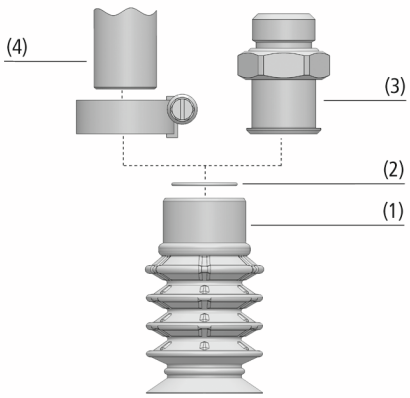
Bellows Suction Cups SPB4 (4.5 Folds)

Suction area (Ø) from 20 mm to 50 mm

PACKAGING ELECTRONICS



Bellows Suction Cups SPB4 (4.5 Folds)



System design Bellows Suction Cups SPB4 (4.5 Folds)



Bellows suction cups SPB4 being used for handling foil-wrapped products

Suitability for industry specific applications

Application

- Round bellows suction cup with 4.5 folds for handling rigid pouch packagings
- Process safe gripping and handling of bulging bags

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 SPI insertion disc for the lower suction fold to prevent film entrapment

Product highlights

- Thin, steep sealing lip with flow fins ideal for rigid, bulging pouch packagings
- Reinforced main body and folds prevent collapse when suction cup is stretched under vacuum
- FDA-compliant silicone SI allows direct food contact

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Bellows Suction Cups SPB4 (4.5 Folds)

Suction area (Ø) from 20 mm to 50 mm

Designation code Bellows Suction Cups SPB4 (4.5 Folds)

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

1 – Abbreviated designation

Code	Version
SPB4	4.5 folds

2 – Suction area

Code	Diameter in mm
20…50	ø 20 to 50

3 – Material

Code	Material
SI-55	Silicone

4 – Connection

Code	Connection
G1/8-AG	G1/8-AG (AG = male (M))
G1/8-IG	G1/8-IG (IG = female (F))
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

Suction cup SPB4 (elastomer part + connection element) is delivered assembled. The assembly consists of:

- Suction cup of type SPB4 – elastomer part, available in various diameters
- Connection element of type SC – available with various threads

Available spare parts: suction cup SPB4, connection element (Schmalz-Connector)

Available accessories: filter screen (sieve, round), hose clamp, pad insert

Ordering data Bellows Suction Cups SPB4 (4.5 Folds)

Type		Vacuum 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

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Bellows Suction Cups SPB4 (4.5 Folds)

Suction area (Ø) from 20 mm to 50 mm

Ordering data Spare parts Bellows Suction Cups SPB4 (4.5 Folds)

Type		Spare parts		Part no.
SPB4	20	Bellows suction cup (round)	SPB4 20 SI-55 SC080	10.01.06.02588
SPB4	30	Bellows suction cup (round)	SPB4 30 SI-55 SC080	10.01.06.02589
SPB4	40	Bellows suction cup (round)	SPB4 40 SI-55 SC090	10.01.06.02590
SPB4	40	-	-	-
SPB4	50	Bellows suction cup (round)	SPB4 50 SI-55 SC090	10.01.06.02613

Type*	Spare parts		Part no.
SPB4 20 SI-55 G1/8-AG	Schmalz-Connector	SC 080 G1/8-AG	10.01.06.03142
SPB4 20 SI-55 G1/8-IG	Schmalz-Connector	SC 080 G1/8-IG	10.01.06.03270
SPB4 20 SI-55 G1/4-AG	Schmalz-Connector	SC 080 G1/4-AG	10.01.06.03268
SPB4 20 SI-55 G1/4-IG	Schmalz-Connector	SC 080 G1/4-IG	10.01.06.03271
SPB4 20 SI-55 G3/8-AG	Schmalz-Connector	SC 080 G3/8-AG	10.01.06.02593
SPB4 20 SI-55 G3/8-IG	Schmalz-Connector	SC 080 G3/8-IG	10.01.06.02594
SPB4 30 SI-55 G1/8-AG	Schmalz-Connector	SC 080 G1/8-AG	10.01.06.03142
SPB4 30 SI-55 G1/8-IG	Schmalz-Connector	SC 080 G1/8-IG	10.01.06.03270
SPB4 30 SI-55 G1/4-AG	Schmalz-Connector	SC 080 G1/4-AG	10.01.06.03268
SPB4 30 SI-55 G1/4-IG	Schmalz-Connector	SC 080 G1/4-AG	10.01.06.03268
SPB4 30 SI-55 G3/8-AG	Schmalz-Connector	SC 080 G3/8-AG	10.01.06.02593
SPB4 30 SI-55 G3/8-IG	Schmalz-Connector	SC 080 G3/8-IG	10.01.06.02594
SPB4 40 SI-55 G1/4-AG	Schmalz-Connector	SC 090 G1/4-AG	10.01.06.02793
SPB4 40 SI-55 G1/4-IG	Schmalz-Connector	SC 090 G1/4-IG	10.01.06.03273
SPB4 40 SI-55 G3/8-AG	Schmalz-Connector	SC 090 G3/8-AG	10.01.06.02791
SPB4 40 SI-55 G3/8-IG	Schmalz-Connector	SC 090 G3/8-IG	10.01.06.03274
SPB4 40 SI-55 G1/2-AG	Schmalz-Connector	SC 090 G1/2-AG	10.01.06.02595
SPB4 40 SI-55 G1/2-IG	-	-	-
SPB4 50 SI-55 G1/4-AG	Schmalz-Connector	SC 090 G1/4-AG	10.01.06.02793
SPB4 50 SI-55 G1/4-IG	Schmalz-Connector	SC 090 G1/4-IG	10.01.06.03273
SPB4 50 SI-55 G3/8-AG	Schmalz-Connector	SC 090 G3/8-AG	10.01.06.02791
SPB4 50 SI-55 G3/8-IG	Schmalz-Connector	SC 090 G3/8-IG	10.01.06.03274
SPB4 50 SI-55 G1/2-AG	Schmalz-Connector	SC 090 G1/2-AG	10.01.06.02595
SPB4 50 SI-55 G1/2-IG	Schmalz-Connector	SC 090 G1/2-IG	10.01.06.02596

*Additional material specifications at beginning of the section "Vacuum Suction Cups"

Ordering data Accessories Bellows Suction Cups SPB4 (4.5 Folds)

Type		Sieve	Hose clamp	Cup insert PE	Stabilization element
SPB4	20	-	10.07.10.00002	10.01.06.02915	-
SPB4	30	-	10.07.10.00002	10.01.06.02855	10.01.06.02953
SPB4	40	-	10.07.10.00003	10.01.06.02856	10.01.06.02954
SPB4	50	-	10.07.10.00003	10.01.06.02916	-

Technical data Bellows Suction Cups SPB4 (4.5 Folds)

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

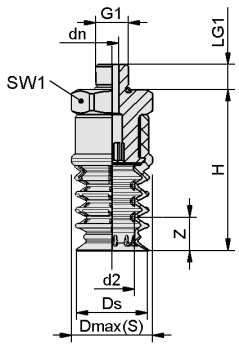
*The specified suction forces are theoretical values at a vacuum of -0.6 bar and with a smooth, dry workpiece surface - they do not include a safety factor

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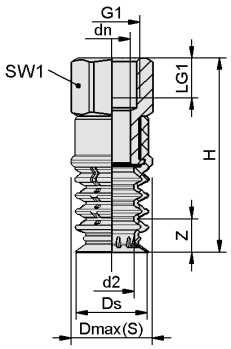
Bellows Suction Cups SPB4 (4.5 Folds)

Suction area (Ø) from 20 mm to 50 mm

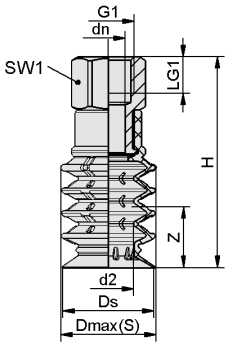
Design data Bellows Suction Cups SPB4 (4.5 Folds)



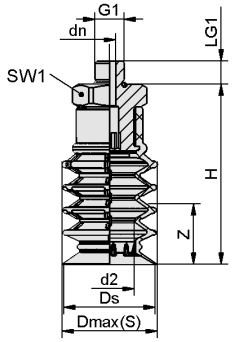
SPB4 20 AG



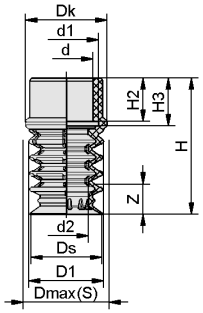
SPB4 20 IG



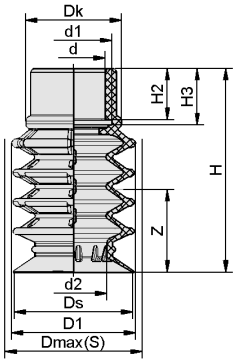
SPB4 30 - 50 IG



SPB4 30 - 50 AG



SPB4 20



SPB4 30 - 50

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Bellows Suction Cups SPB4 (4.5 Folds)

Suction area (Ø) from 20 mm to 50 mm

Design data Bellows Suction Cups SPB4 (4.5 Folds)

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

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Bellows Suction Cups SPB4 (4.5 Folds)

Suction area (Ø) from 20 mm to 50 mm

Type*	dn [mm]	d2 [mm]	Dmax(S) [mm]**	Ds [mm]	G1	H [mm]	LG1 [mm]	SW1 [mm]	Z (Stroke) [mm]
SPB4 50 SI-55 G1/2-IG	15.0	30.0	51.5	50.3	G1/2"-F	97.5	16.0	27	37

*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]	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

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