

# Compact Type ZP3 Series

RoHS

Model Selection

ø1.5, ø2, ø3.5, ø4, ø6, ø8, ø10, ø13, ø16

Flat Type, Flat Type with Groove, Bellows Type, Bellows Type with Ribs

**Overall length shortened** For the flat type (Pad diameter: ø2)

ZP3 Compact

Flat Type

Flat Type with Groove

Bellows Type

Bellows Type with Ribs

Construction

Mounting Bracket Assembly

Precautions

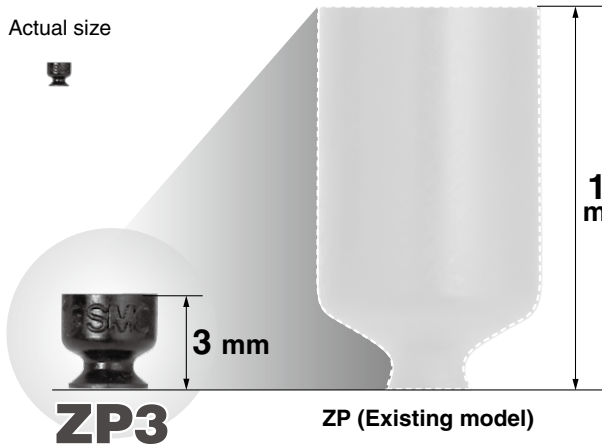
Pad unit

**Max. 9 mm shorter**

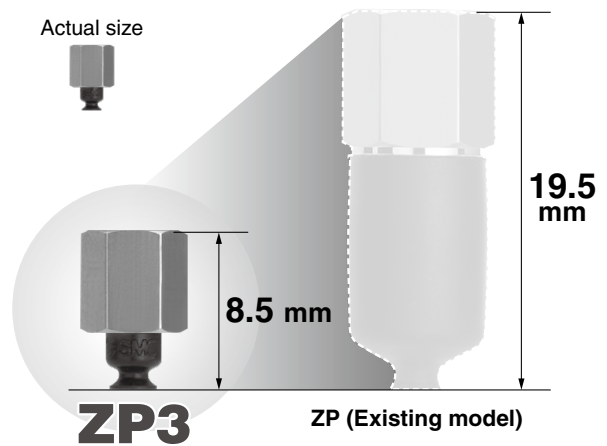
With adapter

**Max. 11 mm shorter**

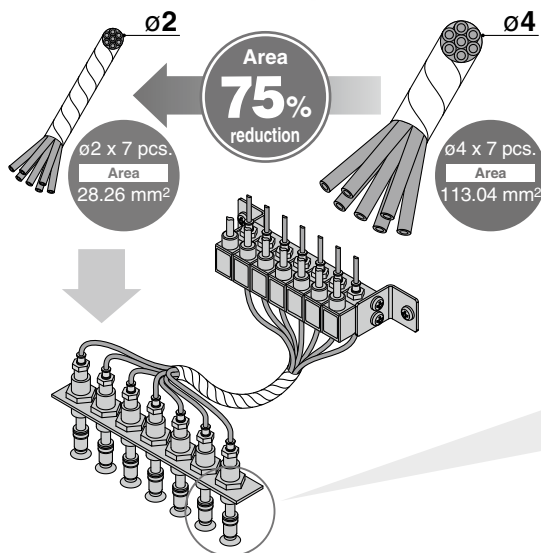
Actual size



Actual size

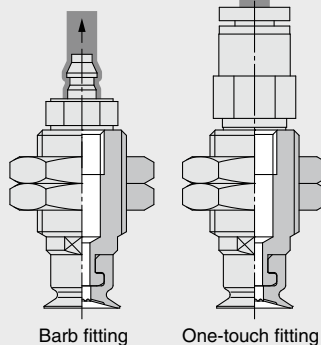


**Space saving** ø2 piping reduces working space!



## Vertical

- Male thread
- Female thread
- Barb fitting (Applicable tubing: ø2)
- One-touch fitting (Applicable tubing: ø2)

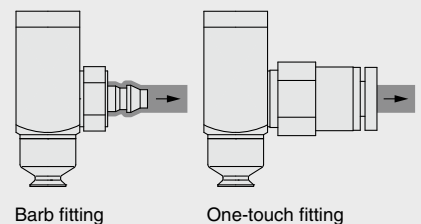


Barb fitting

One-touch fitting

## Lateral

- Female thread
- Barb fitting (Applicable tubing: ø2)
- One-touch fitting (Applicable tubing: ø2)



Barb fitting

One-touch fitting

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### Bellows Type

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## Improved functions

### Improved removability

Adsorption surface is shot-blasted

Micro-dents and bumps on the surface facilitate easy removal.

With groove

Less contact surface with the workpiece makes it easy to remove.



### Construction to prevent the pad from coming off

The new shape of the part which connects with the adapter prevents the pad from coming off.



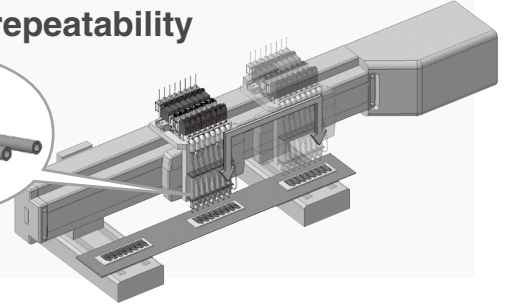
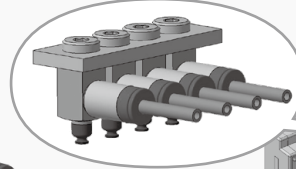
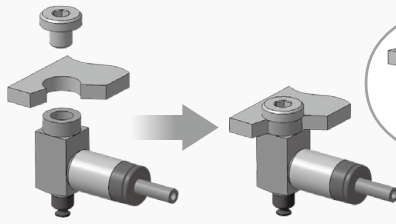
Pad diameter from  $\phi 1.5$

### Easier identification

SMC logo mark

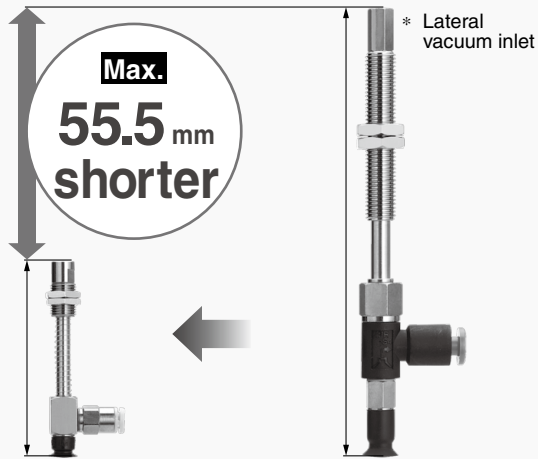


### Fixing boss which allows for easy mounting and repeatability



## Compact buffer body

### Overall length shortened



ZP3

ZP

Pad diameter  $\phi 8$ , Flat type, With One-touch fitting

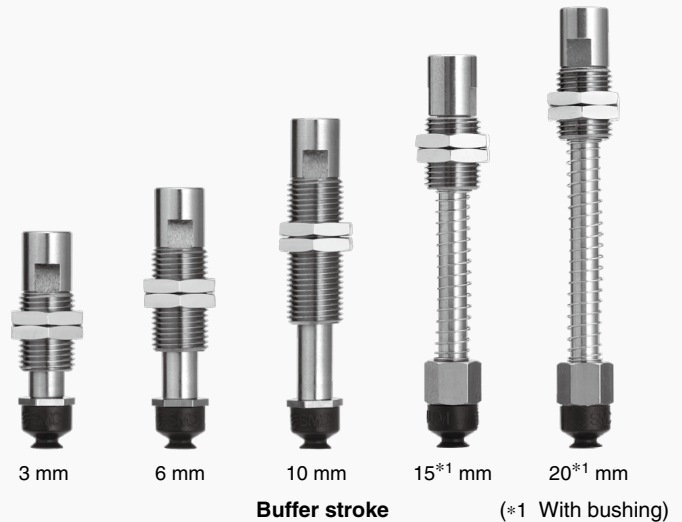
#### ZP3

Stroke	Overall length [mm]
3	40
6	46
10	56
15	59
20	66.5
25	—

#### ZP

Stroke	Overall length [mm]
3	—
6	78.5
10	109.5
15	114.5
20	—
25	124.5

### Short stroke type: 3 mm available



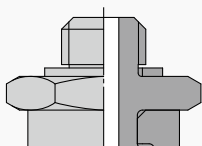
Buffer stroke

(\*1 With bushing)

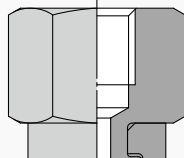
Pad diameter	Buffer specifications	Stroke [mm]				
		3	6	10	15	20
$\phi 1.5, \phi 2, \phi 3.5$	Rotating, Non-rotating	●	●	—	—	—
	Rotating	●	●	●	—	—
$\phi 4, \phi 6, \phi 8, \phi 10, \phi 13, \phi 16$	Rotating, With bushing	—	—	—	●	●
	Non-rotating	●	●	●	●	●

## Wide selection of piping

Male thread

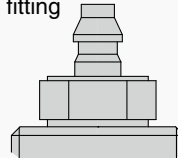


Female thread

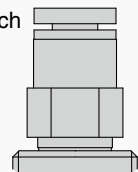



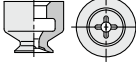

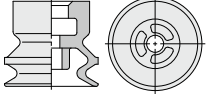


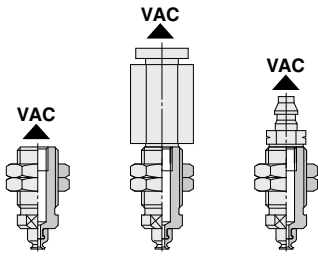
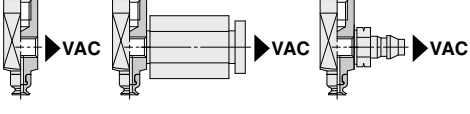
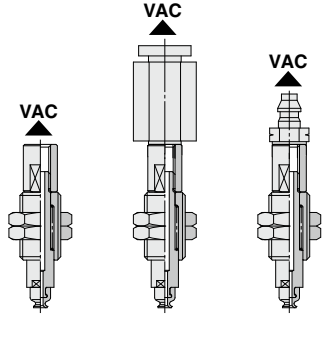
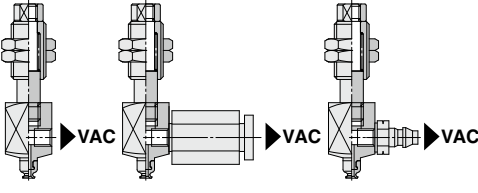
For  $\phi 2$  piping!

Barb fitting



One-touch fitting



		Vacuum inlet direction							
		Flat type	Flat type with groove	Bellows type	Bellows type with ribs				
Vacuum inlet direction	Single unit					p. 137	p. 143	p. 149	p. 155
	Vertical	ZP3-T With adapter			p. 137	p. 143	p. 149	p. 155	
		ZP3-T With adapter			p. 138	p. 144	p. 150	p. 156	
		ZP3-Y With adapter			p. 139	p. 145	p. 151	p. 157	
	Lateral	ZP3-T With buffer			p. 140	p. 146	p. 152	p. 158	
		ZP3-Y With buffer			p. 141	p. 147	p. 153	p. 159	

Model Selection

ZP3 Compact

Flat Type

Flat Type with Groove

Bellows Type

Bellows Type with Ribs

Construction

Mounting Bracket Assembly

Precautions

# Compact Type *ZP3 Series* Specifications

## Pad Material

Material	NBR (Nitrile rubber)	Silicone rubber *1*2	Urethane rubber	FKM (Fluoro rubber)	Conductive NBR (Nitrile rubber)	Conductive silicone rubber	Semiconductive silicone rubber
Color of rubber	Black	White	Brown	Black			
Rubber hardness (Shore A: ±5°)	60		55 to 60	60			55

\*1 Compliant with the FDA (USA Food and Drug Administration) regulation 21CFR§177.2600 for "Rubber articles intended for repeated use"

\*2 Compliant with the standards for "Rubber apparatus (excluding baby drinking apparatus) and containers/packaging" (D3) (Partial revision: Ministry of Health, Labour, and Welfare Notification No. 595, 2012) in Section 3 "Apparatus and Containers/Packaging" of the Food Sanitation Act, Article 18 "Specifications and Standards for Food and Food Additives, etc." (Ministry of Health and Welfare Notification No. 370, 1959).

## Adapter Specifications

### Vacuum Inlet Direction **Vertical** T Type/ZP3-T

Connection		Male thread					Female thread		
Pad diameter		ø1.5 to ø3.5		ø4 to ø8		ø10 to ø16		ø1.5 to ø3.5	ø4 to ø16
Connection thread		M3 x 0.5	M6 x 0.75	M5 x 0.8	M10 x 1	M5 x 0.8	M12 x 1	M3 x 0.5	M5 x 0.8
Vacuum inlet	Female thread	Use the connection thread.	M3 x 0.5	Use the connection thread.	M5 x 0.8	Use the connection thread.	M5 x 0.8	Use the connection thread.	Use the connection thread.
	One-touch fitting		ø2, ø4		ø2, ø4		ø2, ø4, ø6		
	Barb fitting*1		ø2, ø4		ø2, ø4		ø2, ø4, ø6		

\*1 ø2 polyurethane tubing, ø4, ø6 soft tubing

### Vacuum Inlet Direction **Lateral** Y Type/ZP3-Y

Connection		Female thread		
Pad diameter		ø1.5 to ø3.5	ø4 to ø8	ø10 to ø16
Connection thread		M3 x 0.5	M5 x 0.8	M5 x 0.8
Vacuum inlet	Female thread	M3 x 0.5	M5 x 0.8	M5 x 0.8
	One-touch fitting	ø2, ø4	ø2, ø4	ø2, ø4, ø6
	Barb fitting*1	ø2, ø4	ø2, ø4	ø2, ø4, ø6

\*1 ø2 polyurethane tubing, ø4, ø6 soft tubing

## Buffer Specifications

Pad diameter		ø1.5 to ø3.5		ø4 to ø16		
Non-rotating specification		J: Rotating	K: Non-rotating	J: Rotating	JB: Rotating, With bushing	K: Non-rotating
Stroke [mm]		3, 6		3, 6, 10	15, 20	3, 6, 10, 15, 20
Connection thread		M6 x 0.75	M8 x 0.75	M8 x 0.75		
Spring reactive force [N]	At 0 stroke	0.2		0.2		
	At full stroke	0.4	0.5	0.5		



# Compact Type

## Flat Type

# ZP3 Series

Pad diameter:  $\varnothing 1.5$ ,  $\varnothing 2$ ,  $\varnothing 3.5$



Model Selection

ZP3 Compact

Flat Type

Flat Type with Groove

Bellows Type

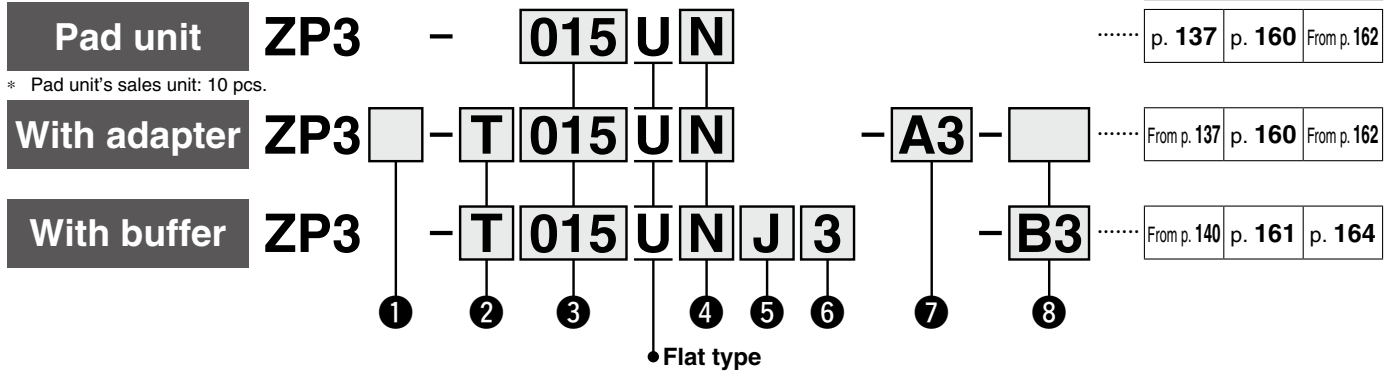
Bellows Type with Ribs

Construction

Mounting Bracket Assembly

Precautions

### How to Order



#### 1 Adapter material

Nil	Brass
S*1	Stainless steel (Stainless steel 304)

\*1 Only applicable to the pad with adapter

#### 2 Vacuum inlet direction

Nil	Pad unit
T	Vertical
Y	Lateral

#### 3 Pad diameter

015	$\varnothing 1.5$
02	$\varnothing 2$
035	$\varnothing 3.5$

#### 4 Material

N	NBR
S	Silicone rubber*1 *2
U	Urethane rubber
F	FKM
GN	Conductive NBR
GS	Conductive silicone rubber

\*1 Compliant with the FDA (USA Food and Drug Administration) regulation 21CFR§177.2600 for "Rubber articles intended for repeated use"

\*2 Compliant with the standards for "Rubber apparatus (excluding baby drinking apparatus) and containers/packaging" (D3) (Partial revision: Ministry of Health, Labour, and Welfare Notification No. 595, 2012) in Section 3 "Apparatus and Containers/Packaging" of the Food Sanitation Act, Article 18 "Specifications and Standards for Food and Food Additives, etc." (Ministry of Health and Welfare Notification No. 370, 1959)

#### 5 Buffer specification

J	Rotating
K	Non-rotating

#### 6 Buffer stroke

Stroke [mm]	Pad diameter	
	All sizes	
3	●	●
6	●	●

### With adapter

#### 7 Connection thread/ 8 Vacuum inlet

○: ZP3□-T/Vertical ●: ZP3□-Y/Lateral

7 Connection thread			8 Vacuum inlet		Pad diameter
Type	Symbol	Size	Symbol	Size	All sizes
Male thread	A3	M3 x 0.5	—	Nil	—*1
			Female thread	B3	M3 x 0.5
	A6	M6 x 0.75	One-touch fitting*4	02	$\varnothing 2$
			Barb fitting*4	04	$\varnothing 4$
				U2	For $\varnothing 2$ polyurethane tubing*2
U4	For $\varnothing 4$ soft tubing*3	○			
	Female thread	B3	M3 x 0.5	—	Nil
Female thread				B3	M3 x 0.5
One-touch fitting*4				02	$\varnothing 2$
Barb fitting*4				04	$\varnothing 4$
				U2	For $\varnothing 2$ polyurethane tubing
U4	For $\varnothing 4$ soft tubing	●			

\*1 Use the connection thread.

\*2 Polyurethane tube piping

\*3 Soft nylon/Polyurethane tube piping

\*4 Not compatible with stainless steel materials

### With buffer

#### 8 Vacuum inlet

○: ZP3-T/Vertical ●: ZP3-Y/Lateral

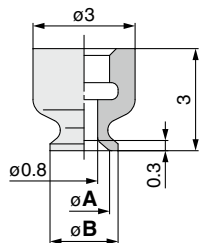
Type	Symbol	Size	Pad diameter	
			All sizes	
Female thread	B3	M3 x 0.5	○●	○●
One-touch fitting	02	$\varnothing 2$	○●	○●
	04	$\varnothing 4$	○●	○●
Barb fitting	U2	For $\varnothing 2$ polyurethane tubing	○●	○●
	U4	For $\varnothing 4$ soft tubing	○●	○●

\* It is not necessary to select a connection thread.

\* The pad, mounting nut, and fitting are shipped together but do not come assembled.

## Dimensions/Models

Single unit  $\varnothing 1.5$  to  $\varnothing 3.5$



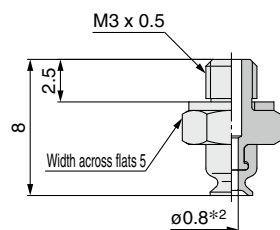
**Construction** p. 160  
**Mounting Bracket Assembly** From p. 162

ZP3 - **015** U **N**  
① ②

Model	① Pad dia.	Form	② Material <sup>*1</sup>	A		B	
ZP3	015	U	N S U F GN GS	1.5		2	
	02			2		2.5	
	035			3.5		4	

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

With adapter  $\varnothing 1.5$  to  $\varnothing 3.5$



**Construction** p. 160  
**Adapter Assembly** p. 162

ZP3 **□** - T **015** U **N** - **A3**  
① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

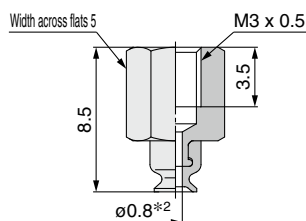
④ Connection thread (Male thread)

A3	M3 x 0.5
----	----------

Model	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material <sup>*1</sup>	④ Connection thread

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

\*2 Indicates the minimum hole size of the adapter or vacuum pad



**Construction** p. 160  
**Adapter Assembly** p. 162

ZP3 **□** - T **015** U **N** - **B3**  
① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Connection thread (Female thread)

B3	M3 x 0.5
----	----------

Model	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material <sup>*1</sup>	④ Connection thread

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

\*2 Indicates the minimum hole size of the adapter or vacuum pad

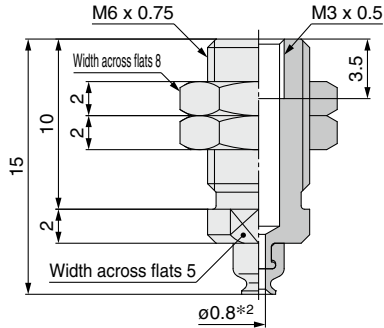


**Dimensions/Models**

**With adapter**  $\varnothing 1.5$  to  $\varnothing 3.5$

ZP3   - T 015 U N - A6 - B3

1   
 2   
 3   
 4   
 5



**1 Adapter material**

<b>Nil</b>	Brass
<b>S</b>	Stainless steel (Stainless steel 304)

**4 Connection thread (Male thread)**

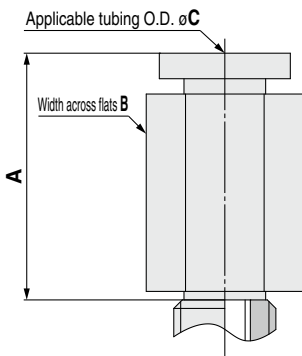
<b>A6</b>	M6 x 0.75
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**5 Vacuum inlet**

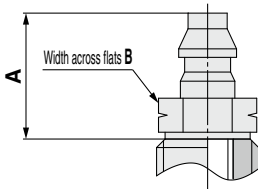
<b>B3</b>	M3 x 0.5	Female thread
<b>02</b>	$\varnothing 2$	One-touch fitting*1
<b>04</b>	$\varnothing 4$	
<b>U2</b>	For $\varnothing 2$ polyurethane tubing	Barb fitting*1
<b>U4</b>	For $\varnothing 4$ soft tubing	

\*1 Not compatible with stainless steel materials

**Vacuum inlet: One-touch fitting**



**Vacuum inlet: Barb fitting**



**Construction** p. 160

**Adapter Assembly** p. 163

Model	Model						
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material*1	4 Connection thread	5 Vacuum inlet
ZP3	Nil S	T	015 02 035	U	N S U F GN GS	A6	B3

**Dimensions Per Vacuum Inlet: One-touch Fitting**

Model	Model						A	B	C	Fitting part min. hole size	Fitting part no.
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material*1	4 Connection thread					
ZP3	Nil	T	015 02 035	U	N S U F GN GS	A6			$\varnothing 1.2$	02	KQ2H02-M3G
										04	KQ2H04-M3G

**Dimensions Per Vacuum Inlet: Barb Fitting**

Model	Model						A	B	Fitting part min. hole size	Fitting part no.
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material*1	4 Connection thread				
ZP3	Nil	T	015 02 035	U	N S U F GN GS	A6			U2	M-3AU-2
									U4	M-3AU-4-X83

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

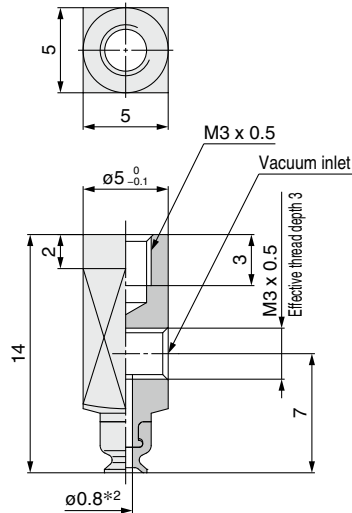
\*2 Indicates the minimum hole size of the adapter or vacuum pad

## Dimensions/Models

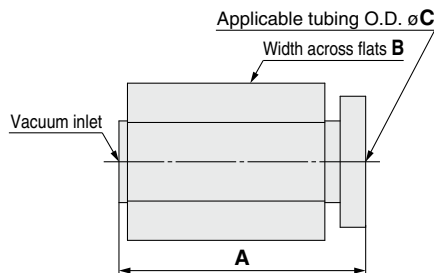
With adapter  $\varnothing 1.5$  to  $\varnothing 3.5$

ZP3   - Y 015 U N - B3 - B3

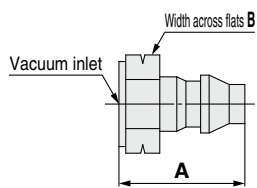
1   
 2   
 3   
 4   
 5



### Vacuum inlet: One-touch fitting



### Vacuum inlet: Barb fitting



Construction p. 160

Adapter Assembly p. 162

### 1 Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

### 4 Connection thread (Female thread)

B3	M3 x 0.5
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### 5 Vacuum inlet

B3	M3 x 0.5	Female thread
02	$\varnothing 2$	One-touch fitting*1
04	$\varnothing 4$	
U2	For $\varnothing 2$ polyurethane tubing	Barb fitting*1
U4	For $\varnothing 4$ soft tubing	

\*1 Not compatible with stainless steel materials

	Model						
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material*1	4 Connection thread	5 Vacuum inlet
ZP3	Nil S	Y	015 02 035	U	N S U F GN GS	B3	B3

### Dimensions Per Vacuum Inlet: One-touch Fitting

	Model						A	B	C	Fitting part min. hole size	Fitting part no.				
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material*1	4 Connection thread						5 Vacuum inlet			
ZP3	Nil	Y	015 02 035	U	N S U F GN GS	B3				$\varnothing 1.2$	02	13	5.5	2	KQ2H02-M3G
											04	14.5	8	4	KQ2H04-M3G

### Dimensions Per Vacuum Inlet: Barb Fitting

	Model						A	B	Fitting part min. hole size	Fitting part no.					
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material*1	4 Connection thread					5 Vacuum inlet				
ZP3	Nil	Y	015 02 035	U	N S U F GN GS	B3					U2	6.5	4.5	$\varnothing 0.9$	M-3AU-2
											U4	7.4	5	$\varnothing 1.2$	M-3AU-4-X83

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

\*2 Indicates the minimum hole size of the adapter or vacuum pad



Dimensions/Models

With buffer  $\varnothing 1.5$  to  $\varnothing 3.5$

ZP3 - T **015** **U** **N** **J** **3** - **B3**

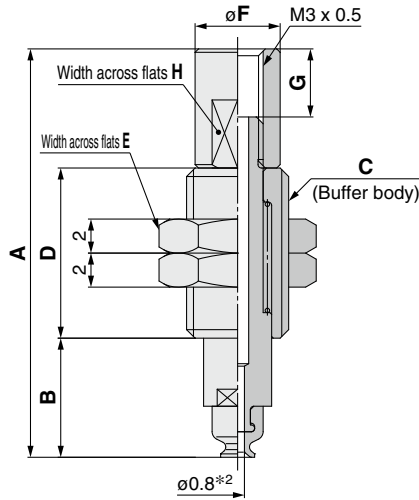
① ② ③ ④ ⑤

⑤ Vacuum inlet

Buffer specification ③

<b>J</b>	Rotating
<b>K</b>	Non-rotating

<b>B3</b>	M3 x 0.5	Female thread
<b>02</b>	$\varnothing 2$	One-touch fitting
<b>04</b>	$\varnothing 4$	Barb fitting
<b>U2</b>	For $\varnothing 2$ polyurethane tubing	Barb fitting
<b>U4</b>	For $\varnothing 4$ soft tubing	



		Model					A	B	C	D	E	F	G	H
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet								
ZP3	T	015 02 035	U	N S U F GN GS	J	3	24	7	M6 x 0.75	10	8	5	4	4
						6		10		14				
					K	3	26.5	8	M8 x 0.75	11	10	7	3	6
						6				33				

Dimensions Per Vacuum Inlet: One-touch Fitting

		Model					J	K	L	Fitting part min. hole size	Fitting part no.	
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet						
ZP3	T	015 02 035	U	N S U F GN GS	J K	3 6	02	13	5.5	2	$\varnothing 1.2$	KQ2H02-M3G
							04	14.5	8	4		KQ2H04-M3G

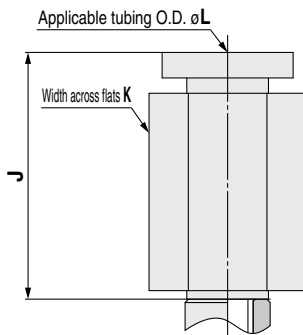
Dimensions Per Vacuum Inlet: Barb Fitting

		Model					J	K	Fitting part min. hole size	Fitting part no.	
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet					
ZP3	T	015 02 035	U	N S U F GN GS	J K	3 6	U2	6.5	4.5	$\varnothing 0.9$	M-3AU-2
							U4	7.4	5	$\varnothing 1.2$	M-3AU-4-X83

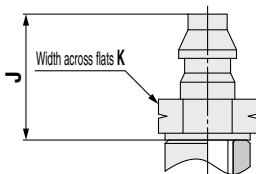
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

\*2 Indicates the minimum hole size of the adapter or vacuum pad

Vacuum inlet: One-touch fitting



Vacuum inlet: Barb fitting



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Buffer Assembly	p. 164

**Dimensions/Models**

**With buffer**  $\varnothing 1.5$  to  $\varnothing 3.5$

**ZP3 - Y 015 U N J 3 - B3**

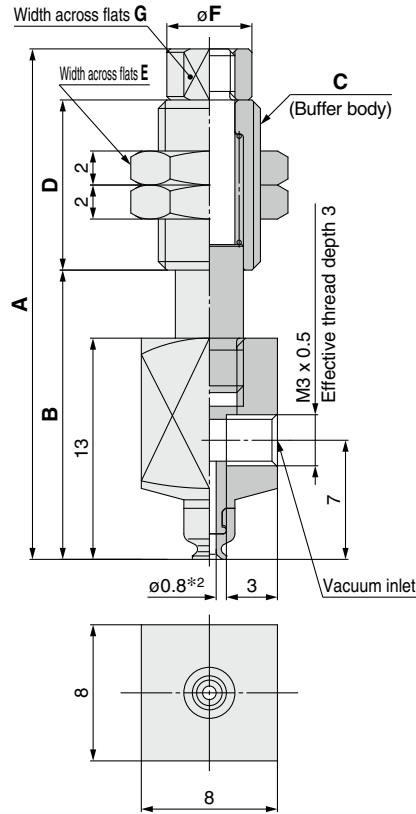
① ② ③ ④

⑤ Vacuum inlet

**Buffer specification** ③

<b>J</b>	Rotating
<b>K</b>	Non-rotating

<b>B3</b>	M3 x 0.5	Female thread
<b>02</b>	$\varnothing 2$	One-touch fitting
<b>04</b>	$\varnothing 4$	
<b>U2</b>	For $\varnothing 2$ polyurethane tubing	
<b>U4</b>	For $\varnothing 4$ soft tubing	



		Model					A	B	C	D	E	F	G	
	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet							
ZP3	Y	015 02 035	U	N S U F GN GS	J	3	B3	30	17	M6 x 0.75	10	8	5	4
						6		37	20		14			
					K	3	34	17	M8 x 0.75	11	10	7	6	
						6	40.5	20		14.5				

**Dimensions Per Vacuum Inlet: One-touch Fitting**

		Model					H	J	K	Fitting part min. hole size	Fitting part no.	
	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet					
ZP3	Y	015 02 035	U	N S U F GN GS	J K	3 6	02	13	5.5	2	$\varnothing 1.2$	KQ2H02-M3G
							04	14.5	8	4		KQ2H04-M3G

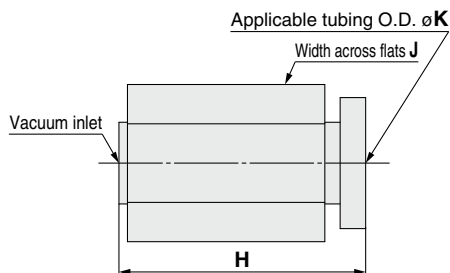
**Dimensions Per Vacuum Inlet: Barb Fitting**

		Model					H	J	Fitting part min. hole size	Fitting part no.	
	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet				
ZP3	Y	015 02 035	U	N S U F GN GS	J K	3 6	U2	6.5	4.5	$\varnothing 0.9$	M-3AU-2
							U4	7.4	5	$\varnothing 1.2$	M-3AU-4-X83

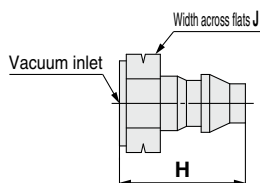
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

\*2 Indicates the minimum hole size of the adapter or vacuum pad

**Vacuum inlet: One-touch fitting**



**Vacuum inlet: Barb fitting**



<b>Construction</b>	p. 161
<b>Buffer Assembly</b>	p. 164



# Compact Type Flat Type with Groove

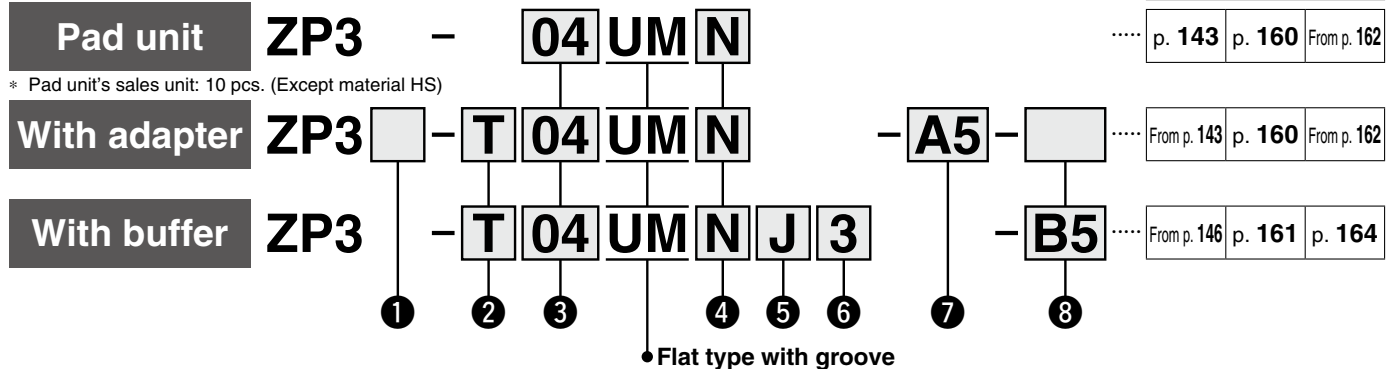
## ZP3 Series

Pad diameter:  $\varnothing 4, \varnothing 6, \varnothing 8, \varnothing 10, \varnothing 13, \varnothing 16$



Model Selection

### How to Order



#### ① Adapter material

<b>Nil</b>	Brass
<b>S*1</b>	Stainless steel (Stainless steel 304)

\*1 Only applicable to the pad with adapter

#### ② Vacuum inlet direction

<b>Nil</b>	Pad unit
<b>T</b>	Vertical
<b>Y</b>	Lateral

#### ③ Pad diameter

<b>04</b>	$\varnothing 4$
<b>06</b>	$\varnothing 6$
<b>08</b>	$\varnothing 8$
<b>10</b>	$\varnothing 10$
<b>13</b>	$\varnothing 13$
<b>16</b>	$\varnothing 16$

#### ④ Material

<b>N</b>	NBR
<b>S</b>	Silicone rubber*1*2
<b>U</b>	Urethane rubber
<b>F</b>	FKM
<b>GN</b>	Conductive NBR
<b>GS</b>	Conductive silicone rubber
<b>HS</b>	Semiconductive silicone rubber

\*1 Compliant with the FDA (USA Food and Drug Administration) regulation 21CFR§177.2600 for "Rubber articles intended for repeated use"

\*2 Compliant with the standards for "Rubber apparatus (excluding baby drinking apparatus) and containers/packaging" (D3) (Partial revision: Ministry of Health, Labour, and Welfare Notification No. 595, 2012) in Section 3 "Apparatus and Containers/Packaging" of the Food Sanitation Act, Article 18 "Specifications and Standards for Food and Food Additives, etc." (Ministry of Health and Welfare Notification No. 370, 1959).

#### ⑤ Buffer specification

<b>J</b>	Rotating
<b>JB</b>	Rotating, With bushing
<b>K</b>	Non-rotating

#### ⑥ Buffer stroke

Stroke [mm]	Buffer specification		
	J	JB	K
<b>3</b>	●	—	●
<b>6</b>	●	—	●
<b>10</b>	●	—	●
<b>15</b>	—	●	●
<b>20</b>	—	●	●

ZP3 Compact

Flat Type

Flat Type with Groove

Bellows Type

Bellows Type with Ribs

Construction

Mounting Bracket Assembly

### With adapter

#### ⑦ Connection thread/ ⑧ Vacuum inlet ○: ZP3□-T/Vertical ●: ZP3□-Y/Lateral

Type	⑦ Connection thread		⑧ Vacuum inlet		Pad diameter [mm]	
	Symbol	Size	Symbol	Size	$\varnothing 4$ to $\varnothing 8$	$\varnothing 10$ to $\varnothing 16$
Male thread	<b>A5</b>	M5 x 0.8	—	<b>Nil</b>	Use the connection thread.	○ ○
			Female thread	<b>B5</b>	M5 x 0.8	○ —
			One-touch fitting	<b>02*3</b>	$\varnothing 2$	○ —
				<b>04</b>	$\varnothing 4$	○ —
			Barb fitting*3	<b>U2</b>	For $\varnothing 2$ polyurethane tubing*1	○ —
				<b>U4</b>	For $\varnothing 4$ soft tubing*2	○ —
	<b>A10</b>	M10 x 1	Female thread	<b>B5</b>	M5 x 0.8	— ○
			One-touch fitting	<b>02*3</b>	$\varnothing 2$	— ○
				<b>04</b>	$\varnothing 4$	— ○
			Barb fitting*3	<b>U2</b>	For $\varnothing 2$ polyurethane tubing*1	— ○
				<b>U4</b>	For $\varnothing 4$ soft tubing*2	— ○
			<b>A12</b>	M12 x 1	Female thread	<b>B5</b>
One-touch fitting	<b>02*3</b>	$\varnothing 2$			— ○	
	<b>04</b>	$\varnothing 4$			— ○	
Barb fitting*3	<b>U2</b>	For $\varnothing 2$ polyurethane tubing*1			— ○	
	<b>U4</b>	For $\varnothing 4$ soft tubing*2			— ○	
Female thread	<b>B5</b>	M5 x 0.8			—	<b>Nil</b>
			Female thread	<b>B5</b>	M5 x 0.8	● ●
			One-touch fitting*3	<b>02</b>	$\varnothing 2$	● ●
				<b>04</b>	$\varnothing 4$	● ●
			Barb fitting*3	<b>U2</b>	For $\varnothing 2$ polyurethane tubing*1	● ●
				<b>U4</b>	For $\varnothing 4$ soft tubing*2	● ●

### With buffer

#### ⑧ Vacuum inlet ○: ZP3-T/Vertical ●: ZP3-Y/Lateral

Type	Symbol	Size	Pad diameter [mm]	
			$\varnothing 4$ to $\varnothing 8$	$\varnothing 10$ to $\varnothing 16$
Female thread	<b>B5</b>	M5 x 0.8	○ ●	○ ●
One-touch fitting	<b>02</b>	$\varnothing 2$	○ ●	○ ●
	<b>04</b>	$\varnothing 4$	○ ●	○ ●
	<b>06</b>	$\varnothing 6$	—	○ ●
Barb fitting	<b>U2</b>	For $\varnothing 2$ polyurethane tubing*1	○ ●	○ ●
	<b>U4</b>	For $\varnothing 4$ soft tubing*2	○ ●	○ ●
	<b>U6</b>	For $\varnothing 6$ soft tubing*2	—	○ ●

\*1 Polyurethane tube piping

\*2 Soft nylon/Polyurethane tube piping

\*3 Not compatible with stainless steel materials

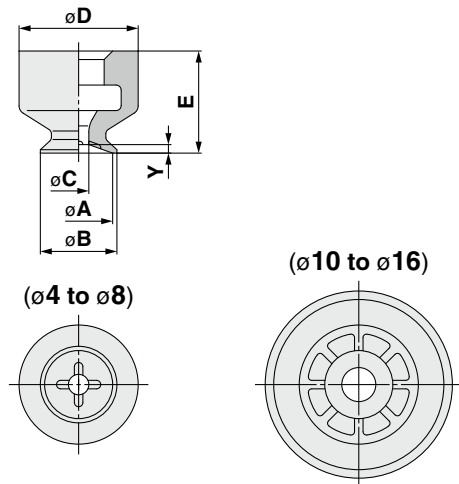
\* It is not necessary to select a connection thread.

\* The pad, mounting nut, and fitting are shipped together but do not come assembled.

Precautions

## Dimensions/Models

### Single unit $\phi 4$ to $\phi 16$



### ZP3 - **04** UM **N**

①      ②

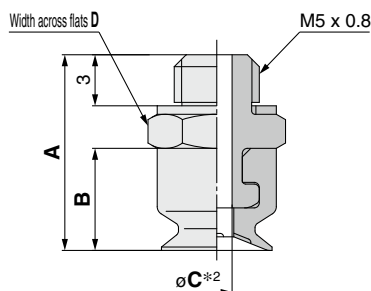
Model				A	B	C	D	E	Y
① Pad dia.	Form	② Material <sup>*1</sup>							
ZP3	04	UM	N	4	4.5	1.2	7	6	0.5
	06		S	6	6.5				0.8
	08		U	8	8.5				1
	10		F	10	11	2	9	7	1
	13		GN	13	14				1.2
	16		GS	16	17				

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber, HS: Semiconductive silicone rubber

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Mounting Bracket Assembly From p. 162

### With adapter $\phi 4$ to $\phi 16$



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Adapter Assembly p. 162

### ZP3 - T **04** UM **N** - **A5**

①      ②      ③      ④

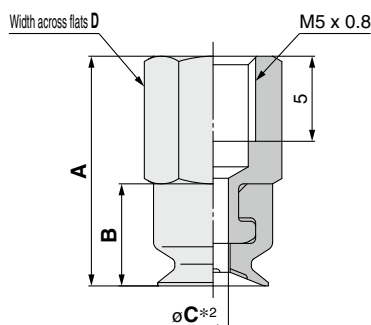
① Adapter material	④ Connection thread (Male thread)
Nil Brass	A5 M5 x 0.8
S Stainless steel (Stainless steel 304)	

Model							A	B	C*2	D
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material <sup>*1</sup>	④ Connection thread					
ZP3	Nil S	T	04	UM	N S U F GN GS HS	A5	11.5	6	1.2	7
			06							
			08							
			10				12.5	7	1.8	10
			13							
			16							

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber, HS: Semiconductive silicone rubber

\*2 Indicates the minimum hole size of the adapter or vacuum pad

### With adapter $\phi 4$ to $\phi 16$



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### ZP3 - T **04** UM **N** - **B5**

①      ②      ③      ④

① Adapter material	④ Connection thread (Female thread)
Nil Brass	B5 M5 x 0.8
S Stainless steel (Stainless steel 304)	

Model							A	B	C*2	D
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material <sup>*1</sup>	④ Connection thread					
ZP3	Nil S	T	04	UM	N S U F GN GS HS	B5	13.5	6	1.2	7
			06							
			08							
			10				14.5	7	1.8	10
			13							
			16							

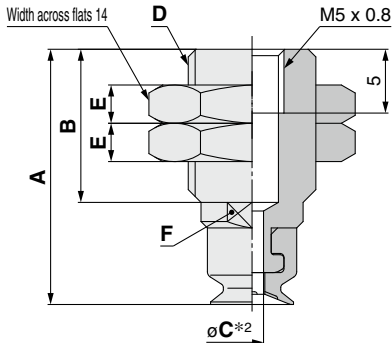
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber, HS: Semiconductive silicone rubber

\*2 Indicates the minimum hole size of the adapter or vacuum pad

**Dimensions/Models**

**With adapter  $\phi 4$  to  $\phi 16$**

Pad diameter:  $\phi 4$  to  $\phi 6$



ZP3   - T 04 UM N - A10 - B5

①                      ②                      ③                      ④                      ⑤

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Connection thread (Male thread)

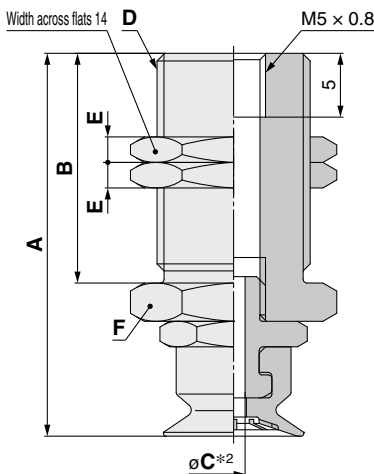
A10	M10 x 1
A12	M12 x 1

⑤ Vacuum inlet

B5	M5 x 0.8	Female thread
02	$\phi 2$	One-touch fitting
04	$\phi 4$	
06	$\phi 6$	
U2*1	For $\phi 2$ polyurethane tubing	Barb fitting
U4*1	For $\phi 4$ soft tubing	
U6*1	For $\phi 6$ soft tubing	

\*1 Not compatible with stainless steel materials

Pad diameter:  $\phi 10$  to  $\phi 16$



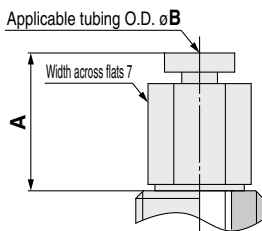
Model	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material*1	④ Connection thread	⑤ Vacuum inlet	A	B	C*2	D	E	F

**Dimensions Per Vacuum Inlet: One-touch Fitting**

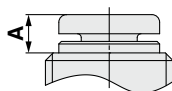
Model	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material*1	④ Connection thread	⑤ Vacuum inlet	A	B	Fitting part min. hole size	Fitting part no.
ZP3	Nil S	T	04 06 08 10 13 16	UM	N S U F GN GS HS	A10	02*3	10.8	2	$\phi 1.4$	KQ2H02-M5N
							04	3	4	$\phi 1.8$	
							02	10.8	2	$\phi 1.4$	KQ2H02-M5N
							04	3	4	$\phi 1.8$	
							02	3.2	6	$\phi 1.8$	
							06	3.2	6	$\phi 1.8$	

\*3 Not compatible with stainless steel materials

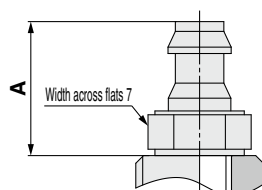
Vacuum inlet: One-touch fitting ( $\phi 2$ )



Vacuum inlet: Built-in One-touch fitting ( $\phi 4, \phi 6$ )



Vacuum inlet: Barb fitting

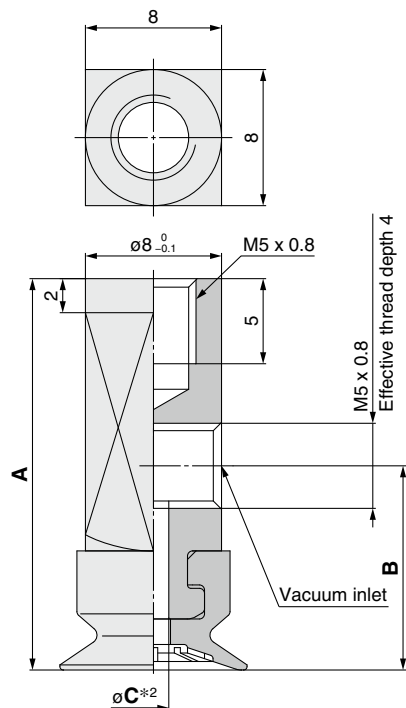


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Adapter Assembly	p. 163

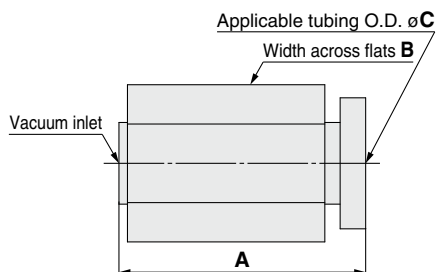
## Dimensions/Models

With adapter  $\varnothing 4$  to  $\varnothing 16$

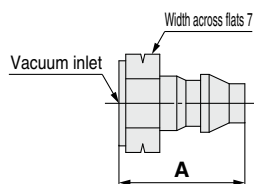
ZP3   - Y 04 UM N - B5 - B5  
① ② ③ ④ ⑤



### Vacuum inlet: One-touch fitting



### Vacuum inlet: Barb fitting



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Adapter Assembly p. 162

### ① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

### ④ Connection thread (Female thread)

B5	M5 x 0.8
----	----------

### ⑤ Vacuum inlet

B5	M5 x 0.8	Female thread
02	$\varnothing 2$	One-touch fitting*1
04	$\varnothing 4$	
06	$\varnothing 6$	
U2	For $\varnothing 2$ polyurethane tubing	Barb fitting*1
U4	For $\varnothing 4$ soft tubing	
U6	For $\varnothing 6$ soft tubing	

\*1 Not compatible with stainless steel materials

Model	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material*1	④ Connection thread	⑤ Vacuum inlet	A	B	C*2	
ZP3	Nil S	Y	04	UM	N S U F GN GS HS	B5	B5	22	11	1.2	
			06							2	
			08							2	
			10 13 16							2	

### Dimensions Per Vacuum Inlet: One-touch Fitting

Model	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material*1	④ Connection thread	⑤ Vacuum inlet	A	B	C	Fitting part min. hole size	Fitting part no.
ZP3	Nil	Y	04	UM	N S U F GN GS HS	B5	02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N
			06				14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N	
			08				10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N	
			10				14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N	
			13					10	6	$\varnothing 2.5$	KQ2H06-M5N	
			16									

### Dimensions Per Vacuum Inlet: Barb Fitting

Model	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material*1	④ Connection thread	⑤ Vacuum inlet	A	Fitting part min. hole size	Fitting part no.
ZP3	Nil	Y	04	UM	N S U F GN GS HS	B5	U2	6.5	$\varnothing 0.9$	M-5AU-2
			06				8.5	$\varnothing 1.8$	M-5AU-4	
			08				6.5	$\varnothing 0.9$	M-5AU-2	
			10				8.5	$\varnothing 1.8$	M-5AU-4	
			13				10.5	$\varnothing 2.5$	M-5AU-6	
			16							

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber, HS: Semiconductive silicone rubber

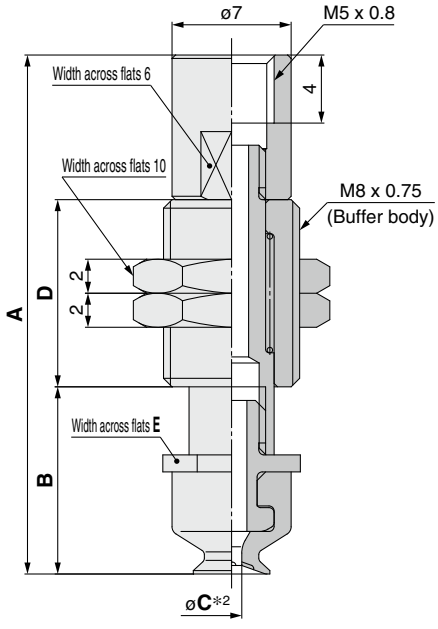
\*2 Indicates the minimum hole size of the adapter or vacuum pad

Dimensions/Models

With buffer  $\varnothing 4$  to  $\varnothing 16$

ZP3 - T **04** **UM** **N** **J** **3** - **B5**

① ② ③ ④ ⑤



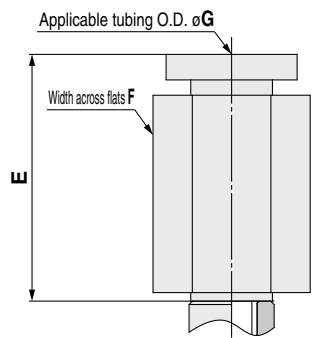
Buffer specification ③

<b>J</b>	Rotating
<b>JB</b>	Rotating, With bushing
<b>K</b>	Non-rotating

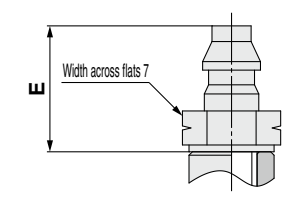
⑤ Vacuum inlet

<b>B5</b>	M5 x 0.8	Female thread
<b>02</b>	$\varnothing 2$	One-touch fitting
<b>04</b>	$\varnothing 4$	
<b>06</b>	$\varnothing 6$	
<b>U2</b>	For $\varnothing 2$ polyurethane tubing	
<b>U4</b>	For $\varnothing 4$ soft tubing	
<b>U6</b>	For $\varnothing 6$ soft tubing	

Vacuum inlet: One-touch fitting



Vacuum inlet: Barb fitting



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		Model					A	B	C*2	D	E			
Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke									
ZP3	T	04	UM	N S U F GN GS HS	J K	3	30.5	11	1.2	11	7			
						6	37	14		14.5				
						10	47	18		20.5				
		06 08			J K	3	30.5	11	11					
						6	37	14	14.5					
						10	47	18	20.5					
	04	UM	N S U F GN GS HS	JB K	B5	15	55	36.5	1.2	10	10			
						20	62.5	44						
						15	55	36.5						
						06 08	JB K	B5	20	62.5		44	1.8	10
									3	31.5		12		
									6	38		15		
10 13 16	JB K	B5	10	48	19	1.8	10							
			15	56	37.5									
			20	63.5	45									
			20	63.5	45									

Dimensions Per Vacuum Inlet: One-touch Fitting

		Model					E	F	G	Fitting part min. hole size	Fitting part no.	
Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke							
ZP3	T	04 06 08	UM	N S U F GN GS HS	J JB K	3	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N	
						6	14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N	
						10	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N	
		10 13 16			JB K	B5	15	14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N
							20	14.7	10	6	$\varnothing 2.5$	KQ2H06-M5N
							20	14.7	10	6	$\varnothing 2.5$	KQ2H06-M5N

Dimensions Per Vacuum Inlet: Barb Fitting

		Model					E	Fitting part min. hole size	Fitting part no.	
Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke					
ZP3	T	04 06 08	UM	N S U F GN GS HS	J JB K	3	6.5	$\varnothing 0.9$	M-5AU-2	
						6	8.5	$\varnothing 1.8$	M-5AU-4	
						10	6.5	$\varnothing 0.9$	M-5AU-2	
		10 13 16			JB K	B5	15	8.5	$\varnothing 1.8$	M-5AU-4
							20	10.5	$\varnothing 2.5$	M-5AU-6
							20	10.5	$\varnothing 2.5$	M-5AU-6

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber, HS: Semiconductive silicone rubber  
\*2 Indicates the minimum hole size of the adapter or vacuum pad



## Dimensions/Models

With buffer  $\varnothing 4$  to  $\varnothing 16$

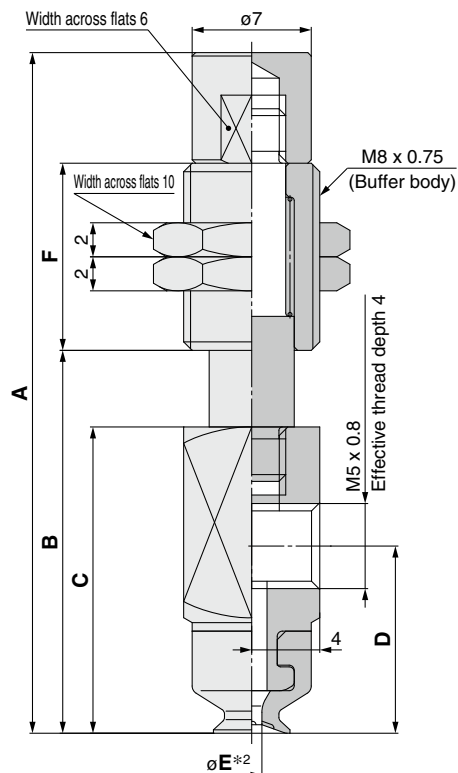
ZP3 - Y **04** **UM** **N** **J** **3** - **B5**

①

②

④

⑤ Vacuum inlet



Buffer specification ③

<b>J</b>	Rotating
<b>JB</b>	Rotating, With bushing
<b>K</b>	Non-rotating

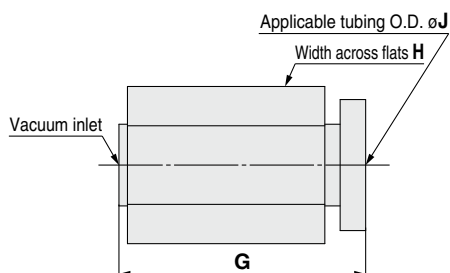
<b>B5</b>	M5 x 0.8	Female thread
<b>02</b>	$\varnothing 2$	One-touch fitting
<b>04</b>	$\varnothing 4$	
<b>06</b>	$\varnothing 6$	
<b>U2</b>	For $\varnothing 2$ polyurethane tubing	Barb fitting
<b>U4</b>	For $\varnothing 4$ soft tubing	
<b>U6</b>	For $\varnothing 6$ soft tubing	

		Model					A	B	C	D	E*2	F		
Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Vacuum inlet									
ZP3	Y	04	UM	N S U F GN GS HS	J K	B5	3	40	22.5	18	11	11		
							6	46	25			14.5		
							10	56	29			20.5		
		3			40		22.5	11						
		6			46		25	14.5						
		10			56		29	20.5						
	06 08	JB K	15	59	42.5	1.2	10							
			20	66.5	50									
			15	59	42.5									
	10 13 16	J K	JB K	20	66.5	50	1.8	10						
				3	41	23.5								
				6	47	26								
											11			
											10	57	30	14.5
											15	60	43.5	20.5
											10			

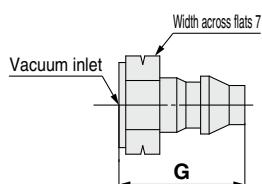
### Dimensions Per Vacuum Inlet: One-touch Fitting

		Model					G	H	J	Fitting part min. hole size	Fitting part no.		
Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Vacuum inlet								
ZP3	Y	04 06 08	UM	N S U F GN GS HS	J K	3 6 10 15 20	02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N	
							04	14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N	
							02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N	
		10 13 16			JB K			04	14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N
								06	14.7	10	6	$\varnothing 2.5$	KQ2H06-M5N

### Vacuum inlet: One-touch fitting



### Vacuum inlet: Barb fitting



### Dimensions Per Vacuum Inlet: Barb Fitting

		Model					G	Fitting part min. hole size	Fitting part no.		
Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Vacuum inlet						
ZP3	Y	04 06 08	UM	N S U F GN GS HS	J K	3 6 10 15 20	U2	6.5	$\varnothing 0.9$	M-5AU-2	
							U4	8.5	$\varnothing 1.8$	M-5AU-4	
							U2	6.5	$\varnothing 0.9$	M-5AU-2	
		10 13 16						U4	8.5	$\varnothing 1.8$	M-5AU-4
								U6	10.5	$\varnothing 2.5$	M-5AU-6

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber, HS: Semiconductive silicone rubber

\*2 Indicates the minimum hole size of the adapter or vacuum pad

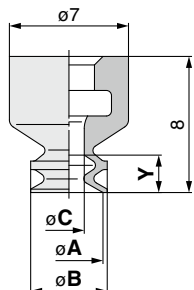
Construction p. 161

Buffer Assembly p. 164



## Dimensions/Models

### Single unit $\varnothing 4$ to $\varnothing 8$



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Mounting Bracket Assembly From p. 162

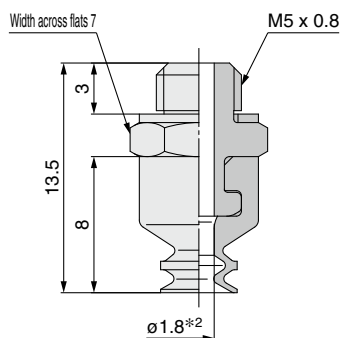
### ZP3 - **04** **B** **N**

① ②

Model	① Pad dia.	Form	② Material <sup>*1</sup>	A	B	C	Y
				ZP3	04	B	N S U F GN GS
	06		6	7	2	3	
	08		8	9			

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

### With adapter $\varnothing 4$ to $\varnothing 8$



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Adapter Assembly p. 162

### ZP3 **□** - T **04** **B** **N** - **A5**

① ② ③ ④

#### ① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

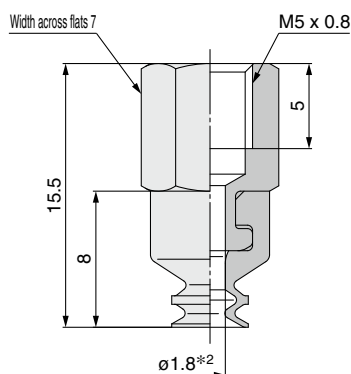
#### ④ Connection thread (Male thread)

A5	M5 x 0.8
----	----------

Model	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material <sup>*1</sup>	④ Connection thread
						ZP3

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

\*2 Indicates the minimum hole size of the adapter or vacuum pad



Construction p. 160

Adapter Assembly p. 162

### ZP3 **□** - T **04** **B** **N** - **B5**

① ② ③ ④

#### ① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

#### ④ Connection thread (Female thread)

B5	M5 x 0.8
----	----------

Model	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material <sup>*1</sup>	④ Connection thread
						ZP3

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

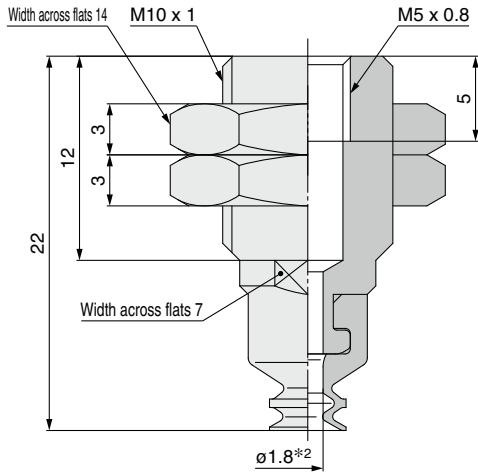
\*2 Indicates the minimum hole size of the adapter or vacuum pad

Dimensions/Models

**With adapter**  $\varnothing 4$  to  $\varnothing 8$

ZP3   - T 04 B N - A10 - B5

1   
 2   
 3   
 4   
 5



**1 Adapter material**

Nil	Brass
S	Stainless steel (Stainless steel 304)

**4 Connection thread (Female thread)**

A10	M10 x 1
-----	---------

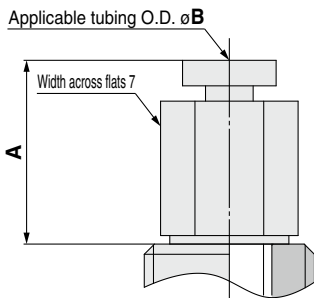
**5 Vacuum inlet**

B5	M5 x 0.8	Female thread
02*1	$\varnothing 2$	One-touch fitting
04	$\varnothing 4$	Barb fitting
U2*1	For $\varnothing 2$ polyurethane tubing	
U4*1	For $\varnothing 4$ soft tubing	

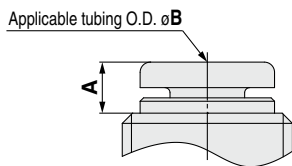
\*1 Not compatible with stainless steel materials

	Model						
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material*1	4 Connection thread	5 Vacuum inlet
ZP3	Nil S	T	04 06 08	B	N S U F GN GS	A10	B5

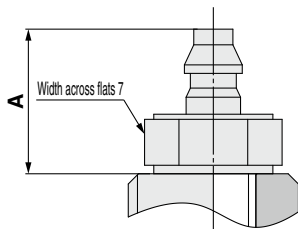
**Vacuum inlet: One-touch fitting ( $\varnothing 2$ )**



**Vacuum inlet: Built-in One-touch fitting ( $\varnothing 4$ )**



**Vacuum inlet: Barb fitting**



**Dimensions Per Vacuum Inlet: One-touch Fitting**

	Model						A	B	Fitting part min. hole size	Fitting part no.	
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material*1	4 Connection thread					5 Vacuum inlet
ZP3	Nil S	T	04 06 08	B	N S U F GN GS	A10	02*3	10.8	2	$\varnothing 1.4$	KQ2H02-M5N
							04	3	4	$\varnothing 1.8$	

\*3 Not compatible with stainless steel materials

**Dimensions Per Vacuum Inlet: Barb Fitting**

	Model						A	Fitting part min. hole size	Fitting part no.	
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material*1	4 Connection thread				5 Vacuum inlet
ZP3	Nil	T	04 06 08	B	N S U F GN GS	A10	U2	6.5	$\varnothing 0.9$	M-5AU-2
							U4	8.5	$\varnothing 1.8$	M-5AU-4

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

\*2 Indicates the minimum hole size of the adapter or vacuum pad

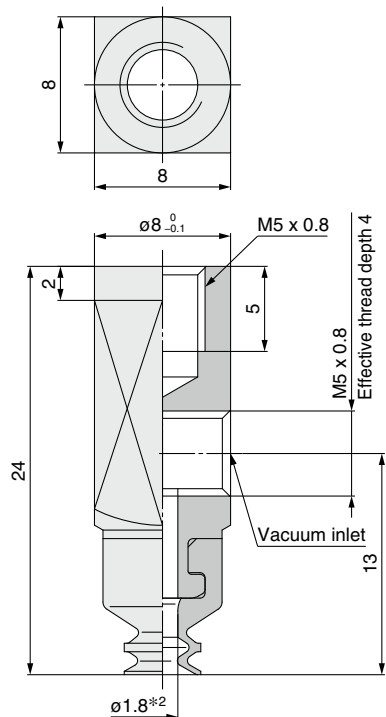
Construction	p. 160
Adapter Assembly	p. 163

## Dimensions/Models

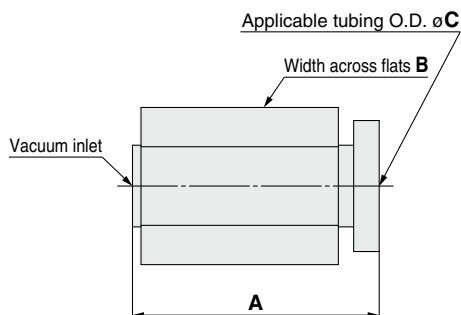
With adapter  $\varnothing 4$  to  $\varnothing 8$

ZP3   - Y 04 B N - B5 - B5

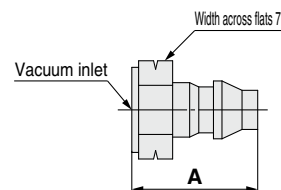
1   
 2   
 3   
 4   
 5



### Vacuum inlet: One-touch fitting



### Vacuum inlet: Barb fitting



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Adapter Assembly	p. 162

### 4 Connection thread (Female thread)

<b>B5</b>	M5 x 0.8
-----------	----------

### 5 Vacuum inlet

<b>B5</b>	M5 x 0.8	Female thread
<b>02</b>	$\varnothing 2$	One-touch fitting*1
<b>04</b>	$\varnothing 4$	Barb fitting*1
<b>U2</b>	For $\varnothing 2$ polyurethane tubing	Barb fitting*1
<b>U4</b>	For $\varnothing 4$ soft tubing	Barb fitting*1

\*1 Not compatible with stainless steel materials

	Model						
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material*1	4 Connection thread	5 Vacuum inlet
ZP3	Nil S	Y	04 06 08	B	N S U F GN GS	B5	B5

### Dimensions Per Vacuum Inlet: One-touch Fitting

	Model						A	B	C	Fitting part min. hole size	Fitting part no.	
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material*1	4 Connection thread						5 Vacuum inlet
ZP3	Nil	Y	04 06 08	B	N S U F GN GS	B5	02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N
							04	14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N

### Dimensions Per Vacuum Inlet: Barb Fitting

	Model						A	Fitting part min. hole size	Fitting part no.	
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material*1	4 Connection thread				5 Vacuum inlet
ZP3	Nil	Y	04 06 08	B	N S U F GN GS	B5	U2	6.5	$\varnothing 0.9$	M-5AU-2
							U4	8.5	$\varnothing 1.8$	M-5AU-4

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

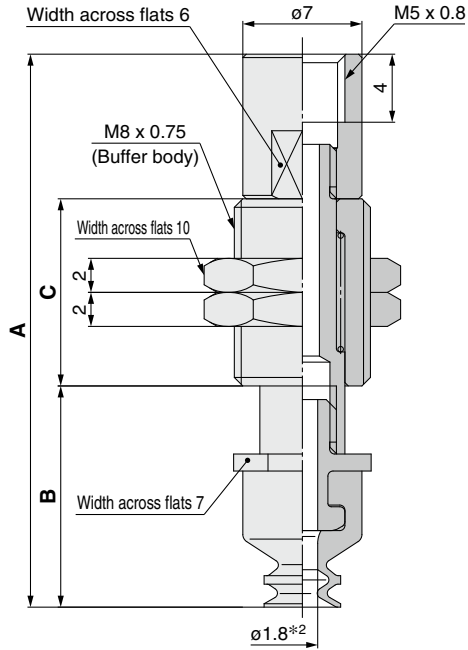
\*2 Indicates the minimum hole size of the adapter or vacuum pad

Dimensions/Models

With buffer  $\varnothing 4$  to  $\varnothing 8$

ZP3 - T **04** **B** **N** **J** **3** - **B5**

① ② ③ ④ ⑤



**Buffer specification ③**

<b>J</b>	Rotating
<b>JB</b>	Rotating, With bushing
<b>K</b>	Non-rotating

**⑤ Vacuum inlet**

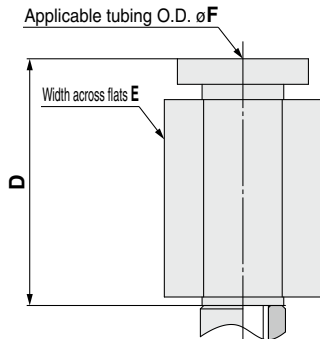
<b>B5</b>	M5 x 0.8	Female thread
<b>02</b>	$\varnothing 2$	One-touch fitting
<b>04</b>	$\varnothing 4$	Barb fitting
<b>U2</b>	For $\varnothing 2$ polyurethane tubing	
<b>U4</b>	For $\varnothing 4$ soft tubing	

		Model						A	B	C
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet				
ZP3	T	04 06 08	B	N S U F GN GS	J K	3	B5	32.5	13	11
						6		39	16	14.5
						10		49	20	20.5
					JB K	15		57	38.5	10
						20		64.5	46	

Dimensions Per Vacuum Inlet: One-touch Fitting

		Model						D	E	F	Fitting part min. hole size	Fitting part no.
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet						
ZP3	T	04 06 08	B	N S U F GN GS	J K	3	02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N
						6		14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N
						10						
					JB K	15						
						20						

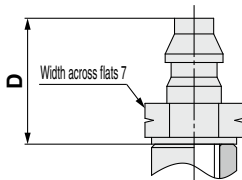
Vacuum inlet: One-touch fitting



Dimensions Per Vacuum Inlet: Barb Fitting

		Model						D	Fitting part min. hole size	Fitting part no.	
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet					
ZP3	T	04 06 08	B	N S U F GN GS	J K	3	U2	6.5	$\varnothing 0.9$	M-5AU-2	
						6		8.5	$\varnothing 1.8$	M-5AU-4	
						10					
					JB K	15					
						20					

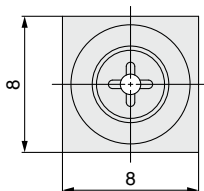
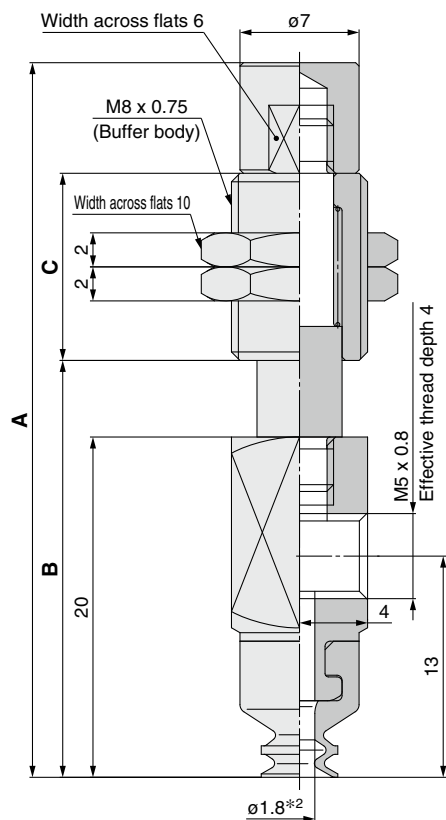
Vacuum inlet: Barb fitting



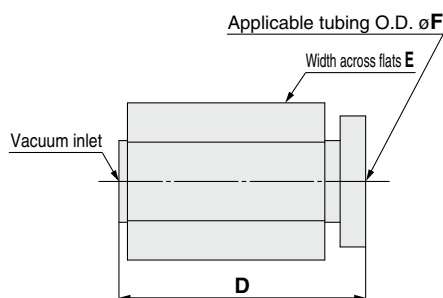
- Construction p. 161
- Buffer Assembly p. 164

## Dimensions/Models

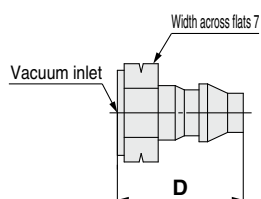
### With buffer $\varnothing 4$ to $\varnothing 8$



#### Vacuum inlet: One-touch fitting



#### Vacuum inlet: Barb fitting



ZP3 - Y **04** **B** **N** **J** **3** - **B5**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b> Vacuum inlet		
<b>Buffer specification 3</b>						
<b>J</b>	Rotating			<b>B5</b>	M5 x 0.8	Female thread
<b>JB</b>	Rotating, With bushing			<b>02</b>	$\varnothing 2$	One-touch fitting
<b>K</b>	Non-rotating			<b>04</b>	$\varnothing 4$	Barb fitting
				<b>U2</b>	For $\varnothing 2$ polyurethane tubing	
				<b>U4</b>	For $\varnothing 4$ soft tubing	

		Model					A	B	C	
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> <sup>*1</sup> Material	<b>3</b> Buffer spec.	<b>4</b> Buffer stroke	<b>5</b> Vacuum inlet				
ZP3	Y	04 06 08	B	N S U F GN GS	J K	3	B5	42	24.5	11
						6		48	27	14.5
						10		58	31	20.5
						15		61	44.5	10
						20		68.5	52	

#### Dimensions Per Vacuum Inlet: One-touch Fitting

		Model					D	E	F	Fitting part min. hole size	Fitting part no.	
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> <sup>*1</sup> Material	<b>3</b> Buffer spec.	<b>4</b> Buffer stroke	<b>5</b> Vacuum inlet						
ZP3	Y	04 06 08	B	N S U F GN GS	J JB K	3	02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N
						6		14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N
						10						
						15 20						

#### Dimensions Per Vacuum Inlet: Barb Fitting

		Model					D	Fitting part min. hole size	Fitting part no.	
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> <sup>*1</sup> Material	<b>3</b> Buffer spec.	<b>4</b> Buffer stroke	<b>5</b> Vacuum inlet				
ZP3	Y	04 06 08	B	N S U F GN GS	J JB K	3	U2	6.5	$\varnothing 0.9$	M-5AU-2
						6		8.5	$\varnothing 1.8$	M-5AU-4
						10				
						15 20				

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

\*2 Indicates the minimum hole size of the adapter or vacuum pad

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Buffer Assembly p. 164





# Compact Type Bellows Type with Ribs

## ZP3 Series

Pad diameter:  $\varnothing 10, \varnothing 13, \varnothing 16$



Model Selection

ZP3 Compact

Flat Type

Flat Type with Groove

Bellows Type

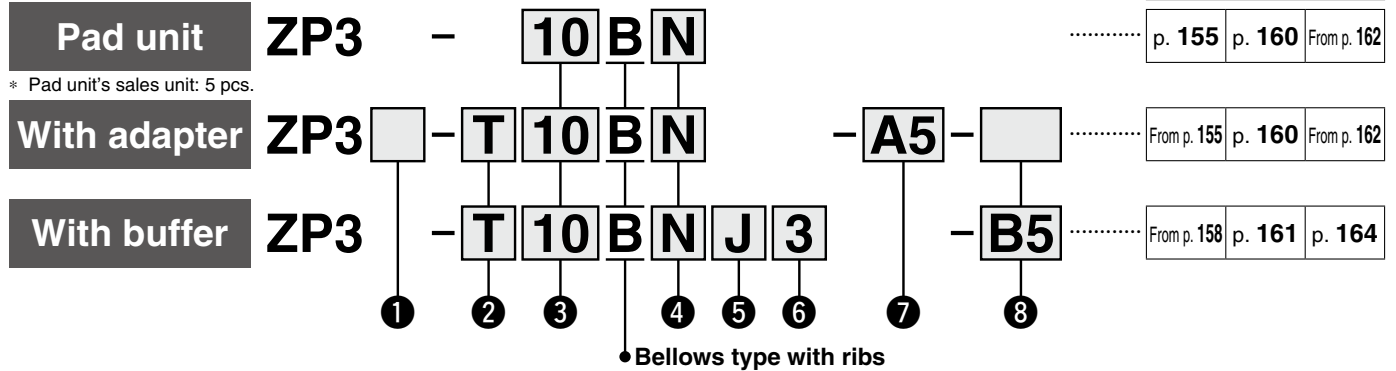
Bellows Type with Ribs

Construction

Mounting Bracket Assembly

Precautions

### How to Order



#### 1 Adapter material

Nil	Brass
S*1	Stainless steel (Stainless steel 304)

\*1 Only applicable to the pad with adapter

#### 2 Vacuum inlet direction

Nil	Pad unit
T	Vertical
Y	Lateral

#### 3 Pad diameter

10	$\varnothing 10$
13	$\varnothing 13$
16	$\varnothing 16$

#### 4 Material

N	NBR
S	Silicone rubber*1 *2
U	Urethane rubber
F	FKM
GN	Conductive NBR
GS	Conductive silicone rubber

\*1 Compliant with the FDA (USA Food and Drug Administration) regulation 21CFR§177.2600 for "Rubber articles intended for repeated use"

\*2 Compliant with the standards for "Rubber apparatus (excluding baby drinking apparatus) and containers/packaging" (D3) (Partial revision: Ministry of Health, Labour, and Welfare Notification No. 595, 2012) in Section 3 "Apparatus and Containers/Packaging" of the Food Sanitation Act, Article 18 "Specifications and Standards for Food and Food Additives, etc." (Ministry of Health and Welfare Notification No. 370, 1959)

#### 5 Buffer specification

J	Rotating
JB	Rotating, With bushing
K	Non-rotating

#### 6 Buffer stroke

Stroke [mm]	Buffer specification		
	J	JB	K
3	●	—	●
6	●	—	●
10	●	—	●
15	—	●	●
20	—	●	●

### With adapter

#### 7 Connection thread / 8 Vacuum inlet

○: ZP3□-T/Vertical ●: ZP3□-Y/Lateral

7 Connection thread			8 Vacuum inlet			Pad diameter All sizes
Type	Symbol	Size	Type	Symbol	Size	
Male thread	A5	M5 x 0.8	—	Nil	Use the connection thread.	○
			Female thread	B5	M5 x 0.8	○
			One-touch fitting	02*3	$\varnothing 2$	○
	04	$\varnothing 4$		○		
	06	$\varnothing 6$		○		
	Barb fitting*3	A12	M12 x 1	U2	For $\varnothing 2$ polyurethane tubing	○
U4				For $\varnothing 4$ soft tubing	○	
U6				For $\varnothing 6$ soft tubing	○	
Female thread	B5	M5 x 0.8	—	Nil	Use the connection thread.	○
			Female thread	B5	M5 x 0.8	●
			One-touch fitting*3	02	$\varnothing 2$	●
	04	$\varnothing 4$		●		
	06	$\varnothing 6$		●		
	Barb fitting*3	B5	M5 x 0.8	U2	For $\varnothing 2$ polyurethane tubing*1	●
U4				For $\varnothing 4$ soft tubing*2	●	
U6				For $\varnothing 6$ soft tubing*2	●	

\*1 Polyurethane tube piping

\*2 Soft nylon/Polyurethane tube piping

\*3 Not compatible with stainless steel materials

### With buffer

#### 8 Vacuum inlet

○: ZP3-T/Vertical ●: ZP3-Y/Lateral

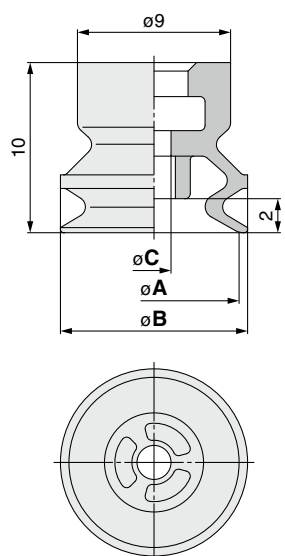
Type	Symbol	Size	Pad diameter All sizes
Female thread	B5	M5 x 0.8	○●
One-touch fitting	02	$\varnothing 2$	○●
	04	$\varnothing 4$	○●
	06	$\varnothing 6$	○●
Barb fitting	U2	For $\varnothing 2$ polyurethane tubing	○●
	U4	For $\varnothing 4$ soft tubing	○●
	U6	For $\varnothing 6$ soft tubing	○●

\* It is not necessary to select a connection thread.

\* The pad, mounting nut, and fitting are shipped together but do not come assembled.

## Dimensions/Models

### Single unit $\varnothing 10$ to $\varnothing 16$



**ZP3 - 10 B N**  
① ②

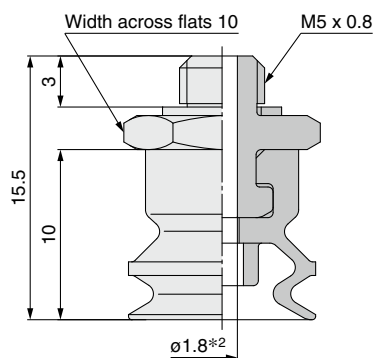
Model	Model		A	B	C
	① Pad dia.	② Form			
ZP3	10	B	10	11	2
	13		13	14	3
	16		16	17	

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

Construction p. 160

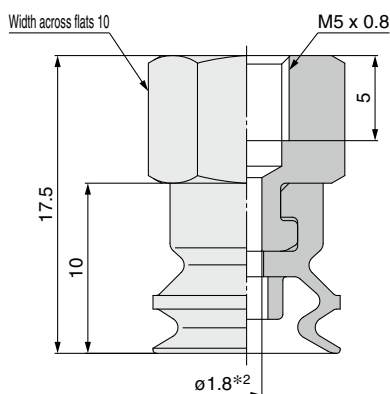
Mounting Bracket Assembly From p. 162

### With adapter $\varnothing 10$ to $\varnothing 16$



Construction p. 160

Adapter Assembly p. 162



Construction p. 160

Adapter Assembly p. 162

**ZP3 - T 10 B N - A5**  
① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Connection thread (Male thread)

A5	M5 x 0.8
----	----------

Model	Model		③ Material	④ Connection thread		
	① Adapter material	② Vacuum inlet direction				
ZP3	Nil S	T	B	N S U F GN GS		
					10	A5
					13 16	

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

\*2 Indicates the minimum hole size of the adapter or vacuum pad

**ZP3 - T 10 B N - B5**  
① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Connection thread (Female thread)

B5	M5 x 0.8
----	----------

Model	Model		③ Material	④ Connection thread		
	① Adapter material	② Vacuum inlet direction				
ZP3	Nil S	T	B	N S U F GN GS		
					10	B5
					13 16	

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

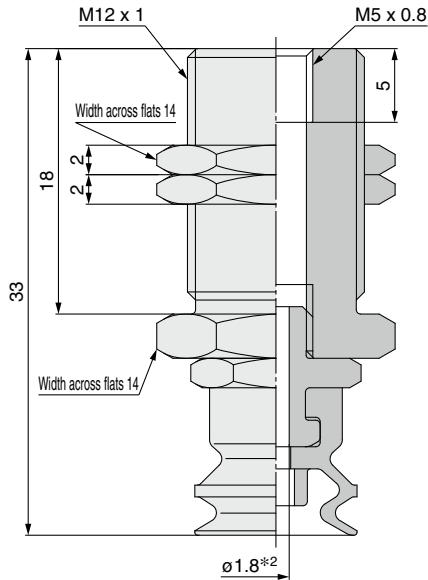
\*2 Indicates the minimum hole size of the adapter or vacuum pad

Dimensions/Models

**With adapter**  $\varnothing 10$  to  $\varnothing 16$

ZP3   - T 10 B N - A12 - B5

1   
 2   
 3   
 4   
 5



**1 Adapter material**

Nil	Brass
S	Stainless steel (Stainless steel 304)

**4 Connection thread (Male thread)**

A12	M12 x 1
-----	---------

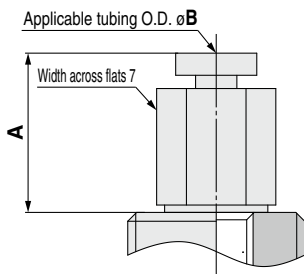
**5 Vacuum inlet**

B5	M5 x 0.8	Female thread
02*1	$\varnothing 2$	One-touch fitting
04	$\varnothing 4$	
06	$\varnothing 6$	
U2*1	For $\varnothing 2$ polyurethane tubing	Barb fitting
U4*1	For $\varnothing 4$ soft tubing	
U6*1	For $\varnothing 6$ soft tubing	

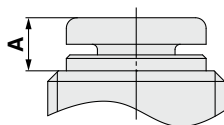
\*1 Not compatible with stainless steel materials

Model							
	1 Adapter material	2 Vacuum inlet direction	3 Pad dia.	4 Form	5 Material*1	6 Connection thread	7 Vacuum inlet
ZP3	Nil S	T	10 13 16	B	N S U F GN GS	A12	B5

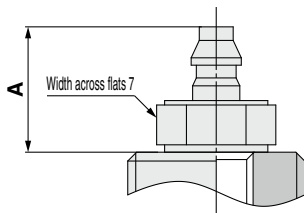
**Vacuum inlet: One-touch fitting ( $\varnothing 2$ )**



**Vacuum inlet: Built-in One-touch fitting ( $\varnothing 4, \varnothing 6$ )**



**Vacuum inlet: Barb fitting**



**Dimensions Per Vacuum Inlet: One-touch Fitting**

Model											
	1 Adapter material	2 Vacuum inlet direction	3 Pad dia.	4 Form	5 Material*1	6 Connection thread	7 Vacuum inlet	A	B	Fitting part min. hole size	Fitting part no.
ZP3	Nil S	T	10 13 16	B	N S U F GN GS	A12	02*3 04 06	10.8	2	$\varnothing 1.4$	KQ2H02-M5N   
								3	4	$\varnothing 1.8$	
								3.2	6	$\varnothing 1.8$	

\*3 Not compatible with stainless steel materials

**Dimensions Per Vacuum Inlet: Barb Fitting**

Model										
	1 Adapter material	2 Vacuum inlet direction	3 Pad dia.	4 Form	5 Material*1	6 Connection thread	7 Vacuum inlet	A	Fitting part min. hole size	Fitting part no.
ZP3	Nil	T	10 13 16	B	N S U F GN GS	A12	U2	6.5	$\varnothing 0.9$	M-5AU-2
							U4	8.5	$\varnothing 1.8$	M-5AU-4
							U6	10.5	$\varnothing 2.5$	M-5AU-6

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

\*2 Indicates the minimum hole size of the adapter or vacuum pad

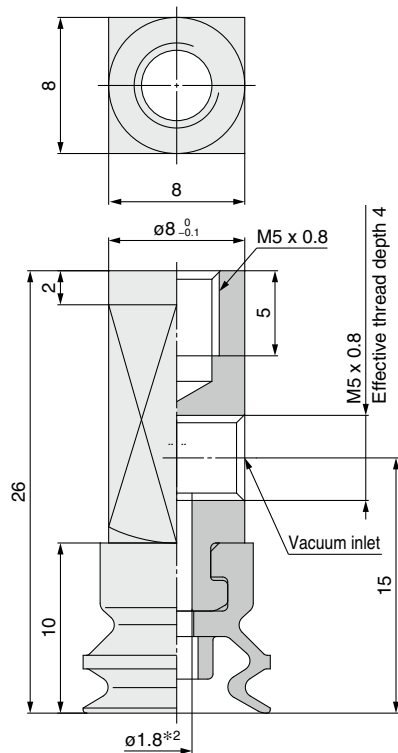
- Construction p. 160
- Adapter Assembly p. 163

## Dimensions/Models

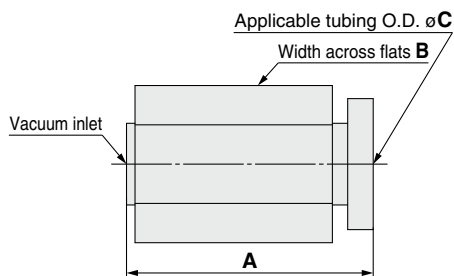
**With adapter**  $\varnothing 10$  to  $\varnothing 16$

ZP3   - Y 10 B N - B5 - B5

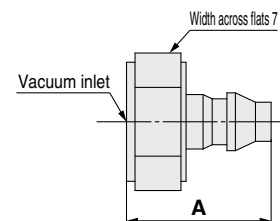
1   
 2   
 3   
 4   
 5



### Vacuum inlet: One-touch fitting



### Vacuum inlet: Barb fitting



Construction p. 160

Adapter Assembly p. 162

### 1 Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

### 4 Connection thread (Female thread)

B5	M5 x 0.8
----	----------

### 5 Vacuum inlet

B5	M5 x 0.8	Female thread
02	$\varnothing 2$	One-touch fitting*1
04	$\varnothing 4$	
06	$\varnothing 6$	
U2	For $\varnothing 2$ polyurethane tubing	Barb fitting*1
U4	For $\varnothing 4$ soft tubing	
U6	For $\varnothing 6$ soft tubing	

\*1 Not compatible with stainless steel materials

Model							
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material*1	4 Connection thread	5 Vacuum inlet
ZP3	Nil S	Y	10 13 16	B	N S U F GN GS	B5	B5

### Dimensions Per Vacuum Inlet: One-touch Fitting

Model							A	B	C	Fitting part min. hole size	Fitting part no.	
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material*1	4 Connection thread	5 Vacuum inlet					
ZP3	Nil	Y	10 13 16	B	N S U F GN GS	B5	02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N
							04	14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N
							06		10	6		KQ2H06-M5N

### Dimensions Per Vacuum Inlet: Barb Fitting

Model							A	Fitting part min. hole size	Fitting part no.	
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material*1	4 Connection thread	5 Vacuum inlet			
ZP3	Nil	Y	10 13 16	B	N S U F GN GS	B5	U2	6.5	$\varnothing 0.9$	M-5AU-2
							U4	8.5	$\varnothing 1.8$	M-5AU-4
							U6	10.5	$\varnothing 2.5$	M-5AU-6

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

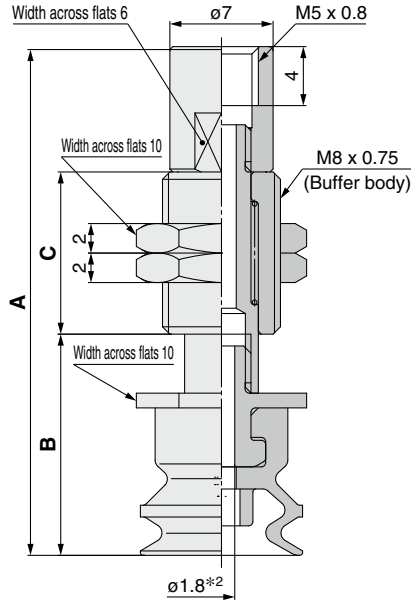
\*2 Indicates the minimum hole size of the adapter or vacuum pad

Dimensions/Models

With buffer  $\varnothing 10$  to  $\varnothing 16$

ZP3 - T **10** **B** **N** **J** **3** - **B5**

①
②
④
⑤



Buffer specification ③

<b>J</b>	Rotating
<b>JB</b>	Rotating, With bushing
<b>K</b>	Non-rotating

⑤ Vacuum inlet

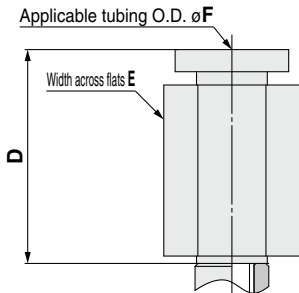
<b>B5</b>	M5 x 0.8	Female thread
<b>02</b>	$\varnothing 2$	One-touch fitting
<b>04</b>	$\varnothing 4$	
<b>06</b>	$\varnothing 6$	
<b>U2</b>	For $\varnothing 2$ polyurethane tubing	
<b>U4</b>	For $\varnothing 4$ soft tubing	
<b>U6</b>	For $\varnothing 6$ soft tubing	

		Model					A	B	C	
	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke				⑤ Vacuum inlet
ZP3	T	10 13 16	B	N S U F GN GS	J K	3	B5	34.5	15	11
						6		41	18	14.5
						10		51	22	20.5
						15		59	40.5	
						20		66.5	48	10

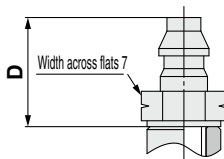
Dimensions Per Vacuum Inlet: One-touch Fitting

		Model					D	E	F	Fitting part min. hole size	Fitting part no.	
	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke						⑤ Vacuum inlet
ZP3	T	10 13 16	B	N S U F GN GS	J JB K	3	02 04 06	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N
						6		14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N
						10			10	6	KQ2H06-M5N	
						15						
						20						

Vacuum inlet: One-touch fitting



Vacuum inlet: Barb fitting



Dimensions Per Vacuum Inlet: Barb Fitting

		Model					D	Fitting part min. hole size	Fitting part no.	
	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke				⑤ Vacuum inlet
ZP3	T	10 13 16	B	N S U F GN GS	J JB K	3	U2 U4 U6	6.5	$\varnothing 0.9$	M-5AU-2
						6		8.5	$\varnothing 1.8$	M-5AU-4
						10		10.5	$\varnothing 2.5$	M-5AU-6
						15				
						20				

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

\*2 Indicates the minimum hole size of the adapter or vacuum pad

Construction	p. 161
Buffer Assembly	p. 164

## Dimensions/Models

With buffer  $\varnothing 10$  to  $\varnothing 16$

ZP3 - Y **10** **B** **N** **J** **3** - **B5**

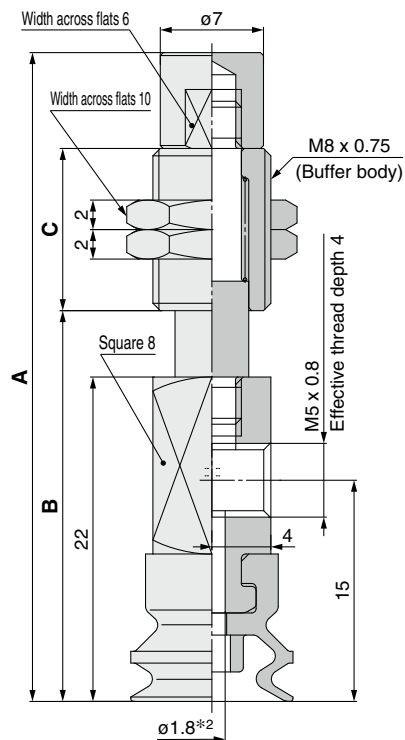
① ② ③ ④

⑤ Vacuum inlet

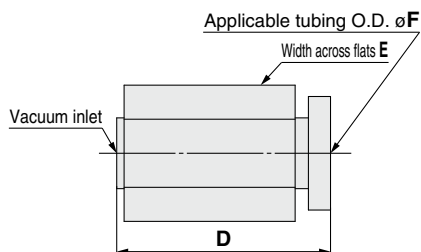
**Buffer specification ③**

<b>J</b>	Rotating
<b>JB</b>	Rotating, With bushing
<b>K</b>	Non-rotating

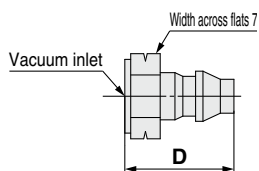
<b>B5</b>	M5 x 0.8	Female thread
<b>02</b>	$\varnothing 2$	One-touch fitting
<b>04</b>	$\varnothing 4$	
<b>06</b>	$\varnothing 6$	
<b>U2</b>	For $\varnothing 2$ polyurethane tubing	Barb fitting
<b>U4</b>	For $\varnothing 4$ soft tubing	
<b>U6</b>	For $\varnothing 6$ soft tubing	



### Vacuum inlet: One-touch fitting



### Vacuum inlet: Barb fitting



Construction	p. 161
Buffer Assembly	p. 164

		Model					A	B	C	
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet				
ZP3	Y	10 13 16	B	N S U F GN GS	J K JB K	3	B5	44	26.5	11
						6		50	29	14.5
						10		60	33	20.5
						15		63	46.5	
						20		70.5	54	10

### Dimensions Per Vacuum Inlet: One-touch Fitting

		Model					D	E	F	Fitting part min. hole size	Fitting part no.	
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet						
ZP3	Y	10 13 16	B	N S U F GN GS	J K JB K	3	02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N
						6		14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N
						10			10	6	KQ2H06-M5N	
						15						
						20						

### Dimensions Per Vacuum Inlet: Barb Fitting

		Model					D	Fitting part min. hole size	Fitting part no.		
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet					
ZP3	Y	10 13 16	B	N S U F GN GS	J K JB K	3	U2	6.5	$\varnothing 0.9$	M-5AU-2	
						6		10.5	8.5	$\varnothing 1.8$	M-5AU-4
						10			10.5	$\varnothing 2.5$	M-5AU-6
						15					
						20					

\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

\*2 Indicates the minimum hole size of the adapter or vacuum pad

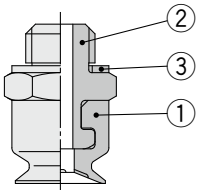
# Compact Type **ZP3 Series** Construction

Model  
Selection

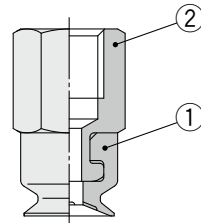
With adapter Flat type:  $\varnothing 1.5$  to  $\varnothing 3.5$  Flat type with groove:  $\varnothing 4$  to  $\varnothing 16$  Bellows type:  $\varnothing 4$  to  $\varnothing 8$  Bellows type with ribs:  $\varnothing 10$  to  $\varnothing 16$

Vacuum inlet direction **Vertical** T Type/ZP3□-T

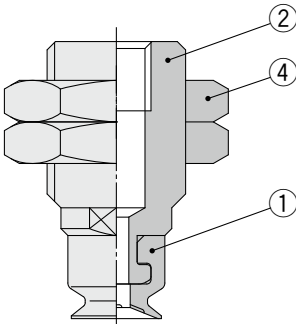
ZP3□-T□-A□



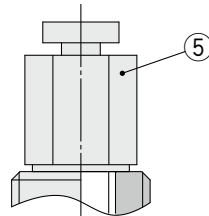
ZP3□-T□-B□



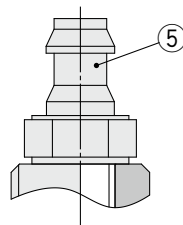
ZP3□-T□-A□-B□



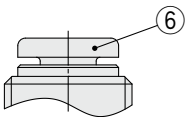
ZP3-T□-A□-(02/04)



ZP3-T□-A□-(U2/U4/U6)



ZP3□-T□-A10-04  
ZP3□-T□-A12-(04/06)



## Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Flat type with groove Bellows type Bellows type with ribs
		Semiconductive silicone rubber	Flat type with groove
2	Adapter	Brass (Electroless nickel plating)	ZP3-T□
		Stainless steel	ZP3S-T□
3	Gasket	Stainless steel/NBR	ZP3-T□
		Stainless steel/FKM	ZP3S-T□
4	Nut	Structural steel (Trivalent chromated)	M6 x 0.75 M12 x 1 ZP3-T□
		Steel (Trivalent zinc chromated)	M10 x 1
		Stainless steel	ZP3S-T□
5	Fitting	—	
6	Cassette	—	

ZP3  
Compact

Flat Type

Flat Type  
with Groove

Bellows Type

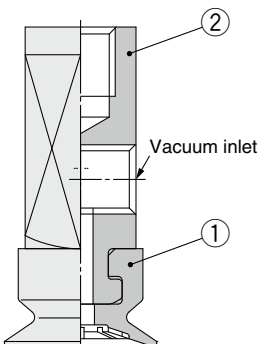
Bellows Type  
with Ribs

Construction

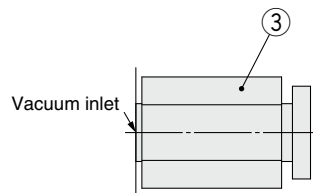
Mounting  
Bracket  
Assembly

Vacuum inlet direction **Lateral** Y Type/ZP3-Y

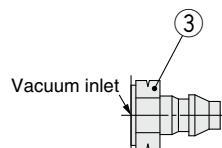
ZP3□-Y□-B□-B□



ZP3-Y□-B□-(02/04/06)



ZP3-Y□-B□-(U2/U4/U6)



## Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Flat type with groove Bellows type Bellows type with ribs
		Semiconductive silicone rubber	Flat type with groove
2	Adapter	Brass (Electroless nickel plating)	ZP3-Y□
		Stainless steel	ZP3S-Y□
3	Fitting	—	

Precautions



With buffer

Flat type:  $\varnothing 1.5$  to  $\varnothing 3.5$

Flat type with groove:  $\varnothing 4$  to  $\varnothing 16$

Bellows type:  $\varnothing 4$  to  $\varnothing 8$

Bellows type with ribs:  $\varnothing 10$  to  $\varnothing 16$

Vacuum inlet direction **Vertical** T Type/ZP3-T

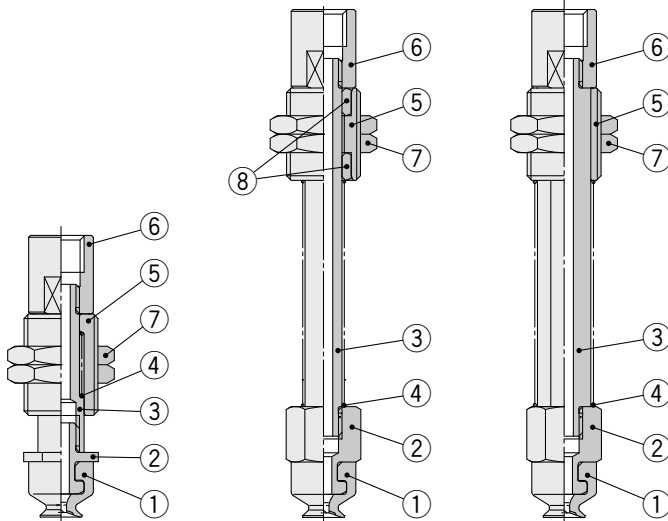
ZP3-T□(J/K)□-B□

ZP3-T□JB□-B□

ZP3-T□K(15/20)□-B□

ZP3-T□-(02/04/06)

ZP3-T□-(U2/U4/U6)



Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Flat type with groove Bellows type Bellows type with ribs
		Semiconductive silicone rubber	Flat type with groove
2	Adapter	Brass (Electroless nickel plating)	
3	Piston rod	Stainless steel	
4	Return spring	Stainless steel	
5	Buffer body	Brass (Electroless nickel plating)	
6	Buffer adapter	Brass (Electroless nickel plating)	
7	Nut	Structural steel (Trivalent chromated)	M6 x 0.75 M8 x 0.75
8	Bushing	—	
9	Fitting	—	

Vacuum inlet direction **Lateral** Y Type/ZP3-Y

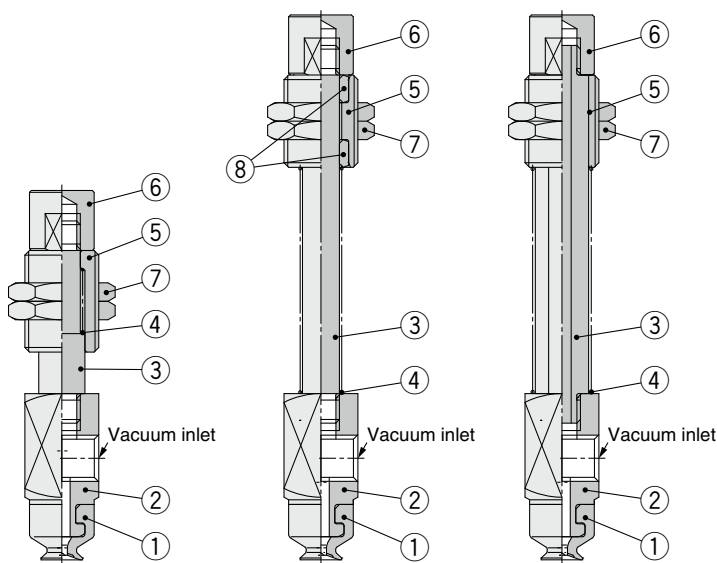
ZP3-Y□(J/K)□-B□

ZP3-Y□JP□-B□

ZP3-Y□K(15/20)□-B□

ZP3-Y□-(02/04/06)

ZP3-Y□-(U2/U4/U6)



Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Flat type with groove Bellows type Bellows type with ribs
		Semiconductive silicone rubber	Flat type with groove
2	Adapter	Brass (Electroless nickel plating)	
3	Piston rod	Stainless steel	
4	Return spring	Stainless steel	
5	Buffer body	Brass (Electroless nickel plating)	
6	Buffer adapter	Brass (Electroless nickel plating)	
7	Nut	Structural steel (Trivalent chromated)	M6 x 0.75 M8 x 0.75
8	Bushing	—	
9	Fitting	—	



# Compact Type ZP3 Series Mounting Bracket Assembly

Model Selection

## Adapter Assembly: Vacuum Inlet Direction **Vertical** T Type/ZP3□-T

**Product part no.**

ZP3 □ - T ① ② □ - ③

Adapter material (Brass/Stainless steel) ●  
Pad diameter ●  
Pad form ●  
Pad material ●  
Connection thread (Male/Female thread) ●

**Component parts**

Male thread: ② Gasket, ① Adapter (With gasket)

Female thread: ① Adapter

		Symbol	① Pad diameter symbol								
			015	02	035	04	06	08	10	13	16
② Pad form	Flat type	U	●	●	●	—	—	—	—	—	—
	Flat type with groove	UM	—	—	—	●	●	●	●	●	●
	Bellows type	B	—	—	—	●	●	●	●	●	●
③ Connection thread	Male thread	M3 x 0.5	ZP3□A-T1-A3			—			—		
		M5 x 0.8	—			ZP3□A-T2-A5			ZP3□A-T3-A5		
	Female thread	M3 x 0.5	ZP3□A-T1-B3			—			—		
		M5 x 0.8	—			ZP3□A-T2-B5			ZP3□A-T3-B5		
④ Gasket (Single unit)	Brass	10 pcs.*1	M-3G2			ZP-5G2			ZP-5G2		
		100 pcs.*1	—			M-5G2			M-5G2		
	Stainless steel	1 pc.*1	M3G-DPH00489			—			—		
		10 pcs.*1	—			M-5G3			M-5G3		

\*1 The gasket (single unit) sales unit is shown.

## Adapter Assembly: Vacuum Inlet Direction **Lateral** Y Type/ZP3□-Y

**Product part no.**

ZP3 □ - Y ① ② □ - ③ - ④

Adapter material (Brass/Stainless steel) ●  
Pad diameter ●  
Pad form ●  
Pad material ●  
Vacuum inlet (Female thread) ●  
Connection thread (Female thread) ●

**Component parts**

① Adapter

The One-touch fitting and barb fitting should be ordered separately. Refer to the dimensions for part numbers.

		Symbol	① Pad diameter symbol									
			015	02	035	04	06	08	10	13	16	
② Pad form	Flat type	U	●	●	●	—	—	—	—	—	—	
	Flat type with groove	UM	—	—	—	●	●	●	●	●	●	
	Bellows type	B	—	—	—	●	●	●	●	●	●	
③ Connection thread	Female thread	M3 x 0.5	B3	ZP3□A-Y1-B3			—			—		
		M5 x 0.8	B5	—			ZP3□A-Y2-B5			ZP3□A-Y3-B5		
④ Vacuum inlet	Female thread	M3 x 0.5	B3	ZP3□A-Y1-B3			—			—		
		M5 x 0.8	B5	—			ZP3□A-Y2-B5			ZP3□A-Y3-B5		

ZP3 Compact

Flat Type

Flat Type with Groove

Bellows Type

Bellows Type with Ribs

Construction

Mounting Bracket Assembly

Precautions

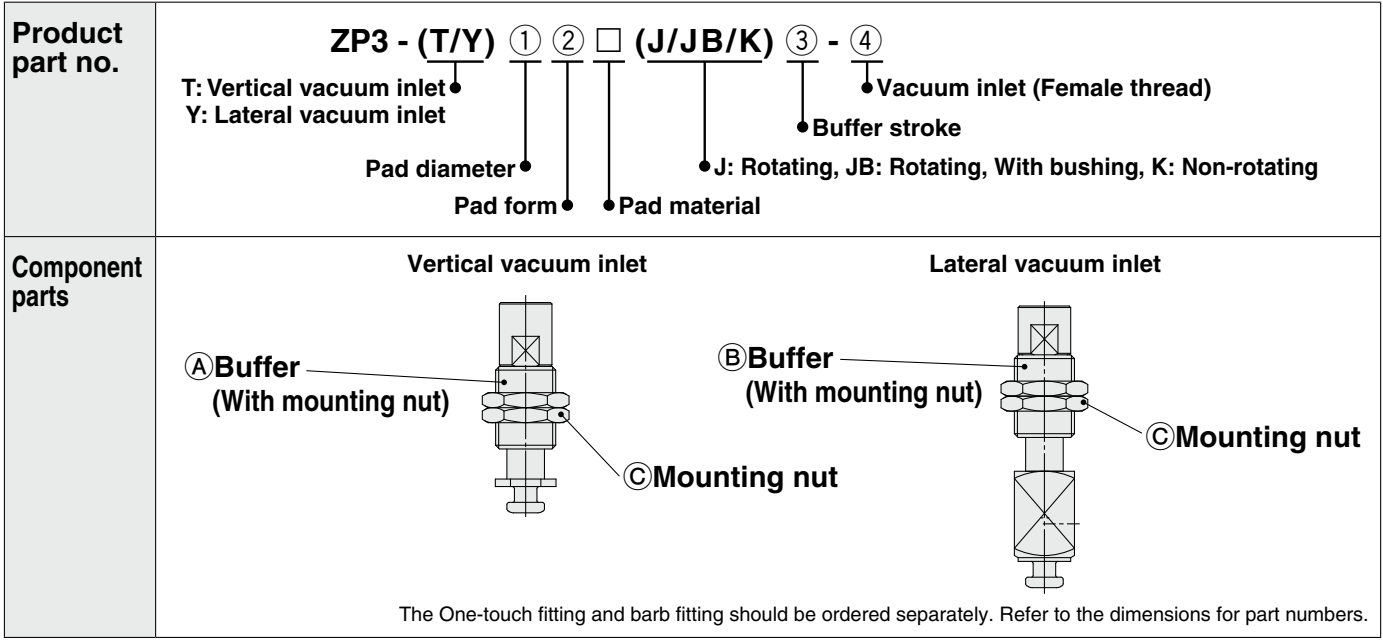
# Compact Type Mounting Bracket Assembly **ZP3 Series**

## Adapter Assembly: Vacuum Inlet Direction **Vertical** T Type/ZP3□-T

<b>Product part no.</b>	<p style="text-align: center;">ZP3 □ - T ① ② □ - ③ - ④</p> <p style="text-align: center;">Adapter material (Brass/Stainless steel) ●</p> <p style="text-align: center;">Pad diameter ●</p> <p style="text-align: center;">Pad form ●</p> <p style="text-align: center;">Pad material ●</p> <p style="text-align: right;">● Vacuum inlet</p> <p style="text-align: right;">● Connection thread</p>
<b>Component parts</b>	<p style="text-align: center;">The One-touch fitting and barb fitting for (A) adapter should be ordered separately. Refer to the dimensions for part numbers.</p>

				Symbol	① Pad diameter symbol										
					015	02	035	04	06	08	10	13	16		
② Pad form				Flat type	<b>U</b>	●	●	●	—	—	—	—	—	—	
				Flat type with groove	<b>UM</b>	—	—	—	●	●	●	●	●	●	●
				Bellows type	<b>B</b>	—	—	—	●	●	●	●	●	●	●
③ Adapter ③ Connection thread Male thread	Male thread	M6 x 0.75	<b>A6</b>	④ Vacuum inlet Female thread	M3 x 0.5	<b>B3</b>	<b>ZP3□A-T1-A6-B3</b>			—					
		M10 x 1	<b>A10</b>		M5 x 0.8	<b>B5</b>	—			<b>ZP3□A-T2-A10-B5</b>					
		M12 x 1	<b>A12</b>		M5 x 0.8	<b>B5</b>	—			<b>ZP3□A-T3-A12-B5</b>					
③ Adapter ③ Connection thread Male thread	Male thread	M10 x 1	<b>A10</b>	④ Vacuum inlet One-touch fitting	ø4	<b>04</b>	—			<b>ZP3□A-T2-A10-04</b>					
		M12 x 1	<b>A12</b>		ø4	<b>04</b>	—			<b>ZP3□A-T3-A12-04</b>					
					ø6	<b>06</b>	—			<b>ZP3□A-T3-A12-06</b>					
③ Mounting nut (Single unit)		Adapter material Brass		M6 x 0.75	<b>ZPNA-M6A</b>			—			—				
				M10 x 1	—			<b>ZPNA-M10</b>			—				
				M12 x 1	—			—			<b>ZPNA-M12A</b>				
		Adapter material Stainless steel		M6 x 0.75	<b>ZPSNA-M6A</b>			—			—				
				M10 x 1	—			<b>ZPSNA-M10</b>			—				
				M12 x 1	—			—			<b>ZPSNA-M12A</b>				

**Buffer Assembly: Vacuum Inlet Direction** **Vertical** T Type/ZP3-T, **Lateral** Y Type/ZP3-Y



		Symbol	① Pad diameter symbol								
			015	02	035	04	06	08	10	13	16
② Pad form	Flat type	U	●	●	●	—	—	—	—	—	—
	Flat type with groove	UM	—	—	—	●	●	●	●	●	●
	Bellows type	B	—	—	—	●	●	●	●	●	●
<b>Vertical</b>	④ Vacuum inlet Female thread	M3 x 0.5	B3	③ Buffer stroke	3	ZP3B-T1(J/K)3-B3	—		—		
					6	ZP3B-T1(J/K)6-B3	—		—		
					3	—	ZP3B-T2A(J/K)3-B5	ZP3B-T2B(J/K)3-B5	—		
		6	—		ZP3B-T2A(J/K)6-B5	ZP3B-T2B(J/K)6-B5	—				
		M5 x 0.8	B5		10	—	ZP3B-T2A(J/K)10-B5	ZP3B-T2B(J/K)10-B5	—		
					15	—	ZP3B-T2A(JB/K)15-B5	ZP3B-T2B(JB/K)15-B5	—		
	M5 x 0.8	B5	③ Buffer stroke	20	—	ZP3B-T2A(JB/K)20-B5	ZP3B-T2B(JB/K)20-B5	—			
				3	ZP3B-Y1(J/K)3-B3	—		—			
				6	ZP3B-Y1(J/K)6-B3	—		—			
				3	—	ZP3B-Y2A(J/K)3-B5	ZP3B-Y2B(J/K)3-B5	—			
				6	—	ZP3B-Y2A(J/K)6-B5	ZP3B-Y2B(J/K)6-B5	—			
				10	—	ZP3B-Y2A(J/K)10-B5	ZP3B-Y2B(J/K)10-B5	—			
<b>Lateral</b>	④ Vacuum inlet Female thread	M3 x 0.5	B3	③ Buffer stroke	15	—	ZP3B-Y2A(JB/K)15-B5	ZP3B-Y2B(JB/K)15-B5	—		
					20	—	ZP3B-Y2A(JB/K)20-B5	ZP3B-Y2B(JB/K)20-B5	—		
					3	—	ZP3B-Y2A(JB/K)3-B5	ZP3B-Y2B(JB/K)3-B5	—		
		6	—		ZP3B-Y2A(JB/K)6-B5	ZP3B-Y2B(JB/K)6-B5	—				
		M5 x 0.8	B5		10	—	ZP3B-Y2A(JB/K)10-B5	ZP3B-Y2B(JB/K)10-B5	—		
					15	—	ZP3B-Y2A(JB/K)15-B5	ZP3B-Y2B(JB/K)15-B5	—		
M8 x 0.75	—	—	—	③ Mounting nut (Single unit)	M6 x 0.75	ZPNA-M6A	—		—		
				M8 x 0.75	—	ZPNA-M8A	ZPNA-M8A				

**[Buffer part number example]**  
 Product part no. ZP3 - T 08UMN J 10 - 04  
 Buffer ZP3B - T 2A J 10 - B5  
 ③ Buffer stroke  
 One-touch fitting KQ2H04-M5N



# Basic/Compact Type Specific Product Precautions

Be sure to read this before handling the products. Refer to page 375 for safety instructions. For vacuum equipment and vacuum pad precautions, refer to pages 376 to 379.

## Mounting

### 1. Tighten the screw within the specified torque range when mounting the buffer.

Tightening with a torque outside of the specified range may cause malfunction.

#### Basic Type ZP Series

Model	Connection thread	Tightening torque [N·m]
ZP□(2 to 8)□(J/K)□-□-A8	M8 x 1	1.5 to 2.0
ZP□(10 to 32)□(J/K)□-□-A10	M10 x 1	2.5 to 3.5
ZP□(40/50)□(J/K)□-□-A14	M14 x 1	6.5 to 7.5

#### Compact Type ZP3 Series

Model	Connection thread	Tightening torque [N·m]
ZP3□-□(015 to 035)□J□-□	M6 x 0.75	1.5 to 1.8
ZP3□-□(015 to 035)□K□-□	M8 x 0.75	2.0 to 2.5
ZP3□-□(04 to 16)□(J/JB/K)□-□		

### 2. Tighten the vacuum inlet male thread adapter (with a gasket seal) within the specified torque range.

#### Basic Type ZP Series

Model	Connection thread	Tightening torque [N·m]
ZPT□□-A5	M5 x 0.8	1.3 to 1.7
ZPT□□-A6	M6 x 1	1.6 to 2.0

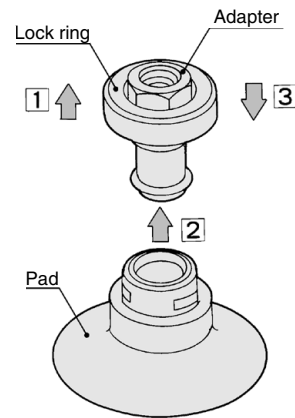
#### Compact Type ZP3 Series

Model	Connection thread	Tightening torque [N·m]
ZP3□-T(015 to 035)U□-A3	M3 x 0.5	0.2 to 0.25
ZP3□-T(04 to 16)□□-A5	M5 x 0.8	1.3 to 1.7

## How to Replace the Pad

### 1. How to replace the pad of the basic type ZP series

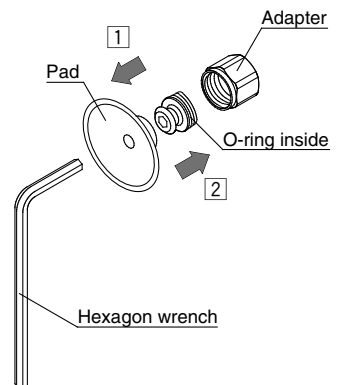
- 1 Pull the lock ring upward, and, after lifting it up to the adapter, remove the old pad by pulling it downward.
- 2 While holding the lock ring in the raised position, place a new pad onto the adapter.
- 3 Confirm that the pad is securely in place, and then return the lock ring to its original position.



### 2. How to replace the pad of the basic (ball joint) type ZP series

#### Pad diameter: $\varnothing 10$ to $\varnothing 32$

- 1 Insert a hexagon wrench into the bottom of the pad, loosen the screw, and remove the old pad from the adapter.
- 2 Place a new pad on the adapter, and, after confirming that the O-ring is in place, retighten the screw with the hexagon wrench.



#### Pad diameter: $\varnothing 40$ , $\varnothing 50$

- 1 Pull the lock ring upward, and, after lifting it up to the adapter, remove the old pad by pulling it downward.
- 2 While holding the lock ring in the raised position, place a new pad onto the adapter.
- 3 Confirm that the pad is securely in place, and then return the lock ring to its original position.

