Vacuum pad
VSP

■ **Pneumatic components**

CONTENTS

○: Option

Pad shape	Holder shape: With buffer	Holder shape: Vacuum outlet	Pad size	Pad material	Free holder (swinging)	Position locking valve	Page
Compact vacuum pad: VSP-M* various pads shapes ・Space conserved by downsizing existing holder	<Small> None (fixed type)	Top/joint Side/joint Direct mount type	● Standard small type (ø0.7, ø1, ø1.5, ø2, ø3, ø4) is added to conventional pad type series	● Material for compact type Nitrile rubber, silicon rubber, urethane rubber, Fluoro rubber, antistatic silicon rubber, Antistatic butadiene rubber, Food Sanitation Law compliant NBR		○	246
Standard type (General type): VSP-*R ・Ideal for thick, flat work pieces	None (fixed type)	Top/joint Side/joint Direct mount type	ø1, ø2, ø3, ø4, ø6, ø8, ø10, ø15, ø20, ø25 ø30, ø40, ø50, ø60, ø80, ø100, ø150, ø200	Nitrile rubber, silicon rubber, Urethane rubber, fluoro rubber, Antistatic silicon rubber, Antistatic butadiene rubber, Food Sanitation Law compliant NBR	○	○	258
	None (with stopper)	Top/joint Side/joint Direct mount type					
Standard type (Deep type): VSP-*A ・Ideal for picking up round balls, etc.	None (fixed type)	Top/joint Side/joint Direct mount type	ø15, ø20, ø25, ø30, ø40, ø50, ø60, ø80, ø100	Nitrile rubber, silicon rubber, Urethane rubber, fluoro rubber, Antistatic silicon rubber, Antistatic butadiene rubber, Food Sanitation Law compliant NBR	○	○	258
	None (with stopper)	Top/joint Side/joint Direct mount type					
Sponge type: VSP-*S ・Ideal for workpieces with uneven surfaces, such as exterior walls	None (fixed type)	Top/joint Side/joint	ø10, ø15, ø20, ø20, ø30, ø35, ø50, ø70, ø100	Cloroplane rubber	○	○	280
	Provided (with stopper)	Top/joint Side/joint Direct mount type					
Bellows type: VSP-*B ・Ideal for soft workpieces, such as paper or vinyl-packed products	None (fixed type)	Top/joint Side/joint	ø10, ø20, ø30, ø40, ø50, ø80	Nitrile rubber, Silicon rubber, Antistatic silicon rubber	○	○	290
	Provided (with stopper)	Top/joint Side/joint Direct mount type					
Multi-level bellows type: VSP-*W ・Ideal for transferring inclined work pieces or vinyl-packed products	None (fixed type)	Top/joint Side/joint	ø10, ø20, ø30, ø40, ø50	Nitrile rubber, Silicon rubber, Food Sanitation Law compliant NBR		○	300
	Provided (with stopper)	Top/joint Side/joint Direct mount type					
Oval type: VSP-*E ・Ideal for workpieces with limited suction space, such as IC circuit boards	None (fixed type)	Top/joint Side/joint	4 x 10, 4 x 20, 4 x 30, 5 x 10, 5 x 20, 5 x 30, 6 x 10, 6 x 20, 6 x 30, 8 x 20, 8 x 30	Nitrile rubber, Silicon rubber, Antistatic butadiene rubber	○	○	310
	None (screw fixed type)	Top/joint Side/joint Direct mount type					
	Provided (with stopper)	Top/joint Side/joint					
Soft type: VSP-*L ・Ideal for unloading molded parts, and transferring delicate workpieces	None (fixed type)	Top/joint Side/joint Side/joint (Direct mounting type)	ø4, ø6, ø8, ø10, ø15, ø20, ø30, ø40	Nitrile rubber, silicon rubber, Fluoro silicon rubber, Antistatic silicon rubber	○	○	324
	Provided (with stopper)	Top/joint Side/joint Direct mount type					
	Provided (without stopper)	Top/joint Side/joint					
Soft bellows type: VSP-*LB ・Ideal for unloading molded parts, and picking up paper, etc.	None (fixed type)	Top/joint Side/joint Side/joint (Direct mounting type)	ø6, ø8, ø10, ø15, ø20	Nitrile rubber, Silicon rubber	○	○	338
	Provided (with stopper)	Top/joint Side/joint Direct mount type					
	Provided (without stopper)	Top/joint Side/joint					
Nonskid type: VSP-*K* ・Ideal of workpieces covered with oil, such as pressed parts	None (fixed type)	Top/joint Side/joint	ø10, ø20, ø30, ø40, ø50	Oil-resistant NBR	○	○	352
	Provided (with stopper)	Top/joint Side/joint Direct mount type					
Thin type: VSP-*P ・Ideal for transferring thin workpieces, such as photocopy paper and vinyl	None (fixed type)	Top/joint Side/joint Direct mount type	ø8, ø10, ø15, ø20	Nitrile rubber, Fluoro silicon rubber			360
	Provided (with stopper)	Top/joint Side/joint Direct mount type					
Long stroke: VSP various pads shapes ・Ideal when distance from pad to workpiece is not specific			● Corresponding pad shape Standard type (general), Bellows type, Oval type Standard type (deep), Nonskid type, Sponge type	● Compatible stroke 10mm, 15mm, 20mm, 30mm, 40mm, 50mm	○	○	368

How to select vacuum pad

Theoretical lift force (General pad)

■ Theoretical lift force is obtained with the pad area and the vacuum generated when using that pad.

<kPa, N display>

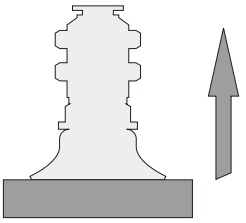
$$W = \frac{C \times P}{101} \times 10.13 \times f$$

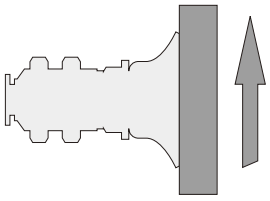
W: Theoretical lift force (N)
C: Pad area (cm^2)
P: Vacuum (-kPa)
f: Safety factor

(mmHg, kg display)

$$W = \frac{C \times P}{760} \times 1.0332 \times f$$

W: Theoretical lift force (kg)
C: Pad area (cm^2)
P: Vacuum (-mmHg)
f: Safety factor

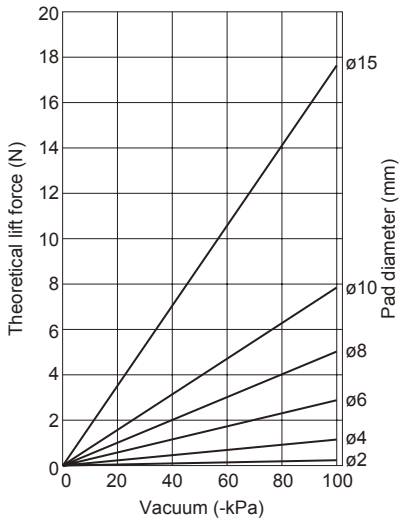

Horizontal suspension


Vertical suspension

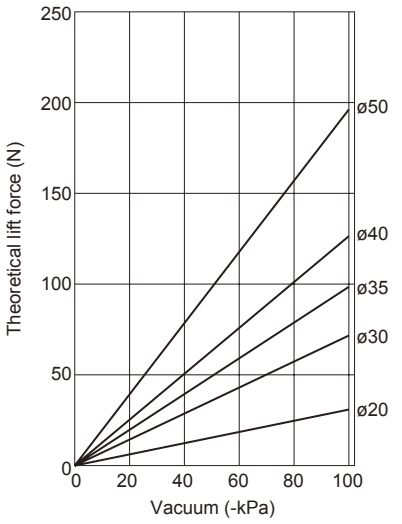
*1: When using a sponge pad, the value is calculated with the inner diameter of the sponge pad so see the separate table.
*2: Due to the characteristics of the pad, the lift force of the bellows type (multistage bellows) and soft type (soft bellows) pad may differ from the theoretical lift force.
*3: The theoretical lift force is a value calculated under static conditions. When actually using the value, provide a 1/4 safety factor for the horizontal suspension, and a 1/8 safety factor for a vertical suspension. Acceleration when moving must also be considered. (Refer to the drawing at right.)

● General pad (rubber pad)

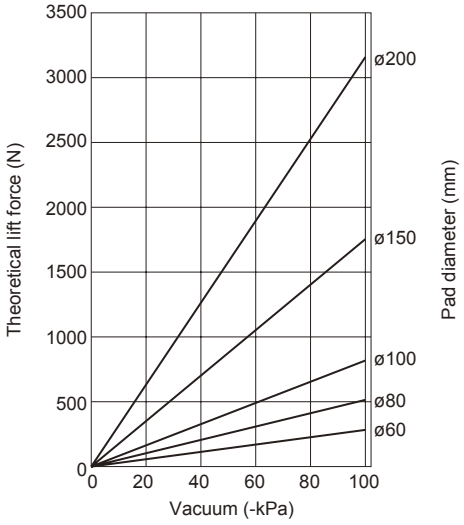
・Pad diameter: ø2mm to ø15mm



・Pad diameter: ø20mm to ø50mm

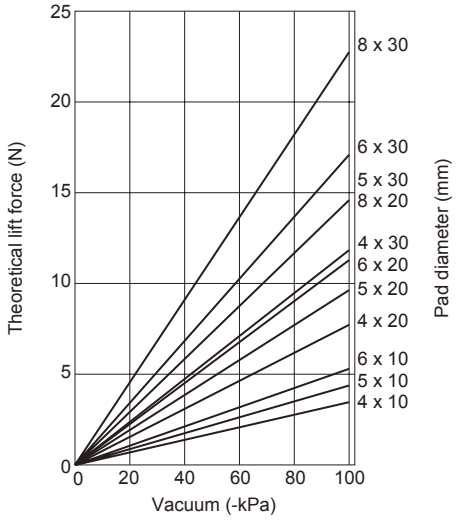


・Pad diameter: ø60mm to ø200mm



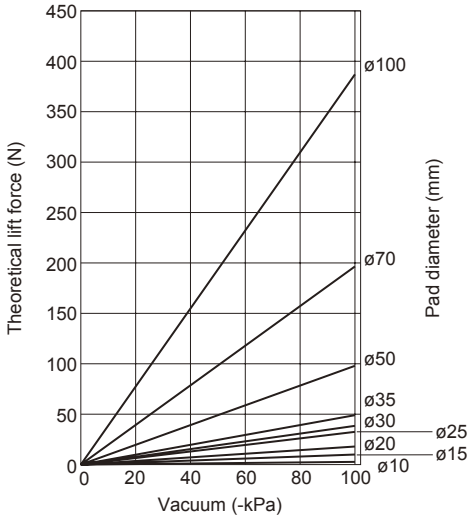
● Oval pad

・Pad diameter: * x 10mm, * x 20mm, * x 30mm



● Sponge pad

・Pad diameter: ø10mm to ø100mm



Selection guide

■ Characteristics of each pad

Item \ Pad material			Nitrile rubber	Silicon rubber	Urethane rubber	Fluorine rubber	Fluoro silicon rubber	Butadiene rubber (low-resistance type)	Cloroplane rubber (sponge type)
			NBR	Si	U	FKM	FSi	BR	CR
Pad color			Black*2	White	Blue	Gray	Light blown	Black	Black
Properties	Surface hardness (Shear A)		40 to 60	40 to 50	60	60	40	60	-
	High temperature working limit temperature		110	180	60	230	180	100	80
	Low temperature working limit temperature		-30	-40	-20	-10	-50	-50	-45
	Weather resistance		△	◎	○	○	○	○	○
	Ozone resistance		△	◎	◎	◎	◎	X	○
	Acid resistance		△	○	X	◎	○	△	△
	Alkaline resistance		○	◎	X	X	◎	○	◎
	Oil resistance	(Gasoline, light oil)	◎	△	◎	◎	△	X	X
		(Benzene, toluene)	△	△	△	◎	△	X	△

Reading the evaluation ⇒ ◎: Best, ○: Appropriate, △: Acceptable, X: Incompatible

*1: The surface resistance rate of the low resistance pad is 200 Ω or less.

*2: Food Sanitation Law compliant pads are in gray.

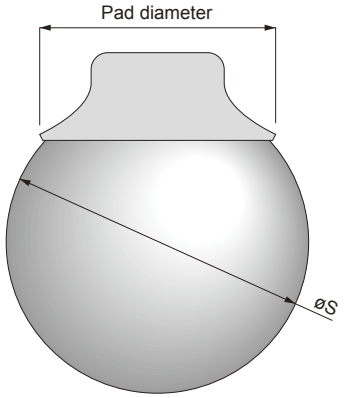
Note 1: The listed properties are the characteristics of typical synthetic rubber used for pad materials.

Note 2: The working limit temperature is an instant temperature. This must be carefully confirmed if the temperature continues for a set time.

■ Sucking up a spherical surface (deep pad)

Minimum pickup diameter

Pad diameter (mm)	ø15	ø20	ø25	ø30	ø40	ø50	ø60	ø80	ø100
Sphere diameter (ø Smm)	20	30	40	50	80	100	120	160	200



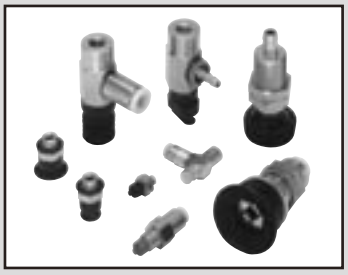
Pad diameter conformity table according to material

Material / Pad diameter	N Nitrile						
	Standard (general type)	Standard (deep type)	Bellows type	Multi-level bellows	Soft type	Soft bellows	Thin type
1	●						
2	●						
3	●						
4	●				●		
6	●				●	●	
8	●				●	●	●
10	●		●	●	●	●	●
15	●	●			●	●	●
20	●	●	●	●	●	●	●
25	●	●					
30	●	●	●	●	●		
35							
40	●	●	●	●	●		
50	●	●	●	●			
60	●	●					
70							
80	●	●	●				
100	●	●					
150	●						
200	●						

Material / Pad diameter	S Silicon						FS Fluoro silicon	
	Standard (general type)	Standard (deep type)	Bellows type	Multi-level bellows	Soft type	Soft bellows	Soft type	Thin type
1	●							
2	●							
3	●							
4	●				●		●	
6	●				●	●	●	
8	●				●	●	●	●
10	●		●	●	●	●	●	●
15	●	●			●	●	●	●
20	●	●	●	●	●	●	●	●
25	●	●						
30	●	●	●	●	●		●	
35								
40	●	●	●	●	●		●	
50	●	●	●	●				
60	●	●						
70								
80	●	●	●					
100	●	●						
150	●							
200	●							

Material / Pad diameter	U Urethane		F Fluorine rubber		SE Antistatic rubber			E Antistatic rubber (low- resistance type)
	Standard (general type)	Standard (deep type)	Standard (general type)	Standard (deep type)	Standard (general type)	Bellows type	Soft type	Standard (general type)
1	●		●		●			●
2	●		●		●			●
3	●		●		●			●
4	●		●		●		●	●
6	●		●		●		●	●
8	●		●		●		●	●
10	●		●		●	●	●	●
15	●	●	●	●	●		●	●
20	●	●	●	●	●	●	●	●
25	●	●	●	●	●			●
30	●	●	●	●	●	●	●	●
35								
40	●	●	●	●	●	●	●	●
50	●	●	●	●	●	●		●
60	●	●	●	●				
70								
80	●	●	●	●				
100	●	●	●	●				
150	●		●					
200	●		●					

Material / Pad diameter	G Food Sanitation Law compliant NBR			Cloroplane rubber	KNH Oil-resistant NBR
	Standard (general type)	Standard (deep type)	Multi-level bellows	Sponge type	Nonskid type
1	●				
2	●				
3	●				
4	●				
6	●				
8	●				
10	●		●	●	●
15	●	●		●	
20	●	●	●	●	●
25	●	●		●	
30	●	●	●	●	●
35				●	
40	●	●	●		●
50	●		●	●	●
60					
70				●	
80					
100				●	
150					
200					



New lightweight material to match downsized pad holder
Compact type vacuum pad

VSP-M* Series

● Pad diameter: ø0.7 to ø30

RoHS

Features

Compact type vacuum pad

- The method for attaching the ø0.7 to ø4mm diameter pad has been changed from the conventional insertion to placed.
- For the ø6 to ø30mm pad diameter, the existing vacuum pad is used, and only the holder has been downsized.

Compact type vacuum pad holder

- The holder (A, B, E types) for the existing vacuum pad has been downsized, allowing space to be saved.
- As conventionally, the pad can be replaced without removing the holder from equipment.
- The aluminum body (conventionally brass) reduces part weight.

How to order

*Refer to the table on page 249 to 255 for the model combination.

● Compact type vacuum pad

VSP - MA 0.7 RM N - 2 - V

● Pad rubber only/standard compact type (RM)

VSPG — 0.7 RM N

Ⓓ Pad material
Ⓑ Pad size
Ⓐ Compact holder shape
Ⓒ Pad shape
Ⓔ Port size/shape
Ⓕ Position locking valve

Symbol	Descriptions
Ⓐ Compact holder shape	
MA	Fixed type top vacuum outlet
MB	Fixed type side vacuum outlet
ME	Direct mount fixed type (pad shape: RM, P only)

Ⓑ Pad size

Refer to the Appendix Table 1 for the pad sizes.

Ⓒ Pad shape	
RM	Standard compact type
R	Standard general type
A	Standard deep type
S	Sponge type
B	Bellows type
W	Multi level bellows type
E	Oval type
L	Soft type
LB	Soft bellows type
K	Nonskid type
P	Thin type

Ⓓ Pad material											
Pad shape		RM	R	A	S	B	W	E	L	LB	K	P
N	Nitrile rubber	●	●	●		●	●	●	●	●		●
S	Silicon rubber	●	●	●		●	●	●	●	●		
U	Urethane rubber	●	●	●								
F	Fluorine rubber	●	●	●								
NH	Oil-resistant NBR										●	
FS	Fluoro silicon								●			●
SE	Antistatic silicon rubber	●	●			●			●			
E	Antistatic boutadiene rubber (low resistance)	●	●					●				
G	Food Sanitation Law compliant NBR	●	●	●			●					
Blank	Cloroplane rubber				●							

Ⓔ Port size/shape	
2	ø1.8 push-in joint Note 2
4	ø4 push-in joint
4T	ø4 barbed joint
6T	ø6 barbed joint
M3	m3 x 0.5 (compact type holder shape: ME type only)
M5	m5 x 0.8 (compact type holder shape: ME type only)

Ⓕ Position locking valve Note 1	
V	With position locking valve
Blank	Without

Note on model no. selection

Note 1: Refer to page 422 for the position locking valve (V). See the list of target vacuum pads (page 424) for details on applicable pad sizes and shapes.

Note 2: Use the air fiber clean type EH-5802 Series or Nihon Pisco polyurethane tubing UB01810 Series for applicable tubing.

● Pad size/pad shape list

Pad size	Pad shape	RM	R	A	S	B	W	E	L	LB	K	P
	0.7	●										
	1	●										
	1.5	●										
	2	●										
	3	●										
	4	●							●			
	6		●						●	●		
	8		●						●	●		●
	10		●		●	●	●		●	●	●	●
	15		●	●	●				●	●		●
	20		●	●	●	●	●		●	●	●	●
	25		●	●	●							
	30		●	●	●	●	●		●		●	
	4 x 10							●				
	4 x 20							●				
	4 x 30							●				
	5 x 10							●				
	5 x 20							●				
	5 x 30							●				
	6 x 10							●				
	6 x 20							●				
	6 x 30							●				
	8 x 20							●				
	8 x 30							●				

Appendix Table 1.1

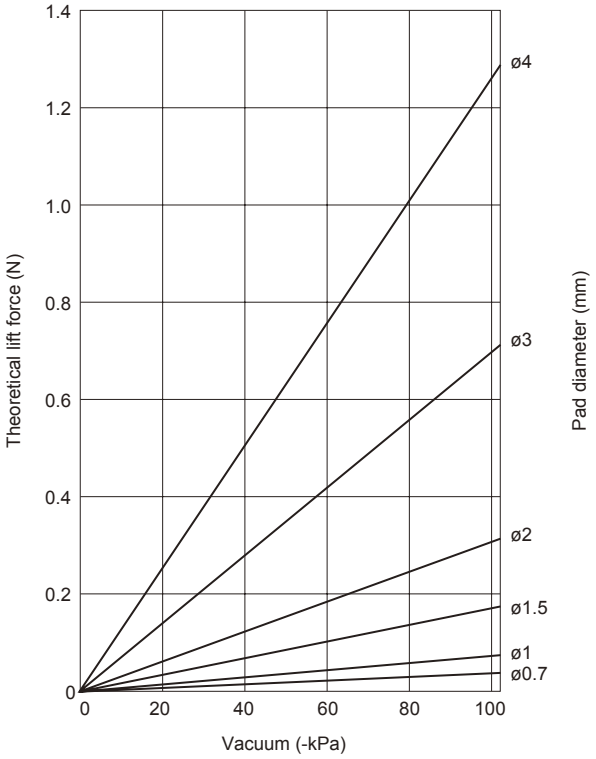
Pad size							
Symbol	0.7	1	1.5	2	3	4	6
Pad diameter (mm)	ø0.7	ø1	ø1.5	ø2	ø3	ø4	ø6
Symbol	8	10	15	20	25	30	
Pad diameter (mm)	ø8	ø10	ø15	ø20	ø25	ø30	

Appendix Table 1.2 Pad shape: Oval

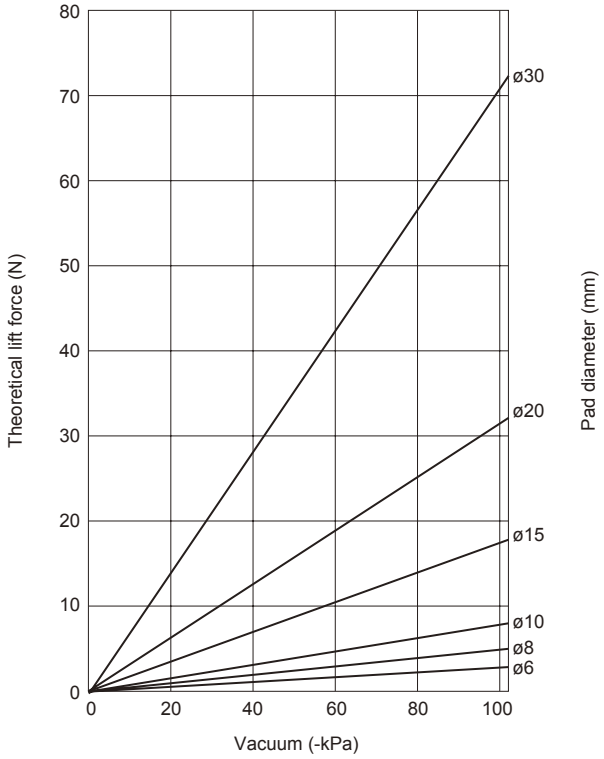
Pad size				
		10mm	20mm	30mm
Symbol	**4mm**	4 x 10	4 x 20	4 x 30
	5mm	5 x 10	5 x 20	5 x 30
	6mm	6 x 10	6 x 20	6 x 30
	8mm	-	8 x 20	8 x 30

Theoretical lift force

● Pad diameter: ø0.7mm to ø40mm

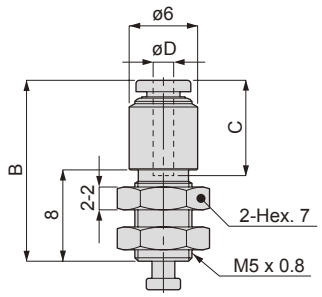


● Pad diameter: ø6mm to ø30mm



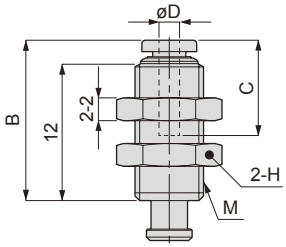
Dimensions (fixed type, top vacuum outlet VSP-MA)

● VSP-MA***-2 (push-in joint type)



Model No.	Applicable pad O.D. Standard type Symbol: RM	Tube O.D. øD	B	C	Weight (g)
VSP-MA***-2	0.7 to 4	1.8	15.9	8.4	1.8

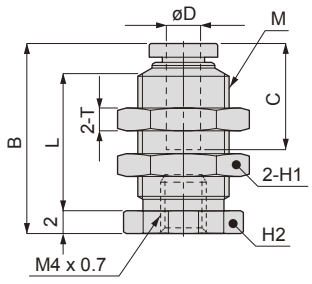
Note 1: For the total length with the pad installed, add corresponding pad dimensions to B dimensions.



Model No.	Applicable pad O.D. Standard type Symbol: R	Applicable pad O.D. Thin type Symbol: P	Tube O.D. øD	B	C	M	Opposite side H	Weight (g)
VSP-MA***-2	6, 8	8 to 20	1.8	14.1	8.4	M6 x 0.75	8	2

Note 1: For the total length with the pad installed, add corresponding pad dimensions to B dimensions.

● VSP-MA***-4 (push-in joint type)

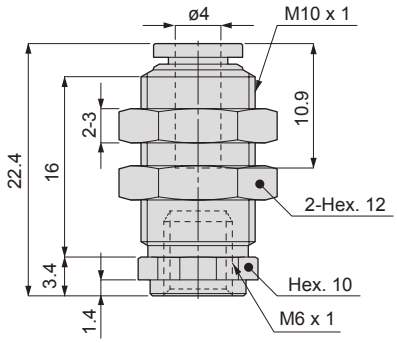


Model No.	Applicable pad O.D. Standard type Symbol: R, A	Bellows type Symbol: B	Multi level bellows Symbol: W	Soft type Symbol: L	Soft bellows Symbol: LB	Nonskid type Symbol: K	Tube O.D. øD	B	L	C	M	Opposite side H	Weight (g)
VSP-MA***-4	10, 15	10	10	4 to 15	6 to 15	10	4	21	16	11.2	M10 x 1	12	7.7

Note 1: For the total length with the pad installed, add corresponding pad dimensions to B dimensions.
Note 2: Soft type and soft bellows type are applicable to adaptor.

Dimensions (fixed type, top vacuum outlet VSP-MA)

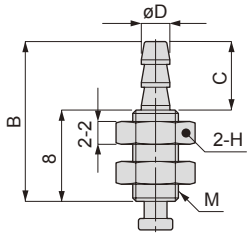
● VSP-MA***-4 (push-in joint type)



Model No.	Applicable pad O.D.								Weight (g)
	Standard type Symbol: R, A	Sponge type Symbol: S	Bellows type Symbol: B	Multi level bellows Symbol: W	Oval type Symbol: E	Soft type Symbol: L	Soft bellows Symbol: LB	Nonskid type Symbol: K	
VSP-MA***-4	20 to 30	10 to 30	20, 30	20, 30	All size	20, 30	20	20, 30	13

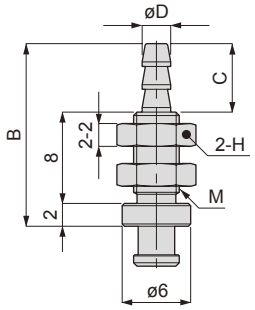
Note 1: For the total length with the pad installed, add corresponding pad dimensions to holder dimensions 22.4.
Note 2: Soft type and soft bellows type are applicable to adaptor.

● VSP-MA***-4T (barbed joint type)



Model No.	Applicable pad O.D. Standard type Symbol: RM	Tube O.D. x I.D. øD	B	C	M	Opposite side H	Weight (g)
VSP-MA***-4T	0.7 to 4	4 x 2.5	15	7	M5 x 0.5	7	1.3

Note 1: For the total length with the pad installed, add corresponding pad dimensions to B dimensions.

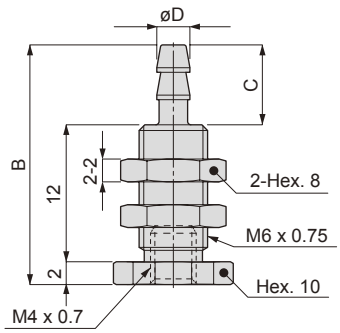


Model No.	Applicable pad O.D.		Tube O.D. x I.D. øD	B	C	M	Opposite side H	Weight (g)
	Standard type Symbol: R	Thin type Symbol: P						
VSP-MA***-4T	6, 8	8 to 20	4 x 2.5	17	7	M5 x 0.5	7	1.6

Note 1: For the total length with the pad installed, add corresponding pad dimensions to B dimensions.

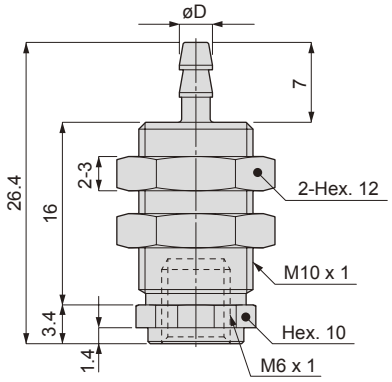
Dimensions (fixed type, top vacuum outlet VSP-MA)

● VSP-MA***-4T (barbed joint type)



Model No.	Applicable pad O.D.						Tube O.D. x I.D. øD	B	C	Weight (g)
	Standard type Symbol: R, A	Bellows type Symbol: B	Multi level bellows Symbol: W	Soft type Symbol: L	Soft bellows Symbol: LB	Nonskid type Symbol: K				
VSP-MA***-4T	10, 15	10	10	4 to 15	6 to 15	10	4 x 2.5	21	7	3.9

Note 1: For the total length with the pad installed, add corresponding pad dimensions to B dimensions.
Note 2: Soft type and soft bellows type are applicable to adaptor.

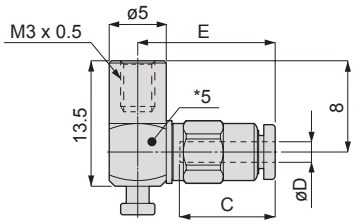


Model No.	Applicable pad O.D.								Tube O.D. x I.D. øD	Weight (g)
	Standard type Symbol: R, A	Sponge type Symbol: S	Bellows type Symbol: B	Multi level bellows Symbol: W	Oval type Symbol: E	Soft type Symbol: L	Soft bellows Symbol: LB	Nonskid type Symbol: K		
VSP-MA***-4T	20 to 30	10 to 30	20, 30	20, 30	All size	20, 30	20	20, 30	4 x 2.5	12
VSP-MA***-6T									6 x 4	13

Note 1: For the total length with the pad installed, add corresponding pad dimensions to holder dimensions 26.4.
Note 2: Soft type and soft bellows type are applicable to adaptor.

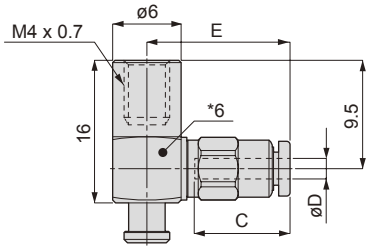
Dimensions (fixed type, side vacuum outlet VSP-MB)

● VSP-MB***-2 (push-in joint type)



Model No.	Applicable pad O.D. Standard type Symbol: RM	Tube O.D. øD	E	C	Weight (g)
VSP-MB***-2	0.7 to 4	1.8	12.1	8.4	1.5

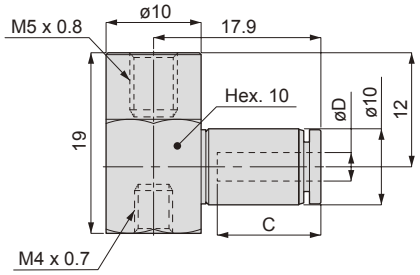
Note 1: For the total length with the pad installed, add corresponding pad dimensions to holder dimensions 13.5.



Model No.	Applicable pad O.D. Standard type Symbol: R	Applicable pad O.D. Thin type Symbol: P	Tube O.D. øD	E	C	Weight (g)
VSP-MB***-2	6, 8	8 to 20	1.8	12.6	8.4	2

Note 1: For the total length with the pad installed, add corresponding pad dimensions to holder dimensions 16.

● VSP-MB***-4 (push-in joint type)

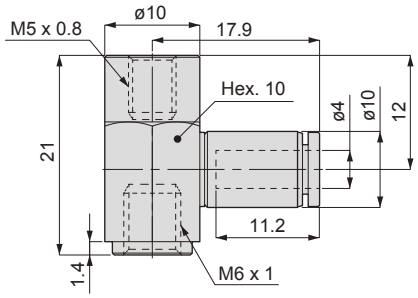


Model No.	Applicable pad O.D. Standard type Symbol: R, A	Bellows type Symbol: B	Multi level bellows Symbol: W	Soft type Symbol: L	Soft bellows Symbol: LB	Nonskid type Symbol: K	Tube O.D. øD	C	Weight (g)
VSP-MB***-4	10, 15	10	10	4 to 15	6 to 15	10	11.2	10.9	8.5

Note 1: For the total length with the pad installed, add corresponding pad dimensions to holder dimensions 19.
Note 2: Soft type and soft bellows type are applicable to adaptor.

Dimensions (fixed type, side vacuum outlet VSP-MB)

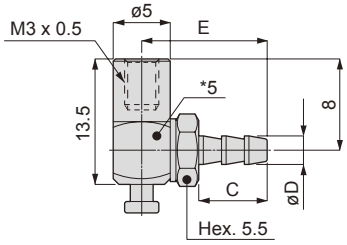
● VSP-MB***-4 (push-in joint type)



Model No.	Applicable pad O.D.								Weight (g)
	Standard type Symbol: R, A	Sponge type Symbol: S	Bellows type Symbol: B	Multi level bellows Symbol: W	Oval type Symbol: E	Soft type Symbol: L	Soft bellows Symbol: LB	Nonskid type Symbol: K	
VSP-MB***-4	20 to 30	10 to 30	20, 30	20, 30	All size	20, 30	20	20, 30	13

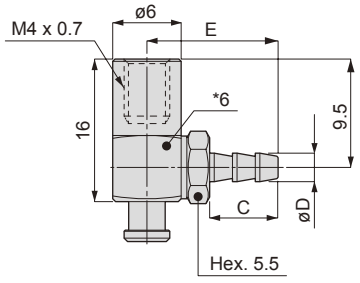
Note 1: For the total length with the pad installed, add corresponding pad dimensions to holder dimensions 21.
Note 2: Soft type and soft bellows type are applicable to adaptor.

● VSP-MB***-4T (barbed joint type)



Model No.	Applicable pad O.D. Standard type Symbol: RM	Tube O.D. x I.D. øD	E	C	Weight (g)
VSP-MB***-4T	0.7 to 4	4 x 2.5	12	7	1.4

Note: For the total length with the pad installed, add corresponding pad dimensions to holder dimensions 13.5.

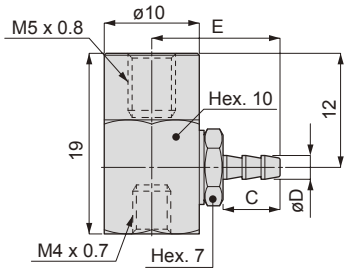


Model No.	Applicable pad O.D.		Tube O.D. øD	E	C	Weight (g)
	Standard type Symbol: R	Thin type Symbol: P				
VSP-MB***-4T	6, 8	8 to 20	4 x 2.5	12.5	7	1.8

Note: For the total length with the pad installed, add corresponding pad dimensions to holder dimensions 16.

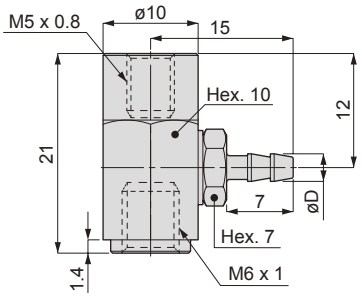
Dimensions (fixed type, side vacuum outlet VSP-MB)

● VSP-MB***-4T (barbed joint type)



Model No.	Applicable pad O.D.						Tube O.D. x I.D. øD	E	C	Weight (g)
	Standard type Symbol: R, A	Bellows type Symbol: B	Multi level bellows Symbol: W	Soft type Symbol: L	Soft bellows Symbol: LB	Nonskid type Symbol: K				
VSP-MB***-4T	10, 15	10	10	4 to 15	6 to 15	10	4 x 2.5	15	7	7.1

Note 1: For the total length with the pad installed, add corresponding pad dimensions to holder dimensions 19.
Note 2: Soft type and soft bellows type are applicable to adaptor.

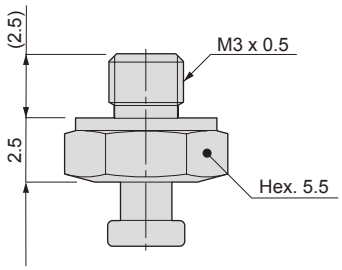


Model No.	Applicable pad O.D.								Tube O.D. x I.D. øD	Weight (g)
	Standard type Symbol: R, A	Sponge type Symbol: S	Bellows type Symbol: B	Multi level bellows Symbol: W	Oval type Symbol: E	Soft type Symbol: L	Soft bellows Symbol: LB	Nonskid type Symbol: K		
VSP-MB***-4T	20 to 30	10 to 30	20, 30	20, 30	All size	20, 30	20	20, 30	4 x 2.5	12
VSP-MB***-6T									6 x 4	13

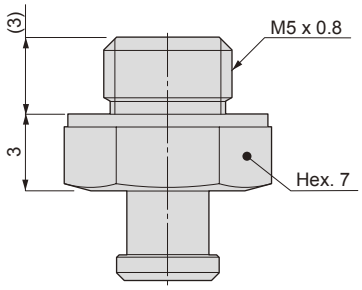
Note 1: For the total length with the pad installed, add corresponding pad dimensions to holder dimensions 21.
Note 2: Soft type and soft bellows type are applicable to adaptor.

Dimensions (direct mount fixed type VSP-ME)

● 07 type



● 6 type

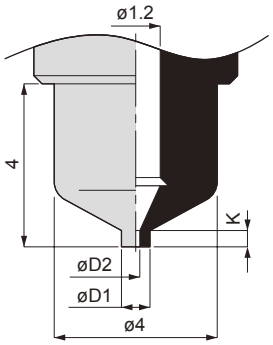


Model No.	Applicable pad O.D.		Weight (g)
	Standard type Symbol: RM, R	Thin type Symbol: P	
VSP-ME0.7**-M3	0.7 to 4	-	0.6
VSP-ME6**-M5	6, 8	8 to 20	1.6

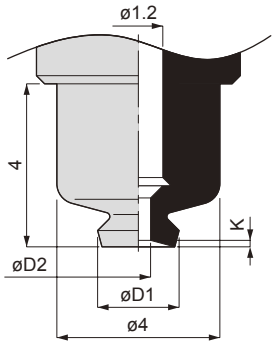
Note: The standard 0.7 to 4 types are compact (RM), and 6 and 8 types are general-purpose (R).

Dimensions (Detailed drawing of pad and holder fixing section)

● VSPG-0.7RM*, VSPG-1RM*, VSPG-1.5RM*



● VSPG-2RM*, VSPG-3RM*, VSPG-4RM*



Model No.	Pad O.D. øD1	Pad I.D. øD2	K	Weight (g)
VSPG-0.7RM*	0.7	0.2	0.4	0.1
VSPG-1RM*	1	0.4	0.4	0.1
VSPG-1.5RM*	1.5	0.7	0.4	0.1
VSPG-2RM*	2	0.6	0.2	0.1
VSPG-3RM*	3	0.8	0.4	0.1
VSPG-4RM*	4	1.2	0.6	0.1

Safety precautions

Warning

■ The compact vacuum pad holder is smaller and lighter than the conventional vacuum pad holder, so withstand load strength is lower. When setting the load, provide adequate allowance, and be sure to check with actual machine use.

■ When replacing the vacuum pad, check the vacuum pad configuration diagram, follow the recommended tightening torque given below, and use appropriate tools. When finished, check that there is no looseness.

Table: Recommended tightening torque when replacing vacuum pad

Thread size	Tightening torque
M4 x 0.7	0.9 to 1.1N·m
M6 x 1	2 to 2.7N·m

■ When installing the compact vacuum pad holder for partitions in actual equipment, follow the recommended tightening torque below, tighten with appropriate tools, and check that there is no looseness.

Table: Recommended tightening torque for partition mounting nut

Thread size	Tightening torque
M4 x 0.7	1 to 1.2N·m
M5 x 0.5	1.5 to 2N·m
M6 x 0.75	2 to 3N·m
M8 x 0.75	2.5 to 3.5N·m
M10 x 1	5 to 7N·m

Caution

■ When using an antielectrostatic specification vacuum pad, the metal plate, etc., that the vacuum pad holder is installed on must be able to release electrostatic discharge. Not providing such measures could accumulate electrostatic discharge in the vacuum pad.

■ Standard general-purpose vacuum pad VSP-*1R* to *4R* cannot be installed on the compact vacuum pad holder. These pads are compatible only with the standard vacuum pad holder.

■ When the compact vacuum pad with diameter ø0.7, ø1, or ø1.5 mm is installed, check that load on the lip during suction does not exceed 0.4 (N). Applying excessive load to the lip could cause the rubber's elasticity to squeeze the inner pad excessively and prevent workpieces from being picked up or could cause the suction confirmation signal to malfunction.

■ The air fiber antielectrostatic discharge UP-9402 Series or air fiber for barbed joint UP-9102 Series cannot be used with the port size ø1.8 pushin joint.
(Recommended applicable tubing: Use air fiber clean EH-5802 Series or Nihon Pisco polyurethane tubing UB01810 Series.)