

SPF Series

Flat Suction Cup

AIRBEST



UNIVERSAL

RoHS

Features

- ◇ With support structure at the bottom
- ◇ Optimal design
- ◇ Small inner volume
- ◇ Available in various sizes

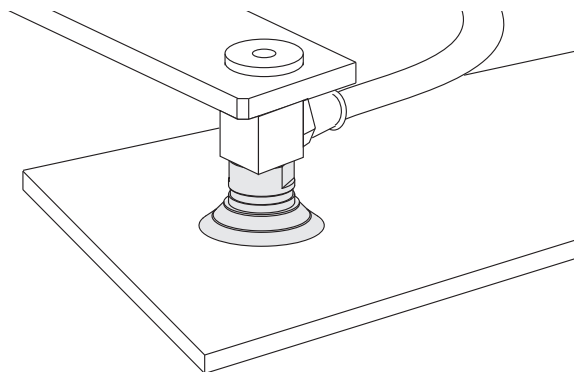
Advantages

- ◇ Be able to prevent permanent deformation of workpieces
- ◇ Small size, large suction force
- ◇ Short working cycle
- ◇ Suitable for workpieces of various sizes and shapes



Applications

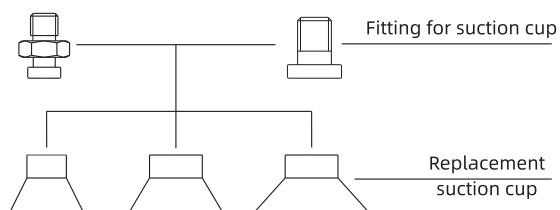
- ◇ Handling of flat workpieces with smooth or slightly rough surface such as wood, metal plate, plywood and plastic plate
- ◇ Suitable for handling electronic components, conductive material can effectively prevent electrostatic damage to electronic components



Structure

- ◇ Suction cups with diameter less than 50mm adopt split structure for easy replacement of wearing parts
- ◇ One-piece structure for suction cup with diameter 60mm-200mm

In the same series, replacement suction cup and fitting can be combined as required



SPF Series

Flat Suction Cup

AIRBEST

Suction Cup

How to order

SPF 15 N - M5M

① ② ③ ④

① Series	② Diameter		③ Material & Hardness		④ Connection thread
SPF	2 - φ2mm	35 - φ35mm	N - NBR	55	Nil - Suction cup only
	3.5 - φ3.5mm	40 - φ40mm	WS - White silicone	50	M3M - M3×0.5 male thread
	5 - φ5mm	50 - φ50mm	CN - Conductive NBR	•55	M5M - M5×0.8 male thread
	6 - φ6mm	60 - φ60mm	CS - Conductive silicone	•55	M8M - M8×1.25 male thread
	8 - φ8mm	80 - φ80mm			M10F - M10×1.25 female thread
	10 - φ10mm	95 - φ95mm			
	15 - φ15mm	120 - φ120mm			
	20 - φ20mm	150 - φ150mm			
	25 - φ25mm	200 - φ200mm			
	30 - φ30mm				

Selection

Model	Connection thread M - Male thread	Model	Connection thread M - Male thread
SPF2□	SPF2□-M3M	SPF25□	SPF25□-M5M
SPF3.5□	SPF3.5□-M3M	SPF30□	SPF30□-M5M
SPF5□	SPF5□-M5M	SPF35□	SPF35□-M5M
SPF6□	SPF6□-M5M	SPF40□	SPF40□-M5M
SPF8□	SPF8□-M5M	SPF50□	SPF50□-M8M
SPF10□	SPF10□-M5M	SPF60□-M10F	-
SPF15□	SPF15□-M5M	SPF80□-M10F	-
SPF20□	SPF20□-M5M	SPF95□-M10F	-

Technical parameters

Model	Pull-out force N	Inner volume cm ³	Weight g	Recommended hose dia. mm	MPQ pcs	Model	Pull-out force N	Inner volume cm ³	Weight g	Recommended hose dia. mm	MPQ pcs
SPF2	0.15	<0.1	0.1	4	10	SPF35	43	2.4	6.6	6	5
SPF3.5	0.4	<0.1	0.1	4	10	SPF40	60	3.4	8.4	6	5
SPF5	0.9	<0.1	0.2	4	10	SPF50	92	5.7	10.4	8	1
SPF6	1.2	<0.1	0.2	4	10	SPF60	127	11	23.2	8	1
SPF8	2.2	<0.1	0.2	4	10	SPF80	226	25.3	48.2	8	1
SPF10	3.5	<0.1	0.3	4	10	SPF95	319	38	70.3	10	1
SPF15	8	0.2	0.4	6	10	SPF120	510	81	159.5	10	1
SPF20	15	0.5	1.6	6	5	SPF150	800	171	322.4	12	1
SPF25	24	1.1	2.5	6	5	SPF200	1,410	364	521.5	12	1
SPF30	32	1	3.3	6	5						

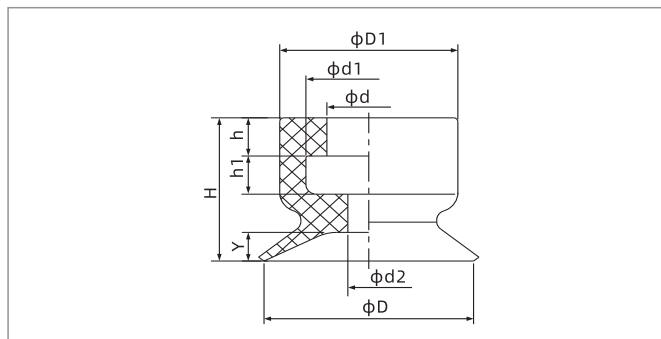
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SPF Series

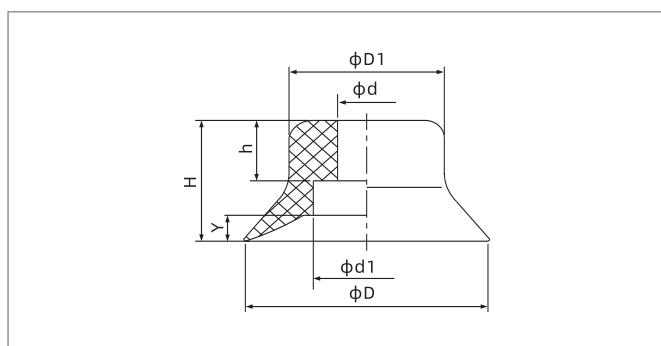
Flat Suction Cup



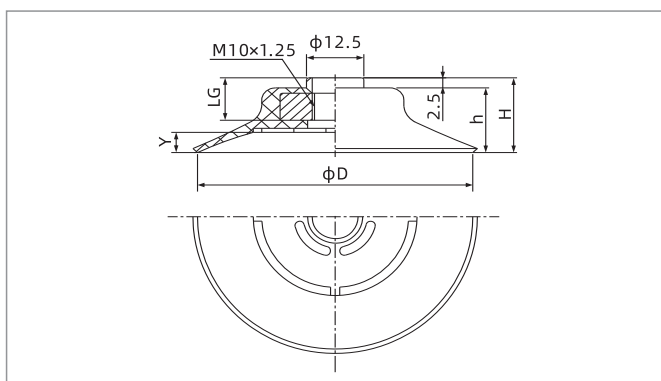
Dimensions(mm) - Suction cup only



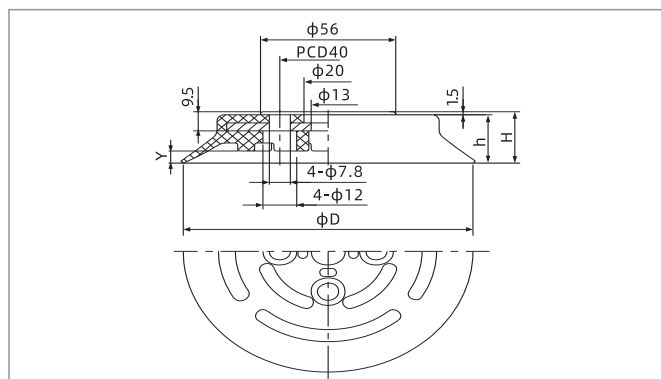
SPF2-15



SPF20-50



SPF60-95



SPF120-200

Model/Size	D	H	D1	d	h	d1	h1	d2	Y
SPF2□	2	4	4	2	1.5	3	1	1.2	0.5
SPF3.5□	3.5	4	4	2	1.5	3	1	1.2	0.5
SPF5□	5	6.5	7.5	4	2	6	2	1.4	0.8
SPF6□	6	6.5	7.5	4	2	6	2	2	0.8
SPF8□	8	7	8	4	2	6	2	2	1.2
SPF10□	10	7.5	8.5	4	2	6	2	2	1.5
SPF15□	15	8	9	4	2	6	2	2	1.9

Model/Size	D	H	D1	d	h	d1	Y
SPF20□	20	10	15	6	4.5	10.8	2.3
SPF25□	25	14	16	6	7	11	3
SPF30□	29	12	14	6	7	11	2
SPF35□	35	14	21	6	7	11	3
SPF40□	40	14	24	6	7	11	3.5
SPF50□	50	15	27	8	7	20	4

Model/Size	D	H	h	LG	Y
SPF60□-M10F	60	18.5	16	10.5	5
SPF80□-M10F	80	20.5	18	11.5	6
SPF95□-M10F	95	21	18.5	11	6

Model/size	D	H	h	Y
SPF120□	120	25.5	24	6
SPF150□	150	32.5	31	9
SPF200□	200	37.5	36	13

◇ Note: The dimensional tolerance conforms to GBT 3672.1-2002-1 M3 rubber product dimensional tolerance standard

SPF Series

Flat Suction Cup

Mounting parts

Item	Model M - Male thread	Applicable suction cup
Fitting for suction cup	PJS-M3M-ST1	SPF2, 3.5
	PJS-M5M-ST2	SPF5, 6, 8, 10, 15
	PJS-M5M-ST3	SPF20
	PJS-M5M-ST4	SPF25, 30, 35, 40
	PJS-M8M-ST6	SPF50

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SAN
SAO
SOFA
STP
SFT
SFA
SBL
SBLP
SBS
SFP
SBP
SXP
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SBOF
STC
SFF
SOB
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SOG
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SFU
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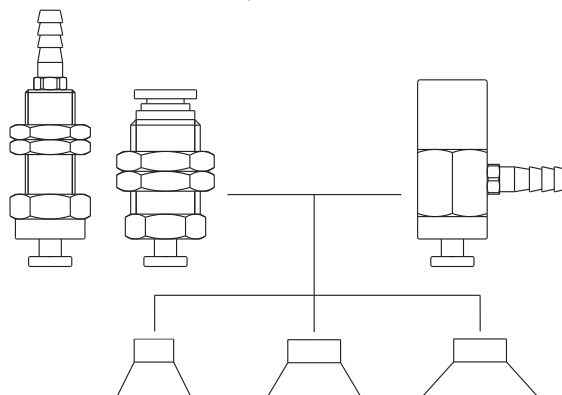
SPF Series

Suction Cup with Locking Fitting

Structure

- ◇ Consisting of replacement suction cup and locking fitting
- ◇ Plug-in fitting for suction cup
- ◇ Vertical vacuum port, Pagoda fitting or one-touch fitting for connection, male thread for mounting
- ◇ Lateral vacuum port, Pagoda fitting for connection, female thread for mounting

In the same series, replacement suction cup and locking fitting can be combined as required



How to order

SPF10N - L B6 - M4F

① ② ③ ④

① Model	② Vacuum port direction	③ Vacuum port connection	④ Mounting thread
SPF10N	Nil - Vertical direction	A4 - One-touch fitting $\phi 4$ hose	M3F - M3×0.5 female thread
	L - Lateral direction	A6 - One-touch fitting $\phi 6$ hose	M4F - M4×0.7 female thread
		B4 - Pagoda fitting $\phi 4$ hose	M6F - M6×1 female thread
		B6 - Pagoda fitting $\phi 6$ hose	M8F - M8×1.25 female thread
		R1 - Rc1/8 female thread	M16F - M16×2 female thread
			M5M - M5×0.5 male thread
			M8M - M8×1 male thread
			M10M - M10×1 male thread
			M12M - M12×1 male thread
			M14M - M14×1 male thread
			M16M - M16×1.5 male thread

◇ Please refer to page 284 for suction cup selection

Selection

Model	Vacuum port direction Vertical-Pagoda fitting	Vertical-One-touch fitting	Lateral-Pagoda fitting
SPF2□	SPF2□-B4-M5M	-	SPF2□-LB4-M3F
SPF3.5□	SPF3.5□-B4-M5M	-	SPF3.5□-LB4-M3F
SPF5□	SPF5□-B6-M8M	SPF5□-A4-M12M	SPF5□-LB6-M4F
SPF6□	SPF6□-B6-M8M	SPF6□-A4-M12M	SPF6□-LB6-M4F
SPF8□	SPF8□-B6-M8M	SPF8□-A4-M12M	SPF8□-LB6-M4F
SPF10□	SPF10□-B6-M8M	SPF10□-A4-M12M	SPF10□-LB6-M4F
SPF15□	SPF15□-B6-M8M	SPF15□-A4-M12M	SPF15□-LB6-M4F
SPF20□	SPF20□-B6-M10M	SPF20□-A6-M14M	SPF20□-LB6-M4F
SPF25□	SPF25□-B6-M10M	SPF25□-A6-M14M	SPF25□-LB6-M6F
SPF30□	SPF30□-B6-M10M	SPF30□-A6-M14M	SPF30□-LB6-M6F
SPF35□	SPF35□-B6-M10M	SPF35□-A6-M14M	SPF35□-LB6-M6F
SPF40□	SPF40□-B6-M10M	SPF40□-A6-M14M	SPF40□-LB6-M6F
SPF50□	SPF50□-B6-M10M	SPF50□-A6-M14M	SPF50□-LB6-M6F

SPF Series

Suction Cup with Locking Fitting

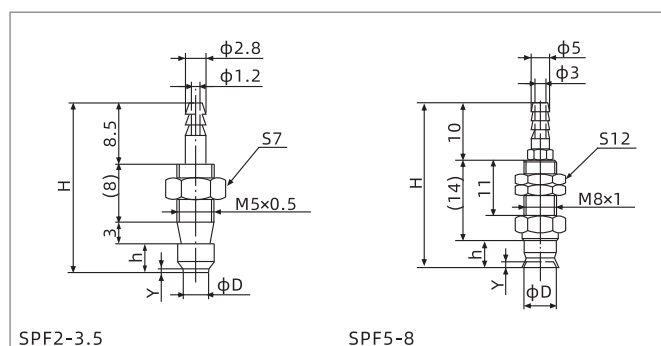
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Suction Cup

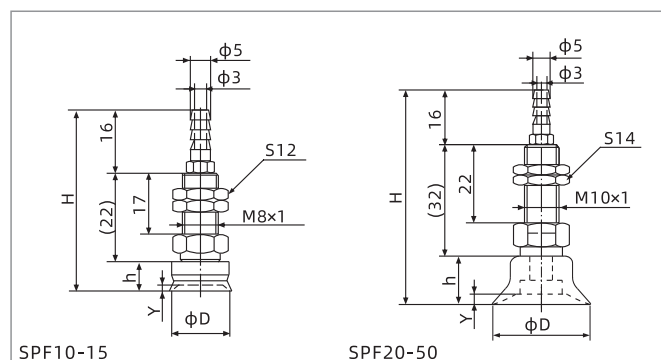
Selection

Model	Vacuum port direction Vertical-Pagoda fitting	Lateral-Pagoda fitting
SPF60□	SPF60□-R1-M16M	SPF60□-LR1-M8F
SPF80□	SPF80□-R1-M16M	SPF80□-LR1-M8F
SPF95□	SPF95□-R1-M16M	SPF95□-LR1-M8F
SPF120□	-	SPF120□-LR1-M16F
SPF150□	-	SPF150□-LR1-M16F
SPF200□	-	SPF200□-LR1-M16F

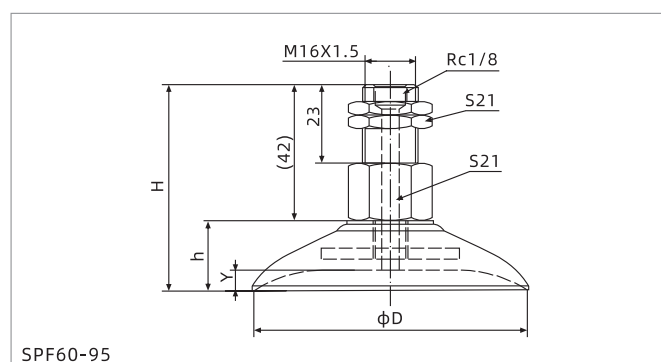
Dimensions(mm)



Vertical-Pagoda fitting



Vertical-Pagoda fitting



Vertical-Female thread connection

Model/Size	D	H	h	Y
SPF2□-B4-M5M	2	23.5	4	0.5
SPF3.5□-B4-M5M	3.5	23.5	4	0.5
SPF5□-B6-M8M	5	30.5	6.5	0.8
SPF6□-B6-M8M	6	30.5	6.5	0.8
SPF8□-B6-M8M	8	31	7	1.2

Model/Size	D	H	h	Y
SPF10□-B6-M8M	10	45.5	7.5	1.5
SPF15□-B6-M8M	15	46	8	1.9
SPF20□-B6-M10M	20	58	10	2.3
SPF25□-B6-M10M	25	62	14	3
SPF30□-B6-M10M	30	60	12	2
SPF35□-B6-M10M	35	62	14	3
SPF40□-B6-M10M	40	62	14	3.5
SPF50□-B6-M10M	50	63	15	4

Model/Size	D	H	h	Y
SPF60□-R1-M16M	60	58	16	5
SPF80□-R1-M16M	80	60	18	6
SPF95□-R1-M16M	95	60.5	18.5	6

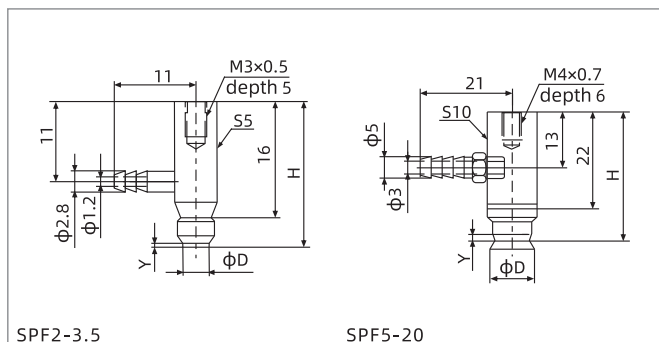
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SPF Series

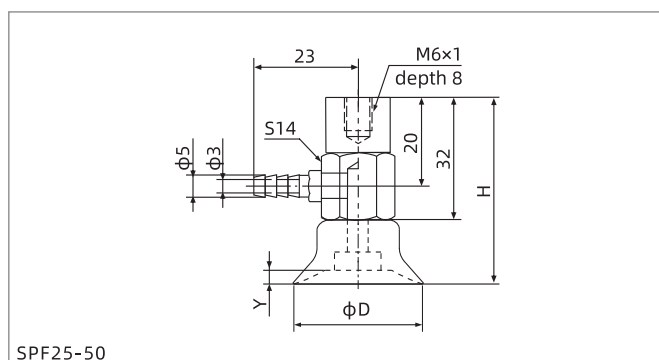
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Suction Cup with Locking Fitting

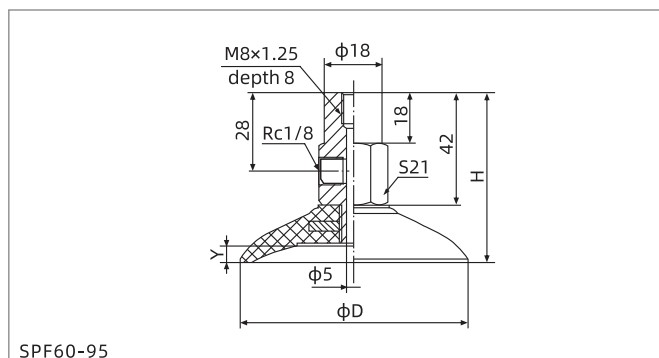
Dimensions(mm)



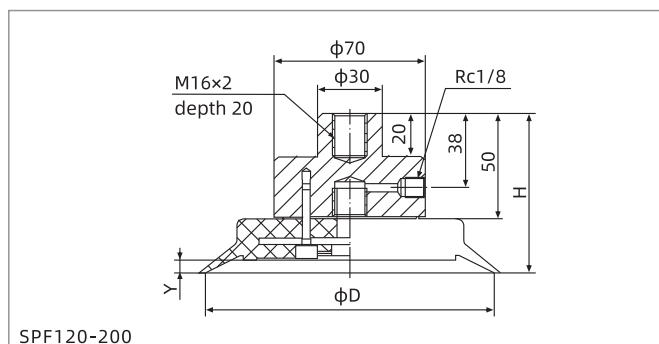
Lateral-Pagoda fitting



Lateral-Pagoda fitting



Lateral-Female thread connection



Lateral-Female thread connection

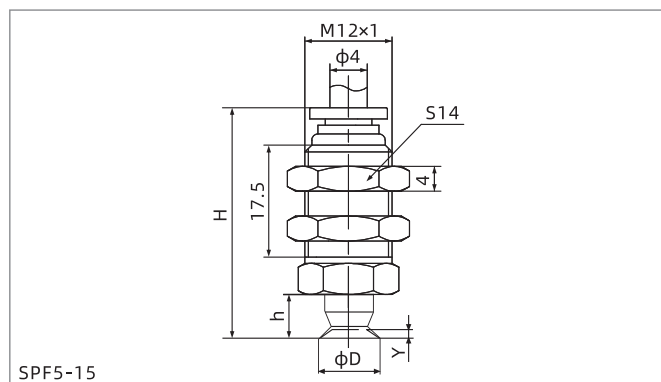
Model/Size	D	H	Y
SPF2□-LB4-M3F	2	20	0.5
SPF3.5□-LB4-M3F	3.5	20	0.5
SPF5□-LB6-M4F	5	28.5	0.8
SPF6□-LB6-M4F	6	28.5	0.8
SPF8□-LB6-M4F	8	29	1.2
SPF10□-LB6-M4F	10	29.5	1.5
SPF15□-LB6-M4F	15	30	1.9
SPF20□-LB6-M4F	20	32	2.3

Model/Size	D	H	Y
SPF25□-LB6-M6F	25	46	3
SPF30□-LB6-M6F	30	44	2
SPF35□-LB6-M6F	35	46	3
SPF40□-LB6-M6F	40	46	3.5
SPF50□-LB6-M6F	50	47	4

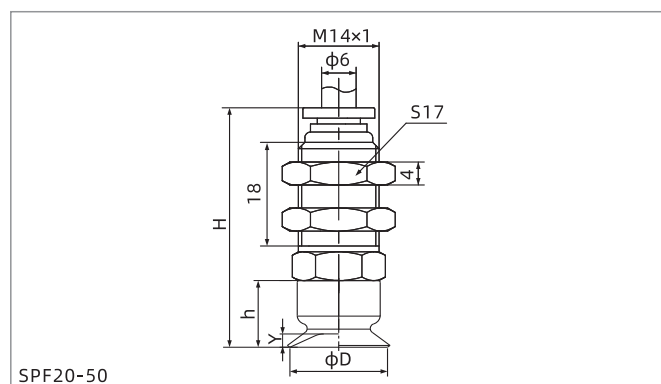
Model/Size	D	H	Y
SPF60□-LR1-M8F	60	58	5
SPF80□-LR1-M8F	80	58.5	6
SPF95□-LR1-M8F	95	59	6

Model/Size	D	H	Y
SPF120□-LR1-M16F	120	75.5	6
SPF150□-LR1-M16F	150	82.5	9
SPF200□-LR1-M16F	200	87.5	13

Suction Cup with Locking Fitting



Model/Size	D	H	Y
SPF5□-A4-M12M	5	34	0.8
SPF6□-A4-M12M	6	34	0.8
SPF8□-A4-M12M	8	34.5	1.2
SPF10□-A4-M12M	10	35	1.5
SPF15□-A4-M12M	15	35.5	1.9



Model/Size	D	H	Y
SPF20□-A6-M14M	20	40	2.3
SPF25□-A6-M14M	25	44	3
SPF30□-A6-M14M	30	42	2
SPF35□-A6-M14M	35	44	3
SPF40□-A6-M14M	40	44	3.5
SPF50□-A6-M14M	50	45	4

SPF Series

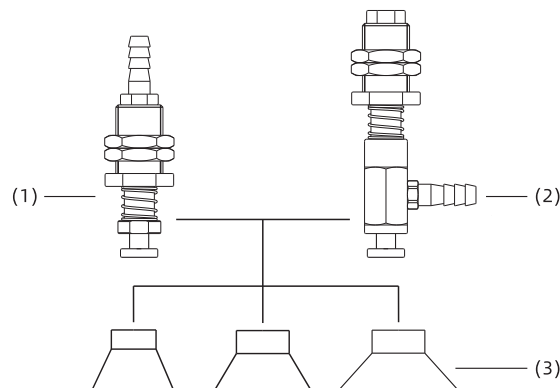


Suction Cup with Level Compensator

Structure

- ◇ Consisting of replacement suction cup(3) and level compensator
- ◇ Plug-in fitting for suction cup
- ◇ Vertical vacuum port(1), male thread for mounting
- ◇ Lateral vacuum port(2), male thread for mounting

In the same series, replacement suction cup and level compensator can be combined as required



How to order

SPF10N - F E 10 LB6 - M11

① ② ③ ④ ⑤ ⑥

① Model	② Level compensator type	③ Buffer type	④ Buffer stroke	⑤ Vacuum port connection	⑥ Mounting thread
SPF10N	F - PSPF Series	E - External spring	2 5 3 10 4 15 6 30	B4 - Vertical, Pagoda fitting $\phi 4$ hose B6 - Vertical, Pagoda fitting $\phi 6$ hose LB4 - Lateral, Pagoda fitting $\phi 4$ hose LB6 - Lateral, Pagoda fitting $\phi 6$ hose LR1 - Lateral, Rc1/8 female thread	M5 - M5×0.5 M9 - M9×1 M11 - M11×1 M14 - M14×1 M16 - M16×1.5

Selection

Model	Vacuum port direction Vertical-Pagoda fitting		Lateral-Pagoda fitting	
SPF2□	SPF2□-FE2B4-M5	SPF2□-FE5B4-M5	SPF2□-FE2LB4-M5	SPF2□-FE5B4-M5
SPF3.5□	SPF3.5□-FE2B4-M5	SPF3.5□-FE5B4-M5	SPF3.5□-FE2LB4-M5	SPF3.5□-FE5LB4-M5
SPF5□	SPF5□-FE3B6-M9	SPF5□-FE10B6-M9	SPF5□-FE3LB6-M9	SPF5□-FE10LB6-M9
SPF6□	SPF6□-FE3B6-M9	SPF6□-FE10B6-M9	SPF6□-FE3LB6-M9	SPF6□-FE10LB6-M9
SPF8□	SPF8□-FE3B6-M9	SPF8□-FE10B6-M9	SPF8□-FE3LB6-M9	SPF8□-FE10LB6-M9
SPF10□	SPF10□-FE4B6-M11	SPF10□-FE10B6-M11	SPF10□-FE4LB6-M11	SPF10□-FE10LB6-M11
SPF15□	SPF15□-FE4B6-M11	SPF15□-FE10B6-M11	SPF15□-FE4LB6-M11	SPF15□-FE10LB6-M11
SPF20□	SPF20□-FE4B6-M11	SPF20□-FE10B6-M11	SPF20□-FE4LB6-M11	SPF20□-FE10LB6-M11
SPF25□	SPF25□-FE6B6-M14	SPF25□-FE15B6-M14	SPF25□-FE6LB6-M14	SPF25□-FE15LB6-M14
SPF30□	SPF30□-FE6B6-M14	SPF30□-FE15B6-M14	SPF30□-FE6LB6-M14	SPF30□-FE15LB6-M14
SPF35□	SPF35□-FE6B6-M14	SPF35□-FE15B6-M14	SPF35□-FE6LB6-M14	SPF35□-FE15LB6-M14
SPF40□	SPF40□-FE6B6-M14	SPF40□-FE15B6-M14	SPF40□-FE6LB6-M14	SPF40□-FE15LB6-M14
SPF50□	SPF50□-FE6B6-M14	SPF50□-FE15B6-M14	SPF50□-FE6LB6-M14	SPF50□-FE15LB6-M14

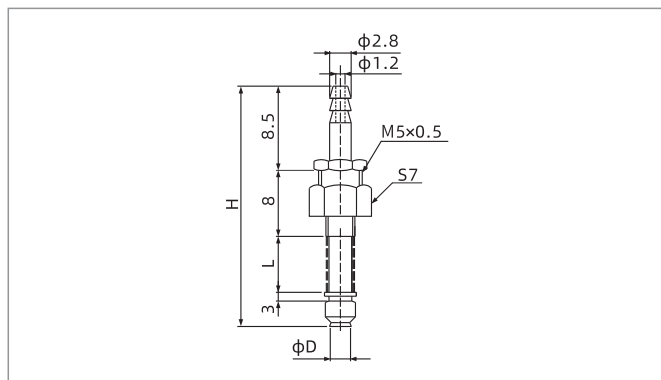
SPF Series

Suction Cup with Level Compensator

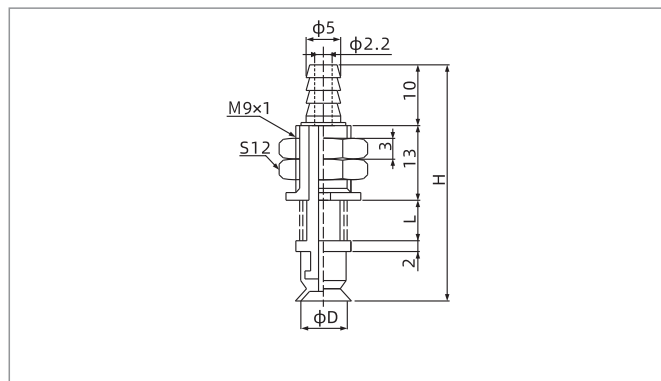
Selection

Model	Vacuum port direction Vertical-Pagoda fitting	Lateral-Pagoda fitting	
SPF60□	-	SPF60□-FE10LR1-M16	SPF60□-FE30LR1-M16
SPF80□	-	SPF80□-FE10LR1-M16	SPF80□-FE30LR1-M16
SPF95□	-	SPF95□-FE10LR1-M16	SPF95□-FE30LR1-M16

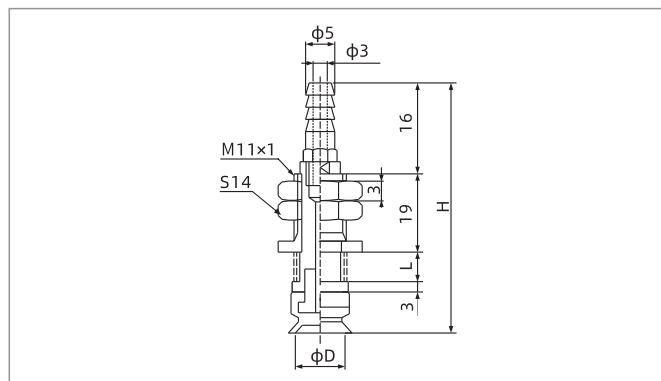
Dimensions(mm)



SPF2-3.5 Vertical-Pagoda fitting



SPF5-8 Vertical-Pagoda fitting



SPF10-20 Vertical-Pagoda fitting

Model/Size	D	H	L	Buffer stroke
SPF2□-FE2B4-M5	2	28.5	5	2.5
SPF2□-FE5B4-M5	2	33.5	10	5
SPF3.5□-FE2B4-M5	3.5	28.5	5	2.5
SPF3.5□-FE5B4-M5	3.5	33.5	10	5

Model/Size	D	H	L	Buffer stroke
SPF5□-FE3B6-M9	5	37.5	6	3
SPF5□-FE10B6-M9	5	51.5	20	10
SPF6□-FE3B6-M9	6	37.5	6	3
SPF6□-FE10B6-M9	6	51.5	20	10
SPF8□-FE3B6-M9	8	38	6	3
SPF8□-FE10B6-M9	8	52	20	10

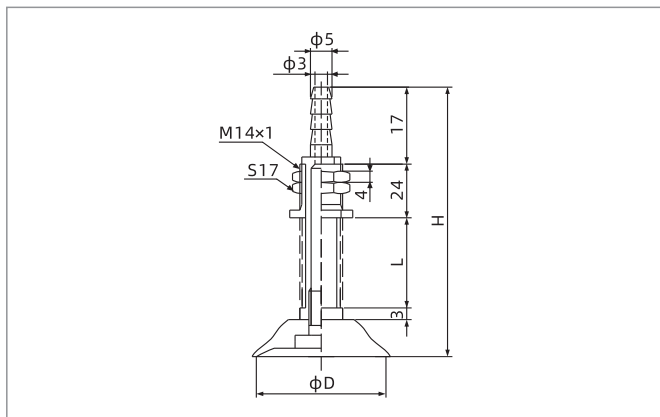
Model/Size	D	H	L	Buffer stroke
SPF10□-FE4B6-M11	10	53.5	8	4
SPF10□-FE10B6-M11	10	65.5	20	10
SPF15□-FE4B6-M11	15	54	8	4
SPF15□-FE10B6-M11	15	66	20	10
SPF20□-FE4B6-M11	20	56	8	4
SPF20□-FE10B6-M11	20	68	20	10

SZ
SP3
SUF
SAN
SAO
SOFA
STP
SFT
SFA
SBL
SBLP
SBS
SFP
SBP
SXP
SGP
SBOF
STC
SFF
SOB
SOF
SOG
SFM
SOM
SBF
SDM
SFU
SFK
SHT
SDL
SFG
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SPF
SPC
SPJ
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SH
SHB
SBB
SOP
SNP

SPF Series

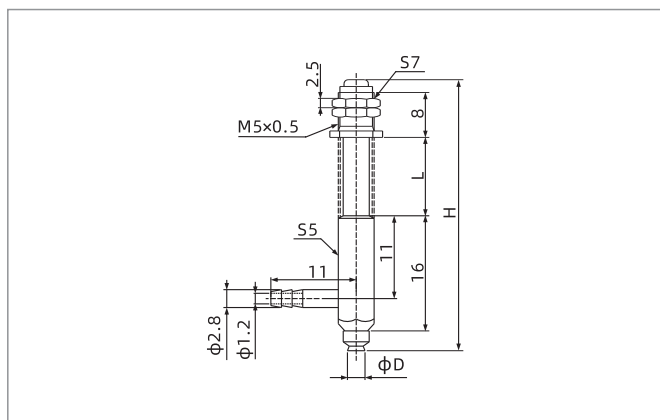
Suction Cup with Level Compensator

Dimensions(mm)



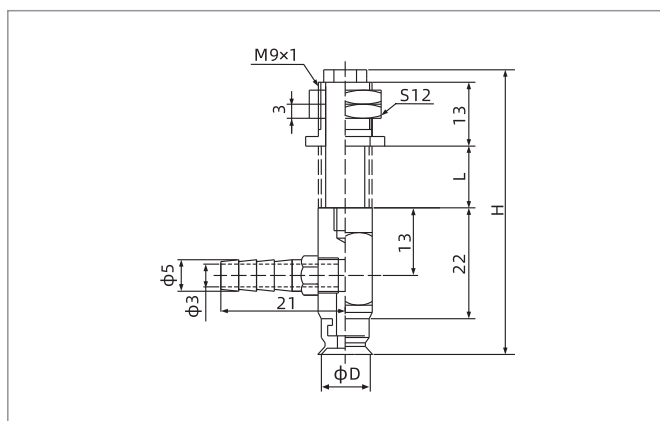
SPF25-50 Vertical-Pagoda fitting

Model/Size	D	H	L	Buffer stroke
SPF25□-FE6B6-M14	25	71	13	6
SPF25□-FE15B6-M14	25	88	30	15
SPF30□-FE6B6-M14	30	69	13	6
SPF30□-FE15B6-M14	30	86	30	15
SPF35□-FE6B6-M14	35	71	13	6
SPF35□-FE15B6-M14	35	88	30	15
SPF40□-FE6B6-M14	40	71	13	6
SPF40□-FE15B6-M14	40	88	30	15
SPF50□-FE6B6-M14	50	72	13	6
SPF50□-FE15B6-M14	50	89	30	15



SPF2-3.5 Lateral-Pagoda fitting

Model/Size	D	H	L	Buffer stroke
SPF2□-FE2LB4-M5	2	35.5	5	2.5
SPF2□-FE5LB4-M5	2	40.5	10	5
SPF3.5□-FE2LB4-M5	3.5	35.5	5	2.5
SPF3.5□-FE5LB4-M5	3.5	40.5	10	5



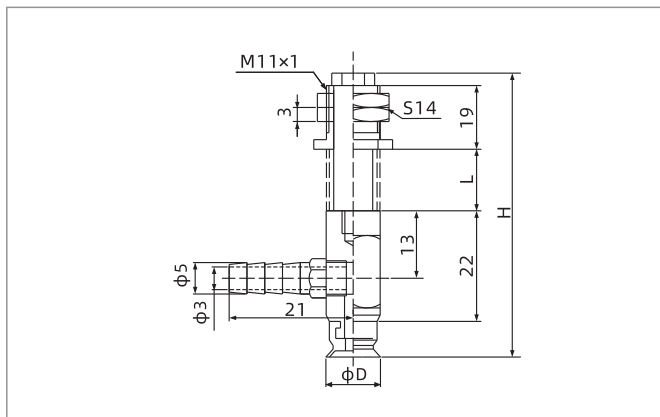
SPF5-8 Lateral-Pagoda fitting

Model/Size	D	H	L	Buffer stroke
SPF5□-FE3LB6-M9	5	50.5	6	3
SPF5□-FE10LB6-M9	5	64.5	20	10
SPF6□-FE3LB6-M9	6	50.5	6	3
SPF6□-FE10LB6-M9	6	64.5	20	10
SPF8□-FE3LB6-M9	8	51	6	3
SPF8□-FE10LB6-M9	8	65	20	10

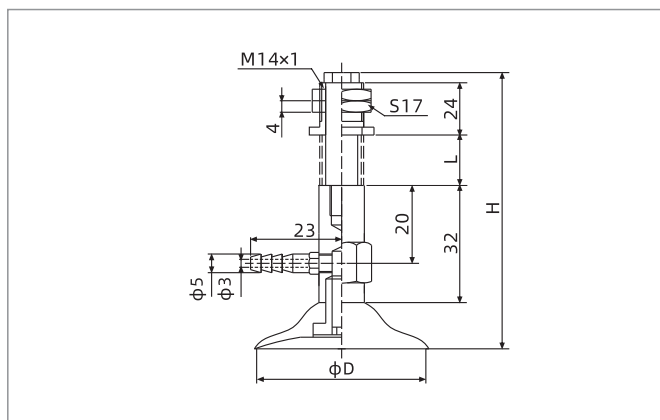
SPF Series

Suction Cup with Level Compensator

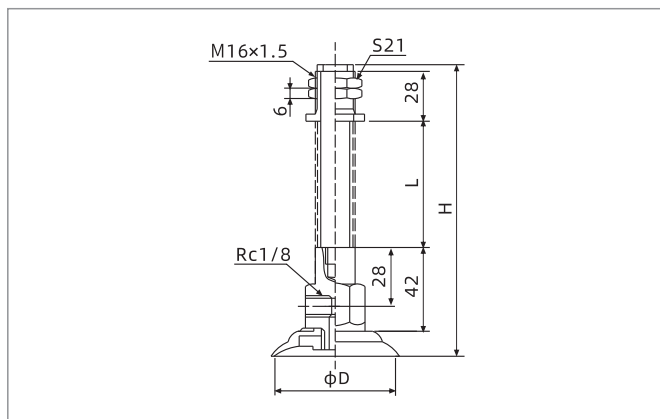
Dimensions(mm)



SPF10-20 Lateral-Pagoda fitting



SPF25-50 Lateral-Pagoda fitting



SPF60-95 Lateral-Female thread connection

Model/Size	D	H	L	Buffer stroke
SPF10□-FE4LB6-M11	10	59.5	8	4
SPF10□-FE10LB6-M11	10	71.5	20	10
SPF15□-FE4LB6-M11	15	60	8	4
SPF15□-FE10LB6-M11	15	72	20	10
SPF20□-FE4LB6-M11	20	62	8	4
SPF20□-FE10LB6-M11	20	74	20	10

Model/Size	D	H	L	Buffer stroke
SPF25□-FE6B6-M14	25	87	13	6
SPF25□-FE15B6-M14	25	104	30	15
SPF30□-FE6B6-M14	30	85	13	6
SPF30□-FE15B6-M14	30	102	30	15
SPF35□-FE6B6-M14	35	87	13	6
SPF35□-FE15B6-M14	35	104	30	15
SPF40□-FE6B6-M14	40	87	13	6
SPF40□-FE15B6-M14	40	104	30	15
SPF50□-FE6B6-M14	50	88	13	6
SPF50□-FE15B6-M14	50	105	30	15

Model/Size	D	H	L	Buffer stroke
SPF60□-FE10LR1-M16	60	110	20	10
SPF60□-FE30LR1-M16	60	150	60	30
SPF80□-FE10LR1-M16	80	112	20	10
SPF80□-FE30LR1-M16	80	152	60	30
SPF95□-FE10LR1-M16	95	112.5	20	10
SPF95□-FE30LR1-M16	95	152.5	60	30