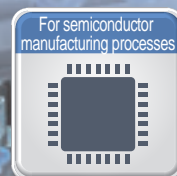


Vacuum System Components SELVACS Suction Pad VSP Series Variations added



**A wide range of needs
are met with variations**



A diverse lineup to meet

expanding needs

Further variations of the Suction Pad VSP Series meet the growing vacuum needs

in various industries, including food, transport, semiconductors and rechargeable batteries.

Respond to food safety



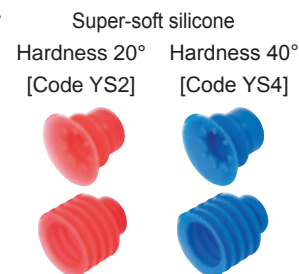
Added a new pad material made of ultra-soft silicone for the food industry.

- Materials compliant with the Food Sanitation Act and the FDA are adopted.

Supported pad shapes

- Bellows: $\phi 15$ to $\phi 50$ ($\phi 15$ is made of only YS2)

- Multi-stage bellows: $\phi 20$ to $\phi 50$



Compatible with clean areas



New pad holder and low dust generation holder added.

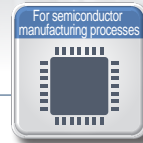
- Dust generation is reduced compared to the conventional spring type holder.
- Achieves low noise during motion.

Noise level

45db

*Under CKD measurement conditions.

We cater to small articles



Small diameter size has been added.

Supported pad shapes

- Bellows: $\phi 2$, $\phi 4$ (Material: N, S, SE only)

- Multi-stage bellows: $\phi 6$, $\phi 8$ (Material: N, S, F, NE, G, HN, EP)



Supports irregular workpieces

Buffer stroke selection range added.

- Extended long stroke for multi-stage bellows, soft, soft bellows, and thin types.

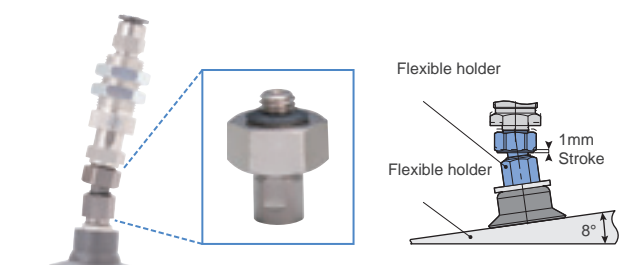


Supports tilted workpieces

Flexible holder added to swinging option.

Flexible holder (CF)

With a 1 mm stroke, the impact when the workpiece contacts is reduced. When separating the workpiece, the spring returns to the original position.

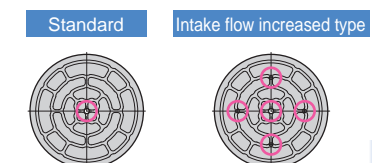


Compatible with thin objects



Flat type (F) and flat suction flow rate increase type (FH), ideal for transporting thin workpieces, have been added.

- Increased flow path holes dramatically improve suction and suction.



Suction flow rate Max. **2.5** times
Suction force Max. **6** times

Flow path
4-hole addition

Corresponds to workpiece appearance quality

Pad rubber surface treatment (option) has been added to reduce suction marks by applying special treatment to the pad surface.

Fiber raised type (-NF, -SF)

The fibers (nylon or silk) on the pad surface prevent rubber material transfer by not directly touching the workpiece.

Suction mark reduction (-ER)

Reduces suction marks by modifying the surface of nitrile rubber with chemical liquids.

Anti-sticking (-DL)

Special coating with good slip. Effective for preventing adhesion of lightweight and thin workpieces.

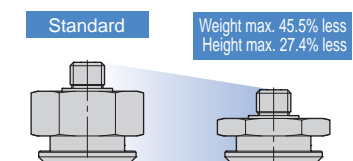
Fluorine coating (-FG)

Surface is modified with special treatment to prevent adhesion to workpieces or application of bellows. Improved pad durability and wear resistance.



*The degree of suction mark reduction differs depending on the environment and workpiece. Perform suction test with an actual device to select a model.

- Thread adaptor keeps height low, resulting in downsizing and weight reduction.



Weight Max. **45.5**% less
Height Max. **27.4**% less

Compatible with rechargeable batteries



Rechargeable battery compatible specifications (-P4) are standardized.

*Expanded support options that can be selected other than what is on this page. Refer to the suction pad series variation for details.



Suction pad series variation

Pad shape - pad size/pad material/option list

Pad shape			Pad Shape Code	Pad size																											Pad material																	Option																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
				0.7	1	1.5	2	3	3.5	4	5	6	8	10	15	20	25	30	35	40	50	60	70	80		100	150	200	Nitrile rubber	Silicone rubber	Urethane rubber	Fluoro rubber	Conductive silicone rubber	Conductive rubber (low resistance type)	Conductive NBR (low resistance type)	NBR compatible with the Food Sanitation Act	HNBR	EPDM	Fluorosilicone rubber	Oil-resistant NBR	Super soft silicone rubber 20°	Super soft silicone rubber 40°	Chloroprene rubber	PEEK	POM	Conductive PEEK	Free holder (Swinging)	Flexible holder (Swinging)	Position locking valve	Surface-treated rubber	Resin Attachment	Specifications for rechargeable battery																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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 is a new additional variation.








Pad shape - holder shape list

Pad shape	Holder type	VSP-A	VSP-B	VSP-C	VSP-D	VSP-E	VSP-F	 VSP-LFC	 VSP-LFD	VSP-HC	VSP-HD	VSP-HDW	VSP-HE	VSP-HEW	VSP-AE	VSP-BE
		VSP-MA	VSP-MB	VSP-MC	VSP-MD	VSP-ME		VSP-LFC	VSP-LFD	VSP-HC	VSP-HD	VSP-HDW	VSP-HE	VSP-HEW	VSP-AE	VSP-BE
Standard		●	●	●	●	●	●	●	●	●	●	●	●	●	-	-
Sponge		●	●	●	●	-	●	●	●	●	●	●	●	●	-	-
		●	●	●	●	-	●	●	●	●	●	●	●	●	-	-
Bellows		●	●	●	●	●	●	●	●	●	●	●	●	●	-	-
		●	●	●	●	●	●	●	●	●	●	●	●	●	-	-
Multi-stage bellows		●	●	●	●	●	●	●	●	●	●	●	●	●	-	-
		●	●	●	●	●	●	●	●	●	●	●	●	●	-	-
Oval		●	●	●	●	-	●	●	●	●	●	●	●	●	●	●
		●	●	●	●	-	●	●	●	●	●	●	●	●	-	-
Soft		●	●	●	●	-	●	●	●	●	●	●	●	●	-	-
		●	●	●	●	-	●	●	●	●	●	●	●	●	-	-
Soft bellows		●	●	●	●	-	●	●	●	●	●	●	●	●	-	-
		●	●	●	●	-	●	●	●	●	●	●	●	●	-	-
Anti-slip		●	●	●	●	-	●	●	●	●	●	●	●	●	-	-
		●	●	●	●	-	●	●	●	●	●	●	●	●	-	-
Thin object type		●	●	●	●	●	●	●	●	-	●	●	●	●	-	-
		●	●	●	●	●	●	●	●	-	●	●	●	●	-	-
Flat		●	●	●	●	-	●	●	●	●	●	●	●	●	-	-
		●	●	●	●	-	●	●	●	●	●	●	●	●	-	-
Suction mark prevention		●	●	●	●	-	●	●	●	●	●	●	●	●	-	-
		●	●	●	●	-	●	●	●	●	●	●	●	●	-	-

 is a new additional variation.










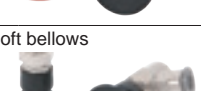


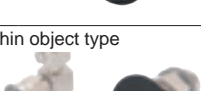



Holder type

Code	Standard	VSP-A	VSP-B	VSP-C	VSP-D	VSP-E	VSP-F	VSP-LFC	VSP-LFD
	Compact	VSP-MA	VSP-MB	VSP-MC	VSP-MD	VSP-ME	-	-	-
Shape		Fixed, Vacuum outlet top	Fixed, Vacuum outlet side	Buffer, Vacuum outlet top	Buffer, Vacuum outlet side	Direct mounting, Fixed	Direct mounting, Buffer	Low dust generation buffer Vacuum outlet top	Low dust generation buffer Vacuum outlet side
									
















Code	Standard	VSP-HC	VSP-HD	VSP-HDW	VSP-HE	VSP-HEW	VSP-AE	VSP-BE
Shape		Lightweight with buffer Vacuum outlet top	Lightweight with buffer Vacuum outlet side	Lightweight with buffer Vacuum outlet both sides	Low back, direct mounting, fixed Vacuum outlet side	Low back, direct mounting, fixed Vacuum outlet both sides	Screw-in, Vacuum outlet top	Screw-in, Vacuum outlet side
								

Suction pad selection data

Pad shape list




Pad shape		Applications	Features	Pad size
Standard		Flat workpieces (Ideal for hard and inflexible workpieces)	The most general purpose and general shape of the pad type. A wide range of pad sizes, pad materials and holder shapes are available. 3 types of pad shapes are available (standard, deep, compact).	<div>123468</div> <div>101520253040</div> <div>506080100150200</div>
		Ideal for spherical workpieces (apples, balls, etc.)		<div>152025304050</div> <div>6080100</div>
		Ideal for compact semiconductor components		<div>0.711.5234</div>
Sponge		Ideal for workpieces such as building outer wall materials, small stones and shells	Workpieces with uneven surface (Building outer wall materials, small stones and shells)	<div>101520253035</div> <div>5070100</div>
Bellows		Ideal for retort-packs and bags containing food, etc.	Bellows pad that molds softly to the workpiece with a bellows structure. The suction mark prevention resin attachment is attached and suitable for transporting FPD and glass substrates.	<div>24681015</div> <div>202530405060</div> <div>80100</div>
Multi-stage bellows			Bellows pad that molds softly to the workpiece with a bellows structure. The four-stage bellows structure enables the pad suction surface to wobble and take the shape of the workpiece.	<div>6810203040</div> <div>50</div>
Oval		Ideal for workpieces (substrates, semiconductors, round bars) with limited suction space	A convenient oval pad for cases where the suction surface cannot be secured circularly. Lineup of small sizes (from 2×4) that support workpieces with small suction surface.	<div>2 x 43.5 x 7</div> <div>4 x 104 x 204 x 30</div> <div>5 x 105 x 205 x 30</div> <div>6 x 106 x 206 x 30</div> <div>8 x 208 x 30</div>
Soft		Ideal for retrieving molded products or easily damaged workpieces	Pad is flexible and workpiece-friendly. Only the workpiece easily scratched is gentle and has few suction marks.	<div>468101520</div> <div>3040</div>
Soft bellows			Pad is flexible and workpiece-friendly. Can be used when the workpiece is tilted due to the bellows structure.	<div>68101520</div>
Anti-slip		Ideal for workpieces covered with an oil film such as press parts	The pad is provided with a grip groove on a pad suction surface to prevent slippage when conveying an oily iron plate.	<div>1020304050</div>
Thin object type		Ideal for thin workpieces such as sheets and vinyl	A suction pad in which the rib portion of the suction surface of the pad is made thin to improve adhesion to a workpiece. Suitable for suctioning thin workpieces and reducing repetitive suction (2-sheet removal).	<div>8101520</div>
Flat			Suction pad with an emphasis on preventing deformation of workpiece during suction and reducing creases by forming a flat suction surface.	<div>1015202530</div>
Suction mark prevention		Ideal for liquid crystal glass, painting process and semiconductor manufacturing equipment, etc.	Type that uses resin material for pad material. A track flexible holder is provided as standard with a fine tilt of the workpiece. Suction marks are less likely to occur and the workpiece releasability during vacuum burst is also good.	<div>102030</div>

Each rubber material, sponge material

Pad material		Nitrile rubber	NBR compatible with the Food Sanitation Act	HNBR	Silicone rubber	Conductive silicone rubber	Super-soft silicone rubber		Urethane rubber	Fluoro rubber	Fluorosilicone rubber	EPDM	Conductive butadiene rubber (Low resistance)	Conductive NBR (Low resistance)	Chloroprene rubber (Sponge)	Silicone rubber (Sponge)	
							Hardness 20°	Hardness 40°									
Item	Order code	N, NH (* 1)	G	HN	S	SE	YS2	YS4	U	F	FS	EP	E	NE	Blank	S	
Applications		Cardboard Plywood Iron plate Food-related Other general workpieces		Cardboard Plywood Iron plate Food-related Other general workpieces Low-concentration ozone Working in an environment	Semiconductor Taking out molded products Thin workpieces Food-related		Food-related		Cardboard Plywood Iron plate	Chemical atmospheres, hot workpieces	Molded parts Remove	Used in applications requiring light resistance and ozone resistance, wet atmospheres	General semiconductor workpieces (antistatic measures)	Semiconductor	Workpieces with uneven surface	Workpieces with uneven surface Food-related	
Pad color		 Black	 Light gray	 Black	 Clear White	 Black	 Pink	 Blue	 Dark blue	 Gray	 Dark orange	 Black	 Black	 Black	 Black	 Dark orange	
Characteristics	Standard	50° to 80°	60° to 70°	50° to 70°	50°	60°	-	-	55° to 70°	60° to 70°	-	50° to 70°	70°	60° to 70°	-	-	
	Bellows	50°	-	50°	50°	60°	20°	40°	55°	60°	-	50°	-	60°	-	-	
	Multi-stage bellows	50°	50°	50°	50°	-	20°	40°	55°	50°	-	50°	-	60°	-	-	
	Oval	40° to 50°	-	50°	40° to 50°	50° to 60°	-	-	55°	50°	-	50°	70°	70°	-	-	
	Soft	40°	-	-	40°	60°	-	-	-	-	40°	-	-	50°	-	-	
	Soft bellows	40°	-	50°	40°	60°	-	-	55°	-	-	50°	-	60°	-	-	
	Anti-slip	50°	-	-	50°	-	-	-	55°	60°	-	-	-	60°	-	-	
	Flat	60°	-	-	40°	40°	-	-	50°	50°	-	-	-	60°	-	-	
	Thin object type	40°	-	-	40°	-	-	-	55°	50°	40°	-	-	60°	-	-	
	High-temp usage limits	110°C		140°C		180°C		-		60°C	230°C	180°C	150°C	100°C	110°C	80°C	180°C
	Low-temp usage limits	-30°C		-30°C		-40°C		-		-20°C	-10°C	-50°C	-40°C	-50°C	-30°C	-45°C	-40°C
	Weather resistance	△		○		◎		-		○	○	○	◎	○	△	○	◎
	Ozone resistance	×		○		◎		-		◎	◎	◎	◎	×	×	○	◎
	Acid resistance	△		△		○		-		×	◎	○	◎	△	△	△	○
Alkali resistance	○		○		◎		-		×	×	◎	◎	○	○	◎	◎	
Q test3203	(Gasoline/Light oil)	◎		◎		△		-		◎	◎	△	×	×	◎	△	
	(Benzene/Toluene)	△		×		△		-		△	◎	△	×	×	△	△	
Volume resistance ratio		-		-		-		10 ⁵ Ω·cm or less		-		-		-		-	
														200 Ω·cm or less		200 Ω·cm or less	

How to read the rating ➡◎ Excellent, ○: Good, △: Conditional, x: Unsuitable
*1: Pad material order code: NH is available only for the anti-slip type.
*1: Characteristics of general synthetic rubbers used for the pad material are indicated in the table of characteristics.
*2: The values for the temperature usage limits are for very short periods of use. Therefore, careful consideration should be employed for usage extending for a constant period of time.
*3: When surface-treated (option) fiber raised type is selected, the high temperature usage limit temperature for fluoro rubber is 200°C.

Resin material

Pad material		PEEK	POM	Conductive PEEK
Item	Order code	K	M	KE
Applications		Semiconductor/LCD manufacturing equipment	Various manufacturing lines Food-related products Packaging machine	Semiconductor/LCD manufacturing equipment Electronic device parts
Pad color		 Beige	 White	 Black
Characteristics	High-temperature usage limits	250°C	95°C	250°C
	Low-temperature usage limits	-50°C	-60°C	-50°C
	Weather resistance	○	x	○
	Acid resistance	○	x	○
	Alkali resistance	○	△	○
	Self-lubrication	○	○	○
	Abrasion resistance	○	○	○
Volume resistance ratio		-	-	10 ⁵ to 10 ⁶ Ω·cm

How to read the rating ➡◎ Excellent, ○: Good, △: Conditional, x: Unsuitable
*1: Characteristics are those of pad resin material and do not include the suction mark prevention pad holder. Select with consideration to the vacuum pad holder to be used and the specifications of the suction mark prevention pad holder.
*2: Characteristics are general characteristics of each material and not guaranteed values. Confirm performance with an actual device before use.
*3: The values for the high temperature usage limits are for very short periods of use. Therefore, careful consideration should be employed for usage extending for a constant period of time.
*4: The volume resistance ratio is a representative value released by the material manufacturers and not a guaranteed value.

Related products

Vacuum System Components SELVACS

● Compact design

Each component has been compactly designed to save space.

● A wide variety of models

Extensive model series and variations handle a wide range of fields and applications.

● Unitization / Modularization

The ejector system/vacuum pump system which form the core are unitized and modularized, designed to save space and increase ease of use.



Catalog No.CC-796A

CKD Corporation

Website <https://www.ckd.co.jp/en/>

ASIA

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