



# Series | Flat vacuum cups SF

Bell shaped vacuum cups for dynamic handling of strongly curved metal sheets – SM-G

## Bell shaped vacuum cups for dynamic handling of strongly curved metal sheets – SM-G



ESPECIALLY FOR STRONGLY CURVED SURFACES



### Product notes

Flexible, round NBR bell shaped cup, 60° Shore A with vulcanized fitting made of aluminum for best adaptation to strongly curved metal sheets. Large area "anti-slip" cleats, various connection threads available. PWIS-conform to guideline VDMA 24364 test category A1.

### Advantage

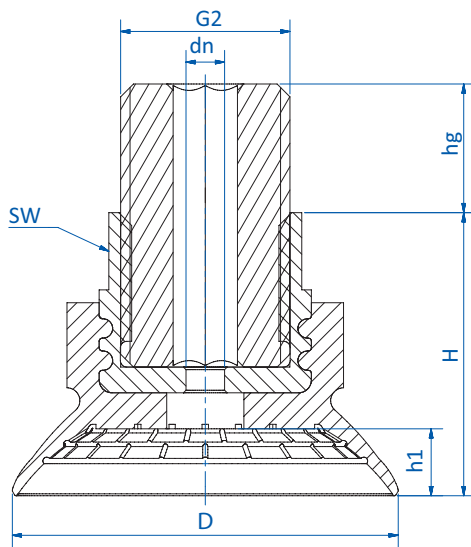
- > Reliable, non-slip handling of oily sheets due to "anti-slip" cleats. Good absorption of lateral forces.
- > Supports help to prevent deep-drawing or deformation of thin sheets
- > Leak-free suction even with strongly curved surfaces due to very flexible sealing lip
- > Vulcanized connection thread ensures a secure fit

### Technical data

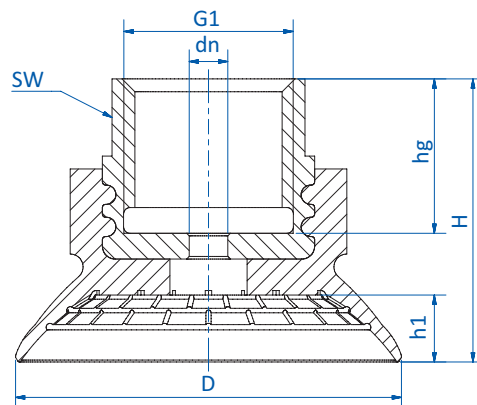
Model / Lip dimensions	Thread (Aluminum)				Volume [cm <sup>3</sup> ]	Gripping force* [N]	
	G1/4-male	G1/4-female	G3/8-female	Rectangular adapter			
SM-G-22	103.022.143.1	103.022.142.1	103.022.148.1	103.022.151.1	1,13	19	4
SM-G-30	103.030.144.1	103.030.141.1	103.030.149.1	103.030.152.1	2,64	33	5,2
SM-G-45	103.045.145.1	103.045.137.1	103.045.150.1	103.045.153.1	9,38	72	7,8
SM-G-60	103.060.146.1	103.060.138.1	103.060.136.1	103.060.154.1	21,77	133	10,6
SM-G-80	103.080.147.1	103.080.139.1	103.080.090.1	103.080.155.1	47,86	218	12,8

\* The gripping force specifications are theoretical guide values on dry, smooth and even workpiece surfaces at 60 % vacuum – they do not include a safety factor

### Dimensions



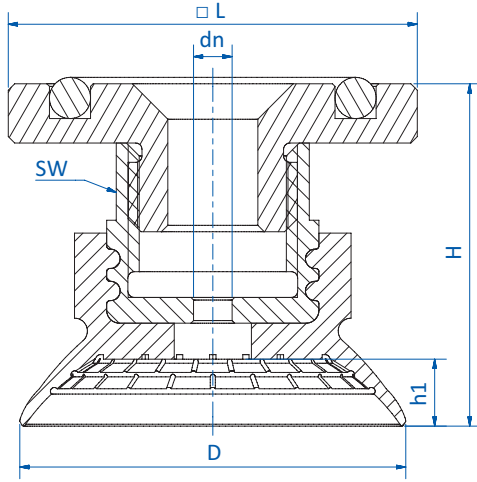
Drawing A



Drawing B



Dimensions



Drawing C

Item no.	Drawing	Ø D [mm]	Ø dn [mm]	G1 (female)	G2 (male)	□L [mm]	H [mm]	h1 [mm]	hg [mm]	SW
103.022.143.*	A	22	3	--	G1/4	--	22	4	12	15
103.022.142.*	B	22	3	G1/4	--	--	15	4	12	15
103.022.148.*	B	22	3	G3/8	--	--	38	4	10	15
103.022.151.*	C	22	3	--	--	31,8	26,6	4	--	15
103.030.144.*	A	30	3	--	G1/4	--	22	5,2	10	15
103.030.141.*	B	30	3	G1/4	--	--	22	5,2	12	15
103.030.149.*	B	30	3	G3/8	--	--	38	5,2	10	15
103.030.152.*	C	30	3	--	--	31,8	26,6	5,2	--	15
103.045.145.*	A	47	4	--	G1/4	--	24,5	7,8	10	17
103.045.137.*	B	47	4	G1/4	--	--	24,5	7,8	12	17
103.045.150.*	B	47	4	G3/8	--	--	40,5	7,8	10	17
103.045.153.*	C	47	4	--	--	31,8	29,1	7,8	--	17
103.060.146.*	A	63	6	--	G1/4	--	31	10,6	10	22
103.060.138.*	B	63	6	G1/4	--	--	36	10,6	20	22
103.060.136.*	B	63	6	G3/8	--	--	31	10,6	15	22
103.060.154.*	C	63	6	--	--	31,8	35,6	10,6	--	22
103.080.147.*	A	83	7,1	--	G1/4	--	35	12,8	10	22
103.080.139.*	B	83	7,1	G1/4	--	--	40	12,8	20	22
103.080.090.*	B	83	7,1	G3/8	--	--	35	12,8	15	22
103.080.155.*	C	83	7,1	--	--	31,8	39,6	12,8	--	22