

## Bellows Suction Cups SPB4f (4.5 Folds)

Suction area (Ø) from 30 mm to 50 mm



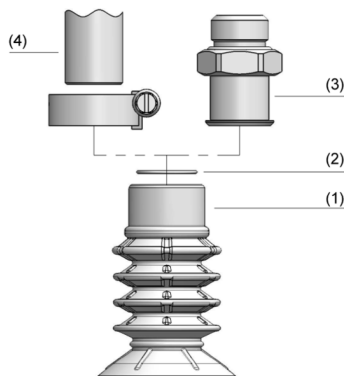
### Suitability for industry specific applications

#### Application

- Round bellows suction cup with 4.5 folds for handling rigid bags and stand-up packaging
- Process safe gripping and handling of liquid, solid or powder filled bags and packaging with a high filling level
- Use in fast packaging processes, particularly together with delta robots (case packers and pick-and-place applications)



Bellows Suction Cups SPB4f (4.5 Folds)



#### Design

- Bellows suction cup SPB4f with 4.5 folds (1) as well as soft, flexible sealing lip with segmented flow fins and integrated bag stabilizer
- Very large shaft diameter for high volume flow rates
- Specially reinforced suction bellows for additional stability
- Mounting via connection element SC (3); alternatively direct attachment on 3/8" - or 1/2" pipe (4) on the machine side and mounting with a hose clamp
- All connection elements SC with male thread are equipped with an integrated sealing ring
- Optional clip-in filter as pre-filter (2)

System design Bellows Suction Cups SPB4f (4.5 Folds)



Bellows suction cups SPB4f when handling pouches

#### Product highlights

- FDA compliant silicone SI allows direct food contact
- Integrated bag stabilizer prevents even thin and soft films from being sucked in
- Reinforced main body and folds for secure gripping under high lateral loads
- Large nominal diameter enables high flow rates for short cycle times

## Bellows Suction Cups SPB4f (4.5 Folds)

Suction area (Ø) from 30 mm to 50 mm

### Designation code Bellows Suction Cups SPB4f (4.5 Folds)

<b>SPB4f</b>	–	<b>40</b>	–	<b>SI-55</b>	–	<b>G1/8-IG</b>
1		2		3		4

#### 1 – Abbreviated designation

Code	Version
SPB4f	4.5 folds

#### 2 – Suction area

Code	Diameter in mm
30...50	ø 30 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 SPB4f (elastomer part + connection element) with integrated bag stabilizer is delivered assembled. The assembly consists of:

- Suction cup of type SPB4f – elastomer part, available in various diameters
- Connection element of type SC – available with various threads

Available spare parts: suction cup SPB4f, Schmalz-Connector

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

### Ordering data Bellows Suction Cups SPB4f (4.5 Folds)

Type	Part no.
SPB4f 30 SI-55 G1/8-AG	10.01.06.03538
SPB4f 30 SI-55 G1/8-IG	10.01.06.03541
SPB4f 30 SI-55 G1/4-AG	10.01.06.03539
SPB4f 30 SI-55 G1/4-IG	10.01.06.03542
SPB4f 30 SI-55 G3/8-AG	10.01.06.03540
SPB4f 30 SI-55 G3/8-IG	10.01.06.03543
SPB4f 40 SI-55 G1/8-AG	10.01.06.03544
SPB4f 40 SI-55 G1/8-IG	10.01.06.03547
SPB4f 40 SI-55 G1/4-AG	10.01.06.03545
SPB4f 40 SI-55 G1/4-IG	10.01.06.03548
SPB4f 40 SI-55 G3/8-AG	10.01.06.03546
SPB4f 40 SI-55 G3/8-IG	10.01.06.03549
SPB4f 50 SI-55 G1/8-AG	10.01.06.03550
SPB4f 50 SI-55 G1/8-IG	10.01.06.03554
SPB4f 50 SI-55 G1/4-AG	10.01.06.03551
SPB4f 50 SI-55 G1/4-IG	10.01.06.03555
SPB4f 50 SI-55 G3/8-AG	10.01.06.03552
SPB4f 50 SI-55 G3/8-IG	10.01.06.03556
SPB4f 50 SI-55 G1/2-AG	10.01.06.03553
SPB4f 50 SI-55 G1/2-IG	10.01.06.03557

## Bellows Suction Cups SPB4f (4.5 Folds)

Suction area ( $\emptyset$ ) from 30 mm to 50 mm

### Ordering data Spare parts Bellows Suction Cups SPB4f (4.5 Folds)

Type			Suction cup material:	
			Silicone SI	Silicone SI-HD
SPB4f	30	SC080	10.01.06.03264	10.01.06.03563
SPB4f	40	SC080	10.01.06.03265	10.01.06.03448
SPB4f	50	SC090	10.01.06.03266	10.01.06.03564

Type	Spare parts		Part no.
SPB4f 30 SI-55 G1/8-AG	Schmalz-Connector	SC 080 G1/8-AG	10.01.06.03142
SPB4f 30 SI-55 G1/8-IG	Schmalz-Connector	SC 080 G1/8-IG	10.01.06.03270
SPB4f 30 SI-55 G1/4-AG	Schmalz-Connector	SC 080 G1/4-AG	10.01.06.03268
SPB4f 30 SI-55 G1/4-IG	Schmalz-Connector	SC 080 G1/4-IG	10.01.06.03271
SPB4f 30 SI-55 G3/8-AG	Schmalz-Connector	SC 080 G3/8-AG	10.01.06.02593
SPB4f 30 SI-55 G3/8-IG	Schmalz-Connector	SC 080 G3/8-IG	10.01.06.02594
SPB4f 40 SI-55 G1/8-AG	Schmalz-Connector	SC 080 G1/8-AG	10.01.06.03142
SPB4f 40 SI-55 G1/8-IG	Schmalz-Connector	SC 080 G1/8-IG	10.01.06.03270
SPB4f 40 SI-55 G1/4-AG	Schmalz-Connector	SC 080 G1/4-AG	10.01.06.03268
SPB4f 40 SI-55 G1/4-IG	Schmalz-Connector	SC 080 G1/4-IG	10.01.06.03271
SPB4f 40 SI-55 G3/8-AG	Schmalz-Connector	SC 080 G3/8-AG	10.01.06.02593
SPB4f 40 SI-55 G3/8-IG	Schmalz-Connector	SC 080 G3/8-IG	10.01.06.02594
SPB4f 50 SI-55 G1/8-AG	Schmalz-Connector	SC 090 G1/8-AG	10.01.06.03269
SPB4f 50 SI-55 G1/8-IG	Schmalz-Connector	SC 090 G1/8-IG	10.01.06.03272
SPB4f 50 SI-55 G1/4-AG	Schmalz-Connector	SC 090 G1/4-AG	10.01.06.02793
SPB4f 50 SI-55 G1/4-IG	Schmalz-Connector	SC 090 G1/4-IG	10.01.06.03273
SPB4f 50 SI-55 G3/8-AG	Schmalz-Connector	SC 090 G3/8-AG	10.01.06.02791
SPB4f 50 SI-55 G3/8-IG	Schmalz-Connector	SC 090 G3/8-IG	10.01.06.03274
SPB4f 50 SI-55 G1/2-AG	Schmalz-Connector	SC 090 G1/2-AG	10.01.06.02595
SPB4f 50 SI-55 G1/2-IG	Schmalz-Connector	SC 090 G1/2-IG	10.01.06.02596

### Ordering data Accessories Bellows Suction Cups SPB4f (4.5 Folds)

Type	Accessories		Part no.
SPB4f	30	Hose clamp	SSB 16-27 ST-VZ
SPB4f	40	Hose clamp	SSB 16-27 ST-VZ
SPB4f	50	Hose clamp	SSB 20-32 ST-VZ

Type	Accessories		Part no.
SPB4f	30	Hose clamp	SSB 16-27 ST-VZ
SPB4f	40	Hose clamp	SSB 16-27 ST-VZ
SPB4f	50	Hose clamp	SSB 20-32 ST-VZ

### Technical data Bellows Suction Cups SPB4f (4.5 Folds)

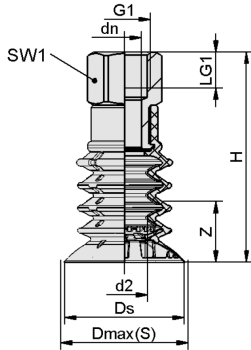
Type	Suction force at -200 mbar [N]	Suction force at -400 mbar [N]	Suction force (-600 mbar) [N]*	Volume [cm <sup>3</sup> ]
SPB4f	30	4.3	8.5	12.80
SPB4f	40	6.8	13.6	20.40
SPB4f	50	13.7	27.3	41.00

\*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

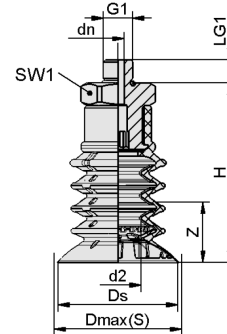
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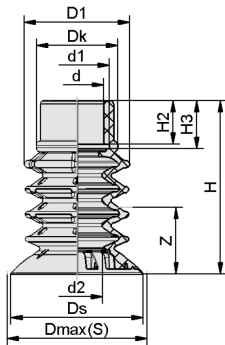
### Design data Bellows Suction Cups SPB4f (4.5 Folds)



SPB4f IG



SPB4f AG



SPB4f

## Bellows Suction Cups SPB4f (4.5 Folds)

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### Design data Bellows Suction Cups SPB4f (4.5 Folds)

Type*	dn [mm]	d2 [mm]	Dmax(S) [mm]**	Ds [mm]	G1	H [mm]	LG1 [mm]	SW1 [mm]	Z (Stroke) [mm]	Artikelnummer
SPB4f 30 SI-55 G1/8-AG	4.0	12.3	32.0	30.7	G1/8"-M	47.5	7.5	22	11	10.01.06.03538
SPB4f 30 SI-55 G1/8-IG	8.6	12.3	32.0	30.7	G1/8"-F	57.5	12.0	22	11	10.01.06.03541
SPB4f 30 SI-55 G1/4-AG	8.0	12.3	32.0	30.7	G1/4"-M	47.5	10.0	22	11	10.01.06.03539
SPB4f 30 SI-55 G1/4-IG	11.0	12.3	32.0	30.7	G1/4"-F	57.5	12.0	22	11	10.01.06.03542
SPB4f 30 SI-55 G3/8-AG	10.3	12.3	32.0	30.7	G3/8"-M	47.5	10.0	22	11	10.01.06.03540
SPB4f 30 SI-55 G3/8-IG	11.0	12.3	32.0	30.7	G3/8"-F	57.5	12.0	22	11	10.01.06.03543
SPB4f 40 SI-55 G1/8-AG	4.0	15.3	42.0	39.7	G1/8"-M	59.5	7.5	22	18	10.01.06.03544
SPB4f 40 SI-55 G1/8-IG	8.6	15.3	42.0	39.7	G1/8"-F	69.5	12.0	22	18	10.01.06.03547
SPB4f 40 SI-55 G1/4-AG	8.0	15.3	42.0	39.7	G1/4"-M	59.5	10.0	22	18	10.01.06.03545
SPB4f 40 SI-55 G1/4-IG	11.0	15.3	42.0	39.7	G1/4"-F	69.5	12.0	22	18	10.01.06.03548
SPB4f 40 SI-55 G3/8-AG	10.3	15.3	42.0	39.7	G3/8"-M	59.5	10.0	22	18	10.01.06.03546
SPB4f 40 SI-55 G3/8-IG	11.0	15.3	42.0	39.7	G3/8"-F	69.5	12.0	22	18	10.01.06.03549
SPB4f 50 SI-55 G1/8-AG	4.0	21.0	52.0	49.7	G1/8"-M	72.5	7.5	27	26	10.01.06.03550
SPB4f 50 SI-55 G1/8-IG	8.6	21.0	52.0	49.7	G1/8"-F	86.5	12.0	27	26	10.01.06.03554
SPB4f 50 SI-55 G1/4-AG	8.0	21.0	52.0	49.7	G1/4"-M	72.5	10.0	27	26	10.01.06.03551
SPB4f 50 SI-55 G1/4-IG	11.4	21.0	52.0	49.7	G1/4"-F	86.5	12.0	27	26	10.01.06.03555
SPB4f 50 SI-55 G3/8-AG	10.3	21.0	52.0	49.7	G3/8"-M	72.5	10.0	27	26	10.01.06.03552
SPB4f 50 SI-55 G3/8-IG	15.0	21.0	52.0	49.7	G3/8"-F	86.5	12.0	27	26	10.01.06.03556
SPB4f 50 SI-55 G1/2-AG	15.0	21.0	52.0	49.7	G1/2"-M	72.5	14.0	27	26	10.01.06.03553
SPB4f 50 SI-55 G1/2-IG	15.0	21.0	52.0	49.7	G1/2"-F	86.5	16.0	27	26	10.01.06.03557

\*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]	
SPB4f	30	16.0	19.6	12.3	22.4	24.4	32	30.7	40.0	13.0	14.4	11
SPB4f	40	16.0	19.6	15.3	31.6	24.4	42	39.7	52.0	13.0	14.4	18
SPB4f	50	20.0	24.8	21.0	41.6	31.0	52	49.7	65.0	14.0	16.0	26

\*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