

Basic Pad *ZP Series*

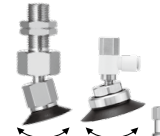
RoHS

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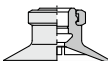
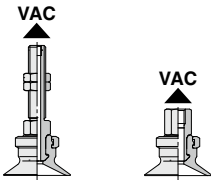
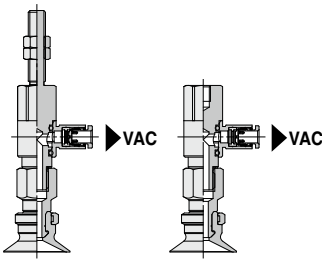
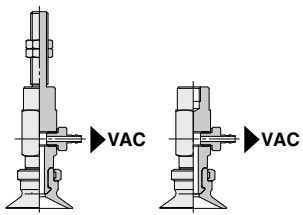
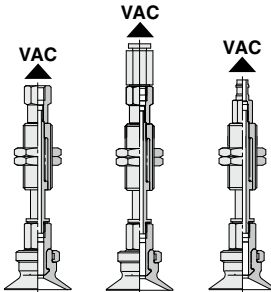
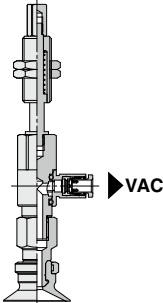
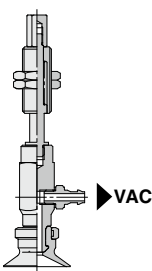
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(Flat type/Flat type with ribs/Bellows type/Thin flat type/Thin flat type with ribs/Deep type)	

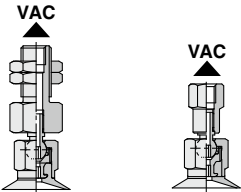
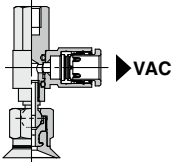
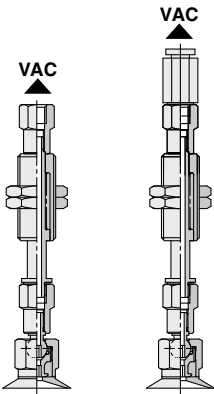
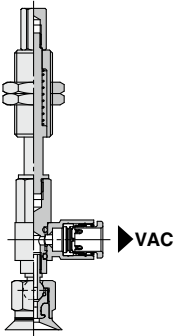
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(Flat, Ball joint type)	

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

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Vacuum inlet direction			Flat type	Flat type with ribs	Bellows type	Thin flat type	Thin flat type with ribs	Deep type
Vertical ▲	Single unit		p. 32	p. 51	p. 68	p. 87	p. 96	p. 105
	ZPT With adapter		p. 33 p. 34	p. 51 p. 52	p. 69 p. 70	p. 87	p. 96	p. 105 p. 106
Lateral ▶	ZPR With adapter		p. 35 p. 37	p. 53 p. 54	p. 71 p. 73	p. 88 p. 89	p. 97 p. 98	p. 107 p. 108
	ZPY With adapter		p. 39 p. 41	p. 55 p. 56	p. 75 p. 77	p. 90 p. 91	p. 99 p. 100	p. 109 p. 110
Vertical ▲	ZPT With buffer		p. 43	p. 57	p. 79	p. 92	p. 101	p. 111
Lateral ▶	ZPR With buffer		p. 46	p. 59	p. 82	p. 93	p. 102	p. 113
	ZPY With buffer		p. 48	p. 60	p. 84	p. 94	p. 103	p. 114

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

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

Construction

Mounting
Bracket
Assembly

Precautions

Basic Pad *ZP* Series Specifications

Pad Material

Material	NBR (Nitrile rubber)	Silicone rubber*1*2	Urethane rubber	FKM (Fluoro rubber)	Conductive NBR (Nitrile rubber)	Conductive silicone rubber
Color of rubber	Black	White	Brown	Black		
Rubber hardness (Shore A: ±5°)	50	40	50 to 60	60	50 to 70	50 to 60

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

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

Adapter Specifications

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

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

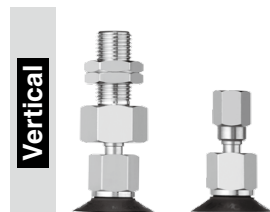
Basic Pad *ZP Series* Specifications

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
	At full stroke	3.0

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

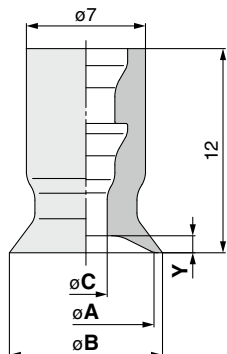


*1 Use the connection thread. *2 Nylon tube piping *3 Soft nylon/Polyurethane tube piping *4 Not compatible with stainless steel materials			
⑧ Connection thread ○: ZP□T/Vertical ●: ZPR/Lateral (With One-tube fitting) △: ZPY/Lateral (With barb fitting)			
Type	Symbol	Size	Pad diameter [mm]
			ø2 to ø8 ø10 to ø16 ø20 to ø32 ø40, ø50
Male thread	A5	M5 x 0.8	●△ ○*1●△ — —
	A6	M6 x 1	●△ ○*1●△ — —
	A8	M8 x 1	— — ○*1●△ ○*1●△
Female thread	B4	M4 x 0.7	●△ — — —
	B5	M5 x 0.8	●△ ●△ ●△ —
	B6	M6 x 1	— ●△ ●△ ●△
	B8	M8 x 1.25	— — ●△ ●△
*1 ○: ZP□T/Vertical comes with a vacuum inlet (female thread).			

Dimensions/Models

Single unit **ø2 to ø8**

ZP **02** U **N**
① ②



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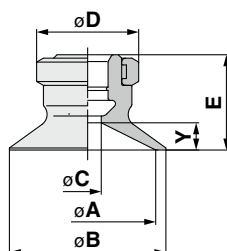
Mounting Bracket Assembly From p. 121

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	8	9		1
			GS				

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

Single unit **ø10 to ø50**

ZP **10** U **N**
① ② ③



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Mounting Bracket Assembly From p. 121

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	Nil	U	N	10	12	4	13	12	3
				13	15			12.5	3.5
				16	18		15	14	4
				20	23			14.5	4.5
				25	28	7	18	18.5	6.5
				32	35			19.5	7.5
				40	43				
				50	53				

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

Model
Selection

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

Bel lows Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

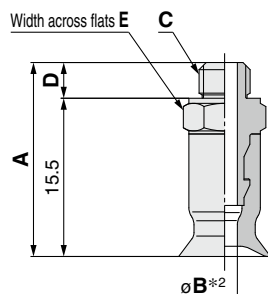
Construction

Mounting
Bracket
Assembly

Precautions

Dimensions/Models

With adapter ø2 to ø8



Construction	p. 115
Adapter Assembly	p. 121

ZP T 02 U N - A5

① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Male thread)

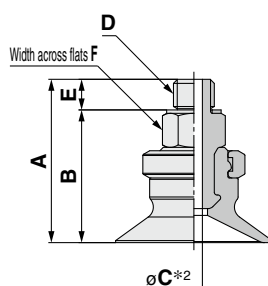
A5	M5 x 0.8
A6	M6 x 1

Model						A	B*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 ø10 to ø50



Construction	p. 117
Adapter Assembly	p. 121

ZP T 10 U 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

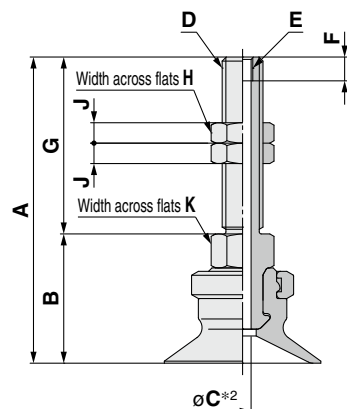
Model						A	B	C*2	D	E	F			
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material	④ Vacuum inlet									
ZP	Nil S	T	U	N S U F GN GS	AS5	21	17.5	2.5	M5 x 0.8	3.5	8			
						21.5	18							
						23	19.5							
						23.5	20							
					AS6	22	17.5	2.5	M6 x 1	4.5	8			
						22.5	18							
						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	4						
						32.5	27							
					AG02	39	32.5	7				G1/4	6.5	21
						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 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	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													
						16	38.5 17.5												
					10		A6	43	17	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	8		
					13														
					16	43.5 17.5													
					20	45		19											
					25	45.5 19.5													
					32	50.5 24.5													
					40	51.5 25.5													
					50		A8	40	24	4	M8 x 1	M5 x 0.8	5	16	12	4	12		
					20														
					25														
					32	40.5 24.5													
					40														
50	41.5 25.5	4.2																	

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

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

Model
Selection

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

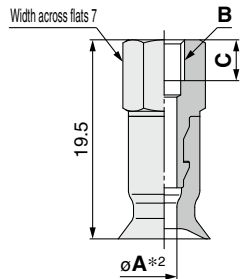
Construction

Mounting
Bracket
Assembly

Precautions

Dimensions/Models

With adapter ø2 to ø8



Construction	p. 115
Adapter Assembly	p. 121

ZP T 02 U N - B4

① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Female thread)

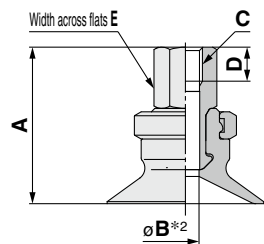
B4	M4 x 0.7
B5	M5 x 0.8

Model						A*2	B	C
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③*1 Material	④ 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			
					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 T 10 U N - B5

① ② ③ ④

① Adapter (Lock ring) material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Female thread)

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

*1 Not compatible with stainless steel materials

Model						A	B*2	C	D	E
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③*1 Material	④ Vacuum inlet					
ZP	Nil S	T	U	N S U F G N G S	B5	21	2.5	M5 x 0.8	5	8
						21.5				
						23	4			
						23.5				
					B6	21	2.5	M6 x 1	6	8
						21.5				
						23	4			
						23.5				
						32	4.9			12
						33				
					B8	29	3.5	M8 x 1.25	8	12
						29.5				
						32	6.6			
						33				
					BG01	27	2.5	G1/8	7.4	14
						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	7			
						33				

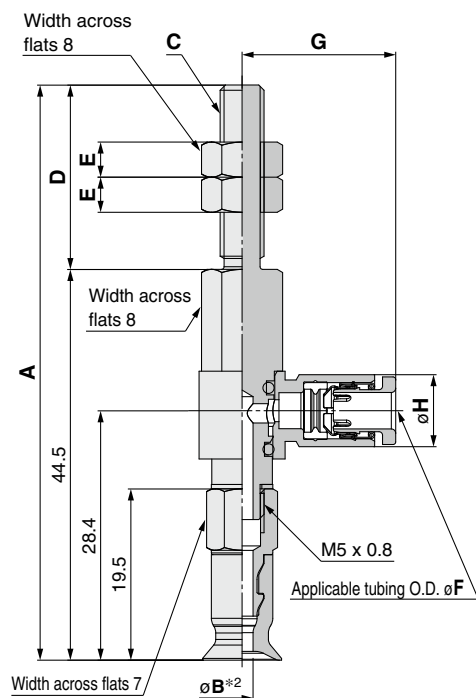
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

*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 Material	3 Vacuum inlet	4 Connection thread					
ZP	02	U	N S U F GN GS	04 06	A5	65.5	1.2	M5 x 0.8	21	4
	04						1.6			
	06						2.5			
	02				A6	70.5	1.2	M6 x 1	26	4
	04						1.6			
	06						2.5			

Dimensions Per Vacuum Inlet

Model						F	G	H	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	Form	2 Material	3 Vacuum inlet	4 Connection thread				
ZP	02	U	N S U F GN GS	04	A5	4	17.5	8.2	$\varnothing 2.5$
	06			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 $\phi 10$ to $\phi 50$

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

①

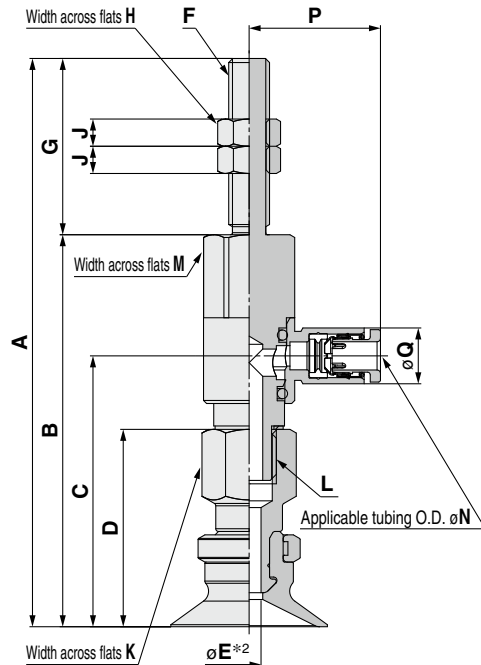
②

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	E ^{*2}	F	G	H	J	K	L			
ZP	R	10	U	N	04	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			
		20					72.5	46.5	30.4	21.5										
		25					83.5	57.6	39.8	29	3.5	M6 x 1		8	4	12	M8 x 1.25			
		32					84	58.1	40.3	29.5										
		40					86.5	60.6	42.8	32	4		25.9							
		50					87.5	61.6	43.8	33										
		20				A6	73.5	57.6	39.8	29	3.5									
		25					74	58.1	40.3	29.5										
		32					76.5	60.6	42.8	32	4	M8 x 1	15.9	12	4	12	M8 x 1.25			
		40					77.5	61.6	43.8	33										
		50																		
		10			06	A8														
		13																		
		16																		
		20																		
		25																		
		32																		
		40																		
		50																		
		10			08	A8														
		13																		
		16																		
		20																		
		25																		
		32																		
		40																		
		50																		

Dimensions Per Vacuum Inlet

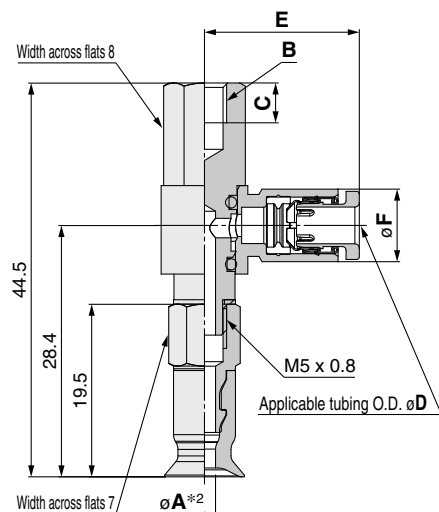
Model														
	Vacuum inlet direction	① Pad dia.	Form	② Material	③ Vacuum inlet	④ Connection thread	M	N	P	Q	Fitting part min. hole size			
ZP	R	10	U	N	04	A5	8	4	17.5	8.2	$\phi 2.5$			
		13			06	A6		6	18.3	10.4	$\phi 4$			
		16			06	A6		4	19.3	8.2	$\phi 3$			
		20			06	A6	12	6	20.5	10.4	$\phi 4.5$			
		25			08	A6		8	23.5	13.2	$\phi 6$			
		32			06	A6		6	20.5	10.4	$\phi 4.5$			
		40			08	A6	16	8	23.5	13.2	$\phi 6$			
		50			08	A6		6	20.5	10.4	$\phi 4.5$			
		50			08	A6		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 $\varnothing 2$ to $\varnothing 8$



Construction p. 115

Adapter Assembly p. 122

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

①

②

④

Connection thread
(Female thread)

Vacuum inlet
(One-touch fitting)

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

B4	M4 x 0.7
B5	M5 x 0.8

Model						A*2	B	C
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	04 06	B4	1.2	M4 x 0.7	4.5
	04					1.6		
	06					2.5		
	02				B5	1.2	M5 x 0.8	5.5
	04					1.6		
	06					2.5		

Dimensions Per Vacuum Inlet

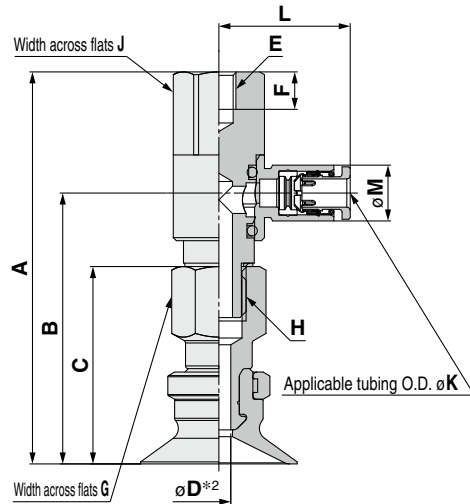
Model						D	E	F	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread				
ZP	02	U	N S U F GN GS	04	B4 B5	4	17.5	8.2	$\varnothing 2.5$
	06			06		6	18.3	10.4	$\varnothing 4$

*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	3	4
Vacuum inlet direction	Pad dia.	Form	Material
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 Material	③ Vacuum inlet	④ Connection thread											
ZP	R	U	N S U F G N S	04 06 08	B5	46	29.9	21	2.5	M5 x 0.8	5.5	8	M5 x 0.8			
						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								
						61.6	43.8	33	4							
						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

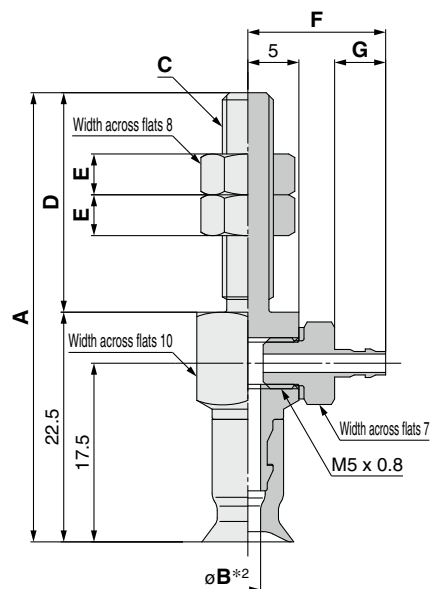
Model						J	K	L	M	Fitting part min. hole size
Vacuum inlet direction	1	2	3	4						
ZP	R	U	N S U F G N S	04	B5	8	4	17.5	8.2	$\varnothing 2.5$
							6	18.3	10.4	$\varnothing 4$
				06	B6	12	4	19.3	8.2	$\varnothing 3$
							6	20.5	10.4	$\varnothing 4.5$
				08	B8	16	8	23.5	13.2	$\varnothing 6$
					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

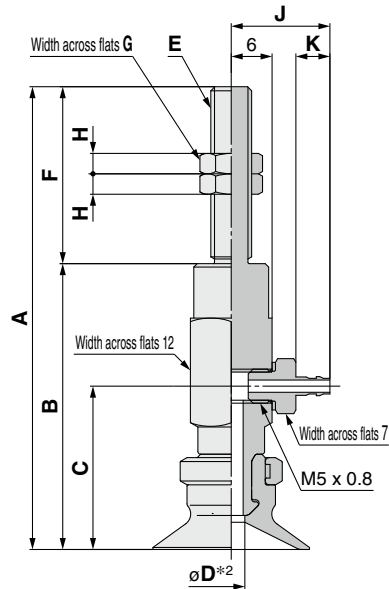
Model						F	G	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread			
ZP	02	U	N S U F GN GS	N4	A5	13.5	5	$\varnothing 1.8$
	04			U4				
	06			N6		15.5	7	$\varnothing 2.5$
	08			U6				

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

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

Dimensions/Models

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



Construction	p. 117
Adapter Assembly	p. 123

ZPY 10 U 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	Y	U	N S U F GN GS	N4 N6 U4 U6	A5	59	38	22	2.5	M5 x 0.8	21	8	4					
						59.5	38.5	22.5										
					A6	64	38	22	2.5	M6 x 1	26	8	4					
						64.5	38.5	22.5										
						68	42	24	3.5									
						68.5	42.5	24.5										
						72.5	46.5	28.5	6									
						73.5	47.5	29.5										
						A8	58	42	24					3.5	M8 x 1	16	12	4
							58.5	42.5	24.5									
					62.5		46.5	28.5	6									
					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	U	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

Model
Selection

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

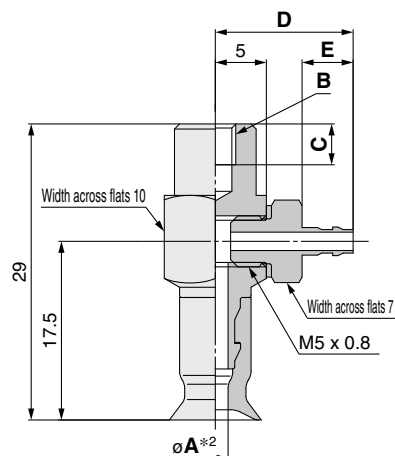
Construction

Mounting
Bracket
Assembly

Precautions

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 123

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

①

②

④

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	❶ Pad dia.	Form	❷ ^{*1} Material	❸ Vacuum inlet	❹ Connection thread				
ZP	Y	02	U	N S U F GN GS	N4 N6 U4 U6	B4	1.2	M4 x 0.7	4
		04					1.6		
		06 08					2.5		
		02				B5	1.2	M5 x 0.8	5
		04					1.6		
		06 08					2.5		

Dimensions Per Vacuum Inlet

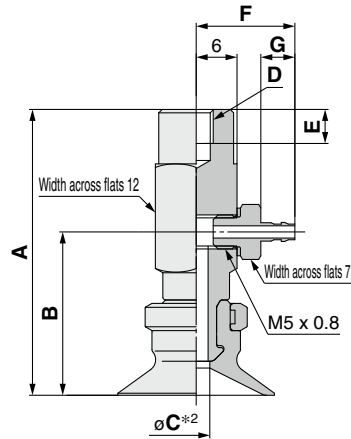
Model							D	E	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread				
ZP	Y	02 04 06 08	U	N S U F GN GS	N4 U4	B4 B5	13.5	5	ø1.8
					N6 U6		15.5	7	ø2.5

*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.	② Form	③ Material	④ Vacuum inlet	⑤ 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			
				N4 N6 U4 U6	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			
				N4 N6 U4 U6	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.	② Form	③ Material	④ Vacuum inlet	⑤ Connection thread			
ZP	Y	U	N S U F GN GS	N4 U4	B4 B5	14.5	5	$\varnothing 1.8$
				N6 U6	B5	16.5	7	$\varnothing 2.5$
				N4 U4	B5 B6 B8	14.5	5	$\varnothing 1.8$
				N6 U6	B6 B8	16.5	7	$\varnothing 2.5$
				N6 U6	B6 B8	16.5	7	$\varnothing 2.5$
				N6 U6	B6 B8	16.5	7	$\varnothing 2.5$

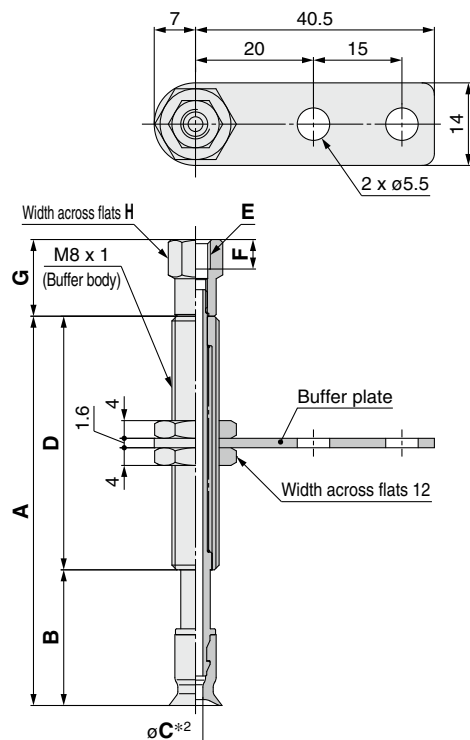
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

With buffer ø2 to ø8

The drawings show the type with a buffer plate.



ZPT 02 U N J 6 - B3 - A8

1	2	3	4	5	6
Buffer specification					
J	Rotating				
K	Non-rotating				
JN	Rotating (Without buffer plate)				
KN	Non-rotating (Without buffer plate)				

6 Connection thread (Male thread)

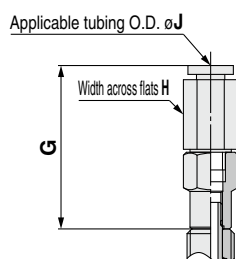
A8 M8 x 1

5 Vacuum inlet

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

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

Vacuum inlet: One-touch fitting



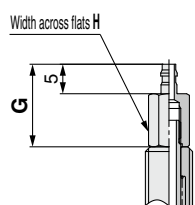
Dimensions Per Vacuum Inlet: Female Thread

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	B3	M3 x 0.5	3	11	6
						10					
						15	B5	M5 x 0.8	5	13	8
						25					

Dimensions Per Vacuum Inlet: One-touch Fitting

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

Vacuum inlet: Barb fitting



Construction	p. 116
Buffer Assembly	p. 124

Dimensions Per Vacuum Inlet: Barb Fitting

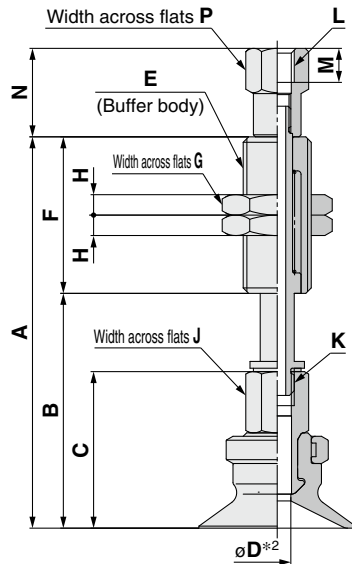
Model								G	H	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread			
ZP	T	02 04 06 08	U	N S U F GN GS	J K JN KN	6	N4	14	6	ø1.8
						10	U4			
						15				
						25				

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

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

Dimensions/Models

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



Construction	p. 118
Buffer Assembly	p. 124

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

Buffer specification **3**

J	Rotating
K	Non-rotating

Connection thread (Male thread) **6**

A10	M10 x 1
A14	M14 x 1

Vacuum inlet (Female thread) **5**

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 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	23							
						20			93.5	42.5				51							
						30			103.5	52.5				77							
						40			139.5	62.5											
						50			149.5	72.5				23							
						10			56	33											
						20			94	43				51							
						30			104	53				77							
						40			140	63											
						50			150	73				23							
						10			57.5	34.5											
						20			95.5	44.5				51							
						30			105.5	54.5											
						40			141.5	64.5				77							
						50			151.5	74.5											
						10			58	35				23							
						20			96	45											
						30			106	55				51							
						40			142	65											
						50			152	75				77							
						10	B5 B01 N01 T01 06 08 N6 U6	A14	94.5	44.5	32	4	M14 x 1	50							
						20			104.5	54.5											
						30			114.5	64.5				75							
						40			159.5	84.5											
						50			95.5	45.5											
						10			105.5	55.5				50							
						20			115.5	65.5											
						30			115.5	65.5											
						40			160.5	85.5				75							
						50															

Dimensions Per Vacuum Inlet: Female Thread

Model											L	M	N	P
	Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread						
ZP	T	10 13 16 20 25 32	U	N S U F GN GS	J K	10	B5	A10	M5 x 0.8	5	13	8		
						20								
						30								
						40								
						50								
						10								
		40 50	U	N S U F GN GS	J K	20	B5	A10	M5 x 0.8	5	9	10		
						30								
						40								
						50								
						10								
						20								
						30	B01 N01 T01	A14	Rc1/8 NPT1/8 NPTF1/8	—	16.5	12	13	
						40								
						50								

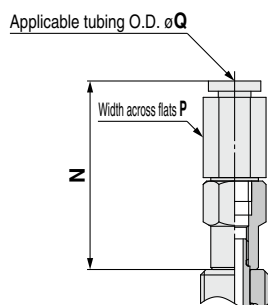
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

*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

Buffer specification ③

J	Rotating
K	Non-rotating

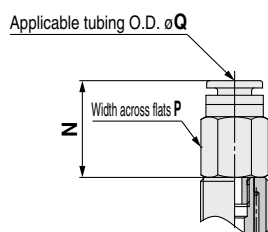
⑥ Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet

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

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



Dimensions Per Vacuum Inlet: One-touch Fitting

Model								N	P	Q	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	T	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					
		40 50				10	06	A14	31.8	10	6	ø4.5
						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 13 16 20 25 32	U	N S U F GN GS	J K	10 20 30 40 50	N6 U6	A10	15	6	ø2.5
		10				N6 U6					
		40 50				20 30 50	N6 U6	A14	19	10	
									12		

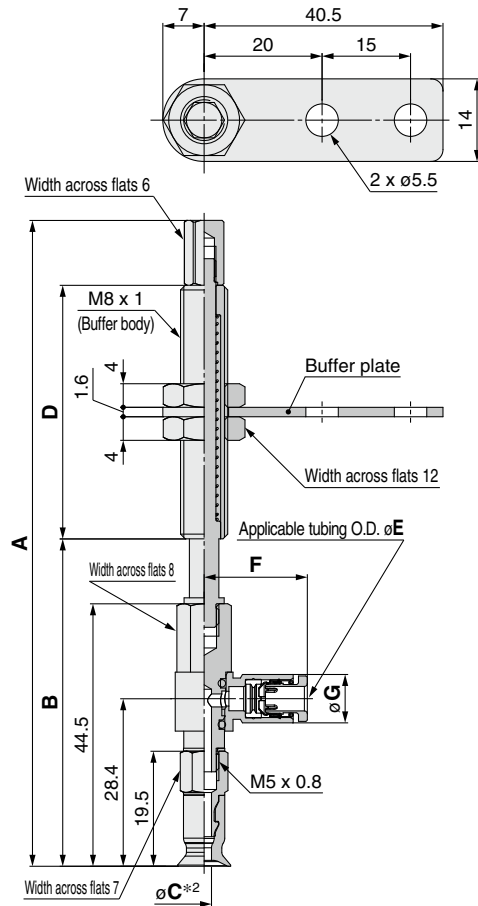
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

Construction	p. 118
Buffer Assembly	p. 124

Dimensions/Models

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

The drawings show the type with a buffer plate.



Construction	p. 116
Buffer Assembly	p. 125

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

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
-----------	--------

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

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

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

Model
Selection

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

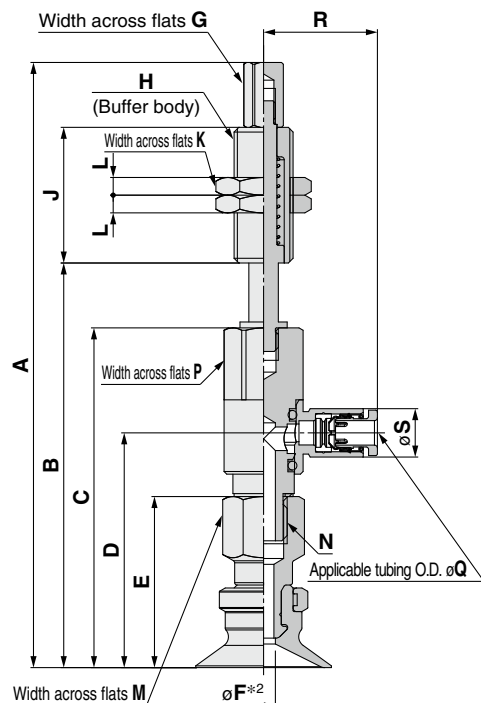
Construction

Mounting
Bracket
Assembly

Precautions

Dimensions/Models

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



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		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 0.8				
		16				20	129.5	67.5													51					
						30	139.5	77.5	46.5	30.4	21.5										77					
						40	175.5	87.5														23				
						50	185.5	97.5														77				
						10	102.6	68.6													6	M10 x 1	14	3		
						20	140.6	78.6														23				
		20 25				30	150.6	88.6	57.6	39.8	29											51				
						40	186.6	98.6															77			
						50	196.6	108.6															23			
						10	103.1	69.1										3.5						12	M8 1.25	
						20	141.1	79.1															51			
						30	151.1	89.1	58.1	40.3	29.5												77			
		32				40	187.1	99.1																		
						50	197.1	109.6																		
						10	140.6	72.6																		
						20	137.6	82.6																		
						30	147.6	92.6	60.6	42.8	32												50			
						40	192.6	112.6																75		
		40				50	141.6	73.6											4	10	M14 x 1		19	4	12	M8 1.25
						10	138.6	83.6																		
						20	148.6	93.6	61.6	43.8	33															
						30	193.6	113.6																		
						40																				
						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 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							
						10							
		20 25 32				20	04	A10	12	4	19.3	8.2	ø3
						30							
						40							
						50							
						10							
						20							
40 50	30	06	A14	16	8	23.5	13.2	ø6					
	40												
	50												
	10												
	20												
	30												

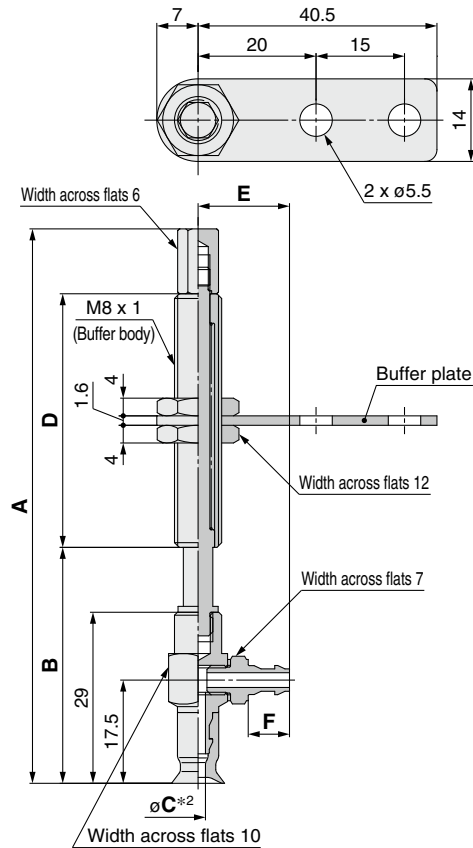
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

With buffer/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 ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet					⑥ Connection thread	
ZP	Y	02	U	N S U F GN GS	J K JN KN	6	N4 N6 U4 U6	A8	63	37	1.2	15
						10			94	40		43
						15			99	45		
						25			109	55		
		6				63			37	1.6	15	
		10				94			40		43	
		15				99			45			
		25				109			55			
		6				63			37	2.5	15	
		10				94			40		43	
		15				99			45			
		25				109			55			

Dimensions Per Vacuum Inlet

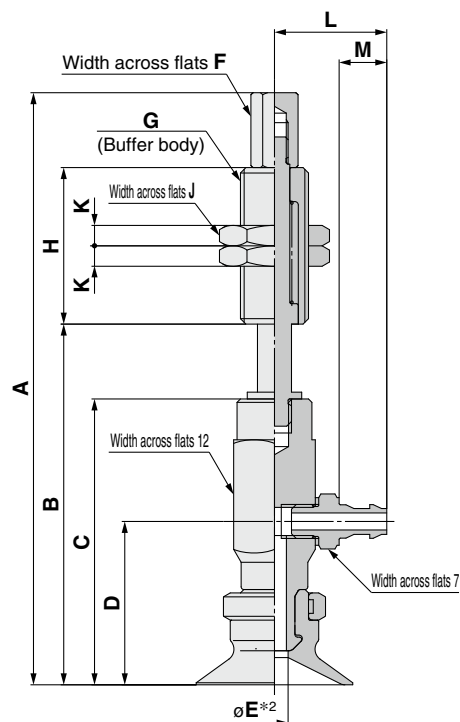
Model							E	F	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	Form	2 *1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet			
ZP	Y	02 04 06 08	U	N S U F GN GS	J K JN KN	6 10 15 25	13.5	5	$\varnothing 1.8$
						N4 U4 N6 U6	15.5	7	$\varnothing 2.5$

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



Construction	p. 118
Buffer Assembly	p. 126

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

①

②

④

Buffer specification ③

J	Rotating
K	Non-rotating

⑥ Connection thread
(Male thread)

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet
(Barb fitting)

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

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	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									
						30			131	69									
						40			167	79									
						50			177	89									
		16				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									
		20 25				10			87	53	42	24	23						
						20			125	63									
						30			135	73									
						40			171	83									
						50			181	93									
		32				10			87.5	53.5	42.5	24.5	51						
						20			125.5	63.5									
						30			135.5	73.5									
						40			171.5	83.5									
						50			181.5	93.5									
		40				10			126.5	58.5	46.5	28.5	50						
						20			123.5	68.5									
						30			133.5	78.5									
						40			178.5	98.5									
						50			127.5	59.5									
		50				10			127.5	59.5	47.5	29.5	50						
						20			124.5	69.5									
						30			134.5	79.5									
						40			179.5	99.5									
						50													

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

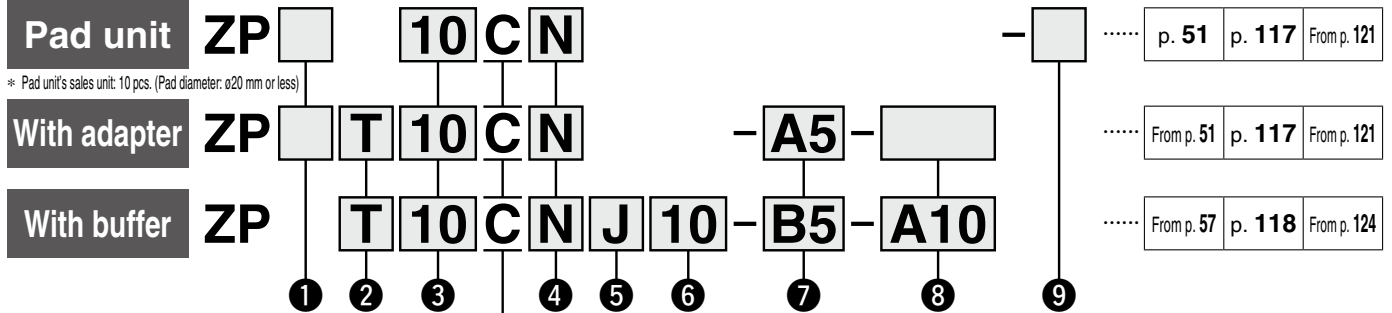


Basic Pad

Flat Type with Ribs

ZP Series

How to Order



① Adapter (Lock ring) material

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

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

② Vacuum inlet direction

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

③ Pad diameter

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

④ Material

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

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

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

⑤ Buffer specification

J	Rotating
K	Non-rotating

⑥ Buffer stroke

Stroke [mm]	Pad diameter [mm]							
	ø10	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	A5	M5 x 0.8	○*1 ●△	—	—
	A6	M6 x 1	○*1 ●△	○*1 ●△	○*1 ●△
	A8	M8 x 1	—	○*1 ●△	○*1 ●△
Female thread	B5	M5 x 0.8	●△	●△	—
	B6	M6 x 1	●△	●△	●△
	B8	M8 x 1.25	—	●△	●△

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

With buffer

⑦ Vacuum inlet

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

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

*1 Nylon tube piping

*2 Soft nylon/Polyurethane tube piping

⑧ Connection thread

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

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

⑨ Lock ring

Symbol	Pad diameter
Nil	All sizes
X19	Without lock ring

Lock ring unit

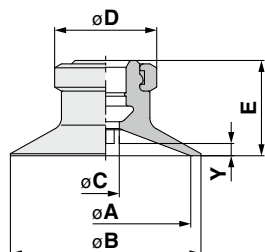
Part no.	Pad diameter [mm]
ZP□L1	ø10 to ø16
ZP□L2	ø20 to ø32
ZP□L3	ø40, ø50

□: Nil/Brass S/Stainless steel

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

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

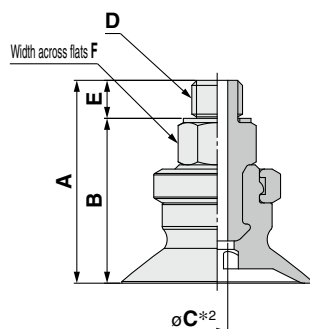
① Lock ring material

Nil	Brass
S	Stainless steel (Stainless steel 304)

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

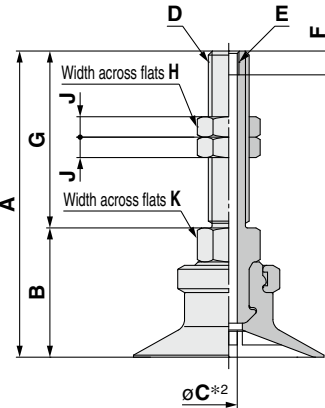
Model						A	B	C*2	D	E	F				
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material	④ Vacuum inlet										
ZP	Nil S	T	C	N S U F G N G S	AS5	21	17.5	2.5	M5 x 0.8	3.5	8				
						21.5	18								
						23	19.5								
						23.5	20								
					AS6	22	17.5	2.5	M6 x 1	4.5	8				
						22.5	18								
						24	19.5								
						24.5	20								
						29.5	25								
						30.5	26								
						AG01	30					24.5	2.5	G1/8	5.5
							30.5				25				
					32		26.5	4							
					32.5		27								
					AG02	39	32.5	7	G1/4	6.5	21				
						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 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 Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material *1	④ Connection thread														
ZP	Nil S	T	C	N S U F GN GS	A5	38	17	2.5	M5 x 0.8	M3 x 0.5	3.5	21	8	4	8				
						38.5	17.5												
					A6	43	17	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	8				
						43.5	17.5												
						45	19												
						45.5	19.5												
						50.5	24.5												
						51.5	25.5												
						A8	40									24	4	M8 x 1	M5 x 0.8
					40.5		24.5												
					41.5		25.5	4.2											

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

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

Model
Selection

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

BelloWS Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

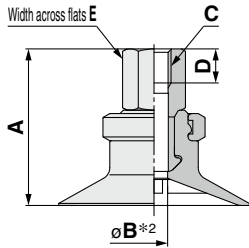
Construction

Mounting
Bracket
Assembly

Precautions

Dimensions/Models

With adapter $\varnothing 10$ 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	②	③	④	⑤	⑥					
Adapter material	Vacuum inlet direction	Pad dia.	Form	*1 Material	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				
						23	4			
						23.5				
						21	2.5			
					B6	21.5		M6 x 1	6	8
						23	4			
						23.5				
						32	4.9			
						33				
					B8	29	3.5	M8 x 1.25	8	12
						29.5				
						32	6.6			
						33				
						27	2.5	G1/8	7.4	14
					BG01	27.5				
						29	4			
						29.5				
						38	7	G1/4	11	17
					BG02	39				
						27	2.5			
						27.5				
					B01 N01*3 T01*3	29	3.5	Rc1/8 NPT1/8 NPTF1/8	—	12
						29.5				
						32				
						33	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

Model
Selection

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

Belows Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

Construction

Mounting
Bracket
Assembly

Precautions

Dimensions/Models

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

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

①

②

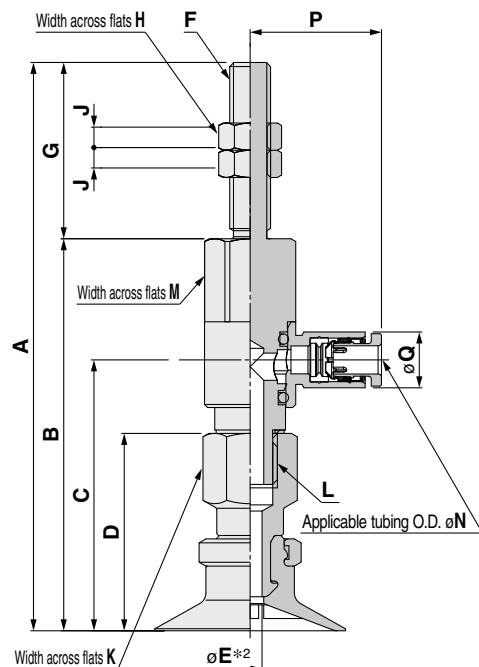
④

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	❶ Pad dia.	Form	❷ *1 Material	❸ Vacuum inlet	❹ Connection thread												
ZP	R	10 13	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
		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	M8 x 1	15.9	12	4	12	M8 x 1.25	
		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							
		50				77.5	61.6	43.8	33								

Dimensions Per Vacuum Inlet

Model										M	N	P	Q	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread									
ZP	R	C	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	$\varnothing 4$				
				06	A6	16	4	19.3	8.2	$\varnothing 3$				
				08	A8	12	6	20.5	10.4	$\varnothing 4.5$				

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

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

Dimensions/Models

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

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

①

②

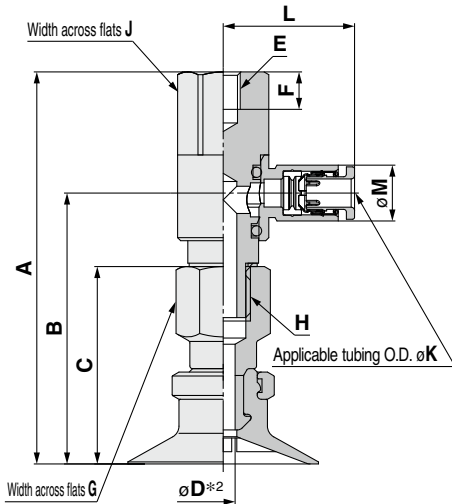
④

Connection thread
(Female thread)

Vacuum inlet
(One-touch fitting)

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

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



Construction p. 117

Adapter Assembly p. 122

Model						A	B	C	D*2	E	F	G	H
Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Vacuum inlet	④ Connection thread								
ZP	R	C	N S U F G N S	04 06 08	B5	46	29.9	21	2.5	M5 x 0.8	5.5	8	M5 x 0.8
						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					
						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 G N S	04	B5	8	4	17.5	8.2	$\phi 2.5$
							6	18.3	10.4	$\phi 4$
				06	B6	12	4	19.3	8.2	$\phi 3$
							6	20.5	10.4	$\phi 4.5$
				08	B8	16	8	23.5	13.2	$\phi 6$
							6	20.5	10.4	$\phi 4.5$
				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

Model
Selection

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

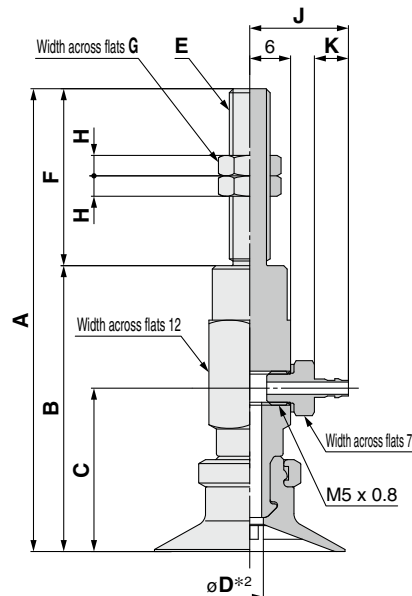
Construction

Mounting
Bracket
Assembly

Precautions

Dimensions/Models

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



Construction	p. 117
Adapter Assembly	p. 123

ZPY **10** C **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 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	2.5					
		10 13				64	38	22	2.5					
		16				64.5	38.5	22.5	2.5					
		20 25				68	42	24	3.5					
		32				68.5	42.5	24.5	3.5					
		40				72.5	46.5	28.5	6					
		50				73.5	47.5	29.5	6					
		20 25				58	42	24	3.5					
		32				58.5	42.5	24.5	3.5					
		40				62.5	46.5	28.5	6					
		50				63.5	47.5	29.5	6					

Dimensions Per Vacuum Inlet

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

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

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

Dimensions/Models

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

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

①

②

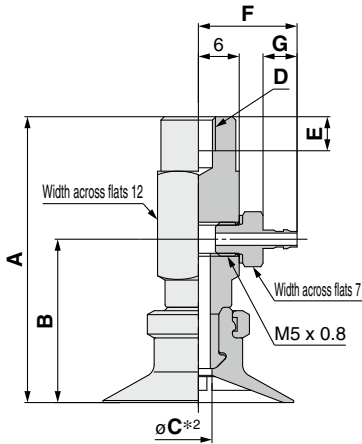
④

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



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Adapter Assembly p. 123

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

Model
Selection

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

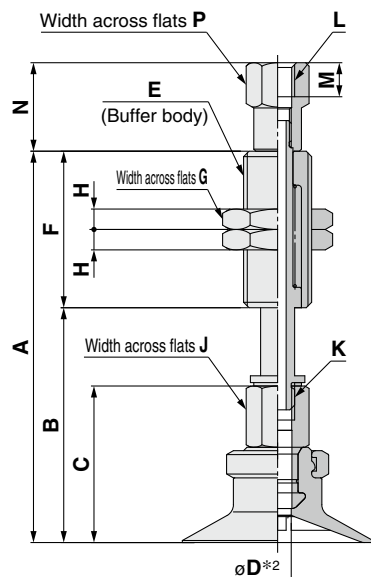
Construction

Mounting
Bracket
Assembly

Precautions

Dimensions/Models

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



Construction	p. 118
Buffer Assembly	p. 124

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

Buffer specification **3**

J	Rotating
K	Non-rotating

6 Connection thread
(Male thread)

A10	M10 x 1
A14	M14 x 1

5 Vacuum inlet
(Female thread)

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

Model									A	B	C	D*2	E	F	G	H	J	K		
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread													
ZP	T	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							
								10 20 30 40 50	B5 04 06 N6 U6	A10			56					33	21.5	23
													94					43		51
													104					53		77
													140					63		23
													150					73		23
					10 20 30 40 50	B5 04 06 N6 U6	A10	57.5	34.5	23		23								
								95.5	44.5			51								
								105.5	54.5			77								
								141.5	64.5			23								
								151.5	74.5			23								
					10 20 30 40 50	B5 04 06 N6 U6	A10	58	35	23.5		23								
								96	45			51								
								106	55			77								
								142	65			23								
								152	75			77								
					10 20 30 50	B5 B01 N01 T01 06 08 N6 U6	A14	94.5	44.5	32		4	M14 x 1	50	19	4	12	M8 x 1.25		
								104.5	54.5					75						
								114.5	64.5					50						
								159.5	84.5					50						
								95.5	45.5					75						
					10 20 30 50	B5 B01 N01 T01 06 08 N6 U6	A14	105.5	55.5	33			50							
								115.5	65.5				75							
								160.5	85.5				75							

Dimensions Per Vacuum Inlet: Female Thread

Model									L	M	N	P
Vacuum inlet direction	❶ Pad dia.	Form	❷ ^{#1} 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		
		10				B01 N01 T01	A14	Rc1/8 NPT1/8 NPTF1/8	—	12	13	
		20										
		30										
		50										

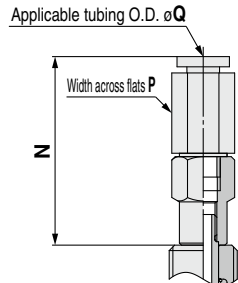
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

With buffer $\varnothing 10$ 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

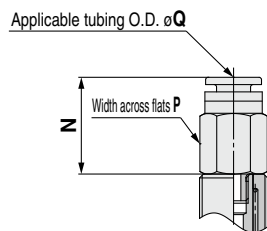
⑥ Connection thread (Male thread)

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

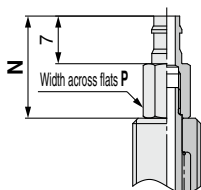
Model								N	P	Q	Fitting part min. hole size						
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread										
ZP	T	C	N S U F GN GS	J K	10	04	A10	27.7	8	4	ø2.5						
					13												
					16												
					20												
					25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

Dimensions Per Vacuum Inlet: Barb Fitting

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

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

Vacuum inlet: Barb fitting



Construction	p. 118
Buffer Assembly	p. 124

Dimensions/Models

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

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

①

②

④

⑥ Connection thread
(Male thread)

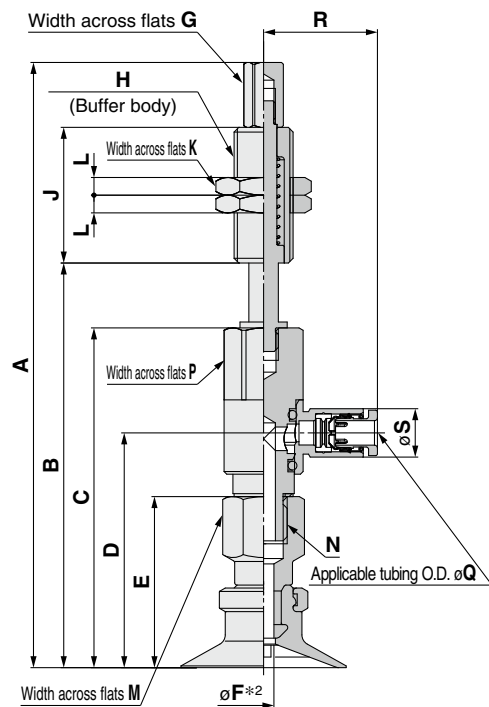
Buffer specification ③

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 *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 06	A10	91	57						6	M10 x1	23				
					20			129	67								51				
					30			139	77	46	29.9	21									
					40			175	87												
					50			185	97				2.5								
					10			91.5	57.5									23		8	M5 0.8
					20			129.5	67.5									51			
					30			139.5	77.5	46.5	30.4	21.5									
					40			175.5	87.5												
					50			185.5	97.5												
					10	102.6	68.6														
					20	140.6	78.6														
					30	150.6	88.6	57.6	39.8	29											
					40	186.6	98.6														
					50	196.6	108.6				3.5										
					10	103.1	69.1										12	M8 1.2			
					20	141.1	79.1														
					30	151.1	89.1	58.1	40.3	29.5											
					40	187.1	99.1														
					50	197.1	109.6														
					10	140.6	72.6														
					20	137.6	82.6	60.6	42.8	32											
					30	147.6	92.6														
					50	192.6	112.6														
					10	141.6	73.6														
					20	138.6	83.6	61.6	43.8	33											
					30	148.6	93.6														
					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
					30	06		12	4	19.3	8.2	ø3
									6	20.5	10.4	ø4.5
					40	08		16	8	23.5	13.2	ø6
					50			12	6	20.5	10.4	ø4.5
					10	A14	16	8	23.5	13.2	ø6	
												20
					20	06	A14	12	6	20.5	10.4	ø4.5
					30	08	A14	16	8	23.5	13.2	ø6
40	08	A14	16	8	23.5	13.2	ø6					
								50				

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

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

Dimensions/Models

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

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

①

②

④

⑥ Connection thread
(Male thread)

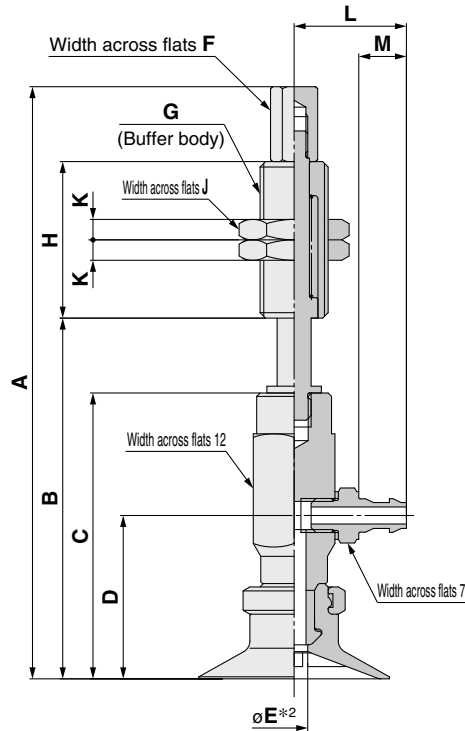
Buffer specification ③

J	Rotating
K	Non-rotating

A10	M10 x 1
A14	M14 x 1

⑤ Vacuum inlet
(Barb fitting)

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



Construction	p. 118
Buffer Assembly	p. 126

Model								A	B	C	D	*2 E	F	G	H	J	K
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread										
ZP	Y	C	N S U F GN GS	J K	10	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			23			
					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	14	3		
					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				23				
					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	19	4		
					20	123.5	68.5						75				
					30	133.5	78.5						50				
					40	178.5	98.5						75				
					50	127.5	59.5	47.5	29.5					75			
					10	127.5	59.5										
					20	124.5	69.5										
					30	134.5	79.5										
					40	179.5	99.5										
					50												

Dimensions Per Vacuum Inlet

Model								L	M	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② Material ^{*1}	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ 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



How to Order

Dimensions/ Models	Construction	Mounting Bracket Assembly
p. 62	p. 119	From p. 127

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

With adapter ZP T 10 F N

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

From p. 62	p. 119	From p. 127
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From p. 65	p. 120	From p. 129
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- **Ball joint type**

1 Vacuum inlet direction

T	Vertical
R	Lateral (With One-touch fitting)

2 Pad diameter

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

5 Buffer stroke

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

3 Material

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

4 Buffer specification

J	Rotating
K	Non-rotating

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

With adapter

6 Vacuum inlet/7 Connection thread

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

⑥ Vacuum inlet			⑦ Connection thread			Pad diameter [mm]			
Type	Symbol	Size	Type	Symbol	Size	ø10 to ø16	ø20 to ø32	ø40, ø50	
Female thread	B5	M5 x 0.8	Male thread	A8	M8 x 1	○	—	—	
				A10	M10 x 1	—	○	—	
				A14	M14 x 1	—	—	○	
—	Nil	—*1	Female thread	B5	M5 x 0.8	○	○	—	
				B8	M8 x 1.25	—	○	○	
				B01	Rc1/8	—	○	○	
				N01	NPT1/8	—	○	○	
				T01	NPTF1/8	—	○	○	
				B5	M5 x 0.8	●	—	—	
One-touch fitting	04	ø4			B5	M5 x 0.8	●	●	●
	06	ø6			B8	M8 x 1.25	—	●	●
	08	ø8			B5	M5 x 0.8	—	●	●
					B8	M8 x 1.25	—	●	●

*1 Use the connection thread.

With buffer

6 Vacuum inlet

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

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

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

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

Lock ring unit

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

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

Dimensions/Models

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

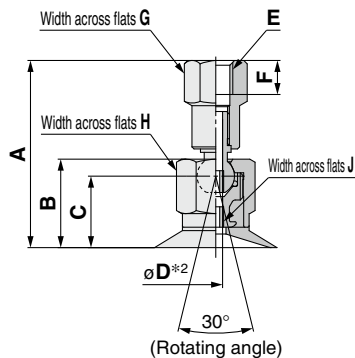
ZPT **10** F **N** - **B5**

①

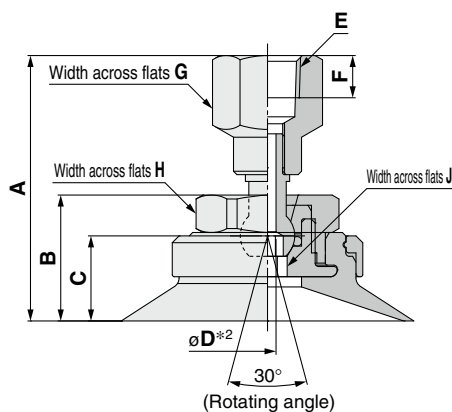
②

③ Connection thread
(Female thread)

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



$\varnothing 10$ to $\varnothing 32$



$\varnothing 40, \varnothing 50$

Model					A	B	C	D*2	E	F	G	H	J
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Connection thread									
ZP	T	F	N S U F GN GS	B5	27	12.5	10	2	M5 x 0.8	5	8	10	2
					27.5	13	10.5						
					32	15.5	12.5				9	12	3
					32.5	16	13						
				B8	36	15.5	12.5	2	M8 x 1.25	8	12	12	3
					36.5	16	13						
					39	18.5	12.5	2.5			19	5	
					40	19.5	13.5						
				B01 N01 T01	36	15.5	12.5	2	Rc1/8 NPT1/8 NPTF1/8	/	14	12	3
					36.5	16	13						
					39	18.5	12.5	2.5			19	5	
					40	19.5	13.5						

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

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

Construction p. 119

Adapter Assembly p. 127

Dimensions/Models

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

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

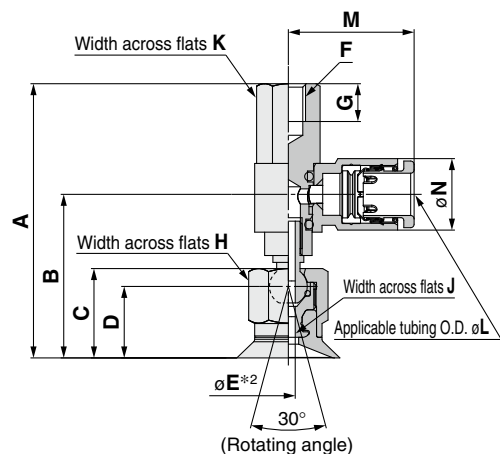
① ②

Vacuum inlet
(One-touch fitting)

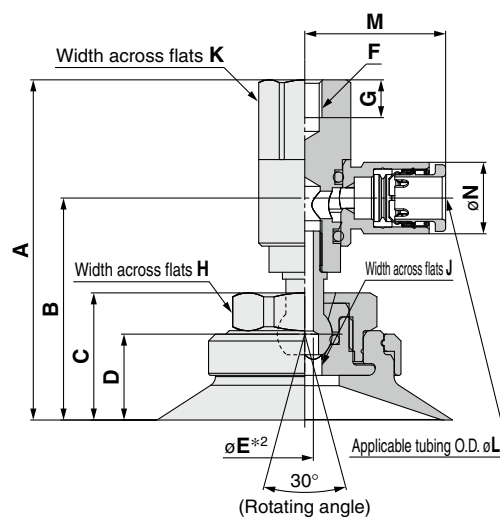
04	$\varnothing 4$
06	$\varnothing 6$
08	$\varnothing 8$

④ Connection thread
(Female thread)

B5	M5 x 0.8
B8	M8 x 1.25



$\varnothing 10$ to $\varnothing 32$



$\varnothing 40, \varnothing 50$

Model						A	B	C	D	*2 E	F	G	H	J
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	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			5.5	12	3
						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	$\varnothing 2.5$
							6	18.3	10.4	$\varnothing 4$
				06	B5	12	6	20.5	10.4	$\varnothing 4.5$
							8	23.5	13.2	$\varnothing 6$
				08	B8	16	8	23.5	13.2	$\varnothing 6$
							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

Construction p. 119

Adapter Assembly p. 128

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

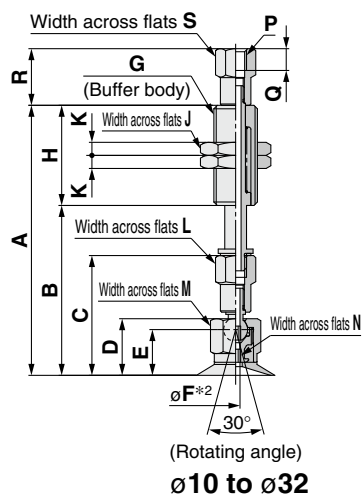
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

With buffer ø10 to ø50



ZPT 10 F N J 10 - B5 - A10

① ② ③ ④ ⑤ ⑥

Buffer specification ③

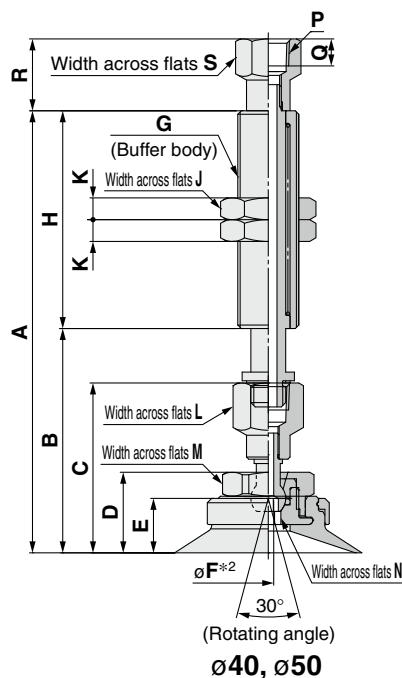
J	Rotating
K	Non-rotating

⑥ Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

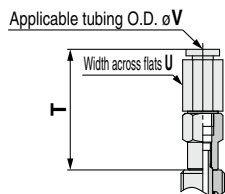
⑤ Vacuum inlet

			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

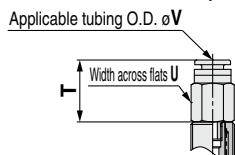


Model																									
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread	A	B	C	D	E	*2 F	G	H	J	K	L	M	N	P	Q	R	S	
ZP	10	T	F	N	10	B5	A10	61.5	38.5						23										
					20			99.5	48.5						51										
					30			109.5	58.5	27	12.5	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	
					20			100	49						51										
					30			110	59	27.5	13	10.5			77										
					40			146	69																
					50			156	79																
	13	16	F	N	10	B5	A10	98.5	48.5						50									16.5	
					20			108.5	58.5	36	15.5	12.5			75								12		
					30			118.5	68.5																
					50			163.5	88.5																
					10			99	49				2		50				12	3			16.5		
					20			109	59	36.5	16	13													
					30			119	69						75								12		
					50			164	89																
					10	101.5	51.5						19	4	12			Rc1/8			16.5				
					20	111.5	61.5	39	18.5	12.5			50				NPT1/8				12				
					30	121.5	71.5											NPTF1/8			16.5				
					50	166.5	91.5																		
					10	102.5	52.5				2.5		75								16.5				
					20	112.5	62.5	40	19.5	13.5			50								12				
					30	122.5	72.5																		
					50	167.5	92.5						75												
	20	25	F	N	10	B01	A14	98.5	48.5						50										16.5
					20			108.5	58.5	36	15.5	12.5			75								12		
					30			118.5	68.5																
					50			163.5	88.5																
					10			99	49				2		50				12	3			16.5		
					20			109	59	36.5	16	13													
30					119			69						75								12			
50					164			89																	
10					101.5			51.5						19	4	12			Rc1/8			16.5			
20					111.5			61.5	39	18.5	12.5			50				NPT1/8				12			
30					121.5			71.5											NPTF1/8			16.5			
50					166.5			91.5																	
32	40	F	N	10	B01	A14	102.5	52.5				2.5		75									16.5		
				20			112.5	62.5	40	19.5	13.5			50							12				
				30			122.5	72.5																	
				50			167.5	92.5						75											
40	50	F	N	10	B01	A14	98.5	48.5						50									16.5		
				20			108.5	58.5	36	15.5	12.5			75								12			
				30			118.5	68.5																	
				50			163.5	88.5																	
				10			99	49				2		50				12	3			16.5			
				20			109	59	36.5	16	13														
				30			119	69						75								12			
				50			164	89																	
				10			101.5	51.5						19	4	12			Rc1/8			16.5			
				20			111.5	61.5	39	18.5	12.5			50				NPT1/8				12			
				30			121.5	71.5											NPTF1/8			16.5			
				50			166.5	91.5																	

Vacuum inlet: One-touch fitting



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

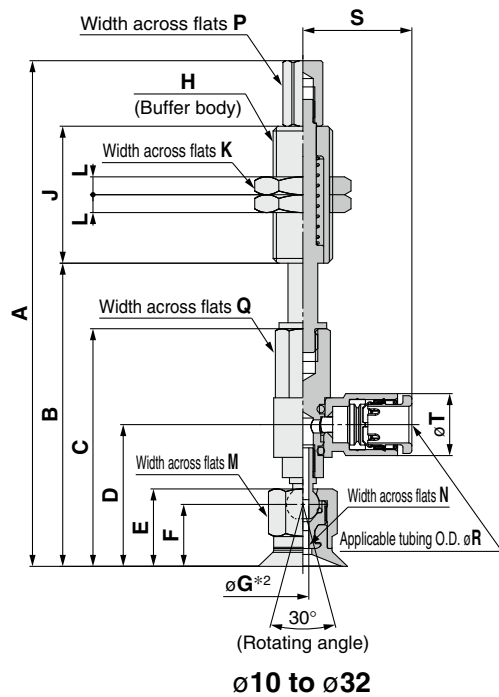


Dimensions Per Vacuum Inlet: One-touch Fitting

Model								T	U	V	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	F	N S U F G N G S	J K	10 20 30 40 50	04	A10	27.7	8	4	ø2.5
							06			10	6	
										06		
							20 25 32 40 50			10	A14	
		08				35.9		14	8	ø6		
						20 30 50		06	19.9	12		6
		08						24.9	14	8		

Dimensions/Models

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



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

Buffer specification **3**

J	Rotating
K	Non-rotating

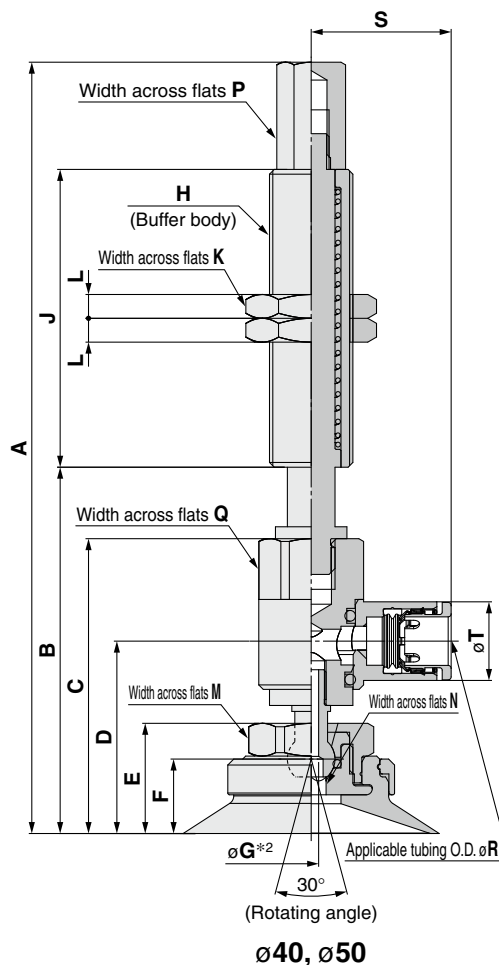
6 Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

5 Vacuum inlet (One-touch fitting)

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

Model																									
	Vacuum inlet direction	① Pad dia.	Form	② Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread	A	B	C	D	E	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							14	3	10	2	6				
						50			178.5	90.5							23								
						10			85	51					2	M10 x 1									
						20			123	61							51								
						30			133	71	40	23.9	13	10.5			77								
						40			169	81															
						50			179	91															
		10				126.5	58.5																		
		20				123.5	68.5																		
		30				133.5	78.5	46.5	29.3	15.5	12.5			50											
		40				178.5	98.5							75											
		50				127	59						2								12	3			
		10				124	69							50											
		20				134	79	47	29.8	16	13														
		30				179	99							75											
		40				129.5	61.5							M14 x 1	19	4									
		50				126.5	71.5								50										
		10				136.5	81.5	49.5	32.3	18.5	12.5														
		20				181.5	101.5								75										
		30				130.5	62.5							2.5											
		40				127.5	72.5																		
		50				137.5	82.5	50.5	33.3	19.5	13.5				50										
							182.5	102.5																	



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	10 13 16	F	N S U F G N S	J K	10 20 30 40 50	04 06	A10	8	4	17.5	8.2	ø2.5	
										6	18.3	10.4	ø4	
										12	6	20.5	10.4	ø4.5
										16	8	23.5	13.2	ø6
		20 25 32 40 50				06 08	A14	12	6	20.5	10.4	ø4.5		
								16	8	23.5	13.2	ø6		
								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

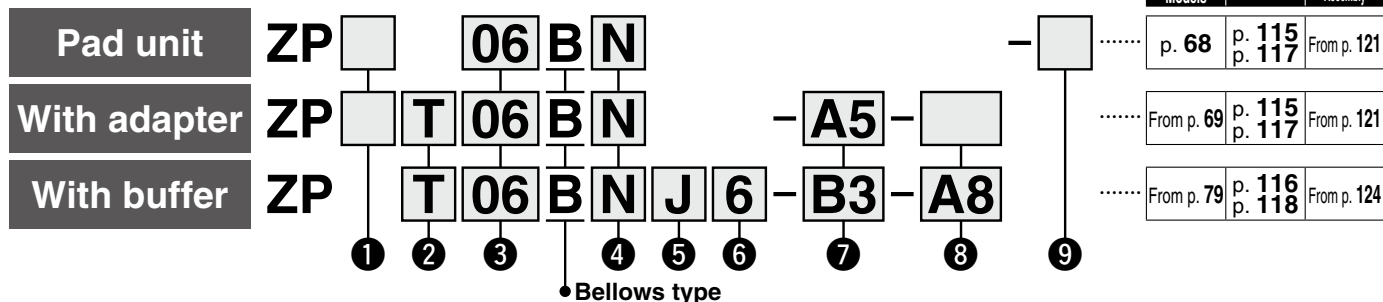
Construction p. 120

Buffer Assembly p. 130



Basic Pad Bellows Type ZP Series

How to Order



Dimensions/ Models	Construction	Mounting Bracket Assembly
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From p. 69	p. 115 p. 117	From p. 121
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

⑤ Buffer specification

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

*1 Only for pad diameters ø6 and ø8

⑥ Buffer stroke

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

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

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

With adapter

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

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

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

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

Type	Symbol	Size	Pad diameter [mm]				
			ø6, ø8	ø10 to ø16	ø20 to ø32	ø40, ø50	
Male thread	A5	M5 x 0.8	●△	○*1●△	—	—	
	A6	M6 x 1	●△	—	○*1●△	—	
	A8	M8 x 1	—	—	○*1●△	○*1●△	
Female thread	B4	M4 x 0.7	●△	—	—	—	
	B5	M5 x 0.8	●△	●△	●△	—	
	B6	M6 x 1	—	●△	—	—	
	B8	M8 x 1.25	—	—	●△	●△	

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

With buffer

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

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

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

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

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

⑨ Lock ring

Symbol	Pad diameter [mm]	
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

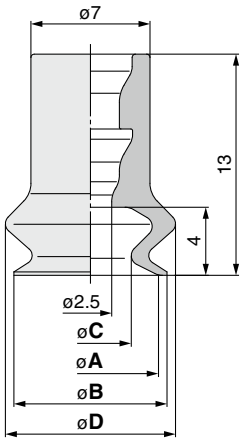
□: Nil/Brass S/Stainless steel

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

Dimensions/Models

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

ZP **06** B **N**
① ②



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

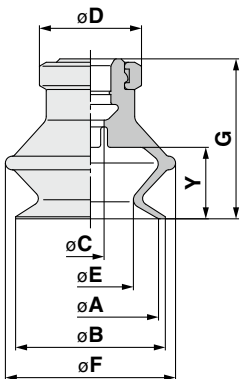
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

Construction p. 115

Mounting Bracket Assembly From p. 121

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

ZP **10** B **N**
① ② ③



① Lock ring material

Nil	Brass
S	Stainless steel (Stainless steel 304)

Model				A	B	C	D	E	F	G	Y
①	②	③	④								
Lock ring material	Pad dia.	Form	Material								
ZP	Nil	S	B	N	10	12	13	5.5	13.5	16	5.5
					13	15		8.7	19	18.5	7.5
					16	18		10	21	20	8.5
					20	22		12.6	25	23.5	10.5
					25	27	15	16	28	24	
					32	34		18.9	37	29	
					40	43		24.4	47	34	16
					50	53		33.4	57	38	19
							7				
							18				

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

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Mounting Bracket Assembly From p. 121

Model
Selection

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

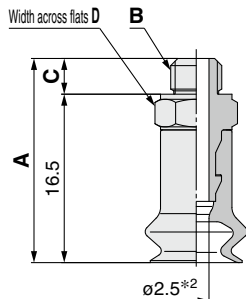
Construction

Mounting
Bracket
Assembly

Precautions

Dimensions/Models

With adapter ø6 to ø8



Construction p. 115

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)

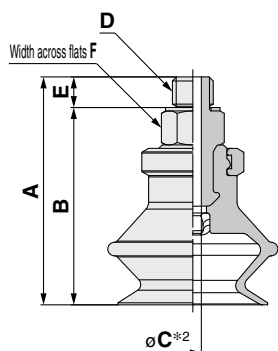
A5	M5 x 0.8
A6	M6 x 1

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

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

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

With adapter ø10 to ø50



Construction p. 117

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

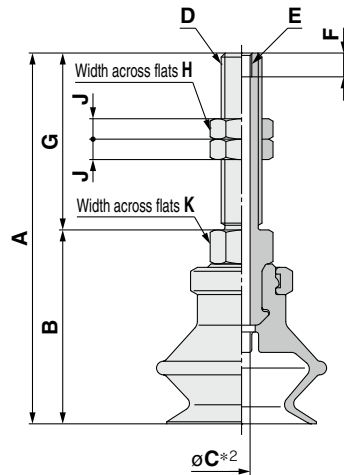
Model						A	B	C*2	D	E	F
①	②	③	④	⑤	⑥						
Adapter material	Vacuum inlet direction	Pad dia.	Form	Material	Vacuum inlet						
ZP	Nil S	T	B	N S U F GN GS	AS5	25	21.5	2.5	M5 x 0.8	3.5	8
						27.5	24				
						29	25.5				
						32.5	29				
						33	29.5				
						38	34.5				
					AS6	26	21.5	2.5	M6 x 1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



Construction p. 117

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	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	
						13	44.5									23.5
						16	46									25
						10	47									21
					13	A6	49.5	23.5	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	8
					16		51	25								
					20		54.5	28.5								
					25		55	29								
					32		60	34								
					40		66	40								
					50		70	44								
					20	A8	49.5	33.5	4	M8 x 1	M5 x 0.8	5	16	12	4	12
					25		50	34								
					32		55	39								
					40		56	40	4.2							
					50		60	44								

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

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

Model
Selection

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

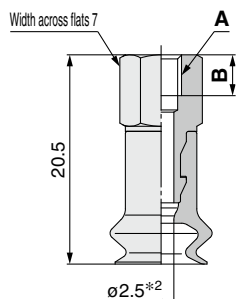
Construction

Mounting
Bracket
Assembly

Precautions

Dimensions/Models

With adapter ø6 to ø8



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Adapter Assembly p. 121

ZP T 06 B N - B4

① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Female thread)

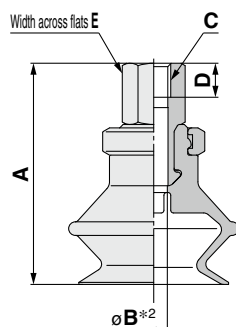
B4	M4 x 0.7
B5	M5 x 0.8

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

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

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

With adapter ø10 to ø50



Construction p. 117

Adapter Assembly p. 121

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		
						27.5						
						29						
						32.5	4					
						33						
						38						
					B6	25	2.5	M6 x 1	6	8		
						27.5						
						29						
						32.5	4					
						33						
						38						
						47.5	4.9				12	
						51.5						
						38.5						3.5
						39						
					44							
					47.5	6.6						
					51.5							
					BG01		31	2.5	G1/8	7.4	14	
						33.5						
						35						
						38.5	4					
						39						
						44						
					BG02	53.5	7	G1/4	11	17		
						57.5						
					B01 N01*3 T01*3	31	2.5	Rc1/8 NPT1/8 NPTF1/8	—	12		
						33.5						
						35						
						38.5	3.5					
						39						
						44						
						47.5	7					
						51.5						

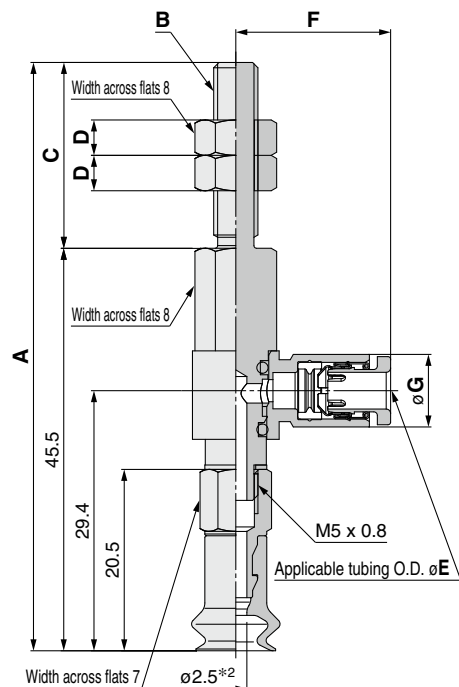
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

*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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Adapter Assembly	p. 122

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

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

4 Connection thread
(Male thread)

A5	M5 x 0.8
A6	M6 x 1

Model						A	B	C	D
Vacuum inlet direction	1 Pad dia.	Form	2 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
					A5	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 Material	3 Vacuum inlet	4 Connection thread				
ZP	R	06 08	B	N S U F GN GS	04	4	17.5	8.2	$\varnothing 2.5$
					A5 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 $\phi 10$ to $\phi 50$

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

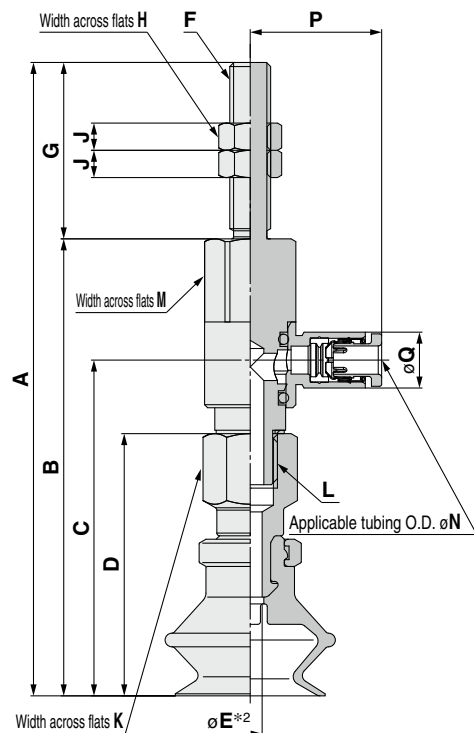
① ②

Vacuum inlet
(One-touch fitting)

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

④ Connection thread
(Male thread)

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



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Adapter Assembly p. 122

Model						A	B	C	D	*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							
					A6	78.5	52.5	36.4	27.5	2.5	M6 x 1	26			8	M5 x 0.8
						80	54	37.9	29							
						93	67.1	49.3	38.5							
						93.5	67.6	49.8	39	3.5		8	4			
						98.5	72.6	54.8	44		M8 x 1.25	25.9			12	M8 x 1.25
						102	76.1	58.3	47.5							
						106	80.1	62.3	51.5	4						
						83	67.1	49.3	38.5							
					A8	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

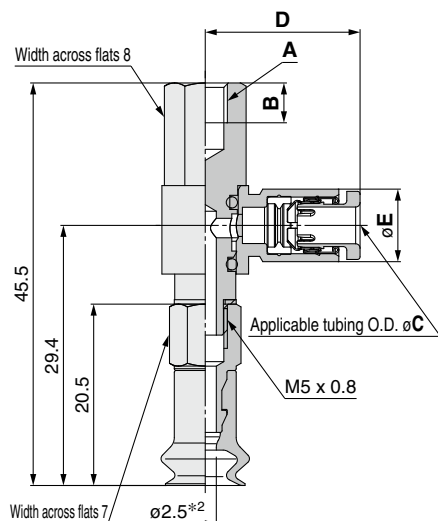
Model						M	N	P	Q	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread					
ZP	R	B	N S U F GN GS	04	A5	8	4	17.5	8.2	$\phi 2.5$
				06	A6		6	18.3	10.4	$\phi 4$
				06	A6	12	4	19.3	8.2	$\phi 3$
				08	A8		6	20.5	10.4	$\phi 4.5$
				06	A6	16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



Construction	p. 115
Adapter Assembly	p. 122

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	M4 x 0.7	4.5
					06	M5 x 0.8	5.5

Dimensions Per Vacuum Inlet

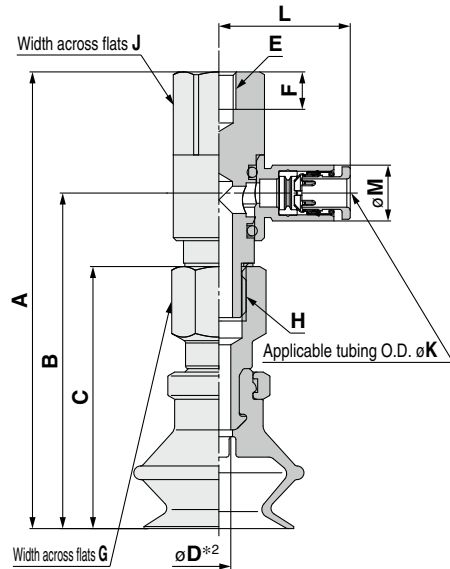
Model						C	D	E	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread				
ZP	R	06 08	B	N S U F GN GS	04	4	17.5	8.2	$\varnothing 2.5$
					06	6	18.3	10.4	$\varnothing 4$

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



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Adapter Assembly p. 122

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

1	2	3	4
04	06	08	
$\phi 4$	$\phi 6$	$\phi 8$	

Vacuum inlet
(One-touch fitting)

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 Material	③ Vacuum inlet	④ Connection thread										
ZP	R	B	N S U F G N S	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	3.5			12	M8 x 1.25		
						67.6	49.8	39							
						72.6	54.8	44							
					B6	50	33.9	25	2.5	M6 x 1	6.5	8	M5 x 0.8		
						52.5	36.4	27.5							
						54	37.9	29							
						67.1	49.3	38.5	3.5			12	M8 x 1.25		
						67.6	49.8	39							
						72.6	54.8	44							
					B8	67.1	58.3	47.5	4	M8 x 1.25	8.5	12	M8 x 1.25		
						80.1	62.3	51.5							
						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			M8 x 1.25	8.5	12	M8 x 1.25
					80.1	62.3	51.5								

Dimensions Per Vacuum Inlet

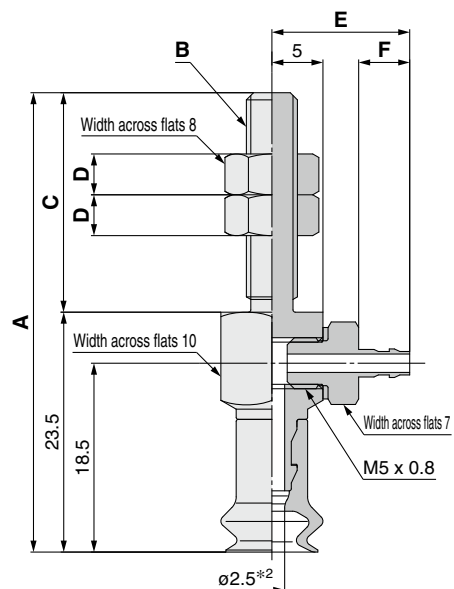
Model						J	K	L	M	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Vacuum inlet	④ Connection thread					
ZP	R	10	B	N S U F G N S	04	8	4	17.5	8.2	ø2.5
		13			B5		6	18.3	10.4	ø4
		16			B6	12	4	19.3	8.2	ø3
		20			B5		6	20.5	10.4	ø4.5
		25			B6	16	8	23.5	13.2	ø6
		32			B8	12	6	20.5	10.4	ø4.5
		40			B6	16	8	23.5	13.2	ø6
		50			B8					

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

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

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

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	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

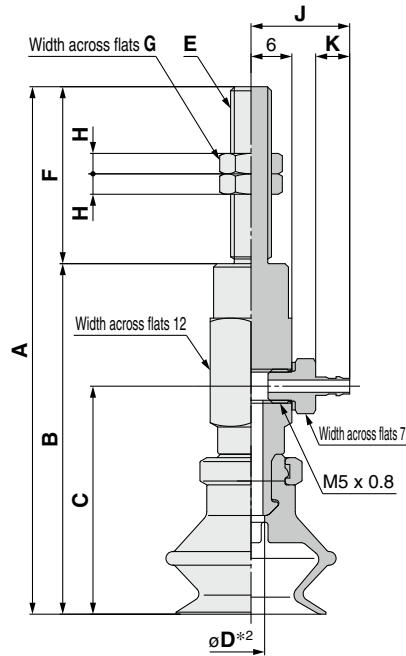
Model						E	F	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	06 08	B	N S U F GN GS	N4 U4	13.5	5	$\varnothing 1.8$
					N6 U6	15.5	7	$\varnothing 2.5$

*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 $\varnothing 50$



Construction	p. 117
Adapter Assembly	p. 123

ZPY 10 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
A8	M8 x 1

Model							A	B	C	D*2	E	F	G	H
Vacuum inlet direction	❶ Pad dia.	Form	❷ ^{#1} Material	❸ Vacuum inlet	❹ Connection thread									
ZP	Y	10	B	N S U F GN GS	N4 N6 U4 U6	A5	63	42	26	2.5	M5 x 0.8	21	8	4
		13					65.5	44.5	28.5					
		16					67	46	30					
		10				A6	68	42	26	2.5	M6 x 1	26	8	4
		13					70.5	44.5	28.5					
		16					72	46	30					
		20					77.5	51.5	33.5	3.5				
		25					78	52	34					
		32					83	57	39					
		40					88	62	44	6				
		50				92	66	48						
		20				A8	67.5	51.5	33.5		M8 x 1	16	12	4
		25					68	52	34					
		32					73	57	39					
		40					78	62	44	6				
		50					82	66	48					

Dimensions Per Vacuum Inlet

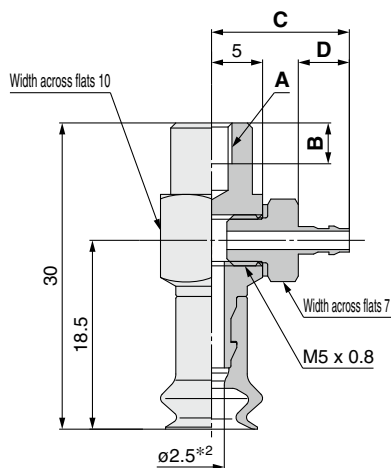
Model									
	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread	J	K	Fitting part min. hole size
ZP	Y	10	B	N S U F GN GS	N4 U4	A5	14.5	5	$\varnothing 1.8$
		13							
		16			N6 U6	A6	16.5	7	$\varnothing 2.5$
		20							
		25			N6 U6	A8	16.5	7	$\varnothing 2.5$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

*1 N: NBR, S: Silicone rubber, 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

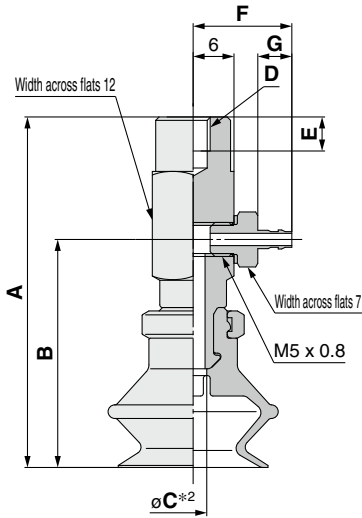
Model							C	D	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread				
ZP	Y	06 08	B	N S U F GN GS	N4 U4	B4 B5	13.5	5	$\varnothing 1.8$
					N6 U6		15.5	7	$\varnothing 2.5$

*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)

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	❶ Pad dia.	Form	❷ Material	❸ Vacuum inlet	❹ Connection thread					
ZP	Y	B	N S U F GN GS	N4 N6 U4 U6	B5	42	26	2.5	M5 x 0.8	5
						44.5	28.5			
						46	30			
						51.5	33.5	3.5		
						52	34			
						57	39			
					B6	42	26	2.5	M6 x 1	6
						44.5	28.5			
						46	30			
						51.5	33.5	3.5		
						52	34			
						57	39			
						62	44	6		
						66	48			
					B8	51.5	33.5	3.5	M8 x 1.25	8
						52	34			
						57	39			
						62	44	6		
						66	48			

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	B	N S U F GN GS	N4 U4	B4	14.5	5	$\varnothing 1.8$
						16.5	7	$\varnothing 2.5$
				N4 U4	B5	14.5	5	$\varnothing 1.8$
						16.5	7	$\varnothing 2.5$
				N6 U6	B6	14.5	5	$\varnothing 1.8$
						16.5	7	$\varnothing 2.5$
				N6 U6	B8	14.5	5	$\varnothing 1.8$
						16.5	7	$\varnothing 2.5$

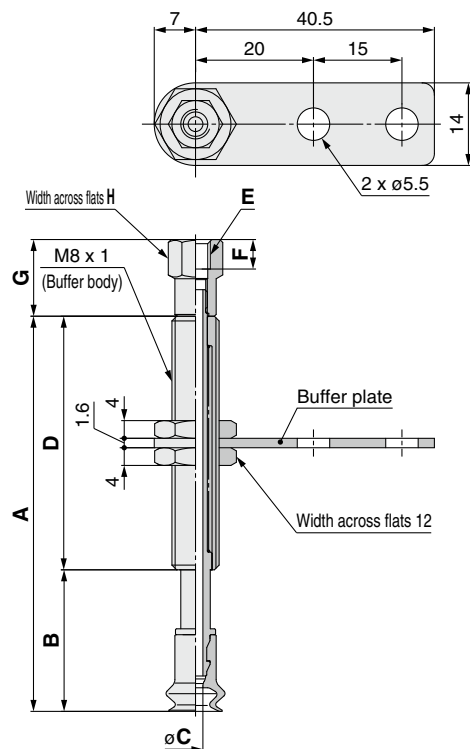
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

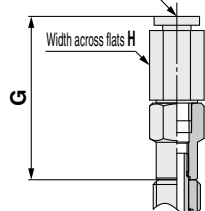
With buffer ø6 to ø8

The drawings show the type with a buffer plate.

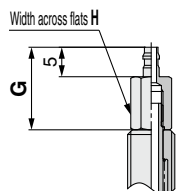


Vacuum inlet: One-touch fitting

Applicable tubing O.D. øJ



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	ø4	One-touch fitting	KQ2H04-M5N
06	ø6	One-touch fitting	KQ2H06-M5N
N4	For ø4 nylon tubing	Barb fitting	
U4	For ø4 soft tubing	Barb fitting	

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

Dimensions Per Vacuum Inlet: Female Thread

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

Dimensions Per Vacuum Inlet: One-touch Fitting

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

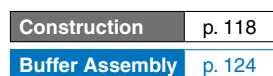
Dimensions Per Vacuum Inlet: Barb Fitting

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 Rotating Buffer (J)

2 Non-rotating Buffer (K)

3 Buffer specification

4 Vacuum inlet (B5)

5 Vacuum inlet (B01, N01, T01)

6 Connection thread (A10, A14)

Buffer specification	
J	Rotating
K	Non-rotating

Vacuum inlet (Female thread)	
B5	M5 x 0.8
B01	Rc1/8
N01	NPT1/8
T01	NPTF1/8

Connection thread (Male thread)	
A10	M10 x 1
A14	M14 x 1

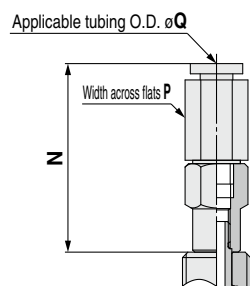
Dimensions Per Vacuum Inlet: Female Thread

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber
*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 B N J 10 - 04 - A10

① ② ③ ④ ⑤ ⑥

Buffer specification ③

J	Rotating
K	Non-rotating

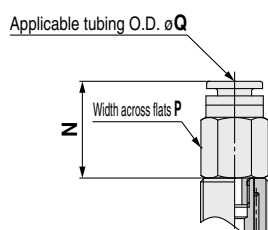
Connection thread (Male thread)

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	⑥ Connection thread				
ZP	T	B	N S U F GN GS	J K	10	04	A10	27.7	8	4	$\varnothing 2.5$
					20						
					30						
					40				10	6	
					50	06					
					10	06	A14	31.8	10	6	$\varnothing 4.5$
					20	08		35.9	14	8	$\varnothing 6$
					30	06		19.9	12	6	$\varnothing 3$
					50	08		24.9	14	8	

Dimensions Per Vacuum Inlet: Barb Fitting

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

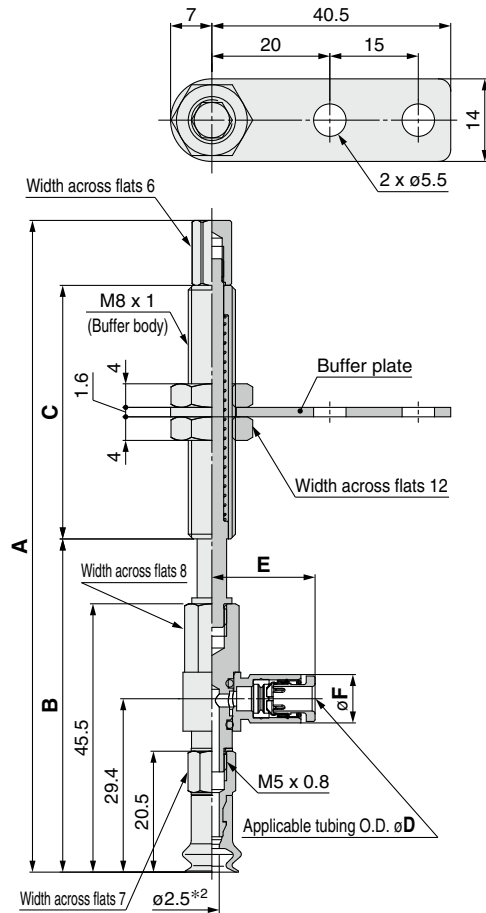
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

Construction	p. 118
Buffer Assembly	p. 124

Dimensions/Models

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

The drawings show the type with a buffer plate.



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

Buffer specification

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

6 Connection thread
(Male thread)

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

5 Vacuum inlet
(One-touch fitting)

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

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

Dimensions Per Vacuum Inlet

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

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Buffer Assembly p. 125

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

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

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

①

②

④

⑥

Connection thread
(Male thread)

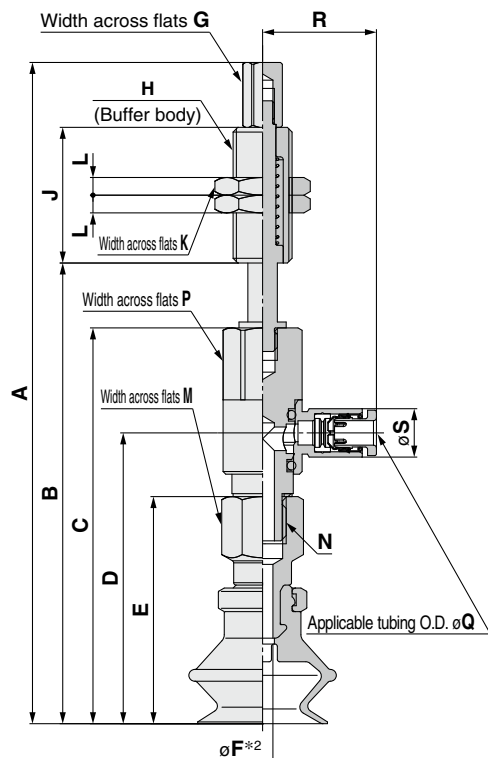
Buffer specification ③

J	Rotating
K	Non-rotating

⑤ Vacuum inlet
(One-touch fitting)

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

A10	M10 x 1
A14	M14 x 1



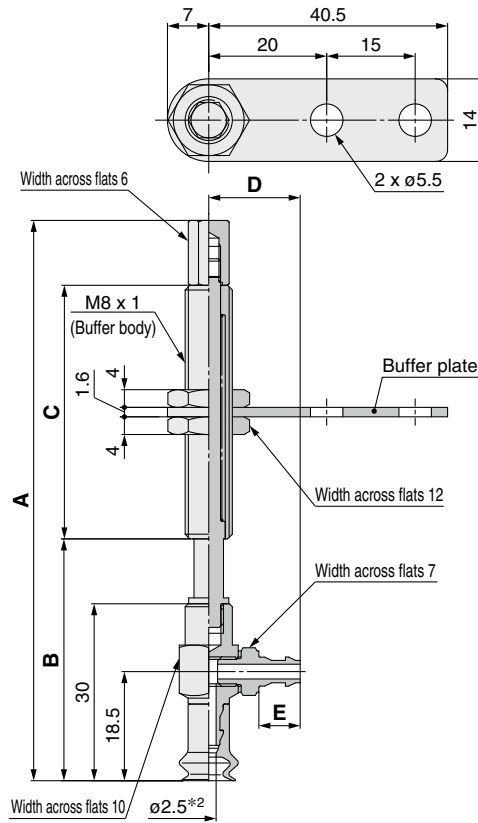
Construction	p. 118
Buffer Assembly	p. 125

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 06		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						
						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							23						
						10			99	65													
						20			137	75							51						
						30			147	85	54	37.9	29										
						40			183	95							77						
						50			193	105													
						10			A10	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									
						40				196.1	108.1							77					
						50				206.1	118.1							23					
		10				112.6	78.6																
		20				150.6	88.6							51									
		30				160.6	98.6	67.6		49.8	39	3.5						12	M8 x 1.25				
		40				196.6	108.6							77									
		50				206.6	118.6																
		10				117.6	83.6							23									
		20				155.6	93.6							51									
		30				165.6	103.6	72.6	54.8	44													
		40				201.6	113.6							77									
		50				211.6	123.6																
		10				A14	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							75	19	4	12	M8 x 1.25				
		50					160.1	92.1															
		10					157.1	102.1	80.1	62.3	51.5				50								
		20					167.1	112.1															
		30					167.1	112.1															
		40					212.1	132.1							75								
		50																					
13				10																			
				20																			
				30																			
				40																			
				50																			
				10																			
				20																			
				30																			
16				10																			
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25				10																			
				20																			
				30																			
				40																			

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**

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	06 08	B	N S U F GN GS	J K JN KN	6	64	38	15
						10	95	41	43
						15	100	46	
						25	110	56	

Dimensions Per Vacuum Inlet

Model							D	E	Fitting part min. hole size
Vacuum inlet direction	1 Pad dia.	Form	2 ^{*1} Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet			
ZP	Y	06 08	B	N S U F GN GS	J K JN KN	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

Construction p. 116

Buffer Assembly p. 126

Model
Selection

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

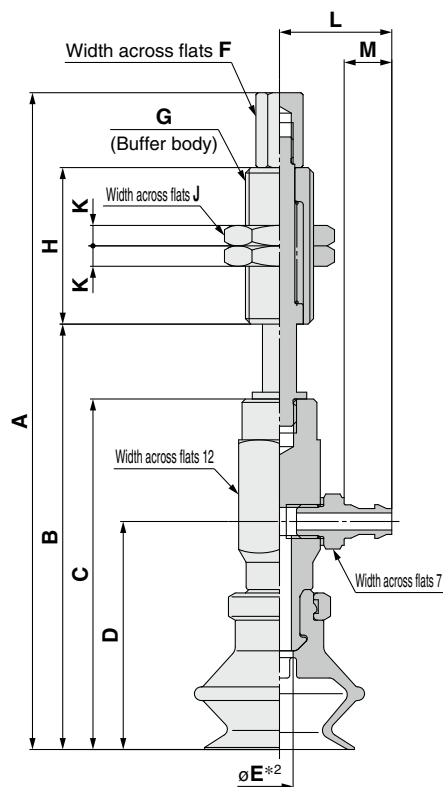
Construction

Mounting
Bracket
Assembly

Precautions

Dimensions/Models

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



Construction	p. 118
Buffer Assembly	p. 126

ZPY 10 B N J 10 - N4 - A10

1	2	3	4	5	6
J	Rotating	Buffer specification			Connection thread (Male thread)
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																	
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	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
					20			125	63								
					30			135	73								
					40			171	83								
					50			181	93								
					10			89.5	55.5	44.5	28.5						
					20			127.5	65.5								
					30			137.5	75.5								
					40			173.5	85.5								
					50			183.5	95.5	46	30						
					10			91	57								
					20			129	67								
					30			139	77								
					40			175	87	51.5	33.5						
					50			185	97								
					10			96.5	62.5								
					20			134.5	72.5								
					30			144.5	82.5	51.5	33.5						
					40			180.5	92.5								
					50			190.5	102.5								
					10			97	63	52	34						
					20			135	73								
					30			145	83								
					40			181	93	57	39						
					50			191	103								
					10			102	68								
					20			140	78	62	44						
					30			150	88								
					40			186	98								
					50			196	108	66	48						
					10			142	74								
					20			139	84								
					30			149	94	N6 U6	A14						
					40			194	114								
					50			146	78								
					10			143	88								
					20			153	98	N6 U6	A14						
					30			153	98								
					40			153	98								
					50			198	118								

Dimensions Per Vacuum Inlet

Model								L	M	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② ^{※1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	Y	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
							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



ZP
Basic

Flat TypeFlat Type
with RibsFlat, Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

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

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

*2 Soft nylon/Polyurethane tube piping

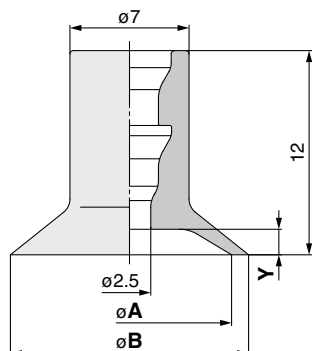
8 Connection thread			
○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)			
Type	Symbol	Size	Pad diameter
Male thread	A8	M8 x 1	All sizes ○●△

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

Dimensions/Models

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

ZP **10** UT **N**
① ②



Construction p. 115

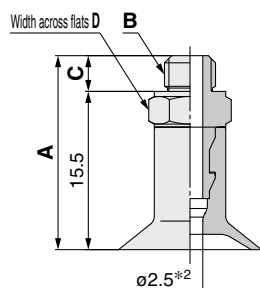
Mounting Bracket Assembly From p. 121

Model				A	B	Y
①	②	③	④			
Pad dia.	Form	Material				
10	UT	N S U F GN GS		10	11	1
13				13	14	1.5
16				16	17	

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

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

ZP **10** UT **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)

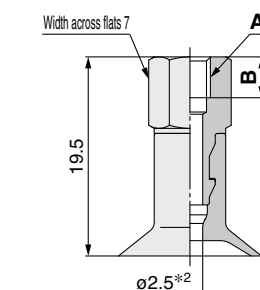
A5	M5 x 0.8
A6	M6 x 1

Model						A	B	C	D	
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 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 **10** UT **N** - **B4**
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 (Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

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

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

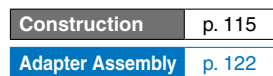
*2 Indicates the minimum hole size of the adapter or vacuum pad

With adapter/One-touch fitting Ø10 to Ø16

1 2

A5	M5 x 0.8
A6	M6 x 1

Vacuum inlet 3 (One-touch fitting)	
04	ø4
06	ø6



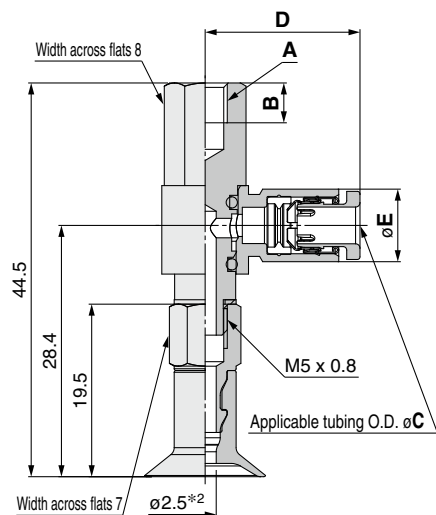
Model						A	B	C	D	
Vacuum inlet direction	1 Pad dia.	Form	2 Material	3 Vacuum inlet	4 Connection thread					
ZP	R	10 13 16	UT	N S U F GN GS	04 06	A5	65.5	M5 x 0.8	21	4
						A6	70.5	M6 x 1	26	4

Model							E	F	G	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	UT	N S U F GN GS	04	A5 A6	4	17.5	8.2	ø2.5
					06		6	18.3	10.4	ø4

*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	UT	N S U F GN GS	04	B4	M4 x 0.7	4.5
				06	B5	M5 x 0.8	5.5

Dimensions Per Vacuum Inlet

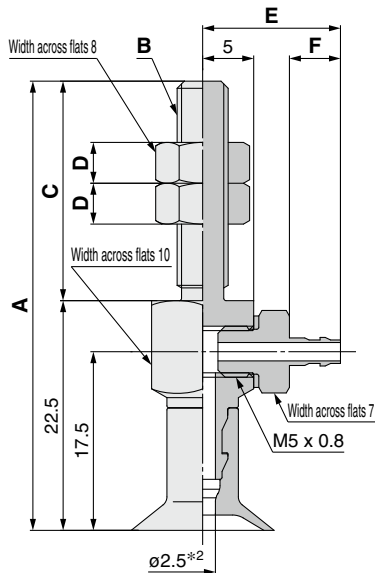
Model						C	D	E	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread				
ZP	R	UT	N S U F GN GS	04	B4	4	17.5	8.2	$\varnothing 2.5$
				06	B5	6	18.3	10.4	$\varnothing 4$

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

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

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 123

ZPY 10 UT N - N4 - A5

1

2

3

4

Vacuum inlet
(Barb fitting)

Connection thread
(Male thread)

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 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 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

Model
Selection

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

Bellevue Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

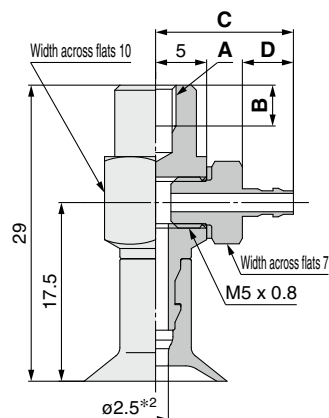
Construction

Mounting
Bracket
Assembly

Precautions

Dimensions/Models

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



Construction p. 115

Adapter Assembly p. 123

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

①

②

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 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	UT	N S U F GN GS	N4 U4	13.5	5	$\varnothing 1.8$
					N6 U6	15.5	7	$\varnothing 2.5$

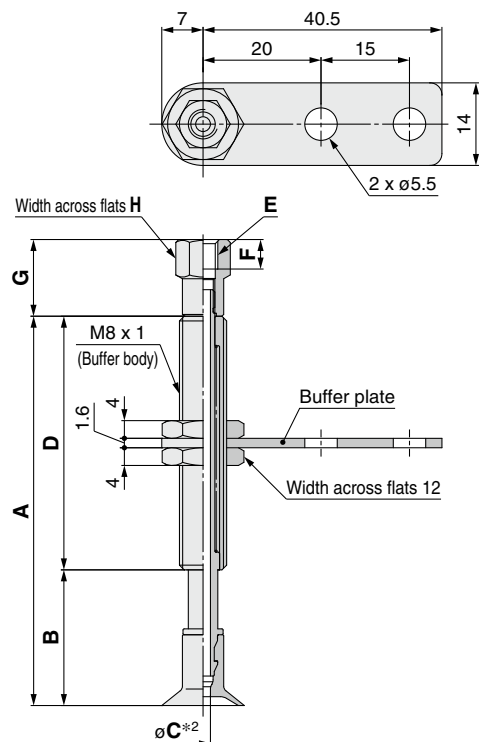
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

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

The drawings show the type with a buffer plate.



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

① ② ④ ⑥

Buffer specification ③

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

⑥ Connection thread (Male thread)

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

⑤ Vacuum inlet

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

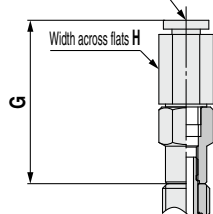
Model							A	B	C*2	D
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet				
ZP	T	10 13 16	UT	N S U F GN GS	J K JN KN	6 10 15 25	B3 B5 04 06 N4 U4	A8		15 43

Dimensions Per Vacuum Inlet: Female Thread

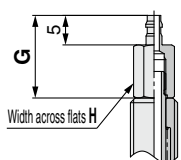
Model								E	F	G	H	
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	T	10 13 16	UT	N S U F GN GS	J K JN KN	6 10 15 25	B3	A8	M3 x 0.5	3	11	6
						B5	M5 x 0.8		5	13	8	

Vacuum inlet: One-touch fitting

Applicable tubing O.D. $\varnothing J$



Vacuum inlet: Barb fitting



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Buffer Assembly	p. 124

Dimensions Per Vacuum Inlet: One-touch Fitting

Model								G	H	J	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	10 13 16	UT	N S U F GN GS	J K JN KN	6 10 15 25	04	27.7	8	4	ø2.5
						06	A8		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	10 13 16	UT	N S U F GN GS	J K JN KN	6 10 15 25	N4 U4	A8	14	6	ø1.8

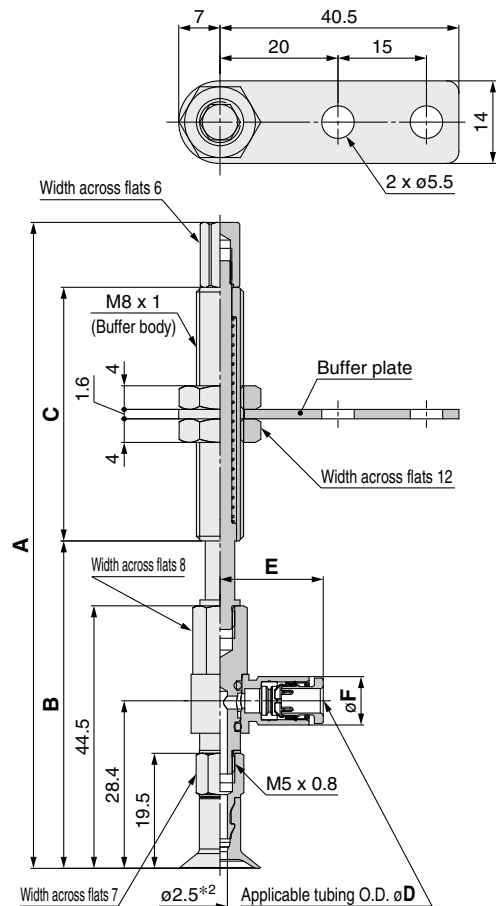
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

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

The drawings show the type with a buffer plate.



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 ^{*1} Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread			
ZP	R	UT	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	UT	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

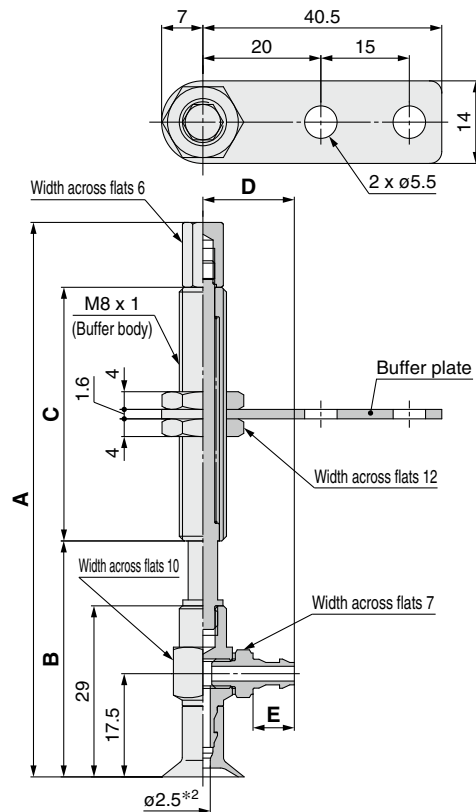
*2 Indicates the minimum hole size of the adapter or vacuum pad

Construction p. 116

Buffer Assembly p. 125

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

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



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Buffer Assembly	p. 126

Buffer specification ③	
J	Rotating
K	Non-rotating
JN	Rotating (Without buffer plate)
KN	Non-rotating (Without buffer plate)

6 Connection thread (Male thread)

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

**5 Vacuum inlet
(Barb fitting)**

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

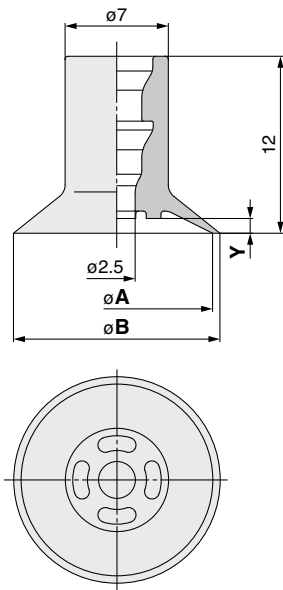
Model								A	B	C	
Vacuum inlet direction	① Pad dia.	Form	② ^{※1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	Y	10 13 16	UT	N S U F GN	J K JN KN	6	N4 N6 U4 U6	A8	63	37	15
						10			94	40	43
						15			99	45	
						25			109	55	

Model								D	E	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② st Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	Y	10 13 16	UT	N S U F GN GS	J K JN KN	6 10 15 25	N4 U4	A8	13.5	5	ø1.8
							N6 U6		15.5	7	ø2.5

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

Dimensions/Models

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



ZP **10** **CT** **N**
① ②

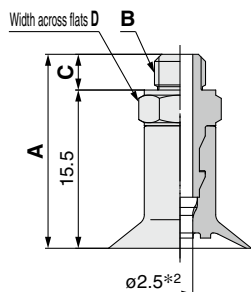
Model				A	B	Y
①	Pad dia.	Form	② Material			
ZP	10	CT	N S U F GN GS	10	11	0.8
	13			13	14	1
	16			16	17	

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

Construction p. 115

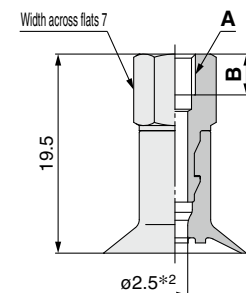
Mounting Bracket Assembly From p. 121

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



Construction p. 115

Adapter Assembly p. 121



Construction p. 115

Adapter Assembly p. 121

ZP **T** **10** **CT** **N** - **A5**
① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Male thread)

A5	M5 x 0.8
A6	M6 x 1

Model						A	B	C	D
①	Adapter material	Vacuum inlet direction	②	Form	③ Material				
ZP	Nil S	T	10 13 16	CT	N S U F GN GS	A5	M5 x 0.8	3.5	7
						A6	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** **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

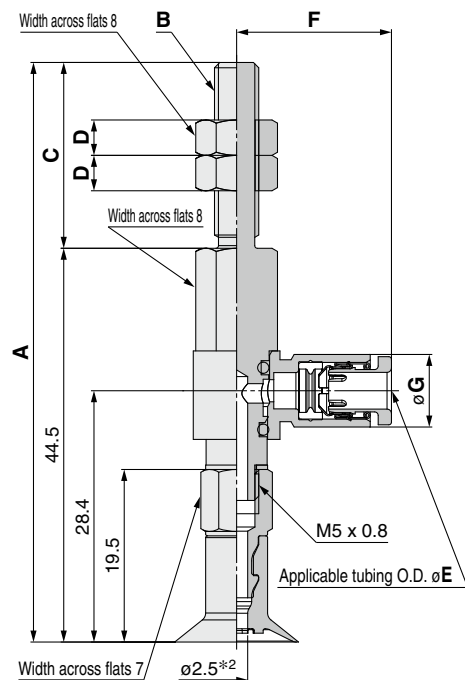
Model						A	B
①	Adapter material	Vacuum inlet direction	②	Form	③ Material		
ZP	Nil S	T	10 13 16	CT	N S U F GN GS	B4	M4 x 0.7
						B5	M5 x 0.8

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

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

Dimensions/Models

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



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

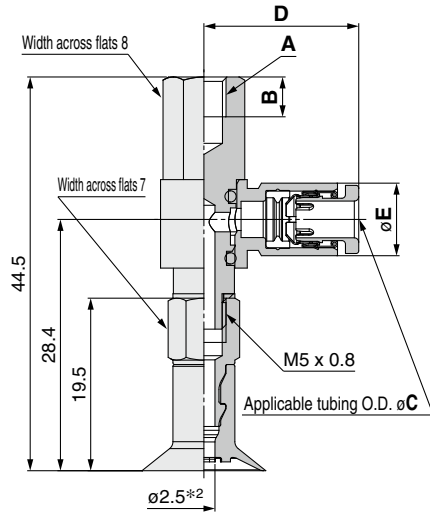
Model						E	F	G	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread				
ZP	R	10 13 16	CT	N S U F GN GS	04	4	17.5	8.2	$\varnothing 2.5$
					06	6	18.3	10.4	$\varnothing 4$

*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

③

④

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

Connection thread
(Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

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

Dimensions Per Vacuum Inlet

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

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

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

Model
Selection

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

BelloWS Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

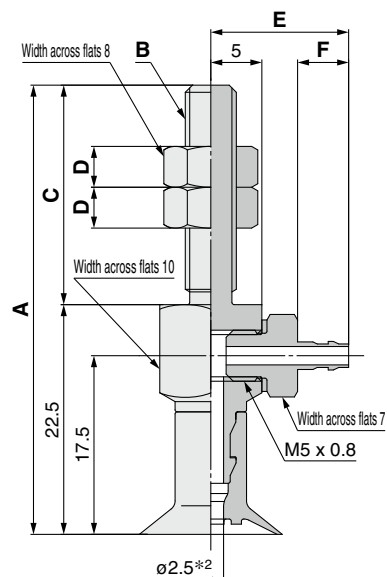
Construction

Mounting
Bracket
Assembly

Precautions

Dimensions/Models

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



Construction	p. 115
Adapter Assembly	p. 123

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

①

②

④

Connection thread
(Male thread)

Vacuum inlet
(Barb fitting)

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 N6 U4 U6	44	M5 x 0.8	21.5	4
					A5 A6	49.5	M6 x 1	27	4

Dimensions Per Vacuum Inlet

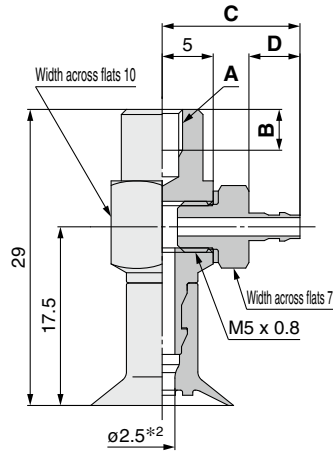
Model						E	F	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	10 13 16	CT	N S U F GN GS	N4 U4	13.5	5	$\varnothing 1.8$
					N6 U6	15.5	7	$\varnothing 2.5$

*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 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

Model
Selection

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

Construction

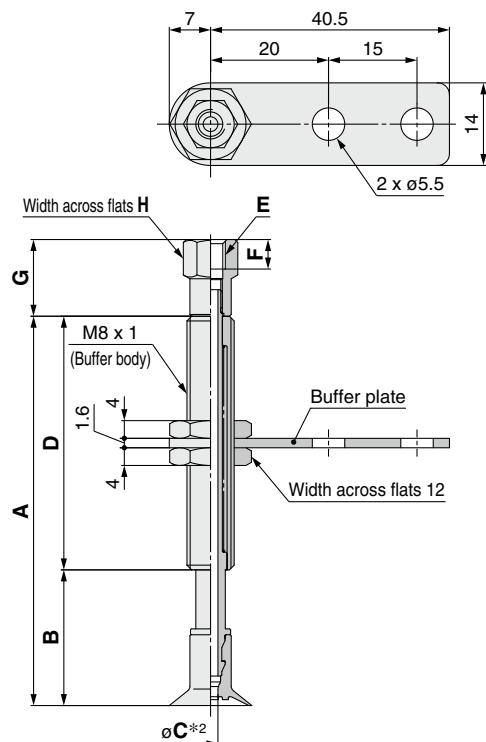
Mounting
Bracket
Assembly

Precautions

Dimensions/Models

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

The drawings show the type with a buffer plate.



ZPT **10** **CT** **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
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5 Vacuum inlet

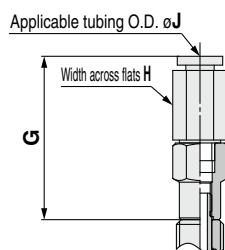
B3	M3 x 0.5	Female thread	
B5	M5 x 0.8	Female thread	
04	$\varnothing 4$	One-touch fitting	KQ2H04-M5N
06	$\varnothing 6$	One-touch fitting	KQ2H06-M5N
N4	For $\varnothing 4$ nylon tubing	Barb fitting	
U4	For $\varnothing 4$ soft tubing	Barb fitting	

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				
ZP	T	CT	N S U F GN GS	J K JN KN	6	B3	33	18	J: 2.5 K: 2	15
					10	B5	66	23		43
					15	04	71	28		
					25	06 N4 U4	81	38		

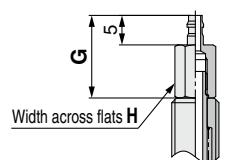
Dimensions Per Vacuum Inlet: Female Thread

Model							E	F	G	H
Vacuum inlet direction	1 Pad dia.	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet				
ZP	T	CT	N S U F GN GS	J K JN KN	6 10 15 25	B3	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				
ZP	T	CT	N S U F GN GS	J K JN KN	6 10 15 25	04	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			
ZP	T	CT	N S U F GN GS	J K JN KN	6 10 15 25	N4	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

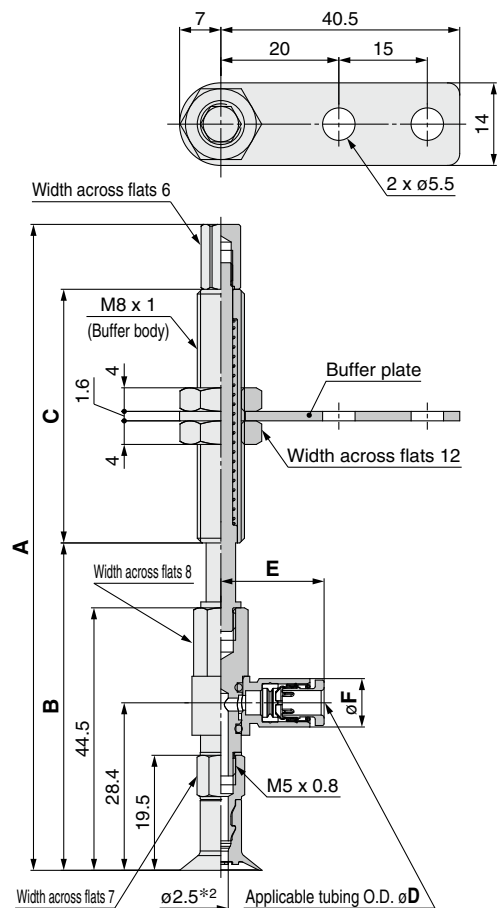
Construction p. 116

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**

⑥ Connection thread (Male thread)

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

Buffer specification ③	
J	Rotating
K	Non-rotating
JN	Rotating (Without buffer plate)
KN	Non-rotating (Without buffer plate)

04	ø4
06	ø6

Model									A	B	C
Vacuum inlet direction	① Pad dia.	Form	② ^{※1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	R	10 13 16	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 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	R	10 13 16	CT	N S U F GN GS	J K 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

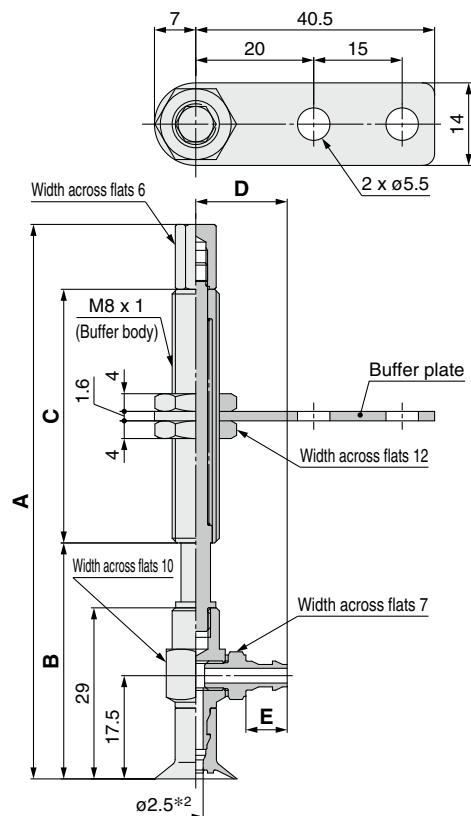
*2 Indicates the minimum hole size of the adapter or vacuum pad

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	3	4	5	6
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
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**5 Vacuum inlet
(Barb fitting)**

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

Model								A	B	C
Vacuum inlet direction	1 Pad dia.	Form	2 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread			
ZP	Y	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	CT	N S U F GN GS	J K JN KN	6	N4 U4	A8	13.5	5	$\varnothing 1.8$
					10 15 25	N6 U6		15.5	7	$\varnothing 2.5$

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

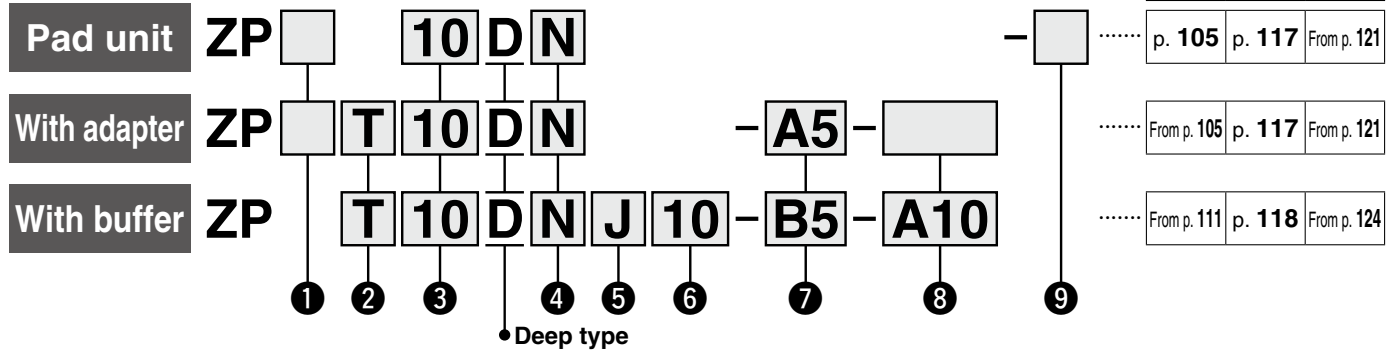
*2 Indicates the minimum hole size of the adapter or vacuum pad



Basic Pad Deep Type ZP Series



How to Order



① Adapter (Lock ring) material

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

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

② Vacuum inlet direction

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

③ Pad diameter

10	ø10
16	ø16
25	ø25
40	ø40

④ Material

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

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

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

⑤ Buffer specification

J	Rotating
K	Non-rotating

⑥ Buffer stroke

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

With adapter

⑦ Vacuum inlet

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

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

With buffer

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

⑨ Lock ring

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

Lock ring unit

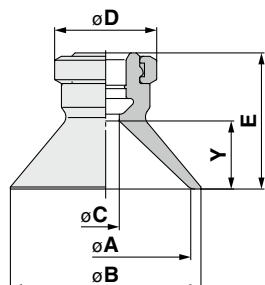
Part no.	Pad diameter [mm]
ZP□L1	ø10, ø16
ZP□L2	ø25
ZP□L3	ø40

□: Nil/Brass S/Stainless steel

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

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

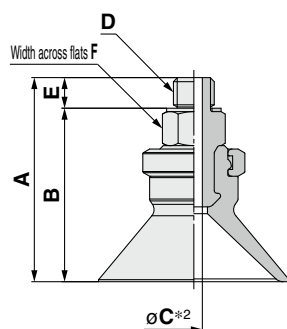
① Lock ring material

Nil	Brass
S	Stainless steel (Stainless steel 304)

Model						A	B	C	D	E	Y
	① Lock ring material	② Pad dia.	Form	③ 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		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

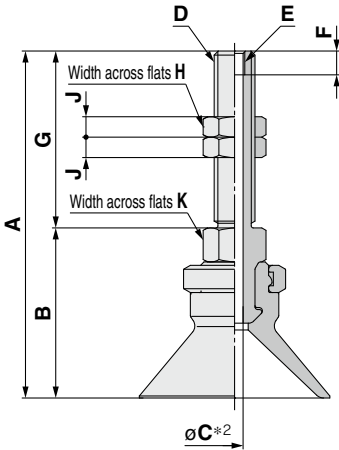
Model						A	B	C*2	D	E	F
① Adapter material	Vacuum inlet direction	② Pad dia.	Form	③ Material	④ Vacuum inlet						
ZP	Nil S	T	D	N S U F GN GS	AS5	24	20.5	2.5	M5 x 0.8	3.5	8
						25	21.5				
						29	25.5				
						25	20.5				
					AS6	26	21.5	2.5	M6 x 1	4.5	8
						30	25.5				
						40	35.5				
			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



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 *1											④ Connection thread
ZP	Nil S	T	10	D	N S U F GN GS	A5	41	20	2.5	M5 x 0.8	M3 x 0.5	3.5	21	8	4	8
			16				42	21								
			10			A6	46	20	2.5	M6 x 1	M3 x 0.5	3.5	26	8	4	8
			16				47	21								
			25			A8	51	25	4	M8 x 1	M5 x 0.8	5	16	12	4	12
			40				61	35.5								
			25				46	30	4							
			40				51	35.5								

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

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

Model
Selection

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

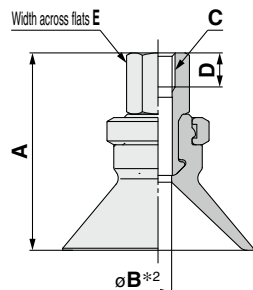
Construction

Mounting
Bracket
Assembly

Precautions

Dimensions/Models

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



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					
					B8	42.5	4.9	M8 x 1.25	8	12	
						35	3.5				
						42.5	6.6				
					BG01	30	2.5	G1/8	7.4	14	
						31					
						35					4
					BG02	48.5	7	G1/4	11	17	
						30	2.5				
						31					
					B01 N01*3 T01*3	35		3.5	Rc1/8 NPT1/8 NPTF1/8	—	12
						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

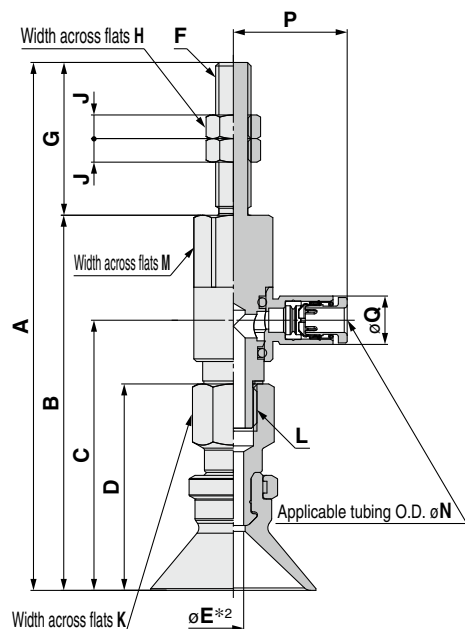
④

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								
		16				A6	75	49	32.9	24	2.5	M6 x 1	26	8	4	8	M5 x 0.8
		10					76	50	33.9	25							
		16				89.5	63.6	45.8	35	3.5	12	M8 x 1.25					
		25				97	71.1	53.3	42.5	4							
		40				A8	79.5	63.6	45.8	35	3.5	M8 x 1	16	12	4	12	M8 x 1.25
		25					87	71.1	53.3	42.5							
		40															

Dimensions Per Vacuum Inlet

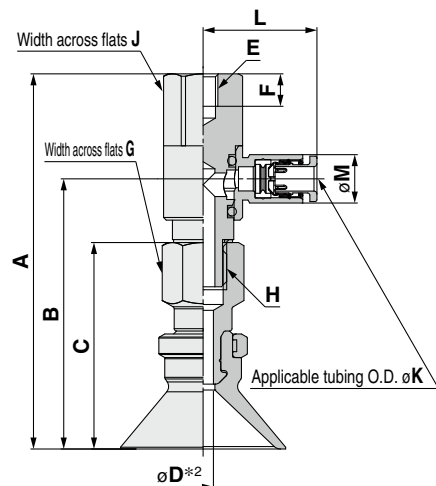
Model										M	N	P	Q	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread									
ZP	R	D	N S U F GN GS	04	A5	8					4	17.5	8.2	$\varnothing 2.5$
				06	A6	12					6	18.3	10.4	$\varnothing 4$
				08	A8	16					8	20.5	10.4	$\varnothing 4.5$

*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 $\varnothing 10$ to $\varnothing 40$



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

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

		Model						A	B	C	*2 D	E	F	G	H
		Vacuum inlet direction	① Pad dia.	Form	② Material ^{*1}	③ Vacuum inlet	④ Connection thread								
ZP	R	10	D	N S U F GN GS	04 06 08	B5	49	32.9	24	2.5	M5 x 0.8	5.5	8	M5 x 0.8	
		16					50	33.9	25						
		25					63.6	45.8	35						3.5
		10				B6	49	32.9	24	2.5	M6 x 1	6.5	8	M5 x 0.8	
		16					50	33.9	25						
		25					63.6	45.8	35						3.5
		40				B8	71.1	53.3	42.5	4	M8 x 1.25	8.5	12	M8 x 1.25	
		25					63.6	45.8	35	3.5					
		40					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	10 16	D	N S U F GN GS	04	B5	8	4	17.5	8.2	ø2.5
					06	B6		6	18.3	10.4	ø4
		25			04	B5	12	4	19.3	8.2	ø3
					06	B6		6	20.5	10.4	ø4.5
		40			08	B8	16	8	23.5	13.2	ø6
					06	B6	12	6	20.5	10.4	ø4.5
					08	B8	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

Model
Selection

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

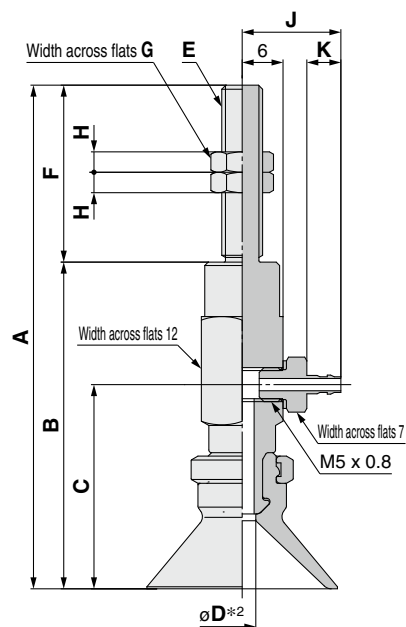
Construction

Mounting
Bracket
Assembly

Precautions

Dimensions/Models

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



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

Dimensions Per Vacuum Inlet

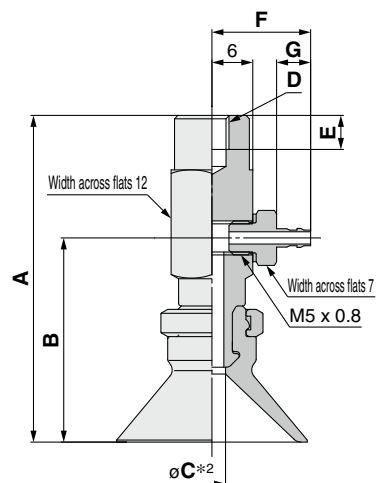
Model						J	K	Fitting part min. hole size
Vacuum inlet direction	① Pad dia.	Form	② *1 Material	③ Vacuum inlet	④ Connection thread			
ZP	Y	D	N S U F GN GS	N4 U4	A5 A6	14.5	5	$\varnothing 1.8$
						16.5	7	$\varnothing 2.5$
				N6 U6	A6 A8	16.5	7	$\varnothing 2.5$

*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	10	D	N S U F GN GS	N4 N6 U4 U6	B5	41	25	2.5	M5 x 0.8	5
	16					42	26			
	25					48	30			
	10				B6	41	25	2.5	M6 x 1	6
	16					42	26			
	25					48	30			
	40				B8	57	39	6	M8 x 1.25	8
	25					48	30			
	40					57	39			

Dimensions Per Vacuum Inlet

Model						F	G	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② ^{※1} Material	③ Vacuum inlet	④ Connection thread				
ZP	Y	10 16	D	N S U F GN GS	N4 U4	B4	14.5	5	ø1.8
					N6 U6	B5	16.5	7	ø2.5
		25			N4 U4	B5	14.5	5	ø1.8
					N6 U6	B6 B8	16.5	7	ø2.5
		40			N6 U6	B6 B8	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

Model
Selection

ZP
Basic

Flat Type

Flat Type
with Ribs

Flat,
Ball Joint Type

Bellows Type

Thin Flat Type

Thin Flat Type
with Ribs

Deep Type

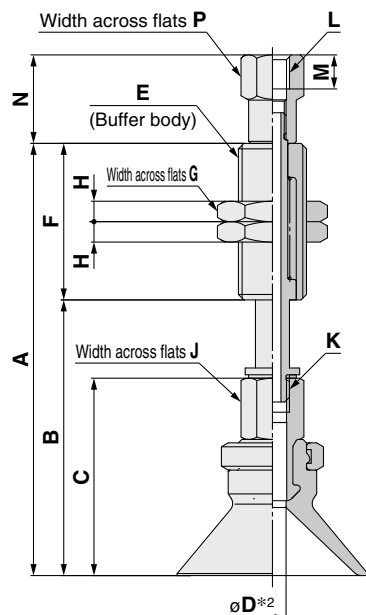
Construction

Mounting
Bracket
Assembly

Precautions

Dimensions/Models

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



Construction	p. 118
Buffer Assembly	p. 124

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

Buffer specification **3**

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	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	14	3	8	M5 x 0.8
						20			96.5	45.5				51				
						30			106.5	55.5				77				
						40			142.5	65.5				23				
						50			152.5	75.5				51				
		16				10			59.5	36.5	25			77				
						20			97.5	46.5	29			23				
						30			107.5	56.5	51							
						40			143.5	66.5	77							
						50			153.5	76.5	77							
	25	10				63.5	40.5	29	23									
		20				101.5	50.5		51									
		30				111.5	60.5		77									
		40				147.5	70.5											
		50				157.5	80.5											
	40	10				B5 B01 N01 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					75				
		30						125	75									
		50						170	95					75				

Dimensions Per Vacuum Inlet: Female Thread

Model									L	M	N	P
Vacuum inlet direction	① Pad dia.	Form	② 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
		10				B5	A14	M5 x 0.8	4.5	15	10	
		20 30 50							5	9		
		10							Rc1/8 NPT1/8 NPTF1/8	16.5		13
		20 30 50				12						
		10										
		20 30 50										

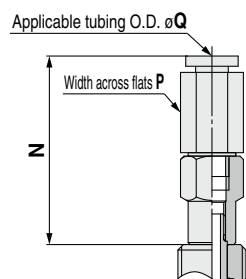
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Dimensions/Models

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

Vacuum inlet: One-touch fitting



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

Buffer specification **3**

J	Rotating
K	Non-rotating

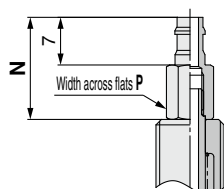
Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

5 Vacuum inlet

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

Vacuum inlet: Barb fitting



Construction	p. 118
Buffer Assembly	p. 124

Dimensions Per Vacuum Inlet: One-touch Fitting

Model								N	P	Q	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② 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	06			10	6	
						30						
						40						
						50						
						40				10	06	A14
	08	35.9	14	8	ø6							
	20	06	19.9	12	6					ø3		
	30	08	24.9	14	8							

Dimensions Per Vacuum Inlet: Barb Fitting

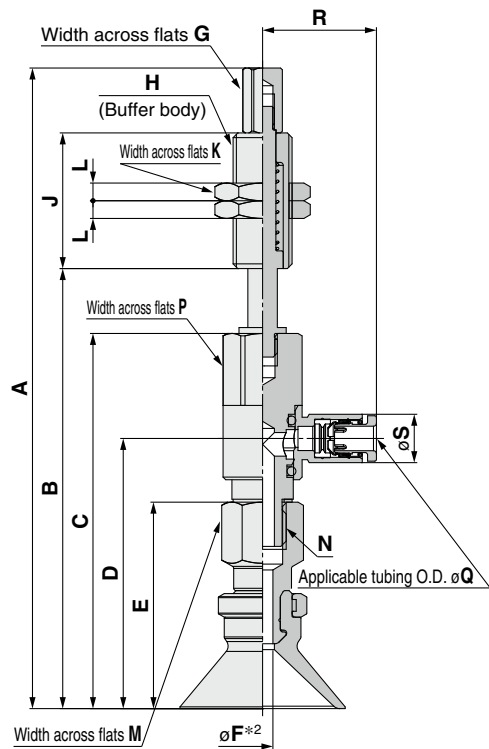
Model								N	P	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	10 16 25	D	N S U F GN GS	J K	10	N6	A10	15	6	ø2.5
						20					
						30					
	40	U6				A14	19	10			
	50										

*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



Construction p. 118

Buffer Assembly p. 125

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	ø4
06	ø6
08	ø8

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	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 x1	23	14	3	8	M5 x 0.8				
						20			132	70															
						30			142	80															
						40			178	90															
						50			188	100															
						10			95	61															
		20				133			71																
		30				143			81																
		40				179			91																
		50				189			101																
		10				108.6			74.6																
		20				146.6			84.6																
	30	156.6				94.6																			
	40	192.6				104.6																			
	50	202.6				114.6																			
	10	151.1				83.1																			
	20	148.1				93.1																			
	30	158.1				103.1																			
	50	203.1				123.1																			
	25	16				04 06 08	A14	151.1	83.1	71.1	53.3	42.5	4	10			M14 x1			50	19	4	12	M8 x 1.25	
								20	148.1											93.1					
								30	158.1											103.1					
								40	203.1											123.1					
								50	203.1											123.1					
10			151.1	83.1																					
20		148.1	93.1																						
30		158.1	103.1																						
40		203.1	123.1																						
50		203.1	123.1																						
40		25	04 06 08	A14	151.1			83.1	71.1	53.3	42.5	4	10		M14 x1	75		19	4	12					M8 x 1.25
					20			148.1								93.1									
	30				158.1	103.1																			
	40				203.1	123.1																			
	50				203.1	123.1																			
	10				151.1	83.1																			

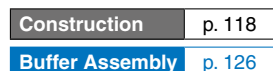
Dimensions Per Vacuum Inlet

Model								P	Q	R	S	Fitting part min. hole size		
Vacuum inlet direction	❶ Pad dia.	Form	❷ Material	❸ Buffer spec.	❹ Buffer stroke	❺ Vacuum inlet	❻ 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		A14	12	4	19.3	8.2	ø3
							06				6	20.5	10.4	ø4.5
	40	10 20 30 50				08	16	8		23.5	13.2	ø6		
						06	12	6		20.5	10.4	ø4.5		
		10 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

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



Buffer specification

J	Rotating
K	Non-rotating

Connection thread (Male thread)

A10	M10 x 1
A14	M14 x 1

5 Vacuum inlet (Barb fitting)		
N4	For ø4 nylon tubing	M-5AN-4
N6	For ø6 nylon tubing	M-5AN-6
U4	For ø4 soft tubing	M-5AU-4
U6	For ø6 soft tubing	M-5AU-6

		Model							A	B	C	D	E ^{*2}	F	G	H	J	K
		Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet										
ZP	Y	10	D	N S U F G N G S	J K	10	N4 N6 U4 U6	A10	86	52	41	25	2.5	6	M10 x 1	23	14	3
						20			124	62						51		
						30			134	72						77		
						40			170	82						23		
		50				180			92	51								
		10				87			53	77								
		20				125			63	23								
		30				135			73	51								
		40				171			83	77								
		50				181			93	23								
		10				93			59	51								
		20				131			69	77								
	16	25	30	141	79	48	30	3.5	6	M10 x 1	51	14	3					
			40	177	89						77							
			50	187	99													
			10	137	69						23							
	25	40	20	134	79	57	39	6	10	M14 x 1	50	19	4					
			30	144	89						75							
			40	189	109													
			50															

Model								L	M	Fitting part min. hole size	
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Conne ⁿ thread				
ZP	Y	10 16 25	D	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					N6 U6	A14	16.5	7	ø2.5

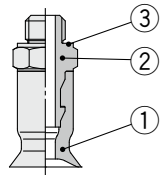
*2 Indicates the minimum hole size of the adapter or vacuum pad

Basic Pad *ZP Series* Construction

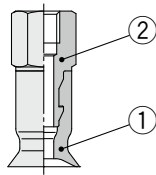
With adapter Flat type: $\varnothing 2$ to $\varnothing 8$ Bellows type: $\varnothing 6$ to $\varnothing 8$ Thin flat type/Thin flat type with ribs: $\varnothing 10$ to $\varnothing 16$

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

ZP□T□-(A5/A6)



ZP□T□-(B4/B5)

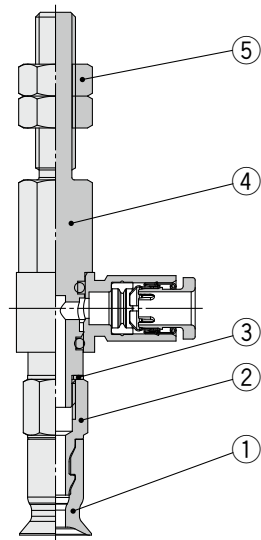


Component Parts

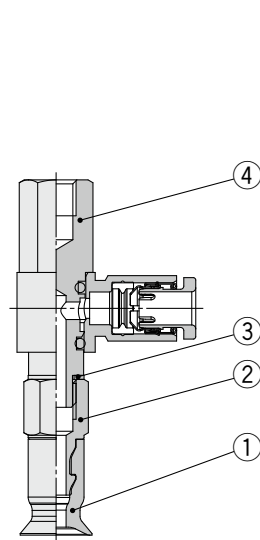
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber,	Flat type
		Urethane rubber, FKM,	Bellows type
		Conductive NBR,	Thin flat type
		Conductive silicone rubber	Thin flat type with ribs
2	Adapter	Brass (Electroless nickel plating)	ZPT
		Stainless steel	ZPST
3	Gasket	Stainless steel/NBR	ZPT
		Stainless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

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

ZPR□-(04/06)-(A5/A6)



ZPR□-(04/06)-(B4/B5)

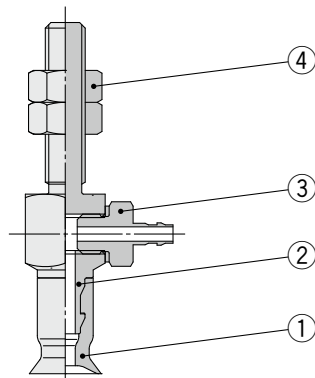


Component Parts

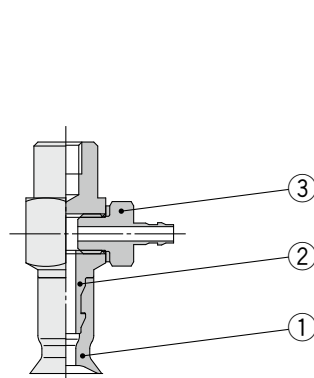
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber,	Flat type
		Urethane rubber, FKM,	Bellows type
		Conductive NBR,	Thin flat type
		Conductive silicone rubber	Thin flat type with ribs
2	Adapter	Brass (Electroless nickel plating)	
3	Gasket	Stainless steel/NBR	
4	Adapter (With One-touch fitting)	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 $\phi 8$

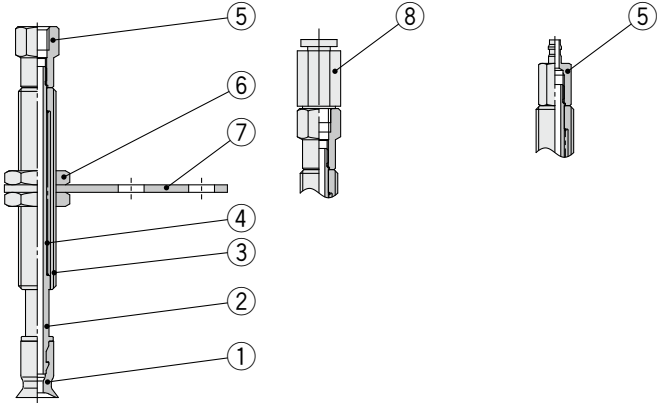
Thin flat type/Thin flat type with ribs: $\phi 10$ to $\phi 16$

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

ZPT□-(B3/B5)-A8

ZPT□-(04/06)-A8

ZPT□-(N4/U4)-A8

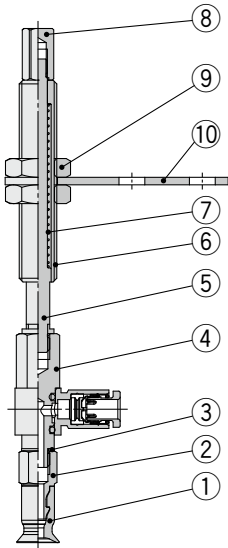


Component Parts

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

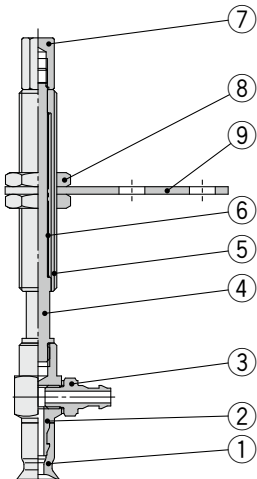


Component Parts

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)	

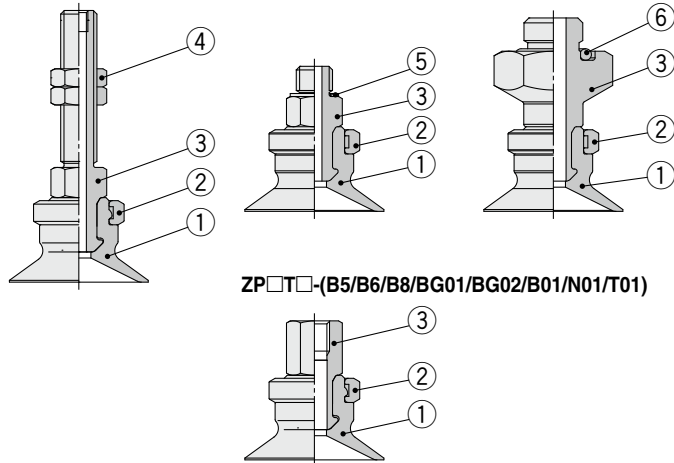
With adapter Flat type: $\phi 10$ to $\phi 50$ Flat type with ribs: $\phi 10$ to $\phi 50$ Bellows type: $\phi 10$ to $\phi 50$ Deep type: $\phi 10$ to $\phi 40$

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

ZP□T□-(A5/A6/A8)

ZP□T□-(AS5/AS6)

ZP□T□-(AG01/AG02)



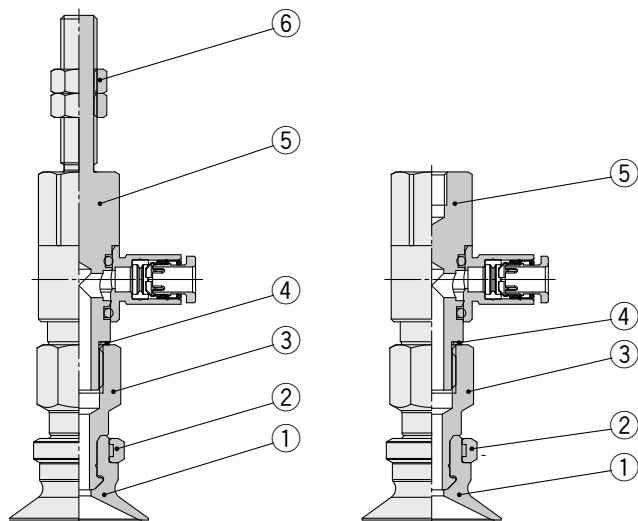
Component Parts

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)



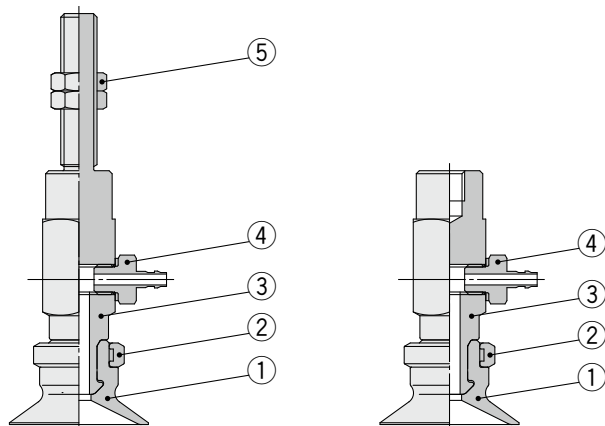
Component Parts

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 $\phi 50$

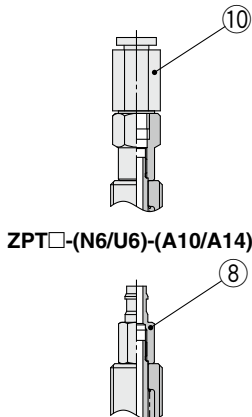
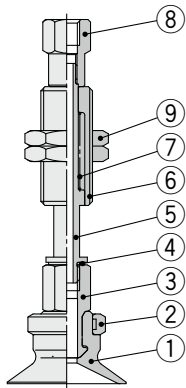
Bellows type: $\phi 10$ to $\phi 50$

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)

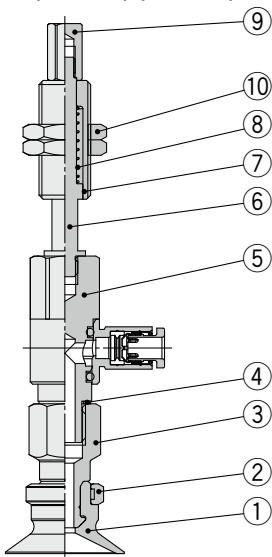


Component Parts

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)

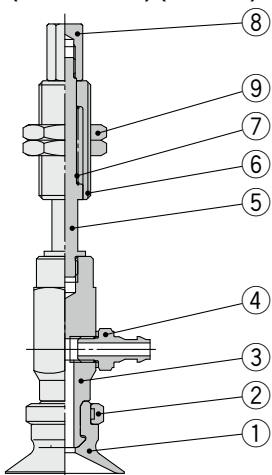


Component Parts

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

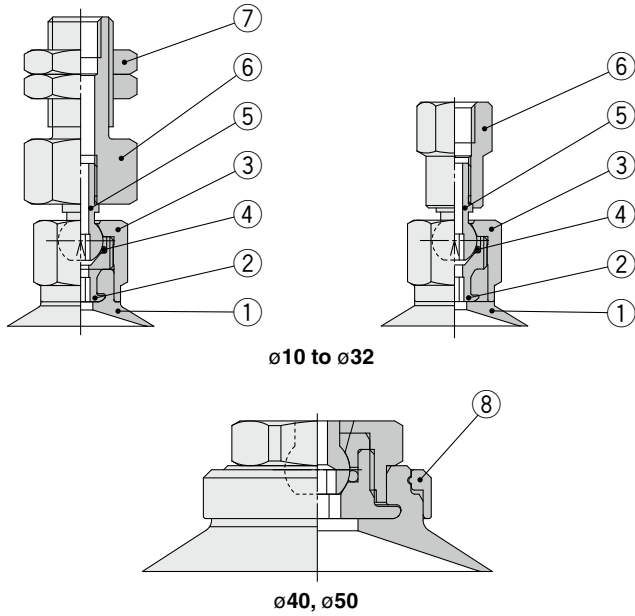
Ball Joint Type

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)

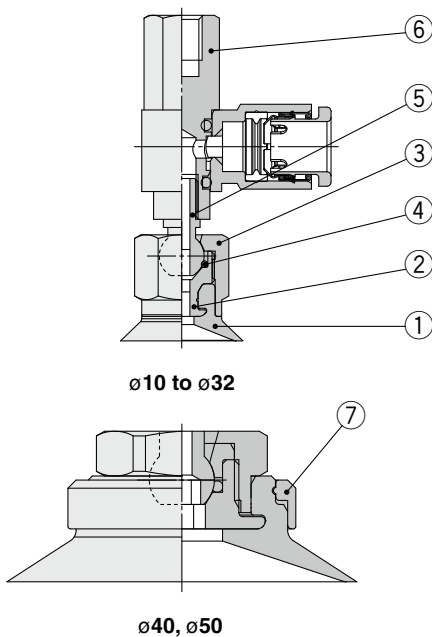


Component Parts

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)



Component Parts

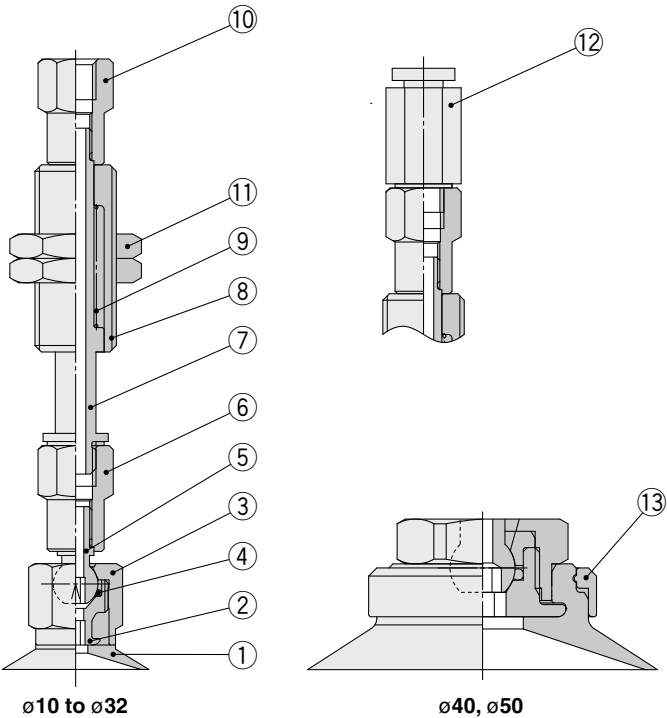
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Shaft cover	Stainless steel	
4	O-ring	FKM	
5	Shaft	Stainless steel	
6	Shaft adapter (With One-touch fitting)	Brass (Electroless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

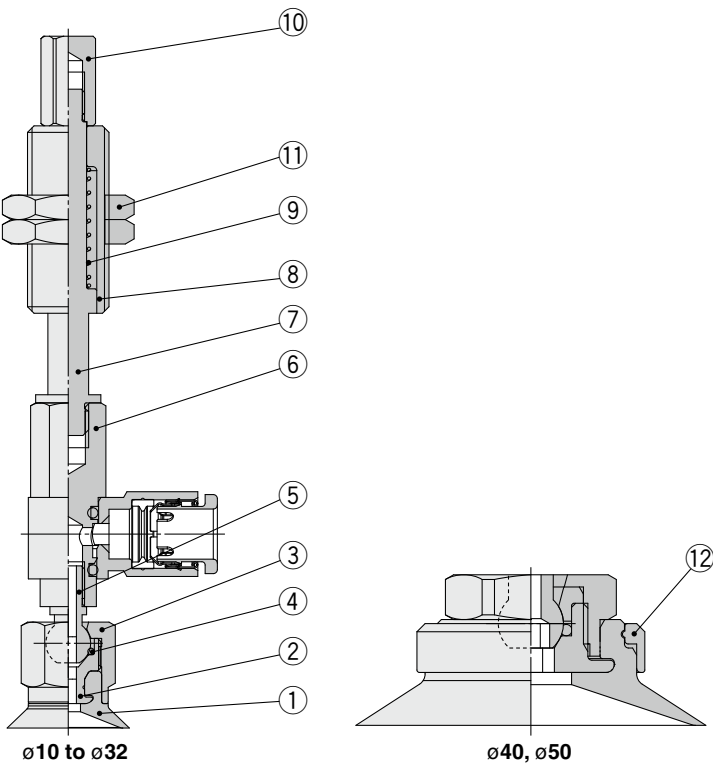
ZPT□F□-(B5/B01/N01/T01)-(A10/A14) ZPT□F□-(04/06/08)-(A10/A14)



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: ø40, ø50

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: ø40, ø50



Basic/Compact Type Specific Product Precautions

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

Mounting

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

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

Basic Type ZP Series

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

Compact Type ZP3 Series

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

2. When mounting the product, tighten with the tightening torque shown in the table below.

If excessive or insufficient tightening torque is applied, sealing failure or loose screws may result.

Basic Type ZP Series

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

Compact Type ZP3 Series

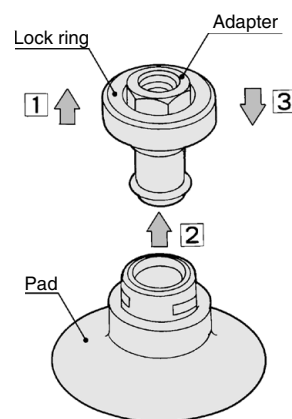
Product part number	Connection thread	Tightening torque [N·m]
ZP3□-T(015 to 035)U□-A3	M3 x 0.5	0.2 to 0.25
ZP3□-T(04 to 16)□□-A5	M5 x 0.8	1.3 to 1.7

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

How to Replace the Pad

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

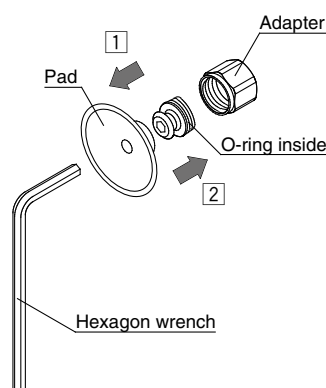
- 1 Pull the lock ring upward, and, after lifting it up to the adapter, remove the old pad by pulling it downward.
- 2 While holding the lock ring in the raised position, place a new pad onto the adapter.
- 3 Confirm that the pad is securely in place, and then return the lock ring to its original position.



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

Pad diameter: 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.

