

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

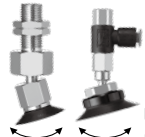


Precautions

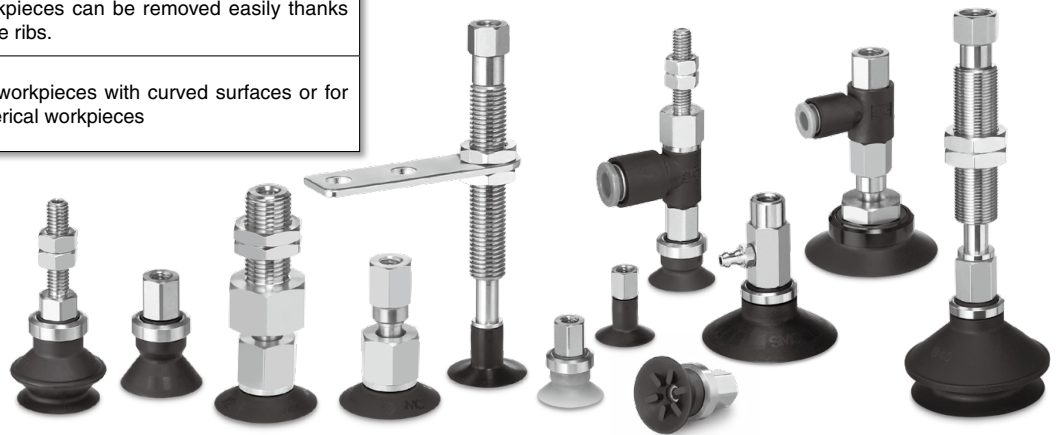
Ø2, Ø4, Ø6, Ø8, Ø10, Ø13, Ø16, Ø20, Ø25, Ø32, Ø40, Ø50

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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
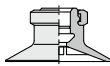


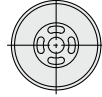


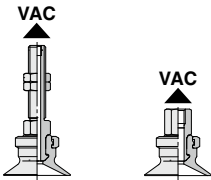
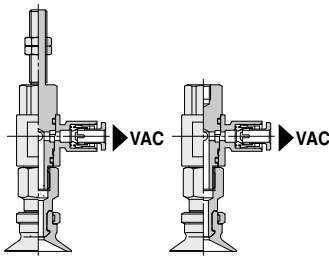
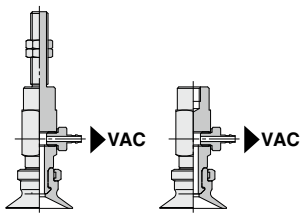
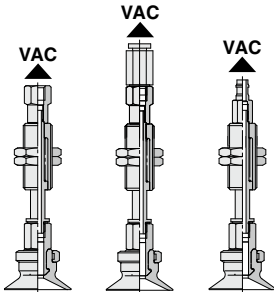
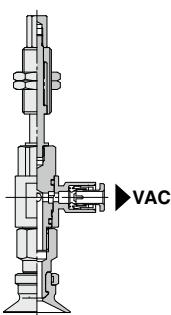
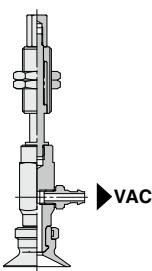
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(Flat type/Flat type with ribs/Bellows type/Thin flat type/Thin flat type with ribs/Deep type)	

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Mounting Bracket Assembly	p. 127
(Flat, Ball joint type)	

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		Vacuum inlet direction						
								
		Flat type	Flat type with ribs	Bellows type	Thin flat type	Thin flat type with ribs	Deep type	
Vertical	Single unit		p. 32	p. 51	p. 68	p. 87	p. 96	p. 105
	ZPT With adapter		p. 33 p. 34	p. 51 p. 52	p. 69 p. 70	p. 87	p. 96	p. 105 p. 106
Lateral	ZPR With adapter		p. 35 p. 37	p. 53 p. 54	p. 71 p. 73	p. 88 p. 89	p. 97 p. 98	p. 107 p. 108
	ZPY With adapter		p. 39 p. 41	p. 55 p. 56	p. 75 p. 77	p. 90 p. 91	p. 99 p. 100	p. 109 p. 110
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Lateral	ZPY With buffer		p. 48	p. 60	p. 84	p. 94	p. 103	p. 114

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

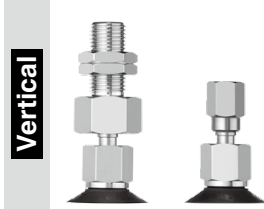
Basic Pad *ZP Series* Specifications

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



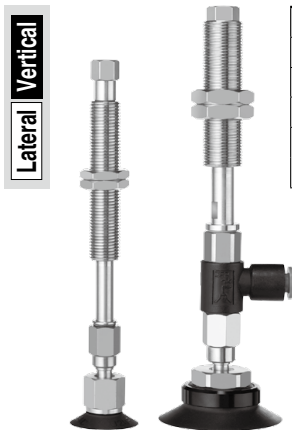
Connection	Male thread			Female thread		
Pad diameter	ø10 to ø16	ø20 to ø32	ø40, ø50	ø10 to ø16	ø20 to ø32	ø40, ø50
Connection thread	M8 x 1	M10 x 1	M14 x 1	M5 x 0.8	M5 x 0.8 M8 x 1.25 1/8 (Rc, NPT, NPTF)	M8 x 1.25 1/8 (Rc, NPT, NPTF)
Vacuum inlet	M5 x 0.8			Use the connection thread.		

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

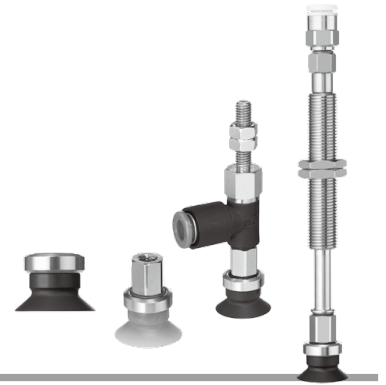
Precautions



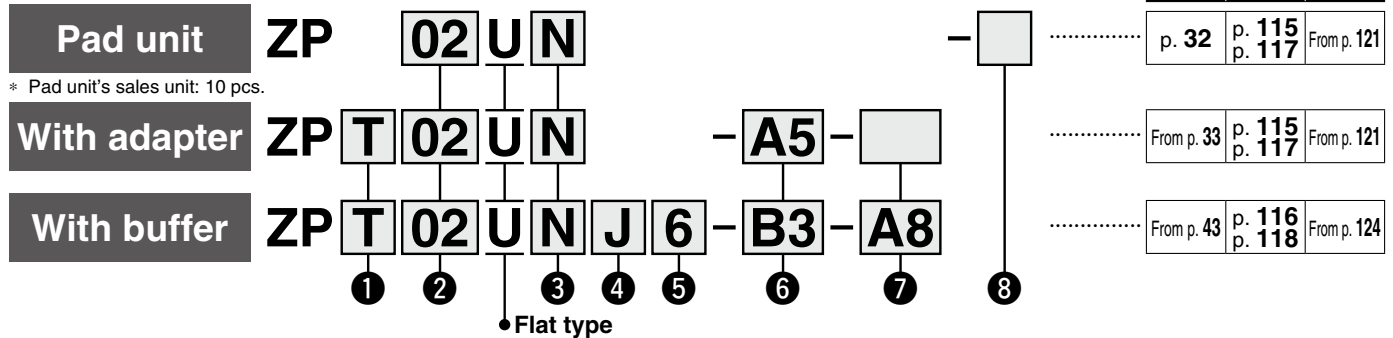
Basic Pad

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	ø2	ø4	ø6	ø8	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
02	●	—	—	—	—	—	—	—	—	—	—	—
04	—	●	—	—	—	—	—	—	—	—	—	—
06	—	—	●	—	—	—	—	—	—	—	—	—
08	—	—	—	●	—	—	—	—	—	—	—	—
10	—	—	—	—	●	—	—	—	—	—	—	—
13	—	—	—	—	—	●	—	—	—	—	—	—

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	—	○	○	○
One-touch fitting	T01	NPTF1/8	—	○	○	○
	04	ø4	●	●	●	—
	06	ø6	●	●	●	●
Barb fitting	08	ø8	—	—	●	●
	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

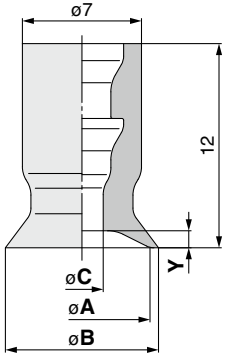
Part no.	Pad diameter [mm]
ZPL1	ø10 to ø16
ZPL2	ø20 to ø32
ZPL3	ø40, ø50

* 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



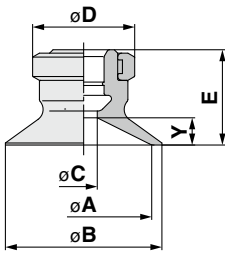
Model				A	B	C	Y
① Pad dia.	Form	② Material ^{*1}	ZP				
02	U	N	S U F GN GS	2	2.6	1.2	0.5
04		4		4.8	1.6	0.8	
06		6		7	2.5		
08		8		9		1	

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

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Mounting Bracket Assembly From p. 121

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

ZP **10** U **N**
① ②



Model				A	B	C	D	E	Y
① Pad dia.	Form	② Material ^{*1}	ZP						
10	U	N S U F GN GS	S U F GN GS	10	12	4	13	12	3
13				13	15			12.5	3.5
16				16	18				
20				20	23				
25				25	28	15	14	4	
32				32	35		14.5	4.5	
40				40	43	7	18	18.5	6.5
50				50	53			19.5	7.5

*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

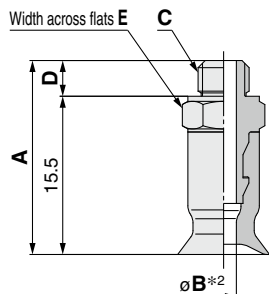
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



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Adapter Assembly	p. 121

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

① ②

③ Vacuum inlet (Male thread)

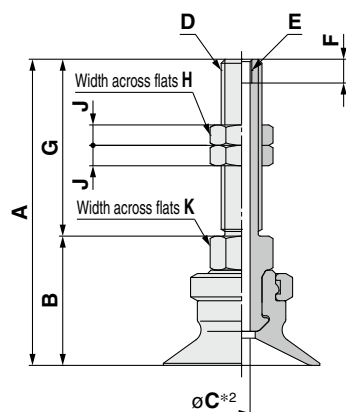
A5	M5 x 0.8
A6	M6 x 1

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



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			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	U	N S U F GN GS	A5	38	17	2.5	M5 x 0.8	M3 x 0.5	3.5	21	8	4	8								
					16	17.5																
					10	17																
					13	17.5																
					20	19																
					25	19.5																
				A6	45	19	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	12								
					32	24.5																
					40	24.5																
					50	25.5																
					20	24									4	M8 x 1	M5 x 0.8	5	16	12	4	12
					25	24.5																
32	25.5																					
40	25.5																					
50	25.5																					
4.2	25.5																					

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

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

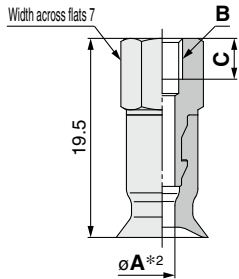
Recommended Gasket Part Nos.

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

Dimensions/Models

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

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



Construction	p. 115
Adapter Assembly	p. 121

3 Vacuum inlet (Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

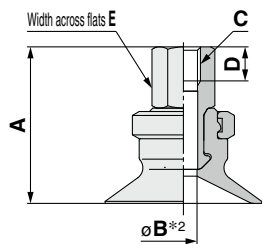
		Model			A*2	B	C
Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Vacuum inlet			
ZP	T	U	N S U F GN GS	B4	1.2	M4 x 0.7	4
					1.6		
					2.5		
				B5	1.2	M5 x 0.8	5
					1.6		
					2.5		

*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 $\varnothing 50$

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



Construction	p. 117
Adapter Assembly	p. 121

3 Vacuum inlet (Female thread)

B5	M5 x 0.8
B6	M6 x 1
B8	M8 x 1.25
B01	Rc1/8
N01	NPT1/8
T01	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	12						
				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

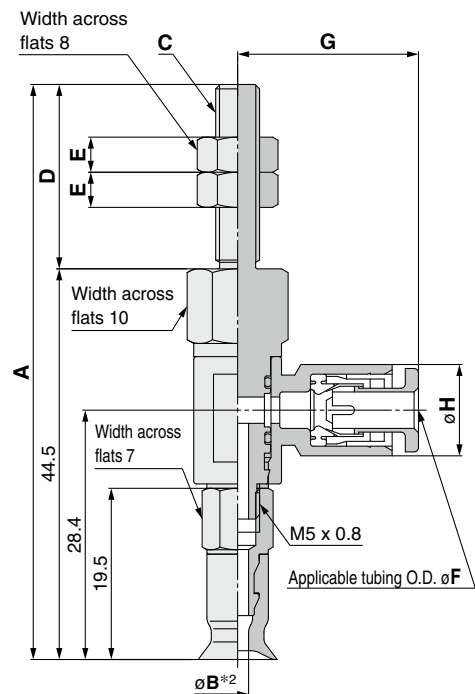
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 122

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

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

4 Connection thread
(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	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			
				02 04 06 08	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	1 Pad dia.	Form	2 *1 Material	3 Vacuum inlet				
ZP	R	U	N S U F GN GS	04	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**

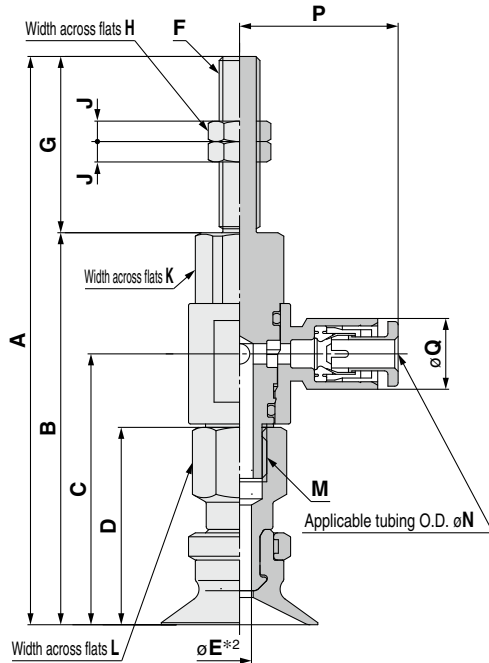
① ②

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



Construction	p. 117
Adapter Assembly	p. 122

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

Dimensions Per Vacuum Inlet

Model		①	②	③	④	N	P	Q	Fitting part min. hole size	
Vacuum inlet direction	Pad dia.	Form	Material ^{*1}	Vacuum inlet	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	A6	4	23.3	10.4	$\varnothing 3$	
						6	24.3	12.8	$\varnothing 4.5$	
				08	A6	A8	8	26.2	15.2	$\varnothing 6$
							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

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

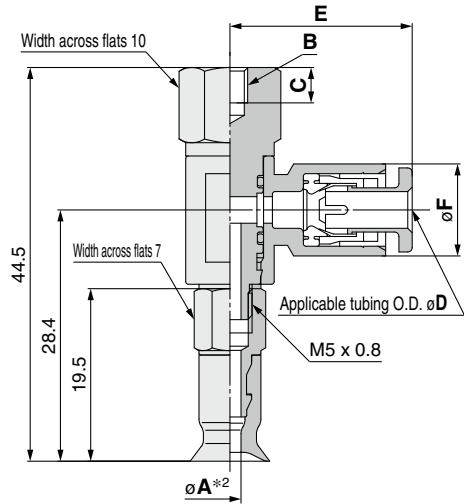
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



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

1	2	3	4
		Vacuum inlet (One-touch fitting)	Connection thread (Female thread)
04	06	$\varnothing 4$ $\varnothing 6$	B4 B5

B4	M4 x 0.7
B5	M5 x 0.8

Construction	p. 115
Adapter Assembly	p. 122

Model						A*2	B	C
Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Vacuum inlet	4 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		

Dimensions Per Vacuum Inlet

Model						D	E	F	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Vacuum inlet	4 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 $\varnothing 50$

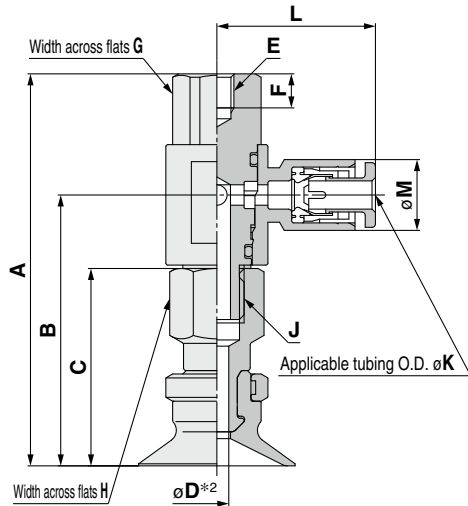
ZPR **10** **U** **N** - **04** - **B5**

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

4 Connection thread (Female thread)

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

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	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	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	57.6	39.8	29									
						20	58.1	40.3	29.5									
					R	U	04 06 08	B6	10	46	29.9	21	2.5	M6 x 1	6	12	12	M8 x 1.25
									13	46.5	30.4	21.5						
									16	57.6	39.8	29						
									20	58.1	40.3	29.5						
	R	U		04 06 08				B8	20	57.6	39.8	29	3.5	M8 x 1.25	8	12	12	M8 x 1.25
									25	58.1	40.3	29.5						
									32	60.6	42.8	32						
									40	61.6	43.8	33						
					R	U	04 06 08	B5	20	57.6	39.8	29	3.5	M8 x 1.25	8	12	12	M8 x 1.25
									25	58.1	40.3	29.5						
									32	60.6	42.8	32						
									40	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	U	N S U F G N S	04	B5	4	20.6	10.4	$\varnothing 3$
					B6	6	21.6	12.8	$\varnothing 4$
				06	B5	4	23.3	10.4	$\varnothing 3$
					B6	6	24.3	12.8	$\varnothing 4.5$
				08	B5	8	26.2	15.2	$\varnothing 6$
					B6	6	24.3	12.8	$\varnothing 4.5$
				08	B6	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

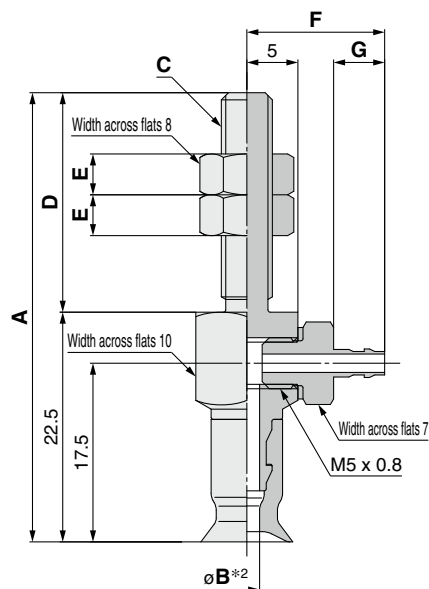
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 123

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

①

②

④

Vacuum inlet ③
(Barb fitting)

④ Connection thread
(Male thread)

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

A5	M5 x 0.8
A6	M6 x 1

	Vacuum inlet direction	Model				A	B*2	C	D	E	
		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	44	1.2	M5 x 0.8	21.5	4	
		04					1.6				
		06 08					2.5				
		02				49.5	A6	1.2	M6 x 1	27	4
		04						1.6			
		06 08						2.5			

Dimensions Per Vacuum Inlet

	Vacuum inlet direction	Model				F	G	Fitting part min. hole size
		① Pad dia.	Form	② *1 Material	③ Vacuum inlet			
ZP	Y	02 04 06 08	U	N S U F GN GS	N4 U4	13.5	5	$\varnothing 1.8$
		N6 U6			A5 A6			

*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 UN - N4 - A5

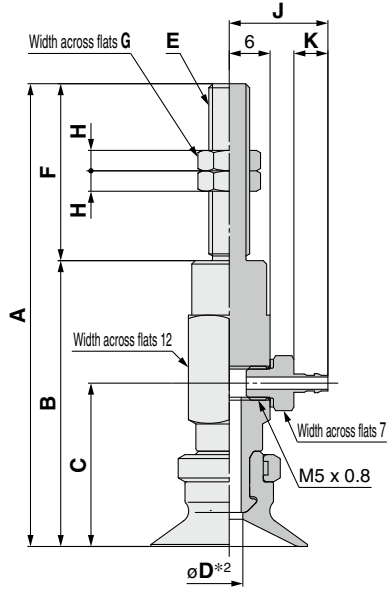
① ②

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*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 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				3.5	68	42	24	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	6	3.5	M8 x 1	16	12	4							
	40							58	42	24				
	50							58.5	42.5	24.5				
	20							62.5	46.5	28.5				
	25	6	6	6	6									
	32					63.5	47.5	29.5						
	40													
	50													

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 U4	A5	14.5	5	$\varnothing 1.8$
		13					N6 U6	A6	16.5
		16			N6 U6	A6			16.5
		20					A8		
		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

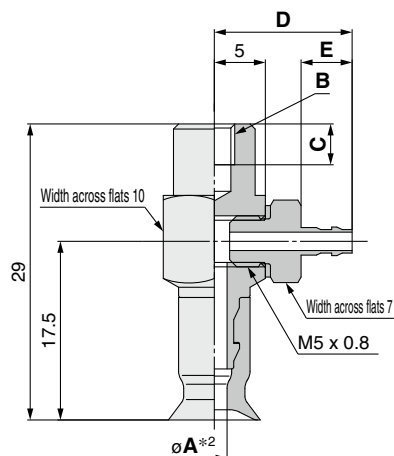
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 123

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

① ②

Vacuum inlet ③
(Barb fitting)

④ Connection thread
(Female thread)

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

B4	M4 x 0.7
B5	M5 x 0.8

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

Dimensions Per Vacuum Inlet

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

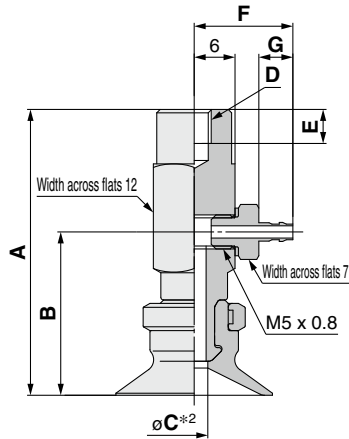
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

*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



Construction	p. 117
Adapter Assembly	p. 123

①
②
③ 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

④ Connection thread (Female thread)

B5	M5 x 0.8
B6	M6 x 1
B8	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					
				U6					
				N4	B5	14.5	5	$\varnothing 1.8$	
				U4	B6	16.5	7	$\varnothing 2.5$	
N6	B8								
U6									
N6	B6	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

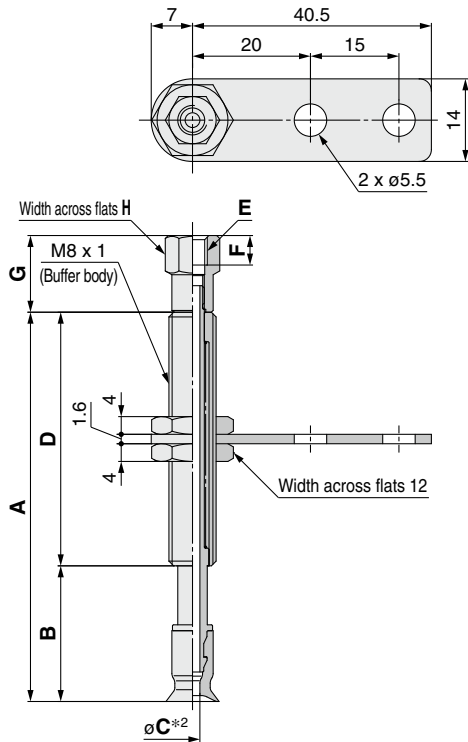
J	Rotating
K	Non-rotating

⑥ Connection thread
(Male thread)

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

⑤ Vacuum inlet

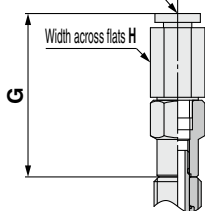
B3	M3 x 0.5	Female thread	
B5	M5 x 0.8		
04	$\varnothing 4$	One-touch fitting	KQ2H04-M5N
06	$\varnothing 6$		KQ2H06-M5N
N4	For $\varnothing 4$ nylon tubing	Barb fitting	
U4	For $\varnothing 4$ soft tubing		



		Model						A	B	C*2	D	
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} 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
		25			81	38			15			
		6			33	18			43			
		10			66	23			15			
	15	71		28	43							
	25	81		38	15							
	6	33		18	43							
	10	66		23	15							
	15	71		28	43							
	25	81		38	15							

Vacuum inlet: One-touch fitting

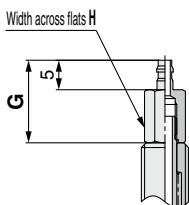
Applicable tubing O.D. $\varnothing J$



Dimensions Per Vacuum Inlet: Female Thread

		Model						E	F	G	H	
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	T	02 04 06 08	U	N S U F G N G S	J K	6	B3 B5	A8	M3 x 0.5	3	11	6
						10 15 25			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 ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	T	02 04 06 08	U	N S U F G N G S	J K	6	04 06	A8	27.7	8	4	$\varnothing 2.5$
						10 15 25				10	6	

Dimensions Per Vacuum Inlet: Barb Fitting

		Model						G	H	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	02 04 06 08	U	N S U F G N G S	J K	6	N4 U4	A8	14	6	$\varnothing 1.8$
						10 15 25					

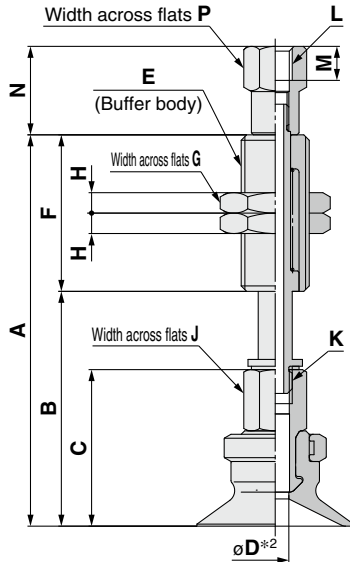
Construction	p. 116
Buffer Assembly	p. 124

*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 $\varnothing 10$ to $\varnothing 50$



Construction	p. 118
Buffer Assembly	p. 124

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

Buffer specification **3**

J	Rotating
K	Non-rotating

6 Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

5 Vacuum inlet (Female thread)

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

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

Dimensions Per Vacuum Inlet: Female Thread

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

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

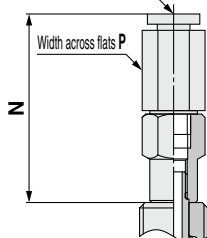
Precautions

Dimensions/Models

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

Vacuum inlet: One-touch fitting

Applicable tubing O.D. $\varnothing Q$



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

① ② ④

Buffer specification ③

J	Rotating
K	Non-rotating

⑥ Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet

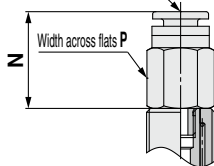
	Vacuum inlet	One-touch fitting	Pad diameter	
			$\varnothing 10$ to $\varnothing 32$	$\varnothing 40, \varnothing 50$ (10 st only)
04	$\varnothing 4$	One-touch fitting	KQ2H04-M5N	KQ2H06-01NS
06	$\varnothing 6$		KQ2H06-M5N	
08	$\varnothing 8$		KQ2H08-01NS	
N6	For $\varnothing 6$ nylon tubing	Barb fitting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

Dimensions Per Vacuum Inlet: One-touch Fitting

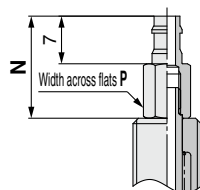
		Model						N	P	Q	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	T	10	U	N S U F GN GS	J K	10	A10	27.7	8	4	$\varnothing 2.5$	
		13				20						
		16				30						
		20				40						
	40	50				10	A14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

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

Applicable tubing O.D. $\varnothing Q$



Vacuum inlet: Barb fitting



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	10	U	N S U F GN GS	J K	10	A10	15	6	$\varnothing 2.5$
		13				20				
		16				30				
	40	50				10	A14	N6	19	
						U6		10		
						N6		12		
U6										

*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

Dimensions/Models

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

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

① ② ③ ④

Buffer specification ③

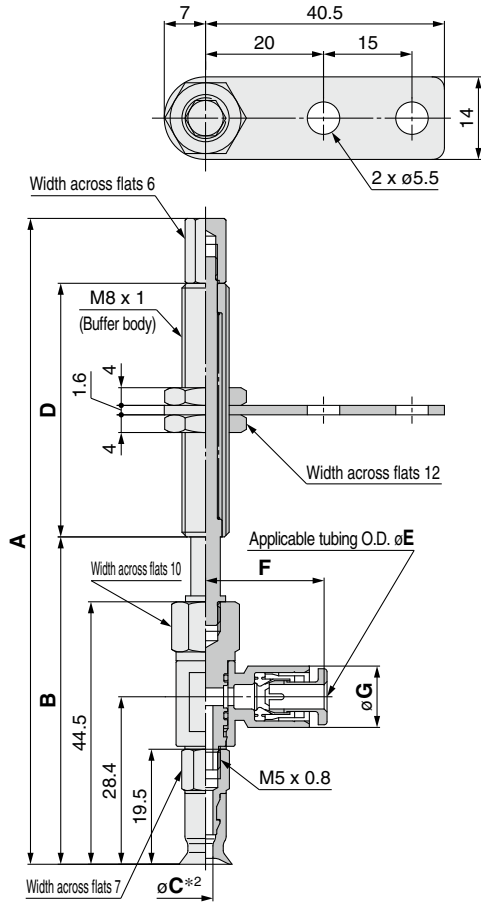
J	Rotating
K	Non-rotating

⑥ **Connection thread (Male thread)**

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

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

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



Construction	p. 116
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 G N S	J K	6	04	06	A8	78.5	52.5	1.2	15			
						10							109.5	55.5	43	
						15							114.5	60.5	43	
		25				124.5							70.5	15		
		6				78.5							52.5	43		
		10				109.5							55.5	15		
	04	U	06		N S U F G N S	J K	15	04	06	A8	114.5	60.5	1.6	43		
							25							124.5	70.5	15
							6							78.5	52.5	43
							10							109.5	55.5	15
							15							114.5	60.5	43
							25							124.5	70.5	15
06	U	08	N S U F G N S	J K	6	04	06	A8	78.5	52.5	2.5	15				
					10							109.5	55.5	43		
					15							114.5	60.5	15		
					25							124.5	70.5	43		
					6							78.5	52.5	15		
					10							109.5	55.5	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 G N S	J K	6	04	A8	4	20.6	10.4	$\varnothing 3$
		04				10						$\varnothing 4$
		06				15						$\varnothing 4$
		08				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

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)

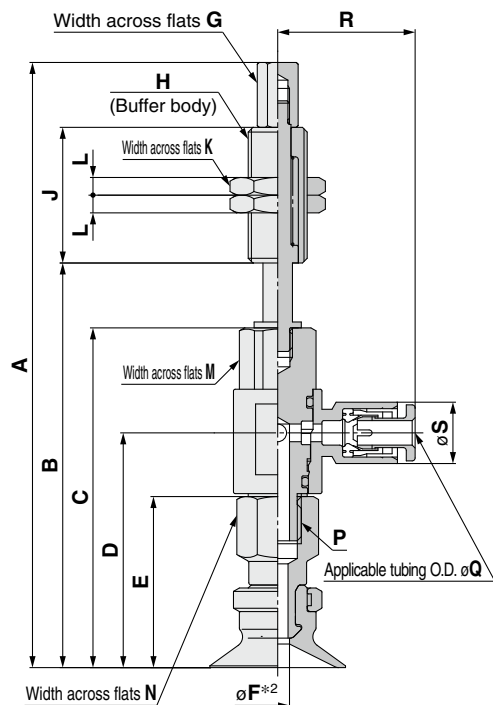
Buffer specification ③

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet (One-touch fitting)

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



Construction	p. 118
Buffer Assembly	p. 125

		Model																					
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} 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	U	N S U F G N S	J K	10	04	06	91	57	46	29.9	21	2.5	6	M10 x1	23	14	3	10	8	M5 x 0.8		
					20			129	67							51							
					30			139	77							77							
					40			175	87							77							
					50			185	97							23							
					10			91.5	57.5							51							
					20			129.5	67.5							77							
					30			139.5	77.5							77							
					40			175.5	87.5							77							
					50			185.5	97.5							23							
					10			102.6	68.6							51							
					20			140.6	78.6							77							
	30	150.6	88.6	77																			
	40	186.6	98.6	77																			
	50	196.6	108.6	23																			
	10	103.1	69.1	51																			
	20	141.1	79.1	77																			
	30	151.1	89.1	77																			
	40	187.1	99.1	77																			
	50	197.1	109.6	77																			
	10	140.6	72.6	50																			
	20	137.6	82.6	50																			
	30	147.6	92.6	50																			
	40	192.6	112.6	75																			
50	192.6	112.6	75																				
10	141.6	73.6	75																				
20	138.6	83.6	75																				
30	148.6	93.6	75																				
40	193.6	113.6	75																				
50	193.6	113.6	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	U	N S U F G N S	J K	10	06	A10	4	20.6	10.4	$\varnothing 3$	
					20							
					30							
					40							
					50							
					10							08
	20											
	30											
	40											
	50											
	10	08			A14	8	26.2	15.2	$\varnothing 6$			
	20											
30												
40												
50												
10	08		A14	8						26.2	15.2	$\varnothing 6$
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 $\varnothing 2$ to $\varnothing 8$

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

① ② ④

Buffer specification ③

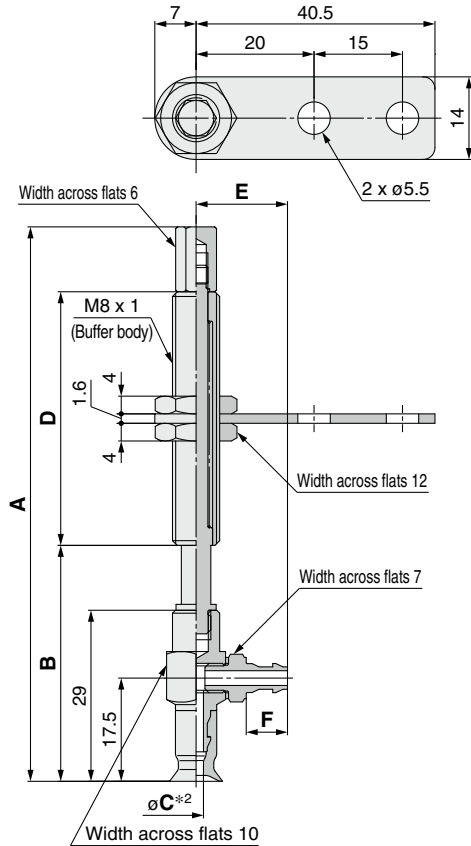
J	Rotating
K	Non-rotating

⑥ Connection thread (Male thread)

A8	M8 x 1
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⑤ Vacuum inlet (Barb fitting)

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



Construction	p. 116
Buffer Assembly	p. 126

		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							

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	A8	13.5	5	$\varnothing 1.8$
		10				N6 U6					
		15									
		06				25		15.5	7	$\varnothing 2.5$	

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Belows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

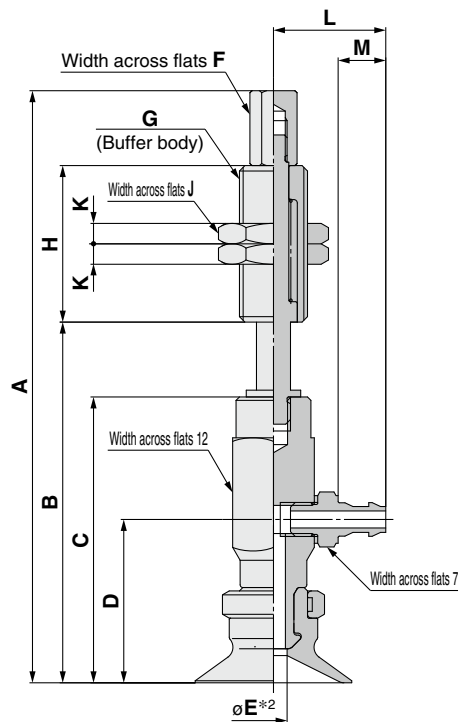
Mounting Bracket Assembly

Precautions

Dimensions/Models

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

ZPY 10 U N J 10 - N4 - A10



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	U	N S U F GN GS	J K	10 20 30 40 50	N4 N6 U4 U6	A10	83	49	38	22	2.5	6	M10 x 1	23	14	3														
								121	59						51																
								131	69						77																
								167	79						23																
								177	89	51																					
								83.5	49.5	38.5	22.5				3.5			6	M10 x 1	23	14	3									
								121.5	59.5											51											
								131.5	69.5											77											
								167.5	79.5											23											
								177.5	89.5	51																					
								87	53	42	24									6			10	M14 x 1	23	19	4				
								125	63																51						
	135	73	77																												
	171	83	23																												
	181	93	51																												
	87.5	53.5	42.5	24.5	6	10	M14 x 1	23	19	4																					
	125.5	63.5						51																							
	135.5	73.5						77																							
	171.5	83.5						23																							
	181.5	93.5	51																												
	126.5	58.5	46.5	28.5				6			10	M14 x 1	50	19	4																
	123.5	68.5											75																		
	133.5	78.5											50																		
	178.5	98.5											75																		
127.5	59.5	47.5	29.5	6									10			M14 x 1	50	19	4												
124.5	69.5																75														
134.5	79.5																50														
179.5	99.5				75																										

Dimensions Per Vacuum Inlet

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

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

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



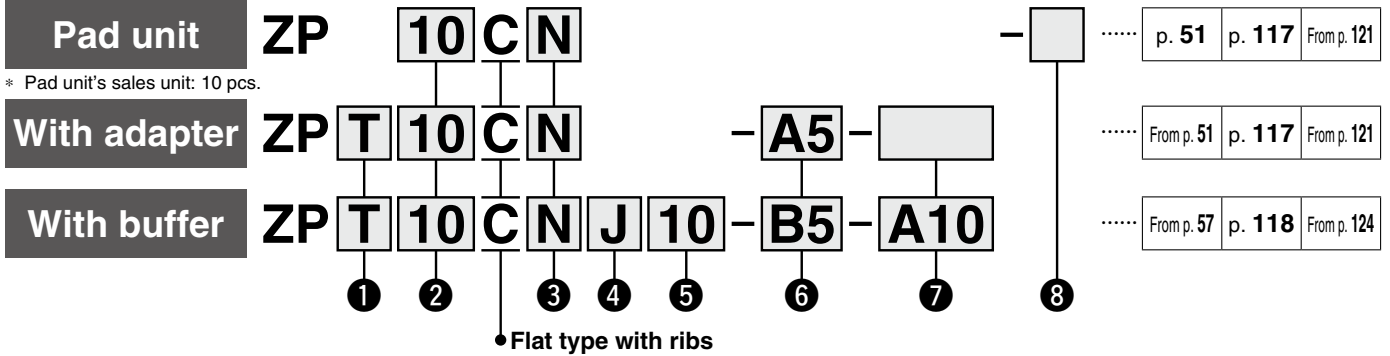
Basic Pad

Flat Type with Ribs

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

5 Buffer stroke

Stroke [mm]	Pad diameter [mm]							
	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
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 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.

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

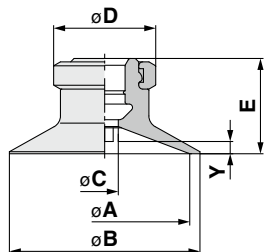
Mounting Bracket Assembly

Precautions

Dimensions/Models

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

ZP **10** C **N**
① ②



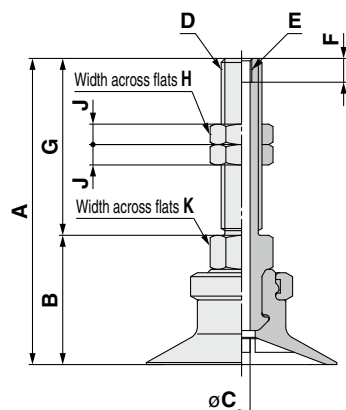
Construction	p. 117
Mounting Bracket Assembly	From p. 121

Model	① Pad dia.	② Form	② Material ^{*1}	A	B	C	D	E	Y	
										ZP
	13		S	13	15			1.8		
	16		U	16	18			1.2		
	20		F	20	23		15	14	1.7	
	25		GN	25	28				1.8	
	32		GS	32	35				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 $\varnothing 50$

ZPT **10** C **N** - **A5**
① ② ③



Construction	p. 117
Adapter Assembly	p. 121

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 ^{*1}	③ Connection thread	A	B	C	D	E	F	G	H	J	K
		13		S		38.5	17.5								
		16		U											
		10		F	A6	43	17	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	8
		13		S		43.5	17.5								
		16		U											
		20		F		45	19								
		25		GN		45.5	19.5								
		32		GS		50.5	24.5								
		40			A8	51.5	25.5	4	M8 x 1	M5 x 0.8	5	16	12	4	12
		20		S		40	24								
		25		U		40.5	24.5								
		32		F		41.5	25.5								
		40		GN				4.2							
		50		GS											

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

Recommended Gasket Part Nos.

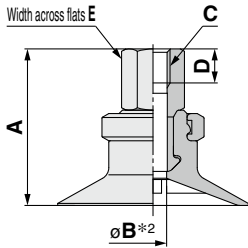
Part no.	D vacuum inlet (Male thread)
WCS5X0.8	M5 x 0.8
WCS6X1	M6 x 1
WCS8X1	M8 x 1

Dimensions/Models

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

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

① ② ③



③ Vacuum inlet
(Female thread)

B5	M5 x 0.8
B6	M6 x 1
B8	M8 x 1.25
B01	Rc1/8
N01	NPT1/8
T01	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	4				5		
					20	23.5							
					25	21	2.5					6	
					32	21.5							
					40	23	4		6				
					50	23.5							
					20	23.5	4.9				12		
					25	29							3.5
					32	29.5	M8 x 1.25						
					40	32							6.6
				50	33	Rc1/8 NPT1/8 NPTF1/8	—						
				10	27			2.5	12				
				13	27.5								
				16	29			3.5					
				20	29.5								
				25	32			7					
				32	33								
				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**

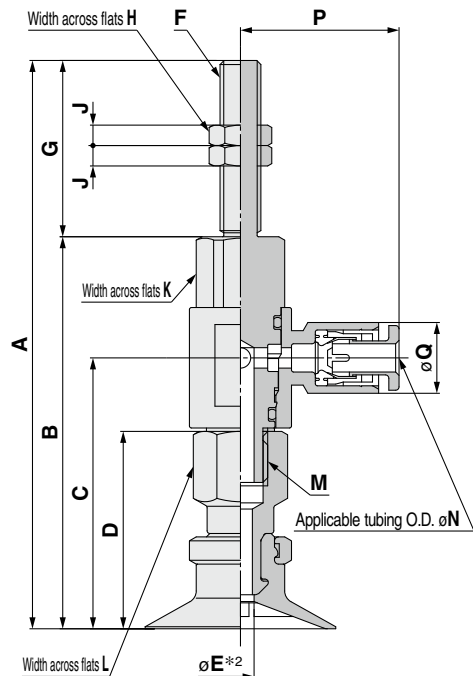
① ②

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 ^{*2}	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	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								
						10	72.5	46.5	30.4	21.5	2.5	M6 x 1	25.9	8	4	12	12	M8 x 1.25
						13	83.5	57.6	39.8	29								
						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								
						40	74	58.1	40.3	29.5	3.5	M8 x 1	15.9	12	4	12	12	M8 x 1.25
						50	76.5	60.6	42.8	32								
						20	77.5	61.6	43.8	33								

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	C	N S U F GN GS	04 06 08	A5 A6 A8	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	$\varnothing 4.5$
						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 $\varnothing 50$

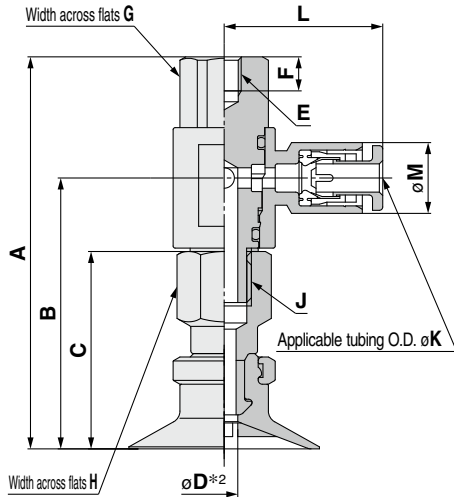
ZPR **10** C **N** - **04** - **B5**

①
②
③ Vacuum inlet
(One-touch fitting)

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

④ Connection thread
(Female thread)

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



Construction	p. 117
Adapter Assembly	p. 122

		Model				A	B	C	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
						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	60.6	42.8	32	4	12	12	M8 x 1.25							
	32	61.6	43.8	33											
	40	57.6	39.8	29	3.5	M8 x 1.25	8	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											

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

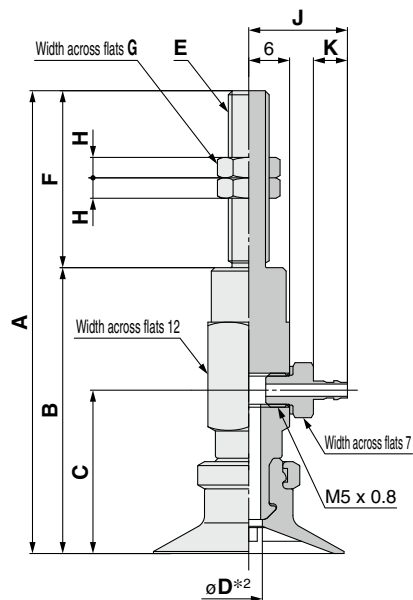
① ②

Vacuum inlet ③
(Barb fitting)

④ Connection thread
(Male thread)

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

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



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	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													
						16	59.5	38.5	22.5										
					10	2.5	M6 x 1	26	8					4					
					13										64	38	22		
					16	64.5									38.5	22.5			
	20	3.5		M8 x 1	16	12				4									
	25										68	42	24						
	32	68.5									42.5	24.5							
	40	6					M8 x 1	16	12		4								
	50											72.5	46.5	28.5					
	20	3.5										M8 x 1	16	12	4				
25	58		42	24															
32	6	M8 x 1	16	12	4														
40						58.5				42.5						24.5			
50	62.5					46.5	28.5												
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 ^{*1} Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	C	N S U F GN GS	N4 U4	A5 A6	14.5	5	$\varnothing 1.8$
						N6 U6	A6 A8	16.5
				N6 U6	A6 A8			16.5

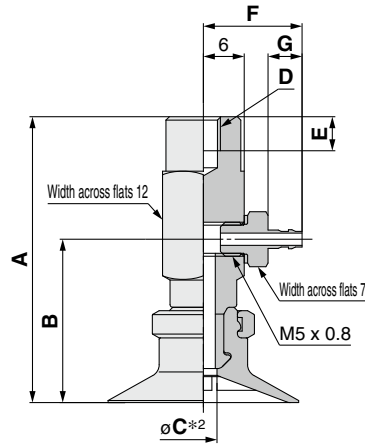
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

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)

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

④ **Connection thread (Female thread)**

B5	M5 x 0.8
B6	M6 x 1
B8	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				
				N6	B5	16.5	7	$\varnothing 2.5$	
				U6	B8				
				N4	B5	14.5	5	$\varnothing 1.8$	
				U4	B8				
N6	B6	16.5	7	$\varnothing 2.5$					
U6	B8								
N6	B6	16.5	7	$\varnothing 2.5$					
U6	B8								

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

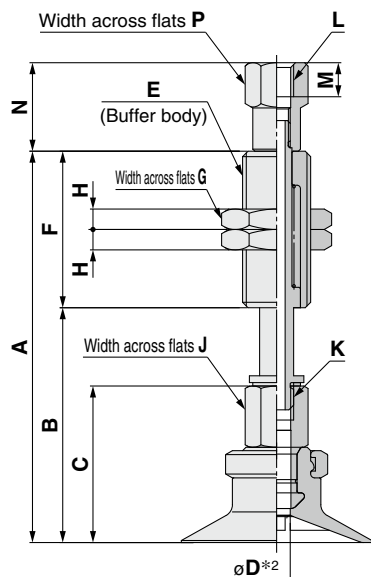
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction	p. 118
Buffer Assembly	p. 124

ZPT **10** C **N** **J** **10** - **B5** - **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 (Female thread)

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

		Model										A	B	C	D*2	E	F	G	H	J	K		
	Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread															
ZP	T	10 13	C	N S U F GN GS	J K	10	B5 04 06 N6 U6	A10	55.5	32.5	21	J: 2.5 K: 2	M10 x 1	14	3	8	M5 x 0.8	23					
						20			93.5	42.5								51					
						30			103.5	52.5								77					
						40			139.5	62.5								23					51
						50			149.5	72.5								23					77
						10			56	33								23					51
		20				94			43	21.5	77												
		30				104			53	23	51												
		40				140			63	23	77												
		50				150			73	23	51												
		10				57.5			34.5	23	77												
		20				95.5			44.5	23	51												
		30				105.5			54.5	23	77												
		40				141.5			64.5	23	51												
		50				151.5			74.5	23	77												
		10				58			35	23.5	23												
		20				96			45	23.5	51												
		30				106			55	23.5	77												
		40				142			65	23.5	51												
		50				152			75	23.5	77												
		10				94.5			44.5	32	50												
		20				104.5			54.5	32	75												
		30				114.5			64.5	32	50												
		40				159.5			84.5	32	75												
50	159.5	84.5	32	50																			
10	95.5	45.5	33	75																			
20	105.5	55.5	33	50																			
30	115.5	65.5	33	75																			
40	160.5	85.5	33	50																			
50	160.5	85.5	33	75																			

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							4.5	15
		20				M5 x 0.8	5	9						
		30												
		40												
		50												
		10								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

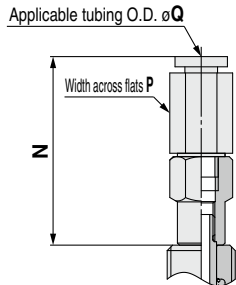
*2 Indicates the minimum hole size of the adapter or vacuum pad

Dimensions/Models

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

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

Vacuum inlet: One-touch fitting



Buffer specification **3**

J	Rotating
K	Non-rotating

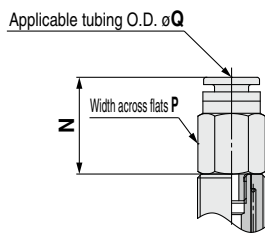
6 Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

5 Vacuum inlet

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

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



Dimensions Per Vacuum Inlet: One-touch Fitting

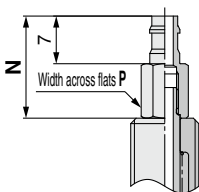
		Model						N	P	Q	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread				
ZP	T	C	N S U F GN GS	J K	10	04	A10	27.7	8	4	$\varnothing 2.5$
					13						
					16						
					20						
					25						
					32						
	40 50	06	A14	10	06	31.8	10	6	$\varnothing 4.5$		
				20	08	35.9	14	8	$\varnothing 6$		
				30	06	19.9	12	6	$\varnothing 3$		
				40	08	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*1 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	$\varnothing 2.5$
					13					
					16					
					20					
					25					
					32					
	40 50	U6	A14	10	N6	19	10			
				20	U6	12				
				30	N6					
				40	U6					
				50						

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

Vacuum inlet: Barb fitting



Construction	p. 118
Buffer Assembly	p. 124

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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

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

① ② ③ ④

⑥ Connection thread (Male thread)

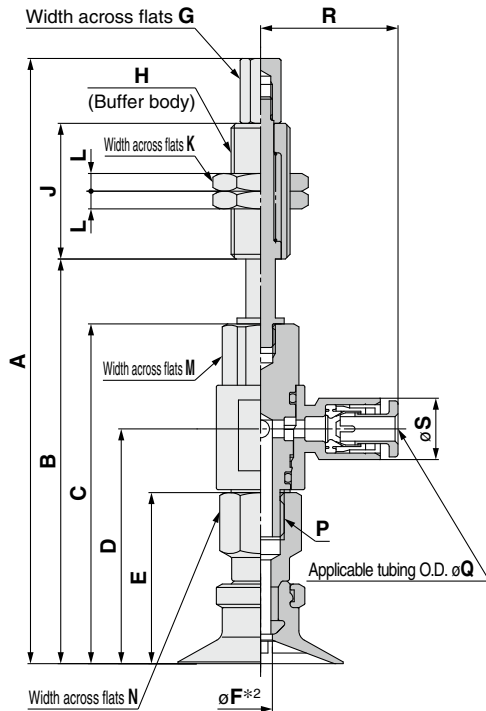
Buffer specification ③

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet (One-touch fitting)

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



Construction	p. 118
Buffer Assembly	p. 125

		Model																										
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} 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												23							
					20			129.5	67.5												51							
					30			139.5	77.5	46.5	30.4	21.5									77							
					40			175.5	87.5																			
					50	A10		185.5	97.5											6	M10 x 1	14	3					
					10			102.6	68.6												23							
					20			140.6	78.6												51							
	30		150.6	88.6	57.6	39.8	29									77												
	40		186.6	98.6																								
	50	06	196.6	108.6										3.5						12	12	M8 x 1.25						
	10		103.1	69.1												23												
	20		141.1	79.1												51												
	30		151.1	89.1	58.1	40.3	29.5									77												
	40		187.1	99.1																								
	50	08	197.1	109.6																								
	10		140.6	72.6																								
	20		137.6	82.6												50												
	30		147.6	92.6	60.6	42.8	32																					
	50	06	192.6	112.6												75												
10		141.6	73.6												50													
20		138.6	83.6																									
30		148.6	93.6	61.6	43.8	33																						
50	08	193.6	113.6												75													
														10	M14 x 1	19	4	12	12		M8 x 1.25							

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	C	N S U F GN GS	J K	10	04	A10		4	20.6	10.4	$\varnothing 3$
					20							
					30							
					40	06						
					50							
					10	04						
	20											
	30	06										
	40											
	50	08										
	10	06										
	20											
30	08											
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

① ② ④

⑥ Connection thread (Male thread)

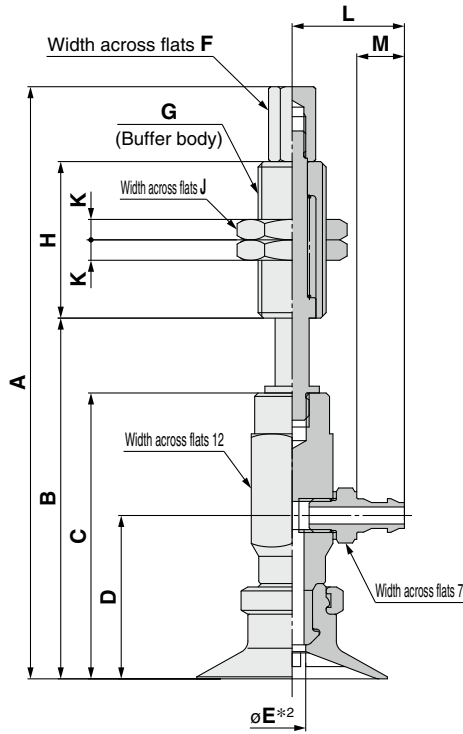
Buffer specification ③

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet (Barb fitting)

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



Construction	p. 118
Buffer Assembly	p. 126

		Model										A	B	C	D	*2 E	F	G	H	J	K																								
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread																																						
ZP	Y	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												3.5	6	M10 x 1																												
	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	187.5	108.5																																											
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																																													

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										
														16.5			
						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
Pad unit ZP 10 F N	p. 62	p. 119	From p. 127
With adapter ZP T 10 F N - B5 - A8	From p. 62	p. 119	From p. 127
With buffer ZP T 10 F N J 10 - B5 - A10	From p. 65	p. 120	From p. 129

① ② ③ ④ ⑤ ⑥ ⑦
 • Ball joint type

① Vacuum inlet direction

T	Vertical
R	Lateral (With One-touch fitting)

② Pad diameter

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

⑤ Buffer stroke

Stroke [mm]	Pad diameter [mm]	
	ø10 to ø16	ø20 to 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/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	B5	M5 x 0.8	Male thread	A8	M8 x 1	○	—	—
				A10	M10 x 1	—	○	—
				A14	M14 x 1	—	—	○
—	Nil	—*1	Female thread	B5	M5 x 0.8	○	○	—
				B8	M8 x 1.25	—	○	○
				B01	Rc1/8	—	○	○
				N01	NPT1/8	—	○	○
				T01	NPTF1/8	—	○	○
				B5	M5 x 0.8	●	—	—
				B8	M8 x 1.25	—	●	●
One-touch fitting	04	ø4	Female thread	B5	M5 x 0.8	—	—	—
				B8	M8 x 1.25	—	●	●
				B5	M5 x 0.8	—	●	●
B8	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	B5	M5 x 0.8	○	—	—
	B01	Rc1/8	—	○	○
	N01	NPT1/8	—	○	○
	T01	NPTF1/8	—	○	○
One-touch fitting	04	ø4	○●	—	—
	06	ø6	○●	○●	○●
	08	ø8	—	○●	○●

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

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

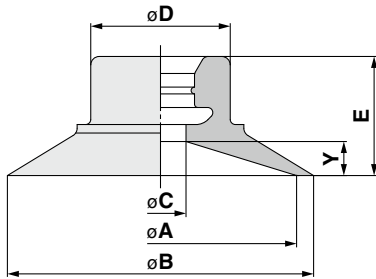
Lock ring unit

Part no.	Pad diameter [mm]
ZPLF	ø40, ø50

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

Dimensions/Models

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



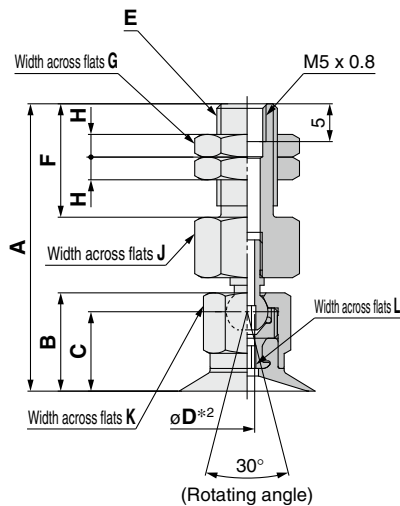
Construction	p. 119
Mounting Bracket Assembly	From p. 127

ZP **10** F **N**
 ① ②

Model	① Pad dia.	Form	② ^{*1} Material	A	B	C	D	E	Y
	13		13	15	7	2			
	16		16	18					
	20		20	22	4	10.2	8.5	3	
	25		25	28					
	32		32	35					
	40		40	43	10	26	13	5	
	50		50	53			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 $\varnothing 50$



$\varnothing 10$ to $\varnothing 32$

ZPT **10** F **N** - **B5** - **A8**
 ① ② ③ ④

Vacuum inlet (Female thread)

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

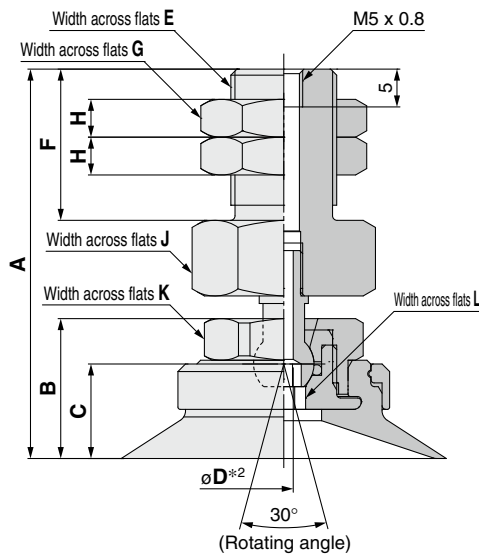
④ Connection thread (Male thread)

A8	M8 x 1
A10	M10 x 1
A14	M14 x 1

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	L
	13		38	13	10.5												
	16		48.5	15.5	12.5												
	20		49	16	13	2	M10 x 1	20	14	3	16	12	3				
	25		51.5	18.5	12.5												
	32		52.5	19.5	13.5												
	40					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



$\varnothing 40, \varnothing 50$

Construction	p. 119
Adapter Assembly	p. 127

Dimensions/Models

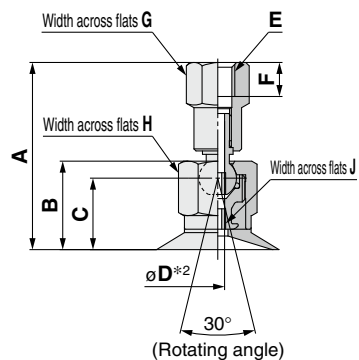
With adapter $\varnothing 10$ to $\varnothing 50$

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

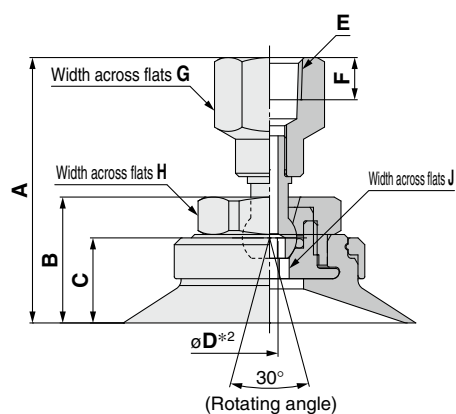
① ②

③ Vacuum inlet (Female thread)

B5	M5 x 0.8
B8	M8 x 1.25
B01	Rc1/8
N01	NPT1/8
T01	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	36.5	16	13	2	M8 x 1.25	8	12	12	3	
					25	39	18.5	12.5							
					32	40	19.5	13.5							
					40	40	19.5	13.5							
				B01 N01 T01	20	36	15.5	12.5	2	Rc1/8 NPT1/8 NPTF1/8	14	14	12	3	
					25	36.5	16	13							
					32	39	18.5	12.5							
					40	40	19.5	13.5							
					50	40	19.5	13.5							

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

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

Construction	p. 119
Adapter Assembly	p. 127

Dimensions/Models

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

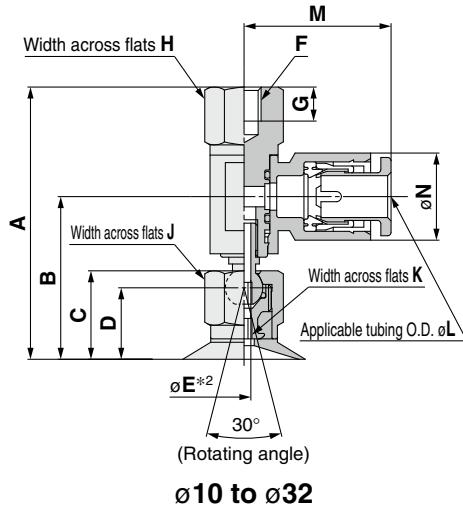
ZPR **10** F **N** - **04** - **B5**

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

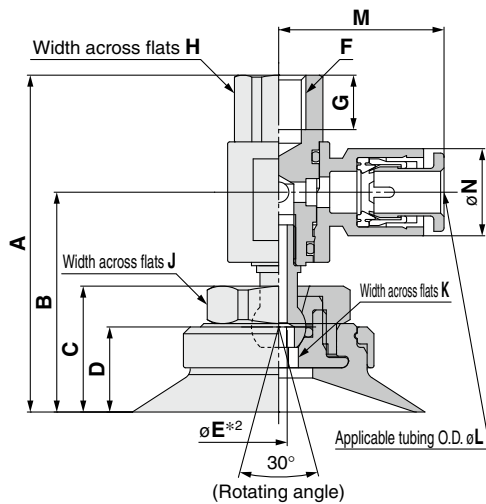
④ Connection thread (Female thread)

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

B5	M5 x 0.8
B8	M8 x 1.25



$\phi 10$ to $\phi 32$



$\phi 40, \phi 50$

Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ 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 06 08	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.	② Form	③ Material	④ 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	$\phi 3$
		13					6	21.6	12.8	$\phi 4$
		16			6	21.6	12.8	$\phi 4$		
		20			6	24.3	12.8	$\phi 4.5$		
		25			6	24.3	12.8	$\phi 4.5$		
		32			8	26.2	15.2	$\phi 6$		
40	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

Construction	p. 119
Adapter Assembly	p. 128

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Ball Joint Type

Bellows Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Thin Flat Type with Ribs

Deep Type

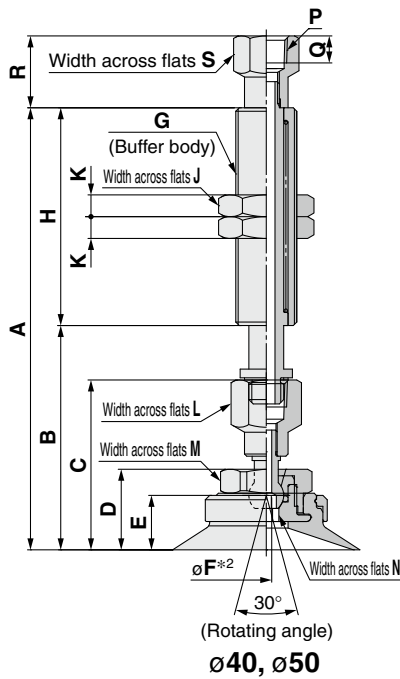
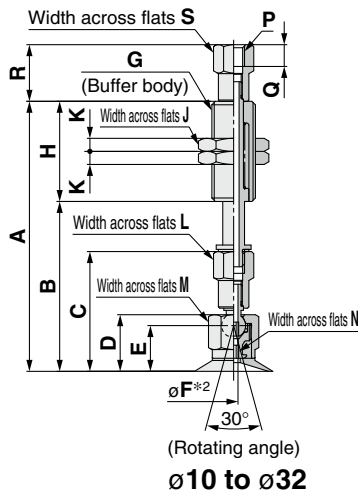
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

With buffer $\phi 10$ to $\phi 50$



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

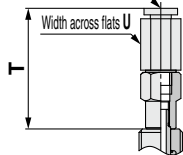
5 Vacuum inlet

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

		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	ϕF^{*2}	G	H	J	K	L	M	N	P	Q	R	S	
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	19																					
	10	101.5	51.5	4																					
	20	111.5	61.5	12																					
	30	121.5	71.5	19																					
	50	166.5	91.5	4																					
	10	102.5	52.5	19																					
	20	112.5	62.5	5																					
30	122.5	72.5	19																						
50	167.5	92.5	5																						

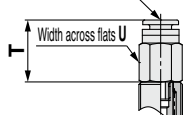
Vacuum inlet: One-touch fitting

Applicable tubing O.D. ϕV



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

Applicable tubing O.D. ϕV



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	$\phi 2.5$	
					20							
					30							
					40							
					50							
					10							06
	20											
	30											
	40											
	50											
	20	06	A14	19.9	12	6	$\phi 3$					
	30											
50												
10	08							A14	24.9	14	8	
20												
30												
50												

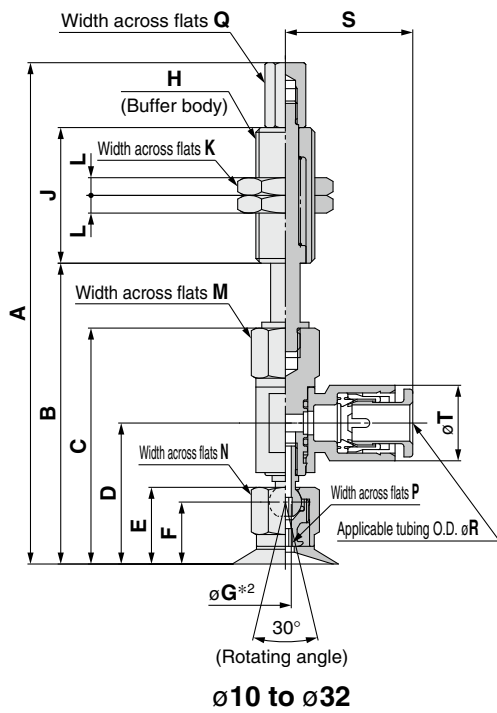
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Construction	p. 120
Buffer Assembly	p. 129

Dimensions/Models

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



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

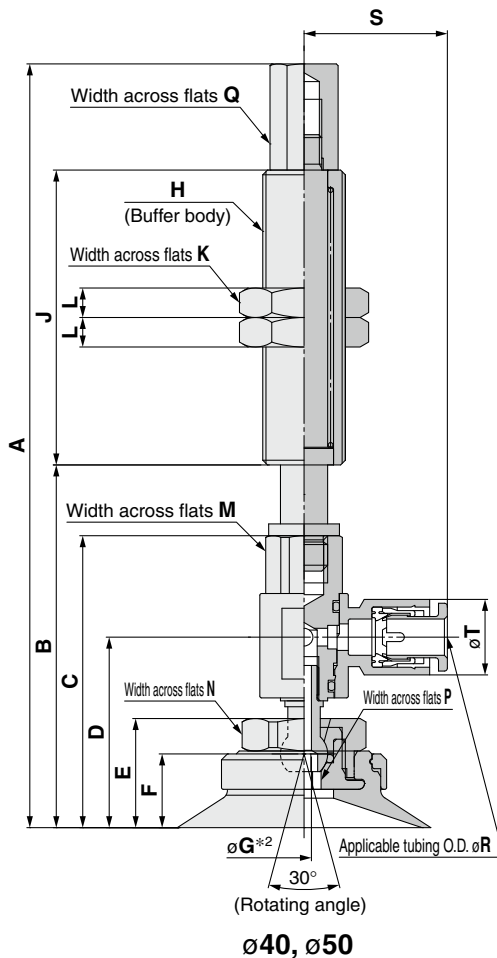
① Pad dia. ② Form ③ Buffer spec. ④ Buffer stroke ⑤ Vacuum inlet ⑥ Connection thread (Male thread)

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

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

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



Dimensions Per Vacuum Inlet: One-touch Fitting

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

Construction	p. 120
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

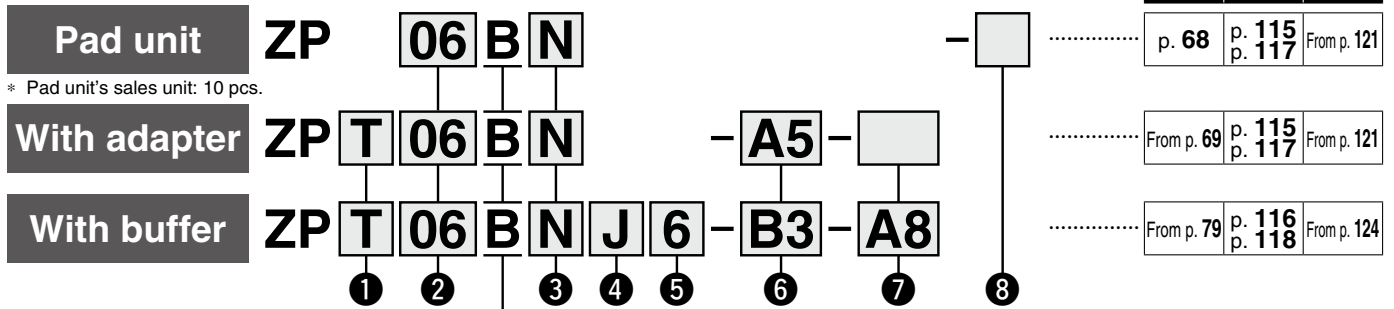
Precautions



Basic Pad Bellows Type ZP Series



How to Order



① Vacuum inlet direction

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

② Pad diameter

Symbol	ø6	ø8	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
06	●	●	—	—	—	—	—	—	—	—
08	—	●	●	—	—	—	—	—	—	—
10	—	—	●	●	—	—	—	—	—	—
13	—	—	—	●	●	—	—	—	—	—
16	—	—	—	—	●	●	—	—	—	—

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

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]			
			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]	
	ø6, ø8	ø10 to ø50
Nil	None*1	
X19	With lock ring	
	Without lock ring	

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

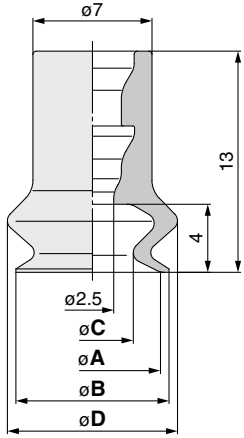
Lock ring unit

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 $\phi 6$ to $\phi 8$



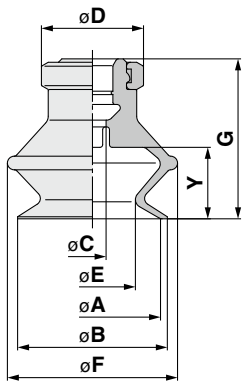
Construction	p. 115
Mounting Bracket Assembly	From p. 121

ZP **06** B **N**
① ②

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

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

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



Construction	p. 117
Mounting Bracket Assembly	From p. 121

ZP **10** B **N**
① ②

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

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

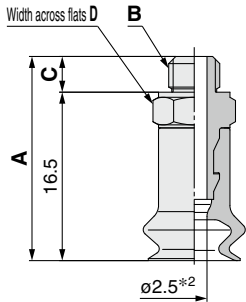
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction p. 115
Adapter Assembly p. 121

ZPT **06** B **N** - **A5**
① ②

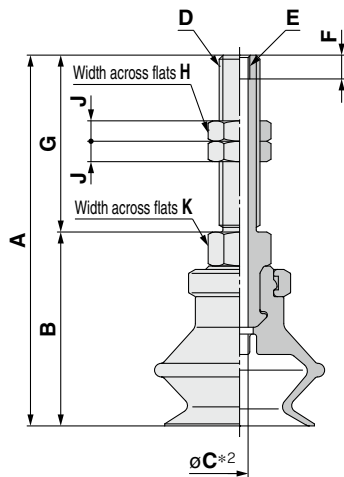
③ Vacuum inlet (Male thread)

A5	M5 x 0.8
A6	M6 x 1

Model					A	B	C	D	
Vacuum inlet direction	① Pad dia.	Form	② *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)

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

Model						A	B	C*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	4.2													

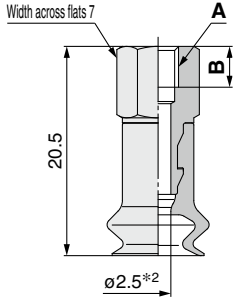
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber
*2 Indicates the minimum hole size of the adapter or vacuum pad

Recommended Gasket Part Nos.

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

Dimensions/Models

With adapter ø6 to ø8



Construction	p. 115
Adapter Assembly	p. 121

ZPT **06** B **N** - **B4**

① ② ③

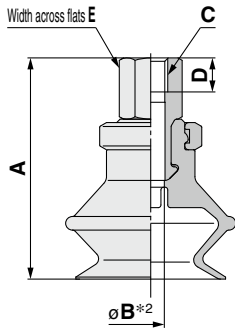
③ Vacuum inlet (Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

Model						A	B
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} 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 ø10 to ø50



Construction	p. 117
Adapter Assembly	p. 121

ZPT **10** B **N** - **B5**

① ② ③

③ Vacuum inlet (Female thread)

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

Model						A	B*2	C	D	E				
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet										
ZP	T	10 13 16 20 25 32 40 50 20 25 32 40 50 10 13 16 20 25 32 40 50	B	N S U F GN GS	B5	25	2.5	M5 x 0.8	5	8				
						27.5								
						29								
						32.5								
						33								
						38								
					B6	25	2.5	M6 x 1	6	8				
						27.5								
						29								
						32.5								
						33								
						38								
					B8	40	4.9	M8 x 1.25	8	12				
						47.5								
						51.5								
						38.5					3.5	Rc1/8 NPT1/8 NPTF1/8	—	12
						39								
						44								
					47.5									
					51.5									
					51.5	7	Rc1/8 NPT1/8 NPTF1/8	—	12					
					31									
					33.5									
					35									
38.5														
39														

*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

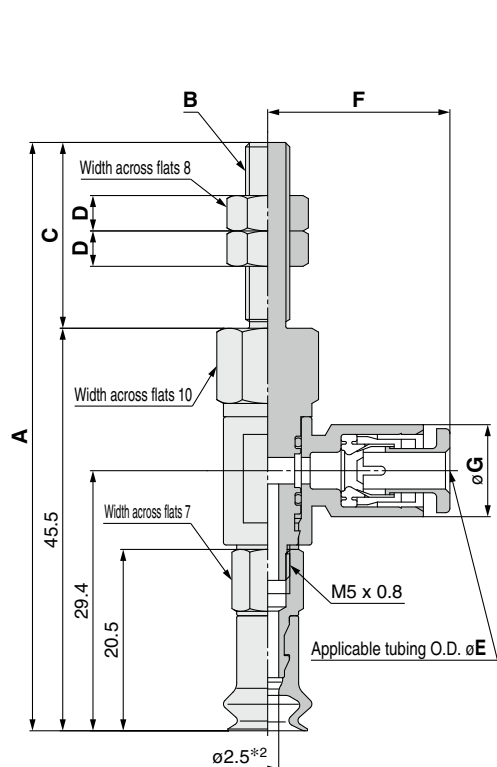
Construction

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**

1	2	3
04	$\varnothing 4$	$\varnothing 4$
06	$\varnothing 6$	$\varnothing 6$

4 Connection thread
(Male thread)

A5	M5 x 0.8
A6	M6 x 1

Model						A	B	C	D	Fitting part min. hole size	
Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Vacuum inlet	4 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	1 Pad dia.	Form	2 *1 Material	3 Vacuum inlet	4 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**

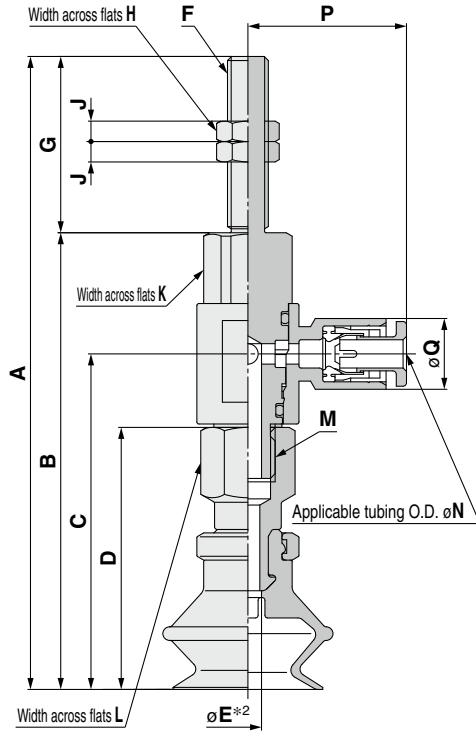
① ②

Vacuum inlet
(One-touch fitting)

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

④ Connection thread
(Male thread)

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



Construction	p. 117
Adapter Assembly	p. 122

Model						A	B	C	D	*2 E	F	G	H	J	K	L	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
						102	76.1	58.3	47.5																																						
	106	80.1	62.3	51.5	4	M8 x 1	15.9	12	4	12	12	12	M8 x 1.25																																		
	83	67.1	49.3	38.5																																											
	83.5	67.6	49.8	39	3.5									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	$\varnothing 3$
					A6	6	21.6	12.8	$\varnothing 4$
				06	A6	4	23.3	10.4	$\varnothing 3$
					A8	6	24.3	12.8	$\varnothing 4.5$
				08	A6	8	26.2	15.2	$\varnothing 6$
					A8	6	24.3	12.8	$\varnothing 4.5$
				08	A6	8	26.2	15.2	$\varnothing 6$
					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

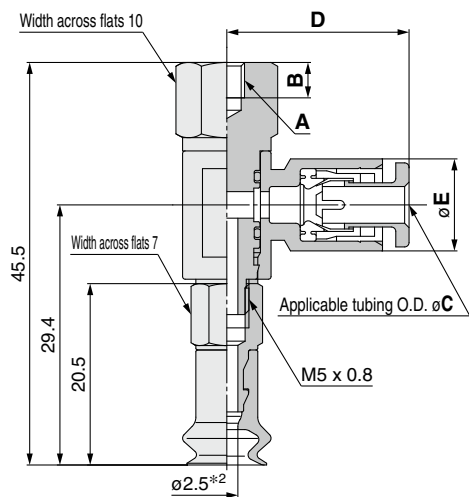
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 122

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

1	2	3	4 Connection thread (Female thread)
Vacuum inlet 3 (One-touch fitting)			
04	$\phi 4$		
06	$\phi 6$		
B4	M4 x 0.7		
B5	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	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	1 Pad dia.	Form	2 *1 Material	3 Vacuum inlet	4 Connection thread					
ZP	R	06 08	B	N S U F GN GS	04	B4 B5	4	20.6	10.4	$\phi 3$
					06		6	21.6	12.8	$\phi 4$

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

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

Dimensions/Models

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

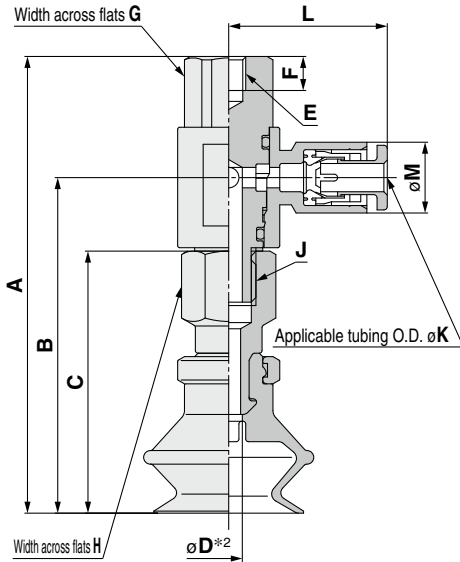
ZPR **10** **B** **N** - **04** - **B5**

①
②
③ Vacuum inlet
(One-touch fitting)

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

④ Connection thread
(Female thread)

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



Construction	p. 117
Adapter Assembly	p. 122

		Model				A	B	C	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	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												
						R	B	N S U F GN GS	04 06 08	B6		10	50	33.9	25	2.5	M6 x 1	6	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																	
	R	B	N S U F GN GS	04 06 08	B8						20	67.1	49.3	38.5	3.5	M8 x 1.25		8	12	12	M8 x 1.25
											25	76.1	58.3	47.5							
											32	80.1	62.3	51.5							
											40	67.1	49.3	38.5							
						50	67.6	49.8	39												
						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.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread				
ZP	R	B	N S U F GN GS	04	B5	4	20.6	10.4	$\phi 3$
				06	B6	6	21.6	12.8	$\phi 4$
				04	B5	4	23.3	10.4	$\phi 3$
				06	B6	6	24.3	12.8	$\phi 4.5$
				08	B8	8	26.2	15.2	$\phi 6$
				06	B6	6	24.3	12.8	$\phi 4.5$
				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

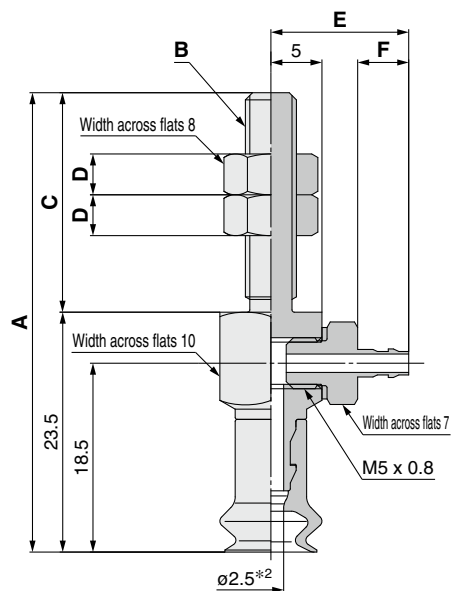
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

With adapter/barb fitting $\varnothing 6$ 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)

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

A5	M5 x 0.8
A6	M6 x 1

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

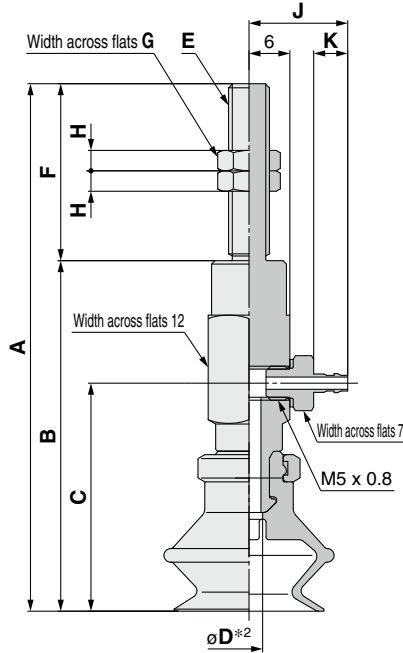
① ②

Vacuum inlet (Barb fitting)

④ **Connection thread (Male thread)**

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*2	E	F	G	H	
	Vacuum inlet direction	① Pad dia.	② Form	③ Material	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	④ Vacuum inlet				
ZP	Y	10	B	N S U F GN GS	N4	A5	14.5	5	$\varnothing 1.8$
		U4							
		20			N6	A6	16.5	7	$\varnothing 2.5$
		32			U6				
		40			N6	A8	16.5	7	$\varnothing 2.5$
		50			U6				

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

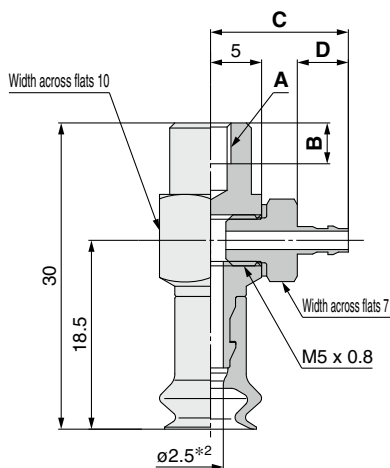
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 123

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

① ②

Vacuum inlet ③
(Barb fitting)

④ Connection thread
(Female thread)

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

B4	M4 x 0.7
B5	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	$\phi 2.5$

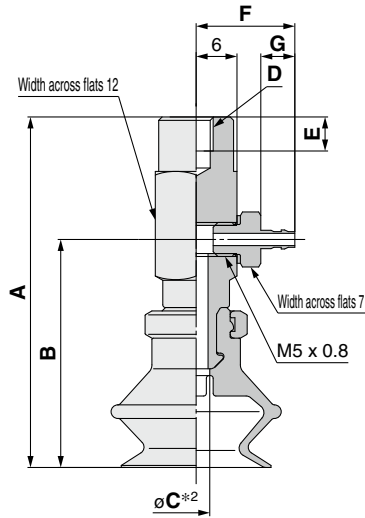
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

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

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

		Model				A	B	C*2	D	E			
Vacuum inlet direction	① Pad dia.	② Form	③ Material*1	④ Vacuum inlet	⑤ Connection thread								
ZP	Y	B	N S U F GN GS	N4 N6 U4 U6	B5	10	42	26	2.5	M5 x 0.8	5		
						13	44.5	28.5					
						16	46	30					
						20	51.5	33.5	3.5				
						25	52	34					
						32	57	39					
						10	42	26	2.5			M6 x 1	6
						13	44.5	28.5					
						16	46	30					
						20	51.5	33.5	3.5				
	25	52	34										
	32	57	39										
	40	62	44	6	M8 x 1.25	8							
	50	66	48										
	20	51.5	33.5										
	25	52	34	3.5									
	32	57	39										
	40	62	44										
	50	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*1	④ Vacuum inlet	⑤ Connection thread			
ZP	Y	B	N S U F GN GS	N4 U4	B4	14.5	5	$\varnothing 1.8$
				N6 U6	B5	16.5	7	$\varnothing 2.5$
				N4 U4	B5	14.5	5	$\varnothing 1.8$
				N6 U6	B6 B8	16.5	7	$\varnothing 2.5$
				N6 U6	B6 B8	16.5	7	$\varnothing 2.5$
				40 50	B6 B8	16.5	7	$\varnothing 2.5$

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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

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

① ② ④

Buffer specification ③

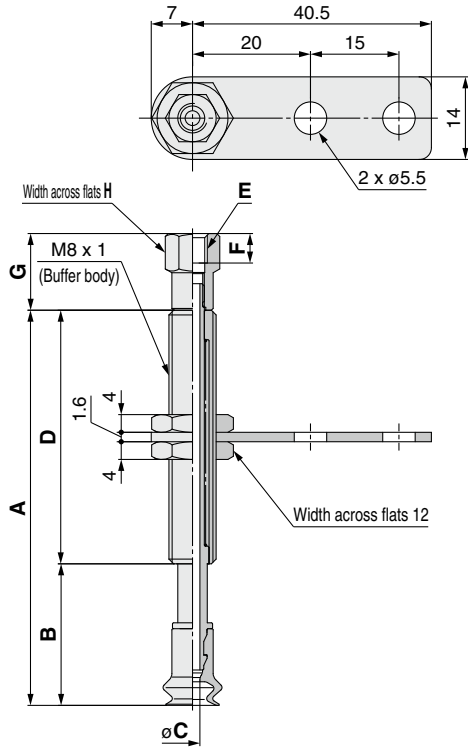
J	Rotating
K	Non-rotating

⑥ **Connection thread (Male thread)**

A8	M8 x 1
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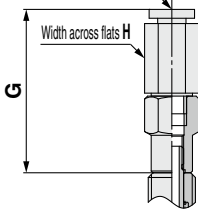
⑤ **Vacuum inlet**

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

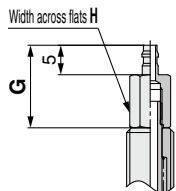


Vacuum inlet: One-touch fitting

Applicable tubing O.D. $\varnothing J$



Vacuum inlet: Barb fitting



Construction	p. 116
Buffer Assembly	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

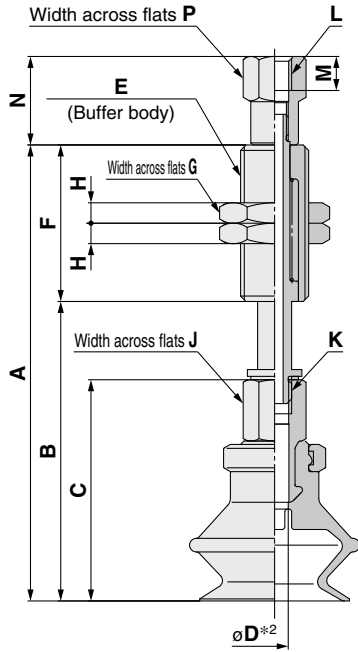
		Model						G	H	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	06 08	B	N S U F GN GS	J K	6 10 15 25	N4 U4	A8	14	6	$\varnothing 1.8$

*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 $\varnothing 50$



Construction	p. 118
Buffer Assembly	p. 124

ZPT 10 B N J 10 - B5 - A10

1	2	3	4	5	6
Buffer specification	Buffer spec.	Vacuum inlet (Female thread)	Connection thread (Male thread)		
J Rotating K Non-rotating	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 G N S	J K	10	B5 04 06 N6 U6	A10	59.5	36.5	25	J: 2.5 K: 2	M10 x 1	23	14	3	8	M5 x 0.8
					20			97.5	46.5								
					30			107.5	56.5								
					40			143.5	66.5								
					50			153.5	76.5								
					10			62	39								
					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								
													75				
													50				
													75				

Dimensions Per Vacuum Inlet: Female Thread

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

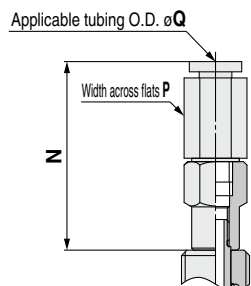
Dimensions/Models

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

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

① ② ③ ④ ⑤ ⑥

Vacuum inlet: One-touch fitting



Buffer specification ③

J	Rotating
K	Non-rotating

⑥ Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet

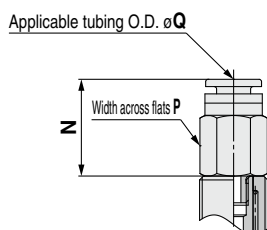
			Pad diameter	
			$\varnothing 10$ to $\varnothing 32$	$\varnothing 40, \varnothing 50$ (10 st only)
04	$\varnothing 4$	One-touch fitting	KQ2H04-M5N	KQ2H06-01NS
06	$\varnothing 6$		KQ2H06-M5N	
08	$\varnothing 8$		KQ2H08-01NS	
N6	For $\varnothing 6$ nylon tubing	Barb fitting		
U6	For $\varnothing 6$ soft 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 ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet					⑥ Connection thread		
ZP	T	10	B	N S U F GN GS	J K	10	A10	27.7	8	4	$\varnothing 2.5$			
		13				20								
		16				30								
		20				40								
		25				50	06		A14	31.8		10	6	$\varnothing 4.5$
		32				10	08			35.9		14	8	$\varnothing 6$
		40				20	06		19.9	12		6	$\varnothing 3$	
		50				30	08		24.9	14		8		

Vacuum inlet: Built-in One-touch fitting

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

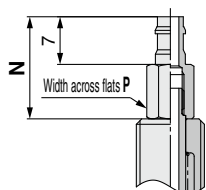


Dimensions Per Vacuum Inlet: Barb Fitting

	Vacuum inlet direction	Model						N	P	Fitting part min. hole size		
		① Pad dia.	Form	② ^{*1} 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				U6						
		25				10	N6		A14		19	10
		32				20	N6				12	
		40				30	U6					
		50				50	U6					

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

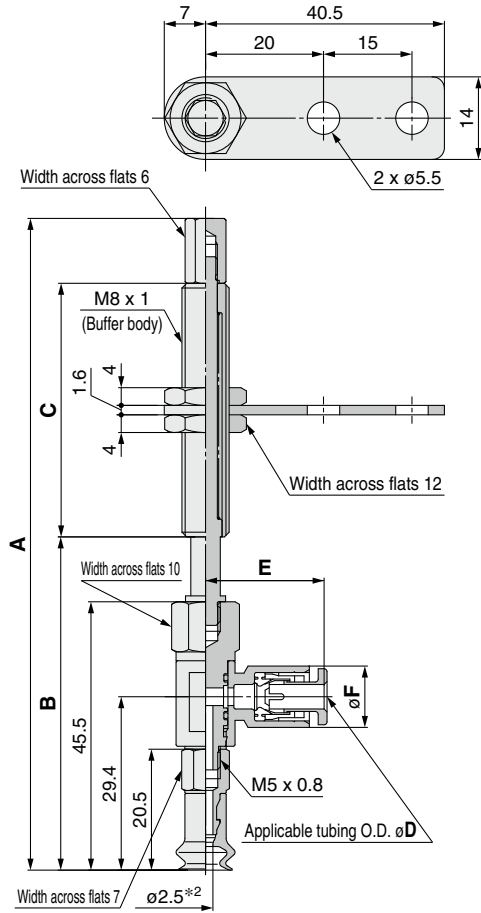
Vacuum inlet: Barb fitting



Construction	p. 118
Buffer Assembly	p. 124

Dimensions/Models

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



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

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	$\phi 6$

		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	06 08	B	N S U F GN GS	J K	6	04 06	A8	79.5	53.5	15
						10			110.5	56.5	43
						15			115.5	61.5	
						25			125.5	71.5	

Dimensions Per Vacuum Inlet

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

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**

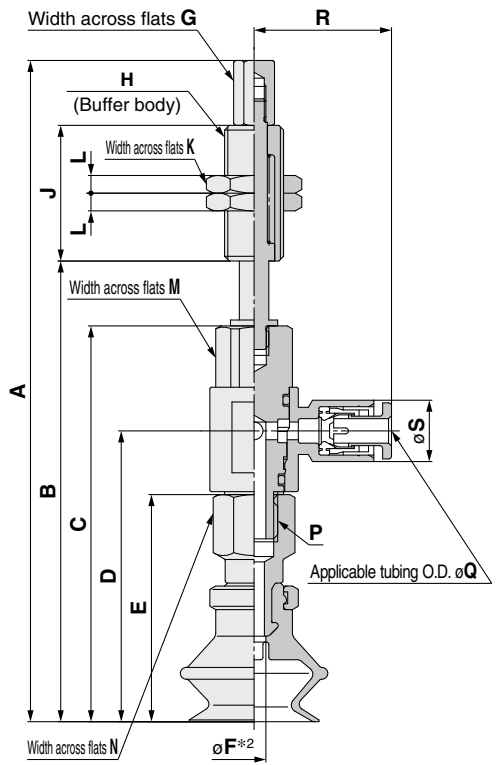
① Pad dia. ② Form ③ Material ④ Buffer spec. ⑤ Vacuum inlet (One-touch fitting) ⑥ Connection thread (Male thread)

Buffer specification

J	Rotating
K	Non-rotating

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

A10	M10 x 1
A14	M14 x 1



Construction	p. 118
Buffer Assembly	p. 125

Model		①	②	③	④	⑤	⑥	A	B	C	D	E	F	G	H	J	K	L	M	N	P								
Vacuum inlet direction	Pad dia.	Form	Material	Buffer spec.	Buffer stroke	Vacuum inlet	Connection thread																						
ZP	R	B	N S U F G N S	J K	10	04	A10	95	61								23												
					20			133	71							51													
					30			143	81	50	33.9	25																	
					40			179	91																				
					50			189	101																				
					10			97.5	63.5																				
					20			135.5	73.5																				
					30			145.5	83.5	52.5	36.4	27.5	2.5														10	8	M5 x 0.8
					40			181.5	93.5																				
					50			191.5	103.5																				
					10			99	65																				
					20			137	75																				
	30	147	85	54	37.9	29																							
	40	183	95																										
	50	193	105																										
	10	112.1	78.1																										
	20	150.1	88.1																										
	30	160.1	98.1	67.1	49.3	38.5																							
	40	196.1	108.1																										
	50	206.1	118.1																										
	10	112.6	78.6																										
	20	150.6	88.6																										
	30	160.6	98.6	67.6	49.8	39	3.5																						
	40	196.6	108.6																										
50	206.6	118.6																											
10	117.6	83.6																											
20	155.6	93.6																											
30	165.6	103.6	72.6	54.8	44																								
40	201.6	113.6																											
50	211.6	123.6																											
10	156.1	88.1																											
20	153.1	98.1																											
30	163.1	108.1	76.1	58.3	47.5																								
40	208.1	128.1																											
50	160.1	92.1																											
10	157.1	102.1																											
20	167.1	112.1	80.1	62.3	51.5																								
30	167.1	112.1																											
50	212.1	132.1																											

Dimensions Per Vacuum Inlet

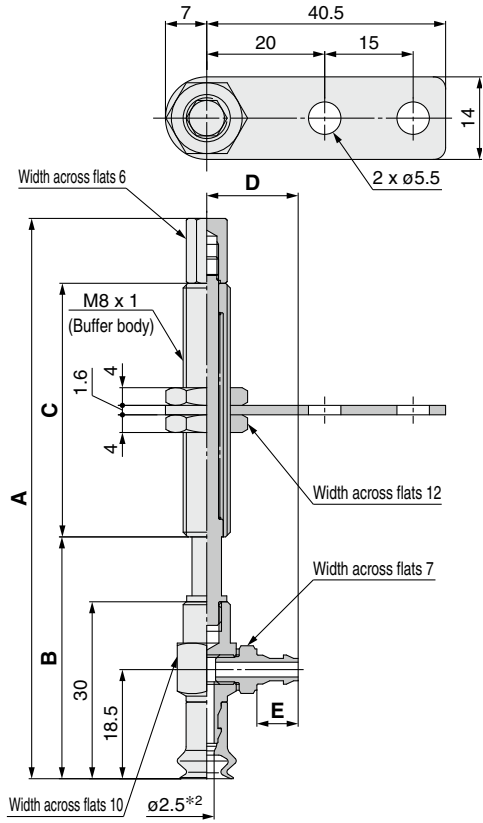
Model		①	②	③	④	⑤	⑥	Q	R	S	Fitting part min. hole size
Vacuum inlet direction	Pad dia.	Form	Material	Buffer spec.	Buffer stroke	Vacuum inlet	Connection thread				
ZP	R	B	N S U F G N S	J K	10	04	A10	4	20.6	10.4	$\varnothing 3$
					20						
					30						
					40						
					50						
					10						
	20										
	30										
	40										
	50										
	10										
	20										
30											
50											
10											
20											
30											
50											

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



Dimensions/Models

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



Construction	p. 116
Buffer Assembly	p. 126

ZPY 06 B N J 6 - N4 - A8

1 2 3 4 5 6

Buffer specification 3

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

Dimensions Per Vacuum Inlet

Model								D	E	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread			
ZP	Y	06 08	B	N S U F GN GS	J K	6	A8	13.5	5	$\varnothing 1.8$
						10 15 25		N4 U4 N6 U6	15.5	7

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

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

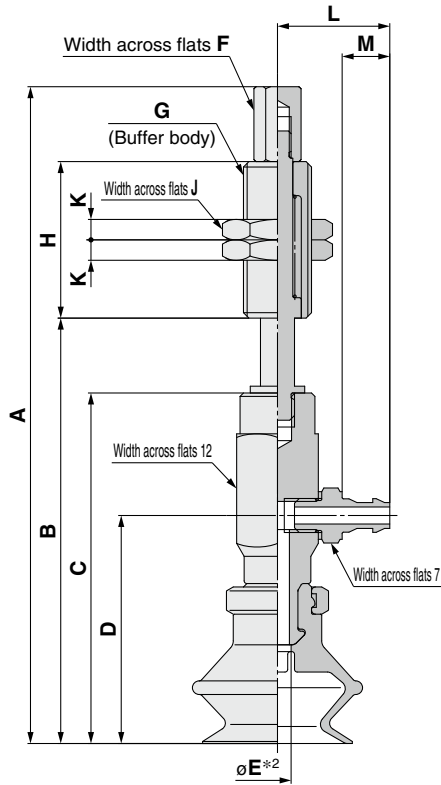
J	Rotating
K	Non-rotating

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



Construction	p. 118
Buffer Assembly	p. 126

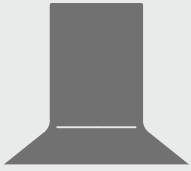
		Model										A	B	C	D	*2 E	F	G	H	J	K
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread														
ZP	10	B	N	J	10	N4	A10	87	53	42	26										23
					20			125	63												51
					30			135	73												77
					40			171	83												
					50			181	93												
					10			89.5	55.5												23
					20			127.5	65.5												51
					30			137.5	75.5												77
					40			173.5	85.5												
					50			183.5	95.5												
					10			91	57												23
					20			129	67												51
	30	139	77	77																	
	40	175	87																		
	50	185	97																		
	10	96.5	62.5	23																	
	20	134.5	72.5	51																	
	30	144.5	82.5	77																	
	40	180.5	92.5																		
	50	190.5	102.5																		
	10	97	63	23																	
	20	135	73	51																	
	30	145	83	77																	
	40	181	93																		
50	191	103																			
10	102	68	23																		
20	140	78	51																		
30	150	88	77																		
40	186	98																			
50	196	108																			
10	142	74	23																		
20	139	84	51																		
30	149	94	75																		
40	194	114	50																		
50	146	78																			
10	143	88	19																		
20	153	98	4																		
30	153	98																			
50	198	118																			

Dimensions Per Vacuum Inlet

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

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

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



Basic Pad Thin Flat Type ZP Series



How to Order

	Dimensions/ Models	Construction	Mounting Bracket Assembly
Pad unit	ZP 10 UT N	p. 87	p. 115 From p. 121
With adapter	ZP T 10 UT N - A5 -	From p. 87	p. 115 From p. 121
With buffer	ZP T 10 UT N J 6 - B3 - A8	From p. 92	p. 116 From p. 124

* Pad unit's sales unit: 10 pcs.

① Vacuum inlet direction ② Pad diameter ③ Material

④ Buffer specification ⑤ Buffer stroke

⑥ Vacuum inlet ⑦ Connection thread

⑧ Connection thread

⑨ Connection thread

⑩ Connection thread

⑪ Connection thread

⑫ Connection thread

⑬ Connection thread

⑭ Connection thread

⑮ Connection thread

⑯ Connection thread

⑰ Connection thread

⑱ Connection thread

⑲ Connection thread

⑳ Connection thread

㉑ Connection thread

㉒ Connection thread

㉓ Connection thread

㉔ Connection thread

㉕ Connection thread

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㉗ Connection thread

㉘ Connection thread

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㊷ Connection thread

㊸ Connection thread

㊹ Connection thread

㊺ Connection thread

㊻ Connection thread

㊼ Connection thread

㊽ Connection thread

㊾ Connection thread

㊿ Connection thread

• Thin flat type

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
10	ø10
13	ø13
16	ø16

③ Material

Symbol	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

Symbol	Buffer specification
J	Rotating
K	Non-rotating

⑤ Buffer stroke

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

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	△

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)

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	●△

⑦ Connection thread

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

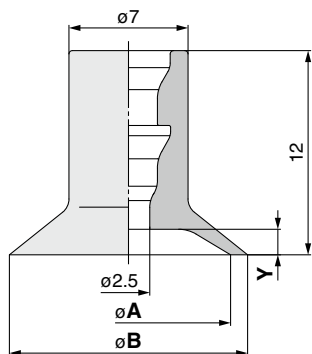
Type	Symbol	Size	Pad diameter
			All sizes
Male thread	A8	M8 x 1	○●△

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.

Dimensions/Models

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



Construction	p. 115
Mounting Bracket Assembly	From p. 121

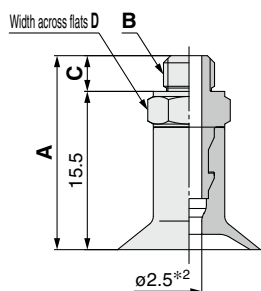
ZP **10** UT **N**

① ②

Model				A	B	Y
① Pad dia.	Form	② Material ^{*1}				
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**

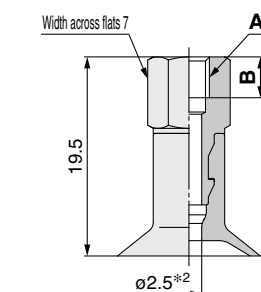
① ② ③ Vacuum inlet (Male thread)

A5	M5 x 0.8
A6	M6 x 1

Model						A	B	C	D
Vacuum inlet direction	① Pad dia.	Form	② Material ^{*1}	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 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 ^{*1}	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**

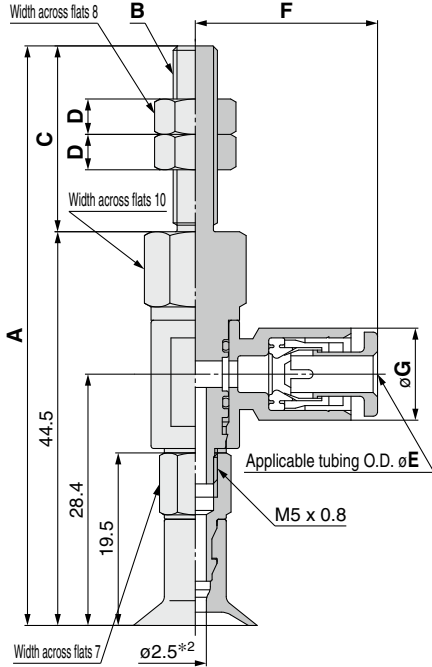
①
②
③
④

Vacuum inlet
(One-touch fitting)

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

④ Connection thread
(Male thread)

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 ^{*1} 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 ^{*1} 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

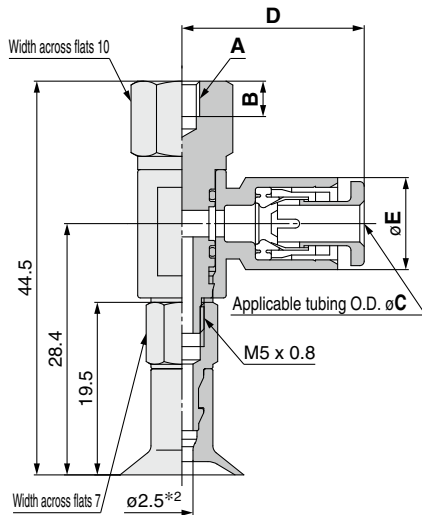
Construction

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

Vacuum inlet (One-touch fitting)

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

Connection thread (Female thread)

B4	M4 x 0.7
B5	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

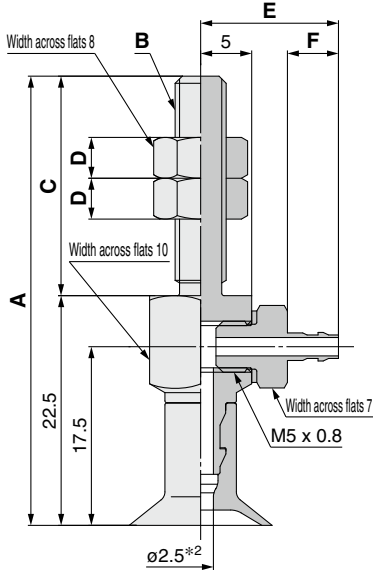
		Model				C	D	E	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread					
ZP	R	10 13 16	UT	N S U F GN GS	04	B4 B5	4	20.6	10.4	$\varnothing 3$
					06		6	21.6	12.8	$\varnothing 4$

*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

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	
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	A5	44	M5 x 0.8	21.5	4
						A6	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*1 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

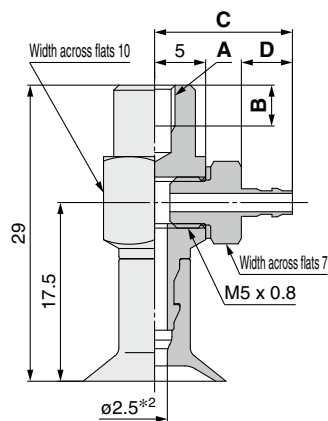
Construction

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

④

Vacuum inlet
(Barb fitting)

Connection thread
(Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

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	
	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

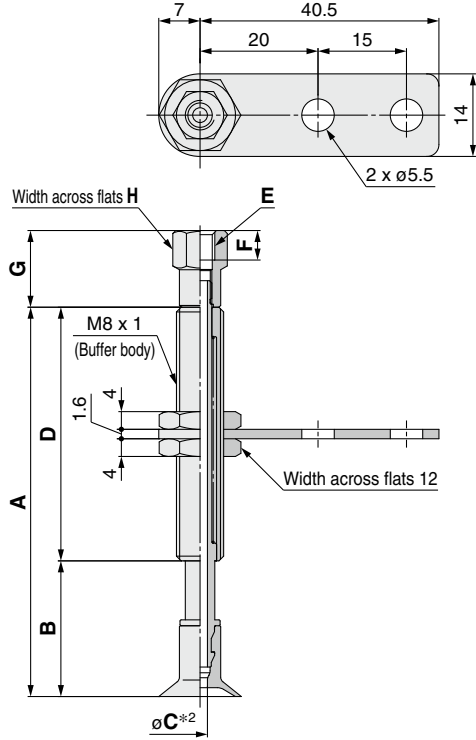
		Model				C	D	Fitting part min. hole size	
	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet				④ Connection thread
ZP	Y	10 13 16	UT	N S U F GN GS	N4 U4	B4 B5	13.5	5	$\varnothing 1.8$
					N6 U6		15.5	7	$\varnothing 2.5$

*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

J	Rotating
K	Non-rotating

6 Connection thread (Male thread)

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

5 Vacuum inlet

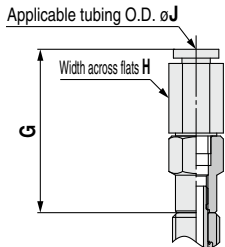
B3	M3 x 0.5	Female thread	
B5	M5 x 0.8		
04	$\varnothing 4$	One-touch fitting	KQ2H04-M5N
06	$\varnothing 6$		KQ2H06-M5N
N4	For $\varnothing 4$ nylon tubing	Barb fitting	
U4	For $\varnothing 4$ soft tubing		

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

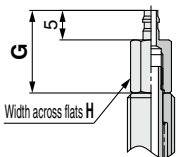
Dimensions Per Vacuum Inlet: Female Thread

		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



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

Buffer specification ③

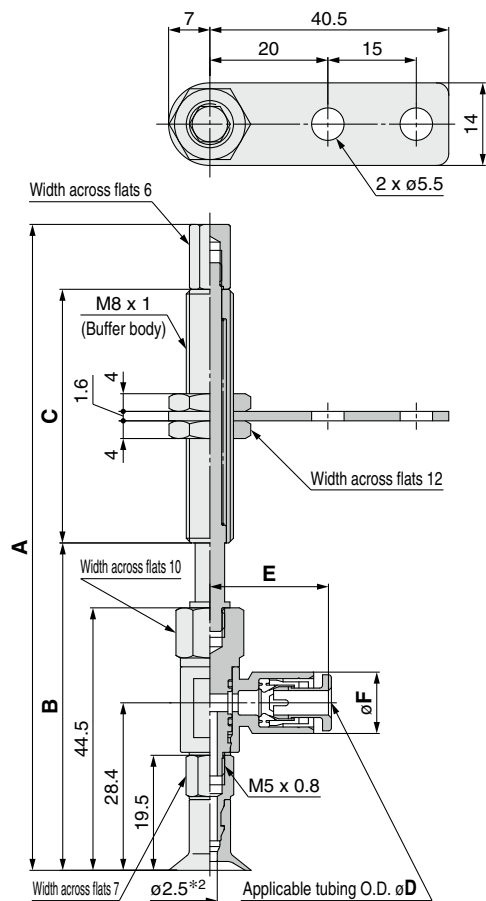
J	Rotating
K	Non-rotating

⑥ Connection thread
(Male thread)

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

⑤ Vacuum inlet
(One-touch fitting)

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



		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	$\varnothing 4$

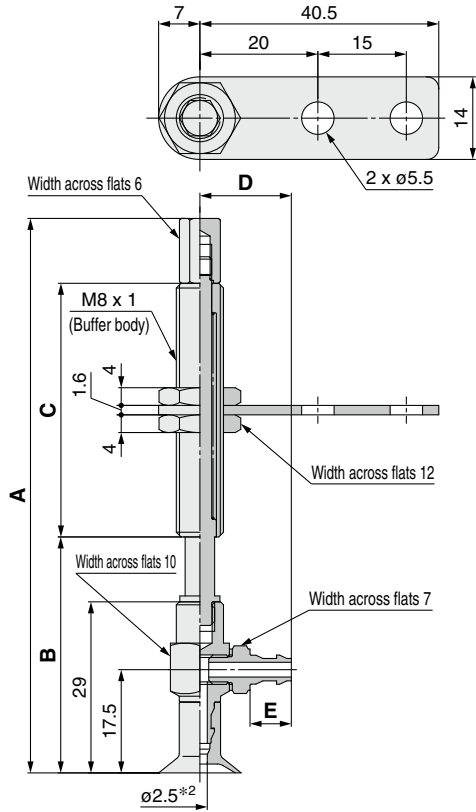
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

*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 *1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread			
ZP	Y	10 13 16	UT	N S U F GN GS	J K	6	A8	63	37	15
						10		94	40	43
						15		99	45	
						25		109	55	

Dimensions Per Vacuum Inlet

Model								D	E	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread			
ZP	Y	10 13 16	UT	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

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
Pad unit ZP 10 CT N	p. 96	p. 115	From p. 121
With adapter ZP T 10 CT N - A5 -	From p. 96	p. 115	From p. 121
With buffer ZP T 10 CT N J 6 - B3 - A8	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

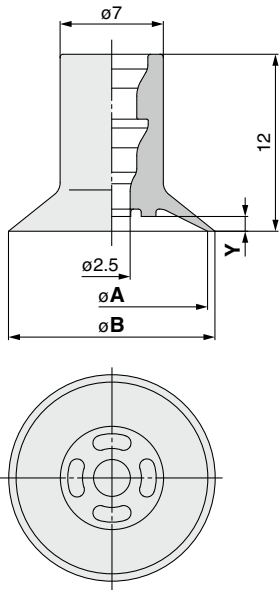
⑦ Connection thread ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

○: 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 $\varnothing 16$



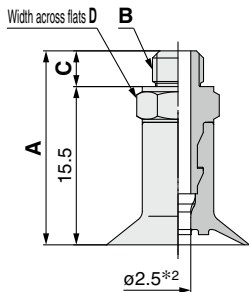
ZP 10 CT N
① ②

Model				A	B	Y
① Pad dia.	Form	② Material ^{*1}				
ZP	10	CT	N S U F GN GS	10	11	0.8
	13			14	1	
	16			17		

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

Construction p. 115
Mounting Bracket Assembly From p. 121

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



ZPT 10 CT N - A5
① ②

③ Vacuum inlet (Male thread)

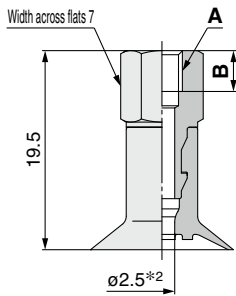
A5	M5 x 0.8
A6	M6 x 1

Model						A	B	C	D
Vacuum inlet direction	① Pad dia.	Form	② Material ^{*1}	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

Construction p. 115
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 ^{*1}	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

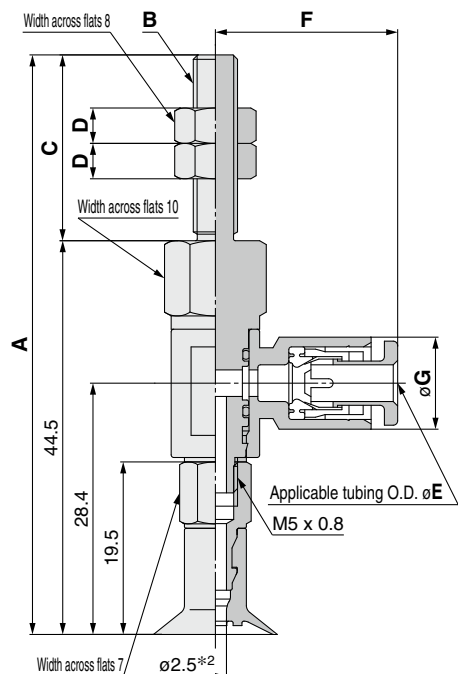
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Construction p. 115
Adapter Assembly p. 121

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**

①

②

④

Vacuum inlet
(One-touch fitting)

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

④ Connection thread
(Male thread)

A5	M5 x 0.8
A6	M6 x 1

Model						A	B	C	D	
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	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 ^{*1} Material	③ Vacuum inlet	④ Connection thread				
ZP	R	10 13 16	CT	N S U F GN GS	04	4	20.6	10.4	$\varnothing 3$
					06				
					A5 A6	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

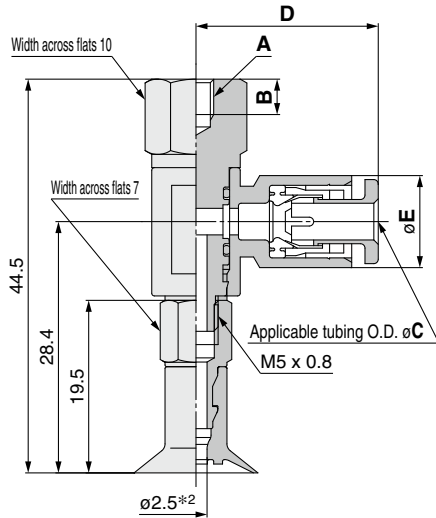
With adapter/One-touch fitting $\varnothing 10$ to $\varnothing 16$

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

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

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	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	CT	N S U F GN GS	04	B4	4	20.6	10.4	$\varnothing 3$	
				06	B5	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

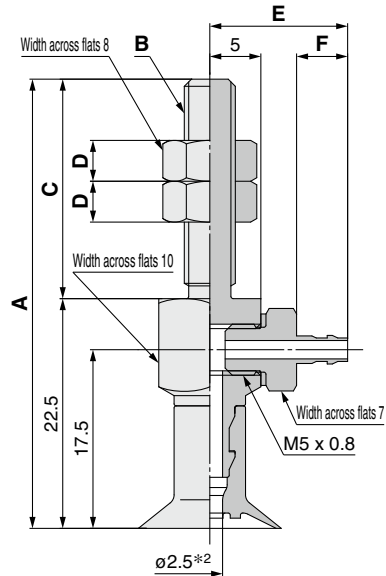
Construction

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)

Connection thread
(Male thread)

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

A5	M5 x 0.8
A6	M6 x 1

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	N4	A5	44	M5 x 0.8	21.5	4
				S	N6					
				F	U4	A6	49.5	M6 x 1	27	4
			GN	U6						
			GS							

Dimensions Per Vacuum Inlet

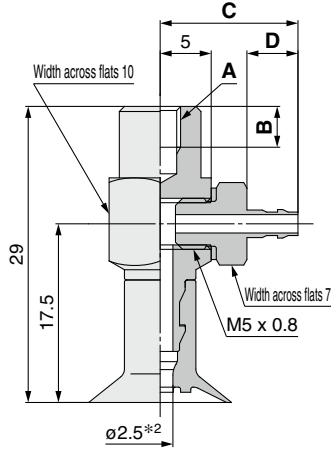
Model						E	F	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	10 13 16	CT	N	N4	13.5	5	$\varnothing 1.8$
				S	U4			
				F	U6	15.5	7	$\varnothing 2.5$
			GN					
			GS					

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

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

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 123

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

①
②
③ Vacuum inlet (Barb fitting)

④ Connection thread (Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

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
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	B4	M4 x 0.7	4
					N6			
					U4	B5	M5 x 0.8	5
					U6			

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

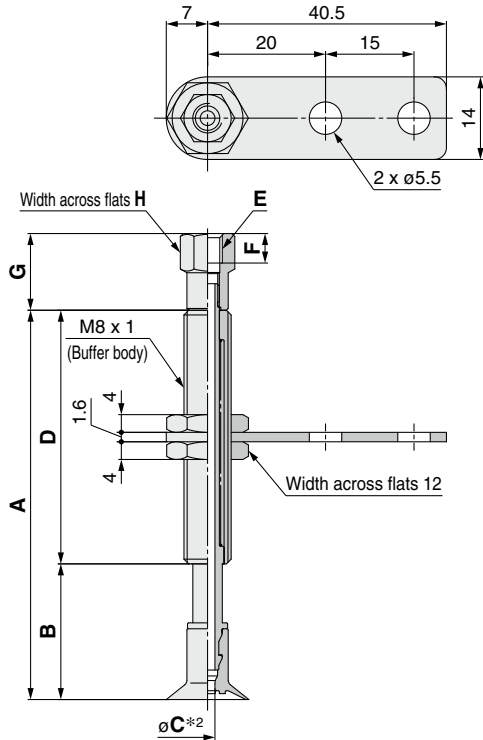
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



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

Buffer specification **3**

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		
04	$\varnothing 4$	One-touch fitting	KQ2H04-M5N
06	$\varnothing 6$		KQ2H06-M5N
N4	For $\varnothing 4$ nylon tubing	Barb fitting	
U4	For $\varnothing 4$ soft tubing		

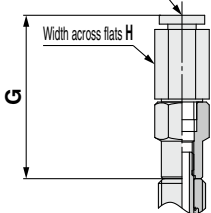
		Model						A	B	C*2	D	
Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread					
ZP	T	10 13 16	CT	N S U F GN GS	J K	6	B3	A8	33	18	J: 2.5 K: 2	15
						10	B5		66	23		43
						15	04		71	28		
						25	06 N4 U4		81	38		

Dimensions Per Vacuum Inlet: Female Thread

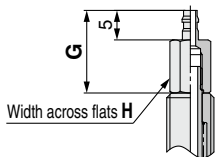
		Model						E	F	G	H
Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread				
ZP	T	10 13 16	CT	N S U F GN GS	J K	6	B3	M3 x 0.5	3	11	6
						10 15 25	B5				
								M5 x 0.8	5	13	8

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	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	14	6	$\varnothing 1.8$
						10 15 25	U4			

Construction	p. 116
Buffer Assembly	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

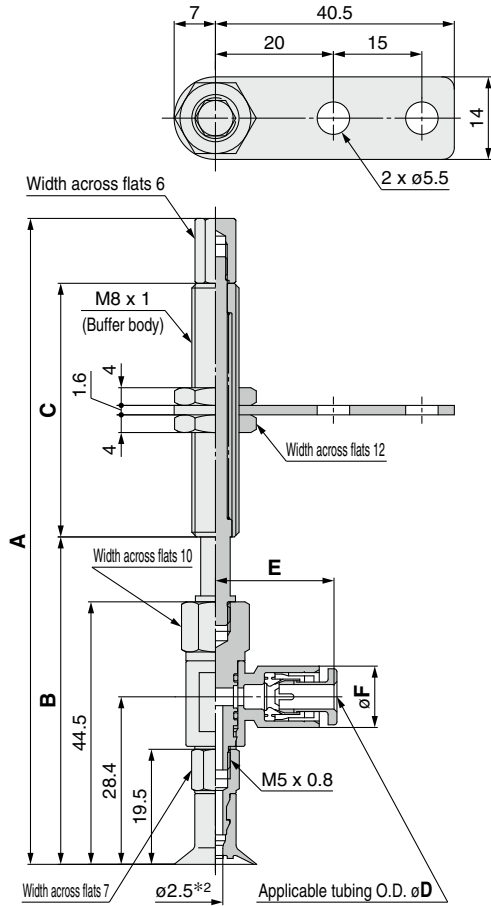
J	Rotating
K	Non-rotating

6 Connection thread (Male thread)

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

5 Vacuum inlet (One-touch fitting)

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



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	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	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 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

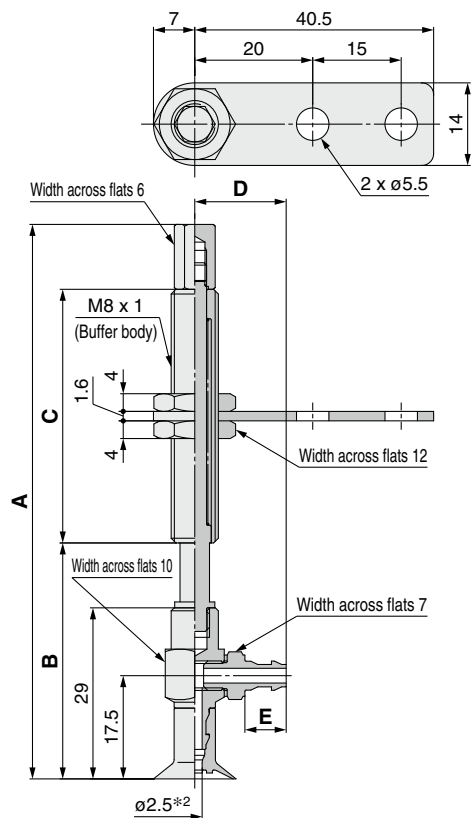
Construction

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 **3**

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 *1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet				6 Connection thread
ZP	Y	10	CT	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 *1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet				6 Connection thread
ZP	Y	10	CT	N S U F GN GS	J K	6	N4 U4	A8	13.5	5	$\varnothing 1.8$
		13				10			15.5		
		16				15	N6 U6			7	$\varnothing 2.5$

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

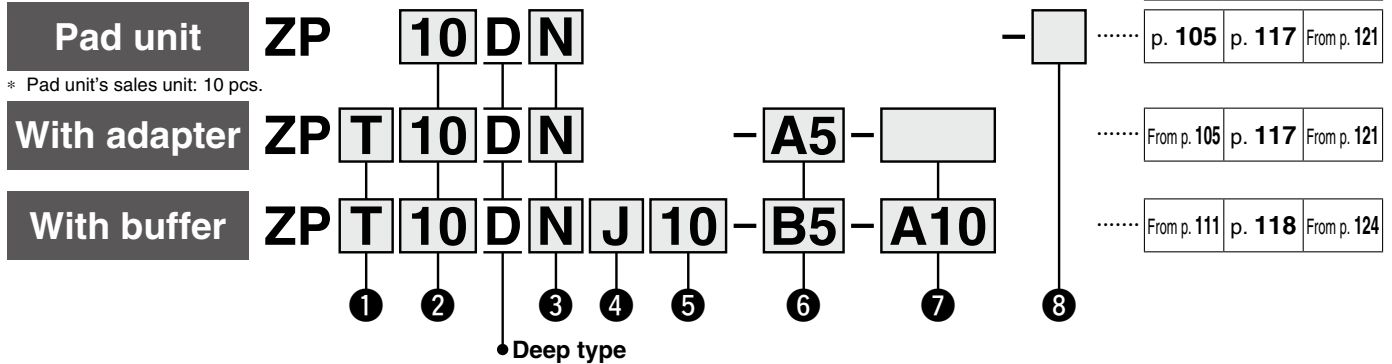
*2 Indicates the minimum hole size of the adapter or vacuum pad



Basic Pad 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	○ ⑦ Connection thread: A5/A6	○ ⑦ Connection thread: A6	○ ⑦ Connection thread: A6
		M5 x 0.8	—	○ ⑦ Connection thread: A8	○ ⑦ 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

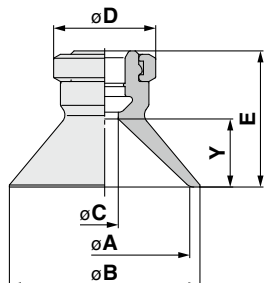
Part no.	Pad diameter [mm]
ZPL1	ø10, ø16
ZPL2	ø25
ZPL3	ø40

* 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 **10** D **N**
① ②



Construction p. 117

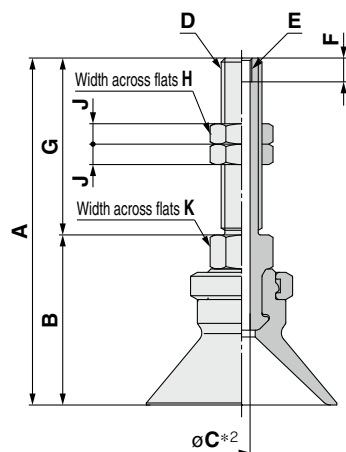
Mounting Bracket Assembly From p. 121

Model	① Pad dia.	Form	② Material ^{*1}	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

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

ZPT **10** D **N** - **A5**
① ② ③



Construction p. 117

Adapter Assembly p. 121

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 Material ^{*1}	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

Recommended Gasket Part Nos.

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

Dimensions/Models

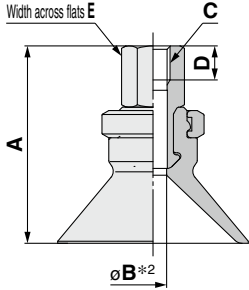
With adapter $\varnothing 10$ to $\varnothing 40$

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

①

②

③ Vacuum inlet
(Female thread)



B5	M5 x 0.8
B6	M6 x 1
B8	M8 x 1.25
B01	Rc1/8
N01	NPT1/8
T01	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	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	10	2.5	Rc1/8	—	12	
					16					
				N01	25	3.5	NPT1/8	—	12	
					40					
				T01	10	7	NPTF1/8	—	12	
					16					
					25					
					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**

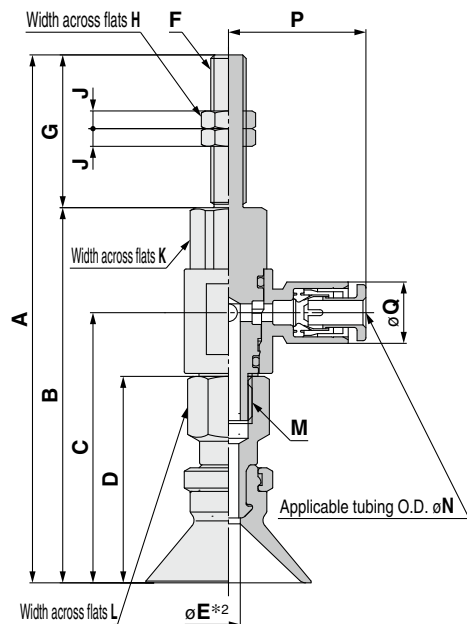
① ②

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



Construction	p. 117
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 ^{*1} Material	③ Vacuum inlet	④ Connection thread																		
ZP	R	10	D	N S U F GN GS	04	A5	70	49	32.9	24	2.5	M5 x 0.8	21	8	4	10	8	M5 x 0.8						
		16					71	50	33.9	25														
		10				75	49	32.9	24	2.5														
		16				76	50	33.9	25															
		25				89.5	63.6	45.8	35	3.5	M6 x 1								26	8	4	10	8	M5 x 0.8
		40				97	71.1	53.3	42.5															
		25			79.5	63.6	45.8	35	3.5	M8 x 1	16	12	4	12	12	M8 x 1.25								
		40			87	71.1	53.3	42.5									4							

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

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

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

Dimensions/Models

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

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

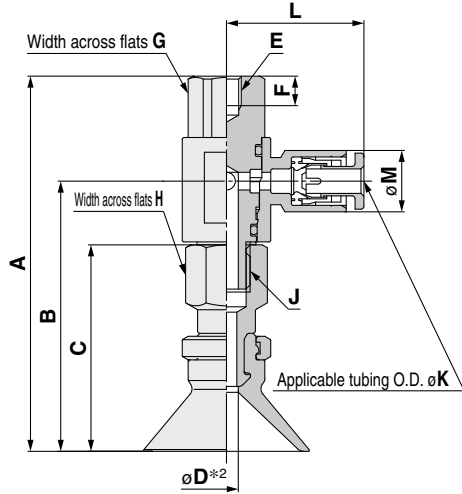
① ②

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	*2 D	E	F	G	H	J				
	Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread												
ZP	R	10	D	N S U F GN GS	04 06 08	B5	49	32.9	24	2.5	M5 x 0.8	5	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 *1 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**

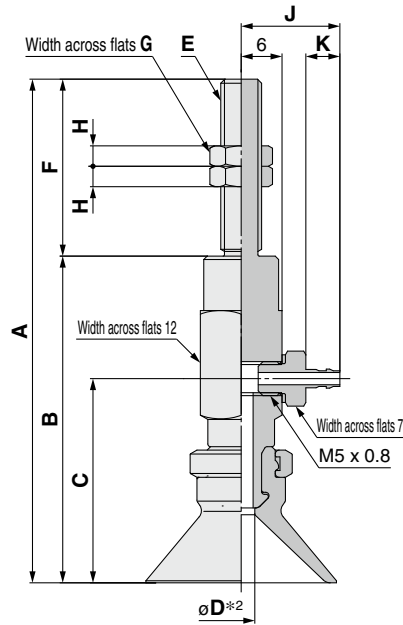
① ②

**Vacuum inlet ③
(Barb fitting)**

**④ Connection thread
(Male thread)**

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

N4	For $\phi 4$ nylon tubing	M-5AN-4
N6	For $\phi 6$ nylon tubing	M-5AN-6
U4	For $\phi 4$ soft tubing	M-5AU-4
U6	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	10	D	N S U F GN GS	N4 N6 U4 U6	A5	62	41	25	2.5	M5 x 0.8	21	8	4				
		16					63	42	26									
		10					67	41	25									
		16					68	42	26									
		25					74	48	30									
		40					83	57	39									
		A6				64	48	30	3.5	M6 x 1	26	8	4					
						25	74	48	30									
						40	83	57	39									
						A8	64	48	30					3.5	M8 x 1	16	12	4
							25	74	48					30				
							40	83	57					39				

Dimensions Per Vacuum Inlet

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

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

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

Dimensions/Models

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

ZPY 10 D N - N4 - B5

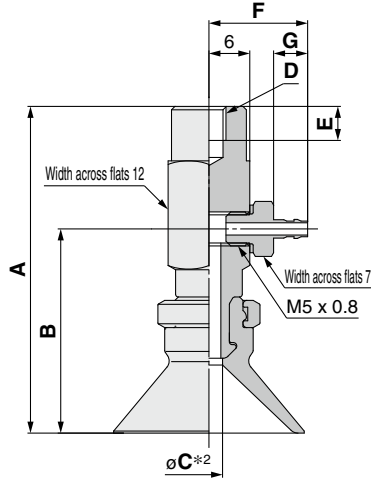
① ②

Vacuum inlet ③
(Barb fitting)

④ Connection thread
(Female thread)

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

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



Construction	p. 117
Adapter Assembly	p. 123

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

Dimensions Per Vacuum Inlet

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

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

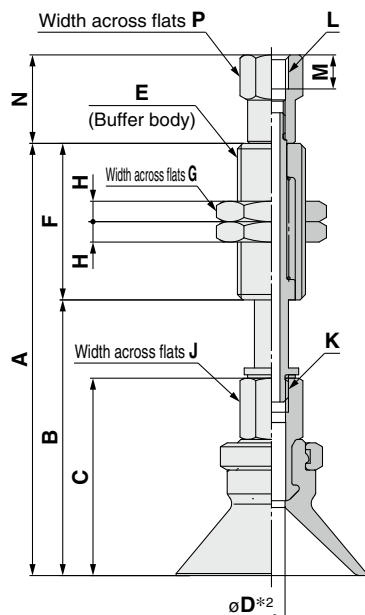
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction	p. 118
Buffer Assembly	p. 124

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

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

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

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

		Model						A	B	C	D*2	E	F	G	H	J	K		
	Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread											
ZP	T	10	D	N S U F G 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									25
						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	29											
		30				107.5	56.5												
		40				143.5	66.5												
		50				153.5	76.5												
		10				63.5	40.5	29											
		20				101.5	50.5												
	30	111.5	60.5																
	40	147.5	70.5																
	50	157.5	80.5																
	10	B5	A14	105	55	42.5	4	M14 x 1	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 S	J K	10	B5	A10	M5 x 0.8	5	13	8			
						20							M5 x 0.8	4.5	15
						30									
						40									
						50									
						10									
	20														
	30														
	50														
	10	B01 N01 T01				A14	Rc1/8 NPT1/8 NPTF1/8	16.5	12	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

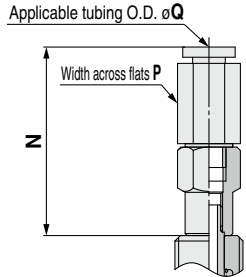
Dimensions/Models

With buffer $\phi 10$ to $\phi 40$

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

① ② ③ ④ ⑤ ⑥

Vacuum inlet: One-touch fitting



Buffer specification ③

J	Rotating
K	Non-rotating

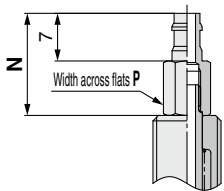
⑥ Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet

		Pad diameter	
		$\phi 10$ to $\phi 25$	$\phi 40$
04	$\phi 4$	One-touch fitting	KQ2H04-M5N
06	$\phi 6$		KQ2H06-M5N
08	$\phi 8$	Barb fitting	KQ2H06-01NS
N6	For $\phi 6$ nylon tubing		KQ2H08-01NS
U6	For $\phi 6$ soft tubing		

Vacuum inlet: Barb fitting



Construction	p. 118
Buffer Assembly	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	$\phi 2.5$			
												06	10	6
						10			08	A14				
												20	06	19.9
						30			08	24.9				
												50		

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	$\phi 2.5$		
											U6	
						10			N6			19
											20	
						30						
											50	

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Belows 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)

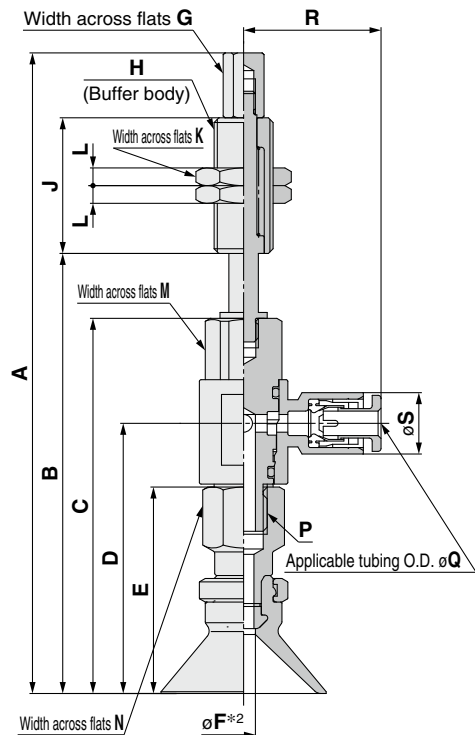
Buffer specification ③

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																				
					20																						
					30																						
					40																						
					50																						
					10			06																			
					20																						
					30																						
					40																						
					50																						
					10				08																		
					20																						
	30																										
	40																										
	50																										
	10	06	A14																								
	20																										
	30																										
	40																										
	50																										
	10			08																							
	20																										
	30																										
	40																										
50																											

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					
					20							
					30							
					40							
					50							
					10			06				
	20											
	30											
	40											
	50											
	10	08										
	20											
30												
40												
50												

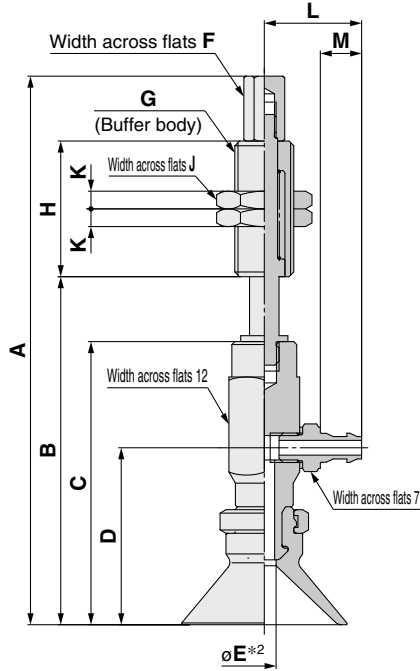
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

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

ZPY **10** **D** **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	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										51
					30			134	72										77
					40			170	82										77
					50			180	92										23
					10			87	53										51
					20			125	63										77
					30			135	73										51
					40			171	83										77
					50			181	93										23
					10			93	59										51
					20			131	69										77
	30	141	79	51															
	40	177	89	77															
	50	187	99	23															
	10	137	69	51															
	20	134	79	77															
	30	144	89	51															
	50	189	109	75															
		40					N6 U6	A14	57	39	6	10	M14 x 1	50	19	4			

Dimensions Per Vacuum Inlet

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

*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

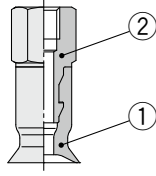
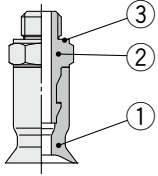
Basic Pad *ZP Series* Construction

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

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

ZPT□-(A5/A6)

ZPT□-(B4/B5)



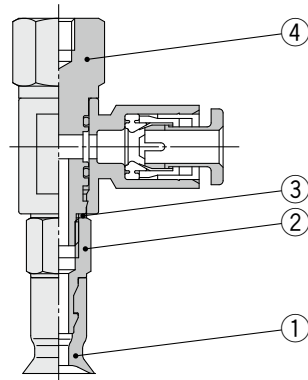
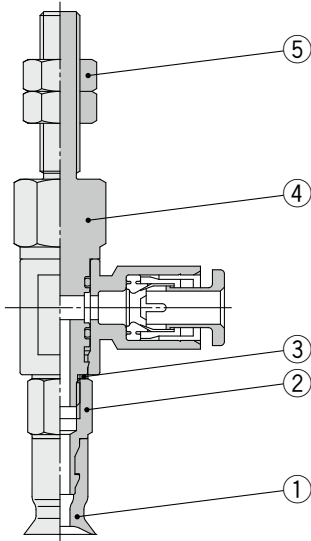
Component Parts

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)



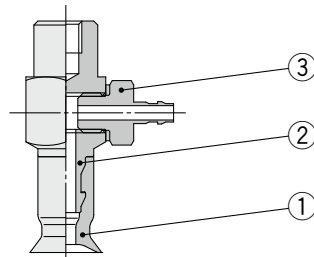
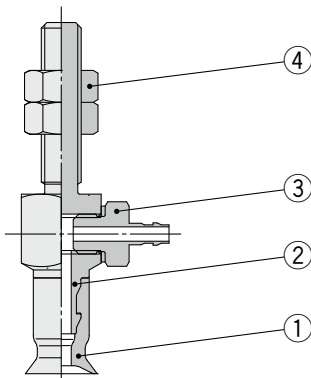
Component Parts

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 $\phi 8$

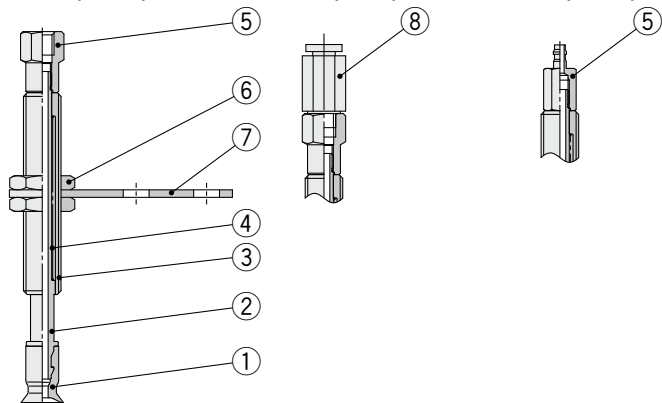
Thin flat type/Thin flat type with ribs: $\phi 10$ to $\phi 16$

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

ZPT□-(B3/B5)-A8

ZPT□-(04/06)-A8

ZPT□-(N4/U4)-A8

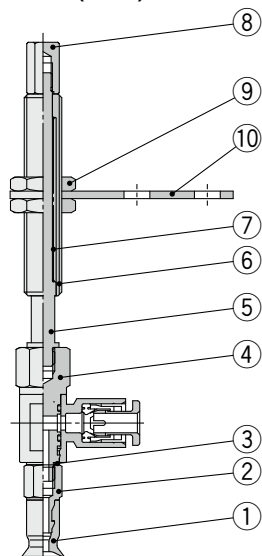


Component Parts

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

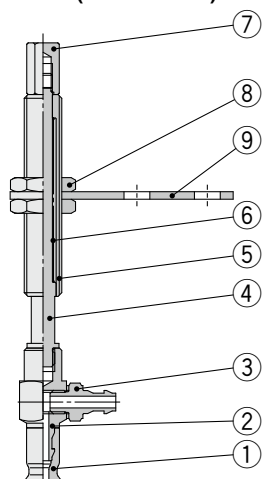


Component Parts

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

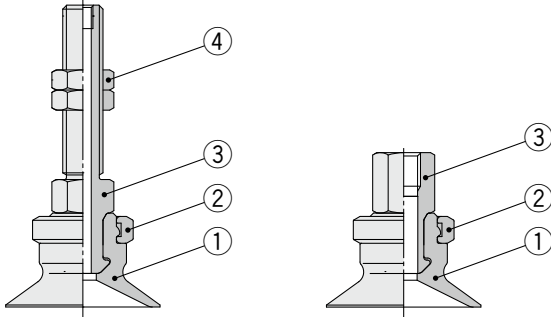
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Bellows type Thin flat type Thin flat type with ribs
2	Adapter	Brass (Electroless nickel plating)	
3	Barb fitting	—	
4	Piston rod	Stainless steel	
5	Buffer body	Brass (Electroless 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: $\phi 10$ to $\phi 50$ Flat type with ribs: $\phi 10$ to $\phi 50$ Bellows type: $\phi 10$ to $\phi 50$ Deep type: $\phi 10$ to $\phi 40$

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

ZPT□-(A5/A6/A8)

ZPT□-(B5/B6/B8/B01/N01/T01)



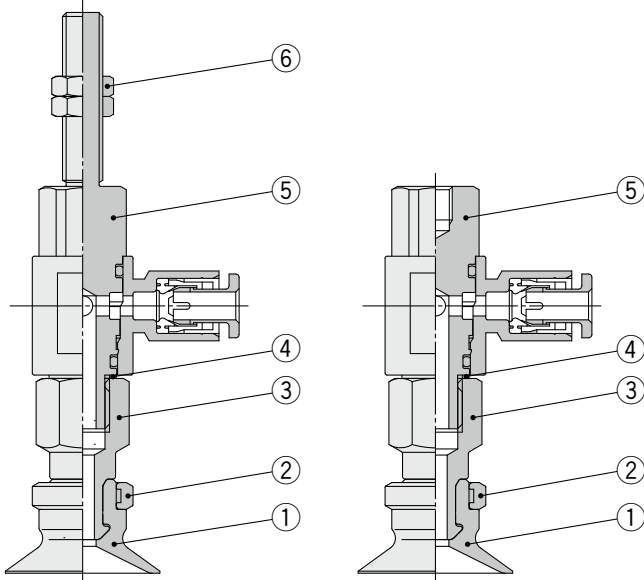
Component Parts

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)



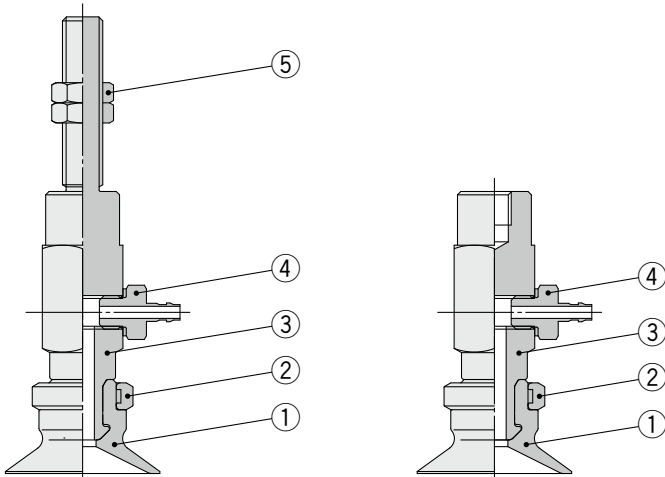
Component Parts

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 $\varnothing 50$

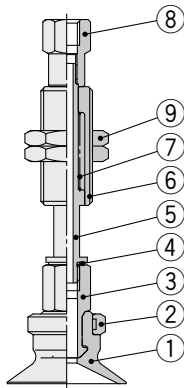
Bellows type: $\varnothing 10$ to $\varnothing 50$

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

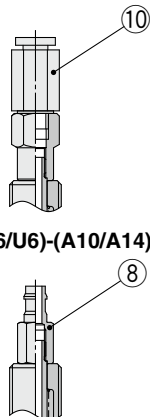
Vacuum inlet direction **Vertical** T Type/ZPT

ZPT□-(B5/B01/N01/T01)-(A10/A14)

ZPT□-(04/06/08)-(A10/A14)



ZPT□-(N6/U6)-(A10/A14)

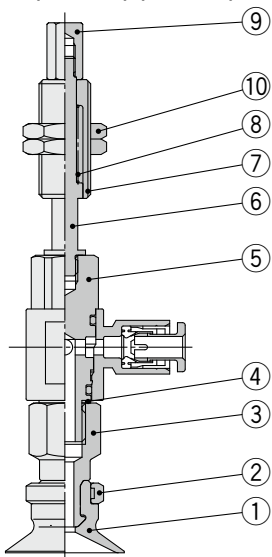


Component Parts

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)

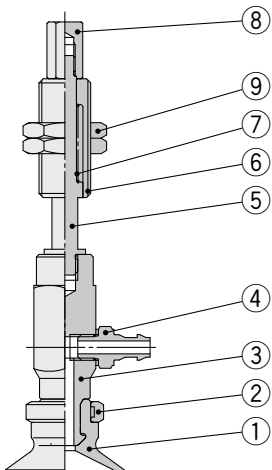


Component Parts

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

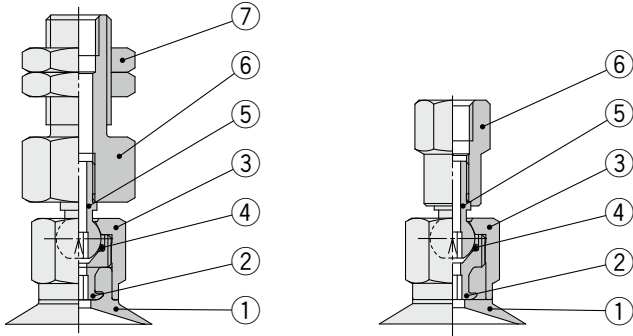
Ball Joint Type Basic Pad **ZP Series** Construction

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

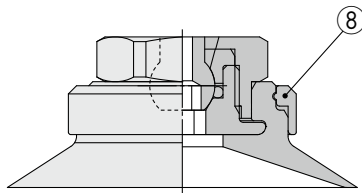
Vacuum inlet direction **Vertical** T Type/ZPT□F

ZPT□F□-(B5/A8/A10/A14)

ZPT□F□-(B5/B8/B01/N01/T01)



$\phi 10$ to $\phi 32$



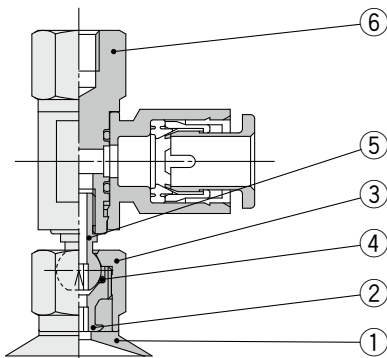
$\phi 40, \phi 50$

Component Parts

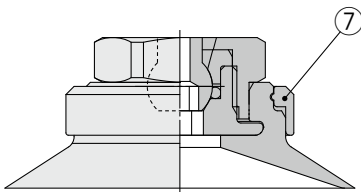
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Shaft cover	Stainless steel	
4	O-ring	FKM	
5	Shaft	Stainless steel	
6	Shaft adapter	Brass (Electroless nickel plating)	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

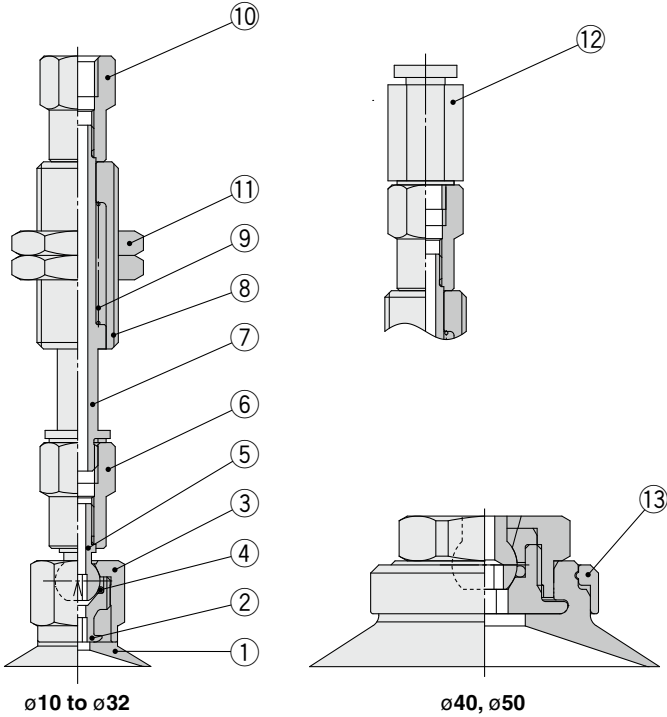
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Shaft cover	Stainless steel	
4	O-ring	FKM	
5	Shaft	Stainless steel	
6	Shaft adapter (With One-touch fitting)	Brass (Electroless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

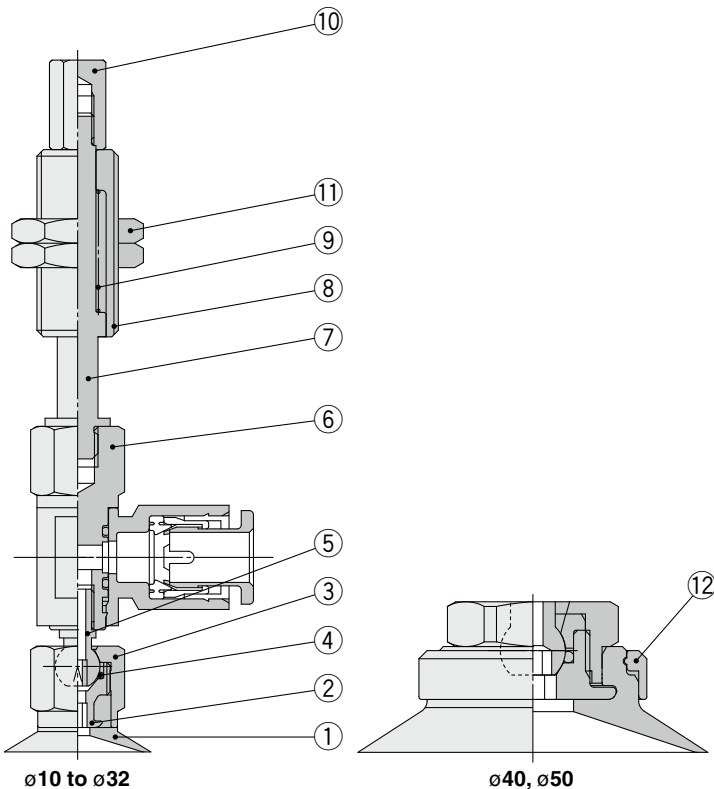


Component Parts

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 (Black 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 (Black 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

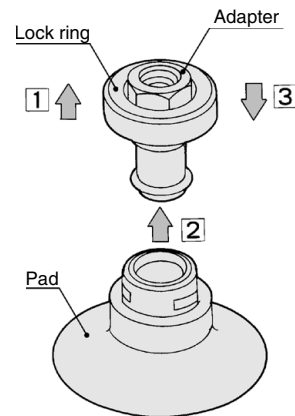
Compact Type ZP3 Series

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)□-□		

How to Replace the Pad

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

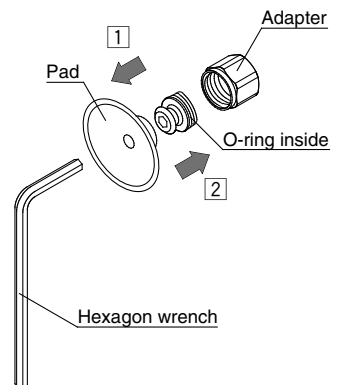
- 1 Pull the lock ring upward, and, after lifting it up to the adapter, remove the old pad by pulling it downward.
- 2 While holding the lock ring in the raised position, place a new pad onto the adapter.
- 3 Confirm that the pad is securely in place, and then return the lock ring to its original position.



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

Pad diameter: ø10 to ø32

- 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: ø40, ø50

- 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.

