

Basic Pad ZP Series

RoHS

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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Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat Joint Type

Bellows Type

Thin Flat Type with Ribs

Deep Type
Construction
Mounting Bracket Assembly

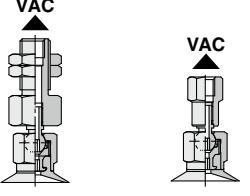
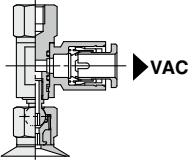
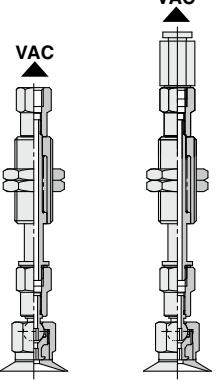
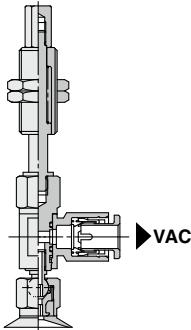
Precautions

Basic Pad ZP Series

Variations

		Vacuum inlet direction	Flat type	Flat type with ribs	Bellows type	Thin flat type	Thin flat type with ribs	Deep type
Vacuum inlet direction								
Single unit			p. 32	p. 51	p. 68	p. 87	p. 96	p. 105
Vertical ↑	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
Vertical ↑	ZPT With buffer		p. 43	p. 57	p. 79	p. 92	p. 101	p. 111
Lateral →	ZPR With buffer		p. 46	p. 59	p. 82	p. 93	p. 102	p. 113
	ZPY With buffer		p. 48	p. 60	p. 84	p. 94	p. 103	p. 114

Ball Joint Type

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

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



Vertical

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)	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



Lateral

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



Lateral Vertical

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
Connection thread		M8 x 1		M10 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.

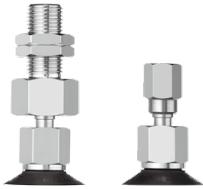
Basic Pad ZP Series

Specifications

Model Selection

Adapter Specifications (Ball Joint Type)

Vertical



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
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.		

Lateral



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	ø6, ø8

Buffer Specifications (Ball Joint Type)

Vertical



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

ZP Basic

Flat Type
with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type
with Ribs

Mounting Bracket Assembly

Precautions



Basic Pad

Flat Type

ZP Series



How to Order

Pad unit	ZP	02 U N	
* Pad unit's sales unit: 10 pcs. (Pad diameter: ø20 mm or less)			
With adapter	ZP	T 02 U N	
With buffer	ZP	T 02 U N J 6 - B3 - A8	

1 2 3 4 5 6 7 8
Flat type

	Dimensions/ Models	Construction	Mounting Bracket Assembly
-	p. 32	p. 115 p. 117	From p. 121
-A5-	From p. 33	p. 115 p. 117	From p. 121
-B3-A8	From p. 43	p. 116 p. 118	From p. 124

1 Vacuum inlet direction

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

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"

With adapter

6 Vacuum inlet

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

Type	Symbol	Size	Pad diameter [mm]			
			ø2 to ø8	ø10 to ø16	ø20 to ø32	ø40, ø50
Male thread	A5	M5 x 0.8	○*1	—	—	—
	A6	M6 x 1	○*1	—	—	—
Female thread	Nil	M3 x 0.5	—	○ (Connection thread: A5/A6)	○ (Connection thread: A6)	○ (Connection thread: A6)
		M5 x 0.8	—	—	○ (Connection thread: A8)	○ (Connection thread: A8)
	B4	M4 x 0.7	○	—	—	—
	B5	M5 x 0.8	○	○	○	—
	B6	M6 x 1	—	○	○	○
	B8	M8 x 1.25	—	—	○	○
	B01	Rc1/8	—	○	○	○
	N01	NPT1/8	—	○	○	○
	T01	NPTF1/8	—	○	○	○
	04	ø4	●	●	●	—
One-touch fitting	06	ø6	●	●	●	●
	08	ø8	—	—	●	●
Barb fitting	N4	For ø4 nylon tubing*2	△	△	△	—
	N6	For ø6 nylon tubing*2	△	△	△	△
	U4	For ø4 soft tubing*3	△	△	△	—
	U6	For ø6 soft tubing*3	△	△	△	△

*1 Use the connection thread. *2 Nylon tube piping *3 Soft nylon/Polyurethane tube piping

7 Connection thread

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

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

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

With buffer

6 Vacuum inlet

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

Type	Symbol	Size	Pad diameter [mm]				
			ø2 to ø8	ø10 to ø16	ø20 to ø32	ø40, ø50	
Female thread	B3	M3 x 0.5	○	—	—	—	
	B5	M5 x 0.8	○	○	○	○	
	B01	Rc1/8	—	—	—	○	
	N01	NPT1/8	—	—	—	○	
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

Lock ring unit

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

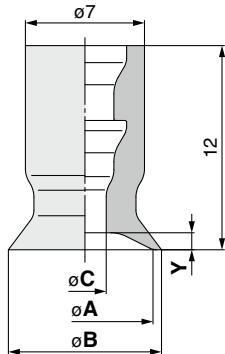
*1 The lock ring cannot be used for pad diameters ø2 to ø8.

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

Dimensions/Models

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

ZP **02 U N**
① ②



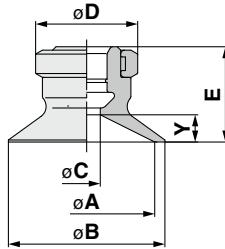
Model				A	B	C	Y
ZP	① Pad dia.	Form	② Material ^{*1}				
	02	U	N	2	2.6	1.2	0.5
	04		S	4	4.8	1.6	0.8
	06		U	6	7	2.5	1
	08		F	8	9		
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber							

Construction p. 115

Mounting Bracket Assembly From p. 121

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

ZP **10 U N**
① ②



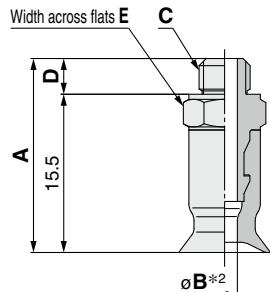
Model				A	B	C	D	E	Y
ZP	① Pad dia.	Form	② Material ^{*1}						
	10	U	N	10	12	4	13	12	3
	13		S	13	15			12.5	3.5
	16		U	16	18			14	4
	20		F	20	23			14.5	4.5
	25		GN	25	28	7	18	18.5	6.5
	32		GS	32	35			19.5	7.5
	40			40	43				
	50			50	53				
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: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

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Mounting Bracket Assembly From p. 121

Dimensions/Models

With adapter $\phi 2$ to $\phi 8$



Construction p. 115

Adapter Assembly p. 121

ZPT 02 U N - A5

①

②

③ Vacuum inlet (Male thread)

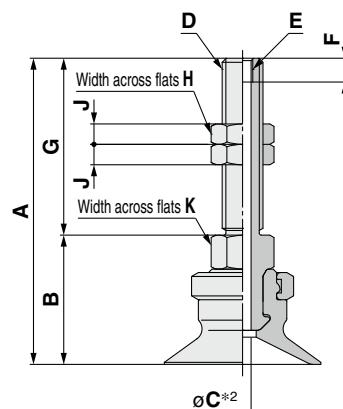
A5	M5 x 0.8
A6	M6 x 1

Model				A	B*2	C	D	E
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material					
ZP	02	U	A5	19	1.2	M5 x 0.8	3.5	7
	04				1.6			
	06				2.5			
	08							
	02		A6	20	1.2	M6 x 1	4.5	8
	04				1.6			
	06				2.5			
	08							

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

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

With adapter $\phi 10$ to $\phi 50$



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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										
ZP	10	U	A5	38	17	2.5	M5 x 0.8	M3 x 0.5	3.5	21	8	4	8
	13			38.5	17.5								
	16			43	17								
	10			43.5	17.5								
	13		A6	45	19	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	12
	20			45.5	19.5								
	25			50.5	24.5								
	32			51.5	25.5								
	40		A8	40	24	4	M8 x 1	M5 x 0.8	5	16	12	4	12
	50			40.5	24.5								
	20			41.5	25.5								
	25												

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

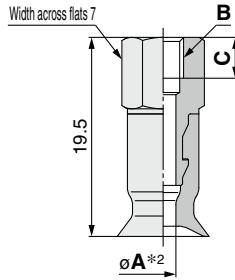
*2 Indicates the minimum hole size of the adapter or vacuum pad

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 $\phi 2$ to $\phi 8$



Construction p. 115

Adapter Assembly p. 121

ZPT 02 U N - B4

①

②

③ Vacuum inlet (Female thread)

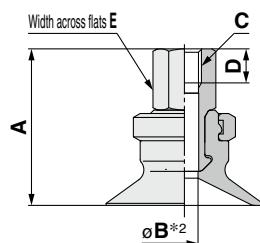
B4	M4 x 0.7
B5	M5 x 0.8

Model				A ^{*2}	B	C
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material			
ZP T	02	U	B4	1.2	M4 x 0.7	4
	04			1.6		
	06			2.5		
	08					
	02		B5	1.2	M5 x 0.8	5
	04			1.6		
	06			2.5		
	08					

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

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

With adapter $\phi 10$ to $\phi 50$



Construction p. 117

Adapter Assembly p. 121

ZPT 10 U 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

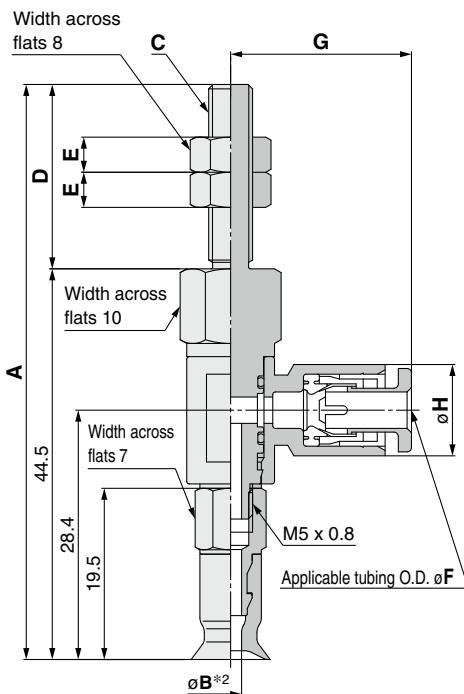
Model				A	B ^{*2}	C	D	E
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material					
ZP T	10	U	B5	21	2.5	M5 x 0.8	5	8
	13			21.5				
	16			23				
	20			23.5				
	25							
	32		B6	21	2.5	M6 x 1	6	8
	10			21.5				
	13			23				
	16			23.5				
	20			32				
ZP T	25			33	4.9	M8 x 1.25	8	12
	32		B8	29			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

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

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

Dimensions/Models

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



Construction p. 115

Adapter Assembly p. 122

ZPR [02] U [N] - [04] - [A5]

① Vacuum inlet (One-touch fitting)
② Form
③ Material
④ Connection thread (Male thread)

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

A5	M5 x 0.8
A6	M6 x 1

		Model				A	B*2	C	D	E	
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Vacuum inlet	④ Connection thread						
ZP R	02	U	N	04	A5	65.5	1.2	M5 x 0.8	21	4	
	04		S				1.6				
	06		U				2.5				
	08		F	06			1.2	M6 x 1	26	4	
	02		GN	A6	70.5		1.6				
	04		GS				2.5				
	06										
	08										

Dimensions Per Vacuum Inlet

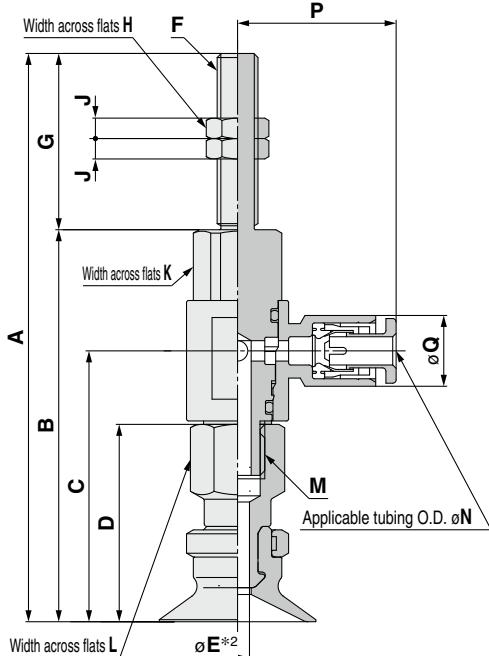
		Model				F	G	H	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Vacuum inlet	④ Connection thread				
ZP R	02	U	N	04	A5	4	20.6	10.4	$\varnothing 3$
	04		S						
	06	A6	U	06		6	21.6	12.8	$\varnothing 4$
	08		F						

*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 $\varnothing 50$



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Adapter Assembly p. 122

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

1	2	3	4
Vacuum inlet (One-touch fitting)			
04	$\varnothing 4$		
06	$\varnothing 6$		
08	$\varnothing 8$		

Connection thread (Male thread)

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

Model	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread	A		B		C		D		E	F	G		H		J		K		L		M	
							A	B	C	D	G	H	J	K	L	M												
ZP R	U	10 13 16	A5	N S U	04	67	46	29.9	21	2.5	M5 x 0.8	21	8	4	10	8	M5 x 0.8											
						67.5	46.5	30.4	21.5																			
						72	46	29.9	21	2.5																		
		10 13 16		N S U	06	72.5	46.5	30.4	21.5																			
						83.5	57.6	39.8	29	3.5	M6 x 1	26	8	4														
						84	58.1	40.3	29.5																			
		20 25 32		F GN GS	08	86.5	60.6	42.8	32	4																		
						87.5	61.6	43.8	33																			
						73.5	57.6	39.8	29	3.5	M8 x 1	15.9	12	4	12	12	M8 x 1.25											
		40 50		A6 A8	A6	74	58.1	40.3	29.5																			
						76.5	60.6	42.8	32	4																		
						77.5	61.6	43.8	33																			

Dimensions Per Vacuum Inlet

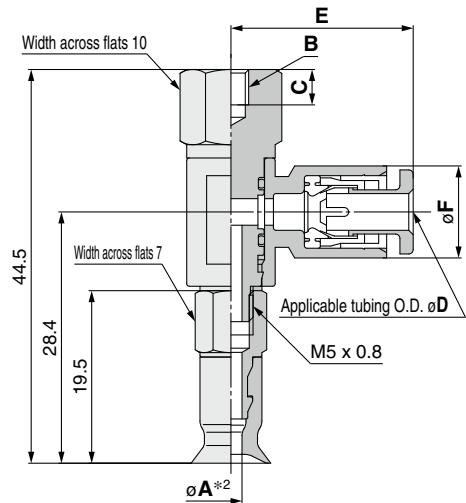
Model	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread	N		P		Q		Fitting part min. hole size		
							N	P	Q						
ZP R	U	10 13 16	A5	N S U	04	4			20.6		10.4			$\varnothing 3$	
						6			21.6		12.8			$\varnothing 4$	
						4			23.3		10.4			$\varnothing 3$	
		20 25 32		A6	06	6			24.3		12.8			$\varnothing 4.5$	
						8			26.2		15.2			$\varnothing 6$	
						6			24.3		12.8			$\varnothing 4.5$	
		40 50		A8	08	8			26.2		15.2			$\varnothing 6$	

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

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

Dimensions/Models

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



ZPR [02] U [N] - [04] - [B4]

① ② ③ ④

Vacuum inlet
(One-touch fitting)

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

④ Connection thread
(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 Material	③ Vacuum inlet	④ Connection thread				
ZP R	U	02	U	N	04	B4	1.2	M4 x 0.7	4	
		04		S			1.6			
		06		U	06		2.5			
		08		F			1.2			
	B5	02	B5	GN	04		1.6	M5 x 0.8	5	
		04		GS			2.5			
		06								
		08								

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Dimensions Per Vacuum Inlet

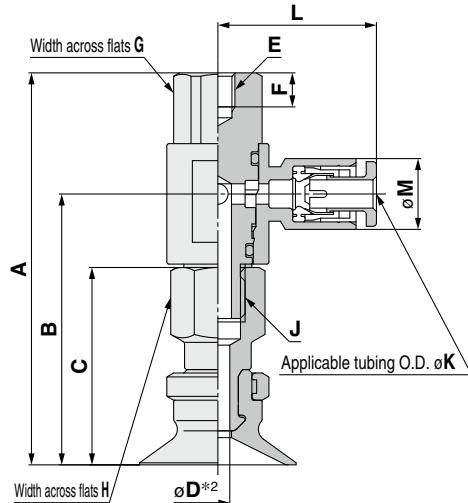
Model							D	E	F	Fitting part min. hole size
	Vacuum inlet direction	① Pad dia.	Form	② Material	③ Vacuum inlet	④ Connection thread				
ZP R	U	02	U	N	04	B4	4	20.6	10.4	ø3
		04		S			6	21.6	12.8	ø4
	B5	06	B5	U						
		08		F						

*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 $\varnothing 50$



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Adapter Assembly p. 122

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

1	2	3	4
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

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	10	U	N S U F GN GS	B5		46	29.9	21	2.5	M5 x 0.8	5	10	8	M5 x 0.8
		13					46.5	30.4	21.5				12	12	M8 x 1.25
		16					57.6	39.8	29	3.5					
		20					58.1	40.3	29.5						
		25			B6		46	29.9	21	2.5	M6 x 1	6	10	8	M5 x 0.8
		32					46.5	30.4	21.5				12	12	M8 x 1.25
		10					57.6	39.8	29	3.5					
		13					58.1	40.3	29.5						
		16					60.6	42.8	32	4					
		20			B8		61.6	43.8	33		M8 x 1.25	8	12	12	M8 x 1.25
		25					57.6	39.8	29	3.5					
		32					58.1	40.3	29.5						
		40					60.6	42.8	32						
		50					61.6	43.8	33	4					
		20					57.6	39.8	29						
		25					58.1	40.3	29.5						
		32					60.6	42.8	32						
		40					61.6	43.8	33						
		50					57.6	39.8	29						

Dimensions Per Vacuum Inlet

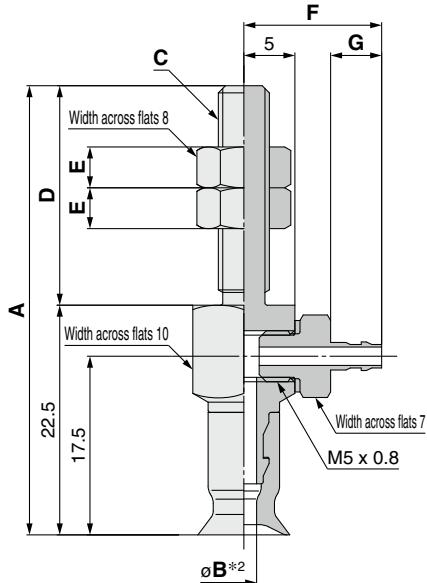
Model							K	L	M	Fitting part min. hole size
	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread				
ZP	R	10	U	N S	B5		4	20.6	10.4	$\varnothing 3$
		13					6	21.6	12.8	$\varnothing 4$
		16		U	B6		4	23.3	10.4	$\varnothing 3$
		20					6	24.3	12.8	$\varnothing 4.5$
		25		F	B5		8	26.2	15.2	$\varnothing 6$
		32					6	24.3	12.8	$\varnothing 4.5$
		40		GN	B6		8	26.2	15.2	$\varnothing 6$
		50								
		20		GS	B8					
		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

Dimensions/Models

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



ZPY [02] U [N] - [N4] - [A5]

① ② ③ ④

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

ZP	Y	Model				A	B*2	C	D	E
		Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Vacuum inlet	Connection thread			
ZP	Y	02	U	A5	44	N4	1.2	M5 x 0.8	21.5	4
		04					1.6			
		06					2.5			
		08					1.2			
		02			49.5	N6	1.6	M6 x 1	27	4
		04					2.5			
		06					1.2			
		08					1.6			

Dimensions Per Vacuum Inlet

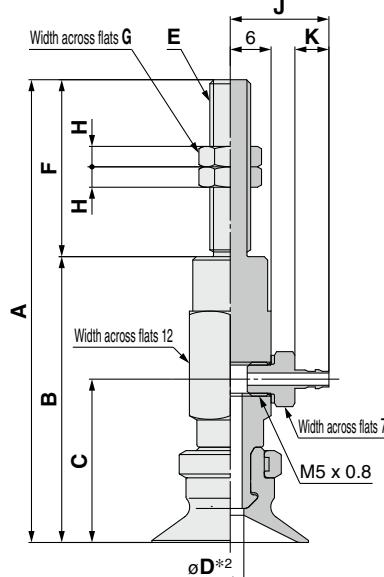
ZP	Y	Model				F	G	Fitting part min. hole size	
		Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Vacuum inlet	Connection thread		
ZP	Y	02	U	A5	N4	13.5	5	$\varnothing 1.8$	
		04				15.5	7		
ZP	Y	06	U	A6	N6	$\varnothing 2.5$	$\varnothing 2.5$		
		08							

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

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

Dimensions/Models

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



Construction p. 117

Adapter Assembly p. 123

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

① ② ③ ④

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

Connection thread
(Male thread)

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

Model				A	B	C	D*2	E	F	G	H	
Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Vacuum inlet	Connection thread							
ZP Y	10	U	N S F GN GS	A5	59	38	22	2.5	M5 x 0.8	21	8	4
	13				59.5	38.5	22.5					
	16				64	38	22	2.5	M6 x 1	26	8	4
	10				64.5	38.5	22.5					
	13			A6	68	42	24	3.5	M6 x 1	26	8	4
	16				68.5	42.5	24.5					
	20				72.5	46.5	28.5					
	25			A8	73.5	47.5	29.5	6	M8 x 1	16	12	4
	32				58	42	24					
	40				58.5	42.5	24.5					
	50				62.5	46.5	28.5					
	20				63.5	47.5	29.5					
	25											
	32											
	40											
	50											

Dimensions Per Vacuum Inlet

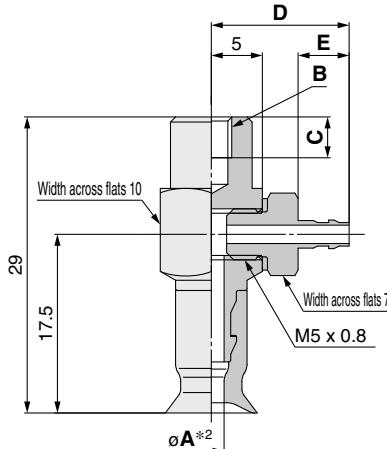
Model				J	K	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Connection thread			
ZP Y	10	U	N S F GN GS	A5 A6	14.5	5	$\varnothing 1.8$
	13				16.5	7	$\varnothing 2.5$
	16				16.5	7	$\varnothing 2.5$
	20						
	25						
	32						
	40						
	50						

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

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

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 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 ^{*2}	B	C
Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Vacuum inlet			
ZP Y	02	U	N S U F GN GS	N4 N6 U4 U6	B4	1.2	M4 x 0.7
	04					1.6	
	06					2.5	
	08				B5	1.2	M5 x 0.8
	02					1.6	
	04					2.5	
	06						
	08						

Dimensions Per Vacuum Inlet

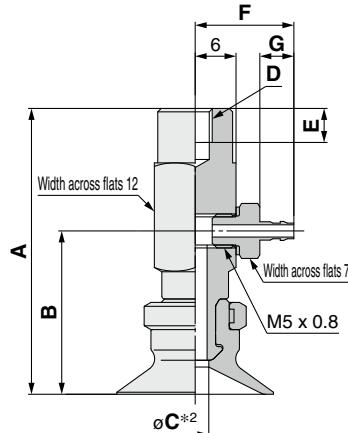
Model					D	E	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Connection thread			
ZP Y	02	U	N S U F GN GS	N4 U4 B4	13.5	5	$\varnothing 1.8$
	04				15.5	7	$\varnothing 2.5$
	06						
	08						

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

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

Dimensions/Models

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



Construction p. 117

Adapter Assembly p. 123

ZPY [10] U [N] - [N4] - [B5]

① ② ③ ④

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

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.	② Form	③ Material ^{*1}	④ Vacuum inlet	Connection thread						
ZP Y	10	U	N S U F GN GS	B5	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			B6	38	22	2.5	M6 x 1	6		
	32				38.5	22.5					
	10				42	24	3.5				
	13				42.5	24.5					
	16			B8	46.5	28.5	6	M8 x 1.25	8		
	20				47.5	29.5					
	25				42	24	3.5				
	32				42.5	24.5					
	40				46.5	28.5	6				
	50				47.5	29.5					

Dimensions Per Vacuum Inlet

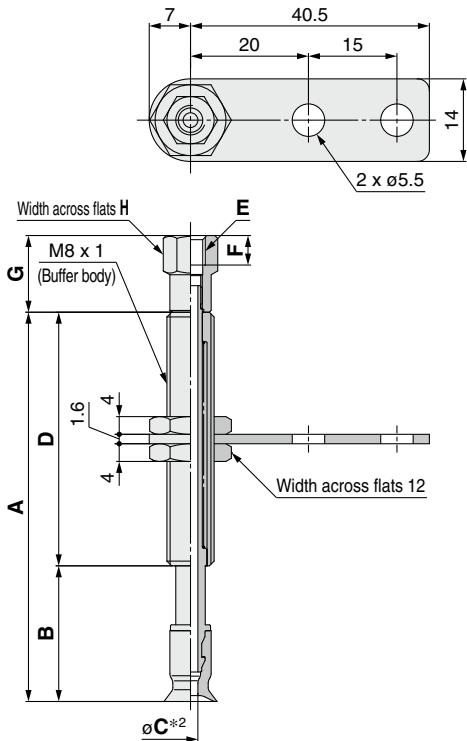
Model				F	G	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Connection thread			
ZP Y	10	U	N S U F GN GS	B4	14.5	5	$\varnothing 1.8$
	13				16.5	7	$\varnothing 2.5$
	16			B5	14.5	5	$\varnothing 1.8$
	20				16.5	7	$\varnothing 2.5$
	25		N6 U6	B6	14.5	5	$\varnothing 1.8$
	32				16.5	7	$\varnothing 2.5$
	40		N6 U6	B8	16.5	7	$\varnothing 2.5$
	50				16.5	7	$\varnothing 2.5$

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

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

Dimensions/Models

With buffer ø2 to ø8



ZPT 02 U N J 6 - B3 - A8

1	2	3	4
		Buffer specification	

J Rotating
K Non-rotating

6 Connection thread
(Male thread)

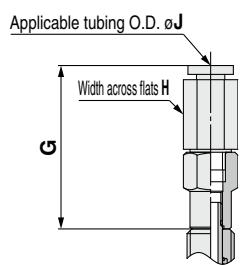
A8 M8 x 1

5 Vacuum inlet

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

Model	Vacuum inlet direction	1 Pad dia.	2 Form	3 Material ^{*1}	4 Buffer spec.	5 Buffer stroke	6 Vacuum inlet	Connection thread	A	B	C ^{*2}	D
	ZP	T	02	U	N S U F G N G S	J K	6 10 15 25	B3 B5	A8	33 66 71 81 33 66 71 81 33 66 71 25	18 23 28 38 18 23 28 38 18 23 28 38	1.2
			04									
			06									
			08									

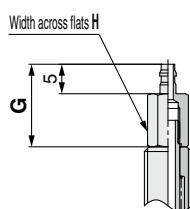
Vacuum inlet: One-touch fitting



Dimensions Per Vacuum Inlet: Female Thread

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

Vacuum inlet: Barb fitting



Dimensions Per Vacuum Inlet: One-touch Fitting

Model	Vacuum inlet direction	1 Pad dia.	2 Form	3 Material ^{*1}	4 Buffer spec.	5 Buffer stroke	6 Vacuum inlet	Connection thread	G	H	J	Fitting part min. hole size	
	ZP	T	02	U	N S U F G N G S	J K	6 10 15 25	04	A8	27.7	8	4	ø2.5
			04										
			06										
			08										

Dimensions Per Vacuum Inlet: Barb Fitting

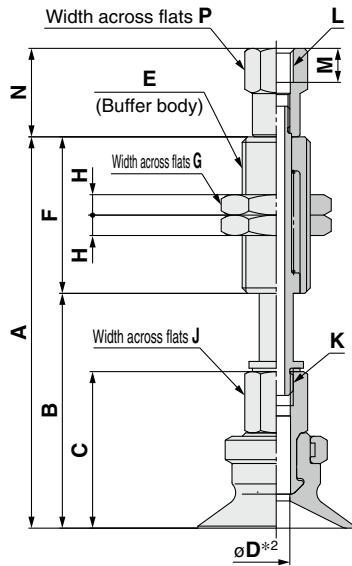
Model	Vacuum inlet direction	1 Pad dia.	2 Form	3 Material ^{*1}	4 Buffer spec.	5 Buffer stroke	6 Vacuum inlet	Connection thread	G	H	Fitting part min. hole size	
	ZP	T	02	U	N S U F G N G S	J K	6 10 15 25	N4	A8	14	6	ø1.8
			04									
			06									
			08									

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

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

Dimensions/Models

With buffer ø10 to ø50



Construction p. 118

Buffer Assembly p. 124

ZPT 10 U N J 10 - B5 - 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
(Female thread)

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

ZP	T	U	J	K	Model						A10	A14	M10 x 1	M14 x 1	M5 x 0.8	M8 x 1.25	
					1 Vacuum inlet direction	2 Pad dia.	3 Form	4 Material	5 Buffer stroke	6 Vacuum inlet							
ZP	T	U	J	K	10 13	16	N	S	10 20 30 40 50	B5 04 06 N6 U6	A10	55.5	32.5			23	
												51					
												77					
												23					
												51					
					20 25	32	S	U	30 40 50 10 20	B5 04 06 N6 U6	A10	104	53	21.5	J: 2.5 K: 2	M10 x 1	M5 x 0.8
												77					
												23					
												51					
												77					
					32	40	F	GN	40 50 10 20 30	B5 B01 N01 T01 06	A14	140	63		4	M14 x 1	M8 x 1.25
												50					
												75					
												19					
												4					
					50	50	G	GS	50 20 30 40 50	B5 B01 N01 T01 08	A14	150	73		33	M14 x 1	M8 x 1.25
												50					
												75					
												19					
												4					

Dimensions Per Vacuum Inlet: Female Thread

ZP	T	U	J	K	Model						A10	A14	M10 x 1	M14 x 1	M8 x 1.25		
					1 Vacuum inlet direction	2 Pad dia.	3 Form	4 Material	5 Buffer stroke	6 Vacuum inlet							
ZP	T	U	J	K	10 13 16 20 25	32	N	S	10 20 30 40 50	B5 A10	M5 x 0.8		5	13	8		
					40	50	F	GN	10 20 30 40 50	B5 A14	94.5	44.5		4.5	15		
											5	9	10				
					50	50	G	GS	10 20 30 40 50	B01 N01 T01	Rc1/8			—	16.5		
											12	13					

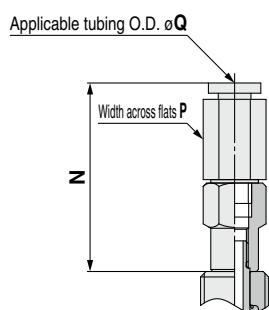
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

With buffer ø10 to ø50

Vacuum inlet: One-touch fitting



ZPT 10 U N J 10 - 04 - A10

① ② ③ ④

Buffer specification ③

J	Rotating
K	Non-rotating

⑥ Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet

Pad diameter	
ø10 to ø32	ø40, ø50 (10 st only)
KQ2H04-M5N	KQ2H06-01NS
KQ2H06-M5N	KQ2H08-01NS
N6 For ø6 nylon tubing	Barb fitting
U6 For ø6 soft tubing	

Dimensions Per Vacuum Inlet: One-touch Fitting

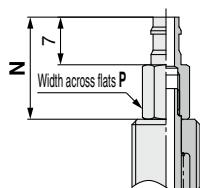
Model							N	P	Q	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Buffer spec.	⑤ Stroke	⑥ Connection thread					
ZP	10	U	N S U F GN GS	J	10	04	A10	27.7	8	4	ø2.5
	13				20	06			10	6	
	16				30			31.8	10	6	
	20				40	06			35.9	14	
	25				50	06		A14	19.9	12	
	32			K	40	08			24.9	14	ø3
	40				50	08					
	50										

Dimensions Per Vacuum Inlet: Barb Fitting

Model							N	P	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Buffer spec.	⑤ Stroke	⑥ Connection thread				
ZP	10	U	N S U F GN GS	J	10	N6	A10	15	6	ø2.5
	13				20					
	16				30			19		
	20				40	U6				
	25				50	U6		A14	12	
	32			K	40	N6				
	40				50	U6				
	50									

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

Vacuum inlet: Barb fitting

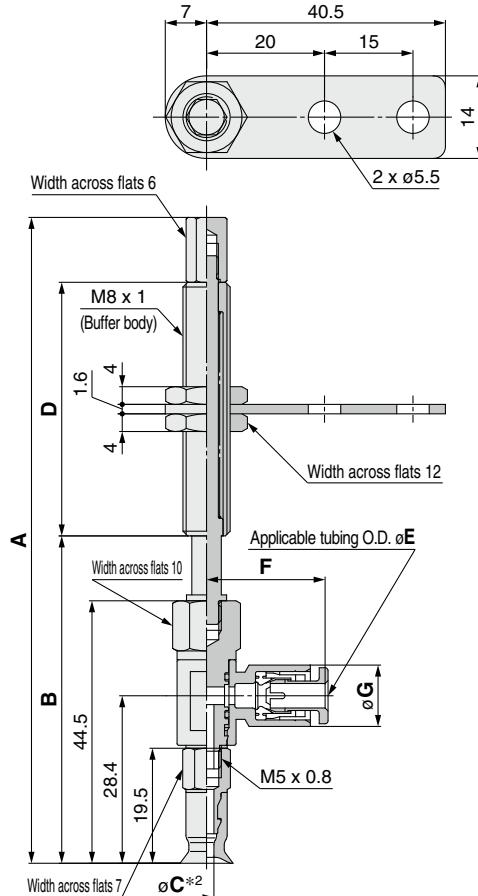


Construction p. 118

Buffer Assembly p. 124

Dimensions/Models

With buffer/One-touch fitting Ø2 to Ø8



Construction p. 116

Buffer Assembly p. 125

ZPR 02 U N J 6 - 04 - A8

1	2	3	4
Buffer specification			
J Rotating			6 Connection thread (Male thread)
K Non-rotating			A8 M8 x 1

5 Vacuum inlet (One-touch fitting)

04	Ø4
06	Ø6

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					
ZP	R	U	N S U F GN GS	J K	6 10 15 25 6 10 15 25 6 10 15 25	04 06 08	A8	78.5	52.5	1.2	15
								109.5	55.5		43
								114.5	60.5		
								124.5	70.5		
								78.5	52.5		15
								109.5	55.5	1.6	43
								114.5	60.5		
								124.5	70.5		
								78.5	52.5		15
								109.5	55.5		
								114.5	60.5		
								124.5	70.5	2.5	43

Dimensions Per Vacuum Inlet

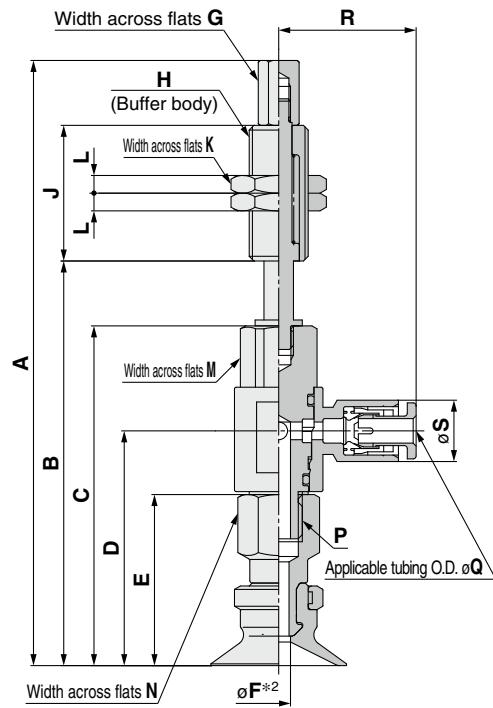
Model							E	F	G	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet				
ZP	R	02	N	J	6	04	4	20.6	10.4	Ø3
		04	S	K	10	A8	6	21.6	12.8	Ø4
		06	U		15					
		08	F		25					
			GN							
			GS							

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



Construction p. 118

Buffer Assembly p. 125

ZPR 10 U N J 10 - 04 - A10

① ② ③ ④ ⑤ ⑥

Buffer specification ③

J	Rotating
K	Non-rotating

Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

5 Vacuum inlet (One-touch fitting)

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

Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Vacuum inlet	⑥ Connection thread	Dimensions											
								A	B	C	D	E	F	G	H	J	K	L	
ZP R	U	10	A10	N	10	10	10	91	57							23			
								129	67							51			
		13		S	20	20	20	139	77	46	29.9	21				77			
								175	87							23			
		16		U	30	30	30	185	97							51			
								91.5	57.5							77			
		20		F	40	40	40	129.5	67.5	46.5	30.4	21.5				23			
								139.5	77.5							51			
	A14	25	A14	G	50	50	50	175.5	87.5							77			
								185.5	97.5							23			
		32		GS	10	10	10	102.6	68.6							51			
								140.6	78.6	57.6	39.8	29			77				
		40		J	40	40	40	150.6	88.6							23			
								186.6	98.6						51				
		50		K	50	50	50	196.6	108.6						77				
								103.1	69.1						23				
		40		A14	10	10	10	141.1	79.1						51				
								151.1	89.1	58.1	40.3	29.5			77				
		50		A14	20	20	20	187.1	99.1						23				
								197.1	109.6						51				
		50		A14	30	30	30	140.6	72.6						77				
								137.6	82.6	60.6	42.8	32			50				
		50		A14	50	50	50	147.6	92.6						75				
								192.6	112.6	4	10	M14 x 1			19	4	12	12	
		50		A14	10	10	10	141.6	73.6						50				
								138.6	83.6	61.6	43.8	33			75				
		50		A14	20	20	20	148.6	93.6						50				
								193.6	113.6						75				

Dimensions Per Vacuum Inlet

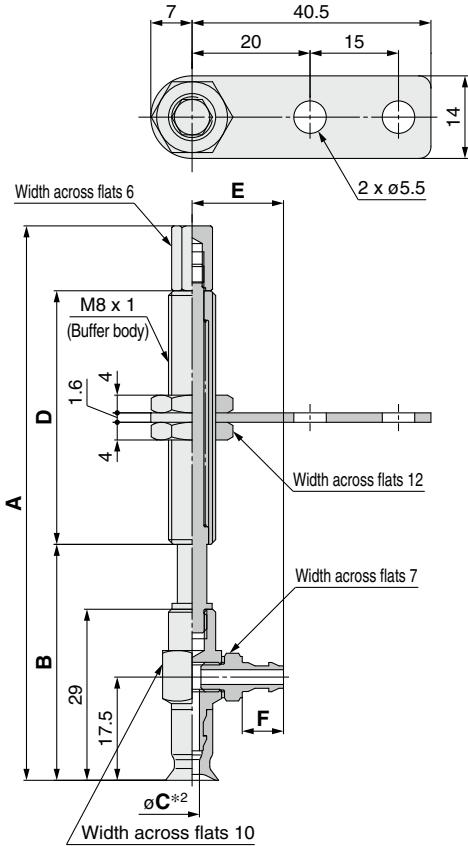
Model								Q	R	S	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Vacuum inlet	⑥ Connection thread						
ZP R	U	10	A10	10	04	10	4		20.6	10.4	$\varnothing 3$	
							6		21.6	12.8	$\varnothing 4$	
		13		20	04	20	4		23.3	10.4	$\varnothing 3$	
							6		24.3	12.8	$\varnothing 4.5$	
		16		30	08	30	8		26.2	15.2	$\varnothing 6$	
							6		24.3	12.8	$\varnothing 4.5$	
	A14	20	A14	20	06	20	8		26.2	15.2	$\varnothing 6$	
		25		30	08	30						
		32		50	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 Ø2 to Ø8



Construction p. 116
Buffer Assembly p. 126

ZPY 02 U N J 6 - N4 - A8

1	2	3	4
Buffer specification			
J Rotating			6 Connection thread (Male thread)
K Non-rotating			A8 M8 x 1

5 Vacuum inlet (Barb fitting)

N4	For Ø4 nylon tubing	M-5AN-4
N6	For Ø6 nylon tubing	M-5AN-6
U4	For Ø4 soft tubing	M-5AU-4
U6	For Ø6 soft tubing	M-5AU-6

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

Dimensions Per Vacuum Inlet

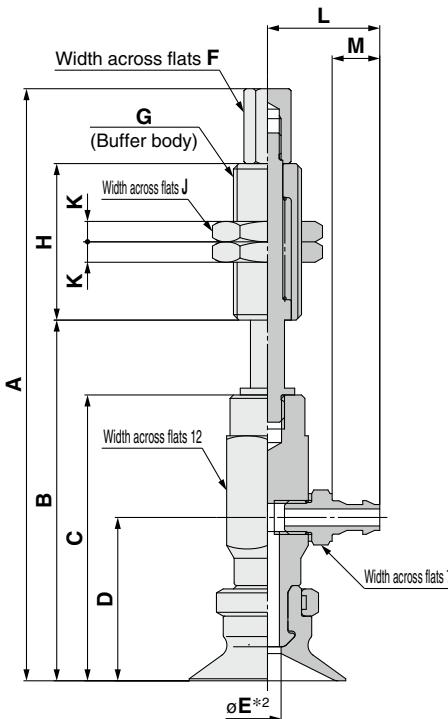
Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke	⑥ Vacuum inlet	Connection thread	E	F	Fitting part min. hole size
									6	10	
ZP Y	U	02	N S U F G N G S	J K	A8	6	N4 U4	A8	13.5	5	Ø1.8
						10			15.5	7	Ø2.5

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



Construction p. 118

Buffer Assembly p. 126

ZPY 10 U N J 10 - N4 - A10

① ② ③ ④

Buffer specification ③

J	Rotating
K	Non-rotating

⑥ **Connection thread**
(Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ **Vacuum inlet**
(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	E*2	F	G	H	J	K	Vacuum inlet direction		① Pad dia.	② Form	③ Material ^{*1}	④ Buffer spec.	⑤ Vacuum stroke	⑥ Connection thread
											10	20						
ZP Y	10 13	U	N S U F GN GS	J K	A10	83	49				83	49					23	
						121	59				121	59					51	
						131	69				131	69					77	
						167	79				167	79					23	
						177	89				177	89					51	
	16	A10	N4 N6 U4 U6	J K	A10	83.5	49.5				83.5	49.5					77	
						121.5	59.5				121.5	59.5					23	
						131.5	69.5				131.5	69.5					51	
						167.5	79.5				167.5	79.5					77	
						177.5	89.5				177.5	89.5					23	
ZP Y	20 25	U	N S U F GN GS	J K	A10	87	53				87	53					51	
						125	63				125	63					77	
						135	73				135	73					23	
						171	83				171	83					51	
						181	93				181	93					77	
	32	A10	N6 U6	J K	A10	87.5	53.5				87.5	53.5					23	
						125.5	63.5				125.5	63.5					51	
						135.5	73.5				135.5	73.5					77	
						171.5	83.5				171.5	83.5					23	
						181.5	93.5				181.5	93.5					51	
ZP Y	40	A14	N6 U6	J K	A14	126.5	58.5				126.5	58.5					50	
						123.5	68.5				123.5	68.5					75	
						133.5	78.5				133.5	78.5					19	
						178.5	98.5				178.5	98.5					47.5	
						127.5	59.5				127.5	59.5					50	
	50	A14	N6 U6	J K	A14	124.5	69.5				124.5	69.5					75	
						134.5	79.5				134.5	79.5					50	
						179.5	99.5				179.5	99.5					75	

Dimensions Per Vacuum Inlet

Model								L	M	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Buffer spec.	⑤ Vacuum stroke	⑥ Connection thread				
ZP Y	10 13	U	N S U F GN GS	J K	A10	10	N4 U4	14.5	5	ø1.8
						20				
						30				
	20 25 32	A10	N6 U6	J K	A10	40	N6 U6	16.5	7	ø2.5
						50				
							N6 U6	16.5	7	ø2.5

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

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



Basic Pad

Flat Type with Ribs

ZP Series

How to Order



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

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

With adapter **ZP** **T** **10C N**

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

① ② ③ ④ ⑤ ⑥ ⑦ ⑧
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 Material

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

3 Pad diameter

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

4 Buffer specification

J	Rotating
K	Non-rotating

5 Buffer stroke

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

*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	○	○	○
		(⑦ Connection thread: A5/A6)	(⑦ Connection thread: A5/A6)	(⑦ Connection thread: A6)	(⑦ Connection thread: A6)
	B5	M5 x 0.8	—	○	○
	B6	M6 x 1	○	○	○
One-touch fitting	B8	M8 x 1.25	—	○	○
	B01	Rc1/8	○	○	○
	N01	NPT1/8	○	○	○
	T01	NPTF1/8	○	○	○
Barb fitting	04	ø4	●	●	—
	06	ø6	●	●	●
	08	ø8	—	●	●
	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).

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

.....	From p. 51	p. 117	From p. 121
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.....	From p. 57	p. 118	From p. 124
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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

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
B5		M5 x 0.8	○	○	○
B01		Rc1/8	—	—	○
N01		NPT1/8	—	—	○
T01		NPTF1/8	—	—	○
04		ø4	○●	○●	—
06		ø6	○●	○●	○●
08		ø8	—	●	○●
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	○●△	○●△	—
Male thread	A14	M14 x 1	—	—	○●△

8 Lock ring

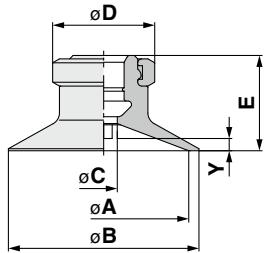
Symbol	Pad diameter
All sizes	
Nil	With lock ring
X19	Without lock ring

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

Dimensions/Models

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

ZP [10 C N]
① ②



Construction p. 117

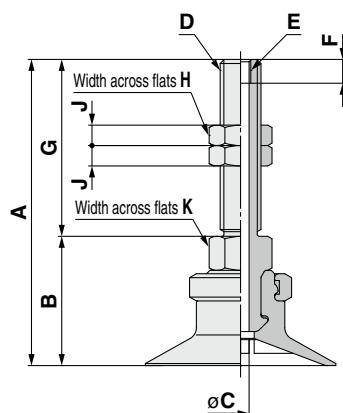
Mounting Bracket Assembly From p. 121

Model			A	B	C	D	E	Y
① Pad dia.	② Form	② *1 Material						
ZP	C	N	10	12	4	13	12	1.7
		S	13	15			12.5	1.8
		U	16	18		20	14	1.2
		F	20	23		25	14.5	1.7
		GN	25	28	15	32	18.5	1.8
		GS	32	35		40	19.5	2.3
			40	43		50	33	3.8
			50	53				

*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

Model			A	B	C	D	E	F	G	H	J	K	
Vacuum inlet direction	① Pad dia.	② Form	② *1 Material	③ Connection thread									
ZP	T	C	10	38	17	2.5	M5 x 0.8	M3 x 0.5	3.5	21	8	4	
			13	38.5	17.5								
	C		10	43	17	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	
			13	43.5	17.5								
			16	45	19								
			20	45.5	19.5								
			25	50.5	24.5								
			32	51.5	25.5								
			40	40	24	4	M8 x 1	M5 x 0.8	5	16	12	4	
			50	40.5	24.5								
			20	41.5	25.5								
			25			4.2							
			32										
			40			4.2							
			50										

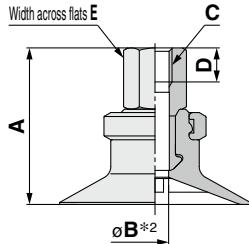
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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 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

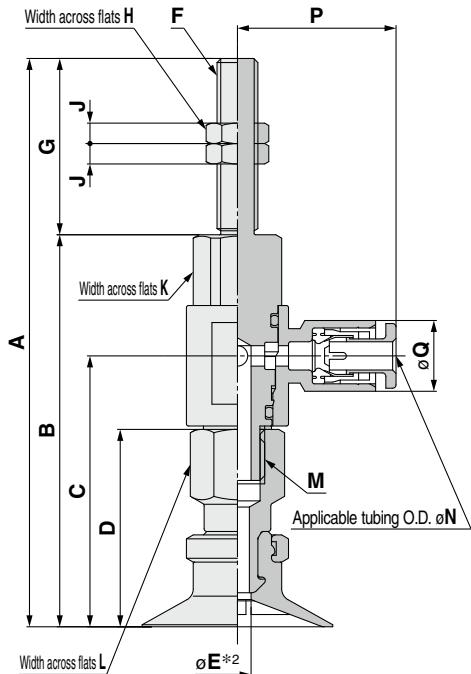
Model				A	B*	C	D	E				
ZP	T	C	① Vacuum inlet direction Pad dia.	② Form Material	③ Vacuum inlet							
ZP	T	C	10	B5	21	2.5	M5 x 0.8	5	8			
			13		21.5							
			16		23	4						
			20		23.5							
			25									
	T	C	32	B6	21	2.5	M6 x 1	6	8			
			10		21.5							
			13		23	4						
			16		23.5							
			20		32							
	T	C	25		33	4.9	M8 x 1.25	8	12			
			32		29							
			40		29.5	3.5						
			50		32							
			50		33							
	T	C	10	B8	27	2.5	Rc1/8	—	12			
			13		27.5							
			16		29	3.5						
			20		29.5							
			25		32							
	T	C	32		33	7						
			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 adapter/One-touch fitting $\varnothing 10$ to $\varnothing 50$



ZPR 10 C N - 04 - A5

①	②	③	④
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

Model	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread	A	B	C	D	E ^{*2}	F	G	H	J	K	L	M
							A5	67	46	29.9	21	2.5	M5 x 0.8	21	8	4	10	8
ZP R	C	10	A6	N	04	67.5	46.5	30.4	21.5									
		13		S		72	46	29.9	21			2.5						
		16		U		72.5	46.5	30.4	21.5									
		10		F	06	83.5	57.6	39.8	29			3.5	M6 x 1	26				
		13		GN		84	58.1	40.3	29.5									
		16		GS		86.5	60.6	42.8	32			4						
		20				87.5	61.6	43.8	33									
		25				73.5	57.6	39.8	29			3.5						
		32				74	58.1	40.3	29.5									
		40				76.5	60.6	42.8	32			4						
		50				77.5	61.6	43.8	33									
		20	A8															
		25																
		32																
		40																
		50																

Construction p. 117

Adapter Assembly p. 122

Dimensions Per Vacuum Inlet

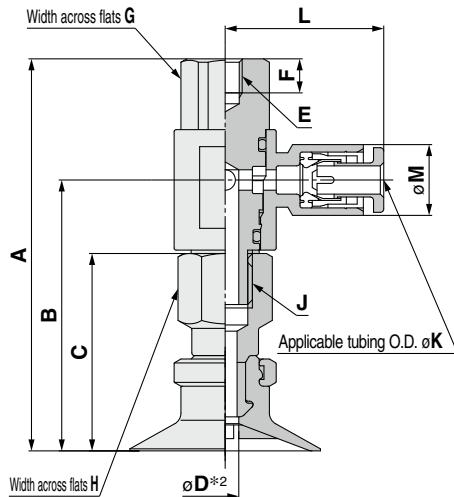
Model	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread	N		P		Q		Fitting part min. hole size		
							A5	A6	04	06	08	06	08	06	08
ZP R	C	10	A6	N	4				20.6		10.4			$\varnothing 3$	
		13		S	6				21.6		12.8			$\varnothing 4$	
		16		U	4				23.3		10.4			$\varnothing 3$	
		20		F	6				24.3		12.8			$\varnothing 4.5$	
		25		GN	8				26.2		15.2			$\varnothing 6$	
		32		GS	6				24.3		12.8			$\varnothing 4.5$	
		40			8				26.2		15.2			$\varnothing 6$	
		50													
		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

Dimensions/Models

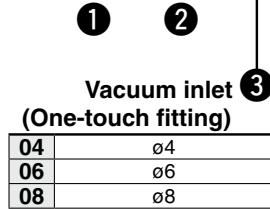
With adapter/One-touch fitting $\varnothing 10$ to $\varnothing 50$



Construction p. 117

Adapter Assembly p. 122

ZPR 10 C N - 04 - B5



Connection thread (Female thread)

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

		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	10	B5	N S U F GN GS	04	46	29.9	21	2.5	M5 x 0.8	5	10	8	M5 x 0.8
			13					46.5	30.4	21.5			12	12	M8 x 1.25
			16					57.6	39.8	29					
			20					58.1	40.3	29.5		3.5			
		B6	25					46	29.9	21			10	8	M5 x 0.8
			32					46.5	30.4	21.5			12	12	M8 x 1.25
			10	B6	N S U F GN GS	06	57.6	39.8	29	6					
			13					58.1	40.3	29.5		12	12	M8 x 1.25	
		B8	16					60.6	42.8	32	4				
			20					61.6	43.8	33					
			25					57.6	39.8	29	3.5	M8 x 1.25	8	12	M8 x 1.25
			32					58.1	40.3	29.5			12	12	M8 x 1.25
		C	40	B8	N S U F GN GS	08	60.6	42.8	32						
			50					61.6	43.8	33					
			20					57.6	39.8	29					
			25					58.1	40.3	29.5					
			32					60.6	42.8	32					
			40					61.6	43.8	33					
			50												

Dimensions Per Vacuum Inlet

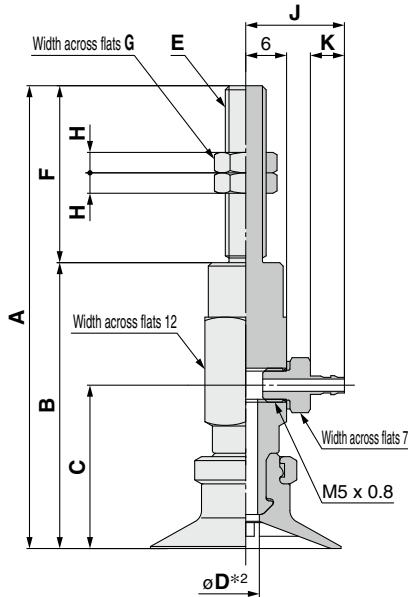
		Model				K	L	M	Fitting part min. hole size		
		Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread				
ZP	R	C	10	B5	N S U F GN GS	04	B5	4	20.6	10.4	$\varnothing 3$
			13					6	21.6	12.8	$\varnothing 4$
			16					4	23.3	10.4	$\varnothing 3$
			20					6	24.3	12.8	$\varnothing 4.5$
		B6	25	B6	N S U F GN GS	08	B8	8	26.2	15.2	$\varnothing 6$
			32					6	24.3	12.8	$\varnothing 4.5$
			40					8	26.2	15.2	$\varnothing 6$
			50								

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

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

Dimensions/Models

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



Construction p. 117

Adapter Assembly p. 123

ZPY 10 C N - N4 - A5

① ② ③ ④

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

Connection thread
(Male thread)

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

Model					A	B	C	D ^{*2}	E	F	G	H
1 Vacuum inlet direction	2 ^{*1} Pad dia. Form	3 Material	4 Vacuum inlet	Connection thread								
ZP Y	10 13 16 10 13	C	N S U F GN	A5	59	38	22	2.5	M5 x 0.8	21	8	4
					59.5	38.5	22.5					
					64	38	22	2.5				
					64.5	38.5	22.5					
					68	42	24	3.5				
	20 25 32 40 50	A6	N4 N6 U4 U6	A6	68.5	42.5	24.5					
					72.5	46.5	28.5	6				
					73.5	47.5	29.5					
					58	42	24	3.5				
					58.5	42.5	24.5					
ZP Y	20 25 32 40 50	A8	N6 U6	A8	62.5	46.5	28.5	6	M8 x 1	16	12	4
					63.5	47.5	29.5					

Dimensions Per Vacuum Inlet

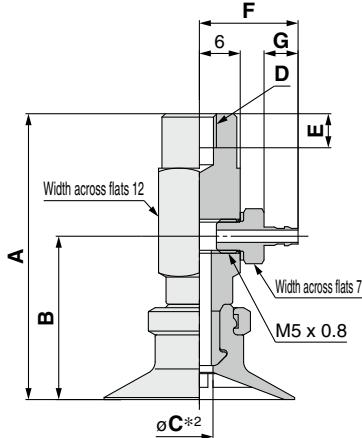
Model					J	K	Fitting part min. hole size
1 Vacuum inlet direction	2 ^{*1} Pad dia. Form	3 Material	4 Vacuum inlet	Connection thread			
ZP Y	10 13 16 20 25 32	C	N4 U4	A5	14.5	5	$\varnothing 1.8$
					16.5	7	$\varnothing 2.5$
ZP Y	40 50	A6	N6 U6	A6	16.5	7	$\varnothing 2.5$

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

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

Dimensions/Models

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



Construction p. 117

Adapter Assembly p. 123

ZPY 10 C N - N4 - B5

① ②

Vacuum inlet
(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

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	10	C	N S U F GN GS	B5	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			B6	38	22	2.5	M6 x 1	6		
	32				38.5	22.5					
	10				42	24	3.5				
	13				42.5	24.5					
	16			B8	46.5	28.5	6	M8 x 1.25	8		
	20				47.5	29.5					
	25				42	24	3.5				
	32				42.5	24.5					
	40				46.5	28.5	6				
	50				47.5	29.5					
	20				42	24	3.5	M8 x 1.25	8		
	25				42.5	24.5					
	32				46.5	28.5	6				
	40				47.5	29.5					
	50				42	24	3.5	M8 x 1.25	8		

Dimensions Per Vacuum Inlet

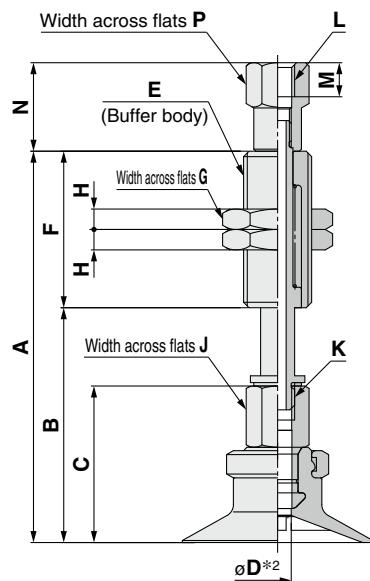
Model				F	G	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread		
ZP Y	10	C	N S U F GN GS	N4	14.5	5	$\varnothing 1.8$
	13			U4	14.5	5	$\varnothing 1.8$
	16		N S U F GN GS	B4	16.5	7	$\varnothing 2.5$
	20			B5	16.5	7	$\varnothing 2.5$
	25		N4 U4 N6 U6	N6	14.5	5	$\varnothing 1.8$
	32			U6	14.5	5	$\varnothing 1.8$
	40			B6	16.5	7	$\varnothing 2.5$
	50			B8	16.5	7	$\varnothing 2.5$
	20		N6 U6	N6	16.5	7	$\varnothing 2.5$
	25			U6	16.5	7	$\varnothing 2.5$
	32		N6 U6	B6	16.5	7	$\varnothing 2.5$
	40			B8	16.5	7	$\varnothing 2.5$
	50			B6	16.5	7	$\varnothing 2.5$
	40			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

Dimensions/Models

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



Construction p. 118

Buffer Assembly p. 124

ZPT 10 C N J 10 - B5 - A10

① ② ③ ④

Buffer specification ③

J	Rotating
K	Non-rotating

⑥ **Connection thread**
(Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ **Vacuum inlet**
(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	Model					
											1 Vacuum inlet direction	2 Pad dia. ^{*1}	3 Form	4 Material ^{*1}	5 Buffer stroke	6 Vacuum inlet
ZP T	A10	10			55.5	32.5										
		13			93.5	42.5										
		16			103.5	52.5	21									
		20			139.5	62.5										
		25			149.5	72.5										
		32			56	33										
		40			94	43										
		50			104	53										
	A14	10			140	63										
		20			150	73										
		30			57.5	34.5										
		40			95.5	44.5										
		50			105.5	54.5	23									
		10			141.5	64.5										
		20			151.5	74.5										
		30			58	35										
		40			96	45										
		50			106	55										
		10			142	65										
		20			152	75										
		30			94.5	44.5										
		40			104.5	54.5										
		50			114.5	64.5										
		10			159.5	84.5										
		20			95.5	45.5										
		30			105.5	55.5										
		40			115.5	65.5										
		50			160.5	85.5										

Dimensions Per Vacuum Inlet: Female Thread

Model	L	M	N	P	Model						
					1 Vacuum inlet direction	2 Pad dia. ^{*1}	3 Form	4 Material ^{*1}	5 Buffer stroke	6 Vacuum inlet	Connection thread
ZP T	A10	10			10					M5 x 0.8	
		13			20						5
		16			30						13
		20			40						8
		25			50						
	A14	10			10					4.5	15
		20			20					5	9
		30			30						
		40			50						
		50			B01					Rc1/8	
					N01					NPT1/8	
					T01					NPTF1/8	
										—	16.5
											12
											13

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

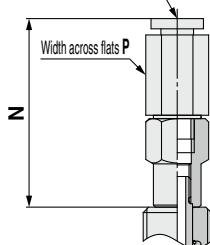
*2 Indicates the minimum hole size of the adapter or vacuum pad

Dimensions/Models

With buffer ø10 to ø50

Vacuum inlet: One-touch fitting

Applicable tubing O.D. øQ



ZPT 10 C N J 10 - 04 - 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	
ø10 to ø32	ø40, ø50 (10 st only)
KQ2H04-M5N	KQ2H06-01NS
KQ2H06-M5N	KQ2H08-01NS
N6 For ø6 nylon tubing	Barb fitting
U6 For ø6 soft tubing	

Dimensions Per Vacuum Inlet: One-touch Fitting

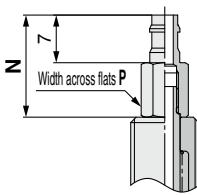
Model							N	P	Q	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Buffer spec.	⑤ Stroke	⑥ Connection thread					
ZP	10	C	N S U F GN GS	J	10	04	A10	27.7	8	4	ø2.5
	13				20	04			10	6	
	16				30	06		31.8	10	6	ø4.5
	20				40	06		35.9	14	8	
	25				50	06		19.9	12	6	ø6
	32			K	10	06	A14	24.9	14	8	
	40				20	08		31.8	10	6	ø3
	50				30	06		35.9	14	8	
					50	08		19.9	12	6	
								24.9	14	8	

Dimensions Per Vacuum Inlet: Barb Fitting

Model							N	P	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Buffer spec.	⑤ Stroke	⑥ Connection thread				
ZP	10	C	N S U F GN GS	J	10	N6	A10	15	6	ø2.5
	13				20	U6				
	16				30	N6		19		
	20				40	U6			10	
	25				50	N6		12		
	32			K	10	U6				
	40				20	N6				
	50				30	U6				
					50	N6				
						U6				

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

Vacuum inlet: Barb fitting

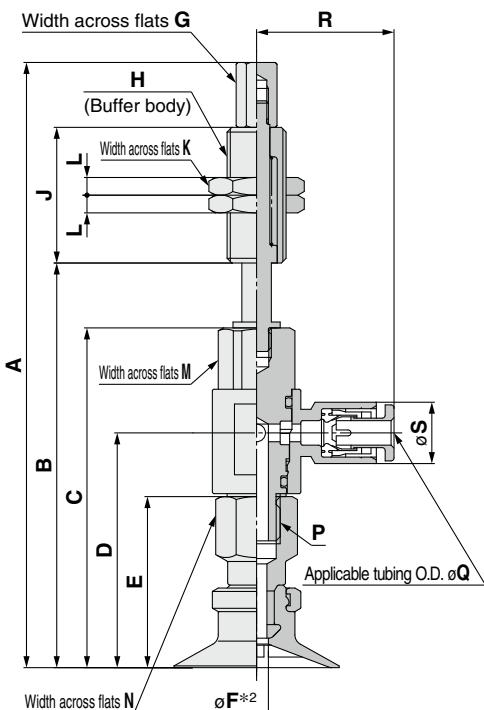


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Buffer Assembly p. 124

Dimensions/Models

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



Construction p. 118
Buffer Assembly p. 125

ZPR 10 C N J 10 - 04 - A10

① ② ④ 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
(One-touch fitting)

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

Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke	⑥ Vacuum inlet	Connection thread	Dimensions												
									A	B	C	D	E	F	G	H	J	K	L		
ZP R	C	10	A10	N	10	10	04	M10 x 1	91	57							23				
						20			129	67							51				
		13		S		30			139	77	46	29.9	21				77				
						40			175	87						23					
		16		U		50			185	97						51					
						10			91.5	57.5						77					
		20		F		20			129.5	67.5						23					
						30			139.5	77.5	46.5	30.4	21.5			51					
	A14	25	A14	G		40	06	M14 x 1	175.5	87.5						77					
						50			185.5	97.5						23					
		32		GS		10			102.6	68.6						51					
						20			140.6	78.6						77					
		40		A14		30			150.6	88.6	57.6	39.8	29			23					
						40			186.6	98.6						51					
		50		A14		50			196.6	108.6						77					
						10			103.1	69.1						23					
		40		A14		20			141.1	79.1						51					
						30			151.1	89.1	58.1	40.3	29.5			77					
		50		A14		40			187.1	99.1						23					
						50			197.1	109.6						51					
		50		A14		10			140.6	72.6						77					
						20			137.6	82.6	60.6	42.8	32			50					
		50		A14		30			147.6	92.6						75					
						50			192.6	112.6						19					
		50		A14		10			141.6	73.6						4					
						20			138.6	83.6	61.6	43.8	33			10					
		50		A14		30			148.6	93.6						50					
						50			193.6	113.6						75					

Dimensions Per Vacuum Inlet

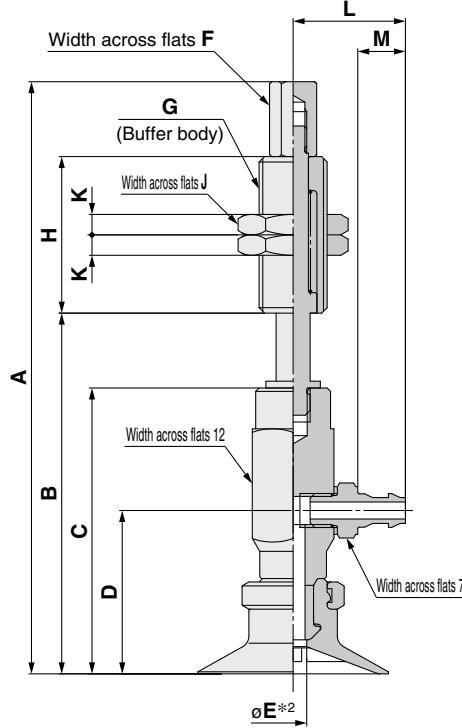
Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke	⑥ Vacuum inlet	Connection thread	Dimensions				Fitting part min. hole size			
									Q	R	S	T				
ZP R	C	10	A10	N	10	04	04	M10 x 1	4	20.6	10.4	ø3	ø3			
						20			6	21.6	12.8	ø4				
		13		S		30			4	23.3	10.4	ø3				
						40			6	24.3	12.8	ø4.5				
		16		F		50			8	26.2	15.2	ø6				
						10	06	M14 x 1	6	24.3	12.8	ø4.5	ø4.5			
	A14	20		GN		20			8	26.2	15.2	ø6				
		25				30										
		GS		40												
				32					50							
									10							
		40		A14		20										
						30										
		50		A14		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 Ø10 to Ø50



Construction p. 118

Buffer Assembly p. 126

ZPY 10 C N J 10 - N4 - A10

① ② ③ ④ ⑤ ⑥

Buffer specification ③

J	Rotating
K	Non-rotating

⑥ Connection thread
(Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet
(Barb fitting)

N4	For Ø4 nylon tubing	M-5AN-4
N6	For Ø6 nylon tubing	M-5AN-6
U4	For Ø4 soft tubing	M-5AU-4
U6	For Ø6 soft tubing	M-5AU-6

Model	A	B	C	D	E ^{*2}	F	G	H	J	K	Dimensions																				
											Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke	⑥ Connection thread	N4	N6	U4	U6	A10	A14	N6	U6						
ZPY											10	13	C	N S U F G N G S	J K	10	83	49	38	22	2.5	6	M10 x 1		23	51	14	3			
											20					20	121	59													
											30					30	131	69													
											40					40	167	79													
											50					50	177	89													
											10					10	83.5	49.5													
											20					20	121.5	59.5													
											30					30	131.5	69.5													
											40					40	167.5	79.5													
											50					50	177.5	89.5													
											10					10	87	53													
											20					20	125	63													
											30					30	135	73													
											40					40	171	83													
											50					50	181	93													
											10					10	87.5	53.5													
											20					20	125.5	63.5													
											30					30	135.5	73.5													
											40					40	171.5	83.5													
											50					50	181.5	93.5													
											10					10	126.5	58.5													
											20					20	123.5	68.5													
											30					30	133.5	78.5													
											40					40	178.5	98.5													
											50					50	127.5	59.5													
											10					10	124.5	69.5													
											20					20	134.5	79.5													
											30					30	179.5	99.5													
											50					50															

Dimensions Per Vacuum Inlet

Model								L	M	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke	⑥ Connection thread	N4			
ZPY	10 13 16 20 25 32 40 50	C	N S U F G N G S	J K	10 20 30 40 50	N4 U4 A10 N6 U6 A14 N6 U6	14.5	5	ø1.8	
							16.5	7	ø2.5	
							16.5	7	ø2.5	

*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 Ball Joint Type

ZP Series



How to Order

		Dimensions/ Models	Construction	Mounting Bracket Assembly
Pad unit	ZP 10 FN			p. 62 p. 119 From p. 127
* Pad unit's sales unit: 10 pcs. (Pad diameter: ø20 mm or less only)				
With adapter	ZP T 10 FN - B5 - A8			From p. 62 p. 119 From p. 127
With buffer	ZP T 10 FN 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	—	—	○
				B5	M5 x 0.8	○	○	—
				B8	M8 x 1.25	—	○	○
				B01	Rc1/8	—	○	○
One-touch fitting	Nil	—* ¹	Female thread	N01	NPT1/8	—	○	○
				T01	NPTF1/8	—	○	○
				B5	M5 x 0.8	●	—	—
				B8	M8 x 1.25	—	●	●
				B8	M8 x 1.25	—	●	●
				B5	M5 x 0.8	—	●	●

*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	○●	—	—
Male thread	A14	M14 x 1	—	○●	○●

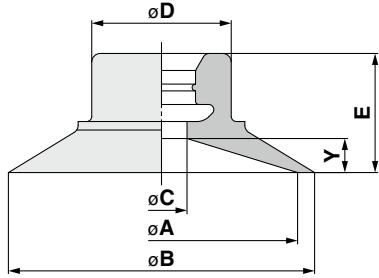
Lock ring unit

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

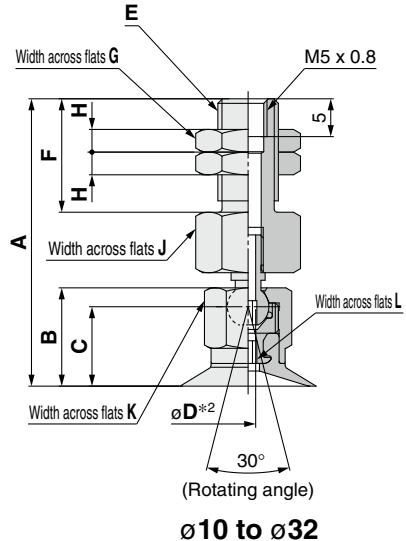
Mounting Bracket Assembly From p. 127

ZP **10 F N**
① ②

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

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

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



ZPT **10 F N - B5 - A8**

① ②
Vacuum inlet ③ (Female thread)

B5 M5 x 0.8

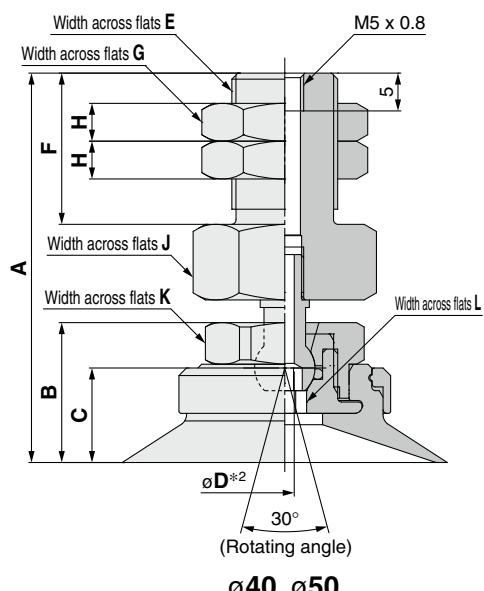
④ Connection thread (Male thread)

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

Model			A	B	C	*2 D	E	F	G	H	J	K	L
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread								
ZP	10	T	F	B5	A8	37.5	12.5	10					
	13					38	13	10.5	2	M8 x 1	15	12	4
	16										12	10	2
	20				A10	48.5	15.5	12.5	2	M10 x 1	20	14	3
	25					49	16	13			16	12	3
	32					51.5	18.5	12.5	2.5	M14 x 1	20	19	4
	40					52.5	19.5	13.5			21	19	5
	50												

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

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

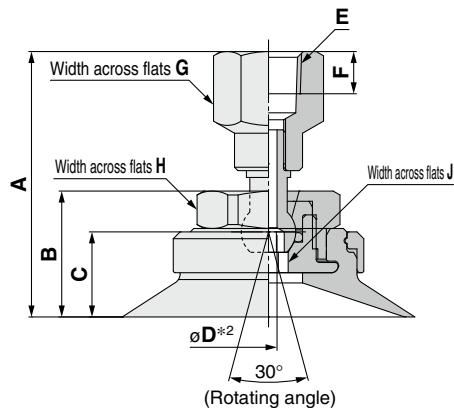
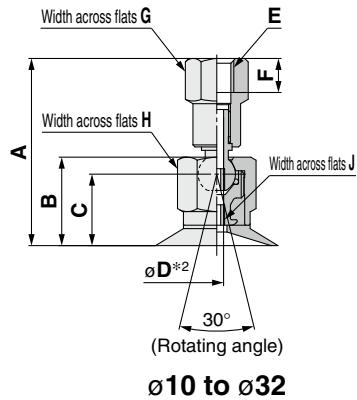


Construction p. 119

Adapter Assembly p. 127

Dimensions/Models

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



ZPT 10 F N - B5

① ②

③ Vacuum inlet
(Female thread)

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

Model									
Vacuum inlet direction	① Pad dia.	② Form	③ Material	③ Vacuum inlet	A	B	C	D*2	E
ZP T	10	F	B5	27	12.5	10			
	13			27.5	13	10.5		2	M5 x 0.8
	16			32	15.5	12.5			5
	20			32.5	16	13			
	25			36	15.5	12.5		2	
	32		B8	36.5	16	13			M8 x 1.25
	40			39	18.5	12.5		2.5	
	50			40	19.5	13.5			
	20		B01	36	15.5	12.5		2	Rc1/8
	25			36.5	16	13			NPT1/8
	32			39	18.5	12.5		2.5	NPTF1/8
	40			40	19.5	13.5			
	50								

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

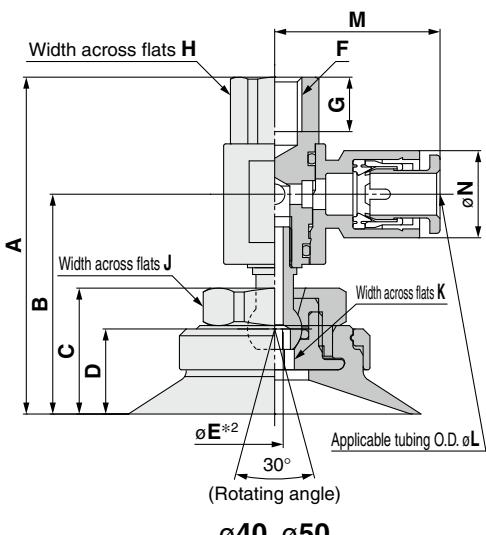
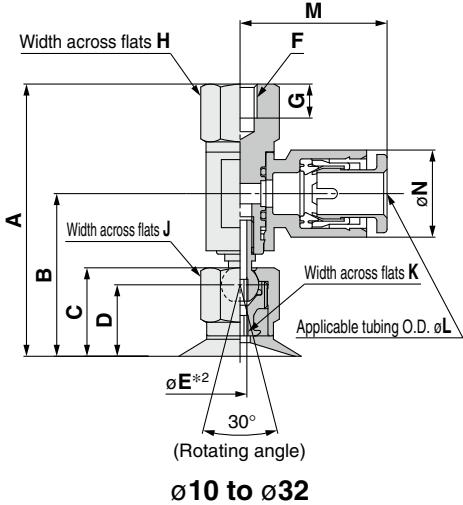
*2 Indicates the minimum hole size of the adapter or vacuum pad

Construction p. 119

Adapter Assembly p. 127

Dimensions/Models

With adapter/One-touch fitting Ø10 to Ø50



ZPR 10 F N - 04 - B5

①

②

Vacuum inlet
(One-touch fitting)

③

④

Connection thread
(Female thread)

B5	M5 x 0.8
B8	M8 x 1.25

Model	Vacuum inlet direction	① Pad dia.	Form	② Material ^{*1}	③ Vacuum inlet	④ Connection thread	A	B	C	D	E ^{*2}	F	G	H	J	K
							04	06	08	B5	B8					
ZP R	F	10		N S U F G N G S	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					46.5	29.3	15.5	12.5						
		20					47	29.8	16	13						
		25					49.5	32.3	18.5	12.5	2.5	M8 x 1.25	8	12	12	3
		32					50.5	33.3	19.5	13.5						
		40					46.5	29.3	15.5	12.5						
		50					47	29.8	16	13						
		20					49.5	32.3	18.5	12.5						
		25					50.5	33.3	19.5	13.5						
		32					46.5	29.3	15.5	12.5	2	M8 x 1.25	8	12	19	5
		40					47	29.8	16	13						
		50					49.5	32.3	18.5	12.5	2.5	M8 x 1.25	8	12	19	5

Dimensions Per Vacuum Inlet

Model	Vacuum inlet direction	① Pad dia.	Form	② Material ^{*1}	③ Vacuum inlet	④ Connection thread	L		M		N	Fitting part min. hole size				
							04	B5	06	B5	06	B5	B8			
ZP R	F	10		N S U F G N G S	04 06 08	B5	4		20.6		10.4		ø3			
		13					6		21.6		12.8		ø4			
		16					6		24.3		12.8		ø4.5			
		20				B5 B8	8		26.2		15.2		ø6			
		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

Construction p. 119

Adapter Assembly p. 128

Model Selection

ZP Basic
Flat Type
Flat Type with Ribs
Flat Type with Ribs

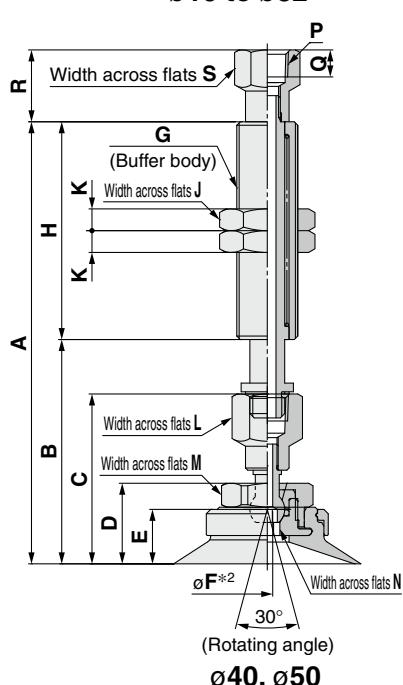
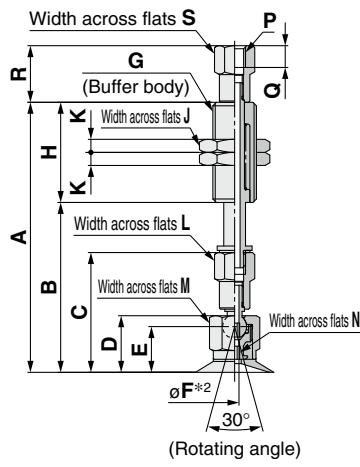
Thin Flat Type with Ribs
Thin Flat Type

Construction

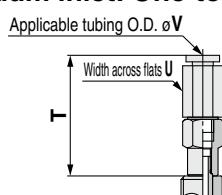
Mounting Bracket Assembly
Precautions

Dimensions/Models

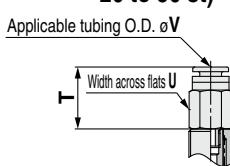
With buffer ø10 to ø50



Vacuum inlet: One-touch fitting



Vacuum inlet: Built-in One-touch fitting
Pad diameter: ø20 to ø50 (Buffer stroke:
20 to 50 st)



ZPT 10 F N J 10 - B5 - A10

① ② ④ ③ 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

Pad diameter	
ø10 to ø16	ø20 to ø50 (10 st only)
B5	M5 x 0.8
B01	Rc1/8
N01	NPT1/8
T01	NPTF1/8
04	ø4
06	ø6
08	ø8

Model										A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread																			
ZP T	10	F	J	10				61.5	38.5								23									
				20				98.5	48.5								51									
				30				108.5	58.5	27	12.5	10					77									
				40				145.5	68.5								14	3	8	10	2	M5 x 0.8	5	13	8	
				50				155.5	78.5								KQ2H04-M5N									
				10				62	39								23									
				20				100	49								51									
				30				110	59	27.5	13	10.5					77									
				40				146	69																	
				50				156	79																	
	13 16	NSUFGNGS	K	10				98.5	48.5								50									
				20				108.5	58.5	36	15.5	12.5					75									
				30				118.5	68.5								12	3								
				50				163.5	88.5								Rc1/8									
				10				99	49								50									
				20				109	59	36.5	16	13					50									
				30				119	69								12	3								
				50				164	89								NPT1/8									
	20 25	A14	J	10				101.5	51.5								75	19	4	12						
				20				111.5	61.5	39	18.5	12.5					50									
				30				121.5	71.5								75									
				50				166.5	91.5								19	5								
				10				102.5	52.5								50									
				20				112.5	62.5	40	19.5	13.5					75									
				30				122.5	72.5								14									
				50				167.5	92.5								8									

Dimensions Per Vacuum Inlet: One-touch Fitting

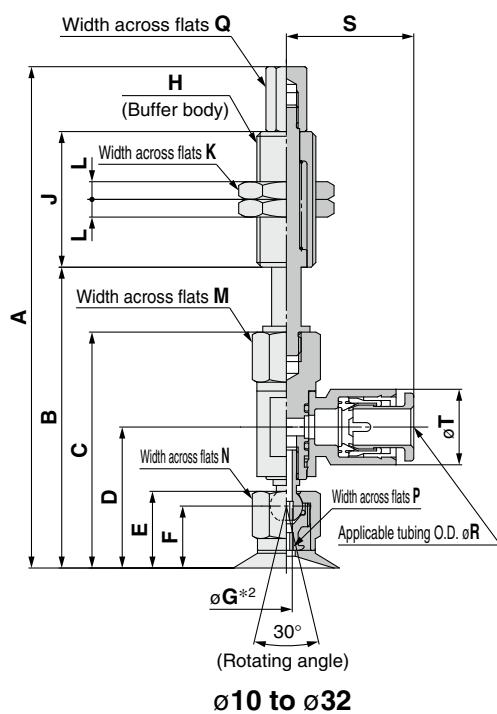
Model										T	U	V	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread							
ZP T	10	F	J	10	04			27.7		8	4			ø2.5
				20	06					10	6			
				30	06					14	8			
				40	06					12	6			
				50	06					19.9	12			
	20 25	A14	K	10	08					24.9	14			ø3
				20	06					35.9	18			
				30	06					19.9	12			
				50	08					24.9	14			
				10	06					31.8	18			

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

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

Dimensions/Models

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



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

Buffer specification ③

J	Rotating
K	Non-rotating

⑥ Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

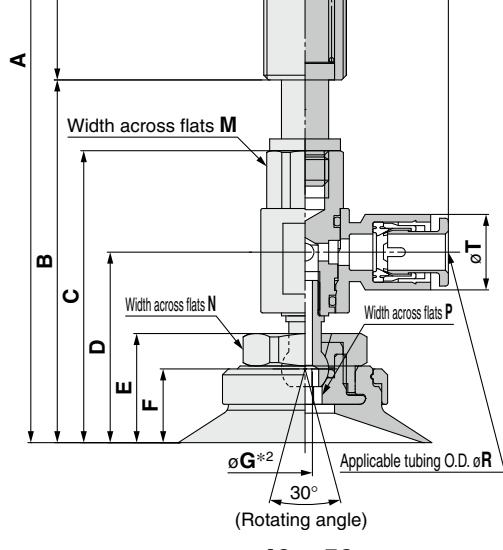
⑤ Vacuum inlet (One-touch fitting)

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

		Model						A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	
Vacuum inlet direction	Pad dia.	①	② ^{*1}	③ Material	④ Buffer spec.	⑤ Vacuum inlet	⑥ Connection thread																
ZP R	F	10	N S U F GN GS	J K	10 20 30 40 50 10 20 30 40 50 10 20 30 40 50 10 20 30 40 50 10 20 30 40 50	04 06 08	A10 A10 A10 A10 A10 A10 A14 A14 A14 A14 A14 A14	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														
								85	51														
								123	61														
								133	71	40	23.9	13	10.5										
								169	81														
								179	91														
								10	58.5														
								123.5	68.5	46.5	29.3	15.5	12.5										
								133.5	78.5														
ZP R	F	13 16 20 25 32 40 50	J K	10 20 30 40 50 10 20 30 40 50 10 20 30 40 50 10 20 30 40 50 10 20 30 40 50	06 08	A10 A10 A10 A10 A10 A10 A14 A14 A14 A14 A14 A14	126.5	58.5															
							129.5	61.5															
							126.5	71.5	49.5	32.3	18.5	12.5											
							136.5	81.5															
							181.5	101.5															
							130.5	62.5	50.5	33.3	19.5	13.5											
							127.5	72.5															
							137.5	82.5															
							182.5	102.5															

Dimensions Per Vacuum Inlet: One-touch Fitting

		Model						R	S	T	Fitting part min. hole size
Vacuum inlet direction	Pad dia.	①	② ^{*1}	③ Material	④ Buffer spec.	⑤ Vacuum inlet	⑥ Connection thread				
ZP R	F	10 13 16 20 25 32 40 50	J K	10 20 30 40 50 10 20 30 40 50 10 20 30 40 50 10 20 30 40 50 10 20 30 40 50	04 06 08	A10 A10 A10 A10 A10 A10 A14 A14 A14 A14 A14 A14	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	$\phi 6$	



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



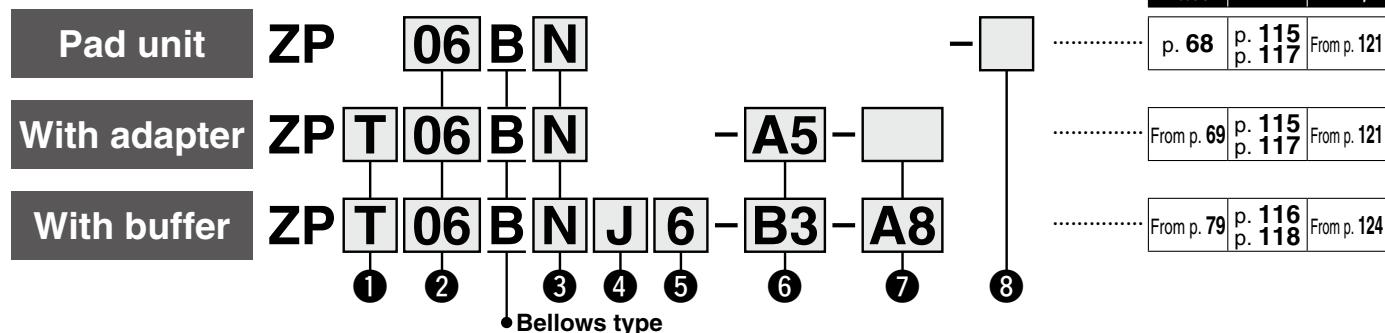
Basic Pad

Bellows Type

ZP Series



How to Order



① Vacuum inlet direction

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

③ Material

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

② Pad diameter

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

④ Buffer specification

J	Rotating
K	Non-rotating

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	—	—	●	●	●	●	●	●	●	●

*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: A8)	○ (Connection thread: A8)
	B4	M4 x 0.7	○	—	—	—
	B5	M5 x 0.8	○	○	○	—
	B6	M6 x 1	—	○	○	○
	B8	M8 x 1.25	—	—	○	○
One-touch fitting	B01	Rc1/8	—	○	○	○
	N01	NPT1/8	—	○	○	○
	T01	NPTF1/8	—	○	○	○
	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	—	—	●	○●
	N4	For ø4 nylon tubing*1	○△	△	△	—
Barb fitting	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	With lock ring
X19		Without lock ring

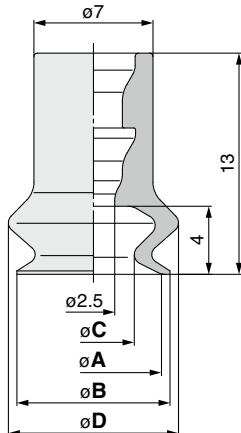
*1 The lock ring cannot be used for pad diameters ø6 and ø8.

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

Dimensions/Models

Single unit **Ø6 to Ø8**

ZP [06 B N]
① ②



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

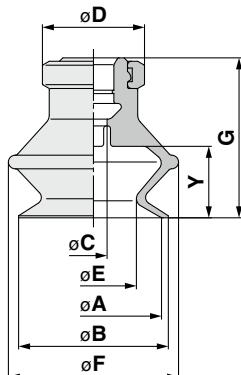
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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Mounting Bracket Assembly From p. 121

Single unit **Ø10 to Ø50**

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	10	12	4	13	5.5	13.5	16	5.5
	13		S	13	15			8.7	19	18.5	7.5
	16		U	16	18			10	21	20	8.5
	20		F	20	22			12.6	25	23.5	10.5
	25		GN	25	27	15	15	16	28	24	
	32		GS	32	34			18.9	37	29	14
	40			40	43			24.4	47	34	16
	50			50	53	7	18	33.4	57	38	19

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

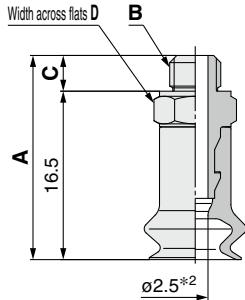
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Mounting Bracket Assembly From p. 121

Basic Pad Bellows Type **ZP Series**

Dimensions/Models

With adapter $\phi 6$ to $\phi 8$



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Adapter Assembly p. 121

ZPT 06 B N - A5

①

②

③ Vacuum inlet (Male thread)

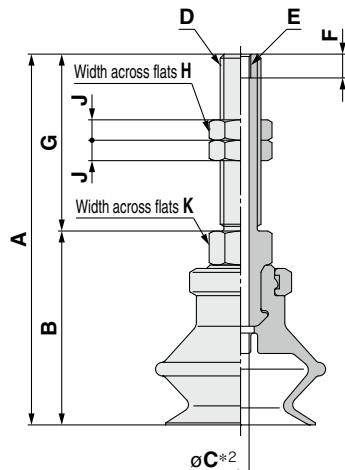
A5	M5 x 0.8
A6	M6 x 1

Model					A	B	C	D
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Vacuum inlet				
ZP	T	06 08	B	N S U F GN GS	A5	20	M5 x 0.8	3.5
				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 $\phi 10$ to $\phi 50$



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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 Material	③ Connection thread										
ZP	T	B	N S U F	A5	42	21	2.5	M5 x 0.8	M3 x 0.5	3.5	21	8	4	8
				A5	44.5	23.5								
				A5	46	25								
				A6	47	21								
			N S U F	A6	49.5	23.5								
				A6	51	25								
				A6	54.5	28.5								
				A6	55	29								
			GN GS	A8	60	34	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	12
				A8	66	40								
				A8	70	44								
				A8	49.5	33.5								
			GN GS	A8	50	34								
				A8	55	39								
				A8	56	40								
				A8	60	44								

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

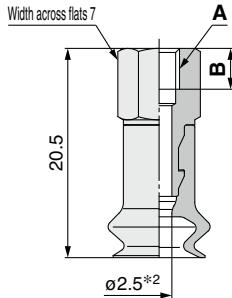
*2 Indicates the minimum hole size of the adapter or vacuum pad

Recommended Gasket Part Nos.

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

Dimensions/Models

With adapter $\phi 6$ to $\phi 8$



ZPT 06 B N-B4

①

②

③ Vacuum inlet (Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

Construction p. 115

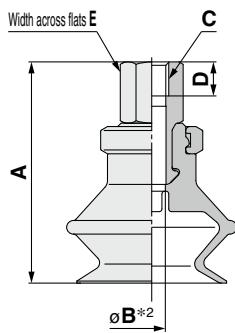
Adapter Assembly p. 121

Model					A	B
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet		
ZP T	06 08	B	N	B4	M4 x 0.7	4
			S U F G N G S	B5		

*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 $\phi 10$ to $\phi 50$



ZPT 10 B 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

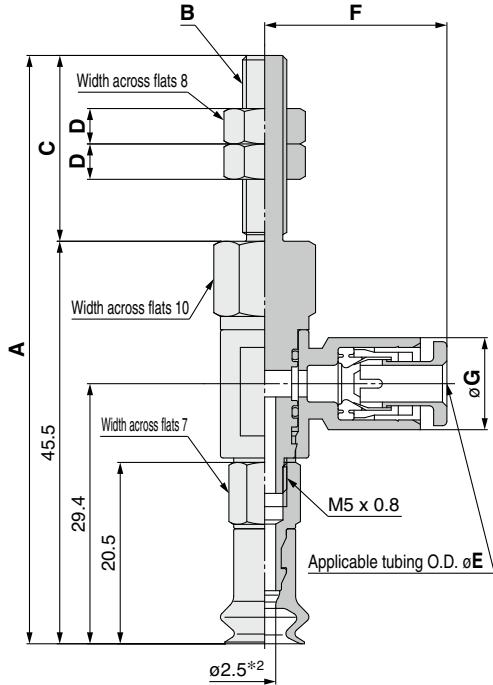
Model					A	B ^{*2}	C	D	E		
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet							
ZP T	10	B	B5	25	2.5	M5 x 0.8	5	8	8		
	13			27.5							
	16			29	4		6	12			
	20			32.5							
	25			33							
	32			38							
	10		B6	25	2.5	M6 x 1	8	12			
	13			27.5							
	16			29							
	20			32.5	4		6	12			
	25			33							
	32		B8	38	4.9	M8 x 1.25	8	12			
	40			47.5							
	50			51.5							
	20			38.5	3.5		6	8			
	25			39							
	32			44							
	40		B01	47.5	6.6	Rc1/8 NPT1/8 NPTF1/8	8	12			
	50			51.5							
	10			31							
	13			33.5	2.5		—	12			
	16			35							
	20			38.5							
	25		N01	39	3.5		—	12			
	32			44							
	40			47.5							
	50		T01	51.5	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

Dimensions/Models

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



ZPR [06] B [N] - [04] - [A5]

① ② ③ ④

Vacuum inlet
(One-touch fitting)

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

Connection thread
(Male thread)

A5	M5 x 0.8
A6	M6 x 1

Model	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread	Fitting part min. hole size				
							A	B			
ZP	R	06 08	B	N S U F GN GS	04 06	A5 A6	66.5	M5 x 0.8	21	4	$\varnothing 3$
							71.5	M6 x 1	26	4	$\varnothing 4$

Dimensions Per Vacuum Inlet

Model	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread	E			F		G	
							E	F	G				
ZP	R	06 08	B	N S U F GN GS	04	A5	4	20.6	10.4				
					06	A6	6	21.6	12.8				

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

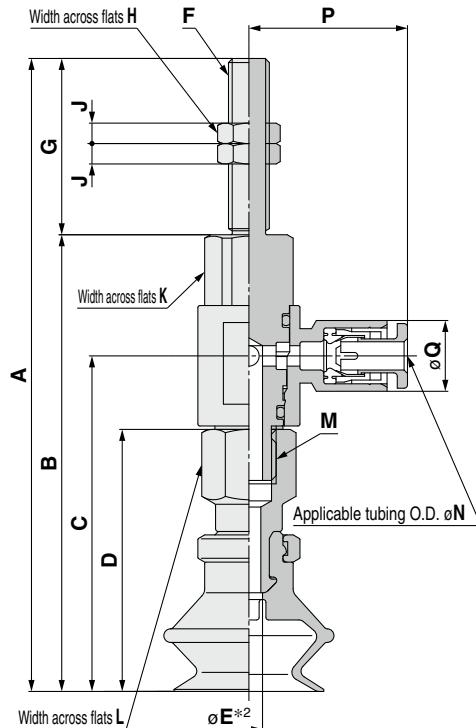
*2 Indicates the minimum hole size of the adapter or vacuum pad

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Adapter Assembly p. 122

Dimensions/Models

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



ZPR 10 B N - 04 - A5

①	②	③	④	
		Vacuum inlet (One-touch fitting)	Connection thread (Male thread)	
04	06	③		
06	08	④		
08		A5		

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

Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Vacuum inlet thread	A	B	C	D	E ^{*2}	F	G	H	J	K	L	M
						10	13	16	20	25	32	40	50	20	25	32	40
ZP R	B	A5	A6	A8	10	71	50	33.9	25	2.5	M5 x 0.8	21	8	4	10	8	M5 x 0.8
					13	73.5	52.5	36.4	27.5								
					16	75	54	37.9	29								
					20	76	50	33.9	25	2.5							
					25	78.5	52.5	36.4	27.5								
					32	80	54	37.9	29								
					40	93	67.1	49.3	38.5	3.5	M6 x 1	26	8	4	10	8	M5 x 0.8
					50	93.5	67.6	49.8	39								
					20	98.5	72.6	54.8	44								
					25	102	76.1	58.3	47.5								
					32	106	80.1	62.3	51.5	4							
ZP R	A6	A8	A8	A8	40	83	67.1	49.3	38.5	3.5							
					50	83.5	67.6	49.8	39								
					20	88.5	72.6	54.8	44								
					25	92	76.1	58.3	47.5								
					32	96	80.1	62.3	51.5	4							
					40												
					50												

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Adapter Assembly p. 122

Dimensions Per Vacuum Inlet

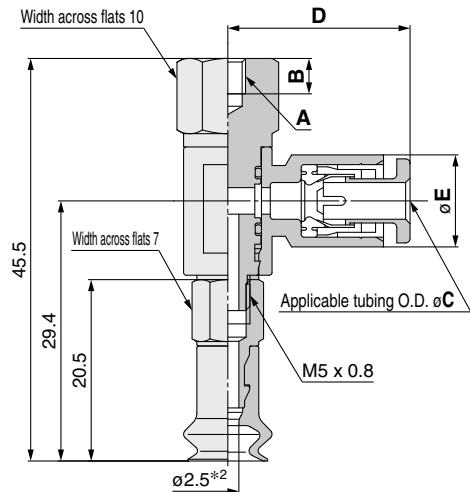
Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Connection thread	N	P	Q	Fitting part min. hole size	
						10	13	16	20	25
ZP R	B	A5	A6	A8	04	4			20.6	10.4
					06	6			21.6	ø4
					04	4			23.3	ø3
					06	6			24.3	ø4.5
					08	8			26.2	ø6
					06	6			24.3	ø4.5
					08	8			26.2	ø6

*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 $\varnothing 6$ to $\varnothing 8$



ZPR [06] B [N] - [04] - [B4]

① ②

Vacuum inlet
(One-touch fitting)

③ ④
Connection thread
(Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

Model	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 06	B4 B5	M4 x 0.7	4
							M5 x 0.8	5

Dimensions Per Vacuum Inlet

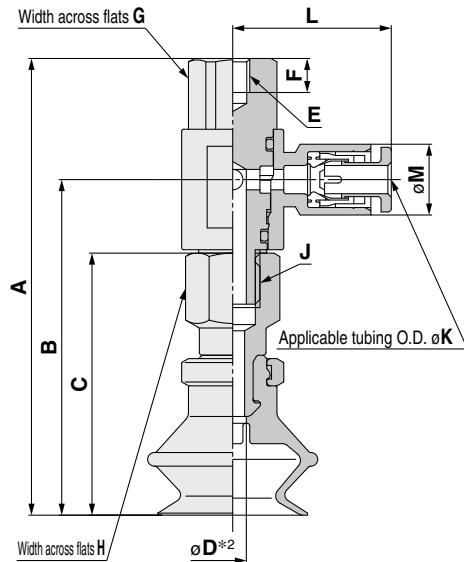
Model	Model						C	D	E	Fitting part min. hole size
	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread				
ZP	R	06 08	B	N S U F GN GS	04 06	B4 B5	4	20.6	10.4	$\varnothing 3$
							6	21.6	12.8	$\varnothing 4$

*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

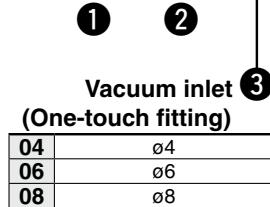
With adapter/One-touch fitting $\varnothing 10$ to $\varnothing 50$



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Adapter Assembly p. 122

ZPR 10 B N - 04 - B5



Connection thread (Female thread)

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

Model							A	B	C	D*	E	F	G	H	J
	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread									
ZP R	B	10	B5	N S U F GN GS	04	B5	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	3.5	M6 x 1	6	12	12	M8 x 1.25
		25					67.6	49.8	39						
		32					72.6	54.8	44						
		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						
		40					76.1	58.3	47.5						
		50					80.1	62.3	51.5	4	M8 x 1.25	8	12	12	M8 x 1.25
		20					67.1	49.3	38.5						
		25					67.6	49.8	39						
		32					72.6	54.8	44						
		40					76.1	58.3	47.5						
		50					80.1	62.3	51.5						

Dimensions Per Vacuum Inlet

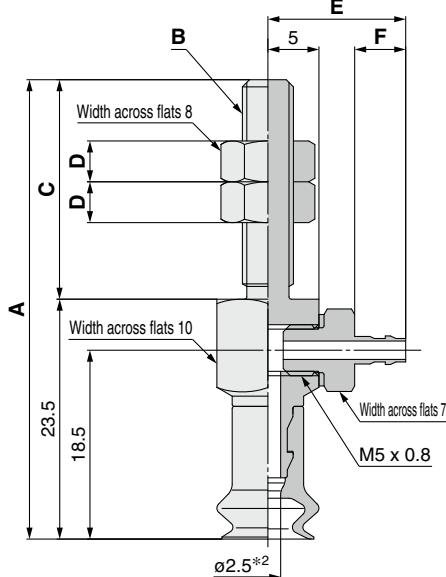
Model							K	L	M	Fitting part min. hole size
	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread				
ZP R	B	10	B	N S U F GN GS	04	B5	4	20.6	10.4	$\varnothing 3$
		13					6	21.6	12.8	$\varnothing 4$
		16					4	23.3	10.4	$\varnothing 3$
		20					6	24.3	12.8	$\varnothing 4.5$
		25					8	26.2	15.2	$\varnothing 6$
		32	B	B	B	B	6	24.3	12.8	$\varnothing 4.5$
		40					8	26.2	15.2	$\varnothing 6$
		50								

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

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

Dimensions/Models

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



Construction p. 115

Adapter Assembly p. 123

ZPY [06] B [N] - [N4] - [A5]

① ② ③ ④

Vacuum inlet
(Barb fitting)

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

Dimensions Per Vacuum Inlet

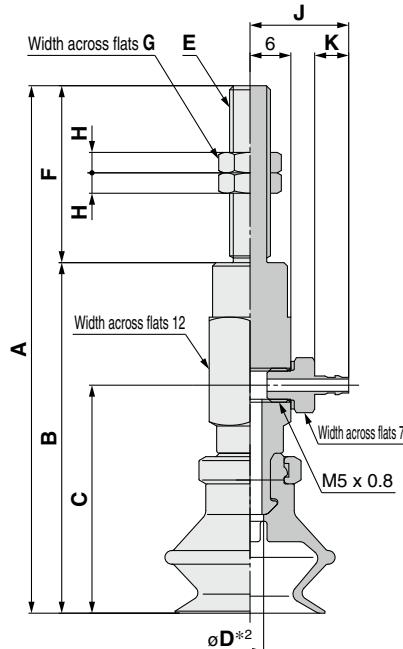
Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Connection thread	E	F	Fitting part min. hole size	
ZP Y 06 08 B				N S U F GN GS	N4 N6 U4 U6	A5 A6	13.5	5	ø1.8
							15.5	7	ø2.5

*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 $\varnothing 50$



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Adapter Assembly p. 123

ZPY [10] B [N] - [N4] - [A5]

① ② ③ ④

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

Connection thread
(Male thread)

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

Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Connection thread	A	B	C	D ^{*2}	E	F	G	H
						A5	A6	A8					
ZP Y	10	10	B	N S U F GN GS	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	2.5	M6 x 1	26	8	4
	13	13				70.5	44.5	28.5					
		16				72	46	30					
		20				77.5	51.5	33.5	3.5	M8 x 1	16	12	4
		25				78	52	34					
	32	32				83	57	39					
		40				88	62	44	6	M8 x 1	16	12	4
		50				92	66	48					
		20				67.5	51.5	33.5					
	25	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

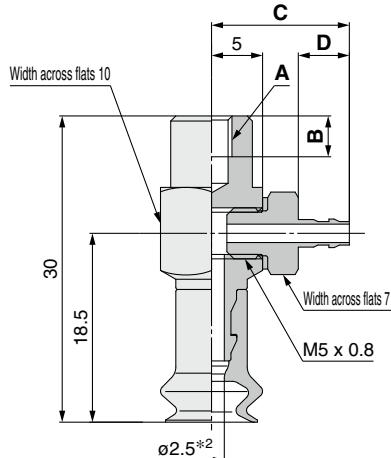
Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Connection thread	J	K	Fitting part min. hole size	
						A5	A6	A8	Deep Type
ZP Y	10	10	B	N S U F GN GS	A5	14.5	5		$\varnothing 1.8$
		13				16.5	7		$\varnothing 2.5$
		16				16.5	7		$\varnothing 2.5$
		20							
ZP Y	25	25							
		32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

Dimensions/Models

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



ZPY [06] B [N] - [N4] - [B4]

① ② ③ ④

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	06 08	B	N S U F GN GS	N4 N6 U4 U6 B4 B5	M4 x 0.7	4	5

Construction p. 115

Adapter Assembly p. 123

Dimensions Per Vacuum Inlet

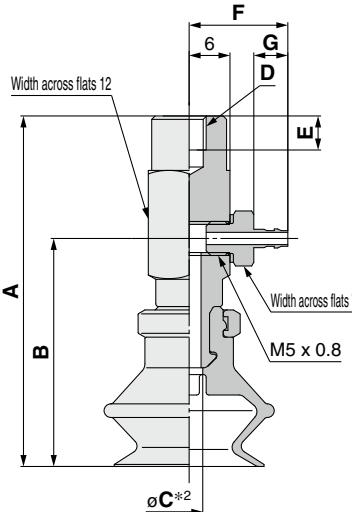
Model							C	D	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread				
ZP	Y	06 08	B	N S U F GN GS	N4 U4 B4 N6 U6 B5	13.5	5	ø1.8	ø2.5

*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 $\varnothing 50$



Construction p. 117

Adapter Assembly p. 123

ZPY 10 B N - N4 - B5

① ② ③ ④

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

Connection thread
(Female thread)

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

Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Vacuum inlet	④ Connection thread	A	B	C ^{*2}	D	E
							B5	B6	B8		
ZP Y	B	10	B	N S U F GN GS	N4	B5	42	26		M5 x 0.8	5
		13					44.5	28.5			
		16					46	30			
		20					51.5	33.5			
		25				N6	52	34	3.5	M6 x 1	6
		32					57	39			
		10					42	26			
		13					44.5	28.5	2.5		
		16				U4	46	30			
		20					51.5	33.5			
		25					52	34	3.5		
		32					57	39			
		40				U6	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

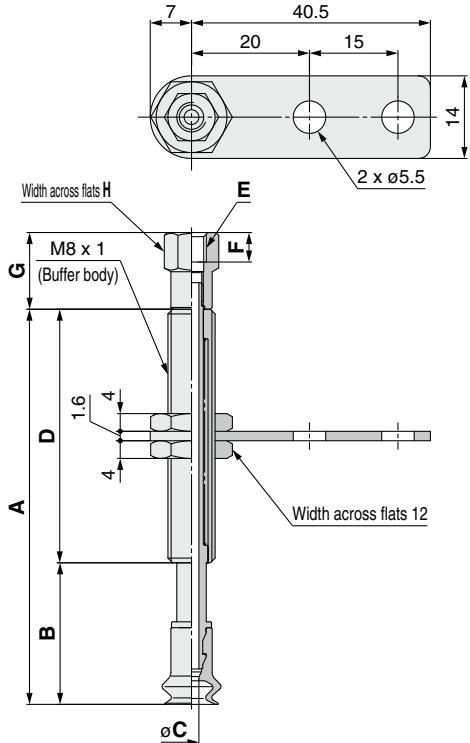
Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Connection thread	F	G	Fitting part min. hole size	
						B4	B5	B6	B8
ZP Y	B	10	B	N4	B5	14.5	5	$\varnothing 1.8$	$\varnothing 2.5$
		13				16.5	7		
		16				14.5	5	$\varnothing 1.8$	$\varnothing 2.5$
		20		N6	B6	16.5	7		
		25				14.5	5	$\varnothing 1.8$	$\varnothing 2.5$
		32		U6	B8	16.5	7		
		40				16.5	7	$\varnothing 1.8$	$\varnothing 2.5$
		50				16.5	7		

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

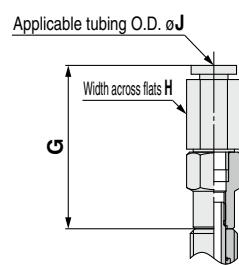
*2 Indicates the minimum hole size of the adapter or vacuum pad

Dimensions/Models

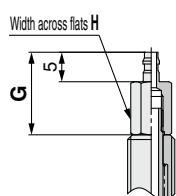
With buffer Ø6 to Ø8



Vacuum inlet: One-touch fitting



Vacuum inlet: Barb fitting



Construction p. 116

Buffer Assembly p. 124

ZPT 06 B N J 6 - B3 - A8

①

②

④

⑤

⑥

Buffer specification

J	Rotating
K	Non-rotating

Connection thread (Male thread)

A8 M8 x 1

5 Vacuum inlet

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

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

Dimensions Per Vacuum Inlet: Female Thread

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

Dimensions Per Vacuum Inlet: One-touch Fitting

ZP	T	06 08	B	Model						G	H	J	Fitting part min. hole size
				1 Vacuum inlet direction	2 Pad dia.	3 Form	4 Material	5 Buffer spec.	6 Buffer stroke				
ZP	T	06 08	B	N S U F GN GS	J K	A8	6	10	04 06	27.7	8	4	ø2.5
							10	15			10	6	

Dimensions Per Vacuum Inlet: Barb Fitting

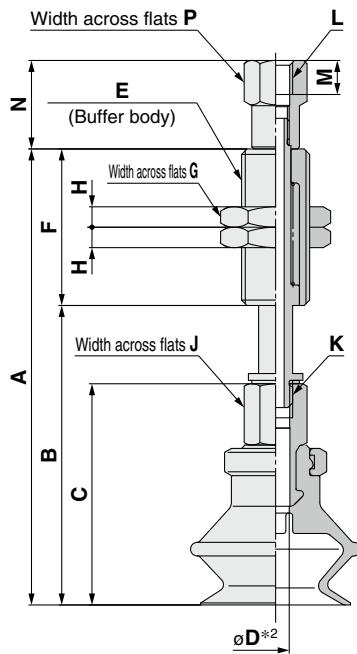
ZP	T	06 08	B	Model						G	H	J	Fitting part min. hole size
				1 Vacuum inlet direction	2 Pad dia.	3 Form	4 Material	5 Buffer spec.	6 Buffer stroke				
ZP	T	06 08	B	N S U F GN GS	J K	A8	6	10	N4 U4	14	6	ø1.8	
							10	15			10		

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

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

Dimensions/Models

With buffer ø10 to ø50



Construction p. 118
Buffer Assembly p. 124

ZPT 10 B N J 10 - B5 - A10

Buffer specification ③

J	Rotating
K	Non-rotating

⑤ Vacuum inlet (Female thread)

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

⑥ Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke	⑥ Vacuum inlet	Connection thread	A	B	C	D ^{*2}	E	F	G	H	J	K
	ZP	T	B	N S U F GN GS	J K	10 13 16 20 25 32 40 50	10 20 30 40 50	B5 A10 B5 A14	59.5 97.5 107.5 143.5 153.5 62 100 110 146 156 63.5 101.5 111.5 147.5 157.5 67 105 115 151 161 67.5 105.5 115.5 151.5 161.5 72.5 110.5 120.5 156.5 166.5 110 120 130 175 114 124 134 179	36.5 46.5 56.5 66.5 76.5 39 49 59 69 79 40.5 50.5 60.5 70.5 80.5 44 54 64 74 84 44.5 54.5 64.5 74.5 84.5 49.5 59.5 69.5 79.5 89.5 60 70 80 100 64 74 84 104	25 27.5 29 32.5 47.5 51.5	23 51 77 23 51 77 23 51 51 77 23 51 77 23 51 77 23 51 77 14 3 8	M5 x 0.8					
ZP T B N J A10																		
ZP T B N J A14																		

Dimensions Per Vacuum Inlet: Female Thread

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

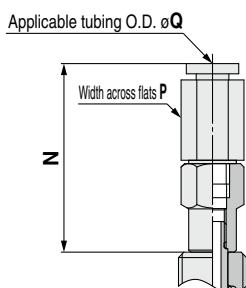
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

With buffer ø10 to ø50

Vacuum inlet: One-touch fitting



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

① ② ③ ④ ⑤ ⑥

Buffer specification ③

J	Rotating
K	Non-rotating

⑥ Connection thread (Male thread)

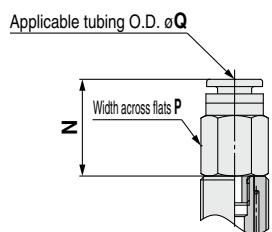
A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet

04	ø4	One-touch fitting
06	ø6	
08	ø8	
N6	For ø6 nylon tubing	
U6	For ø6 soft tubing	

Pad diameter	
ø10 to ø32	ø40, ø50 (10 st only)
KQ2H04-M5N	KQ2H06-M5N
KQ2H06-01NS	KQ2H08-01NS

Vacuum inlet: Built-in One-touch fitting Pad diameter: ø40, ø50 (Buffer stroke: 20 to 50 st)



Dimensions Per Vacuum Inlet: One-touch Fitting

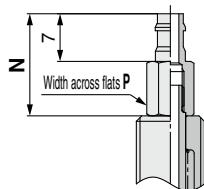
Model							N	P	Q	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Buffer spec.	⑤ Stroke	⑥ Connection thread					
ZP T	10	B	N S U F GN GS	J	10	04	A10	27.7	8	4	ø2.5
	13				20	06			10	6	
	16				30			31.8	10	6	
	20				40	06			35.9	14	
	25				50	08		A14	19.9	12	ø3
	32			K	10	06			24.9	14	
	40				20	08					
	50				30	06					
					50	08					

Dimensions Per Vacuum Inlet: Barb Fitting

Model							N	P	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Buffer spec.	⑤ Stroke	⑥ Connection thread				
ZP T	10	B	N S U F GN GS	J	10	N6	A10	15	6	ø2.5
	13				20	U6				
	16				30			19		
	20				40	U6				
	25				50			A14	12	
	32			K	10	N6				
	40				20	U6				
	50				30	N6				
					50	U6				

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

Vacuum inlet: Barb fitting

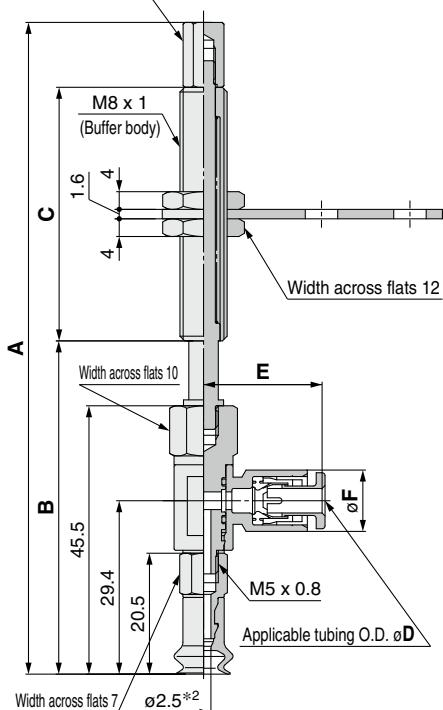
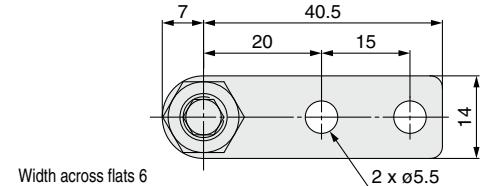


Construction p. 118

Buffer Assembly p. 124

Dimensions/Models

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



ZPR 06 B N J 6 - 04 - A8

① ② ③ ④ ⑤ ⑥

Buffer specification ③

J	Rotating
K	Non-rotating

Connection thread (Male thread)

A8 M8 x 1

⑤ Vacuum inlet (One-touch fitting)

04	Ø4
06	Ø6

Model							A	B	C		
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet					
ZP	R	B	N	J	6	04	A8	79.5	53.5		
			S	K	10			110.5	56.5		
			U		15			115.5	61.5		
			F		25			125.5	71.5		
Dimensions Per Vacuum Inlet							D	E	F		
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread	Fitting part min. hole size			
ZP	R	B	N	J	6	04	A8	4	20.6	10.4	Ø3
			S	K	10			6	21.6	12.8	Ø4
			U		15						
			F		25	06					
			GN								
			GS								

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

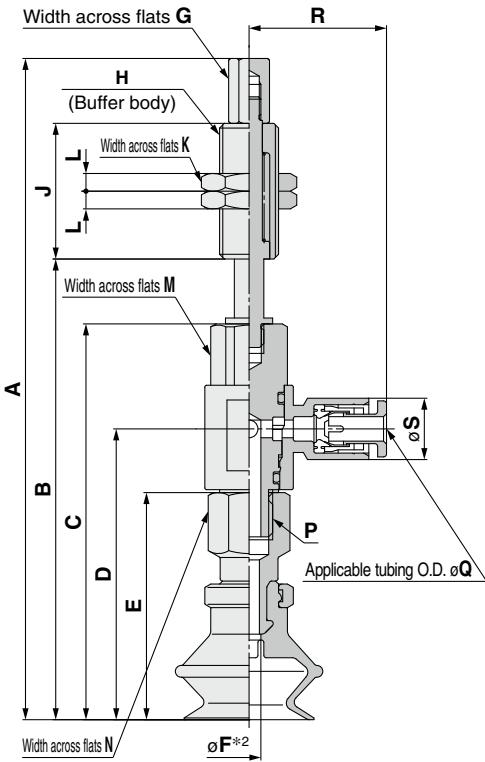
*2 Indicates the minimum hole size of the adapter or vacuum pad

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Buffer Assembly p. 125

Dimensions/Models

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



Construction p. 118
Buffer Assembly p. 125

ZPR 10 B N J 10 - 04 - A10

① ② ④ ⑤ ⑥

Buffer specification ③

J	Rotating
K	Non-rotating

⑤ Vacuum inlet
(One-touch fitting)

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

⑥ Connection thread
(Male thread)

A10	M10 x 1
A14	M14 x 1

Model														
Vacuum inlet direction	① Pad dia.	Form	② Material ^{*1}	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread	A	B	C				
ZP R	10	B	N S U F G N G S	J K	10	04	A10	95	61					
					20			133	71					
					30			143	81	50				
					40			179	91	33.9				
					50			189	101	25				
	13				10	04 06		97.5	63.5					
					20			135.5	73.5					
					30			145.5	83.5	52.5				
					40			181.5	93.5	36.4				
					50			191.5	103.5	27.5				
	16	B	N S U F G N G S	J K	10	04	A10	99	65	2.5				
					20			137	75					
					30			147	85	37.9				
					40			183	95	29				
					50			193	105					
	20				10	04 06	A10	112.1	76.1					
					20			150.1	88.1					
					30			160.1	98.1	67.1				
					40			196.1	108.1	49.3				
					50			206.1	118.1	38.5				
	25	B	N S U F G N G S	J K	10	04	A10	112.6	78.6					
					20			150.6	88.6					
					30			160.6	98.6	67.6				
					40			196.6	108.6	49.8				
					50			206.6	118.6	39				
	32	B	N S U F G N G S	J K	10	04 06 08	A10	117.6	83.6	3.5				
					20			155.6	93.6					
					30			165.6	103.6	72.6				
					40			201.6	113.6	54.8				
					50			211.6	123.6	44				
	40	B	N S U F G N G S	J K	10	06 08	A14	156.1	88.1					
					20			153.1	98.1					
					30			163.1	108.1	76.1				
					40			208.1	128.1	58.3				
					50			160.1	92.1	47.5				
	50	B	N S U F G N G S	J K	10	06 08	A14	157.1	102.1	4				
					20			167.1	112.1	10				
					30			212.1	132.1	M14 x 1				
					50					50				
										75				

Dimensions Per Vacuum Inlet

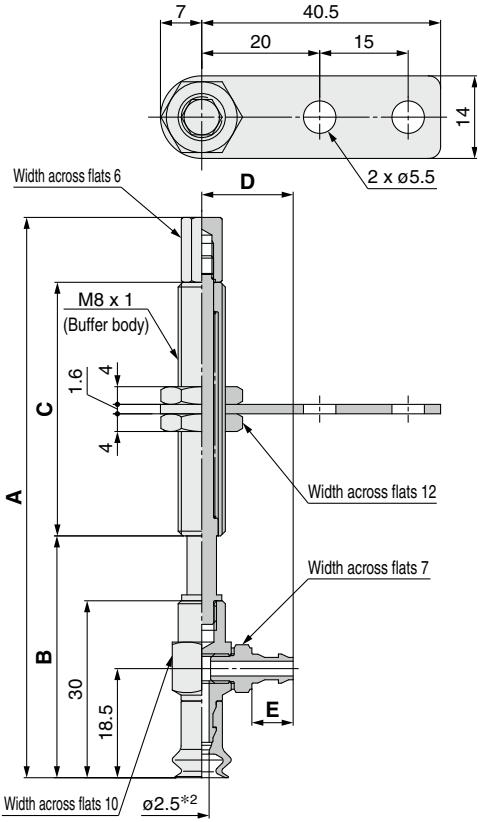
Model							Q	R	S	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② Material ^{*1}	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet					
ZP R	10	B	N S U F G N G S	J K	10	04	A10	4	20.6	10.4	ø3
					20			6	21.6	12.8	ø4
					30			4	23.3	10.4	ø3
					40			6	24.3	12.8	ø4.5
					50			8	26.2	15.2	ø6
	20	B	N S U F G N G S	J K	10	06	A14	6	24.3	12.8	ø4.5
					20			8	26.2	15.2	ø6
					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 Ø6 to Ø8



Construction p. 116

Buffer Assembly p. 126

ZPY 06 B N J 6 - N4 - A8

①	②	③	④
Buffer specification			
J Rotating			⑥ Connection thread (Male thread)
K Non-rotating			A8 M8 x 1

⑤ Vacuum inlet (Barb fitting)

N4	For Ø4 nylon tubing	M-5AN-4
N6	For Ø6 nylon tubing	M-5AN-6
U4	For Ø4 soft tubing	M-5AU-4
U6	For Ø6 soft tubing	M-5AU-6

ZP	Y	06 08	B	Model						A	B	C	
				Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke	⑥ Vacuum inlet	Connection thread		
ZP	Y	06 08	B	N S U F GN GS	J K	6 10 15 25	N4 N6 N6 U4 U6	A8	6	N4 N6 N6 U4 U6	64	38	15
									10		95	41	
									15		100	46	43
									25		110	56	

Dimensions Per Vacuum Inlet

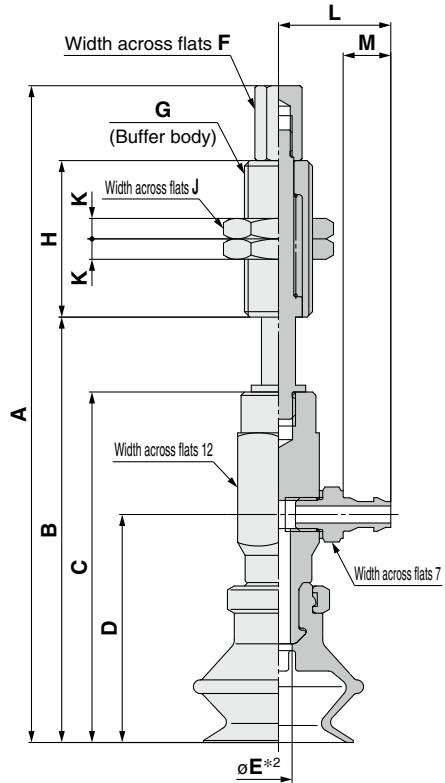
ZP	Y	06 08	B	Model						D	E	Fitting part min. hole size
				Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke	⑥ Vacuum inlet	Connection thread	
ZP	Y	06 08	B	N S U F GN GS	J K	6 10 15 25	N4 U4	A8	N4	13.5	5	Ø1.8
									U4			
									N6 U6	15.5	7	Ø2.5

*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/barb fitting Ø10 to Ø50



Construction p. 118

Buffer Assembly p. 126

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

1 **2** **4**

6 **Connection thread (Male thread)**

3 **Buffer specification**

J	Rotating
K	Non-rotating

5 **Vacuum inlet (Barb fitting)**

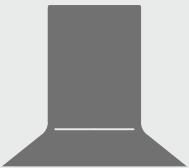
A10	M10 x 1
A14	M14 x 1

N4	For ø4 nylon tubing	M-5AN-4
N6	For ø6 nylon tubing	M-5AN-6
U4	For ø4 soft tubing	M-5AU-4
U6	For ø6 soft tubing	M-5AU-6

Dimensions Per Vacuum Inlet

*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

Pad unit	ZP	10	UT	N	
* Pad unit's sales unit: 10 pcs.					
With adapter	ZP	T	10	UT	N
					-A5-

• Thin flat type

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
6	All sizes
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
Type	Symbol	Size	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	△

With buffer

⑥ Vacuum inlet

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

Type	Symbol	Size	Pad diameter
Type	Symbol	Size	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

Type	Symbol	Size	Pad diameter
Type	Symbol	Size	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, 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 with Ribs

Deep Type

Construction

Mounting Bracket Assembly

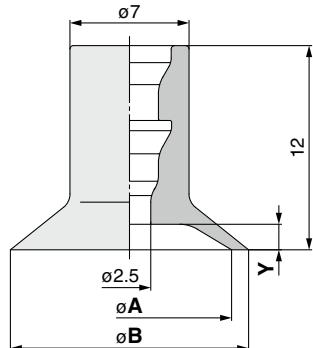
Precautions

Basic Pad Thin Flat Type **ZP Series**

Dimensions/Models

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

ZP [10] UT [N]
① ②



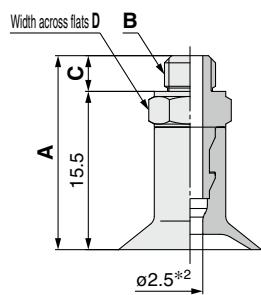
Model			A	B	Y
① Pad dia.	Form	② *1 Material			
ZP	10	N	10	11	1
	13	S	13	14	1.5
	16	U	16	17	
F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber					

Construction p. 115

Mounting Bracket Assembly From p. 121

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

ZPT [10] UT [N] - [A5]
① ② ③

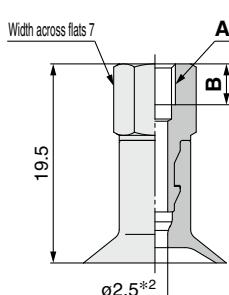


3	Vacuum inlet (Male thread)
A5	M5 x 0.8
A6	M6 x 1

Model			A	B	C	D
Vacuum inlet direction	① Pad dia.	② Form				
ZP	T	10 13 16	A5	19	M5 x 0.8	3.5
		UT		20	M6 x 1	4.5
						8
F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber						

*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

ZPT [10] UT [N] - [B4]
① ② ③



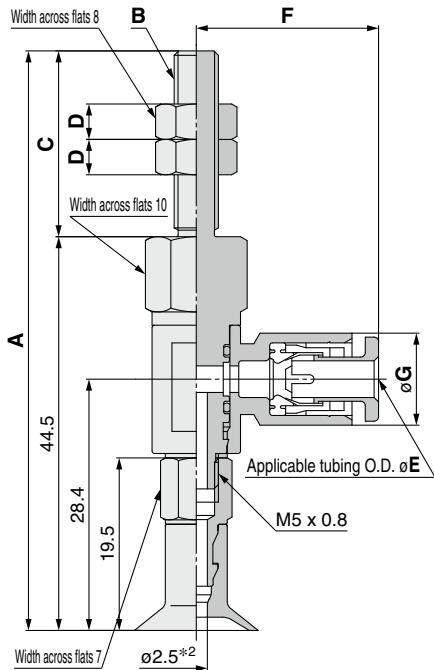
3	Vacuum inlet (Female thread)
B4	M4 x 0.7
B5	M5 x 0.8

Model			A	B
Vacuum inlet direction	① Pad dia.	② Form		
ZP	T	10 13 16	B4	M4 x 0.7
		UT		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	$\varnothing 6$

Connection thread
(Male thread)

A5	M5 x 0.8
A6	M6 x 1

Model	Model				A	B	C	D
	Vacuum inlet direction	① Pad dia.	Form	② Material ^{*1}	③ Vacuum inlet	④ Connection thread		
ZP	R	10	UT	N	04	A5	65.5	M5 x 0.8
		13		S	06	A6	70.5	M6 x 1

Dimensions Per Vacuum Inlet

Model	Model				E	F	G	Fitting part min. hole size
	Vacuum inlet direction	① Pad dia.	Form	② Material ^{*1}	③ Vacuum inlet	④ Connection thread		
ZP	R	10	UT	N	04	A5	4	20.6
		13		S	06	A6	6	21.6

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

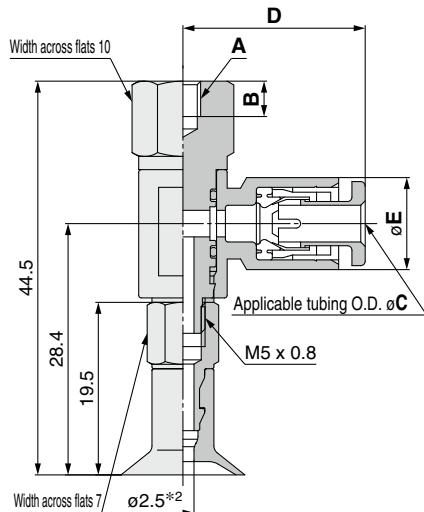
*2 Indicates the minimum hole size of the adapter or vacuum pad

Construction p. 115

Adapter Assembly p. 122

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** **3** **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	Vacuum inlet direction	1 Pad dia.	Form	2 Material ^{*1}	3 Vacuum inlet	4 Connection thread	A	B
							M4 x 0.7	4
ZP	R	10 13 16	UT	N S U F GN GS	04 06	B4 B5	M4 x 0.7	4
							M5 x 0.8	5

Dimensions Per Vacuum Inlet

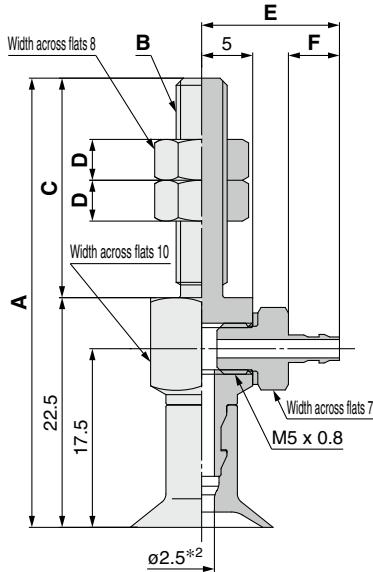
Model	Vacuum inlet direction	1 Pad dia.	Form	2 Material ^{*1}	3 Vacuum inlet	4 Connection thread	C	D	E	Fitting part min. hole size
							N S U F GN GS	04 06	B4 B5	4
ZP	R	10 13 16	UT	N S U F GN GS	04 06	B4 B5	4	20.6	10.4	$\varnothing 3$
							6	21.6	12.8	$\varnothing 4$

*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 ④
Vacuum inlet (Barb fitting)

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

ZP	Y	10 13 16	UT	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 A6	44	M5 x 0.8	21.5	4	
							49.5	M6 x 1	27	4	

Dimensions Per Vacuum Inlet

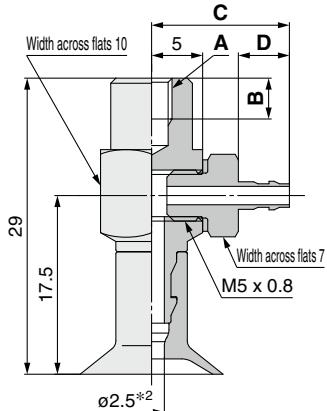
ZP	Y	10 13 16	UT	Model				E	F	Fitting part min. hole size
				Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread	
ZP	Y	10 13 16	UT	N S U F GN GS	N4 U4 N6 U6	A5 A6	13.5	5	$\varnothing 1.8$	
							15.5	7	$\varnothing 2.5$	

*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 $\varnothing 16$



ZPY [10] UT [N] - [N4] - [B4]

①

②

Vacuum inlet
(Barb fitting)

③

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	Model				
			Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet
ZP Y 10 13 16 UT	N S U F GN GS	N4 N6 U4 U6 B4 B5	M4 x 0.7	4			
			M5 x 0.8				5

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Adapter Assembly p. 123

Dimensions Per Vacuum Inlet

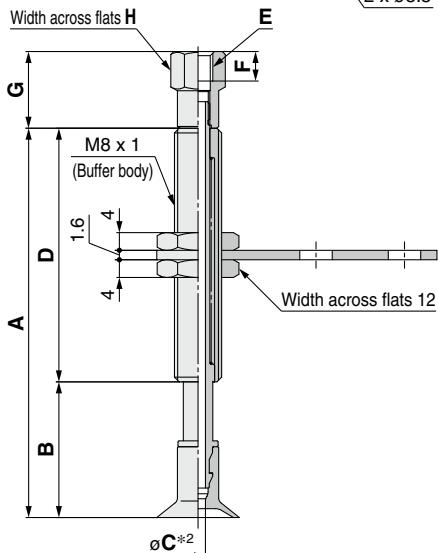
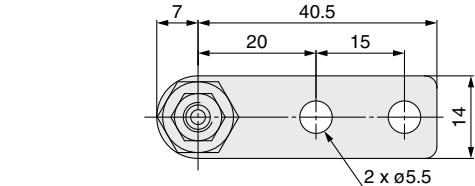
Model	C	D	Fitting part min. hole size	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread			
				N	S	U	F	GN	GS	N4	U4	B4
ZP Y 10 13 16 UT	13.5	5	$\varnothing 1.8$									
	15.5	7	$\varnothing 2.5$									

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

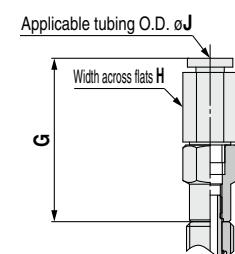
*2 Indicates the minimum hole size of the adapter or vacuum pad

Dimensions/Models

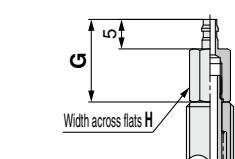
With buffer Ø10 to Ø16



Vacuum inlet: One-touch fitting



Vacuum inlet: Barb fitting



Construction p. 116

Buffer Assembly p. 124

ZPT 10 UT N J 6 - B3 - A8

① ② ④ ③ ⑥

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	Ø4	One-touch fitting	KQ2H04-M5N
06	Ø6		KQ2H06-M5N
N4	For Ø4 nylon tubing	Barb fitting	
U4	For Ø4 soft tubing		

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

Dimensions Per Vacuum Inlet: Female Thread

ZP	T	10 13 16	UT	Model						E	F	G	H
				Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Buffer spec.	⑤ Buffer stroke				
ZP	T	10 13 16	UT	N S U F G N G S	J K	A8	6	B3	M3 x 0.5 M5 x 0.8	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

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

Dimensions Per Vacuum Inlet: Barb Fitting

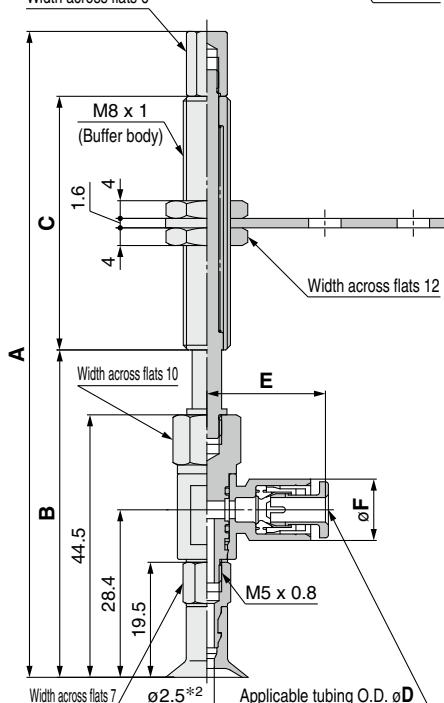
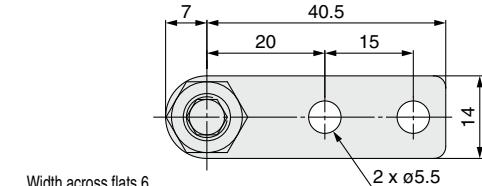
ZP	T	10 13 16	UT	Model						G	H	Fitting part min. hole size
				Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Buffer spec.	⑤ Buffer stroke			
ZP	T	10 13 16	UT	N S U F G N G S	J K	A8	6	10 15 25	N4 U4	14	6	ø1.8
							10 15 25	U4				

*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

Dimensions/Models

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



ZPR 10 UT N J 6 - 04 - A8

① ② ③ ④ ⑤ ⑥

Buffer specification

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			
ZP	R	10 13 16	UT	N S U F GN GS	J K	6 10 15 25	04 06	A8	78.5
									52.5
									15
									43
							109.5	55.5	
							114.5	60.5	
							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						
ZP	R	10 13 16	UT	N S U F GN GS	J K	6 10 15 25	04	A8	4	20.6	10.4	Ø3
									6	21.6	12.8	Ø4

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

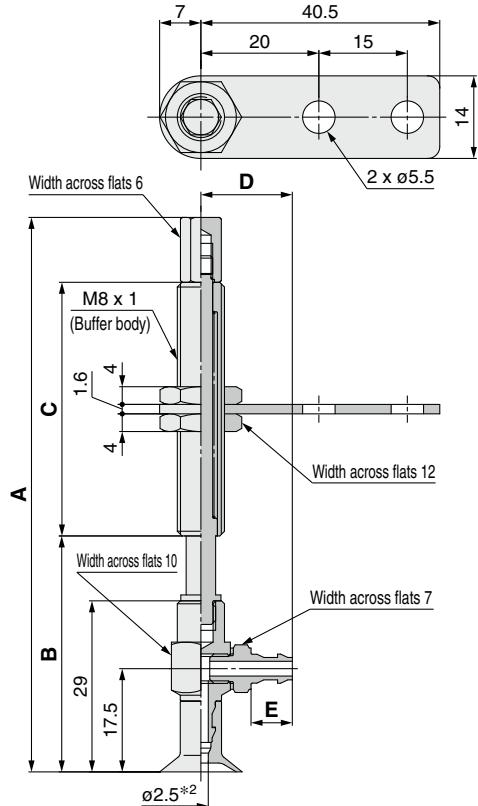
*2 Indicates the minimum hole size of the adapter or vacuum pad

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

① ② ④ ③

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

ZP	Y	10 13 16	UT	Model						A	B	C	
				Vacuum inlet direction	Pad dia.	Form	Material	Buffer spec.	Buffer stroke				
ZP	Y	10 13 16	UT	N S U F GN GS	J K	6 10 15 25	N4 N6 U4 U6	A8	6	N4 N6 U4 U6	63	37	15
									10		94	40	
									15		99	45	43
									25		109	55	

Dimensions Per Vacuum Inlet

ZP	Y	10 13 16	UT	Model						D	E	Fitting part min. hole size
				Vacuum inlet direction	Pad dia.	Form	Material	Buffer spec.	Buffer stroke			
ZP	Y	10 13 16	UT	N S U F GN GS	J K	6 10 15 25	N4 U4	A8	N4 U4	13.5	5	$\varnothing 1.8$
									N6 U6		15.5	7

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

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



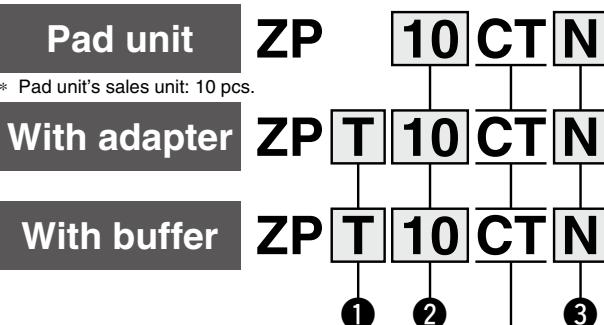
Basic Pad

Thin Flat Type with Ribs

ZP Series



How to Order



Dimensions/ Models	Construction	Mounting Bracket Assembly
p. 96	p. 115	From p. 121
From p. 96	p. 115	From p. 121
From p. 101	p. 116	From p. 124

① Vacuum inlet direction

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

② Pad diameter

10	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
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	△

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

○: 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	●△

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	○●△

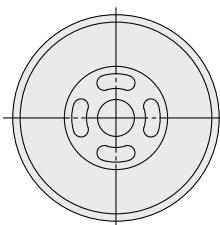
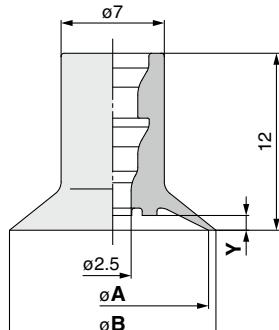
It is not necessary to select a connection thread for ○:ZPT/Vertical.

Use the vacuum inlet.

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

Dimensions/Models

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



ZP [10] CT [N]
① ②

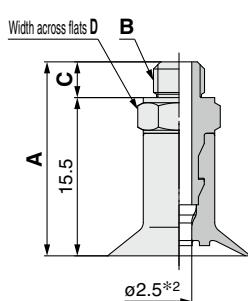
Model			A	B	Y
① Pad dia.	Form	② *1 Material			
ZP	CT	N	10	11	0.8
		S	13	14	1
		U	16	17	

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

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Mounting Bracket Assembly From p. 121

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



Construction p. 115

Adapter Assembly p. 121

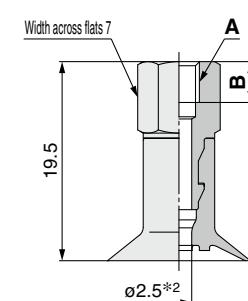
ZPT [10] CT [N] - [A5]
① ②

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.	② Form				
ZP	T	10 13 16	CT	N S U F GN GS	A5	19
						7
				A6	20	M5 x 0.8
						4.5
					8	3.5
						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



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

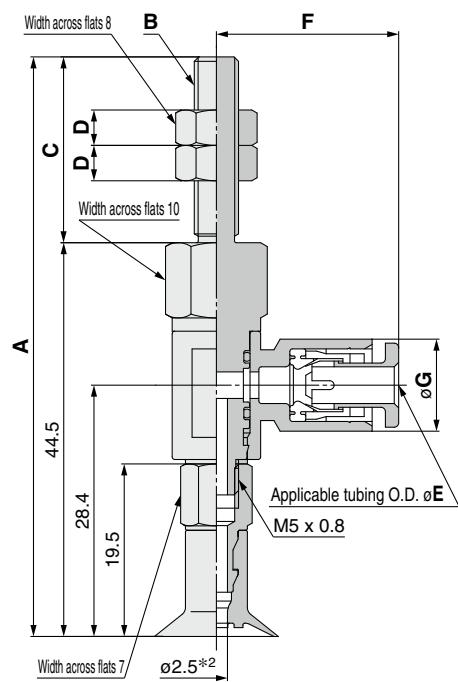
Model			A	B	
Vacuum inlet direction	① Pad dia.	② Form			
ZP	T	10 13 16	CT	N S U F GN GS	M4 x 0.7
					4
				B5	M5 x 0.8
					5

*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 $\varnothing 16$



Construction p. 115

Adapter Assembly p. 122

ZPR 10 CT N - 04 - A5

1	2	3	4
Vacuum inlet (One-touch fitting)			
04 $\varnothing 4$ 06 $\varnothing 6$			
A5	M5 x 0.8		
A6	M6 x 1		

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

Dimensions Per Vacuum Inlet

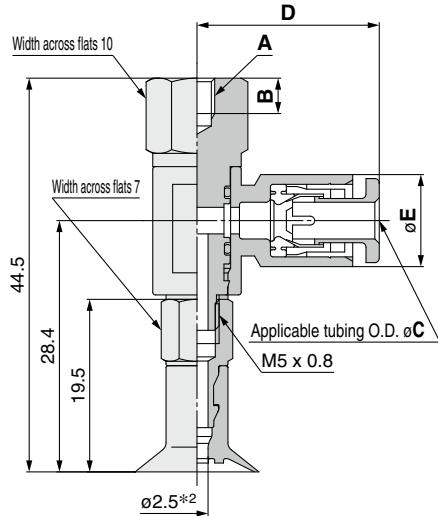
Model							E	F	G	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	2 Form	3 ^{*1} Material	4 Vacuum inlet	Connection thread					
ZP	R	10 13 16	CT	N S U F GN GS	04	A5	4	20.6	10.4	ø3
							6	21.6	12.8	ø4

*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 $\varnothing 16$



Construction p. 115

Adapter Assembly p. 122

ZPR 10 CT N - 04 - B4

① ② ③ 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

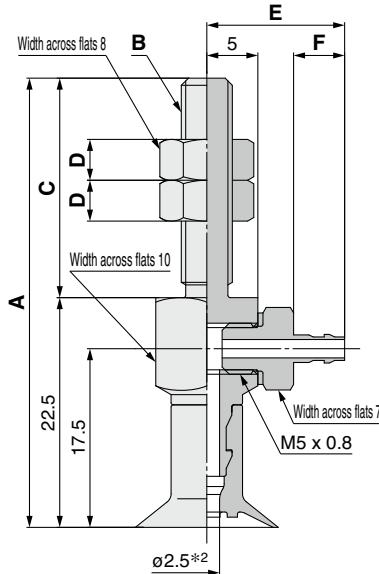
Model	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread	A	B
							N	S
ZP	R	10	CT	N	04	B4	M4 x 0.7	4
		13		S	06	B5	M5 x 0.8	5

Dimensions Per Vacuum Inlet

Model	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread	C	D	E	Fitting part min. hole size
							N	S	U	F
ZP	R	10	CT	N	04	B4	4	20.6	10.4	$\varnothing 3$
		13		S	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

Dimensions/Models**With adapter/barb fitting ø10 to ø16****Construction** p. 115**Adapter Assembly** p. 123**ZPY [10] CT [N] - [N4] - [A5]**

① **②**
③ **④**

**Vacuum inlet
(Barb fitting)****Connection thread
(Male thread)**

A5	M5 x 0.8
A6	M6 x 1

N4	For ø4 nylon tubing	M-5AN-4
N6	For ø6 nylon tubing	M-5AN-6
U4	For ø4 soft tubing	M-5AU-4
U6	For ø6 soft tubing	M-5AU-6

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

Dimensions Per Vacuum Inlet

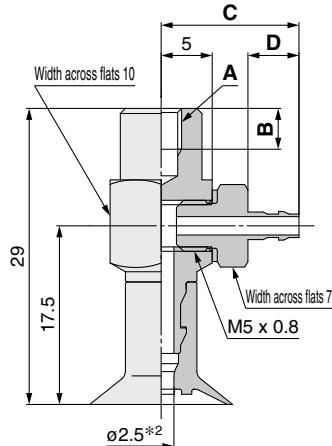
	Vacuum inlet direction	Model				E	F	Fitting part min. hole size
		① Pad dia.	② Form	③ ^{*1} Material	④ Vacuum inlet inlet Connection thread			
ZP	Y	10 13 16	CT	N S U F GN GS	N4 U4 A5 N6 U6 A6	13.5	5	ø1.8
						15.5	7	ø2.5

*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 $\varnothing 16$



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

Construction p. 115

Adapter Assembly p. 123

Dimensions Per Vacuum Inlet

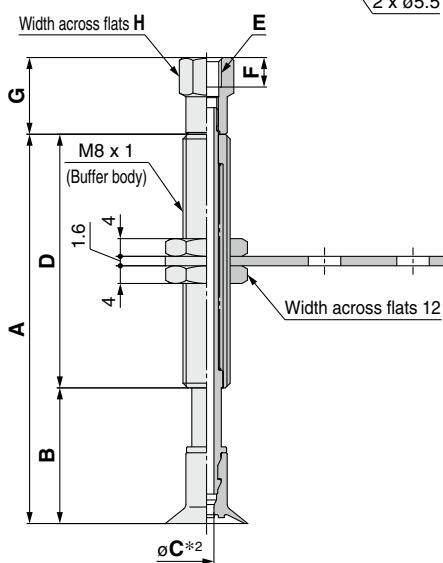
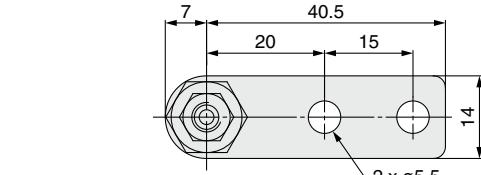
Model	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread	C	D	Fitting part min. hole size
							N	S	
ZP	Y	10 13 16	CT	N S U F GN GS	N4 U4	B4	13.5	5	$\varnothing 1.8$
							15.5	7	$\varnothing 2.5$

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

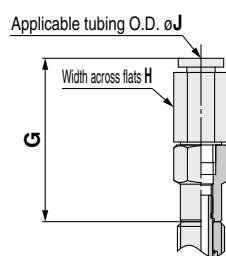
*2 Indicates the minimum hole size of the adapter or vacuum pad

Dimensions/Models

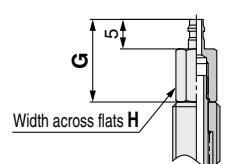
With buffer ø10 to ø16



Vacuum inlet: One-touch fitting



Vacuum inlet: Barb fitting



Construction p. 116

Buffer Assembly p. 124

ZPT [10] CT [N] [J] [6] - [B3] - [A8]

①

②

④

⑥

Buffer specification

J	Rotating
K	Non-rotating

Connection thread (Male thread)

A8 M8 x 1

5 Vacuum inlet

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

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

Dimensions Per Vacuum Inlet: Female Thread

ZP	T	10 13 16	CT	Model						E	F	G	H	
				1 Vacuum inlet direction	2 Pad dia.	3 Form	4 Material ^{*1}	5 Buffer spec.	6 Stroke					
ZP	T	10 13 16	CT	N S U F GN GS	J K	A8	6 10 15 25	B3 B5	M3 x 0.5 M5 x 0.8	M3 x 0.5	3	11	6	ø2.5
										M5 x 0.8	5	13	8	

Dimensions Per Vacuum Inlet: One-touch Fitting

ZP	T	10 13 16	CT	Model						G	H	J	Fitting part min. hole size
				1 Vacuum inlet direction	2 Pad dia.	3 Form	4 Material ^{*1}	5 Buffer spec.	6 Stroke				
ZP	T	10 13 16	CT	N S U F GN GS	J K	A8	6 10 15 25	04 06	B3 B5	27.7	8	4	ø2.5
											10	6	

Dimensions Per Vacuum Inlet: Barb Fitting

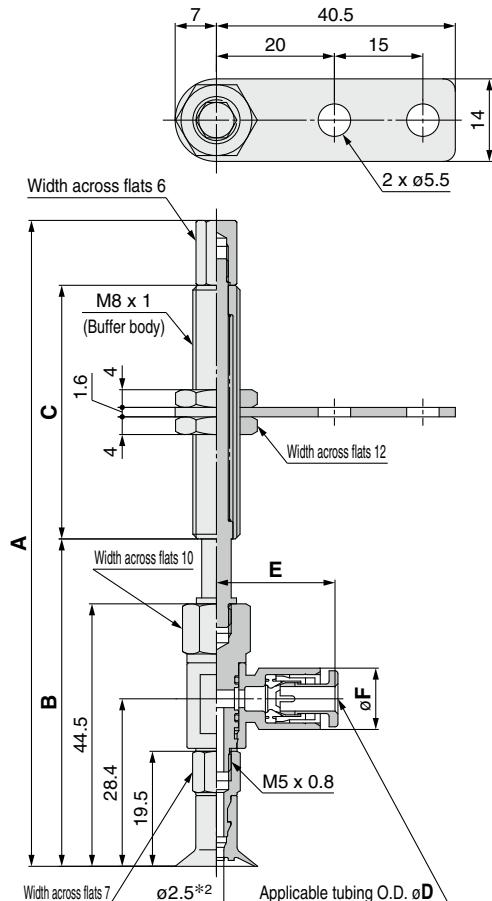
ZP	T	10 13 16	CT	Model						G	H	Fitting part min. hole size	
				1 Vacuum inlet direction	2 Pad dia.	3 Form	4 Material ^{*1}	5 Buffer spec.	6 Stroke				
ZP	T	10 13 16	CT	N S U F GN GS	J K	A8	6 10 15 25	N4 U4	A8	14	6	ø1.8	

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



ZPR 10 CT N J 6 - 04 - A8

① ② ③ ④ ⑤ ⑥

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					
ZP	R	10 13 16	CT	N S U F GN GS	J K	6 10 15 25	04 06	A8	78.5	52.5	15
									109.5	55.5	43
									114.5	60.5	
									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						
ZP	R	10 13 16	CT	N S U F GN GS	J K	6 10 15 25	04	A8	4	20.6	10.4	$\varnothing 3$
									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

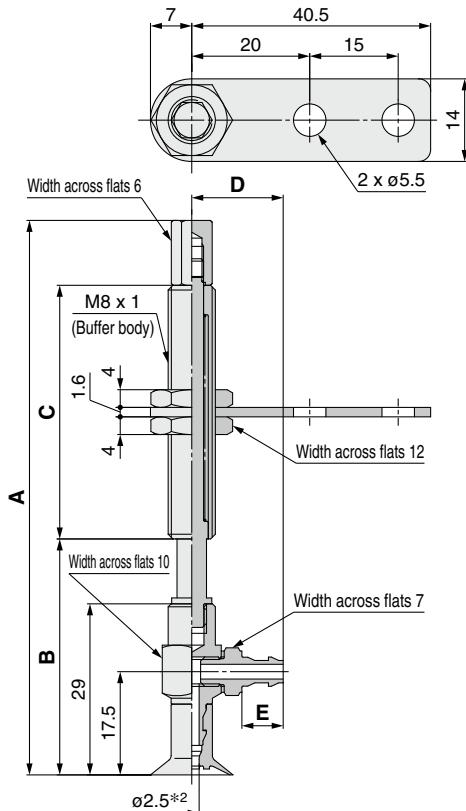
*2 Indicates the minimum hole size of the adapter or vacuum pad

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 CT N J 6 - N4 - A8

① ② ③ ④ ⑤ ⑥

Buffer specification

J	Rotating
K	Non-rotating

**Connection thread
(Male thread)**

A8 M8 x 1

**5 Vacuum inlet
(Barb fitting)**

N4	For Ø4 nylon tubing	M-5AN-4
N6	For Ø6 nylon tubing	M-5AN-6
U4	For Ø4 soft tubing	M-5AU-4
U6	For Ø6 soft tubing	M-5AU-6

ZP	Y	10 13 16	CT	Model						A	B	C	
				Vacuum inlet direction	Pad dia. ①	Form ② ^{*1}	Material ③	Buffer spec. ④	Buffer stroke ⑤				
ZP	Y	10 13 16	CT		N	J	S	6	N4 N6 U4 U6	A8	63	37	15
					S		U				94	40	43
					U		F				99	45	
					F		GN				109	55	
ZP	Y	10 13 16	CT		GN		GS						

Dimensions Per Vacuum Inlet

ZP	Y	10 13 16	CT	Model						D	E	Fitting part min. hole size	
				Vacuum inlet direction	Pad dia. ①	Form ② ^{*1}	Material ③	Buffer spec. ④	Buffer stroke ⑤				
ZP	Y	10 13 16	CT		N	J	S	6	N4 U4	A8	13.5	5	Ø1.8
					S		U				15.5	7	Ø2.5

*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

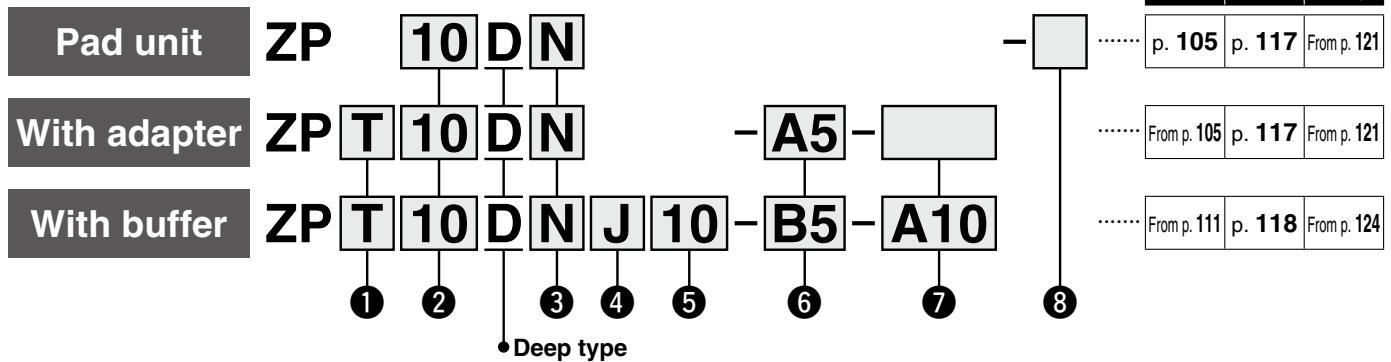
Deep Type

ZP Series

Model Selection



How to Order



① Vacuum inlet direction

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

② Pad diameter

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

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

④ Buffer specification

J	Rotating
K	Non-rotating

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

With adapter

⑥ Vacuum inlet

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

Type	Symbol	Size	Pad diameter [mm]		
			ø10, ø16	ø25	ø40
Female thread	Nil	M3 x 0.5	○ ○ Connection thread: A5/A6	○ ○ Connection thread: A6	○ ○ Connection thread: A6
		M5 x 0.8	—	○ ○ Connection thread: A8	○ ○ Connection thread: A8
	B5	M5 x 0.8	○	○	—
	B6	M6 x 1	○	○	○
One-touch fitting	B8	M8 x 1.25	—	○	○
	B01	Rc1/8	○	○	○
	N01	NPT1/8	○	○	○
	T01	NPTF1/8	○	○	○
Barb fitting	04	ø4	●	●	—
	06	ø6	●	●	●
	08	ø8	—	●	●
	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	—	—	○
One-touch fitting	T01	NPTF1/8	—	—	○
	04	ø4	○●	○●	—
	06	ø6	○●	○●	○●
Barb fitting	08	ø8	—	●	○●
	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

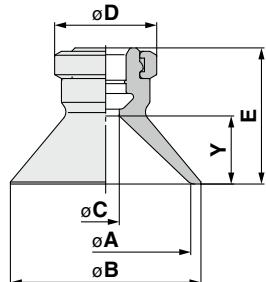
* The pad, lock ring, mounting nut, fitting, and buffer plate are shipped together but do not come assembled.

Precautions

Dimensions/Models

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

ZP [10 D N]
① ②



Model			A	B	C	D	E	Y
	① Pad dia.	② Form *1 Material						
ZP	10	D	N	10	12	4	15	6
	16		S	16	18		16	7
	25		U	25	28		20	10
	40		F	40	43	7	18	29
GN GS								17

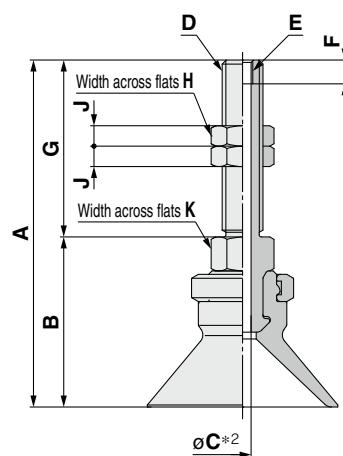
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

Construction p. 117

Mounting Bracket Assembly From p. 121

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

ZPT [10 D N - A5]
① ② ③



③ Connection thread (Male thread)	
A5	M5 x 0.8 (M3 x 0.5 With female thread)
A6	M6 x 1 (M3 x 0.5 With female thread)
A8	M8 x 1 (M5 x 0.8 With female thread)

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

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

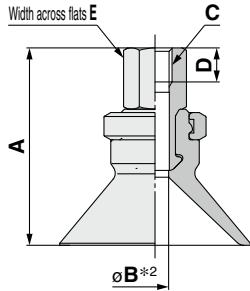
*2 Indicates the minimum hole size of the adapter or vacuum pad

Recommended Gasket Part Nos.

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

Dimensions/Models

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



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*	C	D	E		
Vacuum inlet direction	① Pad dia.	② Form	③ Material							
ZP T	10	D	B5	24	2.5	M5 x 0.8	5	8		
	16			25						
	25			29	4					
	10		B6	24	2.5		6	8		
	16			25	M6 x 1					
	25			29					4	
	40			42.5					4.9	
	25	B8	GN	35	3.5	M8 x 1.25	8	12		
	40			42.5	6.6					
	10		GS	30	2.5	Rc1/8 NPT1/8 NPTF1/8	—	12		
	16			31						
	25			35	3.5					
	40			42.5	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
with Ribs

Flat Type
with Ball Joint

Flat Type
with Bellows

Thin Flat Type
with Ribs

Thin Flat Type
with Ball Joint

Thin Flat Type
with Bellows

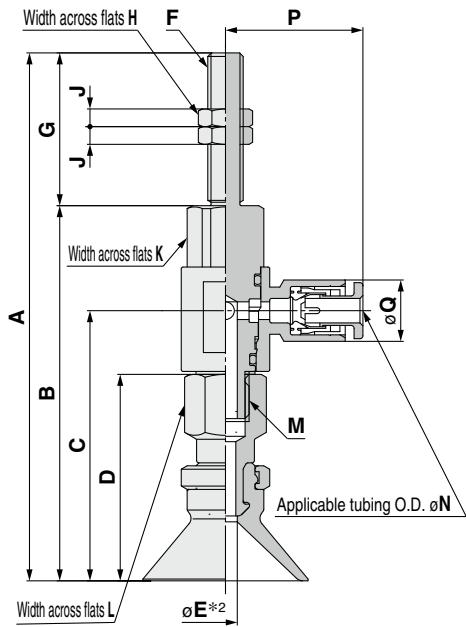
Mounting
Bracket
Assembly

Construction

Precautions

Dimensions/Models

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



Construction p. 117
Adapter Assembly p. 122

ZPR 10 D N - 04 - A5

1	2	3	4
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

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	M
							A5	70	49	32.9	24	2.5	M5 x 0.8	21	8	4	10	8	M5 x 0.8
ZP R		10	D	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	
		16					75	49	32.9	24	2.5	M6 x 1	26	8	4	10	8	M5 x 0.8	
		10					76	50	33.9	25	3.5								
		16					89.5	63.6	45.8	35	3.5								
		25				A6	97	71.1	53.3	42.5	4								
		40					79.5	63.6	45.8	35	3.5	M8 x 1	16	12	4	12	12	M8 x 1.25	
		25					87	71.1	53.3	42.5	4								
		40																	

Dimensions Per Vacuum Inlet

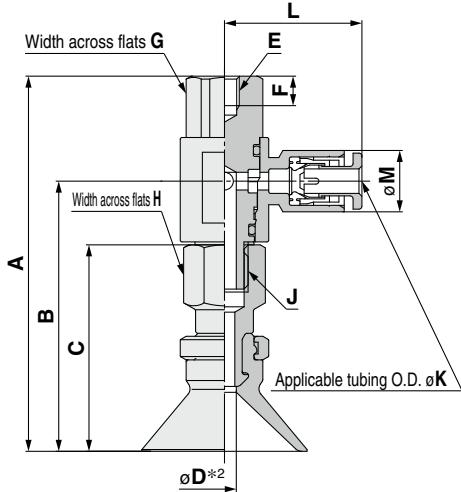
Model	Vacuum inlet direction	1 Pad dia.	Form	2 ^{*1} Material	3 Vacuum inlet	4 Connection thread	N		P		Q		Fitting part min. hole size	
							A5	A6	4	6	4	6	8	$\varnothing 3$
ZP R		10	D	N S U F GN GS	04	A5	4		20.6		10.4		$\varnothing 3$	
		16					6		21.6		12.8		$\varnothing 4$	
		25			A6	A6	4		23.3		10.4		$\varnothing 3$	
		40					6		24.3		12.8		$\varnothing 4.5$	
		25					8		26.2		15.2		$\varnothing 6$	
		40					6		24.3		12.8		$\varnothing 4.5$	
		25					8		26.2		15.2		$\varnothing 6$	
		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

Dimensions/Models

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



ZPR 10 D N - 04 - B5

1	2	3	4
Vacuum inlet (One-touch fitting)			
04 $\varnothing 4$			
06	$\varnothing 6$		
08	$\varnothing 8$		

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

Model	A	B	C	D	E	F	G	H	J	ZP R				
										Vacuum inlet direction	① Pad dia.	Form	② Material	
ZP R	10									B5	49	32.9	24	2.5
	16										50	33.9	25	
	25										63.6	45.8	35	
	10									B6	49	32.9	24	2.5
	16										50	33.9	25	
	25										63.6	45.8	35	
	40									B8	71.1	53.3	42.5	4
	25										63.6	45.8	35	3.5
	40										71.1	53.3	42.5	4
	40													M8 x 1.25

Construction p. 117

Adapter Assembly p. 122

Dimensions Per Vacuum Inlet

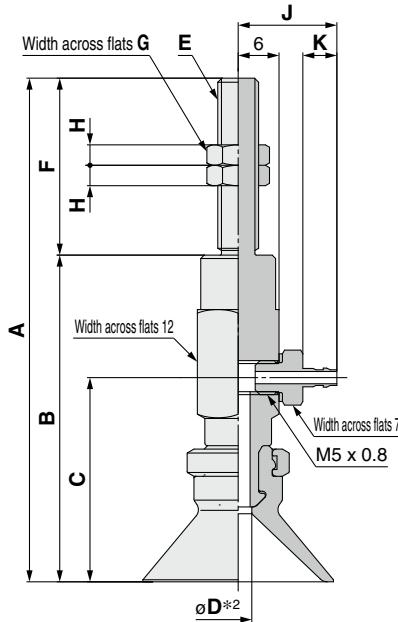
Model	K	L	M	Fitting part min. hole size	ZP R			
					Vacuum inlet direction	① Pad dia.	Form	② Material
ZP R	04 B5	4	20.6	$\varnothing 3$	10			N
	06 B6	6	21.6	$\varnothing 4$				S
	04 B5	4	23.3	$\varnothing 3$	16			U
	06 B6	6	24.3	$\varnothing 4.5$				F
	08 B8	8	26.2	$\varnothing 6$	25			GN
	06 B6	6	24.3	$\varnothing 4.5$				GS
	08 B8	8	26.2	$\varnothing 6$				

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



Construction p. 117

Adapter Assembly p. 123

ZPY 10 D N - N4 - A5

① ② ③ ④

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

ZP	Y	Model				A	B	C	D^{*2}	E	F	G	H
		Vacuum inlet direction	① Pad dia.	② Form	③ Material								
D	A5	10				62	41	25	2.5	M5 x 0.8	21	8	4
		16	N			63	42	26					
		10	S	N4		67	41	25	2.5				
		16	U	N6		68	42	26					
		25	F	U4		74	48	30	3.5				
		40	GN	U6		83	57	39	6				
		25	GS			64	48	30	3.5				
		40				73	57	39	6	M8 x 1	16	12	4
A6				A8									

Dimensions Per Vacuum Inlet

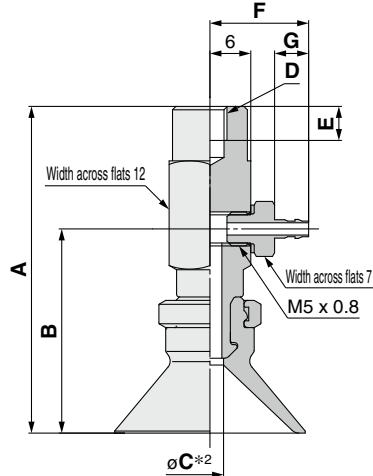
ZP	Y	Model				J	K	Fitting part min. hole size
		Vacuum inlet direction	① Pad dia.	② Form	③ Material			
D	A5	10				14.5	5	$\varnothing 1.8$
		16	N					
		25	S	N4				
A6	A6		U	U4		16.5	7	$\varnothing 2.5$
			F	N6				
			GN	U6				
GS	A8		GS	N6		16.5	7	$\varnothing 2.5$
				U6				

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

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

Dimensions/Models

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



Construction p. 117

Adapter Assembly p. 123

ZPY 10 D N - N4 - B5

① ② ③ ④

Vacuum inlet
(Barb fitting)

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

ZP	Y	Model				A	B	C*2	D	E	
		Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Connection thread					
ZP	Y	D	10	D	N S U F GN GS	B5	41	25	2.5	M5 x 0.8	5
			16				42	26			
			25				48	30			
			10			B6	41	25	2.5	M6 x 1	6
			16				42	26			
			25				48	30			
			40				57	39			
			25			B8	48	30	3.5	M8 x 1.25	8
			40				57	39			

Dimensions Per Vacuum Inlet

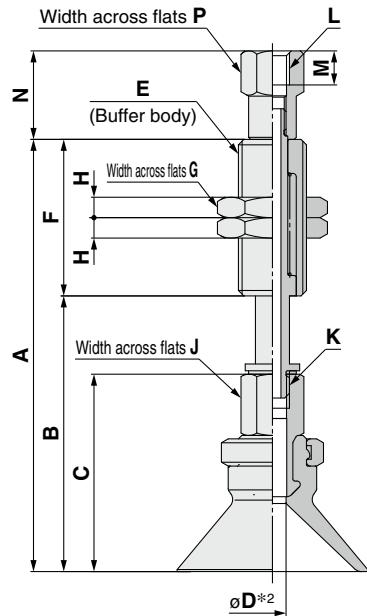
ZP	Y	Model				F	G	Fitting part min. hole size		
		Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}					
ZP	Y	D	10	D	N S U F GN GS	N4 U4	B4 B5	14.5	5	$\varnothing 1.8$
			16			N6 U6		16.5	7	$\varnothing 2.5$
		25	25			N4 U4	B5 B6	14.5	5	$\varnothing 1.8$
			40			N6 U6	B8	16.5	7	$\varnothing 2.5$
		D	N6 U6			B6 B8		16.5	7	$\varnothing 2.5$
			N6 U6							

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

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

Dimensions/Models

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



Construction p. 118

Buffer Assembly p. 124

ZPT 10 D 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.	② Form	③ Material ^{*1}	④ Buffer spec.	⑤ Buffer stroke	⑥ Connection thread										
ZP	T	10	NSUFGNGS	J	10	A10	58.5	35.5						23		
					20		96.5	45.5						51		
					30		106.5	55.5	24					77		
					40		142.5	65.5						23		
	D	16	NSUFGNGS	K	50		152.5	75.5						23		
					10		59.5	36.5						51		
					20		97.5	46.5						77		
					30		107.5	56.5	25					23		
	A10	40	N6U6	A10	40		143.5	66.5						51		
					50		153.5	76.5						77		
					10		63.5	40.5						23		
					20		101.5	50.5	29					51		
	A14	25	NSUFGNGS	J	30		111.5	60.5						77		
					40		147.5	70.5						23		
					50		157.5	80.5						51		
					10		105	55						77		
	T	40	NSUFGNGS	K	20		115	65						23		
					30		125	75						51		
					40		170	95						77		
					50		42.5	4	M14 x 1					19	4	12
M8 x 1.25																

Dimensions Per Vacuum Inlet: Female Thread

Model							L	M	N	P	
Vacuum inlet direction	① Pad dia.	② Form	③ Material ^{*1}	④ Buffer spec.	⑤ Buffer stroke	⑥ Connection thread					
ZP	T	10	NSUFGNGS	J	10	A10	M5 x 0.8	5	13	8	
					20			4.5	15		
					30			5	9	10	
					40						
	D	16	NSUFGNGS	K	50		Rc1/8	16.5			
					10		NPT1/8				
					20		NPTF1/8				
					30						
	A10	25	NSUFGNGS	J	50						
					10						
					20						
					30						
	A14	40	NSUFGNGS	K	50						
					10						
					20						
					30						

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

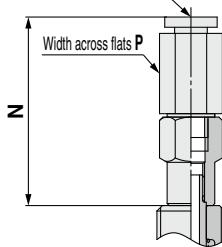
*2 Indicates the minimum hole size of the adapter or vacuum pad

Dimensions/Models

With buffer Ø10 to Ø40

Vacuum inlet: One-touch fitting

Applicable tubing O.D. ØQ



ZPT 10 D N J 10 - 04 - A10

① ② ③ ④

Buffer specification ③

J	Rotating
K	Non-rotating

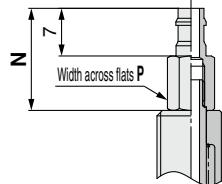
⑥ Connection thread
(Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet

Pad diameter	
Ø10 to Ø25	Ø40
KQ2H04-M5N	KQ2H06-01NS
KQ2H06-M5N	KQ2H08-01NS
Ø8	
N6 For Ø6 nylon tubing	
U6 For Ø6 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.	② Form	③ Material	④ Buffer spec.	⑤ Vacuum inlet	⑥ Connection thread					
ZP	T	D	N S U F G N G S	J K	10	04	A10	27.7	8	4	Ø2.5
					10	06			10	6	
					10	06		31.8	10	6	Ø4.5
					10	08		35.9	14	8	Ø6
					20	06	A14	19.9	12	6	Ø3
					20	08		24.9	14	8	
					50	08					
					50	08					

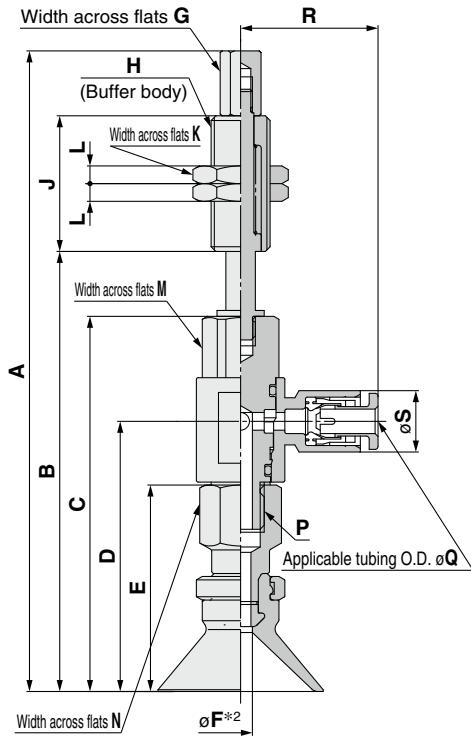
Dimensions Per Vacuum Inlet: Barb Fitting

Model							N	P	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	D	N S U F G N G S	J K	10	N6	A10	15	6	Ø2.5
					10	U6				
					10	N6		19		
					20	N6	A14	12	10	
					20	U6				
					50	U6				

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

Dimensions/Models

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



Construction p. 118

Buffer Assembly p. 125

ZPR 10 D N J 10 - 04 - A10

① ② ③ ④ ⑤ ⑥

Buffer specification ③

J	Rotating
K	Non-rotating

Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

5 Vacuum inlet (One-touch fitting)

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

Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke	⑥ Vacuum inlet	Connection thread	A		B		C		D		E		F		G	H	J	K	L	M	N	P
									10	20	30	40	50	10	20	30	40	50	10	20	30	40	50	10	20	30	40	50
ZP	R	10	D	N S U F G N G S	J K	04 06	A10	94	60	49	32.9	24	2.5	6	23	51	77	23	51	77	23	51	77	10	8	M5 x 0.8		
								132	70					50	33.9	25												
								142	80					50														
								178	90					50														
								188	100					50														
								95	61					50														
		16	D	N S U F G N G S	J K	04 06	A10	133	71	50	33.9	25	3.5	6	23	51	77	23	51	77	23	51	77	12	12	M8 x 1.25		
								143	81					50														
								179	91					50														
								189	101					50														
								108.6	74.6					50														
								146.6	84.6	63.6	45.8	35	3.5	6	23	51	77	23	51	77	23	51	77	12	12	M8 x 1.25		
		25	D	N S U F G N G S	J K	04 06 08	A14	151.1	83.1	71.1	53.3	42.5	4	10	23	51	77	23	51	77	23	51	77	12	12	M8 x 1.25		
								148.1	93.1					50														
								158.1	103.1					50														
								203.1	123.1					50														
								19	4					50														
								75																				

Dimensions Per Vacuum Inlet

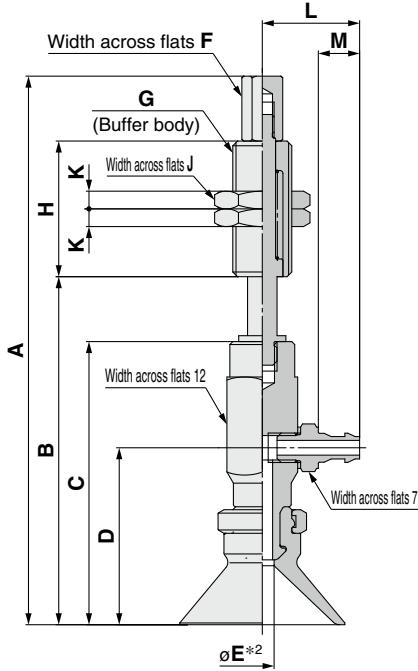
Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke	⑥ Vacuum inlet	Connection thread	Q		R		S		Fitting part min. hole size	
									10	20	30	40	50	04	06	08
ZP	R	10	D	N S U F G N G S	J K	04 06	A10	4						20.6	10.4	ø3
								6						21.6	12.8	ø4
								4						23.3	10.4	ø3
								6						24.3	12.8	ø4.5
								8						26.2	15.2	ø6
								6						24.3	12.8	ø4.5
		25	D	N S U F G N G S	J K	04 06 08	A14	8						26.2	15.2	ø6
								10								
								19								
								75								

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

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

Dimensions/Models

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



Construction p. 118
Buffer Assembly p. 126

ZPY 10 D N J 10 - N4 - A10

①	②	③	④	⑤
Buffer specification				
J Rotating				A10 M10 x 1
K Non-rotating				A14 M14 x 1

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	E ^{*2}	F	G	H	J	K	Vacuum inlet direction						① Pad dia.	② Form	③ Material ^{*1}	④ Buffer spec.	⑤ Vacuum stroke	⑥ Connection thread				
											10	20	30	40	50	N4	N6	U4	U6	A10						
ZP Y	86	52									41	25										23				
	124	62																				51				
	134	72																				77				
	170	82																				23				
	180	92																				51				
	87	53																				77				
	125	63																				23				
	135	73																				51				
	171	83																				77				
	181	93																				23				
	93	59																				51				
	131	69																				77				
	141	79	48	30	3.5	6	M10 x 1															50	19	4		
	177	89																				75				
	187	99																								
	137	69																								
	134	79																								
	144	89																								
	189	109																								

Dimensions Per Vacuum Inlet

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

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

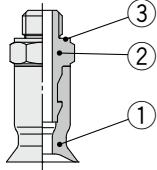
*2 Indicates the minimum hole size of the adapter or vacuum pad

Basic Pad ZP Series Construction

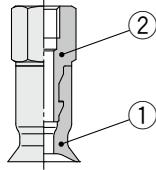
With adapter Flat type: ø2 to ø8 Bellows type: ø6 to ø8 Thin flat type/Thin flat type with ribs: ø10 to ø16

Vacuum inlet direction Vertical T Type/ZPT

ZPT□-(A5/A6)



ZPT□-(B4/B5)

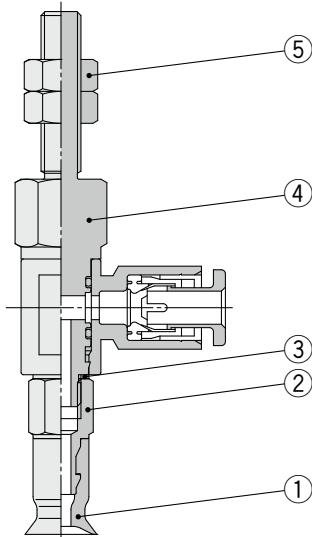


Component Parts

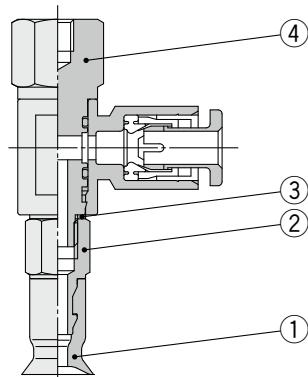
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Bellows type Thin flat type Thin flat type with ribs
2	Adapter	Brass (Electroless nickel plating)	
3	Gasket	Stainless steel/NBR	

Vacuum inlet direction Lateral R Type/ZPR

ZPR□-(04/06)-(A5/A6)



ZPR□-(04/06)-(B4/B5)

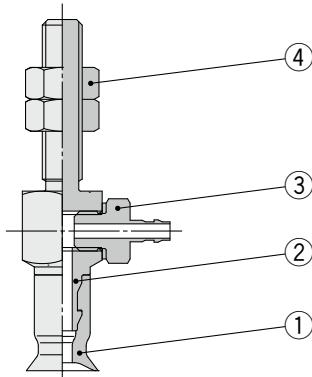


Component Parts

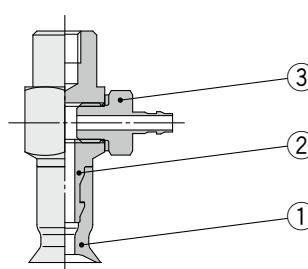
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Bellows type Thin flat type Thin flat type with ribs
2	Adapter	Brass (Electroless nickel plating)	
3	Gasket	Stainless steel/NBR	
4	Adapter (With One-touch fitting)	Brass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

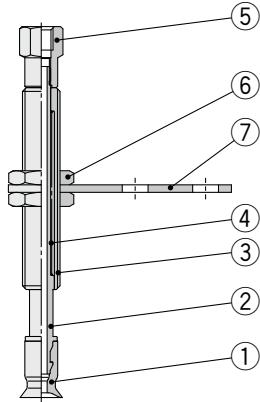
Flat type: ø2 to ø8

Bellows type: ø6 to ø8

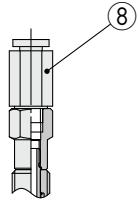
Thin flat type/Thin flat type with ribs: ø10 to ø16

Vacuum inlet direction Vertical T Type/ZPT

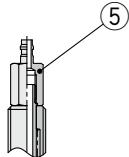
ZPT□-(B3/B5)-A8



ZPT□-(04/06)-A8



ZPT□-(N4/U4)-A8

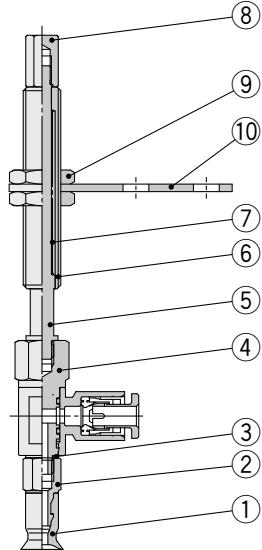


Component Parts

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

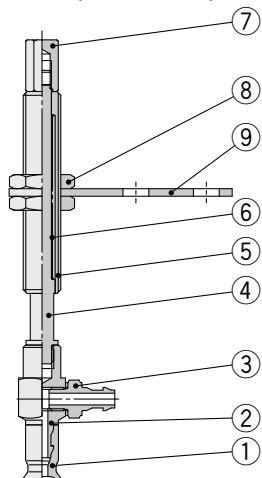


Component Parts

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

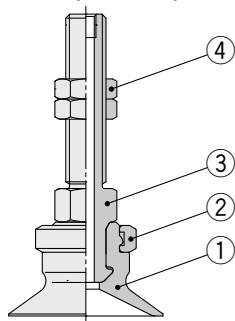
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Bellows type Thin flat type Thin flat type with ribs
2	Adapter	Brass (Electroless nickel plating)	
3	Barb fitting	—	
4	Piston rod	Stainless steel	
5	Buffer body	Brass (Electroless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

Basic Pad Construction ZP Series

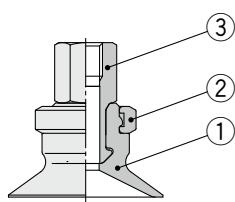
With adapter Flat type: ø10 to ø50 | Flat type with ribs: ø10 to ø50 | Bellows type: ø10 to ø50 | Deep type: ø10 to ø40

Vacuum inlet direction Vertical T Type/ZPT

ZPT□-(A5/A6/A8)



ZPT□-(B5/B6/B8/B01/N01/T01)

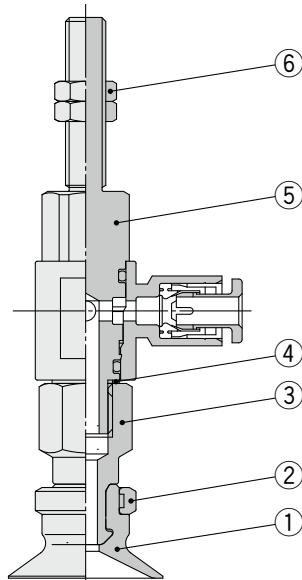


Component Parts

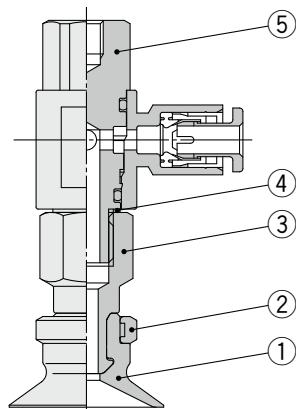
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Flat type with ribs Bellows type Deep type
2	Lock ring	Brass (Electroless nickel plating)	
3	Adapter	Brass (Electroless nickel plating)	
4	Nut	Rolled steel (Zinc chromated)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

Vacuum inlet direction Lateral R Type/ZPR

ZPR□-(04/06/08)-(A5/A6/A8)



ZPR□-(04/06/08)-(B5/B6/B8)

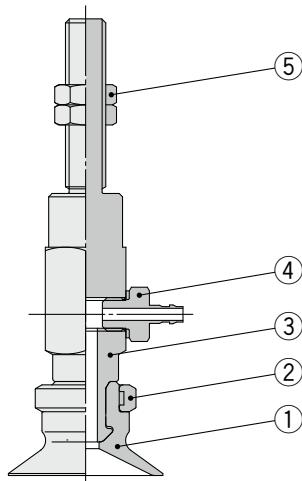


Component Parts

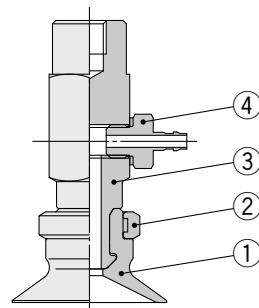
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Flat type with ribs Bellows type Deep type
2	Lock ring	Brass (Electroless nickel plating)	
3	Adapter	Brass (Electroless nickel plating)	
4	Gasket	Stainless steel 304/NBR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

Vacuum inlet direction Lateral Y Type/ZPY

ZPY□-(N4/N6/U4/U6)-(A5/A6/A8)



ZPY□-(N4/N6/U4/U6)-(B5/B6/B8)



Component Parts

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

With buffer

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

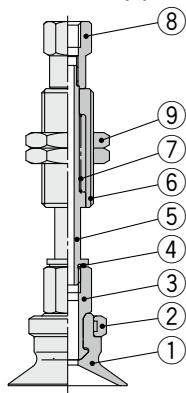
Flat type with ribs: $\varnothing 10$ to $\varnothing 50$

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

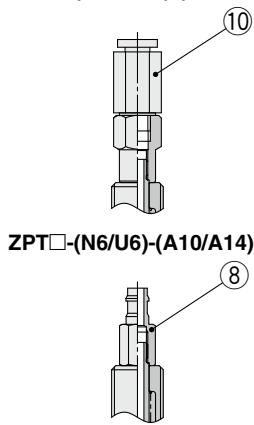
Deep type: $\varnothing 10$ to $\varnothing 40$

Vacuum inlet direction Vertical T Type/ZPT

ZPT□-(B5/B01/N01/T01)-(A10/A14)



ZPT□-(04/06/08)-(A10/A14)

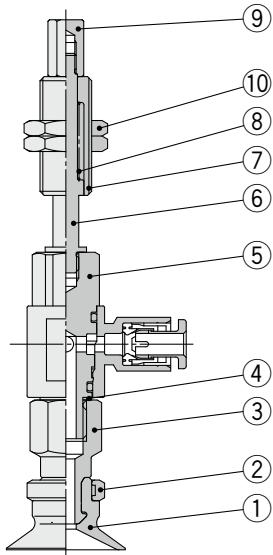


Component Parts

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)

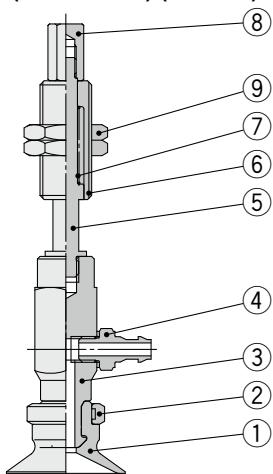


Component Parts

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

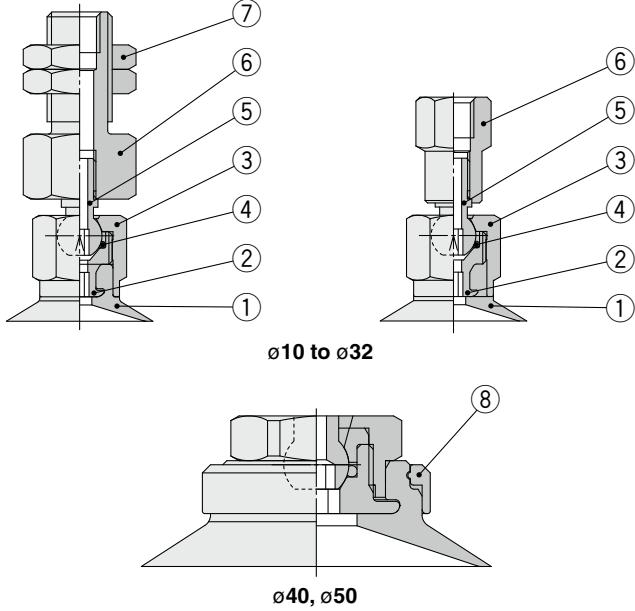
Basic Pad ZP Series Construction

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

Vacuum inlet direction Vertical T Type/ZPT□F

ZPT□F□-B5-(A8/A10/A14)

ZPT□F□-(B5/B8/B01/N01/T01)

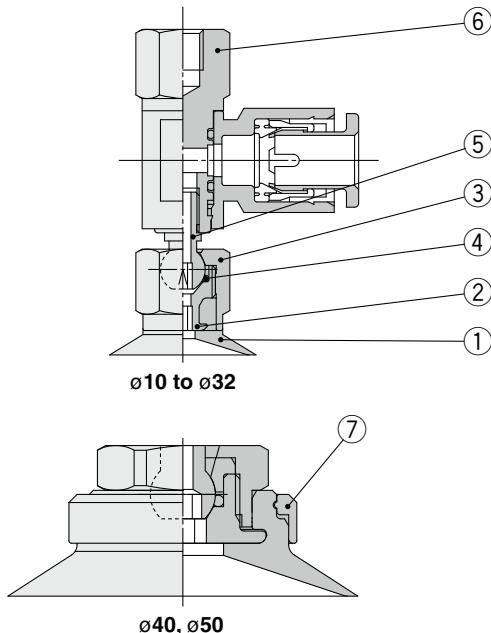


Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type
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) Steel (Zinc chromated)	M8 x 1 M10 x 1 M14 x 1
8	Lock ring	Aluminum (Clear anodized)	Pad diameter: ø40, ø50

Vacuum inlet direction Lateral R Type/ZPR□F

ZPR□F□-(04/06/08)-(B5/B8)



Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Shaft cover	Stainless steel	
4	O-ring	FKM	
5	Shaft	Stainless steel	
6	Shaft adapter (With One-touch fitting)	Brass (Electroless nickel plating), PBT, NBR, Stainless steel, POM	
7	Lock ring	Aluminum (Clear anodized)	Pad diameter: ø40, ø50

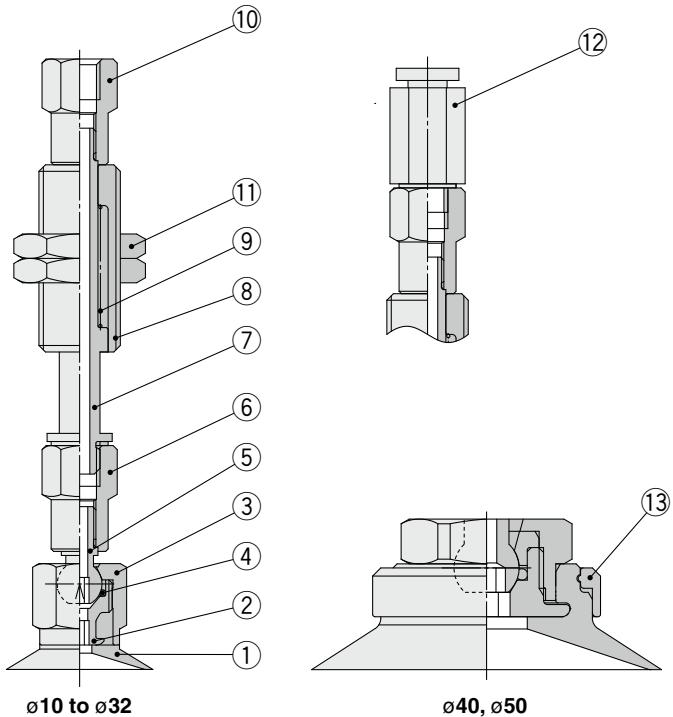
With buffer

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

Vacuum inlet direction Vertical T Type/ZPT□F

ZPT□F□-(B5/B01/N01/T01)-(A10/A14)

ZPT□F□-(04/06/08)-(A10/A14)

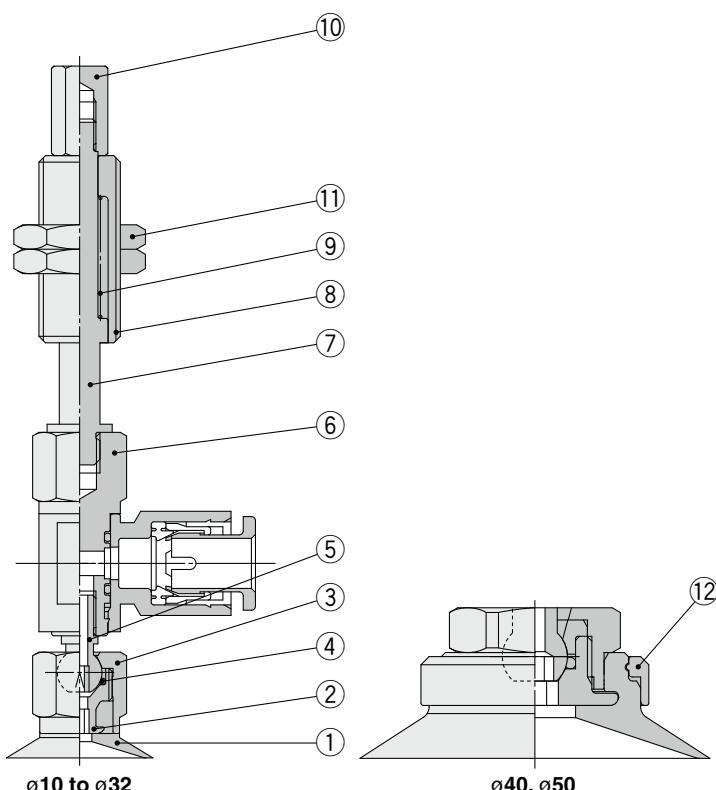


Component Parts

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

Vacuum inlet direction Lateral R Type/ZPR□F

ZPR□F□-(04/06/08)-(A10/A14)



Component Parts

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



Basic/Compact Type Specific Product Precautions

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

Mounting

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

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

Basic Type ZP Series

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

Compact Type ZP3 Series

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

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

Basic Type ZP Series

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

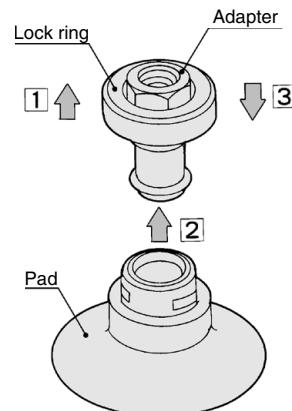
Compact Type ZP3 Series

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

How to Replace the Pad

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

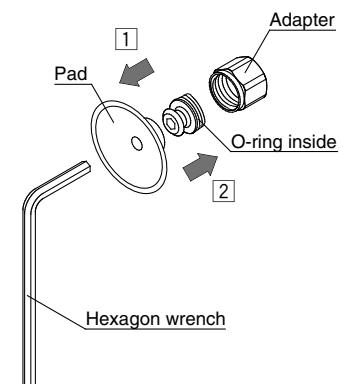
- 1 Pull the lock ring upward, and, after lifting it up to the adapter, remove the old pad by pulling it downward.
- 2 While holding the lock ring in the raised position, place a new pad onto the adapter.
- 3 Confirm that the pad is securely in place, and then return the lock ring to its original position.



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

Pad diameter: 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.

