

SAO Series

Oval Flat Suction Cup



ELECTRONICS



Features

- ◇ Oval and Flat structure
- ◇ Conductive material available
- ◇ Various sizes available

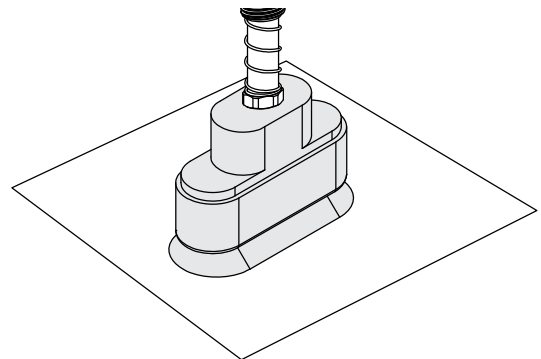
Advantages

- ◇ Small sizes, large suction force, suitable for handling of long and narrow workpieces
- ◇ Discharge static electricity gently to protect workpieces from damage
- ◇ Suitable for workpieces of various sizes and shapes



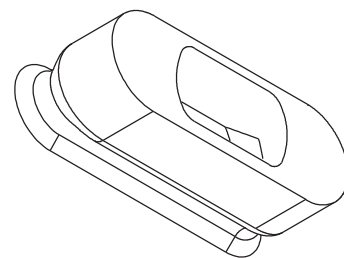
Applications

- ◇ Handling of long and narrow workpieces with even surface
- ◇ Handling of electronic components
- ◇ Conductive material is suitable for 3C industry



Structure

- ◇ Split structure for easy replacement of wearing parts



- SZ
- SP3
- SUF
- SAN**
- SAO**
- SOFA
- STP
- SFT
- SFA
- SBT
- SBL
- SBLP
- SBS
- SFP
- SBP
- XP
- SGP
- SBOF
- STC
- SFF
- SOB
- SOF
- SOG
- SFM
- SOM
- SBF
- SDM
- SFU
- SFK
- SHT
- SDL
- SFG
- SFGT
- SFD
- SB
- SBA
- SF
- SU
- SPA
- SPD
- SPF
- SPC
- SPJ
- SPU
- SH
- SHB
- SBB
- SOP
- SNP

SAO Series

Oval Flat Suction Cup



How to order

SAO 8×20 N

① ② ③

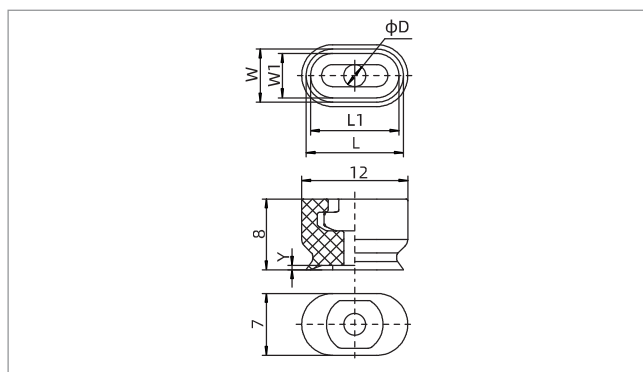
① Series	② Size	③ Material & Hardness
SAO	3.5×7 6×20	N - NBR 55
	4×10 8×20	WS - White silicone 50
	5×10 4×30	CN - Conductive NBR 55
	6×10 5×30	CS - Conductive silicone 55
	4×20 6×30	
	5×20 8×30	

Technical parameters

Model	Pull-out force N	Inner volume cm ³	Min. Curve radius of workpiece mm	Weight g	Recommended hose dia. mm	MPQ pcs
SAO3.5×7	0.9	<0.1	6	0.5	4	10
SAO4×10	1.6	<0.1	7	0.4	4	10
SAO5×10	2	<0.1	9	0.4	4	10
SAO6×10	2.4	<0.1	13	0.5	4	10
SAO4×20	3.2	<0.1	8	0.8	4	10
SAO5×20	4.2	<0.1	11	0.7	4	10
SAO6×20	5	<0.1	14	0.9	4	10
SAO8×20	6.5	<0.1	16	0.9	4	10
SAO4×30	5.2	<0.1	8	1.3	4	10
SAO5×30	6.5	<0.1	10	1.1	4	10
SAO6×30	7.8	<0.1	14	1.2	4	10
SAO8×30	10.2	0.1	18	1.3	4	10

◇ Note: Testing vacuum level -60kPa, workpiece with smooth and clean surface. The data of pull-out force as above are figured out without considering safety factor. The data may be different according to different workpiece surfaces. Recommend the length of vacuum hose to be as short as possible, max 2m.

Dimensions(mm)



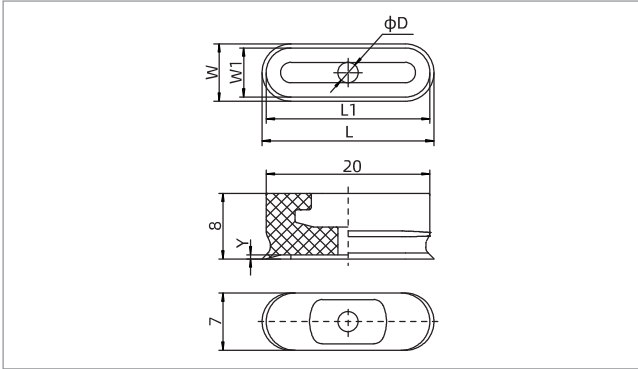
Model/Size	W	L	W1	L1	D	Y
SAO3.5×7□	4.5	8	3.5	7	2-1.5	0.5
SAO4×10□	5	11	4	10	2-1.5	0.5
SAO5×10□	6	11	5	10	2.5	0.5
SAO6×10□	7	11	6	10	2.5	0.5

SAO

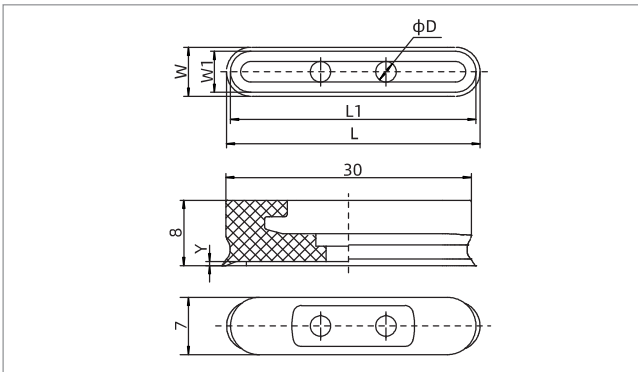
SAO Series

Oval Flat Suction Cup

Dimensions(mm)



SAO



SAO

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

Model/Size	W	L	W1	L1	D	Y
SAO4×20□	5	21	4	20	2-1.8	0.5
SAO5×20□	6	21	5	20	2-2	0.5
SAO6×20□	7	21	6	20	2.5	0.5
SAO8×20□	9	21	8	20	3	0.8

Model/Size	W	L	W1	L1	D	Y
SAO4×30□	5	31	4	30	2-1.8	0.5
SAO5×30□	6	31	5	30	2-2.5	0.5
SAO6×30□	7	31	6	30	2-2.5	0.5
SAO8×30□	9	31	8	30	2-2.5	0.8

- SAZ
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- SFP
- SBP
- SXP
- SGP
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- SNP

SAO Series

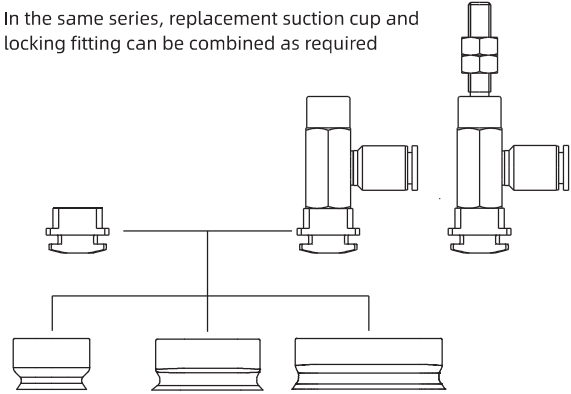
Suction Cup with Locking Fitting



Structure

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

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



How to order

SAO5×20N - LA6 - M5F

① ② ③

① Model	② Vacuum port direction	③ Mounting thread
SAO5×20N	Nil - Vertical LA4 - Lateral,one-touch fitting φ4 hose LA6 - Lateral,one-touch fitting φ6 hose	M5M - M5×0.8 male thread M5F - M5×0.8 female thread

◇ Please refer to page 171 for suction cup selection

Selection

Connection thread M - Male thread		F - Female thread			
SAO3.5×7□-LA4-M5M	SAO3.5×7□-LA6-M5M	SAO3.5×7□-LA4-M5F	SAO3.5×7□-LA6-M5F	SAO3.5×7□-M5F	
SAO4×10□-LA4-M5M	SAO4×10□-LA6-M5M	SAO4×10□-LA4-M5F	SAO4×10□-LA6-M5F	SAO4×10□-M5F	
SAO5×10□-LA4-M5M	SAO5×10□-LA6-M5M	SAO5×10□-LA4-M5F	SAO5×10□-LA6-M5F	SAO5×10□-M5F	
SAO6×10□-LA4-M5M	SAO6×10□-LA6-M5M	SAO6×10□-LA4-M5F	SAO6×10□-LA6-M5F	SAO6×10□-M5F	
SAO4×20□-LA4-M5M	SAO4×20□-LA6-M5M	SAO4×20□-LA4-M5F	SAO4×20□-LA6-M5F	SAO4×20□-M5F	
SAO5×20□-LA4-M5M	SAO5×20□-LA6-M5M	SAO5×20□-LA4-M5F	SAO5×20□-LA6-M5F	SAO5×20□-M5F	
SAO6×20□-LA4-M5M	SAO6×20□-LA6-M5M	SAO6×20□-LA4-M5F	SAO6×20□-LA6-M5F	SAO6×20□-M5F	
SAO8×20□-LA4-M5M	SAO8×20□-LA6-M5M	SAO8×20□-LA4-M5F	SAO8×20□-LA6-M5F	SAO8×20□-M5F	
SAO4×30□-LA4-M5M	SAO4×30□-LA6-M5M	SAO4×30□-LA4-M5F	SAO4×30□-LA6-M5F	SAO4×30□-M5F	
SAO5×30□-LA4-M5M	SAO5×30□-LA6-M5M	SAO5×30□-LA4-M5F	SAO5×30□-LA6-M5F	SAO5×30□-M5F	
SAO6×30□-LA4-M5M	SAO6×30□-LA6-M5M	SAO6×30□-LA4-M5F	SAO6×30□-LA6-M5F	SAO6×30□-M5F	
SAO8×30□-LA4-M5M	SAO8×30□-LA6-M5M	SAO8×30□-LA4-M5F	SAO8×30□-LA6-M5F	SAO8×30□-M5F	

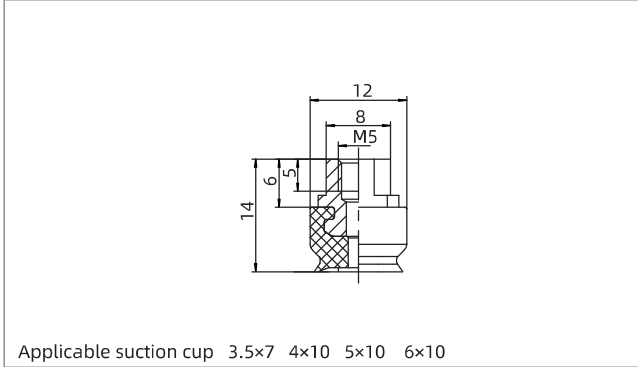
SAO Series



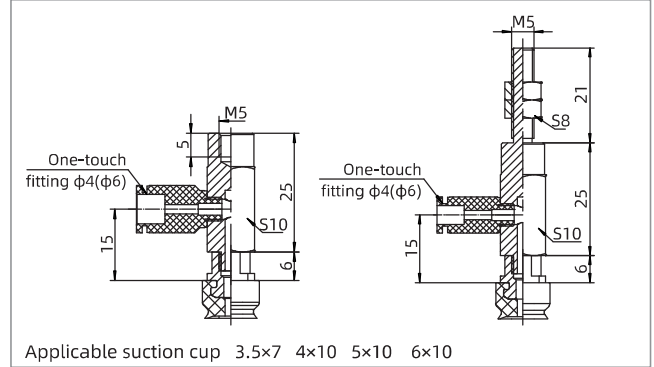
Suction Cup with Locking Fitting

Suction Cup

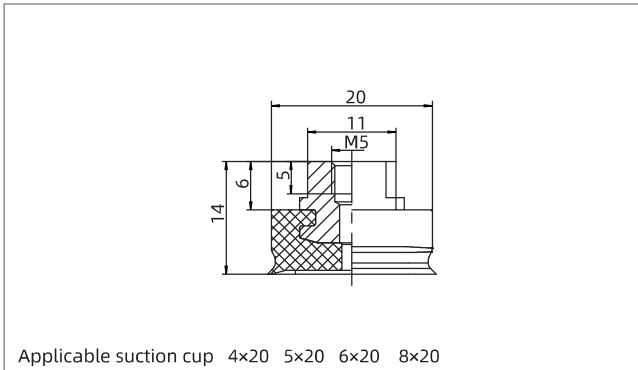
Dimensions(mm)



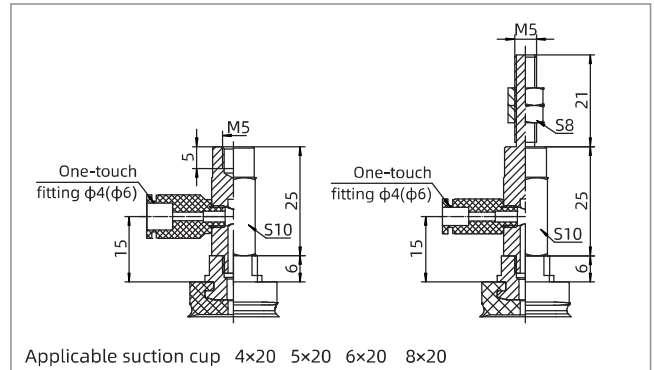
Vertical-Female thread connection



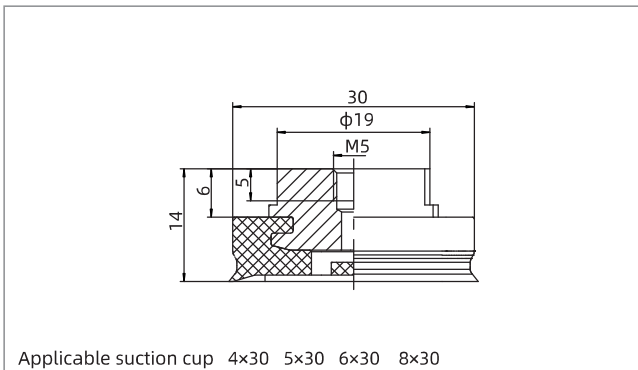
Lateral-Female thread connection Lateral-Male thread connection



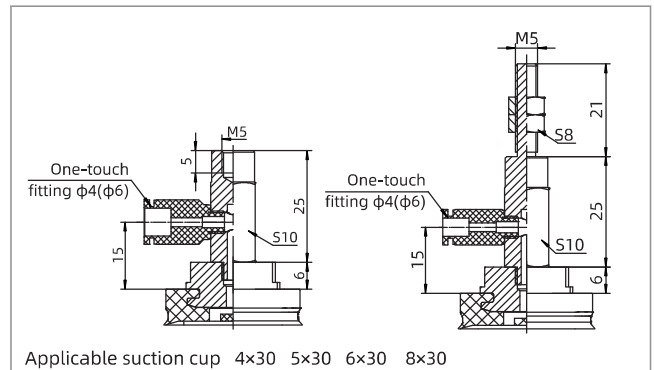
Vertical-Female thread connection



Lateral-Female thread connection Lateral-Male thread connection



Vertical-Female thread connection



Lateral-Female thread connection Lateral-Male thread connection

- SZ
- SP3
- SUF
- SAN
- SAO
- SOFA
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SAO Series

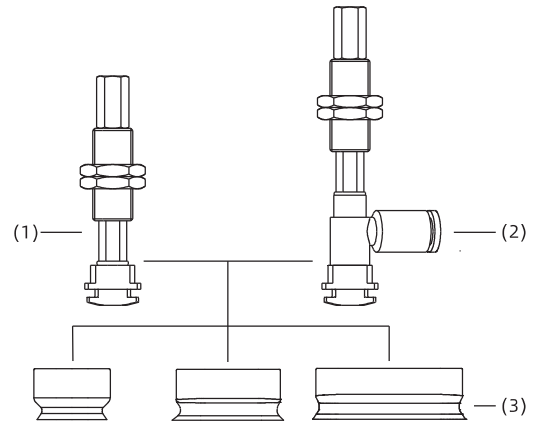
Suction Cup with Level Compensator



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

SAO5×20N - E I 10 R A6 - M10
 ① ② ③ ④ ⑤ ⑥ ⑦

① Series	② Level compensator type	③ Buffer type	④ Buffer stroke	⑤ Rotary type	⑥ Vacuum port connection	⑦ Mounting thread
SAO5×20N	E - PSPE Series	I - Internal spring	10 40 20 50 30	R - Vertical non-rotating B - Lateral non-rotating	Nil - M5×0.8 female thread A4 - One-touch fitting φ4 hose A6 - One-touch fitting φ6 hose	M10 - M10×1

◇ Please refer to page 171 for suction cup selection

Selection

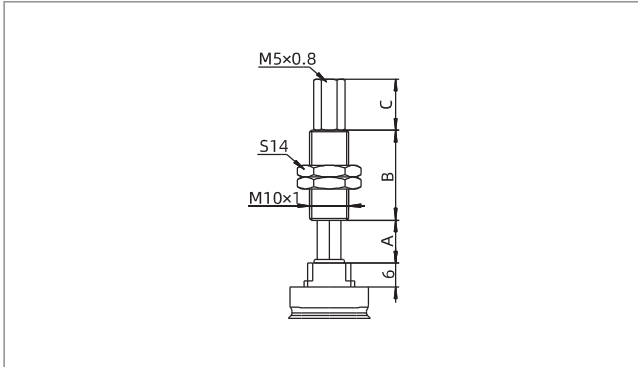
Rotary type/ Vacuum port connection	Nil	A4	A6
R - Vertical non-rotating	●	●	●
B - Lateral non-rotating	-	●	●

◇ Note: "●" default, in stock, "-" unavailable

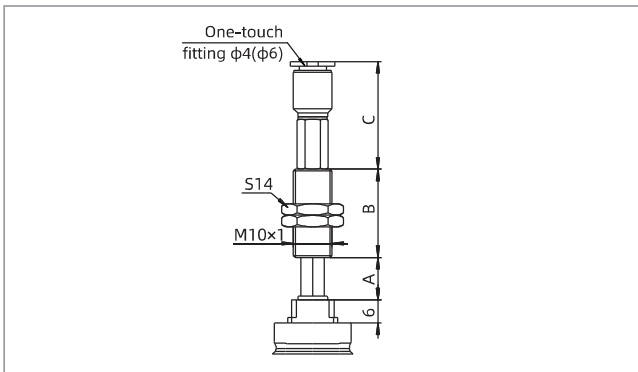
SAO Series

Suction Cup with Level Compensator

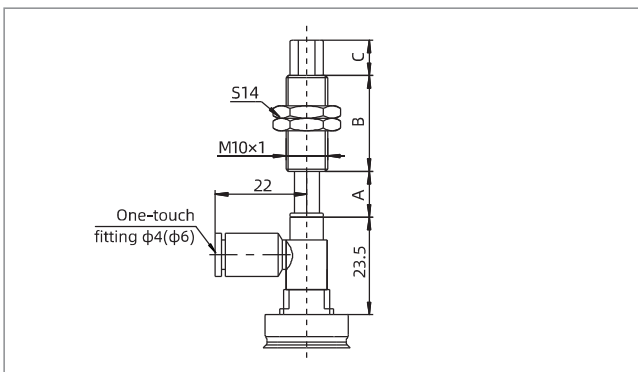
Dimensions(mm)



Vertical-Female thread connection



Vertical-One-touch fitting



Lateral-One-touch fitting

Model/Size	A	B	C	Buffer stroke	F1 (N)	F2 (N)
SAO□-E110R-M10	11	23	13	10	1.0	3.0
SAO□-E120R-M10	21	51	13	20	1.0	3.0
SAO□-E130R-M10	31	51	13	30	1.0	3.0
SAO□-E140R-M10	41	77	13	40	1.0	3.0
SAO□-E150R-M10	51	77	13	50	1.0	3.0

Model/Size	A	B	C	Buffer stroke	F1 (N)	F2 (N)
SAO□-E110R□-M10	11	23	28	10	1.0	3.0
SAO□-E120R□-M10	21	51	28	20	1.0	3.0
SAO□-E130R□-M10	31	51	28	30	1.0	3.0
SAO□-E140R□-M10	41	77	28	40	1.0	3.0
SAO□-E150R□-M10	51	77	28	50	1.0	3.0

Model/Size	A	B	C	Buffer stroke	F1 (N)	F2 (N)
SAO□-E110B□-M10	11	23	8.5	10	1.0	3.0
SAO□-E120B□-M10	21	51	8.5	20	1.0	3.0
SAO□-E130B□-M10	31	51	8.5	30	1.0	3.0
SAO□-E140B□-M10	41	77	8.5	40	1.0	3.0
SAO□-E150B□-M10	51	77	8.5	50	1.0	3.0

◇ Note: 1. Please refer to page 171 for suction cup selection
 2. "F1" means spring force at 0 stroke, "F2" means spring force at max. Stroke

- SZ
- SP3
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