H [mm]	LG1 [mm]	L4 [mm]	SW1 [mm]	Z (Stroke) [mm]
SAXM 115 ED-85 G1/4-IG	6.1	129.4	115.2	G1/4"-F	60.1	12	-	22	20.0
SAXM 115 ED-85 G3/8-AG	6.1	129.4	115.2	G3/8"-M	50.1	10	-	22	20.0
SAXM 115 ED-85 G3/8-IG	6.1	129.4	115.2	G3/8"-F	60.1	12	-	22	20.0
SAXM 115 ED-85 M10-AG	4.1	129.4	115.2	M10-M	50.1	10	-	22	20.0
SAXM 115 ED-85 M14x1.5-AG	6.1	129.4	115.2	M14x1.5-M	50.1	10	-	22	20.0
SAXM 115 ED-85 NPT3/8-IG	6.1	129.4	115.2	NPT3/8"-F	60.1	14	-	22	20.0
SAXM 115 ED-85 RA	6.1	129.4	115.2	-	51.6	-	31.8	-	20.0

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