







Basic Pad ZP Series

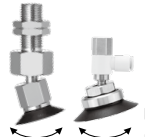


RoHS

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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Deep Type

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

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(Flat, Ball joint type)	

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Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type


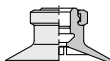





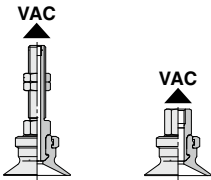
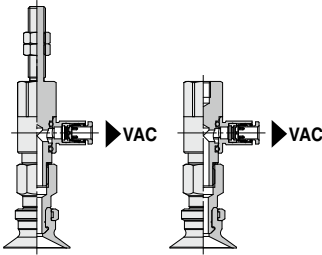
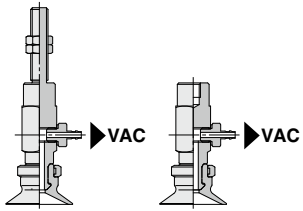
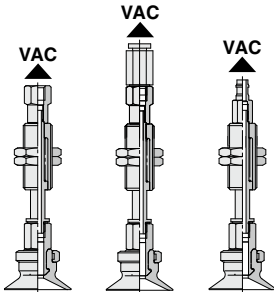
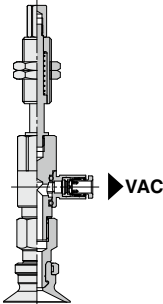
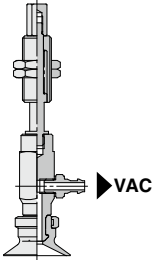
Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

Basic Pad *ZP* Series Specifications

Pad Material

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

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

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

Adapter Specifications

Vacuum Inlet Direction **Vertical** T Type/ZPT

Connection		Male thread						Female thread				
Pad diameter		ø2 to ø8	ø10 to ø16		ø20 to ø32		ø40, ø50		ø2 to ø8*1	ø10 to ø16	ø20 to ø32	ø40, ø50
Connection thread	M5 x 0.8 M6 x 1	M5 x 0.8 M6 x 1	M5 x 0.8 M6 x 1	M5 x 0.8 M6 x 1 G1/8	M5 x 0.8 M6 x 1 M8 x 1	M5 x 0.8 M6 x 1 G1/8	M6 x 1 M8 x 1	M6 x 1 G1/4	M4 x 0.7 M5 x 0.8	M5 x 0.8 M6 x 1 G1/8 1/8 (Rc, NPT, NPTF)	M5 x 0.8 M6 x 1 M8 x 1.25 G1/4 1/8 (Rc, NPT, NPTF)	M6 x 1 M8 x 1.25 G1/4 1/8 (Rc, NPT, NPTF)
		Vacuum inlet	Female thread	Use the connection thread.	M3 x 0.5	Use the connection thread.	M3 x 0.5 M5 x 0.8	Use the connection thread.	M3 x 0.5 M5 x 0.8	Use the connection thread.	Use the connection thread.	

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

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

Connection		Male thread				Female thread			
Pad diameter		ø2 to ø16		ø20 to ø32	ø40, ø50	ø2 to ø8*1	ø10 to ø16	ø20 to ø32	ø40, ø50
Connection thread	M5 x 0.8 M6 x 1	M5 x 0.8 M6 x 1		M6 x 1 M8 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

*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	M5 x 0.8 M6 x 1		M6 x 1 M8 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	

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

*2 Applicable tubing: Nylon tubing, Soft tubing

Buffer Specifications

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

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

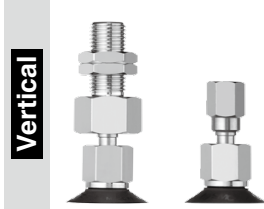
Basic Pad *ZP Series* Specifications

Ball Joint Type

Adapter Specifications (Ball Joint Type)

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



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

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



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

Buffer Specifications (Ball Joint Type)



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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions



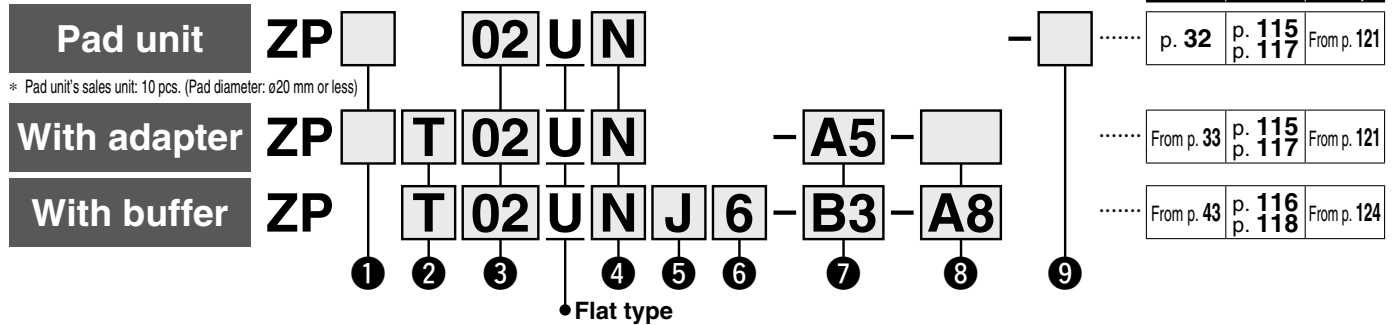
Basic Pad

Flat Type

ZP Series



How to Order



Dimensions/Models	Construction	Mounting Bracket Assembly
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From p. 33	p. 115 p. 117	From p. 121
From p. 43	p. 116 p. 118	From p. 124

1 Adapter (Lock ring) material

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

2 Vacuum inlet direction

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

3 Pad diameter

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

4 Material

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

5 Buffer specification

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

*1 Only for pad diameters ø2 to ø8

6 Buffer stroke

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

*1 Compliant with the FDA (USA Food and Drug Administration) regulation 21CFR§177.2600 for "Rubber articles intended for repeated use"
 *2 Compliant with the standards for "Rubber apparatus (excluding baby drinking apparatus) and containers/packaging" (D3) (Partial revision: Ministry of Health, Labour, and Welfare Notification No. 595, 2012) in Section 3 "Apparatus and Containers/Packaging" of the Japan Food Sanitation Act, Article 18 "Specifications and Standards for Food and Food Additives, etc." (Ministry of Health and Welfare Notification No. 370, 1959)

With adapter

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

Type	Symbol	Size	Pad diameter [mm]			
			ø2 to ø8	ø10 to ø16	ø20 to ø32	ø40, ø50
Male thread	A5	M5 x 0.8	○*1	—	—	—
	AS5		○*1	—	—	—
	A6		○*1	—	—	—
	AS6		○*1	○*1	○*1	—
	AG01		G1/8	○*1	○*1	—
Female thread	AG02	G1/4	—	—	○*1	—
	Nil	M3 x 0.5	—	○ Connection thread: AS(A6)	○ Connection thread: A6	○ Connection thread: A6
		M5 x 0.8	—	○ Connection thread: A8	○ Connection thread: A8	○ Connection thread: A8
	B4	M4 x 0.7	○*1	—	—	—
	B5	M5 x 0.8	○*1	○*1	—	—
	B6	M6 x 1	—	○*1	○*1	—
	B8	M8 x 1.25	—	○*1	○*1	○*1
	BG01	G1/8	—	○*1	○*1	—
	BG02	G1/4	—	—	—	○*1
	B01	Rc1/8	—	○*1	○*1	○*1
	N01*4	NPT1/8	—	○*1	○*1	○*1
	T01*4	NPTF1/8	—	○*1	○*1	○*1
	One-touch fitting	04	ø4	●	●	●
06		ø6	●	●	●	●
08		ø8	—	—	●	●
Barb fitting	N4	For ø4 nylon tubing*2	△	△	△	—
	N6	For ø6 nylon tubing*2	△	△	△	△
	U4	For ø4 soft tubing*3	△	△	△	—
	U6	For ø6 soft tubing*3	△	△	△	△

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

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

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

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

With buffer

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

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

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

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

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

9 Lock ring

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

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

*1 The lock ring cannot be used for pad diameters ø2 to ø8.
 □: Nil/Brass S/Stainless steel

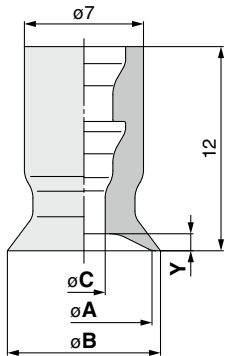
* The pad, lock ring, mounting nut, fitting, and buffer plate are shipped together but do not come assembled.



Dimensions/Models

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

ZP **02** U **N**
① ②



Construction p. 115

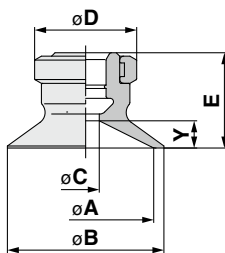
Mounting Bracket Assembly From p. 121

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

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

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

ZP **10** U **N**
① ② ③



Construction p. 117

Mounting Bracket Assembly From p. 121

① Lock ring material

Nil	Brass
S	Stainless steel (Stainless steel 304)

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

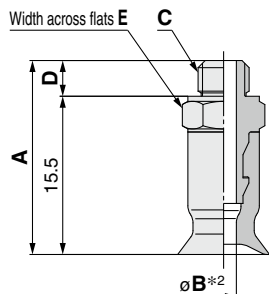
Precautions

Dimensions/Models

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

ZP T 02 U N - A5

① ② ③ ④



Construction	p. 115
Adapter Assembly	p. 121

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Male thread)

A5	M5 x 0.8
A6	M6 x 1

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

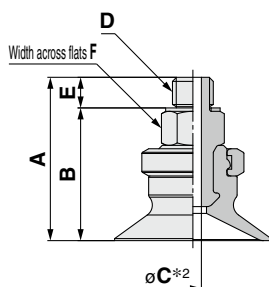
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

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

ZP T 10 U N - AS5

① ② ③ ④



Construction	p. 117
Adapter Assembly	p. 121

① Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Male thread)

AS5	M5 x 0.8
AS6	M6 x 1
AG01	G1/8
AG02	G1/4

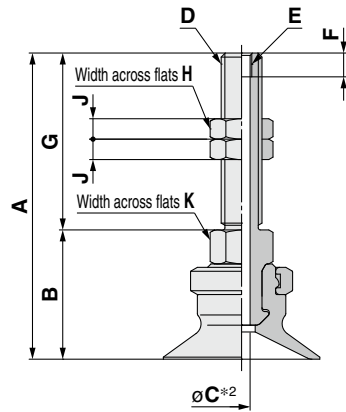
Model	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material	④ Vacuum inlet	A	B	C*2	D	E	F					
													Nil	S	N	S	U
ZP	Nil S	T	10	U	N S U F GN GS	AS5	21	17.5	2.5	M5 x 0.8	3.5	8					
			13					18									
			16					19.5									
			20					20									
			25					22									
			32					17.5									
			10					AS6					2.5	M6 x 1	4.5	8	
			13														18
			16														19.5
			20														20
			25														20
			32														20
			40			25											
			50			26											
			10			AG01	2.5		G1/8	5.5	17						
			13									24.5					
			16									25					
			20									26.5					
			25					27									
			32					32.5									
			40					32.5									
			50					33.5									
			10			AG02	7	G1/4	6.5	21							
			13								24.5						
16	25																
20	26.5																

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



Construction	p. 117
Adapter Assembly	p. 121

ZP 1 T 2 U N 3 - 4 A5

1 Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

4 Connection thread (Male thread)

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

		Model														
ZP	Adapter material 1 Nil S	Vacuum inlet direction T	Pad dia. 2 10 13 16 20 25 32 40 50	Form U	Material 3 N S U F GN GS	Connection thread 4 A5 A6 A8	A	B	C*2	D	E	F	G	H	J	K
			10			A5	38	17	2.5	M5 x 0.8	M3 x 0.5	3.5	21	8	4	8
			13			A5	38.5	17.5								
			16			A5	43	17								
			20			A6	43.5	17.5								8
			25			A6	45	19	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	
			32			A6	45.5	19.5								
			40			A6	50.5	24.5								
			50			A6	51.5	25.5								12
			20			A8	40	24	4							
			25			A8	40.5	24.5		M8 x 1	M5 x 0.8	5	16	12	4	12
			32			A8	41.5	25.5	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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

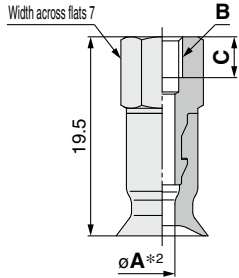
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



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Adapter Assembly p. 121

ZP T 02 U N - B4

① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

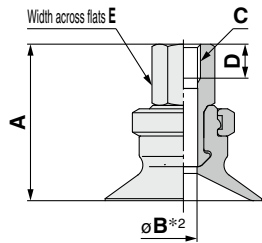
④ Vacuum inlet (Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

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

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

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



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Adapter Assembly p. 121

ZP T 10 U N - B5

① ② ③ ④

① Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Female thread)

B5	M5 x 0.8	BG02	G1/4
B6	M6 x 1	B01	Rc1/8
B8	M8 x 1.25	N01*1	NPT1/8
BG01	G1/8	T01*1	NPTF1/8

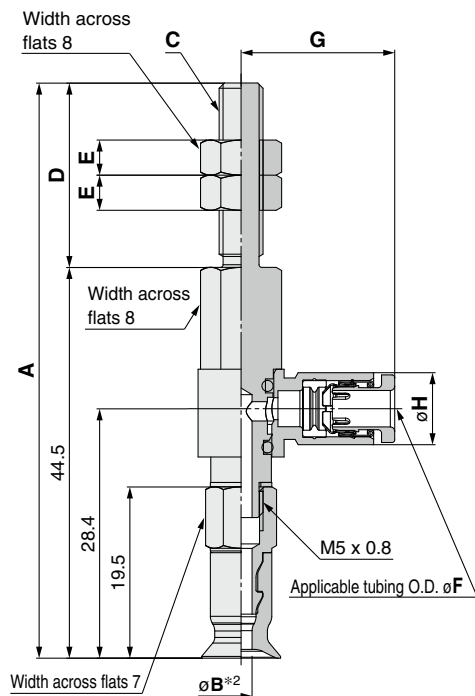
*1 Not compatible with stainless steel materials

Model							A	B*2	C	D	E			
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material*1	④ Vacuum inlet									
ZP	Nil S	T	U	N S U F GN GS	B5	10	21	2.5	M5 x 0.8	5	8			
						13	21.5							
						16	23							
						20	23.5	4						
						25	21							
						32	21.5							
						10	23							
						B6	13	23		4		M6 x 1	6	8
							16	23.5						
							20	32						
					25		40	4.9						
					32		29							
					40		29.5							
					50		32							
					B8		10	29	3.5	M8 x 1.25	8		12	
							13	29.5						
							16	32						
						20	33	6.6						
						25	27							
						32	27.5							
						40	29							
						BG01	10	27	2.5		G1/8	7.4		14
							13	27.5						
							16	29						
					20		29.5	4						
					25		38							
					32		39							
					40		27							
					BG02		10	27	2.5	G1/4		11	17	
							13	27.5						
							16	29						
						20	29.5	7						
						25	27							
						32	27.5							
						40	29							
						B01 N01*3 T01*3	10	27	2.5		Rc1/8 NPT1/8 NPTF1/8	—		12
							13	27.5						
							16	29						
					20		29.5	3.5						
					25		32							
32	33													
40	33													

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber
*2 Indicates the minimum hole size of the adapter or vacuum pad
*3 Not compatible with stainless steel materials

Dimensions/Models

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



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Adapter Assembly	p. 122

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

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

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

Dimensions Per Vacuum Inlet

Model					F	G	H	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Vacuum inlet				
ZP	R	U	N S U F GN GS	04	4	17.5	8.2	$\varnothing 2.5$
				06	6	18.3	10.4	$\varnothing 4$

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

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

Dimensions/Models

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

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

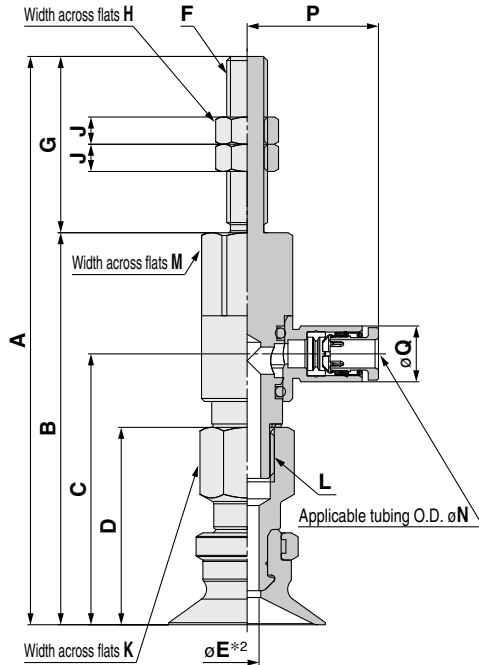
① ②

Vacuum inlet ③
(One-touch fitting)

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

④ Connection thread
(Male thread)

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



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Adapter Assembly p. 122

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

Dimensions Per Vacuum Inlet

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

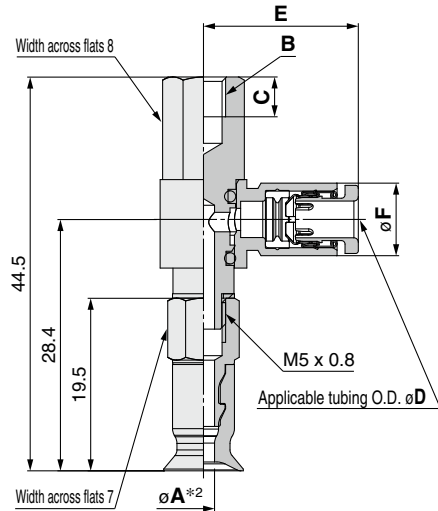
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 122

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

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

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	N S U F GN GS	04 06	B4	1.2	M4 x 0.7	4.5		
						1.6				
						2.5				
						02 04 06 08	B5	1.2	M5 x 0.8	5.5
								1.6		
								2.5		

Dimensions Per Vacuum Inlet

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

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

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

Dimensions/Models

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

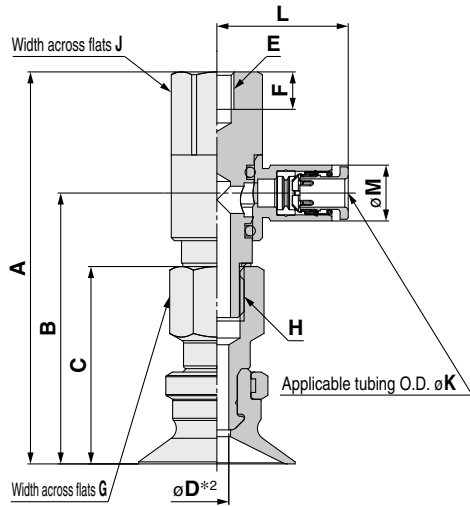
ZPR **10** U **N** - **04** - **B5**

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

4 Connection thread (Female thread)

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

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



Construction p. 117
Adapter Assembly p. 122

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

Dimensions Per Vacuum Inlet

Model	Vacuum inlet direction	1 Pad dia.	2 Form	3 Material	4 Vacuum inlet	5 Connection thread	J	K	L	M	Fitting part min. hole size
ZP	R	10 13 16 20 25 32 40 50	U	N S U F G N S	04 06 08	B5	8	4	17.5	8.2	$\varnothing 2.5$
						B6	8	6	18.3	10.4	$\varnothing 4$
						B5	12	4	19.3	8.2	$\varnothing 3$
						B6	12	6	20.5	10.4	$\varnothing 4.5$
						B8	16	8	23.5	13.2	$\varnothing 6$
						B6	12	6	20.5	10.4	$\varnothing 4.5$
						B8	16	8	23.5	13.2	$\varnothing 6$

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

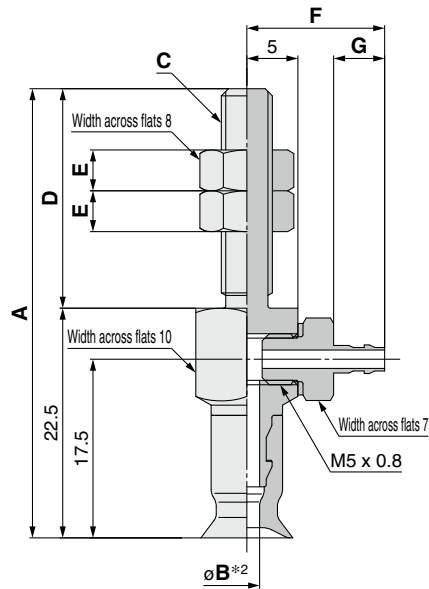
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 123

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

① ②

Vacuum inlet ③
(Barb fitting)

④ Connection thread
(Male thread)

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

A5	M5 x 0.8
A6	M6 x 1

	Vacuum inlet direction	Model				A	B*2	C	D	E	
		① Pad dia.	Form	② *1 Material	③ Vacuum inlet						④ Connection thread
ZP	Y	02	U	N S U F GN GS	N4 N6 U4 U6	44	1.2	M5 x 0.8	21.5	4	
		04					1.6				
		06 08					2.5				
		02				49.5	A6	1.2	M6 x 1	27	4
		04						1.6			
		06 08						2.5			

Dimensions Per Vacuum Inlet

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

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

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

Dimensions/Models

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

ZPY 10 UN - N4 - A5

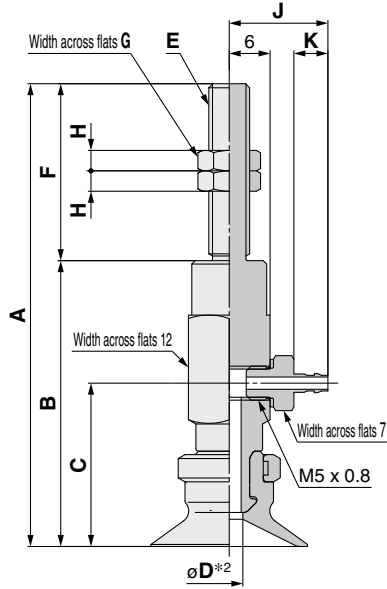
① ②

Vacuum inlet (Barb fitting)

④ **Connection thread (Male thread)**

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

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



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		Model				A	B	C	D ^{*2}	E	F	G	H				
	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread											
ZP	Y	10	U	N S U F GN GS	N4 N6 U4 U6	A5	59	38	22	2.5	M5 x 0.8	21	8	4			
		13					59.5	38.5	22.5								
		16					64	38	22								
		10					64.5	38.5	22.5								
		13				A6	20	68	42	24	3.5	M6 x 1	26	8	4		
		25					68.5	42.5	24.5								
		32					72.5	46.5	28.5								
		40					73.5	47.5	29.5								
		50				A8	20	58	42	24	3.5	M8 x 1	16	12	4		
		25					58.5	42.5	24.5								
		32					62.5	46.5	28.5								
		40					63.5	47.5	29.5								
		50									6						

Dimensions Per Vacuum Inlet

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

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

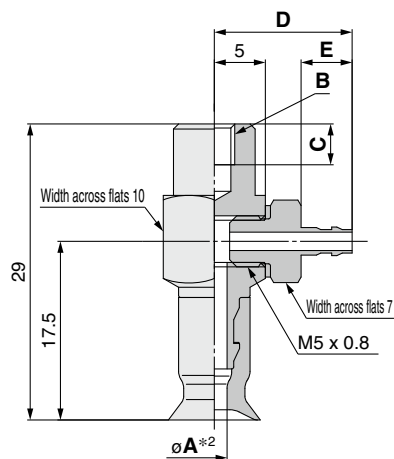
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 123

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

① ②

Vacuum inlet ③
(Barb fitting)

④ Connection thread
(Female thread)

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

B4	M4 x 0.7
B5	M5 x 0.8

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

Dimensions Per Vacuum Inlet

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

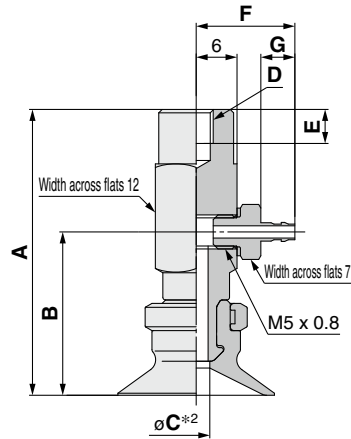
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

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

ZPY 10 U N - N4 - B5



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Adapter Assembly p. 123

①
②
③ Vacuum inlet (Barb fitting)

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

④ Connection thread (Female thread)

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

		Model				A	B	C*2	D	E				
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread									
ZP	Y	U	N S U F GN GS	N4 N6 U4 U6	B5	10	38	22	2.5	M5 x 0.8	5			
						13	38.5	22.5						
						16	42	24						
						20	42.5	24.5	3.5					
						25								
						32								
					B6	10	38	22	2.5	M6 x 1	6			
						13	38.5	22.5						
						16	42	24						
						20	42.5	24.5	6					
						25								
						32								
						B8	40	46.5	28.5			3.5	M8 x 1.25	8
							50	47.5	29.5					
							20	42	24					
25	42.5	24.5	6											
32														
40														

Dimensions Per Vacuum Inlet

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

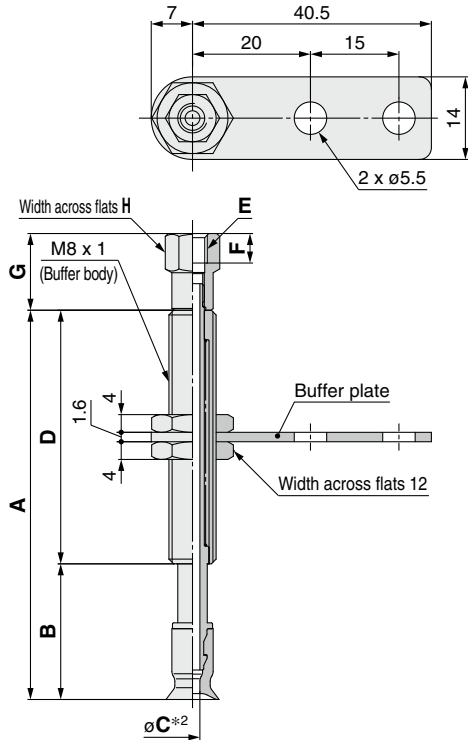
Mounting Bracket Assembly

Precautions

Dimensions/Models

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

The drawings show the type with a buffer plate.



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

① ② ④

Buffer specification ③

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

⑥ Connection thread (Male thread)

A8	M8 x 1
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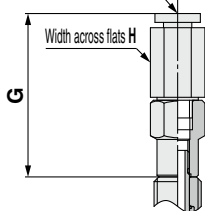
⑤ Vacuum inlet

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

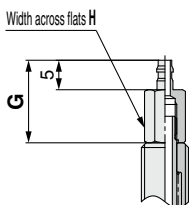
		Model						A	B	C*2	D	
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	T	02	U	N S U F GN GS	J K JN KN	6	B3 B5 04 06 N4 U4	A8	33	18	1.2	15
						10			66	23		43
						15			71	28		
						25			81	38		
						6			33	18		15
						10			66	23		43
	04	U	U		J K JN KN	6	B3 B5 04 06 N4 U4	A8	33	18	1.6	15
						10			66	23		43
						15			71	28		
						25			81	38		
						6			33	18		15
						10			66	23		43
06 08	U	U	J K JN KN	6	B3 B5 04 06 N4 U4	A8	33	18	J: 2.5 K: 2	15		
				10			66	23		43		
				15			71	28				
				25			81	38				
				6			33	18		15		
				10			66	23		43		

Vacuum inlet: One-touch fitting

Applicable tubing O.D. $\varnothing J$



Vacuum inlet: Barb fitting



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Buffer Assembly p. 124

Dimensions Per Vacuum Inlet: Female Thread

		Model						E	F	G	H					
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread									
ZP	T	02 04 06 08	U	N S U F GN GS	J K JN KN	6	B3 B5	A8	M3 x 0.5	3	11	6				
						10										
						15										
						25										
						6							M5 x 0.8	5	13	8
						10										
15																
25																

Dimensions Per Vacuum Inlet: One-touch Fitting

		Model						G	H	J	Fitting part min. hole size			
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread							
ZP	T	02 04 06 08	U	N S U F GN GS	J K JN KN	6	04 06	A8	27.7	8	4	$\varnothing 2.5$		
						10								
						15								
						25								
						6							10	6
						10								
15														
25														

Dimensions Per Vacuum Inlet: Barb Fitting

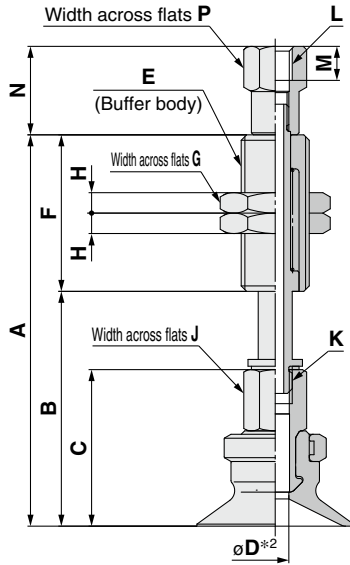
		Model						G	H	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	02 04 06 08	U	N S U F GN GS	J K JN KN	6	N4 U4	A8	14	6	$\varnothing 1.8$
						10					
						15					
						25					

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

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

Dimensions/Models

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



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Buffer Assembly p. 124

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

Buffer specification **3**

J	Rotating
K	Non-rotating

6 Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

5 Vacuum inlet (Female thread)

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

		Model						A	B	C	D*2	E	F	G	H	J	K
Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread										
ZP	T	U	N S U F GN GS	J K	10 20 30 40 50	B5 04 06 N6 U6	A10	55.5	32.5	21	J: 2.5 K: 2	M10 x 1	14	3	8	M5 x 0.8	23
								93.5	42.5								51
								103.5	52.5								77
								139.5	62.5								23
								149.5	72.5	23							
								56	33	51							
								94	43	77							
								104	53	23							
								140	63	51							
								150	73	77							
								57.5	34.5	23							
								95.5	44.5	51							
	105.5	54.5	77														
	141.5	64.5	23														
	151.5	74.5	51														
	58	35	77														
	96	45	23														
	106	55	51														
	142	65	77														
	152	75	23														
	94.5	44.5	50														
	104.5	54.5	75														
	114.5	64.5	19														
	159.5	84.5	4														
95.5	45.5	M14 x 1	19	4	12	M8 x 1.25											
105.5	55.5	50															
115.5	65.5	75															
160.5	85.5	75															

Dimensions Per Vacuum Inlet: Female Thread

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

BelloWS Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

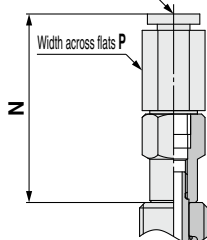
Precautions

Dimensions/Models

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

Vacuum inlet: One-touch fitting

Applicable tubing O.D. $\varnothing Q$



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

① ② ④

Buffer specification ③

J	Rotating
K	Non-rotating

⑥ Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet

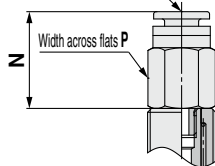
			Pad diameter	
			$\varnothing 10$ to $\varnothing 32$	$\varnothing 40, \varnothing 50$ (10 st only)
04	$\varnothing 4$	One-touch fitting	KQ2H04-M5N	KQ2H06-01NS
06	$\varnothing 6$		KQ2H06-M5N	
08	$\varnothing 8$		KQ2H08-01NS	
N6	For $\varnothing 6$ nylon tubing	Barb fitting		
U6	For $\varnothing 6$ soft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

Dimensions Per Vacuum Inlet: One-touch Fitting

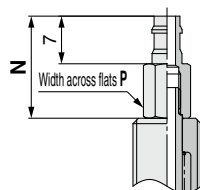
		Model						N	P	Q	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	T	U	N S U F GN GS	J K	10 20 30 40 50	04	A10	27.7	8	4	$\varnothing 2.5$	
												06
						08			14	8		
						08			8	$\varnothing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

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

Applicable tubing O.D. $\varnothing Q$



Vacuum inlet: Barb fitting



Dimensions Per Vacuum Inlet: Barb Fitting

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

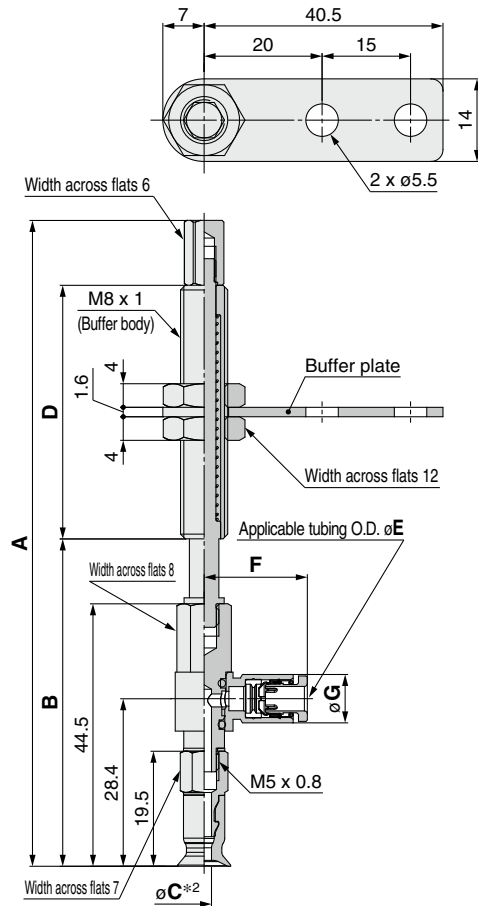
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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Buffer Assembly	p. 124

Dimensions/Models

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

The drawings show the type with a buffer plate.



Construction p. 116

Buffer Assembly p. 125

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

Buffer specification **3**

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

6 Connection thread
(Male thread)

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

5 Vacuum inlet
(One-touch fitting)

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

		Model						A	B	C*2	D	
Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread					
ZP	R	02	U	N S U F GN GS	J K JN KN	6	04	A8	78.5	52.5	1.2	15
						10			109.5	55.5		43
						15			114.5	60.5		
						25			124.5	70.5		
						6			78.5	52.5		15
						10			109.5	55.5		
	R	04	U	N S U F GN GS	J K JN KN	15	06	A8	114.5	60.5	1.6	43
						25			124.5	70.5		
						6			78.5	52.5		15
						10			109.5	55.5		
						15			114.5	60.5		
						25			124.5	70.5		
R	06 08	U	N S U F GN GS	J K JN KN	6	06	A8	78.5	52.5	2.5	15	
					10			109.5	55.5		43	
					15			114.5	60.5			
					25			124.5	70.5			
					6			78.5	52.5		15	
					10			109.5	55.5			

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	6 Connection thread					
ZP	R	02	U	N S U F GN GS	J K JN KN	6	04	A8	4	17.5	8.2	$\phi 2.5$
		04				10			6			
		06 08				15 25			06	6	18.3	10.4

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

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

Dimensions/Models

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

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

① ② ③ ④

⑥ Connection thread
(Male thread)

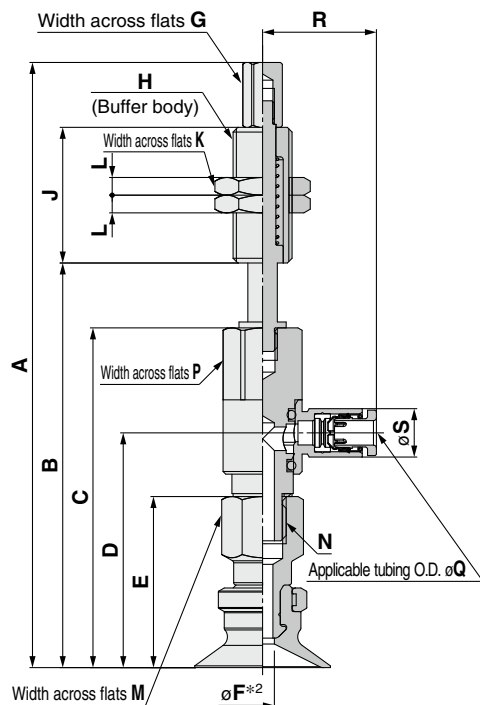
Buffer specification ③

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet
(One-touch fitting)

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



Construction	p. 118
Buffer Assembly	p. 125

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

Dimensions Per Vacuum Inlet

		Model							P	Q	R	S	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread						
ZP	R	U	N S U F G N S	J K	10	04	A10	8	4	17.5	8.2	$\varnothing 2.5$	
					20								
					30								
					40								
					50								
					10								06
	20												
	30												
	40												
	50												
	10	08	A10	16	8	23.5	13.2	$\varnothing 6$					
	20												
30													
40													
50													
10	06								A14	12	6	20.5	10.4
20													
30													
40													
50													
10		08	A14	16	8	23.5	13.2	$\varnothing 6$					
20													
30													
40													
50													

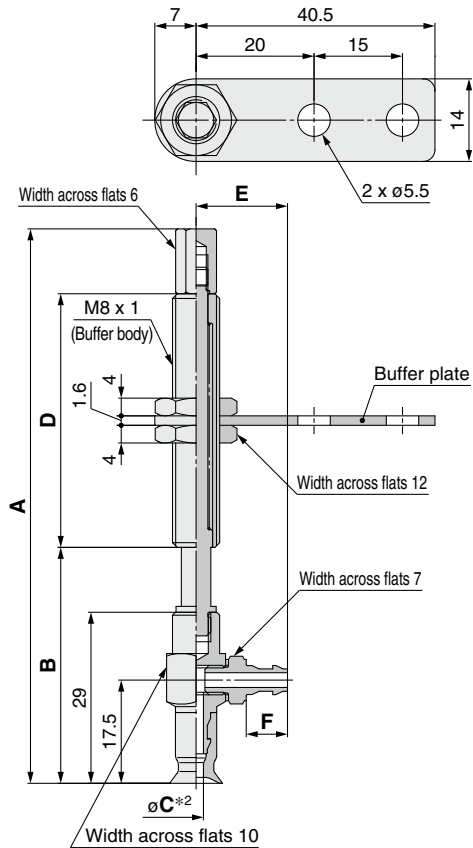
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

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

The drawings show the type with a buffer plate.



Construction	p. 116
Buffer Assembly	p. 126

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

① ② ④

Buffer specification ③

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

⑥ Connection thread
(Male thread)

A8	M8 x 1
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⑤ Vacuum inlet
(Barb fitting)

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

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

Dimensions Per Vacuum Inlet

		Model						E	F	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	Y	02	U	N S U F GN GS	J K JN KN	6	N4 U4	A8	13.5	5	$\varnothing 1.8$
		10									
		15				15.5			7	$\varnothing 2.5$	

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Belows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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

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

① ② ④

⑥ Connection thread
(Male thread)

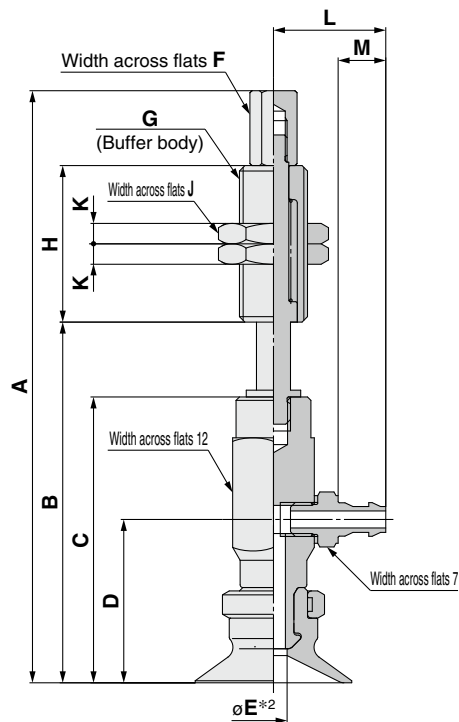
Buffer specification ③

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet
(Barb fitting)

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



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Buffer Assembly p. 126

		Model						A	B	C	D	*2 E	F	G	H	J	K
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread										
ZP	Y	U	N S U F GN GS	J K	10	N4 N6 U4 U6	A10	83	49	38	22	2.5	6	M10 x 1	14	3	23
					20			121	59								51
					30			131	69								77
					40			167	79								23
					50			177	89	77							
					10			83.5	49.5	23							
					20			121.5	59.5	51							
					30			131.5	69.5	77							
					40			167.5	79.5	23							
					50			177.5	89.5	77							
					10			87	53	23							
					20			125	63	51							
	30	135	73	77													
	40	171	83	23													
	50	181	93	77													
	10	87.5	53.5	23													
	20	125.5	63.5	51													
	30	135.5	73.5	77													
	40	171.5	83.5	23													
	50	181.5	93.5	77													
	10	126.5	58.5	50													
	20	123.5	68.5	75													
	30	133.5	78.5	50													
	40	178.5	98.5	19													
50	127.5	59.5	75														
10	124.5	69.5	50														
20	134.5	79.5	75														
30	179.5	99.5															
40																	
50																	

Dimensions Per Vacuum Inlet

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

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

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



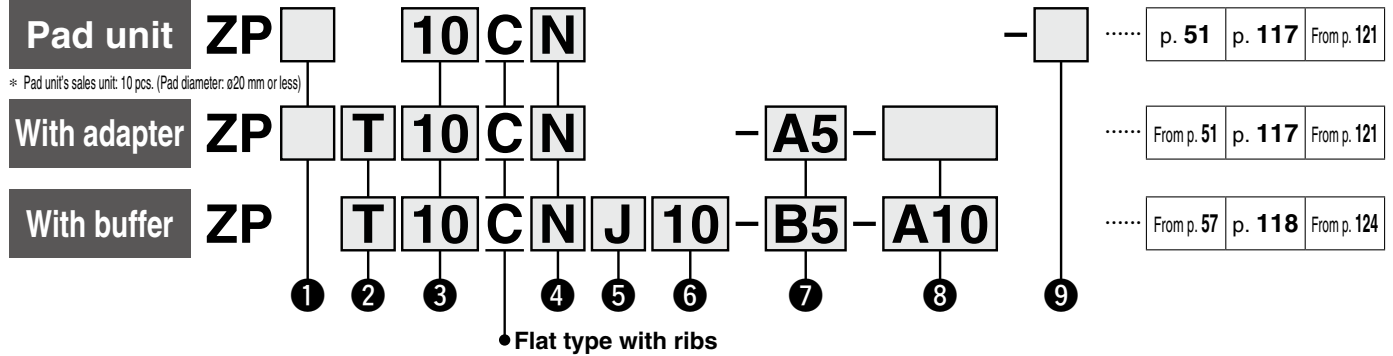
Basic Pad

Flat Type with Ribs

ZP Series



How to Order



1 Adapter (Lock ring) material

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

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

2 Vacuum inlet direction

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

3 Pad diameter

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

4 Material

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

5 Buffer specification

J	Rotating
K	Non-rotating

6 Buffer stroke

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

*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 Japan Food Sanitation Act, Article 18 "Specifications and Standards for Food and Food Additives, etc." (Ministry of Health and Welfare Notification No. 370, 1959)

With adapter

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

Type	Symbol	Size	Pad diameter [mm]		
			ø10 to ø16	ø20 to ø32	ø40, ø50
Male thread	AS5	M5 x 0.8	○*4	○*4	—
	AS6	M6 x 1	○*4	○*4	○*4
	AG01	G1/8	○*4	○*4	—
	AG02	G1/4	—	—	○*4
Female thread	Nil	M3 x 0.5	○ (Connection thread: A5/A6)	○ (Connection thread: A6)	○ (Connection thread: A6)
	Nil	M5 x 0.8	—	○ (Connection thread: A8)	○ (Connection thread: A8)
	B5	M5 x 0.8	○*4	—	—
	B6	M6 x 1	○*4	○*4	○*4
	B8	M8 x 1.25	—	○*4	○*4
	BG01	G1/8	—	○*4	—
	BG02	G1/4	—	—	○*4
	B01	Rc1/8	—	—	○*4
	N01*3	NPT1/8	—	—	○*4
	T01*3	NPTF1/8	—	—	○*4
One-touch fitting	04	ø4	●	●	—
	06	ø6	●	●	●
	08	ø8	—	●	●
Barb fitting	N4	For ø4 nylon tubing*1	△	△	—
	N6	For ø6 nylon tubing*1	△	△	△
	U4	For ø4 soft tubing*2	△	△	—
	U6	For ø6 soft tubing*2	△	△	△

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

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

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

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

With buffer

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

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

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

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

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

9 Lock ring

Symbol	Pad diameter	Lock ring unit	
		Part no.	Pad diameter [mm]
Nil	All sizes	ZP□L1	ø10 to ø16
ZP□L2	With lock ring	ZP□L2	ø20 to ø32
X19	Without lock ring	ZP□L3	ø40, ø50

□: Nil/Brass S/Stainless steel

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

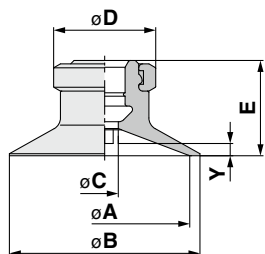
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction p. 117
Mounting Bracket Assembly From p. 121

ZP 10 C N
1 2 3

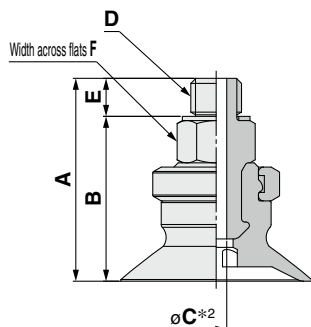
1 Lock ring material

Nil	Brass
S	Stainless steel (Stainless steel 304)

ZP	Lock ring material	Pad dia.	Form	Material	Model					
					A	B	C	D	E	Y
ZP	Nil S	10	C	N S U F GN GS	10	12	4	13	12	1.7
		13			15	1.8				
		16			18	1.2				
		20			23	1.7				
		25			28	1.8				
		32			35	2.3				
	40	43			7	18	3.3			
	50	53					3.8			

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

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



Construction p. 117
Adapter Assembly p. 121

ZP T 10 C N - AS5
1 2 3 4

1 Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

4 Vacuum inlet (Male thread)

AS5	M5 x 0.8
AS6	M6 x 1
AG01	G1/8
AG02	G1/4

ZP	Adapter material	Vacuum inlet direction	Pad dia.	Form	Material	Vacuum inlet	Model						
							A	B	C*2	D	E	F	
ZP	Nil S	T	10	C	N S U F GN GS	AS5	21	17.5	2.5	M5 x 0.8	3.5	8	
			13				18						
			16				19.5						
			20				20						
			25				23.5						
			32				26						
			10				AS6	22	17.5	2.5	M6 x 1	4.5	8
			13					18					
			16					19.5					
			20					20					
			25					24.5					
			32					29.5					
	10	AG01	30	24.5	2.5	G1/8		5.5	17				
	13		25										
	16		26.5										
	20		4	32	27								
	25			39	32.5								
	32			40	33.5								
	40	AG02	7	G1/4	6.5	21							
	50												

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

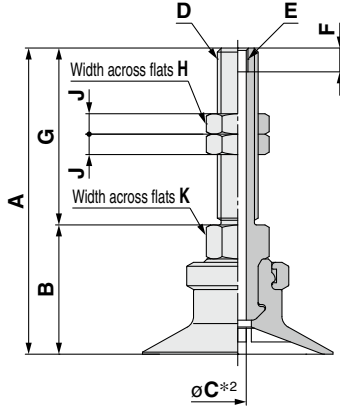
*2 Indicates the minimum hole size of the adapter or vacuum pad

Dimensions/Models

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

ZP T 10 C N - A5

1
 2
 3
 4



Construction p. 117
Adapter Assembly p. 121

1 Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

4 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
ZP	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material	4 Connection thread										
ZP	Nil S	T	10	C	N S U F GN GS	A5	38	17	2.5	M5 x 0.8	M3 x 0.5	3.5	21	8	4	8
			13				38.5	17.5								
			16			A6	43	17	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	8
			13				43.5	17.5								
			20			A8	45	19	4	M8 x 1	M5 x 0.8	5	16	12	4	12
			25				45.5	19.5								
			32			A8	50.5	24.5	4.2	M8 x 1	M5 x 0.8	5	16	12	4	12
			40				51.5	25.5								
			50			A8	40	24	4	M8 x 1	M5 x 0.8	5	16	12	4	12
			25				40.5	24.5								
			32				41.5	25.5								
			40			A8	40	24	4	M8 x 1	M5 x 0.8	5	16	12	4	12
			50				40.5	24.5								
			50			A8	40	24	4	M8 x 1	M5 x 0.8	5	16	12	4	12
			50				41.5	25.5								

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

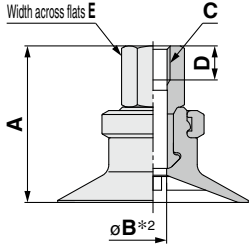
Precautions

Dimensions/Models

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

ZP T 10 C N - B5

① ② ③ ④



Construction p. 117
Adapter Assembly p. 121

① Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Female thread)

B5	M5 x 0.8
B6	M6 x 1
B8	M8 x 1.25
BG01	G1/8
BG02	G1/4
B01	Rc1/8
N01*1	NPT1/8
T01*1	NPTF1/8

*1 Not compatible with stainless steel materials

Model	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③*1 Material	④ Vacuum inlet	A	B*2	C	D	E		
												ZP	Nil
ZP	Nil	T	10	C	N	B5	21	2.5	M5 x 0.8	5	8		
			13				21.5						
			16				4						
			20										
			25				2.5	M6 x 1				6	8
			32										
			10				23.5						
			13				4.9						
			16						21				
			20				21.5						
			25				3.5	M8 x 1.25	8	12			
			32								23		
			40			6.6							
			50				29						
			20			2.5	G1/8				7.4	14	
			25										27
			32			27.5							
			40			4							
			50					29					
			10			7		G1/4	11	17			
			13				38						
			16			39							
			20			2.5	Rc1/8				—	12	
			25										27
32	27.5												
40	3.5												
50		29											
10	7	NPT1/8	—	12									
13					27								
16	27.5												
20	3.5												
25					29								
32	7												
40		29.5											
50	32												
			33										

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

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

*3 Not compatible with stainless steel materials

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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

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

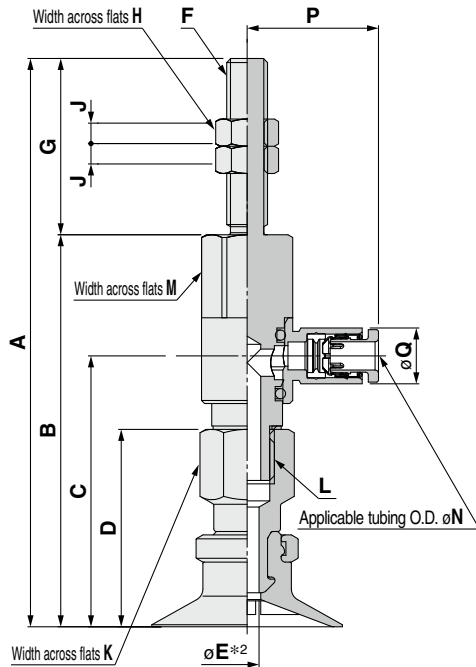
① ②

Vacuum inlet ③
(One-touch fitting)

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

④ Connection thread
(Male thread)

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



Construction	p. 117
Adapter Assembly	p. 122

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

Dimensions Per Vacuum Inlet

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

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

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

Dimensions/Models

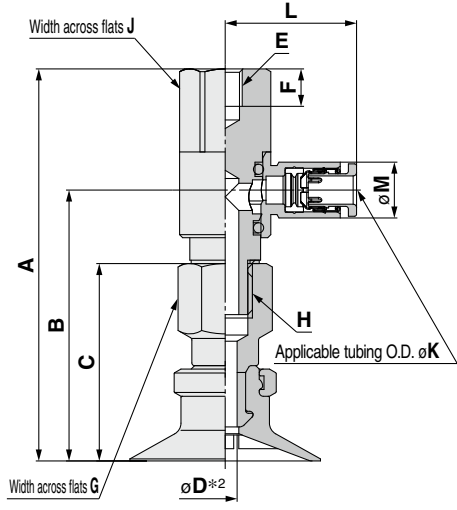
With adapter/One-touch fitting $\varnothing 10$ to $\varnothing 50$

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

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

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

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



Construction p. 117
Adapter Assembly p. 122

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

Dimensions Per Vacuum Inlet

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

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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

ZPY 10 C N - N4 - A5

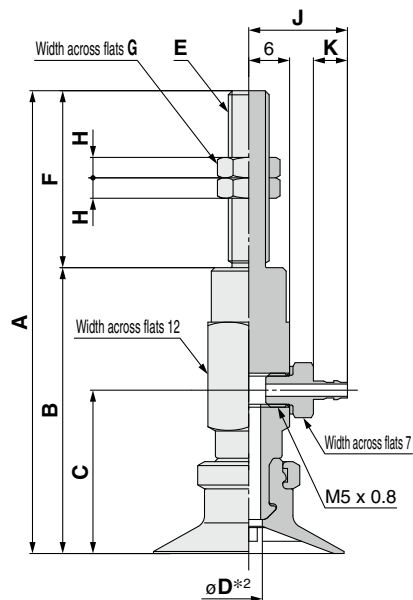
① ②

Vacuum inlet
(Barb fitting)

④ Connection thread
(Male thread)

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

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



Construction	p. 117
Adapter Assembly	p. 123

		Model				A	B	C	D ^{*2}	E	F	G	H					
	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread												
ZP	Y	10	C	N S U F GN GS	N4 N6 U4 U6	A5	59	38	22	2.5	M5 x 0.8	21	8	4				
		13					59.5	38.5	22.5									
		16					64	38	22									
		10				A6	13	N4 N6 U4 U6	N4 N6 U4 U6	A6	64.5	38.5	22.5	2.5	M6 x 1	26	8	4
		16					68				42	24						
		20					68.5				42.5	24.5						
		25					72.5			46.5	28.5							
		32					73.5			47.5	29.5							
		40					73.5			47.5	29.5							
		50				A8	20	N4 N6 U4 U6	N4 N6 U4 U6	A8	58	42	24	3.5	M8 x 1	16	12	4
		25					58.5				42.5	24.5						
		32					62.5				46.5	28.5						
40	A8	40	N4 N6 U4 U6	N4 N6 U4 U6	A8	62.5	46.5	28.5	6	M8 x 1	16	12	4					
50		63.5				47.5	29.5											

Dimensions Per Vacuum Inlet

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

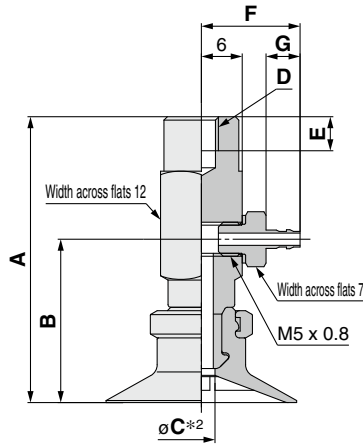
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

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

ZPY 10 C N - N4 - B5



Construction p. 117
Adapter Assembly p. 123

① ②
Vacuum inlet (Barb fitting)

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

④ **Connection thread (Female thread)**

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

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

Dimensions Per Vacuum Inlet

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

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

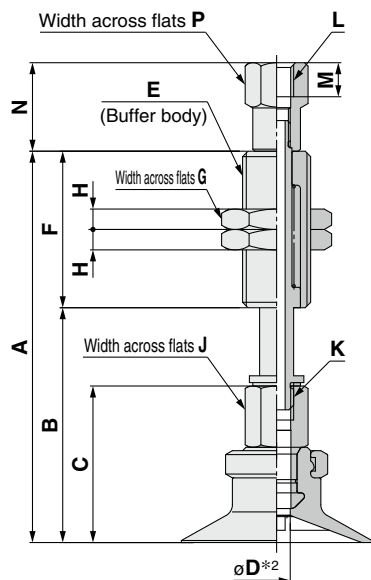
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction p. 118
Buffer Assembly p. 124

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

Buffer specification **3**

J	Rotating
K	Non-rotating

6 Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

5 Vacuum inlet (Female thread)

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

		Model						A	B	C	D*2	E	F	G	H	J	K
Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread										
ZP	10 13	C	N S U F GN GS	J K	10	B5 04 06 N6 U6	A10	55.5	32.5	21	J: 2.5 K: 2	M10 x 1	14	3	8	M5 x 0.8	23
					20			93.5	42.5								51
					30			103.5	52.5								77
					40			139.5	62.5								77
					50			149.5	72.5								23
					10			56	33								23
					20			94	43								51
					30			104	53								77
					40			140	63								77
					50			150	73								23
					10			57.5	34.5								51
					20			95.5	44.5								77
	30	105.5	54.5	77													
	40	141.5	64.5	23													
	50	151.5	74.5	23													
	10	58	35	51													
	20	96	45	77													
	30	106	55	77													
	40	142	65														
	50	152	75														
	20 25 32 40 50	C	N S U F GN GS	J K	10	B5 04 06 N6 U6	A14	94.5	44.5	4	M14 x 1	19	4	12	M8 x 1.25	50	
					20			104.5	54.5							75	
					30			114.5	64.5							50	
					40			159.5	84.5							50	
50					160.5			85.5	75								
10					95.5			45.5									
20					105.5			55.5									
30					115.5			65.5									
40					142			65									
50					152			75									

Dimensions Per Vacuum Inlet: Female Thread

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

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

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

Dimensions/Models

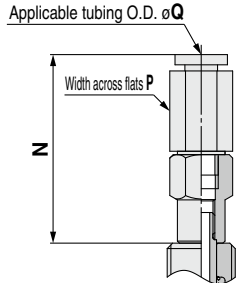
With buffer $\varnothing 10$ to $\varnothing 50$

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

① ② ③ ④

⑥ Connection thread (Male thread)

Vacuum inlet: One-touch fitting



Buffer specification ③

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

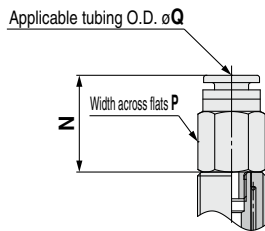
⑤ Vacuum inlet

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

Dimensions Per Vacuum Inlet: One-touch Fitting

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

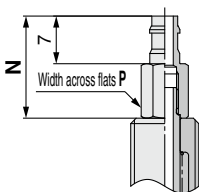
Vacuum inlet: Built-in One-touch fitting
Pad diameter: $\varnothing 40, \varnothing 50$ (Buffer stroke: 20 to 50 st)



Dimensions Per Vacuum Inlet: Barb Fitting

		Model						N	P	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread			
ZP	T	C	N S U F GN GS	J K	10	N6	A10	15	6	$\varnothing 2.5$
					20					
					30					
					40					
					50					
					U6					
	40 50	10	A14	19	10	12				
							U6			
							20	10	12	
							30			
							50			
							U6			

Vacuum inlet: Barb fitting



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

Construction	p. 118
Buffer Assembly	p. 124

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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

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

① ② ③ ④

⑥ Connection thread (Male thread)

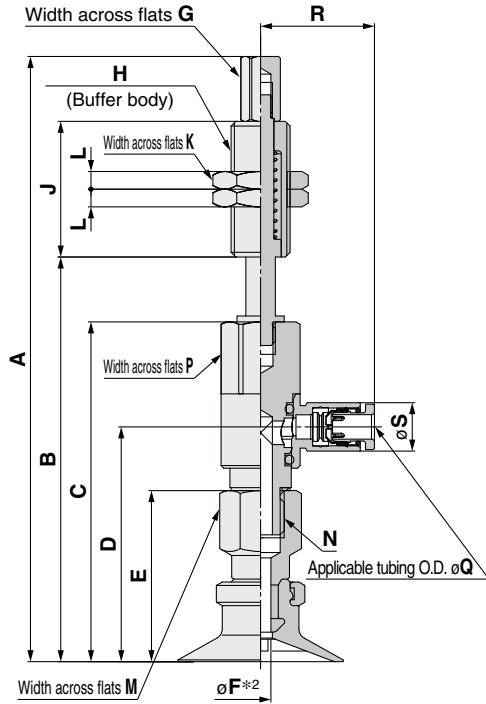
Buffer specification ③

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet (One-touch fitting)

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



Construction	p. 118
Buffer Assembly	p. 125

		Model																								
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread	A	B	C	D	E	^{*2} F	G	H	J	K	L	M	N						
ZP	R	C	N S U F G N S	J K	10	04	A10	91	57							23										
					20			129	67							51										
					30			139	77	46	29.9	21														
					40			175	87																	
					50	04		185	97									2.5						8	M5 x 0.8	
					10	06		91.5	57.5												23					
					20			129.5	67.5																	
					30			139.5	77.5	46.5	30.4	21.5														
					40			175.5	87.5																	
					50			185.5	97.5																	
					10			102.6	68.6										6	M10 x 1	23	14	3			
					20			140.6	78.6																	
	30		150.6	88.6	57.6	39.8	29																			
	40		186.6	98.6																						
	50	04	196.6	108.6										3.5						12	M8 x 1.25					
	10	06	103.1	69.1																						
	20		141.1	79.1																						
	30		151.1	89.1	58.1	40.3	29.5																			
	40		187.1	99.1																						
	50		197.1	109.6																						
	10		140.6	72.6																						
	20		137.6	82.6																						
	30		147.6	92.6	60.6	42.8	32																			
	50	06	192.6	112.6																						
10	08	141.6	73.6										4	10	M14 x 1	75	19	4	12	M8 x 1.25						
20		138.6	83.6																							
30		148.6	93.6	61.6	43.8	33																				
50		193.6	113.6																							

Dimensions Per Vacuum Inlet

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

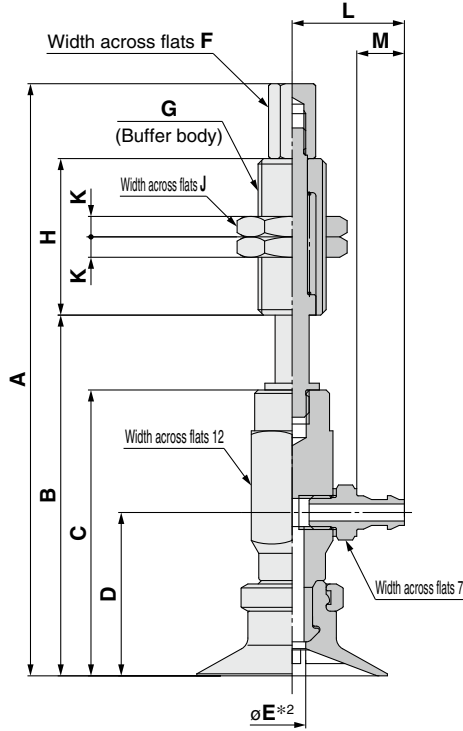
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

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

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



Construction p. 118
Buffer Assembly p. 126

Buffer specification **3**

J	Rotating
K	Non-rotating

6 Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

5 Vacuum inlet (Barb fitting)

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

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

Dimensions Per Vacuum Inlet

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions



Basic Pad

Flat Type Ball Joint Type

ZP Series



How to Order

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

①
②
③
④
⑤
⑥
⑦

● Ball joint type

① Vacuum inlet direction

T	Vertical
R	Lateral (With One-touch fitting)

② Pad diameter

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

⑤ Buffer stroke

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

③ Material

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

④ Buffer specification

J	Rotating
K	Non-rotating

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

With adapter

⑥ Vacuum inlet/⑦ Connection thread

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

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

*1 Use the connection thread.

With buffer

⑥ Vacuum inlet

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

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

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

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

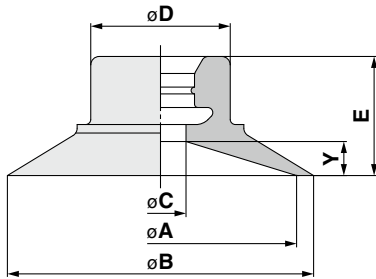
Lock ring unit

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

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

Dimensions/Models

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



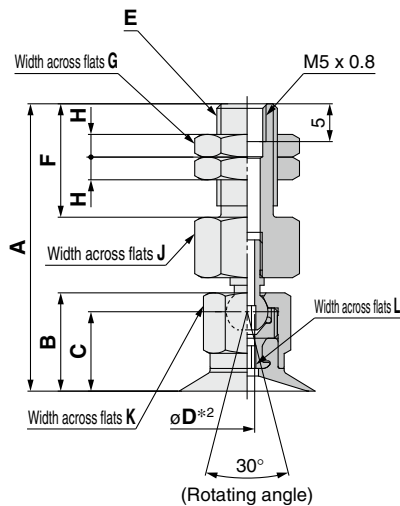
Construction p. 119
 Mounting Bracket Assembly From p. 127

ZP **10** **F** **N**
 ① ②

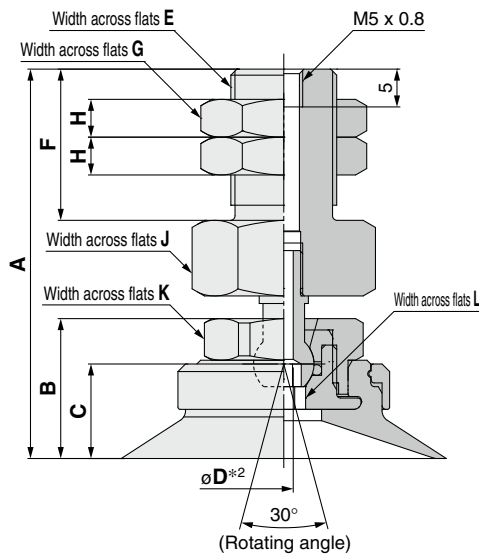
Model	① Pad dia.	Form	② ^{*1} Material	A	B	C	D	E	Y
	10	F	N S U F GN GS	10	12	3	8.2	6.5	1.5
	13			13	15				
	16			16	18				
	20			20	22	4	10.2	8.5	3
	25			25	28				
	32			32	35			9	
	40			40	43	10	26	13	5
	50			50	53	8		14	6

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

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



$\varnothing 10$ to $\varnothing 32$



$\varnothing 40, \varnothing 50$

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

Vacuum inlet (Female thread)

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

④ Connection thread (Male thread)

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

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

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

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

Construction p. 119
 Adapter Assembly p. 127

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

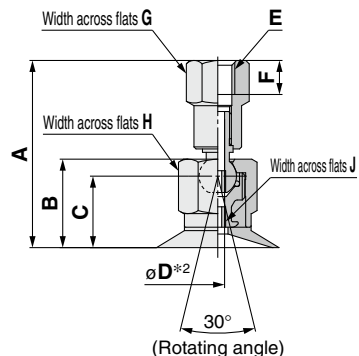
With adapter $\varnothing 10$ to $\varnothing 50$

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

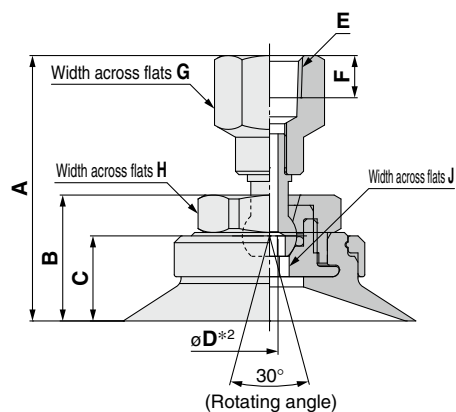
① ②

③ Connection thread (Female thread)

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



$\varnothing 10$ to $\varnothing 32$



$\varnothing 40, \varnothing 50$

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

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

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

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Adapter Assembly p. 127

Dimensions/Models

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

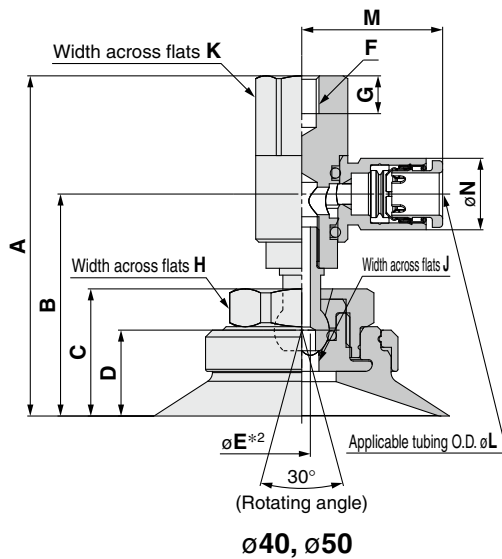
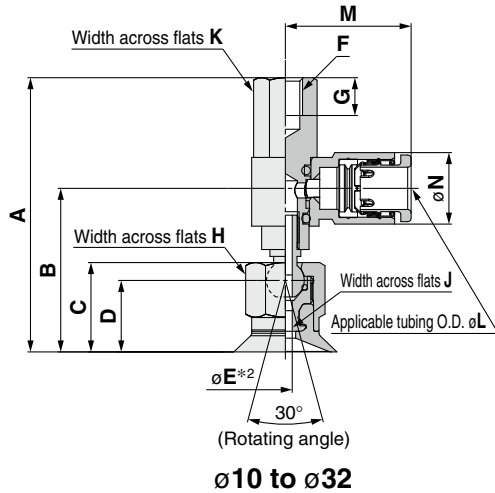
ZPR **10** F **N** - **04** - **B5**

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

④ Connection thread (Female thread)

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

B5	M5 x 0.8
B8	M8 x 1.25



		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	F	N S U F GN GS	04 06 08	B5	10	39.5	23.4	12.5	10	M5 x 0.8	5.5	10	2
						13	40	23.9	13	10.5				
						16	40	23.9	13	10.5				
						20	46.5	29.3	15.5	12.5				
						25	46.5	29.3	15.5	12.5				
						32	47	29.8	16	13				
	R	F	N S U F GN GS	04 06 08	B8	40	49.5	32.3	18.5	12.5	M8 x 1.25	8.5	12	3
						50	50.5	33.3	19.5	13.5				
						20	46.5	29.3	15.5	12.5				
						25	46.5	29.3	15.5	12.5				
						32	47	29.8	16	13				
						40	49.5	32.3	18.5	12.5				
R	F	N S U F GN GS	04 06 08	B8	50	50.5	33.3	19.5	13.5	M8 x 1.25	8.5	12	3	
					20	46.5	29.3	15.5	12.5					
					25	46.5	29.3	15.5	12.5					
					32	47	29.8	16	13					
					40	49.5	32.3	18.5	12.5					
					50	50.5	33.3	19.5	13.5					

Dimensions Per Vacuum Inlet

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

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

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

Construction	p. 119
Adapter Assembly	p. 128

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Ball Joint Type

Bellows Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Thin Flat Type with Ribs

Deep Type

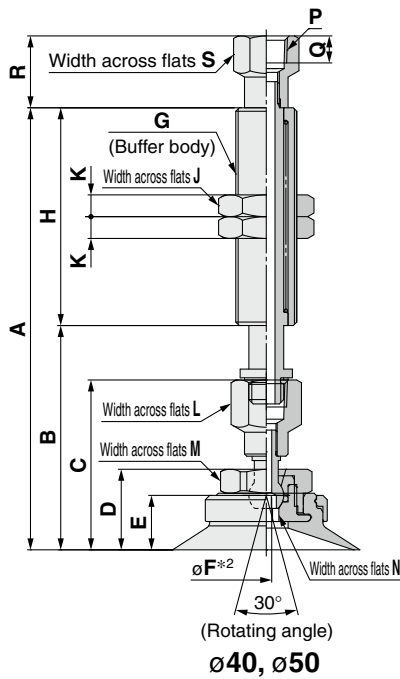
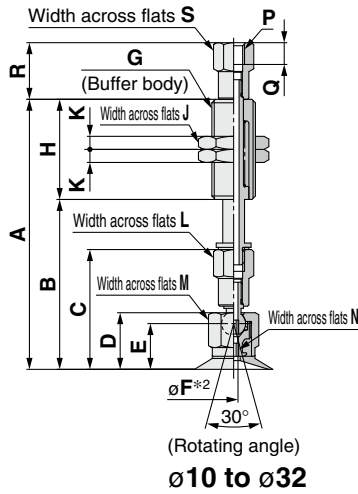
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



ZPT 10 F N J 10 - B5 - A10

Buffer specification ③

J	Rotating
K	Non-rotating

⑥ Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

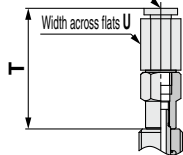
⑤ Vacuum inlet

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

Model														A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread																							
ZP	T	F	N S U F G S	J K	10	B5	A10	61.5	38.5	27	12.5	10	2	M10 x1	23	14	3	8	10	2	M5 x 0.8	5	13	8						
					20			99.5	48.5						51															
					30			109.5	58.5						77															
					40			145.5	68.5						77															
					50			155.5	78.5						23															
					10			62	39						51															
					20			100	49						77															
					30			110	59						27.5															
					40			146	69						13															
					50			156	79						10.5															
					10			98.5	48.5						50															
					20			108.5	58.5						75															
	30	118.5	68.5	75																										
	50	163.5	88.5	12																										
	10	99	49	3																										
	20	109	59	12																										
	30	119	69	3																										
	50	164	89	12																										
	10	101.5	51.5	Rc1/8																										
	20	111.5	61.5	NPT1/8																										
	30	121.5	71.5	NPTF1/8																										
	50	166.5	91.5	13																										
	10	102.5	52.5	16.5																										
	20	112.5	62.5	12																										
30	122.5	72.5	16.5																											
50	167.5	92.5	12																											

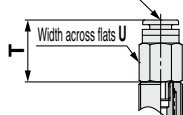
Vacuum inlet: One-touch fitting

Applicable tubing O.D. $\varnothing V$



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

Applicable tubing O.D. $\varnothing V$



Dimensions Per Vacuum Inlet: One-touch Fitting

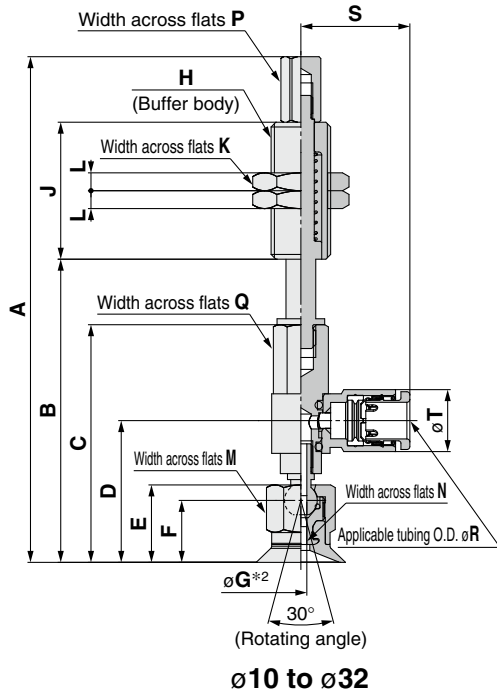
Model										T	U	V	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread						
ZP	T	F	N S U F G S	J K	10	04	A10	27.7	8	4	$\varnothing 2.5$		
					20								
					30								
					40								
					50								
			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

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

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

Dimensions/Models

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



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

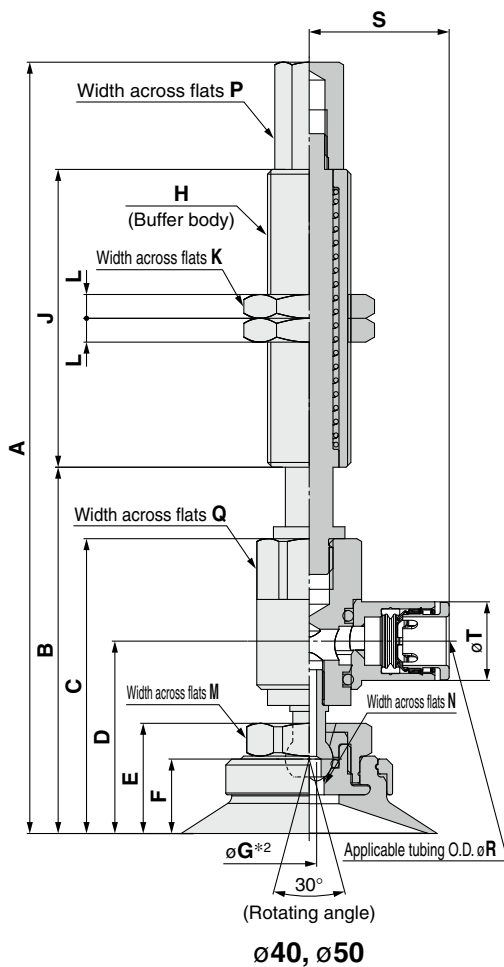
① Pad dia. ② Form ③ Buffer spec. ④ Buffer stroke ⑤ Vacuum inlet ⑥ Connection thread

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet (One-touch fitting)

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



$\varnothing 40, \varnothing 50$

Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke	⑥ Vacuum inlet	⑦ Connection thread	A	B	C	D	E	F	G ^{*2}	H	J	K	L	M	N	P									
									84.5	50.5						23															
ZP	R	10	F	N	J	10	04	A10	84.5	50.5						M10 x 1	23														
									122.5	60.5						51															
									132.5	70.5	39.5	23.4	12.5	10																	
									168.5	80.5																					
									178.5	90.5																					
									10	20	85	51																			
									20	30	123	61																			
									30	40	133	71	40	23.9	13	10.5															
									40	50	169	81																			
									10	20	179	91																			
									20	30	126.5	58.5																			
									30	40	123.5	68.5																			
		40	50	133.5	78.5	46.5	29.3	15.5	12.5																						
		10	20	178.5	98.5																										
		20	30	127	59																		12	3							
		30	40	124	69																										
		40	50	134	79	47	29.8	16	13																						
		10	20	179	99																										
		20	30	129.5	61.5																		19	4							
		30	40	126.5	71.5																										
		40	50	136.5	81.5	49.5	32.3	18.5	12.5																						
		10	20	181.5	101.5																										
		20	30	130.5	62.5																		19	5							
		30	40	127.5	72.5																										
40	50	137.5	82.5																												
50		182.5	102.5																												

Dimensions Per Vacuum Inlet: One-touch Fitting

Model	Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke	⑥ Vacuum inlet	⑦ Connection thread	Q	R	S	T	Fitting part min. hole size																										
ZP	R	10	F	N	J	10	04	A10	8	4	17.5	8.2	$\varnothing 2.5$																										
														20	30	40	50	06	A14	12	6	20.5	10.4	$\varnothing 4.5$															
																									16	8	23.5	13.2	$\varnothing 6$										
																														12	6	20.5	10.4	$\varnothing 4.5$					
																																			16	8	23.5	13.2	$\varnothing 6$

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

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



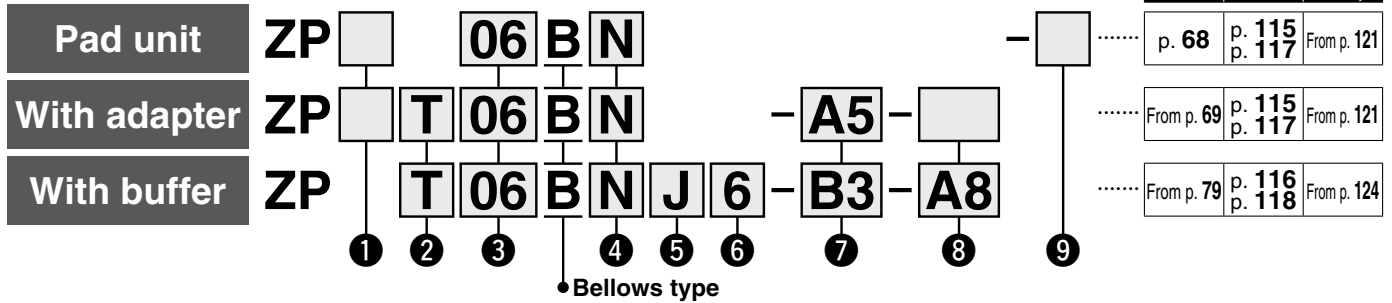
Basic Pad

Bellows Type

ZP Series



How to Order



Dimensions/ Models	Construction	Mounting Bracket Assembly
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From p. 69	p. 115 p. 117	From p. 121
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From p. 79	p. 116 p. 118	From p. 124
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① Adapter (Lock ring) material

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

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

② Vacuum inlet direction

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

③ Pad diameter

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

④ Material

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

⑤ Buffer specification

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

*1 Only for pad diameters ø6 and ø8

⑥ Buffer stroke

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

*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 Japan Food Sanitation Act, Article 18 "Specifications and Standards for Food and Food Additives, etc." (Ministry of Health and Welfare Notification No. 370, 1959)

With adapter

⑦ Vacuum inlet ○: 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	—	—	—
	AS5		○*1	—	—	—
	A6	M6 x 1	○*1	—	—	—
	AS6		○*1	—	—	—
	AG01		○*1	—	—	—
AG02	G1/4	—	—	—	○*1	
Female thread	Nil	M3 x 0.5	—	○ Connection thread: AS(A6)	○ Connection thread: AB	○ Connection thread: AB
		M5 x 0.8	—	○ Connection thread: AB	○ Connection thread: AB	—
	B4	M4 x 0.7	○*1	—	—	—
	B5	M5 x 0.8	○*1	○*1	○*1	—
	B6	M6 x 1	—	○*1	○*1	○*1
	B8	M8 x 1.25	—	—	○*1	○*1
	BG01	G1/8	—	○*1	○*1	—
	BG02	G1/4	—	—	—	○*1
	B01	Rc1/8	—	○*1	○*1	○*1
	N01*4	NPT1/8	—	○*1	○*1	○*1
	T01*4	NPTF1/8	—	○*1	○*1	○*1
	One-touch fitting	04	ø4	●	●	●
06		ø6	●	●	●	●
08		ø8	—	—	●	●
Barb fitting	N4	For ø4 nylon tubing*2	△	△	△	—
	N6	For ø6 nylon tubing*2	△	△	△	△
	U4	For ø4 soft tubing*3	△	△	△	—
	U6	For ø6 soft tubing*3	△	△	△	△

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

⑧ Connection thread ○: 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●△	—
	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

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

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

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

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

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

⑨ Lock ring

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

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

Lock ring unit

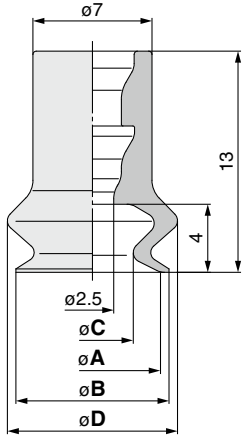
Part no.	Pad diameter [mm]
ZP□L1	ø10 to ø16
ZP□L2	ø20 to ø32
ZP□L3	ø40, ø50

□: Nil/Brass S/Stainless steel

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

Dimensions/Models

Single unit $\varnothing 6$ to $\varnothing 8$



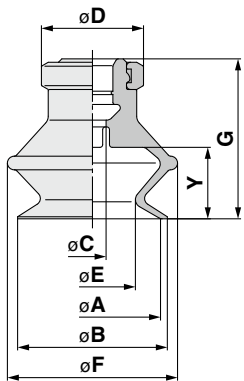
ZP 06 B N
① ②

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

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

Construction p. 115
Mounting Bracket Assembly From p. 121

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



ZP 10 B N
① ② ③

① Lock ring material

Nil	Brass
S	Stainless steel (Stainless steel 304)

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

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

Construction p. 117
Mounting Bracket Assembly From p. 121

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

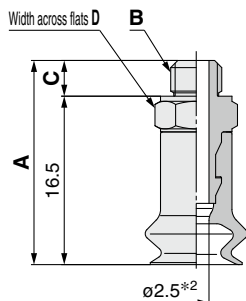
Precautions

Dimensions/Models

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

ZP T 06 B N - A5

1
 2
 3
 4



Construction p. 115

Adapter Assembly p. 121

1 Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

4 Vacuum inlet (Male thread)

A5	M5 x 0.8
A6	M6 x 1

ZP	Model						A	B	C	D
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material ^{*1}	4 Vacuum inlet				
ZP	Nil S	T	06 08	B	N S U F GN GS	A5	20	M5 x 0.8	3.5	7
						A6	21	M6 x 1	4.5	8

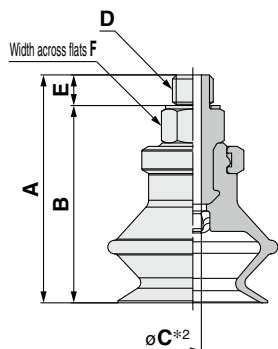
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

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

ZP T 10 B N - AS5

1
 2
 3
 4



Construction p. 117

Adapter Assembly p. 121

1 Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

4 Vacuum inlet (Male thread)

AS5	M5 x 0.8
AS6	M6 x 1
AG01	G1/8
AG02	G1/4

ZP	Model						A	B	C*2	D	E	F
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material ^{*1}	4 Vacuum inlet						
ZP	Nil S	T	10 13 16 20 25 32 38 10 13 16 20 25 32 40 50 10 13 16 20 25 32 40 50	B	N S U F GN GS	AS5	25	21.5	2.5	M5 x 0.8	3.5	8
							27.5	24				
							29	25.5				
							32.5	29				
							33	29.5				
							38	34.5				
						AS6	26	21.5	2.5	M6 x 1	4.5	8
							28.5	24				
							30	25.5				
							33.5	29				
							34	29.5				
							39	34.5				
						AG01	45	40.5	2.5	G1/8	5.5	17
							49	44.5				
							34	28.5				
							36.5	31				
							38	32.5				
							41.5	36				
						AG02	42	36.5	7	G1/4	6.5	21
							47	41.5				
							54.5	48				
							58.5	52				

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

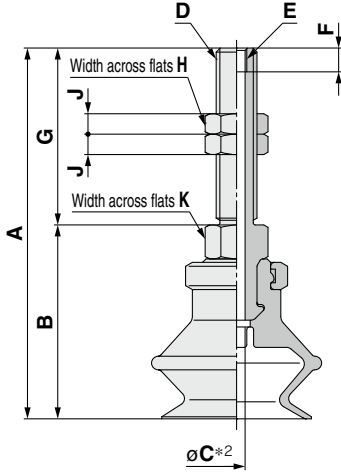
*2 Indicates the minimum hole size of the adapter or vacuum pad

Dimensions/Models

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

ZP T 10 B N - A5

1
 2
 3
 4



Construction p. 117
Adapter Assembly p. 121

1 Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

4 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														
ZP	Adapter material 1 Nil S	Vacuum inlet direction T	Pad dia. 2 10 13 16 20 25 32 40 50	Form B	Material 3 N S U F GN GS	Connection thread 4 A5 A6 A8	A	B	C*2	D	E	F	G	H	J	K
							42	21	2.5	M5 x 0.8	M3 x 0.5	3.5	21	8	4	8
44.5	23.5															
46	25															
47	21															
49.5	23.5	4	M8 x 1	M5 x 0.8	5	16	12	4	12							
51	25															
54.5	28.5															
55	29															
60	34	4.2														
66	40															
70	44															
49.5	33.5															
50	34															
55	39															
56	40															
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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

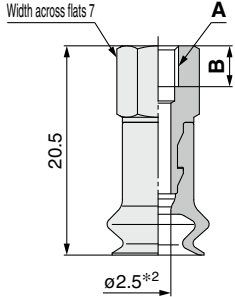
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

With adapter ø6 to ø8



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Adapter Assembly p. 121

ZP T 06 B N - B4

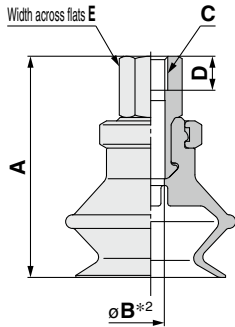
① ② ③ ④

① Adapter material		④ Vacuum inlet (Female thread)	
Nil	Brass	B4	M4 x 0.7
S	Stainless steel (Stainless steel 304)	B5	M5 x 0.8

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

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

With adapter ø10 to ø50



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Adapter Assembly p. 121

ZP T 10 B N - B5

① ② ③ ④

① Adapter (Lock ring) material		④ Vacuum inlet (Female thread)			
Nil	Brass	B5	M5 x 0.8	BG02	G1/4
S	Stainless steel (Stainless steel 304)	B6	M6 x 1	B01	Rc1/8
		B8	M8 x 1.25	N01*1	NPT1/8
		BG01	G1/8	T01*1	NPTF1/8

*1 Not compatible with stainless steel materials

Model	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material*1	④ Vacuum inlet	A	B*2	C	D	E						
ZP	Nil S	T	10 13 16 20 25 32 40 50	B	N S U F GN GS	B5	25	2.5	M5 x 0.8	5	8						
							27.5										
							29										
							32.5										
							33										
							38										
							10	2.5				M6 x 1	6	8			
							13										
							16										
							20										
						25											
						32											
						40	4.9	M8 x 1.25	8	12							
						50											
						20					3.5				M8 x 1.25	8	12
						25											
						32											
						40											
						50											
						10	6.6				G1/8	7.4	14				
						13											
						16											
						20											
						25											
						32	4	G1/8	7.4	14							
						40											
						50											
						10								7	G1/4	11	17
						13											
						16											
20																	
25																	
32	2.5	Rc1/8 NPT1/8 NPTF1/8	—	12													
40																	
50																	
10					3.5	Rc1/8 NPT1/8 NPTF1/8	—	12									
13																	
16																	
20																	
25																	
32	7				Rc1/8 NPT1/8 NPTF1/8				—	12							
40																	
50																	

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber
*2 Indicates the minimum hole size of the adapter or vacuum pad
*3 Not compatible with stainless steel materials

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

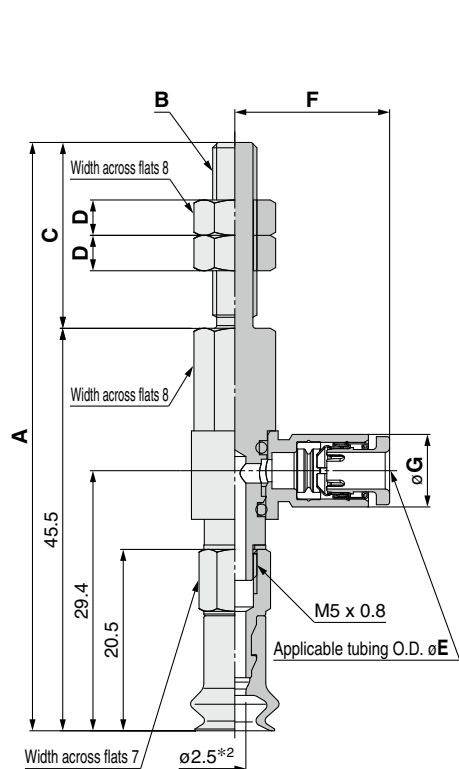
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 122

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

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

Model						A	B	C	D	
Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Vacuum inlet	4 Connection thread					
ZP	R	06 08	B	N S U F GN GS	04	A5	66.5	M5 x 0.8	21	4
					06	A6	71.5	M6 x 1	26	4

Dimensions Per Vacuum Inlet

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

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

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

Dimensions/Models

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

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

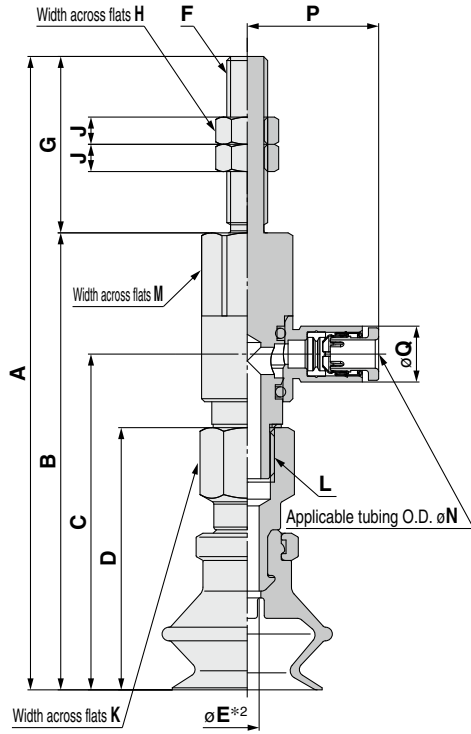
① ②

Vacuum inlet
(One-touch fitting)

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

④ Connection thread
(Male thread)

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



Construction	p. 117
Adapter Assembly	p. 122

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

Dimensions Per Vacuum Inlet

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

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

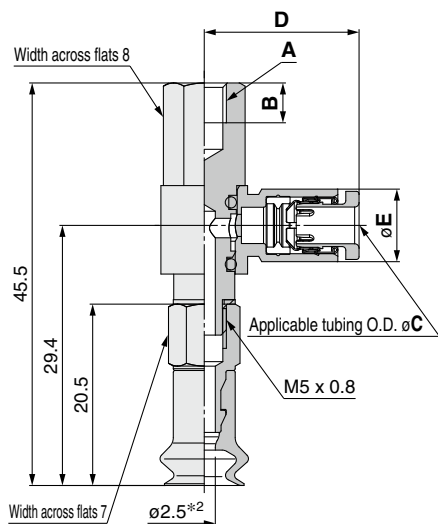
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 122

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

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

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

Dimensions Per Vacuum Inlet

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

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

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

Dimensions/Models

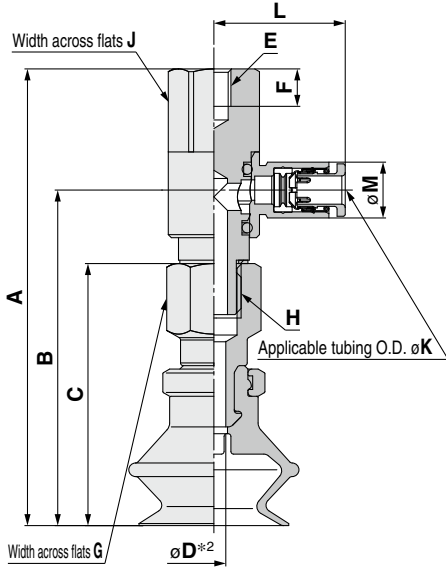
With adapter/One-touch fitting $\varnothing 10$ to $\varnothing 50$

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

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

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

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



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Adapter Assembly p. 122

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

Dimensions Per Vacuum Inlet

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

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

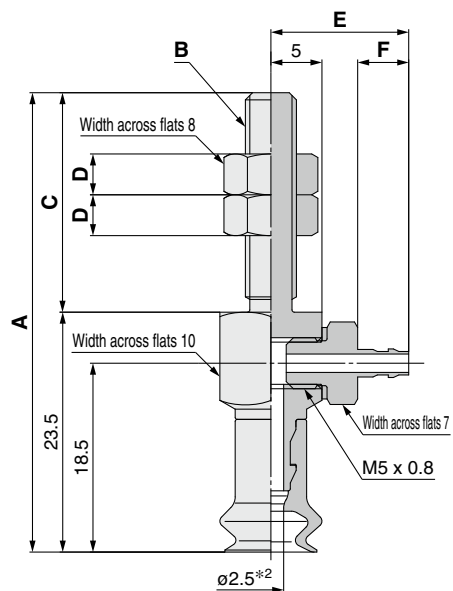
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 123

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

① ②

Vacuum inlet ③
(Barb fitting)

④ Connection thread
(Male thread)

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

A5	M5 x 0.8
A6	M6 x 1

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

Dimensions Per Vacuum Inlet

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

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

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

Dimensions/Models

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

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

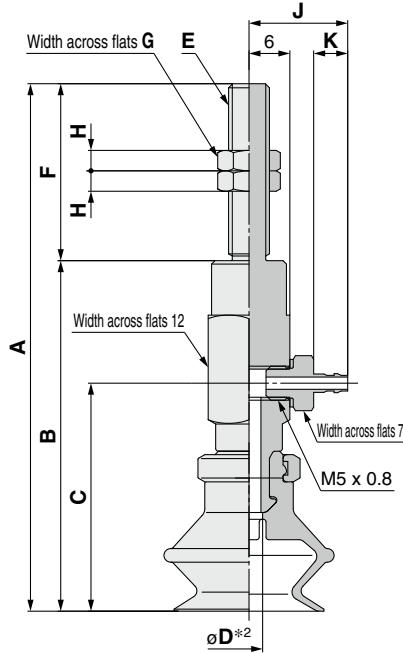
① ②

Vacuum inlet (Barb fitting)

④ **Connection thread (Male thread)**

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

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



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

Dimensions Per Vacuum Inlet

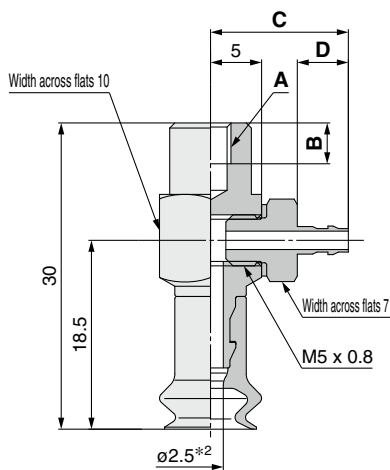
		Model				J	K	Fitting part min. hole size	
	Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Vacuum inlet				
ZP	Y	10	B	N S U F GN GS	N4	A5	14.5	5	$\varnothing 1.8$
		U4							
		16			N6	A6	16.5	7	$\varnothing 2.5$
		20			U6				
		25			N6	A8	16.5	7	$\varnothing 2.5$
		32			U6				
40	50								

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

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

Dimensions/Models

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



Construction p. 115
Adapter Assembly p. 123

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

① ②

Vacuum inlet ③
(Barb fitting)

④ Connection thread
(Female thread)

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

B4	M4 x 0.7
B5	M5 x 0.8

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

Dimensions Per Vacuum Inlet

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

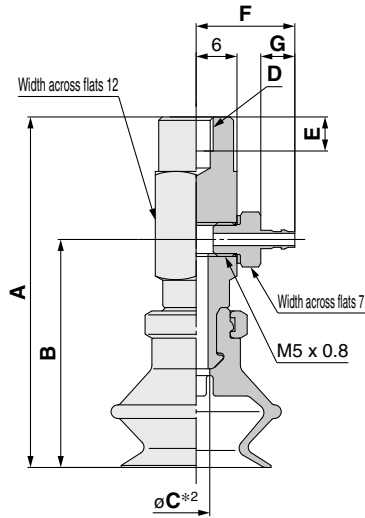
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

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

ZPY 10 B N - N4 - B5



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Adapter Assembly p. 123

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

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

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

		Model				A	B	C*2	D	E
Vacuum inlet direction	1 Pad dia.	2 Form	3*1 Material	4 Vacuum inlet						
ZP	Y	B	N S U F GN GS	N4 N6 U4 U6	B5	42	26	2.5	M5 x 0.8	5
						44.5	28.5			
						46	30			
						51.5	33.5			
						52	34			
						57	39			
					B6	42	26	2.5	M6 x 1	6
						44.5	28.5			
						46	30			
						51.5	33.5			
	52	34								
	57	39								
	62	44	6							
	66	48								
	51.5	33.5								
	B8	52	34	3.5		M8 x 1.25	8			
		57	39							
		62	44							
		66	48							

Dimensions Per Vacuum Inlet

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

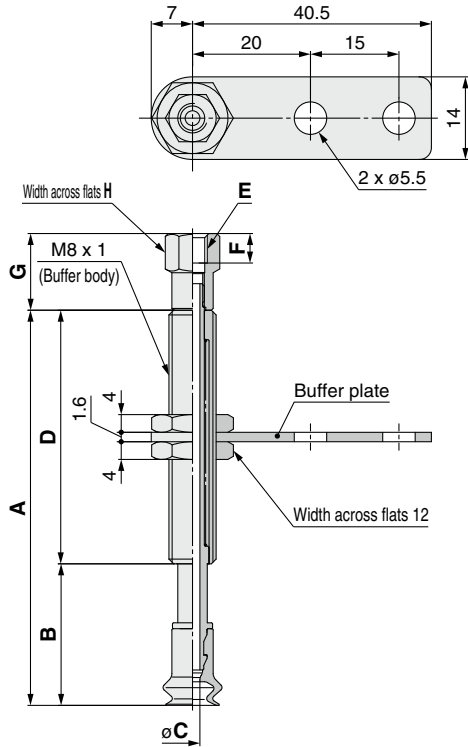
Mounting Bracket Assembly

Precautions

Dimensions/Models

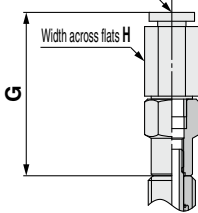
With buffer $\varnothing 6$ to $\varnothing 8$

The drawings show the type with a buffer plate.

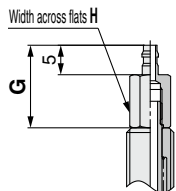


Vacuum inlet: One-touch fitting

Applicable tubing O.D. $\varnothing J$



Vacuum inlet: Barb fitting



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Buffer Assembly	p. 124

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

① ② ④ ③

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

⑥ Connection thread
(Male thread)

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

⑤ Vacuum inlet

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

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

Dimensions Per Vacuum Inlet: Female Thread

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

Dimensions Per Vacuum Inlet: One-touch Fitting

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

Dimensions Per Vacuum Inlet: Barb Fitting

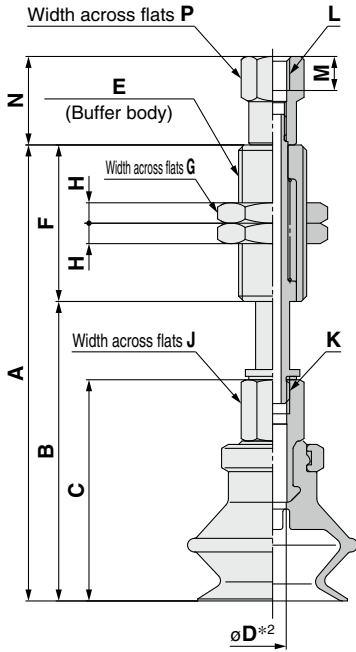
		Model						G	H	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	06 08	B	N S U F GN GS	J K JN KN	6 10 15 25	N4 U4	A8	14	6	$\varnothing 1.8$

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

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

Dimensions/Models

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



Construction p. 118
Buffer Assembly p. 124

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

1	2	3	4	5	6	
Pad dia.	Form	Material	Buffer spec.	Vacuum inlet	Connection thread	
J	Rotating			B5	M5 x 0.8	
K	Non-rotating			B01	Rc1/8	
				N01	NPT1/8	
				T01	NPTF1/8	
					A10	M10 x 1
					A14	M14 x 1

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

Dimensions Per Vacuum Inlet: Female Thread

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

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

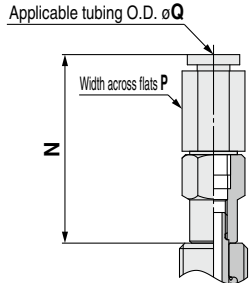
With buffer $\varnothing 10$ to $\varnothing 50$

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

① ② ④

⑥ Connection thread (Male thread)

Vacuum inlet: One-touch fitting



Buffer specification ③

J	Rotating
K	Non-rotating

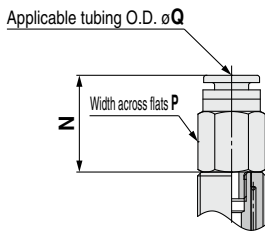
A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet

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

Dimensions Per Vacuum Inlet: One-touch Fitting

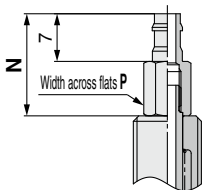
Vacuum inlet: Built-in One-touch fitting
Pad diameter: $\varnothing 40, \varnothing 50$ (Buffer stroke: 20 to 50 st)



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

Dimensions Per Vacuum Inlet: Barb Fitting

Vacuum inlet: Barb fitting



	Vacuum inlet direction	Model						N	P	Fitting part min. hole size		
		① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet				⑥ Connection thread	
ZP	T	10	B	N S U F GN GS	J K	10	A10	15	6	$\varnothing 2.5$		
		13				N6						
		16				U6						
		20				A14	19				10	
		25										10
		32										N6
40	50	20	J K	N6	A14	12	10	$\varnothing 2.5$				
50		30		U6								
50		50		U6								

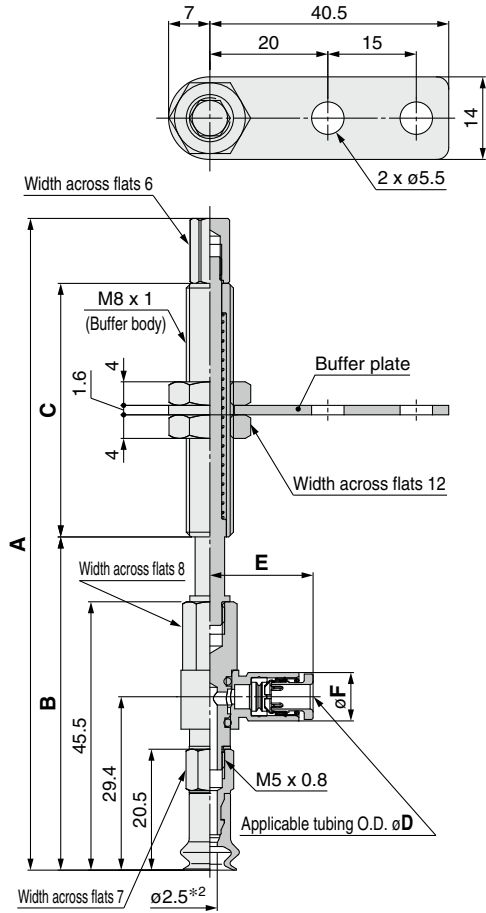
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

Construction	p. 118
Buffer Assembly	p. 124

Dimensions/Models

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

The drawings show the type with a buffer plate.



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

Buffer specification

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

6 Connection thread
(Male thread)

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

5 Vacuum inlet
(One-touch fitting)

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

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

Dimensions Per Vacuum Inlet

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

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

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

- Construction p. 116
- Buffer Assembly p. 125

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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

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

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

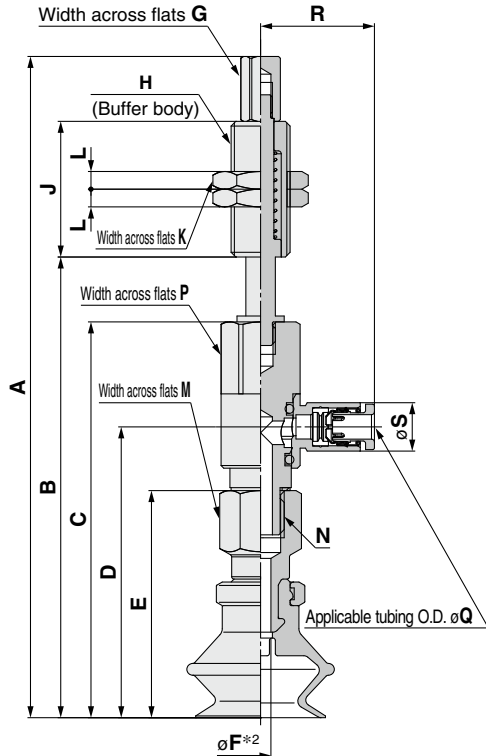
Buffer specification ③

J	Rotating
K	Non-rotating

⑤ Vacuum inlet (One-touch fitting)

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

A10	M10 x 1
A14	M14 x 1



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Buffer Assembly p. 125

		Model																														
Vacuum inlet direction	① Pad dia.	Form	② Material*	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread	A	B	C	D	E	*2 F	G	H	J	K	L	M	N												
ZP	R	B	N S U F GN GS	J K	10 20 30 40 50 10 20 30 40 50 10 20 30 40 50	04 06 A10		95	61					6	M10 x1	23																
								133	71							51																
								143	81	50	33.9	25																				
								179	91																							
								189	101																							
								97.5	63.5																							
								135.5	73.5																							
								145.5	83.5	52.5	36.4	27.5	2.5																			
								181.5	93.5																							
								191.5	103.5																							
								99	65																							
								137	75																							
	147	85	54	37.9	29																											
	183	95																														
	193	105																														
	112.1	78.1																														
	150.1	88.1																														
	160.1	98.1	67.1	49.3	38.5																											
	196.1	108.1																														
	206.1	118.1																														
	112.6	78.6																														
	150.6	88.6																														
	160.6	98.6	67.6	49.8	39	3.5																										
	196.6	108.6																														
206.6	118.6																															
117.6	83.6																															
155.6	93.6																															
165.6	103.6	72.6	54.8	44																												
201.6	113.6																															
211.6	123.6																															
156.1	88.1																															
153.1	98.1																															
163.1	108.1	76.1	58.3	47.5																												
208.1	128.1																															
160.1	92.1																															
157.1	102.1	80.1	62.3	51.5																												
167.1	112.1																															
212.1	132.1																															

Dimensions Per Vacuum Inlet

		Model										P	Q	R	S	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② Material*	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread										
ZP	R	B	N S U F GN GS	J K	10	04	A10	8	4	17.5	8.2	$\varnothing 2.5$					
					20												
					30												
					40												
					50												
					10												
	20	06		6	18.3	10.4	$\varnothing 4$										
	30	06		6	19.3	8.2	$\varnothing 3$										
	40	06		6	20.5	10.4	$\varnothing 4.5$										
	50	08		8	23.5	13.2	$\varnothing 6$										
	10	06		6	20.5	10.4	$\varnothing 4.5$										
	20	08		8	23.5	13.2	$\varnothing 6$										

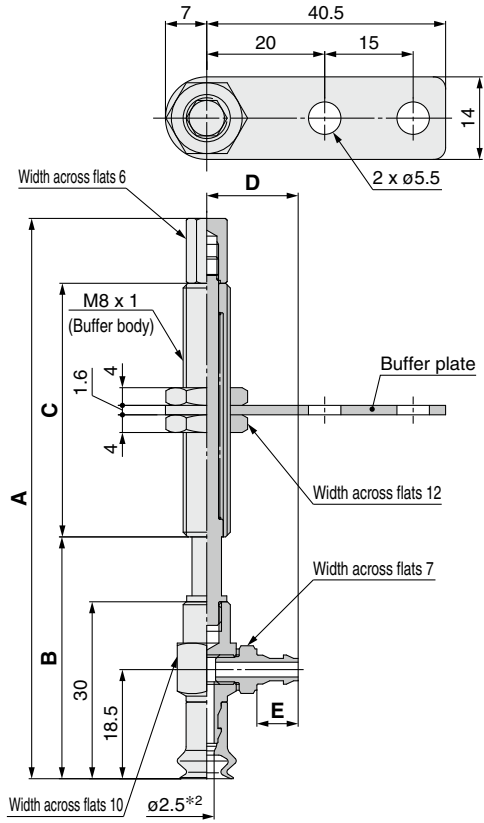
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

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

The drawings show the type with a buffer plate.



Construction	p. 116
Buffer Assembly	p. 126

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

1

2

4

6 Connection thread
(Male thread)

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

Buffer specification 3

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

5 Vacuum inlet
(Barb fitting)

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

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

Dimensions Per Vacuum Inlet

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

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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

ZPY 10 B N J 10 - N4 - A10

① ② ④

Buffer specification ③

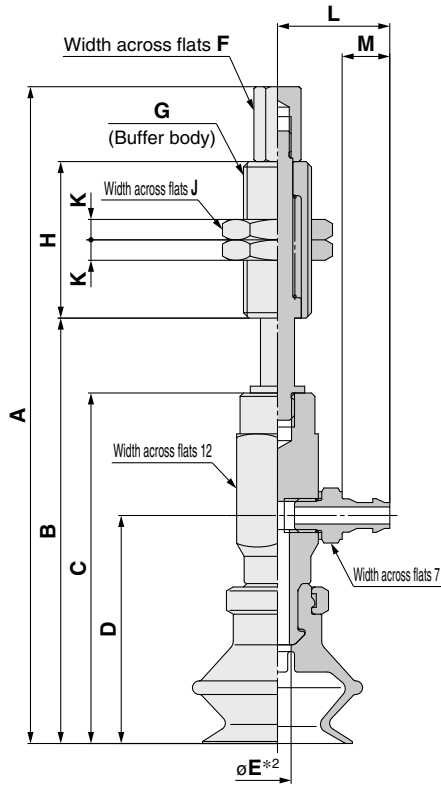
J	Rotating
K	Non-rotating

⑥ **Connection thread (Male thread)**

A10	M10 x 1
A14	M14 x 1

⑤ **Vacuum inlet (Barb fitting)**

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



Construction p. 118
Buffer Assembly p. 126

		Model										A	B	C	D	*2 E	F	G	H	J	K
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread														
ZP	10	B	N S U F GN GS	J K	10	N4 N6 U4 U6	A10	87	53	42	26										23
					20			125	63												51
					30			135	73												77
					40			171	83												
					50			181	93												
					10			89.5	55.5												23
					20			127.5	65.5												51
					30			137.5	75.5												77
					40			173.5	85.5												
					50			183.5	95.5												
					10			91	57												23
					20			129	67												51
	30	139	77	77																	
	40	175	87																		
	50	185	97																		
	10	96.5	62.5	23																	
	20	134.5	72.5	51																	
	30	144.5	82.5	77																	
	40	180.5	92.5																		
	50	190.5	102.5																		
	10	97	63	23																	
	20	135	73	51																	
	30	145	83	77																	
	40	181	93																		
50	191	103																			
10	102	68	23																		
20	140	78	51																		
30	150	88	77																		
40	186	98																			
50	196	108																			
10	142	74	23																		
20	139	84	51																		
30	149	94	75																		
40	194	114																			
50	146	78																			
10	143	88	50																		
20	153	98																			
30	153	98																			
40	198	118																			
50																					

Dimensions Per Vacuum Inlet

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

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

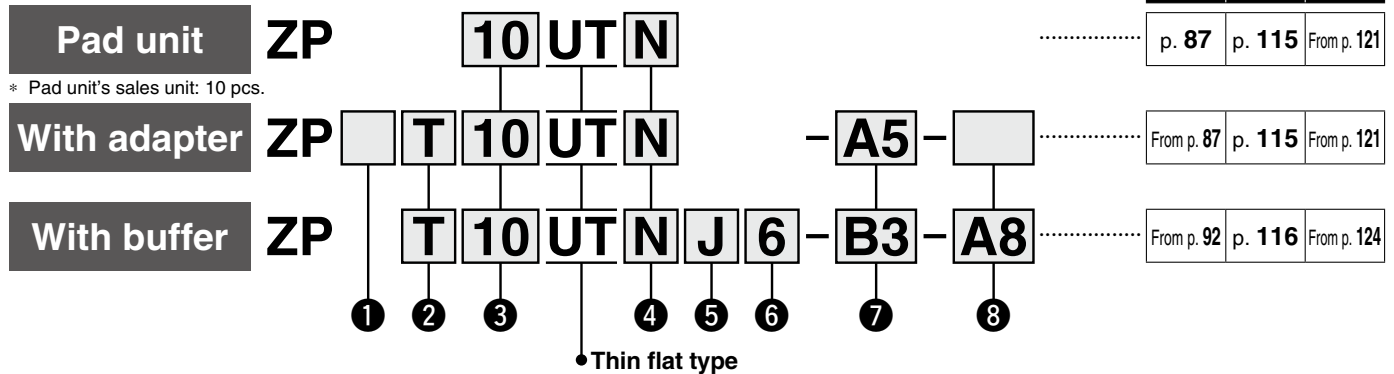
*2 Indicates the minimum hole size of the adapter or vacuum pad



Basic Pad Thin Flat Type ZP Series



How to Order



1 Adapter material

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

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

2 Vacuum inlet direction

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

3 Pad diameter

10	ø10
13	ø13
16	ø16

4 Material

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

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

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

5 Buffer specification

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

6 Buffer stroke

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

With adapter

7 Vacuum inlet

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

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

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

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

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

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

With buffer

7 Vacuum inlet

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

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

*1 Nylon tube piping

*2 Soft nylon/Polyurethane tube piping

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

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

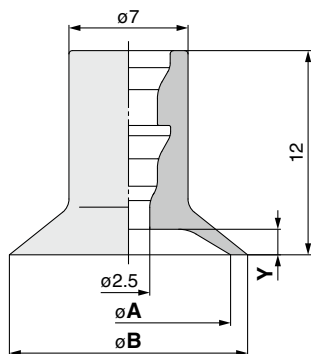
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



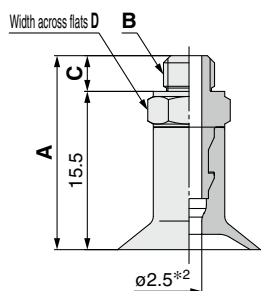
Construction p. 115
Mounting Bracket Assembly From p. 121

ZP **10** UT **N**
① ②

Model				A	B	Y
① Pad dia.	Form	② Material ^{*1}				
ZP	10	UT	N S U F GN GS	10	11	1
	13			13	14	1.5
	16			16	17	

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

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



Construction p. 115
Adapter Assembly p. 121

ZP **T 10** UT **N** - **A5**
① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Male thread)

A5	M5 x 0.8
A6	M6 x 1

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

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

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

ZP **T 10** UT **N** - **B4**
① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

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

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

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

Dimensions/Models

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

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

①

②

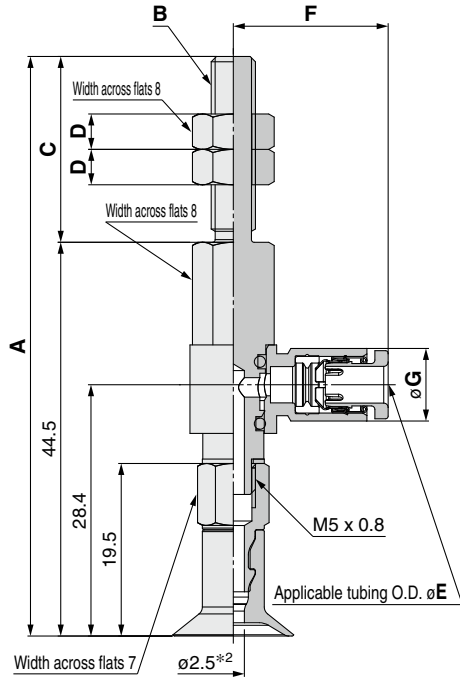
④

④ Connection thread
(Male thread)

Vacuum inlet
(One-touch fitting)

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

A5	M5 x 0.8
A6	M6 x 1



Construction p. 115

Adapter Assembly p. 122

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

Dimensions Per Vacuum Inlet

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

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

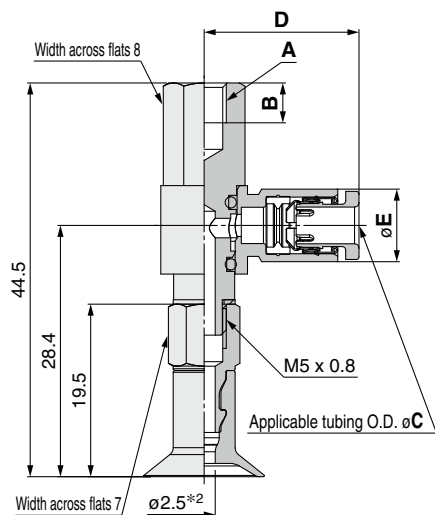
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 122

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

①

②

④

Connection thread
(Female thread)

Vacuum inlet
(One-touch fitting)

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

B4	M4 x 0.7
B5	M5 x 0.8

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

Dimensions Per Vacuum Inlet

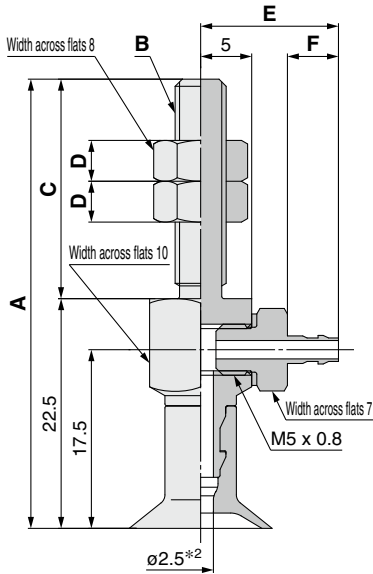
Model						C	D	E	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread					
ZP	R	10 13 16	UT	N S U F GN GS	04	B4 B5	4	17.5	8.2	$\varnothing 2.5$
					06		6	18.3	10.4	$\varnothing 4$

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

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

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 123

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

①
②
③ Vacuum inlet (Barb fitting)

④ Connection thread (Male thread)

A5	M5 x 0.8
A6	M6 x 1

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

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

Dimensions Per Vacuum Inlet

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

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

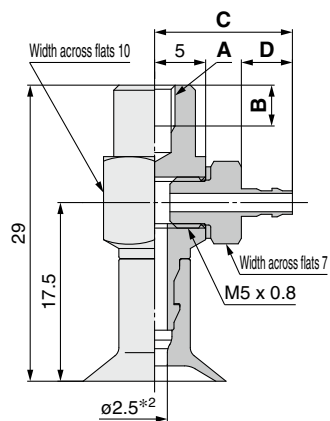
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction p. 115
Adapter Assembly p. 123

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

①

②

③

④

Vacuum inlet (Barb fitting)

Connection thread (Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

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

	Vacuum inlet direction	Model				A	B	
		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	B4	M4 x 0.7	4
					N6			
		U4			B5	M5 x 0.8	5	
		U6						

Dimensions Per Vacuum Inlet

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

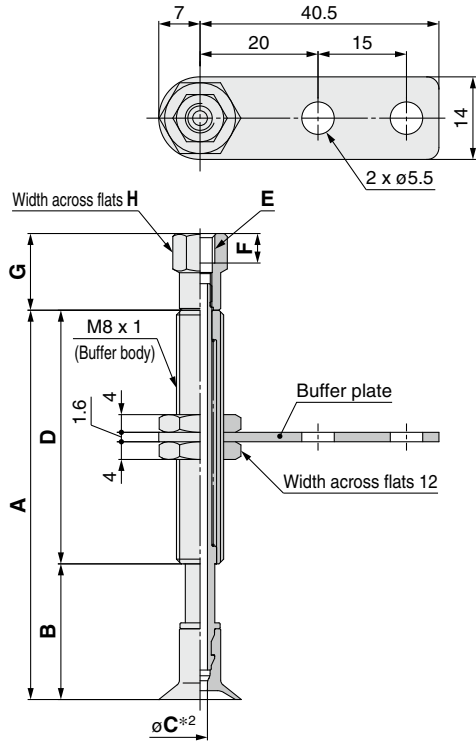
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

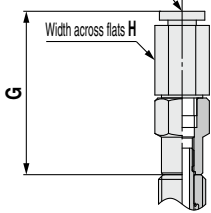
With buffer $\varnothing 10$ to $\varnothing 16$

The drawings show the type with a buffer plate.

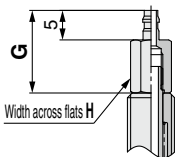


Vacuum inlet: One-touch fitting

Applicable tubing O.D. $\varnothing J$



Vacuum inlet: Barb fitting



Construction	p. 116
Buffer Assembly	p. 124

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

① ② ④ ⑥

Buffer specification ③

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

⑥ Connection thread (Male thread)

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

⑤ Vacuum inlet

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

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

Dimensions Per Vacuum Inlet: Female Thread

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

Dimensions Per Vacuum Inlet: One-touch Fitting

		Model						G	H	J	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	T	10 13 16	UT	N S U F GN GS	J K JN KN	6	04 06	A8	27.7	8	4	$\varnothing 2.5$
						10 15 25				10	6	

Dimensions Per Vacuum Inlet: Barb Fitting

		Model						G	H	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	10 13 16	UT	N S U F GN GS	J K JN KN	6	N4 U4	A8	14	6	$\varnothing 1.8$
						10 15 25					

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

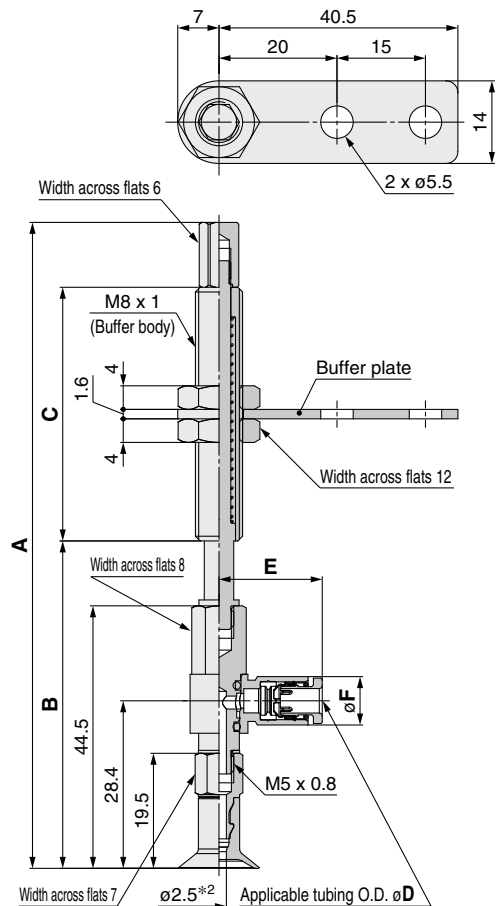
Mounting Bracket Assembly

Precautions

Dimensions/Models

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

The drawings show the type with a buffer plate.



Construction p. 116

Buffer Assembly p. 125

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

① ② ④

⑥ Connection thread
(Male thread)

A8 M8 x 1

⑤ Vacuum inlet
(One-touch fitting)

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

Buffer specification ③

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

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

Dimensions Per Vacuum Inlet

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

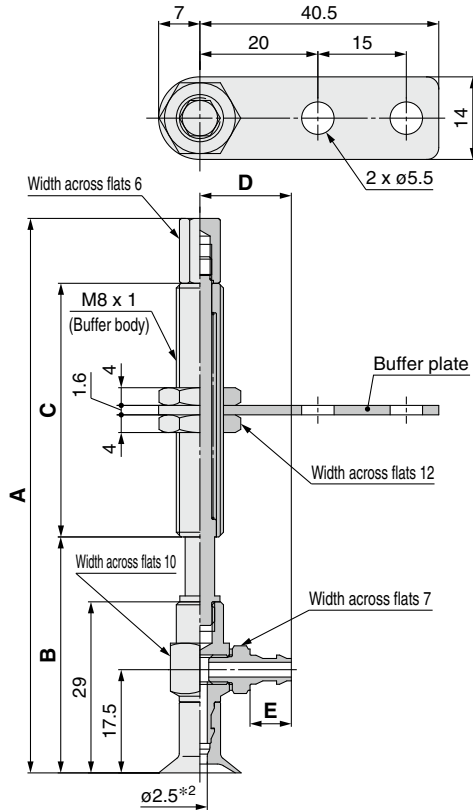
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

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

The drawings show the type with a buffer plate.



Construction	p. 116
Buffer Assembly	p. 126

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

Buffer specification **3**

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

6 Connection thread
(Male thread)

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

5 Vacuum inlet
(Barb fitting)

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

Model								A	B	C
Vacuum inlet direction	1 Pad dia.	Form	2 ^{*1} Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread			
ZP	Y	10 13 16	UT	N S U F GN GS	J K JN KN	6	A8	63	37	15
						10		94	40	43
						15		99	45	
						25		109	55	

Dimensions Per Vacuum Inlet

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

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions



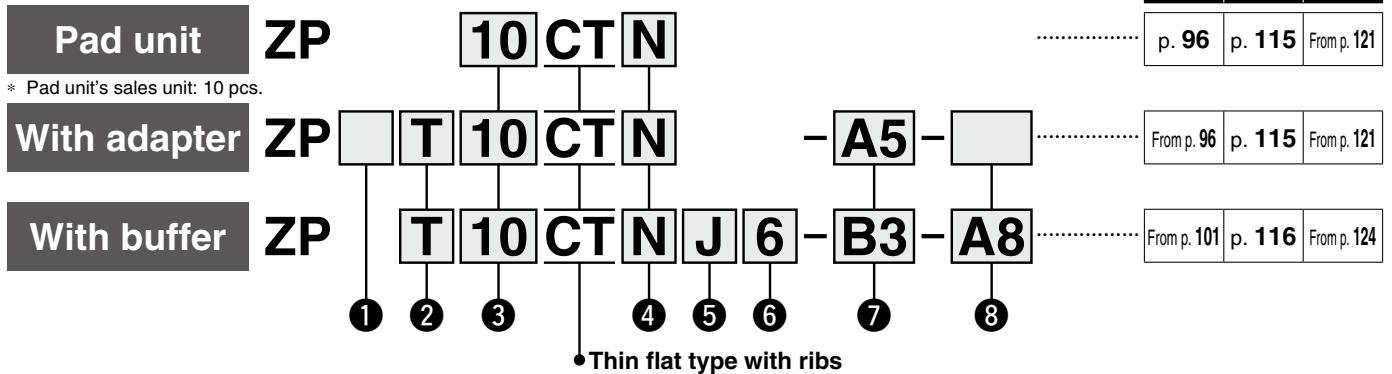
Basic Pad

Thin Flat Type with Ribs

ZP Series



How to Order



① Adapter material

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

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

② Vacuum inlet direction

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

③ Pad diameter

10	ø10
13	ø13
16	ø16

④ Material

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

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

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

⑤ Buffer specification

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

⑥ Buffer stroke

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

With adapter

⑦ Vacuum inlet

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

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

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

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

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

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

With buffer

⑦ Vacuum inlet

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

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

*1 Nylon tube piping

*2 Soft nylon/Polyurethane tube piping

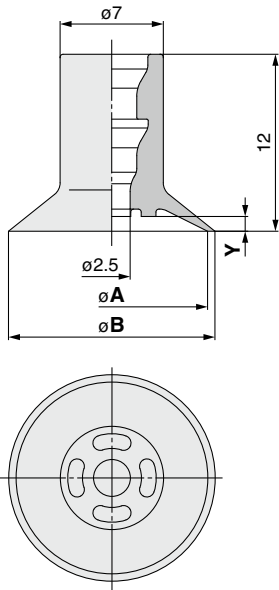
⑧ Connection thread ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

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

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

Dimensions/Models

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



ZP 10 CT N
① ②

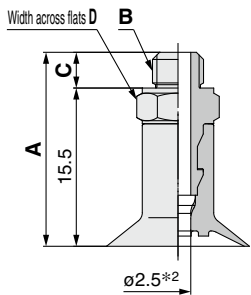
Model				A	B	Y
① Pad dia.	Form	② Material ^{*1}				
ZP	10	CT	N S U F GN GS	10	11	0.8
	13			14	1	
	16			17		

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

Construction p. 115

Mounting Bracket Assembly From p. 121

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



ZP T 10 CT N - A5
① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Male thread)

A5	M5 x 0.8
A6	M6 x 1

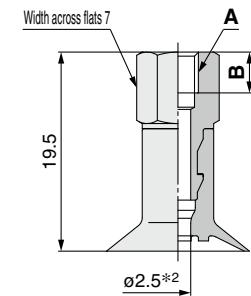
Model						A	B	C	D	
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material ^{*1}	④ Vacuum inlet					
ZP	Nil S	T	10 13 16	CT	N S U F GN GS	A5	19	M5 x 0.8	3.5	7
						A6	20	M6 x 1	4.5	8

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

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

Construction p. 115

Adapter Assembly p. 121



ZP T 10 CT N - B4
① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

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

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

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

Construction p. 115

Adapter Assembly p. 121

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

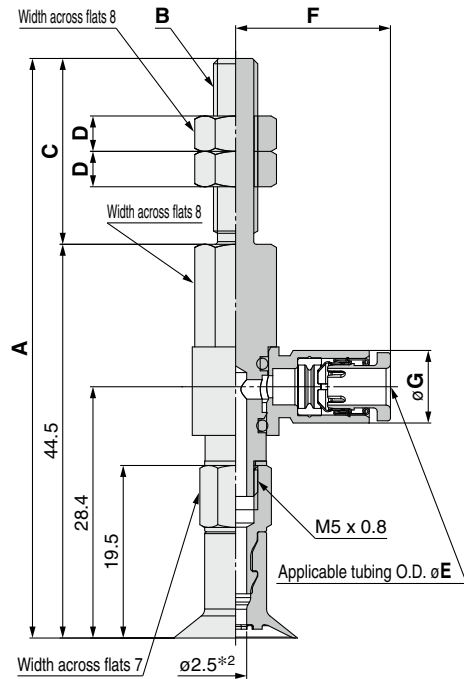
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction p. 115
Adapter Assembly p. 122

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

1	2	3
04	06	04
		06

Vacuum inlet (One-touch fitting)

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

4 Connection thread (Male thread)

A5	M5 x 0.8
A6	M6 x 1

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

Dimensions Per Vacuum Inlet

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

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

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

Dimensions/Models

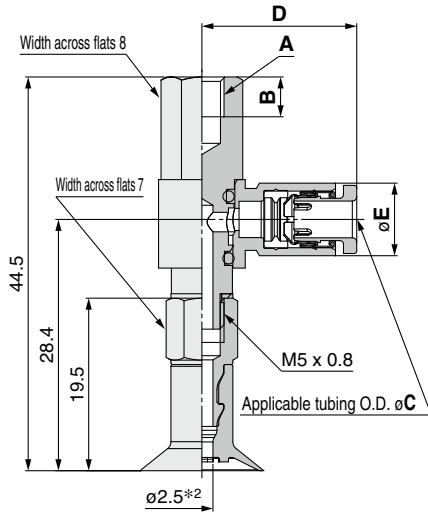
With adapter/One-touch fitting $\varnothing 10$ to $\varnothing 16$

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

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

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

B4	M4 x 0.7
B5	M5 x 0.8



Construction p. 115
Adapter Assembly p. 122

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

Dimensions Per Vacuum Inlet

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

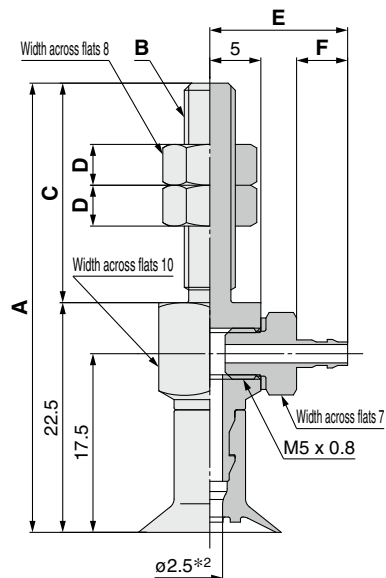
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 123

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

①

②

④

Connection thread
(Male thread)

Vacuum inlet
(Barb fitting)

A5	M5 x 0.8
A6	M6 x 1

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

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

Dimensions Per Vacuum Inlet

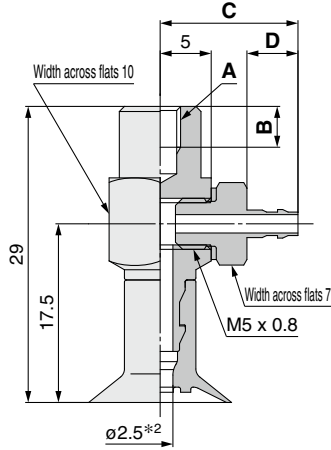
Model						E	F	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	10 13 16	CT	N	N4	13.5	5	$\varnothing 1.8$
				S	U4			
				F	U6	15.5	7	$\varnothing 2.5$
				GN				
				GS				

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

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

Dimensions/Models

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



Construction p. 115
Adapter Assembly p. 123

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

①
②
③ Vacuum inlet (Barb fitting)

④ Connection thread (Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

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

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

Dimensions Per Vacuum Inlet

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

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

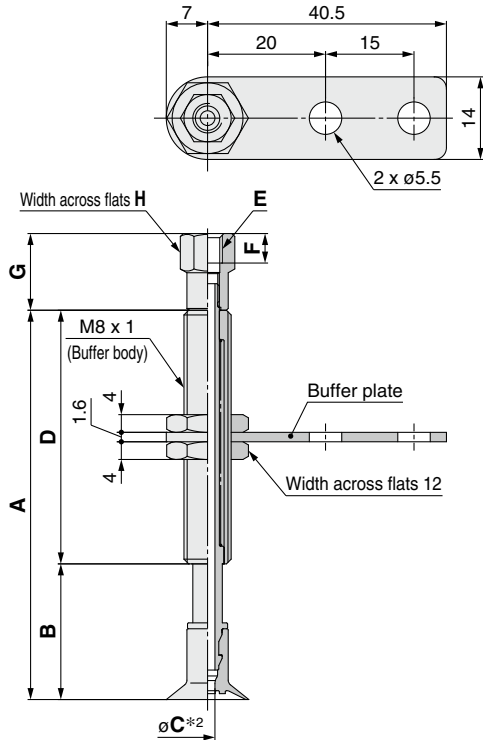
Mounting Bracket Assembly

Precautions

Dimensions/Models

With buffer ø10 to ø16

The drawings show the type with a buffer plate.



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

Buffer specification

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

6 Connection thread (Male thread)

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

5 Vacuum inlet

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

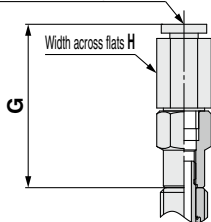
		Model						A	B	C*2	D
	Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread			
ZP	T	10 13 16	CT	N S U F GN GS	J	6	B3	A8	33	18	15
					K	10	B5		66	23	J: 2.5 K: 2
					JN	15	04		71	28	
					KN	25	06 N4 U4		81	38	

Dimensions Per Vacuum Inlet: Female Thread

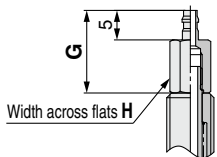
		Model						E	F	G	H	
	Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread				
ZP	T	10 13 16	CT	N S U F GN GS	J	6	B3	A8	M3 x 0.5	3	11	6
					K	10 15 25	B5		M5 x 0.8	5	13	8

Vacuum inlet: One-touch fitting

Applicable tubing O.D. øJ



Vacuum inlet: Barb fitting



Dimensions Per Vacuum Inlet: One-touch Fitting

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

Dimensions Per Vacuum Inlet: Barb Fitting

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

Construction	p. 116
Buffer Assembly	p. 124

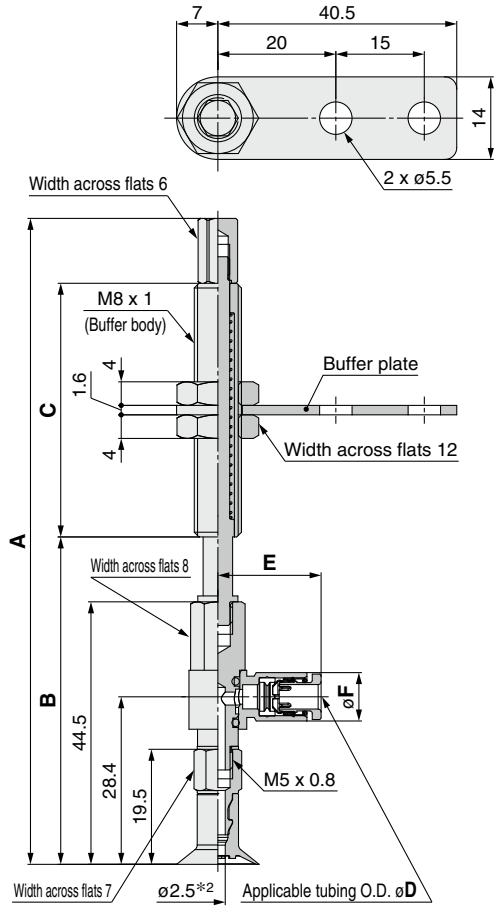
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

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

The drawings show the type with a buffer plate.



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

Buffer specification **3**

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

6 Connection thread
(Male thread)

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

5 Vacuum inlet
(One-touch fitting)

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

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

Dimensions Per Vacuum Inlet

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

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

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

Construction p. 116

Buffer Assembly p. 125

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

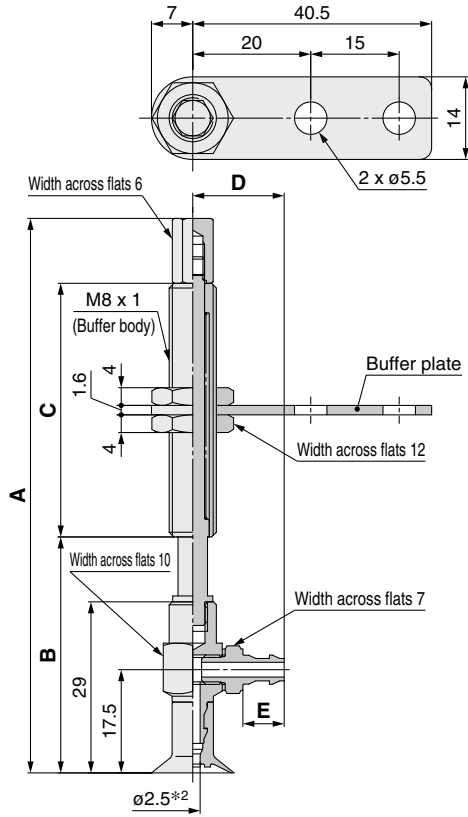
Mounting Bracket Assembly

Precautions

Dimensions/Models

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

The drawings show the type with a buffer plate.



Construction	p. 116
Buffer Assembly	p. 126

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

Buffer specification **3**

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

6 Connection thread
(Male thread)

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

5 Vacuum inlet
(Barb fitting)

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

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

Dimensions Per Vacuum Inlet

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

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

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



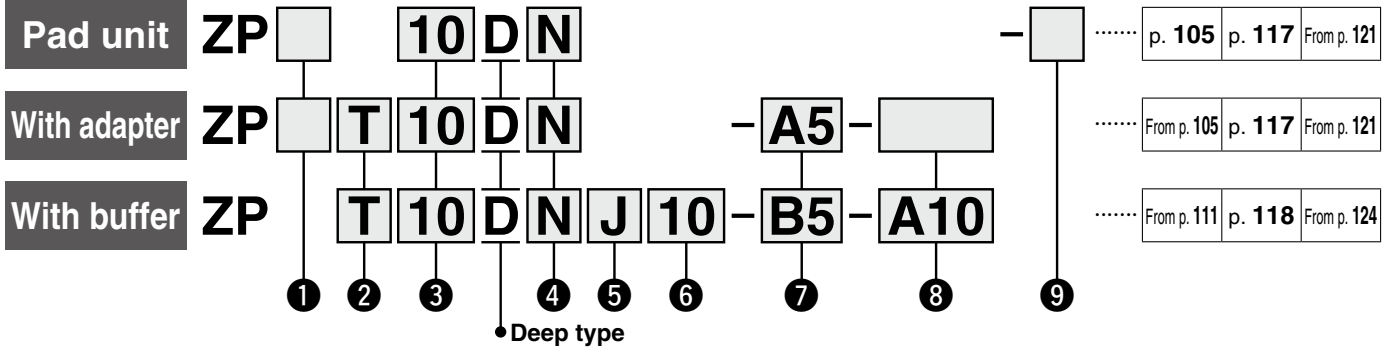
Basic Pad

Deep Type

ZP Series



How to Order



1 Adapter (Lock ring) material

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

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

2 Vacuum inlet direction

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

3 Pad diameter

10	ø10
16	ø16
25	ø25
40	ø40

4 Material

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

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

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

5 Buffer specification

J	Rotating
K	Non-rotating

6 Buffer stroke

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

With adapter

7 Vacuum inlet

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

Type	Symbol	Size	Pad diameter [mm]			
			ø10, ø16	ø25	ø40	
Male thread	AS5	M5 x 0.8	○*4	○*4	—	
	AS6	M6 x 1	○*4	○*4	○*4	
	AG01	G1/8	○*4	○*4	—	
	AG02	G1/4	—	—	○*4	
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	○*4	○*4	—	
	B6	M6 x 1	○*4	○*4	○*4	
	B8	M8 x 1.25	—	○*4	○*4	
	BG01	G1/8	○*4	○*4	—	
	BG02	G1/4	—	—	○*4	
	B01	Rc1/8	○*4	○*4	○*4	
	N01*3	NPT1/8	○*4	○*4	○*4	
	T01*3	NPTF1/8	○*4	○*4	○*4	
One-touch fitting	04	ø4	●	●	—	
	06	ø6	●	●	●	
	08	ø8	—	●	●	
Barb fitting	N4	For ø4 nylon tubing*1	△	△	—	
	N6	For ø6 nylon tubing*1	△	△	△	
	U4	For ø4 soft tubing*2	△	△	—	
	U6	For ø6 soft tubing*2	△	△	△	

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

8 Connection thread

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

With buffer

7 Vacuum inlet

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

Type	Symbol	Size	Pad diameter [mm]			
			ø10, ø16	ø25	ø40	
Female thread	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

8 Connection thread

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

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

9 Lock ring

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

Lock ring unit

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

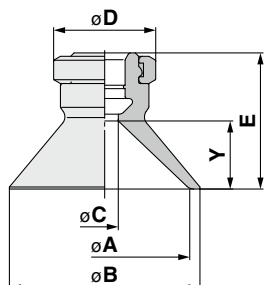
□: Nil/Brass S/Stainless steel

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

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

Dimensions/Models

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



Construction p. 117
Mounting Bracket Assembly From p. 121

ZP 10 D N
① ② ③

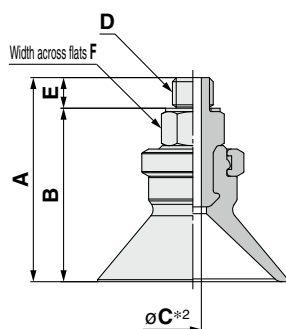
① Lock ring material

Nil	Brass
S	Stainless steel (Stainless steel 304)

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

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

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



Construction p. 117
Adapter Assembly p. 121

ZP T 10 D N - AS5
① ② ③ ④

① Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Male thread)

AS5	M5 x 0.8
AS6	M6 x 1
AG01	G1/8
AG02	G1/4

ZP	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ ^{*1} Material	④ Vacuum inlet	A	B	C*2	D	E	F
							Nil	S	T	D	N S U F GN GS	AS5
		16	21.5									
		25	25.5									
		10	25	20.5	AS6	2.5	M6 x 1	4.5	8			
		16	21.5									
		25	25.5									
		40	35.5	AG01	2.5	G1/8	5.5	17				
		10	33						27.5			
		16	34						28.5			
		25	38	32.5	AG02	7	G1/4	6.5	21			
		40	49.5	43								

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

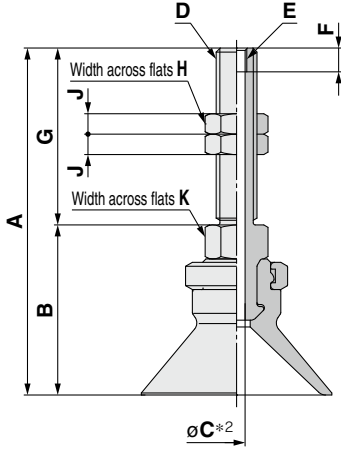
*2 Indicates the minimum hole size of the adapter or vacuum pad

Dimensions/Models

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

ZP T 10 D N - A5

1
 2
 3
 4



Construction	p. 117
Adapter Assembly	p. 121

1 Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

4 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			
ZP	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3 Material	4 Connection thread															
ZP	Nil S	T	10	D	N S U F GN GS	A5	41	20	2.5	M5 x 0.8	M3 x 0.5	3.5	21	8	4	8					
			16				42	21													
			10				46	20													
			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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

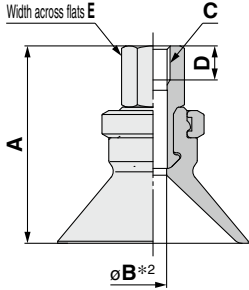
Precautions

Dimensions/Models

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

ZP T 10 D N - B5

1
 2
 3
 4



Construction	p. 117
Adapter Assembly	p. 121

1 Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

4 Vacuum inlet (Female thread)

B5	M5 x 0.8
B6	M6 x 1
B8	M8 x 1.25
BG01	G1/8
BG02	G1/4
B01	Rc1/8
N01*1	NPT1/8
T01*1	NPTF1/8

*1 Not compatible with stainless steel materials

	Model						A	B*2	C	D	E
	1 Adapter material	Vacuum inlet direction	2 Pad dia.	Form	3*1 Material	4 Vacuum inlet					
ZP	Nil S	T	D	N S U F GN GS	B5	10	24	2.5	M5 x 0.8	5	8
						16	25				
						25	29				
					B6	10	24	2.5	M6 x 1	6	8
						16	25				
						25	29				
					B8	10	24	4.9	M8 x 1.25	8	12
						16	25				
						25	29				
					BG01	10	30	2.5	G1/8	7.4	14
						16	31				
						25	35				
					BG02	10	48.5	7	G1/4	11	17
						40	48.5				
					B01 N01*3 T01*3	10	30	2.5	Rc1/8 NPT1/8 NPTF1/8	—	12
						16	31				
						25	35				
						40	42.5				

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

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

*3 Not compatible with stainless steel materials

Model
Selection

ZP
Basic

Flat Type

Flat Type
with
Ribs

Flat,
Ball
Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type
with
Ribs

Deep Type

Construction

Mounting
Bracket
Assembly

Precautions

Dimensions/Models

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

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

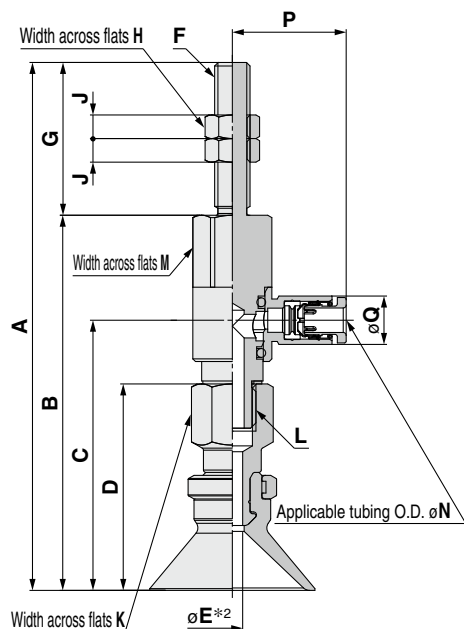
① ②

Vacuum inlet ③
(One-touch fitting)

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

④ Connection thread
(Male thread)

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



Construction p. 117

Adapter Assembly p. 122

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

Dimensions Per Vacuum Inlet

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

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

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

Dimensions/Models

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

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

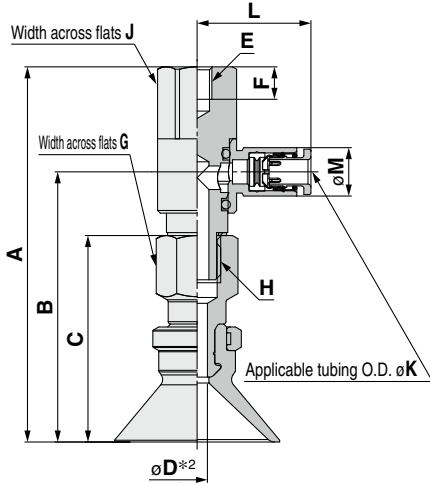
① ②

Vacuum inlet ③
(One-touch fitting)

④ Connection thread
(Female thread)

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

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



Construction p. 117
Adapter Assembly p. 122

		Model				A	B	C	*2 D	E	F	G	H					
	Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread												
ZP	R	10	D	N S U F GN GS	04 06 08	B5	49	32.9	24	2.5	M5 x 0.8	5.5	8	M5 x 0.8				
		50					33.9	25	12				M8 x 1.25					
		63.6					45.8	35										
		10				D	N S U F GN GS	04 06 08	B6	49	32.9	24	2.5	M6 x 1	6.5	8	M5 x 0.8	
		50								33.9	25	12						M8 x 1.25
		63.6								45.8	35							
	16	D	N S U F GN GS	04 06 08	B8				71.1	53.3	42.5	4	M8 x 1.25	8.5	12	M8 x 1.25		
	25								63.6	45.8	35						4	
	40								71.1	53.3	42.5							
	25				D	N S U F GN GS	04 06 08	B8	63.6	45.8	35	3.5	M8 x 1.25	8.5	12	M8 x 1.25		
	40								71.1	53.3	42.5						4	
	40								71.1	53.3	42.5							

Dimensions Per Vacuum Inlet

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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

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

①

②

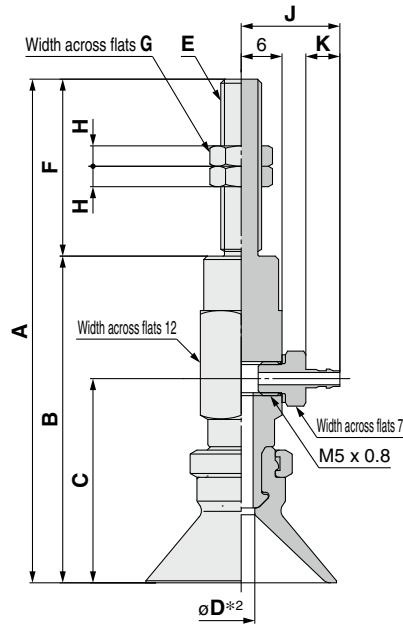
④

**Connection thread
(Male thread)**

**Vacuum inlet ③
(Barb fitting)**

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

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



Construction p. 117
Adapter Assembly p. 123

		Model				A	B	C	D*2	E	F	G	H	
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread									
ZP	Y	D	N S U F GN GS	N4 N6 U4 U6	A5	62	41	25	2.5	M5 x 0.8	21	8	4	
						63	42	26						
					A6	67	41	25	2.5		M6 x 1	26	8	4
						68	42	26						
					A8	74	48	30	3.5		M8 x 1	16	12	4
						83	57	39						
	64	48		30										
	73	57		39										

Dimensions Per Vacuum Inlet

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

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

Dimensions/Models

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

ZPY 10 D N - N4 - B5

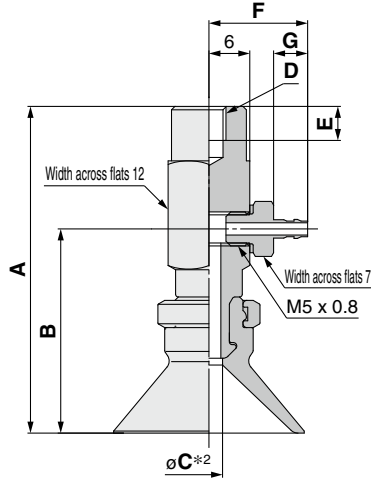
① ②

Vacuum inlet ③
(Barb fitting)

④ Connection thread
(Female thread)

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

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



Construction	p. 117
Adapter Assembly	p. 123

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

Dimensions Per Vacuum Inlet

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

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

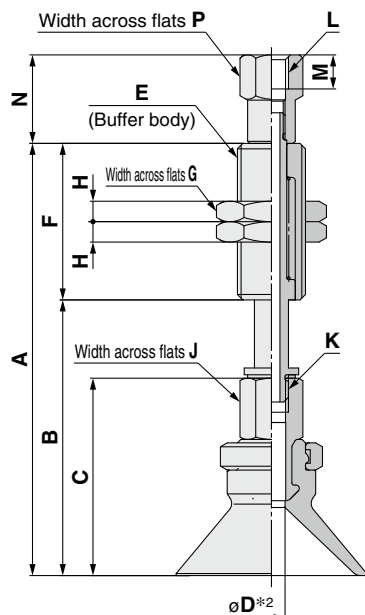
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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



Construction p. 118
Buffer Assembly p. 124

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

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

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

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

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

Dimensions Per Vacuum Inlet: Female Thread

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

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

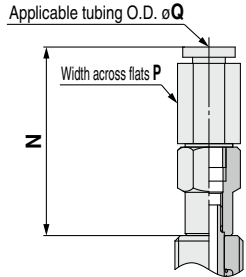
Dimensions/Models

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

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

① ② ③ ④ ⑤ ⑥

Vacuum inlet: One-touch fitting



Buffer specification ③

J	Rotating
K	Non-rotating

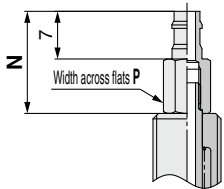
⑥ Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet

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

Vacuum inlet: Barb fitting



Construction	p. 118
Buffer Assembly	p. 124

Dimensions Per Vacuum Inlet: One-touch Fitting

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

Dimensions Per Vacuum Inlet: Barb Fitting

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

BelloWS Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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

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

① ② ③ ④

Buffer specification ③

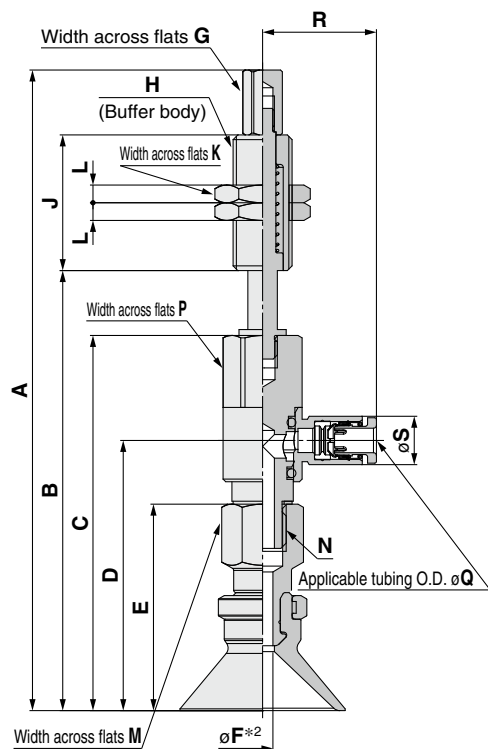
J	Rotating
K	Non-rotating

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	$\varnothing 8$



Construction p. 118

Buffer Assembly p. 125

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

Dimensions Per Vacuum Inlet

		Model							P	Q	R	S	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread						
ZP	R	D	N S U F G N S	J K	10	04	A10	8	4	17.5	8.2	$\varnothing 2.5$	
					20								
					30								
					40								
					50								
					10								06
	20												
	30												
	40												
	50												
	10	08			A10	16	8	23.5	13.2	$\varnothing 6$			
	20												
30													
40													
50													
10	06		A14	12							6	20.5	10.4
20													
30													
40													
50													
10		08			A14	16	8	23.5	13.2	$\varnothing 6$			
20													
30													
40													
50													

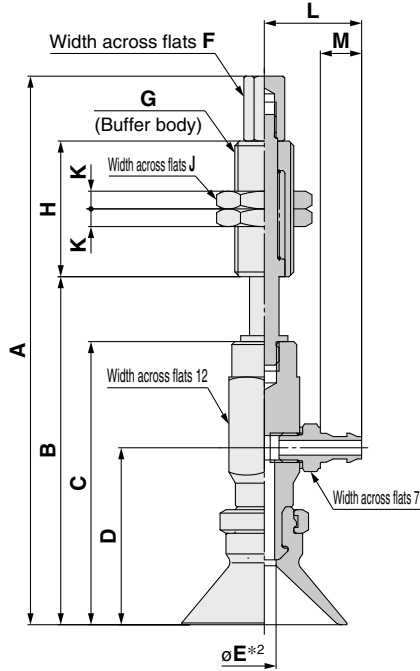
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

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

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



Construction p. 118
 Buffer Assembly p. 126

Buffer specification **3**

J	Rotating
K	Non-rotating

6 Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

5 Vacuum inlet (Barb fitting)

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

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

Dimensions Per Vacuum Inlet

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

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

BelloWS Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

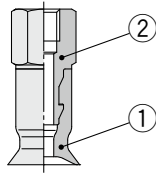
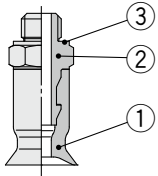
Basic Pad *ZP Series* Construction

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

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

ZP□T□-(A5/A6)

ZP□T□-(B4/B5)



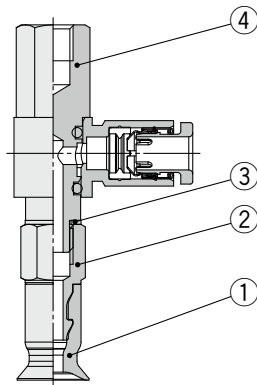
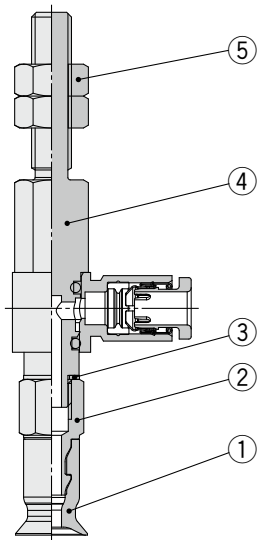
Component Parts

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

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

ZPR□-(04/06)-(A5/A6)

ZPR□-(04/06)-(B4/B5)



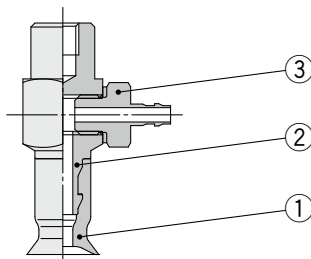
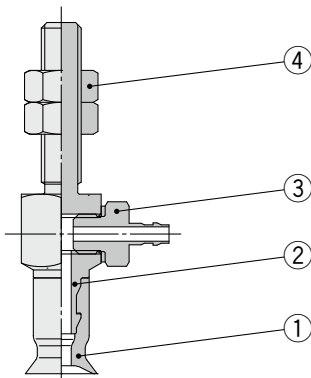
Component Parts

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

With buffer

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

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

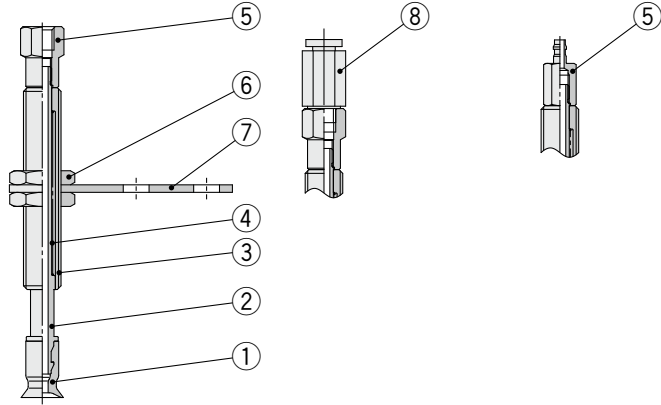
Thin flat type/Thin flat type with ribs: $\phi 10$ to $\phi 16$

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

ZPT□-(B3/B5)-A8

ZPT□-(04/06)-A8

ZPT□-(N4/U4)-A8

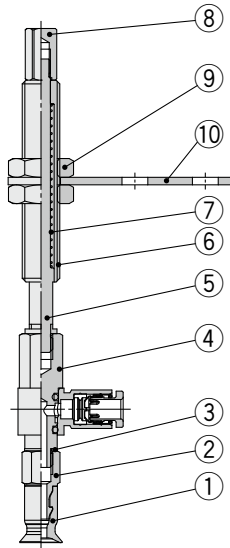


Component Parts

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

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

ZPR□-(04/06)-A8

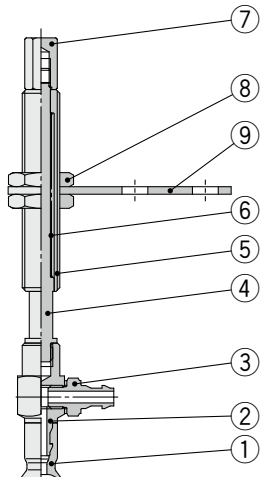


Component Parts

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

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

ZPY□-(N4/N6/U4/U6)-A8



Component Parts

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

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

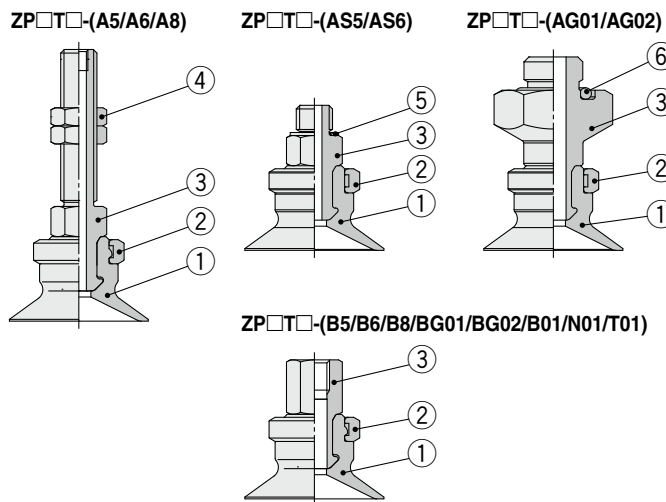
Construction

Mounting Bracket Assembly

Precautions

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

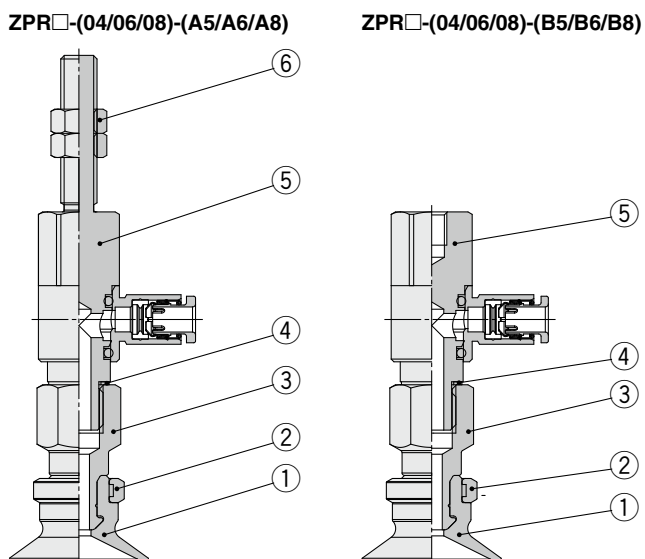
Vacuum inlet direction **Vertical** T Type/ZP□T



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)	ZPT
		Stainless steel	ZPST
3	Adapter	Brass (Electroless nickel plating)	ZPT
		Stainless steel	ZPST
4	Nut	Rolled steel (Zinc chromated)	M5 x 0.8 M6 x 1
		Carbon steel (Zinc chromated)	M8 x 1
		Stainless steel	ZPST
5	Gasket	Stainless steel/NBR	ZPT
		Stainless steel/FKM	ZPST
6	O-ring	Silicone rubber (Blue)	

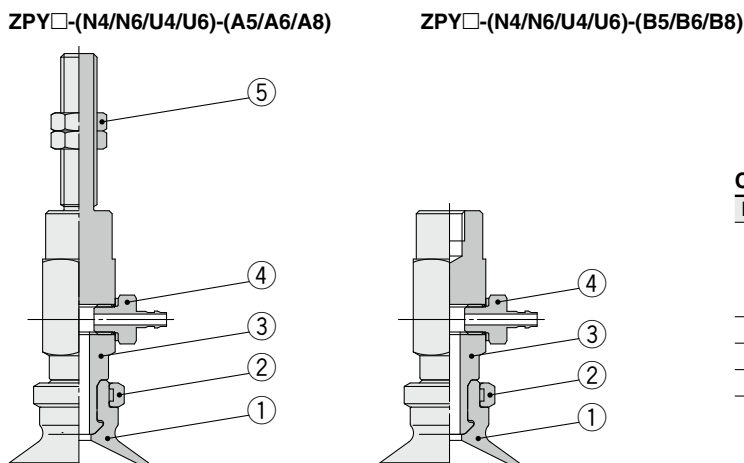
Vacuum inlet direction **Lateral** R Type/ZPR



Component Parts

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

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



Component Parts

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

With buffer

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

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

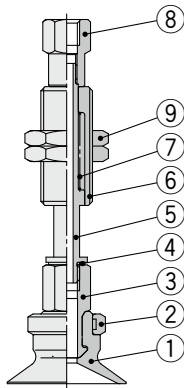
Bellows type: $\varnothing 10$ to $\varnothing 50$

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

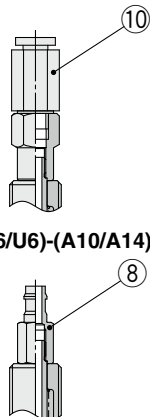
Vacuum inlet direction **Vertical** T Type/ZPT

ZPT□-(B5/B01/N01/T01)-(A10/A14)

ZPT□-(04/06/08)-(A10/A14)



ZPT□-(N6/U6)-(A10/A14)

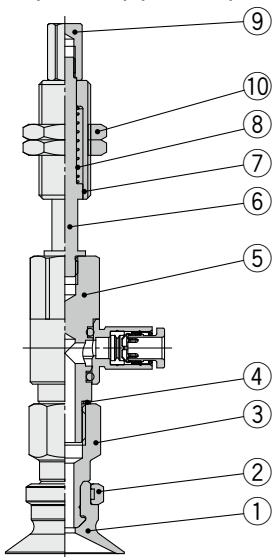


Component Parts

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

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

ZPR□-(04/06/08)-(A10/A14)

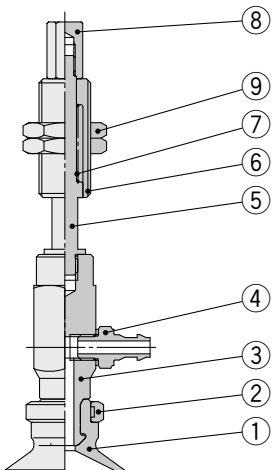


Component Parts

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

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

ZPY□-(N4/N6/U4/U6)-(A10/A14)



Component Parts

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

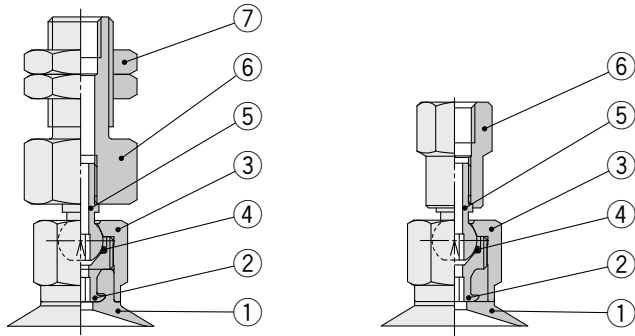
Ball Joint Type Basic Pad **ZP Series** Construction

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

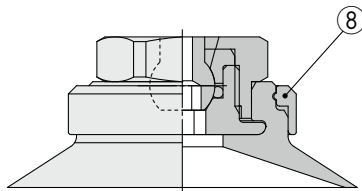
Vacuum inlet direction **Vertical** T Type/ZPT□F

ZPT□F□-B5-(A8/A10/A14)

ZPT□F□-(B5/B8/B01/N01/T01)



$\phi 10$ to $\phi 32$



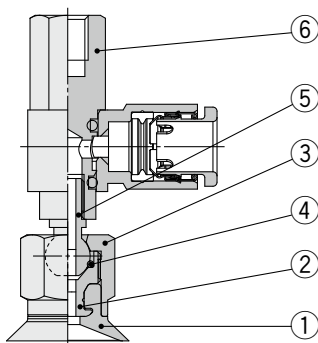
$\phi 40, \phi 50$

Component Parts

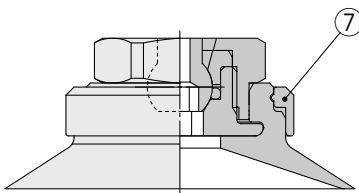
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Shaft cover	Stainless steel	
4	O-ring	FKM	
5	Shaft	Stainless steel	
6	Shaft adapter	Brass (Electroless nickel plating)	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

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

ZPR□F□-(04/06/08)-(B5/B8)



$\phi 10$ to $\phi 32$



$\phi 40, \phi 50$

Component Parts

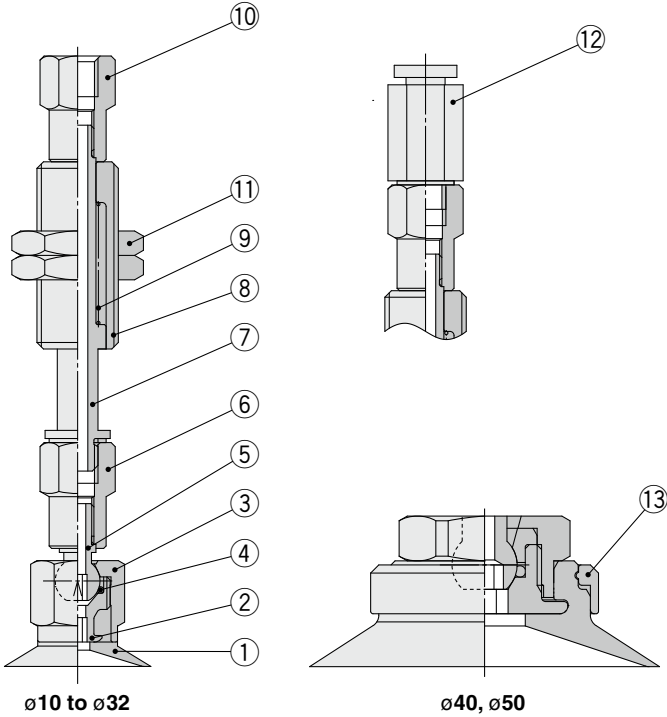
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Shaft cover	Stainless steel	
4	O-ring	FKM	
5	Shaft	Stainless steel	
6	Shaft adapter (With One-touch fitting)	Brass (Electroless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

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

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

ZPT□F□-(B5/B01/N01/T01)-(A10/A14)

ZPT□F□-(04/06/08)-(A10/A14)

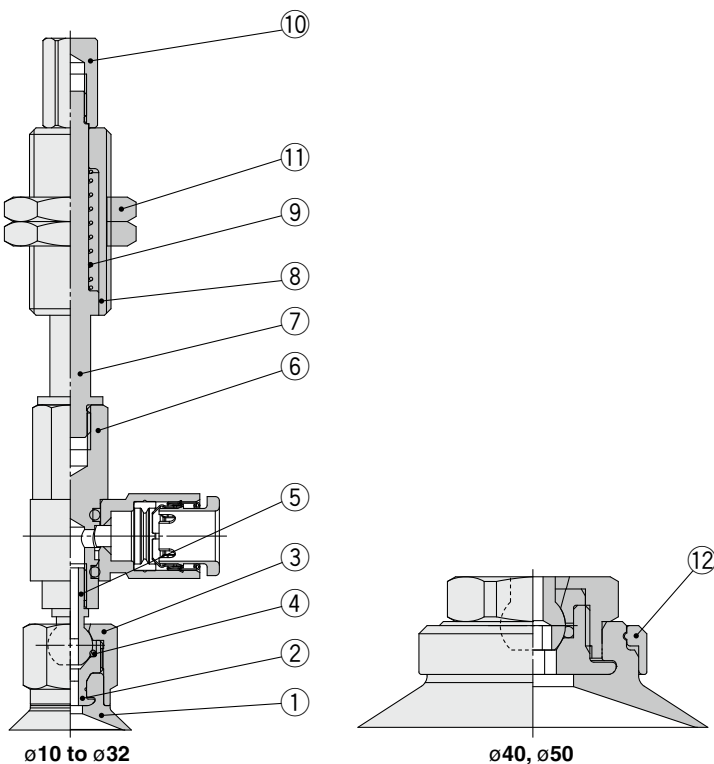


Component Parts

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

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

ZPR□F□-(04/06/08)-(A10/A14)



Component Parts

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



Basic/Compact Type Specific Product Precautions

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

Mounting

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

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

Basic Type ZP Series

Product part number	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

Product part number	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. When mounting the product, tighten with the tightening torque shown in the table below. If excessive or insufficient tightening torque is applied, sealing failure or loose screws may result.

Basic Type ZP Series

Product part number	Connection thread	Tightening torque [N·m]
ZP□T□□-A5	M5 x 0.8	1.3 to 1.7
ZP□T□□-AS5		
ZP□T□□-A6	M6 x 1	1.6 to 2
ZP□T□□-AS6		
ZP□T□□-AG01	G1/8	3 to 5
ZP□T□□-AG02	G1/4	8 to 12

Compact Type ZP3 Series

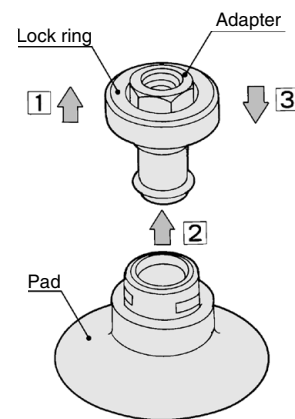
Product part number	Connection thread	Tightening torque [N·m]
ZP3□-T(015 to 035)U□-A3	M3 x 0.5	0.2 to 0.25
ZP3□-T(04 to 16)□□-A5	M5 x 0.8	1.3 to 1.7

Product part number	Connection thread	Tightening torque [N·m]
ZP□T□□-BG01	G1/8	3 to 5
ZP□T□□-BG02	G1/4	8 to 12

How to Replace the Pad

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

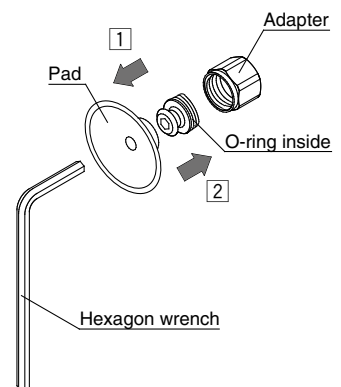
- 1 Pull the lock ring upward, and, after lifting it up to the adapter, remove the old pad by pulling it downward.
- 2 While holding the lock ring in the raised position, place a new pad onto the adapter.
- 3 Confirm that the pad is securely in place, and then return the lock ring to its original position.



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

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

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



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

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

