

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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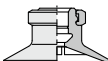
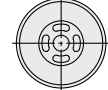
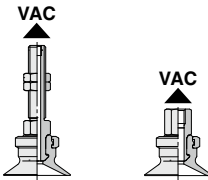
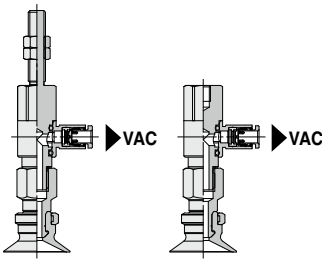
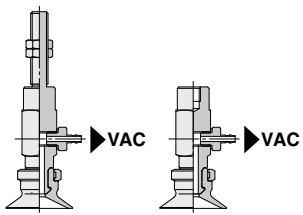
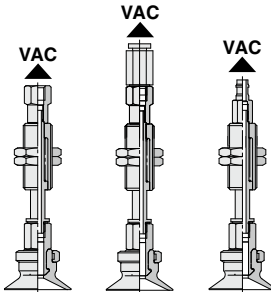
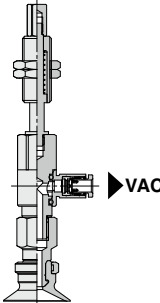
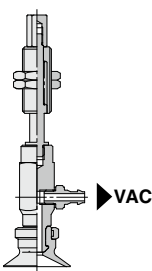
Deep Type

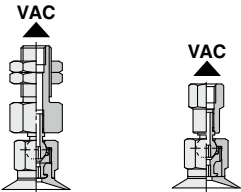
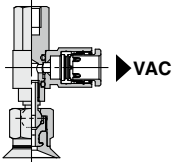
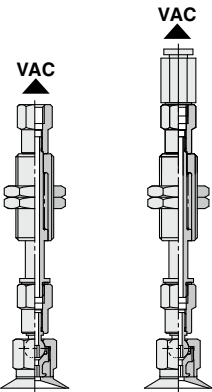
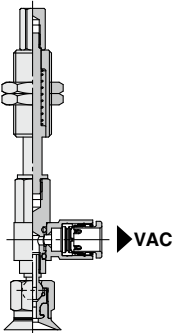
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Basic Pad *ZP* Series Variations

								
			Vacuum inlet direction					
Vacuum inlet direction	Single unit		p. 32	p. 51	p. 68	p. 87	p. 96	p. 105
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	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
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Ball Joint Type			
		Vacuum inlet direction	Flat type
Vacuum inlet direction	Single unit		p. 62
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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 70	50 to 60

- *1 Uses a material compliant with a dissolution test of the FDA (U.S. Food and Drug Administration) regulation 21CFR§177.2600 for "Rubber articles intended for repeated use."
 *2 Uses a material compliant with the standards for "Rubber apparatus (excluding baby drinking apparatus) and containers/packaging" (D3) (Partial revision: Japanese 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." (Japanese Ministry of Health and Welfare Notification No. 370, 1959)

Adapter Specifications

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

Vertical

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 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	M6 x 1 M8 x 1		M4 x 0.7 M5 x 0.8	M5 x 0.8 M6 x 1	M5 x 0.8 M6 x 1 M8 x 1.25	M6 x 1 M8 x 1.25
Vacuum inlet	One-touch fitting	ø4, ø6	ø4, ø6, ø8	ø6, ø8	ø4, ø6		ø4, ø6, ø8	ø6, ø8

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

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



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

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

*2 Applicable tubing: Nylon tubing, Soft tubing

Buffer Specifications

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

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

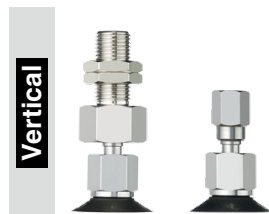
Basic Pad *ZP Series* Specifications

Ball Joint Type

Adapter Specifications (Ball Joint Type)

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



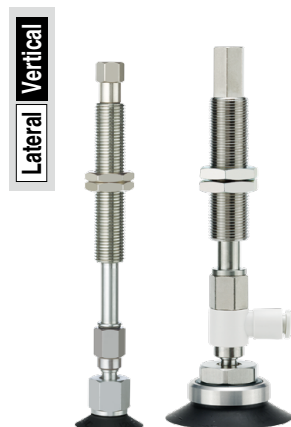
Connection	Male thread			Female thread		
Pad diameter	ø10 to ø16	ø20 to ø32	ø40, ø50	ø10 to ø16	ø20 to ø32	ø40, ø50
Connection thread	M8 x 1	M10 x 1	M14 x 1	M5 x 0.8	M5 x 0.8 M8 x 1.25 1/8 (Rc, NPT, NPTF)	M8 x 1.25 1/8 (Rc, NPT, NPTF)
Vacuum inlet	M5 x 0.8			Use the connection thread.		

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



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

Buffer Specifications (Ball Joint Type)



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



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starting in

ZP 02 U N

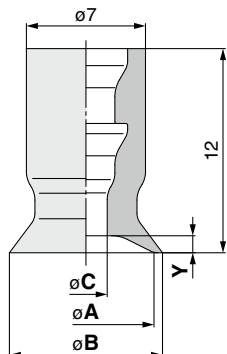
ZP T 02 U N

ZP | **T** **02** **U** **N** **J** **6** - **B3** - **A8**

Dimensions/Models

Single unit **ø2 to ø8**

ZP **02** **U** **N**
① ②



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

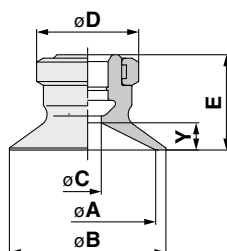
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

Construction p. 115

Mounting Bracket Assembly From p. 121

Single unit **ø10 to ø50**

ZP **10** **U** **N**
① ② ③



① Lock ring material

Nil	Brass
S	Stainless steel (Stainless steel 304)

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

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

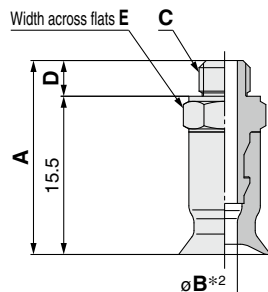
Construction p. 117

Mounting Bracket Assembly From p. 121

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

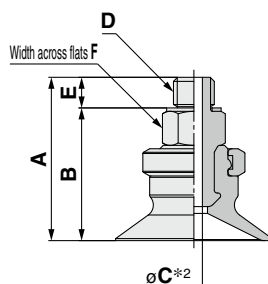
Model						A	B*2	C	D	E
①	②	③	④	⑤	⑥					
Adapter material	Vacuum inlet direction	Pad dia.	Form	Material	Vacuum inlet					
ZP	Nil S	T	U	N S U F GN GS	A5	19	1.2	M5 x 0.8	3.5	7
							1.6			
							2.5			
							2.5			
					A6	20	1.2	M6 x 1	4.5	8
							1.6			
							2.5			
							2.5			
							2.5			
							2.5			

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

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

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

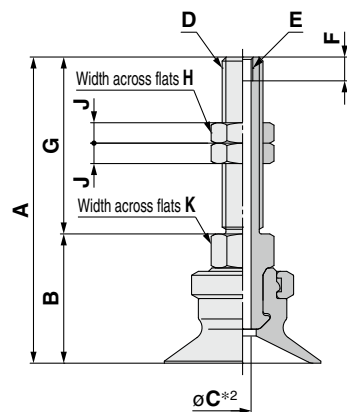
Model						A	B	C*2	D	E	F
①	②	③	④	⑤	⑥						
Adapter material	Vacuum inlet direction	Pad dia.	Form	Material	Vacuum inlet						
ZP	Nil S	T	U	N S U F GN GS	AS5	21	17.5	2.5	M5 x 0.8	3.5	8
						21.5	18				
						23	19.5				
						23.5	20				
					AS6	22	17.5	2.5	M6 x 1	4.5	8
						22.5	18				
						24	19.5				
						24.5	20				
						29.5	25				
						30.5	26				
					AG01	30	24.5	2.5	G1/8	5.5	17
						30.5	25				
						32	26.5				
						32.5	27				
					AG02	39	32.5	7	G1/4	6.5	21
						40	33.5				
						40	33.5				
						40	33.5				

*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 10 U N - A5

① ② ③ ④

① Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Connection thread (Male thread)

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

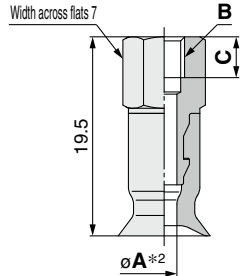
Model							A	B	C*2	D	E	F	G	H	J	K	
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material	④ Connection thread												
ZP	Nil S	T	10	U	N S U F GN GS	A5	38	17	2.5	M5 x 0.8	M3 x 0.5	3.5	21	8	4	8	
			13				38.5	17.5									
			16			A6	43	17	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	8	
			13				43.5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

Dimensions/Models

With adapter ø2 to ø8



Construction	p. 115
Adapter Assembly	p. 121

ZP 1 T 02 U N - B4

1 Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

4 Vacuum inlet (Female thread)

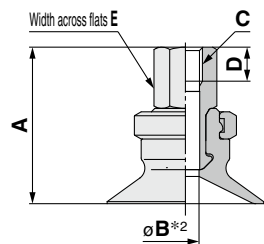
B4	M4 x 0.7
B5	M5 x 0.8

Model						A*2	B	C
1	2	3	4	5	6			
Adapter material	Vacuum inlet direction	Pad dia.	Form	Material	Vacuum inlet			
ZP	Nil S	T	U	N S U F GN GS	B4	1.2	M4 x 0.7	4
						1.6		
						2.5		
						1.2		
						1.6		
						2.5		
					B5	1.2	M5 x 0.8	5
						1.6		
						2.5		

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

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

With adapter ø10 to ø50



Construction	p. 117
Adapter Assembly	p. 121

ZP 1 T 10 U N - B5

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*1 Material	④ Vacuum inlet					
ZP	Nil S	T	U	N S U F GN GS	B5	21	2.5	M5 x 0.8	5	8
						21.5				
						23	4			
						23.5				
						B6	21			
					21.5					
					23		4			
					23.5					
					32		4.9	12		
					33					
					B8		29	3.5	M8 x 1.25	8
						29.5				
						32	6.6			
						33				
						BG01	27	2.5		
					27.5					
					29		4			
					29.5					
					BG02	38	7	G1/4	11	17
						39				
					B01 N01*3 T01*3	27	2.5	Rc1/8 NPT1/8 NPTF1/8	—	12
						27.5				
						29	3.5			
						29.5				
						32				
						33				

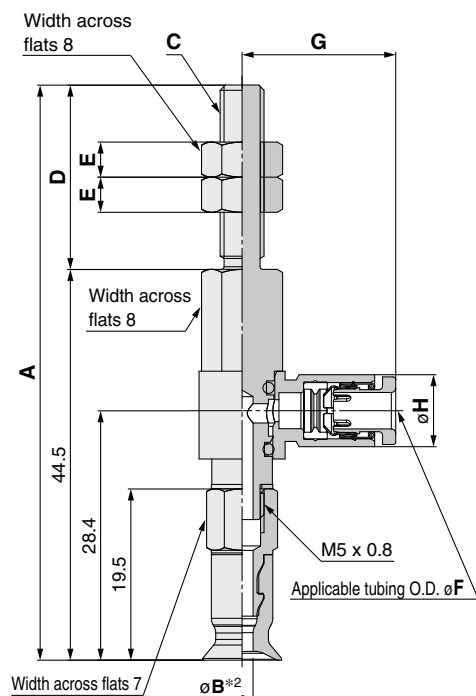
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

*3 Not compatible with stainless steel materials

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 122

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

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

A5	M5 x 0.8
A6	M6 x 1

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

Dimensions Per Vacuum Inlet

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

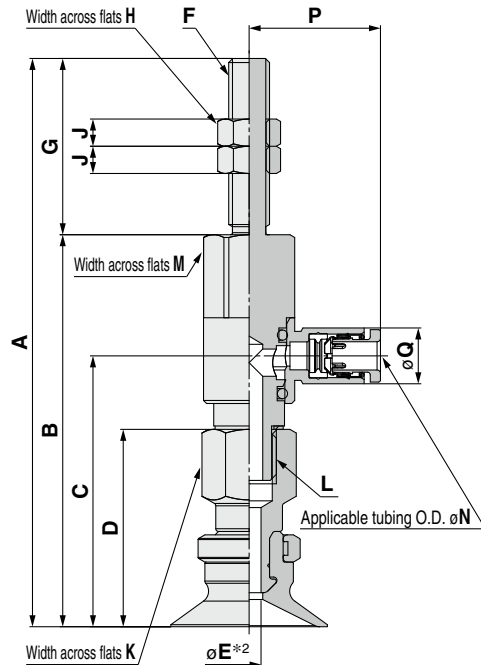
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

*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 U N - 04 - A5



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

04	ø4
06	ø6
08	ø8

4 Connection thread (Male thread)

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

Model						A	B	C	D	*2 E	F	G	H	J	K	L		
Vacuum inlet direction	① Pad dia.	Form	② Material *1	③ Vacuum inlet	④ Connection thread													
ZP	R	10 13	U	N S U F G N G S	04 06 08	A5	67	46	29.9	21	2.5	M5 x 0.8	21	8	4	8	M5 x 0.8	
		16					67.5	46.5	30.4	21.5								
		10 13				A6	72	46	29.9	21	2.5	M6 x 1	26	8	4	8	M5 x 0.8	
		16					72.5	46.5	30.4	21.5								
		20 25					83.5	57.6	39.8	29	3.5		25.9			12	M8 x 1.25	
		32					84	58.1	40.3	29.5								
		40					86.5	60.6	42.8	32	4							
		50					87.5	61.6	43.8	33								
		20 25					A8	73.5	57.6	39.8	29	3.5	M8 x 1	15.9	12	4	12	M8 x 1.25
		32						74	58.1	40.3	29.5							
		40				76.5		60.6	42.8	32	4							
		50				77.5		61.6	43.8	33								

Construction p. 117

Adapter Assembly p. 122

Dimensions Per Vacuum Inlet

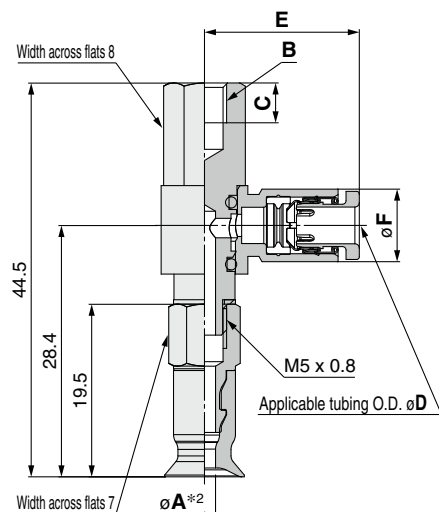
Model						M	N	P	Q	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Vacuum inlet	④ Connection thread						
ZP	R	10 13 16	U	N S U F GN GS	04	A5 A6	8	4	17.5	8.2	ø2.5
		06			A6			6	18.3	10.4	ø4
		20 25 32			04	A6 A8	12	4	19.3	8.2	ø3
					06			6	20.5	10.4	ø4.5
		40 50			08		16	8	23.5	13.2	ø6
					06		12	6	20.5	10.4	ø4.5
					08	16	8	23.5	13.2	ø6	

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

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

Dimensions/Models

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



Construction p. 115

Adapter Assembly p. 122

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

①

②

④

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

Model						A*2	B	C
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread			
ZP	02	R	U	N S U F GN GS	04	1.2	M4 x 0.7	4.5
	04					1.6		
	06					2.5		
	08				06	1.2	M5 x 0.8	5.5
	02					1.6		
	06					2.5		

Dimensions Per Vacuum Inlet

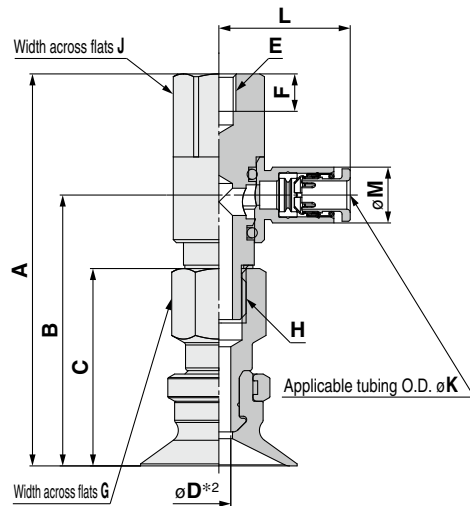
Model						D	E	F	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread				
ZP	02	R	U	N S U F GN GS	04	4	17.5	8.2	$\varnothing 2.5$
	06				06	6	18.3	10.4	$\varnothing 4$

*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 $\varnothing 50$



Construction	p. 117
Adapter Assembly	p. 122

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

①

②

Vacuum inlet
(One-touch fitting)

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

④ Connection thread
(Female thread)

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

Model						A	B	C	D*2	E	F	G	H			
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	B5	46	29.9	21	2.5	M5 x 0.8	5.5	8	M5 x 0.8			
						46.5	30.4	21.5								
						57.6	39.8	29	3.5			12	M8 x 1.25			
						58.1	40.3	29.5								
					B6	46	29.9	21	2.5	M6 x 1	6.5	8	M5 x 0.8			
						46.5	30.4	21.5								
						57.6	39.8	29	3.5			12	M8 x 1.25			
						58.1	40.3	29.5								
						60.6	42.8	32	4							
						61.6	43.8	33								
						B8	57.6	39.8	29			3.5	M8 x 1.25	8.5	12	M8 x 1.25
							58.1	40.3	29.5							
					60.6		42.8	32	4							
					61.6		43.8	33								

Dimensions Per Vacuum Inlet

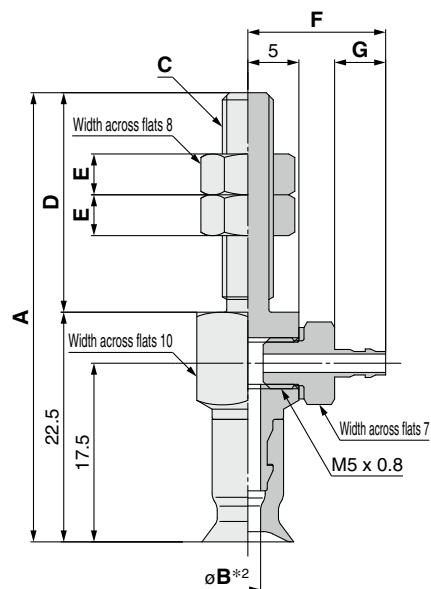
Model						J	K	L	M	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread					
ZP	R	U	N S U F GN GS	04	B5	8	4	17.5	8.2	$\varnothing 2.5$
				06	B6		6	18.3	10.4	$\varnothing 4$
				04	B5	12	4	19.3	8.2	$\varnothing 3$
				06	B6		6	20.5	10.4	$\varnothing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

*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 $\varnothing 2$ to $\varnothing 8$



Construction	p. 115
Adapter Assembly	p. 123

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

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
(Male thread)

A5	M5 x 0.8
A6	M6 x 1

Model						A	B*2	C	D	E
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread					
ZP	02	U	N S U F GN GS	N4 N6 U4 U6	A5	44	1.2	M5 x 0.8	21.5	4
	04						1.6			
	06						2.5			
	08			N4 N6 U4 U6	A6	49.5	1.2	M6 x 1	27	4
	02						1.6			
	06						2.5			

Dimensions Per Vacuum Inlet

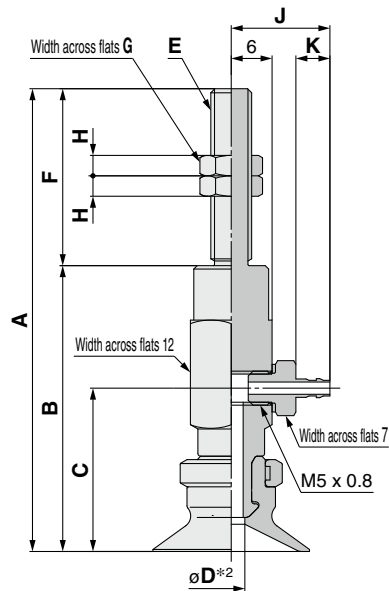
Model						F	G	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread			
ZP	02	U	N S U F GN GS	N4 U4	A5 A6	13.5	5	$\varnothing 1.8$
	06 08			N6 U6		15.5	7	$\varnothing 2.5$

*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 $\varnothing 50$



Construction	p. 117
Adapter Assembly	p. 123

ZPY 10 U N - N4 - A5

1

2

4

Connection thread
(Male thread)

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

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

Model						A	B	C	D*2	E	F	G	H	
Vacuum inlet direction	1 Pad dia.	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				A6	64	38	22	2.5	M6 x 1	26	8	4
		13					64.5	38.5	22.5					
		16					68	42	24	3.5				
		20					68.5	42.5	24.5					
		25					72.5	46.5	28.5	6				
		32					73.5	47.5	29.5					
		40				A8	58	42	24	3.5	M8 x 1	16	12	4
		50					58.5	42.5	24.5					
		20					62.5	46.5	28.5	6				
		25					63.5	47.5	29.5					
		32												
		40												
50														

Dimensions Per Vacuum Inlet

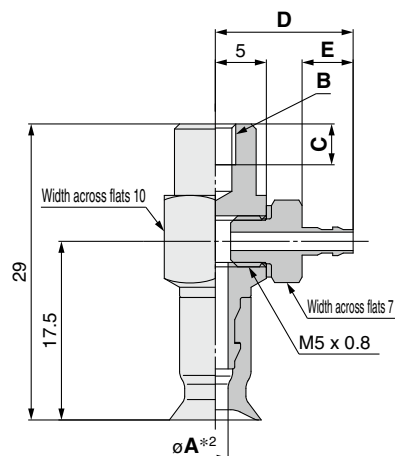
Model							J	K	Fitting part min. hole size
	Vacuum inlet direction	① Pad dia.	Form	② Material ^{#1}	③ Vacuum inlet	④ Connection thread			
ZP	Y	10	U	N S U F GN GS	N4	A5	14.5	5	ø1.8
		13			U4				
		16			N6	A6	16.5	7	ø2.5
		20			U6				
		25							
		32							
		40			N6	A6	16.5	7	ø2.5
		50			U6	A8			

*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

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 123

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

①

②

Vacuum inlet ③
(Barb fitting)

④ Connection thread
(Female thread)

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

B4	M4 x 0.7
B5	M5 x 0.8

Model						A*2	B	C
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	02	U	N S U F GN GS	B4	1.2	M4 x 0.7	4
		04				1.6		
		06				2.5		
		08			B5	1.2	M5 x 0.8	5
		02				1.6		
		04				2.5		

Dimensions Per Vacuum Inlet

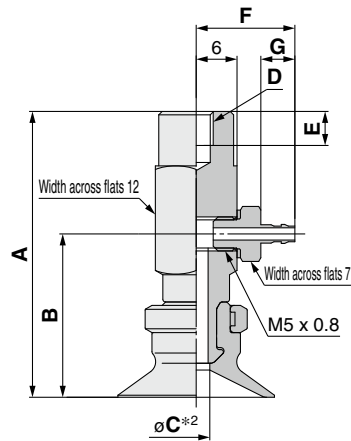
Model							D	E	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread				
ZP	Y	02 04 06 08	U	N S U F GN GS	N4 U4	B4 B5	13.5	5	ø1.8
					N6 U6		15.5	7	ø2.5

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

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

Dimensions/Models

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



Construction	p. 117
Adapter Assembly	p. 123

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

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 Material	③ Vacuum inlet	④ Connection thread					
ZP	Y	U	N S U F GN GS	N4 N6 U4 U6	B5	38	22	2.5	M5 x 0.8	5
						38.5	22.5			
						42	24	3.5		
						42.5	24.5			
					B6	38	22	2.5	M6 x 1	6
						38.5	22.5			
						42	24	3.5		
						42.5	24.5			
						46.5	28.5	6		
						47.5	29.5			
					B8	42	24	3.5	M8 x 1.25	8
						42.5	24.5			
						46.5	28.5	6		
						47.5	29.5			

Dimensions Per Vacuum Inlet

Model						F	G	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	U	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	16.5	7	$\varnothing 2.5$
				N6 U6	B8	16.5	7	$\varnothing 2.5$
				N6 U6	B8	16.5	7	$\varnothing 2.5$

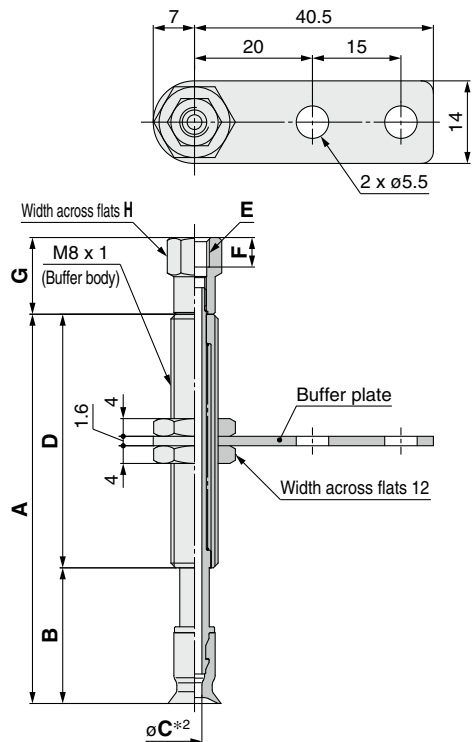
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

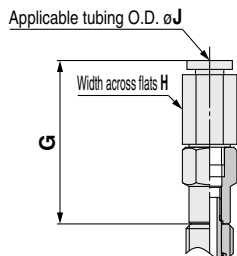
Dimensions/Models

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

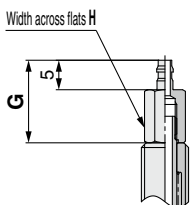
The drawings show the type with a buffer plate.



Vacuum inlet: One-touch fitting



Vacuum inlet: Barb fitting



Construction	p. 116
Buffer Assembly	p. 124

ZPT 02 U N J 6 - B3 - 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

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

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	1.6	15	
		10				66			23		43	
		15				71			28			
		25				81			38			
		06 08				6			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 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 10 15 25	B3	A8	M3 x 0.5	3	11	6
							B5		M5 x 0.8	5	13	8

Dimensions Per Vacuum Inlet: One-touch Fitting

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

Dimensions Per Vacuum Inlet: Barb Fitting

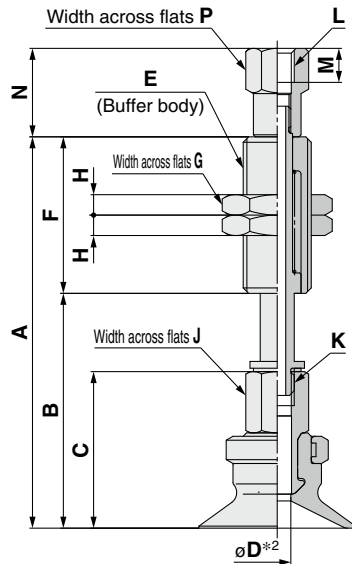
Model								G	H	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread			
ZP	T	02 04 06 08	U	N S U F GN GS	J K JN KN	6 10 15 25	N4	14	6	ø1.8
							A8 U4			

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

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

Dimensions/Models

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



Construction	p. 118
Buffer Assembly	p. 124

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

① ② ③ ④ ⑤ ⑥

Buffer specification ③

J	Rotating
K	Non-rotating

⑥ Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet (Female thread)

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

Model								A	B	C	D*2	E	F	G	H	J	K					
	Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread														
ZP	T	10 13	U	N S U F GN GS	J K	10	B5 04 06 N6 U6	A10	55.5	32.5	21	J: 2.5 K: 2	M10 x 1	14	3	8	M5 x 0.8					
						20			93.5	42.5												
						30			103.5	52.5												
						40			139.5	62.5												
						50			149.5	72.5												
		10				56			33	21.5	J: 2.5 K: 2							M10 x 1	14	3	8	M5 x 0.8
		20				94			43													
		30				104			53													
		40				140			63													
		50				150			73													
		10				57.5			34.5	23	J: 2.5 K: 2							M10 x 1	14	3	8	M5 x 0.8
		20				95.5			44.5													
		30				105.5			54.5													
		40				141.5			64.5													
		50				151.5			74.5													
		10				58			35	23.5	J: 2.5 K: 2							M10 x 1	14	3	8	M5 x 0.8
		20				96			45													
		30				106			55													
		40				142			65													
		50				152			75													
		10				94.5	44.5	32	J: 2.5 K: 2	M14 x 1	19							4	12	M8 x 1.25		
		20				104.5	54.5															
		30				114.5	64.5															
		50				159.5	84.5															
		10				95.5	45.5															
		20				105.5	55.5	33	J: 2.5 K: 2	M14 x 1	19							4	12	M8 x 1.25		
		30				115.5	65.5															
		50				160.5	85.5															

Dimensions Per Vacuum Inlet: Female Thread

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

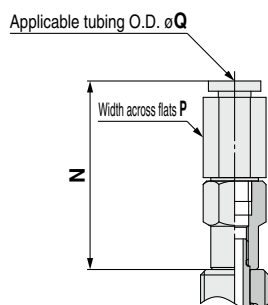
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

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

Vacuum inlet: One-touch fitting



ZPT 10 U N J 10 - 04 - A10

① ② ③ ④ ⑤ ⑥

Buffer specification ③

J	Rotating
K	Non-rotating

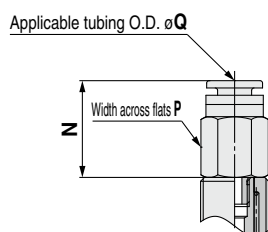
Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet

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

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



Dimensions Per Vacuum Inlet: One-touch Fitting

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

Dimensions Per Vacuum Inlet: Barb Fitting

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

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

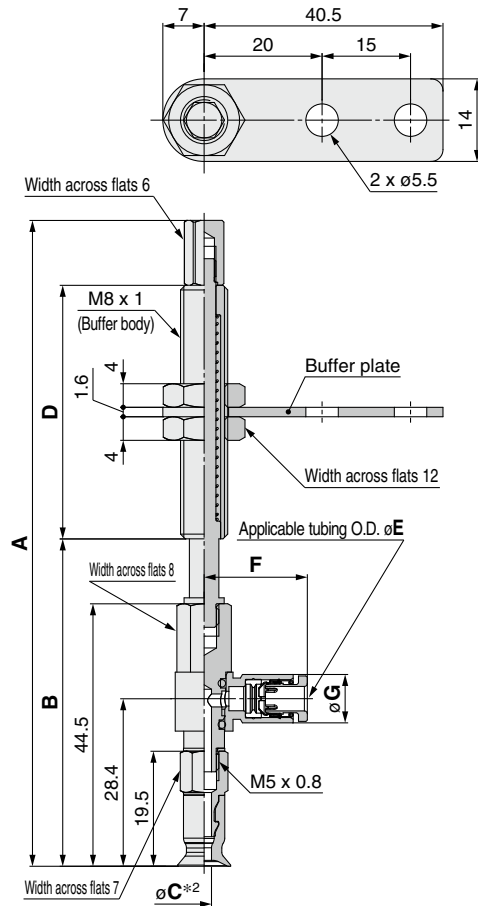
Construction p. 118

Buffer Assembly p. 124

Dimensions/Models

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

The drawings show the type with a buffer plate.



Construction	p. 116
Buffer Assembly	p. 125

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

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
(One-touch fitting)

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

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

Dimensions Per Vacuum Inlet

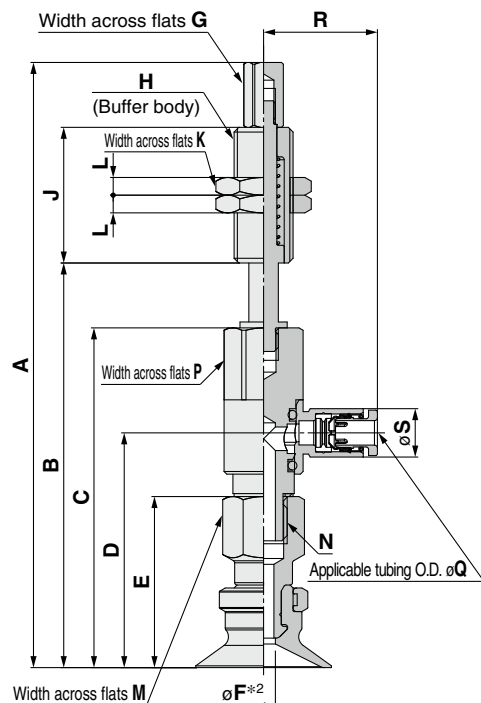
Model								E	F	G	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	R	02 04 06 08	U	N S U F GN GS	J K JN KN	6 10 15 25	04 06	A8	4	17.5	8.2	ø2.5
									6	18.3	10.4	ø4

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

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

Dimensions/Models

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



Construction	p. 118
Buffer Assembly	p. 125

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

Buffer specification **3**

J	Rotating
K	Non-rotating

6 Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

5 Vacuum inlet (One-touch fitting)

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

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	10 13	U	N S U F GN GS	J K	10	04 06	A10	91	57							23									
						20			129	67							51									
						30			139	77	46	29.9	21				77									
						40			175	87																
						50			185	97																
		10				91.5			57.5				2.5				23			8	M5 x 0.8					
		20				129.5			67.5																	
		30				139.5			77.5	46.5	30.4	21.5					77									
		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					51											
		40				186.6	98.6								77											
		50				196.6	108.6				3.5							12	M8 x 1.25							
		10				103.1	69.1								23											
		20				141.1	79.1								51											
		30				151.1	89.1	58.1	40.3	29.5					77											
		40				187.1	99.1																			
		50				197.1	109.6																			
		10				140.6	72.6																			
		20				137.6	82.6	60.6	42.8	32									50							
		30				147.6	92.6																			
		50				192.6	112.6											4	10	M14 x 1	75	19	4	12	M8 x 1.25	
		10				141.6	73.6																			
		20				138.6	83.6																			
		30				148.6	93.6	61.6	43.8	33																
		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	10 13 16	U	N S U F GN GS	J K	10	04	A10	8	4	17.5	8.2	ø2.5	
						20 30 40 50	06			6	18.3	10.4	ø4	
		20 25 32				10	04		A10	12	4	19.3	8.2	ø3
						20 30 40 50	06				6	20.5	10.4	ø4.5
		40 50				20 30 40 50	08	16		8	23.5	13.2	ø6	
						10 20 30 50	06	A14		12	6	20.5	10.4	ø4.5
		20 30 50					08		16	8	23.5	13.2	ø6	

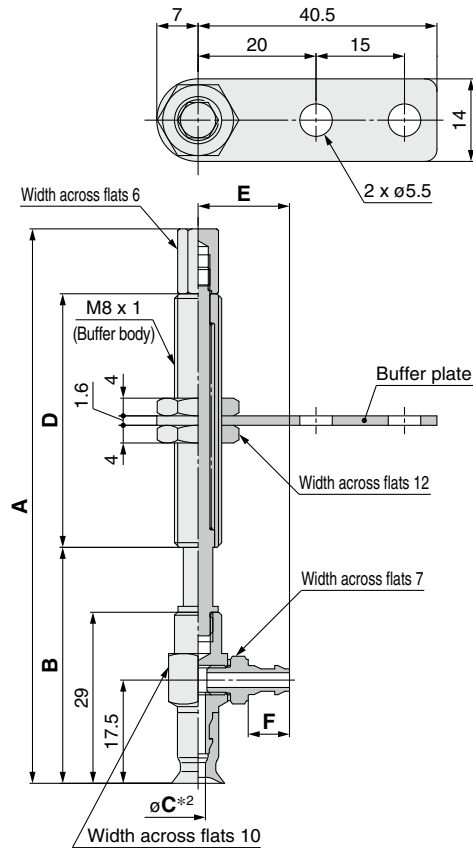
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

With 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**

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
(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 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	Y	02	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			
					25			109	55			
		04			U			6	63	37	1.6	15
								10	94	40		43
								15	99	45		
								25	109	55		
		06 08			U			6	63	37	2.5	15
								10	94	40		43
								15	99	45		
								25	109	55		

Dimensions Per Vacuum Inlet

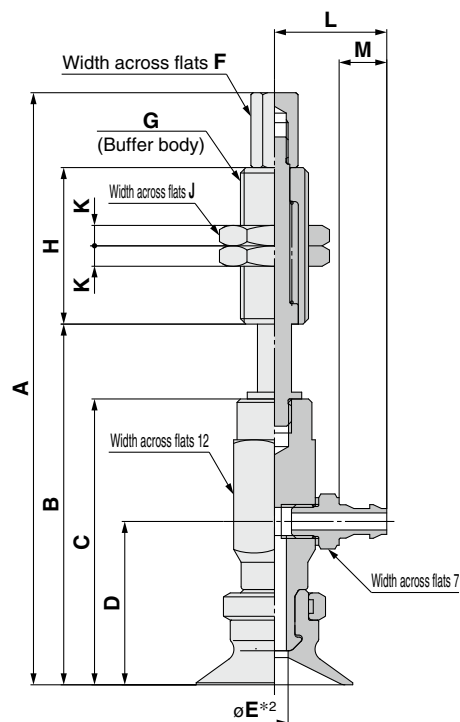
Model								E	F	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread			
ZP	Y	02 04 06 08	U	N S U F GN GS	J K JN KN	6	N4 U4 N6 U6	13.5	5	$\varnothing 1.8$
						10 15 25		15.5	7	$\varnothing 2.5$

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

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

Dimensions/Models

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



Construction p. 118
Buffer Assembly p. 126

ZPY 10 U N J 10 - N4 - A10

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 Material ^{*1}	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread												
ZP	Y	10 13	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	23	14	3	
						20			121	59									51
		30				131			69										
		40				167			79										
		50				177			89	38.5	22.5	77							
		10				83.5			49.5							23			
		20				121.5			59.5										
		30				131.5			69.5										
		40				167.5			79.5	87	53	42				24			77
		50				177.5			89.5										
		10				87	53	23											
		20				125	63												
		30				135	73												
		40				171	83	3.5	6	M10 x 1	77								
		50				181	93					14							
		10				87.5	53.5												
		20				125.5	63.5												
		30				135.5	73.5	42.5	24.5	51									
		40				171.5	83.5												
		50				181.5	93.5				77								
		10				126.5	58.5												
		20				123.5	68.5	46.5	28.5	50									
		30				133.5	78.5												
		50				178.5	98.5				6	10	M14 x 1	75					
		10				127.5	59.5								19				
		20				124.5	69.5												
		30				134.5	79.5												
		50				179.5	99.5	47.5	29.5	75									

Dimensions Per Vacuum Inlet

Model												
	Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread		L	M	Fitting part min. hole size
ZP	Y	10	U	N S U F GN GS	J K	10 20 30 40 50	N4 U4	A10		14.5	5	$\varnothing 1.8$
		13										
		16										
		20					N6 U6	A14		16.5	7	$\varnothing 2.5$
		25										
		32										
		40					N6 U6	A14		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



Basic Pad

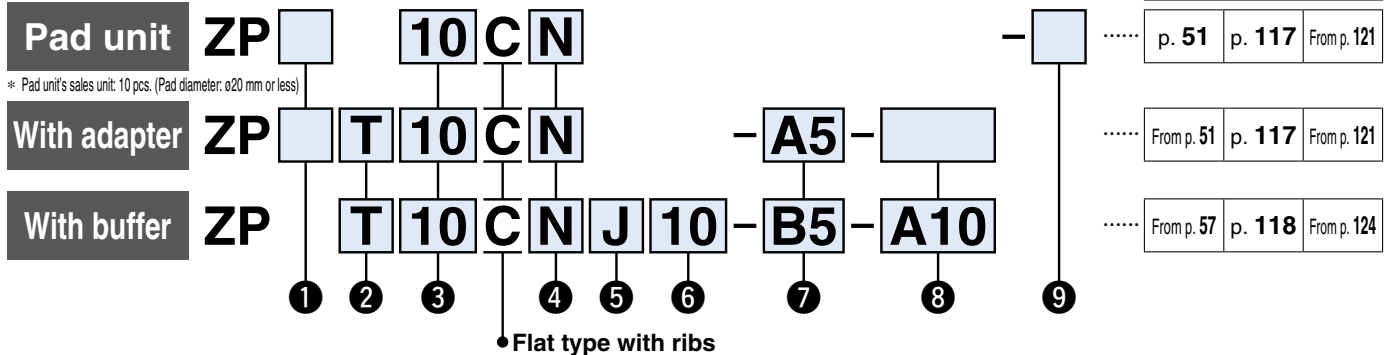
Flat Type with Ribs

ZP Series

The ZP series models ø10 to ø16 are scheduled to be redesigned to eliminate the lock ring starting in December 2026.



How to Order



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

From p. 51	p. 117	From p. 121
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From p. 57	p. 118	From p. 124
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① Adapter (Lock ring) material

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

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

② Vacuum inlet direction

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

③ Pad diameter

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

④ Material

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

*1 Uses a material compliant with a dissolution test of the FDA (U.S. Food and Drug Administration) regulation 21CFR§177.2600 for "Rubber articles intended for repeated use."

*2 Uses a material compliant with the standards for "Rubber apparatus (excluding baby drinking apparatus) and containers/packaging" (D3) (Partial revision: Japanese 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." (Japanese Ministry of Health and Welfare Notification No. 370, 1959)

⑤ Buffer specification

J	Rotating
K	Non-rotating

⑥ Buffer stroke

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

With adapter

⑦ Vacuum inlet

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

Type	Symbol	Size	Pad diameter [mm]		
			ø10 to ø16	ø20 to ø32	ø40, ø50
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

○: 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*1	A5	M5 x 0.8	○*2 △	—	—
	A6	M6 x 1	○*2 △	○*2 △	○*2 △
	A8	M8 x 1	—	○*2 △	○*2 △
Female thread	B5	M5 x 0.8	● △	● △	—
	B6	M6 x 1	● △	● △	● △
	B8	M8 x 1.25	—	● △	● △

*1 The mounting nut is shipped together with the product (unassembled). *2 ○: 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*1	A10	M10 x 1	○ ● △	○ ● △	—
	A14	M14 x 1	—	—	○ ● △

*1 The mounting nut and ○: ZPT/Vertical buffer are shipped together with the product (unassembled).

⑨ Lock ring

Symbol	Pad diameter
Nil	All sizes
X19	Without lock ring

Lock ring unit

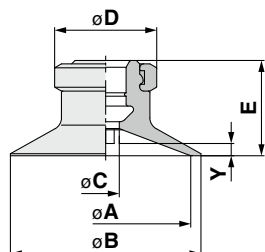
Part no.	Pad diameter [mm]
ZP□L1	ø10 to ø16
ZP□L2	ø20 to ø32
ZP□L3	ø40, ø50

□: Nil/Brass S/Stainless steel

* The pad unit lock ring is shipped together with the product (unassembled).

Dimensions/Models

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



Construction p. 117
Mounting Bracket Assembly From p. 121

ZP 10 C N
① ② ③

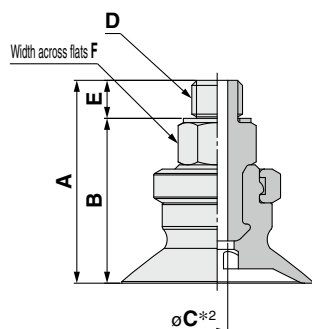
① Lock ring material

Nil	Brass
S	Stainless steel (Stainless steel 304)

Model					A	B	C	D	E	Y
①	②	③	④	⑤	A	B	C	D	E	Y
Lock ring material	Pad dia.	Form	Material	*1						
ZP	Nil S	10 13 16 20 25 32 40 50	C	N S U F GN GS	10	12	4	13	12	1.7
					13	15			1.8	
					16	18			12.5	1.2
					20	23		15	14	1.7
					25	28			1.8	
					32	35			14.5	2.3
					40	43	7	18	18.5	3.3
					50	53			19.5	3.8

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

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



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

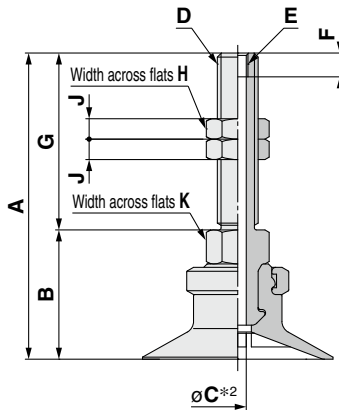
Model					A	B	C*2	D	E	F
①	②	③	④	⑤	A	B	C*2	D	E	F
Adapter material	Vacuum inlet direction	Pad dia.	Form	Material						
ZP	Nil S	T	10 13 16 20 25 32 40 50	C	N S U F GN GS	AS5	2.5	M5 x 0.8	3.5	8
							2.5	M6 x 1	4.5	8
							2.5	G1/8	5.5	17
							4	G1/4	6.5	21
							7	G1/4	6.5	21

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

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

Dimensions/Models

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



Construction	p. 117
Adapter Assembly	p. 121

ZP T 10 C N - A5

① ② ③ ④

① Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Connection thread (Male thread)

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

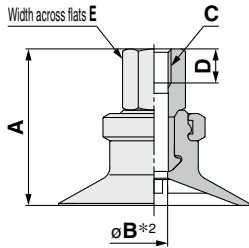
Model										A	B	C*2	D	E	F	G	H	J	K
①	②	③	④	①	②	③	④	①	②										
Adapter material	Vacuum inlet direction	Pad dia.	Form	Material	Connection thread														
ZP	Nil S	T	C	N S U F GN GS	A5	10		38	17	2.5	M5 x 0.8	M3 x 0.5	3.5	21	8	4	8		
						13		38.5	17.5										
						16													
						10	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

Dimensions/Models

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



Construction p. 117

Adapter Assembly p. 121

ZP **T** 10 **C** 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
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 Material *1	④ Vacuum inlet						
ZP	Nil S	T	C	N S U F GN GS	B5	21	2.5	M5 x 0.8	5	8	
						21.5	4				
						23					
						23.5					
					B6	21	2.5	M6 x 1	6	8	
						21.5	4				
						23					4.9
						23.5					
						32	12				
						33					
					B8	29	3.5	M8 x 1.25	8	12	
						29.5	6.6				
						32					
						33					
					BG01	27	2.5	G1/8	7.4	14	
						27.5	4				
						29					
						29.5					
					BG02	38	7	G1/4	11	17	
						39					
					B01 N01*3 T01*3	27	2.5	Rc1/8 NPT1/8 NPTF1/8	—	12	
						27.5	3.5				
						29					7
						29.5					
						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

Dimensions/Models

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

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

①

②

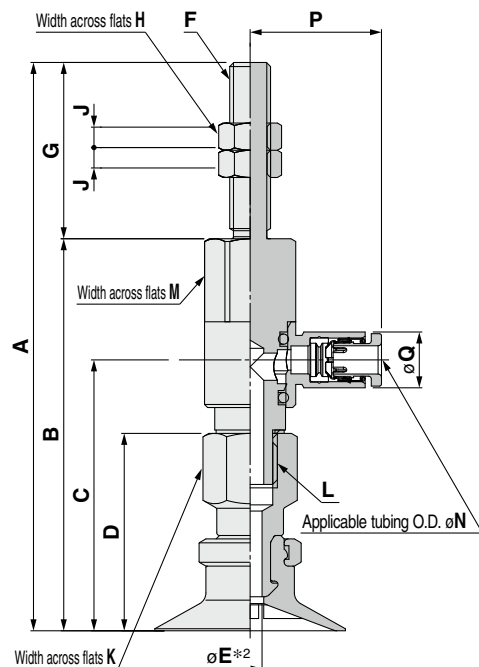
④

Connection thread
(Male thread)

Vacuum inlet
(One-touch fitting)

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

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



Construction p. 117

Adapter Assembly p. 122

		Model																
	Vacuum inlet direction	① Pad dia.	Form	② Material	③ Vacuum inlet	④ Connection thread		A	B	C	D	*2 E	F	G	H	J	K	L
ZP	R	10	C	N S U F GN GS	04 06 08	A5		67	46	29.9	21	2.5	M5 x 0.8	21	8	4	8	M5 x 0.8
		13						67.5	46.5	30.4	21.5							
		16						72	46	29.9	21	2.5		26			8	M5 x 0.8
		10						72.5	46.5	30.4	21.5							
		13				A6		83.5	57.6	39.8	29	3.5	M6 x 1		8	4		
		16						84	58.1	40.3	29.5						12	M8 x 1.25
		20						86.5	60.6	42.8	32	4		25.9				
		25						87.5	61.6	43.8	33							
		32				A8		73.5	57.6	39.8	29	3.5	M8 x 1					
		40						74	58.1	40.3	29.5			15.9	12	4	12	M8 x 1.25
		50						76.5	60.6	42.8	32	4						
		20						77.5	61.6	43.8	33							
		25																
		32																
		40																
		50																

Dimensions Per Vacuum Inlet

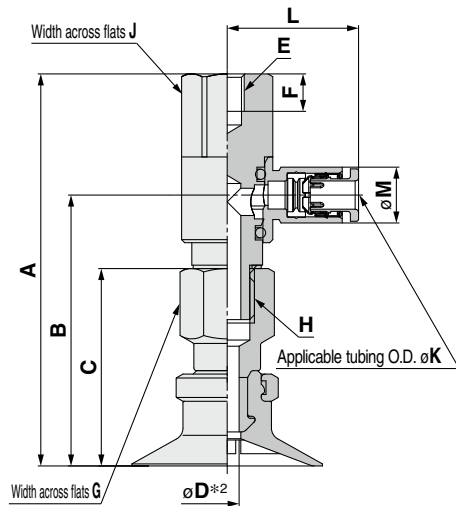
		Model										Fitting part min. hole size
	Vacuum inlet direction	① Pad dia.	Form	② Material	③ Vacuum inlet	④ Connection thread		M	N	P	Q	
ZP	R	10	C	N S U F GN GS	04	A5		8	4	17.5	8.2	$\phi 2.5$
		13			06	A6			6	18.3	10.4	$\phi 4$
		16			04	A6			4	19.3	8.2	$\phi 3$
		20			06	A8		12	6	20.5	10.4	$\phi 4.5$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

Dimensions/Models

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



Construction p. 117
Adapter Assembly p. 122

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

1	2	3	4
Vacuum inlet (One-touch fitting)			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

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

Dimensions Per Vacuum Inlet

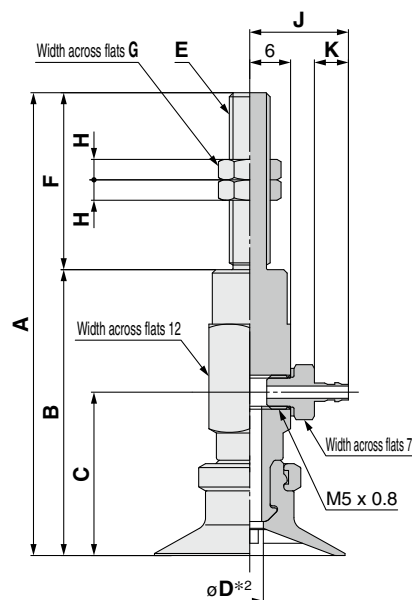
Model						J	K	L	M	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Vacuum inlet	4 Connection thread					
ZP	R	C	N S U F GN GS	04	B5	8	4	17.5	8.2	$\varnothing 2.5$
				06	B6		6	18.3	10.4	$\varnothing 4$
				04	B5	12	4	19.3	8.2	$\varnothing 3$
				06	B6		6	20.5	10.4	$\varnothing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

Dimensions/Models

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



Construction	p. 117
Adapter Assembly	p. 123

ZPY **10** C **N** - **N4** - **A5**

① ②

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
(Male thread)

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

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

Dimensions Per Vacuum Inlet

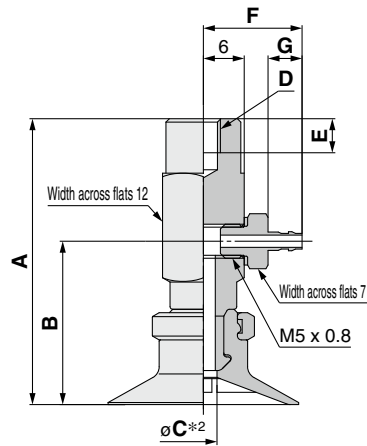
Model						J	K	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	C	N S U F GN GS	N4 U4	A5	14.5	5	$\varnothing 1.8$
				N6 U6		16.5	7	$\varnothing 2.5$
				N6 U6	A6	16.5	7	$\varnothing 2.5$
				N6 U6	A8	16.5	7	$\varnothing 2.5$

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

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

Dimensions/Models

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



Construction	p. 117
Adapter Assembly	p. 123

ZPY **10** C **N** - **N4** - **B5**

①

②

④

Connection thread
(Female thread)

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

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					
ZP	Y	C	N S U F GN GS	N4 N6 U4 U6	B5	38	22	M5 x 0.8	5
						38.5	22.5		
						42	24		
						42.5	24.5		
				N4 N6 U4 U6	B6	38	22	M6 x 1	6
						38.5	22.5		
						42	24		
						42.5	24.5		
						46.5	28.5		
						47.5	29.5		
				N4 N6 U4 U6	B8	42	24	M8 x 1.25	8
						42.5	24.5		
						46.5	28.5		
						47.5	29.5		

Dimensions Per Vacuum Inlet

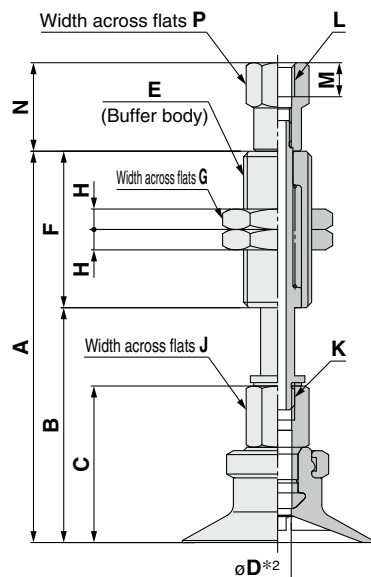
Model					F	G	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet			
ZP	Y	C	N S U F GN GS	N4 U4	14.5	5	$\varnothing 1.8$
				N6 U6	16.5	7	$\varnothing 2.5$
				N4 U4	14.5	5	$\varnothing 1.8$
				N6 U6	16.5	7	$\varnothing 2.5$
				N6 U6	16.5	7	$\varnothing 2.5$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

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

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

Dimensions/Models

With buffer $\varnothing 10$ 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	T	10 13	C	N S U F GN GS	J K	10 20 30 40 50	B5 04 06 N6 U6	A10	55.5	32.5	21	J: 2.5 K: 2	M10 x 1	23	14	3	8	M5 x 0.8
									93.5	42.5				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	32	4	M14 x 1	50								
		104.5				54.5				75								
		114.5				64.5				19								
		159.5				84.5				50								
		95.5				45.5				13								
		105.5				55.5				23								
		115.5				65.5				51								
		160.5				85.5				75								
		94.5				44.5				33	12		M8 x 1.25					
		104.5				54.5												
114.5	64.5																	
159.5	84.5																	
95.5	45.5																	
105.5	55.5																	
115.5	65.5																	
160.5	85.5																	
94.5	44.5																	
104.5	54.5																	
114.5	64.5																	
159.5	84.5																	
95.5	45.5																	
105.5	55.5																	
115.5	65.5																	
160.5	85.5																	
94.5	44.5																	
104.5	54.5																	
114.5	64.5																	
159.5	84.5																	
95.5	45.5																	
105.5	55.5																	
115.5	65.5																	
160.5	85.5																	
94.5	44.5																	
104.5	54.5																	
114.5	64.5																	
159.5	84.5																	
95.5	45.5																	
105.5	55.5																	
115.5	65.5																	
160.5	85.5																	

Dimensions Per Vacuum Inlet: Female Thread

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

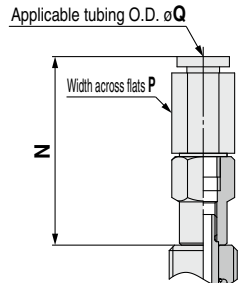
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

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

Vacuum inlet: One-touch fitting



ZPT 10 C N J 10 - 04 - A10

① ② ③ ④ ⑤ ⑥

Buffer specification ③

J	Rotating
K	Non-rotating

⑥ Connection thread (Male thread)

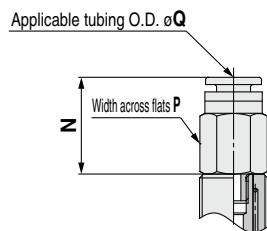
A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet

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

Vacuum inlet: Built-in One-touch fitting

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



Dimensions Per Vacuum Inlet: One-touch Fitting

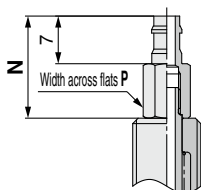
Model								N	P	Q	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	T	C	N S U F GN GS	J K	10	04	A10	27.7	8	4	ø2.5	
					13							
					16							
					20							
					25	10			6			
					32							
			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

Dimensions Per Vacuum Inlet: Barb Fitting

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

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

Vacuum inlet: Barb fitting



Construction	p. 118
Buffer Assembly	p. 124

Dimensions/Models

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

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

①

②

④

⑥ Connection thread
(Male thread)

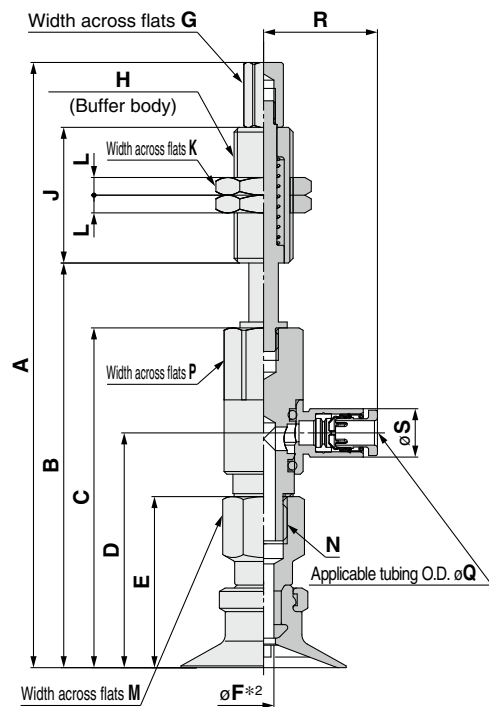
Buffer specification ③

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet
(One-touch fitting)

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



Construction	p. 118
Buffer Assembly	p. 125

Model								A	B	C	D	E	*2 F	G	H	J	K	L	M	N		
Vacuum inlet direction	① Pad dia.	Form	② Material *1	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread															
ZP	R	C	N S U F GN GS	J K	10	04 06	A10	91	57	46	29.9	21	2.5	6	M10 x 1	23	14	3	8	M5 0.8		
					20			129	67							51						
					30			139	77												77	
					40			175	87													
					50			185	97													
					10			91.5	57.5	23												
					20			129.5	67.5		51											
					30			139.5	77.5			77										
					40			175.5	87.5													
					50			185.5	97.5													
					10	102.6	68.6	3.5	7	M14 x 1	23	19	4	12	M8 1.2							
					20	140.6	78.6				51											
					30	150.6	88.6									77						
					40	186.6	98.6															
					50	196.6	108.6															
					10	103.1	69.1				23											
					20	141.1	79.1									51						
					30	151.1	89.1										77					
					40	187.1	99.1															
					50	197.1	109.6															
					10	140.6	72.6	60.6	42.8	32	4	10	M14 x 1	50	19	4	12	M8 1.2				
					20	137.6	82.6							75								
					30	147.6	92.6												50			
					40	192.6	112.6															
					50	192.6	112.6															
					10	141.6	73.6							61.6					43.8	33	50	
					20	138.6	83.6															75
					30	148.6	93.6															
					40	193.6	113.6															
					50	193.6	113.6															

Dimensions Per Vacuum Inlet

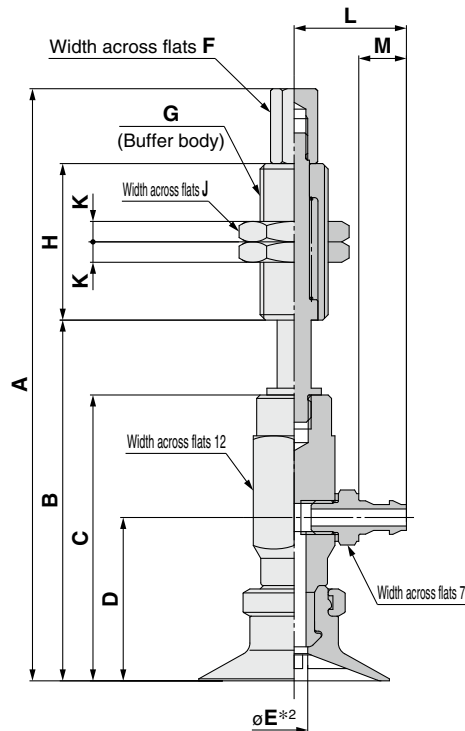
Model								P	Q	R	S	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	R	C	N S U F GN GS	J K	10	04	A10	8	4	17.5	8.2	ø2.5
					20				6	18.3	10.4	ø4
					20 25 32	4		19.3	8.2	ø3		
						6		20.5	10.4	ø4.5		
						16		8	23.5	13.2	ø6	
						40 50		12	6	20.5	10.4	ø4.5
	16				8		23.5	13.2	ø6			

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

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

Dimensions/Models

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



Construction	p. 118
Buffer Assembly	p. 126

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

1	2	3	4	5	6
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	N4 N6 U4 U6	A10	83	49	38	22	2.5	6	M10 x 1	23	14	3
					20			121	59						51		
					30			131	69						77		
					40			167	79						23		
					50			177	89						51		
					10			83.5	49.5	38.5	22.5				77		
					20			121.5	59.5								
					30			131.5	69.5								
					40			167.5	79.5								
					50			177.5	89.5								
					10			87	53	42	24	3.5	6	M10 x 1	23		
					20			125	63						51		
					30			135	73						77		
					40			171	83						23		
					50			181	93						51		
					10			87.5	53.5	42.5	24.5				77		
					20			125.5	63.5								
					30			135.5	73.5								
					40			171.5	83.5								
					50			181.5	93.5								
					10	126.5	58.5	46.5	28.5	6	10	M14 x 1	50				
					20	123.5	68.5						75				
					30	133.5	78.5						50				
					50	178.5	98.5						75				
					10	127.5	59.5	47.5	29.5				75				
					20	124.5	69.5										
					30	134.5	79.5										
					50	179.5	99.5										

Dimensions Per Vacuum Inlet

Model								L	M	Fitting part min. hole size	
Vacuum inlet direction	❶ Pad dia.	Form	❷ ^{*1} Material	❸ Buffer spec.	❹ Buffer stroke	❺ Vacuum inlet	❻ Connection thread				
ZP	Y	10 13 16 20 25 32	C	N S U F GN GS	J K	10 20 30 40 50	N4 U4	A10	14.5	5	ø1.8
		N6 U6					16.5		7	ø2.5	
		40 50					N6 U6	A14	16.5	7	ø2.5

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

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

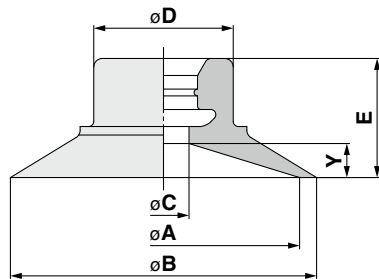


From p. 65	p. 120	From p. 129
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Dimensions/Models

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



Construction p. 119

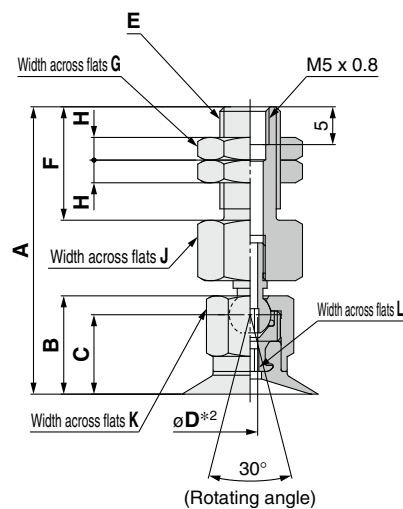
Mounting Bracket Assembly From p. 127

ZP **10** F **N**
① ②

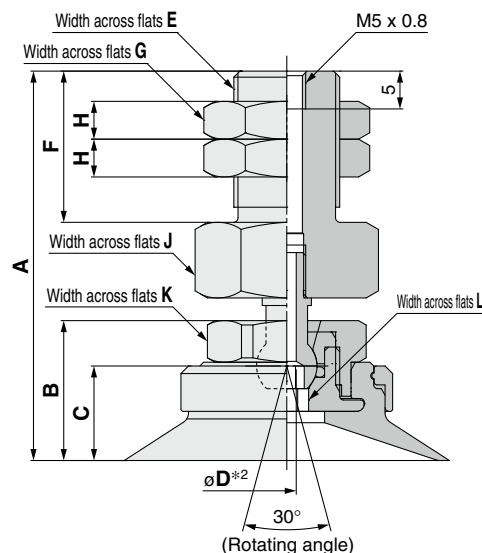
Model				A	B	C	D	E	Y
①	Pad dia.	Form	② Material						
ZP	10	F	N S U F GN GS	10	12	3	8.2	6.5	1.5
	13			13	15			7	2
	16			16	18			8.5	3
	20			20	22	4	10.2	9	
	25			25	28			13	5
	32			32	35			14	6
	40			40	43	10	26		
	50			50	53	8			

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

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



$\varnothing 10$ 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

Connection thread
(Male thread)

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

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

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

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

Construction p. 119

Adapter Assembly p. 127

Dimensions/Models

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

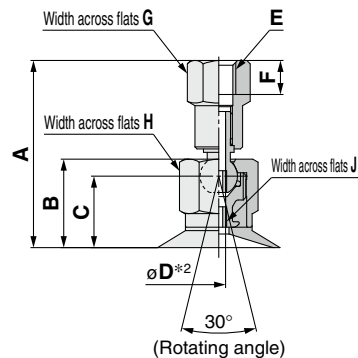
ZPT **10** F **N** - **B5**

①

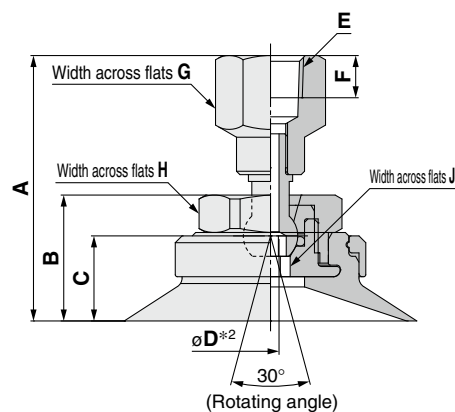
②

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 Material	③ Connection thread										
ZP	T	10	F	N S U F GN GS	B5	27	12.5	10	2	M5 x 0.8	5	8	10	2
		27.5				13	10.5							
		20				32	15.5	12.5				9	12	3
		25				32.5	16	13						
		20			36	15.5	12.5	2	M8 x 1.25	8	12	12	3	
		25			36.5	16	13							
		40			39	18.5	12.5				19	5		
		50			40	19.5	13.5							
		20			36	15.5	12.5	2	Rc1/8 NPT1/8 NPTF1/8	/	14	12	3	
		32			36.5	16	13							
		40			39	18.5	12.5					19	5	
		50			40	19.5	13.5							

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

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

Construction p. 119

Adapter Assembly p. 127

Dimensions/Models

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

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

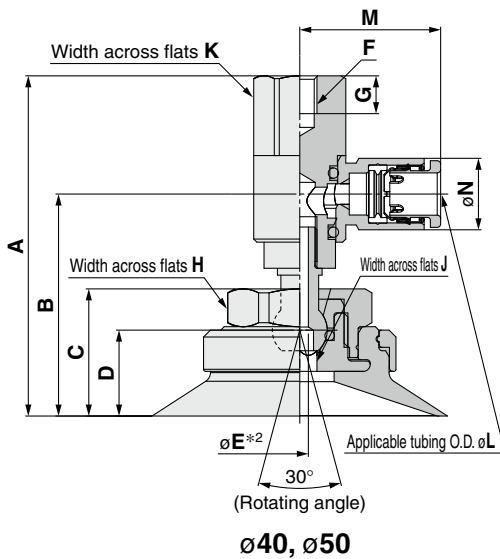
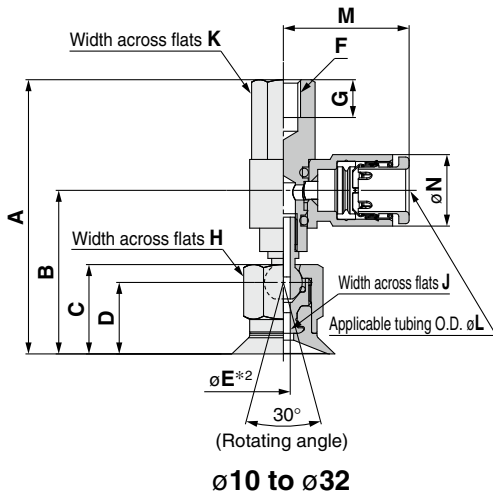
① ②

Vacuum inlet
(One-touch fitting)

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

④ Connection thread
(Female thread)

B5	M5 x 0.8
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	39.5	23.4	12.5	10	2	M5 x 0.8	5.5	10	2
						40	23.9	13	10.5					
						46.5	29.3	15.5	12.5					
						47	29.8	16	13					
						49.5	32.3	18.5	12.5					
						50.5	33.3	19.5	13.5					
					B8	46.5	29.3	15.5	12.5	2	M8 x 1.25	8.5	12	3
						47	29.8	16	13					
						49.5	32.3	18.5	12.5					
						50.5	33.3	19.5	13.5					
						46.5	29.3	15.5	12.5					
						47	29.8	16	13					

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	$\phi 2.5$
							6	18.3	10.4	$\phi 4$
				06	B5	12	6	20.5	10.4	$\phi 4.5$
							8	23.5	13.2	$\phi 6$
				08	B8	16	8	23.5	13.2	$\phi 6$
							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

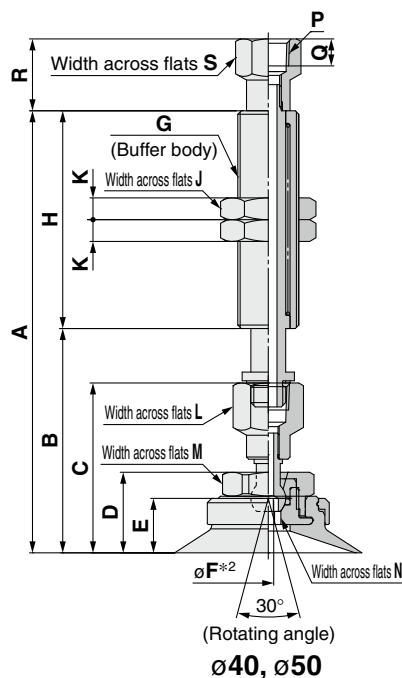
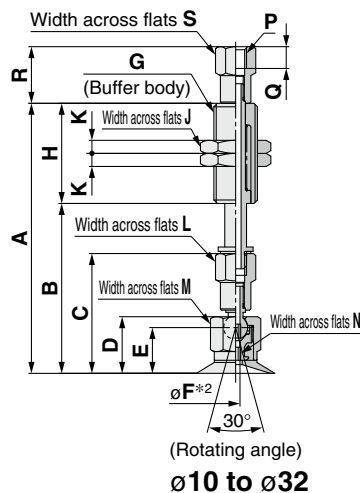
*2 Indicates the minimum hole size of the adapter or vacuum pad

Construction p. 119

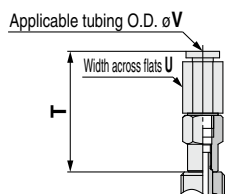
Adapter Assembly p. 128

Dimensions/Models

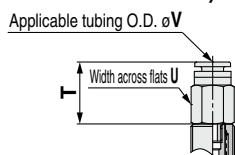
With buffer ø10 to ø50



Vacuum inlet: One-touch fitting



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



ZPT 10 F N J 10 - B5 - A10

① ② ③ ④ ⑤ ⑥

Buffer specification ③

J	Rotating
K	Non-rotating

⑥ Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet

			Pad diameter	
			ø10 to ø16	ø20 to ø50 (10 st only)
B5	M5 x 0.8	Female thread		
B01	Rc1/8			
N01	NPT1/8			
T01	NPTF1/8	One-touch fitting		
04	ø4		KQ2H04-M5N	
06	ø6		KQ2H06-M5N	KQ2H06-01NS
08	ø8			KQ2H08-01NS

Model																											
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread	A	B	C	D	E	F	^{*2} G	H	J	K	L	M	N	P	Q	R	S			
ZP	T	10	N S U F GN GS	J K	10	B5	A10	61.5	38.5						23												
					20			99.5	48.5						51												
					30			109.5	58.5	27	12.5	10															
					40			145.5	68.5						77												
					50			155.5	78.5																		
					10			62	39				2	M10 x 1	23	14	3	8	10	2	M5 x 0.8	5	13	8			
		13 16			20	100	49						51														
					30	110	59	27.5	13	10.5			77														
					40	146	69																				
					50	156	79																				
					10	98.5	48.5														16.5						
					20	108.5	58.5	36	15.5	12.5			50														
	20 25	30			118.5	68.5						75													12		
		50			163.5	88.5																					
		10			99	49				2		50							12	3							
		20			109	59	36.5	16	13																		
		30			119	69						75													12		
		50			164	89																					
		32			10	101.5	51.5						19	4	12									Rc1/8 NPT1/8 NPTF1/8			16.5
					20	111.5	61.5	39	18.5	12.5			50														16.5
					30	121.5	71.5																				12
					50	166.5	91.5						75														
					10	102.5	52.5				2.5									19	5						16.5
					20	112.5	62.5	40	19.5	13.5			50														
	40	30			122.5	72.5																					
		50			167.5	92.5																					
		10																									
		20																									
		30																									
		50																									
	50	10																									
		20																									
		30																									
		50																									
		10																									
		20																									

Dimensions Per Vacuum Inlet: One-touch Fitting

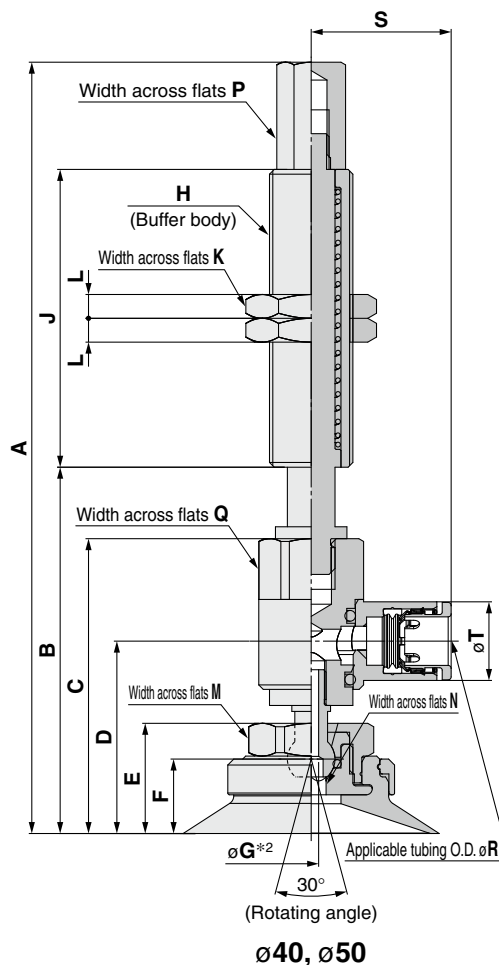
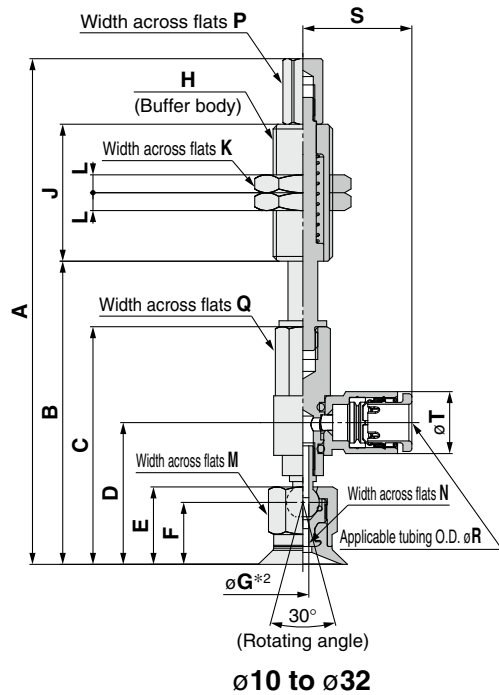
Model												T	U	V	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread								
ZP	T	F	N S U F GN GS	J K	10	04	A10	27.7		8		4		ø2.5	
					20										
					30										
					40	06	A10	31.8		10		6		ø4.5	
					50										
					10										
	20 25 32 40 50	F	N S U F GN GS	J K	20	06	A14	19.9		12		6		ø3	
					30										
					50										
					10			24.9		14		8			
					20										

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

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

Dimensions/Models

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



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

1	2	3	4	5	6
J	Rotating				
K	Non-rotating				

6 Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

5 Vacuum inlet (One-touch fitting)

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

Model																						
	Vacuum inlet direction	① Pad dia.	Form	② ^{#1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread	A	B	C	D	E	F	*2 G	H	J	K	L	M	N	P
ZP	R	10	F	N S U F GN GS	J K	10	04 06	A10	84.5	50.5							23					
						20			122.5	60.5							51					
						30			132.5	70.5	39.5	23.4	12.5	10			77					
						40			168.5	80.5							77					
						50			178.5	90.5							77					
						10			85	51					2	M10 x 1	23	14	3	10	2	6
						20			123	61							51					
						30			133	71	40	23.9	13	10.5			77					
						40			169	81							77					
						50			179	91							77					
		10				126.5	58.5															
		20				123.5	68.5															
		30				133.5	78.5	46.5	29.3	15.5	12.5			50								
		40				178.5	98.5							75								
		10				127	59					2						12	3			
		20				124	69							50								
		30				134	79	47	29.8	16	13			75								
		50				179	99							M14 x 1	75	19	4			10		
		10				129.5	61.5															
		20				126.5	71.5															
		30				136.5	81.5	49.5	32.3	18.5	12.5			50								
		40				181.5	101.5															
		10				130.5	62.5															
		20				127.5	72.5															
		30				137.5	82.5	50.5	33.3	19.5	13.5			50								
		40				182.5	102.5															
		50																				

Dimensions Per Vacuum Inlet: One-touch Fitting

Model								Q	R	S	T	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	F	N S U F G N S	J K	10	04	A10	8	4	17.5	8.2	ø2.5
					20				6	18.3	10.4	ø4
					30	06	A14	12	6	20.5	10.4	ø4.5
					40			16	8	23.5	13.2	ø6
					50	08	A14	12	6	20.5	10.4	ø4.5
					50			16	8	23.5	13.2	ø6

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

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

Construction p. 120

Buffer Assembly p. 130

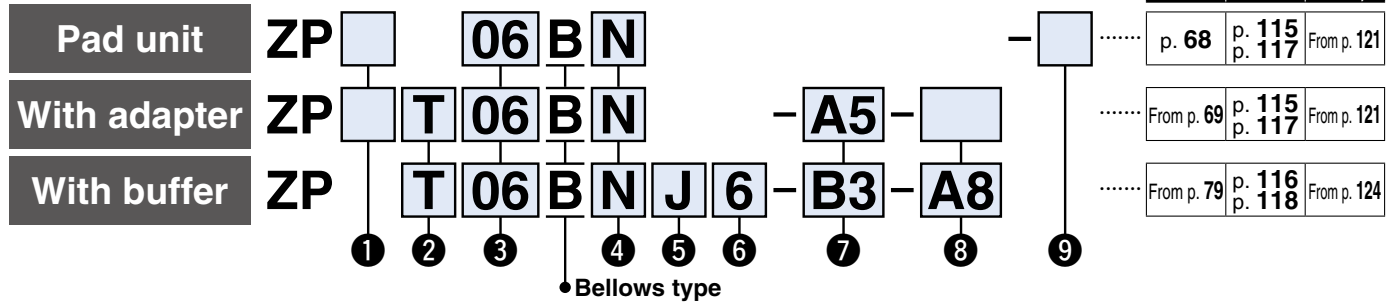


Basic Pad Bellows Type ZP Series

The ZP series models ø10 to ø16 are scheduled to be redesigned to eliminate the lock ring starting in December 2026.



How to Order



Dimensions/ Models	Construction	Mounting Bracket Assembly
p. 68	p. 115 p. 117	From p. 121
From p. 69	p. 115 p. 117	From p. 121
From p. 79	p. 116 p. 118	From p. 124

① Adapter (Lock ring) material

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

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

② Vacuum inlet direction

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

③ Pad diameter

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

④ Material

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

*1 Uses a material compliant with a dissolution test of the FDA (U.S. Food and Drug Administration) regulation 21CFR§177.2600 for "Rubber articles intended for repeated use."

*2 Uses a material compliant with the standards for "Rubber apparatus (excluding baby drinking apparatus) and containers/packaging" (D3) (Partial revision: Japanese 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." (Japanese Ministry of Health and Welfare Notification No. 370, 1959)

⑤ Buffer specification

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

*1 Only for pad diameters ø6 and ø8

⑥ Buffer stroke

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

With adapter

⑦ Vacuum inlet ○: 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	M5 x 0.8	—	○*1	—	—	
	A6	M6 x 1	○*1	—	—	—	
	AS6	M6 x 1	—	○*1	—	—	
	AG01	G1/8	—	○*1	—	—	
Female thread	AG02	G1/4	—	—	—	—	
	Nil	M3 x 0.5	—	○ (Connection thread: AS/AG)	○ (Connection thread: AG)	○ (Connection thread: AG)	
	Nil	M5 x 0.8	—	—	○ (Connection thread: AG)	○ (Connection thread: AG)	
	B4	M4 x 0.7	○*1	—	—	—	
	B5	M5 x 0.8	○*1	—	—	—	
	B6	M6 x 1	—	○*1	—	—	
	B8	M8 x 1.25	—	—	—	—	
	BG01	G1/8	—	○*1	—	—	
	BG02	G1/4	—	—	—	—	
	B01	Rc1/8	—	○*1	—	—	
	N01*4	NPT1/8	—	○*1	—	—	
	T01*4	NPTF1/8	—	○*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*1	A5	M5 x 0.8	●△	○*2△	—	—	
	A6	M6 x 1	●△	○*2△	—	—	
	A8	M8 x 1	—	—	○*2△	○*2△	
Female thread	B4	M4 x 0.7	●△	—	—	—	
	B5	M5 x 0.8	●△	●△	●△	—	
	B6	M6 x 1	—	●△	●△	●△	
	B8	M8 x 1.25	—	—	●△	●△	

*1 The mounting nut is shipped together with the product (unassembled). *2 ○: 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*1	A8	M8 x 1	○●△	—	—	—	
	A10	M10 x 1	—	○●△	○●△	—	
	A14	M14 x 1	—	—	—	○●△	

*1 The mounting nut, buffer plate, and ○: ZPT/Vertical buffer are shipped together with the product (unassembled).

⑨ Lock ring

Symbol	Pad diameter [mm]	
Nil	ø6, ø8	ø10 to ø50
X19	None*1	With lock ring Without lock ring

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

Lock ring unit

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

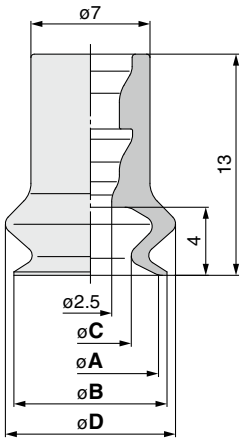
□: Nil/Brass S/Stainless steel

* The pad unit lock ring is shipped together with the product (unassembled).

Dimensions/Models

Single unit **ø6 to ø8**

ZP **06** B **N**
① ②



Model				A	B	C	D
①	②	③	④				
Pad dia.	Form	Material					
ZP	06	B	N	6	7	3.4	9
	08	B	S U F GN GS	8	9	4.8	10

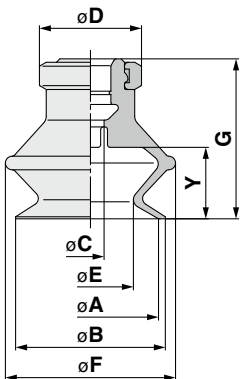
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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Mounting Bracket Assembly From p. 121

Single unit **ø10 to ø50**

ZP **10** B **N**
① ② ③



① Lock ring material

Nil	Brass
S	Stainless steel (Stainless steel 304)

Model				A	B	C	D	E	F	G	Y
①	②	③	④								
Lock ring material	Pad dia.	Form	Material								
ZP	Nil S	10	B	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	7	15	16	28	24	
		32		32	34			18.9	37	29	
		40		40	43			24.4	47	34	
		50		50	53			33.4	57	38	

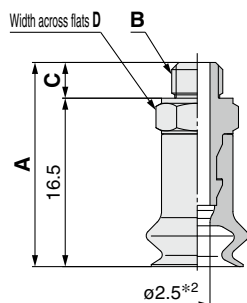
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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Mounting Bracket Assembly From p. 121

Dimensions/Models

With adapter ø6 to ø8



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Adapter Assembly p. 121

ZP T 06 B N - A5

① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Male thread)

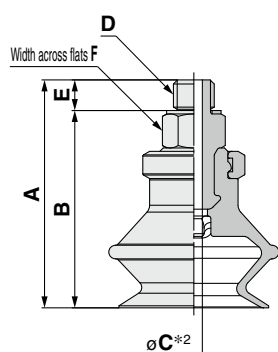
A5	M5 x 0.8
A6	M6 x 1

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	06 08	B	N S U F	A5	20	M5 x 0.8	3.5	7
					GN GS	A6	21	M6 x 1	4.5	8

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

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

With adapter ø10 to ø50



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Adapter Assembly p. 121

ZP T 10 B 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

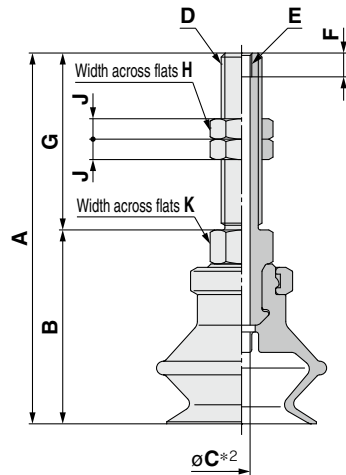
Model						A	B	C*2	D	E	F
①	②	③	④	⑤	⑥						
Adapter material	Vacuum inlet direction	Pad dia.	Form	Material	Vacuum inlet						
ZP	Nil S	T	B	N S U F GN GS	AS5	25	21.5	2.5	M5 x 0.8	3.5	8
						27.5	24				
						29	25.5				
						32.5	29				
						33	29.5				
						38	34.5				
					AS6	26	21.5	2.5	M6 x 1	4.5	8
						28.5	24				
						30	25.5				
						33.5	29				
						34	29.5				
						39	34.5				
					AG01	45	40.5	4	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 $\varnothing 50$



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Adapter Assembly p. 121

ZP T 10 B N - A5

① ② ③ ④

① Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Connection thread (Male thread)

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

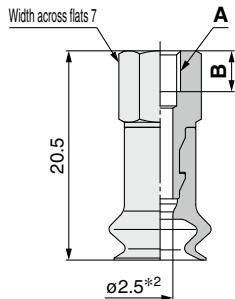
Model							A	B	C*2	D	E	F	G	H	J	K								
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material *1	④ Connection thread																			
ZP	Nil S	T	B	N S U F GN GS	A5	42	21	2.5	M5 x 0.8	M3 x 0.5	3.5	21	8	4	8									
						44.5	23.5																	
						46	25																	
					A6	47	21	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	8									
						49.5	23.5																	
						51	25																	
						54.5	28.5																	
						55	29																	
						60	34																	
						66	40																	
						70	44																	
						A8	49.5									33.5	4	M8 x 1	M5 x 0.8	5	16	12	4	12
							50									34								
							55									39								
							56									40	4.2							
							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

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

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Female thread)

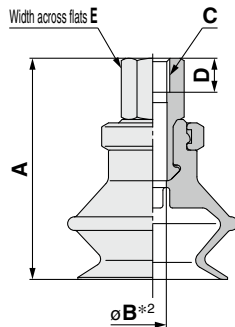
B4	M4 x 0.7
B5	M5 x 0.8

Model							A	B
	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material	④ Vacuum inlet		
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

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 *1 Material	④ Vacuum inlet						
ZP	Nil S	T	B	N S U F GN GS	B5	25	2.5	M5 x 0.8	5	8	
						13					27.5
						16					29
						20	32.5				4
						25	33				
						32	38				
					B6	10	25	2.5	M6 x 1	6	8
						13	27.5				
						16	29				
						20	32.5	4			
						25	33				
						32	38				4.9
					40	47.5					
					50	51.5					
					B8	20	38.5	3.5	M8 x 1.25	8	12
						25	39				
						32	44				
						40	47.5				
						50	51.5				
						BG01	10	31			
					13		33.5				
					16		35				
					20		38.5	4			
					25		39				
					32		44				
					BG02	40	53.5	7	G1/4	11	17
						50	57.5				
						B01 N01*3 T01*3	10	31			
					13		33.5				
					16		35				
					20		38.5	3.5			
					25		39				
					32		44		7		
					40		47.5				
					50		51.5				

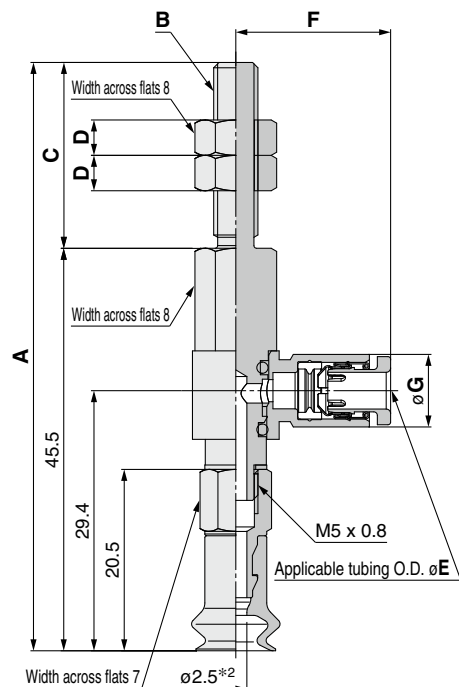
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

*3 Not compatible with stainless steel materials

Dimensions/Models

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



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

①

②

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

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	66.5	M5 x 0.8	21	4
					06	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	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** B **N** - **04** - **A5**

①

②

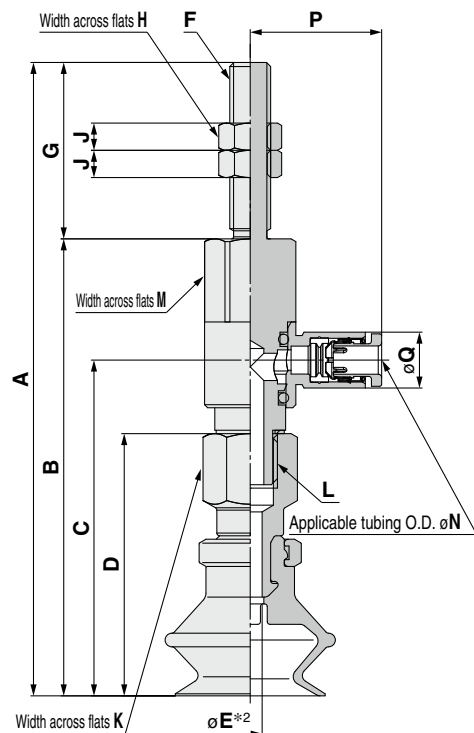
④

Connection thread
(Male thread)

Vacuum inlet
(One-touch fitting)

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

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



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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
						73.5	52.5	36.4	27.5							
						75	54	37.9	29							
						76	50	33.9	25	2.5		26			8	M5 x 0.8
					A6	78.5	52.5	36.4	27.5							
						80	54	37.9	29							
						93	67.1	49.3	38.5							
						93.5	67.6	49.8	39	3.5	M6 x 1		8	4		
						98.5	72.6	54.8	44			25.9			12	M8 x 1.25
						102	76.1	58.3	47.5							
						106	80.1	62.3	51.5	4						
					A8	83	67.1	49.3	38.5							
						83.5	67.6	49.8	39	3.5	M8 x 1					
						88.5	72.6	54.8	44			15.9	12	4	12	M8 x 1.25
						92	76.1	58.3	47.5							
						96	80.1	62.3	51.5	4						

Dimensions Per Vacuum Inlet

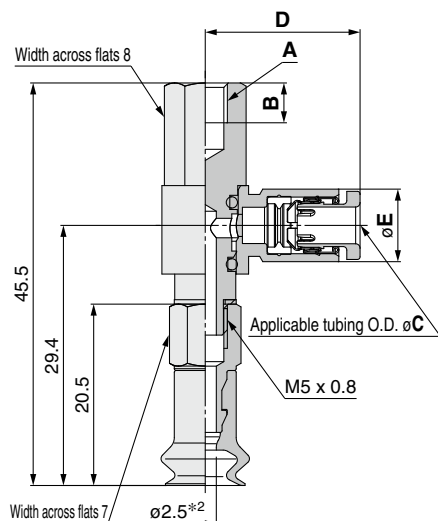
Model						M	N	P	Q	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread					
ZP	R	B	N S U F GN GS	04	A5	8	4	17.5	8.2	$\varnothing 2.5$
				06	A6		6	18.3	10.4	$\varnothing 4$
				04	A6	12	4	19.3	8.2	$\varnothing 3$
				06	A8		6	20.5	10.4	$\varnothing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



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

①

②

Vacuum inlet
(One-touch fitting)

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

④ Connection thread
(Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

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

Dimensions Per Vacuum Inlet

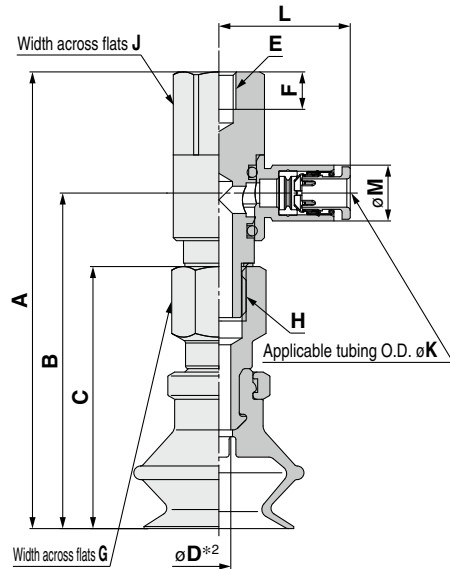
Model						C	D	E	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread				
ZP	R	06 08	B	N S U F GN GS	04 06	4	17.5	8.2	$\varnothing 2.5$
					B4 B5	6	18.3	10.4	$\varnothing 4$

*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

Dimensions/Models

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



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

①

②

Vacuum inlet
(One-touch fitting)

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

④ Connection thread
(Female thread)

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

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

Dimensions Per Vacuum Inlet

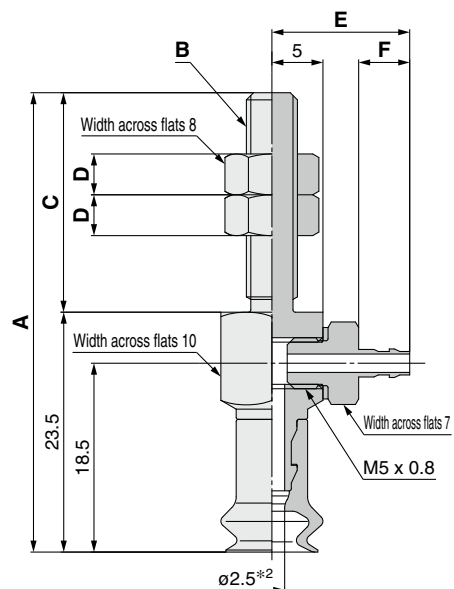
Model						J	K	L	M	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread					
ZP	R	B	N S U F GN GS	04	B5	8	4	17.5	8.2	$\varnothing 2.5$
				06	B6		6	18.3	10.4	$\varnothing 4$
				04	B5	12	4	19.3	8.2	$\varnothing 3$
				06	B6		6	20.5	10.4	$\varnothing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

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
(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
(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	Y	06 08	B	N S U F GN GS	N4 N6 U4 U6	45	M5 x 0.8	21.5	4
					A5 A6	50.5	M6 x 1	27	4

Dimensions Per Vacuum Inlet

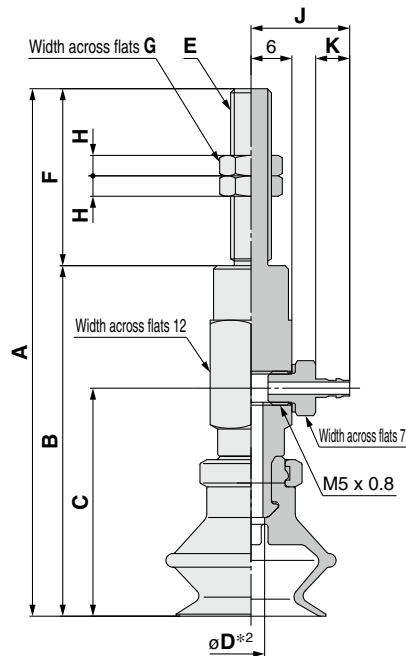
Model						E	F	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	06 08	B	N S U F GN GS	N4 U4	13.5	5	$\varnothing 1.8$
					N6 U6	15.5	7	$\varnothing 2.5$

*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

④

Connection thread
(Male thread)

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

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	B	N S U F GN GS	N4 N6 U4 U6	A5	63	42	26	2.5	M5 x 0.8	21	8	4
						65.5	44.5	28.5					
						67	46	30					
					A6	68	42	26	2.5	M6 x 1	26	8	4
						70.5	44.5	28.5					
						72	46	30					
						77.5	51.5	33.5	3.5				
						78	52	34					
						83	57	39					
						88	62	44	6				
						92	66	48					
					A8	67.5	51.5	33.5	3.5	M8 x 1	16	12	4
						68	52	34					
						73	57	39					
						78	62	44	6				
						82	66	48					

Dimensions Per Vacuum Inlet

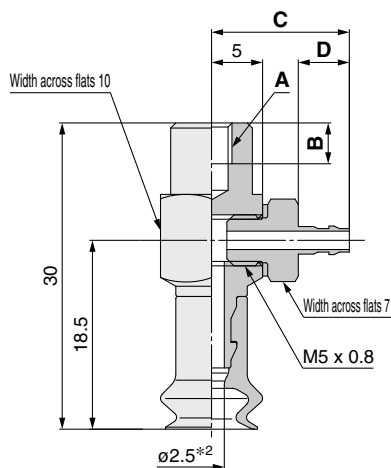
Model						J	K	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	B	N S U F GN GS	N4 U4	A5	14.5	5	$\varnothing 1.8$
						16.5	7	$\varnothing 2.5$
				N6 U6	A6	16.5	7	$\varnothing 2.5$
						16.5	7	$\varnothing 2.5$
				N6 U6	A8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

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

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

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 123

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

① ②

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

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	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

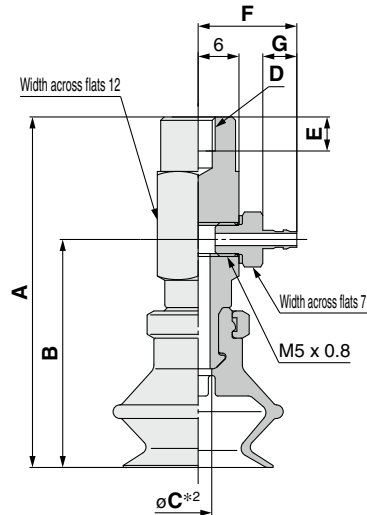
Model							C	D	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread				
ZP	Y	06 08	B	N S U F GN GS	N4 U4	B4 B5	13.5	5	$\varnothing 1.8$
					N6 U6		15.5	7	$\varnothing 2.5$

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



Construction	p. 117
Adapter Assembly	p. 123

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

①

②

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.	Form	② Material	③ Vacuum inlet	④ Connection thread					
ZP	10	Y	B	N S U F GN GS	N4 N6 U4 U6	B5	42	26	M5 x 0.8	5
	13						44.5	28.5		
	16						46	30		
	20						51.5	33.5		
	25						52	34		
	32						57	39		
	10				N4 N6 U4 U6	B6	42	26	M6 x 1	6
	13						44.5	28.5		
	16						46	30		
	20						51.5	33.5		
	25						52	34		
	32						57	39		
	40				N4 N6 U4 U6	B8	62	44	M8 x 1.25	8
	50						66	48		
	20						51.5	33.5		
	25						52	34		
	32						57	39		
	40						62	44		
	50						66	48		

Dimensions Per Vacuum Inlet

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

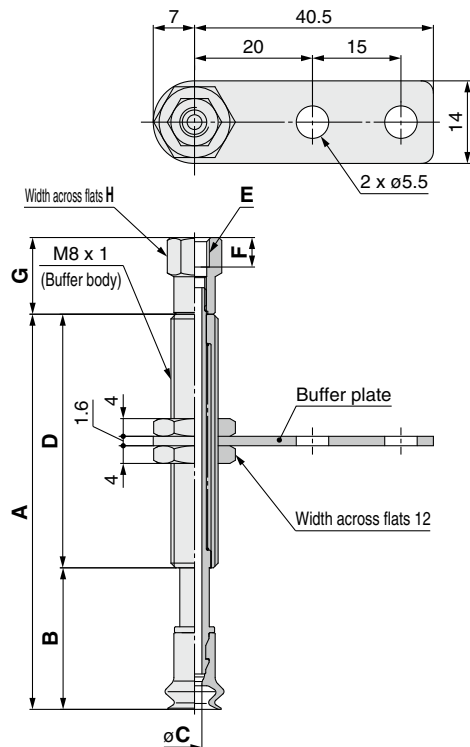
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

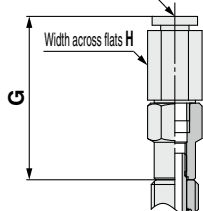
With buffer $\phi 6$ to $\phi 8$

The drawings show the type with a buffer plate.

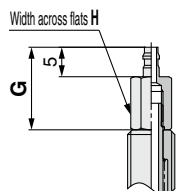


Vacuum inlet: One-touch fitting

Applicable tubing O.D. ϕJ



Vacuum inlet: Barb fitting



Construction	p. 116
Buffer Assembly	p. 124

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

B3	M3 x 0.5	Female thread	
B5	M5 x 0.8	Female thread	
04	$\phi 4$	One-touch fitting	KQ2H04-M5N
06	$\phi 6$	One-touch fitting	KQ2H06-M5N
N4	For $\phi 4$ nylon tubing	Barb fitting	
U4	For $\phi 4$ 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	06 08	B	N S U F GN GS	J K JN KN	6	B3	A8	34	19	15
						10	B5		67	24	
						15	04		72	29	43
						25	06 N4 U4		82	39	

Dimensions Per Vacuum Inlet: Female Thread

Model								E	F	G	H	
	Vacuum inlet direction	① Pad dia.	Form	② 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	B3	A8	M3 x 0.5	3	11	6
							B5		M5 x 0.8	5	13	8

Dimensions Per Vacuum Inlet: One-touch Fitting

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

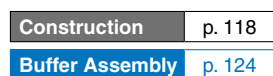
Dimensions Per Vacuum Inlet: Barb Fitting

Model								G	H	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	06 08	B	N S U F GN GS	J K JN KN	6 10 15 25	N4 U4	A8	14	6	ø1.8

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

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

With buffer Ø 10 to Ø 50



① ② ④ ⑤ ⑥ Connection thread (Male thread)

**5 Vacuum inlet
(Female thread)**

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

A10	M10 x 1
A14	M14 x 1

Dimensions Per Vacuum Inlet: Female Thread

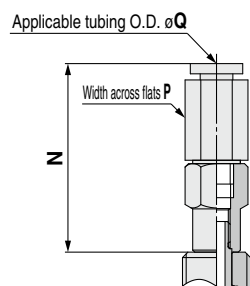
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber



Dimensions/Models

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

Vacuum inlet: One-touch fitting



ZPT 10 B N J 10 - 04 - A10

① ② ③ ④ ⑤ ⑥

Buffer specification ③

J	Rotating
K	Non-rotating

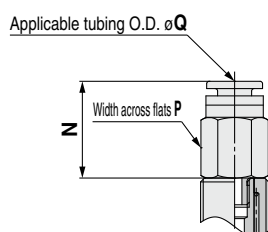
Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet

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

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



Dimensions Per Vacuum Inlet: One-touch Fitting

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

Dimensions Per Vacuum Inlet: Barb Fitting

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

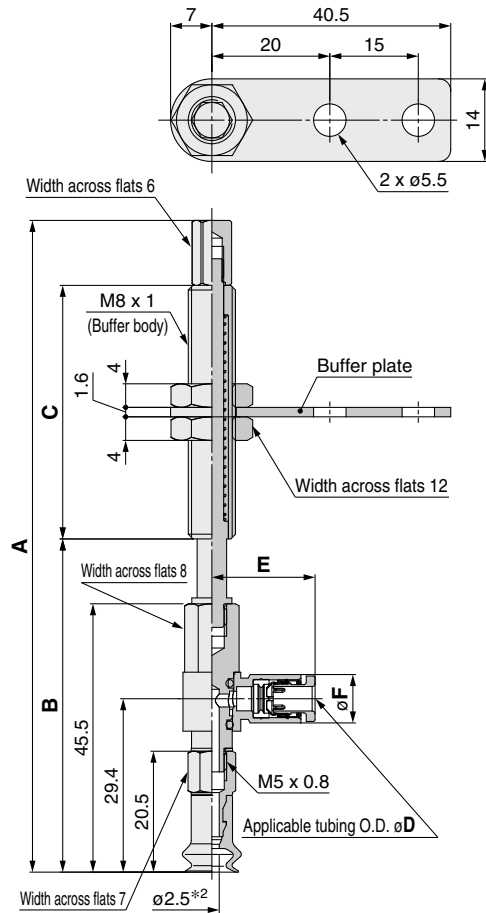
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

Construction	p. 118
Buffer Assembly	p. 124

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

Dimensions Per Vacuum Inlet

Model							D	E	F	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet				
ZP	R	06 08	B	N S U F GN GS	6 10 15 25	04	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

Construction p. 116

Buffer Assembly p. 125

Dimensions/Models

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

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

①

②

④

⑥

Connection thread
(Male thread)

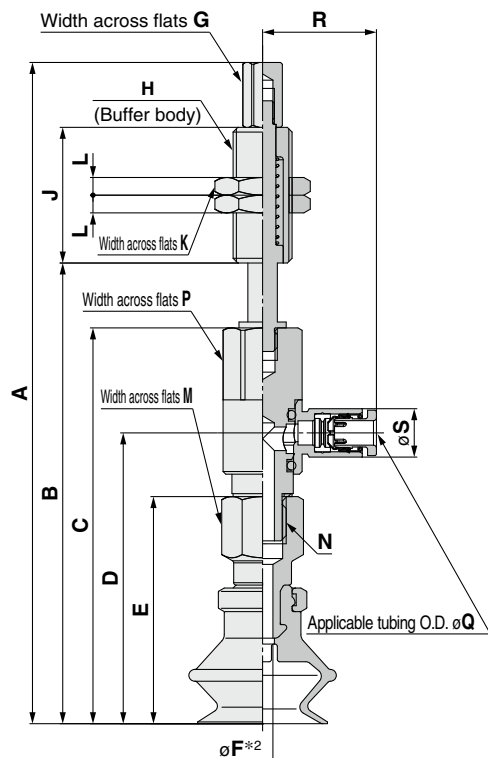
Buffer specification ③

J	Rotating
K	Non-rotating

Vacuum inlet
(One-touch fitting)

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

A10	M10 x 1
A14	M14 x 1



Construction p. 118

Buffer Assembly p. 125

Model																													
	Vacuum inlet direction	① Pad dia.	Form	② Material ^{*1}	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread	A	B	C	D	E	*2 F	G	H	J	K	L	M	N								
ZP	R	10	B	N S U F G N G S	J K	10	04	A10	95	61							23												
						20			133	71							51												
						30			143	81	50	33.9	25																
						40			179	91							77												
						50			189	101																			
						10			97.5	63.5							23												
		13				20			135.5	73.5						51													
						30			145.5	83.5	52.5	36.4	27.5	2.5												8	M5 x 0.8		
						40			181.5	93.5														77					
						50			191.5	103.5																			
						10			99	65													23						
						20			137	75														51					
		16				30			147	85	54	37.9	29																
						40			183	95																			
						50			193	105														77					
						10			112.1	78.1												6	M10 x 1	23	14	3			
						20			150.1	88.1														51					
						30			160.1	98.1	67.1	49.3	38.5																
		20				40			196.1	108.1																			
						50			206.1	118.1																			
						10			112.6	78.6														23					
						20			150.6	88.6																			
						30			160.6	98.6	67.6	49.8	39	3.5										51			12	M8 x 1.25	
						40			196.6	108.6															77				
		25				50			206.6	118.6																			
						10			117.6	83.6															23				
						20			155.6	93.6																			
						30			165.6	103.6	72.6	54.8	44											51					
						40			201.6	113.6																			
						50			211.6	123.6															77				
		32				10			156.1	88.1																			
						20			153.1	98.1																			
						30			163.1	108.1	76.1	58.3	47.5																
						40			208.1	128.1																			
						50			208.1	128.1																			
						10			160.1	92.1											4	10	M14 x 1	75	19	4	12	M8 x 1.25	
		40				20			157.1	102.1	80.1	62.3	51.5																
						30			167.1	112.1																			
						40			212.1	132.1																			
						50			212.1	132.1																			
						10			156.1	88.1																			
						20			153.1	98.1																			
		50				30			163.1	108.1	76.1	58.3	47.5																
						40			208.1	128.1																			
						50			208.1	128.1																			
						10			160.1	92.1																			
						20			157.1	102.1	80.1	62.3	51.5																
						30			167.1	112.1																			
		50				212.1			132.1																				

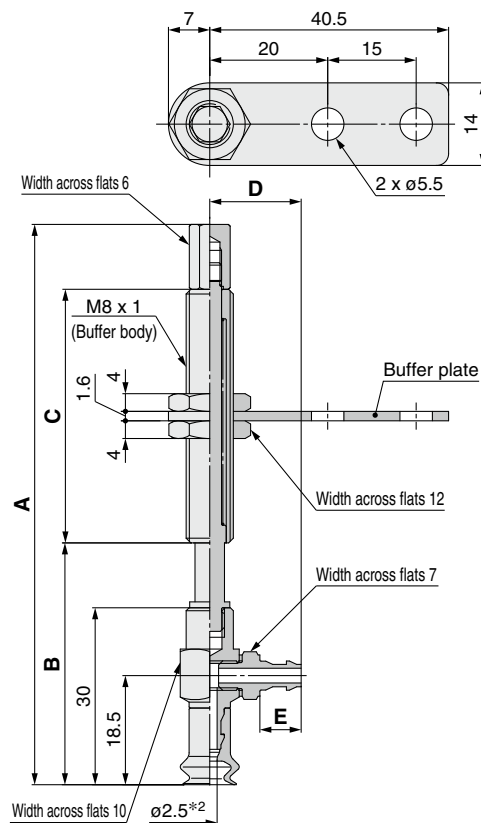
Dimensions Per Vacuum Inlet

Model									P	Q	R	S	Fitting part min. hole size			
Vacuum inlet direction	① Pad dia.	Form	② ^{※1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread									
ZP	R	10 13 16	N S U F G N G S	J K	10 20 30 40 50	04	A10	8	4	17.5	8.2	ø2.5				
						06							6	18.3	10.4	ø4
						20 25 32			10 20 30 40 50	04	12	4				
										06			6	20.5	10.4	ø4.5
		40 50			10 20 30 50	08	16	8	23.5	13.2	ø6					
						06						12	6	20.5	10.4	ø4.5
						08										
						06						A14	12	6	20.5	10.4
08	16	8	23.5	13.2	ø6											

Dimensions/Models

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

The drawings show the type with a buffer plate.



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	N4 N6 U4 U6	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 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	N4 U4	A8	13.5	5	ø1.8
						10 15 25	N6 U6		15.5	7	ø2.5

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

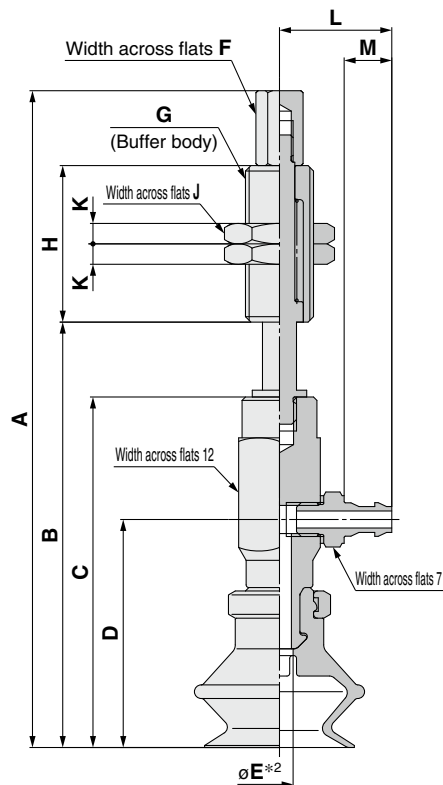
*2 Indicates the minimum hole size of the adapter or vacuum pad

Construction p. 116

Buffer Assembly p. 126

Dimensions/Models

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



Construction	p. 118
Buffer Assembly	p. 126

ZPY 10 B N J 10 - N4 - A10

1	2	3	4	5	6
Buffer specification					
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

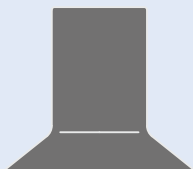
Model								A	B	C	D	*2 E	F	G	H	J	K			
Vacuum inlet direction	① Pad dia.	Form	② Material ^{*1}	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread													
ZP	Y	B	N S U F GN GS	J K	10	N4 N6 U4 U6	A10	87	53	42	26	2.5	6	M10 x 1	14	3	23			
					20			125	63								51			
					30			135	73								77			
					40			171	83								23			
					50			181	93								77			
					10			89.5	55.5	44.5	28.5						2.5	6	M10 x 1	23
					20			127.5	65.5											51
					30			137.5	75.5											77
					40			173.5	85.5											23
					50			183.5	95.5											77
					10			91	57	46	30						2.5	6	M10 x 1	23
					20			129	67											51
					30			139	77											77
					40			175	87											23
					50			185	97											77
					10			96.5	62.5	51.5	33.5						2.5	6	M10 x 1	23
					20			134.5	72.5											51
					30			144.5	82.5											77
					40			180.5	92.5											23
					50			190.5	102.5											77
					10			97	63	52	34						3.5	6	M10 x 1	23
					20			135	73											51
					30			145	83											77
					40			181	93											23
					50			191	103											77
					10			102	68	57	39						3.5	6	M10 x 1	23
					20			140	78											51
					30			150	88											77
					40			186	98											23
					50			196	108											77
					10			142	74	62	44						6	10	M14 x 1	50
					20			139	84											75
					30			149	94											50
					40			194	114											75
					50			146	78											50
					10			143	88	66	48						6	10	M14 x 1	50
					20			153	98											75
					30			153	98											75
					40			153	98											75
					50			198	118											75

Dimensions Per Vacuum Inlet

Model								L	M	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	Y	10 13 16 20 25 32	B	N S U F GN GS	J K	10 20 30 40 50	N4 U4	A10	14.5	5	ø1.8
		N6 U6				16.5	7		ø2.5		
		40 50				N6 U6	A14	16.5	7	ø2.5	

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

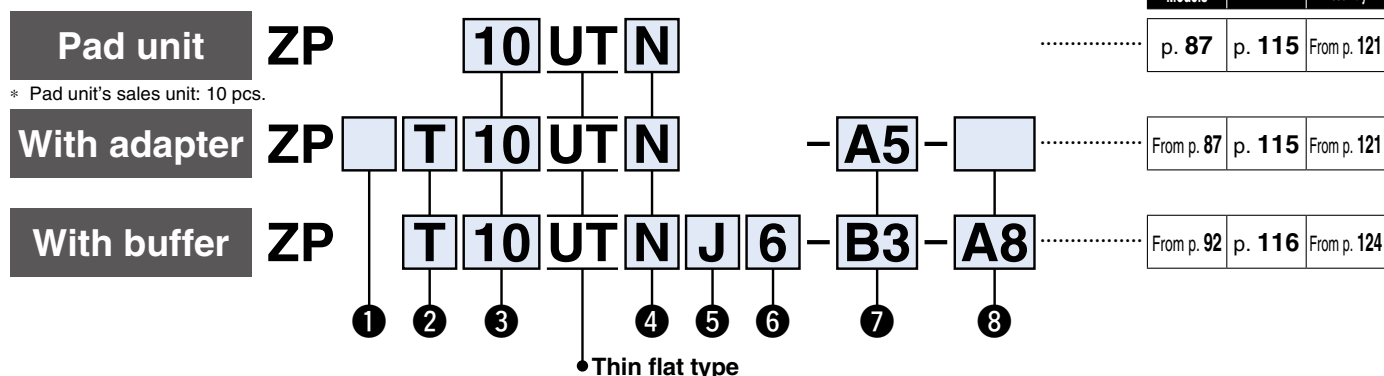
*2 Indicates the minimum hole size of the adapter or vacuum pad



Basic Pad 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 Uses a material compliant with a dissolution test of the FDA (U.S. Food and Drug Administration) regulation 21CFR§177.2600 for "Rubber articles intended for repeated use."

*2 Uses a material compliant with the standards for "Rubber apparatus (excluding baby drinking apparatus) and containers/packaging" (D3) (Partial revision: Japanese 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." (Japanese 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

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

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

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

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

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

*1 The mounting nut is shipped together with the product (unassembled).

With buffer

7 Vacuum inlet

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

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

*1 Nylon tube piping

*2 Soft nylon/Polyurethane tube piping

8 Connection thread

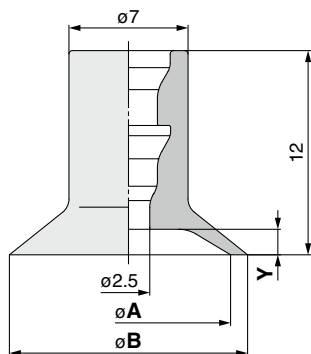
○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

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

*1 The mounting nut, buffer plate, and ○: ZPT/Vertical buffer are shipped together with the product (unassembled).

Dimensions/Models

Single unit Ø10 to Ø16



Construction p. 115

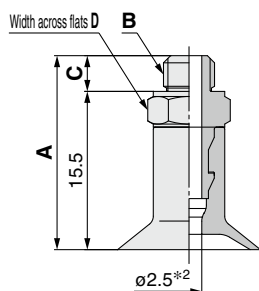
Mounting Bracket Assembly From p. 121

ZP **10** UT **N**
① ②

Model				A	B	Y
	① Pad dia.	Form	② Material			
ZP	10	UT	N S U F G N G S	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 Ø10 to Ø16



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	NSUF	A5	19	M5 x 0.8	3.5	7
					GN GS	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 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

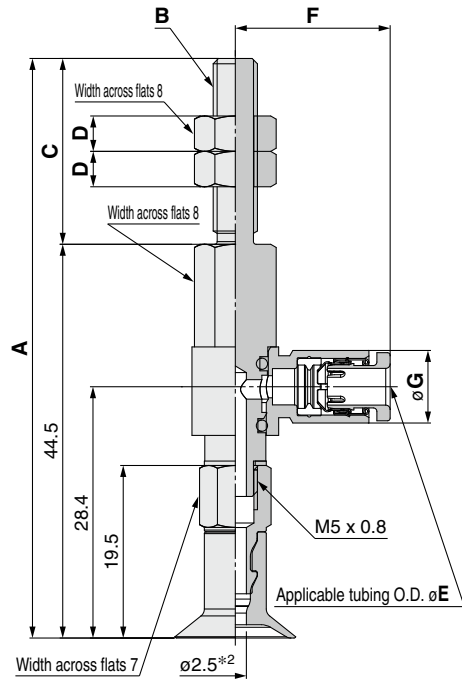
Model							A	B
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material	④ Vacuum inlet			
ZP	Nil S	T	10 13 16	UT	N S U F	B4	M4 x 0.7	4
					GN GS	B5	M5 x 0.8	5

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

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

Dimensions/Models

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



Construction p. 115

Adapter Assembly p. 122

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

①

②

③

④

Vacuum inlet
(One-touch fitting)

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

Connection thread
(Male thread)

A5	M5 x 0.8
A6	M6 x 1

Model						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

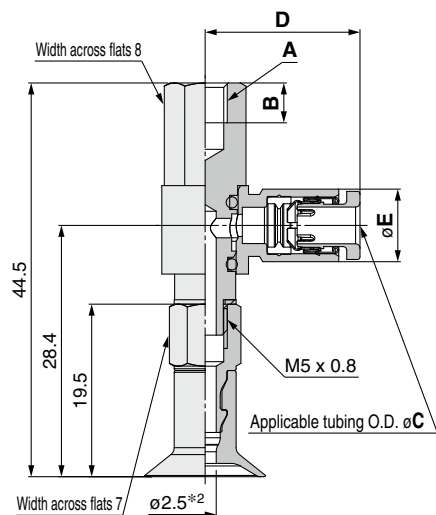
Model						E	F	G	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread					
ZP	R	10 13 16	UT	N S U F GN GS	04	A5 A6	4	17.5	8.2	ø2.5
					06		6	18.3	10.4	ø4

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

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

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 122

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

①

②

③

④

Vacuum inlet
(One-touch fitting)

Connection thread
(Female thread)

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	M4 x 0.7	4.5
					06	M5 x 0.8	5.5

Dimensions Per Vacuum Inlet

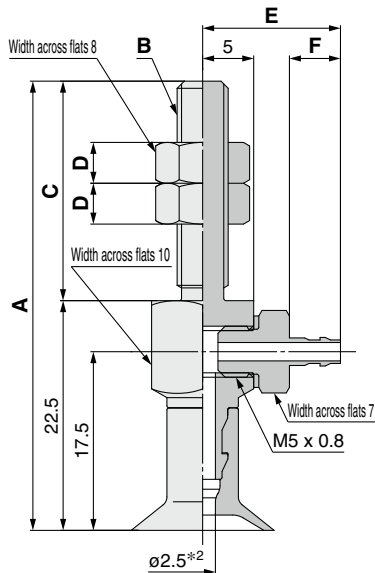
Model						C	D	E	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread				
ZP	R	10 13 16	UT	N S U F GN GS	04	4	17.5	8.2	$\varnothing 2.5$
					06	6	18.3	10.4	$\varnothing 4$

*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

④

Vacuum inlet
(Barb fitting)

Connection thread
(Male thread)

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

A5	M5 x 0.8
A6	M6 x 1

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

Dimensions Per Vacuum Inlet

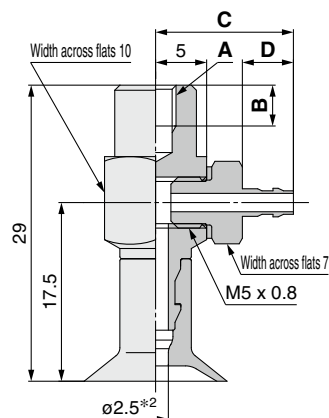
Model						E	F	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	10 13 16	UT	N S U F GN GS	N4 U4	13.5	5	$\varnothing 1.8$
					N6 U6	15.5	7	$\varnothing 2.5$

*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 $\varnothing 16$



Construction p. 115

Adapter Assembly p. 123

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

①

②

④

Connection thread
(Female thread)

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

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	Y	10 13 16	UT	N S U F GN GS	N4	M4 x 0.7	4
					N6		
					U4	M5 x 0.8	5
					U6		

Dimensions Per Vacuum Inlet

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

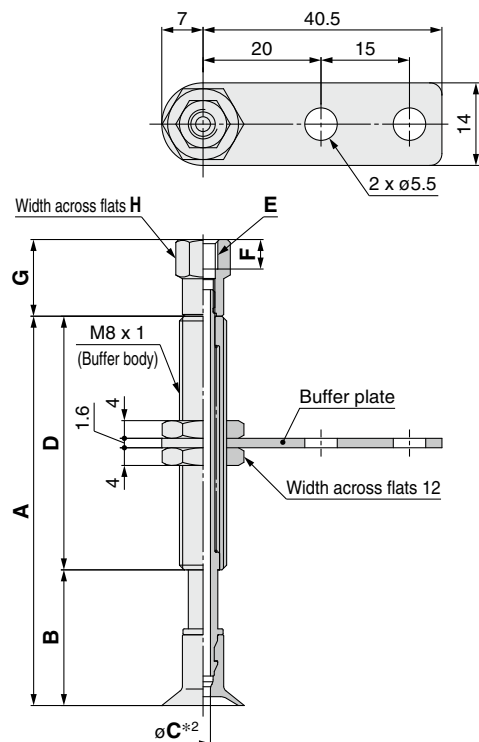
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

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

The drawings show the type with a buffer plate.



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

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	

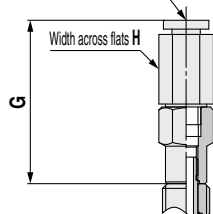
Model								A	B	C*2	D
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	UT	N S U F GN GS	J K JN KN	6	B3	A8	33	18	J: 2.5 K: 2	15
					10	B5		66	23		43
					15	06		71	28		
					25	N4 U4		81	38		

Dimensions Per Vacuum Inlet: Female Thread

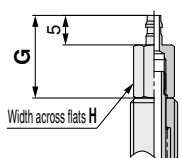
Model								E	F	G	H
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	UT	N S U F GN GS	J K JN KN	6 10 15 25	B3	A8	M3 x 0.5	3	11	6
						B5		M5 x 0.8	5	13	8

Vacuum inlet: One-touch fitting

Applicable tubing O.D. $\varnothing J$



Vacuum inlet: Barb fitting



Dimensions Per Vacuum Inlet: One-touch Fitting

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

Dimensions Per Vacuum Inlet: Barb Fitting

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

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

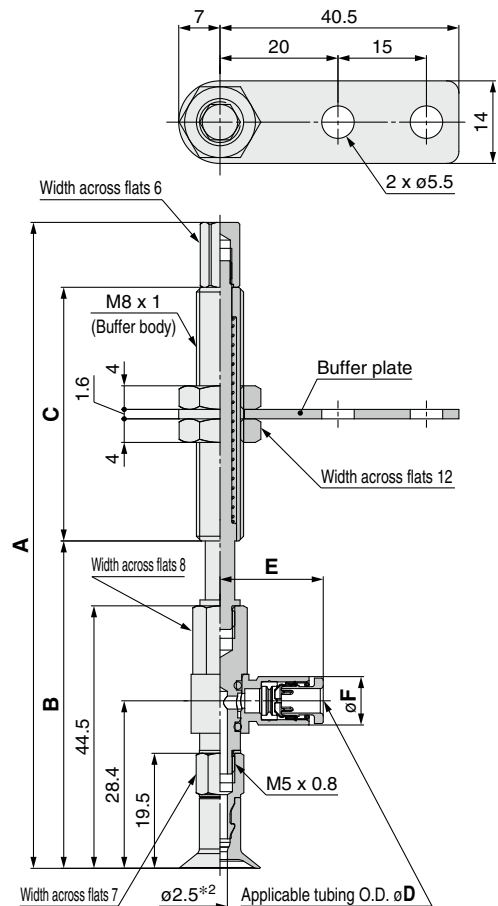
*2 Indicates the minimum hole size of the adapter or vacuum pad

Construction	p. 116
Buffer Assembly	p. 124

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**

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 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet			
ZP	R	UT	N S U F GN GS	J K JN KN	6	04 06	A8	78.5	52.5
					10			109.5	55.5
					15			114.5	60.5
					25			124.5	70.5

Dimensions Per Vacuum Inlet

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

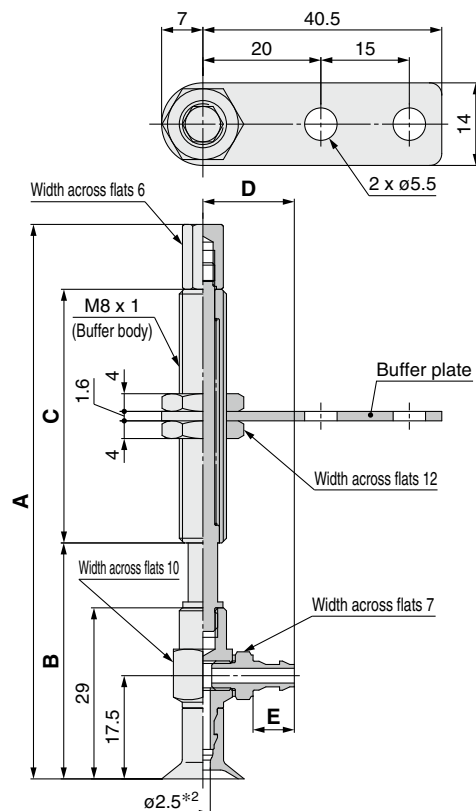
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

With 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

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			
ZP	Y	UT	N S U F GN GS	J K JN KN	6	N4 N6 U4 U6	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			
ZP	Y	UT	N S U F GN GS	J K JN KN	6	N4 U4	13.5	5	$\varnothing 1.8$
					10 15 25	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



Pad unit

* Pad unit's sales unit: 10 pcs.

With adapter

With buffer

p. 96	p. 115	From p. 121
From p. 96	p. 115	From p. 121
From p. 101	p. 116	From p. 124

- **Thin flat type with ribs**

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 Uses a material compliant with a dissolution test of the FDA (U.S. Food and Drug Administration) regulation 21CFR§177.2600 for "Rubber articles intended for repeated use."

*2 Uses a material compliant with the standards for "Rubber apparatus (excluding baby drinking apparatus) and containers/packaging" (D3) (Partial revision: Japanese 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." (Japanese 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□T/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)

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

Type	Symbol	Size	Pad diameter All sizes
Male thread*1	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□T/Vertical.
Use the vacuum inlet.

*1 The mounting nut is shipped together with the product (unassembled).

With buffer

7 Vacuum inlet

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

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

*1 Nylon tube piping

*2 Soft nylon/Polyurethane tube piping

8 Connection thread

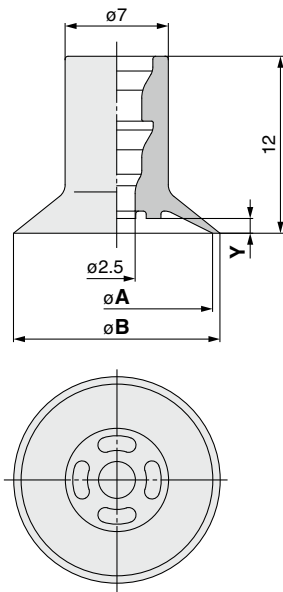
○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

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

*1 The mounting nut, buffer plate, and ○: ZPT/Vertical buffer are shipped together with the product (unassembled).

Dimensions/Models

Single unit $\phi 10$ to $\phi 16$



ZP **10** CT **N**
① ②

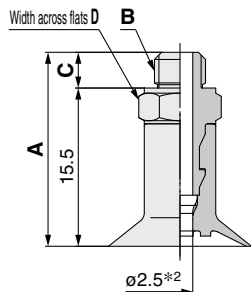
Model				A	B	Y
①	②	③	④			
Pad dia.	Form	Material				
10	CT	N S U F GN GS		10	11	0.8
13				13	14	1
16				16	17	

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

Construction p. 115

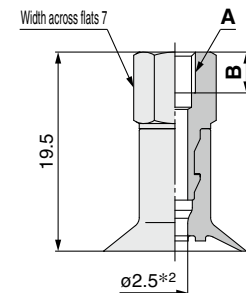
Mounting Bracket Assembly From p. 121

With adapter $\phi 10$ to $\phi 16$



Construction p. 115

Adapter Assembly p. 121



Construction p. 115

Adapter Assembly p. 121

ZP **T10** 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 ^{*)}	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

ZP **T10** 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

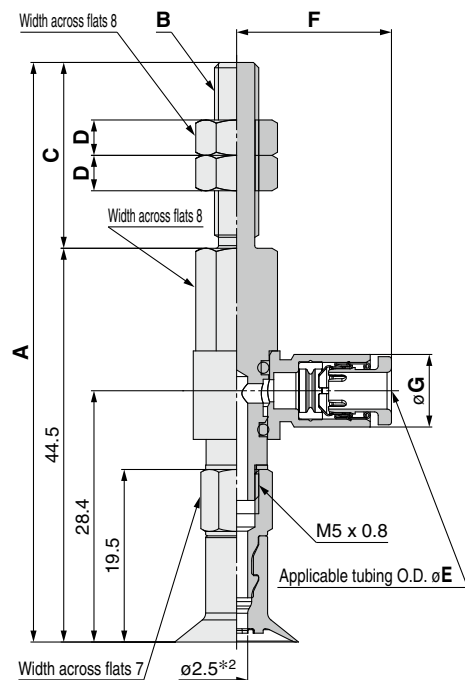
Model						A	B	
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material ^①	④ Vacuum inlet			
ZP	Nil S	T	10 13 16	CT	NSUFGNGS	B4	M4 x 0.7	4
						B5	M5 x 0.8	5

*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 $\varnothing 16$



Construction p. 115

Adapter Assembly p. 122

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

①

②

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

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

Dimensions Per Vacuum Inlet

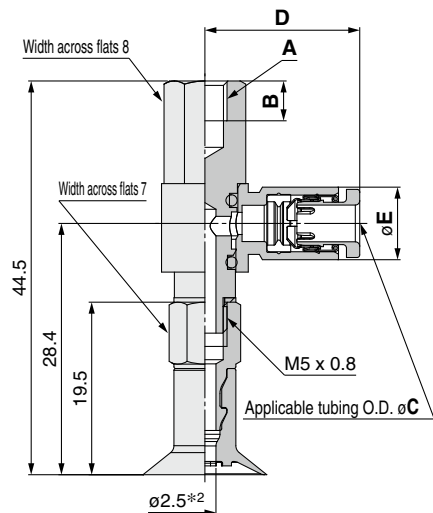
Model						E	F	G	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread				
ZP	R	10 13 16	CT	N S U F GN GS	04	4	17.5	8.2	$\varnothing 2.5$
					06	6	18.3	10.4	$\varnothing 4$

*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 $\varnothing 16$



Construction p. 115

Adapter Assembly p. 122

ZPR 10 CT N - 04 - B4

1

2

	I
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1

**Connection thread
(Female thread)**

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

04	ø4
06	ø6

B4	M4 x 0.7
B5	M5 x 0.8

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

Dimensions Per Vacuum Inlet

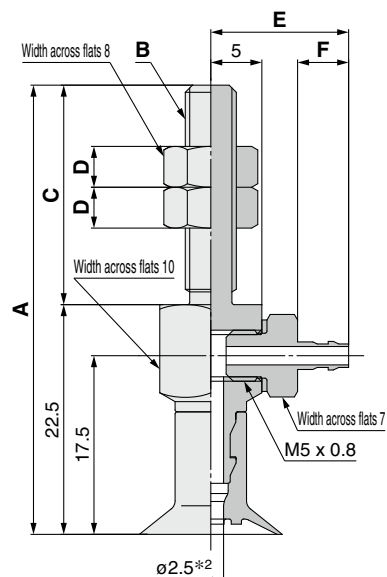
Model							C	D	E	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Vacuum inlet	④ Connection thread					
ZP	R	10 13 16	CT	N S U F G N G S	04	B4 B5	4	17.5	8.2	ø2.5
					06		6	18.3	10.4	ø4

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

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

Dimensions/Models

With adapter/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)

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

A5	M5 x 0.8
A6	M6 x 1

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

Dimensions Per Vacuum Inlet

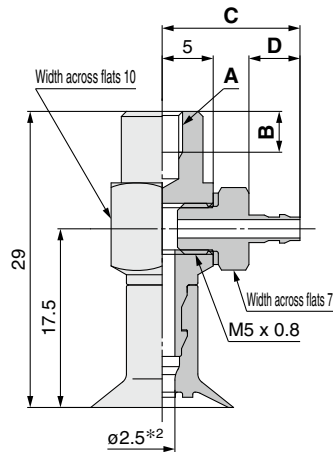
Model						E	F	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	10 13 16	CT	N S U F GN GS	N4	13.5	5	$\varnothing 1.8$
					U4			
					N6	15.5	7	$\varnothing 2.5$
					U6			

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

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

Dimensions/Models

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



Construction p. 115

Adapter Assembly p. 123

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

①

②

④

Connection thread
(Female thread)

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

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	Y	10 13 16	CT	N S U F GN GS	N4 N6 U4 U6	M4 x 0.7	4
					B4 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	13.5	5	$\varnothing 1.8$
					N6 U6	15.5	7	$\varnothing 2.5$

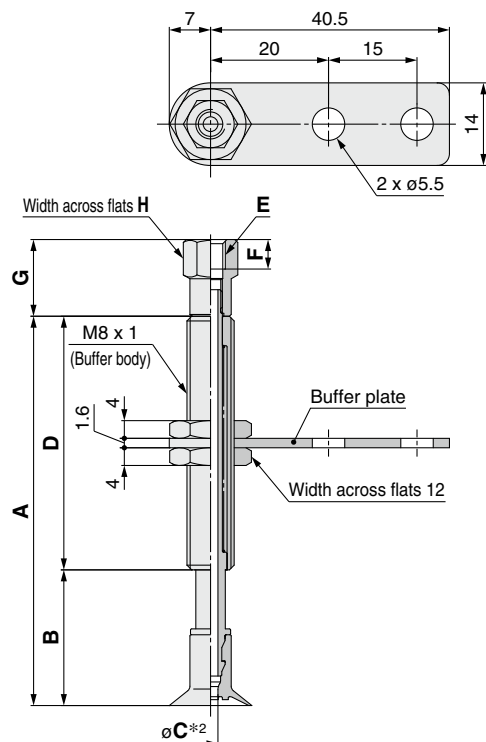
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

*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.



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

① ② ③ ④ ⑤ 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
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⑤ Vacuum inlet

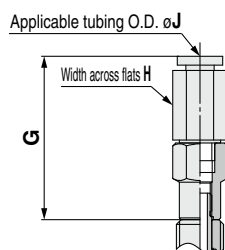
B3	M3 x 0.5	Female thread	
B5	M5 x 0.8	Female thread	
04	$\varnothing 4$	One-touch fitting	KQ2H04-M5N
06	$\varnothing 6$	One-touch fitting	KQ2H06-M5N
N4	For $\varnothing 4$ nylon tubing	Barb fitting	
U4	For $\varnothing 4$ soft tubing	Barb fitting	

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	CT	N S U F GN GS	J K JN KN	6	B3	A8	33	18	J: 2.5 K: 2	15
					10	B5		66	23		43
					15	06		71	28		
					25	N4 U4		81	38		

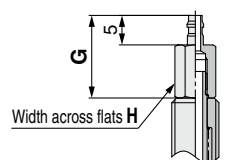
Dimensions Per Vacuum Inlet: Female Thread

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

Vacuum inlet: One-touch fitting



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	CT	N S U F GN GS	J K JN KN	6 10 15 25	04	A8	27.7	8	4	$\varnothing 2.5$
						06			10	6	

Dimensions Per Vacuum Inlet: Barb Fitting

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

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

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

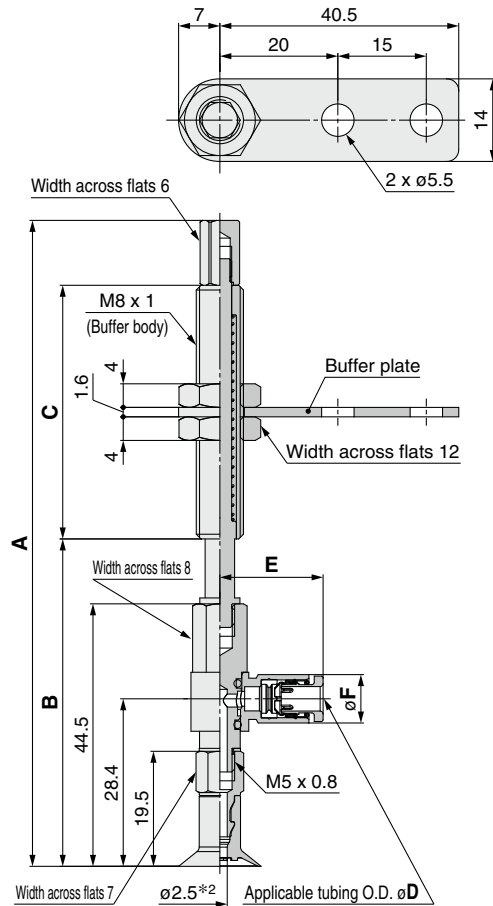
Construction p. 116

Buffer Assembly p. 124

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

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	CT	N S U F GN GS	J K JN KN	6	04 06	A8	78.5	52.5	15
					10			109.5	55.5	43
					15			114.5	60.5	
					25			124.5	70.5	

Dimensions Per Vacuum Inlet

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

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

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

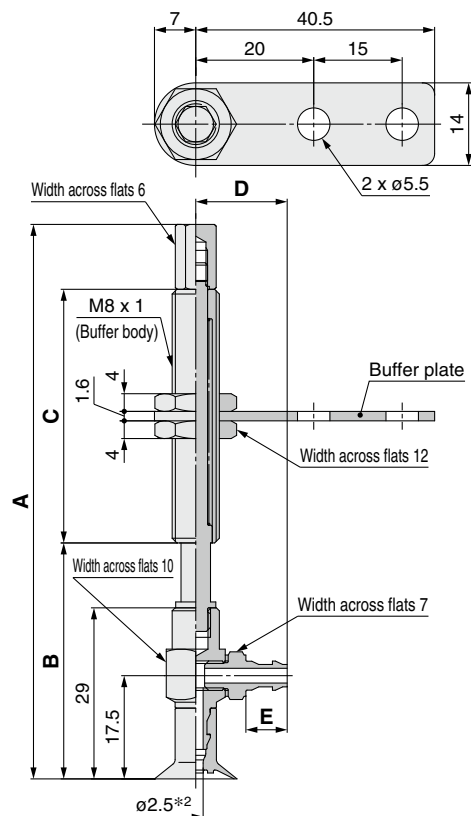
Construction p. 116

Buffer Assembly p. 125

Dimensions/Models

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

The drawings show the type with a buffer plate.



Construction	p. 116
Buffer Assembly	p. 126

ZPY 10 CT N J 6 - N4 - A8

1

2

4

⑥ Connection thread (Male thread)

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

**5 Vacuum inlet
(Barb fitting)**

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

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 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 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 10 15 25	N4 U4	A8	13.5	5	ø1.8
							N6 U6		15.5	7	ø2.5

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

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

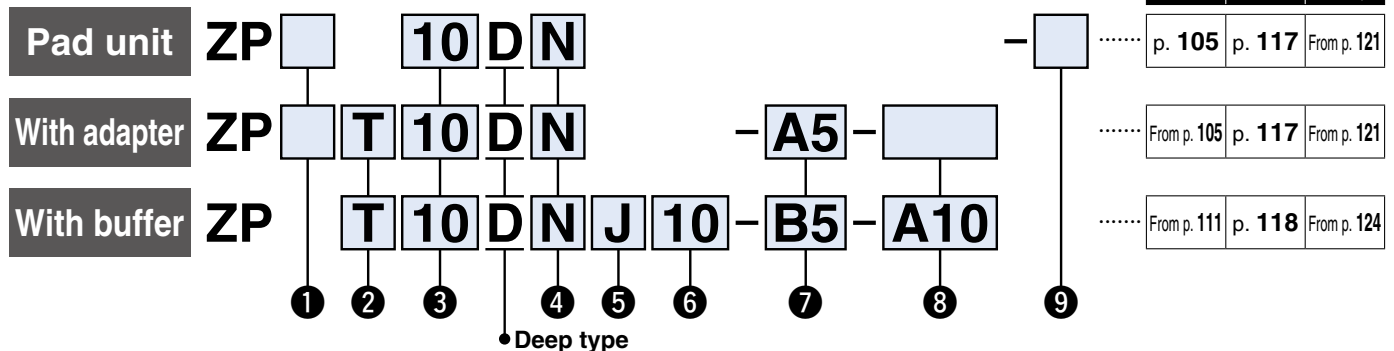


Basic Pad Deep Type ZP Series

The ZP series models ø10 and ø16 are scheduled to be redesigned to eliminate the lock ring starting in December 2026.



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 Uses a material compliant with a dissolution test of the FDA (U.S. Food and Drug Administration) regulation 21CFR§177.2600 for "Rubber articles intended for repeated use."

*2 Uses a material compliant with the standards for "Rubber apparatus (excluding baby drinking apparatus) and containers/packaging" (D3) (Partial revision: Japanese 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." (Japanese 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

○: 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	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

○: 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*1	A5	M5 x 0.8	○*2 △	—	—	
	A6	M6 x 1	○*2 ● △	○*2 ● △	○*2 ● △	
	A8	M8 x 1	—	○*2 ● △	○*2 ● △	
	B5	M5 x 0.8	● △	● △	—	
Female thread	B6	M6 x 1	● △	● △	● △	
	B8	M8 x 1.25	—	● △	● △	

*1 The mounting nut is shipped together with the product (unassembled).

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

*1 Nylon tube piping

*2 Soft nylon/Polyurethane tube piping

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*1	A10	M10 x 1	○●△	○●△	—	
	A14	M14 x 1	—	—	○●△	

*1 The mounting nut and ○: ZPT/Vertical buffer are shipped together with the product (unassembled).

⑨ Lock ring

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

Lock ring unit

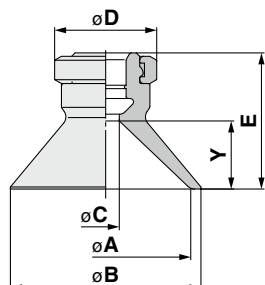
Part no.	Pad diameter [mm]
ZP□L1	ø10, ø16
ZP□L2	ø25
ZP□L3	ø40

□: Nil/Brass S/Stainless steel

* The pad unit lock ring is shipped together with the product (unassembled).

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

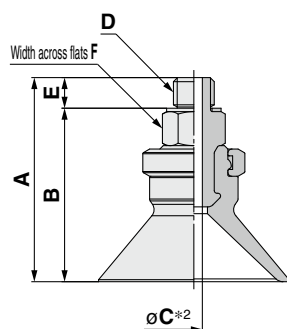
① Lock ring material

Nil	Brass
S	Stainless steel (Stainless steel 304)

Model					A	B	C	D	E	Y
	① Lock ring material	② Pad dia.	Form	③ ^{#1} Material						
ZP	Nil S	10	D	N S U F GN GS	10	12	4	13	15	6
		16			16	18			16	7
		25			25	28		15	20	10
		40			40	43	7	18	29	17

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

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



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

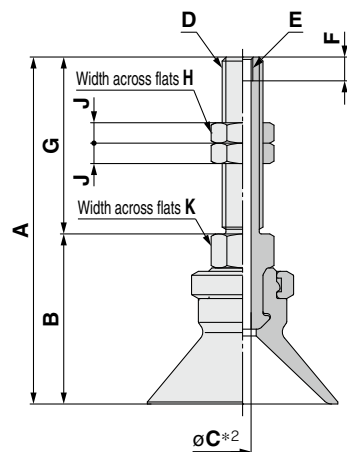
Model							A	B	C*2	D	E	F
	① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material ^{*1}	④ Vacuum inlet						
ZP	Nil S	T	10	D	N S U F GN GS	AS5	24	20.5	2.5	M5 x 0.8	3.5	8
			16				25	21.5				
			25				29	25.5				
			10				25	20.5				
			16			AS6	26	21.5	2.5	M6 x 1	4.5	8
			25				30	25.5				
			40				40	35.5				
			10				33	27.5				
			16			AG01	34	28.5	2.5	G1/8	5.5	17
			25				38	32.5				
			40				AG02	49.5	43	7	G1/4	6.5

*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 $\varnothing 40$



Construction	p. 117
Adapter Assembly	p. 121

ZP T 10 D N - A5

① ② ③ ④

① Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Connection thread (Male thread)

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

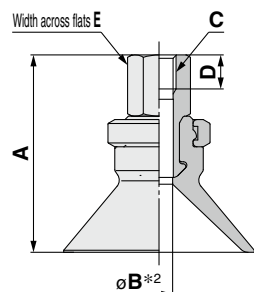
Model							A	B	C*2	D	E	F	G	H	J	K
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material	④ Connection thread											
ZP	Nil S	T	D	N S U F GN GS	A5	41	20	2.5	M5 x 0.8	M3 x 0.5	3.5	21	8	4	8	
						42	21									
					A6	46	20	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	8	
						47	21									
						51	25									
						61	35.5									
					A8	46	30	4	M8 x 1	M5 x 0.8	5	16	12	4	12	
						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

Dimensions/Models

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



Construction p. 117

Adapter Assembly p. 121

ZP T 10 D 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
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 Material ^{*1}	④ Vacuum inlet					
ZP	Nil S	T	D	N S U F GN GS	B5	24	2.5	M5 x 0.8	5	8
						25				
						29				
					B6	24	2.5	M6 x 1	6	8
						25				
						29	4.9			
					B8	35	3.5	M8 x 1.25	8	12
						42.5	6.6			
						BG01	30	2.5	G1/8	7.4
					31		4			
					35					
					BG02	48.5	7	G1/4	11	17
						30	2.5			
					B01 N01*3 T01*3	31		Rc1/8 NPT1/8 NPTF1/8	—	12
						35	3.5			
						42.5	7			

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

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

*3 Not compatible with stainless steel materials

Dimensions/Models

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

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

①

②

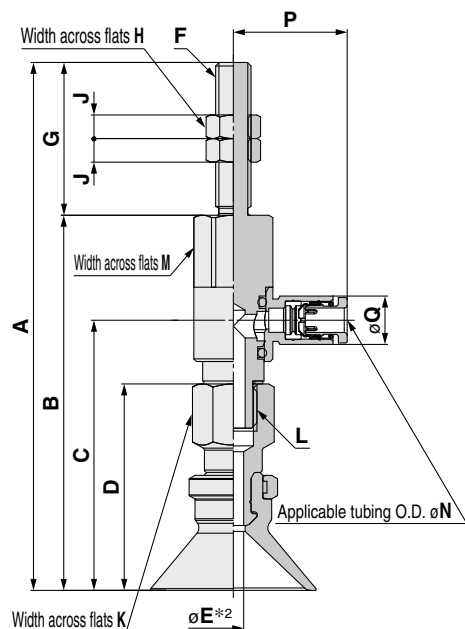
④

Connection thread
(Male thread)

Vacuum inlet
(One-touch fitting)

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

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



Construction p. 117

Adapter Assembly p. 122

Model						A	B	C	D	*2 E	F	G	H	J	K	L	
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread												
ZP	R	10	D	N S U F GN GS	04 06 08	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								
		A6				75	49	32.9	24	2.5	M6 x 1	26	8	4	8	M5 x 0.8	
						76	50	33.9	25								
						89.5	63.6	45.8	35						3.5	12	M8 x 1.25
						97	71.1	53.3	42.5						4		
		A8				79.5	63.6	45.8	35	3.5	M8 x 1	16	12	4	12	M8 x 1.25	
						87	71.1	53.3	42.5	4							

Dimensions Per Vacuum Inlet

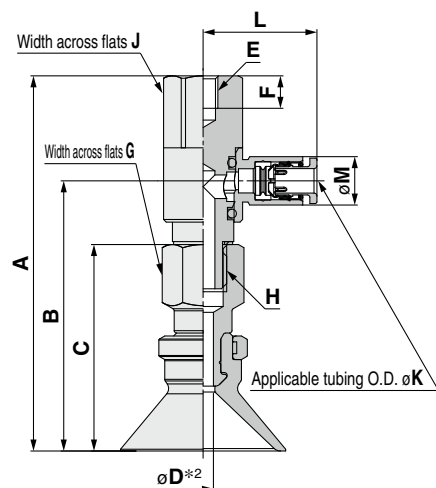
Model										M	N	P	Q	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread									
ZP	R	D	N S U F GN GS	04	A5	8					4	17.5	8.2	$\varnothing 2.5$
				06	A6	12					6	18.3	10.4	$\varnothing 4$
				08	A8	16					8	20.5	10.4	$\varnothing 4.5$

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

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

Dimensions/Models

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



Construction p. 117

Adapter Assembly p. 122

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

①

②

④

Connection thread
(Female thread)

Vacuum inlet
(One-touch fitting)

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

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

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

Dimensions Per Vacuum Inlet

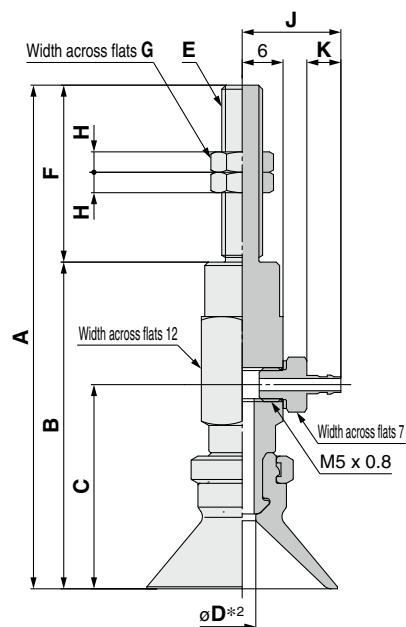
Model						J	K	L	M	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Vacuum inlet	④ Connection thread					
ZP	R	D	N S U F GN GS	04	B5	8	4	17.5	8.2	$\phi 2.5$
				06	B6		6	18.3	10.4	$\phi 4$
				04	B5	12	4	19.3	8.2	$\phi 3$
				06	B6		6	20.5	10.4	$\phi 4.5$
				08	B8	16	8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

Dimensions/Models

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



Construction	p. 117
Adapter Assembly	p. 123

ZPY 10 D N - N4 - A5

①

②

④

Vacuum inlet
(Barb fitting)

Connection thread
(Male thread)

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

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

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	10	D	N S U F GN GS	N4 N6 U4 U6	A5	62	41	25	2.5	M5 x 0.8	21	8	4
	16					63	42	26					
	10				A6	67	41	25	2.5	M6 x 1	26	8	4
	16					68	42	26					
	25					74	48	30					
	40					83	57	39					
	25			A8		64	48	30	3.5	M8 x 1	16	12	4
	40					73	57	39					

Dimensions Per Vacuum Inlet

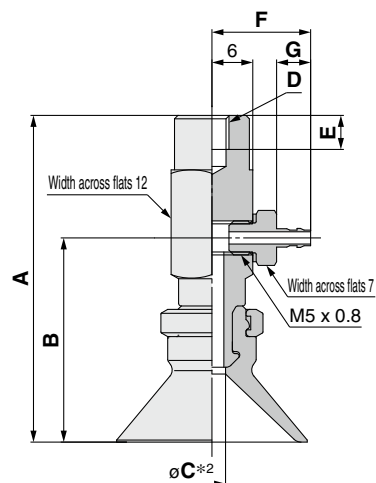
Model						J	K	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread			
ZP	10	D	N S U F GN GS	N4	A5	14.5	5	$\varnothing 1.8$
	16			U4				
	25			N6	A6	16.5	7	$\varnothing 2.5$
	40			U6	A8	16.5	7	$\varnothing 2.5$

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

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

Dimensions/Models

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



Construction	p. 117
Adapter Assembly	p. 123

ZPY **10** D **N** - **N4** - **B5**

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	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	3.5		
						57	39	6		

Dimensions Per Vacuum Inlet

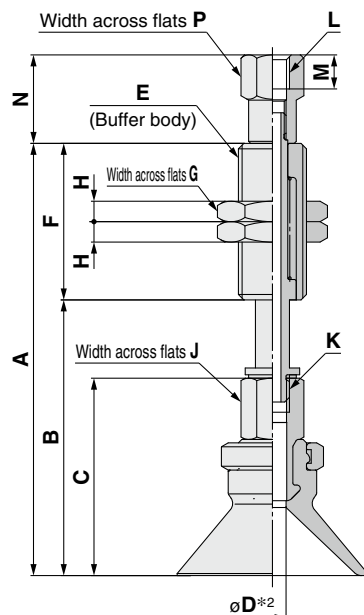
Model						F	G	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	D	N S U F GN GS	N4 U4	B4	14.5	5	$\varnothing 1.8$
				N6 U6	B5	16.5	7	$\varnothing 2.5$
				N4 U4	B5	14.5	5	$\varnothing 1.8$
				N6 U6	B6 B8	16.5	7	$\varnothing 2.5$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

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

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

Dimensions/Models

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



Construction	p. 118
Buffer Assembly	p. 124

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

Buffer specification **3**

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																				
	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*2	E	F	G	H	J	K		
ZP	T	10	D	N S U F G N S	J K	10	B5 04 06 N6 U6	A10	58.5	35.5	24	J: 2.5 K: 2	M10 x 1	23						
						20			96.5	45.5				51						
						30			106.5	55.5				77						
						40			142.5	65.5				77						
						50			152.5	75.5				23						
		10				59.5			36.5	25	M10 x 1			23	14	3	8	M5 x 0.8		
		20				97.5			46.5					51						
		30				107.5			56.5					77						
		40				143.5			66.5					23						
		50				153.5			76.5					51						
		10				63.5			40.5	29				M14 x 1	23					
		20				101.5			50.5						51					
		30				111.5			60.5						77					
		40				147.5			70.5						77					
		50				157.5			80.5											
		10				B5 B01 T01 06 08 N6 U6	A14	105	55	42.5			4		M14 x 1	50	19	4	12	M8 x 1.25
		20						115	65											
		30						125	75											
		50						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 20 30 40 50	B5	A10	M5 x 0.8	5	13	8
		40				10	B5	A14	M5 x 0.8	4.5	15	10
						20				5	9	
						30						
						50						
						10			B01 N01 T01	Rc1/8 NPT1/8 NPTF1/8		16.5
						20	12					
		30										
50												

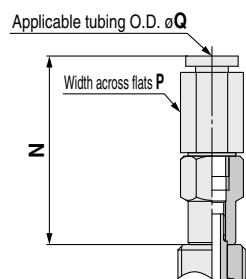
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

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

Vacuum inlet: One-touch fitting



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

① ② ③ ④ ⑤ ⑥

Buffer specification ③

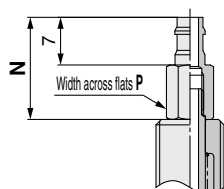
J	Rotating
K	Non-rotating

⑥ Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

		Pad diameter	
		$\phi 10$ to $\phi 25$	$\phi 40$
⑤ Vacuum inlet	04	$\phi 4$	One-touch fitting
	06	$\phi 6$	
	08	$\phi 8$	
N6	For $\phi 6$ nylon tubing		Barb fitting
U6	For $\phi 6$ soft tubing		
		KQ2H04-M5N	KQ2H06-01NS
		KQ2H06-M5N	KQ2H08-01NS

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	10 16 25	D	N S U F GN GS	J K	10	04	A10	27.7	8	4	ø2.5
						20						
						30						
						40						
						50						
		10				06	A14	31.8	10	6	ø4.5	
		20						35.9	14	8	ø6	
		30						19.9	12	6	ø3	
		40						24.9	14	8		
		50										

Dimensions Per Vacuum Inlet: Barb Fitting

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

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

Dimensions/Models

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

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

①

②

④

⑥

Connection thread
(Male thread)

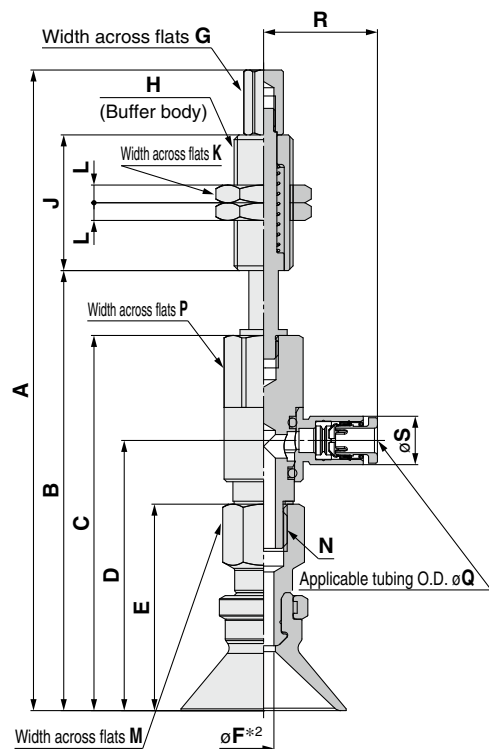
Buffer specification ③

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet
(One-touch fitting)

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



Construction p. 118

Buffer Assembly p. 125

Model								A	B	C	D	E	*2 F	G	H	J	K	L	M	N	
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	D	N S U F G N G S	J K	10	04 06	A10	94	60	49	32.9	24	2.5	6	M10 x 1	23	14	3	8	M5 x 0.8
						20			132	70							51				
						30			142	80							77				
						40			178	90							23				
						50			188	100							51				
		16				10			95	61	23										
						20			133	71	77										
						30			143	81	51										
						40			179	91	77										
						50			189	101	77										
		25				10			108.6	74.6	23										
	20					146.6	84.6	51													
	30					156.6	94.6	63.6	45.8	35	3.5	77	12		M8 x 1.25						
	40					192.6	104.6														
	50					202.6	114.6														
	40	10				151.1	83.1	71.1	53.3	42.5	4	10	M14 x 1		50	19	4	12	M8 x 1.25		
		20				148.1	93.1														
		30				158.1	103.1														
		40				203.1	123.1														
		50																			

Dimensions Per Vacuum Inlet

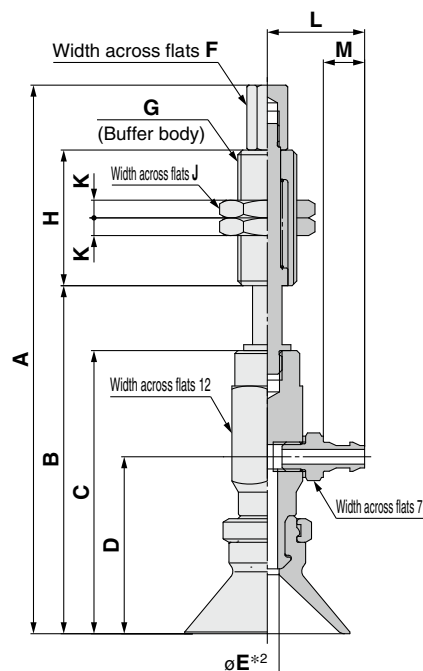
Model								P	Q	R	S	Fitting part min. hole size			
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread								
ZP	R	10 16	D	N S U F G N G S	J K	10 20 30 40 50	04	A10	8	4	17.5	8.2	ø2.5		
							06			6	18.3	10.4	ø4		
		25				10 20 30 40 50	04		12	4	19.3	8.2	ø3		
							06			6	20.5	10.4	ø4.5		
						40	10 20 30 40 50			08	16	8	23.5	13.2	ø6
										A14	12	6	20.5	10.4	ø4.5
		08				16	8	23.5	13.2		ø6				

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

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

Dimensions/Models

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



Construction p. 118

Buffer Assembly p. 126

ZPY 10 D N J 10 - N4 - A10

1

2

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

Model								A	B	C	D	*2 E	F	G	H	J	K				
Vacuum inlet direction	❶ Pad dia.	Form	❷ ^{*1} Material	❸ Buffer spec.	❹ Buffer stroke	❺ Vacuum inlet	❻ Connetion thread														
ZP	Y	10	N S U F GN GS	J K	10	N4 N6 U4 U6	A10	86	52	41	25	2.5	6	M10 x 1		14	3				
					20			124	62									23			
					30			134	72										51		
					40			170	82											77	
					50			180	92												23
					10			87	53												
		20			125			63	77												
		30			135			73		23											
		40			171			83			51										
		50			181			93				77									
		10			93			59					23								
		20			131			69						51							
	30	141			79	14															
	40	177			89		3														
	50	187			99			77													
	10	137			69				23												
	20	134			79					50											
	30	144			89						19										
	40					4															
	50						75														

Dimensions Per Vacuum Inlet

Model								L	M	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② Material ^{*1}	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	Y	10 16 25	D	N S U F GN GS	J K	10	N4	A10	14.5	5	ø1.8
						20	U4				
		30				N6 U6	16.5		7	ø2.5	
		40									
		50				N6 U6	A14	16.5	7	ø2.5	
		10									

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

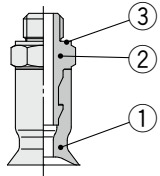
*2 Indicates the minimum hole size of the adapter or vacuum pad

Basic Pad *ZP Series* Construction

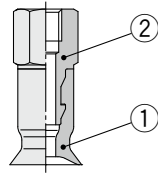
With adapter Flat type: $\varnothing 2$ to $\varnothing 8$ Bellows type: $\varnothing 6$ to $\varnothing 8$ Thin flat type/Thin flat type with ribs: $\varnothing 10$ to $\varnothing 16$

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

ZP□T□-(A5/A6)



ZP□T□-(B4/B5)

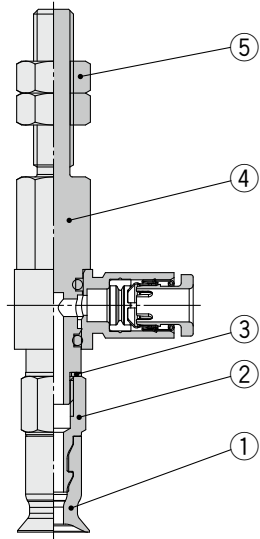


Component Parts

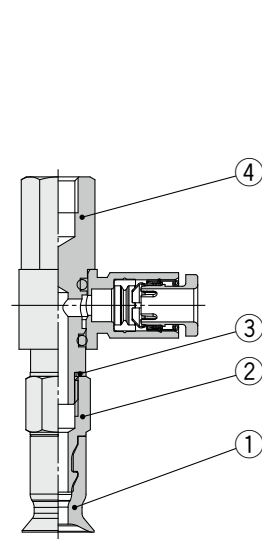
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber,	Flat type
		Urethane rubber, FKM,	Bellows type
		Conductive NBR,	Thin flat type
		Conductive silicone rubber	Thin flat type with ribs
2	Adapter	Brass (Electroless nickel plating)	ZPT
		Stainless steel	ZPST
3	Gasket	Stainless steel/NBR	ZPT
		Stainless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

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

ZPR□-(04/06)-(A5/A6)



ZPR□-(04/06)-(B4/B5)

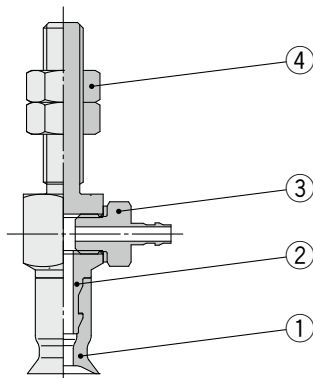


Component Parts

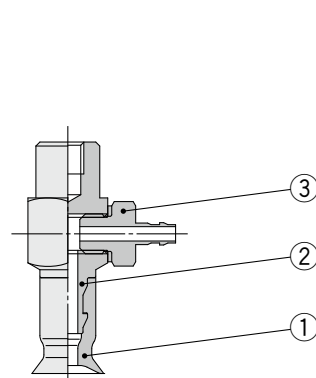
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber,	Flat type
		Urethane rubber, FKM,	Bellows type
		Conductive NBR,	Thin flat type
		Conductive silicone rubber	Thin flat type with ribs
2	Adapter	Brass (Electroless nickel plating)	
3	Gasket	Stainless steel/NBR	
4	Adapter (With One-touch fitting)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

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

ZPY□-(N4/N6/U4/U6)-(A5/A6)



ZPY□-(N4/N6/U4/U6)-(B4/B5)



Component Parts

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

With buffer

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

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

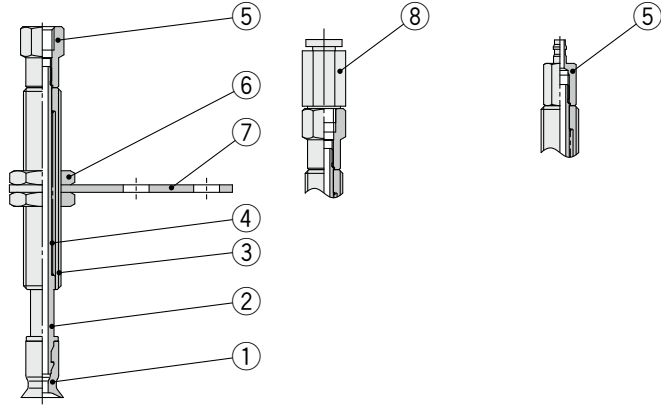
Thin flat type/Thin flat type with ribs: $\phi 10$ to $\phi 16$

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

ZPT□-(B3/B5)-A8

ZPT□-(04/06)-A8

ZPT□-(N4/U4)-A8

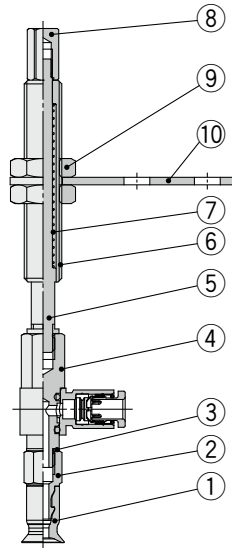


Component Parts

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

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

ZPR□-(04/06)-A8

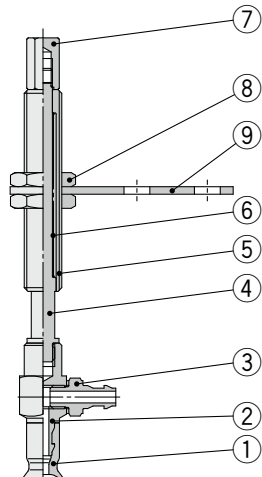


Component Parts

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

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

ZPY□-(N4/N6/U4/U6)-A8



Component Parts

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

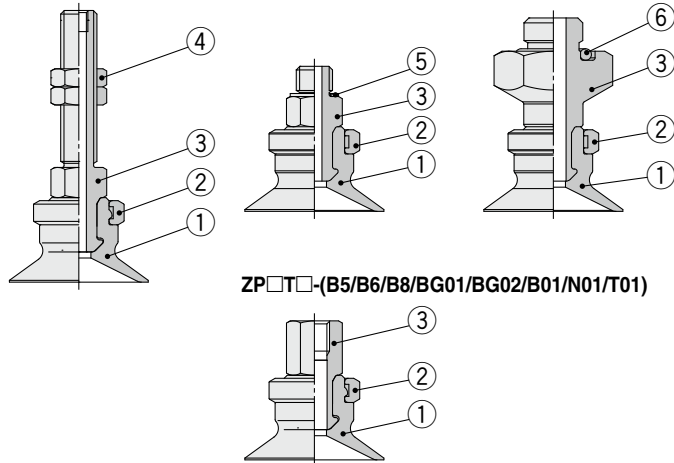
With adapter Flat type: $\phi 10$ to $\phi 50$ Flat type with ribs: $\phi 10$ to $\phi 50$ Bellows type: $\phi 10$ to $\phi 50$ Deep type: $\phi 10$ to $\phi 40$

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

ZP□T□-(A5/A6/A8)

ZP□T□-(AS5/AS6)

ZP□T□-(AG01/AG02)



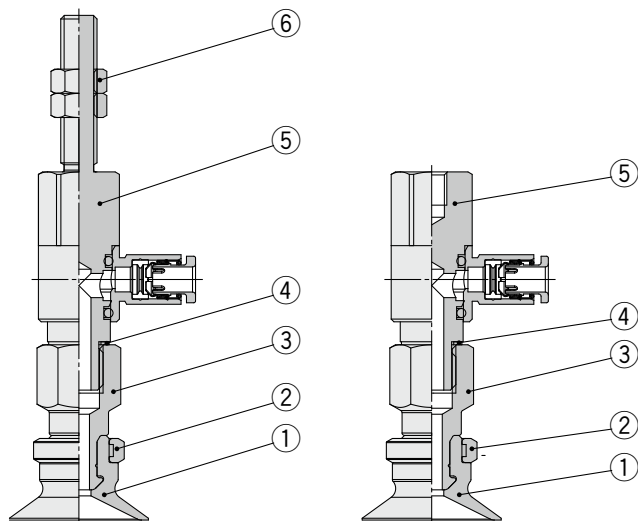
Component Parts

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

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

ZPR□-(04/06/08)-(A5/A6/A8)

ZPR□-(04/06/08)-(B5/B6/B8)



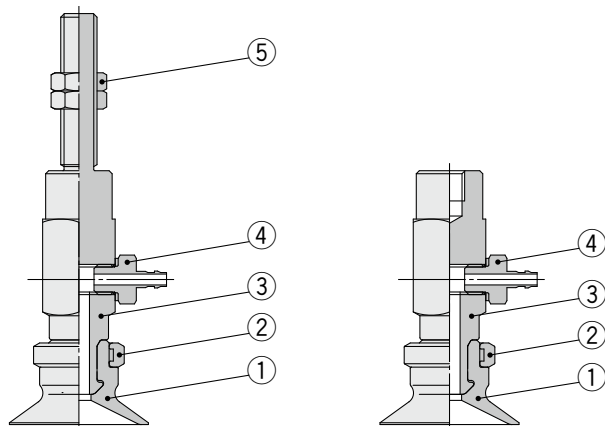
Component Parts

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

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

ZPY□-(N4/N6/U4/U6)-(A5/A6/A8)

ZPY□-(N4/N6/U4/U6)-(B5/B6/B8)



Component Parts

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

With buffer

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

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

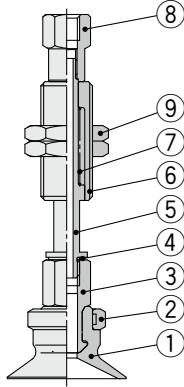
Bellows type: $\phi 10$ to $\phi 50$

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

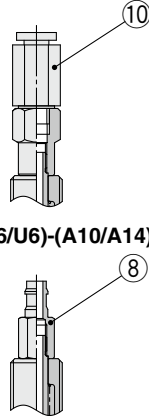
Vacuum inlet direction **Vertical** T Type/ZPT

ZPT□-(B5/B01/N01/T01)-(A10/A14)

ZPT□-(04/06/08)-(A10/A14)



ZPT□-(N6/U6)-(A10/A14)

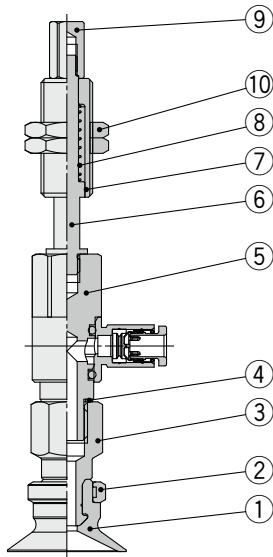


Component Parts

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)

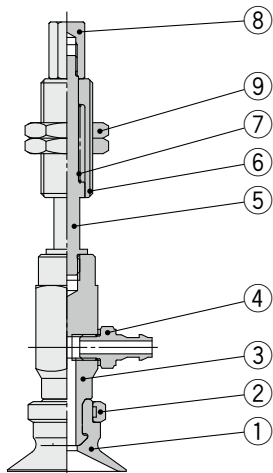


Component Parts

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

Basic Pad *ZP Series* Construction

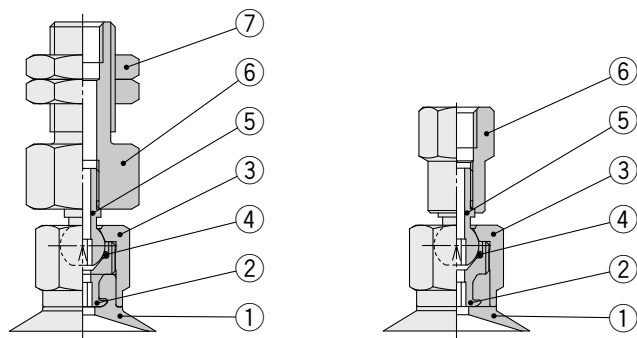
Ball Joint Type

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

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

ZPT□F□-(B5/A10/A14)

ZPT□F□-(B5/B8/B01/N01/T01)



$\phi 10$ to $\phi 32$

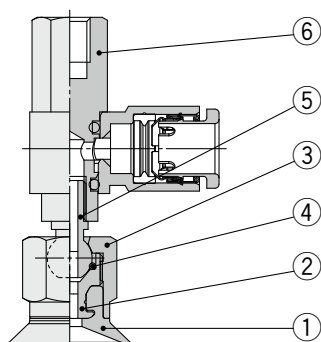
$\phi 40, \phi 50$

Component Parts

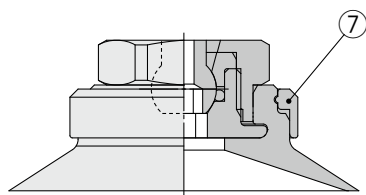
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Shaft cover	Stainless steel	
4	O-ring	FKM	
5	Shaft	Stainless steel	
6	Shaft adapter	Brass (Electroless nickel plating)	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

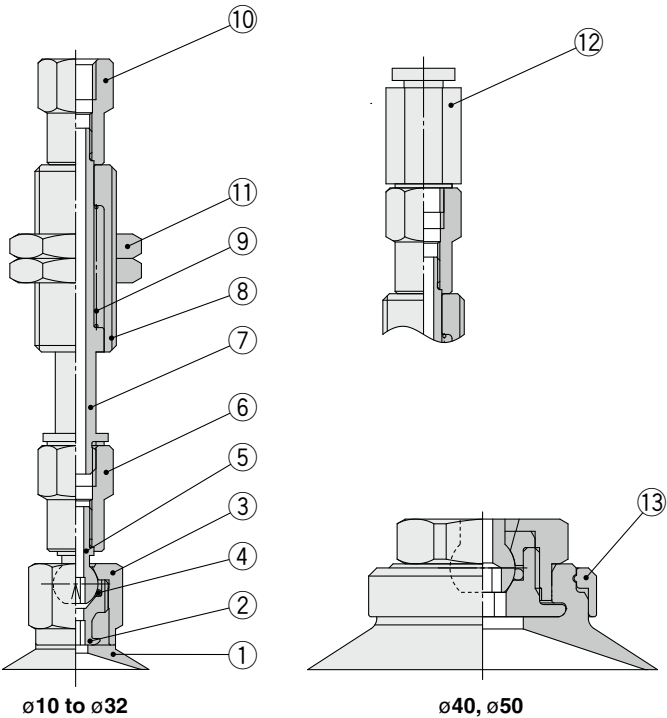
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Shaft cover	Stainless steel	
4	O-ring	FKM	
5	Shaft	Stainless steel	
6	Shaft adapter (With One-touch fitting)	Brass (Electroless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

With buffer

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

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

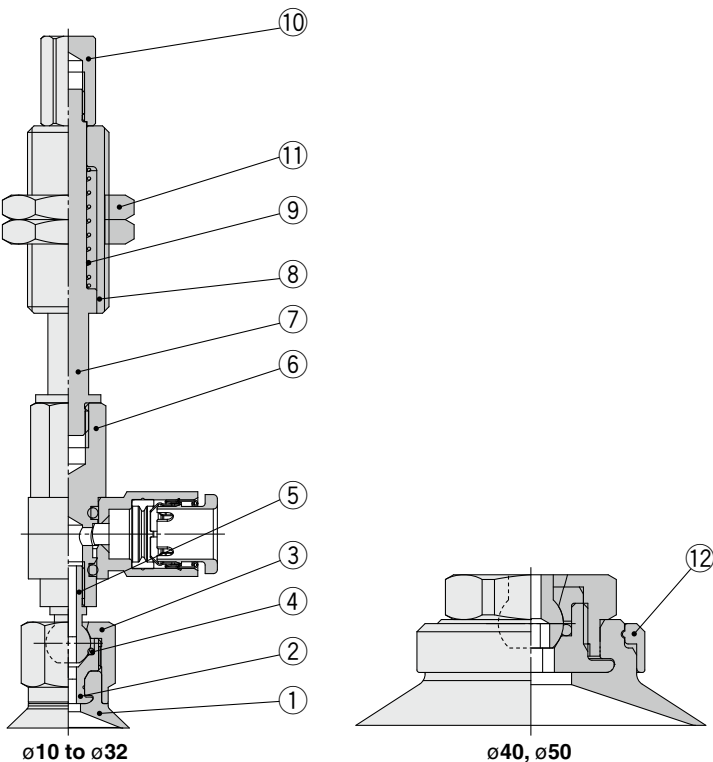
ZPT□F□-(B5/B01/N01/T01)-(A10/A14) ZPT□F□-(04/06/08)-(A10/A14)



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

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

ZPR□F□-(04/06/08)-(A10/A14)



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



Basic/Compact Type Specific Product Precautions

Be sure to read this before handling the products.

For safety instructions as well as vacuum equipment and vacuum pads precautions, refer to the “[Handling Precautions for SMC Products](#)” of each product on the SMC website.

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

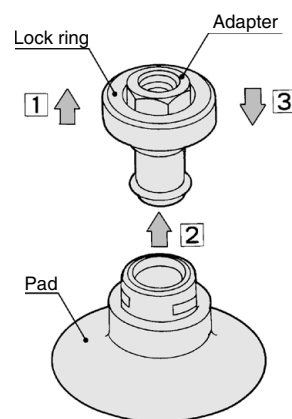
Product part number	Connection thread	Tightening torque [N·m]
ZP3□-T(015 to 035)U□-A3	M3 x 0.5	0.2 to 0.25
ZP3□-T(04 to 16)□□-A5	M5 x 0.8	1.3 to 1.7

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

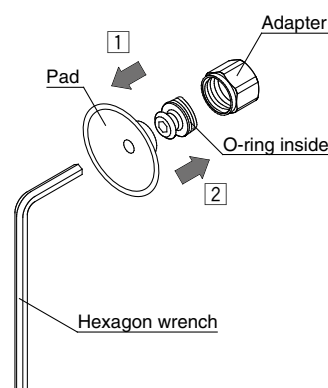
- 1 Pull the lock ring upward, and, after lifting it up to the adapter, remove the old pad by pulling it downward.
- 2 While holding the lock ring in the raised position, place a new pad onto the adapter.
- 3 Confirm that the pad is securely in place, and then return the lock ring to its original position.



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

Pad diameter: ø10 to ø32

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



Pad diameter: ø40, ø50

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

