



SPB4

Bellows Suction Cups

For packaging bags/soft bags

/shrink film use

Suction area (Ø) from 20 mm to 50 mm

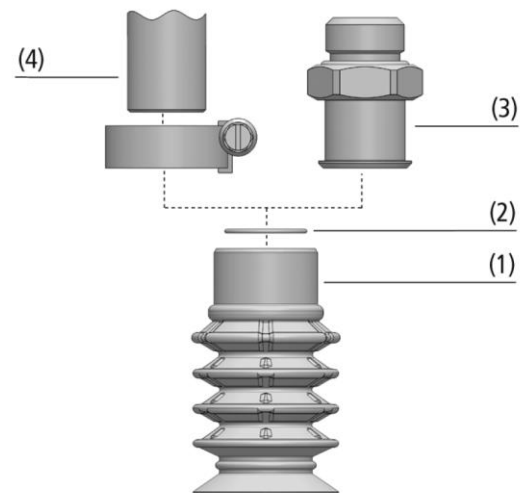


Applications

- Round bellows suction cup with 4.5 folds for handling of flexible products such as pouches and other plastic film packaging
- Process reliable gripping and handling of solid, powdery and liquid filled pouches
- High-speed packaging processes, particularly in conjunction with parallel kinematic robots

Design

- Bellows suction cup SPB4 (1) with 4.5 folds and soft, flexible sealing lip
- Specially reinforced suction bellows for additional stability
- Mounting via connection element SC (3). Alternatively direct attachment on 3/8" - or 1/2" pipe on the machine side and mounting with a hose clamp (4)
- All mounting elements with male thread include an integrated sealing ring
- Optional clip-in filter as pre-filter (2)
- Optional insert disc SPI for the lower suction fold avoids taping the foil





Product Highlights

- Thin, steep sealing lip with flow fins ideal for pouches and other flexible workpieces
- Flexibility of the sealing lip is not affected by compressed folds
- Reinforced main body and folds prevent collapse when suction cups are stretched under vacuum
- FDA compliant silicone SI allows direct food contact



Ordering Data

SPB4 **30** **SI-55** **G1/4-AG**
 ① ② ③

①Suction area ⁽¹⁾		②Material		③Connection	
Code	Diameter	Code	Material	Code	Connection
20	Ø21.4 mm	SI-55	Silicone(55±5 ShA) ■	none	no connection
30	Ø30.2 mm			G1/8-AG	G1/8(AG = male(M))
40	Ø40.5 mm			G1/8-IG	G1/8(IG = female (F))
50	Ø50.3 mm			G1/4-AG	G1/4-AG
				G1/4-IG	G1/4-IG
				G3/8-AG	G3/8-AG
				G3/8-IG	G3/8-IG
				G1/2-AG	G1/2-AG
				G1/2-IG	G1/2-IG

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



Technical Data

Type		Suction force at -200 mbar [N]	Suction force at -400 mbar [N]	Suction force (-600 mbar) [N]*	Pull-off force at -200 mbar [N]	Pull-off force at -400 mbar [N]	Volume [cm³]
SPB4	20	2.6	5.3	8	4.9	7	7.9
SPB4	30	5.3	10.6	16	9.9	13	15.7
SPB4	40	8.3	16.6	25	14.1	23	35.8
SPB4	50	16.5	33.0	50	22.0	37	64.6

*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.

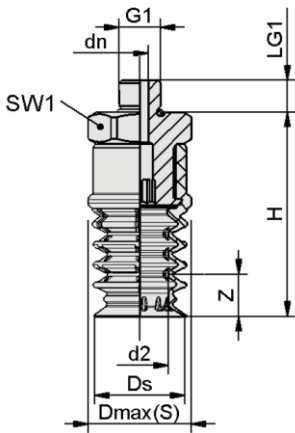
Ordering Data

Type	Connection							
	G1/8-AG	G1/8-IG	G1/4-AG	G1/4-IG	G3/8-AG	G3/8-IG	G1/2-AG	G1/2-IG
SPB4-20-...	10.01.06.03514	10.01.06.03517	10.01.06.03515	10.01.06.03518	10.01.06.03516	10.01.06.03519	-	-
SPB4-30-...	10.01.06.03520	10.01.06.03523	10.01.06.03521	10.01.06.03524	10.01.06.03522	10.01.06.03525	-	-
SPB4-40-...	10.01.06.03913	10.01.06.03914	10.01.06.03526	10.01.06.03529	10.01.06.03527	10.01.06.03530	10.01.06.03528	10.01.06.03531
SPB4-50-...	10.01.06.03915	10.01.06.03916	10.01.06.03532	10.01.06.03535	10.01.06.03533	10.01.06.03536	10.01.06.03534	10.01.06.03537

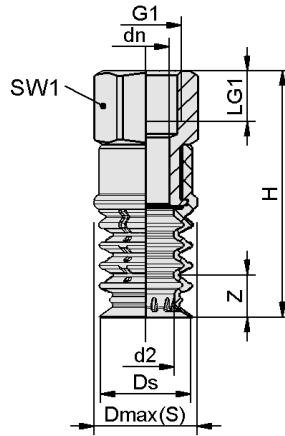
Type	suction cup	Optional attachment			
		filter screen : SIEB ⁽³⁾	Hose clamp : SSB	Pad Insert PE : SPI	Stabilization element : SPSE
SPB4-20-...	10.01.06.02588	10.07.01.00320	10.07.10.00002	10.01.06.02915	-
SPB4-30-...	10.01.06.02589	10.07.01.00320	10.07.10.00002	10.01.06.02855	10.01.06.02953
SPB4-40-...	10.01.06.02590	10.07.01.00321	10.07.10.00003	10.01.06.02856	10.01.06.02954
SPB4-50-...	10.01.06.02613	10.07.01.00321	10.07.10.00003	10.01.06.02916	-

(3) If you purchase both the vacuum suction cup and the filter screen simultaneously, they can be assembled together before shipping.

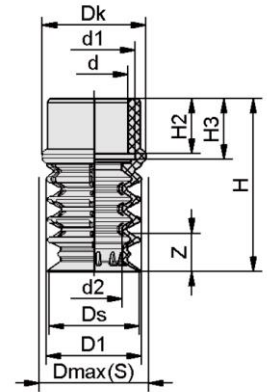
Design Data



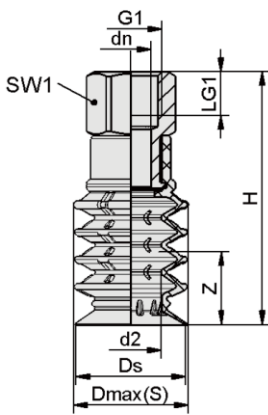
SPB4 20 AG



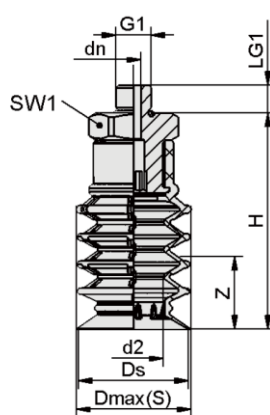
SPB4 20 IG



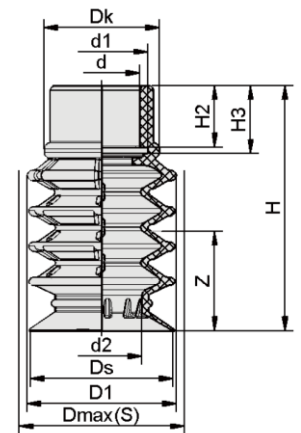
SPB4 20



SPB4 30 - 50 IG



SPB4 30 - 50 AG



SPB4 30 - 50

Type*	dn [mm]	d2 [mm]	Dmax(S) [mm]**	Ds [mm]	G1	H [mm]	LG1 [mm]	SW1 [mm]	Z (Stroke) [mm]
SPB4 20 SI-55 G1/8-AG	4.0	13.5	24.4	21.4	G1/8"-M	48.4	7.5	22	10
SPB4 20 SI-55 G1/8-IG	8.6	13.5	24.4	21.4	G1/8"-F	58.4	12.0	22	10
SPB4 20 SI-55 G1/4-AG	8.0	13.5	24.4	21.4	G1/4"-M	48.4	10.0	22	10
SPB4 20 SI-55 G1/4-IG	11.0	13.5	24.4	21.4	G1/4"-F	58.4	12.0	22	10
SPB4 20 SI-55 G3/8-AG	10.3	13.5	24.4	21.4	G3/8"-M	48.4	10.0	22	10
SPB4 20 SI-55 G3/8-IG	11.0	13.5	24.4	21.4	G3/8"-F	58.4	12.0	22	10
SPB4 30 SI-55 G1/8-AG	4.0	17.0	31.5	30.2	G1/8"-M	59.5	7.5	22	20
SPB4 30 SI-55 G1/8-IG	8.6	17.0	31.5	30.2	G1/8"-F	69.5	12.0	22	20
SPB4 30 SI-55 G1/4-AG	8.0	17.0	31.5	30.2	G1/4"-M	59.5	10.0	22	20
SPB4 30 SI-55 G1/4-IG	11.0	17.0	31.5	30.2	G1/4"-F	69.5	12.0	22	20
SPB4 30 SI-55 G3/8-AG	10.3	17.0	31.5	30.2	G3/8"-M	59.5	10.0	22	20
SPB4 30 SI-55 G3/8-IG	11.0	17.0	31.5	30.2	G3/8"-F	69.5	12.0	22	20
SPB4 40 SI-55 G1/8-AG	4.0	23.0	41.5	40.5	G1/8"-M	80.6	7.5	27	27
SPB4 40 SI-55 G1/8-IG	8.6	23.0	41.5	40.5	G1/8"-F	87.1	12.0	27	27
SPB4 40 SI-55 G1/4-AG	8.0	23.0	41.5	40.5	G1/4"-M	73.1	10.0	27	27
SPB4 40 SI-55 G1/4-IG	11.4	23.0	41.5	40.5	G1/4"-F	87.1	12.0	27	27
SPB4 40 SI-55 G3/8-AG	10.3	23.0	41.5	40.5	G3/8"-M	73.1	10.0	27	27
SPB4 40 SI-55 G3/8-IG	15.0	23.0	41.5	40.5	G3/8"-F	87.1	12.0	27	27
SPB4 40 SI-55 G1/2-AG	15.0	23.0	41.5	40.5	G1/2"-M	73.1	14.0	27	27
SPB4 40 SI-55 G1/2-IG	15.0	23.0	41.5	40.5	G1/2"-F	87.1	16.0	27	27
SPB4 50 SI-55 G1/8-AG	4.0	30.0	51.5	50.3	G1/8"-M	91.0	7.5	27	37
SPB4 50 SI-55 G1/8-IG	8.6	30.0	51.5	50.3	G1/8"-F	97.5	12.0	27	37
SPB4 50 SI-55 G1/4-AG	8.0	30.0	51.5	50.3	G1/4"-M	83.5	10.0	27	37
SPB4 50 SI-55 G1/4-IG	11.4	30.0	51.5	50.3	G1/4"-F	97.5	12.0	27	37
SPB4 50 SI-55 G3/8-AG	10.3	30.0	51.5	50.3	G3/8"-M	83.5	10.0	27	37
SPB4 50 SI-55 G3/8-IG	15.0	30.0	51.5	50.3	G3/8"-F	97.5	12.0	27	37
SPB4 50 SI-55 G1/2-AG	15.0	30.0	51.5	50.3	G1/2"-M	83.5	14.0	27	37

Type*	d [mm]	d1 [mm]	d2 [mm]	D1 [mm]	Dk [mm]	Dmax(S) [mm]**	Ds [mm]	H [mm]	H2 [mm]	H3 [mm]	Z (Stroke) [mm]	
SPB4	20	16.0	19.6	13.5	22.0	24.4	24.4	21.4	41.0	13.0	14.4	10.0
SPB4	30	16.0	19.6	17.0	31.0	24.4	31.5	30.2	52.0	13.0	14.4	20.0
SPB4	40	20.0	24.8	23.0	41.0	31.0	41.5	40.5	65.6	14.0	16.0	27.0
SPB4	50	20.0	24.8	30.0	51.0	31.0	51.5	50.3	76.0	14.0	16.0	36.5

*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