

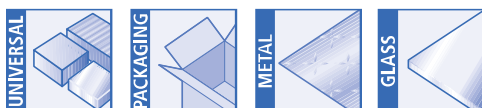


SPB1

Bellows Suction Cups

for handling of cardboard

Suction area (Ø) from 10 mm to 80 mm

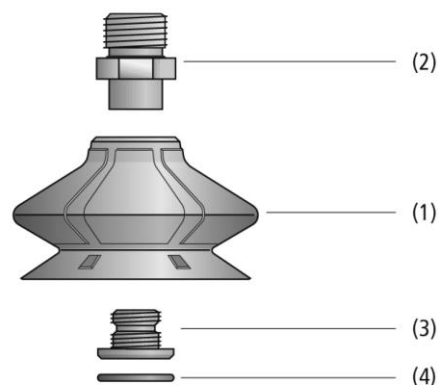


Applications

- Round bellows suction cup with 1.5 folds for the use in cardboard box and tray erectors
- Handling of cardboards and rigid packaging in top-loading and side-loading machines
- Palletizing and depalletizing processes
- Heavy-duty applications that require suction cups with excellent sealing and low wear

Design

- Round bellows suction cup SPB1 (1) with 1.5 folds and soft, flexible sealing lip
- Made of wear-proof material Elastodur ED-65
- Models with diameter up to 30 mm feature plug-in connection element
- Starting at 40 mm diameter with a two-piece connection element: consisting of machine-side component (2) and suction-side component (3)
- Clip-in filter screen (4) as pre-filter
- All connection elements with male thread are equipped with integrated sealing on the fastening thread





Product Highlights

- Suction cup seals optimally on cardboard boxes and rigid packaging
- High intrinsic stability of the suction cup in dynamic processes
- Spacing elements between sealing lip and fold prevent the suction cup from moving
- High suction force with small dimensions thanks to large effective suction area
- Material Elastodur ED-65 minimizes wear (service life approx. 3 times higher than with NBR)



Designation Code

SPB1 30 ED-65 G1/8-AG F
① ② ③ ④

Suction area ⁽¹⁾		②Material		③Connection		④filter screen	
Code	Diameter	Code	Material	Code	Connection	Code	filter screen
10	Ø 9.8 mm	ED-65	Elastodur	none	no connection	none	no filter screen
15	Ø 15.4 mm			M5-AG	M5-AG (AG = male (M))	F	with filter screen
20	Ø 21.4 mm			M5-IG	M5-IG (IG = female (F))		
25	Ø 26.4 mm			G1/8-AG	G1/8-AG		
30	Ø 31.4 mm			G1/8-IG	G1/8-IG		
40	Ø 41.4 mm			G1/4-AG	G1/4-AG		
50	Ø 51.4 mm			G1/4-IG	G1/4-IG		
60	Ø 61.4 mm						
80	Ø 81.4 mm						

(1) For available combinations of suction cup diameter and thread model, please refer to the "Ordering Data".



Technical Data

Type		Suction force (-600 mbar) [N]*	Pull-off force [N]	Lateral force [N]	Volume [cm³]	Workpiece radius min. (convex) [mm]	Hose diameter (recom.) d [mm]**
SPB1	10	1.5	4.0	2.0	0.5	5	4
SPB1	15	4.3	9.0	5.0	1.5	8	4
SPB1	20	9.9	16.2	9.8	3.2	20	4
SPB1	25	14.9	23.4	13.0	5.3	20	4
SPB1	30	20.7	30.6	15.5	8.0	35	6
SPB1	40	35.9	46.8	24.8	18.4	70	6
SPB1	50	54.7	72.7	31.2	30.2	100	6
SPB1	60	78.0	100.9	49.4	49.3	100	6
SPB1	80	166.0	200.0	59.0	98.4	150	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.

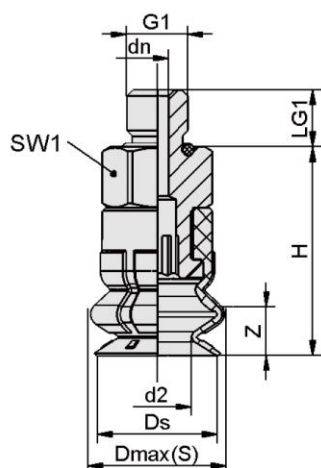
**The recommended hose diameter is based on a hose length of approx. 2 m

Ordering Data

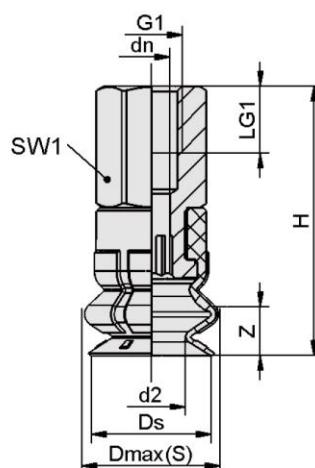
Type	Connection						suction cup	filter screen (Filter pore size: 280 µm)
	M5-AG	M5-IG	G1/8-AG	G1/8-IG	G1/4-AG	G1/4-IG		
SPB1-10-...	●	●	-	-	-	-	●	-
SPB1-15-...	-	-	●	●	-	-	●	-
SPB1-20-...	-	-	●	●	-	-	●	●
SPB1-25-...	-	-	●	●	-	-	●	●
SPB1-30-...	-	-	●	●	-	-	●	●
SPB1-40-...	-	-	-	-	●	●	●	●
SPB1-50-...	-	-	-	-	●	●	●	●
SPB1-60-...	-	-	-	-	●	●	●	●
SPB1-80-...	-	-	-	-	●	●	●	●



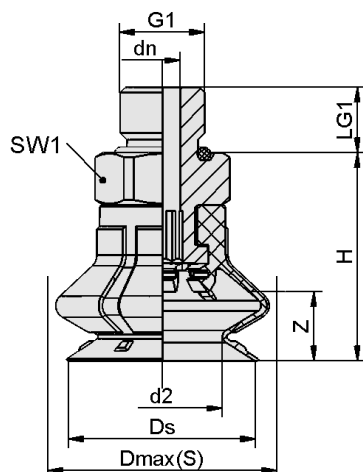
Design Data



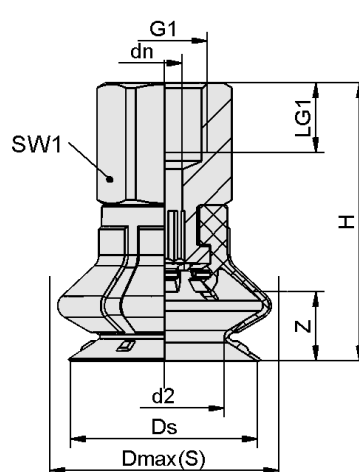
SPB1 10 - 15 AG



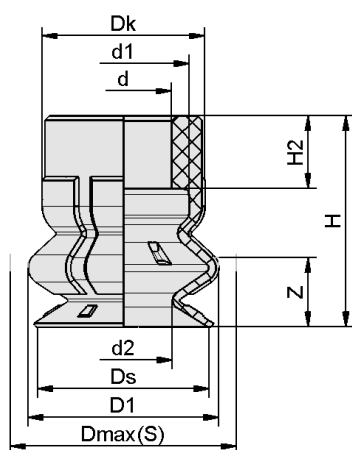
SPB1 10 - 15 IG



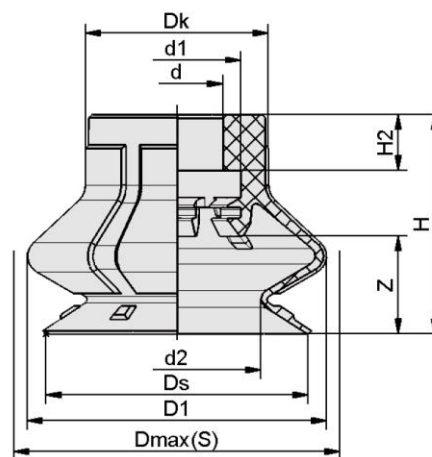
SPB1 20 - 80 AG



SPB1 20 - 80 IG



SPB1 10 - 15



SPB1 20 - 80



Type*	dn [mm]	d2 [mm]	Dmax(S) [mm]**	Ds [mm]	G1	H [mm]	LG1 [mm]	SW1 [mm]	Z (Stroke) [mm]
SPB1 10 ED-65 M5-AG	1.8	5.6	11.3	9.8	M5-M	18	4.7	8	4
SPB1 10 ED-65 M5-IG	3.1	5.6	11.3	9.8	M5-F	23	5.5	8	4
SPB1 15 ED-65 G1/8-AG	4.1	9.5	19.7	15.4	G1/8"-M	21	7.5	14	6
SPB1 15 ED-65 G1/8-IG	4.1	9.5	19.7	15.4	G1/8"-F	29	8.0	14	6
SPB1 20 ED-65 G1/8-AG	4.1	13.8	26.3	21.4	G1/8"-M	24	7.5	14	8
SPB1 20 ED-65 G1/8-IG	4.1	13.8	26.3	21.4	G1/8"-F	32	8.0	14	8
SPB1 25 ED-65 G1/8-AG	4.1	16.9	31.3	26.4	G1/8"-M	27	7.5	14	11
SPB1 25 ED-65 G1/8-IG	4.1	16.9	31.3	26.4	G1/8"-F	35	8.0	14	11
SPB1 30 ED-65 G1/8-AG	4.1	20.0	36.7	31.4	G1/8"-M	29	7.5	14	13
SPB1 30 ED-65 G1/8-IG	4.1	20.0	36.7	31.4	G1/8"-F	37	8.0	14	13
SPB1 40 ED-65 G1/4-AG	6.1	26.1	48.0	41.4	G1/4"-M	38	10.0	17	16
SPB1 40 ED-65 G1/4-IG	6.1	26.1	48.0	41.4	G1/4"-F	48	12.0	17	16
SPB1 50 ED-65 G1/4-AG	6.1	32.3	58.4	51.4	G1/4"-M	40	10.0	17	18
SPB1 50 ED-65 G1/4-IG	6.1	32.3	58.4	51.4	G1/4"-F	50	12.0	17	18
SPB1 60 ED-65 G1/4-AG	6.1	38.6	69.6	61.4	G1/4"-M	44	10.0	17	22
SPB1 60 ED-65 G1/4-IG	6.1	38.6	69.6	61.4	G1/4"-F	54	12.0	17	22
SPB1 80 ED-65 G1/4-AG	6.1	56.0	88.0	81.4	G1/4"-M	54	10.0	22	24
SPB1 80 ED-65 G1/4-IG	6.1	56.0	88.0	81.4	G1/4"-F	64	12.0	22	24

*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

Type*		d [mm]	d1 [mm]	d2 [mm]	D1 [mm]	Dk [mm]	Dmax(S) [mm]**	Ds [mm]	H [mm]	H2 [mm]	Z (Stroke) [mm]
SPB1	10	5.5	7.5	5.6	11.0	9.4	11.3	9.8	12.1	4.2	4.0
SPB1	15	7.5	10.5	9.5	18.4	15.1	19.7	15.4	15.0	4.6	6.0
SPB1	20	7.5	10.5	13.8	24.6	15.1	26.3	21.4	18.0	4.6	8.0
SPB1	25	7.5	10.5	16.9	29.0	15.1	31.3	26.4	21.0	4.6	11.0
SPB1	30	7.5	10.5	20.0	34.2	15.1	36.7	31.4	23.0	4.6	13.0
SPB1	40	11.0	17.5	26.1	44.6	21.6	48.0	41.4	30.0	7.0	16.0
SPB1	50	11.0	17.5	32.3	55.2	21.6	58.4	51.4	32.0	7.0	18.0
SPB1	60	11.0	17.5	38.6	65.7	21.6	69.6	61.4	36.0	7.0	22.0
SPB1	80	14.0	29.3	56.0	82.7	27.1	88.0	81.4	45.9	15.3	23.5

*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