

# Basic Pad *ZP Series*

RoHS

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

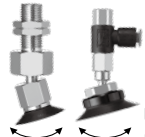


Precautions

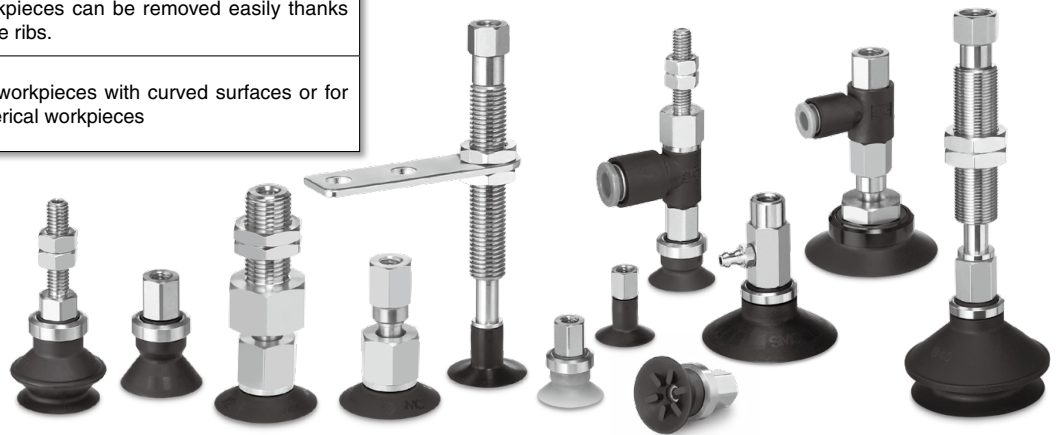
ø2, ø4, ø6, ø8, ø10, ø13, ø16, ø20, ø25, ø32, ø40, ø50

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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
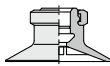


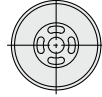


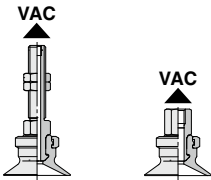
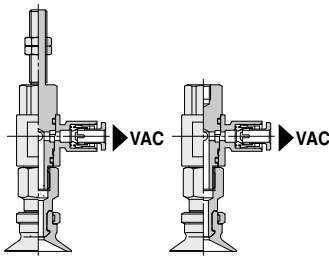
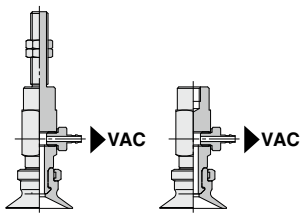
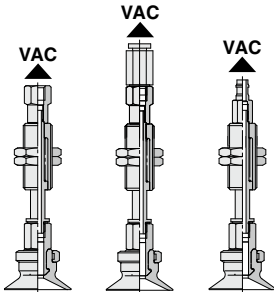
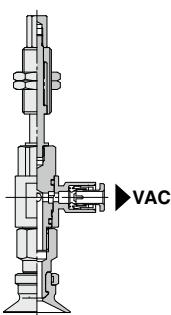
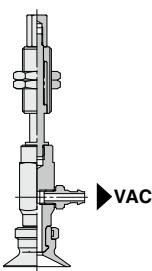
### Thin Flat Type with Ribs

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### Deep Type

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		Vacuum inlet direction						
								
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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
Vertical	ZPT With buffer		p. 43	p. 57	p. 79	p. 92	p. 101	p. 111
	ZPR With buffer		p. 46	p. 59	p. 82	p. 93	p. 102	p. 113
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
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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

# 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.

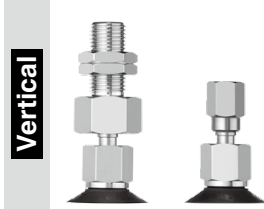
# Basic Pad *ZP Series* Specifications

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



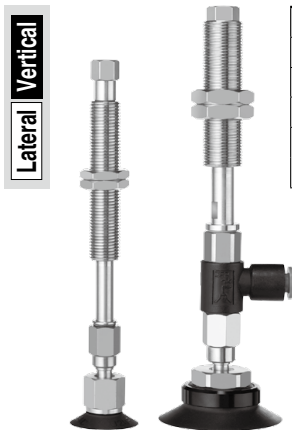
Connection	Male thread			Female thread		
Pad diameter	ø10 to ø16	ø20 to ø32	ø40, ø50	ø10 to ø16	ø20 to ø32	ø40, ø50
Connection thread	M8 x 1	M10 x 1	M14 x 1	M5 x 0.8	M5 x 0.8 M8 x 1.25 1/8 (Rc, NPT, NPTF)	M8 x 1.25 1/8 (Rc, NPT, NPTF)
Vacuum inlet	M5 x 0.8			Use the connection thread.		

### 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

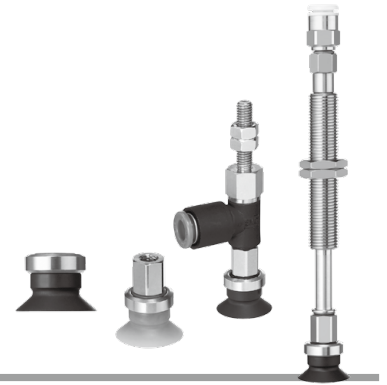
Precautions



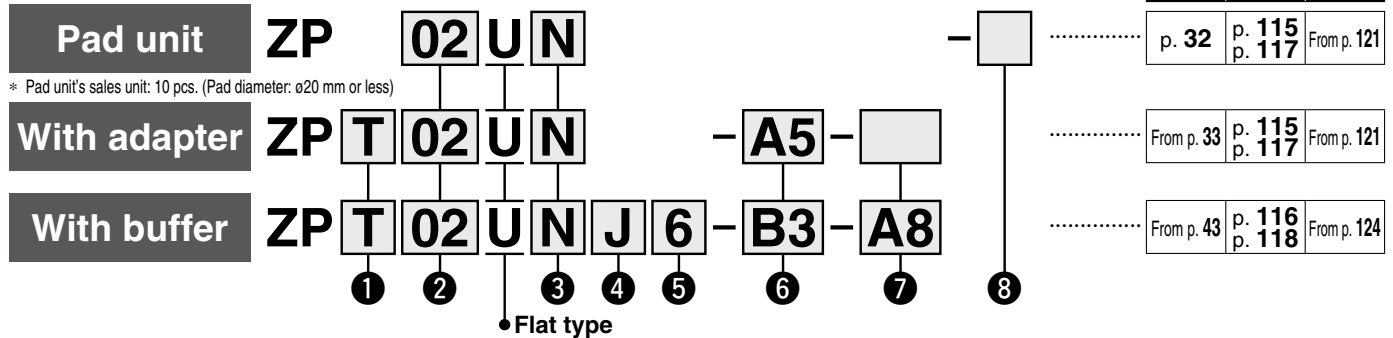
# Basic Pad

## Flat Type

# ZP Series



### How to Order



**① Vacuum inlet direction**

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

**② Pad diameter**

Symbol	Pad diameter [mm]
02	ø2
04	ø4
06	ø6
08	ø8
10	ø10
13	ø13
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50

**⑤ 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	—	—	—	—	●	●	●	●	●	●	●	●

**③ Material**

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

**④ Buffer specification**

Symbol	Specification
J	Rotating
K	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** ○: 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	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	NPT1/8	—	○	○	○
	T01	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

**⑦ 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	A5	M5 x 0.8	●	○*1	—	—
	A6	M6 x 1	●△	○*1●△	○*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 ○: ZPT/Vertical comes with a vacuum inlet (female thread).

### With buffer

**⑥ 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	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

**⑦ 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	A8	M8 x 1	○●△	—	—	—
	A10	M10 x 1	—	○●△	○●△	—
	A14	M14 x 1	—	—	—	○●△

### ⑧ Lock ring

Symbol	Pad diameter [mm]	
	ø2 to ø8	ø10 to ø50
Nil	None*1	With lock ring
X19	None*1	Without lock ring

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

### Lock ring unit

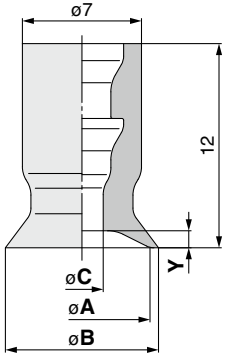
Part no.	Pad diameter [mm]
ZPL1	ø10 to ø16
ZPL2	ø20 to ø32
ZPL3	ø40, ø50

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

## Dimensions/Models

Single unit  $\phi 2$  to  $\phi 8$

ZP **02** U **N**  
① ②



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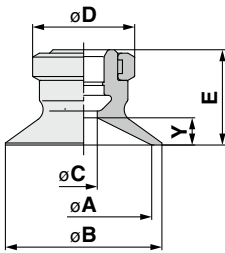
Mounting Bracket Assembly From p. 121

Model	① Pad dia.	Form	② <sup>*1</sup> Material	A	B	C	Y
				ZP	02	U	N S U F GN GS
04	4	4.8	1.6	0.8			
06	6	7	2.5				
08	8	9		1			

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

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

ZP **10** U **N**  
① ②



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Mounting Bracket Assembly From p. 121

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

\*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

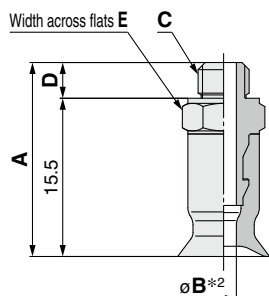
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 121

ZPT **02** U **N** - **A5**

①      ②

③ Vacuum inlet (Male thread)

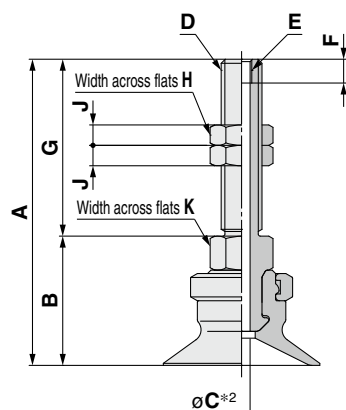
A5	M5 x 0.8
A6	M6 x 1

		Model					A	B*2	C	D	E
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet							
ZP	T	02	U	N S U F GN GS	A5	19	1.2	M5 x 0.8	3.5	7	
		04									1.6
		06 08									2.5
		02			A6	20	1.2	M6 x 1	4.5	8	
		04									1.6
		06 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 $\varnothing 50$



Construction	p. 117
Adapter Assembly	p. 121

ZPT **10** U **N** - **A5**

①      ②

③ 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													
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Connection thread	A	B	C*2	D	E	F	G	H	J	K	
ZP	T	U	N S U F GN GS	A5	10	38	17	2.5	M5 x 0.8	M3 x 0.5	3.5	21	8	4	8
					13	38.5	17.5								
					16										
					10	43	17								
					13	43.5	17.5								
					16										
				20	45	19	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	12	
				25	45.5	19.5									
				32	50.5	24.5									
				40	51.5	25.5									
				50											
				20	40	24									4
25	40.5	24.5													
32	41.5	25.5													
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

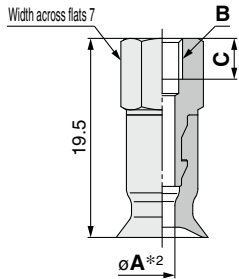
### Recommended Gasket Part Nos.

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  $\varnothing 8$



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ZPT **02** U **N** - **B4**

①      ②      ③

③ Vacuum inlet (Female thread)

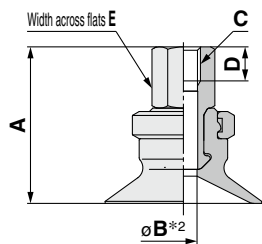
<b>B4</b>	M4 x 0.7
<b>B5</b>	M5 x 0.8

		Model			A*2	B	C
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet			
ZP	T	U	N S U F GN GS	B4	1.2	M4 x 0.7	4
					1.6		
					2.5		
				B5	1.2	M5 x 0.8	5
					1.6		
					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  $\varnothing 50$



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ZPT **10** U **N** - **B5**

①      ②      ③

③ 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</b>	NPT1/8
<b>T01</b>	NPTF1/8

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

\*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

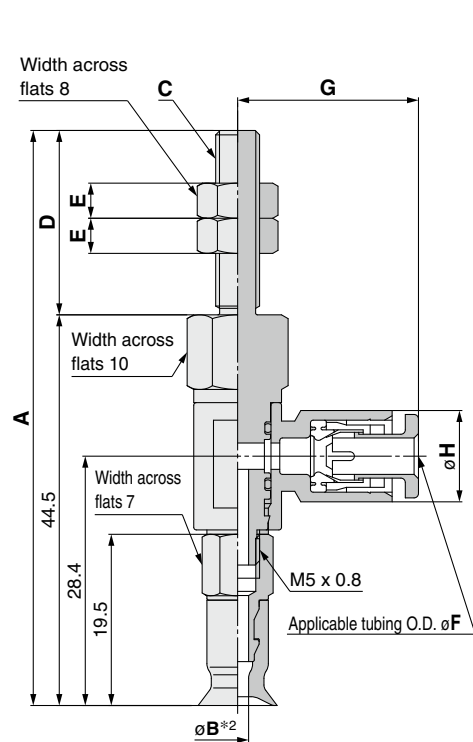
Construction

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** - **A5**

<b>1</b>	<b>2</b>	<b>3</b>
Vacuum inlet (One-touch fitting)		
<b>04</b>	$\varnothing 4$	
<b>06</b>	$\varnothing 6$	

**4** Connection thread (Male thread)

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

Model						A	B* <sup>2</sup>	C	D	E
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> <sup>*1</sup> Material	<b>3</b> Vacuum inlet	<b>4</b> Connection thread					
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	1.2	M6 x 1	26	4
							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> <sup>*1</sup> Material	<b>3</b> Vacuum inlet	<b>4</b> Connection thread				
ZP	R	U	N S U F GN GS	04	A5 A6	4	20.6	10.4	$\varnothing 3$
				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  $\varnothing 10$  to  $\varnothing 50$**

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

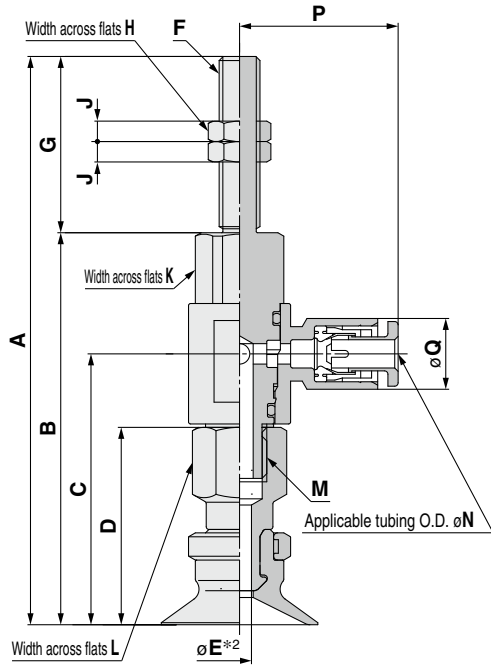
① ②

**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



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		Model				A	B	C	D	E <sup>*2</sup>	F	G	H	J	K	L	M								
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	M5 x 0.8	21	8	4	10	8	M5 x 0.8								
						13	67.5	46.5	30.4	21.5															
						16	72	46	29.9	21								26							
						13	72.5	46.5	30.4	21.5															
					A6	20	83.5	57.6	39.8	29	M6 x 1	25.9	8	4	12	12	M8 x 1.25								
						25	84	58.1	40.3	29.5															
						32	86.5	60.6	42.8	32															
						40	87.5	61.6	43.8	33															
						50	73.5	57.6	39.8	29															
						A8	20	74	58.1	40.3								29.5	M8 x 1	15.9	12	4	12	12	M8 x 1.25
							25	76.5	60.6	42.8								32							
							32	77.5	61.6	43.8								33							
					40																				

**Dimensions Per Vacuum Inlet**

		Model				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	4	20.6	10.4	$\varnothing 3$
					A6	6	21.6	12.8	$\varnothing 4$
				06	A5	4	23.3	10.4	$\varnothing 3$
					A6	6	24.3	12.8	$\varnothing 4.5$
				08	A5	8	26.2	15.2	$\varnothing 6$
					A6	6	24.3	12.8	$\varnothing 4.5$
				08	A5	8	26.2	15.2	$\varnothing 6$

\*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

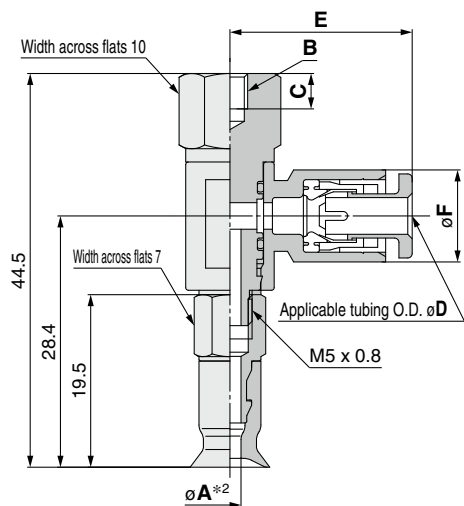
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

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



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>	<b>06</b>	$\varnothing 4$ $\varnothing 6$	<b>B4</b> <b>B5</b>
			M4 x 0.7 M5 x 0.8

<b>B4</b>	M4 x 0.7
<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
						1.6		
						2.5		
					B5	1.2	M5 x 0.8	5
						1.6		
						2.5		

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### 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	20.6	10.4	$\varnothing 3$
				06		6	21.6	12.8	$\varnothing 4$

\*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  $\varnothing 50$**

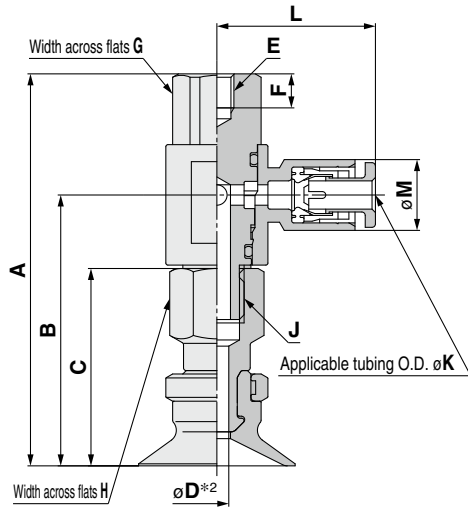
ZPR **10** U **N** - **04** - **B5**

**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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		Model				A	B	C	D*2	E	F	G	H	J	
Vacuum inlet direction	1 Pad dia.	2 Form	3 Material	4 Vacuum inlet	4 Connection thread										
ZP	R	U	N S U F G N S	04 06 08	B5	10	46	29.9	21	2.5	M5 x 0.8	5	10	8	M5 x 0.8
						13	46.5	30.4	21.5						
						16	46.5	30.4	21.5	3.5					
						20	57.6	39.8	29						
						25	57.6	39.8	29	2.5	M6 x 1	6	12	12	M8 x 1.25
						32	58.1	40.3	29.5						
						40	57.6	39.8	29	3.5	M8 x 1.25	8	12	12	M8 x 1.25
						50	60.6	42.8	32						
	40	61.6	43.8	33	4	M8 x 1.25	8	12	12	M8 x 1.25					
	50	61.6	43.8	33											

**Dimensions Per Vacuum Inlet**

		Model				K	L	M	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	2 Form	3 Material	4 Vacuum inlet	4 Connection thread				
ZP	R	U	N S U F G N S	04	B5	4	20.6	10.4	$\varnothing 3$
				06	B6	6	21.6	12.8	$\varnothing 4$
				04	B5	4	23.3	10.4	$\varnothing 3$
				06	B6	6	24.3	12.8	$\varnothing 4.5$
				08	B8	8	26.2	15.2	$\varnothing 6$
				06	B6	6	24.3	12.8	$\varnothing 4.5$
				08	B8	8	26.2	15.2	$\varnothing 6$

\*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

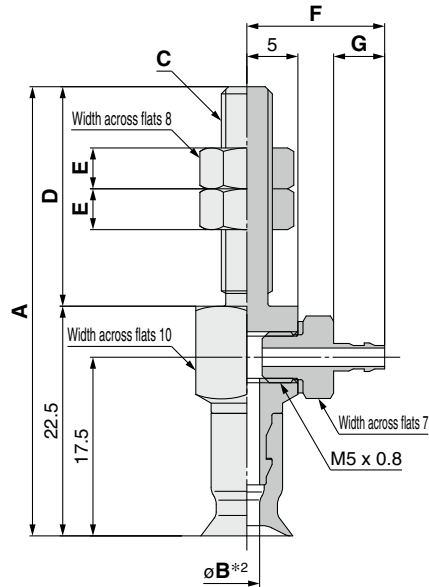
Construction

Mounting Bracket Assembly

Precautions

**Dimensions/Models**

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



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Adapter Assembly	p. 123

**ZPY 02 UN - 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

		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 A6	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** - **A5**

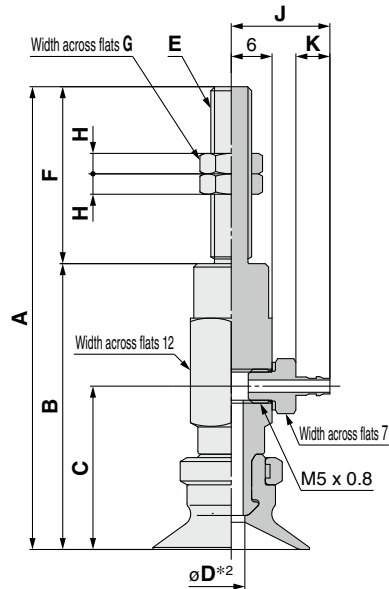
① ②

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
<b>A8</b>	M8 x 1



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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

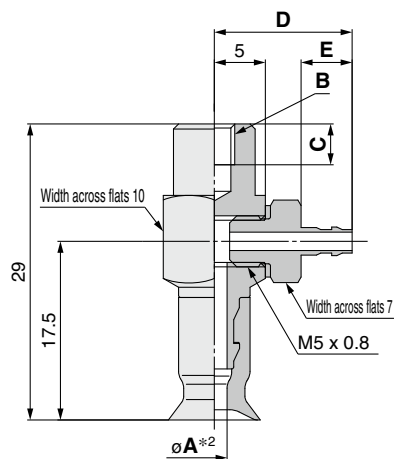
Construction

Mounting Bracket Assembly

Precautions

## 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

	Vacuum inlet direction	Model				A*2	B	C
		① Pad dia.	Form	②*1 Material	③ Vacuum inlet			
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

	Vacuum inlet direction	Model				D	E	Fitting part min. hole size	
		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

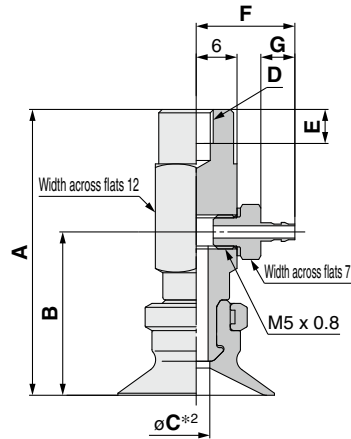
\*2 Indicates the minimum hole size of the adapter or vacuum pad



## Dimensions/Models

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

ZPY 10 U N - N4 - B5



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Adapter Assembly p. 123

①  
②  
③ 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 (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	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					
					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	U	N S U F GN GS	N4	B4	14.5	5	$\varnothing 1.8$	
				U4	B5	16.5	7	$\varnothing 2.5$	
				N6	B5				
				U6	B6	14.5	5	$\varnothing 1.8$	
				N4	B6	16.5	7	$\varnothing 2.5$	
				U4	B8				
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  $\varnothing 2$  to  $\varnothing 8$

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

① ② ④

Buffer specification ③

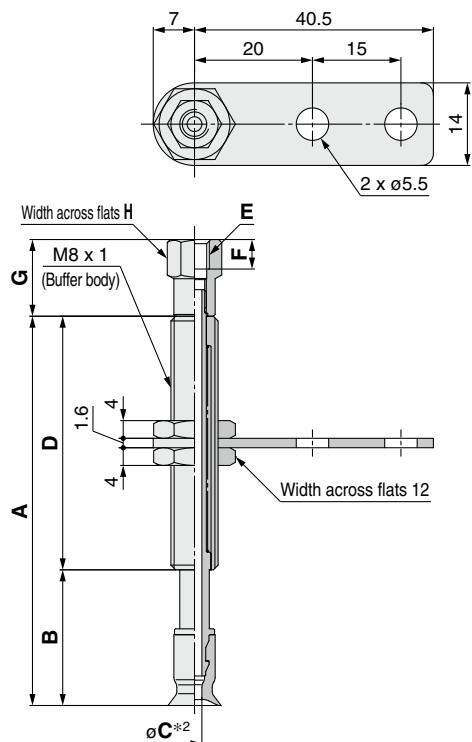
J	Rotating
K	Non-rotating

⑥ Connection thread  
(Male thread)

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

⑤ Vacuum inlet

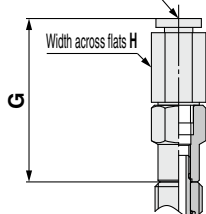
B3	M3 x 0.5	Female thread	
B5	M5 x 0.8	Female thread	
04	$\varnothing 4$	One-touch fitting	KQ2H04-M5N
06	$\varnothing 6$	One-touch fitting	KQ2H06-M5N
N4	For $\varnothing 4$ nylon tubing	Barb fitting	
U4	For $\varnothing 4$ soft tubing		



		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	02	U	N S U F G N G S	J K	6	B3 B5 04 06 N4 U4	A8	33	18	1.2	15						
						10			66	23		43						
						15			71	28		43						

### Vacuum inlet: One-touch fitting

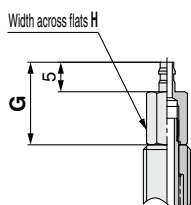
Applicable tubing O.D.  $\varnothing J$



### 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	02	U	N S U F G N G S	J K	6	B3	A8	M3 x 0.5	3	11	6
		10				15						
		15				25	B5		M5 x 0.8	5	13	8

### 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	02	U	N S U F G N G S	J K	6	04	A8	27.7	8	4	$\varnothing 2.5$
		10				15						
		15				25	06					

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### Dimensions Per Vacuum Inlet: Barb Fitting

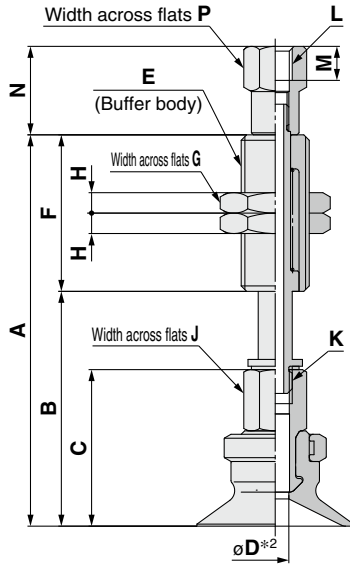
		Model						G	H	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	02	U	N S U F G N G S	J K	6	N4	A8	14	6	$\varnothing 1.8$
		10				15					
		15				25	U4				

\*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

Dimensions/Models

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



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Buffer Assembly p. 124

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

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 (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	<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	T	U	N S U F GN GS	J K	10 20 30 40 50	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	
								93.5	42.5									
								103.5	52.5									
								139.5	62.5									
								149.5	72.5									
								56	33									
								94	43									
								104	53									
								140	63									
								150	73									
								57.5	34.5									
								95.5	44.5									
	105.5	54.5																
	141.5	64.5																
	151.5	74.5																
	58	35																
	96	45																
	106	55																
	142	65																
	152	75																
	94.5	44.5																
	104.5	54.5																
	114.5	64.5																
	159.5	84.5																
95.5	45.5																	
105.5	55.5																	
115.5	65.5																	
160.5	85.5																	

Dimensions Per Vacuum Inlet: Female Thread

		Model						L	M	N	P	
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	T	U	N S U F GN GS	J K	10 20 30 40 50	B5	A10	M5 x 0.8	5	13	8	
								M5 x 0.8	4.5	15	10	
									Rc1/8 NPT1/8 NPTF1/8	5	9	13
										—	16.5	12
											12	13
										T	U	N S U F GN GS
	Rc1/8 NPT1/8 NPTF1/8	4.5	15	10								
		—	16.5	12								
			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

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

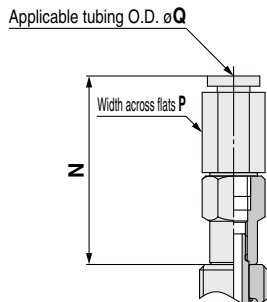
Mounting Bracket Assembly

Precautions

## Dimensions/Models

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

### Vacuum inlet: One-touch fitting



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

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

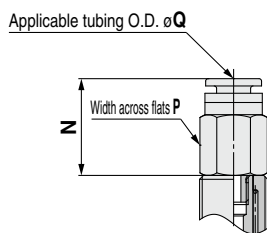
**5** Vacuum inlet

	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
<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			

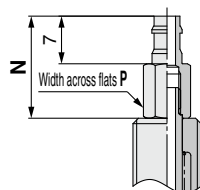
### Dimensions Per Vacuum Inlet: One-touch Fitting

		Model						N	P	Q	Fitting part min. hole size
Vacuum inlet direction	Pad dia.	Form	Material	Buffer spec.	Buffer stroke	Vacuum inlet	Connection thread				
ZP	T	U	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	31.8	10	6	$\varnothing 4.5$	
						20	35.9	14	8	$\varnothing 6$	
						30	19.9	12	6	$\varnothing 3$	
						50	24.9	14	8		

### 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: Barb Fitting

		Model						N	P	Fitting part min. hole size
Vacuum inlet direction	Pad dia.	Form	Material	Buffer spec.	Buffer stroke	Vacuum inlet	Connection thread			
ZP	T	U	N S U F GN GS	J K	10	N6	A10	15	6	$\varnothing 2.5$
					13					
					16					
					20					
					25					
					32					
	40 50	U6			A14	10	19	10		
						20	12			
						30				
						50				

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

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Buffer Assembly	p. 124

Dimensions/Models

With buffer/One-touch fitting  $\phi 2$  to  $\phi 8$

ZPR **02** **U** **N** **J** **6** - **04** - **A8**

① ② ④

Buffer specification ③

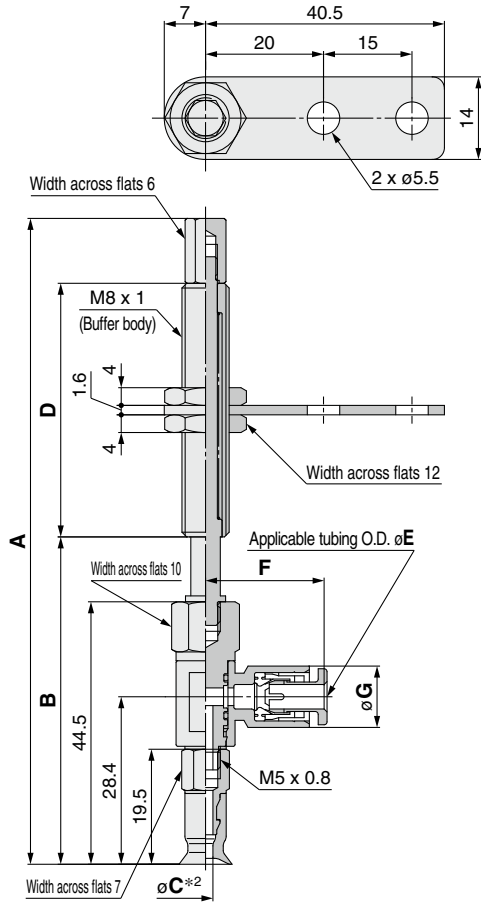
J	Rotating
K	Non-rotating

⑥ Connection thread (Male thread)

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

⑤ Vacuum inlet (One-touch fitting)

04	$\phi 4$
06	$\phi 6$



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Buffer Assembly p. 125

	Vacuum inlet direction	Model						A	B	C*2	D		
		① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet					⑥ Connection thread	
ZP	R	02	U	N S U F GN GS	J	6	04	06	A8	78.5	52.5	1.2	15
						10				109.5	55.5		43
						15				114.5	60.5		43
		04			6	78.5				52.5	15		
					10	109.5				55.5	43		
					15	114.5				60.5	43		
	06		6		78.5	52.5	15						
			10		109.5	55.5	43						
			15		114.5	60.5	43						
	08	25	124.5		70.5	43							
		6	78.5		52.5	15							
		10	109.5		55.5	43							
15		114.5	60.5	43									
25		124.5	70.5	43									
25		124.5	70.5	43									

Dimensions Per Vacuum Inlet

	Vacuum inlet direction	Model						E	F	G	Fitting part min. hole size	
		① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet					⑥ Connection thread
ZP	R	02	U	N S U F GN GS	J	6	04	A8	4	20.6	10.4	$\phi 3$
		04				10			6	$\phi 4$		
		06				15			6	21.6	12.8	$\phi 4$
		08				25						

\*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  $\varnothing 50$

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

- 1**
- 2**
- 3**
- 4**

**6** Connection thread  
(Male thread)

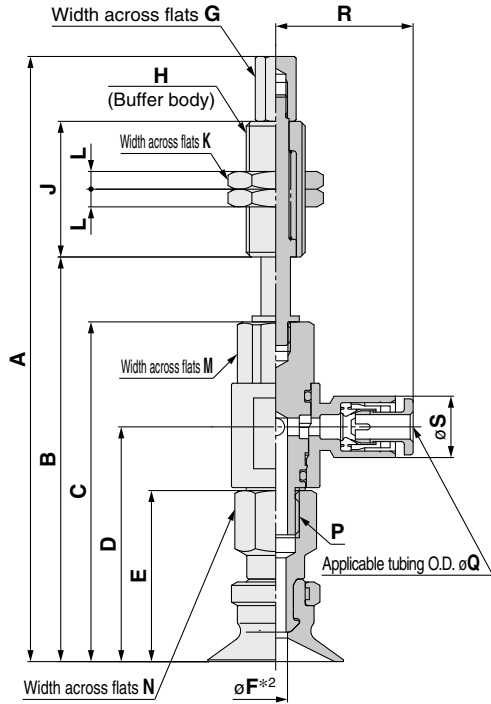
<b>A10</b>	M10 x 1
<b>A14</b>	M14 x 1

**Buffer specification** **3**

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

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

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



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- Buffer Assembly** p. 125

		Model																														
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> Material <sup>*1</sup>	<b>3</b> Buffer spec.	<b>4</b> Buffer stroke	<b>5</b> Vacuum inlet	<b>6</b> Connection thread	A	B	C	D	E	F <sup>*2</sup>	G	H	J	K	L	M	N	P											
ZP	R	U	N S U F G N S	J K	10 20 30 40 50	04 06	A10	91	57							23																
								129	67									51														
								139	77	46	29.9	21																				
								175	87																							
								185	97											2.5							10	8	M5 x 0.8			
								91.5	57.5																							
								129.5	67.5																							
								139.5	77.5	46.5	30.4	21.5																				
								175.5	87.5																							
								185.5	97.5																							
								102.6	68.6													6	M10 x 1	23	14	3						
								140.6	78.6																							
	150.6	88.6	57.6	39.8	29																											
	186.6	98.6																														
	196.6	108.6											3.5																			
	103.1	69.1																														
	141.1	79.1																														
	151.1	89.1	58.1	40.3	29.5																											
	187.1	99.1																														
	197.1	109.6																														
	140.6	72.6																														
	137.6	82.6																														
	147.6	92.6	60.6	42.8	32																											
	192.6	112.6																														
141.6	73.6												4	10	M14 x 1	75	19	4	12	12			M8 x 1.25									
138.6	83.6																															
148.6	93.6	61.6	43.8	33																												
193.6	113.6																															

**Dimensions Per Vacuum Inlet**

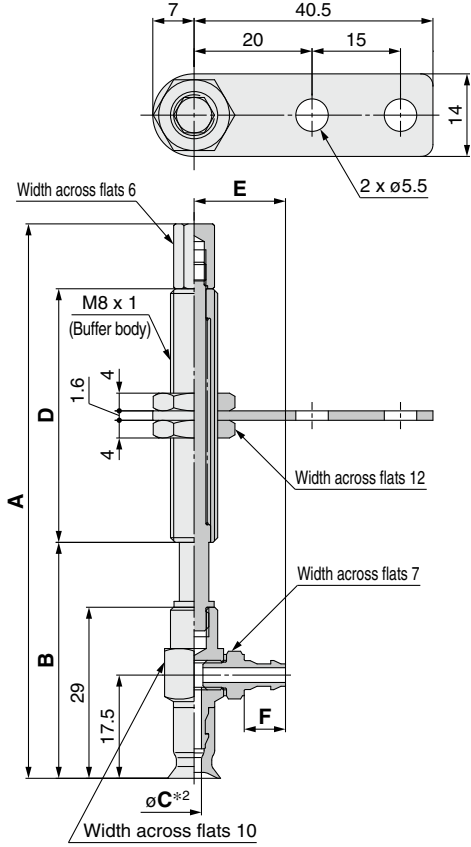
		Model						Q	R	S	Fitting part min. hole size
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> Material <sup>*1</sup>	<b>3</b> Buffer spec.	<b>4</b> Buffer stroke	<b>5</b> Vacuum inlet	<b>6</b> Connection thread				
ZP	R	U	N S U F G N S	J K	10 20 30 40 50	04 06	A10	4	20.6	10.4	$\varnothing 3$
								6	21.6	12.8	$\varnothing 4$
								4	23.3	10.4	$\varnothing 3$
								6	24.3	12.8	$\varnothing 4.5$
								8	26.2	15.2	$\varnothing 6$
								6	24.3	12.8	$\varnothing 4.5$
	R	U			10 20 30 50	06 08	A14	6	24.3	12.8	$\varnothing 4.5$
								8	26.2	15.2	$\varnothing 6$

\*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  $\phi 2$  to  $\phi 8$**



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**Buffer Assembly** p. 126

**ZPY 02 UNJ 6 - N4 - A8**

**Buffer specification**

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

**6 Connection thread (Male thread)**  
**A8** M8 x 1

**5 Vacuum inlet (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

		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	6	N4 N6 U4 U6	A8	63	37	1.2	15
						10			94	40		43
						15			99	45		43
		25				109			55	15		
		6				63			37	43		
		10				94			40	15		
	15	99		45	43							
	25	109		55	15							
	6	63		37	43							
	10	94		40	15							
	15	99		45	43							
	25	109		55	15							
6	63	37	43									
10	94	40	15									
15	99	45	43									
25	109	55	15									
6	63	37	43									
10	94	40	15									
15	99	45	43									
25	109	55	15									
6	63	37	43									
10	94	40	15									
15	99	45	43									
25	109	55	15									

**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	6	N4 U4 N6 U6	A8	13.5	5	$\phi 1.8$
		10				15			7	$\phi 2.5$	
		15				25			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

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)

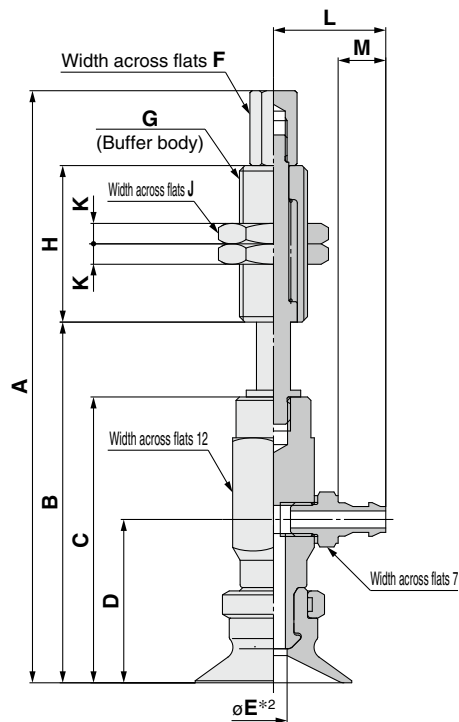
Buffer specification ③

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



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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	A10	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 Ribs

# ZP Series



### How to Order

**Pad unit** ZP **10** **C** **N**

\* Pad unit's sales unit: 10 pcs. (Pad diameter: ø20 mm or less)

**With adapter** ZP **T** **10** **C** **N** - **A5** - [ ]

**With buffer** ZP **T** **10** **C** **N** **J** **10** - **B5** - **A10**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

• Flat type with ribs

Dimensions/Models	Construction	Mounting Bracket Assembly
p. 51	p. 117	From p. 121
From p. 51	p. 117	From p. 121
From p. 57	p. 118	From p. 124

**1 Vacuum inlet direction**

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

**2 Pad diameter**

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

**5 Buffer stroke**

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

**3 Material**

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

**4 Buffer specification**

J	Rotating
K	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**  
○: 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	Nil	M3 x 0.5	○	○	○
		M5 x 0.8	—	○	○
	B5	M5 x 0.8	○	○	—
	B6	M6 x 1	○	○	○
	B8	M8 x 1.25	—	○	○
	B01	Rc1/8	○	○	○
	T01	NPT1/8	○	○	○
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

**7 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	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 ○: ZPT/Vertical comes with a vacuum inlet (female thread).

### With buffer

**6 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

**7 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	—	—	○●△

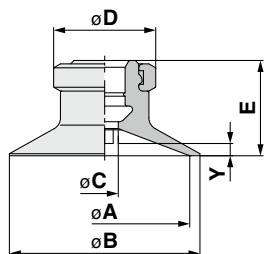
**8 Lock ring**

Symbol	Pad diameter	Lock ring unit	
		Part no.	Pad diameter [mm]
Nil	All sizes	ZPL1	ø10 to ø16
X19	With lock ring	ZPL2	ø20 to ø32
	Without lock ring	ZPL3	ø40, ø50

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

## Dimensions/Models

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



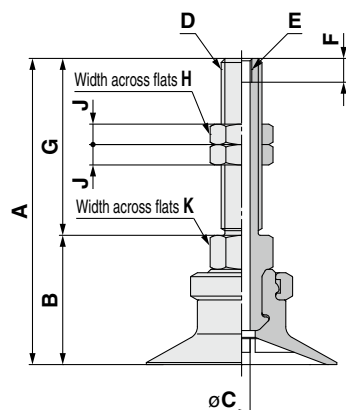
Construction p. 117  
Mounting Bracket Assembly From p. 121

ZP **10** C **N**  
① ②

Model	① Pad dia.	② Form	② Material <sup>*1</sup>	A	B	C	D	E	Y	
										ZP
	13		S	13	15			1.8		
	16		U	16	18			1.2		
	20		F	20	23			1.7		
	25		GN	25	28		15	14	1.8	
	32		GS	32	35			14.5	2.3	
	40			40	43	7	18	18.5	3.3	
	50			50	53					19.5

\*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

ZPT **10** C **N** - **A5**  
① ② ③

③ 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	Vacuum inlet direction	① Pad dia.	② Form	② Material <sup>*1</sup>	③ Connection thread	A	B	C	D	E	F	G	H	J	K
		13		S		38.5	17.5								
		16		U		43	17	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	8
		13		F		43.5	17.5								
		20		GN	A6	45	19								
		25		GS		45.5	19.5								
		32				50.5	24.5								
		40				51.5	25.5								12
		50						4	M8 x 1	M5 x 0.8	5	16	12	4	12
		20		S	A8	40	24								
		25		U		40.5	24.5	4.2							
		32		F		41.5	25.5								

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

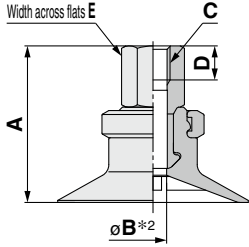
### Recommended Gasket Part Nos.

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

Dimensions/Models

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

ZPT **10** C **N** - **B5**



**3 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</b>	NPT1/8
<b>T01</b>	NPTF1/8

Construction	p. 117
Adapter Assembly	p. 121

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

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**

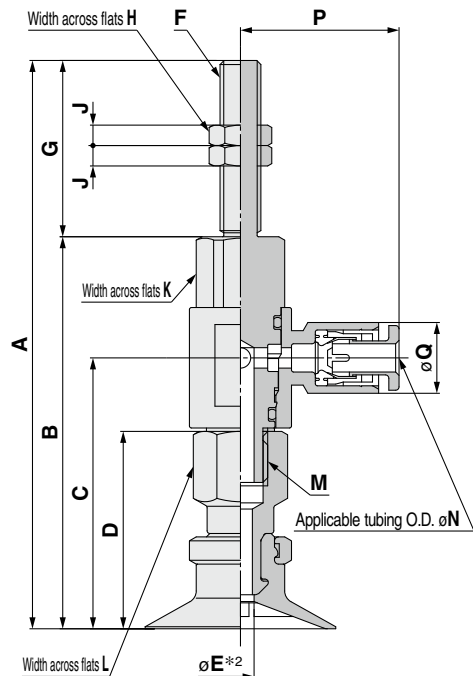
① ②

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	M	
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread													
ZP	R	C	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	10	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	10	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	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	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	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	12	M8 x 1.25					
	20	77.5	61.6	43.8	33													
	25																	
	32																	
	40																	
	50																	

### Dimensions Per Vacuum Inlet

		Model				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	C	N S U F GN GS	04	A5	4	20.6	10.4	$\varnothing 3$
				06	A6	6	21.6	12.8	$\varnothing 4$
				04	A6	4	23.3	10.4	$\varnothing 3$
				06	A6	6	24.3	12.8	$\varnothing 4.5$
				08	A8	8	26.2	15.2	$\varnothing 6$
				06	A6	6	24.3	12.8	$\varnothing 4.5$
				08	A8	8	26.2	15.2	$\varnothing 6$
				08	A8	8	26.2	15.2	$\varnothing 6$

\*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

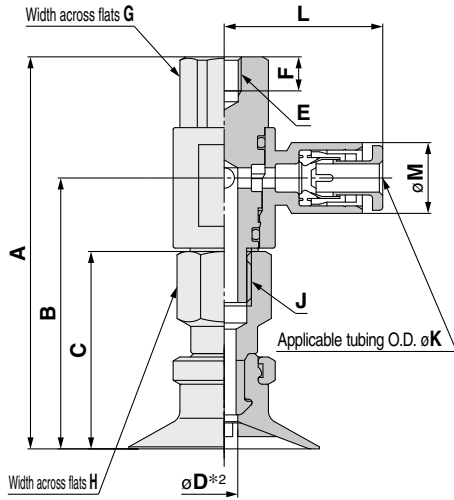
With adapter/One-touch fitting  $\varnothing 10$  to  $\varnothing 50$

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

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

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

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



Construction p. 117  
Adapter Assembly p. 122

		Model				A	B	C	D*2	E	F	G	H	J	
Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	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	10	8	M5 x 0.8
						13	46.5	30.4	21.5						
						16	57.6	39.8	29	3.5			12	12	M8 x 1.25
						20	58.1	40.3	29.5						
						25	46	29.9	21	2.5	M6 x 1	6	10	8	M5 x 0.8
						32	46.5	30.4	21.5						
						40	57.6	39.8	29	3.5			12	12	M8 x 1.25
						50	58.1	40.3	29.5						
	20	60.6	42.8	32	4	12	12	M8 x 1.25							
	25	61.6	43.8	33											
	32	57.6	39.8	29	3.5	M8 x 1.25	8	12	12	M8 x 1.25					
	40	58.1	40.3	29.5											
	50	60.6	42.8	32	4										
	50	61.6	43.8	33											

Dimensions Per Vacuum Inlet

		Model				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	C	N S U F GN GS	04	B5	4	20.6	10.4	$\varnothing 3$
				06	B6	6	21.6	12.8	$\varnothing 4$
				04	B5	4	23.3	10.4	$\varnothing 3$
				06	B6	6	24.3	12.8	$\varnothing 4.5$
				08	B8	8	26.2	15.2	$\varnothing 6$
				06	B6	6	24.3	12.8	$\varnothing 4.5$
				08	B8	8	26.2	15.2	$\varnothing 6$

\*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

Mounting Bracket Assembly

Precautions

## Dimensions/Models

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

ZPY 10 C N - N4 - A5

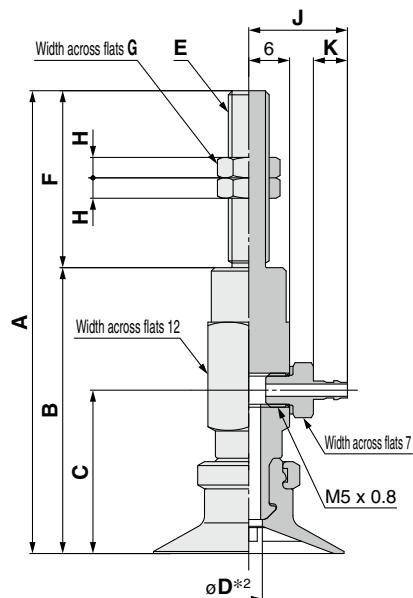
① ②

Vacuum inlet  
(Barb fitting)

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	A6	64.5	38.5	22.5	2.5	M6 x 1	26	8	4
		16					68				42	24						
		20					68.5				42.5	24.5						
		25					72.5			46.5	28.5							
		32					73.5			47.5	29.5							
		40					73.5			47.5	29.5							
		50				A8	20	N4 N6 U4 U6	N4 N6 U4 U6	A8	58	42	24	3.5	M8 x 1	16	12	4
		25					58.5				42.5	24.5						
		32					62.5				46.5	28.5						
40	A8	40	N4 N6 U4 U6	N4 N6 U4 U6	A8	62.5	46.5	28.5	6	M8 x 1	16	12	4					
50		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 U4	A5	14.5	5	$\varnothing 1.8$
		13					N6 U6	A6	16.5
		16			N6 U6	A6			16.5
		20					N6 U6	A8	16.5
25	N6 U6	A8	16.5	7	$\varnothing 2.5$				
32			N6 U6	A8	16.5	7	$\varnothing 2.5$		
40	N6 U6	A8			16.5	7	$\varnothing 2.5$		
50			N6 U6	A8	16.5	7	$\varnothing 2.5$		

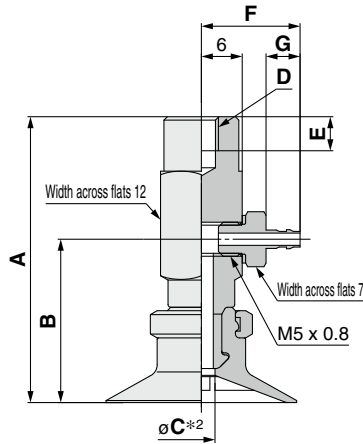
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

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				
				U6	B6	14.5	5	$\varnothing 1.8$	
				N4	B6				
				U4	B8	16.5	7	$\varnothing 2.5$	
N6	B8								
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

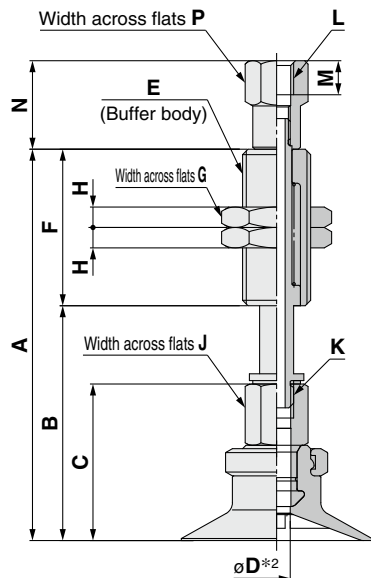
Construction

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** **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 (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.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 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								77			
						50			149.5	72.5								23			
						10			56	33								23			
						20			94	43								51			
						30			104	53								77			
						40			140	63								77			
						50			150	73								23			
						10			57.5	34.5								51			
						20			95.5	44.5								77			
		30	105.5	54.5	77																
		40	141.5	64.5	23																
		50	151.5	74.5	23																
		10	58	35	51																
		20	96	45	77																
		30	106	55	23																
		40	142	65	77																
		50	152	75																	
		10	94.5	44.5	4	M14 x 1	19	4	12	M8 x 1.25											
		20	104.5	54.5							50										
		30	114.5	64.5							75										
		40	159.5	84.5							50										
50	159.5	84.5	75																		
10	95.5	45.5	50																		
20	105.5	55.5	75																		
30	115.5	65.5																			
40	160.5	75.5																			
50																					

**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 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							
						30							
						40							
						50							
						10							B5
		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  $\varnothing 50$**

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

① ② ③ ④

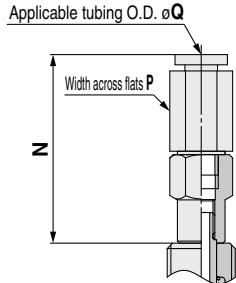
⑥ Connection thread (Male thread)

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

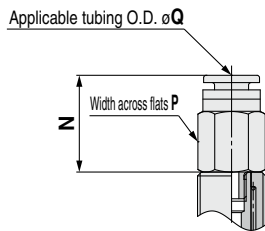
⑤ Vacuum inlet

	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			

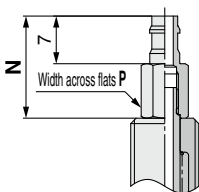
**Vacuum inlet: One-touch fitting**



**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									
	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)

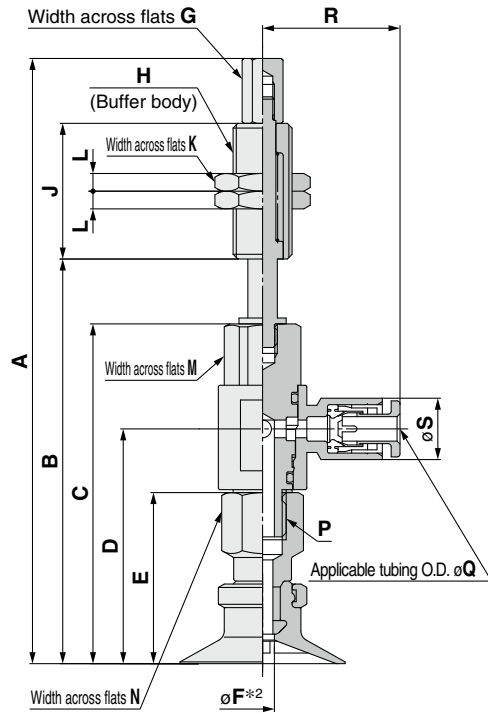
Buffer specification ③

<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	F	*2	G	H	J	K	L	M	N	P							
ZP	R	C	N S U F GN GS	J K	10	04	A10	91	57								23												
					20			129	67											51									
					30			139	77	46	29.9	21									77								
					40			175	87																				
					50	06		185	97										2.5						10	8	M5 x 0.8		
					10			91.5	57.5																				
					20			129.5	67.5																				
					30			139.5	77.5	46.5	30.4	21.5																	
					40			175.5	87.5																				
					50	A10		185.5	97.5																				
					10			102.6	68.6																				
					20			140.6	78.6																				
	30		150.6	88.6	57.6	39.8	29																						
	40		186.6	98.6																									
	50	06	196.6	108.6																									
	10		103.1	69.1																									
	20		141.1	79.1																									
	30		151.1	89.1	58.1	40.3	29.5																						
	40		187.1	99.1																									
	50	08	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	06	192.6	112.6																									
10		141.6	73.6																										
20		138.6	83.6																										
30		148.6	93.6	61.6	43.8	33																							
50	A14	193.6	113.6																										

### Dimensions Per Vacuum Inlet

		Model							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 GN GS	J K	10	04	A10		4	20.6	10.4	$\varnothing 3$
					20							
					30							
					40							
					50							
					10	04						
	20											
	30											
	40											
	50											
	10	06			A14				6	24.3	12.8	$\varnothing 4.5$
	20											
30												
40												
50												
10	08	A14		8			26.2	15.2				
20												
30												
40												
50												
10	06				A14				6	24.3	12.8	$\varnothing 4.5$
20												
30												
40												
50												
10	08	A14		8			26.2	15.2				
20												
30												
40												
50												

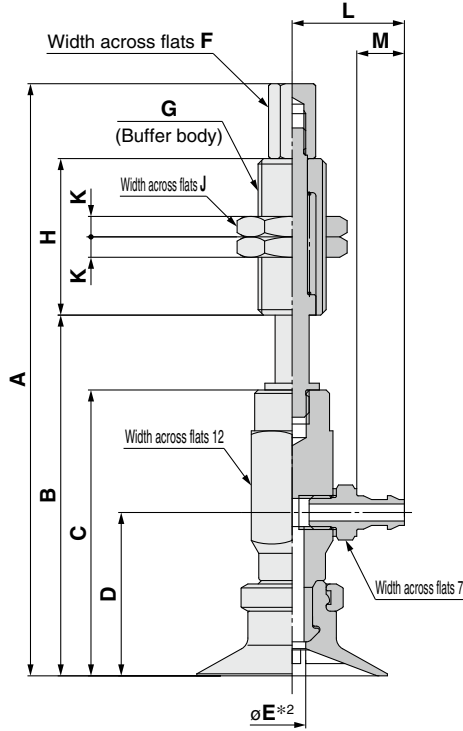
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

With buffer/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																						
																						121	59																						
																						131	69	38	22																				
																						167	79																						
																						177	89																						
																						10	83.5	49.5												2.5	6	M10 x 1					14	3	
																						20	121.5	59.5																					
																						30	131.5	69.5	38.5	22.5																			
																						40	167.5	79.5																					
																						50	177.5	89.5																					
																						10	87	53																					
	20	125	63																																										
	30	135	73	42	24																																								
	40	171	83																																										
	50	181	93																																										
	10	87.5	53.5																																										
	20	125.5	63.5																																										
	30	135.5	73.5	42.5	24.5																																								
	40	171.5	83.5																																										
	50	181.5	93.5																																										
	10	126.5	58.5																																										
	20	123.5	68.5																																										
	30	133.5	78.5	46.5	28.5																																								
40	178.5	98.5																																											
50	178.5	98.5																																											
10	127.5	59.5																																											
20	124.5	69.5																																											
30	134.5	79.5	47.5	29.5																																									
40	179.5	99.5																																											
50	179.5	99.5																																											

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 U4	A10										
															14.5	5	$\varnothing 1.8$
															16.5	7	$\varnothing 2.5$
						N6 U6	A14										
						N6 U6	A14										

\*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	<b>B5</b>	M5 x 0.8	—	●	●	
			<b>B8</b>	M8 x 1.25	—	●	●	
			<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	—	○●	○●

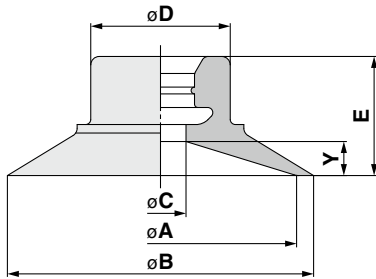
#### Lock ring unit

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  $\varnothing 50$



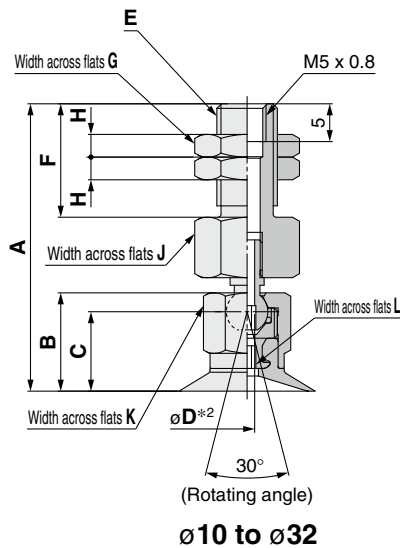
Construction p. 119  
Mounting Bracket Assembly From p. 127

ZP **10** **F** **N**  
① ②

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

Vacuum inlet (Female thread)

**B5** M5 x 0.8

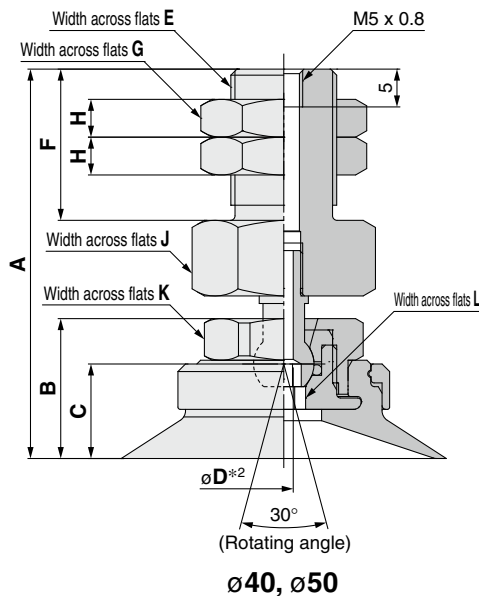
④ Connection thread (Male thread)

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

Model	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet	④ Connection thread	A	B	C	D <sup>*2</sup>	E	F	G	H	J	K	L					
																		ZP				
ZP	T	10	F	N S U F GN GS	B5	A8	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					2	M10 x 1	49	16	13											
		25							51.5	18.5	12.5											
		32							52.5	19.5	13.5											
		40					2.5	M14 x 1	20	19	4	21	19	5								
		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. 127

## Dimensions/Models

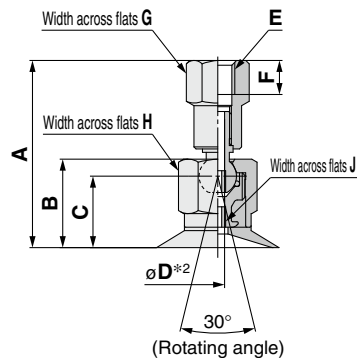
**With adapter**  $\varnothing 10$  to  $\varnothing 50$

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

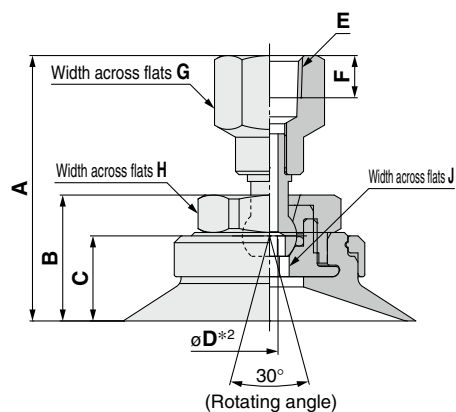
①      ②

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*2	E	F	G	H	J
Vacuum inlet direction	① Pad dia.	Form	②*1 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	15.5	12.5	2	M8 x 1.25	8	12	12	3	
					25	36.5	16	13							
					32	39	18.5	12.5							
					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	39	18.5	12.5							
					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  $\varnothing 50$

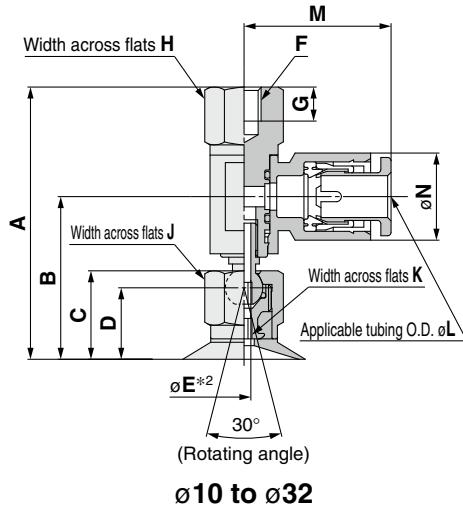
ZPR **10** F **N** - **04** - **B5**

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

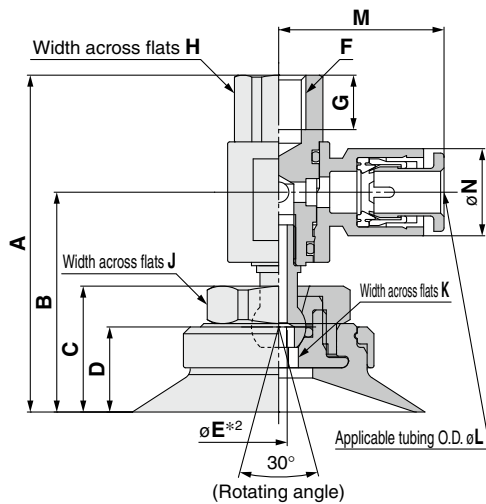
④ Connection thread (Female thread)

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.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread	A	B	C	D	*2 E	F	G	H	J	K		
ZP	R	10	F	N S U F GN GS	04	B5	39.5	23.4	12.5	10	2	M5 x 0.8	5	10	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	8	12	19	5						
	50	50.5			33.3	19.5	13.5											
	20	46.5			29.3	15.5	12.5						2	M8 x 1.25	8	12	12	3
	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														

### Dimensions Per Vacuum Inlet

Model	Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread	L	M	N	Fitting part min. hole size
ZP	R	10	F	N S U F GN GS	04	B5	4	20.6	10.4	$\varnothing 3$
		13			6		21.6	12.8	$\varnothing 4$	
		16			6	21.6	12.8	$\varnothing 4$		
		20			6	24.3	12.8	$\varnothing 4.5$		
		25			6	24.3	12.8	$\varnothing 4.5$		
		32			8	26.2	15.2	$\varnothing 6$		
40	B5 B8	8	26.2	15.2	$\varnothing 6$					
50		8	26.2	15.2	$\varnothing 6$					

\*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

Construction	p. 119
Adapter Assembly	p. 128

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

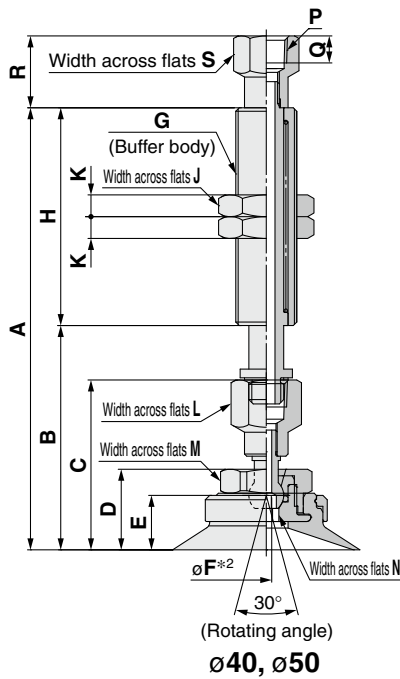
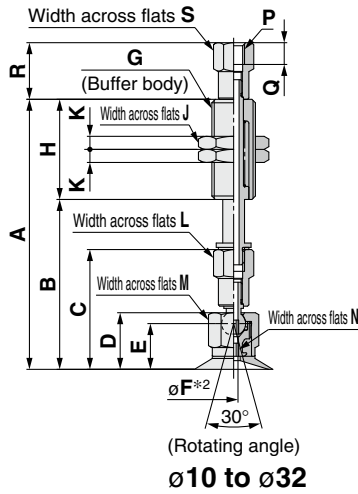
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



ZPT 10 F 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

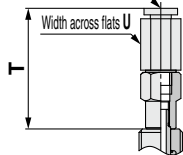
⑤ Vacuum inlet

		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						23															
					50			155.5	78.5						51															
					10			62	39						77															
					20			100	49						23															
					30			110	59						51															
					40			146	69						77															
					50			156	79																					
					10			98.5	48.5						50															
					20			108.5	58.5						75															
	30	118.5	68.5	12																										
	50	163.5	88.5	3																										
	10	99	49	12																										
	20	109	59	3																										
	30	119	69	12																										
	50	164	89	13																										
	10	101.5	51.5	19																										
	20	111.5	61.5	4																										
	30	121.5	71.5	12																										
	50	166.5	91.5	19																										
	10	102.5	52.5	5																										
	20	112.5	62.5	19																										
30	122.5	72.5	5																											
50	167.5	92.5	12																											

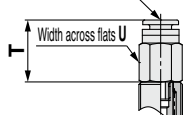
Vacuum inlet: One-touch fitting

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	19.9	12	6	$\varnothing 3$						
	20												
30													
40													
50													
10	08							A14	24.9	14	8		
20													
30													
40													
50													

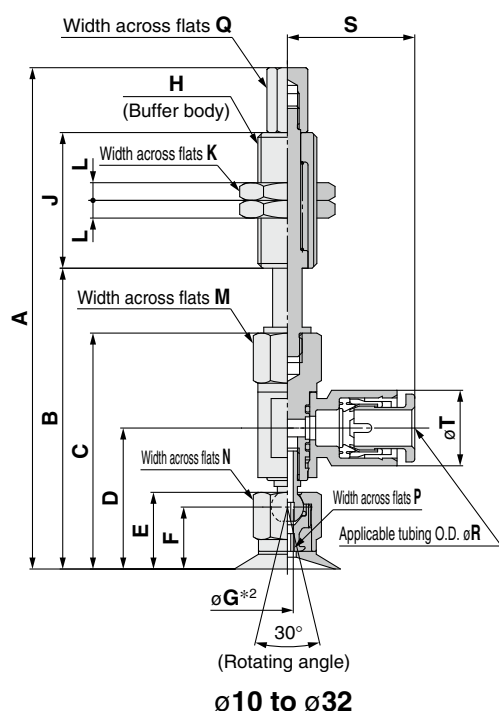
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

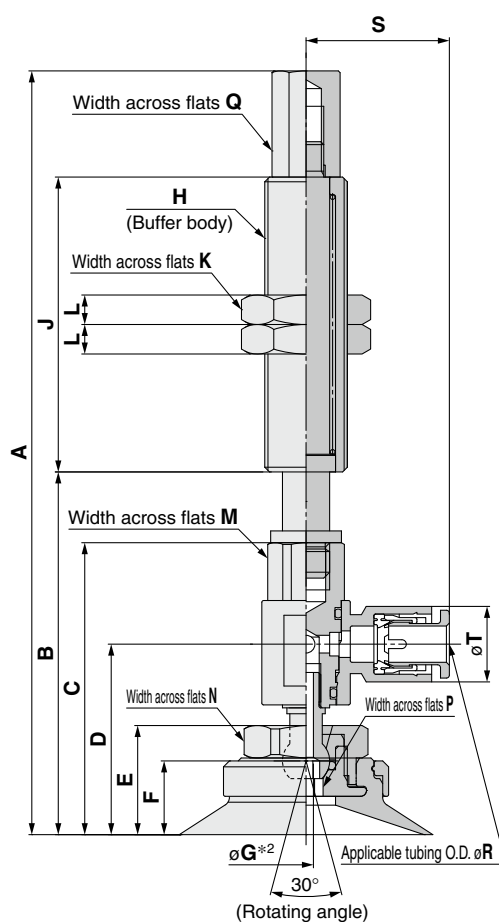


Dimensions/Models

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



$\phi 10$  to  $\phi 32$



$\phi 40, \phi 50$

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

① Pad dia. 10, ② Form F, ③ Buffer spec. N, ④ Buffer stroke J, ⑤ Vacuum inlet 10, ⑥ Connection thread 04 - A10

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

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

Model		Dimensions																															
Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke	⑥ Vacuum inlet	⑥ Connection thread	A	B	C	D	E	F	G *2	H	J	K	L	M	N	P	Q											
ZP	R	F	N S U F GN GS	J K	10	04	A10	84.5	50.5							23																	
								122.5	60.5																								
								132.5	70.5	39.5	23.4	12.5	10																				
								168.5	80.5																								
								178.5	90.5																								
								10	06		85	51																					
					13	16						123	61																				
												133	71	40	23.9	13	10.5																
												169	81																				
												179	91																				
												10	08		126.5	58.5																	
												20	25		123.5	68.5																	
	R	32							133.5	78.5	46.5	29.3	15.5	12.5																			
									178.5	98.5																							
									10	06		127	59																				
									20	30		124	69																				
									30	30		134	79	47	29.8	16	13																
									50	08		179	99																				
		40								129.5	61.5																						
										126.5	71.5																						
										136.5	81.5	49.5	32.3	18.5	12.5																		
										181.5	101.5																						
										10	08		130.5	62.5																			
										20	30		127.5	72.5																			
50								137.5	82.5																								
								182.5	102.5	50.5	33.3	19.5	13.5																				
								10	06																								
								20	30																								
								30	06																								
								50	08																								

Dimensions Per Vacuum Inlet: One-touch Fitting

Model		Dimensions										
Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke	⑥ Vacuum inlet	⑥ Connection thread	R	S	T	Fitting part min. hole size	
ZP	R	F	N S U F GN GS	J K	10	20	04	A10	4	20.6	10.4	$\phi 3$
									6	21.6	12.8	$\phi 4$
					20	30	06		6	24.3	12.8	$\phi 4.5$
									8	26.2	15.2	$\phi 6$
					30	06	A14		6	24.3	12.8	$\phi 4.5$
									8	26.2	15.2	$\phi 6$
	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

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 Buffer Assembly p. 130



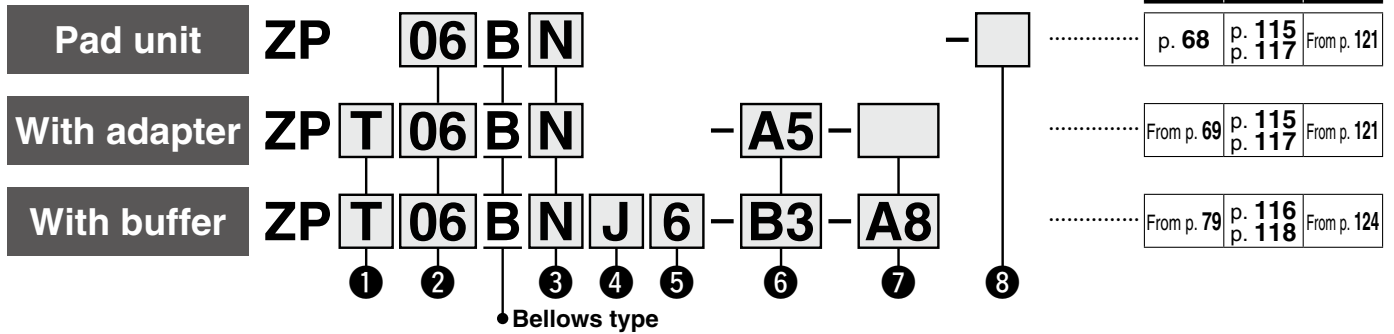
Model Selection  
**ZP Basic**  
 Flat Type  
 Flat Type with Ribs  
 Flat, Ball Joint Type  
 Bellows Type  
 Thin Flat Type  
 Thin Flat Type with Ribs  
 Deep Type  
 Construction  
 Mounting Bracket Assembly  
 Precautions



# Basic Pad Bellows Type ZP Series



## How to Order



**1 Vacuum inlet direction**

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

**2 Pad diameter**

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

**5 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	—	—	●	●	●	●	●	●	●	●

**3 Material**

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

**4 Buffer specification**

J	Rotating
K	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** ○: 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	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: A6	○ Connection thread: A6
	B4	M4 x 0.7	○	—	—	—
	B5	M5 x 0.8	○	○	○	—
	B6	M6 x 1	—	—	○	○
	B8	M8 x 1.25	—	—	○	○
	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*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

**7 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	A5	M5 x 0.8	●△	○*1●△	—	—
	A6	M6 x 1	●△	○*1●△	○*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 It is not necessary to select a connection thread for ○: ZPT/Vertical.

### With buffer

**6 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

**7 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	—	—	—	○●△

**8 Lock ring**

Symbol	Pad diameter [mm]		Part no.	Pad diameter [mm]
	ø6, ø8	ø10 to ø50		
Nil	None*1		ZPL1	ø10 to ø16
X19	With lock ring		ZPL2	ø20 to ø32
	Without lock ring		ZPL3	ø40, ø50

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

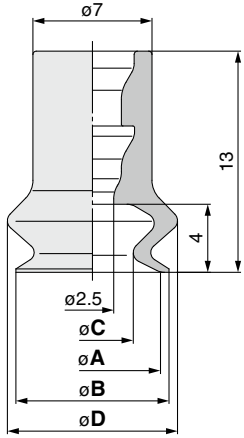
\* The pad, lock ring, mounting nut, fitting, and buffer plate are shipped together but do not come assembled.



**Dimensions/Models**

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

**ZP 06 B N**  
① ②



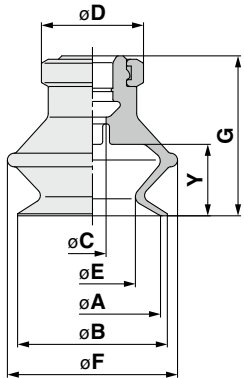
Model			A	B	C	D
ZP	① Pad dia.	② Form	A	B	C	D
	06	B				
	08	B	6	7	3.4	9
		N S U F GN GS	8	9	4.8	10

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

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Mounting Bracket Assembly From p. 121

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

**ZP 10 B N**  
① ②



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

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

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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

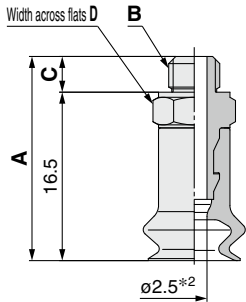
Construction

Mounting Bracket Assembly

Precautions

**Dimensions/Models**

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



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Adapter Assembly p. 121

ZPT **06** B **N** - **A5**  
①      ②

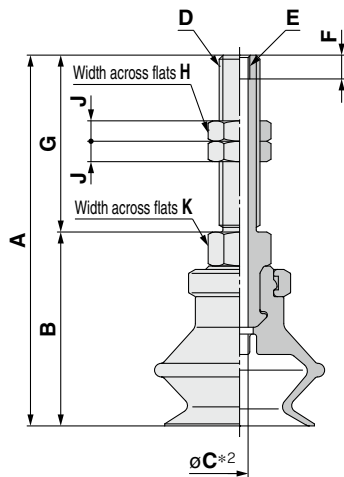
③ Vacuum inlet (Male thread)

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

Model					A	B	C	D	
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet					
ZP	T	06 08	B	N	A5	20	M5 x 0.8	3.5	7
				S U F GN GS	A6	21	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  $\varnothing 50$**



Construction p. 117  
Adapter Assembly p. 121

ZPT **10** B **N** - **A5**  
①      ②

③ Connection thread (Male thread)

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

Model						A	B	C*2	D	E	F	G	H	J	K
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Connection thread											
ZP	T	10 13 16 10 13 16 20 25 32 40 50 20 25 32 40 50	B	N S U F GN GS	A5	42	21	2.5	M5 x 0.8	M3 x 0.5	3.5	21	8	4	8
						44.5	23.5								
						46	25								
						47	21								
						49.5	23.5								
						51	25								
					A6	54.5	28.5	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	8
						55	29								
						60	34								
						66	40								
						70	44								
						70	44								
					A8	49.5	33.5	4	M8 x 1	M5 x 0.8	5	16	12	4	12
						50	34								
						55	39								
						56	40								
						60	44								
						60	44								

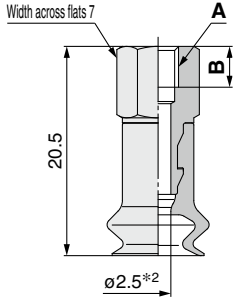
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber  
\*2 Indicates the minimum hole size of the adapter or vacuum pad

**Recommended Gasket Part Nos.**

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

**Dimensions/Models**

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



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

ZPT **06** B **N** - **B4**  
① ② ③

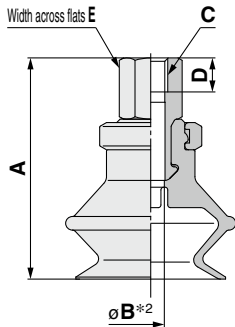
③ Vacuum inlet (Female thread)

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

Model						A	B
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet			
ZP	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  $\varnothing 10$  to  $\varnothing 50$**



**Construction** p. 117  
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ZPT **10** B **N** - **B5**  
① ② ③

③ 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</b>	NPT1/8
<b>T01</b>	NPTF1/8

Model						A	B*2	C	D	E			
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet									
ZP	T	B	N S U F GN GS	B5	10	25	M5 x 0.8	5	8				
					13	27.5							
					16	29							
					20	32.5							
					25	33							
					32	38							
					B6	10	25	M6 x 1		6			
						13	27.5						
						16	29						
						20	32.5						
						25	33						
						32	38						
				B8	10	25	M8 x 1.25	8					
					13	27.5							
					16	29							
					20	32.5							
					25	33							
					32	38							
				B01 N01 T01	10 13 16 20 25 32 40 50	B	N S U F GN GS	B01 N01 T01	10	31	Rc1/8 NPT1/8 NPTF1/8	—	12
									13	33.5			
									16	35			
									20	38.5			
									25	39			
									32	44			
40	47.5												
50	51.5												
10	31	3.5	—						12				
13	33.5												
16	35												
20	38.5												
25	39												
32	44												
40	47.5												
50	51.5												

\*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

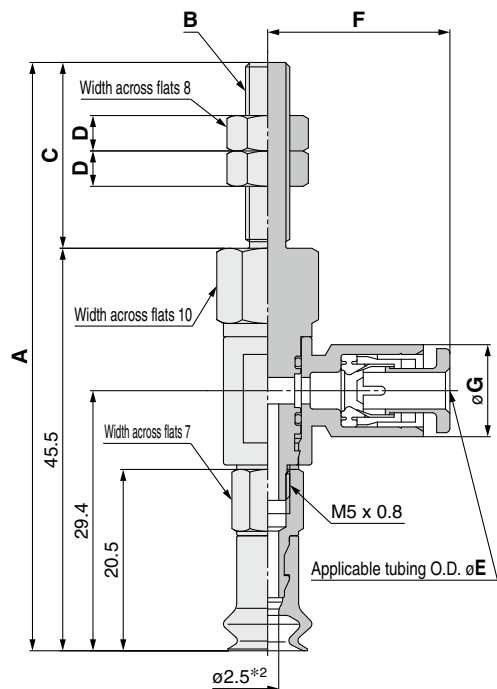
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 122

ZPR **06** **B** **N** - **04** - **A5**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b> Connection thread (Male thread)
Vacuum inlet (One-touch fitting)			
<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	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	A5	66.5	M5 x 0.8	21	4	$\varnothing 3$
					06	A6	71.5	M6 x 1	26	4	$\varnothing 4$

### Dimensions Per Vacuum Inlet

Model						E	F	G
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	20.6	10.4
					06	6	21.6	12.8

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

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

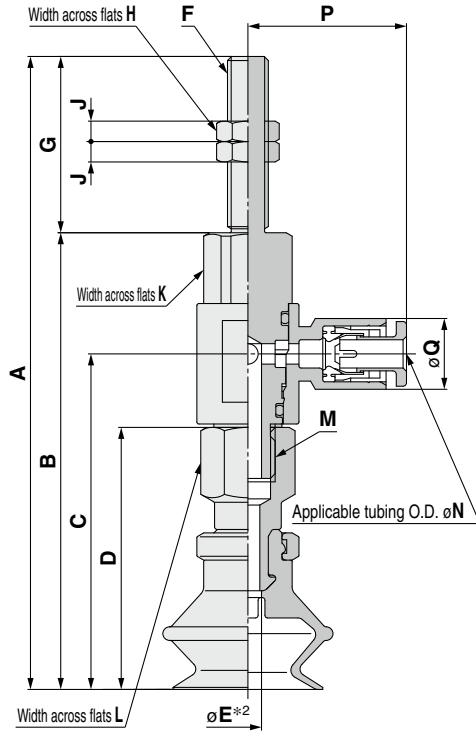
① ②

Vacuum inlet ③  
(One-touch fitting)

④ Connection thread  
(Male thread)

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
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Model						A	B	C	D	*2 E	F	G	H	J	K	L	M																														
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	10	8	M5 x 0.8																														
						73.5	52.5	36.4	27.5																																						
						75	54	37.9	29	2.5								M6 x 1	26	8	4	10	8	M5 x 0.8																							
						76	50	33.9	25																																						
						78.5	52.5	36.4	27.5	3.5															M8 x 1.25	25.9	12	12	12	12	M8 x 1.25																
						80	54	37.9	29																																						
						93	67.1	49.3	38.5	4																						M8 x 1	15.9	12	4	12	12	12	M8 x 1.25								
						93.5	67.6	49.8	39																																						
						98.5	72.6	54.8	44	3.5																														M8 x 1	15.9	12	4	12	12	12	M8 x 1.25
						98.5	72.6	54.8	44																																						
	102	76.1	58.3	47.5	4	M8 x 1	15.9	12	4	12	12	12	M8 x 1.25																																		
	106	80.1	62.3	51.5																																											
	83	67.1	49.3	38.5	3.5									M8 x 1	15.9	12	4	12	12	12	M8 x 1.25																										
	83.5	67.6	49.8	39																																											
	88.5	72.6	54.8	44	4																	M8 x 1	15.9	12	4	12	12	12	M8 x 1.25																		
	88.5	72.6	54.8	44																																											
	92	76.1	58.3	47.5	4																									M8 x 1	15.9	12	4	12	12	12	M8 x 1.25										
	96	80.1	62.3	51.5																																											

**Dimensions Per Vacuum Inlet**

Model						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	4	20.6	10.4	$\varnothing 3$
				06	A6	6	21.6	12.8	$\varnothing 4$
				06	A6	4	23.3	10.4	$\varnothing 3$
				06	A8	6	24.3	12.8	$\varnothing 4.5$
				08	A8	8	26.2	15.2	$\varnothing 6$
				06	A6	6	24.3	12.8	$\varnothing 4.5$
				08	A8	8	26.2	15.2	$\varnothing 6$

\*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

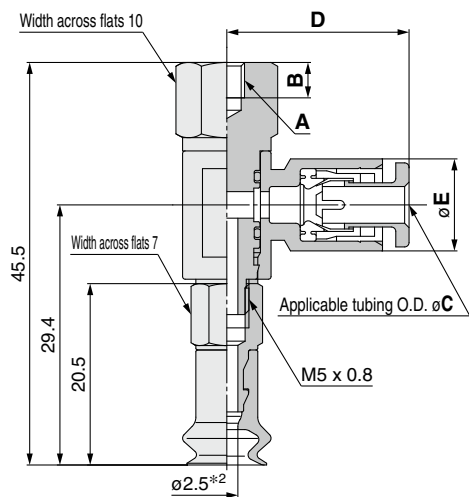
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

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



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>	$\varnothing 4$		<b>B4</b> M4 x 0.7
<b>06</b>	$\varnothing 6$		<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
					06	B5	M5 x 0.8	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	20.6	10.4	$\varnothing 3$
					06		6	21.6	12.8	$\varnothing 4$

\*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**

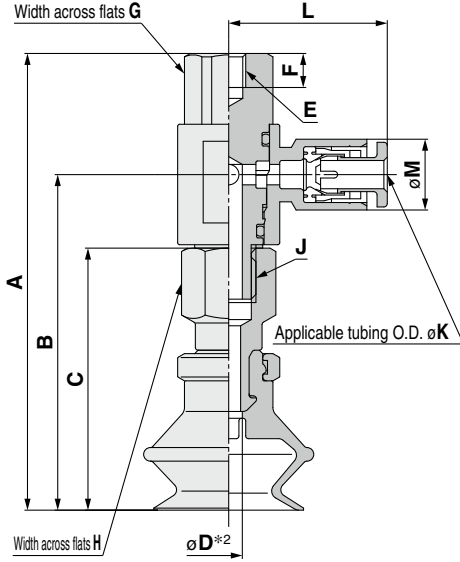
**With adapter/One-touch fitting  $\phi 10$  to  $\phi 50$**

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

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

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

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



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		Model				A	B	C	D*2	E	F	G	H	J	
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	10	8	M5 x 0.8
						13	52.5	36.4	27.5						
						16	54	37.9	29						
						20	67.1	49.3	38.5						
						25	67.6	49.8	39						
					32	72.6	54.8	44							
					10	50	33.9	25	2.5	M5 x 0.8	5	10	8	M5 x 0.8	
					13	52.5	36.4	27.5							
					16	54	37.9	29							
					20	67.1	49.3	38.5							
				25	67.6	49.8	39								
				32	72.6	54.8	44								
				40	76.1	58.3	47.5	4	M6 x 1	6	12	12	M8 x 1.25		
				50	80.1	62.3	51.5								
				20	67.1	49.3	38.5	3.5	M8 x 1.25	8	12	12	M8 x 1.25		
				25	67.6	49.8	39								
				32	72.6	54.8	44								
				40	76.1	58.3	47.5								
				50	80.1	62.3	51.5								

**Dimensions Per Vacuum Inlet**

		Model				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	4	20.6	10.4	$\phi 3$
					B6	6	21.6	12.8	$\phi 4$
				06	B5	4	23.3	10.4	$\phi 3$
					B6	6	24.3	12.8	$\phi 4.5$
				08	B6	8	26.2	15.2	$\phi 6$
					B8	8	24.3	12.8	$\phi 4.5$
				08	B6	6	24.3	12.8	$\phi 4.5$
					B8	8	26.2	15.2	$\phi 6$

\*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

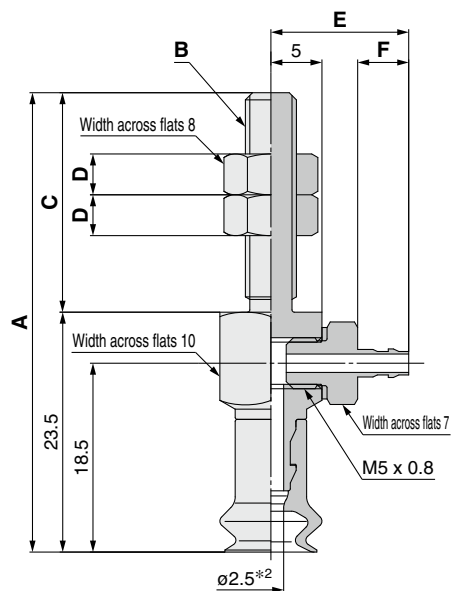
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

With adapter/barb fitting  $\varnothing 6$  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	13.5	5	$\varnothing 1.8$
					N6 U6	A6	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**

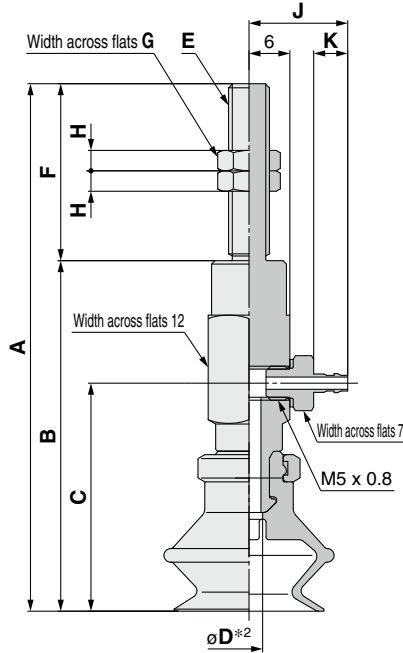
① ②

**Vacuum inlet (Barb fitting)**

④ **Connection thread (Male thread)**

<b>A5</b>	M5 x 0.8
<b>A6</b>	M6 x 1
<b>A8</b>	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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		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	U6								
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

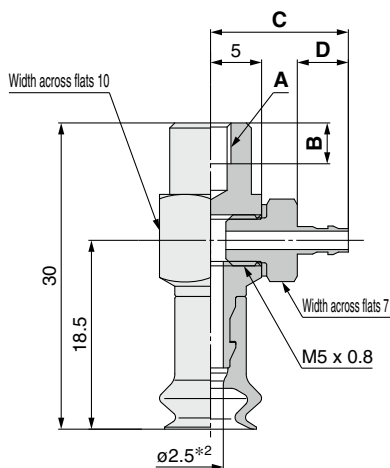
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

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



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Adapter Assembly p. 123

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

① ②

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	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	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	$\phi 2.5$

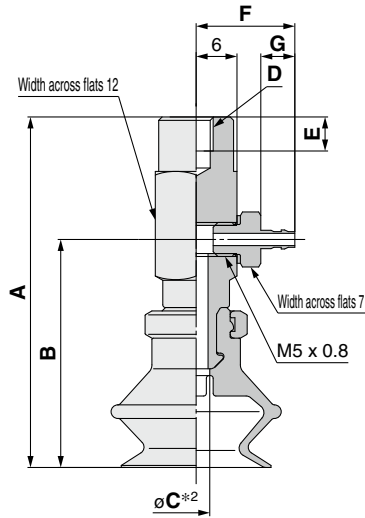
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

\*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  
②  
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 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	3.5						
		52	34							
	57	39	6							
	62	44								
	66	48	6							

**Dimensions Per Vacuum Inlet**

		Model				F	G	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	② Form	③ 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	16.5	7
				N4 U4	B5 B6 B8	14.5	5	$\varnothing 1.8$
						16.5	7	$\varnothing 2.5$
				N6 U6	B6 B8	16.5	7	$\varnothing 2.5$
						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  $\varnothing 6$  to  $\varnothing 8$**

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

① ② ④

**Buffer specification ③**

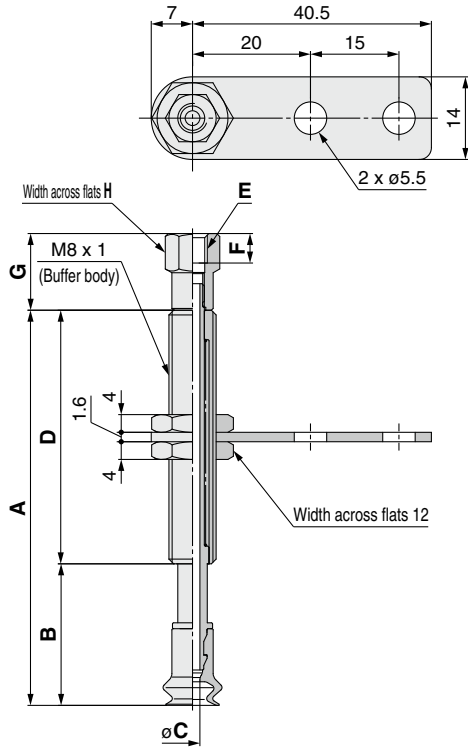
<b>J</b>	Rotating
<b>K</b>	Non-rotating

⑥ **Connection thread (Male thread)**

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

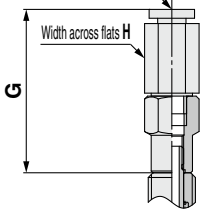
⑤ **Vacuum inlet**

<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		

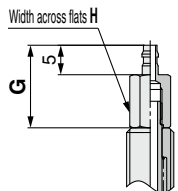


**Vacuum inlet: One-touch fitting**

Applicable tubing O.D.  $\varnothing J$



**Vacuum inlet: Barb fitting**



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

		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	6	B3	A8	34	19	J: 2.5 K: 2	15
						10	B5		67	24		43
						15	04		72	29		
						25	06 N4 U4		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	6	B3	A8	M3 x 0.5	3	11	6
						10 15 25	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	06 08	B	N S U F GN GS	J K	6	04	A8	27.7	8	4	$\varnothing 2.5$
						10 15 25	06			10	6	

**Dimensions Per Vacuum Inlet: Barb Fitting**

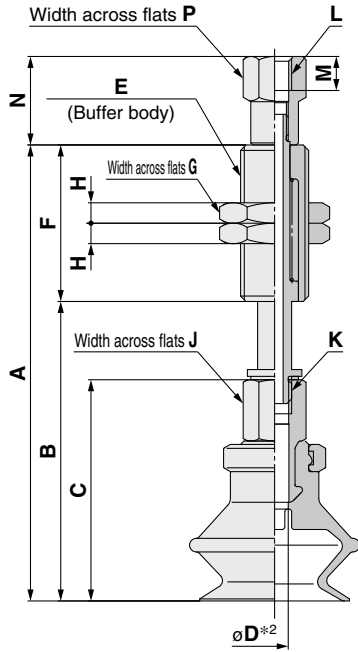
		Model						G	H	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	06 08	B	N S U F GN GS	J K	6 10 15 25	N4 U4	A8	14	6	$\varnothing 1.8$

\*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  $\varnothing 50$



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Buffer Assembly p. 124

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

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
Pad dia.	Form	Material	Buffer spec.	Vacuum inlet	Connection thread
J Rotating K Non-rotating	B	N S U F GN GS	J K	B5 M5 x 0.8 B01 Rc1/8 N01 NPT1/8 T01 NPTF1/8	A10 M10 x 1 A14 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 GN GS	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								
					20			100	49								
					30			110	59								
					40			146	69								
					50			156	79								
					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								
					10			67	44								
					20			105	54								
					30			115	64								
					40			151	74								
					50			161	84								
					10			67.5	44.5								
					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								
					20			110.5	59.5								
					30			120.5	69.5								
					40			156.5	79.5								
					50			166.5	89.5								
					10			110	60								
					20			120	70								
					30			130	80								
					40			175	100								
					50			175	100								
					10			114	64								
					20			124	74								
					30			134	84								
					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 GN GS	J K	10	B5	A10	M5 x 0.8	5	13	8												
					20																		
					30																		
					40																		
					50																		
					10							B5	A10	M5 x 0.8	5	9	10						
					20																		
					30																		
					40																		
					50																		
					10													B01 N01 T01	A14	Rc1/8 NPT1/8 NPTF1/8	—	16.5	13
					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

## Dimensions/Models

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

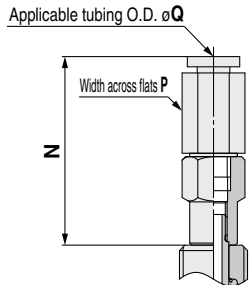
ZPT **10** **B** **N** **J** **10** - **04** - **A10**

① ② ④

⑥ Connection thread (Male thread)

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

### Vacuum inlet: One-touch fitting



Buffer specification ③

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

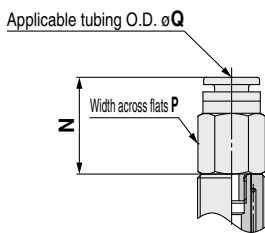
⑤ Vacuum inlet

			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	A14		31.8	10		6
		25				50						
		32				10			06	08		35.9
40	50	20	06	19.9	12	6						
50		30	08	24.9	14	8						
50		50	08									

### 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					
		20				A14	19		10		
		25									10
		32					20		N6		U6
40	50	30	U6								
50		50									

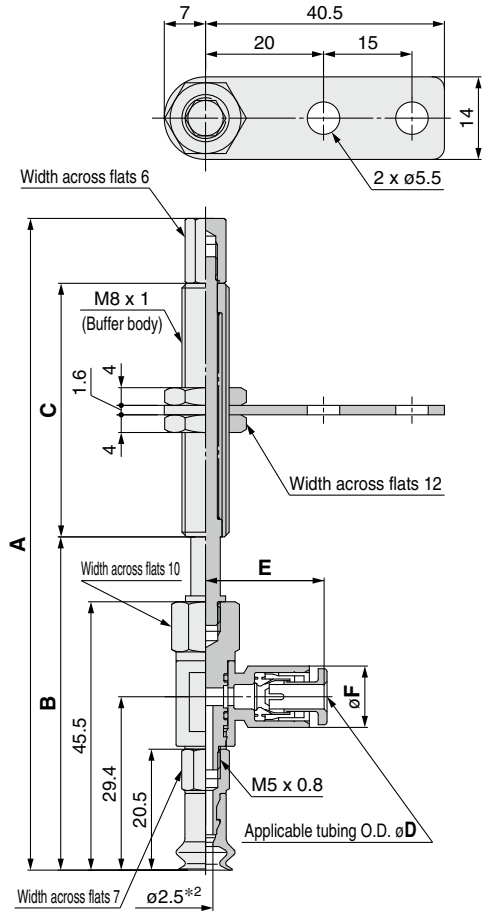
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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Buffer Assembly	p. 124



**Dimensions/Models**

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



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

**Buffer specification** **3**

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

**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>06</b> <b>08</b>	<b>B</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>6</b>	<b>04</b> <b>06</b>	<b>A8</b>	79.5	53.5	15
						<b>10</b>			110.5	56.5	43
						<b>15</b>			115.5	61.5	
						<b>25</b>			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					
<b>ZP</b>	<b>R</b>	<b>06</b> <b>08</b>	<b>B</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>6</b>	<b>04</b> <b>06</b>	<b>A8</b>	4	20.6	10.4	$\varnothing 3$
						<b>10</b>			6	21.6	12.8	$\varnothing 4$
						<b>15</b> <b>25</b>						

\*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**

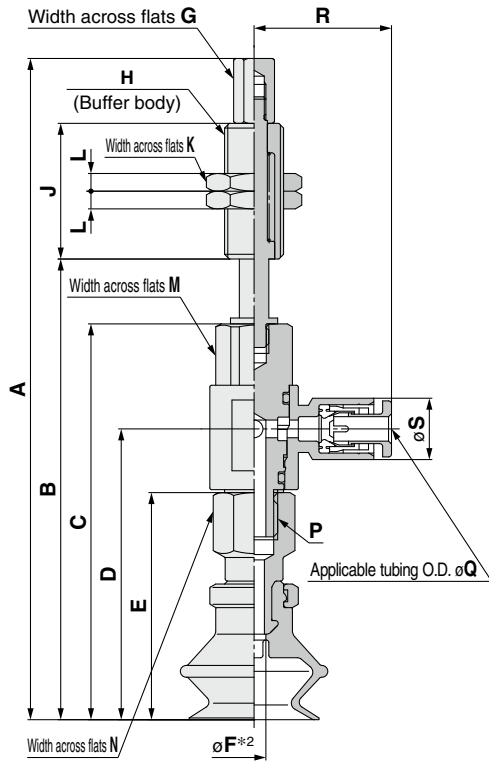
<b>J</b>	Rotating
<b>K</b>	Non-rotating

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

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

**Connection thread (Male thread)**

<b>A10</b>	M10 x 1
<b>A14</b>	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	P
ZP	R	B	N S U F GN GS	J K	10	04	A10	95	61	50	33.9	25	2.5	6	M10 x 1	23	14	3	8	M5 x 0.8	P
					20			133	71							51					
					30			143	81							77					
					40			179	91							23					
					50			189	101							51					
					10			97.5	63.5							77					
					20			135.5	73.5							23					
					30			145.5	83.5							51					
					40			181.5	93.5							77					
					50			191.5	103.5							23					
					10			99	65							51					
					20			137	75							77					
					30			147	85							23					
					40			183	95							51					
					50			193	105							77					
					10			112.1	78.1							23					
					20			150.1	88.1							51					
					30			160.1	98.1							77					
					40			196.1	108.1							23					
					50			206.1	118.1							51					
					10			112.6	78.6							77					
					20			150.6	88.6							23					
					30			160.6	98.6							51					
					40			196.6	108.6							77					
					50			206.6	118.6							23					
					10			117.6	83.6							51					
					20			155.6	93.6							77					
					30			165.6	103.6							23					
					40			201.6	113.6							51					
					50			211.6	123.6							77					
					10			156.1	88.1							23					
					20			153.1	98.1							51					
					30			163.1	108.1							77					
					40			208.1	128.1							23					
					50			160.1	92.1							51					
					10			157.1	102.1							77					
					20			167.1	112.1							23					
					30			212.1	132.1							51					

**Dimensions Per Vacuum Inlet**

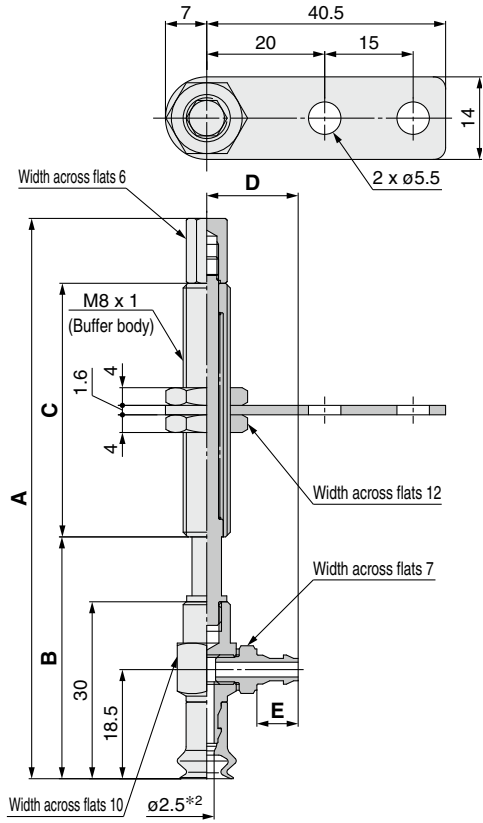
		Model						Q	R	S	Fitting part min. hole size					
Vacuum inlet direction	1 Pad dia.	Form	2 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread									
ZP	R	B	N S U F GN GS	J K	10	04	A10	4	20.6	10.4	$\varnothing 3$					
					20											
					30											
					40											
					50	06		6	21.6	12.8	$\varnothing 4$					
					10											
					20											
					30											
					40	08		8	26.2	15.2	$\varnothing 6$					
					50											
					10							06	6	24.3	12.8	$\varnothing 4.5$
					20											
30																
50	08	8	26.2	15.2	$\varnothing 6$											

\*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  $\varnothing 8$**



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

1 2 3 4 5 6

**Buffer specification** 3

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

**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> *1 Material	<b>3</b> Buffer spec.	<b>4</b> Buffer stroke	<b>5</b> Vacuum inlet	<b>6</b> Connection thread			
ZP	Y	06 08	B	N S U F GN GS	J K	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	<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	Y	06 08	B	N S U F GN GS	J K	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

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

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  $\varnothing 50$**

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

① ② ④

**Buffer specification ③**

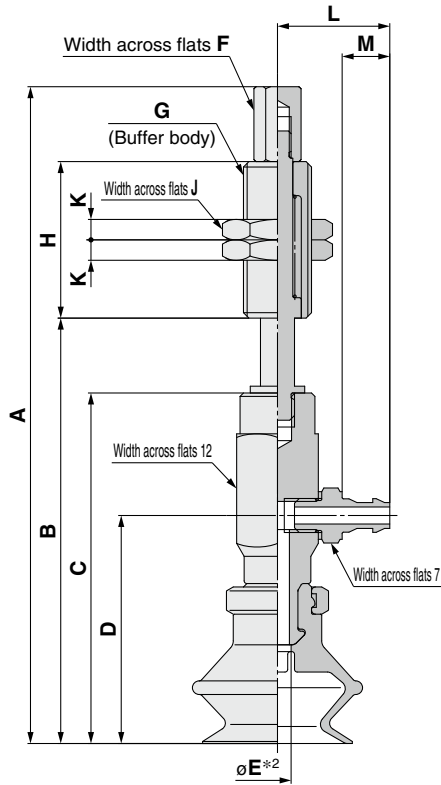
<b>J</b>	Rotating
<b>K</b>	Non-rotating

⑥ **Connection thread (Male thread)**

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

⑤ **Vacuum inlet (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



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

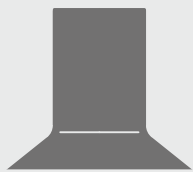
		Model										A	B	C	D	*2 E	F	G	H	J	K	
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread															
ZP	10	B	N S U F GN GS	J K	10	N4 N6 U4 U6	A10	87	53	42	26	2.5	6	M10 x 1	14	3	23	51	77	23	51	
					20			125	63													77
					30			135	73													77
					40			171	83													77
					50			181	93													77
					10			89.5	55.5													23
					20			127.5	65.5													23
					30			137.5	75.5													23
					40			173.5	85.5													23
					50			183.5	95.5													23
					10			91	57													23
					20			129	67													23
	30	139	77	23																		
	40	175	87	23																		
	50	185	97	23																		
	10	96.5	62.5	23																		
	20	134.5	72.5	23																		
	30	144.5	82.5	23																		
	40	180.5	92.5	23																		
	50	190.5	102.5	23																		
	10	97	63	23																		
	20	135	73	23																		
	30	145	83	23																		
	40	181	93	23																		
50	191	103	23																			
10	102	68	23																			
20	140	78	23																			
30	150	88	23																			
40	186	98	23																			
50	196	108	23																			
10	142	74	23																			
20	139	84	23																			
30	149	94	23																			
40	194	114	23																			
50	194	114	23																			
10	146	78	23																			
20	143	88	23																			
30	153	98	23																			
40	198	118	23																			
50	198	118	23																			

**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 S U F GN GS	J K	10 20 30 40 50	N4 U4	A10	14.5	5	14.5	5	14.5	5	$\varnothing 1.8$														
															N6 U6	A10	16.5	7	16.5	7	$\varnothing 2.5$							
																						N6 U6	A14	16.5	7	16.5	7	$\varnothing 2.5$
															N6 U6	A14	16.5	7	16.5	7	$\varnothing 2.5$							
															N6 U6	A14	16.5	7	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



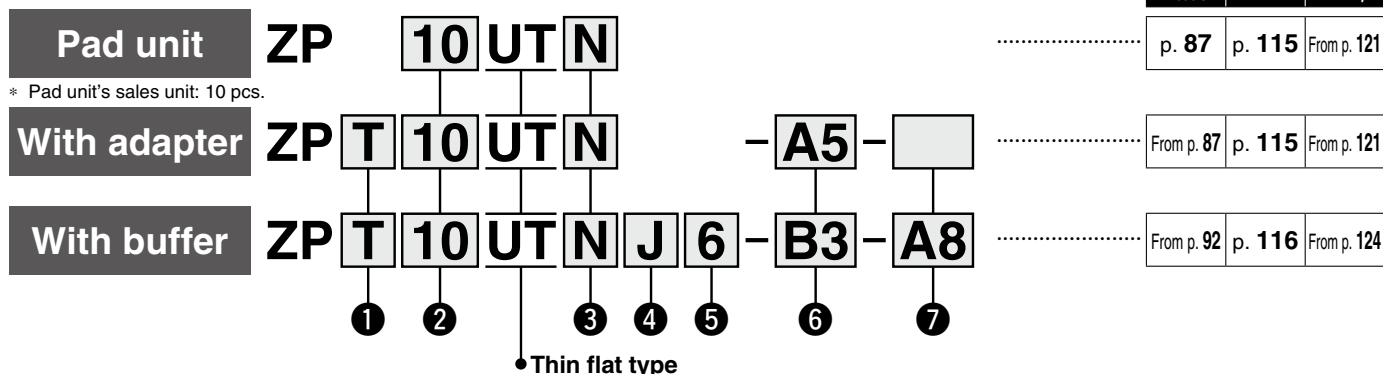
# Basic Pad

## Thin Flat Type

# ZP Series



### How to Order



#### ① Vacuum inlet direction

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

#### ② Pad diameter

10	ø10
<b>13</b>	ø13
<b>16</b>	ø16

#### 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

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

#### ④ Buffer specification

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

#### ⑤ Buffer stroke

Stroke [mm]	Pad diameter
	All sizes
<b>6</b>	●
<b>10</b>	●
<b>15</b>	●
<b>25</b>	●

### With adapter

#### ⑥ Vacuum inlet

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

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

#### ⑦ Connection thread ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

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

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

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

### With buffer

#### ⑥ Vacuum inlet

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

Type	Symbol	Size	Pad diameter
			All sizes
Female thread	<b>B3</b>	M3 x 0.5	○
	<b>B5</b>	M5 x 0.8	○
One-touch fitting	<b>04</b>	ø4	○●
	<b>06</b>	ø6	○●
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

#### ⑦ Connection thread

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

Type	Symbol	Size	Pad diameter
			All sizes
Male thread	<b>A8</b>	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

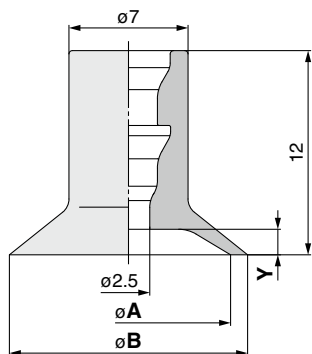
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

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



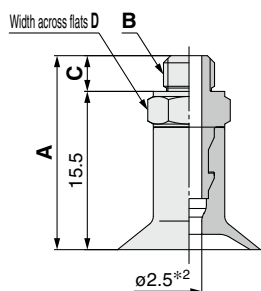
Construction p. 115  
Mounting Bracket Assembly From p. 121

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

ZPT **10** UT **N** - **A5**  
① ② ③

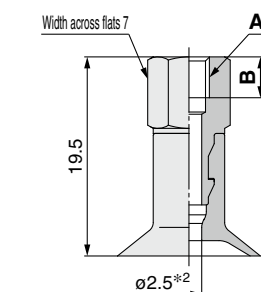
③ Vacuum inlet  
(Male thread)

A5	M5 x 0.8
A6	M6 x 1

Model						A	B	C	D
Vacuum inlet direction	① Pad dia.	Form	② Material <sup>*1</sup>	③ Vacuum inlet					
ZP	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



Construction p. 115  
Adapter Assembly p. 121

ZPT **10** UT **N** - **B4**  
① ② ③

③ Vacuum inlet  
(Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

Model						A	B
Vacuum inlet direction	① Pad dia.	Form	② Material <sup>*1</sup>	③ Vacuum inlet			
ZP	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

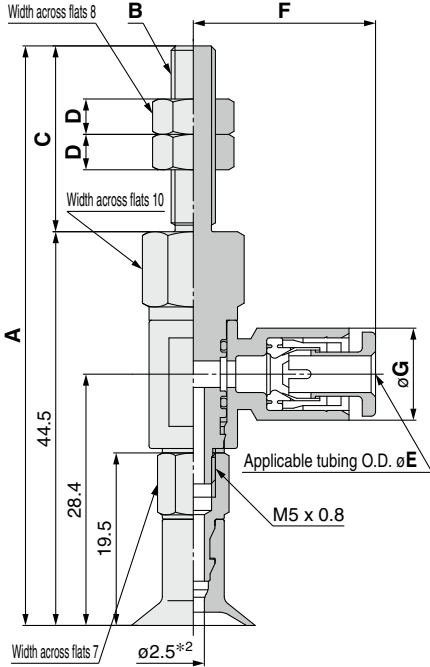
④

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	20.6	10.4	$\varnothing 3$
					06		6	21.6	12.8	$\varnothing 4$

\*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

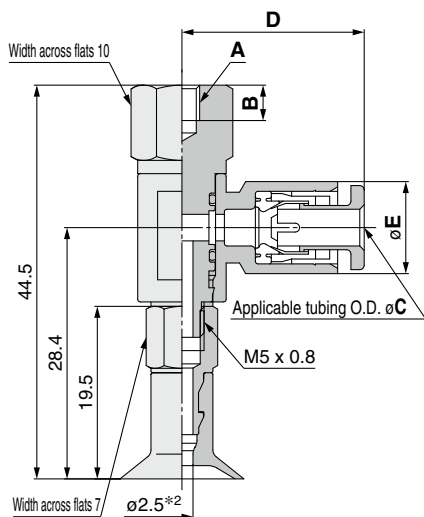
Construction

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

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

		Model				A	B	
Vacuum inlet direction	① Pad dia.	Form	②*1 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
					06	B5	M5 x 0.8	5

### Dimensions Per Vacuum Inlet

		Model				C	D	E	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread					
ZP	R	10 13 16	UT	N S U F GN GS	04	B4 B5	4	20.6	10.4	$\varnothing 3$
					06		6	21.6	12.8	$\varnothing 4$

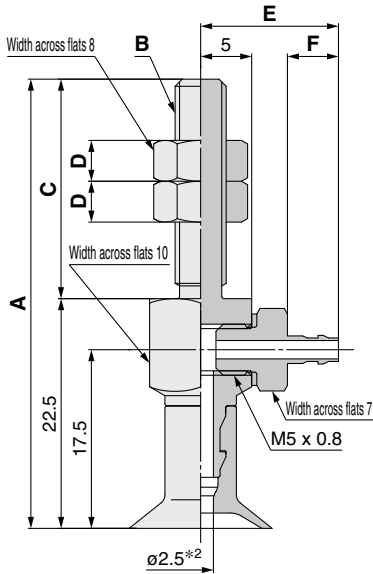
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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



**Dimensions/Models**

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



Construction	p. 115
Adapter Assembly	p. 123

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

①  
②  
③ Vacuum inlet (Barb fitting)

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	UT	N S U F GN GS	N4	A5	44	M5 x 0.8	21.5	4
					N6					
					U4					
					U6					
						49.5	M6 x 1	27	4	

**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 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

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

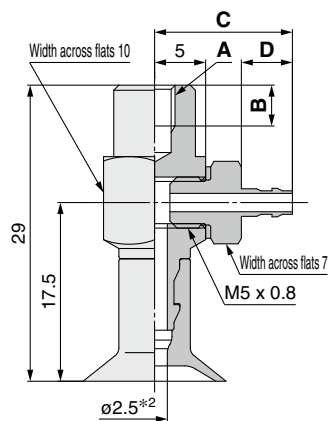
Construction

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  
③ Vacuum inlet (Barb fitting)

④ Connection thread (Female thread)

B4	M4 x 0.7
B5	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*1 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

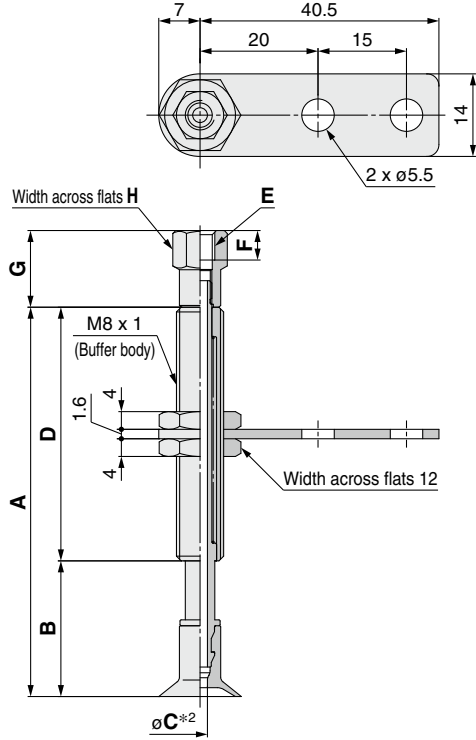
		Model				C	D	Fitting part min. hole size	
	Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet				④ Connection thread
ZP	Y	10 13 16	UT	N S U F GN GS	N4 U4	B4 B5	13.5	5	$\varnothing 1.8$
					N6 U6		15.5	7	$\varnothing 2.5$

\*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  $\varnothing 16$**



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

**Buffer specification 3**

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

**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		

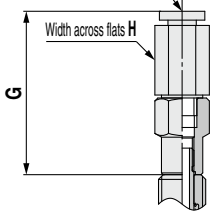
		Model						A	B	C*2	D	
Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread					
ZP	T	10 13 16	UT	N S U F GN GS	J K	6	B3	A8	33	18	J: 2.5 K: 2	15
						10	B5		66	23		43
						15	04		71	28		
						25	06 N4 U4		81	38		

**Dimensions Per Vacuum Inlet: Female Thread**

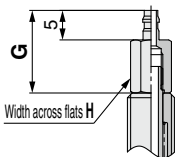
		Model						E	F	G	H	
Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread					
ZP	T	10 13 16	UT	N S U F GN GS	J K	6	B3	A8	M3 x 0.5	3	11	6
						10 15 25	B5		M5 x 0.8	5	13	8

**Vacuum inlet: One-touch fitting**

Applicable tubing O.D.  $\varnothing J$



**Vacuum inlet: Barb fitting**



- Construction** p. 116
- Buffer Assembly** p. 124

**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	UT	N S U F GN GS	J K	6	04	A8	27.7	8	4	$\varnothing 2.5$
						10 15 25	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	10 13 16	UT	N S U F GN GS	J K	6	N4	A8	14	6	$\varnothing 1.8$
						10 15 25	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

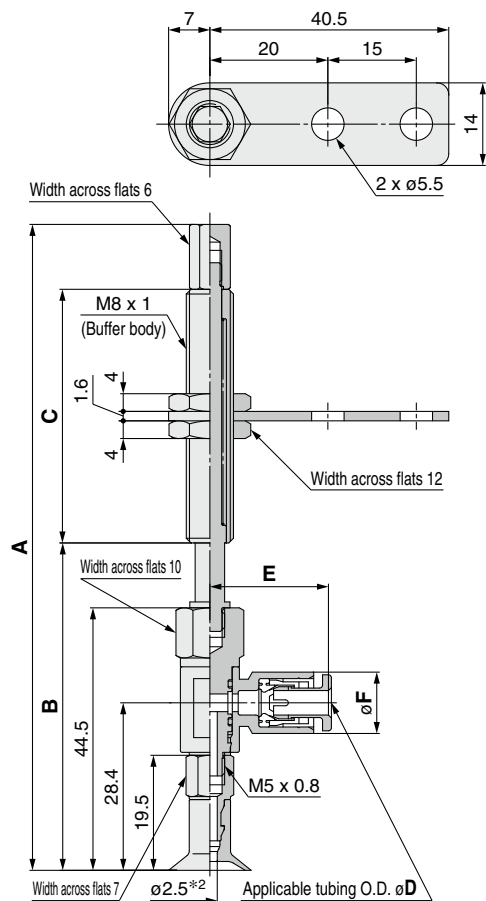
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

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



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

① ② ③ ④ ⑤ ⑥

**Buffer specification** ③

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

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	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	R	10 13 16	UT	N S U F GN GS	J K	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	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	R	10 13 16	UT	N S U F GN GS	J K	6	04 06	A8	4	20.6	10.4	$\varnothing 3$
						10 15 25			6	21.6	12.8	$\varnothing 4$

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

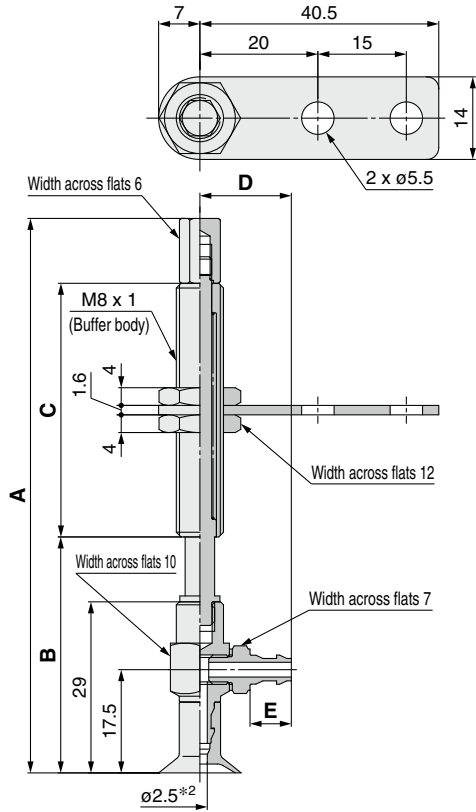
\*2 Indicates the minimum hole size of the adapter or vacuum pad

Construction p. 116

Buffer Assembly p. 125

**Dimensions/Models**

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



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

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

**Buffer specification**

J	Rotating
K	Non-rotating

**6 Connection thread (Male thread)**

A8	M8 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	
	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	Y	10	UT	N S U F GN GS	J K	6	N4 N6 U4 U6	A8	63	37	15
		13				10			94		
		16				15			99		
						25			109		

**Dimensions Per Vacuum Inlet**

		Model						D	E	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	Y	10	UT	N S U F GN GS	J K	6	N4 U4 N6 U6	A8	13.5	5	$\varnothing 1.8$
		13				10			15.5		
		16				15					$\varnothing 2.5$

\*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



# Basic Pad

## Thin Flat Type with Ribs

# ZP Series



### How to Order

	Dimensions/ Models	Construction	Mounting Bracket Assembly
<b>Pad unit</b> ZP <b>10</b> CT N	p. 96	p. 115	From p. 121
<b>With adapter</b> ZP T <b>10</b> CT N - <b>A5</b> -	From p. 96	p. 115	From p. 121
<b>With buffer</b> ZP T <b>10</b> CT N J <b>6</b> - <b>B3</b> - <b>A8</b>	From p. 101	p. 116	From p. 124

①
②
③
④
⑤
⑥
⑦

● Thin flat type with ribs

#### ① Vacuum inlet direction

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

#### ② Pad diameter

10	ø10
13	ø13
16	ø16

#### ③ Material

N	NBR
S	Silicone rubber*1
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"

#### ④ Buffer specification

J	Rotating
K	Non-rotating

#### ⑤ Buffer stroke

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

### With adapter

#### ⑥ Vacuum inlet

○: ZPT/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	△

#### ⑦ 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 ○: ZPT/Vertical. Use the vacuum inlet.

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

### With buffer

#### ⑥ 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

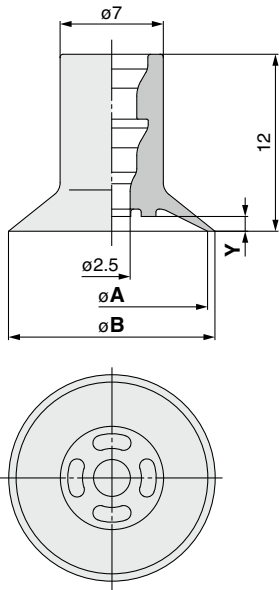
#### ⑦ Connection thread ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

○: 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

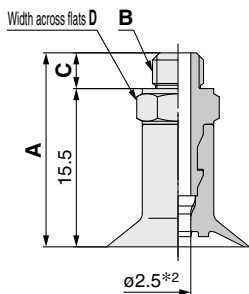
Model				A	B	Y
① Pad dia.	Form	② Material <sup>*1</sup>				
ZP	10	CT	N S U F GN GS	10	11	0.8
	13			14	1	
	16			17		

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

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Mounting Bracket Assembly From p. 121

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



**ZPT 10 CT N - A5**  
① ②

③ Vacuum inlet (Male thread)

A5	M5 x 0.8
A6	M6 x 1

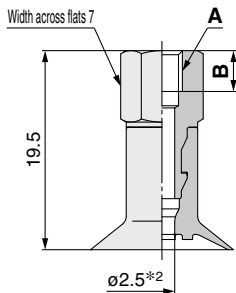
Model						A	B	C	D
Vacuum inlet direction	① Pad dia.	Form	② Material <sup>*1</sup>	③ Vacuum inlet					
ZP	T	10 13 16	CT	N S U F GN GS	A5	19	M5 x 0.8	3.5	7
					A6	20	M6 x 1	4.5	8

\*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

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Adapter Assembly p. 121



**ZPT 10 CT N - B4**  
① ②

③ Vacuum inlet (Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

Model						A	B
Vacuum inlet direction	① Pad dia.	Form	② Material <sup>*1</sup>	③ Vacuum inlet			
ZP	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

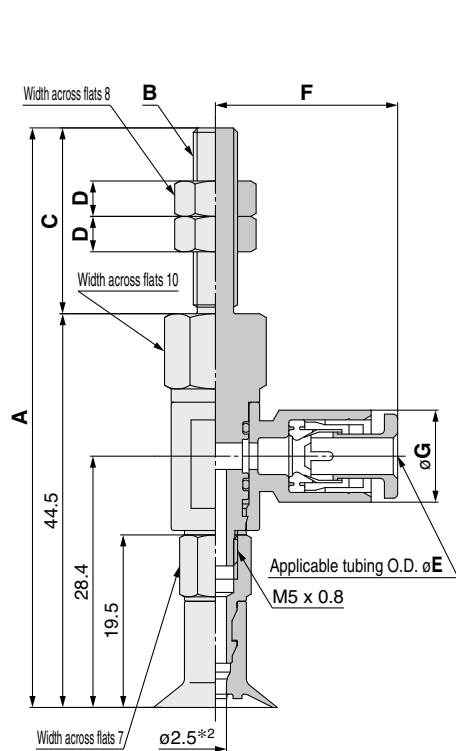
Construction

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>04</b>	<b>06</b>	<b>04</b>
		<b>06</b>

Vacuum inlet  
(One-touch fitting)

<b>4</b>	<b>Connection thread (Male thread)</b>
<b>A5</b>	M5 x 0.8
<b>A6</b>	M6 x 1

Model						A	B	C	D
Vacuum inlet direction	<b>1</b> Pad dia.	Form	<b>2</b> 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> Material	<b>3</b> Vacuum inlet	<b>4</b> Connection thread				
ZP	R	CT	N S U F GN GS	04	A5	4	20.6	10.4	$\varnothing 3$
					A6	6	21.6	12.8	$\varnothing 4$
				06					

\*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

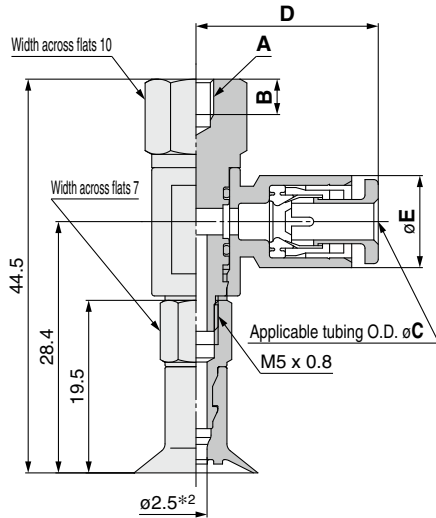
④

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*1 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
					06	B5	M5 x 0.8	5

**Dimensions Per Vacuum Inlet**

Model							C	D	E	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread					
ZP	R	10 13 16	CT	N S U F GN GS	04	B4 B5	4	20.6	10.4	$\varnothing 3$
					06		6	21.6	12.8	$\varnothing 4$

\*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

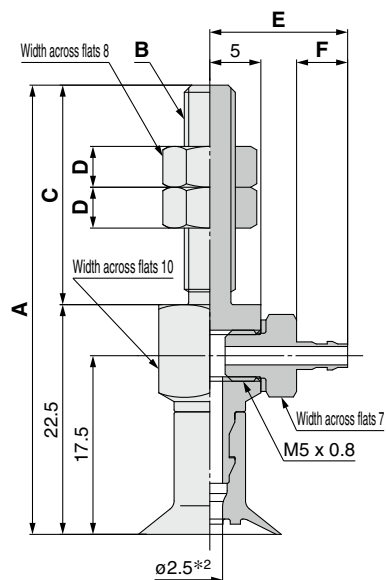
Construction

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*1 Material	③ Vacuum inlet	④ Connection thread					
ZP	Y	10 13 16	CT	N S U F GN GS	N4	A5	44	M5 x 0.8	21.5	4
					N6 U4 U6					
ZP	Y	10 13 16	CT	N S U F GN GS	N4	A6	49.5	M6 x 1	27	4
					N6 U4 U6					

### Dimensions Per Vacuum Inlet

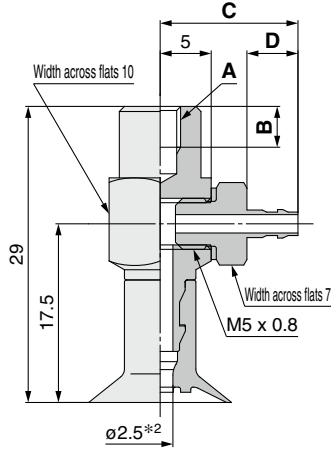
Model						E	F	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread				
ZP	Y	10 13 16	CT	N S U F GN GS	N4 U4	A5 A6	13.5	5	$\varnothing 1.8$
					N6 U6				
ZP	Y	10 13 16	CT	N S U F GN GS	N4 U4	A5 A6	15.5	7	$\varnothing 2.5$
					N6 U6				

\*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  $\varnothing 16$**



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**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*1 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*1 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

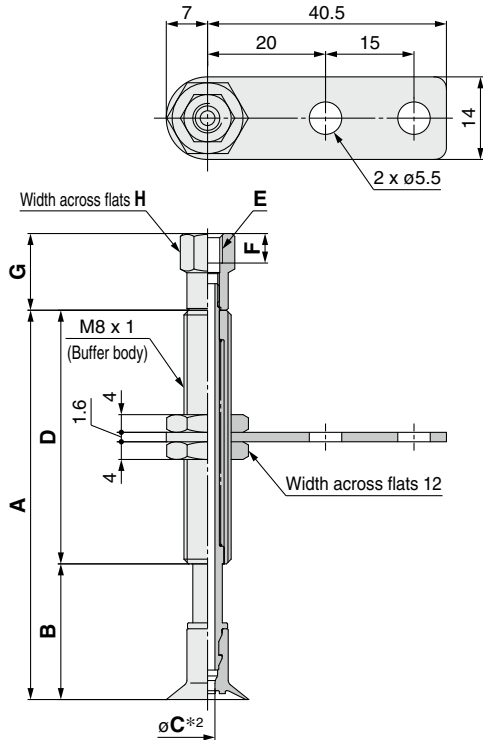
Construction

Mounting Bracket Assembly

Precautions

**Dimensions/Models**

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



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

**Buffer specification** **3**

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

**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	

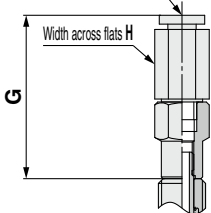
		Model						A	B	C*2	D	
Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread					
ZP	T	10 13 16	CT	N S U F GN GS	J K	6	B3	A8	33	18	J: 2.5 K: 2	15
						10	B5		66	23		43
						15	04		71	28		
						25	06 N4 U4		81	38		

**Dimensions Per Vacuum Inlet: Female Thread**

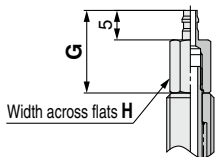
		Model						E	F	G	H	
Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread					
ZP	T	10 13 16	CT	N S U F GN GS	J K	6	B3	A8	M3 x 0.5	3	11	6
						10 15 25	B5		M5 x 0.8	5	13	8

**Vacuum inlet: One-touch fitting**

Applicable tubing O.D.  $\varnothing J$



**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*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 K	6	04	A8	27.7	8	4	$\varnothing 2.5$
						10 15 25	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	10 13 16	CT	N S U F GN GS	J K	6	N4	A8	14	6	$\varnothing 1.8$
						10 15 25	U4				

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<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  $\varnothing 16$

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

Buffer specification **3**

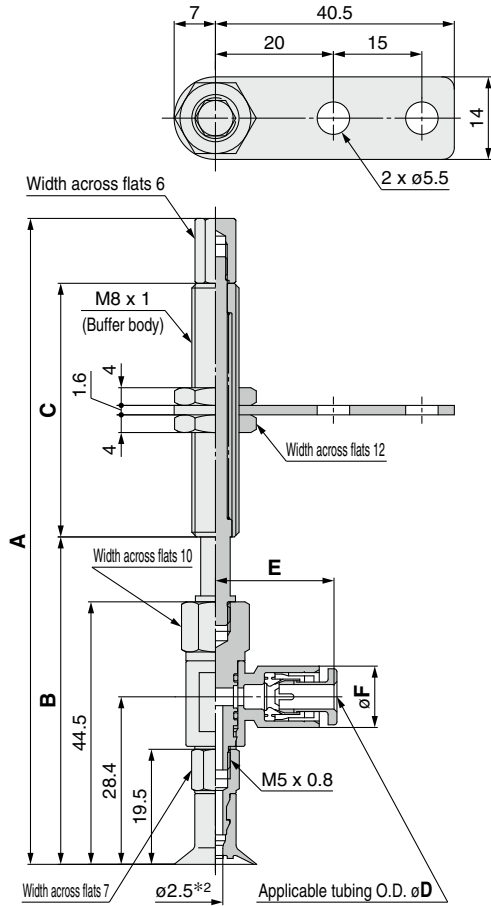
<b>J</b>	Rotating
<b>K</b>	Non-rotating

**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				
ZP	R	10 13 16	CT	N S U F GN GS	J K	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	CT	N S U F GN GS	J K	6	04 06	A8	4	20.6	10.4	$\varnothing 3$
						10 15 25			6	21.6	12.8	$\varnothing 4$

\*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

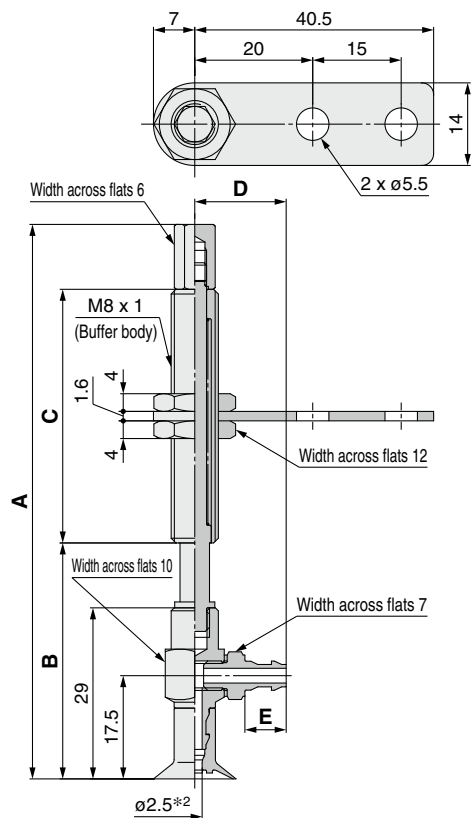
Construction

Mounting Bracket Assembly

Precautions

## Dimensions/Models

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



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

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

**Buffer specification**

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

**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> *1 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	CT	N S U F GN GS	J K	6	N4 N6 U4 U6	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> *1 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	CT	N S U F GN GS	J K	6	N4 U4	A8	13.5	5	$\varnothing 1.8$
						10 15 25			N6 U6	15.5	7

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

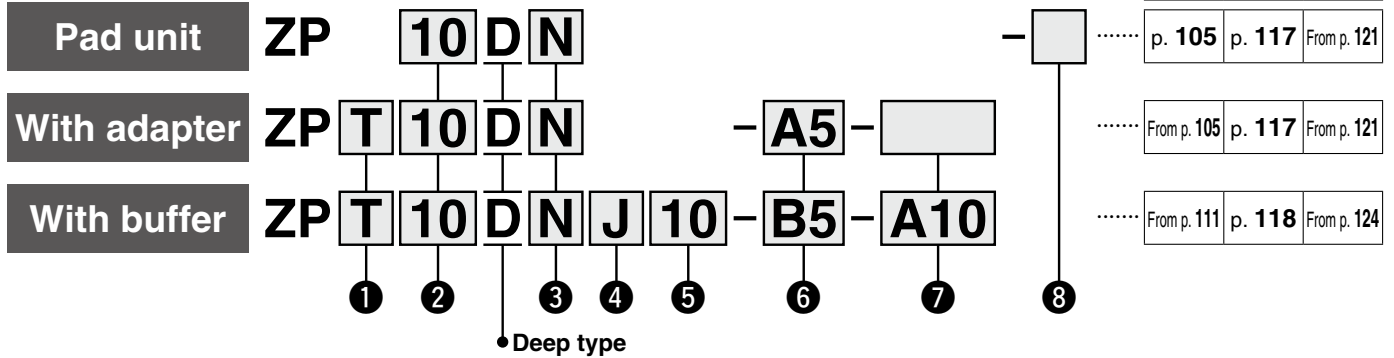
\*2 Indicates the minimum hole size of the adapter or vacuum pad



# Basic Pad Deep Type ZP Series



## How to Order



### 1 Vacuum inlet direction

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

### 2 Pad diameter

Symbol	Pad diameter [mm]
10	ø10
16	ø16
25	ø25
40	ø40

### 5 Buffer stroke

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

### 3 Material

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

### 4 Buffer specification

Symbol	Specification
J	Rotating
K	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

○: 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	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)
	B5	M5 x 0.8	○	○	—
	B6	M6 x 1	○	○	○
	B8	M8 x 1.25	—	○	○
	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

### 7 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	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 ○: ZPT/Vertical comes with a vacuum inlet (female thread).

## With buffer

### 6 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	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

### 7 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	A10	M10 x 1	○●△	○●△	—
	A14	M14 x 1	—	—	○●△

### 8 Lock ring

Symbol	Pad diameter	
	All sizes	
Nil	With lock ring	
X19	Without lock ring	

### Lock ring unit

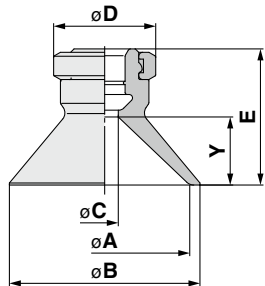
Part no.	Pad diameter [mm]
ZPL1	ø10, ø16
ZPL2	ø25
ZPL3	ø40

\* 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  $\varnothing 40$

**ZP**  $\boxed{10}$   $\boxed{D}$   $\boxed{N}$   
① ②



Model	① Pad dia.	Form	② <sup>*1</sup> Material	A	B	C	D	E	Y
				ZP	10	D	N S U F GN GS	10	12
16	16	18	16	7					
25	25	28	15	20	10				
40	40	43	7	18	29			17	

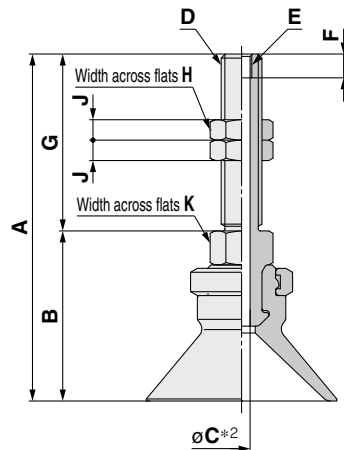
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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Mounting Bracket Assembly From p. 121

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

**ZPT**  $\boxed{10}$   $\boxed{D}$   $\boxed{N}$  -  $\boxed{A5}$   
① ② ③



③ 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	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Connection thread	A	B	C*2	D	E	F	G	H	J	K
						ZP	T	10	D	N S U F GN GS	A5	41	20	2.5	M5 x 0.8
16	42	21													
10	46	20	2.5	M6 x 1	M3 x 0.5	3.5	26	8			4	8			
16	47	21													
25	51	25	4	M8 x 1	M5 x 0.8	5	16	12			4	12			
40	61	35.5													
25	46	30	4.2	M8 x 1	M5 x 0.8	5	16	12			4	12			
40	51	35.5													

\*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

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Adapter Assembly p. 121

**Recommended Gasket Part Nos.**

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



Dimensions/Models

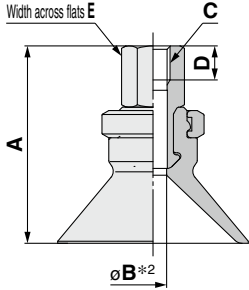
**With adapter**  $\varnothing 10$  to  $\varnothing 40$

ZPT **10** D **N** - **B5**

①

②

③ 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</b>	NPT1/8
<b>T01</b>	NPTF1/8

<b>Construction</b>	p. 117
<b>Adapter Assembly</b>	p. 121

		Model				A	B*2	C	D	E
Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> Material	③ Vacuum inlet						
ZP	T	D	N S U F GN GS	B5	24	2.5	M5 x 0.8	5	8	
					25					
					29					
				B6	24	2.5	M6 x 1	6	8	
					25					
					29					
				B8	40	4.9	M8 x 1.25	8	12	
					25					
				B01	30	2.5	Rc1/8	—	12	
					31					
				N01	35	3.5	NPT1/8	—	12	
					40					
				T01	40	7	NPTF1/8	—	12	
					40					

\*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  $\varnothing 40$

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

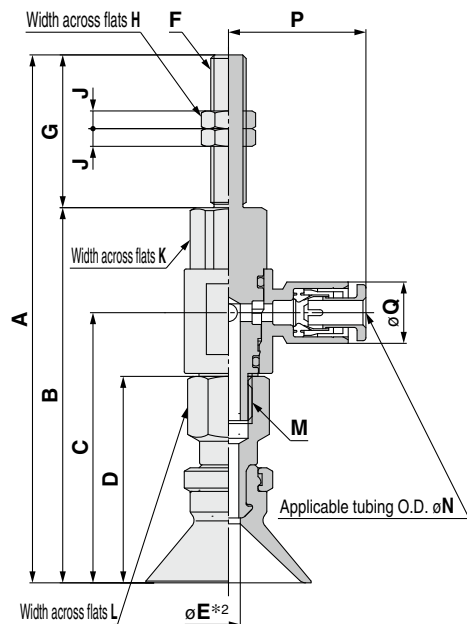
① ②

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



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Adapter Assembly p. 122

		Model				A	B	C	D	$E^{*2}$	F	G	H	J	K	L	M	
	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> 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	10	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	10	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	12	M8 x 1.25
		16					79.5	63.6	45.8	35								
		25			97		71.1	53.3	42.5									
		40			79.5		63.6	45.8	35									
		25			87		71.1	53.3	42.5									
		40			87		71.1	53.3	42.5									

### Dimensions Per Vacuum Inlet

		Model				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	D	N S U F GN GS	04	A5	4	20.6	10.4	$\varnothing 3$		
		16			06		6	21.6	12.8	$\varnothing 4$		
		25			04	A6	4	23.3	10.4	$\varnothing 3$		
					06		6	24.3	12.8	$\varnothing 4.5$		
					08		8	26.2	15.2	$\varnothing 6$		
					40		06	A8	6	24.3	12.8	$\varnothing 4.5$
							08		8	26.2	15.2	$\varnothing 6$

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

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

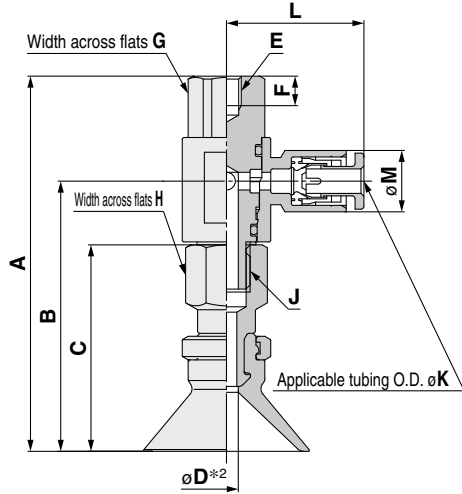
① ②

④ Connection thread  
(Female thread)

Vacuum inlet (One-touch fitting)

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

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	<sup>*2</sup> D	E	F	G	H	J				
	Vacuum inlet direction	① Pad dia.	Form	② <sup>*1</sup> 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	10	8	M5 x 0.8			
		16					50	33.9	25				12	12	M8 x 1.25			
		25					63.6	45.8	35				3.5					
		10				D	N S U F GN GS	04 06 08	B6	49	32.9	24	2.5	M6 x 1	6	10	8	M5 x 0.8
		16								50	33.9	25				12	12	M8 x 1.25
		25								63.6	45.8	35				3.5		
	40	D	N S U F GN GS	04 06 08	B8				71.1	53.3	42.5	4	M8 x 1.25	8	12	12	M8 x 1.25	
	25								63.6	45.8	35				3.5			
	40								71.1	53.3	42.5				4			

**Dimensions Per Vacuum Inlet**

		Model				K	L	M	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	D	N S U F GN GS	04	B5	4	20.6	10.4	$\phi 3$
					06	B6	6	21.6	12.8	$\phi 4$
		16			04	B5	4	23.3	10.4	$\phi 3$
					06	B6	6	24.3	12.8	$\phi 4.5$
		25			08	B8	8	26.2	15.2	$\phi 6$
					06	B6	6	24.3	12.8	$\phi 4.5$
		40			08	B8	8	26.2	15.2	$\phi 6$

\*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**

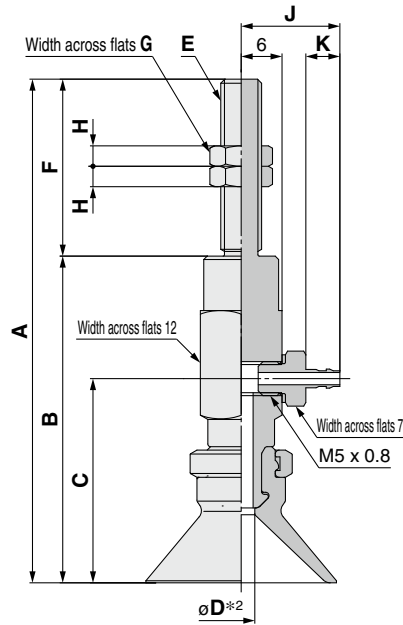
① ②

**Vacuum inlet ③  
(Barb fitting)**

**④ Connection thread  
(Male thread)**

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

<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



**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	D	N S U F GN GS	N4 N6 U4 U6	A5	62	41	25	2.5	M5 x 0.8	21	8	4	
						63	42	26						
					A6	67	41	25	2.5		M6 x 1	26	8	4
						68	42	26						
					A8	74	48	30	3.5		M8 x 1	16	12	4
						83	57	39	6					
	64	48		30		3.5								
	73	57		39		6								

**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	D	N S U F GN GS	N4 U4	A5 A6	14.5	5	$\phi 1.8$
						16.5	7	$\phi 2.5$
				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

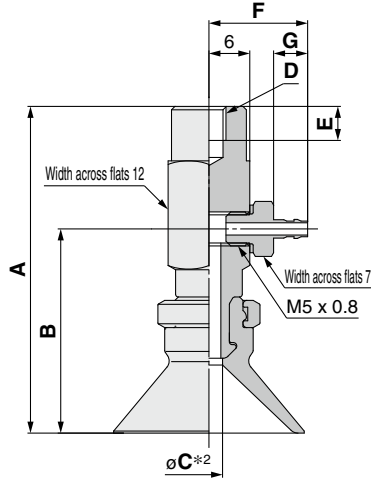
① ②

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



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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 B6 B8	14.5	5	$\varnothing 1.8$
						16.5	7	$\varnothing 2.5$
				N6 U6	B6 B8	14.5	5	$\varnothing 1.8$
						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

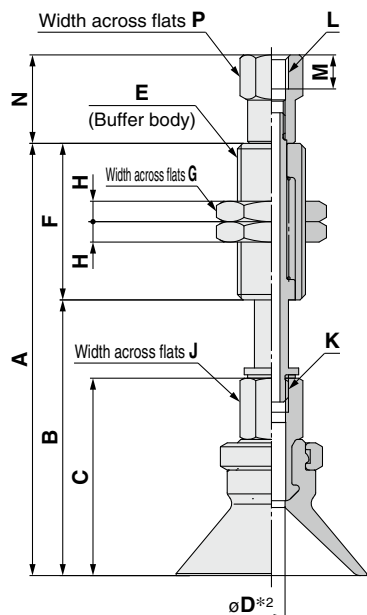
Construction

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**

**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 (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.	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	A14	105	55	42.5	4	M14 x 1	50	19	4	12	M8 x 1.25
							20	B01		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												
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

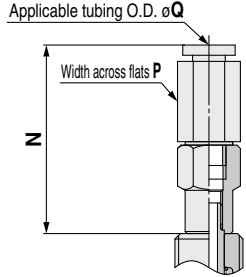
**Dimensions/Models**

**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

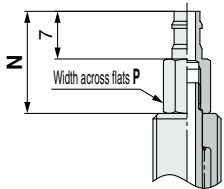
**⑥ Connection thread (Male thread)**

<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>	$\varnothing 4$	One-touch fitting	KQ2H04-M5N	
<b>06</b>	$\varnothing 6$		KQ2H06-M5N	KQ2H06-01NS
<b>08</b>	$\varnothing 8$	Barb fitting		KQ2H08-01NS
<b>N6</b>	For $\varnothing 6$ nylon tubing			
<b>U6</b>	For $\varnothing 6$ soft tubing			

**Vacuum inlet: Barb fitting**



<b>Construction</b>	p. 118
<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			24.9	14	8							

**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	$\varnothing 2.5$			
											U6		
						10			N6			A14	19
											20		
						30			U6			12	
											50		U6

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

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

① ② ③ ④

⑥ Connection thread  
(Male thread)

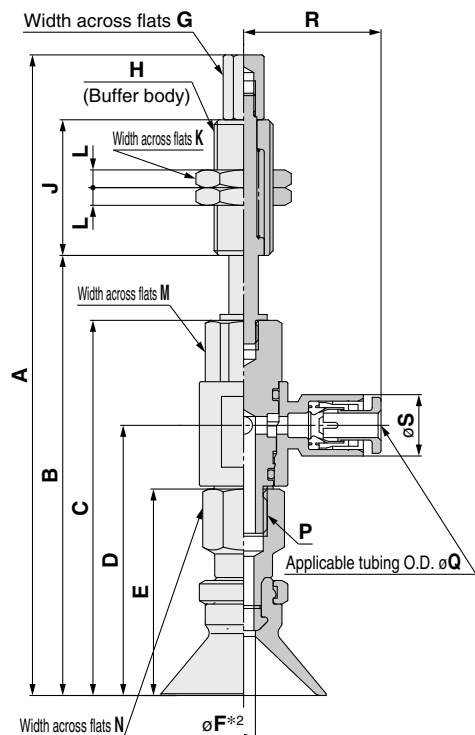
Buffer specification ③

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										A	B	C	D	E	*2 F	G	H	J	K	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	R	D	N S U F G N S	J K	10	04	A10	94	60	49	32.9	24	2.5	6	M10 x1	14	3	10	8	M5 x 0.8	23						
					20			132	70												51						
					30			142	80												77						
					40			178	90												77						
					50			188	100												23						
					10			95	61												77						
					20			133	71												77						
					30			143	81												23						
					40			179	91												77						
					50			189	101												77						
					10			108.6	74.6												23						
					20			146.6	84.6												77						
	30	156.6	94.6	77																							
	40	192.6	104.6	77																							
	50	202.6	114.6	77																							
	10	151.1	83.1	77																							
	20	148.1	93.1	77																							
	30	158.1	103.1	77																							
	50	203.1	123.1	77																							
	R	D	D	N S U F G N S	J K	06	A14	151.1	83.1	71.1	53.3	42.5	4	10	M14 x1	19	4	12	12	M8 x 1.25	50						
						20		148.1	93.1												75						
						30		158.1	103.1												75						
						40		192.6	104.6												75						
						50		202.6	114.6												75						
08						151.1		83.1	75																		

### Dimensions Per Vacuum Inlet

		Model							Q	R	S	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	R	D	N S U F G N S	J K	10	04	A10	4	20.6	10.4	$\varnothing 3$			
					20									
					30									
					40									
					50									
					06									
	R	D			D	N S U F G N S	J K	10	04	A10	4	23.3	10.4	$\varnothing 3$
								20						
								30						
								40						
								50						
								06						
R	D	D	N S U F G N S	J K	10			08	A14	8	26.2	15.2	$\varnothing 6$	
					20									
					30									
					40									
					50									
					06									
R	D	D			N S U F G N S	J K	10	06	A14	6	24.3	12.8	$\varnothing 4.5$	
							20							
							30							
							40							
							50							
							08							
R	D	D	N S U F G N S	J K			10	08	A14	8	26.2	15.2	$\varnothing 6$	
							20							
							30							
							40							
							50							
							08							

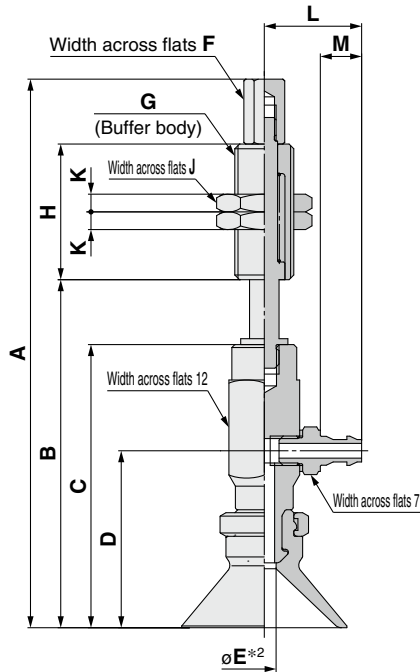
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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



Dimensions/Models

With buffer/barb fitting  $\varnothing 10$  to  $\varnothing 40$



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																
		Y	D	N S U F GN GS	J K	10	N6 U6	A14	134	79	57	39	6	10	M14 x 1	50	19	4	
						20			134	79									
						30			144	89									
						40			177	89									
						50			187	99									
10						137			69										
20		134	79																
30		144	89																
50		189	109																

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	N6 U6					16.5	7	$\varnothing 2.5$
					50								
					10								
20	N6 U6	16.5	7	$\varnothing 2.5$									
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

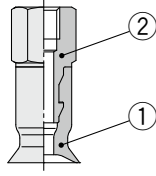
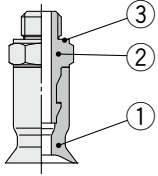
# Basic Pad *ZP Series* Construction

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

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

ZPT□-(A5/A6)

ZPT□-(B4/B5)



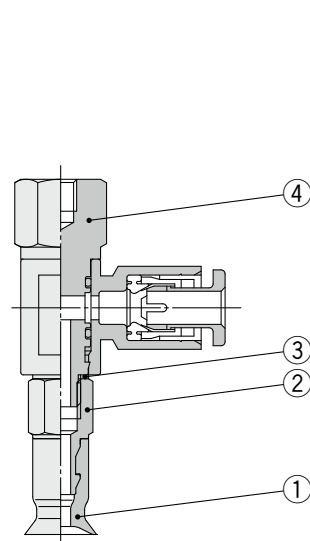
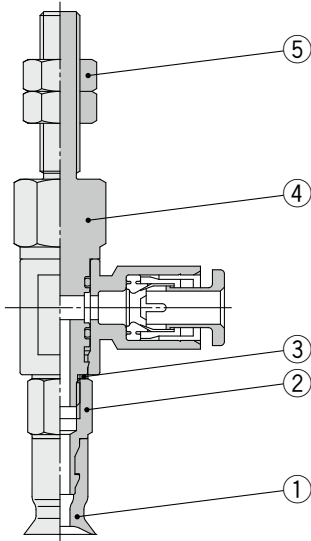
### Component Parts

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
2	Adapter	Brass (Electroless nickel plating)	
3	Gasket	Stainless steel/NBR	

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

ZPR□-(04/06)-(A5/A6)

ZPR□-(04/06)-(B4/B5)



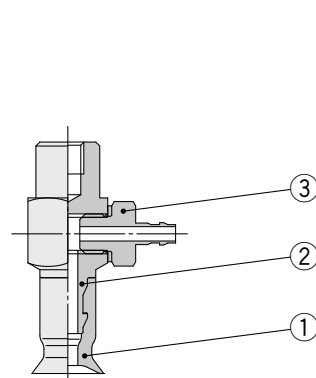
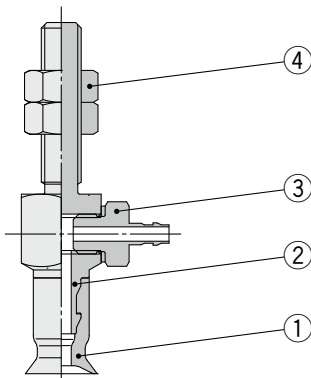
### Component Parts

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
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
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  $\phi 8$

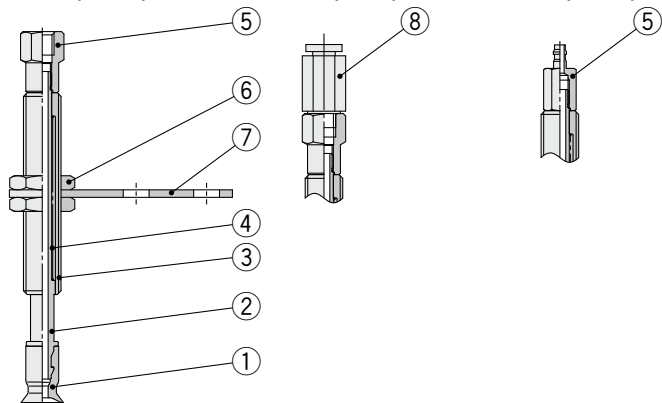
Thin flat type/Thin flat type with ribs:  $\phi 10$  to  $\phi 16$

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

ZPT□-(B3/B5)-A8

ZPT□-(04/06)-A8

ZPT□-(N4/U4)-A8

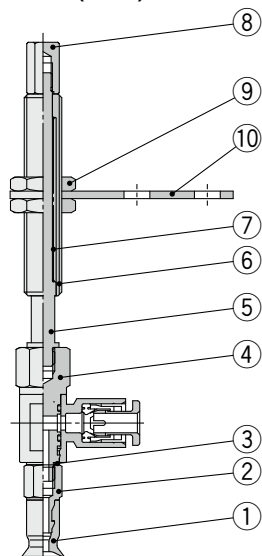


Component Parts

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

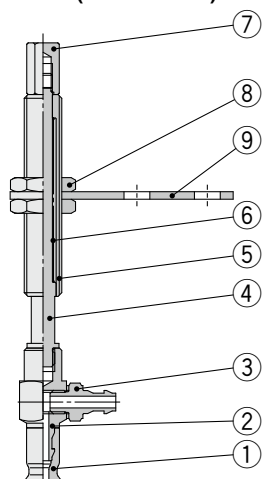


Component Parts

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

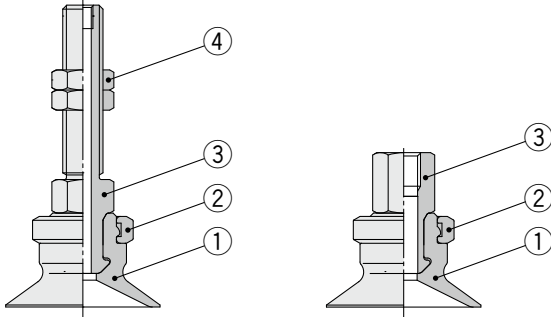
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Bellows type Thin flat type Thin flat type with ribs
2	Adapter	Brass (Electroless nickel plating)	
3	Barb fitting	—	
4	Piston rod	Stainless steel	
5	Buffer body	Brass (Electroless 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/ZPT

ZPT□-(A5/A6/A8)

ZPT□-(B5/B6/B8/B01/N01/T01)



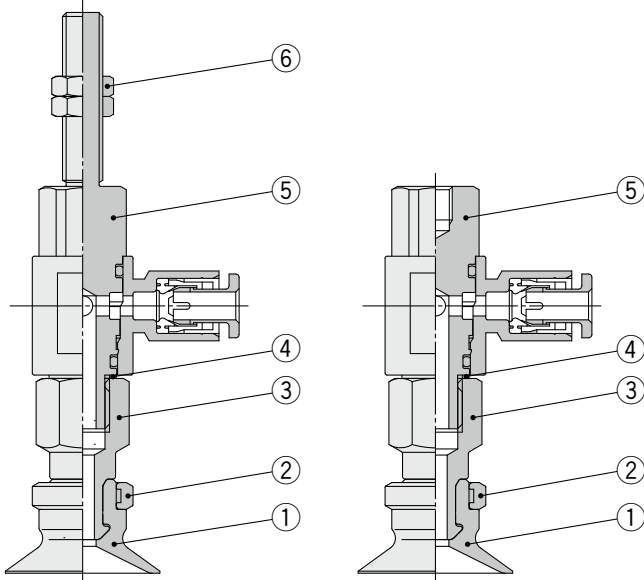
Component Parts

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)	
3	Adapter	Brass (Electroless nickel plating)	
4	Nut	Rolled steel (Zinc chromated)	M5 x 0.8 M6 x 1
		Carbon steel (Zinc chromated)	M8 x 1

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

ZPR□-(04/06/08)-(A5/A6/A8)

ZPR□-(04/06/08)-(B5/B6/B8)



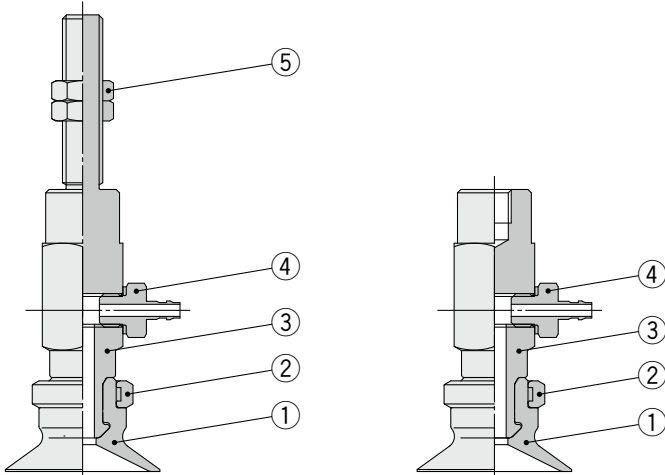
Component Parts

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)	M5 x 0.8 M6 x 1
		Carbon steel (Zinc chromated)	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)	M5 x 0.8 M6 x 1
		Carbon steel (Zinc chromated)	M8 x 1

With buffer

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

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

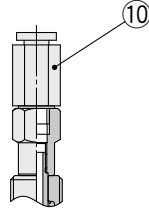
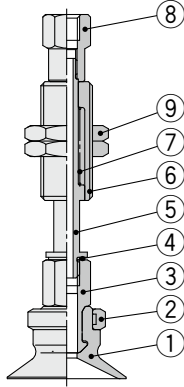
Bellows type:  $\varnothing 10$  to  $\varnothing 50$

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

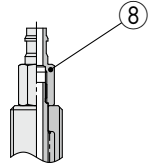
Vacuum inlet direction **Vertical** T Type/ZPT

ZPT□-(B5/B01/N01/T01)-(A10/A14)

ZPT□-(04/06/08)-(A10/A14)



ZPT□-(N6/U6)-(A10/A14)

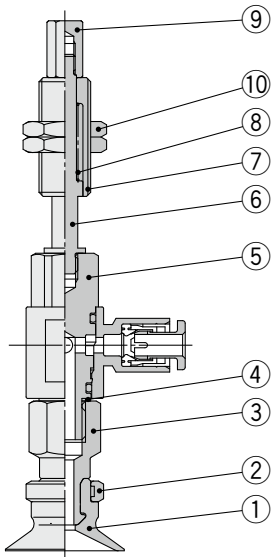


Component Parts

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)

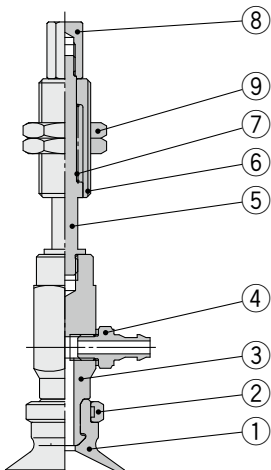


Component Parts

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

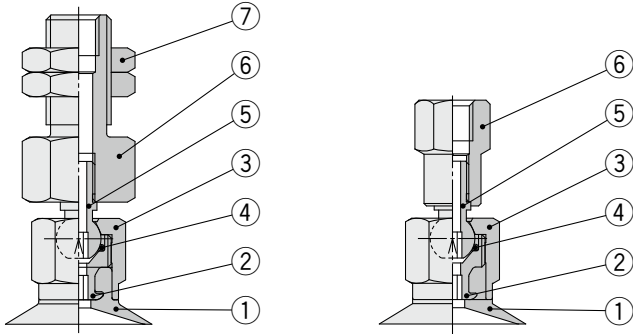
# Ball Joint Type Basic Pad **ZP Series** Construction

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

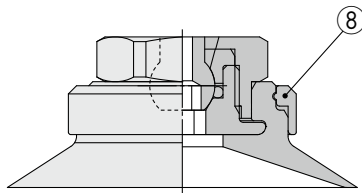
Vacuum inlet direction **Vertical** T Type/ZPT□F

ZPT□F□-(B5/A8/A10/A14)

ZPT□F□-(B5/B8/B01/N01/T01)



$\phi 10$  to  $\phi 32$



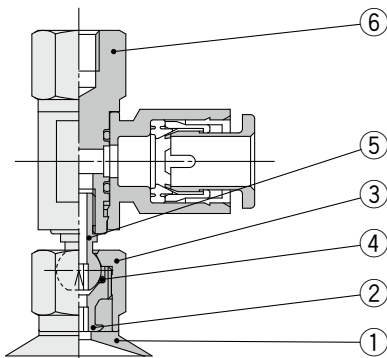
$\phi 40, \phi 50$

## Component Parts

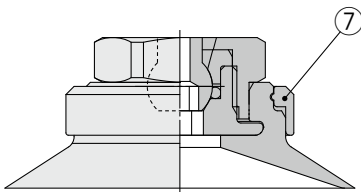
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Shaft cover	Stainless steel	
4	O-ring	FKM	
5	Shaft	Stainless steel	
6	Shaft adapter	Brass (Electroless nickel plating)	
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

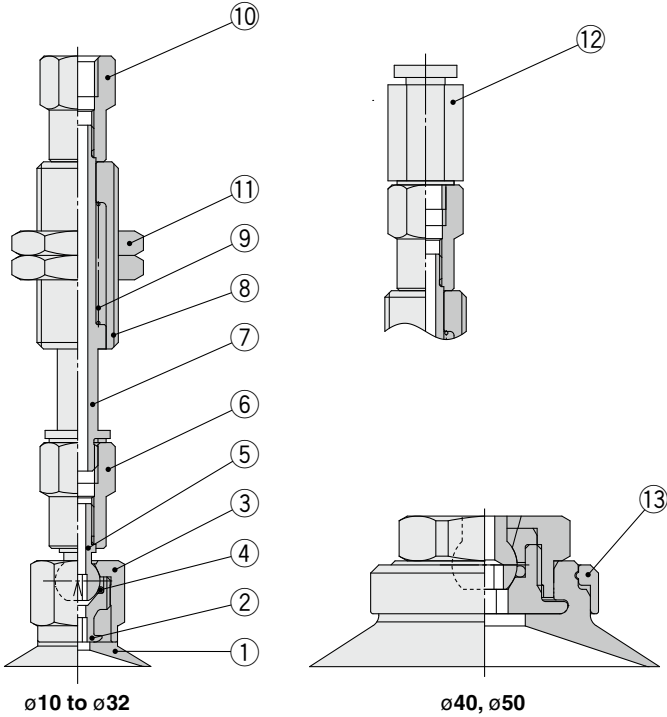
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Shaft cover	Stainless steel	
4	O-ring	FKM	
5	Shaft	Stainless steel	
6	Shaft adapter (With One-touch fitting)	Brass (Electroless 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)

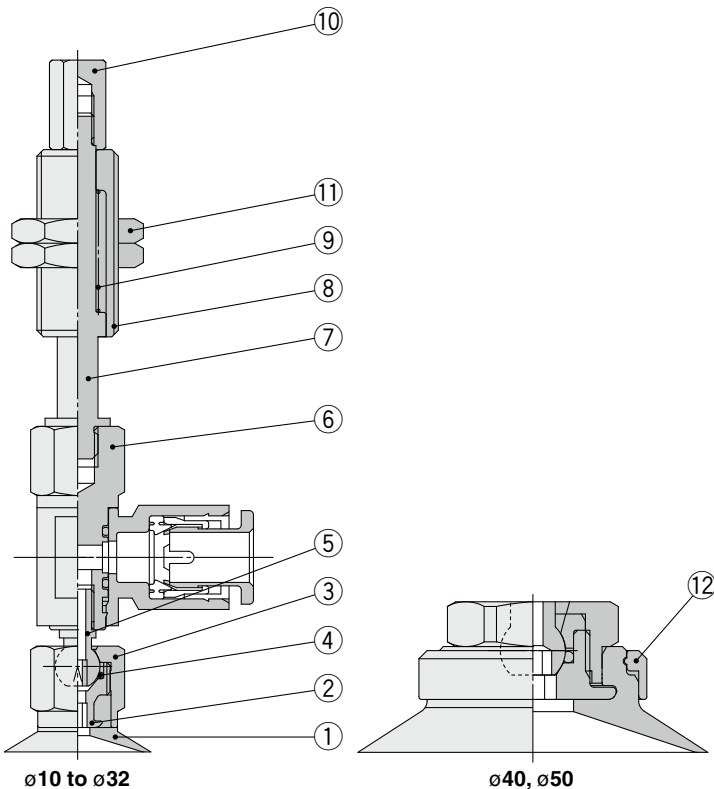


**Component Parts**

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

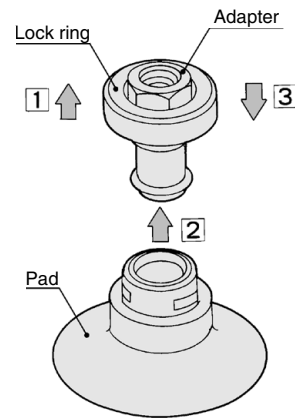
#### Compact Type ZP3 Series

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

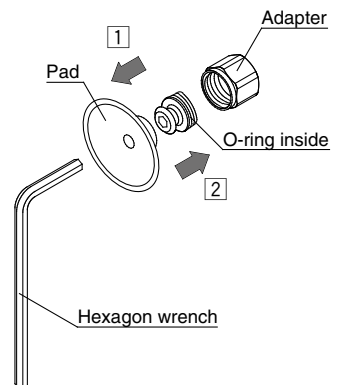
- 1 Pull the lock ring upward, and, after lifting it up to the adapter, remove the old pad by pulling it downward.
- 2 While holding the lock ring in the raised position, place a new pad onto the adapter.
- 3 Confirm that the pad is securely in place, and then return the lock ring to its original position.



### 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.

