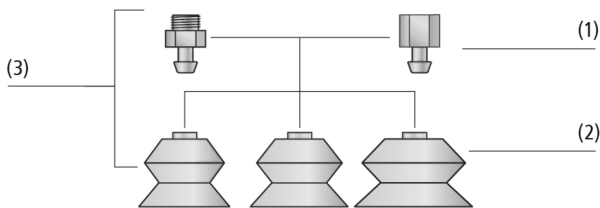


## Bellows Suction Cups FSGA (1.5 Folds)

Suction area ( $\varnothing$ ) from 2 mm to 78 mm



Bellows Suction Cups FSGA (1.5 Folds)



System Design Bellows Suction Cups FSGA (1.5 Folds)



Bellows suction cups FSGA being used for handling cardboard boxes

### Suitability for Industry Specific Applications

#### Applications

- Round bellows suction cup with 1.5 folds for handling of extremely sensitive workpieces (optimum damping effect due to folds)
- Handling of workpieces with uneven surfaces, such as pipes (folds permit optimal adaptation to concave and convex surfaces)

#### Design

- Robust and wear-resistant suction cup FSGA (3) with single sealing lip, consisting of suction cup FGA (2) with 1.5 folds and connection nipple (1)
- All nipples are plugged in
- Suction cups with a diameter of 25 mm or more with supports on the bottom
- With each nipple family, the replacement cups and nipples can be combined as desired

#### Product Highlights

- Wide range of diameters and materials for the most varied workpieces
- Soft, tapered sealing lip adapts optimally to curved surfaces or uneven surfaces
- Effective damping of the workpieces during placement by 1.5 folds and support surfaces on the underside (from diameter 25 mm)
- High stiffness of the upper fold provides stability under horizontal forces and high accelerations

## Bellows Suction Cups FSGA (1.5 Folds)

Suction area (Ø) from 2 mm to 78 mm

### Designation Code Bellows Suction Cups FSGA (1.5 Folds)

<b>FSGA</b>	-	<b>14</b>	-	<b>HT1-60</b>	-	<b>G1/8-IG</b>
1		2		3		4

#### 1 – Abbreviated designation

Code	Version
FSGA	1.5 folds

#### 2 – Suction area

Code	Diameter in mm
4...78	ø 4 to 78

#### 3 – Material

Code	Material
HT1-60	High temperature material
NBR-55	Nitrile caoutchuc
NK-45	Natural rubber
SI-55	Silicone
SI-HD-65	Silicone
SI-MD-55	Silicone

#### 4 – Connection

Code	Connection
M3-AG	M3-AG (AG = male (M))
M5-AG	M5-AG
M5-IG	M5-IG (IG = female (F))
G1/8-AG	G1/8-AG
G1/8-IG	G1/8-IG
G1/4-AG	G1/4-AG
G1/4-IG	G1/4-IG

Suction cup FSGA (elastomer part + connection nipple) is delivered unassembled (diameters of 33 mm and more are assembled). The delivery consists of:

























































- Suction cup of type FGA – elastomer part, available in various diameters and materials
- Connection nipple of type SA-NIP – available with various threads

Available spare parts: suction cup FGA, connection nipple SA-NIP


















## Bellows Suction Cups FSGA (1.5 Folds)

Suction area (Ø) from 2 mm to 78 mm

### Ordering Data Bellows Suction Cups FSGA (1.5 Folds)














Type			Suction cup material with ShA: *			
			HT1-60	NBR-55	NBR-ESD-55	NK-45
FSGA	2	M3-AG	10.01.06.04523	10.01.06.04521 	10.01.06.04524	-
FSGA	4	M3-AG	10.01.06.04145	10.01.06.04143 	10.01.06.04147	-
FSGA	6	M5-AG	10.01.06.02996 	10.01.06.02994 	10.01.06.04317	-
FSGA	6	M5-IG	10.01.06.03000 	10.01.06.02998 	10.01.06.04318	-
FSGA	11	M5-AG	10.01.06.01227 	10.01.06.00076 	10.01.06.04319	10.01.06.00406
FSGA	11	G1/8-AG	10.01.06.01226 	10.01.06.00075 	10.01.06.04320	10.01.06.00408
FSGA	11	G1/8-IG	10.01.06.01232 	10.01.06.00061 	10.01.06.04321	10.01.06.00407
FSGA	14	M5-AG	10.01.06.00933 	10.01.06.00379 	10.01.06.04322	10.01.06.00385
FSGA	14	G1/8-AG	10.01.06.00932 	10.01.06.00381 	10.01.06.04323	10.01.06.00387
FSGA	14	G1/8-IG	10.01.06.00948 	10.01.06.00380 	10.01.06.04324	10.01.06.00386
FSGA	16	M5-AG	10.01.06.01229 	10.01.06.00078 	10.01.06.04479	10.01.06.00409
FSGA	16	G1/8-AG	10.01.06.01228 	10.01.06.00077 	10.01.06.04480	10.01.06.00411
FSGA	16	G1/8-IG	10.01.06.01233 	10.01.06.00062 	10.01.06.04481	10.01.06.00410
FSGA	20	M5-AG	10.01.06.00937 	10.01.06.00388 	10.01.06.04325	10.01.06.00394
FSGA	20	G1/8-AG	10.01.06.00936 	10.01.06.00390 	10.01.06.04326	10.01.06.00396
FSGA	20	G1/8-IG	10.01.06.00952 	10.01.06.00389 	10.01.06.04327	10.01.06.00395
FSGA	22	M5-AG	10.01.06.01231 	10.01.06.00080 	10.01.06.04482	10.01.06.00412
FSGA	22	G1/8-AG	10.01.06.01230 	10.01.06.00079 	10.01.06.04483	10.01.06.00414
FSGA	22	G1/8-IG	10.01.06.01234 	10.01.06.00063 	10.01.06.04484	10.01.06.00413
FSGA	25	G1/8-AG	10.01.06.00940 	10.01.06.00399 	10.01.06.04485	10.01.06.00405
FSGA	25	G1/8-IG	10.01.06.00956 	10.01.06.00398 	10.01.06.04486	10.01.06.00404
FSGA	33	G1/4-AG	10.01.06.00941 	10.01.06.00081 	10.01.06.04487	10.01.06.00330
FSGA	33	G1/4-IG	10.01.06.00957 	10.01.06.00064 	10.01.06.04488	10.01.06.00415
FSGA	43	G1/4-AG	10.01.06.00942 	10.01.06.00082 	-	10.01.06.00418
FSGA	43	G1/4-IG	10.01.06.00958 	10.01.06.00065 	-	10.01.06.00417
FSGA	53	G1/4-AG	10.01.06.00943 	10.01.06.00083 	-	10.01.06.00326
FSGA	53	G1/4-IG	10.01.06.00977 	10.01.06.00066 	-	10.01.06.00419
FSGA	63	G1/4-AG	10.01.06.02476 	10.01.06.00685 	-	10.01.06.00687
FSGA	63	G1/4-IG	10.01.06.02477 	10.01.06.00691 	-	10.01.06.00693
FSGA	78	G1/4-AG	10.01.06.02478	10.01.06.00084	-	10.01.06.00340
FSGA	78	G1/4-IG	10.01.06.02479	10.01.06.00067	-	10.01.06.00421

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

Type			Suction cup material with ShA: *		
			SI-55	SI-HD-65	SI-MD-55
FSGA	2	M3-M	10.01.06.04522 	-	-
FSGA	4	M3-M	10.01.06.04144 	-	-
FSGA	6	M5-M	10.01.06.02995 	10.01.06.04175	-
FSGA	6	M5-F	10.01.06.02999 	10.01.06.04174	-
FSGA	8	M3-M	10.01.06.05728 	10.01.06.05747	-
FSGA	11	M5-M	10.01.06.00086 	10.01.06.04176	10.01.06.04193
FSGA	11	G1/8"-M	10.01.06.00085 	10.01.06.04177	10.01.06.04194
FSGA	11	G1/8"-F	10.01.06.00068 	10.01.06.04178	10.01.06.04195
FSGA	14	M5-M	10.01.06.00382 	10.01.06.04179	10.01.06.04196
FSGA	14	G1/8"-M	10.01.06.00384 	10.01.06.04180	10.01.06.04197
FSGA	14	G1/8"-F	10.01.06.00383 	10.01.06.04181	10.01.06.04198
FSGA	16	M5-M	10.01.06.00088 	10.01.06.04182	10.01.06.04199
FSGA	16	G1/8"-M	10.01.06.00087 	10.01.06.04183	10.01.06.04200
FSGA	16	G1/8"-F	10.01.06.00069 	10.01.06.04184	10.01.06.04201
FSGA	20	M5-M	10.01.06.00391 	10.01.06.04185	10.01.06.04202
FSGA	20	G1/8"-M	10.01.06.00393 	10.01.06.04186	10.01.06.04203
FSGA	20	G1/8"-F	10.01.06.00392 	10.01.06.04187	10.01.06.04204

## Bellows Suction Cups FSGA (1.5 Folds)

Suction area (Ø) from 2 mm to 78 mm

Type			Suction cup material with ShA: *		
			SI-55	SI-HD-65	SI-MD-55
FSGA	22	M5-M	10.01.06.00090 	10.01.06.04188	10.01.06.04205
FSGA	22	G1/8"-M	10.01.06.00089 	10.01.06.04189	10.01.06.04206
FSGA	22	G1/8"-F	10.01.06.00070 	10.01.06.04190	10.01.06.04207
FSGA	25	G1/8"-M	10.01.06.00402 	10.01.06.04191	10.01.06.04208
FSGA	25	G1/8"-F	10.01.06.00401 	10.01.06.04192	10.01.06.04209
FSGA	33	G1/4"-M	10.01.06.00091 	-	10.01.06.04210
FSGA	33	G1/4"-F	10.01.06.00071 	-	10.01.06.04211
FSGA	43	G1/4"-M	10.01.06.00092 	-	-
FSGA	43	G1/4"-F	10.01.06.00072 	-	-
FSGA	53	G1/4"-M	10.01.06.00093 	-	-
FSGA	53	G1/4"-F	10.01.06.00073 	-	-
FSGA	63	G1/4"-M	10.01.06.00686 	-	-
FSGA	63	G1/4"-F	10.01.06.00692 	-	-
FSGA	78	G1/4"-M	10.01.06.00094	-	-
FSGA	78	G1/4"-F	10.01.06.00074	-	-

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

# Bellows Suction Cups FSGA (1.5 Folds)

Suction area (Ø) from 2 mm to 78 mm

## Ordering Data Spare Parts Bellows Suction Cups FSGA (1.5 Folds)

Type	Suction cup material with ShA: *						
	HT1-60	NBR-55	NBR-ESD-55	NK-45	SI-55	SI-HD-65	SI-MD-55
FGA 2	10.01.06.04519	10.01.06.04231	10.01.06.04520	-	10.01.06.04518	-	-
FGA 4	10.01.06.04093	10.01.06.04066	10.01.06.04095	-	10.01.06.04092	-	-
FGA 6	10.01.06.02603	10.01.06.02981	10.01.06.04135	10.01.06.02604	10.01.06.01571	10.01.06.03442	-
FGA 8	-	-	-	-	10.01.06.05253	-	-
- 8	-	-	-	-	-	10.01.06.05746	-
FGA 11	10.01.06.01247	10.01.06.00095	10.01.06.04136	10.01.06.00423	10.01.06.00098	10.01.06.03986	10.01.06.04151
FGA 14	10.01.06.00868	10.01.06.00370	10.01.06.04257	10.01.06.00372	10.01.06.00371	10.01.06.03143	10.01.06.04114
FGA 16	10.01.06.01248	10.01.06.00096	10.01.06.04453	10.01.06.00424	10.01.06.00099	10.01.06.02459	10.01.06.04115
FGA 20	10.01.06.00870	10.01.06.00373	10.01.06.04258	10.01.06.00375	10.01.06.00374	10.01.06.04150	10.01.06.03892
FGA 22	10.01.06.01249	10.01.06.00097	10.01.06.04454	10.01.06.00425	10.01.06.00100	10.01.06.03419	10.01.06.04152
FGA 25	10.01.06.00872	10.01.06.00376	10.01.06.04455	10.01.06.00378	10.01.06.00377	10.01.06.03245	10.01.06.04153
FGA 33	10.01.06.00873	10.01.06.00130	10.01.06.04456	10.01.06.00426	10.01.06.00126	-	10.01.06.04096
FGA 43	10.01.06.00874	10.01.06.00131	-	10.01.06.00427	10.01.06.00127	-	-
FGA 53	10.01.06.00875	10.01.06.00132	-	10.01.06.00428	10.01.06.00128	-	-
FGA 63	10.01.06.02473	10.01.06.00688	-	10.01.06.00690	10.01.06.00689	-	-
FGA 78	10.01.06.02474	10.01.06.00133	-	10.01.06.00429	10.01.06.00129	-	-

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

Type	Spare Parts			Part no.
FSGA 2	M3-AG	Suction cup connection nipple	SA-NIP N003 M3-AG DN100	10.01.01.00316
FSGA 4	M3-AG	Suction cup connection nipple	SA-NIP N003 M3-AG DN100	10.01.01.00316
FSGA 6	M5-AG	Suction cup connection nipple	SA-NIP N004 M5-AG DN200	10.01.01.03526
FSGA 8	M3-AG	Suction cup connection nipple	SA-NIP N063 M3-AG DN100	10.01.06.05727
FSGA 11	M5-AG	Suction cup connection nipple	SA-NIP N016 M5-AG DN250	10.01.06.00123
FSGA 11	G1/8-AG	Suction cup connection nipple	SA-NIP N016 G1/8-AG DN350	10.01.06.05735
FSGA 14	M5-AG	Suction cup connection nipple	SA-NIP N016 M5-AG DN250	10.01.06.00123
FSGA 14	G1/8-AG	Suction cup connection nipple	SA-NIP N016 G1/8-AG DN350	10.01.06.05735
FSGA 16	M5-AG	Suction cup connection nipple	SA-NIP N016 M5-AG DN250	10.01.06.00123
FSGA 16	G1/8-AG	Suction cup connection nipple	SA-NIP N016 G1/8-AG DN350	10.01.06.05735
FSGA 20	M5-AG	Suction cup connection nipple	SA-NIP N016 M5-AG DN250	10.01.06.00123
FSGA 20	G1/8-AG	Suction cup connection nipple	SA-NIP N016 G1/8-AG DN350	10.01.06.05735
FSGA 22	M5-AG	Suction cup connection nipple	SA-NIP N016 M5-AG DN250	10.01.06.00123
FSGA 22	G1/8-AG	Suction cup connection nipple	SA-NIP N016 G1/8-AG DN350	10.01.06.05735
FSGA 25	G1/8-AG	Suction cup connection nipple	SA-NIP N016 G1/8-AG DN350	10.01.06.05735
FSGA 33	G1/4-AG	Suction cup connection nipple	SA-NIP N018 G1/4-AG DN440	10.01.06.01065
FSGA 43	G1/4-AG	Suction cup connection nipple	SA-NIP N018 G1/4-AG DN440	10.01.06.01065
FSGA 53	G1/4-AG	Suction cup connection nipple	SA-NIP N018 G1/4-AG DN440	10.01.06.01065
FSGA 63	G1/4-AG	Suction cup connection nipple	SA-NIP N018 G1/4-AG DN440	10.01.06.01065
FSGA 78	G1/4-AG	Suction cup connection nipple	SA-NIP N019 G1/4-AG DN820	10.01.06.01959

Type	Spare Parts			Part no.
FSGA 6	M5-IG	Suction cup connection nipple	SA-NIP N004 M5-IG DN200	10.01.01.03518
FSGA 11	G1/8-IG	Suction cup connection nipple	SA-NIP N016 G1/8-IG DN350	10.01.06.05731
FSGA 14	G1/8-IG	Suction cup connection nipple	SA-NIP N016 G1/8-IG DN350	10.01.06.05731
FSGA 16	G1/8-IG	Suction cup connection nipple	SA-NIP N016 G1/8-IG DN350	10.01.06.05731
FSGA 20	G1/8-IG	Suction cup connection nipple	SA-NIP N016 G1/8-IG DN350	10.01.06.05731
FSGA 22	G1/8-IG	Suction cup connection nipple	SA-NIP N016 G1/8-IG DN350	10.01.06.05731
FSGA 25	G1/8-IG	Suction cup connection nipple	SA-NIP N016 G1/8-IG DN350	10.01.06.05731
FSGA 33	G1/4-IG	Suction cup connection nipple	SA-NIP N018 G1/4-IG DN440	10.01.06.01066
FSGA 43	G1/4-IG	Suction cup connection nipple	SA-NIP N018 G1/4-IG DN440	10.01.06.01066
FSGA 53	G1/4-IG	Suction cup connection nipple	SA-NIP N018 G1/4-IG DN440	10.01.06.01066

## Bellows Suction Cups FSGA (1.5 Folds)

Suction area (Ø) from 2 mm to 78 mm

Type	Spare Parts			Part no.
FSGA 63	G1/4-IG	Suction cup connection nipple	SA-NIP N018 G1/4-IG DN440	10.01.06.01066
FSGA 78	G1/4-IG	Suction cup connection nipple	SA-NIP N019 G1/4-IG DN820	10.01.06.01960

### Technical Data Bellows Suction Cups FSGA (1.5 Folds)

Type		Suction force (-600 mbar) [N]*	Pull-off force [N]**	Volume [cm <sup>3</sup> ]	Workpiece radius min. (convex) [mm]	Hose diameter (recom.) d [mm]***	Nipple family
FSGA	2	0.08	0.2	0.016	1	3	N 003
FSGA	4	0.29	0.5	0.035	2	3	N 003
FSGA	6	0.40	1.4	0.098	4	4	N 004
FSGA	8	0.58	1.7	0.169	4	-	-
FSGA	11	0.95	3.8	0.225	10	4	N 016
FSGA	14	1.20	5.0	0.420	15	4	N 016
FSGA	16	2.30	6.7	0.750	20	4	N 016
FSGA	20	4.70	10.7	1.150	20	4	N 016
FSGA	22	5.70	15.2	1.400	25	4	N 016
FSGA	25	5.30	17.3	2.944	25	4	N 016
FSGA	33	13.60	39.6	4.750	40	6	N 018
FSGA	43	22.80	64.5	9.250	60	6	N 018
FSGA	53	51.30	95.0	26.488	100	6	N 018
FSGA	63	85.00	135.0	43.829	100	6	N 018
FSGA	78	137.40	218.0	75.583	100	6	N 019

\*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

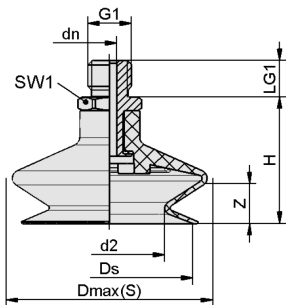
\*\*The pull-off force of the versions made of natural rubber is reduced by about 40 %

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

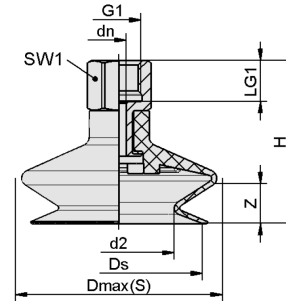
# Bellows Suction Cups FSGA (1.5 Folds)

Suction area ( $\emptyset$ ) from 2 mm to 78 mm

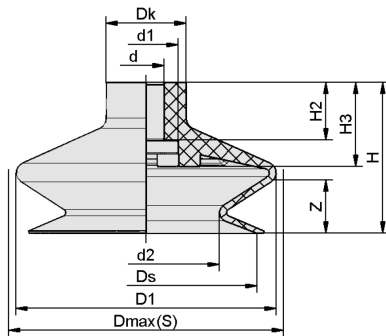
Design Data Bellows Suction Cups FSGA (1.5 Folds)



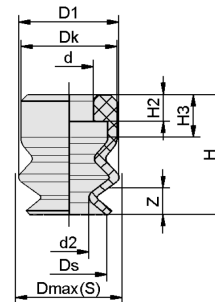
FSGA AG



FSGA IG



FGA 6, 33 - 78



FGA 11 - 25

## Bellows Suction Cups FSGA (1.5 Folds)

Suction area (Ø) from 2 mm to 78 mm

### Design Data Bellows Suction Cups FSGA (1.5 Folds)

Type*			d2 [mm]	dn [mm]	Dmax(S) [mm]**	Ds [mm]	G1	H [mm]	LG1 [mm]	SW1 [mm]	Z (Stroke) [mm]
FSGA	2	M3-AG	1.3	1.0	4.0	1.9	M3-M	6.5	3.0	5	1
FSGA	4	M3-AG	2.5	1.0	5.0	4.0	M3-M	7.5	3.0	5	2
FSGA	6	M5-AG	3.0	2.0	8.0	5.7	M5-M	14.0	4.5	8	2
FSGA	6	M5-IG	3.0	2.0	8.0	5.7	M5-F	19.0	5.5	8	2
FSGA	8	M3-AG	3.5	1.0	9.7	8.0	M3-M	13.8	3.0	5	4
FSGA	11	M5-AG	5.1	2.5	13.0	10.4	M5-M	21.0	5.0	7	4
FSGA	11	G1/8-AG	5.1	3.5	13.0	10.4	G1/8"-M	22.0	7.5	14	4
FSGA	11	G1/8-IG	5.1	3.5	13.0	10.4	G1/8"-F	28.0	8.0	14	4
FSGA	14	M5-AG	5.0	2.5	14.5	12.5	M5-M	20.5	5.0	7	5
FSGA	14	G1/8-AG	5.0	3.5	14.5	12.5	G1/8"-M	21.5	7.5	14	5
FSGA	14	G1/8-IG	5.0	3.5	14.5	12.5	G1/8"-F	27.5	8.0	14	5
FSGA	16	M5-AG	8.4	2.5	18.5	15.6	M5-M	24.2	5.0	7	7
FSGA	16	G1/8-AG	8.4	3.5	18.5	15.6	G1/8"-M	25.2	7.5	14	7
FSGA	16	G1/8-IG	8.4	3.5	18.5	15.6	G1/8"-F	31.2	8.0	14	7
FSGA	20	M5-AG	11.0	2.5	21.0	18.1	M5-M	20.2	5.0	7	5
FSGA	20	G1/8-AG	11.0	3.5	21.0	18.1	G1/8"-M	21.2	7.5	14	5
FSGA	20	G1/8-IG	11.0	3.5	21.0	18.1	G1/8"-F	27.2	8.0	14	5
FSGA	22	M5-AG	11.7	2.5	25.0	21.5	M5-M	24.0	5.0	7	6
FSGA	22	G1/8-AG	11.7	3.5	25.0	21.5	G1/8"-M	25.0	7.5	14	6
FSGA	22	G1/8-IG	11.7	3.5	25.0	21.5	G1/8"-F	31.0	8.0	14	6
FSGA	25	G1/8-AG	9.9	3.5	26.5	22.5	G1/8"-M	29.0	7.5	14	9
FSGA	25	G1/8-IG	9.9	3.5	26.5	22.5	G1/8"-F	35.0	8.0	14	9
FSGA	33	G1/4-AG	17.0	4.4	38.0	30.0	G1/4"-M	31.0	11.0	17	9
FSGA	33	G1/4-IG	17.0	4.4	38.0	30.0	G1/4"-F	42.0	12.0	17	9
FSGA	43	G1/4-AG	21.9	4.4	47.5	38.0	G1/4"-M	31.6	11.0	17	10
FSGA	43	G1/4-IG	21.9	4.4	47.5	38.0	G1/4"-F	42.6	12.0	17	10
FSGA	53	G1/4-AG	33.0	4.4	60.0	50.0	G1/4"-M	38.0	11.0	17	15
FSGA	53	G1/4-IG	33.0	4.4	60.0	50.0	G1/4"-F	49.0	12.0	17	15
FSGA	63	G1/4-AG	44.5	4.4	68.0	60.0	G1/4"-M	38.0	11.0	17	15
FSGA	63	G1/4-IG	44.5	4.4	68.0	60.0	G1/4"-F	49.0	12.0	17	15
FSGA	78	G1/4-AG	54.0	8.2	84.5	74.0	G1/4"-M	53.0	11.0	21	16
FSGA	78	G1/4-IG	54.0	8.2	84.5	74.0	G1/4"-F	62.0	12.0	21	16

\*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]
FGA	2	2.0	3.0	1.3	3.3	4.0	4.0	1.9	4.5	1.5	2.3	1.0
FGA	4	2.0	3.0	2.5	4.6	4.0	5.0	4.0	5.5	1.5	2.6	1.5
FGA	6	3.7	5.8	3.0	7.5	7.2	8.0	5.7	9.0	2.0	3.2	2.0
FGA	8	1.9	-	3.5	9.4	5.5	9.7	8.0	11.8	3.4	-	3.6
FGA	11	4.5	-	5.1	12.0	10.0	13.0	10.4	16.0	3.8	9.3	4.0
FGA	14	4.5	-	5.0	13.7	10.0	14.5	12.5	15.5	3.8	8.5	5.0
FGA	16	4.5	-	8.4	17.0	10.0	18.5	15.6	19.2	3.8	9.4	7.0
FGA	20	4.5	-	11.0	19.9	10.0	21.0	18.1	15.2	3.8	8.7	5.0
FGA	22	4.5	-	11.7	24.2	10.0	25.0	21.5	19.0	3.8	9.1	6.0
FGA	25	4.5	-	9.9	25.0	10.0	26.5	22.5	23.0	3.8	8.9	9.0
FGA	33	8.0	16.0	17.0	36.0	18.0	38.0	30.0	27.0	13.0	14.0	9.0
FGA	43	8.0	14.5	21.9	45.9	18.0	47.5	38.0	27.6	13.0	17.1	10.0
FGA	53	8.0	14.5	33.0	58.6	18.0	60.0	50.0	34.0	12.3	19.0	15.0
FGA	63	8.0	14.5	44.5	67.0	18.0	68.0	60.0	34.0	13.0	18.8	15.0
FGA	78	11.8	21.8	54.0	83.0	24.7	84.5	74.0	47.0	19.7	31.4	16.0





Bellows Suction Cups (Round)

## Bellows Suction Cups FSGA (1.5 Folds)

Suction area (Ø) from 2 mm to 78 mm

\*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