







# Basic Pad *ZP Series*

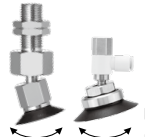


RoHS

∅2, ∅4, ∅6, ∅8, ∅10, ∅13, ∅16, ∅20, ∅25, ∅32, ∅40, ∅50

Flat Type, Flat Type with Ribs, Bellows Type, Thin Flat Type, Thin Flat Type with Ribs, Deep Type

## 12 sizes, 6 types of pad forms, and a wide range of adapter variations

Pad form	Application
Flat type 	For workpieces with flat and undeformed surfaces
Flat type with ribs 	For workpieces which are easily deformed Workpieces can be removed easily thanks to the ribs.
Bellows type 	For use where there is no space for a buffer or for workpieces with inclined surfaces
Thin flat type 	For soft workpieces such as thin sheets or vinyl Wrinkling or deformation during adsorption can be reduced.
Thin flat type with ribs 	For soft workpieces such as thin sheets or vinyl Workpieces can be removed easily thanks to the ribs.
Deep type 	For workpieces with curved surfaces or for spherical workpieces

Mounting bracket	Application
Ball joint 	For workpieces with inclined or curved surfaces
With adapter 	The adapter can be selected according to the installation conditions.
With buffer 	For workpieces of varying heights The buffer can reduce the impact to the workpiece during adsorption.



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Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type


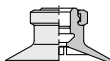





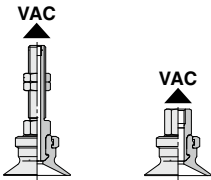
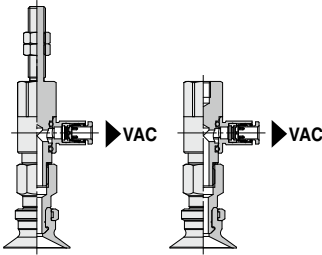
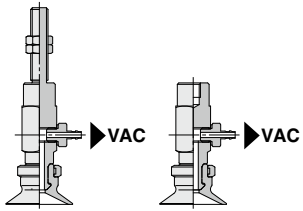
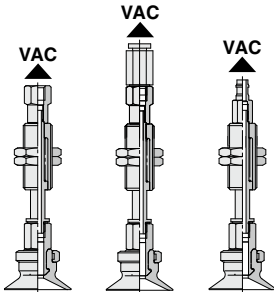
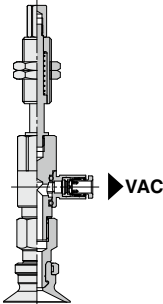
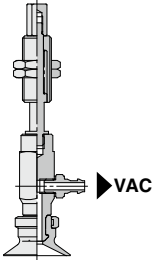
Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

		Vacuum inlet direction						
								
		Flat type	Flat type with ribs	Bellows type	Thin flat type	Thin flat type with ribs	Deep type	
Vertical	Single unit		p. 32	p. 51	p. 68	p. 87	p. 96	p. 105
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Lateral	ZPR With adapter		p. 35 p. 37	p. 53 p. 54	p. 71 p. 73	p. 88 p. 89	p. 97 p. 98	p. 107 p. 108
	ZPY With adapter		p. 39 p. 41	p. 55 p. 56	p. 75 p. 77	p. 90 p. 91	p. 99 p. 100	p. 109 p. 110
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Lateral	ZPY With buffer		p. 48	p. 60	p. 84	p. 94	p. 103	p. 114

Ball Joint Type		Vacuum inlet direction	Flat type
Vacuum inlet direction	Single unit		p. 62
Vertical	ZPT With adapter		p. 62 p. 63
Lateral	ZPR With adapter		p. 64
Vertical	ZPT With buffer		p. 65
Lateral	ZPR With buffer		p. 66

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

# Basic Pad *ZP* Series Specifications

## Pad Material

Material	NBR (Nitrile rubber)	Silicone rubber*1*2	Urethane rubber	FKM (Fluoro rubber)	Conductive NBR (Nitrile rubber)	Conductive silicone rubber
Color of rubber	Black	White	Brown	Black		
Rubber hardness (Shore A: ±5°)	50	40	50 to 60	60	50 to 65	50 to 60

\*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/ZPT

Connection		Male thread			Female thread			
Pad diameter		ø2 to ø8	ø10 to ø16	ø20 to ø50	ø2 to ø8*1	ø10 to ø16	ø20 to ø32	ø40, ø50
Connection thread		M5 x 0.8 M6 x 1		M6 x 1 M8 x 1	M4 x 0.7 M5 x 0.8	M5 x 0.8 M6 x 1 1/8 (Rc, NPT, NPTF)	M5 x 0.8 M6 x 1 M8 x 1.25 1/8 (Rc, NPT, NPTF)	M6 x 1 M8 x 1.25 1/8 (Rc, NPT, NPTF)
Vacuum inlet	Female thread	Use the connection thread.	M3 x 0.5	M3 x 0.5 M5 x 0.8	Use the connection thread.			

\*1 Refer to ø2 to ø8 for the thin flat type and thin flat type with ribs.

### Vacuum Inlet Direction **Lateral** R Type/ZPR

Connection		Male thread			Female thread			
Pad diameter		ø2 to ø16	ø20 to ø32	ø40, ø50	ø2 to ø8*1	ø10 to ø16	ø20 to ø32	ø40, ø50
Connection thread		M5 x 0.8 M6 x 1	M6 x 1 M8 x 1		M4 x 0.7 M5 x 0.8	M5 x 0.8 M6 x 1	M5 x 0.8 M6 x 1 M8 x 1.25	M6 x 1 M8 x 1.25
Vacuum inlet	One-touch fitting	ø4, ø6	ø4, ø6, ø8	ø6, ø8	ø4, ø6	ø4, ø6, ø8	ø6, ø8	

\*1 Refer to ø2 to ø8 for the thin flat type and thin flat type with ribs.

### Vacuum Inlet Direction **Lateral** Y Type/ZPY

Connection		Male thread			Female thread			
Pad diameter		ø2 to ø16	ø20 to ø32	ø40, ø50	ø2 to ø8*1	ø10 to ø16	ø20 to ø32	ø40, ø50
Connection thread		M5 x 0.8 M6 x 1	M6 x 1 M8 x 1		M4 x 0.7 M5 x 0.8	M5 x 0.8 M6 x 1	M5 x 0.8 M6 x 1 M8 x 1.25	M6 x 1 M8 x 1.25
Vacuum inlet	Barb fitting*2	ø4, ø6		ø6	ø4, ø6		ø6	

\*1 Refer to ø2 to ø8 for the thin flat type and thin flat type with ribs.

\*2 Applicable tubing: Nylon tubing, Soft tubing

## Buffer Specifications

Pad diameter		ø2 to ø8*1	ø10 to ø32	ø40, ø50
Non-rotating specification		J: Rotating, K: Non-rotating		
Stroke [mm]		6, 10, 15, 25	10, 20, 30, 40, 50	10, 20, 30, 50
Connection thread		M8 x 1	M10 x 1	M14 x 1
Spring reactive force [N]	At 0 stroke	0.8	1.0	2.0
	At full stroke	1.2	3.0	5.0

\*1 Refer to ø2 to ø8 for the thin flat type and thin flat type with ribs.

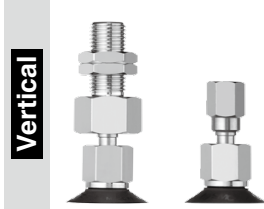
# Basic Pad *ZP Series* Specifications

Ball Joint Type

## Adapter Specifications (Ball Joint Type)

Ball joint rotating angle	30°
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### Vacuum Inlet Direction **Vertical** T Type/ZPT□F



Connection	Male thread			Female thread		
Pad diameter	ø10 to ø16	ø20 to ø32	ø40, ø50	ø10 to ø16	ø20 to ø32	ø40, ø50
Connection thread	M8 x 1	M10 x 1	M14 x 1	M5 x 0.8	M5 x 0.8 M8 x 1.25 1/8 (Rc, NPT, NPTF)	M8 x 1.25 1/8 (Rc, NPT, NPTF)
Vacuum inlet	M5 x 0.8			Use the connection thread.		

### Vacuum Inlet Direction **Lateral** R Type/ZPR□F



Connection	Female thread		
Pad diameter	ø10 to ø16	ø20 to ø32	ø40, ø50
Connection thread	M5 x 0.8	M5 x 0.8 M8 x 1.25	M5 x 0.8 M8 x 1.25
Vacuum inlet	One-touch fitting	ø4, ø6	ø6, ø8

## Buffer Specifications (Ball Joint Type)



Pad diameter		ø10 to ø16	ø20 to ø50
Non-rotating specification		J: Rotating, K: Non-rotating	
Stroke [mm]		10, 20, 30, 40, 50	10, 20, 30, 50
Connection thread		M10 x 1	M14 x 1
Spring reactive force [N]	At 0 stroke	1.0	2.0
	At full stroke	3.0	5.0

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions



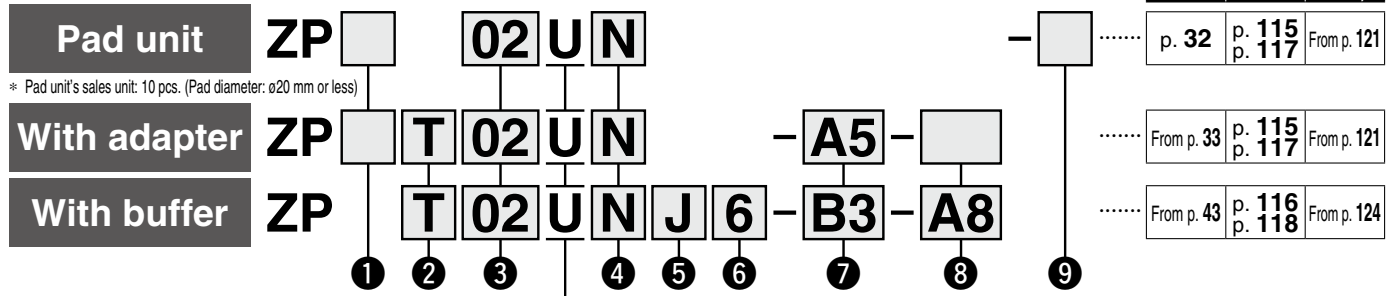
# Basic Pad

## Flat Type

# ZP Series



### How to Order



#### ① Adapter (Lock ring) material

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

\*1 Only applicable to the pad unit (with lock ring) and the pad with adapter (Vacuum inlet direction: Vertical (Option "T"))

#### ② Vacuum inlet direction

<b>Nil</b>	Pad unit
<b>T</b>	Vertical
<b>R</b>	Lateral (With One-touch fitting)
<b>Y</b>	Lateral (With barb fitting)

#### ③ Pad diameter

<b>02</b>	ø2	<b>16</b>	ø16
<b>04</b>	ø4	<b>20</b>	ø20
<b>06</b>	ø6	<b>25</b>	ø25
<b>08</b>	ø8	<b>32</b>	ø32
<b>10</b>	ø10	<b>40</b>	ø40
<b>13</b>	ø13	<b>50</b>	ø50

#### 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

#### ⑤ Buffer specification

<b>J</b>	Rotating
<b>K</b>	Non-rotating
<b>JN*1</b>	Rotating (Without buffer plate)
<b>KN*1</b>	Non-rotating (Without buffer plate)

\*1 Only for pad diameters ø2 to ø8

#### ⑥ Buffer stroke

Stroke [mm]	Pad diameter [mm]											
	ø2	ø4	ø6	ø8	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
6	●	●	●	●	—	—	—	—	—	—	—	—
10	●	●	●	●	●	—	—	—	—	—	—	—
15	●	●	●	●	—	—	—	—	—	—	—	—
20	—	—	—	—	●	●	●	●	●	●	●	●
25	●	●	●	●	—	—	—	—	—	—	—	—
30	—	—	—	—	●	●	●	●	●	●	●	●
40	—	—	—	—	●	●	●	●	●	●	—	—
50	—	—	—	—	●	●	●	●	●	●	●	●

\*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)

### With adapter

#### ⑦ Vacuum inlet ○: ZP□/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]			
			ø2 to ø8	ø10 to ø16	ø20 to ø32	ø40, ø50
Male thread	<b>A5</b>	M5 x 0.8	○*1	—	—	—
	<b>A6</b>	M6 x 1	○*1	—	—	—
Female thread	<b>Nil</b>	M3 x 0.5	—	○ Connection thread: A5/A6	○ Connection thread: A6	○ Connection thread: A6
		M5 x 0.8	—	○ Connection thread: A6	○ Connection thread: A6	—
	<b>B4</b>	M4 x 0.7	○	—	—	—
	<b>B5</b>	M5 x 0.8	○	○	—	—
	<b>B6</b>	M6 x 1	—	○	○	○
	<b>B8</b>	M8 x 1.25	—	—	○	○
	<b>B01</b>	Rc1/8	—	—	○	○
	<b>N01*4</b>	NPT1/8	—	—	○	○
One-touch fitting	<b>T01*4</b>	NPTF1/8	—	○	○	○
	<b>04</b>	ø4	●	●	●	—
	<b>06</b>	ø6	●	●	●	●
Barb fitting	<b>08</b>	ø8	—	—	●	●
	<b>N4</b>	For ø4 nylon tubing*2	△	△	△	—
	<b>N6</b>	For ø6 nylon tubing*2	△	△	△	△
	<b>U4</b>	For ø4 soft tubing*3	△	△	△	—
<b>U6</b>	For ø6 soft tubing*3	△	△	△	△	

\*1 Use the connection thread. \*2 Nylon tube piping \*3 Soft nylon/Polyurethane tube piping \*4 Not compatible with stainless steel materials

#### ⑧ Connection thread ○: ZP□/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]			
			ø2 to ø8	ø10 to ø16	ø20 to ø32	ø40, ø50
Male thread	<b>A5</b>	M5 x 0.8	●△	○*1△	—	—
	<b>A6</b>	M6 x 1	●△	○*1●△	—	—
	<b>A8</b>	M8 x 1	—	—	○*1●△	○*1●△
Female thread	<b>B4</b>	M4 x 0.7	●△	—	—	—
	<b>B5</b>	M5 x 0.8	●△	●△	●△	—
	<b>B6</b>	M6 x 1	—	●△	●△	●△
	<b>B8</b>	M8 x 1.25	—	—	●△	●△

\*1 ○: ZP□/Vertical comes with a vacuum inlet (female thread).

### With buffer

#### ⑦ Vacuum inlet ○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]			
			ø2 to ø8	ø10 to ø16	ø20 to ø32	ø40, ø50
Female thread	<b>B3</b>	M3 x 0.5	○	—	—	—
	<b>B5</b>	M5 x 0.8	○	○	—	○
	<b>B01</b>	Rc1/8	—	—	—	○
	<b>N01</b>	NPT1/8	—	—	—	○
	<b>T01</b>	NPTF1/8	—	—	—	○
One-touch fitting	<b>04</b>	ø4	○●	○●	○●	—
	<b>06</b>	ø6	○●	○●	○●	○●
	<b>08</b>	ø8	—	—	●	○●
Barb fitting	<b>N4</b>	For ø4 nylon tubing*1	○△	△	△	—
	<b>N6</b>	For ø6 nylon tubing*1	△	○△	○△	○△
	<b>U4</b>	For ø4 soft tubing*2	○△	△	△	—
	<b>U6</b>	For ø6 soft tubing*2	△	○△	○△	○△

\*1 Nylon tube piping \*2 Soft nylon/Polyurethane tube piping

#### ⑧ Connection thread ○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]			
			ø2 to ø8	ø10 to ø16	ø20 to ø32	ø40, ø50
Male thread	<b>A8</b>	M8 x 1	○●△	—	—	—
	<b>A10</b>	M10 x 1	—	○●△	○●△	—
	<b>A14</b>	M14 x 1	—	—	—	○●△

#### ⑨ Lock ring

Symbol	Pad diameter [mm]	
	ø2 to ø8	ø10 to ø50
<b>Nil</b>	With lock ring	—
<b>X19</b>	Without lock ring	—

\*1 The lock ring cannot be used for pad diameters ø2 to ø8.

#### Lock ring unit

Part no.	Pad diameter [mm]
<b>ZP□L1</b>	ø10 to ø16
<b>ZP□L2</b>	ø20 to ø32
<b>ZP□L3</b>	ø40, ø50

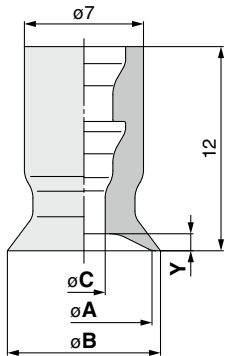
□: Nil/Brass S/Stainless steel

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

## Dimensions/Models

Single unit  $\varnothing 2$  to  $\varnothing 8$

ZP **02** U **N**  
① ②



Construction p. 115

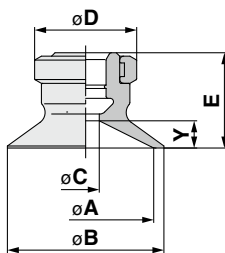
Mounting Bracket Assembly From p. 121

Model	① Pad dia.	Form	② <sup>*1</sup> Material	A	B	C	Y
	02			2	2.6	1.2	0.5
	04			4	4.8	1.6	0.8
	06			6	7	2.5	1
	08			8	9		

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

Single unit  $\varnothing 10$  to  $\varnothing 50$

ZP **10** U **N**  
① ② ③



Construction p. 117

Mounting Bracket Assembly From p. 121

### ① Lock ring material

Nil	Brass
S	Stainless steel (Stainless steel 304)

Model	① Lock ring material	② Pad dia.	Form	③ <sup>*1</sup> Material	A	B	C	D	E	Y	
											ZP
		10			10	12	4	13	12	3	
		13			13	15			12.5	3.5	
		16			16	18			15	14	4
		20			20	23				14.5	4.5
		25			25	28	18.5	6.5			
		32			32	35	7	18	19.5	7.5	
		40			40	43					
		50			50	53					

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

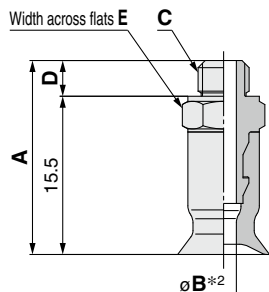
Precautions



## Dimensions/Models

### With adapter $\varnothing 2$ to $\varnothing 8$

ZP   T 02 U N - A5  
①   ②   ③   ④



**Construction** p. 115  
**Adapter Assembly** p. 121

#### ① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

#### ④ Vacuum inlet (Male thread)

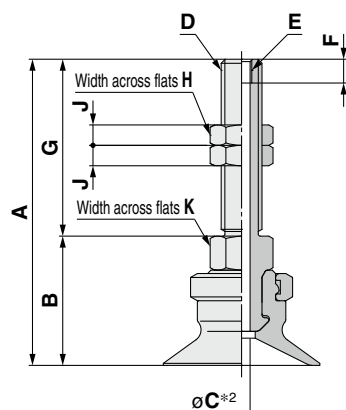
A5	M5 x 0.8
A6	M6 x 1

Model	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material	④ Vacuum inlet	A	B*2	C	D	E			
												Nil	S	U
ZP	Nil	S	T	U	N	A5	19	1.2	M5 x 0.8	3.5	7			
								1.6						
								2.5						
								② 02				A6	20	1.2
								② 04						1.6
								② 06						2.5
② 08	M6 x 1	4.5	8											

\*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

### With adapter $\varnothing 10$ to $\varnothing 50$

ZP   T 10 U N - A5  
①   ②   ③   ④



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**Adapter Assembly** p. 121

#### ① Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

#### ④ Connection thread (Male thread)

A5	M5 x 0.8 (M3 x 0.5 With female thread)
A6	M6 x 1 (M3 x 0.5 With female thread)
A8	M8 x 1 (M5 x 0.8 With female thread)

Model	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material	④ Connection thread	A	B	C*2	D	E	F	G	H	J	K	
																	Nil
ZP	Nil	S	T	U	N	A5	38	17	2.5	M5 x 0.8	M3 x 0.5	3.5	21	8	4	8	
																	10
																	13
																	16
																	10
																	13
							43	17	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	8	
																	16
																	20
																	25
																	32
																	40
							45	19	2.5	M8 x 1	M5 x 0.8	5	16	12	4	12	
																	16
																	20
																	25
																	32
																	40
40	24	4	M8 x 1	M5 x 0.8	5	16	12	4	12								
										25							
										32							
										40							
										50							
										50							
40.5	24.5	4.2	M8 x 1	M5 x 0.8	5	16	12	4	12								
										25							
										32							
										40							
										50							
										50							

\*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

#### Recommended Gasket Part Nos.

Part no.	D vacuum inlet (Male thread)
WCS5X0.8	M5 x 0.8
WCS6X1	M6 x 1
WCS8X1	M8 x 1

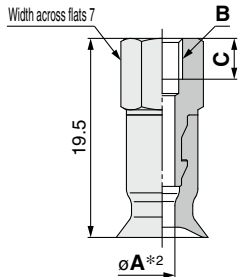


Dimensions/Models

With adapter  $\varnothing 2$  to  $\varnothing 8$

ZP   T 02 U N - B4

①      ②      ③      ④



Construction	p. 115
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① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

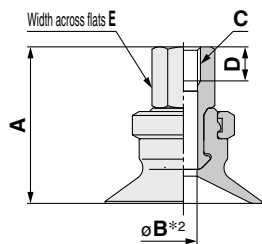
ZP	① Adapter material	Vacuum inlet direction	Model				A*2	B	C
			② Pad dia.	Form	③ Material	④ Vacuum inlet			
ZP	Nil S	T	02	U	N S U F GN GS	B4	1.2	M4 x 0.7	4
			04				1.6		
			06				2.5		
			08				1.2		
			02				1.6		
			04			B5	1.2	M5 x 0.8	5
			06				1.6		
			08				2.5		

\*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

With adapter  $\varnothing 10$  to  $\varnothing 50$

ZP   T 10 U N - B5

①      ②      ③      ④



Construction	p. 117
Adapter Assembly	p. 121

① Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Female thread)

B5	M5 x 0.8	B01	Rc1/8
B6	M6 x 1	N01*1	NPT1/8
B8	M8 x 1.25	T01*1	NPTF1/8

\*1 Not compatible with stainless steel materials

ZP	① Adapter material	Vacuum inlet direction	Model				A	B*2	C	D	E				
			② Pad dia.	Form	③ Material	④ Vacuum inlet									
ZP	Nil S	T	10	U	N S U F GN GS	B5	21	2.5	M5 x 0.8	5	8				
			13				21.5								
			16				23								
			20				4	23.5							
			25												
			32				B6	21				2.5	M6 x 1	6	8
			13					21.5							
			16					4				23			
			20									23.5			
			25					4.9				32			
			32												
			40			B8	29	3.5	M8 x 1.25	8	12				
			20				29.5								
			25				6.6	32							
			32												
			40			B01 N01*3 T01*3	27	2.5	Rc1/8 NPT1/8 NPTF1/8	—	12				
			10				27.5								
			13				3.5	29							
			16					29.5							
			20				7	32							
			25												
			32												
			40			33	33								
			50												

\*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  
\*3 Not compatible with stainless steel materials

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

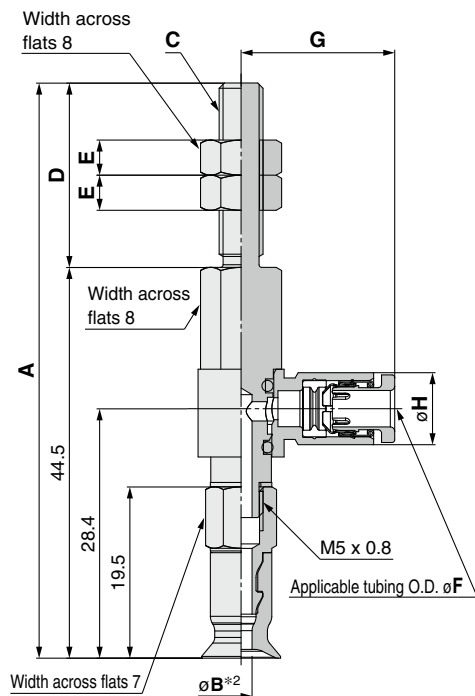
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

With adapter/One-touch fitting  $\varnothing 2$  to  $\varnothing 8$



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ZPR **02** U **N** - **04** - **A5**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
		Vacuum inlet (One-touch fitting)	Connection thread (Male thread)
<b>04</b>	$\varnothing 4$		<b>A5</b> M5 x 0.8
<b>06</b>	$\varnothing 6$		<b>A6</b> M6 x 1

Model					A	B*2	C	D	E	
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> Material	<b>3</b> Vacuum inlet						
ZP	R	U	N S U F GN GS	04 06	A5	65.5	1.2	M5 x 0.8	21	4
							1.6			
							2.5			
					A6	70.5	M6 x 1	26	4	
										1.2
										1.6
2.5										

### Dimensions Per Vacuum Inlet

Model					F	G	H	Fitting part min. hole size
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> Material	<b>3</b> Vacuum inlet				
ZP	R	U	N S U F GN GS	04	4	17.5	8.2	$\varnothing 2.5$
				06				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 adapter/One-touch fitting  $\phi 10$  to  $\phi 50$**

ZPR **10** **U** **N** - **04** - **A5**

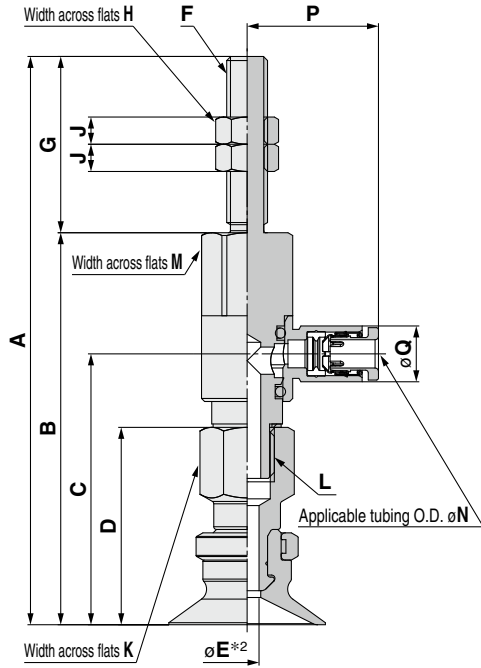
① ②

Vacuum inlet ③  
(One-touch fitting)

④ Connection thread  
(Male thread)

04	$\phi 4$
06	$\phi 6$
08	$\phi 8$

A5	M5 x 0.8
A6	M6 x 1
A8	M8 x 1



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Model						A	B	C	D	E <sup>*2</sup>	F	G	H	J	K	L	
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread												
ZP	R	U	N S U F GN GS	04 06 08	A5	10	67	46	29.9	21	2.5	M5 x 0.8	21	8	4	8	M5 x 0.8
						13	67.5	46.5	30.4	21.5							
						16	72	46	29.9	21	2.5	M6 x 1	26	8	4	8	M5 x 0.8
						10	72.5	46.5	30.4	21.5							
						13	83.5	57.6	39.8	29	3.5	M6 x 1	25.9	8	4	12	M8 x 1.25
						16	84	58.1	40.3	29.5							
	20	86.5	60.6	42.8	32	4	M8 x 1	15.9	12	4	12	M8 x 1.25					
	25	87.5	61.6	43.8	33												
	32	73.5	57.6	39.8	29	3.5	M8 x 1	15.9	12	4	12	M8 x 1.25					
	40	74	58.1	40.3	29.5												
	50	76.5	60.6	42.8	32	4	M8 x 1	15.9	12	4	12	M8 x 1.25					
	20	77.5	61.6	43.8	33												

**Dimensions Per Vacuum Inlet**

Model						M	N	P	Q	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread					
ZP	R	U	N S U F GN GS	04	A5	8	4	17.5	8.2	$\phi 2.5$
				06	A6					6
				04	A6 A8	12	6	19.3	8.2	$\phi 3$
				06						6
	08	A6 A8	16	8	23.5	13.2	$\phi 6$			
	06						12	6	20.5	10.4
	50	A6 A8	16	8	23.5	13.2	$\phi 6$			
	08						16	8	23.5	13.2

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

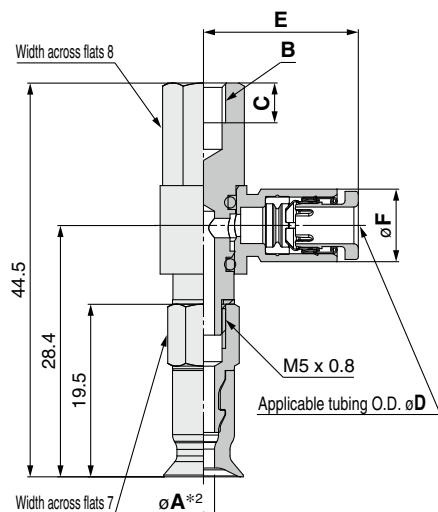
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

With adapter/One-touch fitting  $\varnothing 2$  to  $\varnothing 8$



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ZPR **02** U **N** - **04** - **B4**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
		Vacuum inlet (One-touch fitting)	Connection thread (Female thread)
<b>04</b>	$\varnothing 4$		<b>B4</b> M4 x 0.7
<b>06</b>	$\varnothing 6$		<b>B5</b> M5 x 0.8

Model						A*2	B	C
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> *1 Material	<b>3</b> Vacuum inlet	<b>4</b> Connection thread			
ZP	R	U	N S U F GN GS	04 06	B4	1.2	M4 x 0.7	4.5
						1.6		
						2.5		
					B5	1.2	M5 x 0.8	5.5
						1.6		
						2.5		

### Dimensions Per Vacuum Inlet

Model						D	E	F	Fitting part min. hole size
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> *1 Material	<b>3</b> Vacuum inlet	<b>4</b> Connection thread				
ZP	R	U	N S U F GN GS	04	B4 B5	4	17.5	8.2	$\varnothing 2.5$
				06		6	18.3	10.4	$\varnothing 4$

\*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 adapter/One-touch fitting  $\varnothing 10$  to  $\varnothing 50$**

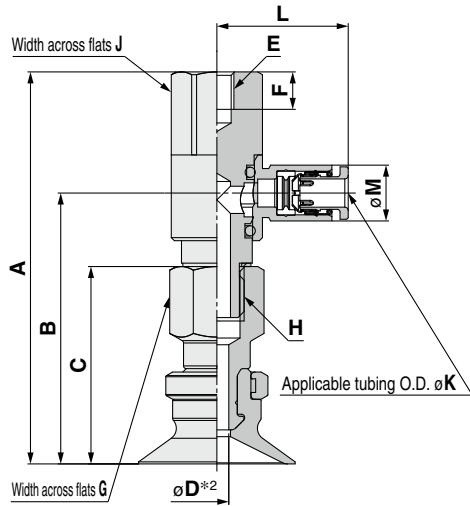
ZPR **10** **U** **N** - **04** - **B5**

**1** Pad dia.  
**2** Form  
**3** Vacuum inlet (One-touch fitting)

**4** Connection thread (Female thread)

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

<b>B5</b>	M5 x 0.8
<b>B6</b>	M6 x 1
<b>B8</b>	M8 x 1.25



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**Adapter Assembly** p. 122

Model	Vacuum inlet direction	1 Pad dia.	2 Form	3 Material	4 Vacuum inlet	5 Connection thread	A	B	C	D*2	E	F	G	H										
ZP	R	10	U	N	04	B5	46	29.9	21	2.5	M5 x 0.8	5.5	8	M5 x 0.8										
		13					46.5	30.4	21.5															
		16					57.6	39.8	29															
		20					58.1	40.3	29.5															
		R					25	U	S	06	B6	46	29.9	21	2.5	M6 x 1	6.5	12	M8 x 1.25					
							13					46.5	30.4	21.5										
							16					57.6	39.8	29										
							20					58.1	40.3	29.5										
							R					25	U	F	08	B8	57.6	39.8	29	3.5	M8 x 1.25	8.5	12	M8 x 1.25
												32					60.6	42.8	32					
	40		61.6	43.8	33																			
	50		61.6	43.8	33																			

**Dimensions Per Vacuum Inlet**

Model	Vacuum inlet direction	1 Pad dia.	2 Form	3 Material	4 Vacuum inlet	5 Connection thread	J	K	L	M	Fitting part min. hole size	
ZP	R	10	U	N	04	B5	8	4	17.5	8.2	$\varnothing 2.5$	
						B6		6	18.3	10.4	$\varnothing 4$	
		20			04	B5	12	4	19.3	8.2	$\varnothing 3$	
						B6		6	20.5	10.4	$\varnothing 4.5$	
		25			06	B8	16	8	23.5	13.2	$\varnothing 6$	
						B8		6	20.5	10.4	$\varnothing 4.5$	
		32			06	B6	12	12	6	20.5	10.4	$\varnothing 4.5$
						B8		16	8	23.5	13.2	$\varnothing 6$
		40			08	B6	12	12	6	20.5	10.4	$\varnothing 4.5$
						B8		16	8	23.5	13.2	$\varnothing 6$
50	08	B6	12	12	6	20.5	10.4	$\varnothing 4.5$				
		B8		16	8	23.5	13.2	$\varnothing 6$				

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

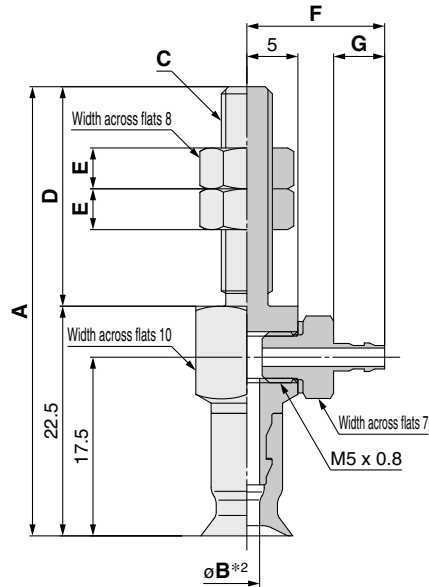
Construction

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**Dimensions/Models**

**With adapter/barb fitting  $\varnothing 2$  to  $\varnothing 8$**



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**ZPY 02 U N - N4 - A5**

① ②

**Vacuum inlet (Barb fitting)**

<b>N4</b>	For $\varnothing 4$ nylon tubing	M-5AN-4
<b>N6</b>	For $\varnothing 6$ nylon tubing	M-5AN-6
<b>U4</b>	For $\varnothing 4$ soft tubing	M-5AU-4
<b>U6</b>	For $\varnothing 6$ soft tubing	M-5AU-6

④ **Connection thread (Male thread)**

<b>A5</b>	M5 x 0.8
<b>A6</b>	M6 x 1

		Model				A	B*2	C	D	E
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread					
ZP	Y	02	U	N S U F GN GS	N4 N6 U4 U6	A5	44	M5 x 0.8	21.5	4
		04								
		06								
		08				A6				
		02								
		04								
06	49.5	M6 x 1	27	4						
08										

**Dimensions Per Vacuum Inlet**

		Model				F	G	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread				
ZP	Y	02	U	N S U F GN GS	N4	A5	13.5	5	$\varnothing 1.8$
		U4							
		06			N6	A6	15.5	7	$\varnothing 2.5$
		08			U6				

\*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/barb fitting  $\varnothing 10$  to  $\varnothing 50$

ZPY **10** **U** **N** - **N4** - **A5**

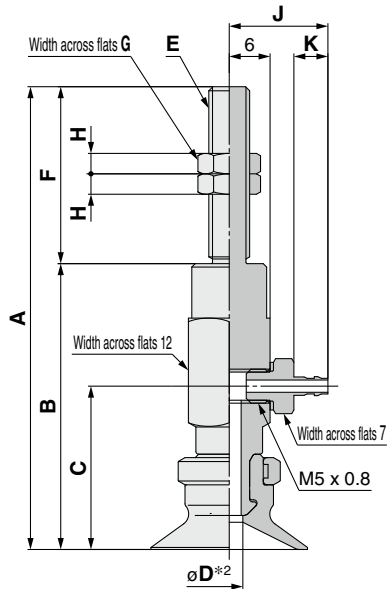
① ②

Vacuum inlet ③  
(Barb fitting)

④ Connection thread  
(Male thread)

A5	M5 x 0.8
A6	M6 x 1
A8	M8 x 1

N4	For $\varnothing 4$ nylon tubing	M-5AN-4
N6	For $\varnothing 6$ nylon tubing	M-5AN-6
U4	For $\varnothing 4$ soft tubing	M-5AU-4
U6	For $\varnothing 6$ soft tubing	M-5AU-6



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		Model				A	B	C	D*2	E	F	G	H	
	Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread								
ZP	Y	10	U	N S U F GN GS	N4 N6 U4 U6	A5	59	38	22	2.5	M5 x 0.8	21	8	4
		13					59.5	38.5	22.5					
		16					64	38	22					
		10					64.5	38.5	22.5					
		13				68	42	24	3.5	M6 x 1	26	8	4	
		16				68.5	42.5	24.5						
		20				72.5	46.5	28.5						
		25				73.5	47.5	29.5						
		32				A8	58	42	24	3.5	M8 x 1	16	12	4
		40					58.5	42.5	24.5					
		50					62.5	46.5	28.5					
		20					63.5	47.5	29.5					

Dimensions Per Vacuum Inlet

		Model				J	K	Fitting part min. hole size	
	Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	10	U	N S U F GN GS	N4	A5	14.5	5	$\varnothing 1.8$
		13			U4				
		16			N6 U6	A6	16.5	7	$\varnothing 2.5$
		20							
		25				A8	16.5	7	$\varnothing 2.5$
		32							
40									
50									

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

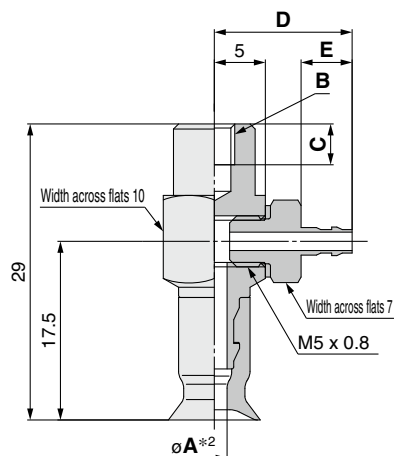
Mounting Bracket Assembly

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## Dimensions/Models

With adapter/barb fitting  $\varnothing 2$  to  $\varnothing 8$



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ZPY **02** **U** **N** - **N4** - **B4**

① ②

Vacuum inlet ③  
(Barb fitting)

④ Connection thread  
(Female thread)

<b>N4</b>	For $\varnothing 4$ nylon tubing	M-5AN-4
<b>N6</b>	For $\varnothing 6$ nylon tubing	M-5AN-6
<b>U4</b>	For $\varnothing 4$ soft tubing	M-5AU-4
<b>U6</b>	For $\varnothing 6$ soft tubing	M-5AU-6

<b>B4</b>	M4 x 0.7
<b>B5</b>	M5 x 0.8

		Model				A*2	B	C
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	02	U	N S U F GN GS	N4 N6 U4 U6	B4	M4 x 0.7	4
		04						
		06						
		08				B5		
		02						
		04						
06	B5	M5 x 0.8	5					
08								

### Dimensions Per Vacuum Inlet

		Model				D	E	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread				
ZP	Y	02	U	N S U F GN GS	N4	B4 B5	13.5	5	$\varnothing 1.8$
		04			U4				
		06			N6		15.5	7	$\varnothing 2.5$
		08			U6				

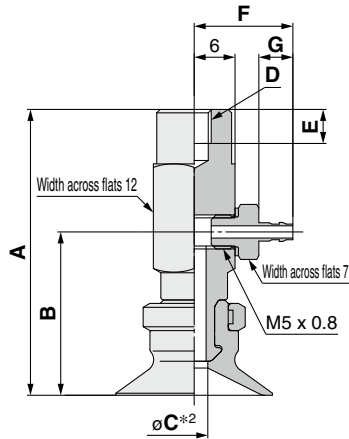
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

**Dimensions/Models**

**With adapter/barb fitting  $\varnothing 10$  to  $\varnothing 50$**

**ZPY 10 U N - N4 - B5**



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**1** Pad dia.  
**2** Form  
**3** Vacuum inlet (Barb fitting)  
**4** Connection thread (Female thread)

<b>4</b> Connection thread (Female thread)	
<b>B5</b>	M5 x 0.8
<b>B6</b>	M6 x 1
<b>B8</b>	M8 x 1.25

<b>N4</b>	For $\varnothing 4$ nylon tubing	M-5AN-4
<b>N6</b>	For $\varnothing 6$ nylon tubing	M-5AN-6
<b>U4</b>	For $\varnothing 4$ soft tubing	M-5AU-4
<b>U6</b>	For $\varnothing 6$ soft tubing	M-5AU-6

		Model				A	B	C*2	D	E	
Vacuum inlet direction	1 Pad dia.	2 Form	3*1 Material	4 Vacuum inlet	5 Connection thread						
ZP	Y	U	N S U F GN GS	N4 N6 U4 U6	B5	10	38	22	2.5	M5 x 0.8	5
						13	38.5	22.5			
						16	42	24	3.5		
						20	42.5	24.5			
					25	38	22	2.5	M6 x 1	6	
					32	38.5	22.5				
					40	42	24	3.5			
					50	42.5	24.5				
	20	46.5	28.5	6	M8 x 1.25	8					
	25	47.5	29.5								
	32	42	24	3.5							
	40	42.5	24.5								
	50	46.5	28.5	6							
		47.5	29.5								

**Dimensions Per Vacuum Inlet**

		Model				F	G	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	2 Form	3*1 Material	4 Vacuum inlet	5 Connection thread			
ZP	Y	U	N S U F GN GS	N4	B4	14.5	5	$\varnothing 1.8$
				U4	B5			
				N6	B5	16.5	7	$\varnothing 2.5$
				U6	B8			
				N4	B5	14.5	5	$\varnothing 1.8$
				U4	B8			
N6	B6	16.5	7	$\varnothing 2.5$				
U6	B8							
N6	B6	16.5	7	$\varnothing 2.5$				
U6	B8							

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

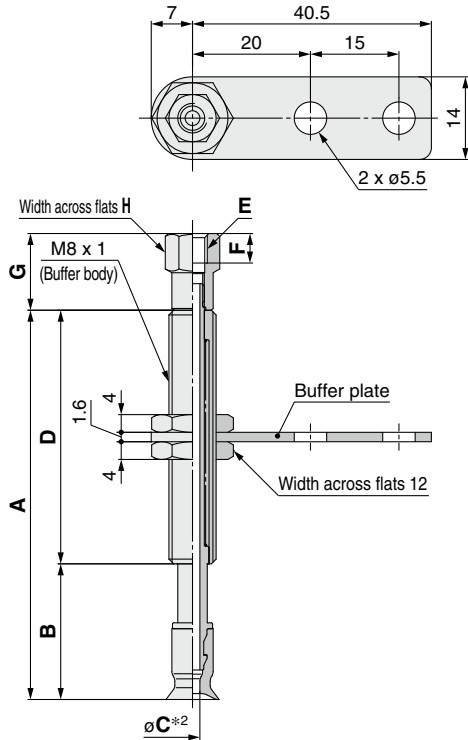
Mounting Bracket Assembly

Precautions

## Dimensions/Models

### With buffer $\varnothing 2$ to $\varnothing 8$

The drawings show the type with a buffer plate.



ZPT **02** **U** **N** **J** **6** - **B3** - **A8**

① ② ④

#### Buffer specification ③

<b>J</b>	Rotating
<b>K</b>	Non-rotating
<b>JN</b>	Rotating (Without buffer plate)
<b>KN</b>	Non-rotating (Without buffer plate)

#### ⑥ Connection thread (Male thread)

<b>A8</b>	M8 x 1
-----------	--------

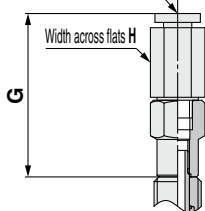
#### ⑤ Vacuum inlet

<b>B3</b>	M3 x 0.5	Female thread	
<b>B5</b>	M5 x 0.8	Female thread	
<b>04</b>	$\varnothing 4$	One-touch fitting	KQ2H04-M5N
<b>06</b>	$\varnothing 6$		KQ2H06-M5N
<b>N4</b>	For $\varnothing 4$ nylon tubing	Barb fitting	
<b>U4</b>	For $\varnothing 4$ soft tubing		

		Model						A	B	C*2	D		
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread						
ZP	T	U	N S U F GN GS	J K JN KN	6	B3 B5 04 06 N4 U4	A8	33	18	1.2	15		
					10			66	23		43		
					15			71	28				
					25			81	38				
					6			33	18		15		
					10			66	23		43		
	04	U			N S U F GN GS	J K JN KN	6	B3 B5 04 06 N4 U4	A8	33	18	1.6	15
							10			66	23		43
							15			71	28		
							25			81	38		
							6			33	18		15
							10			66	23		43
06 08	U	N S U F GN GS	J K JN KN	6	B3 B5 04 06 N4 U4	A8	33	18	J: 2.5 K: 2	15			
				10			66	23		43			
				15			71	28					
				25			81	38					
				6			33	18		15			
				10			66	23		43			

#### Vacuum inlet: One-touch fitting

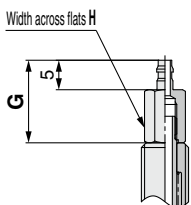
Applicable tubing O.D.  $\varnothing J$



#### Dimensions Per Vacuum Inlet: Female Thread

		Model						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	⑥ Connection thread				
ZP	T	U	N S U F GN GS	J K JN KN	6	B3 B5	A8	M3 x 0.5	3	11	6
					10						
					15						
					25			M5 x 0.8	5	13	8
					6						
					10						

#### Vacuum inlet: Barb fitting



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

		Model						G	H	J	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	U	N S U F GN GS	J K JN KN	6	04 06	A8	27.7	8	4	$\varnothing 2.5$
					10						
					15						
					25						
					6						
					10						

Construction p. 116

Buffer Assembly p. 124

#### Dimensions Per Vacuum Inlet: Barb Fitting

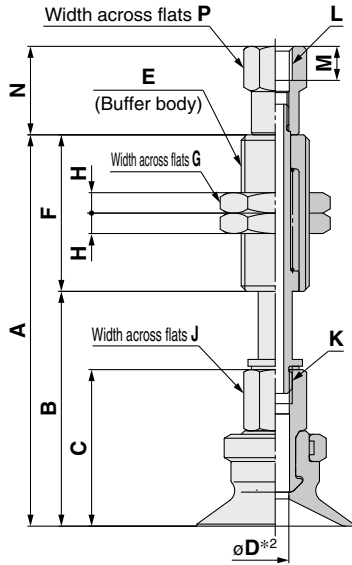
		Model						G	H	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread			
ZP	T	U	N S U F GN GS	J K JN KN	6	N4 U4	A8	14	6	$\varnothing 1.8$
					10					
					15					
					25					
					6					
					10					

\*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  $\varnothing 50$



Construction p. 118  
Buffer Assembly p. 124

ZPT 10 U N J 10 - B5 - A10

Buffer specification ③

J	Rotating
K	Non-rotating

⑥ Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet (Female thread)

B5	M5 x 0.8
B01	Rc1/8
N01	NPT1/8
T01	NPTF1/8

		Model						A	B	C	D*2	E	F	G	H	J	K
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread										
ZP	T	U	N S U F GN GS	J K	10	B5 04 06 N6 U6	A10	55.5	32.5	21	J: 2.5 K: 2	M10 x 1	23	14	3	8	M5 x 0.8
					20			93.5	42.5								
					30			103.5	52.5								
					40			139.5	62.5								
					50			149.5	72.5								
					10			56	33								
					20			94	43								
					30			104	53								
					40			140	63								
					50			150	73								
					10			57.5	34.5								
					20			95.5	44.5								
	30	105.5	54.5														
	40	141.5	64.5														
	50	151.5	74.5														
	10	58	35														
	20	96	45														
	30	106	55														
	40	142	65														
	50	152	75														
	10	94.5	44.5														
	20	104.5	54.5														
	30	114.5	64.5														
	40	159.5	84.5														
50	160.5	85.5															
10	95.5	45.5															
20	105.5	55.5															
30	115.5	65.5															
50	160.5	85.5															

Dimensions Per Vacuum Inlet: Female Thread

		Model						L	M	N	P
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	U	N S U F GN GS	J K	10	B5	A10	M5 x 0.8	5	13	8
					20						
					30						
					40						
					50						
					10						
	20										
	30										
	50										
	10	B01 N01 T01	Rc1/8 NPT1/8 NPTF1/8	—	16.5						
	20										
	30										
50											
10	B5					A10	M5 x 0.8	5	9		
20											
30											
50											
10		B01 N01 T01	Rc1/8 NPT1/8 NPTF1/8	—	12						
20											
30											
50											

\*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/One-touch fitting  $\varnothing 10$  to  $\varnothing 50$**

ZPR **10** **U** **N** **J** **10** - **04** - **A10**

① ② ③ ④

⑥ Connection thread (Male thread)

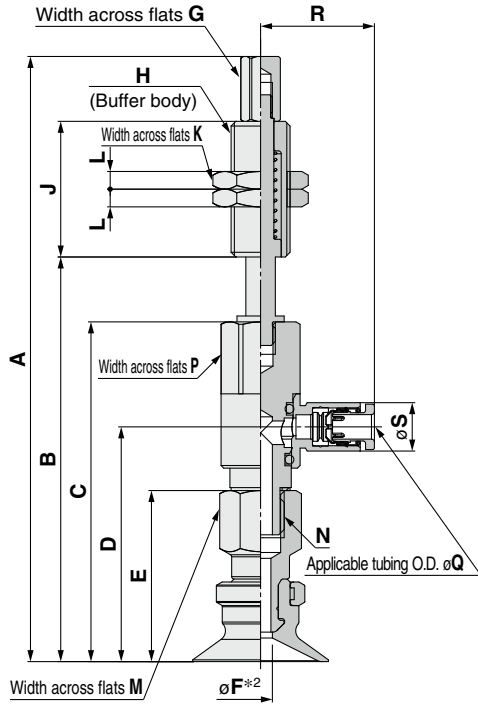
Buffer specification ③

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

<b>A10</b>	M10 x 1
<b>A14</b>	M14 x 1

⑤ Vacuum inlet (One-touch fitting)

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



**Construction** p. 118  
**Buffer Assembly** p. 125

		Model																					
Vacuum inlet direction	① Pad dia.	Form	② <sup>#1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread	A	B	C	D	E	<sup>*2</sup> F	G	H	J	K	L	M	N			
ZP	R	U	N S U F G N S	J K	10	04	06	91	57	46	29.9	21	2.5	6	M10 x 1	23	14	3	8	M5 x 0.8			
					20			129	67							51							
					30			139	77							77							
					40			175	87							77							
					50			185	97							23							
					10			91.5	57.5							23							
					20			129.5	67.5							51							
					30			139.5	77.5							46.5					30.4	21.5	51
					40			175.5	87.5							77							
					50			185.5	97.5							77							
					10			102.6	68.6							23							
					20			140.6	78.6							51							
	30	150.6	88.6	57.6	39.8	29	77																
	40	186.6	98.6	77																			
	50	196.6	108.6	77																			
	10	103.1	69.1	23																			
	20	141.1	79.1	51																			
	30	151.1	89.1	58.1	40.3	29.5	77																
	40	187.1	99.1	77																			
	50	197.1	109.6	77																			
	10	140.6	72.6	50																			
	20	137.6	82.6	60.6	42.8	32	50																
	30	147.6	92.6	75																			
	50	192.6	112.6	75																			
10	141.6	73.6	19	4	12	50																	
20	138.6	83.6	19	4	12	50																	
30	148.6	93.6	75																				
50	193.6	113.6	75																				

**Dimensions Per Vacuum Inlet**

		Model							P	Q	R	S	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② <sup>#1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread						
ZP	R	U	N S U F G N S	J K	10	06	A10	8	4	17.5	8.2	$\varnothing 2.5$	
					20								
					30								
					40								
					50								
					10								08
	20												
	30												
	40												
	50												
	10	08			A14	16	8	23.5	13.2	$\varnothing 6$			
	20												
30													
50													

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

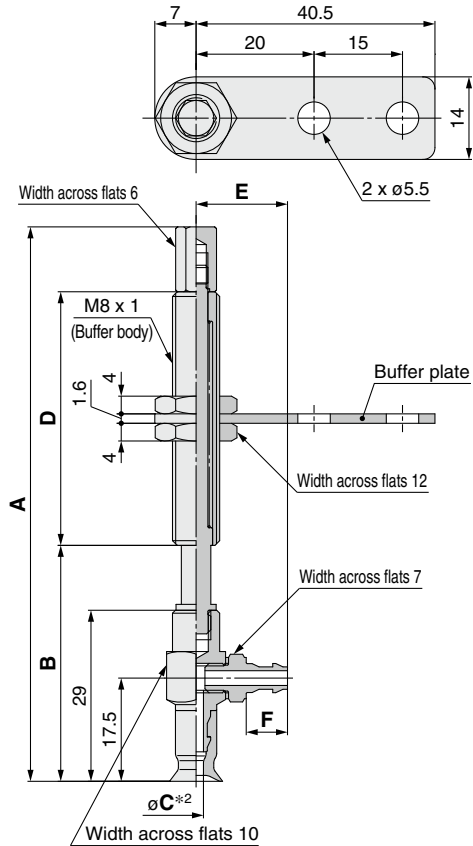
\*2 Indicates the minimum hole size of the adapter or vacuum pad



## Dimensions/Models

### With buffer/barb fitting $\varnothing 2$ to $\varnothing 8$

The drawings show the type with a buffer plate.



Construction	p. 116
Buffer Assembly	p. 126

ZPY **02** **U** **N** **J** **6** - **N4** - **A8**

① ② ③ ④

#### Buffer specification ③

<b>J</b>	Rotating
<b>K</b>	Non-rotating
<b>JN</b>	Rotating (Without buffer plate)
<b>KN</b>	Non-rotating (Without buffer plate)

⑥ Connection thread  
(Male thread)

<b>A8</b>	M8 x 1
-----------	--------

⑤ Vacuum inlet  
(Barb fitting)

<b>N4</b>	For $\varnothing 4$ nylon tubing	M-5AN-4
<b>N6</b>	For $\varnothing 6$ nylon tubing	M-5AN-6
<b>U4</b>	For $\varnothing 4$ soft tubing	M-5AU-4
<b>U6</b>	For $\varnothing 6$ soft tubing	M-5AU-6

		Model						A	B	C*2	D	
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	Y	02	U	N S U F GN GS	J K JN KN	6	N4 N6 U4 U6	A8	63	37	1.2	15
						10			94	40		43
						15			99	45		43
						25			109	55	43	
						6			63	37	15	
						10			94	40	43	
	04	U	N S U F GN GS	J K JN KN	6	N4 N6 U4 U6	A8	63	37	1.6	15	
					10			94	40		43	
					15			99	45		43	
					25			109	55	43		
					6			63	37	15		
					10			94	40	43		
06 08	U	N S U F GN GS	J K JN KN	6	N4 N6 U4 U6	A8	63	37	2.5	15		
				10			94	40		43		
				15			99	45		43		
				25			109	55	43			
				6			63	37	15			
				10			94	40	43			

#### Dimensions Per Vacuum Inlet

		Model						E	F	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	Y	02	U	N S U F GN GS	J K JN KN	6	N4 U4 N6 U6	A8	13.5	5	$\varnothing 1.8$
		10				15			7	$\varnothing 2.5$	
		15				25			7	$\varnothing 2.5$	

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Belows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

With buffer/barb fitting  $\varnothing 10$  to  $\varnothing 50$

ZPY **10** U **N** **J** **10** - **N4** - **A10**

① ② ④

⑥ Connection thread  
(Male thread)

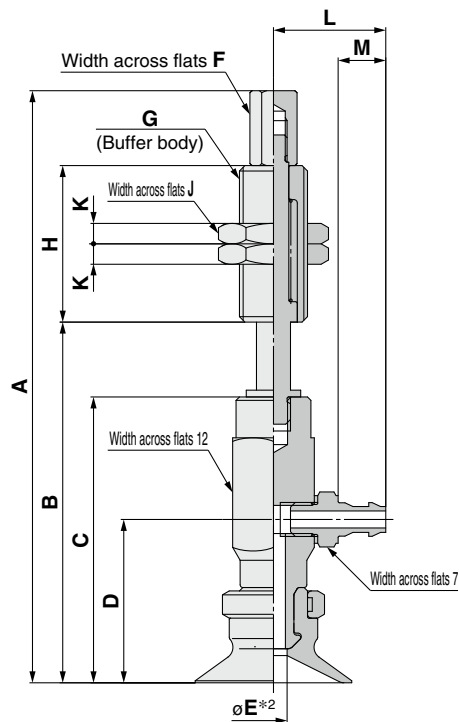
Buffer specification ③

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet  
(Barb fitting)

N4	For $\varnothing 4$ nylon tubing	M-5AN-4
N6	For $\varnothing 6$ nylon tubing	M-5AN-6
U4	For $\varnothing 4$ soft tubing	M-5AU-4
U6	For $\varnothing 6$ soft tubing	M-5AU-6



Construction	p. 118
Buffer Assembly	p. 126

		Model						A	B	C	D	*2 E	F	G	H	J	K
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread										
ZP	Y	U	N S U F GN GS	J K	10	N4 N6 U4 U6	A10	83	49	38	22	2.5	6	M10 x 1	14	3	23
					20			121	59								51
					30			131	69								77
					40			167	79								77
					50			177	89	23							
					10			83.5	49.5	51							
					20			121.5	59.5	77							
					30			131.5	69.5	23							
					40			167.5	79.5	51							
					50			177.5	89.5	77							
					10			87	53	23							
					20			125	63	51							
	30	135	73	77													
	40	171	83	23													
	50	181	93	51													
	10	87.5	53.5	23													
	20	125.5	63.5	51													
	30	135.5	73.5	77													
	40	171.5	83.5	23													
	50	181.5	93.5	51													
	10	126.5	58.5	23													
	20	123.5	68.5	51													
	30	133.5	78.5	77													
	40	178.5	98.5	23													
50	127.5	59.5	51														
10	124.5	69.5	77														
20	134.5	79.5	23														
30	179.5	99.5	51														
40	126.5	58.5	23														
50	123.5	68.5	51														
10	133.5	78.5	77														
20	178.5	98.5	23														
30	127.5	59.5	51														
40	124.5	69.5	77														
50	134.5	79.5	23														
10	179.5	99.5	51														
20	126.5	58.5	23														
30	123.5	68.5	51														
40	133.5	78.5	77														
50	178.5	98.5	23														
10	127.5	59.5	51														
20	124.5	69.5	77														
30	134.5	79.5	23														
40	179.5	99.5	51														
50	126.5	58.5	23														
10	123.5	68.5	51														
20	133.5	78.5	77														
30	178.5	98.5	23														
40	127.5	59.5	51														
50	124.5	69.5	77														
10	134.5	79.5	23														
20	179.5	99.5	51														
30	126.5	58.5	23														
40	123.5	68.5	51														
50	133.5	78.5	77														
10	178.5	98.5	23														
20	127.5	59.5	51														
30	124.5	69.5	77														
40	134.5	79.5	23														
50	179.5	99.5	51														

### Dimensions Per Vacuum Inlet

		Model						L	M	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread			
ZP	Y	U	N S U F GN GS	J K	10 20 30 40 50	N4 U4	A10	14.5	5	$\varnothing 1.8$
								N6 U6	A14	16.5
						N6 U6	A14			16.5
								N6 U6	A14	16.5
						N6 U6	A14			16.5
								N6 U6	A14	16.5

\*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



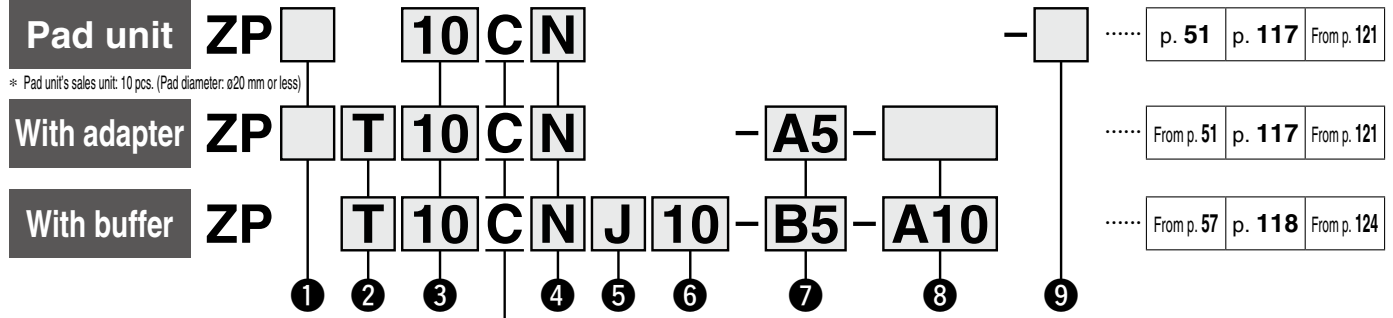
# Basic Pad

## Flat Type with Ribbs

# ZP Series



### How to Order



#### 1 Adapter (Lock ring) material

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

\*1 Only applicable to the pad unit (with lock ring) and the pad with adapter (Vacuum inlet direction: Vertical (Option "T"))

#### 2 Vacuum inlet direction

Nil	Pad unit
T	Vertical
R	Lateral (With One-touch fitting)
Y	Lateral (With barb fitting)

#### 3 Pad diameter

10	ø10
13	ø13
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50

#### 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 [mm]							
	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
10	●	●	●	●	●	●	●	●
20	●	●	●	●	●	●	●	●
30	●	●	●	●	●	●	●	●
40	●	●	●	●	●	●	—	—
50	●	●	●	●	●	●	●	●

### With adapter

#### 7 Vacuum inlet

○: ZP□/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]		
			ø10 to ø16	ø20 to ø32	ø40, ø50
Female thread	Nil	M3 x 0.5	○ ③ Connection thread: A5/A6	○ ④ Connection thread: A6	○ ⑤ Connection thread: A6
		M5 x 0.8	—	○ ③ Connection thread: A8	○ ④ Connection thread: A8
	B5	M5 x 0.8	○	○	—
	B6	M6 x 1	○	○	○
	B8	M8 x 1.25	—	○	○
	B01	Rc1/8	○	○	○
	N01*3	NPT1/8	○	○	○
	T01*3	NPTF1/8	○	○	○
One-touch fitting	04	ø4	●	●	—
	06	ø6	●	●	●
	08	ø8	—	●	●
Barb fitting	N4	For ø4 nylon tubing*1	△	△	—
	N6	For ø6 nylon tubing*1	△	△	△
	U4	For ø4 soft tubing*2	△	△	—
	U6	For ø6 soft tubing*2	△	△	△

\*1 Nylon tube piping \*2 Soft nylon/Polyurethane tube piping \*3 Not compatible with stainless steel materials

#### 8 Connection thread

○: ZP□/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]		
			ø10 to ø16	ø20 to ø32	ø40, ø50
Male thread	A5	M5 x 0.8	○*1●△	—	—
	A6	M6 x 1	○*1●△	○*1●△	○*1●△
	A8	M8 x 1	—	○*1●△	○*1●△
Female thread	B5	M5 x 0.8	●△	●△	—
	B6	M6 x 1	●△	●△	●△
	B8	M8 x 1.25	—	●△	●△

\*1 ○: ZP□/Vertical comes with a vacuum inlet (female thread).

### With buffer

#### 7 Vacuum inlet

○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]		
			ø10 to ø16	ø20 to ø32	ø40, ø50
Female thread	B5	M5 x 0.8	○	○	○
	B01	Rc1/8	—	—	○
	N01	NPT1/8	—	—	○
	T01	NPTF1/8	—	—	○
One-touch fitting	04	ø4	○●	○●	—
	06	ø6	○●	○●	○●
	08	ø8	—	●	○●
Barb fitting	N4	For ø4 nylon tubing*1	△	△	—
	N6	For ø6 nylon tubing*1	○△	○△	○△
	U4	For ø4 soft tubing*2	△	△	—
	U6	For ø6 soft tubing*2	○△	○△	○△

\*1 Nylon tube piping

\*2 Soft nylon/Polyurethane tube piping

#### 8 Connection thread

○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]		
			ø10 to ø16	ø20 to ø32	ø40, ø50
Male thread	A10	M10 x 1	○●△	○●△	—
	A14	M14 x 1	—	—	○●△

#### 9 Lock ring

Symbol	Pad diameter	
	Nil	All sizes
X19	Without lock ring	

#### Lock ring unit

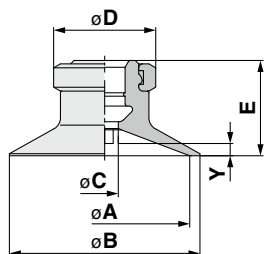
Part no.	Pad diameter [mm]
ZP□L1	ø10 to ø16
ZP□L2	ø20 to ø32
ZP□L3	ø40, ø50

□: Nil/Brass S/Stainless steel

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

## Dimensions/Models

### Single unit $\varnothing 10$ to $\varnothing 50$



Construction p. 117  
Mounting Bracket Assembly From p. 121

ZP   10 C N  
① ② ③

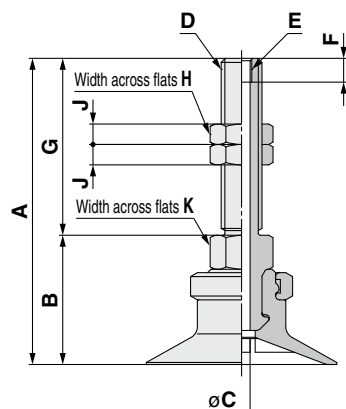
#### ① Lock ring material

Nil	Brass
S	Stainless steel (Stainless steel 304)

		Model				A	B	C	D	E	Y
ZP	Lock ring material ① Nil S	Pad dia. ② 10 13 16 20 25 32 40 50	Form ② C	Material ③ N S U F GN GS							
										10	12
					13	15	1.8				
					16	18	1.2				
					20	23	1.7				
					25	28	15	15	14	1.8	
					32	35				2.3	
					40	43				3.3	
					50	53	7	18	18.5	3.8	
									19.5	3.8	

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

### With adapter $\varnothing 10$ to $\varnothing 50$



Construction p. 117  
Adapter Assembly p. 121

ZP   T 10 C N - A5  
① ② ③ ④

#### ① Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

#### ④ Connection thread (Male thread)

A5	M5 x 0.8 (M3 x 0.5 With female thread)
A6	M6 x 1 (M3 x 0.5 With female thread)
A8	M8 x 1 (M5 x 0.8 With female thread)

		Model				A	B	C	D	E	F	G	H	J	K
ZP	Adapter material ① Nil S	Vacuum inlet direction ② T	Pad dia. ② 10 13 16 20 25 32 40 50	Form ② C	Material ③ N S U F GN GS										
												38	17	2.5	M5 x 0.8
						38.5	17.5								
						43	17								
						43.5	17.5	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	8
						45	19								
						45.5	19.5								
						50.5	24.5								
						51.5	25.5	4	M8 x 1	M5 x 0.8	5	16	12	4	12
						40	24								
						40.5	24.5								
						41.5	25.5	4.2							

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

#### Recommended Gasket Part Nos.

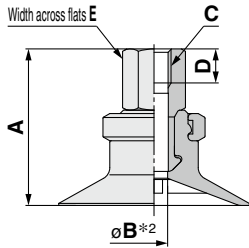
Part no.	D vacuum inlet (Male thread)
WCS5X0.8	M5 x 0.8
WCS6X1	M6 x 1
WCS8X1	M8 x 1

Dimensions/Models

**With adapter**  $\varnothing 10$  to  $\varnothing 50$

ZP   T 10 C N - B5

1   
 2   
 3   
 4



Construction	p. 117
Adapter Assembly	p. 121

**1 Adapter (Lock ring) material**

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

**4 Vacuum inlet (Female thread)**

<b>B5</b>	M5 x 0.8
<b>B6</b>	M6 x 1
<b>B8</b>	M8 x 1.25
<b>B01</b>	Rc1/8
<b>N01*1</b>	NPT1/8
<b>T01*1</b>	NPTF1/8

\*1 Not compatible with stainless steel materials

		Model					A	B*2	C	D	E
1	Vacuum inlet direction	2	Form	3*1	4						
Adapter material		Pad dia.		Material	Vacuum inlet						
ZP	Nil	T	C	N S U F GN GS	B5	21	2.5	M5 x 0.8	5	8	
						13					
						16	4				
						20					
						25					
					32	B6	21	2.5	M6 x 1	6	8
					13						
					16		4				
					20						
					25						
	32	B8	20	3.5	M8 x 1.25	8	12				
	25										
	32		6.6								
	40										
	50	B01 N01*3 T01*3	20	2.5	Rc1/8 NPT1/8 NPTF1/8	—	12				
	25										
	32		3.5								
	40										
	50										
			10	7							
		13									
		16									
		20									
		25									
		32									
		40									
		50									

\*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

\*3 Not compatible with stainless steel materials

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

With adapter/One-touch fitting  $\varnothing 10$  to  $\varnothing 50$

ZPR **10** C **N** - **04** - **A5**

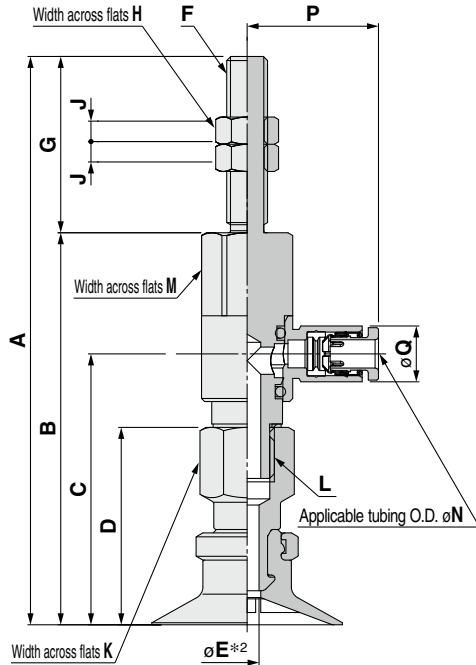
① ②

Vacuum inlet ③  
(One-touch fitting)

04	$\varnothing 4$
06	$\varnothing 6$
08	$\varnothing 8$

④ Connection thread  
(Male thread)

A5	M5 x 0.8
A6	M6 x 1
A8	M8 x 1



Construction	p. 117
Adapter Assembly	p. 122

		Model					A	B	C	D	E <sup>*2</sup>	F	G	H	J	K	L						
	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread																	
ZP	R	10	C	N S U F GN GS	04	06	A5	67	46	29.9	21	2.5	M5 x 0.8	21	8	4	8	M5 x 0.8					
		13						67.5	46.5	30.4	21.5												
		16						72	46	29.9	21	2.5	26	8	4	8	M5 x 0.8						
		10						72.5	46.5	30.4	21.5												
		13						83.5	57.6	39.8	29	3.5	M6 x 1	25.9	8	4	12	M8 x 1.25					
		16						84	58.1	40.3	29.5												
		20					86.5	60.6	42.8	32	4	8	4	12	M8 x 1.25								
		25					87.5	61.6	43.8	33													
		32					73.5	57.6	39.8	29	3.5	M8 x 1	15.9	12	4	12	M8 x 1.25						
		40					74	58.1	40.3	29.5													
		50					76.5	60.6	42.8	32	4	8	4	12	M8 x 1.25								
		32					77.5	61.6	43.8	33													
		40																					
		50																					

### Dimensions Per Vacuum Inlet

		Model					M	N	P	Q	Fitting part min. hole size
	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread					
ZP	R	10	C	N S U F GN GS	04	A5	8	4	17.5	8.2	$\varnothing 2.5$
		13			A6	6		18.3	10.4	$\varnothing 4$	
		16			04	A6	12	4	19.3	8.2	$\varnothing 3$
		20			06	A8		6	20.5	10.4	$\varnothing 4.5$
		25			08	A6	16	8	23.5	13.2	$\varnothing 6$
		32			06	A6		6	20.5	10.4	$\varnothing 4.5$
		40			08	A8	16	8	23.5	13.2	$\varnothing 6$
		50									

\*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/One-touch fitting  $\varnothing 10$  to  $\varnothing 50$

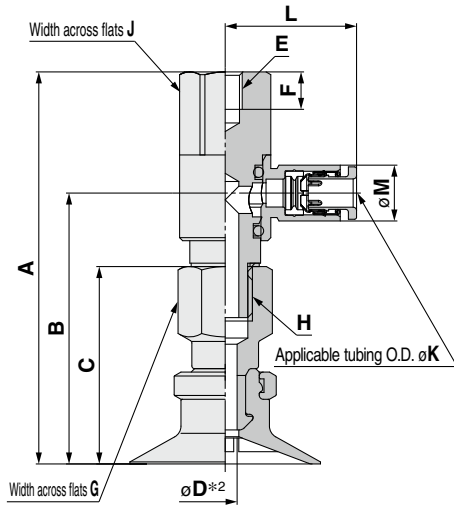
ZPR **10** C **N** - **04** - **B5**

**1** Pad dia.  
**2** Form  
**3** Vacuum inlet (One-touch fitting)

**4** Connection thread (Female thread)

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

<b>B5</b>	M5 x 0.8
<b>B6</b>	M6 x 1
<b>B8</b>	M8 x 1.25



Construction p. 117  
Adapter Assembly p. 122

ZP	R	Model				A	B	C	D <sup>*2</sup>	E	F	G	H				
		Vacuum inlet direction	1 Pad dia.	2 Form	3 Vacuum inlet									4 Connection thread			
ZP	R	C	N S U F GN GS	04 06 08	B5	10	46	29.9	21	2.5	M5 x 0.8	5.5	8	M5 x 0.8			
						13	46.5	30.4	21.5				8	M5 x 0.8			
						16	57.6	39.8	29				12	M8 x 1.25			
						20	58.1	40.3	29.5				12	M8 x 1.25			
					B6	25	46	29.9	21	2.5	M6 x 1	6.5	8	M5 x 0.8			
						32	46.5	30.4	21.5				8	M5 x 0.8			
						40	57.6	39.8	29				12	M8 x 1.25			
						50	58.1	40.3	29.5				12	M8 x 1.25			
						B8	20	57.6	39.8	29			3.5	M8 x 1.25	8.5	12	M8 x 1.25
							25	58.1	40.3	29.5						12	M8 x 1.25
							32	60.6	42.8	32						12	M8 x 1.25
							40	61.6	43.8	33						12	M8 x 1.25

Dimensions Per Vacuum Inlet

ZP	R	Model				J	K	L	M	Fitting part min. hole size
		Vacuum inlet direction	1 Pad dia.	2 Form	3 Vacuum inlet					
ZP	R	C	N S U F GN GS	04 06 08	B5 B6 B5 B6 B8 B6 B8	8	4	17.5	8.2	$\varnothing 2.5$
										$\varnothing 4$
										$\varnothing 3$
										$\varnothing 4.5$
						12	6	20.5	10.4	$\varnothing 6$
										$\varnothing 4.5$
										$\varnothing 6$
										$\varnothing 6$

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions



## Dimensions/Models

With adapter/barb fitting  $\varnothing 10$  to  $\varnothing 50$

ZPY 10 C N - N4 - A5

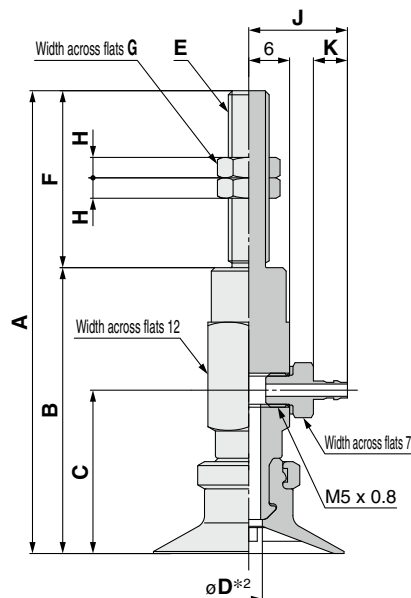
① ②

Vacuum inlet  
(Barb fitting) ③

④ Connection thread  
(Male thread)

A5	M5 x 0.8
A6	M6 x 1
A8	M8 x 1

N4	For $\varnothing 4$ nylon tubing	M-5AN-4
N6	For $\varnothing 6$ nylon tubing	M-5AN-6
U4	For $\varnothing 4$ soft tubing	M-5AU-4
U6	For $\varnothing 6$ soft tubing	M-5AU-6



Construction	p. 117
Adapter Assembly	p. 123

		Model				A	B	C	D <sup>*2</sup>	E	F	G	H								
	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread															
ZP	Y	10	C	N S U F GN GS	N4 N6 U4 U6	A5	59	38	22	2.5	M5 x 0.8	21	8	4							
		13					59.5	38.5	22.5												
		16					64	38	22												
		10				A6	13	N4 N6 U4 U6	N4 N6 U4 U6	2.5	64	38	22	2.5	M6 x 1	26	8	4			
		16					64.5				38.5	22.5									
		20					68				42	24									
		25					3.5			32	N4 N6 U4 U6	N4 N6 U4 U6	3.5	68.5	42.5	24.5	3.5	M6 x 1	26	8	4
		40								72.5				46.5	28.5						
		50								73.5				47.5	29.5						
		20				A8	25	N4 N6 U4 U6	N4 N6 U4 U6	3.5	58	42	24	3.5	M8 x 1	16	12	4			
		32					58.5				42.5	24.5									
		40					62.5				46.5	28.5									
50	63.5	47.5	29.5																		
	63.5	47.5	29.5																		

### Dimensions Per Vacuum Inlet

		Model				J	K	Fitting part min. hole size	
	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	10	C	N S U F GN GS	N4	A5	14.5	5	$\varnothing 1.8$
		U4							
		13			N6	A6	16.5	7	$\varnothing 2.5$
		16			U6				
20	A8	N6	16.5	7	$\varnothing 2.5$				
25		U6							
32		U6							

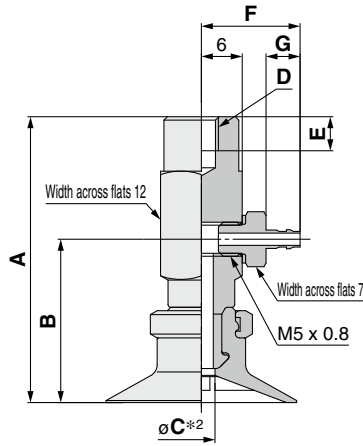
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

With adapter/barb fitting  $\varnothing 10$  to  $\varnothing 50$

ZPY 10 C N - N4 - B5



Construction p. 117  
Adapter Assembly p. 123

① ②  
Vacuum inlet (Barb fitting) ③

<b>N4</b>	For $\varnothing 4$ nylon tubing	M-5AN-4
<b>N6</b>	For $\varnothing 6$ nylon tubing	M-5AN-6
<b>U4</b>	For $\varnothing 4$ soft tubing	M-5AU-4
<b>U6</b>	For $\varnothing 6$ soft tubing	M-5AU-6

④ Connection thread (Female thread)

<b>B5</b>	M5 x 0.8
<b>B6</b>	M6 x 1
<b>B8</b>	M8 x 1.25

		Model					A	B	C*2	D	E		
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread								
ZP	Y	C	N S U F GN GS	N4 N6 U4 U6	B5	10	38	22	2.5	M5 x 0.8	5		
						13	38.5	22.5					
						16	42	24	3.5				
						20	42.5	24.5					
						25	38	22	2.5			M6 x 1	6
						32	38.5	22.5					
					10	42	24	3.5					
					13	42.5	24.5						
					16	46.5	28.5	6					
					20	47.5	29.5						
					25	42	24	3.5	M8 x 1.25	8			
					32	42.5	24.5						
					40	46.5	28.5	6					
					50	47.5	29.5						

Dimensions Per Vacuum Inlet

		Model					F	G	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread				
ZP	Y	C	N S U F GN GS	N4	B4	14.5	5	$\varnothing 1.8$	
				U4	B5	16.5	7	$\varnothing 2.5$	
				N6	B5	14.5	5	$\varnothing 1.8$	
				U6	B6	16.5	7	$\varnothing 2.5$	
				N6	B8	16.5	7	$\varnothing 2.5$	
				U6	B8	16.5	7	$\varnothing 2.5$	

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

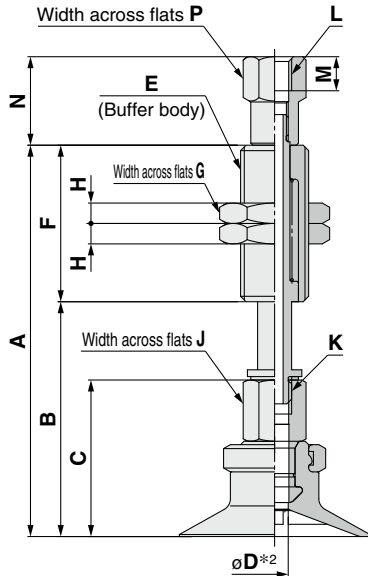
Construction

Mounting Bracket Assembly

Precautions

**Dimensions/Models**

**With buffer**  $\varnothing 10$  to  $\varnothing 50$



**Construction** p. 118  
**Buffer Assembly** p. 124

ZPT **10** C **N** **J** **10** - **B5** - **A10**

**Buffer specification**

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

**6 Connection thread (Male thread)**

<b>A10</b>	M10 x 1
<b>A14</b>	M14 x 1

**5 Vacuum inlet (Female thread)**

<b>B5</b>	M5 x 0.8
<b>B01</b>	Rc1/8
<b>N01</b>	NPT1/8
<b>T01</b>	NPTF1/8

		Model										A	B	C	D*2	E	F	G	H	J	K
	Vacuum inlet direction	1 Pad dia.	2 Form	3 Material	4 Buffer spec.	5 Buffer stroke	6 Vacuum inlet	6 Connection thread													
ZP	T	10 13	C	N S U F GN GS	J K	10	B5 04 06 N6 U6	A10	55.5	32.5	21	J: 2.5 K: 2	M10 x 1	14	3	8	M5 x 0.8	23			
						20			93.5	42.5								51			
						30			103.5	52.5								77			
						40			139.5	62.5								23	51		
						50			149.5	72.5								23	51		
						10			56	33								77			
						20			94	43								23	51		
						30			104	53								23	51		
						40			140	63								23	51		
						50			150	73								23	51		
						10			57.5	34.5								23	51		
						20			95.5	44.5								23	51		
		30	105.5	54.5	23	51															
		40	141.5	64.5	23	51															
		50	151.5	74.5	23	51															
		10	58	35	23	51															
		20	96	45	23	51															
		30	106	55	23	51															
		40	142	65	23	51															
		50	152	75	23	51															
		10	94.5	44.5	32	50															
		20	104.5	54.5	32	50															
		30	114.5	64.5	32	50															
		40	159.5	84.5	32	50															
50	169.5	94.5	32	50																	
10	95.5	45.5	33	50																	
20	105.5	55.5	33	50																	
30	115.5	65.5	33	50																	
40	150.5	80.5	33	50																	
50	160.5	90.5	33	50																	

**Dimensions Per Vacuum Inlet: Female Thread**

		Model							L	M	N	P			
	Vacuum inlet direction	1 Pad dia.	2 Form	3 Material	4 Buffer spec.	5 Buffer stroke	6 Vacuum inlet	6 Connection thread							
ZP	T	10 13 16 20 25 32	C	N S U F GN GS	J K	10	B5	A10	M5 x 0.8	5	13	8			
						20			M5 x 0.8	4.5	15	10			
						30				B5	A14	5	9	10	
						40						Rc1/8 NPT1/8 NPTF1/8	16.5	13	
						50							—	12	13
						10								B01 N01 T01	A14
		20				—	12	13							
		30					—	12	13						
		40						—	12	13					
		50							—	12	13				

\*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  $\varnothing 50$**

ZPT **10** **C** **N** **J** **10** - **04** - **A10**

① ② ③ ④

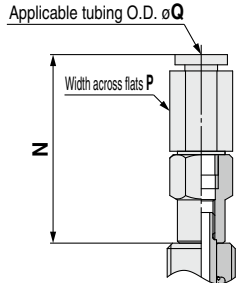
⑥ Connection thread (Male thread)

<b>A10</b>	M10 x 1
<b>A14</b>	M14 x 1

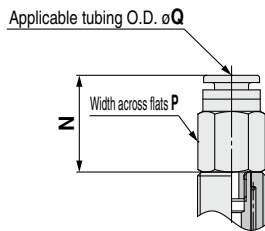
⑤ Vacuum inlet

	Vacuum inlet	One-touch fitting	Pad diameter	
			$\varnothing 10$ to $\varnothing 32$	$\varnothing 40, \varnothing 50$ (10 st only)
<b>04</b>	$\varnothing 4$	One-touch fitting	KQ2H04-M5N	KQ2H06-01NS KQ2H08-01NS
<b>06</b>	$\varnothing 6$		KQ2H06-M5N	
<b>08</b>	$\varnothing 8$		KQ2H08-M5N	
<b>N6</b>	For $\varnothing 6$ nylon tubing	Barb fitting		
<b>U6</b>	For $\varnothing 6$ soft tubing			

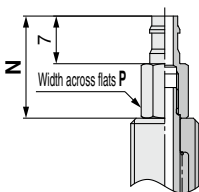
**Vacuum inlet: One-touch fitting**



**Vacuum inlet: Built-in One-touch fitting**  
Pad diameter:  $\varnothing 40, \varnothing 50$  (Buffer stroke: 20 to 50 st)



**Vacuum inlet: Barb fitting**



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

		Model						N	P	Q	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	C	N S U F GN GS	J K	10	04	A10	27.7	8	4	$\varnothing 2.5$
					13						
					16						
					20						
					25						
					32						
	40 50	06	A14	10	06	A14	31.8	10	6	$\varnothing 4.5$	
				20			35.9	14	8	$\varnothing 6$	
				30			19.9	12	6	$\varnothing 3$	
				40			24.9	14	8		
				50							

**Dimensions Per Vacuum Inlet: Barb Fitting**

		Model						N	P	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread			
ZP	T	C	N S U F GN GS	J K	10	N6	A10	15	6	$\varnothing 2.5$
					20					
					30					
					40					
					50					
					40 50					
	20	12								
	30									
	40									
	50									

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

Construction	p. 118
Buffer Assembly	p. 124

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

BelloWS Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

**Dimensions/Models**

**With buffer/One-touch fitting  $\varnothing 10$  to  $\varnothing 50$**

ZPR **10** C **N** **J** **10** - **04** - **A10**

① ② ③ ④

⑥ Connection thread (Male thread)

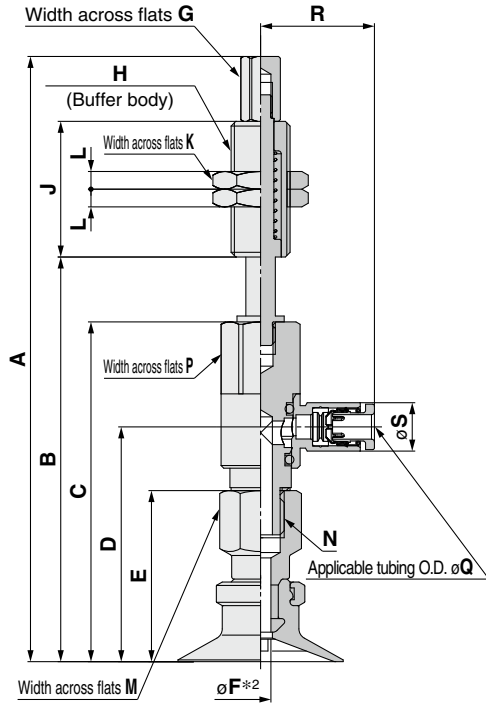
Buffer specification ③

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet (One-touch fitting)

04	$\varnothing 4$
06	$\varnothing 6$
08	$\varnothing 8$



Construction p. 118  
Buffer Assembly p. 125

		Model																										
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread	A	B	C	D	E	<sup>*2</sup> F	G	H	J	K	L	M	N								
ZP	R	C	N S U F G N S	J K	10	04	A10	91	57							23												
					20	129		67							51													
					30	139		77	46	29.9	21																	
					40	175		87																				
					50	185		97																				
					10	91.5		57.5										2.5								8	M5 x 0.8	
					20	129.5		67.5																				
					30	139.5		77.5	46.5	30.4	21.5																	
					40	175.5		87.5																				
					50	185.5		97.5																				
					10	102.6		68.6												6	M10 x 1	23						
					20	140.6		78.6																				
	30	150.6	88.6	57.6	39.8	29																						
	40	186.6	98.6																									
	50	196.6	108.6																									
	10	103.1	69.1											3.5														
	20	141.1	79.1																									
	30	151.1	89.1	58.1	40.3	29.5																						
	40	187.1	99.1																									
	50	197.1	109.6																									
	10	140.6	72.6																									
	20	137.6	82.6																									
	30	147.6	92.6	60.6	42.8	32																						
	50	192.6	112.6																									
10	141.6	73.6												4	10	M14 x 1	75											
20	138.6	83.6																										
30	148.6	93.6	61.6	43.8	33																							
50	193.6	113.6																										

**Dimensions Per Vacuum Inlet**

		Model						P	Q	R	S	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	R	C	N S U F G N S	J K	10	04	A10	8	4	17.5	8.2	$\varnothing 2.5$
					20	06						
					30	06						
					40	06						
					50	06						
					10	04						
	20	06										
	30	06										
	40	06										
	50	08	16	8	23.5	13.2	$\varnothing 6$					
	10	06						12	6	20.5	10.4	$\varnothing 4.5$
	20	08										
30	08											
50	08											

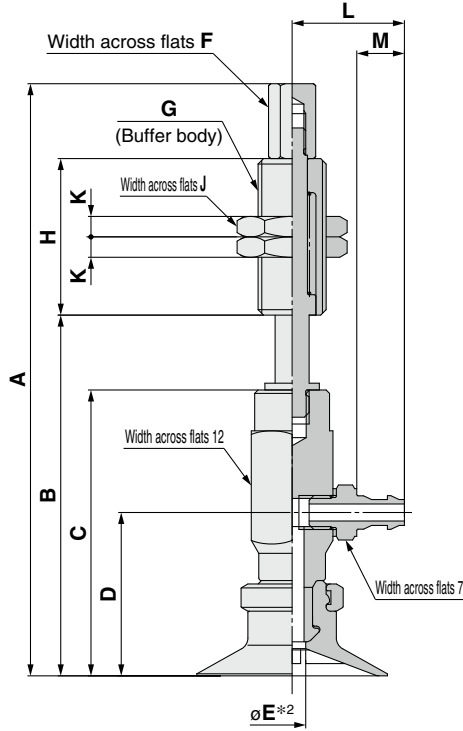
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

With buffer/barb fitting  $\varnothing 10$  to  $\varnothing 50$

ZPY **10** C **N** **J** **10** - **N4** - **A10**



Construction p. 118  
 Buffer Assembly p. 126

Buffer specification **3**

J	Rotating
K	Non-rotating

**6** Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

**5** Vacuum inlet (Barb fitting)

N4	For $\varnothing 4$ nylon tubing	M-5AN-4
N6	For $\varnothing 6$ nylon tubing	M-5AN-6
U4	For $\varnothing 4$ soft tubing	M-5AU-4
U6	For $\varnothing 6$ soft tubing	M-5AU-6

		Model										A	B	C	D	*2 E	F	G	H	J	K
Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread														
ZP	Y	C	N S U F GN GS	J K	10 20 30 40 50	N4 U4 U6	A10	83	49	38	22	2.5	6	M10 x 1	14	3	23				
								121	59								51				
								131	69								77				
								167	79								77				
								177	89	23											
								83.5	49.5	51											
								121.5	59.5	77											
								131.5	69.5	77											
								167.5	79.5	23											
								177.5	89.5	51											
								87	53	77											
								125	63	23											
	135	73	51																		
	171	83	77																		
	181	93	14	3																	
	87.5	53.5	23																		
	125.5	63.5	51																		
	135.5	73.5	77																		
	171.5	83.5	77																		
	181.5	93.5	77																		
	126.5	58.5	23																		
	123.5	68.5	51																		
	133.5	78.5	77																		
	178.5	98.5	19	4																	
127.5	59.5	50																			
124.5	69.5	75																			
134.5	79.5	50																			
179.5	99.5	75																			

Dimensions Per Vacuum Inlet

		Model							L	M	Fitting part min. hole size		
Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread						
ZP	Y	C	N S U F GN GS	J K	10 20 30 40 50	N4	A10	14.5	5	$\varnothing 1.8$			
						U4							
						N6	A14				16.5	7	$\varnothing 2.5$
						U6							
N6	A14	16.5	7	$\varnothing 2.5$									
U6													

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions



# Basic Pad

## Flat Type Ball Joint Type

# ZP Series



### How to Order

	Dimensions/Models	Construction	Mounting Bracket Assembly
<b>Pad unit</b> ZP <b>10 F N</b>	p. 62	p. 119	From p. 127
<b>With adapter</b> ZP <b>T 10 F N</b> - <b>B5</b> - <b>A8</b>	From p. 62	p. 119	From p. 127
<b>With buffer</b> ZP <b>T 10 F N J 10</b> - <b>B5</b> - <b>A10</b>	From p. 65	p. 120	From p. 129

①
②
③
④
⑤
⑥
⑦

● Ball joint type

#### ① Vacuum inlet direction

<b>T</b>	Vertical
<b>R</b>	Lateral (With One-touch fitting)

#### ② Pad diameter

<b>10</b>	ø10
<b>13</b>	ø13
<b>16</b>	ø16
<b>20</b>	ø20
<b>25</b>	ø25
<b>32</b>	ø32
<b>40</b>	ø40
<b>50</b>	ø50

#### ⑤ Buffer stroke

Stroke [mm]	Pad diameter [mm]	
	ø10 to ø16	ø20 to ø50
<b>10</b>	●	●
<b>20</b>	●	●
<b>30</b>	●	●
<b>40</b>	●	—
<b>50</b>	●	●

#### ③ Material

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

#### ④ Buffer specification

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

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

### With adapter

#### ⑥ Vacuum inlet/⑦ Connection thread

○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting)

⑥ Vacuum inlet			⑦ Connection thread			Pad diameter [mm]		
Type	Symbol	Size	Type	Symbol	Size	ø10 to ø16	ø20 to ø32	ø40, ø50
Female thread	<b>B5</b>	M5 x 0.8	Male thread	<b>A8</b>	M8 x 1	○	—	—
				<b>A10</b>	M10 x 1	—	○	—
				<b>A14</b>	M14 x 1	—	—	○
—	<b>Nil</b>	—*1	Female thread	<b>B5</b>	M5 x 0.8	○	○	—
				<b>B8</b>	M8 x 1.25	—	○	○
				<b>B01</b>	Rc1/8	—	○	○
				<b>N01</b>	NPT1/8	—	○	○
				<b>T01</b>	NPTF1/8	—	○	○
				<b>B5</b>	M5 x 0.8	●	—	—
				<b>B8</b>	M8 x 1.25	—	●	●
One-touch fitting	<b>04</b>	ø4	Female thread	<b>B5</b>	M5 x 0.8	—	—	—
				<b>B8</b>	M8 x 1.25	—	●	●
				<b>B5</b>	M5 x 0.8	—	●	●
	<b>06</b>	ø6		<b>B8</b>	M8 x 1.25	—	●	●
	<b>08</b>	ø8		<b>B5</b>	M5 x 0.8	—	●	●
				<b>B8</b>	M8 x 1.25	—	●	●

\*1 Use the connection thread.

### With buffer

#### ⑥ Vacuum inlet

○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting)

Type	Symbol	Size	Pad diameter [mm]			
			ø10 to ø16	ø20 to ø32	ø40, ø50	
Female thread	<b>B5</b>	M5 x 0.8	○	—	—	
		<b>B01</b>	Rc1/8	—	○	○
		<b>N01</b>	NPT1/8	—	○	○
		<b>T01</b>	NPTF1/8	—	○	○
One-touch fitting	<b>04</b>	ø4	○●	—	—	
		<b>06</b>	ø6	○●	○●	○●
		<b>08</b>	ø8	—	○●	○●

#### ⑦ Connection thread ○: ZPT/Vertical ●: ZPR/Lateral

Type	Symbol	Size	Pad diameter [mm]		
			ø10 to ø16	ø20 to ø32	ø40, ø50
Male thread	<b>A10</b>	M10 x 1	○●	—	—
		<b>A14</b>	M14 x 1	—	○●

#### Lock ring unit

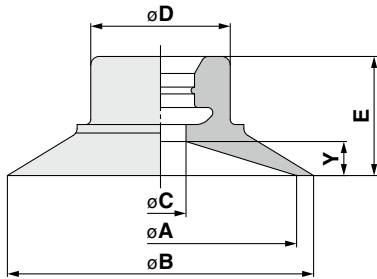
Part no.	Pad diameter [mm]
<b>ZPLF</b>	ø40, ø50

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



## Dimensions/Models

Single unit  $\varnothing 10$  to  $\varnothing 50$



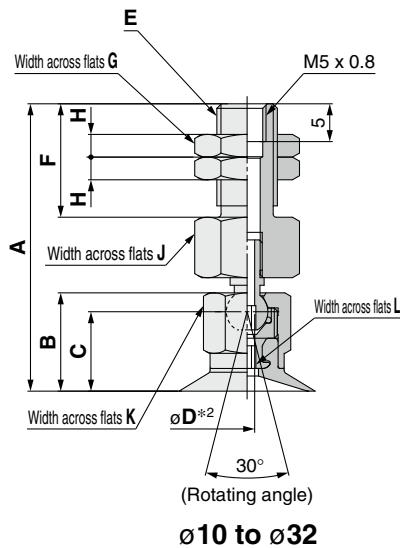
Construction p. 119  
Mounting Bracket Assembly From p. 127

ZP **10** **F** **N**  
① ②

Model				A	B	C	D	E	Y
① Pad dia.	Form	② Material <sup>*1</sup>							
ZP	10	F	N S U F GN GS	10	12	3	8.2	6.5	1.5
	13			13	15			7	2
	16			16	18			8.5	3
	20			20	22	4	10.2	9	5
	25			25	28			13	
	32			32	35			14	
	40			40	43	10	26	13	5
	50			50	53	8	26	14	6

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

With adapter  $\varnothing 10$  to  $\varnothing 50$



ZPT **10** **F** **N** - **B5** - **A8**  
① ② ④

Vacuum inlet (Female thread) ③

**B5** M5 x 0.8

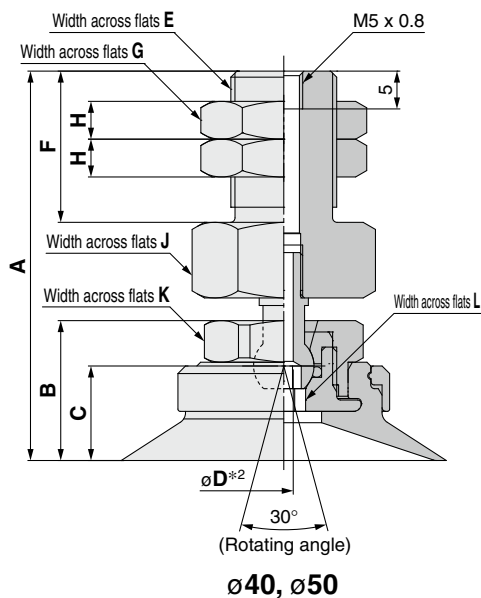
④ Connection thread (Male thread)

<b>A8</b>	M8 x 1
<b>A10</b>	M10 x 1
<b>A14</b>	M14 x 1

Model							A	B	C	D <sup>*2</sup>	E	F	G	H	J	K	L
Vacuum inlet direction	① Pad dia.	Form	② Material <sup>*1</sup>	③ Vacuum inlet	④ Connection thread												
ZP	T	F	N S U F GN GS	B5	A8	10	37.5	12.5	10	2	M8 x 1	15	12	4	12	10	2
						13	38	13	10.5								
						16	48.5	15.5	12.5								
						20	49	16	13	2	M10 x 1	20	14	3	16	12	3
						25	51.5	18.5	12.5								
						32	52.5	19.5	13.5								
						40	51.5	18.5	12.5	2.5	M14 x 1	20	19	4	21	19	5
						50	52.5	19.5	13.5								

\*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. 119  
Adapter Assembly p. 127

## Dimensions/Models

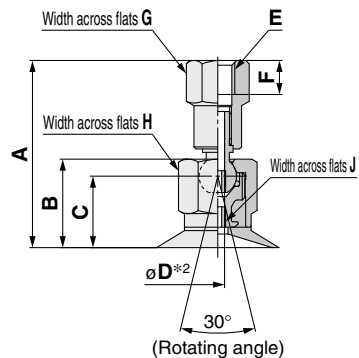
**With adapter**  $\varnothing 10$  to  $\varnothing 50$

ZPT **10** F **N** - **B5**

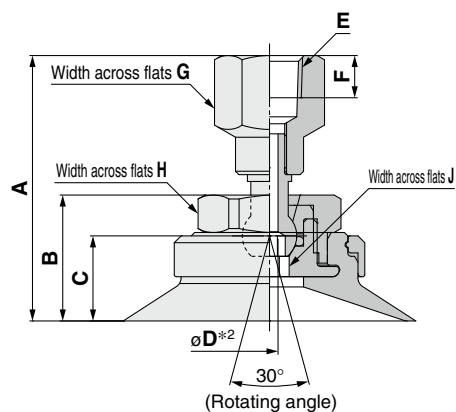
①      ②

③ Vacuum inlet (Female thread)

<b>B5</b>	M5 x 0.8
<b>B8</b>	M8 x 1.25
<b>B01</b>	Rc1/8
<b>N01</b>	NPT1/8
<b>T01</b>	NPTF1/8



$\varnothing 10$  to  $\varnothing 32$



$\varnothing 40, \varnothing 50$

		Model					A	B	C	D <sup>*2</sup>	E	F	G	H	J
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet											
ZP	T	F	N S U F GN GS	B5	10	27	12.5	10	2	M5 x 0.8	5	8	10	2	
					13	27.5	13	10.5							
					16	32	15.5	12.5							
					20	32.5	16	13							
					25	36	15.5	12.5							
				B8	20	36.5	16	13	2	M8 x 1.25	8	12	12	3	
					25	39	18.5	12.5							
					32	40	19.5	13.5							
					40	40	19.5	13.5							
				B01 N01 T01	20	36	15.5	12.5	2	Rc1/8 NPT1/8 NPTF1/8	14	14	12	3	
					25	36.5	16	13							
					32	39	18.5	12.5							
					40	40	19.5	13.5							
					50	40	19.5	13.5							

\*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. 119

Adapter Assembly p. 127

## Dimensions/Models

With adapter/One-touch fitting  $\varnothing 10$  to  $\varnothing 50$

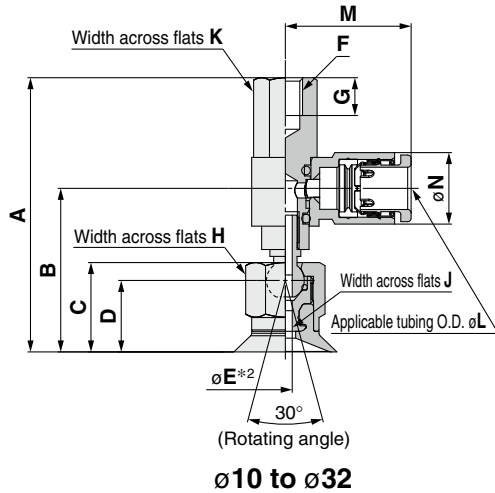
ZPR **10** F **N** - **04** - **B5**

① Pad dia.  
② Form  
③ Vacuum inlet (One-touch fitting)

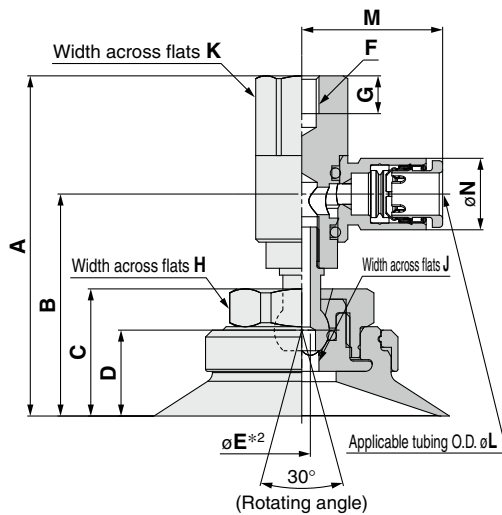
④ Connection thread (Female thread)

04	$\varnothing 4$
06	$\varnothing 6$
08	$\varnothing 8$

B5	M5 x 0.8
B8	M8 x 1.25



$\varnothing 10$  to  $\varnothing 32$



$\varnothing 40, \varnothing 50$

Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Vacuum inlet	⑤ Connection thread	A	B	C	D	*2 E	F	G	H	J
ZP	R	10	F	N S U F GN GS	04 06 08	B5	39.5	23.4	12.5	10	2	M5 x 0.8	5.5	10	2
		13					40	23.9	13	10.5					
		16					40	23.9	13	10.5					
		20					46.5	29.3	15.5	12.5					
		25					46.5	29.3	15.5	12.5					
		32					47	29.8	16	13					
	40	49.5	32.3	18.5	12.5	2.5	M8 x 1.25	8.5	12	3					
	50	50.5	33.3	19.5	13.5										
	20	46.5	29.3	15.5	12.5										
	25	46.5	29.3	15.5	12.5										
	32	47	29.8	16	13										
	40	49.5	32.3	18.5	12.5										
50	50.5	33.3	19.5	13.5	2.5										

### Dimensions Per Vacuum Inlet

Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Vacuum inlet	⑤ Connection thread	K	L	M	N	Fitting part min. hole size
ZP	R	10	F	N S U F GN GS	04	B5	8	4	17.5	8.2	$\varnothing 2.5$
		13			06						
		16			06	6	18.3	10.4	$\varnothing 4$		
		20			06	12	6	20.5	10.4	$\varnothing 4.5$	
		25			B5 B8	16	8	23.5	13.2	$\varnothing 6$	
		32									08
40											
50											

\*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. 119
Adapter Assembly	p. 128

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Ball Joint Type

Bellows Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Thin Flat Type with Ribs

Deep Type

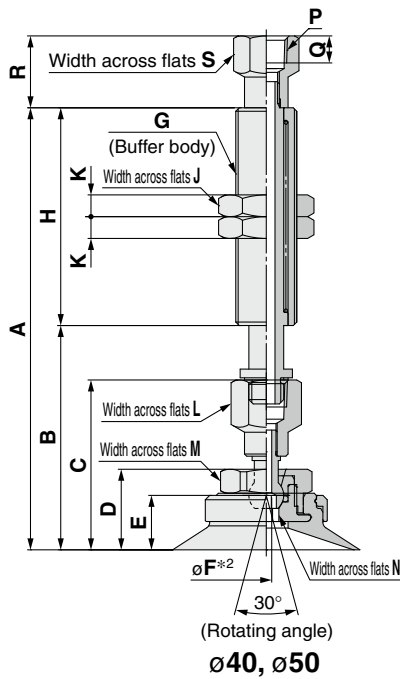
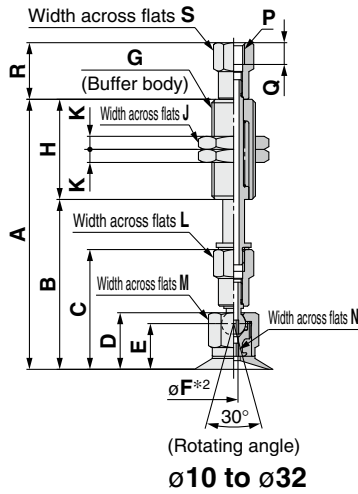
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

With buffer  $\varnothing 10$  to  $\varnothing 50$



ZPT 10 F N J 10 - B5 - A10

1 2 3 4

Buffer specification 3

J	Rotating
K	Non-rotating

6 Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

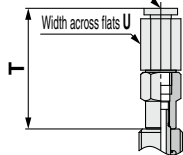
5 Vacuum inlet

		Pad diameter	
		$\varnothing 10$ to $\varnothing 16$	$\varnothing 20$ to $\varnothing 50$ (10 st only)
B5	M5 x 0.8	Female thread	
B01	Rc1/8		
N01	NPT1/8		
T01	NPTF1/8	One-touch fitting	KQ2H04-M5N KQ2H06-M5N KQ2H06-01NS KQ2H08-01NS
04	$\varnothing 4$		
06	$\varnothing 6$		
08	$\varnothing 8$		

Model														A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
Vacuum inlet direction	1 Pad dia.	Form	2 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread																							
ZP	T	F	N S U F G S	J K	10	B5	A10	61.5	38.5	27	12.5	10	2	M10 x1	23	14	3	8	10	2	M5 x 0.8	5	13	8						
					20			99.5	48.5						51															
					30			109.5	58.5						77															
					40			145.5	68.5						77															
					50			155.5	78.5						77															
					10			62	39						23															
					20			100	49						51															
					30			110	59						77															
					40			146	69																					
					50			156	79																					
					10			98.5	48.5						50															
					20			108.5	58.5						75															
	30	118.5	68.5	75																										
	50	163.5	88.5	75																										
	10	99	49	12																										
	20	109	59	3																										
	30	119	69																											
	50	164	89																											
	10	101.5	51.5	19																										
	20	111.5	61.5	4																										
	30	121.5	71.5	12																										
	50	166.5	91.5																											
	10	102.5	52.5	19																										
	20	112.5	62.5	5																										
30	122.5	72.5																												
50	167.5	92.5																												
T	F	N S U F G S	J K	B01 N01 T01	A14	61.5	38.5	36	15.5	12.5	2	M14 x1	23	19	4	12	Rc1/8 NPT1/8 NPTF1/8	16.5	13	12	16.5	12	16.5	12						
						20	98.5						48.5												50					
						30	108.5						58.5												75					
						50	163.5						88.5												75					
						10	99						49												12					
						20	109						59												3					
						30	119						69																	
						50	164						89																	
						10	101.5						51.5												19					
						20	111.5						61.5												4					
						30	121.5						71.5												12					
						50	166.5						91.5																	
10	102.5	52.5	19																											
20	112.5	62.5	5																											
30	122.5	72.5																												
50	167.5	92.5																												

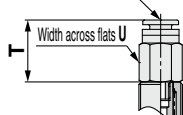
Vacuum inlet: One-touch fitting

Applicable tubing O.D.  $\varnothing V$



Vacuum inlet: Built-in One-touch fitting  
Pad diameter:  $\varnothing 20$  to  $\varnothing 50$  (Buffer stroke: 20 to 50 st)

Applicable tubing O.D.  $\varnothing V$



Dimensions Per Vacuum Inlet: One-touch Fitting

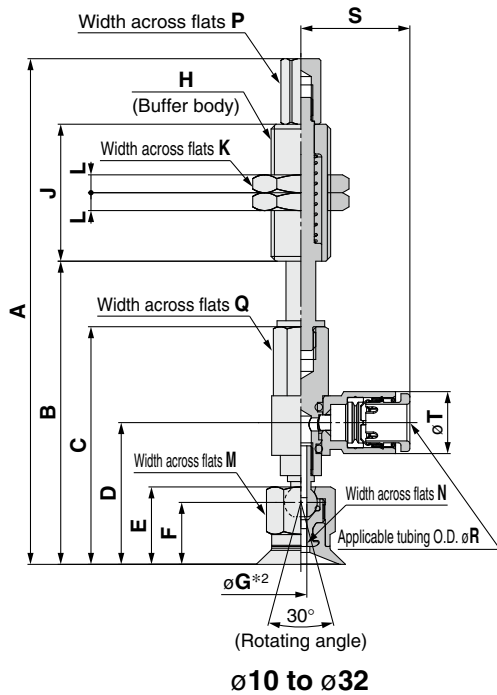
Model										T	U	V	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	Form	2 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread						
ZP	T	F	N S U F G S	J K	10	04	A10	27.7	8	4	$\varnothing 2.5$		
					20								
					30								
					40								
					50								
					10							06	A14
	20												
	30												
	40												
	50												
	10	08	A14	35.9	14	8	$\varnothing 6$						
	20												
30													
40													
50													
10	06							A14	19.9	12	6	$\varnothing 3$	
20													
30													
40													
50													
10		08	A14	24.9	14	8							
20													
30													
40													
50													

\*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/One-touch fitting  $\varnothing 10$  to  $\varnothing 50$



ZPR **10** F **N** **J** **10** - **04** - **A10**

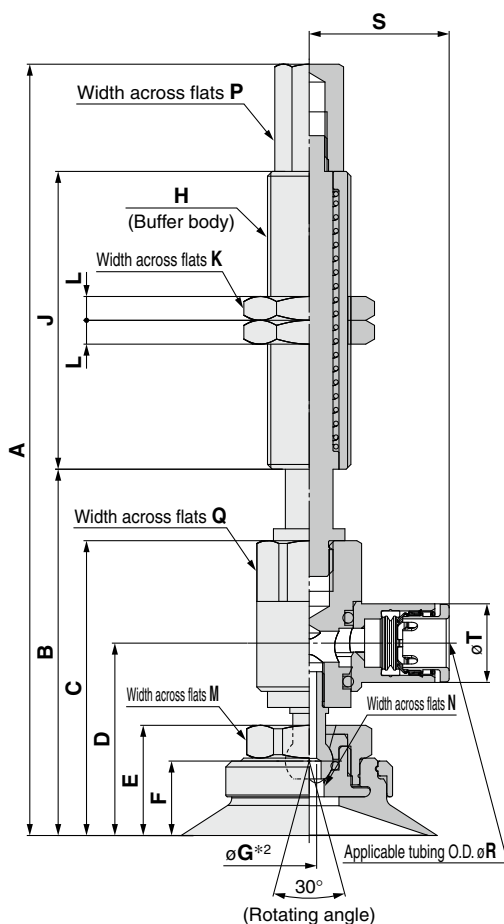
① Pad dia. ② Form ③ Buffer spec. ④ Buffer stroke ⑤ Vacuum inlet ⑥ Connection thread

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet (One-touch fitting)

04	$\varnothing 4$
06	$\varnothing 6$
08	$\varnothing 8$



$\varnothing 40, \varnothing 50$

Vacuum inlet direction	Model						A	B	C	D	E	F	G <sup>*2</sup>	H	J	K	L	M	N	P		
	① Pad dia.	② Form	③ Material <sup>*1</sup>	④ Buffer spec.	⑤ Buffer stroke	⑥ Vacuum inlet																
ZP	R	10	F	N	J	10	84.5	50.5						M10 x 1	23							
							122.5	60.5					51									
							132.5	70.5	39.5	23.4	12.5	10										
							168.5	80.5					77									
							178.5	90.5					23									
							185	91					14									
		13	16	F	N	J	10	123	61						M10 x 1	51						
								133	71	40	23.9	13	10.5									
								169	81					77								
								179	91					23								
								126.5	58.5					50								
								123.5	68.5					75								
	20	25	F	N	J	10	133.5	78.5	46.5	29.3	15.5	12.5		M14 x 1	19	4						
							178.5	98.5					75									
							127	59					12									
							124	69	47	29.8	16	13										
							134	79					50									
							179	99					75									
	40	40	F	N	J	10	129.5	61.5						M14 x 1	19	4				10		
							126.5	71.5					50									
							136.5	81.5	49.5	32.3	18.5	12.5										
							181.5	101.5					75									
							130.5	62.5					19									
							127.5	72.5					50									
50	50	F	N	J	10	137.5	82.5	50.5	33.3	19.5	13.5		M14 x 1	19	5							
						182.5	102.5					75										

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

Vacuum inlet direction	Model						Q	R	S	T	Fitting part min. hole size																																												
	① Pad dia.	② Form	③ Material <sup>*1</sup>	④ Buffer spec.	⑤ Buffer stroke	⑥ Vacuum inlet																																																	
ZP	R	10	F	N	J	10	8	4	17.5	8.2	$\varnothing 2.5$																																												
												13	16	F	N	J	10	8	6	18.3	10.4	$\varnothing 4$																																	
																							20	25	F	N	J	10	12	6	20.5	10.4	$\varnothing 4.5$																						
																																		32	40	F	N	J	10	16	8	23.5	13.2	$\varnothing 6$											
																																													40	50	F	N	J	10	12	6	20.5	10.4	$\varnothing 4.5$

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

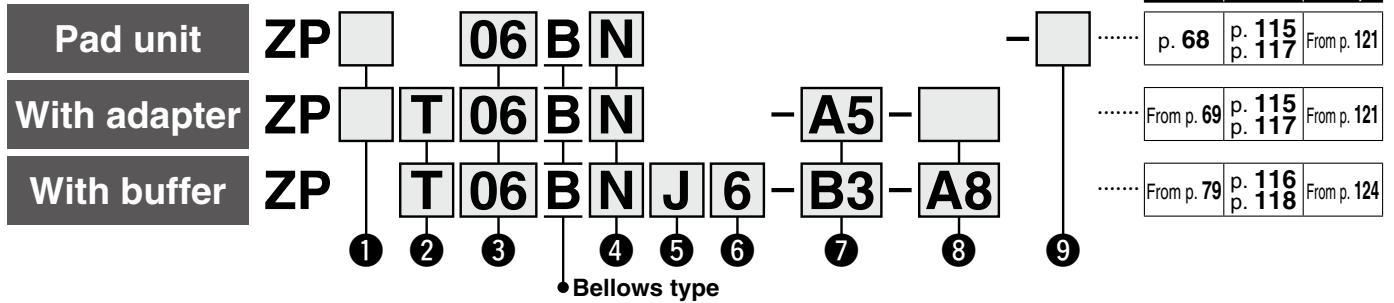
\*2 Indicates the minimum hole size of the adapter or vacuum pad



# Basic Pad Bellows Type ZP Series



## How to Order



### 1 Adapter (Lock ring) material

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

\*1 Only applicable to the pad unit (with lock ring) and the pad with adapter (Vacuum inlet direction: Vertical (Option "T"))

### 2 Vacuum inlet direction

Nil	Pad unit
T	Vertical
R	Lateral (With One-touch fitting)
Y	Lateral (With barb fitting)

### 3 Pad diameter

06	ø6	20	ø20
08	ø8	25	ø25
10	ø10	32	ø32
13	ø13	40	ø40
16	ø16	50	ø50

### 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
JN*1	Rotating (Without buffer plate)
KN*1	Non-rotating (Without buffer plate)

\*1 Only for pad diameters ø6 and ø8

### 6 Buffer stroke

Stroke [mm]	Pad diameter [mm]									
	ø6	ø8	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
6	●	●	—	—	—	—	—	—	—	—
10	●	●	●	●	●	●	●	●	●	●
15	●	●	—	—	—	—	—	—	—	—
20	—	—	●	●	●	●	●	●	●	●
25	●	●	—	—	—	—	—	—	—	—
30	—	—	●	●	●	●	●	●	●	●
40	—	—	●	●	●	●	●	●	●	—
50	—	—	●	●	●	●	●	●	●	●

## With adapter

### 7 Vacuum inlet

○: ZP□/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]				
			ø6, ø8	ø10 to ø16	ø20 to ø32	ø40, ø50	
Male thread	A5	M5 x 0.8	○*1	—	—	—	
	A6	M6 x 1	○*1	—	—	—	
Female thread	Nil	M3 x 0.5	—	○ Connection thread: A5/A6	○ Connection thread: A6	○ Connection thread: A6	
		M5 x 0.8	—	○ Connection thread: A8	○ Connection thread: A8		
	B4	M4 x 0.7	○	—	—		
	B5	M5 x 0.8	○	○	—		
	B6	M6 x 1	○	○	○		
	B8	M8 x 1.25	—	—	○		
	B01	Rc1/8	—	○	○		
	N01*4	NPT1/8	—	○	○		
	T01*4	NPTF1/8	—	○	○		
	One-touch fitting	04	ø4	●	●	●	
06		ø6	●	●	●		
08		ø8	—	—	●		
Barb fitting	N4	For ø4 nylon tubing*2	△	△	△		
	N6	For ø6 nylon tubing*2	△	△	△		
	U4	For ø4 soft tubing*3	△	△	△		
	U6	For ø6 soft tubing*3	△	△	△		

\*1 Use the connection thread. \*2 Nylon tube piping \*3 Soft nylon/Polyurethane tube piping \*4 Not compatible with stainless steel materials

### 8 Connection thread

○: ZP□/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]				
			ø6, ø8	ø10 to ø16	ø20 to ø32	ø40, ø50	
Male thread	A5	M5 x 0.8	●△	○*1●△	—	—	
	A6	M6 x 1	●△	○*1●△	—	—	
	A8	M8 x 1	—	—	○*1●△	○*1●△	
Female thread	B4	M4 x 0.7	●△	—	—	—	
	B5	M5 x 0.8	●△	●△	●△	—	
	B6	M6 x 1	—	●△	●△	●△	
	B8	M8 x 1.25	—	—	●△	●△	

\*1 ○: ZP□/Vertical comes with a vacuum inlet (female thread).

## With buffer

### 7 Vacuum inlet

○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]				
			ø6, ø8	ø10 to ø16	ø20 to ø32	ø40, ø50	
Female thread	B3	M3 x 0.5	○	—	—	—	
	B5	M5 x 0.8	○	○	○	○	
	B01	Rc1/8	—	—	—	○	
	N01	NPT1/8	—	—	—	○	
	T01	NPTF1/8	—	—	—	○	
One-touch fitting	04	ø4	○●	○●	○●	—	
	06	ø6	○●	○●	○●	○●	
	08	ø8	—	—	●	○●	
Barb fitting	N4	For ø4 nylon tubing*1	○△	△	△	—	
	N6	For ø6 nylon tubing*1	△	○△	○△	○△	
	U4	For ø4 soft tubing*2	○△	△	△	—	
	U6	For ø6 soft tubing*2	△	○△	○△	○△	

\*1 Nylon tube piping \*2 Soft nylon/Polyurethane tube piping

### 8 Connection thread

○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]				
			ø6, ø8	ø10 to ø16	ø20 to ø32	ø40, ø50	
Male thread	A8	M8 x 1	○●△	—	—	—	
	A10	M10 x 1	—	○●△	○●△	—	
	A14	M14 x 1	—	—	—	○●△	

### 9 Lock ring

Symbol	Pad diameter [mm]	
	ø6, ø8	ø10 to ø50
Nil	With lock ring	—
X19	Without lock ring	—

\*1 The lock ring cannot be used for pad diameters ø6 and ø8.

### Lock ring unit

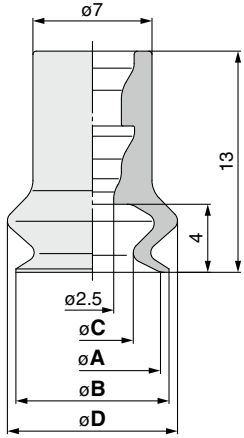
Part no.	Pad diameter [mm]
ZP□L1	ø10 to ø16
ZP□L2	ø20 to ø32
ZP□L3	ø40, ø50

□: Nil/Brass S/Stainless steel

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

**Dimensions/Models**

**Single unit  $\phi 6$  to  $\phi 8$**



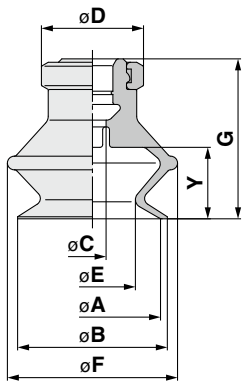
**ZP** **06** **B** **N**  
 ① ②

Model				A	B	C	D
① Pad dia.	Form	② Material					
ZP	06	B	N S U F GN GS	6	7	3.4	9
	08			8	9	4.8	10

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

**Construction** p. 115  
**Mounting Bracket Assembly** From p. 121

**Single unit  $\phi 10$  to  $\phi 50$**



**ZP** **10** **B** **N**  
 ① ② ③

**① Lock ring material**

Nil	Brass
S	Stainless steel (Stainless steel 304)

Model					A	B	C	D	E	F	G	Y
① Lock ring material	② Pad dia.	Form	③ Material									
ZP	Nil S	B	N S U F GN GS	4	10	12	4	13	5.5	13.5	16	5.5
					13	15			8.7	19	18.5	7.5
					16	18			10	21	20	8.5
					20	22			12.6	25	23.5	10.5
					25	27			16	28	24	
					32	34			18.9	37	29	14
	40	43	24.4	47	34	16						
	50	53	33.4	57	38	19						
					7	18						

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

**Construction** p. 117  
**Mounting Bracket Assembly** From p. 121

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

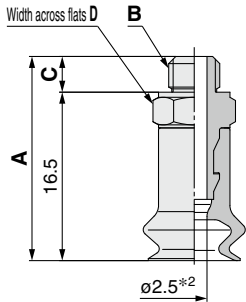
Mounting Bracket Assembly

Precautions

**Dimensions/Models**

**With adapter  $\varnothing 6$  to  $\varnothing 8$**

ZP    T 06 B N - A5  
①   ②   ③   ④



Construction p. 115  
 Adapter Assembly p. 121

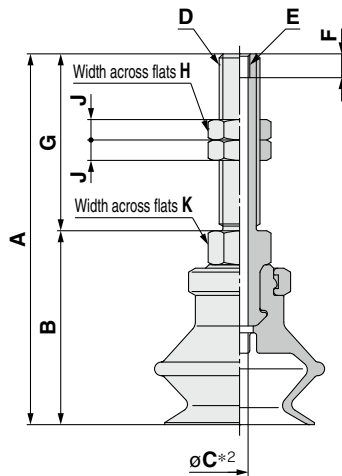
<b>① Adapter material</b>		<b>④ Vacuum inlet (Male thread)</b>	
Nil	Brass	A5	M5 x 0.8
S	Stainless steel (Stainless steel 304)	A6	M6 x 1

Model	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material <sup>*1</sup>	④ Vacuum inlet	A	B	C	D										
											ZP	Nil S	T	06 08	B	N S U F GN GS	A5	A6	20	21

\*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

**With adapter  $\varnothing 10$  to  $\varnothing 50$**

ZP    T 10 B N - A5  
①   ②   ③   ④



Construction p. 117  
 Adapter Assembly p. 121

<b>① Adapter (Lock ring) material</b>		<b>④ Connection thread (Male thread)</b>	
Nil	Brass	A5	M5 x 0.8 (M3 x 0.5 With female thread)
S	Stainless steel (Stainless steel 304)	A6	M6 x 1 (M3 x 0.5 With female thread)
		A8	M8 x 1 (M5 x 0.8 With female thread)

Model	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material <sup>*1</sup>	④ Connection thread	A	B	C*2	D	E	F	G	H	J	K														
																	ZP	Nil S	T	10 13 16 10 13 16 20 25 32 40 50	B	N S U F GN GS	A5	A6	A8	42 44.5 46 47 49.5 51 54.5 55 60 66 70	21 23.5 25 21 23.5 25 28.5 29 34 40 44	2.5	2.5	2.5

\*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

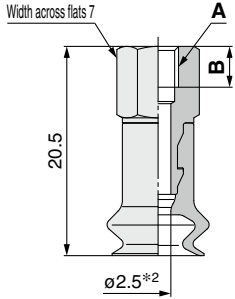
**Recommended Gasket Part Nos.**

Part no.	D vacuum inlet (Male thread)
WCS5X0.8	M5 x 0.8
WCS6X1	M6 x 1
WCS8X1	M8 x 1



**Dimensions/Models**

**With adapter ø6 to ø8**



Construction p. 115  
Adapter Assembly p. 121

ZP   T 06 B N - B4  
① ② ③ ④

**① Adapter material**

Nil	Brass
S	Stainless steel (Stainless steel 304)

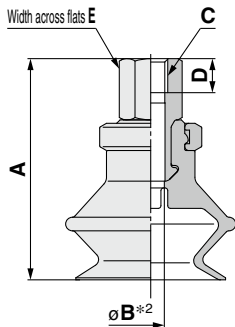
**④ Vacuum inlet (Female thread)**

B4	M4 x 0.7
B5	M5 x 0.8

ZP	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material*1	④ Vacuum inlet	Model	
							A	B
ZP	Nil S	T	06 08	B	N S U F GN GS	B4	M4 x 0.7	4
						B5	M5 x 0.8	5

\*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

**With adapter ø10 to ø50**



Construction p. 117  
Adapter Assembly p. 121

ZP   T 10 B N - B5  
① ② ③ ④

**① Adapter (Lock ring) material**

Nil	Brass
S	Stainless steel (Stainless steel 304)

**④ Vacuum inlet (Female thread)**

B5	M5 x 0.8	B01	Rc1/8
B6	M6 x 1	N01*1	NPT1/8
B8	M8 x 1.25	T01*1	NPTF1/8

\*1 Not compatible with stainless steel materials

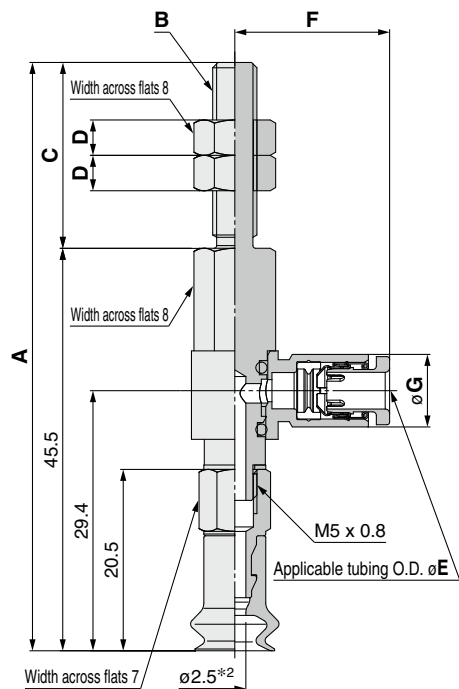
ZP	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material*1	④ Vacuum inlet	Model															
							A	B*2	C	D	E											
ZP	Nil S	T	10 13 16 20 25 32 38 40 47.5 50 51.5 55	B	N S U F GN GS	B5	25	2.5	M5 x 0.8	5	8											
							27.5															
							29															
							32.5															
							33															
							38															
							25	2.5				M6 x 1	6	8								
							27.5															
							29															
							32.5															
							33															
							38															
							47.5	4.9							M8 x 1.25	8	12					
							51.5															
							55															
						38.5	3.5	M8 x 1.25	8	12												
						39																
						44																
						47.5	6.6				M8 x 1.25							8	12			
						51.5																
						55																
						31	2.5					Rc1/8 NPT1/8 NPTF1/8	—	12								
						33.5																
						35																
						38.5	3.5													Rc1/8 NPT1/8 NPTF1/8	—	12
						39																
						44																
						47.5	7								Rc1/8 NPT1/8 NPTF1/8	—	12					
						51.5																
						55																

\*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  
 \*3 Not compatible with stainless steel materials

Model Selection  
 ZP Basic  
 Flat Type  
 Flat Type with Ribs  
 Flat, Ball Joint Type  
 Bellows Type  
 Thin Flat Type  
 Thin Flat Type with Ribs  
 Deep Type  
 Construction  
 Mounting Bracket Assembly  
 Precautions

## Dimensions/Models

With adapter/One-touch fitting  $\varnothing 6$  to  $\varnothing 8$



Construction	p. 115
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ZPR **06** **B** **N** - **04** - **A5**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b> Connection thread (Male thread)
<b>04</b>	$\varnothing 4$	<b>04</b>	<b>A5</b> M5 x 0.8
<b>06</b>	$\varnothing 6$		<b>A6</b> M6 x 1

Model						A	B	C	D
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> *1 Material	<b>3</b> Vacuum inlet	<b>4</b> Connection thread				
ZP	R	06 08	B	N S U F GN GS	A5	66.5	M5 x 0.8	21	4
					A6	71.5	M6 x 1	26	4

### Dimensions Per Vacuum Inlet

Model						E	F	G	Fitting part min. hole size
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> *1 Material	<b>3</b> Vacuum inlet	<b>4</b> Connection thread				
ZP	R	06 08	B	N S U F GN GS	04	4	17.5	8.2	$\varnothing 2.5$
					A5 A6	6	18.3	10.4	$\varnothing 4$

\*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 adapter/One-touch fitting  $\varnothing 10$  to  $\varnothing 50$**

ZPR **10** **B** **N** - **04** - **A5**

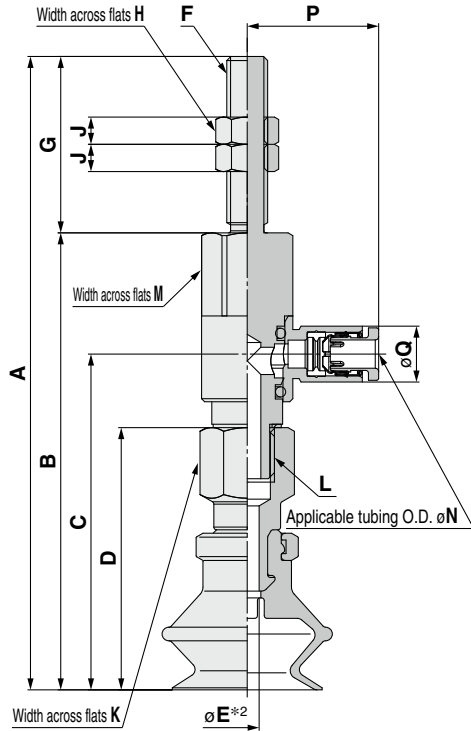
① ②

Vacuum inlet  
(One-touch fitting)

04	$\varnothing 4$
06	$\varnothing 6$
08	$\varnothing 8$

④ Connection thread  
(Male thread)

A5	M5 x 0.8
A6	M6 x 1
A8	M8 x 1



Construction	p. 117
Adapter Assembly	p. 122

Model						A	B	C	D	*2 E	F	G	H	J	K	L
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread											
ZP	R	B	N S U F GN GS	04 06 08	A5	71	50	33.9	25	2.5	M5 x 0.8	21	8	4	8	M5 x 0.8
						10										
						13										
						16										
						10										
						13										
					A6	76	50	33.9	25	3.5	M6 x 1	25.9	8	4	12	M8 x 1.25
						13										
						16										
						20										
						25										
						32										
	40															
	50															
	A8	80	54	37.9	29	4	M8 x 1	15.9	12	4	12	M8 x 1.25				
		20														
		25														
		32														
		40														
		50														
20																
25																

**Dimensions Per Vacuum Inlet**

Model						M	N	P	Q	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread					
ZP	R	B	N S U F GN GS	04	A5	8	4	17.5	8.2	$\varnothing 2.5$
					A6					
				06	A6	12	6	18.3	10.4	$\varnothing 4$
					A8					
				08	A6	16	8	23.5	13.2	$\varnothing 6$
					A8					
				06	A6	12	6	20.5	10.4	$\varnothing 4.5$
					A8					
				08	A6	16	8	23.5	13.2	$\varnothing 6$
					A8					

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

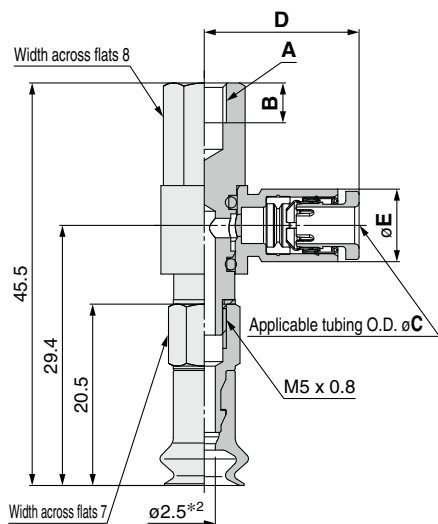
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

With adapter/One-touch fitting  $\phi 6$  to  $\phi 8$



Construction	p. 115
Adapter Assembly	p. 122

ZPR **06** **B** **N** - **04** - **B4**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b> Connection thread (Female thread)
Vacuum inlet (One-touch fitting)			
<b>04</b>	$\phi 4$		<b>B4</b> M4 x 0.7
<b>06</b>	$\phi 6$		<b>B5</b> M5 x 0.8

Model						A	B	
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> *1 Material	<b>3</b> Vacuum inlet	<b>4</b> Connection thread			
ZP	R	06 08	B	N S U F GN GS	04	B4	M4 x 0.7	4.5
					06	B5	M5 x 0.8	5.5

### Dimensions Per Vacuum Inlet

Model						C	D	E	Fitting part min. hole size	
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> *1 Material	<b>3</b> Vacuum inlet	<b>4</b> Connection thread					
ZP	R	06 08	B	N S U F GN GS	04	B4 B5	4	17.5	8.2	$\phi 2.5$
					06		6	18.3	10.4	$\phi 4$

\*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**

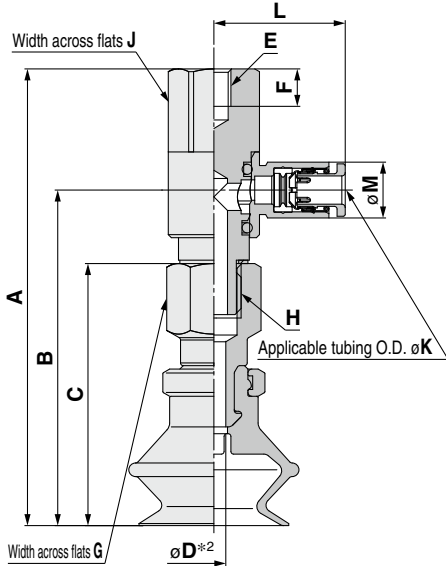
**With adapter/One-touch fitting  $\varnothing 10$  to  $\varnothing 50$**

ZPR **10** **B** **N** - **04** - **B5**

**1** Pad dia.  
**2** Form  
**3** Vacuum inlet (One-touch fitting)  
**4** Connection thread (Female thread)

04	$\varnothing 4$
06	$\varnothing 6$
08	$\varnothing 8$

B5	M5 x 0.8
B6	M6 x 1
B8	M8 x 1.25



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Adapter Assembly p. 122

		Model				A	B	C	D*2	E	F	G	H						
Vacuum inlet direction	1 Pad dia.	2 Form	3*1 Material	4 Vacuum inlet	5 Connection thread														
ZP	R	B	N S U F GN GS	04 06 08	B5	10	50	33.9	25	2.5	M5 x 0.8	5.5	8	M5 x 0.8					
						13	52.5	36.4	27.5										
						16	54	37.9	29										
						20	67.1	49.3	38.5	3.5									
						25	67.6	49.8	39										
						32	72.6	54.8	44										
						R	B	N S U F GN GS	04 06 08	B6	10	50	33.9	25	2.5	M6 x 1	6.5	12	M8 x 1.25
											13	52.5	36.4	27.5					
											16	54	37.9	29					
											20	67.1	49.3	38.5	3.5				
	25	67.6	49.8	39															
	32	72.6	54.8	44															
	R	B	N S U F GN GS	04 06 08	B8						20	67.1	49.3	38.5	4	M8 x 1.25	8.5	12	M8 x 1.25
											25	67.6	49.8	39					
											32	72.6	54.8	44					
											40	76.1	58.3	47.5	4				
						50	80.1	62.3	51.5										
						20	67.1	49.3	38.5	3.5									
						25	67.6	49.8	39										
						32	72.6	54.8	44										
40						76.1	58.3	47.5	4										
50						80.1	62.3	51.5											

**Dimensions Per Vacuum Inlet**

		Model				J	K	L	M	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	2 Form	3*1 Material	4 Vacuum inlet	5 Connection thread					
ZP	R	B	N S U F GN GS	04	B5	8	4	17.5	8.2	$\varnothing 2.5$
					B6					
				06	B5	12	4	19.3	8.2	$\varnothing 3$
					B6					
				08	B5	16	8	23.5	13.2	$\varnothing 6$
					B6					
				06	B6	12	6	20.5	10.4	$\varnothing 4.5$
					B8					
08	B6	16	8	23.5	13.2	$\varnothing 6$				
	B8									

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

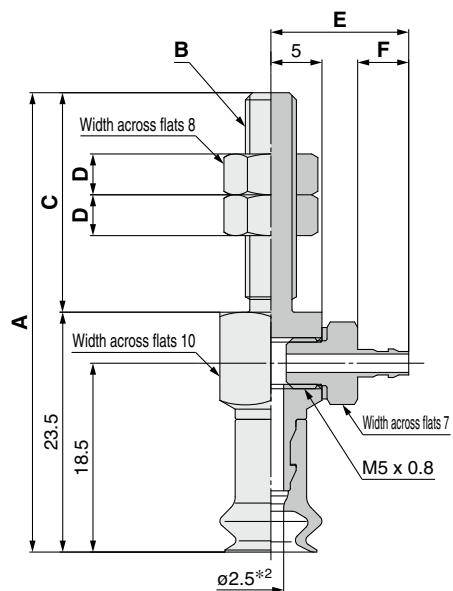
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

With adapter/barb fitting  $\varnothing 6$  to  $\varnothing 8$



Construction	p. 115
Adapter Assembly	p. 123

ZPY **06** **B** **N** - **N4** - **A5**

① ②

Vacuum inlet ③  
(Barb fitting)

④ Connection thread  
(Male thread)

<b>N4</b>	For $\varnothing 4$ nylon tubing	M-5AN-4
<b>N6</b>	For $\varnothing 6$ nylon tubing	M-5AN-6
<b>U4</b>	For $\varnothing 4$ soft tubing	M-5AU-4
<b>U6</b>	For $\varnothing 6$ soft tubing	M-5AU-6

<b>A5</b>	M5 x 0.8
<b>A6</b>	M6 x 1

	Vacuum inlet direction	Model				A	B	C	D	
		① Pad dia.	② Form	③ Material	④ Vacuum inlet					
ZP	Y	06 08	B	N S U F GN GS	N4 N6 U4 U6	A5	45	M5 x 0.8	21.5	4
						A6	50.5	M6 x 1	27	4

### Dimensions Per Vacuum Inlet

	Vacuum inlet direction	Model				E	F	Fitting part min. hole size	
		① Pad dia.	② Form	③ Material	④ Vacuum inlet				
ZP	Y	06 08	B	N S U F GN GS	N4 U4	A5 A6	13.5	5	$\varnothing 1.8$
					N6 U6		15.5	7	$\varnothing 2.5$

\*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/barb fitting  $\varnothing 10$  to  $\varnothing 50$**

ZPY **10** **B** **N** - **N4** - **A5**

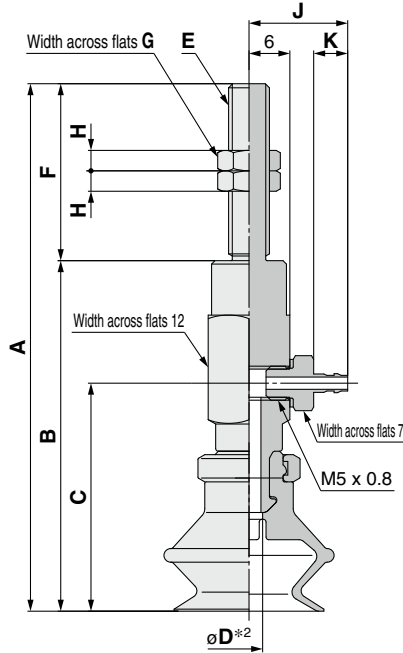
① ②

**Vacuum inlet (Barb fitting)**

④ **Connection thread (Male thread)**

A5	M5 x 0.8
A6	M6 x 1
A8	M8 x 1

<b>N4</b>	For $\varnothing 4$ nylon tubing	M-5AN-4
<b>N6</b>	For $\varnothing 6$ nylon tubing	M-5AN-6
<b>U4</b>	For $\varnothing 4$ soft tubing	M-5AU-4
<b>U6</b>	For $\varnothing 6$ soft tubing	M-5AU-6



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Adapter Assembly p. 123

		Model				A	B	C	D*2	E	F	G	H	
	Vacuum inlet direction	① Pad dia.	② Form	③ Material*1	④ Vacuum inlet									
ZP	Y	10	B	N S U F GN GS	N4 N6 U4 U6	A5	63	42	26	2.5	M5 x 0.8	21	8	4
		13					65.5	44.5	28.5					
		16					67	46	30					
		10					68	42	26					
		13				70.5	44.5	28.5	2.5	M6 x 1	26	8	4	
		16				72	46	30						
		20				77.5	51.5	33.5						
		25				78	52	34						
		32				83	57	39	3.5	M8 x 1	16	12	4	
		40				88	62	44						
		50				92	66	48						
		20				67.5	51.5	33.5						
		25				68	52	34	3.5	M8 x 1	16	12	4	
		32				73	57	39						
		40				78	62	44						
		50				82	66	48						

**Dimensions Per Vacuum Inlet**

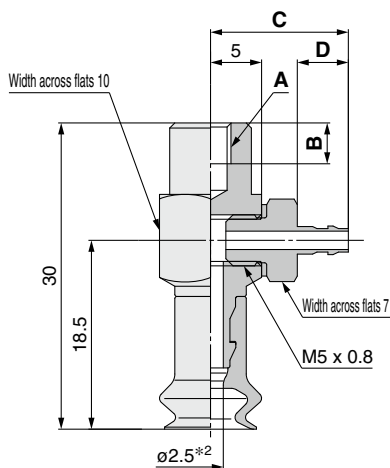
		Model				J	K	Fitting part min. hole size	
	Vacuum inlet direction	① Pad dia.	② Form	③ Material*1	④ Vacuum inlet				
ZP	Y	10	B	N S U F GN GS	N4	A5	14.5	5	$\varnothing 1.8$
		U4							
		13			N6	A6	16.5	7	$\varnothing 2.5$
		16			U6				
		20			N6	A8	16.5	7	$\varnothing 2.5$
		25			U6				
32									
40									
50									

\*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

Model Selection  
ZP Basic  
Flat Type  
Flat Type with Ribs  
Flat, Ball Joint Type  
Bellows Type  
Thin Flat Type  
Thin Flat Type with Ribs  
Deep Type  
Construction  
Mounting Bracket Assembly  
Precautions

## Dimensions/Models

With adapter/barb fitting  $\phi 6$  to  $\phi 8$



Construction p. 115

Adapter Assembly p. 123

ZPY **06** **B** **N** - **N4** - **B4**

①

②

④

Vacuum inlet ③  
(Barb fitting)

④ Connection thread  
(Female thread)

<b>N4</b>	For $\phi 4$ nylon tubing	M-5AN-4
<b>N6</b>	For $\phi 6$ nylon tubing	M-5AN-6
<b>U4</b>	For $\phi 4$ soft tubing	M-5AU-4
<b>U6</b>	For $\phi 6$ soft tubing	M-5AU-6

<b>B4</b>	M4 x 0.7
<b>B5</b>	M5 x 0.8

	Vacuum inlet direction	Model				A	B	
		① Pad dia.	② Form	③ Vacuum inlet Material	④ Connection thread			
ZP	Y	06 08	B	N S U F GN GS	N4 N6 U4 U6	B4	M4 x 0.7	4
						B5	M5 x 0.8	5

### Dimensions Per Vacuum Inlet

	Vacuum inlet direction	Model				C	D	Fitting part min. hole size	
		① Pad dia.	② Form	③ Vacuum inlet Material	④ Connection thread				
ZP	Y	06 08	B	N S U F GN GS	N4 U4	B4 B5	13.5	5	$\phi 1.8$
					N6 U6		15.5	7	$\phi 2.5$

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

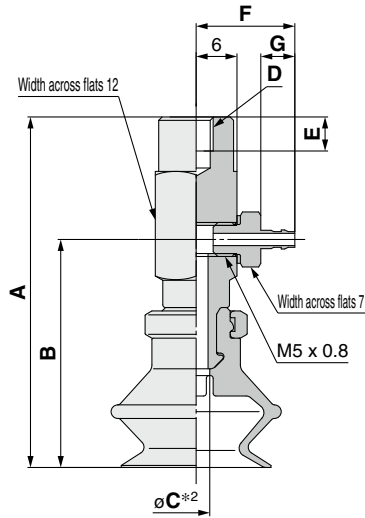
\*2 Indicates the minimum hole size of the adapter or vacuum pad



**Dimensions/Models**

**With adapter/barb fitting  $\varnothing 10$  to  $\varnothing 50$**

**ZPY 10 B N - N4 - B5**



**Construction** p. 117  
**Adapter Assembly** p. 123

**1** Pad dia.  
**2** Form  
**3** Vacuum inlet (Barb fitting)  
**4** Connection thread (Female thread)

<b>N4</b>	For $\varnothing 4$ nylon tubing	M-5AN-4
<b>N6</b>	For $\varnothing 6$ nylon tubing	M-5AN-6
<b>U4</b>	For $\varnothing 4$ soft tubing	M-5AU-4
<b>U6</b>	For $\varnothing 6$ soft tubing	M-5AU-6

<b>B5</b>	M5 x 0.8
<b>B6</b>	M6 x 1
<b>B8</b>	M8 x 1.25

		Model				A	B	C*2	D	E
Vacuum inlet direction	1 Pad dia.	2 Form	3*1 Material	4 Vacuum inlet						
ZP	Y	B	N S U F GN GS	N4 N6 U4 U6	B5	42	26	2.5	M5 x 0.8	5
						44.5	28.5			
						46	30			
						51.5	33.5			
						52	34			
						57	39			
					B6	42	26	2.5	M6 x 1	6
						44.5	28.5			
						46	30			
						51.5	33.5			
	52	34								
	57	39								
	B8	62	44	6		M8 x 1.25	8			
		66	48							
		51.5	33.5							
		52	34							

**Dimensions Per Vacuum Inlet**

		Model				F	G	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	2 Form	3*1 Material	4 Vacuum inlet				
ZP	Y	B	N S U F GN GS	N4 U4	B4	14.5	5	$\varnothing 1.8$
				N6 U6	B5			
				N4 U4	B5	16.5	7	$\varnothing 2.5$
				N6 U6	B6 B8			
				40	N6	16.5	7	$\varnothing 2.5$
				50	U6			

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

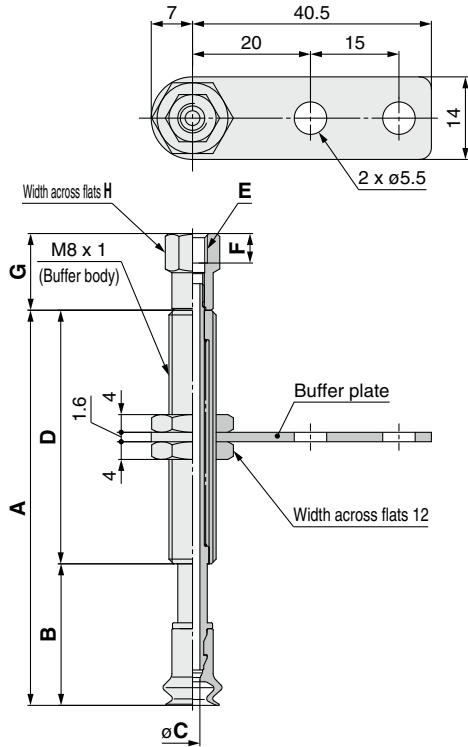
Mounting Bracket Assembly

Precautions

**Dimensions/Models**

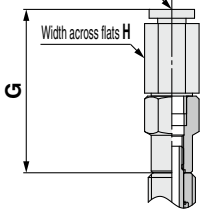
**With buffer  $\varnothing 6$  to  $\varnothing 8$**

The drawings show the type with a buffer plate.

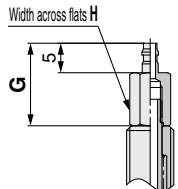


**Vacuum inlet: One-touch fitting**

Applicable tubing O.D.  $\varnothing J$



**Vacuum inlet: Barb fitting**



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Buffer Assembly	p. 124

ZPT **06** **B** **N** **J** **6** - **B3** - **A8**

① ② ③ ④ ⑤ ⑥

**Buffer specification ③**

<b>J</b>	Rotating
<b>K</b>	Non-rotating
<b>JN</b>	Rotating (Without buffer plate)
<b>KN</b>	Non-rotating (Without buffer plate)

**⑥ Connection thread (Male thread)**

<b>A8</b>	M8 x 1
-----------	--------

**⑤ Vacuum inlet**

<b>B3</b>	M3 x 0.5	Female thread	
<b>B5</b>	M5 x 0.8		
<b>04</b>	$\varnothing 4$	One-touch fitting	KQ2H04-M5N
<b>06</b>	$\varnothing 6$		KQ2H06-M5N
<b>N4</b>	For $\varnothing 4$ nylon tubing	Barb fitting	
<b>U4</b>	For $\varnothing 4$ soft tubing		

		Model						A	B	C*2	D	
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	T	06 08	B	N S U F GN GS	J K JN KN	6	B3 B5 04 06 N4 U4	A8	34	19	J: 2.5 K: 2	15
						10			67	24		43
						15			72	29		
						25			82	39		

**Dimensions Per Vacuum Inlet: Female Thread**

		Model						E	F	G	H	
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	T	06 08	B	N S U F GN GS	J K JN KN	6	B3 B5	A8	M3 x 0.5	3	11	6
						10 15 25			M5 x 0.8	5	13	8

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

		Model						G	H	J	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	T	06 08	B	N S U F GN GS	J K JN KN	6	04 06	A8	27.7	8	4	$\varnothing 2.5$
						10 15 25				10	6	

**Dimensions Per Vacuum Inlet: Barb Fitting**

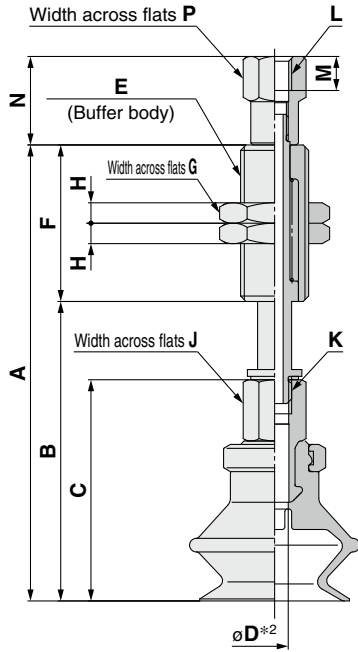
		Model						G	H	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	06 08	B	N S U F GN GS	J K JN KN	6 10 15 25	N4 U4	A8	14	6	$\varnothing 1.8$

\*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  $\varnothing 50$**



- Construction p. 118
- Buffer Assembly p. 124

**ZPT 10 B N J 10 - B5 - A10**

① Pad dia. ② Form ③ Buffer spec. ④ Buffer stroke ⑤ Vacuum inlet (Female thread) ⑥ Connection thread (Male thread)

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

<b>B5</b>	M5 x 0.8
<b>B01</b>	Rc1/8
<b>N01</b>	NPT1/8
<b>T01</b>	NPTF1/8

<b>A10</b>	M10 x 1
<b>A14</b>	M14 x 1

Model		①	②	③	④	⑤	⑥	A	B	C	D*2	E	F	G	H	J	K														
Vacuum inlet direction	Pad dia.	Form	Material	Buffer spec.	Buffer stroke	Vacuum inlet	Connection thread																								
ZP	T	B	N S U F G N S	J K	10	B5 04 06 N6 U6	A10	59.5	36.5	25	J: 2.5 K: 2	M10 x 1	23	14	3	8	M5 x 0.8														
					20			97.5	46.5																						
					30			107.5	56.5																						
					40			143.5	66.5																						
					50			153.5	76.5																						
					10			62	39									27.5	77												
					20			100	49																						
					30			110	59																						
					40			146	69																						
					50			156	79																						
					10			63.5	40.5											29	77										
					20			101.5	50.5																						
					30			111.5	60.5																						
					40			147.5	70.5																						
					50			157.5	80.5																						
					10			67	44													32.5	77								
					20			105	54																						
					30			115	64																						
					40			151	74																						
					50			161	84																						
					10			67.5	44.5															33	77						
					20			105.5	54.5																						
					30			115.5	64.5																						
					40			151.5	74.5																						
					50			161.5	84.5																						
					10			72.5	49.5																	38	77				
					20			110.5	59.5																						
					30			120.5	69.5																						
					40			156.5	79.5																						
					50			166.5	89.5																						
					10			110	60																			47.5	75		
					20			120	70																						
					30			130	80																						
					40			175	100																						
					50			175	100																						
					10			114	64																					51.5	75
					20			124	74																						
					30			134	84																						
					40			179	104																						
					50			179	104																						

**Dimensions Per Vacuum Inlet: Female Thread**

Model		①	②	③	④	⑤	⑥	L	M	N	P					
Vacuum inlet direction	Pad dia.	Form	Material	Buffer spec.	Buffer stroke	Vacuum inlet	Connection thread									
ZP	T	B	N S U F G N S	J K	10	B5	A10	M5 x 0.8	5	13	8					
					20											
					16											
					20											
					25											
					32											
					10							B5	A10	M5 x 0.8	4.5	15
					20											
					30											
					40											
					50											
					10											
20																
30																
40																
50																

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

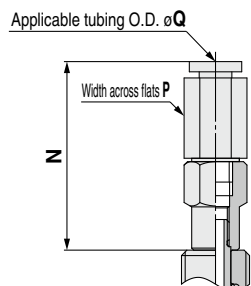
## Dimensions/Models

With buffer  $\varnothing 10$  to  $\varnothing 50$

ZPT **10** **B** **N** **J** **10** - **04** - **A10**

①
②
③
④
⑤
⑥

### Vacuum inlet: One-touch fitting



**Buffer specification** ③

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

### ⑥ Connection thread (Male thread)

<b>A10</b>	M10 x 1
<b>A14</b>	M14 x 1

**⑤ Vacuum inlet**

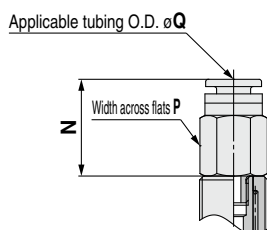
			Pad diameter	
			$\varnothing 10$ to $\varnothing 32$	$\varnothing 40, \varnothing 50$ (10 st only)
<b>04</b>	$\varnothing 4$	One-touch fitting	KQ2H04-M5N	KQ2H06-01NS
<b>06</b>	$\varnothing 6$		KQ2H06-M5N	
<b>08</b>	$\varnothing 8$		KQ2H08-01NS	
<b>N6</b>	For $\varnothing 6$ nylon tubing	Barb fitting		
<b>U6</b>	For $\varnothing 6$ soft tubing			

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

	Vacuum inlet direction	Model						N	P	Q	Fitting part min. hole size			
		① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet					⑥ Connection thread		
ZP	T	10	B	N S U F GN GS	J K	10	A10	27.7	8	4	$\varnothing 2.5$			
		13				20								
		16				30								
		20				40								
		25				50	06		A14	31.8		10	6	$\varnothing 4.5$
		32				40	08			35.9		14	8	$\varnothing 6$
		40				20	06			19.9		12	6	$\varnothing 3$
		50				30	08			24.9		14	8	

### Vacuum inlet: Built-in One-touch fitting

Pad diameter:  $\varnothing 40, \varnothing 50$  (Buffer stroke: 20 to 50 st)

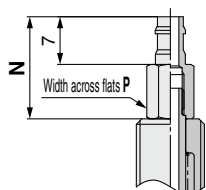


### Dimensions Per Vacuum Inlet: Barb Fitting

	Vacuum inlet direction	Model						N	P	Fitting part min. hole size	
		① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet				⑥ Connection thread
ZP	T	10	B	N S U F GN GS	J K	10	A10	15	6	$\varnothing 2.5$	
		13				N6					
		16				U6	19				
		20									A14
		25									
		32									20
40	30										
50	50										

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

### Vacuum inlet: Barb fitting

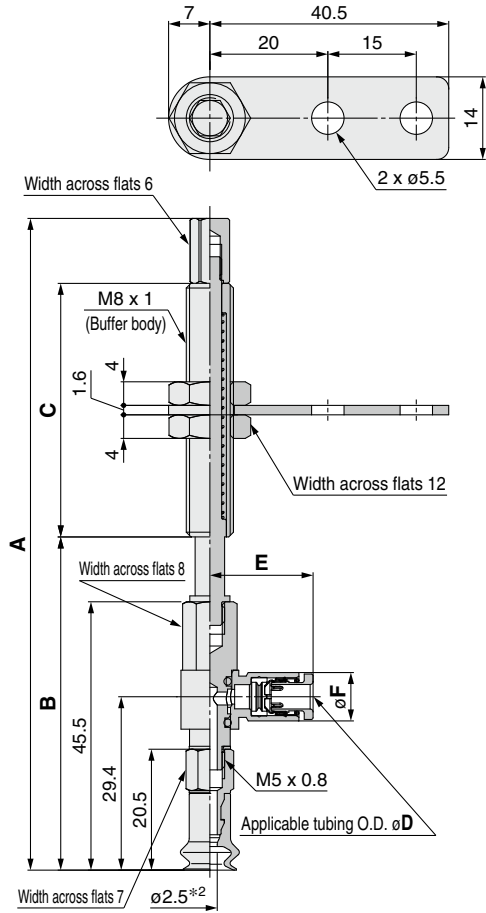


Construction	p. 118
Buffer Assembly	p. 124

## Dimensions/Models

### With buffer/One-touch fitting $\phi 6$ to $\phi 8$

The drawings show the type with a buffer plate.



ZPR **06** **B** **N** **J** **6** - **04** - **A8**

#### Buffer specification **3**

<b>J</b>	Rotating
<b>K</b>	Non-rotating
<b>JN</b>	Rotating (Without buffer plate)
<b>KN</b>	Non-rotating (Without buffer plate)

**6** Connection thread  
(Male thread)

<b>A8</b>	M8 x 1
-----------	--------

**5** Vacuum inlet  
(One-touch fitting)

<b>04</b>	$\phi 4$
<b>06</b>	$\phi 6$

		Model						A	B	C	
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> *1 Material	<b>3</b> Buffer spec.	<b>4</b> Buffer stroke	<b>5</b> Vacuum inlet	<b>6</b> Connection thread				
ZP	R	06 08	B	N S U F GN GS	J K JN KN	6	04 06	A8	79.5	53.5	15
						10			110.5	56.5	43
						15			115.5	61.5	
						25			125.5	71.5	

#### Dimensions Per Vacuum Inlet

		Model						D	E	F	Fitting part min. hole size	
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> *1 Material	<b>3</b> Buffer spec.	<b>4</b> Buffer stroke	<b>5</b> Vacuum inlet	<b>6</b> Connection thread					
ZP	R	06 08	B	N S U F GN GS	J K JN KN	6	04	A8	4	17.5	8.2	$\phi 2.5$
						10 15 25			06	6	18.3	10.4

\*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. 116

Buffer Assembly p. 125

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

**Dimensions/Models**

**With buffer/One-touch fitting  $\varnothing 10$  to  $\varnothing 50$**

ZPR **10** **B** **N** **J** **10** - **04** - **A10**

① ② ③ ④ ⑤ ⑥ Connection thread (Male thread)

Buffer specification ③

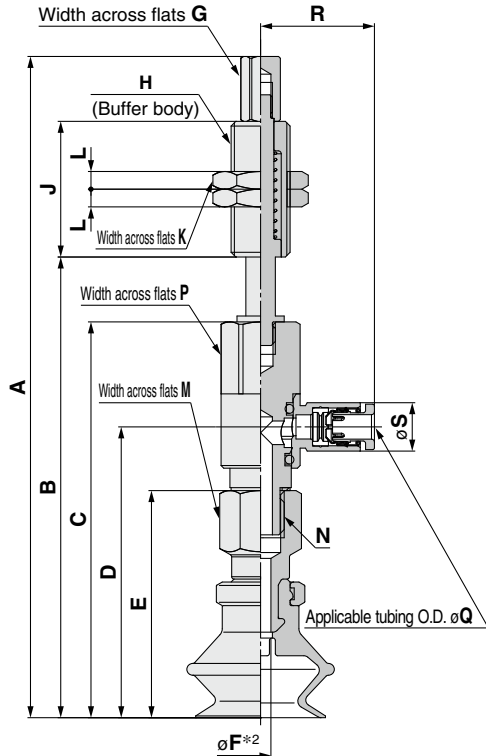
J	Rotating
K	Non-rotating

⑤ Vacuum inlet (One-touch fitting)

04	$\varnothing 4$
06	$\varnothing 6$
08	$\varnothing 8$

⑥ Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1



Construction p. 118  
Buffer Assembly p. 125

		Model																															
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread	A	B	C	D	E	*2 F	G	H	J	K	L	M	N													
ZP	R	B	N S U F GN GS	J K	10	04	A10	95	61												23												
								133	71																	51							
								143	81	50	33.9	25																					
								179	91																								
								189	101																								
								10	20																								
								10	30																								
								10	40																								
								10	50																								
								13	20																								
								13	30																								
								13	40																								
	13	50																															
	16	10																															
	16	20																															
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50	40																																
50	50																																

**Dimensions Per Vacuum Inlet**

		Model																												
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread	P	Q	R	S	Fitting part min. hole size																		
ZP	R	B	N S U F GN GS	J K	10	04	A10	8	4	17.5	8.2	$\varnothing 2.5$																		
												12	6	18.3	10.4	$\varnothing 4$														
																16	8	23.5	13.2	$\varnothing 6$										
																				20	6	20.5	10.4	$\varnothing 4.5$						
																								30	8	23.5	13.2	$\varnothing 6$		
																												50	6	20.5
	50	8	23.5	13.2	$\varnothing 6$																									
					10	06	A14	12	6	20.5	10.4	$\varnothing 4.5$																		
												20	8	23.5	13.2	$\varnothing 6$														
																30	6	20.5	10.4	$\varnothing 4.5$										
																				50	8	23.5	13.2	$\varnothing 6$						

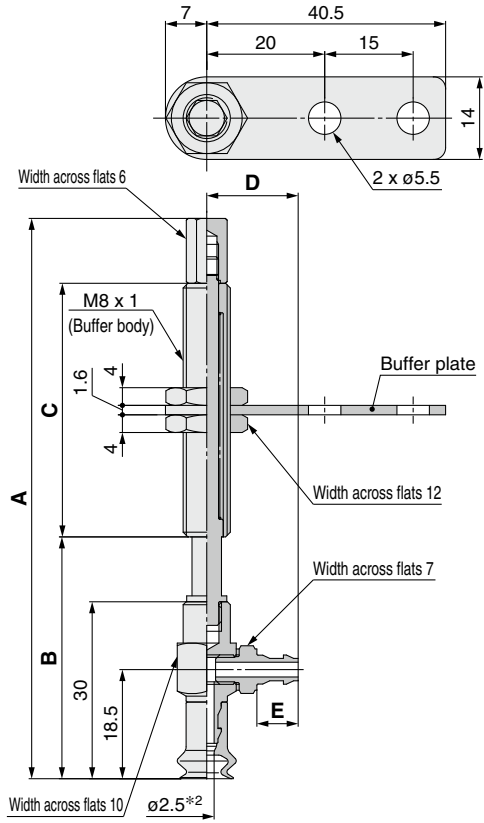
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber  
\*2 Indicates the minimum hole size of the adapter or vacuum pad



## Dimensions/Models

### With buffer/barb fitting $\varnothing 6$ to $\varnothing 8$

The drawings show the type with a buffer plate.



Construction	p. 116
Buffer Assembly	p. 126

ZPY **06** **B** **N** **J** **6** - **N4** - **A8**

1

2

4

6

6 Connection thread  
(Male thread)

A8	M8 x 1
----	--------

Buffer specification 3

J	Rotating
K	Non-rotating
JN	Rotating (Without buffer plate)
KN	Non-rotating (Without buffer plate)

5 Vacuum inlet  
(Barb fitting)

N4	For $\varnothing 4$ nylon tubing	M-5AN-4
N6	For $\varnothing 6$ nylon tubing	M-5AN-6
U4	For $\varnothing 4$ soft tubing	M-5AU-4
U6	For $\varnothing 6$ soft tubing	M-5AU-6

Model								A	B	C
Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread			
ZP	Y	06 08	B	N S U F GN GS	J K JN KN	6	A8	64	38	15
						10		95	41	43
						15		100	46	
						25		110	56	

### Dimensions Per Vacuum Inlet

Model								D	E	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread			
ZP	Y	06 08	B	N S U F GN GS	J K JN KN	6	A8	13.5	5	$\varnothing 1.8$
						10 15 25		15.5	7	$\varnothing 2.5$

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

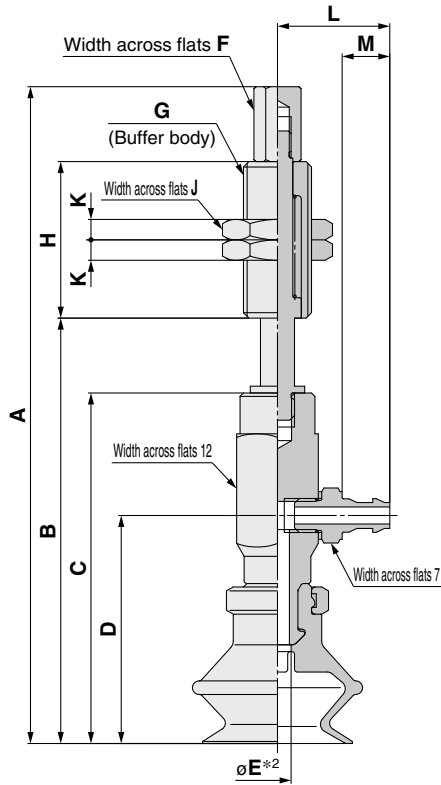
Construction

Mounting Bracket Assembly

Precautions

**Dimensions/Models**

**With buffer/barb fitting  $\varnothing 10$  to  $\varnothing 50$**



**Construction** p. 118  
**Buffer Assembly** p. 126

**ZPY 10 B N J 10 - N4 - A10**

1 2 3 4 5 6

**Buffer specification 3**

J	Rotating
K	Non-rotating

**6 Connection thread (Male thread)**

A10	M10 x 1
A14	M14 x 1

**5 Vacuum inlet (Barb fitting)**

N4	For $\varnothing 4$ nylon tubing	M-5AN-4
N6	For $\varnothing 6$ nylon tubing	M-5AN-6
U4	For $\varnothing 4$ soft tubing	M-5AU-4
U6	For $\varnothing 6$ soft tubing	M-5AU-6

		Model										A	B	C	D	*2 E	F	G	H	J	K
Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread														
ZP	10	B	N	J	10	N4	A10	87	53	42	26	2.5	6	M10 x 1	14	3	23	51	77	23	
					20			125	63												
					30			135	73												
					40			171	83												
					50			181	93												
					10			89.5	55.5												
					20			127.5	65.5												
					30			137.5	75.5												
					40			173.5	85.5												
					50			183.5	95.5												
					10			91	57												
					20			129	67												
	30	139	77																		
	40	175	87																		
	50	185	97																		
	10	96.5	62.5																		
	20	134.5	72.5																		
	30	144.5	82.5																		
	40	180.5	92.5																		
	50	190.5	102.5																		
	10	97	63																		
	20	135	73																		
	30	145	83																		
	40	181	93																		
50	191	103																			
10	102	68																			
20	140	78																			
30	150	88																			
40	186	98																			
50	196	108																			
10	142	74																			
20	139	84																			
30	149	94																			
40	194	114																			
50	194	114																			
10	146	78																			
20	143	88																			
30	153	98																			
50	198	118																			

**Dimensions Per Vacuum Inlet**

		Model										L	M	Fitting part min. hole size							
Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread														
ZP	Y	B	N	J	K	10	N4	A10	14.5	5	14.5	5	$\varnothing 1.8$								
														20	U4						
																30	U6				
																		40	U6		
																				50	U6
50	A14	16.5	7	$\varnothing 2.5$																	

\*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

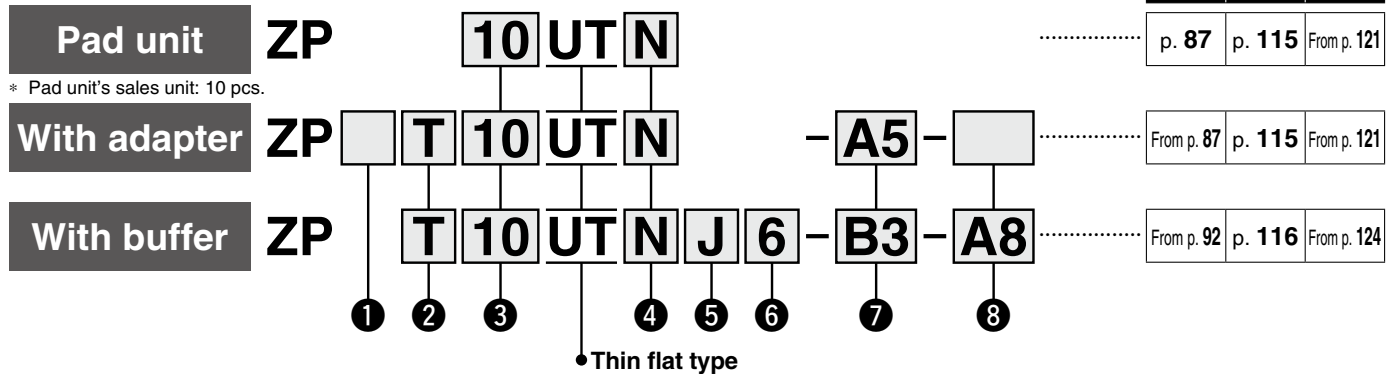




# Basic Pad Thin Flat Type ZP Series



## How to Order



### 1 Adapter material

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

\*1 Only applicable to the pad with adapter (Vacuum inlet direction: Vertical (Option "T"))

### 2 Vacuum inlet direction

Nil	Pad unit
T	Vertical
R	Lateral (With One-touch fitting)
Y	Lateral (With barb fitting)

### 3 Pad diameter

10	ø10
13	ø13
16	ø16

### 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
JN	Rotating (Without buffer plate)
KN	Non-rotating (Without buffer plate)

### 6 Buffer stroke

Stroke [mm]	Pad diameter	
	All sizes	
6	●	
10	●	
15	●	
25	●	

## With adapter

### 7 Vacuum inlet

○: ZP□/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter
			All sizes
Male thread	A5	M5 x 0.8	○
	A6	M6 x 1	○
Female thread	B4	M4 x 0.7	○
	B5	M5 x 0.8	○
One-touch fitting	04	ø4	●
	06	ø6	●
Barb fitting	N4	For ø4 nylon tubing	△
	N6	For ø6 nylon tubing	△
	U4	For ø4 soft tubing	△
	U6	For ø6 soft tubing	△

### 8 Connection thread ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter
			All sizes
Male thread	A5	M5 x 0.8	●△
	A6	M6 x 1	●△
Female thread	B4	M4 x 0.7	●△
	B5	M5 x 0.8	●△

It is not necessary to select a connection thread for ○: ZP□/Vertical. Use the vacuum inlet.

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

## With buffer

### 7 Vacuum inlet

○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter
			All sizes
Female thread	B3	M3 x 0.5	○
	B5	M5 x 0.8	○
One-touch fitting	04	ø4	○●
	06	ø6	○●
Barb fitting	N4	For ø4 nylon tubing*1	○△
	N6	For ø6 nylon tubing*1	△
	U4	For ø4 soft tubing*2	○△
	U6	For ø6 soft tubing*2	△

\*1 Nylon tube piping

\*2 Soft nylon/Polyurethane tube piping

### 8 Connection thread

○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter
			All sizes
Male thread	A8	M8 x 1	○●△

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

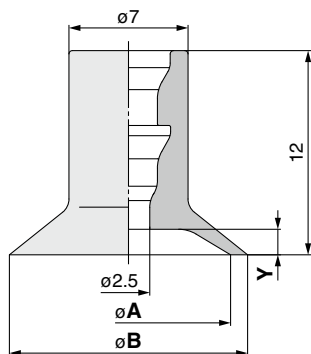
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

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



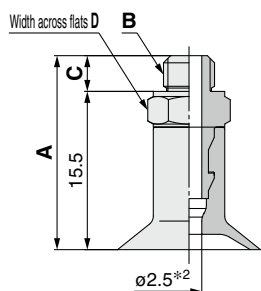
Construction p. 115  
Mounting Bracket Assembly From p. 121

ZP **10** UT **N**  
① ②

Model				A	B	Y
① Pad dia.	Form	② Material <sup>*1</sup>				
ZP	10	UT	N S U F GN GS	10	11	1
	13			13	14	1.5
	16			16	17	

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

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



Construction p. 115  
Adapter Assembly p. 121

ZP **T** **10** UT **N** - **A5**  
① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Male thread)

A5	M5 x 0.8
A6	M6 x 1

Model							A	B	C	D
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material <sup>*1</sup>	④ Vacuum inlet					
ZP	Nil S	T	10 13 16	UT	N S U F GN GS	A5	19	M5 x 0.8	3.5	7
						A6	20	M6 x 1	4.5	8

\*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

ZP **T** **10** UT **N** - **B4**  
① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

Model							A	B
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material <sup>*1</sup>	④ Vacuum inlet			
ZP	Nil S	T	10 13 16	UT	N S U F GN GS	B4	M4 x 0.7	4
						B5	M5 x 0.8	5

\*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/One-touch fitting  $\varnothing 10$  to  $\varnothing 16$**

ZPR **10** UT **N** - **04** - **A5**

①

②

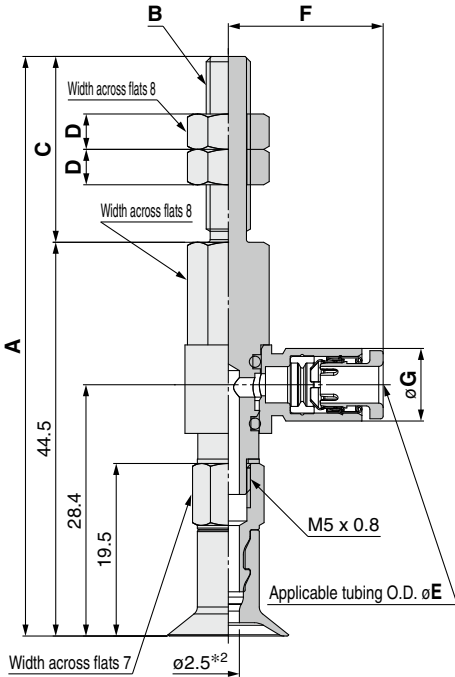
④

④ Connection thread  
(Male thread)

Vacuum inlet  
(One-touch fitting)

04	$\varnothing 4$
06	$\varnothing 6$

A5	M5 x 0.8
A6	M6 x 1



Construction	p. 115
Adapter Assembly	p. 122

Model						A	B	C	D	
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread					
ZP	R	10 13 16	UT	N S U F GN GS	04	A5	65.5	M5 x 0.8	21	4
					06	A6	70.5	M6 x 1	26	4

**Dimensions Per Vacuum Inlet**

Model						E	F	G	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread					
ZP	R	10 13 16	UT	N S U F GN GS	04	A5 A6	4	17.5	8.2	$\varnothing 2.5$
					06		6	18.3	10.4	$\varnothing 4$

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

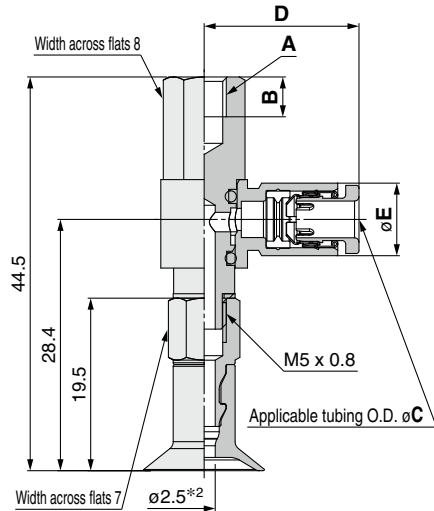
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

With adapter/One-touch fitting  $\varnothing 10$  to  $\varnothing 16$



Construction	p. 115
Adapter Assembly	p. 122

ZPR **10** UT **N** - **04** - **B4**

①

②

④

Connection thread  
(Female thread)

Vacuum inlet  
(One-touch fitting)

04	$\varnothing 4$
06	$\varnothing 6$

B4	M4 x 0.7
B5	M5 x 0.8

		Model				A	B	
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread			
ZP	R	10 13 16	UT	N S U F GN GS	04	B4	M4 x 0.7	4.5
					06	B5	M5 x 0.8	5.5

### Dimensions Per Vacuum Inlet

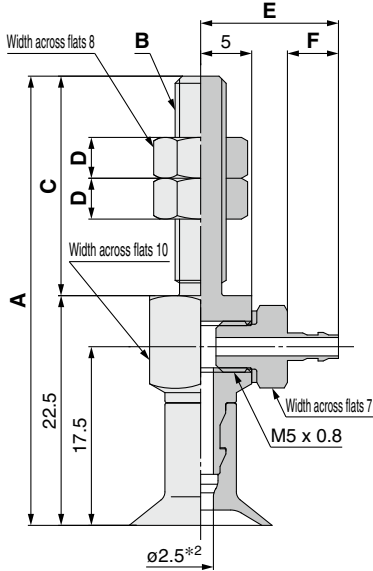
		Model				C	D	E	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread					
ZP	R	10 13 16	UT	N S U F GN GS	04	B4 B5	4	17.5	8.2	$\varnothing 2.5$
					06		6	18.3	10.4	$\varnothing 4$

\*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 adapter/barb fitting  $\varnothing 10$  to  $\varnothing 16$**



<b>Construction</b>	p. 115
<b>Adapter Assembly</b>	p. 123

ZPY **10** UT **N** - **N4** - **A5**

①  
②  
③ Vacuum inlet (Barb fitting)

④ Connection thread (Male thread)

<b>A5</b>	M5 x 0.8
<b>A6</b>	M6 x 1

<b>N4</b>	For $\varnothing 4$ nylon tubing	M-5AN-4
<b>N6</b>	For $\varnothing 6$ nylon tubing	M-5AN-6
<b>U4</b>	For $\varnothing 4$ soft tubing	M-5AU-4
<b>U6</b>	For $\varnothing 6$ soft tubing	M-5AU-6

Model						A	B	C	D	
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread					
ZP	Y	10 13 16	UT	N	N4	A5	44	M5 x 0.8	21.5	4
				S	N6					
				F	U4	A6	49.5	M6 x 1	27	4
				GN	U6					
GS										

**Dimensions Per Vacuum Inlet**

Model						E	F	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	10 13 16	UT	N	N4	13.5	5	$\varnothing 1.8$
				S	U4			
				F	N6	15.5	7	$\varnothing 2.5$
				GN				
				GS				

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

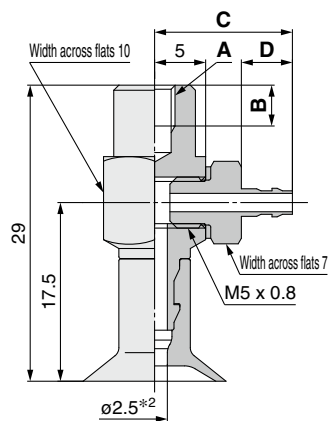
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

With adapter/barb fitting  $\varnothing 10$  to  $\varnothing 16$



Construction p. 115  
Adapter Assembly p. 123

ZPY **10** UT **N** - **N4** - **B4**

①

②

④

Vacuum inlet  
(Barb fitting)

Connection thread  
(Female thread)

<b>N4</b>	For $\varnothing 4$ nylon tubing	M-5AN-4
<b>N6</b>	For $\varnothing 6$ nylon tubing	M-5AN-6
<b>U4</b>	For $\varnothing 4$ soft tubing	M-5AU-4
<b>U6</b>	For $\varnothing 6$ soft tubing	M-5AU-6

<b>B4</b>	M4 x 0.7
<b>B5</b>	M5 x 0.8

	Vacuum inlet direction	Model				A	B	
		① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet			④ Connection thread
ZP	Y	10 13 16	UT	N S U F GN GS	N4 N6 U4 U6	B4	M4 x 0.7	4
						B5	M5 x 0.8	5

### Dimensions Per Vacuum Inlet

	Vacuum inlet direction	Model				C	D	Fitting part min. hole size	
		① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet				④ Connection thread
ZP	Y	10 13 16	UT	N S U F GN GS	N4 U4	B4 B5	13.5	5	$\varnothing 1.8$
					N6 U6		15.5	7	$\varnothing 2.5$

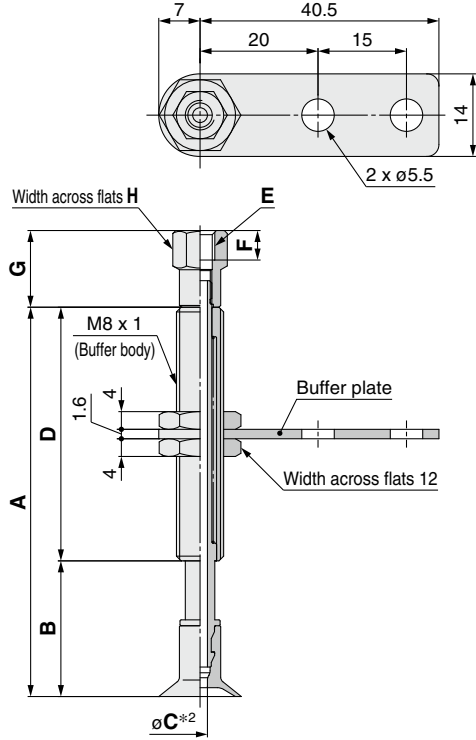
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

## Dimensions/Models

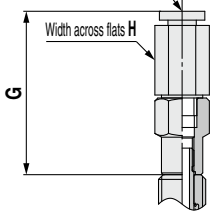
### With buffer $\varnothing 10$ to $\varnothing 16$

The drawings show the type with a buffer plate.

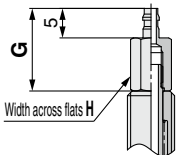


#### Vacuum inlet: One-touch fitting

Applicable tubing O.D.  $\varnothing J$



#### Vacuum inlet: Barb fitting



Construction	p. 116
Buffer Assembly	p. 124

ZPT **10** UT **N** **J** **6** - **B3** - **A8**

① ② ④ ⑥

**Buffer specification** ③

<b>J</b>	Rotating
<b>K</b>	Non-rotating
<b>JN</b>	Rotating (Without buffer plate)
<b>KN</b>	Non-rotating (Without buffer plate)

⑥ **Connection thread (Male thread)**

<b>A8</b>	M8 x 1
-----------	--------

⑤ **Vacuum inlet**

<b>B3</b>	M3 x 0.5	Female thread	
<b>B5</b>	M5 x 0.8	Female thread	
<b>04</b>	$\varnothing 4$	One-touch fitting	KQ2H04-M5N
<b>06</b>	$\varnothing 6$	One-touch fitting	KQ2H06-M5N
<b>N4</b>	For $\varnothing 4$ nylon tubing	Barb fitting	
<b>U4</b>	For $\varnothing 4$ soft tubing	Barb fitting	

		Model						A	B	C*2	D
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	UT	N S U F GN GS	J K JN KN	6	B3 B5 04 06 N4 U4	A8	33	18	J: 2.5 K: 2	15
					10			66	23		43
					15			71	28		
					25			81	38		

#### Dimensions Per Vacuum Inlet: Female Thread

		Model						E	F	G	H
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	UT	N S U F GN GS	J K JN KN	6 10 15 25	B3	A8	M3 x 0.5	3	11	6
						B5		M5 x 0.8	5	13	8

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

		Model						G	H	J	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	UT	N S U F GN GS	J K JN KN	6 10 15 25	04	A8	27.7	8	4	$\varnothing 2.5$
						06			10	6	

#### Dimensions Per Vacuum Inlet: Barb Fitting

		Model						G	H	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread			
ZP	T	UT	N S U F GN GS	J K JN KN	6 10 15 25	N4	A8	14	6	$\varnothing 1.8$
						U4				

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

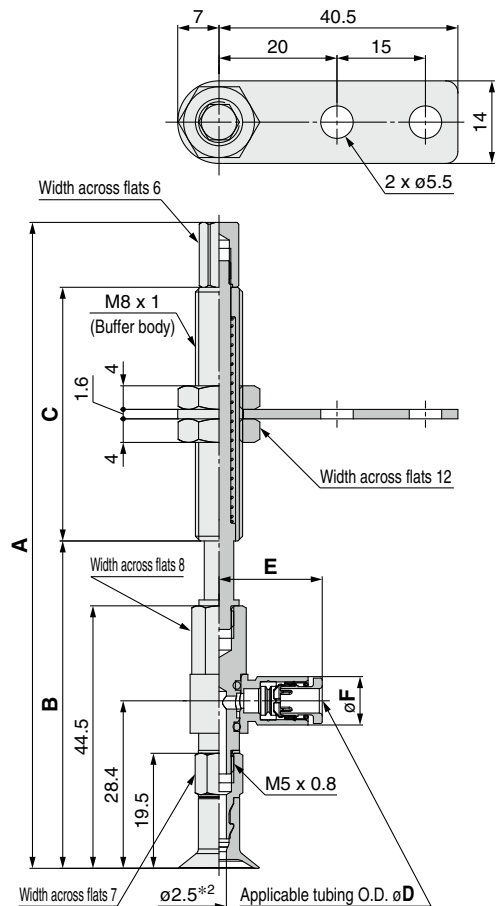
Mounting Bracket Assembly

Precautions

## Dimensions/Models

With buffer/One-touch fitting  $\varnothing 10$  to  $\varnothing 16$

The drawings show the type with a buffer plate.



ZPR **10** UT **N** **J** **6** - **04** - **A8**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
		<b>Buffer specification</b>			
<b>J</b>	Rotating				
<b>K</b>	Non-rotating				
<b>JN</b>	Rotating (Without buffer plate)				
<b>KN</b>	Non-rotating (Without buffer plate)				

**6** Connection thread  
(Male thread)

**A8** M8 x 1

**5** Vacuum inlet  
(One-touch fitting)

<b>04</b>	$\varnothing 4$
<b>06</b>	$\varnothing 6$

		Model						A	B	C	
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> *1 Material	<b>3</b> Buffer spec.	<b>4</b> Buffer stroke	<b>5</b> Vacuum inlet	<b>6</b> Connection thread				
ZP	R	10 13 16	UT	N S U F GN GS	J K JN KN	6	04 06	A8	78.5	52.5	15
						10			109.5	55.5	43
						15			114.5	60.5	
						25			124.5	70.5	

### Dimensions Per Vacuum Inlet

		Model						D	E	F	Fitting part min. hole size	
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> *1 Material	<b>3</b> Buffer spec.	<b>4</b> Buffer stroke	<b>5</b> Vacuum inlet	<b>6</b> Connection thread					
ZP	R	10 13 16	UT	N S U F GN GS	J K JN KN	6	04 06	A8	4	17.5	8.2	$\varnothing 2.5$
						10 15 25			6	18.3	10.4	$\varnothing 4$

\*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. 116

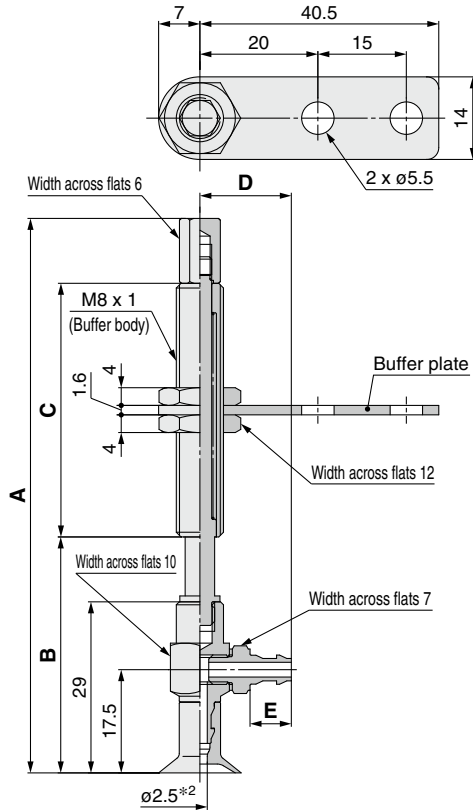
Buffer Assembly p. 125



## Dimensions/Models

### With buffer/barb fitting $\varnothing 10$ to $\varnothing 16$

The drawings show the type with a buffer plate.



Construction	p. 116
Buffer Assembly	p. 126

ZPY **10** UT **N** **J** **6** - **N4** - **A8**

**Buffer specification**

<b>J</b>	Rotating
<b>K</b>	Non-rotating
<b>JN</b>	Rotating (Without buffer plate)
<b>KN</b>	Non-rotating (Without buffer plate)

**6 Connection thread (Male thread)**

<b>A8</b>	M8 x 1
-----------	--------

**5 Vacuum inlet (Barb fitting)**

<b>N4</b>	For $\varnothing 4$ nylon tubing	M-5AN-4
<b>N6</b>	For $\varnothing 6$ nylon tubing	M-5AN-6
<b>U4</b>	For $\varnothing 4$ soft tubing	M-5AU-4
<b>U6</b>	For $\varnothing 6$ soft tubing	M-5AU-6

		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	<b>6</b> Connection thread			
ZP	Y	10 13 16	UT	N S U F GN GS	J K JN KN	6	A8	63	37	15
						10		94	40	43
						15		99	45	
						25		109	55	

### Dimensions Per Vacuum Inlet

		Model						D	E	Fitting part min. hole size
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	<b>6</b> Connection thread			
ZP	Y	10 13 16	UT	N S U F GN GS	J K JN KN	6	A8	13.5	5	$\varnothing 1.8$
						10 15 25		N4 U4 N6 U6	15.5	7

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions



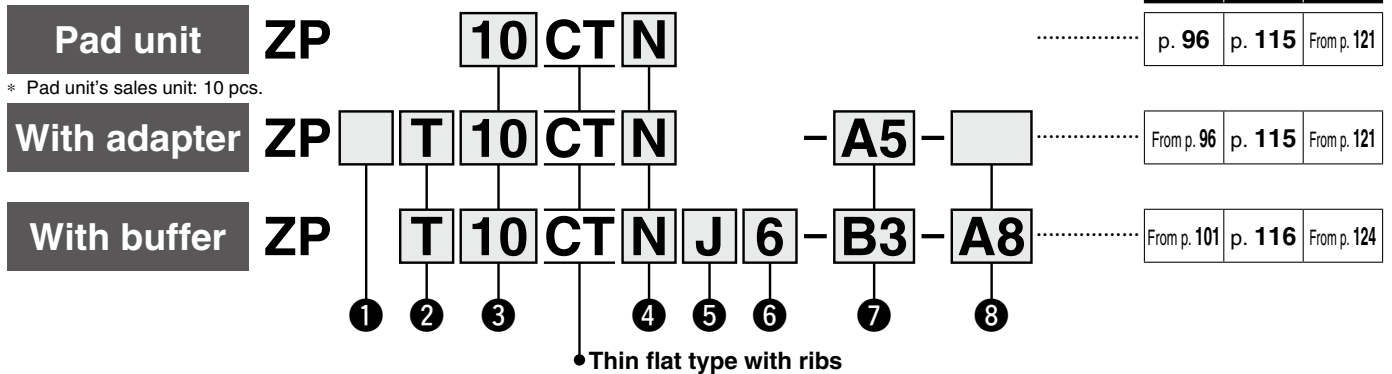
# Basic Pad

## Thin Flat Type with Ribs

# ZP Series



### How to Order



#### ① Adapter material

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

\*1 Only applicable to the pad with adapter (Vacuum inlet direction: Vertical (Option "T"))

#### ② Vacuum inlet direction

Nil	Pad unit
T	Vertical
R	Lateral (With One-touch fitting)
Y	Lateral (With barb fitting)

#### ③ Pad diameter

10	ø10
13	ø13
16	ø16

#### 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
JN	Rotating (Without buffer plate)
KN	Non-rotating (Without buffer plate)

#### ⑥ Buffer stroke

Stroke [mm]	Pad diameter	
	All sizes	
6	●	
10	●	
15	●	
25	●	

#### With adapter

#### ⑦ Vacuum inlet

○: ZP□/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter
			All sizes
Male thread	A5	M5 x 0.8	○
	A6	M6 x 1	○
Female thread	B4	M4 x 0.7	○
	B5	M5 x 0.8	○
One-touch fitting	04	ø4	●
	06	ø6	●
Barb fitting	N4	For ø4 nylon tubing	△
	N6	For ø6 nylon tubing	△
	U4	For ø4 soft tubing	△
	U6	For ø6 soft tubing	△

#### ⑧ Connection thread ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter
			All sizes
Male thread	A5	M5 x 0.8	●△
	A6	M6 x 1	●△
Female thread	B4	M4 x 0.7	●△
	B5	M5 x 0.8	●△

It is not necessary to select a connection thread for ○: ZP□/Vertical. Use the vacuum inlet.

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

#### With buffer

#### ⑦ Vacuum inlet

○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter
			All sizes
Female thread	B3	M3 x 0.5	○
	B5	M5 x 0.8	○
One-touch fitting	04	ø4	○●
	06	ø6	○●
Barb fitting	N4	For ø4 nylon tubing*1	○△
	N6	For ø6 nylon tubing*1	△
	U4	For ø4 soft tubing*2	○△
	U6	For ø6 soft tubing*2	△

\*1 Nylon tube piping

\*2 Soft nylon/Polyurethane tube piping

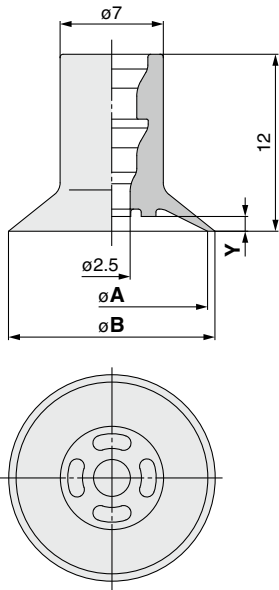
#### ⑧ Connection thread ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter
			All sizes
Male thread	A8	M8 x 1	○●△

**Dimensions/Models**

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



**ZP 10 CT N**  
① ②

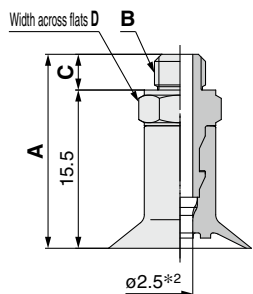
Model				A	B	Y
① Pad dia.	Form	② Material <sup>*1</sup>				
ZP	10	CT	N S U F GN GS	10	11	0.8
	13			14	1	
	16			17		

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

Construction p. 115

Mounting Bracket Assembly From p. 121

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



**ZP T 10 CT N - A5**  
① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Male thread)

A5	M5 x 0.8
A6	M6 x 1

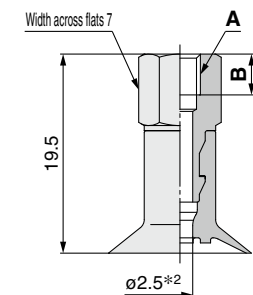
Model						A	B	C	D	
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material <sup>*1</sup>	④ Vacuum inlet					
ZP	Nil S	T	10 13 16	CT	N S U F GN GS	A5	19	M5 x 0.8	3.5	7
						A6	20	M6 x 1	4.5	8

\*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. 115

Adapter Assembly p. 121



**ZP T 10 CT N - B4**  
① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

Model						A	B	
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material <sup>*1</sup>	④ Vacuum inlet			
ZP	Nil S	T	10 13 16	CT	N S U F GN GS	B4	M4 x 0.7	4
						B5	M5 x 0.8	5

\*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. 115

Adapter Assembly p. 121

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

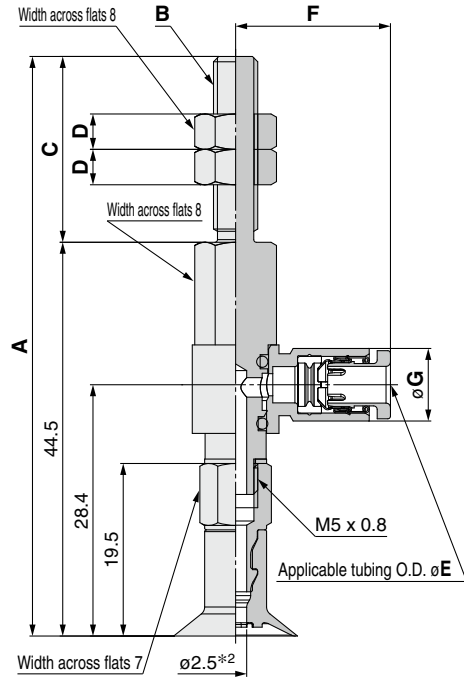
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

**With adapter/One-touch fitting**  $\varnothing 10$  to  $\varnothing 16$



**Construction** p. 115  
**Adapter Assembly** p. 122

ZPR **10** CT **N** - **04** - **A5**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b> Connection thread (Male thread)
<b>04</b>	$\varnothing 4$		<b>A5</b> M5 x 0.8
<b>06</b>	$\varnothing 6$		<b>A6</b> M6 x 1

Model						A	B	C	D
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> *1 Material	<b>3</b> Vacuum inlet	<b>4</b> Connection thread				
ZP	R	CT	N S U F GN GS	04	A5	65.5	M5 x 0.8	21	4
					A6	70.5	M6 x 1	26	4
				06					

### Dimensions Per Vacuum Inlet

Model						E	F	G	Fitting part min. hole size
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> *1 Material	<b>3</b> Vacuum inlet	<b>4</b> Connection thread				
ZP	R	CT	N S U F GN GS	04	A5	4	17.5	8.2	$\varnothing 2.5$
					A6	6	18.3	10.4	$\varnothing 4$

\*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 adapter/One-touch fitting  $\varnothing 10$  to  $\varnothing 16$**

ZPR **10** CT **N** - **04** - **B4**

①

②

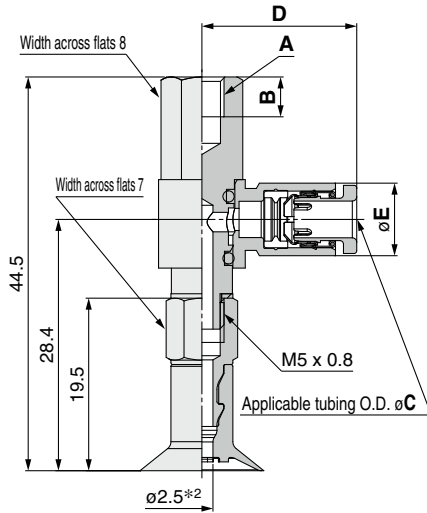
④

④ Connection thread  
(Female thread)

Vacuum inlet  
(One-touch fitting)

04	$\varnothing 4$
06	$\varnothing 6$

B4	M4 x 0.7
B5	M5 x 0.8



Construction	p. 115
Adapter Assembly	p. 122

Model						A	B	
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread			
ZP	R	10 13 16	CT	N S U F GN GS	04	B4	M4 x 0.7	4.5
					06	B5	M5 x 0.8	5.5

**Dimensions Per Vacuum Inlet**

Model						C	D	E	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread					
ZP	R	10 13 16	CT	N S U F GN GS	04	B4 B5	4	17.5	8.2	$\varnothing 2.5$
					06		6	18.3	10.4	$\varnothing 4$

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

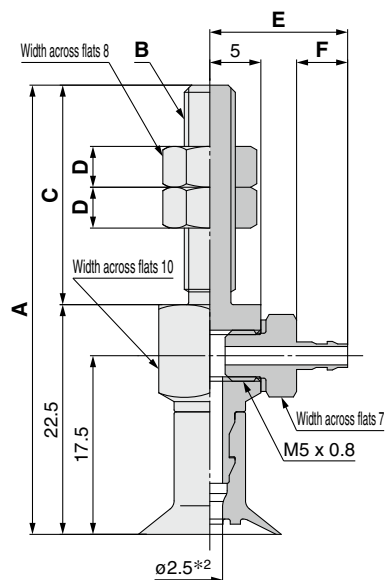
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

With adapter/barb fitting  $\varnothing 10$  to  $\varnothing 16$



Construction	p. 115
Adapter Assembly	p. 123

ZPY **10** CT **N** - **N4** - **A5**

①

②

④

Vacuum inlet  
(Barb fitting) ③

④ Connection thread  
(Male thread)

A5	M5 x 0.8
A6	M6 x 1

<b>N4</b>	For $\varnothing 4$ nylon tubing	M-5AN-4
<b>N6</b>	For $\varnothing 6$ nylon tubing	M-5AN-6
<b>U4</b>	For $\varnothing 4$ soft tubing	M-5AU-4
<b>U6</b>	For $\varnothing 6$ soft tubing	M-5AU-6

Model						A	B	C	D	
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread					
ZP	Y	10 13 16	CT	N	N4	A5	44	M5 x 0.8	21.5	4
				S	N6					
				F	U4	A6	49.5	M6 x 1	27	4
				GN	U6					
				GS						

### Dimensions Per Vacuum Inlet

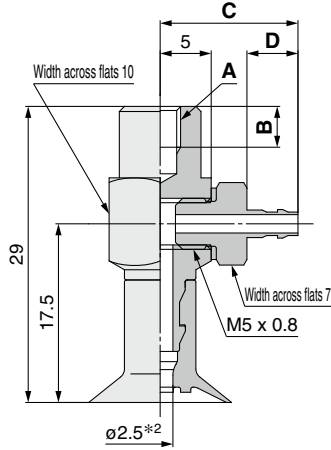
Model						E	F	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	10 13 16	CT	N	N4	13.5	5	$\varnothing 1.8$
				S	U4			
				F	U6	15.5	7	$\varnothing 2.5$
				GN				
				GS				

\*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/barb fitting  $\varnothing 10$  to  $\varnothing 16$**



**Construction** p. 115  
**Adapter Assembly** p. 123

ZPY **10** CT **N** - **N4** - **B4**

①  
②  
③ Vacuum inlet (Barb fitting)

④ Connection thread (Female thread)

<b>B4</b>	M4 x 0.7
<b>B5</b>	M5 x 0.8

<b>N4</b>	For $\varnothing 4$ nylon tubing	M-5AN-4
<b>N6</b>	For $\varnothing 6$ nylon tubing	M-5AN-6
<b>U4</b>	For $\varnothing 4$ soft tubing	M-5AU-4
<b>U6</b>	For $\varnothing 6$ soft tubing	M-5AU-6

		Model				A	B	
	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet			④ Connection thread
ZP	Y	10 13 16	CT	N S U F GN GS	N4 N6 U4 U6	B4	M4 x 0.7	4
						B5	M5 x 0.8	5

**Dimensions Per Vacuum Inlet**

		Model				C	D	Fitting part min. hole size	
	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet				④ Connection thread
ZP	Y	10 13 16	CT	N S U F GN GS	N4 U4	B4 B5	13.5	5	$\varnothing 1.8$
					N6 U6		15.5	7	$\varnothing 2.5$

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

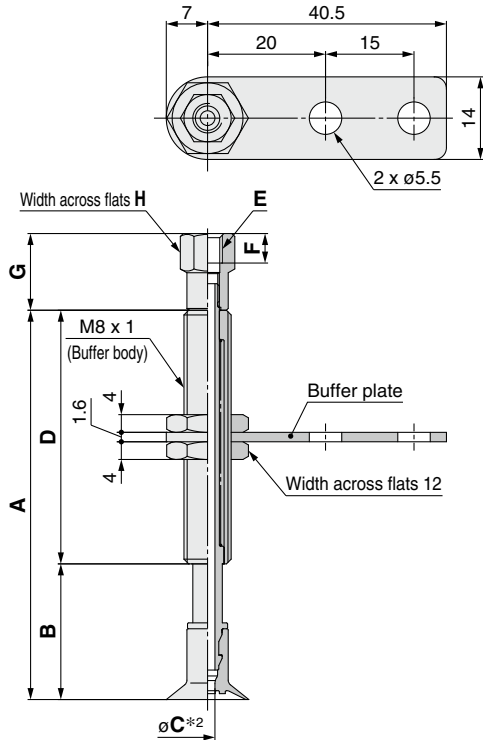
Mounting Bracket Assembly

Precautions

**Dimensions/Models**

**With buffer ø10 to ø16**

The drawings show the type with a buffer plate.



**ZPT** **10** **CT** **N** **J** **6** - **B3** - **A8**

**Buffer specification**

<b>J</b>	Rotating
<b>K</b>	Non-rotating
<b>JN</b>	Rotating (Without buffer plate)
<b>KN</b>	Non-rotating (Without buffer plate)

**6 Connection thread (Male thread)**

<b>A8</b>	M8 x 1
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**5 Vacuum inlet**

<b>B3</b>	M3 x 0.5	Female thread	
<b>B5</b>	M5 x 0.8	Female thread	
<b>04</b>	ø4	One-touch fitting	KQ2H04-M5N
<b>06</b>	ø6	One-touch fitting	KQ2H06-M5N
<b>N4</b>	For ø4 nylon tubing	Barb fitting	
<b>U4</b>	For ø4 soft tubing	Barb fitting	

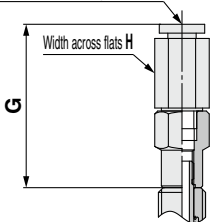
		Model						A	B	C*2	D	
Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread					
ZP	T	10 13 16	CT	N S U F GN GS	J	6	B3	A8	33	18	J: 2.5 K: 2	15
					K	10	B5		66	23		43
					JN	15	04		71	28		
					KN	25	06 N4 U4		81	38		

**Dimensions Per Vacuum Inlet: Female Thread**

		Model						E	F	G	H	
Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread					
ZP	T	10 13 16	CT	N S U F GN GS	J	6	B3	A8	M3 x 0.5	3	11	6
					K	10 15 25	B5		M5 x 0.8	5	13	8

**Vacuum inlet: One-touch fitting**

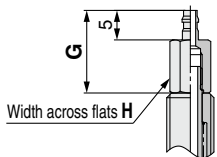
Applicable tubing O.D. øJ



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

		Model						G	H	J	Fitting part min. hole size	
Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread					
ZP	T	10 13 16	CT	N S U F GN GS	J	6	04	A8	27.7	8	4	ø2.5
					K	10 15 25	06			10	6	

**Vacuum inlet: Barb fitting**



**Dimensions Per Vacuum Inlet: Barb Fitting**

		Model						G	H	Fitting part min. hole size	
Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread				
ZP	T	10 13 16	CT	N S U F GN GS	J	6	N4	A8	14	6	ø1.8
					K	10 15 25	U4				

<b>Construction</b>	p. 116
<b>Buffer Assembly</b>	p. 124

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

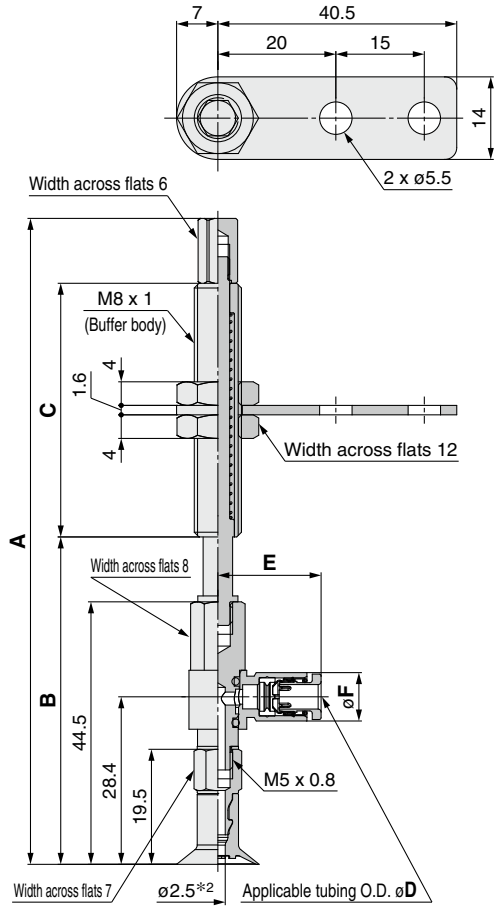
\*2 Indicates the minimum hole size of the adapter or vacuum pad



## Dimensions/Models

### With buffer/One-touch fitting $\varnothing 10$ to $\varnothing 16$

The drawings show the type with a buffer plate.



ZPR **10** CT **N** **J** **6** - **04** - **A8**

#### Buffer specification **3**

<b>J</b>	Rotating
<b>K</b>	Non-rotating
<b>JN</b>	Rotating (Without buffer plate)
<b>KN</b>	Non-rotating (Without buffer plate)

**6** Connection thread  
(Male thread)

<b>A8</b>	M8 x 1
-----------	--------

**5** Vacuum inlet  
(One-touch fitting)

<b>04</b>	$\varnothing 4$
<b>06</b>	$\varnothing 6$

		Model						A	B	C	
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> *1 Material	<b>3</b> Buffer spec.	<b>4</b> Buffer stroke	<b>5</b> Vacuum inlet	<b>6</b> Connection thread				
<b>ZP</b>	<b>R</b>	<b>10</b> <b>13</b> <b>16</b>	<b>CT</b>	<b>N</b> <b>S</b> <b>U</b> <b>F</b> <b>GN</b> <b>GS</b>	<b>J</b> <b>K</b> <b>JN</b> <b>KN</b>	<b>6</b>	<b>04</b> <b>06</b>	<b>A8</b>	78.5	52.5	15
						<b>10</b>			109.5	55.5	43
						<b>15</b>			114.5	60.5	
						<b>25</b>			124.5	70.5	

#### Dimensions Per Vacuum Inlet

		Model						D	E	F	Fitting part min. hole size	
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> *1 Material	<b>3</b> Buffer spec.	<b>4</b> Buffer stroke	<b>5</b> Vacuum inlet	<b>6</b> Connection thread					
<b>ZP</b>	<b>R</b>	<b>10</b> <b>13</b> <b>16</b>	<b>CT</b>	<b>N</b> <b>S</b> <b>U</b> <b>F</b> <b>GN</b> <b>GS</b>	<b>J</b> <b>K</b> <b>JN</b> <b>KN</b>	<b>6</b>	<b>04</b> <b>06</b>	<b>A8</b>	4	17.5	8.2	$\varnothing 2.5$
						<b>10</b> <b>15</b> <b>25</b>			6	18.3	10.4	$\varnothing 4$

\*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. 116

Buffer Assembly p. 125

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

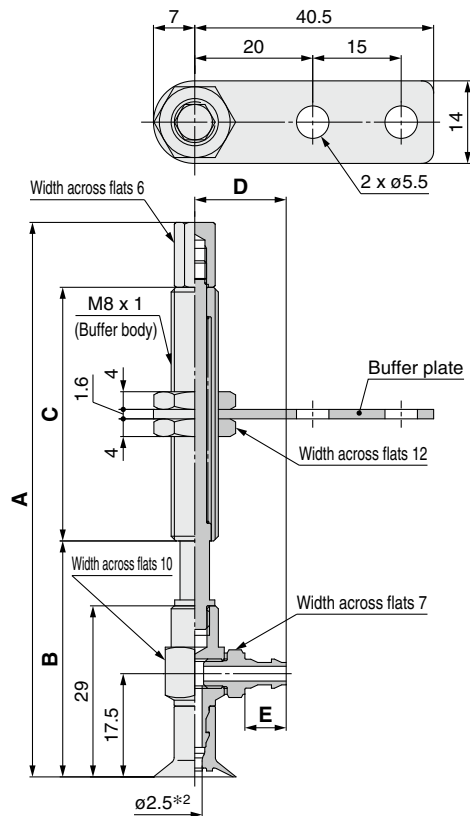
Mounting Bracket Assembly

Precautions

## Dimensions/Models

### With buffer/barb fitting $\varnothing 10$ to $\varnothing 16$

The drawings show the type with a buffer plate.



**Construction** p. 116  
**Buffer Assembly** p. 126

ZPY **10** CT **N** **J** **6** - **N4** - **A8**

#### Buffer specification **3**

<b>J</b>	Rotating
<b>K</b>	Non-rotating
<b>JN</b>	Rotating (Without buffer plate)
<b>KN</b>	Non-rotating (Without buffer plate)

**6** Connection thread  
(Male thread)

<b>A8</b>	M8 x 1
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**5** Vacuum inlet  
(Barb fitting)

<b>N4</b>	For $\varnothing 4$ nylon tubing	M-5AN-4
<b>N6</b>	For $\varnothing 6$ nylon tubing	M-5AN-6
<b>U4</b>	For $\varnothing 4$ soft tubing	M-5AU-4
<b>U6</b>	For $\varnothing 6$ soft tubing	M-5AU-6

		Model						A	B	C	
	Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> *1 Material	<b>3</b> Buffer spec.	<b>4</b> Buffer stroke	<b>5</b> Vacuum inlet				<b>6</b> Connection thread
<b>ZP</b>	<b>Y</b>	<b>10</b> <b>13</b> <b>16</b>	<b>CT</b>	<b>N</b> <b>S</b> <b>U</b> <b>F</b> <b>GN</b> <b>GS</b>	<b>J</b> <b>K</b> <b>JN</b> <b>KN</b>	<b>6</b>	<b>N4</b> <b>N6</b> <b>U4</b> <b>U6</b>	<b>A8</b>	63	37	15
						<b>10</b>			94	40	43
						<b>15</b>			99	45	
						<b>25</b>			109	55	

#### Dimensions Per Vacuum Inlet

		Model						D	E	Fitting part min. hole size	
	Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> *1 Material	<b>3</b> Buffer spec.	<b>4</b> Buffer stroke	<b>5</b> Vacuum inlet				<b>6</b> Connection thread
<b>ZP</b>	<b>Y</b>	<b>10</b> <b>13</b> <b>16</b>	<b>CT</b>	<b>N</b> <b>S</b> <b>U</b> <b>F</b> <b>GN</b> <b>GS</b>	<b>J</b> <b>K</b> <b>JN</b> <b>KN</b>	<b>6</b>	<b>N4</b> <b>U4</b>	<b>A8</b>	13.5	5	$\varnothing 1.8$
						<b>10</b> <b>15</b> <b>25</b>			<b>N6</b> <b>U6</b>	15.5	7

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

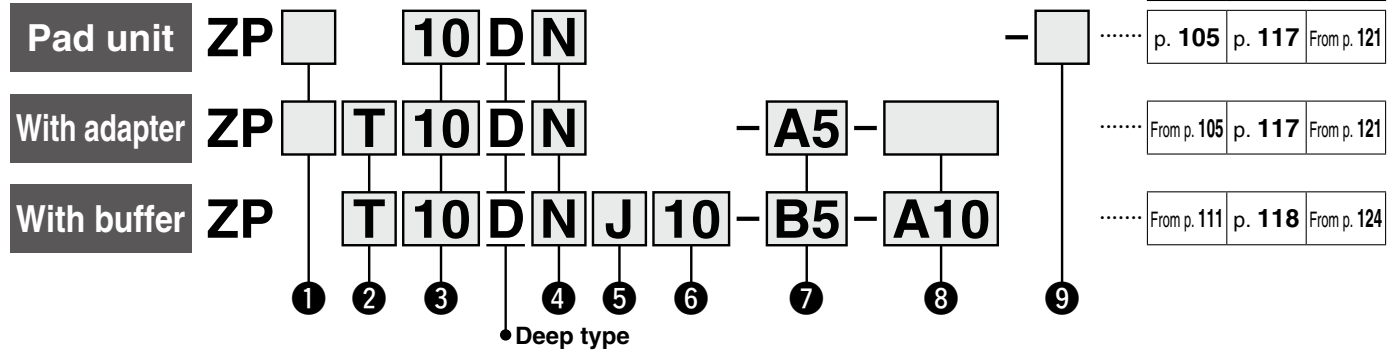
\*2 Indicates the minimum hole size of the adapter or vacuum pad



# Basic Pad Deep Type ZP Series



## How to Order



### 1 Adapter (Lock ring) material

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

\*1 Only applicable to the pad unit (with lock ring) and the pad with adapter (Vacuum inlet direction: Vertical (Option "T"))

### 2 Vacuum inlet direction

<b>Nil</b>	Pad unit
<b>T</b>	Vertical
<b>R</b>	Lateral (With One-touch fitting)
<b>Y</b>	Lateral (With barb fitting)

### 3 Pad diameter

<b>10</b>	ø10
<b>16</b>	ø16
<b>25</b>	ø25
<b>40</b>	ø40

### 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

\*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>K</b>	Non-rotating

### 6 Buffer stroke

Stroke [mm]	Pad diameter [mm]			
	ø10	ø16	ø25	ø40
<b>10</b>	●	●	●	●
<b>20</b>	●	●	●	●
<b>30</b>	●	●	●	●
<b>40</b>	●	●	●	—
<b>50</b>	●	●	●	●

## With adapter

### 7 Vacuum inlet

○: ZP□T/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]		
			ø10, ø16	ø25	ø40
Female thread	Nil	M3 x 0.5	○ (Connection thread: A5/A6)	○ (Connection thread: A6)	○ (Connection thread: A6)
		M5 x 0.8	—	○ (Connection thread: A8)	○ (Connection thread: A8)
	<b>B5</b>	M5 x 0.8	○	○	—
	<b>B6</b>	M6 x 1	○	○	○
	<b>B8</b>	M8 x 1.25	—	○	○
	<b>B01</b>	Rc1/8	○	○	○
	<b>N01</b> *3	NPT1/8	○	○	○
	<b>T01</b> *3	NPTF1/8	○	○	○
One-touch fitting	<b>04</b>	ø4	●	●	—
	<b>06</b>	ø6	●	●	●
	<b>08</b>	ø8	—	●	●
Barb fitting	<b>N4</b>	For ø4 nylon tubing*1	△	△	—
	<b>N6</b>	For ø6 nylon tubing*1	△	△	△
	<b>U4</b>	For ø4 soft tubing*2	△	△	—
	<b>U6</b>	For ø6 soft tubing*2	△	△	△

\*1 Nylon tube piping \*2 Soft nylon/Polyurethane tube piping

\*3 Not compatible with stainless steel materials

### 8 Connection thread

○: ZP□T/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]		
			ø10, ø16	ø25	ø40
Male thread	<b>A5</b>	M5 x 0.8	○*1●△	—	—
	<b>A6</b>	M6 x 1	○*1●△	○*1●△	○*1●△
	<b>A8</b>	M8 x 1	—	○*1●△	○*1●△
Female thread	<b>B5</b>	M5 x 0.8	●△	●△	—
	<b>B6</b>	M6 x 1	●△	●△	●△
	<b>B8</b>	M8 x 1.25	—	●△	●△

\*1 ○: ZP□T/Vertical comes with a vacuum inlet (female thread).

## With buffer

### 7 Vacuum inlet

○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]		
			ø10, ø16	ø25	ø40
Female thread	<b>B5</b>	M5 x 0.8	○	○	○
	<b>B01</b>	Rc1/8	—	—	○
	<b>N01</b>	NPT1/8	—	—	○
	<b>T01</b>	NPTF1/8	—	—	○
One-touch fitting	<b>04</b>	ø4	○●	○●	—
	<b>06</b>	ø6	○●	○●	○●
	<b>08</b>	ø8	—	●	○●
Barb fitting	<b>N4</b>	For ø4 nylon tubing*1	△	△	—
	<b>N6</b>	For ø6 nylon tubing*1	○△	○△	○△
	<b>U4</b>	For ø4 soft tubing*2	△	△	—
<b>U6</b>	For ø6 soft tubing*2	○△	○△	○△	

\*1 Nylon tube piping

\*2 Soft nylon/Polyurethane tube piping

### 8 Connection thread

○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]		
			ø10, ø16	ø25	ø40
Male thread	<b>A10</b>	M10 x 1	○●△	○●△	—
	<b>A14</b>	M14 x 1	—	—	○●△

### 9 Lock ring

Symbol	Pad diameter
<b>Nil</b>	All sizes
<b>X19</b>	With lock ring
<b>X19</b>	Without lock ring

### Lock ring unit

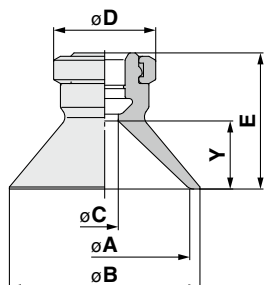
Part no.	Pad diameter [mm]
<b>ZP□L1</b>	ø10, ø16
<b>ZP□L2</b>	ø25
<b>ZP□L3</b>	ø40

□: Nil/Brass S/Stainless steel

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

## Dimensions/Models

Single unit  $\varnothing 10$  to  $\varnothing 40$



Construction p. 117

Mounting Bracket Assembly From p. 121

ZP   10 D N  
1 2 3

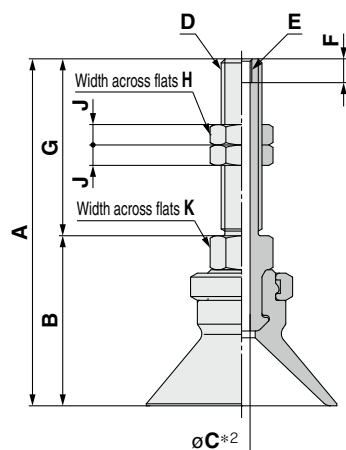
### 1 Lock ring material

Nil	Brass
S	Stainless steel (Stainless steel 304)

ZP	1 Lock ring material	2 Pad dia.	Form	3 Material	A	B	C	D	E	Y
					Nil	10	D	N S U F GN GS	10	12
S	16	18	16	7						
	25	28	15	20	10					
	40	43	7	18	29	17				

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

With adapter  $\varnothing 10$  to  $\varnothing 40$



Construction p. 117

Adapter Assembly p. 121

ZP   T 10 D N - A5  
1 2 3 4

### 1 Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

### 4 Connection thread (Male thread)

A5	M5 x 0.8 (M3 x 0.5 With female thread)
A6	M6 x 1 (M3 x 0.5 With female thread)
A8	M8 x 1 (M5 x 0.8 With female thread)

ZP	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material	4 Connection thread	A	B	C*2	D	E	F	G	H	J	K
							Nil	T	10	D	N S U F GN GS	A5	41	20	2.5	M5 x 0.8
S	16	21														
	10	20														
	16	21	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4			8				
	25	25														
	40	35.5	4	M8 x 1	M5 x 0.8	5	16	12	4			12				
	25	30														
	40	35.5	4.2													

\*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

### Recommended Gasket Part Nos.

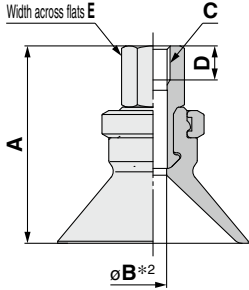
Part no.	D vacuum inlet (Male thread)
WCS5X0.8	M5 x 0.8
WCS6X1	M6 x 1
WCS8X1	M8 x 1

Dimensions/Models

**With adapter**  $\varnothing 10$  to  $\varnothing 40$

ZP   T 10 D N - B5

1   
 2   
 3   
 4



Construction	p. 117
Adapter Assembly	p. 121

**1 Adapter (Lock ring) material**

Nil	Brass
S	Stainless steel (Stainless steel 304)

**4 Vacuum inlet (Female thread)**

B5	M5 x 0.8
B6	M6 x 1
B8	M8 x 1.25
B01	Rc1/8
N01*1	NPT1/8
T01*1	NPTF1/8

\*1 Not compatible with stainless steel materials

	Model				A	B*2	C	D	E	
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	3 Form						4 Material *1
<b>ZP</b>	<b>Nil</b> <b>S</b>	<b>T</b>	<b>D</b>	<b>N</b> <b>S</b> <b>U</b> <b>F</b> <b>GN</b> <b>GS</b>	<b>B5</b>	10	24	M5 x 0.8	5	8
						16	25			
						25	29			
					<b>B6</b>	10	24	M6 x 1	6	8
						16	25			
						25	29			
	<b>B8</b>	40	42.5	M8 x 1.25	8	12				
		25	35							
		40	42.5							
		10	30							
	<b>B01</b> <b>N01*3</b> <b>T01*3</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	12				
							16	31		
							25	35		
							40	42.5		

\*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

\*3 Not compatible with stainless steel materials

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

**Dimensions/Models**

**With adapter/One-touch fitting  $\varnothing 10$  to  $\varnothing 40$**

ZPR **10** **D** **N** - **04** - **A5**

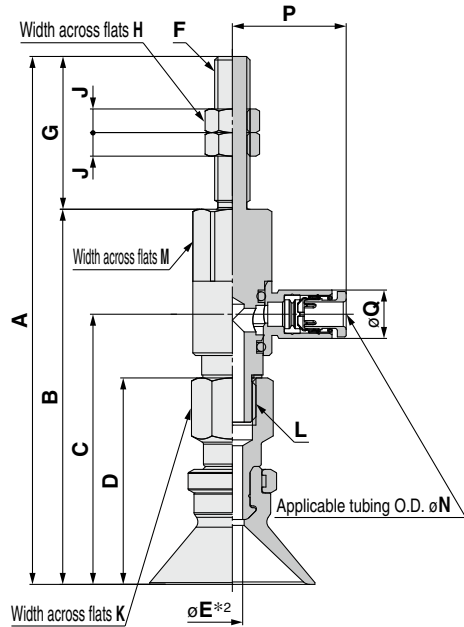
① ②

④ Connection thread  
(Male thread)

Vacuum inlet ③  
(One-touch fitting)

04	$\varnothing 4$
06	$\varnothing 6$
08	$\varnothing 8$

A5	M5 x 0.8
A6	M6 x 1
A8	M8 x 1



Construction	p. 117
Adapter Assembly	p. 122

		Model				A	B	C	D	*2 E	F	G	H	J	K	L	
	Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread											
ZP	R	10	D	N S U F GN GS	04	A5	70	49	32.9	24	2.5	M5 x 0.8	21	8	4	8	M5 x 0.8
		71					50	33.9	25								
		16				A6	75	49	32.9	24	2.5	M6 x 1	26	8	4	8	M5 x 0.8
		76					50	33.9	25								
		10				A8	89.5	63.6	45.8	35	3.5	M8 x 1	16	12	4	12	M8 x 1.25
		25					97	71.1	53.3	42.5							
		16			79.5		63.6	45.8	35	3.5							
		25			87		71.1	53.3	42.5	4							
		40															
		40															

**Dimensions Per Vacuum Inlet**

		Model				M	N	P	Q	Fitting part min. hole size	
	Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread					
ZP	R	10	D	N S U F GN GS	04	A5	8	4	17.5	8.2	$\varnothing 2.5$
		06			A6	6		18.3	10.4	$\varnothing 4$	
		16			A6	12	4	19.3	8.2	$\varnothing 3$	
		06				6	20.5	10.4	$\varnothing 4.5$		
		25			A8	16	8	23.5	13.2	$\varnothing 6$	
		08				12	6	20.5	10.4	$\varnothing 4.5$	
		06				16	8	23.5	13.2	$\varnothing 6$	
		08				12	6	20.5	10.4	$\varnothing 4.5$	

\*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/One-touch fitting  $\phi 10$  to  $\phi 40$**

ZPR **10** D **N** - **04** - **B5**

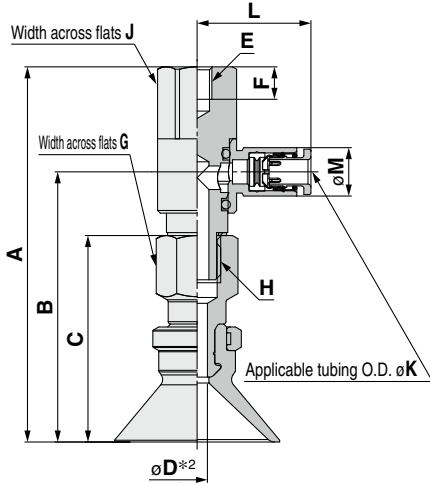
① ②

Vacuum inlet  
(One-touch fitting)

04	$\phi 4$
06	$\phi 6$
08	$\phi 8$

④ Connection thread  
(Female thread)

B5	M5 x 0.8
B6	M6 x 1
B8	M8 x 1.25



Construction p. 117  
Adapter Assembly p. 122

		Model				A	B	C	*2 D	E	F	G	H				
	Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread											
ZP	R	10	D	N S U F GN GS	04 06 08	B5	49	32.9	24	2.5	M5 x 0.8	5.5	8				
		16					50	33.9	25				12				
		25					63.6	45.8	35				12				
		10				D	N S U F GN GS	04 06 08	B6	2.5	49	32.9	24	M6 x 1	6.5	8	8
		16									50	33.9	25				12
		25									63.6	45.8	35				12
	40	D	N S U F GN GS	04 06 08	B8				4	71.1	53.3	42.5	M8 x 1.25	8.5	12	8	
	25									63.6	45.8	35				12	
	40									71.1	53.3	42.5				12	

**Dimensions Per Vacuum Inlet**

		Model				J	K	L	M	Fitting part min. hole size	
	Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread					
ZP	R	10	D	N S U F GN GS	04	B5	8	4	17.5	8.2	$\phi 2.5$
					06	B6		6	18.3	10.4	$\phi 4$
		25			04	B5	12	4	19.3	8.2	$\phi 3$
					06	B6		6	20.5	10.4	$\phi 4.5$
	40	06	B6	12	6	20.5	10.4	$\phi 4.5$			
			08		B8	8	23.5	13.2	$\phi 6$		
		08	B6	16	6	20.5	10.4	$\phi 4.5$			
			B8		8	23.5	13.2	$\phi 6$			

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

**Dimensions/Models**

**With adapter/barb fitting  $\phi 10$  to  $\phi 40$**

ZPY **10** D **N** - **N4** - **A5**

①

②

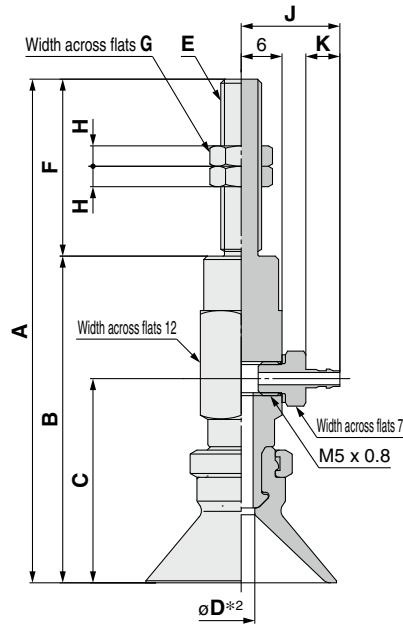
④

**Connection thread  
(Male thread)**

**Vacuum inlet ③  
(Barb fitting)**

<b>N4</b>	For $\phi 4$ nylon tubing	M-5AN-4
<b>N6</b>	For $\phi 6$ nylon tubing	M-5AN-6
<b>U4</b>	For $\phi 4$ soft tubing	M-5AU-4
<b>U6</b>	For $\phi 6$ soft tubing	M-5AU-6

<b>A5</b>	M5 x 0.8
<b>A6</b>	M6 x 1
<b>A8</b>	M8 x 1



**Construction** p. 117  
**Adapter Assembly** p. 123

		Model				A	B	C	D*2	E	F	G	H			
	Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread										
ZP	Y	10	D	N S U F GN GS	N4 N6 U4 U6	A5	62	41	25	2.5	M5 x 0.8	21	8	4		
		16					63	42	26							
		10					67	41	25							
		16					68	42	26							
		25					74	48	30							
		40					83	57	39							
		25				M6 x 1	26	8	4							
		40								M8 x 1	16	12	4			
		25												64	48	30
		40												73	57	39

**Dimensions Per Vacuum Inlet**

		Model				J	K	Fitting part min. hole size	
	Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	10	D	N S U F GN GS	N4 U4	A5 A6	14.5	5	$\phi 1.8$
		16			N6 U6		16.5	7	$\phi 2.5$
		25			N6 U6	A6 A8	16.5	7	$\phi 2.5$

\*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/barb fitting  $\varnothing 10$  to  $\varnothing 40$

ZPY 10 D N - N4 - B5

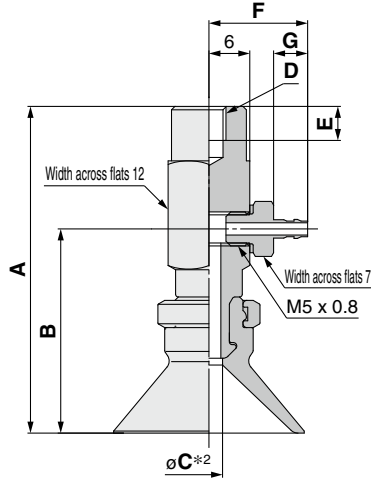
① ②

Vacuum inlet ③  
(Barb fitting)

④ Connection thread  
(Female thread)

B5	M5 x 0.8
B6	M6 x 1
B8	M8 x 1.25

N4	For $\varnothing 4$ nylon tubing	M-5AN-4
N6	For $\varnothing 6$ nylon tubing	M-5AN-6
U4	For $\varnothing 4$ soft tubing	M-5AU-4
U6	For $\varnothing 6$ soft tubing	M-5AU-6



Construction	p. 117
Adapter Assembly	p. 123

		Model				A	B	C*2	D	E		
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread							
ZP	Y	D	N S U F GN GS	N4 N6 U4 U6	B5	41	25	2.5	M5 x 0.8	5		
						42	26					
						48	30					
					B6	41	25	2.5			M6 x 1	6
						42	26					
						48	30					
	B8	57		39	6	M8 x 1.25	8					
		48		30								
		57		39								

Dimensions Per Vacuum Inlet

		Model				F	G	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	D	N S U F GN GS	N4 U4	B4	14.5	5	$\varnothing 1.8$
					B5	16.5	7	$\varnothing 2.5$
				N4 U4	B5	14.5	5	$\varnothing 1.8$
					B6 B8	16.5	7	$\varnothing 2.5$
				N6 U6	B6 B8	16.5	7	$\varnothing 2.5$
					B6 B8	16.5	7	$\varnothing 2.5$

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

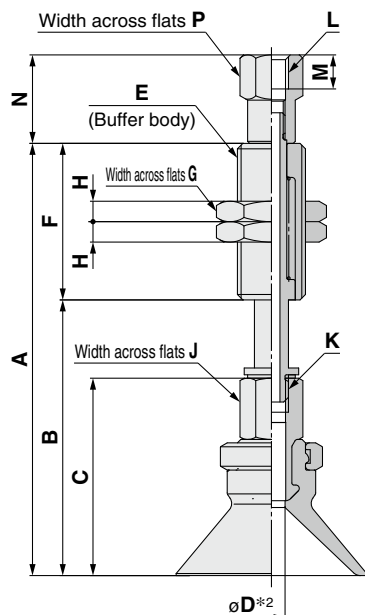
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

With buffer  $\varnothing 10$  to  $\varnothing 40$



Construction	p. 118
Buffer Assembly	p. 124

ZPT **10** D **N** **J** **10** - **B5** - **A10**

① Pad dia. ② Form ③ Buffer spec. ④ Buffer stroke ⑤ Vacuum inlet ⑥ Connection thread (Male thread)

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

<b>A10</b>	M10 x 1
<b>A14</b>	M14 x 1

<b>B5</b>	M5 x 0.8
<b>B01</b>	Rc1/8
<b>N01</b>	NPT1/8
<b>T01</b>	NPTF1/8

		Model						A	B	C	D*2	E	F	G	H	J	K		
	Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread											
ZP	T	10	D	N S U F G N S	J K	10	B5	A10	58.5	35.5	24	J: 2.5 K: 2	M10 x 1	23	14	3	8	M5 x 0.8	
						20			96.5	45.5									
						30			106.5	55.5									
						40			142.5	65.5									
						50			152.5	75.5									
						10			59.5	36.5									
		20				97.5	46.5												
		30				107.5	56.5												
		40				143.5	66.5												
		50				153.5	76.5												
		10				63.5	40.5												
		20				101.5	50.5												
	30	111.5	60.5																
	40	147.5	70.5																
	50	157.5	80.5																
	40	T	40	D	N S U F G N S	J K	10	B5 B01	A14	105	55	42.5	4	M14 x 1	50	19	4	12	M8 x 1.25
							20	N01		115	65								
							30	T01		125	75								
							50	06 08 N6 U6		170	95								

### Dimensions Per Vacuum Inlet: Female Thread

		Model						L	M	N	P	
	Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	10 16 25	D	N S U F G N S	J K	10	B5	A10	M5 x 0.8	5	13	8
						20						
						30						
						40						
						50						
						10						
	20											
	30											
	40											
	50											
	10	B01 N01 T01				A14	Rc1/8 NPT1/8 NPTF1/8	16.5	13			
	20											
30												
40												
50												

\*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

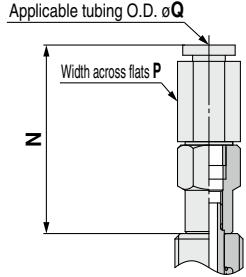
**Dimensions/Models**

**With buffer  $\varnothing 10$  to  $\varnothing 40$**

ZPT **10** **D** **N** **J** **10** - **04** - **A10**

① ② ③ ④ ⑤ ⑥

**Vacuum inlet: One-touch fitting**



**Buffer specification** ③

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

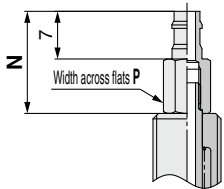
**⑥ Connection thread (Male thread)**

<b>A10</b>	M10 x 1
<b>A14</b>	M14 x 1

**⑤ Vacuum inlet**

		Pad diameter	
		$\varnothing 10$ to $\varnothing 25$	$\varnothing 40$
<b>04</b>	$\varnothing 4$	KQ2H04-M5N	KQ2H06-01NS
<b>06</b>	$\varnothing 6$		
<b>08</b>	$\varnothing 8$	KQ2H06-M5N	KQ2H08-01NS
<b>N6</b>	For $\varnothing 6$ nylon tubing		
<b>U6</b>	For $\varnothing 6$ soft tubing		

**Vacuum inlet: Barb fitting**



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<b>Buffer Assembly</b>	p. 124

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

		Model						N	P	Q	Fitting part min. hole size			
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread							
ZP	T	D	N S U F GN GS	J K	10 20 30 40 50	04	A10	27.7	8	4	$\varnothing 2.5$			
												06		
						10			06	A14			31.8	10
												08		
						20			06	A14			19.9	12
												30		
	50	08												

**Dimensions Per Vacuum Inlet: Barb Fitting**

		Model						N	P	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread			
ZP	T	D	N S U F GN GS	J K	10 20 30 40 50	N6	A10	15	6	$\varnothing 2.5$
						10				
	U6									
					20		N6	12		
	30					U6				
50										

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Ball Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

With buffer/One-touch fitting  $\varnothing 10$  to  $\varnothing 40$

ZPR **10** **D** **N** **J** **10** - **04** - **A10**

① ② ③ ④

Buffer specification ③

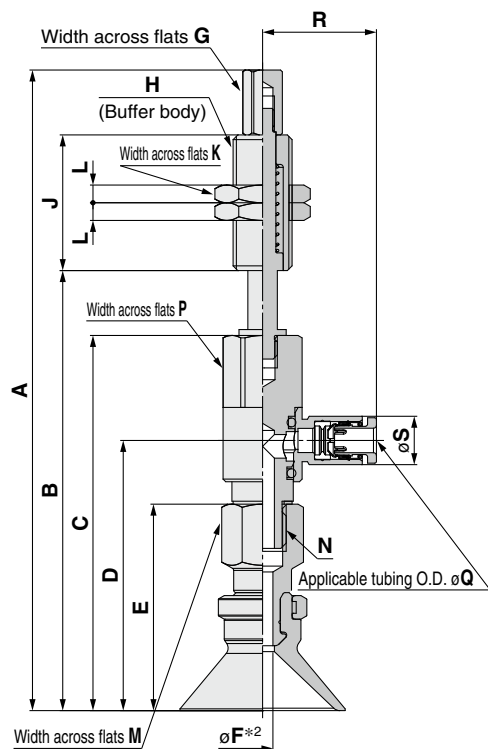
<b>J</b>	Rotating
<b>K</b>	Non-rotating

⑥ Connection thread (Male thread)

<b>A10</b>	M10 x 1
<b>A14</b>	M14 x 1

⑤ Vacuum inlet (One-touch fitting)

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



Construction p. 118

Buffer Assembly p. 125

		Model										A	B	C	D	E	F <sup>*2</sup>	G	H	J	K	L	M	N	
	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread																	
ZP	R	10	D	N S U F GN GS	J K	10	04	A10	94	60	49	32.9	24	2.5	6	M10 x 1	14	3	8	23	M5 x 0.8				
						20			132	70										51					
						30			142	80										77					
						40			178	90										23					
						50			188	100										77					
		10				06	10		95	61	23														
		20					133		71	51															
		30					143		81	50	33.9	25	77												
		40					179		91	23															
		50					189		101	77															
	10	08	10	108.6	74.6	23																			
	20		146.6	84.6	51																				
	30		156.6	94.6	63.6	45.8	35	3.5	77																
	40		192.6	104.6	12	M8 x 1.25																			
	50		202.6	114.6	77																				
	10	06	10	151.1	83.1	75																			
	20		148.1	93.1	50	19	4	12	M8 x 1.25																
	30		158.1	103.1	19	4	12																		
	40		158.1	103.1	19	4	12																		
	50		203.1	123.1	75																				

### Dimensions Per Vacuum Inlet

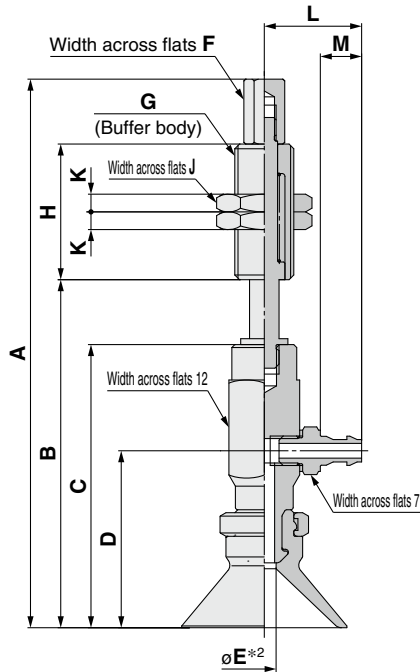
		Model							P	Q	R	S	Fitting part min. hole size				
	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread									
ZP	R	10 16	D	N S U F GN GS	J K	10	04	A10	8	4	17.5	8.2	$\varnothing 2.5$				
						20											
						30											
		40				06	12							4	19.3	8.2	$\varnothing 3$
		50															
		10															
	20	06	16	8	23.5	13.2		$\varnothing 6$									
	30																
	40																
	50	08					12		6	20.5	10.4	$\varnothing 4.5$					
	10																
	20																
30	08	16	8	23.5	13.2	$\varnothing 6$											
40																	
50																	

\*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/barb fitting  $\varnothing 10$  to  $\varnothing 40$



Construction p. 118  
 Buffer Assembly p. 126

ZPY **10** D **N** **J** **10** - **N4** - **A10**

① ② ③ ④ ⑤ ⑥

Buffer specification ③

J	Rotating
K	Non-rotating

⑥ Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet (Barb fitting)

N4	For $\varnothing 4$ nylon tubing	M-5AN-4
N6	For $\varnothing 6$ nylon tubing	M-5AN-6
U4	For $\varnothing 4$ soft tubing	M-5AU-4
U6	For $\varnothing 6$ soft tubing	M-5AU-6

		Model							A	B	C	D	*2 E	F	G	H	J	K
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread											
ZP	Y	D	N S U F GN GS	J K	10	N4 N6 U4 U6	A10	86	52	41	25	2.5	6	M10 x 1	23	14	3	
					20			124	62									
					30			134	72									
					40			170	82									
					50			180	92									
					10			87	53									
					20			125	63									
					30			135	73									
					40			171	83									
					50			181	93									
					10			93	59									
					20			131	69									
	30	141	79															
	40	177	89															
	50	187	99															
	10	137	69															
	20	134	79															
	30	144	89															
	50	189	109															
		40					N6 U6	A14	57	39	6	10	M14 x 1	50	19	4		

Dimensions Per Vacuum Inlet

		Model							L	M	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	Y	D	N S U F GN GS	J K	10	N4 U4	A10	14.5	5	$\varnothing 1.8$	
					20						
					30						
					40						
					50						
					10						N6 U6
	20										
	30										
	50										
	10	N6 U6	A14	16.5	7	$\varnothing 2.5$					
	20										
	30										
50											

\*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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

BelloWS Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

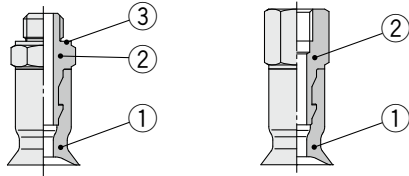
# Basic Pad *ZP Series* Construction

With adapter Flat type:  $\phi 2$  to  $\phi 8$  Bellows type:  $\phi 6$  to  $\phi 8$  Thin flat type/Thin flat type with ribs:  $\phi 10$  to  $\phi 16$

Vacuum inlet direction **Vertical** T Type/ZP□T

ZP□T□-(A5/A6)

ZP□T□-(B4/B5)



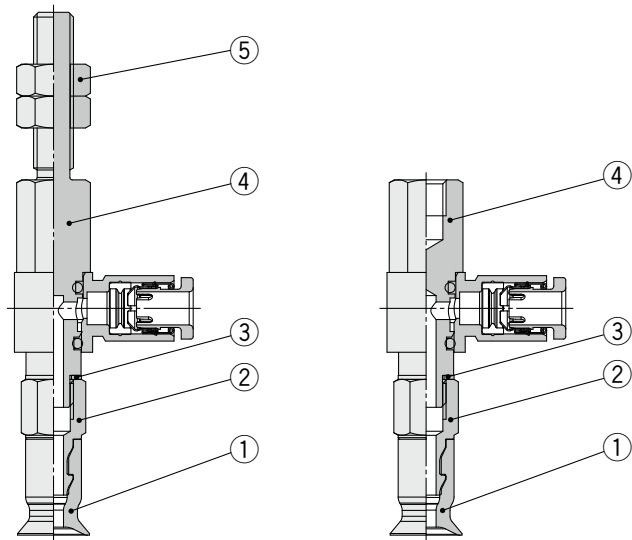
## Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Bellows type Thin flat type Thin flat type with ribs
		Brass (Electroless nickel plating)	ZPT
		Stainless steel	ZPST
2	Adapter	Stainless steel/NBR	ZPT
		Stainless steel/FKM	ZPST
3	Gasket		

Vacuum inlet direction **Lateral** R Type/ZPR

ZPR□-(04/06)-(A5/A6)

ZPR□-(04/06)-(B4/B5)



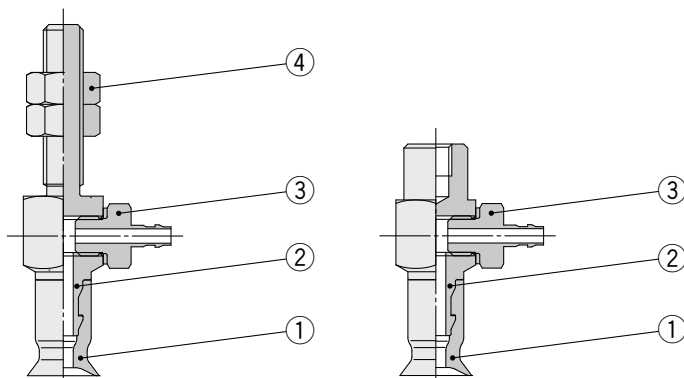
## Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Bellows type Thin flat type Thin flat type with ribs
		Brass (Electroless nickel plating)	
		Stainless steel/NBR	
2	Adapter	Brass (Electroless nickel plating)	
3	Gasket	Stainless steel/NBR	
4	Adapter (With One-touch fitting)	Brass (Electroless nickel plating), PBT, NBR, Stainless steel, POM	
5	Nut	Rolled steel (Zinc chromated)	M5 x 0.8 M6 x 1

Vacuum inlet direction **Lateral** Y Type/ZPY

ZPY□-(N4/N6/U4/U6)-(A5/A6)

ZPY□-(N4/N6/U4/U6)-(B4/B5)



## Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Bellows type Thin flat type Thin flat type with ribs
		Brass (Electroless nickel plating)	
2	Adapter	Brass (Electroless nickel plating)	
3	Barb fitting	—	
4	Nut	Rolled steel (Zinc chromated)	M5 x 0.8 M6 x 1

With buffer

Flat type:  $\phi 2$  to  $\phi 8$

Bellows type:  $\phi 6$  to  $\phi 8$

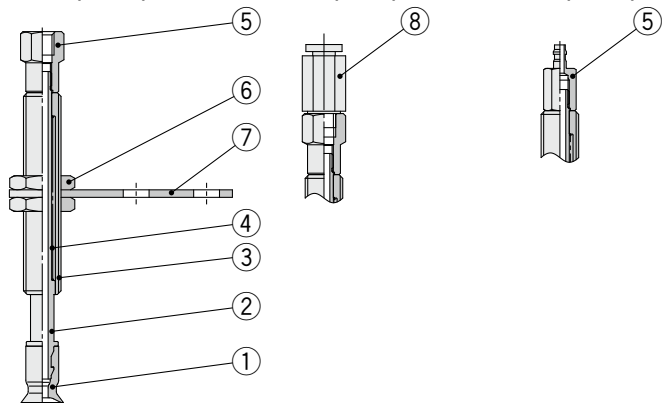
Thin flat type/Thin flat type with ribs:  $\phi 10$  to  $\phi 16$

Vacuum inlet direction **Vertical** T Type/ZPT

ZPT□-(B3/B5)-A8

ZPT□-(04/06)-A8

ZPT□-(N4/U4)-A8

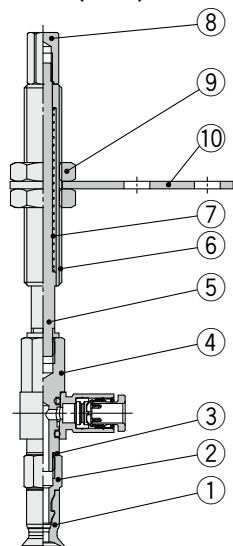


Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Bellows type Thin flat type Thin flat type with ribs
2	Piston rod	Stainless steel	
3	Buffer body	Brass (Electroless nickel plating)	
4	Return spring	Stainless steel	
5	Buffer adapter	Brass (Electroless nickel plating)	
6	Nut	Carbon steel (Zinc chromated)	M8 x 1
7	Buffer plate	Steel (Trivalent chromated)	
8	Fitting	—	

Vacuum inlet direction **Lateral** R Type/ZPR

ZPR□-(04/06)-A8

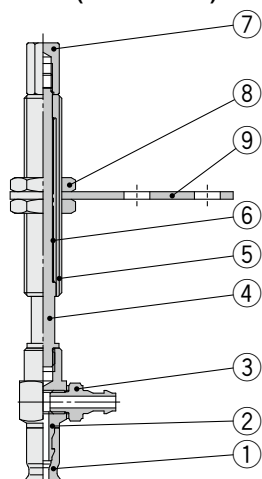


Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Bellows type Thin flat type Thin flat type with ribs
2	Adapter	Brass (Electroless nickel plating)	
3	Gasket	Stainless steel 304/NBR	
4	Adapter (With One-touch fitting)	Brass (Electroless nickel plating), PBT, NBR, Stainless steel, POM	
5	Piston rod	Stainless steel	
6	Buffer body	Brass (Electroless nickel plating)	
7	Return spring	Stainless steel	
8	Buffer adapter	Brass (Electroless nickel plating)	
9	Nut	Carbon steel (Zinc chromated)	M8 x 1
10	Buffer plate	Steel (Trivalent chromated)	

Vacuum inlet direction **Lateral** Y Type/ZPY

ZPY□-(N4/N6/U4/U6)-A8



Component Parts

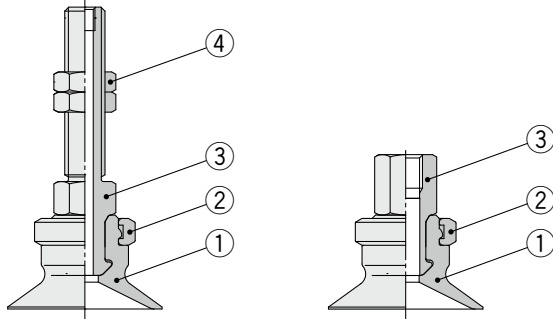
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Bellows type Thin flat type Thin flat type with ribs
2	Adapter	Brass (Electroless nickel plating)	
3	Barb fitting	—	
4	Piston rod	Stainless steel	
5	Buffer body	Brass (Electroless nickel plating)	
6	Return spring	Stainless steel	
7	Buffer adapter	Brass (Electroless nickel plating)	
8	Nut	Carbon steel (Zinc chromated)	M8 x 1
9	Buffer plate	Steel (Trivalent chromated)	

With adapter Flat type:  $\varnothing 10$  to  $\varnothing 50$  Flat type with ribs:  $\varnothing 10$  to  $\varnothing 50$  Bellows type:  $\varnothing 10$  to  $\varnothing 50$  Deep type:  $\varnothing 10$  to  $\varnothing 40$

Vacuum inlet direction **Vertical** T Type/ZP□T

ZP□T□-(A5/A6/A8)

ZP□T□-(B5/B6/B8/B01/N01/T01)



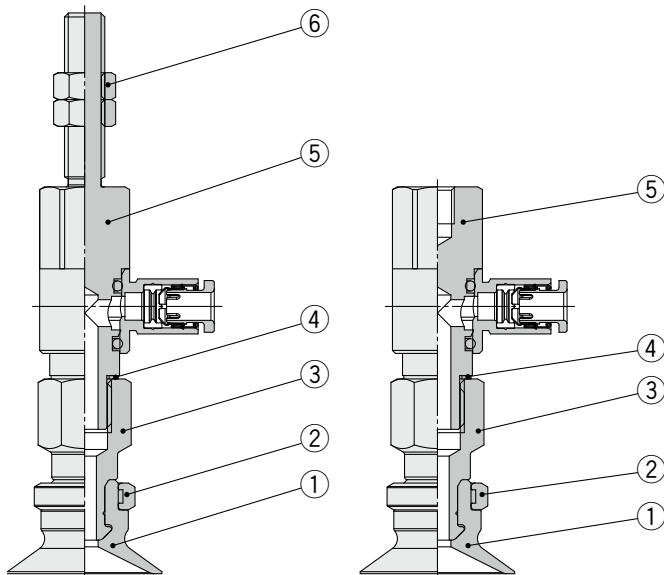
Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Flat type with ribs Bellows type Deep type
2	Lock ring	Brass (Electroless nickel plating) Stainless steel	ZPT ZPST
3	Adapter	Brass (Electroless nickel plating) Stainless steel	ZPT ZPST
4	Nut	Rolled steel (Zinc chromated) Carbon steel (Zinc chromated) Stainless steel	M5 x 0.8 M6 x 1 M8 x 1 ZPT ZPST

Vacuum inlet direction **Lateral** R Type/ZPR

ZPR□-(04/06/08)-(A5/A6/A8)

ZPR□-(04/06/08)-(B5/B6/B8)



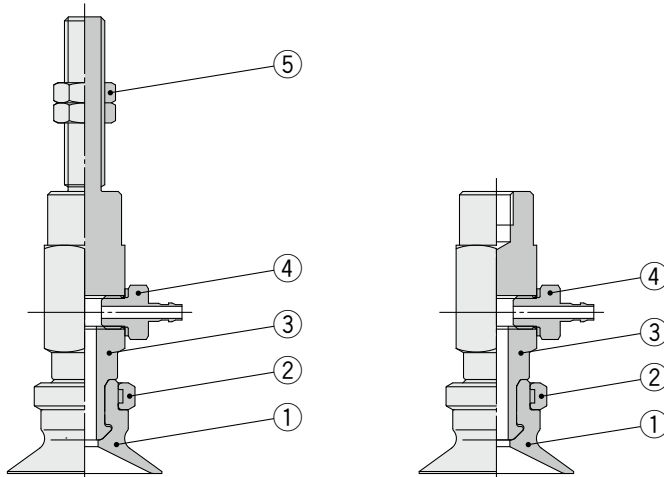
Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Flat type with ribs Bellows type Deep type
2	Lock ring	Brass (Electroless nickel plating)	
3	Adapter	Brass (Electroless nickel plating)	
4	Gasket	Stainless steel 304/NBR	
5	Adapter (With One-touch fitting)	Brass (Electroless nickel plating), PBT, NBR, Stainless steel, POM	
6	Nut	Rolled steel (Zinc chromated) Carbon steel (Zinc chromated)	M5 x 0.8 M6 x 1 M8 x 1

Vacuum inlet direction **Lateral** Y Type/ZPY

ZPY□-(N4/N6/U4/U6)-(A5/A6/A8)

ZPY□-(N4/N6/U4/U6)-(B5/B6/B8)



Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Flat type with ribs Bellows type Deep type
2	Lock ring	Brass (Electroless nickel plating)	
3	Adapter	Brass (Electroless nickel plating)	
4	Barb fitting	—	
5	Nut	Rolled steel (Zinc chromated) Carbon steel (Zinc chromated)	M5 x 0.8 M6 x 1 M8 x 1



With buffer

Flat type:  $\varnothing 10$  to  $\varnothing 50$

Flat type with ribs:  $\varnothing 10$  to  $\varnothing 50$

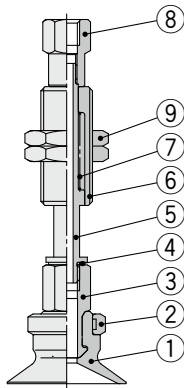
Bellows type:  $\varnothing 10$  to  $\varnothing 50$

Deep type:  $\varnothing 10$  to  $\varnothing 40$

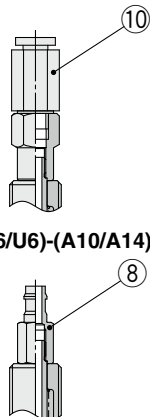
Vacuum inlet direction **Vertical** T Type/ZPT

ZPT□-(B5/B01/N01/T01)-(A10/A14)

ZPT□-(04/06/08)-(A10/A14)



ZPT□-(N6/U6)-(A10/A14)

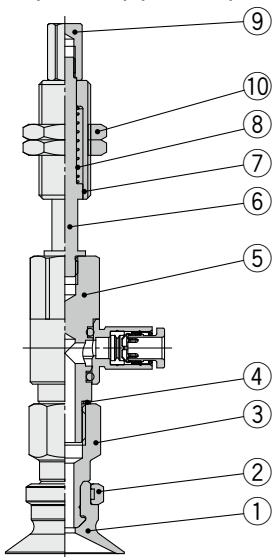


Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Flat type with ribs Bellows type Deep type
2	Lock ring	Brass (Electroless nickel plating)	
3	Adapter	Brass (Electroless nickel plating)	
4	Gasket	Stainless steel/NBR	
5	Piston rod	Stainless steel	
6	Buffer body	Brass (Electroless nickel plating)	
7	Return spring	Stainless steel	
8	Buffer adapter	Brass (Electroless nickel plating)	
9	Nut	Steel (Zinc chromated)	M10 x 1 M14 x 1
10	Fitting	—	

Vacuum inlet direction **Lateral** R Type/ZPR

ZPR□-(04/06/08)-(A10/A14)

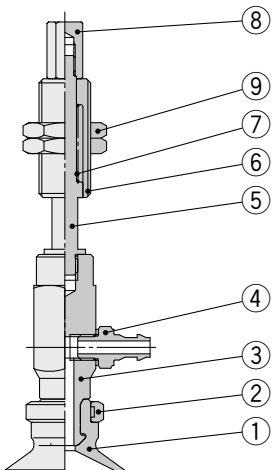


Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Flat type with ribs Bellows type Deep type
2	Lock ring	Brass (Electroless nickel plating)	
3	Adapter	Brass (Electroless nickel plating)	
4	Gasket	Stainless steel/NBR	
5	Adapter (With One-touch fitting)	Brass (Electroless nickel plating), PBT, NBR, Stainless steel, POM	
6	Piston rod	Stainless steel	
7	Buffer body	Brass (Electroless nickel plating)	
8	Return spring	Stainless steel	
9	Buffer adapter	Brass (Electroless nickel plating)	
10	Nut	Steel (Zinc chromated)	M10 x 1 M14 x 1

Vacuum inlet direction **Lateral** Y Type/ZPY

ZPY□-(N4/N6/U4/U6)-(A10/A14)



Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Flat type with ribs Bellows type Deep type
2	Lock ring	Brass (Electroless nickel plating)	
3	Adapter	Brass (Electroless nickel plating)	
4	Barb fitting	—	
5	Piston rod	Stainless steel	
6	Buffer body	Brass (Electroless nickel plating)	
7	Return spring	Stainless steel	
8	Buffer adapter	Brass (Electroless nickel plating)	
9	Nut	Steel (Zinc chromated)	M10 x 1 M14 x 1

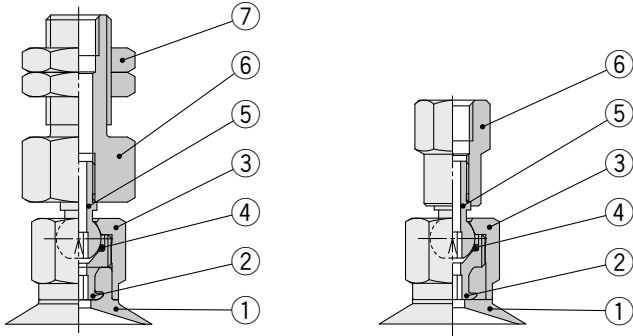
# Ball Joint Type Basic Pad **ZP Series** Construction

With adapter Flat type:  $\phi 10$  to  $\phi 50$

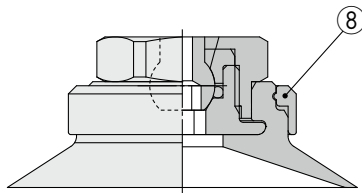
Vacuum inlet direction **Vertical** T Type/ZPT□F

ZPT□F□-(B5/A8/A10/A14)

ZPT□F□-(B5/B8/B01/N01/T01)



$\phi 10$  to  $\phi 32$



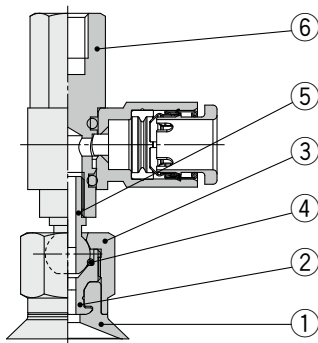
$\phi 40, \phi 50$

## Component Parts

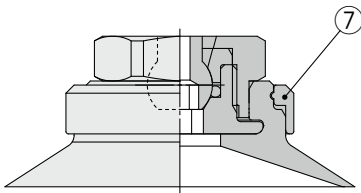
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Shaft cover	Stainless steel	
4	O-ring	FKM	
5	Shaft	Stainless steel	
6	Shaft adapter	Brass (Electroless nickel plating)	
7	Nut	Carbon steel (Zinc chromated)	M8 x 1
		Steel (Zinc chromated)	M10 x 1 M14 x 1
8	Lock ring	Aluminum (Clear anodized)	Pad diameter: $\phi 40, \phi 50$

Vacuum inlet direction **Lateral** R Type/ZPR□F

ZPR□F□-(04/06/08)-(B5/B8)



$\phi 10$  to  $\phi 32$



$\phi 40, \phi 50$

## Component Parts

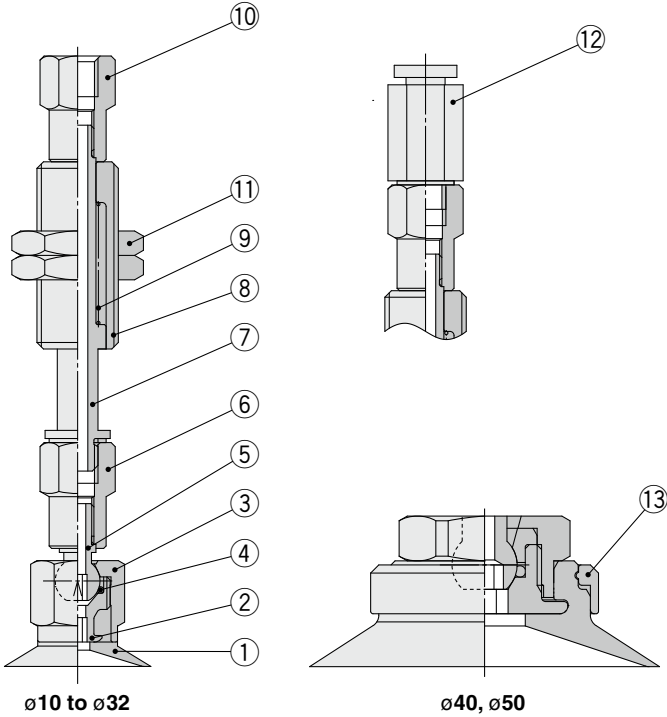
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Shaft cover	Stainless steel	
4	O-ring	FKM	
5	Shaft	Stainless steel	
6	Shaft adapter (With One-touch fitting)	Brass (Electroless nickel plating), PBT, NBR, Stainless steel, POM	
7	Lock ring	Aluminum (Clear anodized)	Pad diameter: $\phi 40, \phi 50$

With buffer Flat type:  $\phi 10$  to  $\phi 50$

Vacuum inlet direction **Vertical** T Type/ZPT□F

ZPT□F□-(B5/B01/N01/T01)-(A10/A14)

ZPT□F□-(04/06/08)-(A10/A14)

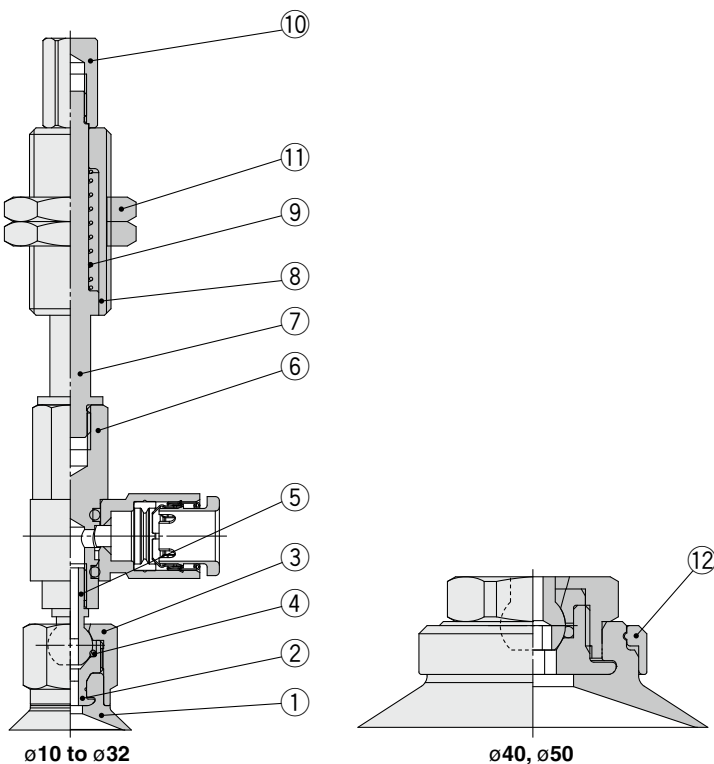


**Component Parts**

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Shaft cover	Stainless steel	
4	O-ring	FKM	
5	Shaft	Stainless steel	
6	Shaft adapter	Brass (Electroless nickel plating)	
7	Piston rod	Stainless steel	
8	Buffer body	Brass (Electroless nickel plating)	
9	Return spring	Stainless steel	
10	Buffer adapter	Brass (Electroless nickel plating)	
11	Nut	Steel (Zinc chromated)	M10 x 1 M14 x 1
12	Fitting	—	
13	Lock ring	Aluminum (Clear anodized)	Pad diameter: $\phi 40, \phi 50$

Vacuum inlet direction **Lateral** R Type/ZPR□F

ZPR□F□-(04/06/08)-(A10/A14)



**Component Parts**

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Shaft cover	Stainless steel	
4	O-ring	FKM	
5	Shaft	Stainless steel	
6	Shaft adapter (With One-touch fitting)	Brass (Electroless nickel plating), PBT, NBR, Stainless steel, POM	
7	Piston rod	Stainless steel	
8	Buffer body	Brass (Electroless nickel plating)	
9	Return spring	Stainless steel	
10	Buffer adapter	Brass (Electroless nickel plating)	
11	Nut	Steel (Zinc chromated)	M10 x 1 M14 x 1
12	Lock ring	Aluminum (Clear anodized)	Pad diameter: $\phi 40, \phi 50$



# 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

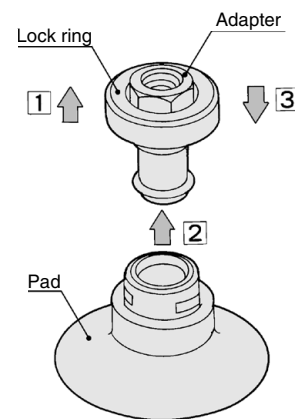
#### Compact Type ZP3 Series

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

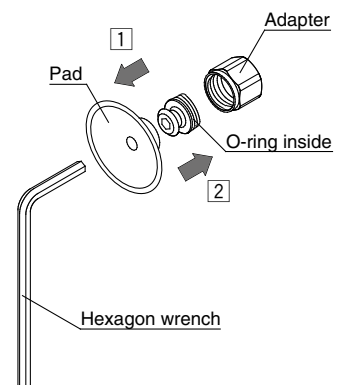
- 1 Pull the lock ring upward, and, after lifting it up to the adapter, remove the old pad by pulling it downward.
- 2 While holding the lock ring in the raised position, place a new pad onto the adapter.
- 3 Confirm that the pad is securely in place, and then return the lock ring to its original position.



### 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.

