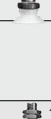
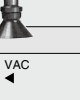
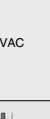
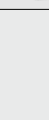
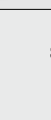
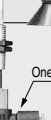
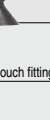
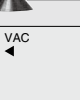
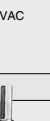
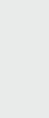
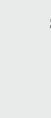
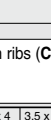
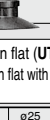
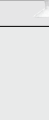
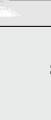
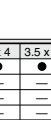
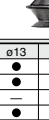
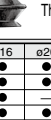
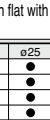


Vacuum Pad

Series ZP

Type		Without buffer		With buffer		Rotating: Non-rotating ø2 to ø8: Stroke 6, 10, 15, 25 mm ø10 to ø32: Stroke 10, 20, 30, 40, 50 mm ø40, ø50: Stroke 10, 20, 30, 50 mm											
 P.1270 to P.1295 Series ZPT Vertical vacuum entry	Vacuum entry port	Mounting	 Male thread (Common)	 Female thread (Common)	Vacuum entry port	Mounting	 Female thread Buffer body	 Barb fitting Buffer body	 One-touch fitting Buffer body								
			 Male thread	 Female thread			 Female thread	 Barb fitting	 One-touch fitting								
			 Male thread	 Female thread			 Female thread	 Barb fitting	 One-touch fitting								
			 Male thread	 Female thread			 Female thread	 Barb fitting	 One-touch fitting								
 P.1296 to P.1311 Series ZPR Lateral vacuum entry with One-touch fitting			 Male thread	 Female thread			 Male thread	 Female thread	 One-touch fitting								
			 Male thread	 Female thread			 Male thread	 Female thread	 One-touch fitting								
			 Male thread	 Female thread			 Male thread	 Female thread	 One-touch fitting								
			 Male thread	 Female thread			 Male thread	 Female thread	 One-touch fitting								
 P.1312 to P.1327 Series ZPY Lateral vacuum entry with Barb fitting			 Male thread	 Female thread			 Male thread	 Female thread	 Barb fitting								
			 Male thread	 Female thread			 Male thread	 Female thread	 Barb fitting								
			 Male thread	 Female thread			 Male thread	 Female thread	 Barb fitting								
			 Male thread	 Female thread			 Male thread	 Female thread	 Barb fitting								
Pad form (Compatible with all models)		Flat (U)	Flat with ribs (C)	Deep (D)	Bellows (B)	Thin flat (UT)	Thin flat with ribs (CT)										
																	
		Pad diameter	2 x 4	3.5 x 7	4 x 10	ø2	ø4	ø6	ø8	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
		Flat	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Flat with ribs	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Deep	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Bellows	—	—	—	—	●	●	●	●	●	●	●	●	●	●	●
		Thin flat	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		Thin flat with ribs	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pad diameter (ø2 to ø50)																	

Pad diameter (ø2 to ø50)	ø2 to ø50
	

Pad material	NBR (Black), Silicone rubber (White), Urethane rubber (Brown), FKM (Black with green mark), Conductive NBR (Black with one silver mark), Conductive silicone rubber (Black with two silver marks)
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Pad selection	Refer to the vacuum equipment model selection on pages 877 to 898 for the calculation of lift force and response time.
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Pad Material and Characteristics

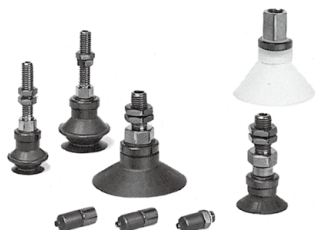
Characteristics	Durometer HS (±5°)	Operating temperature range (°C)	Oil resistance gasoline	Oil resistance benzol	Base resistance	Acid resistance	Weatherability	Ozone resistance	Abrasion resistance	Waterproof	Solvent resistance (Benzene, toluene)
NBR	A50/S	0 to 120	⊙	x	○	○	x	x	⊙	○	x
Silicone rubber	A40/S	-30 to 200	x	x	○	x	⊙	⊙	x	○	x
Urethane rubber	A60/S	0 to 60	⊙	x	x	x	○	⊙	⊙	x	x
FKM	A60/S	0 to 250	⊙	⊙	x	⊙	⊙	⊙	○	⊙	⊙
Conductive NBR	A50/S	0 to 100	○	x	○	x	○	x	○	○	x
Conductive silicone rubber	A50/S	-10 to 200	x	x	○	x	⊙	⊙	x	○	x

* The above table covers only general characteristics of subject rubber materials. Pad materials used by SMC pass the JIS standards; however the actual performance depends on operating conditions.



Vacuum Pad/ Vertical Vacuum Entry Without Buffer Series ZPT

RoHS



Specifications

Vacuum entry	Direction		Vertical	
	Connection		Male thread	Female thread
	Thread diameter	ø2 to ø8 Elliptic (2 x 4, 3.5 x 7, 4 x 10) Thin section series (ø10 to ø16)	M5 x 0.8, M6 x 1	M4 x 0.7, M5 x 0.8
		ø10 to ø16	M5 x 0.8, M6 x 1	M5 x 0.8, M6 x 1 1/8 (Rc, NPT, NPTF)
		ø20 to ø32	M6 x 1, M8 x 1	M5 x 0.8, M6 x 1, M8 x 1.25 1/8 (Rc, NPT, NPTF)
		ø40, ø50	M6 x 1, M8 x 1	M6 x 1, M8 x 1.25 1/8 (Rc, NPT, NPTF)
	Mounting		Use connection for vacuum entry	

Pad Type

Pad form	Flat	Flat with ribs	Deep	Bellows	Thin flat/Thin flat with ribs
Pad diameter (mm)	2, 4, 6, 8, 2 x 4, 3.5 x 7, 4 x 10, 10, 13, 16, 20, 25, 32, 40, 50	10, 13, 16, 20, 25, 32, 40, 50	10, 16, 25, 40	6, 8, 10, 13, 16, 20, 25, 32, 40, 50	10, 13, 16
Material (Color)	NBR (Black), Silicone rubber (White), Urethane rubber (Brown), FKM (Black with green mark) Conductive NBR (Black with one silver mark), Conductive silicone rubber (Black with two silver marks)				
Durometer	NBR (A50/S), Silicone rubber (A40/S), Urethane rubber/FKM (A60/S) Conductive NBR (A50/S), Conductive silicone rubber (A50/S)				

Weight/Male Thread (Female thread)

(g)

Flat	Flat				Flat with ribs				Deep				Bellows					
Model	M4	M5	M6	M8	□ ½	M5	M6	M8	□ ½	M5	M6	M8	□ ½	M4	M5	M6	M8	□ ½
ZPT2004 3507 4010 ZPT02 to 08 Thin section series 10 to 16	— (3.5)	2.5 (3)	3.5 (—)	—	—	—	—	—	—	—	—	—	—	— (3.5) (6.5) (6.5)	2.5 (3) (6.5)	3.5 (—) (6.5) (6.5)	—	—
ZPT10	—	10 (6.5)	12 (6)	—	— (13)	10 (6.5)	12 (6)	—	— (12)	10 (7)	12 (6)	— (13)	—	—	—	—	—	—
ZPT13	—	—	—	—	—	—	—	—	—	11 (7)	15 (7)	15 (13)	—	—	—	—	—	—
ZPT16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ZPT20	—	—	15 (8)	26 (17)	— (16)	— (8.5)	15 (8)	26 (17)	— (16)	— (10)	15 (10)	15 (18)	— (17)	—	—	15 (8)	16 (17)	— (16)
ZPT25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ZPT32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ZPT40	—	—	28 (26)	30 (25)	— (23)	—	28 (26)	30 (25)	— (16)	—	30 (28)	32 (26)	— (20)	—	—	28 (26)	30 (25)	— (23)
ZPT50	—	—	30 (29)	32 (27)	— (25)	—	32 (30)	34 (29)	— (27)	—	—	—	—	—	—	30 (29)	32 (27)	— (25)

* () : Figures for female thread connections

How to Order

Series ZPT
Without buffer

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

Pad dia. (mm) Pad type Material Vacuum entry post

Pad diameter

2004	2 x 4
3507	3.5 x 7
4010	4 x 10
02	ø2
04	ø4
06	ø6
08	ø8
10	ø10
13	ø13
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50

Vacuum entry/Mounting thread diameter

Connection	Symbol	Thread diameter	ø2 to ø8 2 x 4, 3.5 x 7, 4 x 10 ø10 to ø16 (Thin section series)	ø10 to ø16	ø20 to ø32	ø40, ø50
Male thread	A5	M5 x 0.8	●	●	—	—
	A6	M6 x 1	●	●	●	●
	A8	M8 x 1	—	—	●	●
	B4	M4 x 0.7	●	—	—	—
Female thread	B5	M5 x 0.8	●	●	●	—
	B6	M6 x 1	—	●	●	●
	B8	M8 x 1.25	—	—	●	●
	B01	Rc 1/8	—	●	●	●
	N01	NPT 1/8	—	●	●	●
	T01	NPTF 1/8	—	●	●	●

Pad type

(Refer to "Table (1)" for applications.)

U	Flat
C	Flat with ribs
D	Deep
B	Bellows
UT	Thin flat
CT	Thin flat with ribs

Table (1) Pad Diameter/Pad Type

Type	Diameter									
	2 x 4	3.5 x 7	4 x 10	ø2	ø4	ø6	ø8	ø10	ø13	ø16
Flat	●	●	●	—	—	—	—	●	●	●
Flat with ribs	—	—	—	—	—	—	—	●	●	●
Deep	—	—	—	—	—	—	—	—	—	—
Bellows	—	—	—	—	—	●	●	●	●	●
Thin flat	—	—	—	—	—	—	—	●	●	●
Thin flat with ribs	—	—	—	—	—	—	—	●	●	●

Material

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

⚠ Precautions

Be sure to read before handling. Refer to front matter 35 for Safety Instructions and pages 899 to 901 for Vacuum Equipment Precautions.

Caution on Design

⚠ Warning

- In cases where workpieces are heavy or dangerous, etc., take measures to address a possible loss of adsorption force (installation of drop prevention guides, etc.).**
In the case of transportation by vacuum adsorption using vacuum pads, adsorption force is lost when there is a drop in vacuum pressure. Furthermore, since vacuum pressure can also deteriorate due to wear and cracking of pads, and vacuum leakage from piping, etc., be certain to perform maintenance on vacuum equipment.

Selection

⚠ Caution

- The pad materials differ depending upon the operating environment.**
An appropriate pad material should be selected. Furthermore, since vacuum pads are manufactured for use with industrial products, they should not have direct contact with pharmaceuticals or food products, etc.
- Depending upon the weight and shape of the workpieces, the diameter, quantity and shape of pads will vary.**
Use the pad lifting force table for reference. Also, the pads selected will differ based upon conditions other than the above, such as the condition of the workpiece surface (presence or absence of oil or water), the workpiece material and its gas permeability. Confirmation is necessary by actually performing vacuum adsorption testing on the subject workpieces.
- Use a buffer for adsorption on fragile workpieces.**
The cushioning by the buffer is necessary when there is variation in the height of workpieces. When further positioning of pads and workpieces is desired, a detent buffer can be used.

- The life of a buffer will be reduced if the lateral force is applied to the buffer shaft.**
Note that sometimes a load is applied to the buffer by a piping tube (pulling or pressing, etc. in a lateral direction).
- Do not apply an impact or large forces to a pad when adsorbing a workpiece.**
This will cause deformation, cracking and wear of the pad to be accelerated. The stiffening ribs, etc. should touch lightly, while staying within the pad skirt's deformation range. Positioning should be performed accurately. Especially in the case of small diameter pads.
- When transporting in an upward direction, factors such as acceleration, wind pressure and impact force must be considered in addition to a workpiece weight.**
Use caution particularly when lifting items such as glass plates and circuit boards, because a large force will be applied by the wind pressure. When a workpiece which is oriented vertically is transported horizontally, large forces are applied by acceleration when movement is started and stopped. Further, in cases where the pad and a workpiece can slip easily, accelerations and decelerations of horizontal movement should be kept low.
- When transporting flat workpieces that have large surface areas using multiple pads, care must be taken when arranging the pads to balance the workpiece.**

Maintenance

⚠ Caution

- Perform pad maintenance regularly.**
Since pads are essentially rubber, deterioration is unavoidable. The rate of deterioration depends upon factors such as conditions of use, environment and temperature. Regular maintenance should be performed. If any damage, splitting, cracking or abrasion has occurred in a pad which appears to be harmful, replace it immediately. Also, take care not to damage the outside of the pad.

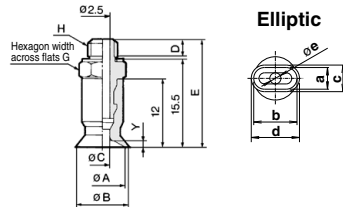
Connection	Male thread	Pad Form	Flat/Flat with ribs/Deep/Thin flat/ Thin flat with ribs/Elliptic
Vacuum Entry Port	Vertical	Mounting	Use connection for vacuum entry

Thin flat/Thin flat with ribs $\phi 10$, $\phi 13$, $\phi 16$ /Elliptic 2004, 3507, 4010

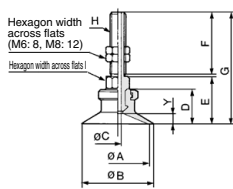
Size/Flat $\phi 2$, $\phi 4$, $\phi 6$, $\phi 8$

Size/ $\phi 20$, $\phi 25$, $\phi 32$

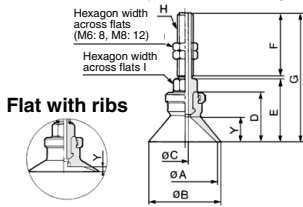
Flat/Thin flat/Thin flat with ribs



Flat



Deep: ZPT25D only



Flat with ribs

Flat/Thin Flat/Thin Flat with Ribs

Model	A	B	C	H: M5 x 0.8			H: M6 x 1			Y
				D	E	G	D	E	G	
ZPT02U	2	2.6	1.2							0.5
ZPT04U	4	4.8	1.6							0.8
ZPT06U	6	7								
ZPT08U	8	9								1
ZPT10UT	10	11								
ZPT13UT	13	14	2.5	3	19	7	4	20	8	1.5
ZPT16UT	16	17								0.8
ZPT10CT	10	11								
ZPT13CT	13	14								1
ZPT16CT	16	17								

Flat/Flat with Ribs

Model	A	B	D	H: M6 x 1					H: M8 x 1					Y
				C	E	F	G	I	C	E	F	G	I	
ZPT20 ^U _C	20	23												1.7
ZPT25 ^U _C	25	28	14	3	19	25	45	8	3.5	24	15	40	12	1.8
ZPT32 ^U _C	32	35	14.5				19.5	45.5		24.5		40.5	4.5	2.3

Deep

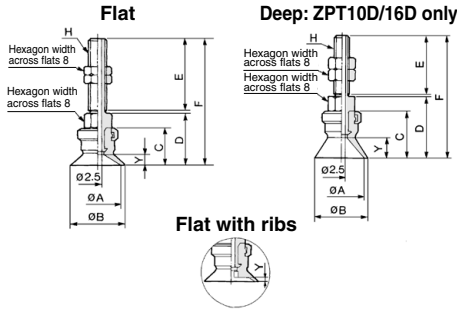
Model	A	B	D	H: M6 x 1					H: M8 x 1					Y
				C	E	F	G	I	C	E	F	G	I	
ZPT25D	25	28	20	3	25	25	51	8	3.5	30	15	46	12	10

Elliptic

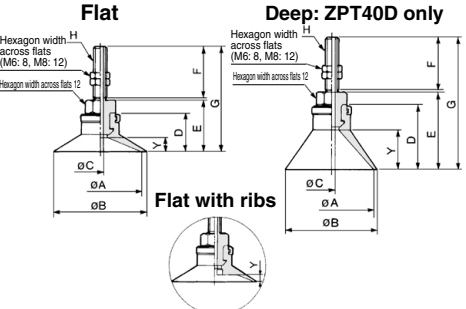
Model	a	b	c	d	e	Y
ZPT2004U	2	4	2.6	4.6	1.2	0.3
ZPT3507U	3.5	7	4.3	7.8	1.8	0.5
ZPT4010U	4	10	5	11	2	0.8

* Dimensions of D, E, G are the same.

Size/ $\phi 10$, $\phi 13$, $\phi 16$



Size/ $\phi 40$, $\phi 50$



Flat/Flat with Ribs

Model	A	B	C	D	H: M5 x 0.8		H: M6 x 1		Y
					E	F	E	F	
ZPT10 ^U _C	10	12	12	17			38	43	1.7
ZPT13 ^U _C	13	15			20		25		1.8
ZPT16 ^U _C	16	18	12.5	17.5			38.5	43.5	1.2

Flat/Flat with Ribs

Model	A	B	D	E	H: M6 x 1			H: M8 x 1			Y
					C	F	G	C	F	G	
ZPT40 ^U _C	40	43	18.5	24.5	3	25	50.5	4.5	15	40.5	3.3
ZPT50 ^U _C	50	53	19.5	25.5			51.5			41.5	3.8

Deep

Model	A	B	C	D	H: M5 x 0.8		H: M6 x 1		Y
					E	F	E	F	
ZPT10D	10	12	15	20	20	41	25	46	6
ZPT16D	16	18	16	21	20	42	25	47	7

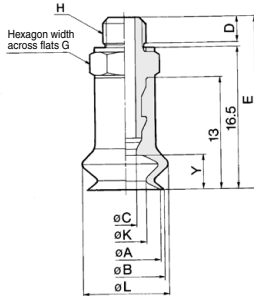
Deep

Model	A	B	D	E	H: M6 x 1			H: M8 x 1			Y
					C	F	G	C	F	G	
ZPT40D	40	43	29	35.5	3	25	61	4.5	15	51	17

Connection	Male thread	Pad Form	Bellows
Vacuum Entry Port	Vertical	Mounting	Use connection for vacuum entry

Size/ø6, ø8

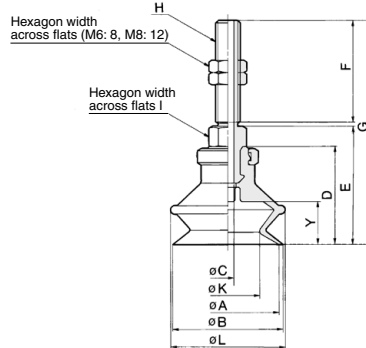
Bellows



Model	A	B	C	H: M5 x 0.8			H: M6 x 1			K	L	Y
				D	E	G	D	E	G			
ZPT06B	6	7								3.3	9	4
ZPT08B	8	9	2.5	3	20	7	4	21	8	4.7	10	

Size/ø20, ø25, ø32

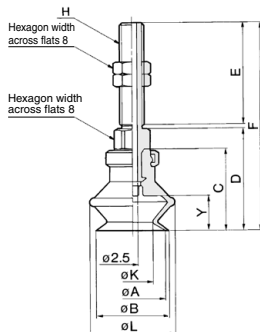
Bellows



Model	A	B	D	H: M6 x 1					H: M8 x 1					K	L	Y
				C	E	F	G	I	C	E	F	G	I			
ZPT20B	20	22	23.5											12	25	10.5
ZPT25B	25	27	24	3	28.5	25	54.5	8	33.5	34	15	49.5	12	16	28	10.5
ZPT32B	32	34	29		34		60		39			55		19	37	14

Size/ø10, ø13, ø16

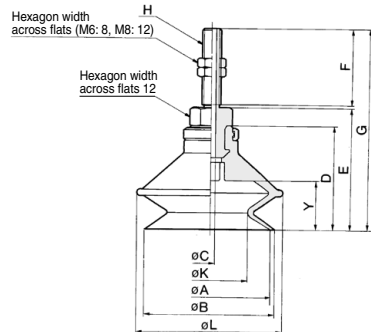
Bellows



Model	A	B	C	D	H: M5 x 0.8		H: M6 x 1		K	L	Y
					E	F	E	F			
ZPT10B	10	12	16	21		42		47	6	14	5.5
ZPT13B	13	15	18.5	23.5	20	44.5	25	49.5	9	19	7.5
ZPT16B	16	18	20	25		46		51	10	21	8.5

Size/ø40, ø50

Bellows



Model	A	B	D	E	H: M6 x 1			H: M8 x 1			K	L	Y
					C	F	G	C	F	G			
ZPT40B	40	43	34	40							56	24	16
ZPT50B	50	53	38	44	3	25	66	4.5	15	60	32	57	19

ZP3

ZP2

ZP2V

ZP

ZPT

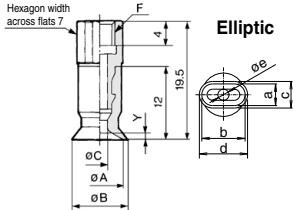
ZPR

XT661

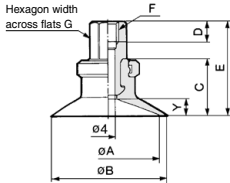
Connection	Female thread	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Vertical	Mounting	Use connection for vacuum entry

Thin flat/Thin flat with ribs $\phi 10, \phi 13, \phi 16$ /Elliptic 2004, 3507, 4010
Size/Flat $\phi 2, \phi 4, \phi 6, \phi 8$ Size/ $\phi 20, \phi 25, \phi 32$

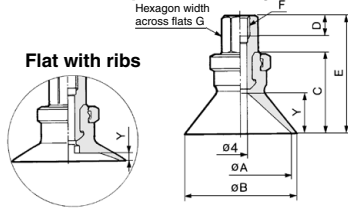
Flat/Thin flat/Thin flat with ribs



Flat



Deep: ZPT25D only



Flat

Model	A	B	C	F	Y
ZPT02U	2	2.6	1.2		0.5
ZPT04U	4	4.8	1.6		0.8
ZPT06U	6	7			
ZPT08U	8	9			
ZPT10UT	10	11		M4 x 0.7	1
ZPT13UT	13	14			
ZPT16UT	16	17		M5 x 0.8	1.5
ZPT10CT	10	11			0.8
ZPT13CT	13	14			
ZPT16CT	16	17			1

Flat/Flat with Ribs

Model	A	B	C	F: M5 x 0.8			F: M6 x 1			F: M8 x 1.25			F: 1/8 (Rc, NPT, NPTF)		Y
				D	E	G	D	E	G	D	E	G	E	G	
ZPT20 ^U _C	20	23	14	5	23	8	6	23	8	8	12	29	12	4	1.7
ZPT25 ^U _C	25	28													1.8
ZPT32 ^U _C	32	35	14.5		23.5			23.5			29.5		29.5		4.5 2.3

Deep

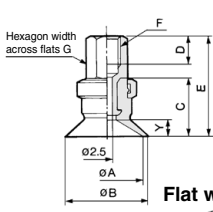
Model	A	B	C	F: M5 x 0.8			F: M6 x 1			F: M8 x 1.25			F: 1/8 (Rc, NPT, NPTF)		Y
				D	E	G	D	E	G	D	E	G	E	G	
ZPT25D	25	28	20	5	29	8	6	29	8	8	35	12	35	12	10

Elliptic

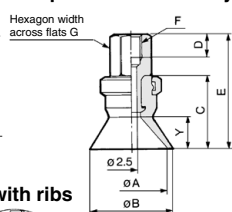
Model	a	b	c	d	e	Y
ZPT2004U	2	4	2.6	4.6	1.2	0.3
ZPT3507U	3.5	7	4.3	7.8	1.8	0.5
ZPT4010U	4	10	5	11	2	0.8

Size/ $\phi 10, \phi 13, \phi 16$

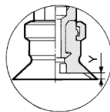
Flat



Deep: ZPT10D/16D only



Flat with ribs



Flat/Flat with Ribs

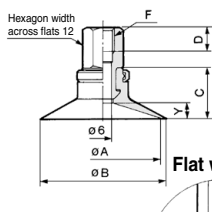
Model	A	B	C	F: M5 x 0.8			F: M6 x 1			F: 1/8 (Rc, NPT, NPTF)		Y
				D	E	G	D	E	G	E	G	
ZPT10 ^U _C	10	12	12		21	8	21		27		3	1.7
ZPT13 ^U _C	13	15		5			6		8		12	1.8
ZPT16 ^U _C	16	18	12.5		21.5			21.5		27.5		3.5 1.2

Deep

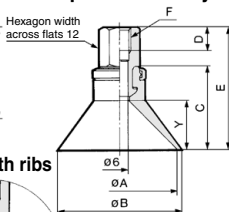
Model	A	B	C	F: M5 x 0.8			F: M6 x 1			F: 1/8 (Rc, NPT, NPTF)		Y
				D	E	G	D	E	G	E	G	
ZPT10D	10	12	15		24	8	6		24		30	6
ZPT16D	16	18	16	5	25		6		25		31	7

Size/ $\phi 40, \phi 50$

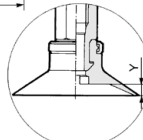
Flat



Deep: ZPT40D only



Flat with ribs



Flat/Flat with Ribs

Model	A	B	C	F: M6 x 1			F: M8 x 1.25			F: Rc 1/8		Y
				D	E	D	E	D	E	E	G	
ZPT40 ^U _C	40	43	18.5		32		32		32		6.5	3.3
ZPT50 ^U _C	50	53	19.5	6		33		33		33		7.5 3.8

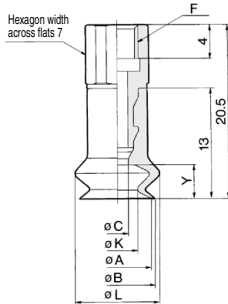
Deep

Model	A	B	C	F: M6 x 1			F: M8 x 1.25			F: 1/8 (Rc, NPT, NPTF)		Y
				D	E	D	E	D	E	E	G	
ZPT40D	40	43	29	6	42.5	8	42.5		42.5			17

Connection	Female thread	Pad Form	Bellows
Vacuum Entry Port	Vertical	Mounting	Use connection for vacuum entry

Size/ø6, ø8

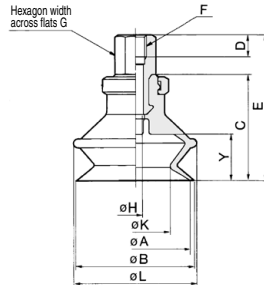
Bellows



Model	A	B	C	F	K	L	Y
ZPT06B	6	7	2.5	M4 x 0.7	3.3	9	4
ZPT08B	8	9	2.5	M5 x 0.8	4.7	10	4

Size/ø20, ø25, ø32

Bellows

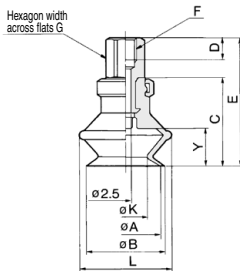


Model	A	B	C	F: M5 x 0.8			F: M6 x 1			F: M8 x 1.25			F: 1/8" Rc, NPT, NPTF		
				D	E	G	D	E	G	D	E	G	D	E	G
ZPT20B	20	22	23.5		32.5			32.5			38.5			38.5	
ZPT25B	25	27	24	5	33	8	4	6	33	8	4	8	39	12	3.5
ZPT32B	32	34	29		38				38				44		

Model	K	L	Y
ZPT20B	12	25	10.5
ZPT25B	16	28	10.5
ZPT32B	19	37	14

Size/ø10, ø13, ø16

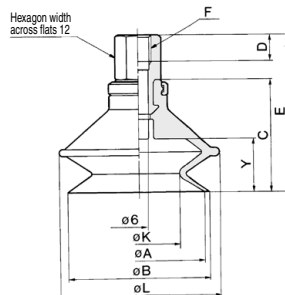
Bellows



Model	A	B	C	F: M5 x 0.8			F: M6 x 1			F: 1/8" Rc, NPT, NPTF			K	L	Y
				D	E	G	D	E	G	D	E	G			
ZPT10B	10	12	16		25			25			31		6	14	5.5
ZPT13B	13	15	18.5	5	27.5	8	6	27.5	8		33.5	12	9	19	7.5
ZPT16B	16	18	20		29			29			35		10	21	8.5

Size/ø40, ø50

Bellows



Model	A	B	C	F: M6 x 1			F: M8 x 1.25			F: 1/8" Rc, NPT, NPTF			K	L	Y
				D	E	G	D	E	G	D	E	G			
ZPT40B	40	43	34	6	47.5		8	47.5			47.5		24	48	16
ZPT50B	50	53	38		51.5			51.5			51.5		32	57	19

ZP3

ZP2

ZPTV

ZP

ZPT

ZPR

XT661



Vacuum Pad/ Vertical Vacuum Entry With Buffer

Series ZPT

RoHS



Specifications

Vacuum entry direction		Vertical			
Vacuum entry	Connection	Connection	Female thread	Barb fitting	One-touch fitting
		ø2 to ø8 Elliptic (2 x 4, 3.5 x 7, 4 x 10) Thin section series (ø10 to ø16)	M3 x 0.5 M5 x 0.8	ø4 Nylon tube ø4 Urethane tube	ø4 tube ø6 tube
		ø10 to ø32	M5 x 0.8	ø6 Nylon tube ø6 Urethane tube	ø4 tube ø6 tube
		ø40 to ø50	M5 x 0.8 1/8 (Rc, NPT, NPTF)	ø6 Nylon tube ø6 Urethane tube	ø6 tube ø8 tube
Connection	Thread dia.	ø2 to ø8	M8 x 1 Male thread		
		ø10 to ø32	M10 x 1 Male thread		
		ø40 to ø50	M14 x 1 Male thread		

Buffer Specifications

Pad dia. (mm)		ø2 to ø8*	ø10 to ø32	ø40, ø50
Stroke (mm)		6, 10, 15, 25	10, 20, 30, 40, 50	10, 20, 30, 50
Spring Reactive Force (N)	0 stroke	0.8	1.0	2.0
	Full stroke	1.2	3.0	5.0
Non-rotating specification		Rotating (J)/Non-rotating (K)		

* Refer to ø2 to ø8 for Thin flat, Thin flat with ribs and Elliptic.

Pad Type

Pad form	Flat	Flat with ribs	Deep	Bellows
Pad diameter (mm)	2, 4, 6, 8, 2 x 4, 3.5 x 7, 4 x 10, 10, 13, 16, 20, 25, 32, 40, 50	10, 13, 16, 20, 25, 32, 40, 50	10, 16, 25, 40	6, 8, 10, 13, 16, 20, 25, 32, 40, 50
Material (Color)	NBR (Black), Silicone rubber (White), Urethane rubber (Brown), FKM (Black with green mark) Conductive NBR (Black with one silver mark), Conductive silicone rubber (Black with two silver marks)			
Durometer	NBR (A50/S), Silicone rubber (A40/S), Urethane rubber/FKM (A60/S) Conductive NBR (A50/S), Conductive silicone rubber (A50/S)			

Weight

Stroke (mm)	Pad form Vacuum entry port	Flat/Flat with ribs								Deep								Bellows							
		Female thread			One-touch fitting			Barb fitting	Female thread			One-touch fitting			Barb fitting	Female thread			One-touch fitting			Barb fitting			
		B3	B5	□01	□04	□06	□08	N□U□	B5	□01	□04	□06	□08	N□U□	B3	B5	□01	□04	□06	□08	N□U□				
6	ZPT2004 3507 4010	22	24	—	26	27	—	22	—	—	—	—	—	22	24	—	26	27	—	22	—	—	—		
	ZPT02 to 08 Thin section series 10 to 16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
10	ZPT 10 to 16	—	26	—	29	30	—	25	27	—	29	30	—	25	—	27	—	30	31	—	26	—	—		
10	ZPT 20 25	—	29	—	31	33	—	27	30	—	32	33	—	28	—	31	—	34	35	—	30	—	—		
	ZPT 32	—	57	—	33	34	—	30	—	—	—	—	—	—	—	36	—	38	39	—	34	—	—		
10	ZPT 40	—	129	132	—	133	141	129	131	134	—	134	143	129	—	141	144	—	145	153	140	—	—		
	ZPT 50	—	135	138	—	139	147	133	—	—	—	—	—	—	—	148	151	—	152	160	147	—	—		

Weight by Stroke

Stroke (mm)	10	15	20	25	30	40	50
Model	ZPT2004 3507 4010	—	—	—	—	—	—
ZPT02 to 08 Thin section series 10 to 16	+6	+7	—	+8	—	—	—
ZPT10 to 32	—	—	+11	—	+13	+23	+24
ZPT40, 50	—	—	+38	—	+40	—	+67

How to Order

Series ZPT With buffer

ZPT 16 U GS K 20 - 06 - A10

Pad diameter

2004	2 x 4
3507	3.5 x 7
4010	4 x 10
02	ø2
04	ø4
06	ø6
08	ø8
10	ø10
13	ø13
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50

• **Mounting thread diameter/
Male thread**
(Refer to "Table (3)" for applications.)

• **Vacuum entry port**
(Refer to "Table (3)" for applications.)

• **Buffer stroke**
(Refer to "Table (2)" for applications.)

Buffer type

J	Rotating
K	Non-rotating

Pad type

("Table (1)" for applications.)

U	Flat
C	Flat with ribs
D	Deep
B	Bellows
UT	Thin flat
CT	Thin flat with ribs

Material

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

Table (1) Pad Diameter/Pad Type

Diameter	2 x 4	3.5 x 7	4 x 10	ø2	ø4	ø6	ø8	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
Type															
Flat	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Flat with ribs	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●
Deep	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●
Bellows	—	—	—	—	—	—	●	●	●	●	●	●	●	●	●
Thin flat	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●
Thin flat with ribs	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●

Table (2) Pad Diameter/Stroke

Diameter	2 x 4	3.5 x 7	4 x 10	ø2	ø4	ø6	ø8	Thin flat/Thin flat with ribs ø10 ø13 ø16	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
Stroke																
6 mm	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—	—
10 mm	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—
15 mm	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—
20 mm	—	—	—	—	—	—	—	—	—	●	●	●	●	●	●	●
25 mm	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
30 mm	—	—	—	—	—	—	—	—	—	●	●	●	●	●	●	●
40 mm	—	—	—	—	—	—	—	—	—	●	●	●	●	●	●	●
50 mm	—	—	—	—	—	—	—	—	—	●	●	●	●	●	●	●

Table (3) Vacuum Entry/Mounting Thread Diameter

	Symbol	Thread dia./Port size	ø2 to ø8 2 x 4, 3.5 x 7, 4 x 10 Thin section series ø10 to ø16	ø10 to ø32	ø40, ø50
Vacuum entry	B3	M3 x 0.5	●	—	—
	B5	M5 x 0.8	●	●	●
	B01	Rc 1/8	—	—	●
	N01	NPT 1/8	—	—	●
	T01	NPTF 1/8	—	—	●
	N4	ø4 Nylon tube	●	—	—
	N6	ø6 Nylon tube	—	●	●
	U4	ø4 Urethane tube	●	—	—
	U6	ø6 Urethane tube	—	●	●
	04	ø4 tube	●	●	—
Mounting	06	ø6 tube	●	●	—
	08	ø8 tube	—	—	●
	A8	M8 x 1	●	—	—
	A10	M10 x 1	—	●	—
	A14	M14 x 1	—	—	●

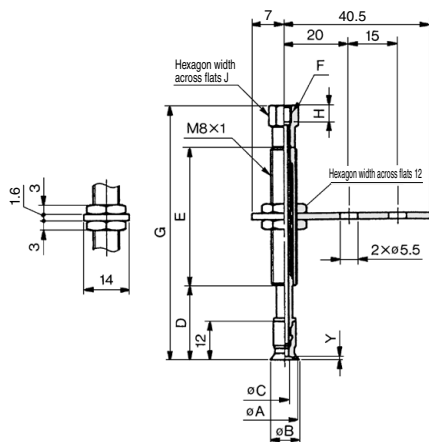
Tightening Torque

(N·m)

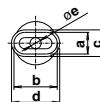
Mounting thread diameter	Torque
M8 x 1	1.5 to 2.0
M10 x 1	2.5 to 3.5
M14 x 1	6.5 to 7.5

Connection	Female thread (Buffer)	Pad Form	Flat/Thin flat/Thin flat with ribs/Elliptic
Vacuum Entry Port	Vertical	Mounting	Buffer body

Flat/ø2, ø4, ø6, ø8, Thin flat/Thin flat with ribs/ø10, ø13, ø16, Elliptic/2004, 3507, 4010



Elliptic



Flat

Model	A	B	C	Y
ZPT02U□□□□-B□-A8	2	2.6	1.2	0.5
ZPT04U□□□□-B□-A8	4	4.8	1.6	0.8
ZPT06U□□□□-B□-A8	6	7	2.5	
ZPT08U□□□□-B□-A8	8	9		1

Elliptic

Model	a	b	c	d	e	Y
ZPT2004U	2	4	2.6	4.6	1.2	0.3
ZPT3507U	3.5	7	4.3	7.8	1.8	0.5
ZPT4010U	4	10	5	11	2	0.8

Thin Flat/Thin Flat with Ribs

Model	A	B	C	Y
ZPT10UT	10	11	2.5	1
ZPT13UT	13	14		1.5
ZPT16UT	16	17		
ZPT10CT	10	11		0.8
ZPT13CT	13	14		1
ZPT16CT	16	17		

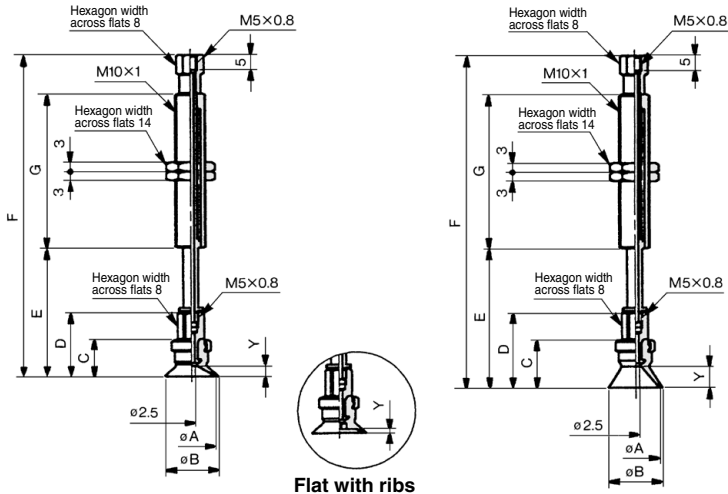
Dimensions by Stroke

Model	D	E	F: M3 x 0.5			F: M5 x 0.8		
			G	H	J	G	H	J
ZPT□□□□□□ 6-B□-A8	18	15	44	3	6	46	5	8
ZPT□□□□□□ 10-B□-A8	23		77			79		
ZPT□□□□□□ 15-B□-A8	28	43	82			84		
ZPT□□□□□□ 25-B□-A8	38		92			94		

Connection	Female thread (Buffer)	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Vertical	Mounting	Buffer body

Flat/Flat with ribs/ø10, ø13, ø16

Deep/ø10, ø16



Flat with ribs

ø10, ø13, ø16

Flat/Flat with Ribs

Model	A	B	C	D	Y	
					Flat	Flat with ribs
ZPT10 $\frac{U}{C}$ □□□□-B5-A10	10	12	12	21	3	1.7
ZPT13 $\frac{U}{C}$ □□□□-B5-A10	13	15				1.8
ZPT16 $\frac{U}{C}$ □□□□-B5-A10	16	18	12.5	21.5	3.5	1.2

Dimensions by Stroke

Model	ø10, ø13		ø16		G
	E	F	E	F	
ZPT□□ $\frac{U}{C}$ □□□□10-B5-A10	32.5	68.5	33	69	23
ZPT□□ $\frac{U}{C}$ □□□□20-B5-A10	42.5	106.5	43	107	51
ZPT□□ $\frac{U}{C}$ □□□□30-B5-A10	52.5	116.5	53	117	77
ZPT□□ $\frac{U}{C}$ □□□□40-B5-A10	62.5	152.5	63	153	
ZPT□□ $\frac{U}{C}$ □□□□50-B5-A10	72.5	162.5	73	163	

ø10, ø16

Deep

Model	A	B	C	D	Y
ZPT10D□□□□□-B5-A10	10	12	15	24	6
ZPT16D□□□□□-B5-A10	16	18	16	25	7

Dimensions by Stroke

Model	ø10		ø16		G
	E	F	E	F	
ZPT□□D□□□□10-B5-A10	35.5	71.5	36.5	72.5	23
ZPT□□D□□□□20-B5-A10	45.5	109.5	46.5	110.5	51
ZPT□□D□□□□30-B5-A10	55.5	119.5	56.5	120.5	
ZPT□□D□□□□40-B5-A10	65.5	155.5	66.5	156.5	77
ZPT□□D□□□□50-B5-A10	75.5	165.5	76.5	166.5	

ZP3

ZP2

ZP2V

ZP

ZPT

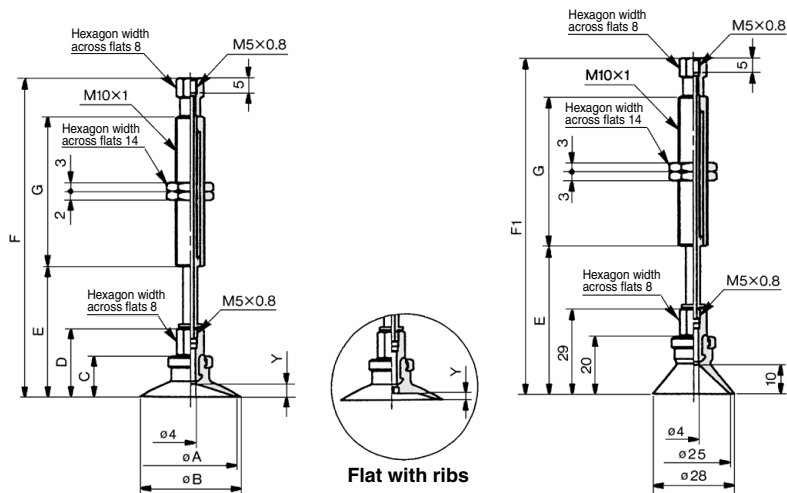
ZPR

XT661

Connection	Female thread (Buffer)	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Vertical	Mounting	Buffer body

Flat/Flat with ribs/ø20, ø25, ø32

Deep/ø25



ø20, ø25, ø32

Flat/Flat with Ribs

Model	A	B	C	D	Y	
					Flat	Flat with ribs
ZPT20 ^U □□□□-B5-A10	20	23	14	23	4	1.7
ZPT25 ^U □□□□-B5-A10	25	28				1.8
ZPT32 ^U □□□□-B5-A10	32	35				2.3

Dimensions by Stroke

Model	ø20, ø25		ø32		G
	E	F	E	F	
ZPT□□ ^U □□□□10-B5-A10	34.5	70.5	35	71	51
ZPT□□ ^U □□□□20-B5-A10	44.5	108.5	45	109	
ZPT□□ ^U □□□□30-B5-A10	54.5	118.5	55	119	
ZPT□□ ^U □□□□40-B5-A10	64.5	154.5	65	155	77
ZPT□□ ^U □□□□50-B5-A10	74.5	164.5	75	165	

ø25

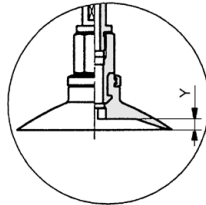
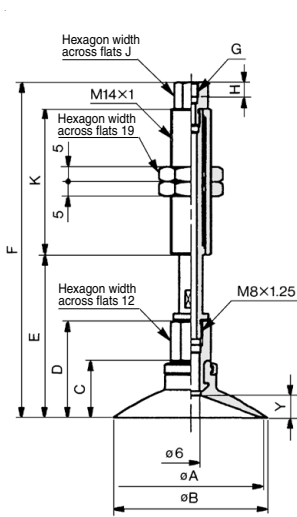
Deep

Model	E	F	G
ZPT25D□□□10-B5-A10	40.5	76.5	51
ZPT25D□□□20-B5-A10	50.5	114.5	
ZPT25D□□□30-B5-A10	60.5	124.5	
ZPT25D□□□40-B5-A10	70.5	160.5	77
ZPT25D□□□50-B5-A10	80.5	170.5	

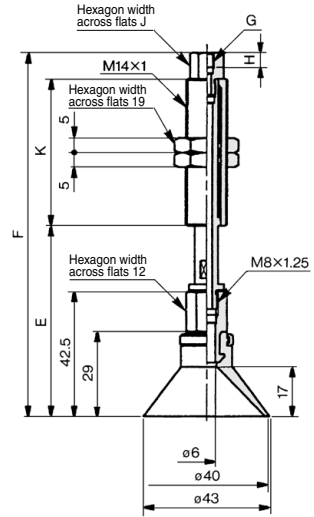
Connection	Female thread (Buffer)	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Vertical	Mounting	Buffer body

Flat/Flat with ribs/ø40, ø50

Deep/ø40



Flat with ribs



ø40, ø50

Flat/Flat with Ribs

Model	A	B	C	D	Y	
					Flat	Flat with ribs
ZPT40 $\frac{1}{2}$ □□□□□□□□-A14	40	43	18.5	32	6.5	3.3
ZPT50 $\frac{1}{2}$ □□□□□□□□-A14	50	53	19.5	33	7.5	3.8

Dimensions by Stroke

Model	E		G: M5 x 0.8			G: ½ (Rc, NPT, NPTF)			K	
	ø40	ø50	F		H	J	F			
			ø40	ø50			ø40	ø50		
ZPT□□□□□□□□10-□□□□-A14	44.5	45.5	108.5	110.5	5	10	111	112	13	50
ZPT□□□□□□□□20-□□□□-A14	54.5	55.5	113.5	114.5			116.5	117.5		
ZPT□□□□□□□□30-□□□□-A14	64.5	65.5	123.5	124.5			126.5	127.5		
ZPT□□□□□□□□50-□□□□-A14	84.5	85.5	168.5	169.5			171.5	172.5		

ø40

Deep

Model	E	G: M5 x 0.8			G: ½ (Rc, NPT, NPTF)		K
		F	H	J	F	J	
					121.5	127	
ZPT40D□□□□10-□□□□-A14	55	120					
ZPT40D□□□□20-□□□□-A14	65	124	5	10	127	13	50
ZPT40D□□□□30-□□□□-A14	75	134			137		
ZPT40D□□□□50-□□□□-A14	95	179			182		75

ZP3

ZP2

ZP2V

ZP

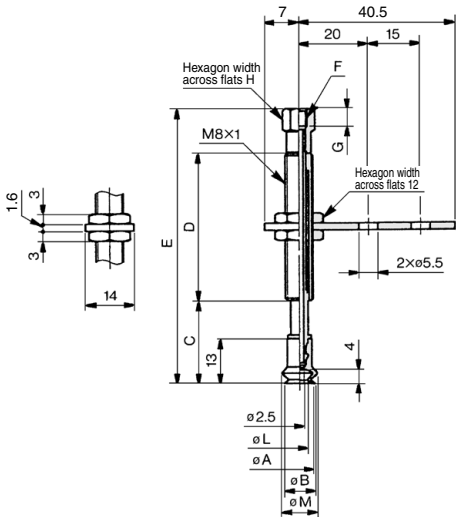
ZPT

ZPR

XT661

Connection	Female thread (Buffer)	Pad Form	Bellows
Vacuum Entry Port	Vertical	Mounting	Buffer body

Bellows/ø6, ø8



ø6, ø8

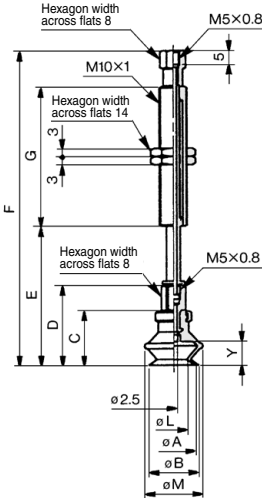
Bellows

Model	A	B	L	M
ZPT06B□□□□-B□-A8	6	7	3.3	9
ZPT08B□□□□-B□-A8	8	9	4.7	10

Dimensions by Stroke

Model	C	D	F: M3 x 0.5			F: M5 x 0.8		
			E	G	H	E	G	H
ZPT□□B□□□-6-B□-A8	19	15	45			47		
ZPT□□B□□□-10-B□-A8	24		78			80		
ZPT□□B□□□-15-B□-A8	29	43	83	3	6	85	5	8
ZPT□□B□□□-25-B□-A8	39		93			95		

Bellows/ø10, ø13, ø16



ø10, ø13, ø16

Bellows

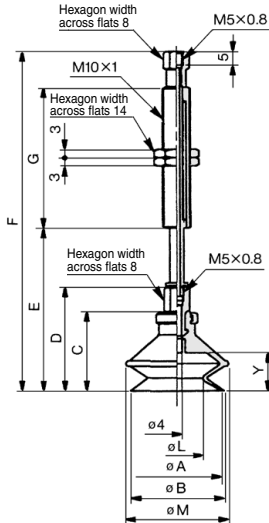
Model	A	B	C	D	L	M	Y
ZPT10B□□□□-B5-A10	10	12	16	25	6	14	5.5
ZPT13B□□□□-B5-A10	13	15	18.5	27.5	9	19	7.5
ZPT16B□□□□-B5-A10	16	18	20	29	10	21	8.5

Dimensions by Stroke

Model	ø10		ø13		ø16		G
	E	F	E	F	E	F	
ZPT□□B□□□-10-B5-A10	36.5	72.5	39	75	40.5	76.5	23
ZPT□□B□□□-20-B5-A10	46.5	110.5	49	113	50.5	114.5	51
ZPT□□B□□□-30-B5-A10	56.5	120.5	59	123	60.5	124.5	
ZPT□□B□□□-40-B5-A10	66.5	156.5	69	159	70.5	160.5	77
ZPT□□B□□□-50-B5-A10	76.5	166.5	79	169	80.5	170.5	

Connection	Female thread (Buffer)	Pad Form	Bellows
Vacuum Entry Port	Vertical	Mounting	Buffer body

Bellows/ø20, ø25, ø32



ø20, ø25, ø32

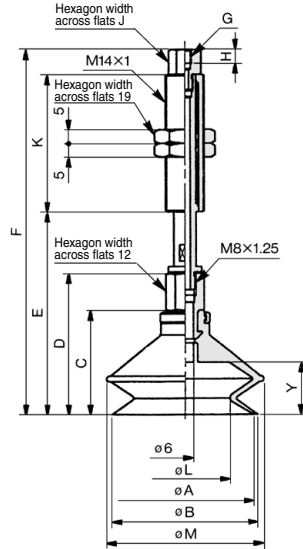
Bellows

Model	A	B	C	D	L	M	Y
ZPT20B□□□□□-B5-A10	20	22	23.5	32.5	12	25	10.5
ZPT25B□□□□□-B5-A10	25	27	24	33	16	28	
ZPT32B□□□□□-B5-A10	32	34	29	38	19	37	14

Dimensions by Stroke

Model	ø20		ø25		ø32		G
	E	F	E	F	E	F	
ZPT□□B□□□□10-B5-A10	44	80	44.5	80.5	49.5	85.5	23
ZPT□□B□□□□20-B5-A10	54	118	54.5	118.5	59.5	123.5	51
ZPT□□B□□□□30-B5-A10	64	128	64.5	128.5	69.5	133.5	
ZPT□□B□□□□40-B5-A10	74	164	74.5	164.5	79.5	169.5	77
ZPT□□B□□□□50-B5-A10	84	174	84.5	174.5	89.5	179.5	

Bellows/ø40, ø50



ø40, ø50

Bellows

Model	A	B	C	D	L	M	Y
ZPT40B□□□□□-A14	40	43	34	47.5	24	48	16
ZPT50B□□□□□-A14	50	53	38	51.5	32	57	19

Dimensions by Stroke

Model	E		G: M5 x 0.8		G: ½ (Rc, NPT, NPTF)			K
	ø40	ø50	F		F			
			ø40	ø50	ø40	ø50		
ZPT□□B□□□□10-□□□-A14	60	64	125	129	5	10	13	50
ZPT□□B□□□□20-□□□-A14	70	74	129	133				
ZPT□□B□□□□30-□□□-A14	80	84	139	143				
ZPT□□B□□□□50-□□□-A14	100	104	184	188				
								75

ZP3

ZP2

ZP2V

ZP

ZPT

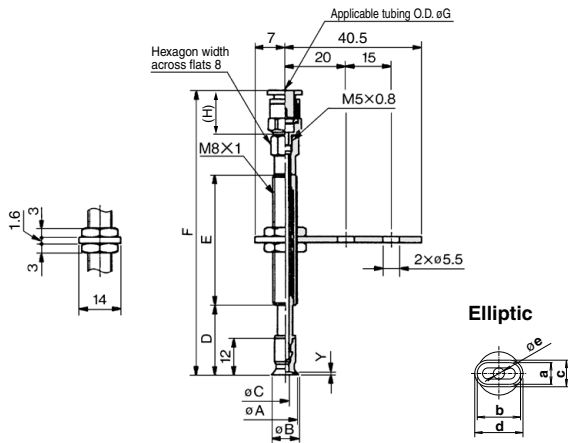
ZPR

XT661

Series **ZPT**

Connection	One-touch fitting (Buffer)	Pad Form	Flat/Flat with ribs/Deep/Thin flat Thin flat with ribs/Elliptic
Vacuum Entry Port	Vertical	Mounting	Buffer body

Flat/ø2, ø4, ø6, ø8, Thin flat/Flat with ribs/ø10, ø13, ø16, Elliptic/2004, 3507, 4010



Flat

Model	A	B	C	Y
ZPT02U□□□□□-0□-A8	2	2.6	1.2	0.5
ZPT04U□□□□□-0□-A8	4	4.8	1.6	0.8
ZPT06U□□□□□-0□-A8	6	7	2.5	1
ZPT08U□□□□□-0□-A8	8	9		

Dimensions by Stroke

Model	D	E	F	
			G: 4	G: 6
ZPT□□□□□ 6-0□-A8	18	15	60	61
ZPT□□□□□ 10-0□-A8	23		93	94
ZPT□□□□□ 15-0□-A8	28	43	98	99
ZPT□□□□□ 25-0□-A8	38		108	109

Dimensions by Applicable tubing O.D.

Applicable tubing O.D.	H
ø4	13.9
ø6	14.7

Elliptic

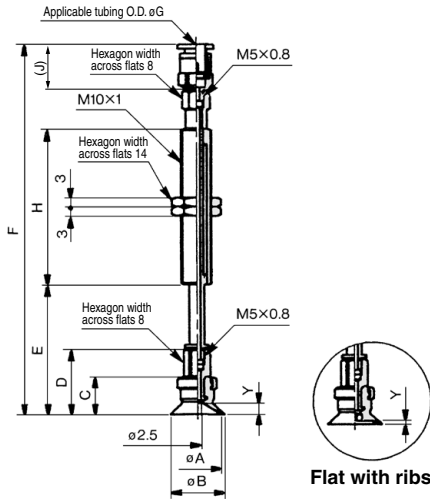
Model	a	b	c	d	øe	Y
ZPT2004U	2	4	2.6	4.6	1.2	0.3
ZPT3507U	3.5	7	4.3	7.8	1.8	0.5
ZPT4010U	4	10	5	11	2	0.8

Thin Flat/Thin Flat with Ribs

Model	A	B	C	Y
ZPT10UT	10	11		1
ZPT13UT	13	14		1.5
ZPT16UT	16	17	2.5	0.8
ZPT10CT	10	11		1
ZPT13CT	13	14		
ZPT16CT	16	17		

Connection	One-touch fitting (Buffer)	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Vertical	Mounting	Buffer body

Flat/Flat with ribs/ø10, ø13, ø16



ø10, ø13, ø16

Flat/Flat with Ribs

Model	A	B	C	D	Y	
					Flat	Flat with ribs
ZPT10 $\frac{1}{2}$ □□□□□-0□-A10	10	12				1.7
ZPT13 $\frac{1}{2}$ □□□□□-0□-A10	13	15	12	21	3	1.8
ZPT16 $\frac{1}{2}$ □□□□□-0□-A10	16	18	12.5	21.5	3.5	1.2

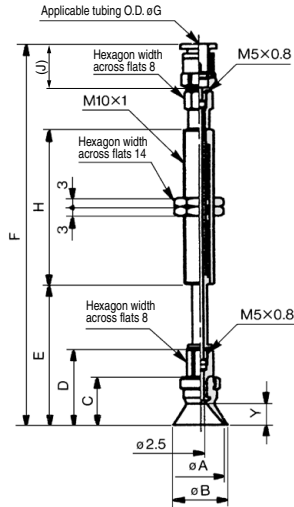
Dimensions by Stroke

Model	ø10, ø13			ø16			H
	E	F		E	F		
		G: 4	G: 6		G: 4	G: 6	
ZPT□□□□ _U □□□10-0- A10	32.5	82.5	83.5	33	83	84	23
ZPT□□□□ _U □□□20-0- A10	42.5	120.5	121.5	43	121	122	51
ZPT□□□□ _U □□□30-0- A10	52.5	130.5	131.5	53	131	132	
ZPT□□□□ _U □□□40-0- A10	62.5	166.5	167.5	63	167	168	77
ZPT□□□□ _U □□□50-0- A10	72.5	176.5	177.5	73	177	178	

Dimensions by Applicable tubing O.D.

Applicable tubing O.D.	J
ø4	13.9
ø6	14.7

Deep/ø10, ø16



ø10, ø16

Deep

Model	A	B	C	D	Y
ZPT10D□□□□□-0□-A10	10	12	15	24	6
ZPT16D□□□□□-0□-A10	16	18	16	25	7

Dimensions by Stroke

Model	ø10			ø16			H
	E	F		E	F		
		G: 4	G: 6		G: 4	G: 6	
ZPT□□D□□□10-0□-A10	35.5	85.5	86.5	36.5	86.5	87.5	23
ZPT□□D□□□20-0□-A10	45.5	123.5	124.5	46.5	124.5	125.5	51
ZPT□□D□□□30-0□-A10	55.5	133.5	134.5	56.5	134.5	135.5	
ZPT□□D□□□40-0□-A10	65.5	169.5	170.5	66.5	170.5	171.5	77
ZPT□□D□□□50-0□-A10	75.5	179.5	180.5	76.5	180.5	181.5	

Dimensions by Applicable tubing O.D.

Applicable tubing O.D.	J
ø4	13.9
ø6	14.7

ZP3

ZP2

ZP2V

ZP

ZPT ZPR

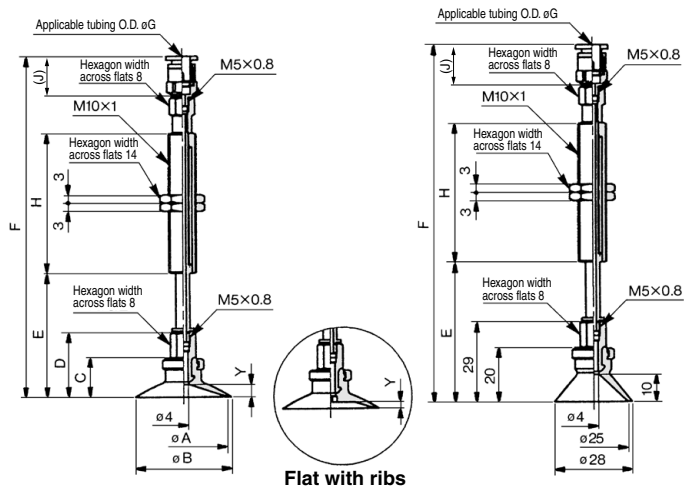
XT661

Series **ZPT**

Connection	One-touch fitting (Buffer)	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Vertical	Mounting	Buffer body

Flat/Flat with ribs/ø20, ø25, ø32

Deep/ø25



ø20, ø25, ø32

Flat Type/Flat with Ribs

Model	A	B	C	D	Y	
					Flat	Flat with ribs
ZPT20 $\frac{1}{2}$ □□□□□-0□-A10	20	23	14	23	4	1.7
ZPT25 $\frac{1}{2}$ □□□□□-0□-A10	25	28				1.8
ZPT32 $\frac{1}{2}$ □□□□□-0□-A10	32	35	14.5	23.5	4.5	2.3

Dimensions by Stroke

Model	ø20, ø25			ø32			H
	E	F		E	F		
		G: 4	G: 6		G: 4	G: 6	
ZPT□□ $\frac{1}{2}$ □□□□□10-0-□-A10	34.5	84.5	85.5	35	85	86	23
ZPT□□ $\frac{1}{2}$ □□□□□20-0-□-A10	44.5	122.5	123.5	45	123	124	51
ZPT□□ $\frac{1}{2}$ □□□□□30-0-□-A10	54.5	132.5	133.5	55	133	134	
ZPT□□ $\frac{1}{2}$ □□□□□40-0-□-A10	64.5	168.5	169.5	65	169	170	77
ZPT□□ $\frac{1}{2}$ □□□□□50-0-□-A10	74.5	178.5	179.5	75	179	180	

Dimensions by Applicable tubing O.D.

Applicable tubing O.D.	J
ø4	13.9
ø6	14.7

ø25

Deep

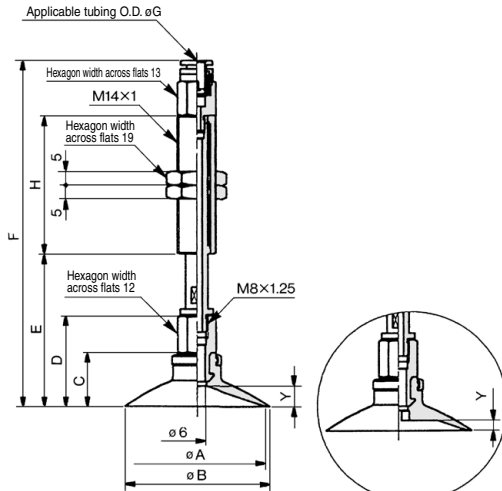
Model	E	F		H
		G: 4	G: 6	
ZPT25D□□□□10-0□-A10	40.5	90.5	91.5	23
ZPT25D□□□□20-0□-A10	50.5	128.5	129.5	51
ZPT25D□□□□30-0□-A10	60.5	138.5	139.5	
ZPT25D□□□□40-0□-A10	70.5	174.5	175.5	77
ZPT25D□□□□50-0□-A10	80.5	184.5	185.5	

Dimensions by Applicable tubing O.D.

Applicable tubing O.D.	J
ø4	13.9
ø6	14.7

Connection	One-touch fitting (Buffer)	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Vertical	Mounting	Buffer body

Flat/Flat with ribs/ø40, ø50



Flat with ribs

ø40, ø50

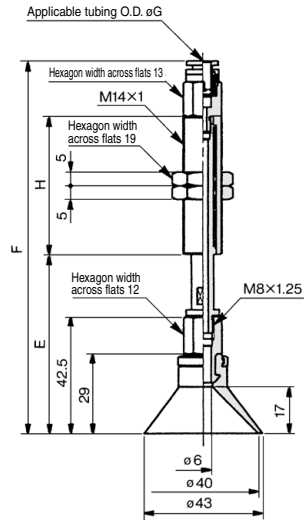
Flat/Flat with Ribs

Model	A	B	C	D	Y	
					Flat	Flat with ribs
ZPT40 $\frac{U}{C}$ □□□□□-0□-A14	40	43	18.5	32	6.5	3.3
ZPT50 $\frac{U}{C}$ □□□□□-0□-A14	50	53	19.5	33	7.5	3.8

Dimensions by Stroke

Model	ø40			ø50			H
	E	F		E	F		
		G: 6	G: 8		G: 6	G: 8	
ZPT□□ $\frac{U}{C}$ □□□□10-0□-A14	44.5	129.5	135	45.5	130.5	136	50
ZPT□□ $\frac{U}{C}$ □□□□20-0□-A14	54.5	124.4	129.4	55.5	125.4	130.4	
ZPT□□ $\frac{U}{C}$ □□□□30-0□-A14	64.5	134.4	139.4	65.5	135.4	140.4	
ZPT□□ $\frac{U}{C}$ □□□□50-0□-A14	84.5	179.4	184.4	85.5	180.4	185.4	75

Deep/ø40



ø40

Deep

Model	E	F		H
		G: 6	G: 8	
ZPT40D□□□□□10-0□-A14	55	140	145.5	50
ZPT40D□□□□□20-0□-A14	65	134.9	139.9	
ZPT40D□□□□□30-0□-A14	75	144.9	149.9	
ZPT40D□□□□□50-0□-A14	95	189.9	194.9	75

ZP3

ZP2

ZP2V

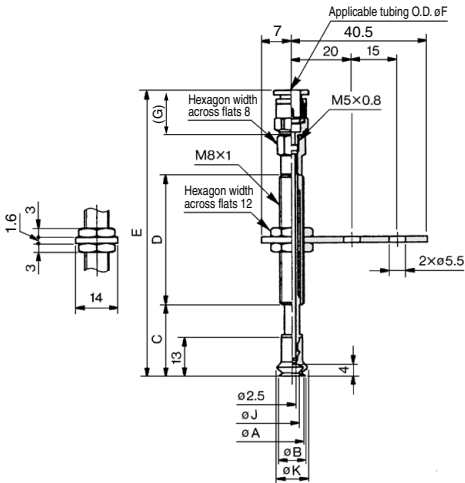
ZP

ZPT
ZPR

XT661

Connection	One-touch fitting (Buffer)	Pad Form	Bellows
Vacuum Entry Port	Vertical	Mounting	Buffer body

Bellows/ø6, ø8



ø6, ø8

Bellows

Model	A	B	J	K
ZPT06B□□□□□-0□-A8	6	7	3.3	9
ZPT08B□□□□□-0□-A8	8	9	4.7	10

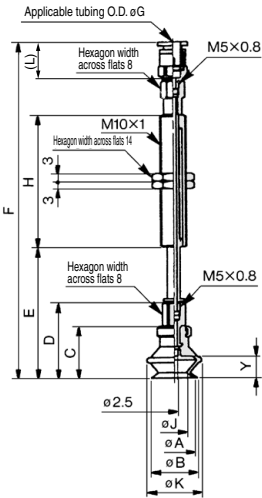
Dimensions by Stroke

Model	C	D	E	
			F: 4	F: 6
ZPT□□B□□□□ 6-0□-A8	19	15	61	62
ZPT□□B□□□□ 10-0□-A8	24		94	95
ZPT□□B□□□□ 15-0□-A8	29	43	99	100
ZPT□□B□□□□ 25-0□-A8	39		109	110

Dimensions by Applicable tubing O.D.

Applicable tubing O.D.	G
ø4	13.9
ø6	14.7

Bellows/ø10, ø13, ø16



ø10, ø13, ø16

Bellows

Model	A	B	C	D	J	K	Y
ZPT10B□□□□□-0□-A10	10	12	16	25	6	14	5.5
ZPT13B□□□□□-0□-A10	13	15	18.5	27.5	9	19	7.5
ZPT16B□□□□□-0□-A10	16	18	20	29	10	21	8.5

Dimensions by Stroke

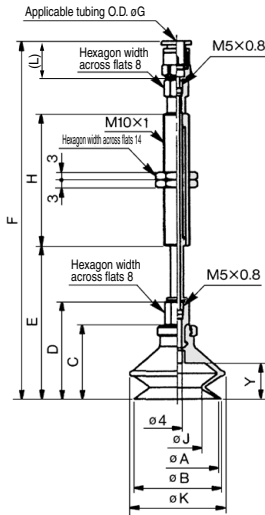
Model	ø10			ø13			ø16			H
	E	F		E	F		E	F		
		G: 4	G: 6		G: 4	G: 6		G: 4	G: 6	
ZPT□□B□□□10-0□-A10	36.5	86.5	87.5	39	89	90	40.5	90.5	91.5	23
ZPT□□B□□□20-0□-A10	46.5	124.5	125.5	49	127	128	50.5	128.5	129.5	51
ZPT□□B□□□30-0□-A10	56.5	134.5	135.5	59	137	138	60.5	138.5	139.5	
ZPT□□B□□□40-0□-A10	66.5	170.5	171.5	69	173	174	70.5	174.5	185.5	77
ZPT□□B□□□50-0□-A10	76.5	180.5	181.5	79	183	184	80.5	184.5	185.5	

Dimensions by Applicable tubing O.D.

Applicable tubing O.D.	L
ø4	13.9
ø6	14.7

Connection	One-touch fitting (Buffer)	Pad Form	Bellows
Vacuum Entry Port	Vertical	Mounting	Buffer body

Bellows/ø20, ø25, ø32



ø20, ø25, ø32

Bellows

Model	A	B	C	D	J	K	Y
ZPT20B□□□□□-0□-A10	20	22	23.5	32.5	12	25	10.5
ZPT25B□□□□□-0□-A10	25	27	24	33	16	28	
ZPT32B□□□□□-0□-A10	32	34	29	38	19	37	14

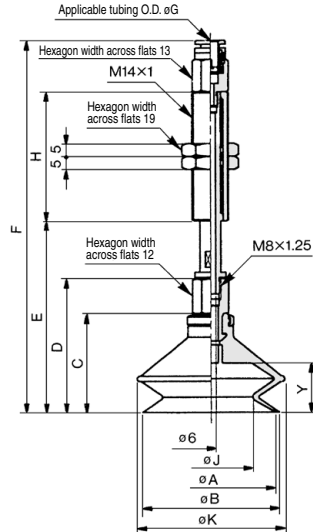
Dimensions by Stroke

Model	ø20			ø25			ø32			H
	E	F		E	F		E	F		
		G: 4	G: 6		G: 4	G: 6		G: 4	G: 6	
ZPT□□B□□□10-0□-A10	44	94	95	44.5	94.5	95.5	49.5	99.5	100.5	23
ZPT□□B□□□20-0□-A10	54	132	133	54.5	132.5	133.5	59.5	137.5	138.5	51
ZPT□□B□□□30-0□-A10	64	142	143	64.5	142.5	143.5	69.5	147.5	148.5	77
ZPT□□B□□□40-0□-A10	74	178	179	74.5	178.5	179.5	79.5	183.5	184.5	104
ZPT□□B□□□50-0□-A10	84	188	189	84.5	188.5	189.5	89.5	193.5	194.5	177

Dimensions by Applicable tubing O.D.

Applicable tubing O.D.	L
ø4	13.9
ø6	14.7

Bellows/ø40, ø50



ø40, ø50

Bellows

Model	A	B	C	D	J	K	Y
ZPT40B□□□□□-0□-A14	40	43	34	47.5	24	48	16
ZPT50B□□□□□-0□-A14	50	53	38	51.5	32	57	19

Dimensions by Stroke

Model	ø40			ø50			H
	E	F		E	F		
		G: 6	G: 8		G: 6	G: 8	
ZPT□□B□□□□10-0□-A14	60	145	150.5	64	149	154.5	50
ZPT□□B□□□□20-0□-A14	70	139.9	144.9	74	143.9	148.9	
ZPT□□B□□□□30-0□-A14	80	149.9	154.9	84	153.9	158.9	
ZPT□□B□□□□50-0□-A14	100	194.9	199.9	104	198.9	203.9	75

ZP3

ZP2

ZP2V

ZP

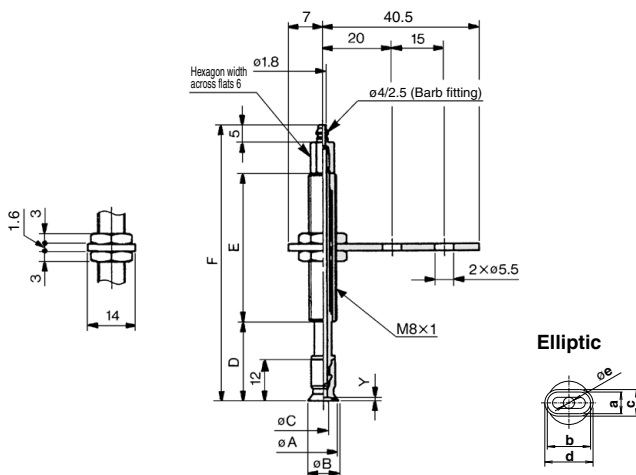
ZPT

ZPR

XT661

Connection	Barb fitting (Buffer)	Pad Form	Flat/Thin flat/Thin flat with ribs/Elliptic
Vacuum Entry Port	Vertical	Mounting	Buffer body

Flat/ø2, ø4, ø6, ø8, Thin flat/Thin flat with ribs/ø10, ø13, ø16, Elliptic/2004, 3507, 4010



Flat

Model	A	B	C	Y
ZPT02U□□□□□-□4-A8	2	2.6	1.2	0.5
ZPT04U□□□□□-□4-A8	4	4.8	1.6	0.8
ZPT06U□□□□□-□4-A8	6	7	2.5	
ZPT08U□□□□□-□4-A8	8	9		

Dimensions by Stroke

Model	D	E	F
ZPT□□□□□ 6-□4-A8	18	15	47
ZPT□□□□□10-□4-A8	23	43	80
ZPT□□□□□15-□4-A8	28		85
ZPT□□□□□25-□4-A8	38		95

Elliptic

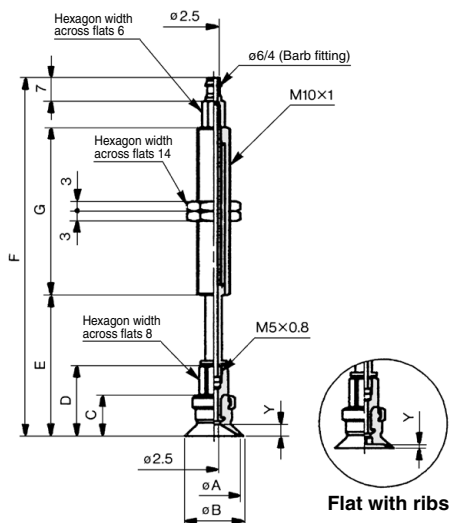
Model	a	b	c	d	e	Y
ZPT2004U	2	4	2.6	4.6	1.2	0.3
ZPT3507U	3.5	7	4.3	7.8	1.8	0.5
ZPT4010U	4	10	5	11	2	0.8

Thin Flat/Thin Flat with Ribs

Model	A	B	C	Y
ZPT10UT ☐	10	11	2.5	1
ZPT13UT ☐	13	14		1.5
ZPT16UT ☐	16	17		
ZPT10CT ☐	10	11		0.8
ZPT13CT ☐	13	14		1
ZPT16CT ☐	16	17		

Connection	Barb fitting (Buffer)	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Vertical	Mounting	Buffer body

Flat/Flat with ribs/ø10, ø13, ø16



Ø10, Ø13, Ø16

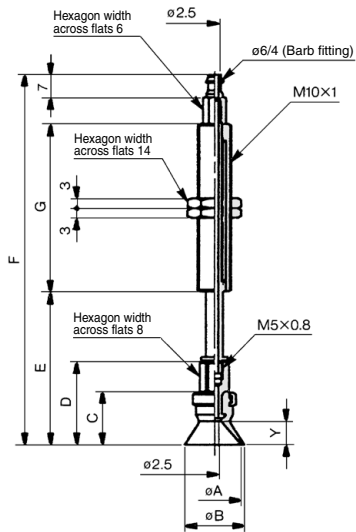
Flat/Flat with Ribs

Model	A	B	C	D	Y	
					Flat	Flat with ribs
ZPT10 ^g □□□□□-□6-A10	10	12	12	21	3	1.7
ZPT13 ^g □□□□□-□6-A10	13	15				1.8
ZPT16 ^g □□□□□-□6-A10	16	18	12.5	21.5	3.5	1.2

Dimensions by Stroke

[illegible]

Deep/Ø10, Ø16



Ø10, Ø16

Deep

Model	A	B	C	D	Y
ZPT10D□□□□□-□6-A10	10	12	15	24	6
ZPT16D□□□□□-□6-A10	16	18	16	25	7

Dimensions by Stroke

Model	$\phi 10$		$\phi 16$		G
	E	F	E	F	
ZPT□□□□□10-□6-A10	35.5	73.5	36.5	74.5	23
ZPT□□□□□20-□6-A10	45.5	111.5	46.5	112.5	51
ZPT□□□□□30-□6-A10	55.5	121.5	56.5	122.5	
ZPT□□□□□40-□6-A10	65.5	157.7	66.5	158.5	
ZPT□□□□□50-□6-A10	75.5	167.5	76.5	168.5	77

ZP3

ZP2

ZP2V

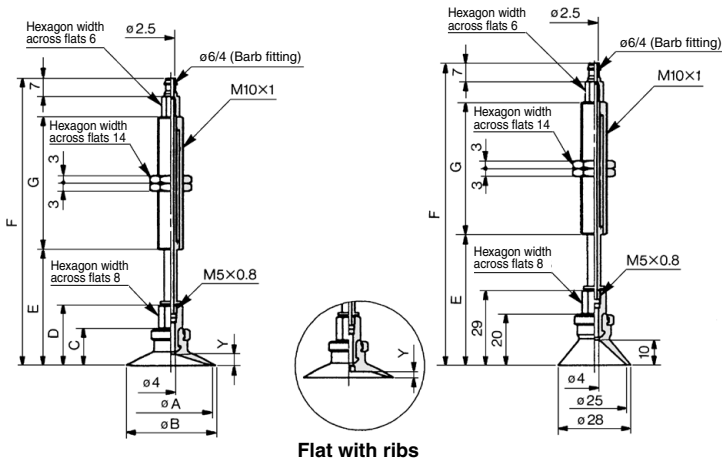
ZP

ZPT
ZPPXT661

Connection	Barb fitting (Buffer)	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Vertical	Mounting	Buffer body

Flat/Flat with ribs/ø20, ø25, ø32

Deep/ø25



ø20, ø25, ø32

Flat/Flat with Ribs

Model	A	B	C	D	Y	
					Flat	Flat with ribs
ZPT20 $\frac{1}{2}$ □□□□□□□□□□6-A10	20	23	14	23	4	1.7
ZPT25 $\frac{1}{2}$ □□□□□□□□□□6-A10	25	28				1.8
ZPT32 $\frac{1}{2}$ □□□□□□□□□□6-A10	32	35	14.5	23.5	4.5	2.3

Dimensions by Stroke

Model	ø20, ø25		ø32		G
	E	F	E	F	
ZPT□□□□□□□□□□10□□6-A10	34.5	72.5	35	73	23
ZPT□□□□□□□□□□20□□6-A10	44.5	110.5	45	111	51
ZPT□□□□□□□□□□30□□6-A10	54.5	120.5	55	121	77
ZPT□□□□□□□□□□40□□6-A10	64.5	156.5	65	157	
ZPT□□□□□□□□□□50□□6-A10	74.5	166.5	75	167	

ø25

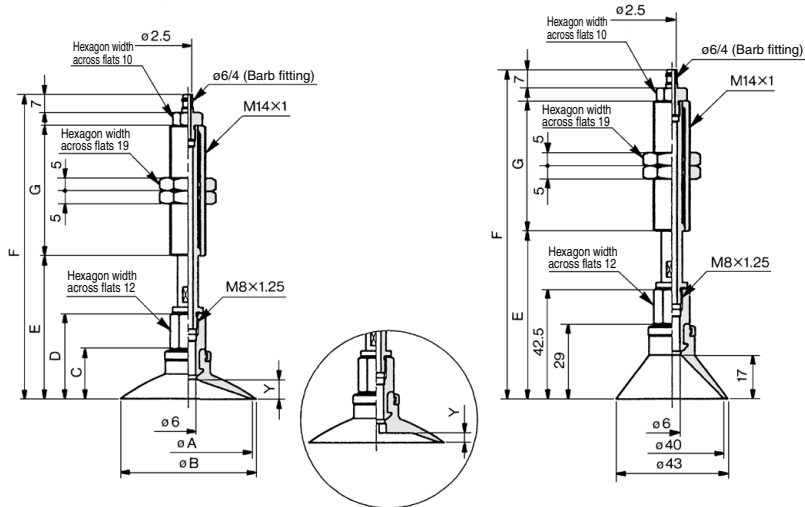
Deep

Model	E	F	G
ZPT25D□□□□10□□6-A10	40.5	78.5	23
ZPT25D□□□□20□□6-A10	50.5	116.5	51
ZPT25D□□□□30□□6-A10	60.5	126.5	
ZPT25D□□□□40□□6-A10	70.5	162.5	77
ZPT25D□□□□50□□6-A10	80.5	172.5	

Connection	Barb fitting (Buffer)	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Vertical	Mounting	Buffer body

Flat/Flat with ribs/ø40, ø50

Deep/ø40



Flat with ribs

ø40, ø50

Flat/Flat with Ribs

Model	A	B	C	D	Y	
					Flat	Flat with ribs
ZPT40 $\frac{1}{2}$ □□□□□□□□6-A14	40	43	18.5	32	6.5	3.3
ZPT50 $\frac{1}{2}$ □□□□□□□□6-A14	50	53	19.5	33	7.5	3.8

Dimensions by Stroke

Model	ø40		ø50		G
	E	F	E	F	
ZPT□□□□□□□□10□□6-A14	44.5	113.5	45.5	114.5	50
ZPT□□□□□□□□20□□6-A14	54.5	116.5	55.5	117.5	
ZPT□□□□□□□□30□□6-A14	64.5	126.5	65.5	127.5	
ZPT□□□□□□□□50□□6-A14	84.5	171.5	85.5	172.5	75

ø40

Deep

Model	E	F	G
ZPT40D□□□□10□□6-A14	55	124	50
ZPT40D□□□□20□□6-A14	65	127	
ZPT40D□□□□30□□6-A14	75	137	75
ZPT40D□□□□50□□6-A14	95	182	

ZP3

ZP2

ZP2V

ZP

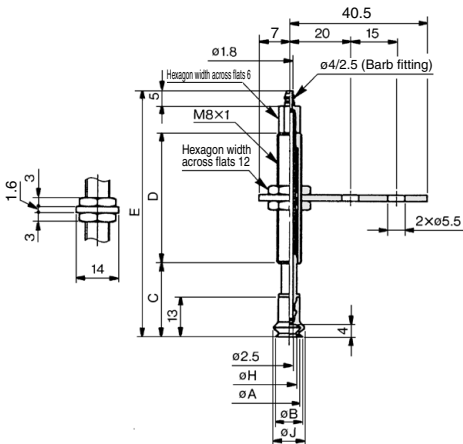
ZPT

ZPR

XT661

Connection	Barb fitting (Buffer)	Pad Form	Bellows
Vacuum Entry Port	Vertical	Mounting	Buffer body

Bellows/ø6, ø8



ø6, ø8

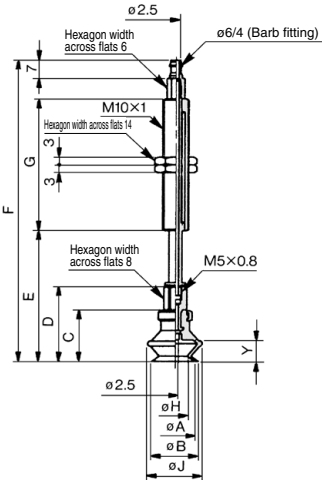
Bellows

Model	A	B	H	J
ZPT06B□□□□□□4-A8	6	7	3.3	9
ZPT08B□□□□□□4-A8	8	9	4.7	10

Dimensions by Stroke

Model	C	D	E
ZPT□□B□□□□6-□4-A8	19	15	48
ZPT□□B□□□□10-□4-A8	24		81
ZPT□□B□□□□15-□4-A8	29	43	86
ZPT□□B□□□□25-□4-A8	39		96

Bellows/ø10, ø13, ø16



ø10, ø13, ø16

Bellows

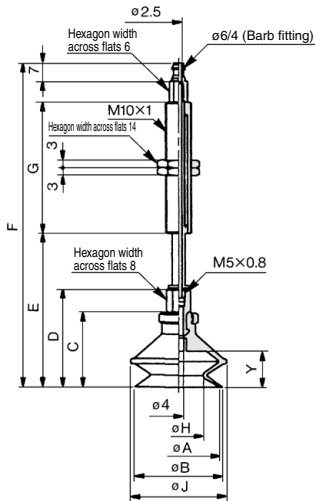
Model	A	B	C	D	H	J	Y
ZPT10B□□□□□□6-A10	10	12	16	25	6	14	5.5
ZPT13B□□□□□□6-A10	13	15	18.5	27.5	9	19	7.5
ZPT16B□□□□□□6-A10	16	18	20	29	10	21	8.5

Dimensions by Stroke

Model	ø10		ø13		ø16		G
	E	F	E	F	E	F	
ZPT□□B□□□□10-□6-A10	36.5	74.5	39	77	40.5	78.5	23
ZPT□□B□□□□20-□6-A10	46.5	112.5	49	115	50.5	116.5	51
ZPT□□B□□□□30-□6-A10	56.5	122.5	59	125	60.5	126.5	
ZPT□□B□□□□40-□6-A10	66.5	158.5	69	161	70.5	162.5	77
ZPT□□B□□□□50-□6-A10	76.5	168.5	79	171	80.5	172.5	

Connection	Barb fitting (Buffer)	Pad Form	Bellows
Vacuum Entry Port	Vertical	Mounting	Buffer body

Bellows/ø20, ø25, ø32



ø20, ø25, ø32

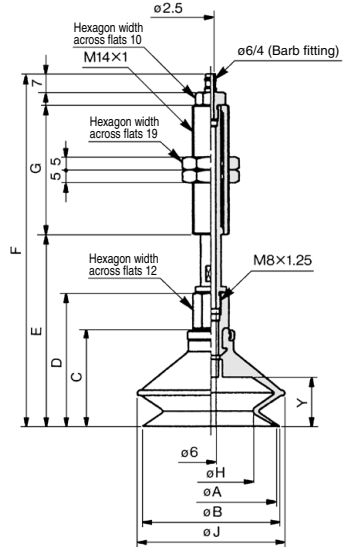
Bellows

Model	A	B	C	D	H	J	Y
ZPT20B□□□□□6-A10	20	22	23.5	32.5	12	25	10.5
ZPT25B□□□□□6-A10	25	27	24	33	16	28	
ZPT32B□□□□□6-A10	32	34	29	38	19	37	14

Dimensions by Stroke

Model	ø20		ø25		ø32		G
	E	F	E	F	E	F	
ZPT□□B□□□□10-□6-A10	44	82	44.5	82.5	49.5	87.5	23
ZPT□□B□□□□20-□6-A10	54	120	54.5	120.5	59.5	125.5	51
ZPT□□B□□□□30-□6-A10	64	130	64.5	130.5	69.5	135.5	
ZPT□□B□□□□40-□6-A10	74	166	74.5	166.5	79.5	171.5	77
ZPT□□B□□□□50-□6-A10	84	176	84.5	176.5	89.5	181.5	

Bellows/ø40, ø50



ø40, ø50

Bellows

Model	A	B	C	D	H	J	Y
ZPT40B□□□□□6-A14	40	43	34	47.5	24	48	16
ZPT50B□□□□□6-A14	50	53	38	51.5	32	57	19

Dimensions by Stroke

Model	ø40		ø50		G
	E	F	E	F	
ZPT□□B□□□□10-□6-A14	60	129	64	133	
ZPT□□B□□□□20-□6-A14	70	132	74	136	50
ZPT□□B□□□□30-□6-A14	80	142	84	146	
ZPT□□B□□□□50-□6-A14	100	187	104	191	75

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661



Vacuum Pad/ Lateral Vacuum Entry with One-touch Fitting Without Buffer

Series ZPR

RoHS



Specifications

Vacuum entry	Direction		Lateral	
	Connection		One-touch fitting	
	Applicable tube dia.	Elliptic (2 x 4, 3.5 x 7, 4 x 10) Thin section series (ø10 to ø16) ø2 to ø8	ø4, ø6 tube	
		ø10 to ø16	ø4, ø6 tube	
		ø20 to ø32	ø4, ø6, ø8 tube	
		ø40 to ø50	ø6, ø8 tube	
Mounting	Connection		Male thread	Female thread
	Thread dia.	Elliptic (2 x 4, 3.5 x 7, 4 x 10) Thin section series (ø10 to ø16) ø2 to ø8	M5 x 0.8, M6 x 1	M4 x 0.7, M5 x 0.8
		ø10 to ø16	M5 x 0.8, M6 x 1	M5 x 0.8, M6 x 1
		ø20 to ø32	M6 x 1, M8 x 1	M5 x 0.8, M6 x 1, M8 x 1.25
		ø40 to ø50	M6 x 1, M8 x 1	M6 x 1, M8 x 1.25

Pad Type

Pad form	Flat	Flat with ribs	Deep	Bellows	Thin flat/Thin flat with ribs
Pad diameter (mm)	2, 4, 6, 8, 2 x 4, 3.5 x 7, 4 x 10, 10, 13, 16, 20, 25, 32, 40, 50	10, 13, 16, 20, 25, 32, 40, 50	10, 16, 25, 40	6, 8, 10, 13, 16, 20, 25, 32, 40, 50	10, 13, 16
Material (Color)	NBR (Black), Silicone rubber (White), Urethane rubber (Brown), FKM (Black with green mark) Conductive NBR (Black with one silver mark), Conductive silicone rubber (Black with two silver marks)				
Durometer	NBR (A50/S), Silicone rubber (A40/S), Urethane rubber/FKM (A60/S) Conductive NBR (A50/S), Conductive silicone rubber (A50/S)				

Weight/Male Thread (Female thread)

(g)

Model	Pad form		Flat				Flat with ribs			Deep			Bellows			
	Connection		M4	M5	M6	M8	M5	M6	M8	M5	M6	M8	M4	M5	M6	M8
ZPR02 to 08 2004, 3507, 4010 Thin section series 10 to 16	—	26 (19)	27 (—)	—	—	—	—	—	—	—	—	—	(19) (Except ø2, ø4)	26 (20) (Except ø2, ø4)	27 (—) (Except ø2, ø4)	—
ZPR10	—	29 (23)	31 (21)	—	29 (23)	31 (22)	—	29 (23)	30 (22)	—	—	—	—	29 (23)	31 (22)	—
ZPR13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ZPR16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ZPR20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ZPR25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ZPR32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ZPR40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ZPR50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

() : Figures for female thread connections.

How to Order

Series ZPR
Without buffer

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

Pad diameter

2004	2 x 4
3507	3.5 x 7
4010	4 x 10
02	ø2
04	ø4
06	ø6
08	ø8
10	ø10
13	ø13
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50

Pad type

(Refer to "Table (1)" for applications.)

U	Flat
C	Flat with ribs
D	Deep
B	Bellows
UT	Thin flat
CT	Thin flat with ribs

Mounting thread

(Refer to "Table (2)" for applications.)

Vacuum entry port

(Refer to "Table (2)" for applications.)

Table (2) Vacuum Entry/Mounting Thread Diameter

Connection	Symbol	Thread dia./ Port size	ø2 to ø8 2 x 4 3.5 x 7 4 x 10 ø10 to ø16 (Thin section series)	ø10 to ø16	ø20 to ø32	ø40 to ø50
Vacuum entry	One-touch fitting	04	ø4 tube	●	●	—
		06	ø6 tube	●	●	●
		08	ø8 tube	—	●	●
Mounting	Male thread	A5	M5 x 0.8	●	—	—
		A6	M6 x 1	●	●	●
		A8	M8 x 1	—	—	●
		B4	M4 x 0.7	●	—	—
	Female thread	B5	M5 x 0.8	●	●	—
		B6	M6 x 1	—	●	●
		B8	M8 x 1.25	—	—	●

Material

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

Table (1) Pad Diameter/Pad Type

Type \ Dia.	2 x 4	3.5 x 7	4 x 10	ø2	ø4	ø6	ø8	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
Flat	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Flat with ribs	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●
Deep	—	—	—	—	—	—	—	●	—	●	—	●	—	—	—
Bellows	—	—	—	—	—	●	●	●	●	●	●	●	●	●	●
Thin flat	—	—	—	—	—	—	—	—	●	●	—	—	—	—	—
Thin flat with ribs	—	—	—	—	—	—	—	—	●	●	—	—	—	—	—

ZP3

ZP2

ZP2V

ZP

ZPT

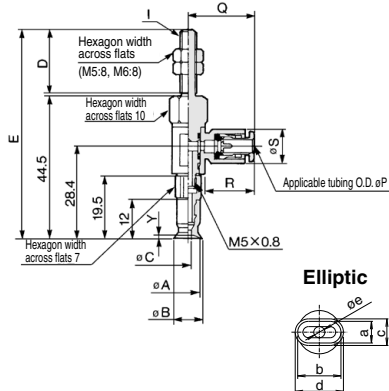
ZPR

XT661

Connection	One-touch fitting	Pad Form	Flat/Flat with ribs/Deep/Thin flat/ Thin flat with ribs/Elliptic
Vacuum Entry Port	Lateral	Mounting	Male thread

**Size/Flat ø2, ø4, ø6, ø8/Thin flat/Thin flat with ribs ø10, ø13, ø16/
Elliptic 2004, 3507, 4010**

Size/Ø10, Ø13, Ø16

Flat/Thin flat/Thin flat with ribs

Flat

Model	A	B	C	I: M5 x 0.8		I: M6 x 1		Y
				D	E	D	E	
ZPR02U	2	2.6	1.2	20	65.5	25	70.5	0.5
ZPR04U	4	4.8	1.6					0.8
ZPR06U	6	7	2.5					
ZPR08U	8	9	2.5					1

Applicable Tubing

Applicable tubing O. D.	P	Q	R	S
ø4	4	20.6	15.6	10.4
ø6	6	21.6	16.6	12.8

Elliptic

Model	a	b	c	d	e	Y
ZPR2004U	2	4	2.6	4.6	1.2	0.3
ZPR3507U	3.5	7	4.3	7.8	1.8	0.5
ZPR4010U	4	10	5	11	2	0.8

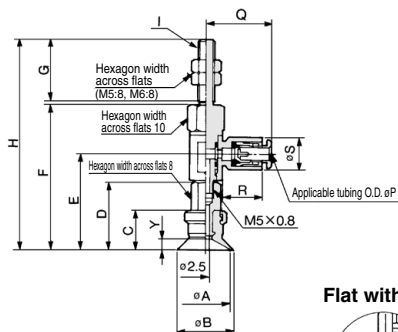
* Dimensions of D, E are the same.

Thin Flat/Thin Flat with Ribs

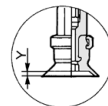
Model	A	B	Y
ZPR10UT	10	11	1
ZPR13UT	13	14	1.5
ZPR16UT	16	17	1.5
ZPR10CT	10	11	0.8
ZPR13CT	13	14	1
ZPR16CT	16	17	1

* Dimensions of D, E are the same.

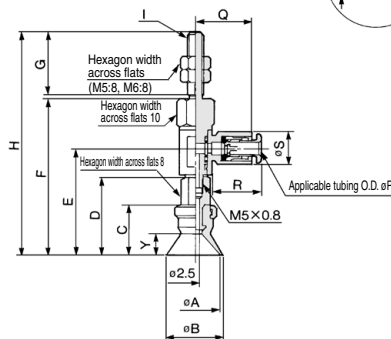
Flat



Flat with ribs



Deep: ZPR10D, 16D only



Flat/Flat with Ribs

Model	A	B	C	D	E	F	I: M5 x 0.8		I: M6 x 1		Y	
							G	H	G	H	Flat	Flat with ribs
ZPR10 ^{UC}	10	12	12	21	29.9	46	20	67	25	72	3	1.7
ZPR13 ^{UC}	13	15						67.5		72.5	1.8	
ZPR16 ^{UC}	16	18										12.5

Deep

Model	A	B	C	D	E	F	I: M5 x 0.8		I: M6 x 1		Y
							G	H	G	H	
ZPR10D	10	12	15	24	32.9	49	20	70	25	75	6
ZPR16D	16	18	16	25	33.9	50		71		76	7

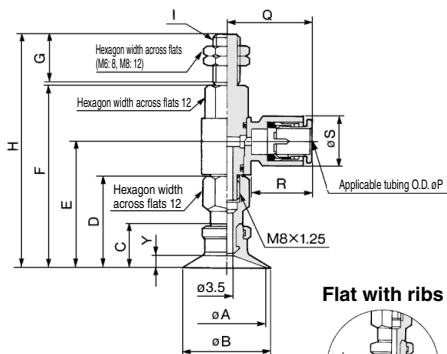
Applicable Tubing

Applicable tubing O.D.	P	Q	R	S
ø4	4	20.6	15.6	10.4
ø6	6	21.6	16.6	12.8

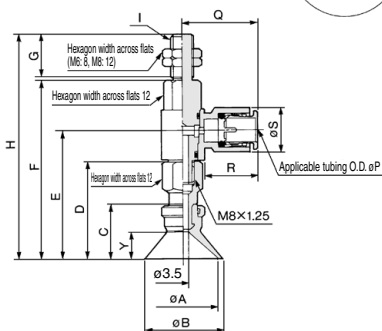
Vacuum Pad/ Lateral Vacuum Entry with One-touch Fitting without Buffer **Series ZPR**

Connection	One-touch fitting	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Lateral	Mounting	Male thread

Size/ø20, ø25, ø32



Deep: ZPR25D only



Flat/Flat with Ribs

Model	A	B	C	D	E	F	I: M6 x 1		I: M8 x 1		Y
							G	H	G	H	
ZPR20 ^U _C	20	23		14	29	39.8	57.6				1.7
ZPR25 ^U _C	25	28						25	15	73.5	1.8
ZPR32 ^U _C	32	35	14.5	29.5	40.3	58.1		84	74	4.5	2.3

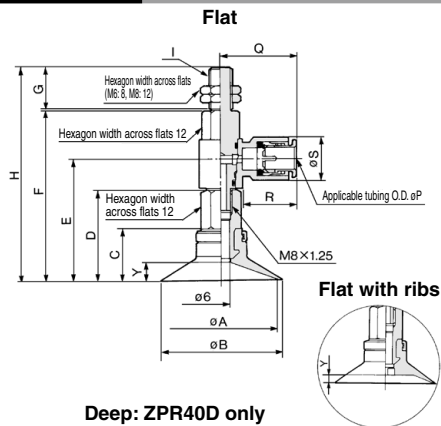
Deep

Model	A	B	C	D	E	F	I: M6 x 1		I: M8 x 1		Y
							G	H	G	H	
ZPR25D	25	28	20	35	48.5	63.6	25	89.5	15	79.5	10

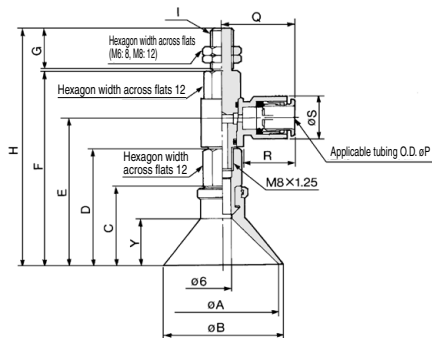
Applicable Tubing

Applicable tubing O.D.	P	Q	R	S
ø4	4	23.3	15.8	10.4
ø6	6	24.3	16.8	12.8
ø8	8	26.2	18.7	15.2

Size/ø40, ø50



Deep: ZPR40D only



Flat/Flat with Ribs

Model	A	B	C	D	E	F	I: M6 x 1		I: M8 x 1		Y
							G	H	G	H	
ZPR40 ^U _C	40	43	18.5	32	42.8	60.6					
ZPR50 ^U _C	50	53	19.5	33	43.8	61.6	25	86.5	15	76.5	3.3
											3.8

Deep

Model	A	B	C	D	E	F	I: M6 x 1		I: M8 x 1		Y
							G	H	G	H	
ZPR40D	40	43	29	42.5	53.3	71.1	25	97	15	87	17

Applicable Tubing

Applicable tubing O.D.	P	Q	R	S
ø6	6	24.3	16.8	12.8
ø8	8	26.2	18.7	15.2

ZP3

ZP2

ZP2V

ZP

ZPT

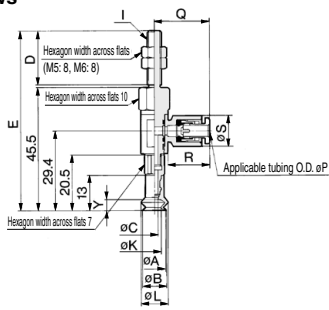
ZPR

XT661

Connection	One-touch fitting	Pad Form	Bellows
Vacuum Entry Port	Lateral	Mounting	Male thread

Size/**ø6, ø8**

Bellows



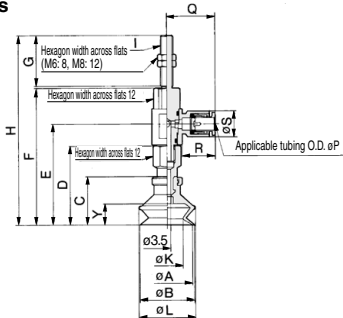
Model	A	B	C	I: M5 x 0.8		I: M6 x 1		K	L	Y
				D	E	D	E			
ZPR06B	6	7		20	66.5	25	71.5	3.3	9	4
ZPR08B	8	9	2.5					4.7	10	

Applicable Tubing

Applicable tubing O.D.	P	Q	R	S
ø4	4	20.6	15.6	10.4
ø6	6	21.6	16.6	12.8

Size/**ø20, ø25, ø32**

Bellows



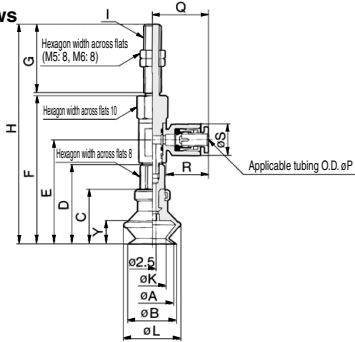
Model	A	B	C	D	E	F	I: M6 x 1		I: M8 x 1		K	L	Y
							G	H	G	H			
ZPR20B	20	22	23.5	38.5	49.3	67.1		93		83	12	25	10.5
ZPR25B	25	27	24	39	49.8	67.6	25	93.5	15	83.5	16	28	10.5
ZPR32B	32	34	29	44	54.8	72.6		98.5		88.5	19	37	14

Applicable Tubing

Applicable tubing O.D.	P	Q	R	S
ø4	4	23.3	15.8	10.4
ø6	6	24.3	16.8	12.8
ø8	8	26.2	18.7	15.2

Size/**ø10, ø13, ø16**

Bellows



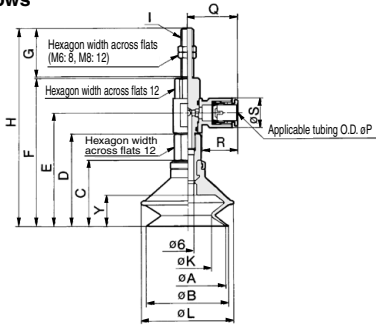
Model	A	B	C	D	E	F	I: M5 x 0.8		I: M6 x 1		K	L	Y
							G	H	G	H			
ZPR10B	10	12	16	25	33.9	50		71		76	6	14	5.5
ZPR13B	13	15	18.5	27.5	36.4	52.5	20	73.5	25	78.5	9	19	7.5
ZPR16B	16	18	20	29	37.9	54		75		80	10	21	8.5

Applicable Tubing

Applicable tubing O.D.	P	Q	R	S
ø4	4	20.6	15.6	10.4
ø6	6	21.6	16.6	12.8

Size/**ø40, ø50**

Bellows



Model	A	B	C	D	E	F	I: M6 x 1		I: M8 x 1		K	L	Y
							G	H	G	H			
ZPR40B	40	43	34	47.5	58.3	76.1		102		92	24	48	16
ZPR50B	50	53	38	51.5	62.3	80.1	25	106	15	96	32	57	19

Applicable Tubing

Applicable tubing O.D.	P	Q	R	S
ø6	6	24.3	16.8	12.8
ø8	8	26.2	18.7	15.2

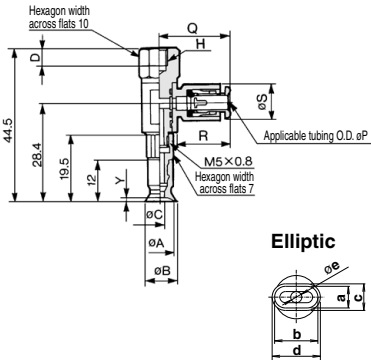
Vacuum Pad/ Lateral Vacuum Entry with One-touch Fitting without Buffer *Series ZPR*

Connection	One-touch fitting	Pad Form	Flat/Flat with ribs/Deep/Thin flat/ Thin flat with ribs/Elliptic
Vacuum Entry Port	Lateral	Mounting	Female thread

Size/Flat ø2, ø4, ø6, ø8/Thin flat/Thin flat with ribs ø10, ø13, ø16/
Elliptic 2004, 3507, 4010

Size/ø10, ø13, ø16

Flat/Thin flat/Thin flat with ribs



Elliptic



Flat

Model	A	B	C	H: M4 x 0.7 D	H: M5 x 0.8 D	Y
ZPR02U	2	2.6	1.2	4	5	0.5
ZPR04U	4	4.8	1.6			0.8
ZPR06U	6	7	2.5			1
ZPR08U	8	9	2.5			1

Applicable Tubing

Applicable tubing O.D.	P	Q	R	S
ø4	4	20.6	15.6	10.4
ø6	6	21.6	16.6	12.8

Elliptic

Model	a	b	c	d	e	Y
ZPR2004U	2	4	2.6	4.6	1.2	0.3
ZPR3507U	3.5	7	4.3	7.8	1.8	0.5
ZPR4010U	4	10	5	11	2	0.8

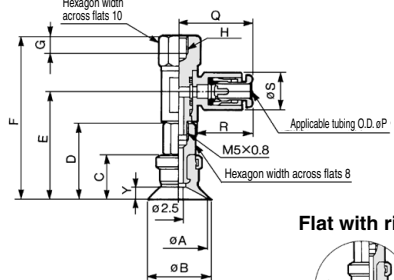
* Dimensions of D are the same.

Thin Flat/Thin Flat with Ribs

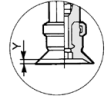
Model	A	B	C	Y
ZPR10UT	10	11	2.5	1
ZPR13UT	13	14		1.5
ZPR16UT	16	17		0.8
ZPR10CT	10	11		1
ZPR13CT	13	14	2.5	1
ZPR16CT	16	17		1

* Dimensions of D are the same.

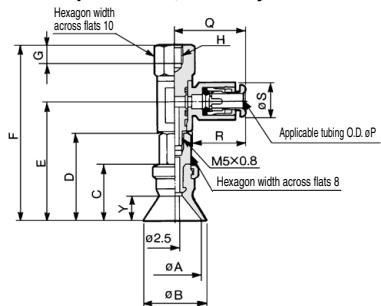
Flat



Flat with ribs



Deep: ZPR10D, 16D only



Flat/Flat with Ribs

Model	A	B	C	D	E	F	H: M5 x 0.8 G	H: M6 x 1 G	Flat	Flat with ribs
ZPR10 _C	10	12	12	21	29.9	46	5	6	3	1.7
ZPR13 _C	13	15	16	25	33.9	50			3.5	1.8
ZPR16 _C	16	18	16	25	33.9	50			3.5	1.2

Deep

Model	A	B	C	D	E	F	H: M5 x 0.8 G	H: M6 x 1 G	Y
ZPR10D	10	12	15	24	32.9	49	5	6	6
ZPR16D	16	18	16	25	33.9	50			7

Applicable Tubing

Applicable tubing O.D.	P	Q	R	S
ø4	4	20.6	15.6	10.4
ø6	6	21.6	16.6	12.8

ZP3

ZP2

ZP2V

ZP

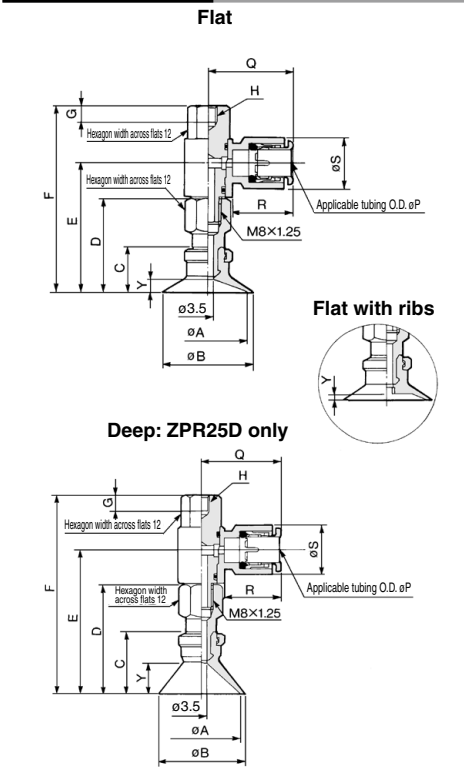
ZPT

ZPR

XT661

Connection	One-touch fitting	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Lateral	Mounting	Female thread

Size/ø20, ø25, ø32



Flat/Flat with Ribs

Model	A	B	C	D	E	F	H: M5 x 0.8		H: M6 x 1	H: M8 x 1.25	Y	
							G	G			Flat	Flat with ribs
ZPR20 _C	20	23	14	29	39.8	57.6	5	6	8	4	1.7	
ZPR25 _C	25	28									1.8	
ZPR32 _C	32	35	14.5	29.5	40.3	58.1					4.5	2.3

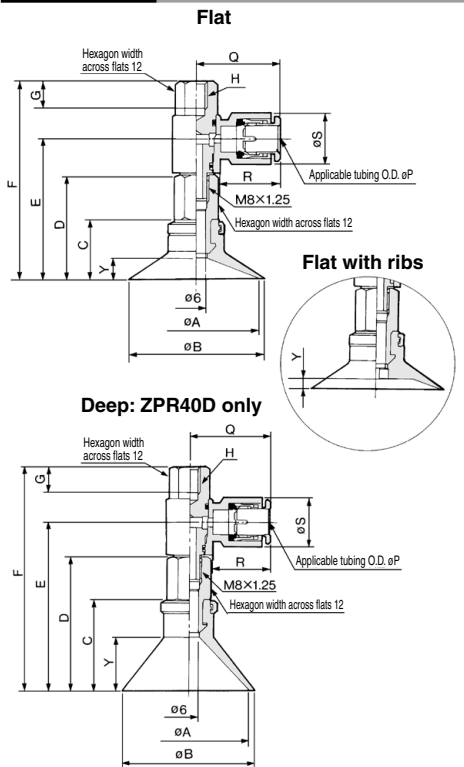
Deep

Model	A	B	C	D	E	F	H: M5 x 0.8		H: M6 x 1	H: M8 x 1.25	Y
							G	G			
ZPR25D	25	28	20	35	45.8	63.6	5		6	8	10

Applicable Tubing

Applicable tubing O.D.	P	Q	R	S
ø4	4	23.3	15.8	10.4
ø6	6	24.3	16.8	12.8
ø8	8	26.2	18.7	15.2

Size/ø40, ø50



Flat/Flat with Ribs

Model	A	B	C	D	E	F	H: M6 x 1		H: M8 x 1.25	Y	
							G	G		Flat	Flat with ribs
ZPR40 _C	40	43	18.5	32	42.8	60.6	6	8		6.5	3.3
ZPR50 _C	50	53	19.5	33	43.8	61.6				7.5	3.8

Deep

Model	A	B	C	D	E	F	H: M6 x 1		H: M8 x 1.25	Y
							G	G		
ZPR40D	40	43	29	42.5	53.3	71.1	6		8	17

Applicable Tubing

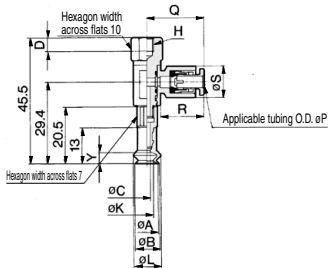
Applicable tubing O.D.	P	Q	R	S
ø6	6	24.3	16.8	12.8
ø8	8	26.2	18.7	15.2

Vacuum Pad/ Lateral Vacuum Entry with One-touch Fitting Without Buffer *Series ZPR*

Connection	One-touch fitting	Pad Form	Bellows
Vacuum Entry Port	Lateral	Mounting	Female thread

Size/ø6, ø8

Bellows



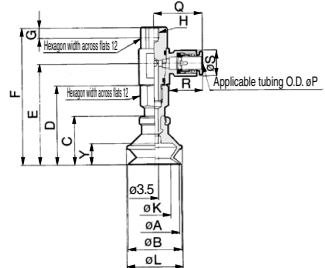
Model	A	B	C	H: M4 x 0.7 D	H: M5 x 0.8 D	K	L	Y
ZPR06B	6	7	2.5	4	5	3.3	9	4
ZPR08B	8	9				4.7	10	

Applicable Tubing

Applicable tubing O.D.	P	Q	R	S
ø4	4	20.6	15.6	10.4
ø6	6	21.6	16.6	12.8

Size/ø20, ø25, ø32

Bellows



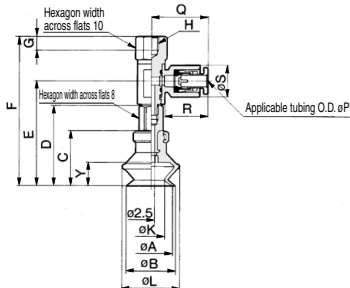
Model	A	B	C	D	E	F	H: M5 x 0.8 G	H: M6 x 1 G	H: M6 x 1.25 G	K	L	Y
ZPR20B	20	22	23.5	38.5	49.3	67.1				12	25	10.5
ZPR25B	25	27	24	39	49.8	67.6	5	6	8	16	28	10.5
ZPR32B	32	34	29	44	54.8	72.6				19	37	14

Applicable Tubing

Applicable tubing O.D.	P	Q	R	S
ø4	4	23.3	15.8	10.4
ø6	6	24.3	16.8	12.8
ø8	8	26.2	18.7	15.2

Size/ø10, ø13, ø16

Bellows



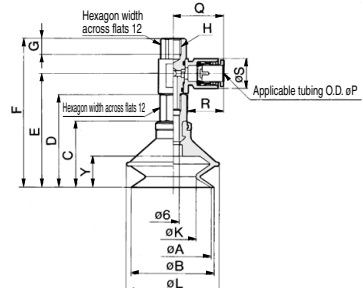
Model	A	B	C	D	E	F	H: M5 x 0.8 G	H: M6 x 1 G	K	L	Y
ZPR10B	10	12	16	25	33.9	50			6	14	5.5
ZPR13B	13	15	18.5	27.5	36.4	52.5	5	6	9	19	7.5
ZPR16B	16	18	20	29	37.9	54			10	21	8.5

Applicable Tubing

Applicable tubing O.D.	P	Q	R	S
ø4	4	20.6	15.6	10.4
ø6	6	21.6	16.6	12.8

Size/ø40, ø50

Bellows



Model	A	B	C	D	E	F	H: M6 x 1 G	H: M8 x 1.25 G	K	L	Y
ZPR40B	40	43	34	47.5	58.3	76.1			24	48	16
ZPR50B	50	53	38	51.5	62.3	80.1	6	8	32	57	19

Applicable Tubing

Applicable tubing O.D.	P	Q	R	S
ø6	6	24.3	16.8	12.8
ø8	8	26.2	18.7	15.2

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661



Vacuum Pad/ Lateral Vacuum Entry with One-touch Fitting With Buffer

Series ZPR

RoHS

Specifications

Vacuum entry	Direction		Lateral
	Connection		One-touch fitting
Applicable tube dia.	Elliptic (2 x 4, 3.5 x 7, 4 x 10) Thin section series (ø10 to ø16) ø2 to ø8		ø4, ø6 tube
	ø10 to ø16		ø4, ø6 tube
	ø20 to ø32		ø4, ø6, ø8 tube
	ø40 to ø50		ø6, ø8 tube
Mounting	Elliptic (2 x 4, 3.5 x 7, 4 x 10) Thin section series (ø10 to ø16) ø2 to ø8		M8 x 1 Male thread
	ø10 to ø16		M10 x 1 Male thread
	ø20 to ø32		M10 x 1 Male thread
	ø40 to ø50		M14 x 1 Male thread

Buffer Specifications

Dia. (mm)		ø2 to ø8	ø10 to ø32	ø40, ø50
Stroke (mm)		6, 10, 15, 25	10, 20, 30, 40, 50	10, 20, 30, 50
Spring Reactive Force (N)	0 stroke	0.8	1.0	2.0
	Full stroke	1.2	3.0	5.0
Non-rotating specification			Rotating (J)/Non-rotating (K)	

* Refer to ø2 to ø8 for Thin flat, Thin flat with ribs and Elliptic.

Pad Type

Pad form	Flat	Flat with ribs	Deep	Bellows	Thin flat/Thin flat with ribs
Pad dia. (mm)	2, 4, 6, 8, 2 x 4, 3.5 x 7, 4 x 10, 10, 13, 16, 20, 25, 32, 40, 50	10, 13, 16, 20, 25, 32, 40, 50	10, 16, 25, 40	6, 8, 10, 13, 16, 20, 25, 32, 40, 50	10, 13, 16
Material (Color)	NBR (Black), Silicone rubber (White), Urethane rubber (Brown), FKM (Black with green mark) Conductive NBR (Black with one silver mark), Conductive silicone rubber (Black with two silver marks)				
Durometer	NBR (A50/S), Silicone rubber (A40/S), Urethane rubber/FKM (A60/S) Conductive NBR (A50/S), Conductive silicone rubber (A50/S)				

Weight

(g)

Stroke (mm)	Pad form	Flat/Flat with ribs			Deep			Bellows		
	Vacuum entry port	04	06	08	04	06	08	04	06	08
6	Model									
	2004, 3507, 4010 ZPR02 to 08 Thin section flat series (10 to 16)	38	39	—	—	—	—	38	39	—
10	ZPR 10 to 16	39	40	—	39	40	—	40	41	—
10	ZPR 20 to 25	54	55	56	55	56	57	57	58	59
	ZPR 32	56	57	58	—	—	—	61	62	63
10	ZPR 40	—	126	127	—	128	129	—	138	139
	ZPR 50	—	132	133	—	—	—	—	145	146

Weight by Stroke

(g)

Model	Stroke (mm)						
	10	15	20	25	30	40	50
ZPR02 to 08	+7	+8	—	+9	—	—	—
ZPR10 to 32	—	—	+12	—	+14	+26	+28
ZPR40, 50	—	—	-6	—	-2	—	+30

How to Order

Series ZPR
With buffer

ZPR 16 U GS K 20 - 06 - A10

Pad diameter

2004	2 x 4
3507	3.5 x 7
4010	4 x 10
02	ø2
04	ø4
06	ø6
08	ø8
10	ø10
13	ø13
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50

Mounting thread/Male thread
(Refer to "Table (3)" for applications.)

Vacuum entry port
(Refer to "Table (3)" for applications.)

Buffer stroke
(Refer to "Table (2)" for applications.)

Buffer type

J	Rotating
K	Non-rotating

Material

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

Pad type

(Refer to "Table (1)" for applications.)

U	Flat
C	Flat with ribs
D	Deep
B	Bellows
UT	Thin flat
CT	Thin flat with ribs

Table (1) Pad Diameter/Pad Type

Dia.	2 x 4	3.5 x 7	4 x 10	ø2	ø4	ø6	ø8	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
Type	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Flat	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Flat with ribs	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●
Deep	—	—	—	—	—	—	—	—	●	●	●	●	●	●	●
Bellows	—	—	—	—	—	●	●	●	●	●	●	●	●	●	●
Thin flat	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●
Thin flat with ribs	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●

Table (2) Pad Diameter/Stroke

Diameter	2 x 4	3.5 x 7	4 x 10	ø2	ø4	ø6	ø8	Thin flat/ Thin flat with ribs	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
Stroke	6 mm	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—
10 mm	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
15 mm	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
20 mm	—	—	—	—	—	—	—	—	—	●	●	●	●	●	●	●
25 mm	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
30 mm	—	—	—	—	—	—	—	—	—	●	●	●	●	●	●	●
40 mm	—	—	—	—	—	—	—	—	—	●	●	●	●	●	●	●
50 mm	—	—	—	—	—	—	—	—	—	●	●	●	●	●	●	●

Table (3) Vacuum Entry/Mounting Thread Diameter

	Symbol	Thread dia./ Port size	ø2 to ø8 2 x 4, 3.5 x 7, 4 x 10 ø10 to ø16 (Thin section series)	ø10 to ø16	ø20 to ø32	ø40, ø50
Vacuum entry One-touch fitting	04	ø4 tube	●	●	●	—
	06	ø6 tube	●	●	●	●
	08	ø8 tube	—	—	●	●
Mounting Male thread	A8	M8 x 1	●	—	—	—
	A10	M10 x 1	—	●	●	—
	A14	M14 x 1	—	—	—	●

Tightening Torque

(N·m)

Mounting thread diameter	Torque
M8 x 1	1.5 to 2.0
M10 x 1	2.5 to 3.5
M14 x 1	6.5 to 7.5

ZP3

ZP2

ZP2V

ZP

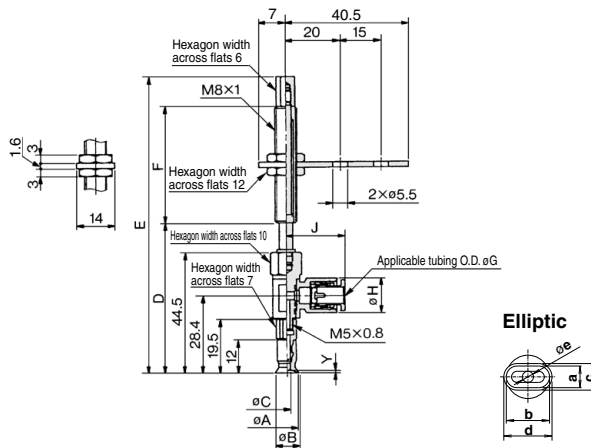
ZPT

ZPR

XT661

Connection	One-touch fitting	Pad Form	Flat/Thin flat/Thin flat with ribs/Elliptic
Vacuum Entry Port	Lateral	Mounting	Male thread

Flat/ø2, ø4, ø6, ø8, Thin flat/Thin flat with ribs/ø10, ø13, ø16, Elliptic/2004, 3507, 4010



Flat

Model	A	B	C	Y
ZPR02U□□□□□-0□-A8	2	2.6	1.2	0.5
ZPR04U□□□□□-0□-A8	4	4.8	1.6	0.8
ZPR06U□□□□□-0□-A8	6	7	2.5	
ZPR08U□□□□□-0□-A8	8	9	1	

Dimensions by Stroke

Model	D	E	F	G: 4		G: 6	
				H	J	H	J
ZPR□□□□□ 6-0□-A8	52.5	78.5	15	10.4	20.6	12.8	21.6
ZPR□□□□□□10-0□-A8	55.5	109.5	43				
ZPR□□□□□□15-0□-A8	60.5	114.5					
ZPR□□□□□□25-0□-A8	70.5	124.5					

Elliptic

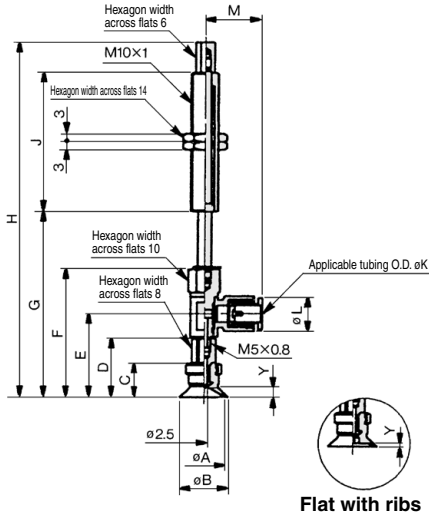
Model	a	b	c	d	e	Y
ZPR2004U	2	4	2.6	4.6	1.2	0.3
ZPR3507U	3.5	7	4.3	7.8	1.8	0.5
ZPR4010U	4	10	5	11	2	0.8

Thin Flat/Thin Flat with Ribs

Model	A	B	C	Y
ZPR10UT	10	11	2.5	1
ZPR13UT	13	14		1.5
ZPR16UT	16	17		
ZPR10CT	10	11		0.8
ZPR13CT	13	14		1
ZPR16CT	16	17		

Connection	One-touch fitting	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Lateral	Mounting	Male thread

Flat/Flat with ribs/ø10, ø13, ø16



ø10, ø13, ø16

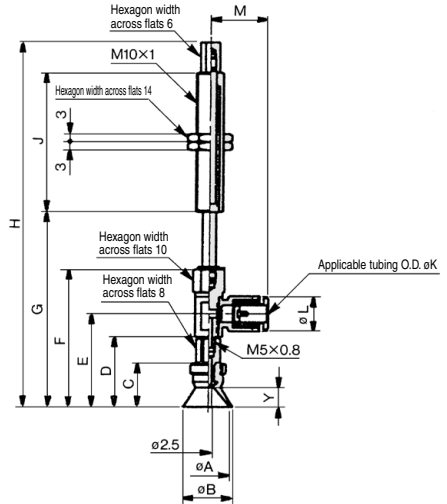
Flat/Flat with Ribs

Model	A	B	C	D	E	F	Y	
							Flat	Flat with ribs
ZPR10□□□□□-0□A10	10	12	12	21	29.9	46	3	1.7
ZPR13□□□□□-0□A10	13	15	12	21	29.9	46	3	1.8
ZPR16□□□□□-0□A10	16	18	12.5	21.5	30.4	46.5	3.5	1.2

Dimensions by Stroke

Model	ø10, ø13		ø16		J
	G	H	G	H	
ZPR□□□□□□□□10-0□-A10	57	91	57.5	91.5	23
ZPR□□□□□□□□20-0□-A10	67	129	67.5	129.5	51
ZPR□□□□□□□□30-0□-A10	77	139	77.5	139.5	51
ZPR□□□□□□□□40-0□-A10	87	175	87.5	175.5	77
ZPR□□□□□□□□50-0□-A10	97	185	97.5	185.5	77

Deep/ø10, ø16



ø10, ø16

Deep

Model	A	B	C	D	E	F	Y
ZPR10D□□□□□-0□-A10	10	12	15	24	32.9	49	6
ZPR16D□□□□□-0□-A10	16	18	16	25	33.9	50	7

Dimensions by Stroke

Model	ø10		ø16		J
	G	H	G	H	
ZPR□□□□□□□□10-0□-A10	60	83	61	84	23
ZPR□□□□□□□□20-0□-A10	70	132	71	133	51
ZPR□□□□□□□□30-0□-A10	80	142	81	143	51
ZPR□□□□□□□□40-0□-A10	90	178	91	179	77
ZPR□□□□□□□□50-0□-A10	100	188	101	189	77

One-touch Fitting

Model	K	L	M
ZPR□□□□□□□□04-A10	4	10.4	20.6
ZPR□□□□□□□□06-A10	6	12.8	21.6

ZP3

ZP2

ZP2V

ZP

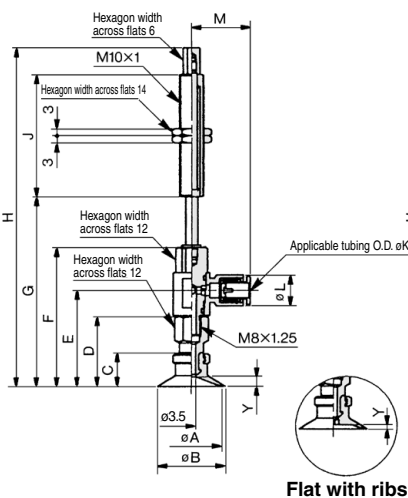
ZPT

ZPR

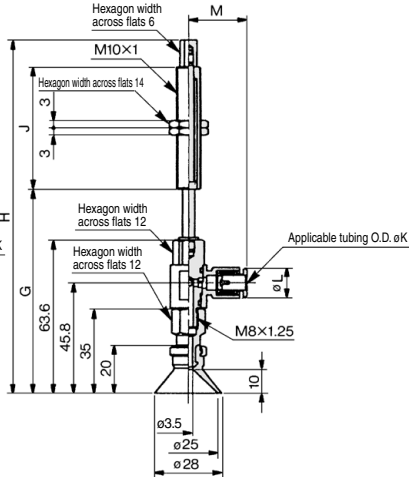
XT661

Connection	One-touch fitting	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Lateral	Mounting	Male thread

Flat/Flat with ribs/ø20, ø25, ø32



Deep/ø25



ø20, ø25, ø32

Flat/Flat with Ribs

Model	A	B	C	D	E	F	Y	
							Flat	Flat with ribs
ZPR20 10-0-A10	20	23	14	29	39.8	57.6	4	1.7
ZPR25 20-0-A10	25	28						1.8
ZPR32 30-0-A10	32	35	14.5	29.5	40.3	58.1	4.5	2.3

Dimensions by Stroke

Model	ø20, ø25		ø32		J
	G	H	G	H	
ZPR 10-0-A10	68.6	102.6	69.1	103.1	23
ZPR 20-0-A10	78.6	140.6	79.1	141.1	51
ZPR 30-0-A10	88.6	150.6	89.1	151.1	
ZPR 40-0-A10	98.6	186.6	99.1	187.1	77
ZPR 50-0-A10	108.6	196.6	109.6	197.1	

ø25

Deep

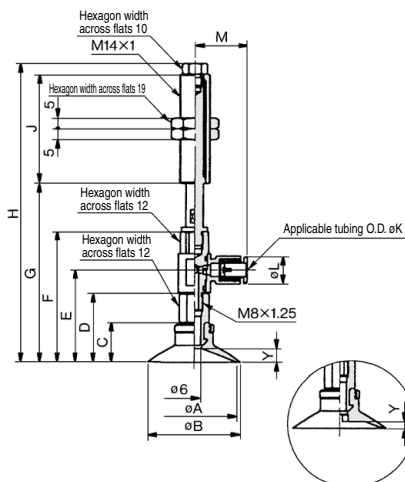
Model	G	H	J
ZPR25D 10-0-A10	74.6	108.6	23
ZPR25D 20-0-A10	84.6	146.6	
ZPR25D 30-0-A10	94.6	156.6	51
ZPR25D 40-0-A10	104.6	192.6	
ZPR25D 50-0-A10	114.6	202.6	77

One-touch Fitting

Model	K	L	M
ZPR 04-A10	4	10.4	23.3
ZPR 06-A10	6	12.8	24.3
ZPR 08-A10	8	15.2	26.2

Connection	One-touch fitting	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Lateral	Mounting	Male thread

Flat/Flat with ribs/ø40, ø50



Flat with ribs

ø40, ø50

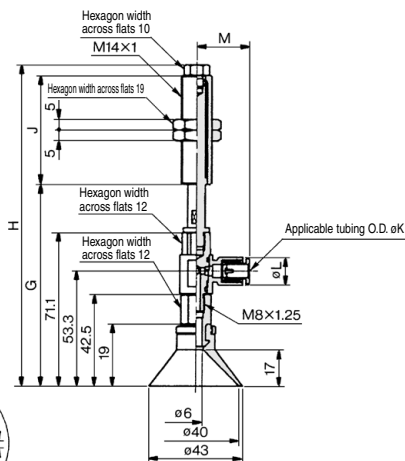
Flat/Flat with Ribs

Model	A	B	C	D	E	F	Y	
							Flat	Flat with ribs
ZPR40 ^U □□□□-0□A14	40	43	18.5	32	42.8	60.6	6.5	3.3
ZPR50 ^U □□□□-0□A14	50	53	19.5	33	43.8	61.6	7.5	3.8

Dimensions by Stroke

Model	ø40		ø50		J
	G	H	G	H	
ZPR□□ ^U □□□□10-0□A14	72.6	140.6	73.6	141.6	50
ZPR□□ ^U □□□□20-0□A14	82.6	137.6	83.6	138.6	
ZPR□□ ^U □□□□30-0□A14	92.6	147.6	93.6	148.6	
ZPR□□ ^U □□□□50-0□A14	112.6	192.6	113.6	193.6	

Deep/ø40



ø40

Deep

Model	G	H	J
ZPR40D□□□□10-0□A14	83.1	151.1	50
ZPR40D□□□□20-0□A14	93.1	148.1	
ZPR40D□□□□30-0□A14	103.1	158.1	75
ZPR40D□□□□50-0□A14	123.1	203.1	

One-touch Fitting

Model	K	L	M
ZPR□□□□□□□□06-A14	6	12.8	24.3
ZPR□□□□□□□□08-A14	8	15.2	26.2

ZP3

ZP2

ZP2V

ZP

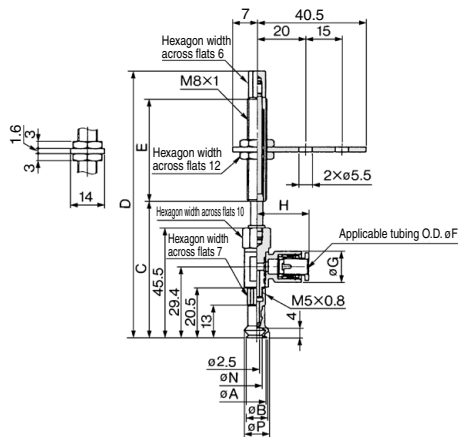
ZPT

ZPR

XT661

Connection	One-touch fitting	Pad Form	Bellows
Vacuum Entry Port	Lateral	Mounting	Male thread

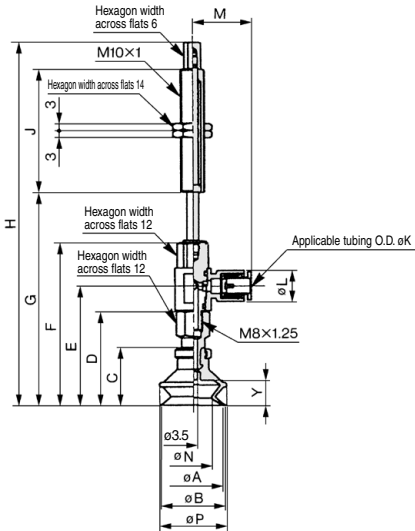
Bellows/ø6, ø8



Vacuum Pad/
Lateral Vacuum Entry with One-touch Fitting with Buffer **Series ZPR**

Connection	One-touch fitting	Pad Form	Bellows
Vacuum Entry Port	Lateral	Mounting	Male thread

Bellows/ø20, ø25, ø32



ø20, ø25, ø32

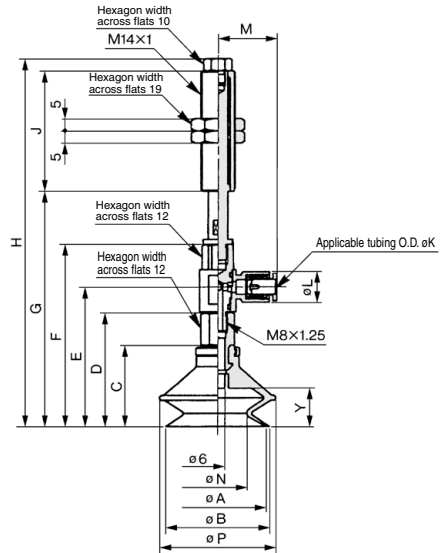
Bellows

Model	A	B	C	D	E	F	N	P	Y
ZPR20B□□□□□□□□□□-A10	20	22	23.5	38.5	49.3	67.1	12	25	10.5
ZPR25B□□□□□□□□□□-A10	25	27	24	39	49.8	67.6	16	28	
ZPR32B□□□□□□□□□□-A10	32	34	29	44	54.8	72.6	19	37	14

Dimensions by Stroke

Model	ø20		ø25		ø32		J	K: 4		K: 6		K: 8	
	G	H	G	H	G	H		L	M	L	M	L	M
ZPR□□B□□□□□10-0□-A10	78.1	112.1	78.6	112.6	83.6	117.6	23						
ZPR□□B□□□□□20-0□-A10	88.1	150.1	88.6	150.6	93.6	155.6	51						
ZPR□□B□□□□□30-0□-A10	98.1	180.1	98.6	180.6	103.6	185.6		10.4	23.3	12.8	24.3	15.2	26.2
ZPR□□B□□□□□40-0□-A10	108.1	196.1	108.6	196.6	113.6	201.6	77						
ZPR□□B□□□□□50-0□-A10	118.1	206.1	118.6	206.6	123.6	211.6							

Bellows/ø40, ø50



ø40, ø50

Bellows

Model	A	B	C	D	E	F	N	P	Y
ZPR40B□□□□□□□□□□-A14	40	43	34	47.5	58.3	76.1	24	48	16
ZPR50B□□□□□□□□□□-A14	50	53	38	51.5	62.3	80.1	32	57	19

Dimensions by Stroke

Model	ø40		ø50		J	K: 6		K: 8	
	G	H	G	H		L	M	L	M
ZPR□□B□□□□□10-0□-A14	88.1	156.1	92.1	160.1					
ZPR□□B□□□□□20-0□-A14	98.1	153.1	102.1	157.1	50				
ZPR□□B□□□□□30-0□-A14	108.1	163.1	112.1	167.1		12.8	24.3	15.2	26.2
ZPR□□B□□□□□50-0□-A14	128.1	208.1	132.1	212.1	75				

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661



Vacuum Pad/ Lateral Vacuum Entry with Barb Fitting Without Buffer

Series ZPY

Specifications



		Direction	Lateral	
		Connection	Barb fitting	
Vacuum entry	Applicable tube dia.	Elliptic (2 x 4, 3.5 x 7, 4 x 10) Thin section series (ø10 to ø16) ø2 to ø8	ø4, ø6 Nylon tube, ø4, ø6 Urethane tube	
		ø10 to ø16	ø4, ø6 Nylon tube, ø4, ø6 Urethane tube	
		ø20 to ø32	ø4, ø6 Nylon tube, ø4, ø6 Urethane tube	
		ø40 to ø50	ø6 Nylon tube, ø6 Urethane tube	
Mounting	Thread dia.	Connection	Male thread	Female thread
		Elliptic (2 x 4, 3.5 x 7, 4 x 10) Thin section series (ø10 to ø16) ø2 to ø8	M5 x 0.8, M6 x 1	M4 x 0.7, M5 x 0.8
		ø10 to ø16	M5 x 0.8, M6 x 1	M5 x 0.8, M6 x 1
		ø20 to ø32	M6 x 1, M8 x 1	M5 x 0.8, M6 x 1, M8 x 1.25
		ø40 to ø50	M6 x 1, M8 x 1	M6 x 1, M8 x 1.25

Pad Type

Pad form	Flat	Flat with ribs	Deep	Bellows	Thin flat/Thin flat with ribs
Pad dia. (mm)	2, 4, 6, 8, 2 x 4, 3.5 x 7, 4 x 10, 10, 13, 16, 20, 25, 32, 40, 50	10, 13, 16, 20, 25, 32, 40, 50	10, 16, 25, 40	6, 8, 10, 13, 16, 20, 25, 32, 40, 50	10, 13, 16
Material (Color)	NBR (Black), Silicone rubber (White), Urethane rubber (Brown), FKM (Black with green mark) Conductive NBR (Black with one silver mark), Conductive silicone rubber (Black with two silver marks)				
Durometer	NBR (A50/S), Silicone rubber (A40/S), Urethane rubber/FKM (A60/S) Conductive NBR (A50/S), Conductive silicone rubber (A50/S)				

Weight/Male Thread (Female thread)

(g)

Model	Flat			Flat with ribs			Deep			Bellows		
	M5	M6	M8	M5	M6	M8	M5	M6	M8	M5	M6	M8
ZPY02 to 08 2004 3507 4010 10 to 16 (Thin section series)	15 (11)	15	—	—	—	—	—	—	—	15 (11) Except ø2, ø4	15 (11) Except ø2, ø4	—
ZPY10	—	—	—	—	—	—	31 (27)	33 (26)	—	—	—	—
ZPY13	32 (25)	33 (25)	—	32 (25)	33 (25)	—	—	—	—	(25)	33 (25)	33 (—)
ZPY16	—	—	—	—	—	—	32 (27)	38 (27)	—	—	—	—
ZPY20	—	—	—	—	—	—	—	—	—	—	—	—
ZPY25	— (30)	38 (30)	38 (29)	— (30)	38 (30)	38 (29)	— (30)	38 (30)	38 (28)	— (30)	38 (30)	38 (29)
ZPY32	—	—	—	—	—	—	—	—	—	—	—	—
ZPY40	—	43 (36)	47 (34)	—	42 (35)	46 (33)	—	44 (37)	48 (35)	—	43 (36)	47 (34)
ZPY50	—	44 (38)	49 (35)	—	46 (38)	50 (37)	—	—	—	—	44 (38)	49 (35)

* (): Figures for female thread connections.

How to Order

Series ZPY
Without buffer

ZPY 02 U N - N4 - A5

Pad diameter

2004	2 x 4
3507	3.5 x 7
4010	4 x 10
02	ø2
04	ø4
06	ø6
08	ø8
10	ø10
13	ø13
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50

Mounting thread
(Refer to "Table (2)" for applications.)

Vacuum entry port
(Refer to "Table (2)" for applications.)

Table (2) Vacuum Entry/Mounting Thread Diameter

Connection		Symbol	Thread dia./Port size	ø2 to ø8 2 x 4 3.5 x 7 4 x 10 ø10 to ø16 (thin section series)	ø10 to ø16	ø20 to ø32	ø40 to ø50
Vacuum entry	Barb fitting	N4	ø4 Nylon tube	●	●	●	—
		N6	ø6 Nylon tube	●	●	●	●
		U4	ø4 Urethane tube	●	●	●	—
		U6	ø6 Urethane tube	●	●	●	●
Mounting	Male thread	A5	M5 x 0.8	●	●	—	—
		A6	M6 x 1	●	●	●	●
		A8	M8 x 1	—	—	●	●
		B4	M4 x 0.7	●	—	—	—
		B5	M5 x 0.8	●	●	●	—
		B6	M6 x 1	—	●	●	●
	Female thread	B8	M8 x 1.25	—	—	●	●

Pad type
(Refer to "Table (1)" for applications.)

U	Flat
C	Flat with ribs
D	Deep
B	Bellows
UT	Thin flat
CT	Thin flat with ribs

Material

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

Table (1) Pad Diameter/Pad Type

Type \ Dia.	2 x 4	3.5 x 7	4 x 10	ø2	ø4	ø6	ø8	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
Flat	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Flat with ribs	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●
Deep	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Bellows	—	—	—	—	—	●	●	●	●	●	●	●	●	●	●
Thin flat	—	—	—	—	—	—	—	●	●	●	—	—	—	—	—
Thin flat with ribs	—	—	—	—	—	—	—	●	●	●	—	—	—	—	—

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

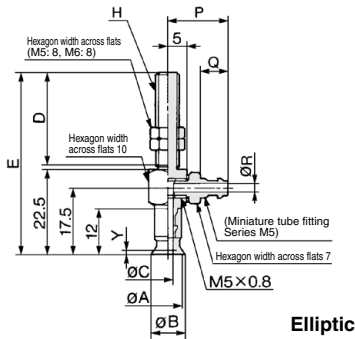
XT661

Connection	Barb Fitting	Pad Form	Flat/Flat with ribs/Deep/ Thin flat/Thin flat with ribs/Elliptic
Vacuum Entry Port	Lateral	Mounting	Male thread

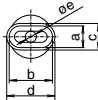
Size/Flat ø2, ø4, ø6, ø8/Thin flat/Thin flat with ribs ø10, ø13, ø16/
Elliptic 2004, 3507, 4010

Size/ø10, ø13, ø16

Flat/Thin flat/Thin flat with ribs



Elliptic



Flat

Model	A	B	C	H: M5 x 0.8		H: M6 x 1		Y
				D	E	D	E	
ZPY02U	2	2.6	1.2	20	44	25	49.5	0.5
ZPY04U	4	4.8	1.6					0.8
ZPY06U	6	7	2.5					1
ZPY08U	8	9						

Elliptic

Model	a	b	c	d	e	Y
ZPY2004U	2	4	2.6	4.6	1.2	0.3
ZPY3507U	3.5	7	4.3	7.8	1.8	0.5
ZPY4010U	4	10	5	11	2	0.8

Thin Flat/Thin Flat with Ribs

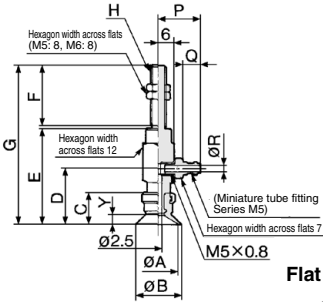
Model	A	B	C	Y
ZPY10UT	10	11	2.5	1
ZPY13UT	13	14		1.5
ZPY16UT	16	17		0.8
ZPY10CT	10	11	2.5	0.8
ZPY13CT	13	14		1
ZPY16CT	16	17		1

* Dimensions of D, E are the same.

Applicable Tubing

Applicable tubing O.D.	P	Q	R
N4 (Nylon tube ø4/2.5)	13.5	5	1.8
N6 (Nylon tube ø6/4)	15.5	7	2.5
U4 (Soft tube ø4/2.5)	13.5	5	1.8
U6 (Soft tube ø6/4)	15.5	7	2.5

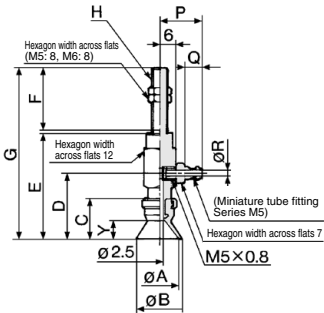
Flat



Flat with ribs



Deep: ZPY10D, 16D only



Flat/Flat with Ribs

Model	A	B	C	D	E	H: M5 x 0.8		H: M6 x 1		Y	
						F	G	F	G	Flat	Flat with ribs
ZPY10U	10	12	12	22	38	20	59	25	64	3	1.7
ZPY13U	13	15									1.8
ZPY16U	16	18	12.5	22.5	38.5						1.2

Deep

Model	A	B	C	D	E	H: M5 x 0.8		H: M6 x 1		Y
						F	G	F	G	
ZPY10D	10	12	15	25	41	20	62	25	67	6
ZPY16D	16	18	16	26	42					

Applicable Tubing

Applicable tubing O.D.	P	Q	R
N4 (Nylon tube ø4/2.5)	14.5	5	1.8
N6 (Nylon tube ø6/4)	16.5	7	2.5
U4 (Soft tube ø4/2.5)	14.5	5	1.8
U6 (Soft tube ø6/4)	16.5	7	2.5

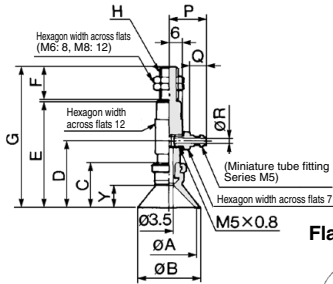
Vacuum Pad/ Lateral Vacuum Entry with Barb Fitting without Buffer *Series ZPY*

Connection	Barb Fitting	Pad Form	Flat/Flat with ribs/Deep/ Thin flat/Thin flat with ribs/Elliptic
Vacuum Entry Port	Lateral	Mounting	Male thread

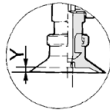
Size/ø20, ø25, ø32

Size/ø40, ø50

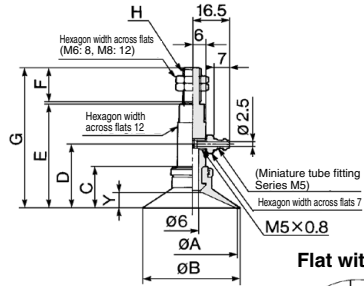
Flat



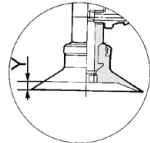
Flat with ribs



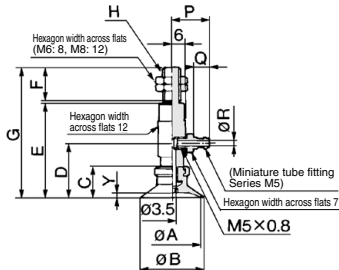
Flat



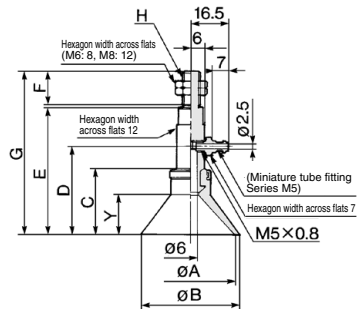
Flat with ribs



Deep: ZPY25D only



Deep: ZPY40D only



Flat/Flat with Ribs

Model	A	B	C	D	E	H: M6 x 1 F	H: M8 x 1 G	F	G	Flat	Flat with ribs
ZPY20	20	23	14	24	42	25	68	15	58	4	1.7
ZPY25	25	28									1.8
ZPY32	32	35	14.5	24.5	42.5		68.5		58.5	4.5	2.3

Deep

Model	A	B	C	D	E	H: M6 x 1 F	H: M8 x 1 G	F	G	Y
ZPY25D	25	28	20	30	48	25	74	15	64	10

Applicable Tubing

Applicable tubing O.D.	P	Q	R
N4 (Nylon tube ø4/2.5)	14.5	5	1.8
N6 (Nylon tube ø6/4)	16.5	7	2.5
U4 (Soft tube ø4/2.5)	14.5	5	1.8
U6 (Soft tube ø6/4)	16.5	7	2.5

Flat/Flat with Ribs

Model	A	B	C	D	E	H: M6 x 1 F	H: M8 x 1 G	F	G	Flat	Flat with ribs
ZPY40	40	43	18.5	28.5	46.5	25	72.5	15	62.5	6.5	3.3
ZPY50	50	53	19.5	29.5	47.5		73.5		63.5	7.5	3.8

Deep

Model	A	B	C	D	E	H: M6 x 1 F	H: M8 x 1 G	F	G	Y
ZPY40D	40	43	29	39	57	25	83	15	73	17

ZP3

ZP2

ZP2V

ZP

ZPT

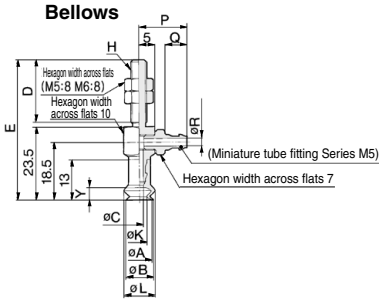
ZPR

XT661

Series ZPY

Connection	Barb Fitting	Pad Form	Bellows
Vacuum Entry Port	Lateral	Mounting	Male thread

Size/ø6, ø8

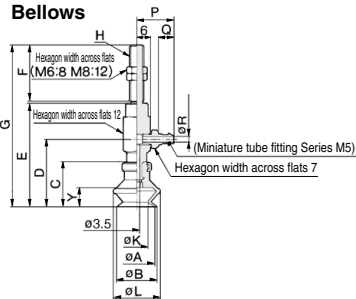


Model	A	B	C	H: M5 x 0.8		H: M6 x 1		K	L	Y
				D	E	D	E			
ZPY06B	6	7	2.5	20	45	25	50.5	3.3	9	4
ZPY08B	8	9						4.7	10	

Applicable Tubing

Applicable tubing O.D.	P	Q	R
N4 (Nylon tube ø4/2.5)	13.5	5	1.8
N6 (Nylon tube ø6/4)	15.5	7	2.5
U4 (Urethane tube ø4/2.5)	13.5	5	1.8
U6 (Urethane tube ø6/4)	15.5	7	2.5

Size/ø20, ø25, ø32

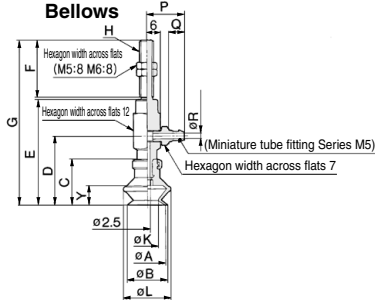


Model	A	B	C	D	E	H: M6 x 1		H: M8 x 1		K	L	Y
						F	G	F	G			
ZPY20B	20	22	23.5	33.5	51.5			77.5		12	25	10.5
ZPY25B	25	27	24	34	52	25		78	15	16	28	
ZPY32B	32	34	29	39	57			83		19	37	14

Applicable Tubing

Applicable tubing O.D.	P	Q	R
N4 (Nylon tube ø4/2.5)	14.5	5	1.8
N6 (Nylon tube ø6/4)	16.5	7	2.5
U4 (Urethane tube ø4/2.5)	14.5	5	1.8
U6 (Urethane tube ø6/4)	16.5	7	2.5

Size/ø10, ø13, ø16

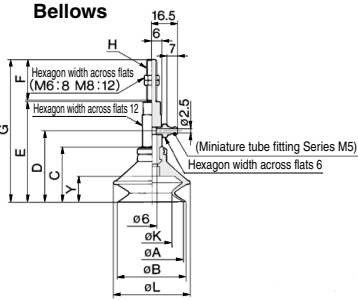


Model	A	B	C	D	E	H: M5 x 0.8		H: M6 x 1		K	L	Y
						F	G	F	G			
ZPY10B	10	12	16	26	42			63		6	14	5.5
ZPY13B	13	15	18.5	28.5	44.5	20		65.5	25	70.5	9	7.5
ZPY16B	16	18	20	30	46			67		72	10	8.5

Applicable Tubing

Applicable tubing O.D.	P	Q	R
N4 (Nylon tube ø4/2.5)	14.5	5	1.8
N6 (Nylon tube ø6/4)	16.5	7	2.5
U4 (Urethane tube ø4/2.5)	14.5	5	1.8
U6 (Urethane tube ø6/4)	16.5	7	2.5

Size/ø40, ø50



Model	A	B	C	D	E	H: M6 x 1		H: M8 x 1		K	L	Y
						F	G	F	G			
ZPY40B	40	43	34	44	62			88		24	48	16
ZPY50B	50	53	38	48	66	25		92	15	32	57	19

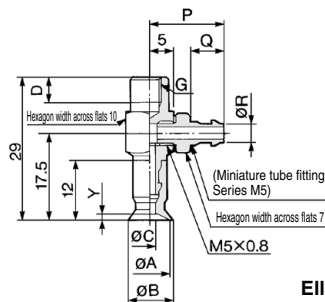
Vacuum Pad/ Lateral Vacuum Entry with Barb Fitting without Buffer *Series ZPY*

Connection	Barb fitting	Pad Form	Flat/Flat with ribs/Deep/Thin flat/ Thin flat with ribs/Elliptic
Vacuum Entry Port	Lateral	Mounting	Female thread

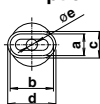
Size/Flat ø2, ø4, ø6, ø8/Thin flat/Thin flat with ribs ø10, ø13, ø16/
Elliptic 2004, 3507, 4010

Size/ø10, ø13, ø16

Flat/Thin flat/Thin flat with ribs



Elliptic



Flat/Flat with Ribs

				G: M4 x 0.7	G: M5 x 0.8	Y
Model	A	B	C	D	D	
ZPY02U	2	2.6	1.2	4	5	0.5
ZPY04U	4	4.8	1.6			0.8
ZPY06U	6	7	2.5			1
ZPY08U	8	9				

Elliptic

Model	a	b	c	d	e	Y
ZPY2004U	2	4	2.6	4.6	1.2	0.3
ZPY3507U	3.5	7	4.3	7.8	1.8	0.5
ZPY4010U	4	10	5	11	2	0.8

Thin Flat /Thin Flat with Ribs

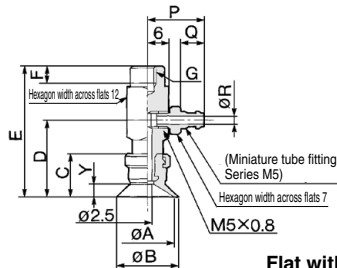
Model	A	B	C	Y
ZPY10UT	10	11	2.5	1
ZPY13UT	13	14		1.5
ZPY16UT	16	17		0.8
ZPY10CT	10	11		1
ZPY13CT	13	14		
ZPY16CT	16	17		

* Dimensions of D are the same.

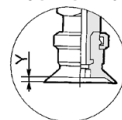
Applicable Tubing

Applicable tubing O.D.	P	Q	R
N4 (Nylon tube ø4/2.5)	13.5	5	1.8
N6 (Nylon tube ø6/4)	15.5	7	2.5
U4 (Soft tube ø4/2.5)	13.5	5	1.8
U6 (Soft tube ø6/4)	15.5	7	2.5

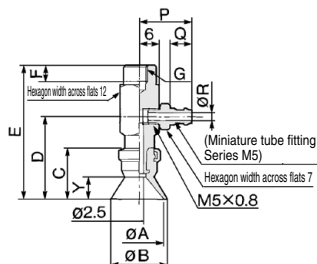
Flat



Flat with ribs



Deep: ZPY10D, 16D only



Flat/Flat with Ribs

Model	A	B	C	D	E	G: M5 x 0.8	G: M6 x 1	Y
ZPY10U	10	12	12	22	38	5	6	Flat
ZPY13U	13	15	12	22	38.5			Flat with ribs
ZPY16U	16	18	12.5	22.5	38.5			Flat with ribs

Deep

Model	A	B	C	D	E	G: M5 x 0.8	G: M6 x 1	Y
ZPY10D	10	12	15	25	41	5	6	6
ZPY16D	16	18	16	26	42			7

Applicable Tubing

Applicable tubing O.D.	P	Q	R
N4 (Nylon tube ø4/2.5)	14.5	5	1.8
N6 (Nylon tube ø6/4)	16.5	7	2.5
U4 (Soft tube ø4/2.5)	14.5	5	1.8
U6 (Soft tube ø6/4)	16.5	7	2.5

ZP3

ZP2

ZP2V

ZP

ZPT

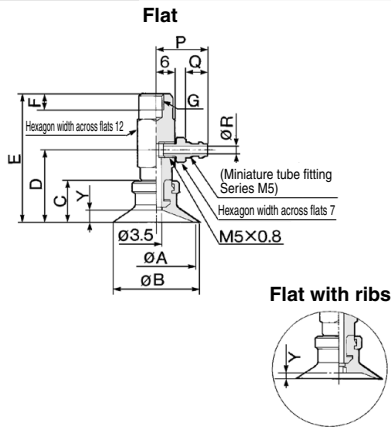
ZPR

XT661

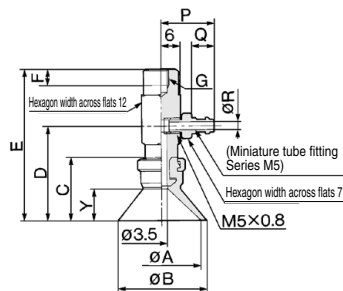
Series **ZPY**

Connection	Barb fitting	Pad Form	Flat/Flat with ribs/Deep/Thin flat/Thin flat with ribs/Elliptic
Vacuum Entry Port	Lateral	Mounting	Female thread

Size/ $\varnothing 20$, $\varnothing 25$, $\varnothing 32$



Deep: ZPY25D only



Flat/Flat with ribs

Model	A	B	C	D	E	G: M5 x 0.8	G: M6 x 1	G: M8 x 1.25	Y
ZPY20	20	23	14	24	42	5	6	8	1.7
ZPY25	25	28							1.8
ZPY32	32	35	14.5	24.5	42.5				2.3

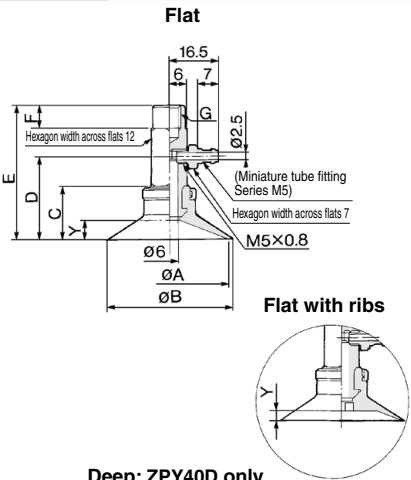
Deep

Model	A	B	C	D	E	G: M5 x 0.8	G: M6 x 1	G: M8 x 1.25	Y
ZPY25D	25	28	20	30	48	5	6	8	10

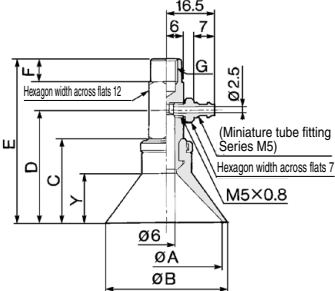
Applicable Tubing

Applicable tubing O.D.	P	Q	R
N4 (Nylontube $\varnothing 4/2.5$)	14.5	5	1.8
N6 (Nylon tube $\varnothing 6/4$)	16.5	7	2.5
U4 (Soft tube $\varnothing 4/2.5$)	14.5	5	1.8
U6 (Soft tube $\varnothing 6/4$)	16.5	7	2.5

Size/ $\varnothing 40$, $\varnothing 50$



Deep: ZPY40D only



Flat/Flat with ribs

Model	A	B	C	D	E	G: M6 x 1	G: M8 x 1.25	Y
ZPY40	40	43	18.5	28.5	46.5	6	8	6.5
ZPY50	50	53	19.5	29.5	47.5			7.5

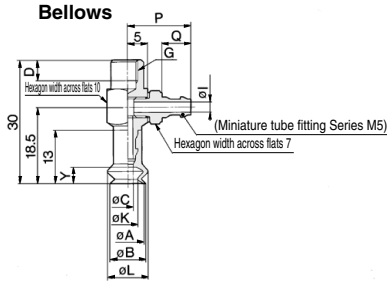
Deep

Model	A	B	C	D	E	G: M6 x 1	G: M8 x 1.25	Y
ZPY40D	40	43	29	39	57	6	8	17

Vacuum Pad/
Lateral Vacuum Entry with Barb Fitting without Buffer **Series ZPY**

Connection	Barb fitting	Pad Form	Bellows
Vacuum Entry Port	Lateral	Mounting	Female thread

Size/ø6, ø8

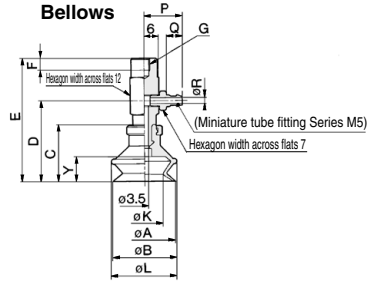


Model	A	B	C	G: M4 x 0.7	G: M5 x 0.8	K	L	Y
ZPY06B	6	7	2.5	4	5	3.3	9	4
ZPY08B	8	9				4.7	10	

Applicable Tubing

Applicable tubing O.D.	P	Q	R
N4 (Nylon tube ø4/2.5)	13.5	5	1.8
N6 (Nylon tube ø6/4)	15.5	7	2.5
U4 (Urethane tube ø4/2.5)	13.5	5	1.8
U6 (Urethane tube ø6/4)	15.5	7	2.5

Size/ø20, ø25, ø32

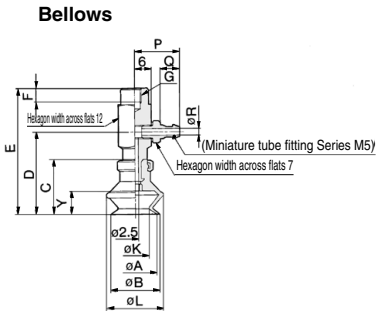


Model	A	B	C	D	E	G: M5 x 0.8	G: M6 x 1	G: M8 x 1.25	K	L	Y
ZPY20B	20	22	23.5	33.5	51.5				12	25	10.5
ZPY25B	25	27	24	34	52	5	6	8	16	28	10.5
ZPY32B	32	34	29	39	57				19	37	14

Applicable Tubing

Applicable tubing O.D.	P	Q	R
N4 (Nylon tube ø4/2.5)	14.5	5	1.8
N6 (Nylon tube ø6/4)	16.5	7	2.5
U4 (Urethane tube ø4/2.5)	14.5	5	1.8
U6 (Urethane tube ø6/4)	16.5	7	2.5

Size/ø10, ø13, ø16

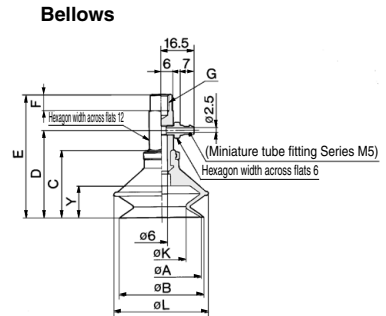


Model	A	B	C	D	E	G: M5 x 0.8	G: M6 x 1	K	L	Y
ZPY10B	10	12	16	26	42			6	14	5.5
ZPY13B	13	15	18.5	28.5	44.5	5	6	9	19	7.5
ZPY16B	16	18	20	30	46			10	21	8.5

Applicable Tubing

Applicable tubing O.D.	P	Q	R
N4 (Nylon tube ø4/2.5)	14.5	5	1.8
N6 (Nylon tube ø6/4)	16.5	7	2.5
U4 (Urethane tube ø4/2.5)	14.5	5	1.8
U6 (Urethane tube ø6/4)	16.5	7	2.5

Size/ø40, ø50



Model	A	B	C	D	E	G: M6 x 1	G: M8 x 1.25	K	L	Y
ZPY40B	40	43	34	44	62			24	48	16
ZPY50B	50	53	38	48	66	6	8	32	57	19

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661



Vacuum Pad/ Lateral Vacuum Entry with Barb Fitting With Buffer

Series ZPY



Specifications

Vacuum entry	Applicable tubing dia.	Direction	Lateral
		Connection	Barb fitting
		Elliptic (2 x 4, 3.5 x 7, 4 x 10) ø10 to ø16 (Thin section series) ø2 to ø8	ø4, ø6 Nylon tube, ø4, ø6 Urethane tube
		ø10 to ø16	ø4, ø6 Nylon tube, ø4, ø6 Urethane tube
		ø20 to ø32	ø4, ø6 Nylon tube, ø4, ø6 Urethane tube
		ø40 to ø50	ø6 Nylon tube, ø6 Urethane tube
Mounting	Thread dia.	Elliptic (2 x 4, 3.5 x 7, 4 x 10) ø10 to ø16 (Thin section series) ø2 to ø8	M8 x 1 Male thread
		ø10 to ø16	M10 x 1 Male thread
		ø20 to ø32	M10 x 1 Male thread
		ø40 to ø50	M14 x 1 Male thread

Buffer Specifications

Pad dia. (mm)	Stroke (mm)	ø2 to ø8 *	ø10 to ø32	ø40, ø50
		6, 10, 15, 25	10, 20, 30, 40, 50	10, 20, 30, 50
Spring Reactive Force (N)	0 stroke	0.8	1.0	2.0
	Full stroke	1.2	3.0	5.0
Non-rotating specification		Rotating (J)/Non-rotating (K)		

* Refer to ø2 to ø8 for Thin flat, Thin flat with ribs and Elliptic.

Pad Type

Pad form	Flat	Flat with ribs	Deep	Bellows	Thin flat/Thin flat with ribs
Pad dia. (mm)	2, 4, 6, 8, 2 x 4, 3.5 x 7, 4 x 10, 10, 13, 16, 20, 25, 32, 40, 50	10, 13, 16, 20, 25, 32, 40, 50	10, 16, 25, 40	6, 8, 10, 13, 16, 20, 25, 32, 40, 50	10, 13, 16
Material (Color)	NBR (Black), Silicone rubber (White), Urethane rubber (Brown), FKM (Black with green mark) Conductive NBR (Black with one silver mark), Conductive silicone rubber (Black with two silver marks)				
Durometer	NBR (A50/S), Silicone rubber (A40/S), Urethane rubber/FKM (A60/S) Conductive NBR (A50/S), Conductive silicone rubber (A50/S)				

Weight

(g)

Stroke (mm)	Pad form	Flat/Flat with ribs	Deep	Bellows
Model				
6	ZPY2004	33	—	33
	ZPY3507			
	ZPY4010			
	ZPY02 to ø8			
	ZPY10 to 16 (Thin section series)			
10	ZPY 10 to 16	45	45	46
10	ZPY 20	50	51	53
	ZPY 25			
10	ZPY 32	52	—	58
	ZPY 40	115	117	127
	ZPY 50	132	—	134

Weight by Stroke

(g)

Stroke (mm)	10	15	20	25	30	40	50
Model							
ZPY02 to ø8	+7	+8	—	+9	—	—	—
ZPY10 to 32	—	—	+12	—	+14	+26	+28
ZPY40, 50	—	—	-5.5	—	-1.5	—	+30

How to Order

Series ZPY
With buffer

ZPY

16

U

GS

K

20

-

U6

-

A10

Pad diameter

2004	2 x 4
3507	3.5 x 7
4010	4 x 10
02	ø2
04	ø4
06	ø6
08	ø8
10	ø10
13	ø13
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50

Mounting thread/Male thread
(Refer to "Table (3)" for applications.)

Vacuum entry port
(Refer to "Table (3)" for applications.)

Buffer stroke
(Refer to "Table (2)" for applications.)

Buffer type

J	Rotating
K	Non-rotating

Material

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

Pad type
(Refer to "Table (1)" for applications.)

U	Flat
C	Flat with ribs
D	Deep
B	Bellows
UT	Thin flat
CT	Thin flat with ribs

Table (1) Pad Diameter/Pad Type

Type	2 x 4	3.5 x 7	4 x 10	ø2	ø4	ø6	ø8	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
Flat	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Flat with ribs	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●
Deep	—	—	—	—	—	—	—	—	—	—	●	—	—	—	—
Bellows	—	—	—	—	—	●	●	●	●	●	●	●	●	●	●
Thin flat	—	—	—	—	—	—	—	—	●	●	—	—	—	—	—
Thin flat with ribs	—	—	—	—	—	—	—	●	●	●	—	—	—	—	—

Table (2) Pad Diameter/Stroke

Stroke	2 x 4	3.5 x 7	4 x 10	ø2	ø4	ø6	ø8	Thin flat/Thin flat with ribs ø10/ø13/ø16	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
6 mm	●	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—
10 mm	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
15 mm	●	●	●	●	●	●	●	●	●	—	—	—	—	—	—	—
20 mm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25 mm	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
30 mm	—	—	—	—	—	—	—	—	—	●	●	●	●	●	●	●
40 mm	—	—	—	—	—	—	—	—	—	—	●	●	●	●	●	●
50 mm	—	—	—	—	—	—	—	—	—	●	●	●	●	●	●	●

Table (3) Vacuum Entry/Mounting Thread Diameter

	Symbol	Thread dia./ Port size	ø2 to ø8 2 x 4, 3.5 x 7 4 x 10 ø10 to ø16 (Thin section series)	ø10 to ø32	ø40, ø50
Vacuum entry	Barb fitting	N4	ø4 Nylon tube	●	—
		N6	ø6 Nylon tube	●	●
		U4	ø4 Urethane tube	●	—
		U6	ø6 Urethane tube	●	●
Mounting	Male thread	A8	M8 x 1	—	—
		A10	M10 x 1	—	—
		A14	M14 x 1	—	●

Tightening Torque (N·m)

Mounting thread diameter	Torque
M8 x 1	1.5 to 2.0
M10 x 1	2.5 to 3.5
M14 x 1	6.5 to 7.5

ZP3

ZP2

ZP2V

ZP

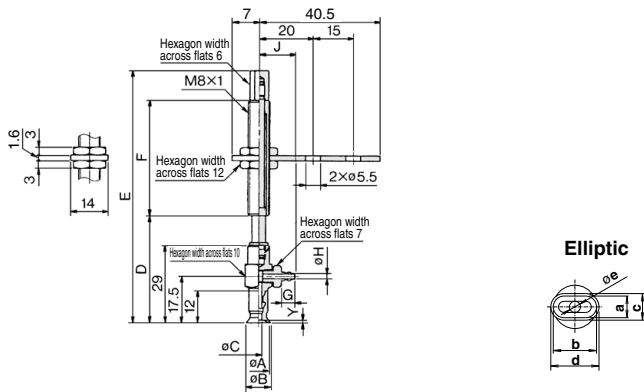
ZPT

ZPR

XT661

Connection	Barb fitting	Pad Form	Flat/Thin flat/Thin flat with ribs/Elliptic
Vacuum Entry Port	Lateral	Mounting	Male thread

Flat/ø2, ø4, ø6, ø8, Thin flat/Thin flat with ribs/ø10, ø13, ø16, Elliptic/2004, 3507, 4010



Flat

Model	A	B	C	Y
ZPY02U□□□□□□□□-A8	2	2.6	1.2	0.5
ZPY04U□□□□□□□□-A8	4	4.8	1.6	0.8
ZPY06U□□□□□□□□-A8	6	7	2.5	1
ZPY08U□□□□□□□□-A8	8	9		

Elliptic

Model	a	b	c	d	e	Y
ZPY2004U	2	4	2.6	4.6	1.2	0.3
ZPY3507U	3.5	7	4.3	7.8	1.8	0.5
ZPY4010U	4	10	5	11	2	0.8

Thin Flat/Thin Flat with Ribs

Model	A	B	C	Y
ZPY10UT	10	11	2.5	1
ZPY13UT	13	14		1.5
ZPY16UT	16	17		0.8
ZPY10CT	10	11	1	
ZPY13CT	13	14		
ZPY16CT	16	17		

Dimensions by Stroke

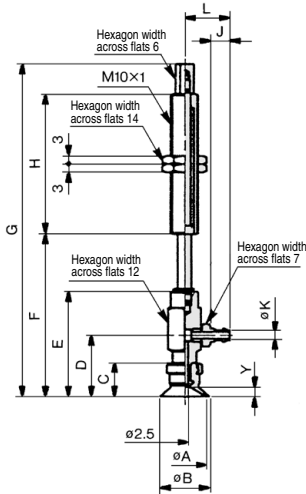
Model	D	E	F	ø4 tube			ø6 tube		
				G	H	J	G	H	J
ZPY□□□□□□ 6-□□-A8	37	63	15	5	1.8	13.5	7	2.5	15.5
ZPY□□□□□□ 10-□□-A8	40	94							
ZPY□□□□□□ 15-□□-A8	45	99	43						
ZPY□□□□□□ 25-□□-A8	55	109							

Vacuum Pad/
Lateral Vacuum Entry with Barb Fitting with Buffer **Series ZPY**

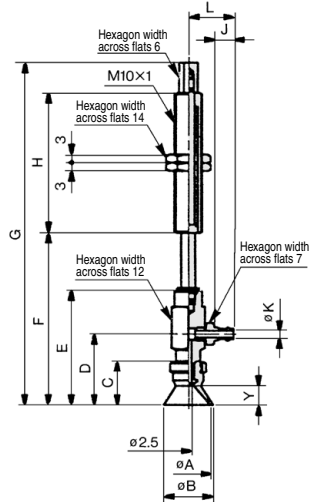
Connection	Barb fitting	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Lateral	Mounting	Male thread

Flat/Flat with ribs/ø10, ø13, ø16

Deep/ø10, ø16



Flat with ribs



ø10, ø13, ø16

Flat/Flat with Ribs

Model	A	B	C	D	E	Y	
						Flat	Flat with ribs
ZPY10 $\frac{1}{2}$ □□□□□□□□□□A10	10	12	12	22	38	3	1.7
ZPY13 $\frac{1}{2}$ □□□□□□□□□□A10	13	15					1.8
ZPY16 $\frac{1}{2}$ □□□□□□□□□□A10	16	18	12.5	22.5	38.5	3.5	1.2

Dimensions by Stroke

Model	ø10, ø13		ø16		H
	F	G	F	G	
ZPY□□□□□□□□□□□□□□□□A10	49	83	49.5	83.5	23
ZPY□□□□□□□□□□□□□□□□A10	59	121	59.5	121.5	51
ZPY□□□□□□□□□□□□□□□□A10	69	131	69.5	131.5	51
ZPY□□□□□□□□□□□□□□□□A10	79	167	79.5	167.5	77
ZPY□□□□□□□□□□□□□□□□A10	89	177	89.5	177.5	77

ø10, ø16

Deep

Model	A	B	C	D	E	Y
ZPY10D□□□□□□□□□□□□□□□□A10	10	12	15	25	41	6
ZPY16D□□□□□□□□□□□□□□□□A10	16	18	16	26	42	7

Dimensions by Stroke

Model	ø10		ø16		H
	F	G	F	G	
ZPY□□□□□□□□□□□□□□□□A10	52	86	53	87	23
ZPY□□□□□□□□□□□□□□□□A10	62	124	63	125	51
ZPY□□□□□□□□□□□□□□□□A10	72	134	73	135	51
ZPY□□□□□□□□□□□□□□□□A10	82	170	83	171	77
ZPY□□□□□□□□□□□□□□□□A10	92	180	93	181	77

Dimensions by Tubing

Model	J	K	L
ZPY□□□□□□□□□□□□□□□□A10	5	1.8	14.5
ZPY□□□□□□□□□□□□□□□□A10	7	2.5	16.5

ZP3

ZP2

ZP2V

ZP

ZPT

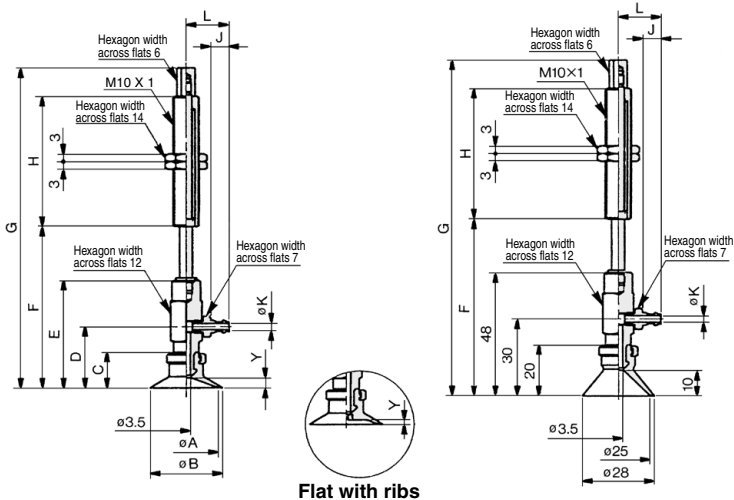
ZPR

XT661

Connection	Barb fitting	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Lateral	Mounting	Male thread

Flat/Flat with ribs/ø20, ø25, ø32

Deep/ø25



ø20, ø25, ø32

Flat/Flat with Ribs

Model	A	B	C	D	E	Y	
						Flat	Flat with ribs
ZPY20 $\frac{1}{2}$ □□□□□□□□□□A10	20	23		14	24	42	1.7
ZPY25 $\frac{1}{2}$ □□□□□□□□□□A10	25	28					1.8
ZPY32 $\frac{1}{2}$ □□□□□□□□□□A10	32	35	14.5	24.5	42.5	4.5	2.3

Dimensions by Stroke

Model	ø20, ø25		ø32		H
	F	G	F	G	
ZPY□□□□□□□□□□□□□□□□A10	53	87	53.5	87.5	23
ZPY□□□□□□□□□□□□□□□□A10	63	125	63.5	125.5	51
ZPY□□□□□□□□□□□□□□□□A10	73	135	73.5	135.5	
ZPY□□□□□□□□□□□□□□□□A10	83	171	83.5	171.5	77
ZPY□□□□□□□□□□□□□□□□A10	93	181	93.5	181.5	

ø25

Deep

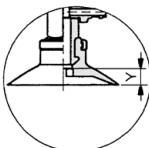
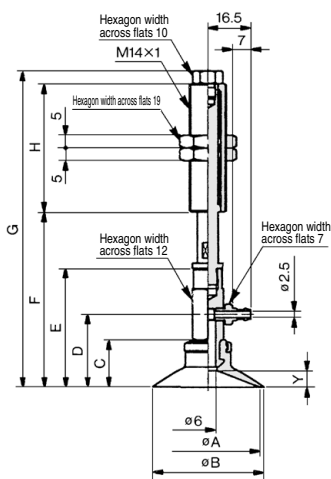
Model	F	G	H
ZPY25D□□□□□□□□□□□□□□□□A10	59	93	23
ZPY25D□□□□□□□□□□□□□□□□A10	69	131	
ZPY25D□□□□□□□□□□□□□□□□A10	79	141	51
ZPY25D□□□□□□□□□□□□□□□□A10	89	177	
ZPY25D□□□□□□□□□□□□□□□□A10	99	187	77

Dimensions by Tubing

Model	J	K	L
ZPY□□□□□□□□□□□□□□□□□□□□□□A10	5	1.8	14.5
ZPY□□□□□□□□□□□□□□□□□□□□□□A10	7	2.5	16.5

Connection	Barb fitting	Pad Form	Flat/Flat with ribs/Deep
Vacuum Entry Port	Lateral	Mounting	Male thread

Flat/Flat with ribs/ø40, ø50



Flat with ribs

ø40, ø50

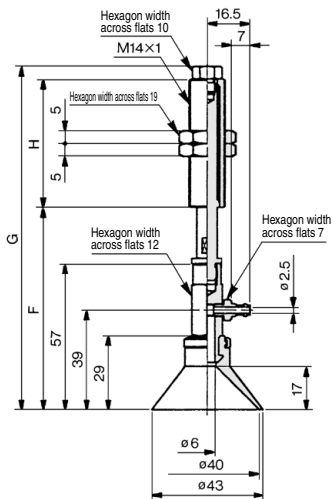
Flat/Flat with Ribs

Model	A	B	C	D	E	Y	
						Flat	Flat with ribs
ZPY40 $\frac{U}{C}$ □□□□□□□□□□6-A14	40	43	18.5	28.5	46.5	6.5	3.3
ZPY50 $\frac{U}{C}$ □□□□□□□□□□6-A14	50	53	19.5	29.5	47.5	7.5	3.8

Dimensions by Stroke

Model	ø40		ø50		H
	F	G	F	G	
ZPY□□□□□□□□□□10-□6-A14	58.5	126.5	59.5	127.5	50
ZPY□□□□□□□□□□20-□6-A14	68.5	123.5	69.5	124.5	
ZPY□□□□□□□□□□30-□6-A14	78.5	133.5	79.5	134.5	
ZPY□□□□□□□□□□50-□6-A14	98.5	178.5	99.5	179.5	75

Deep/ø40



ø40

Deep

Model	F	G	H
ZPY40D□□□□□□10-□6-A14	69	137	50
ZPY40D□□□□□□20-□6-A14	79	134	
ZPY40D□□□□□□30-□6-A14	89	144	75
ZPY40D□□□□□□50-□6-A14	109	189	

ZP3

ZP2

ZP2V

ZP

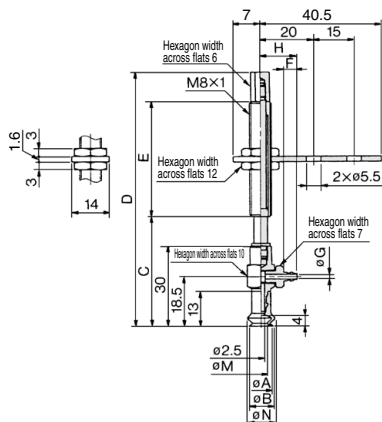
ZPT

ZPR

XT661

Connection	Barb fitting	Pad Form	Bellows
Vacuum Entry Port	Lateral	Mounting	Male thread

Bellows/ø6, ø8



Ø6, Ø8

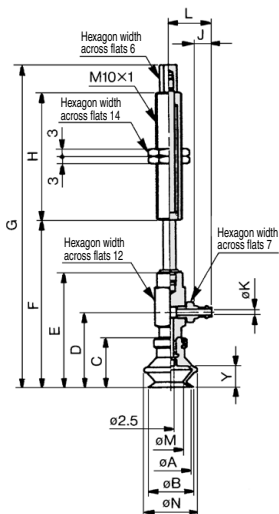
Bellows

Model	A	B	M	N
ZPY06B□□□□□-□□- A8	6	7	3.3	9
ZPY08B□□□□□-□□- A8	8	9	4.7	10

Dimensions by Stroke

Model	C	D	E	ø4 tube			ø6 tube		
				F	G	H	F	G	H
ZPY□□B□□□ 6-□□-A8	38	64	15						
ZPY□□B□□□□10-□□-A8	41	95							
ZPY□□B□□□□15-□□-A8	46	100	43	5	1.8	13.5	7	2.5	15.5
ZPY□□B□□□□25-□□-A8	56	110							

Bellows/ø10, ø13, ø16



Ø10, Ø13, Ø16

Bellows

Model	A	B	C	D	E	M	N	Y
ZPY10B□□□□□-□□- A10	10	12	16	25	42	6	14	5.5
ZPY13B□□□□□-□□- A10	13	15	18.5	28.5	44.5	9	19	7.5
ZPY16B□□□□□-□□- A10	16	18	20	30	46	10	21	8.5

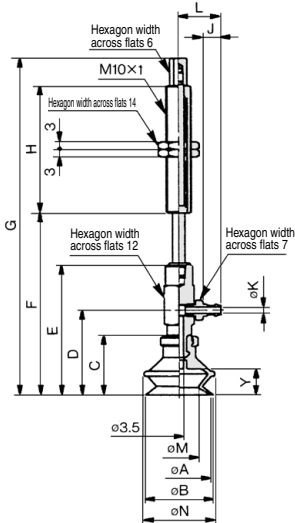
Dimensions by Stroke

Model	ø10		ø13		ø16		H	ø4 tube			ø6 tube		
	F	G	F	G	F	G		J	K	L	J	K	L
ZPY□□B□□□□□□-A10	53	87	55.5	89.5	57	91	23						
ZPY□□B□□□□□□20-A10	63	125	65.5	127.5	67	129							
ZPY□□B□□□□□□30-A10	73	135	75.5	137.5	77	139							
ZPY□□B□□□□□□40-A10	83	171	85.5	173.5	87	175							
ZPY□□B□□□□□□50-A10	93	181	95.5	183.5	97	185							

Vacuum Pad/
Lateral Vacuum Entry with Barb Fitting with Buffer **Series ZPY**

Connection	Barb fitting	Pad Form	Bellows
Vacuum Entry Port	Lateral	Mounting	Male thread

Bellows/ø20, ø25, ø32



ø20, ø25, ø32

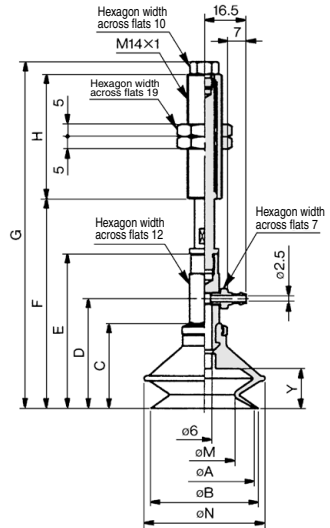
Bellows

Model	A	B	C	D	E	M	N	Y
ZPY20B□□□□□□□□□□-A10	20	22	23.5	33.5	51.5	12	25	10.5
ZPY25B□□□□□□□□□□-A10	25	27	24	34	52	16	28	
ZPY32B□□□□□□□□□□-A10	32	34	29	39	57	19	37	14

Dimensions by Stroke

Model	ø20		ø25		ø32		H	ø4 tube			ø6 tube		
	F	G	F	G	F	G		J	K	L	J	K	L
ZPY□□B□□□□10-□□-A10	62.5	96.5	63	97	68	102	23						
ZPY□□B□□□□20-□□-A10	74.5	136.5	75	137	80	142	51						
ZPY□□B□□□□30-□□-A10	84.5	146.5	85	147	90	152	5	1.8	14.5	7	2.5	16.5	
ZPY□□B□□□□40-□□-A10	94.5	182.5	95	183	100	188	77						
ZPY□□B□□□□50-□□-A10	104.5	192.5	105	193	110	198							

Bellows/ø40, ø50



ø40, ø50

Bellows

Model	A	B	C	D	E	M	N	Y
ZPY40B□□□□□□□□□□-A14	40	43	34	44	62	24	48	16
ZPY50B□□□□□□□□□□-A14	50	53	38	48	66	32	57	19

Dimensions by Stroke

Model	ø40		ø50		H
	F	G	F	G	
ZPY□□B□□□□10-□□-A14	74	142	78	146	
ZPY□□B□□□□20-□□-A14	84	139	88	143	50
ZPY□□B□□□□30-□□-A14	94	149	98	153	
ZPY□□B□□□□50-□□-A14	114	194	118	198	75

ZP3

ZP2

ZP2V

ZP

ZPT

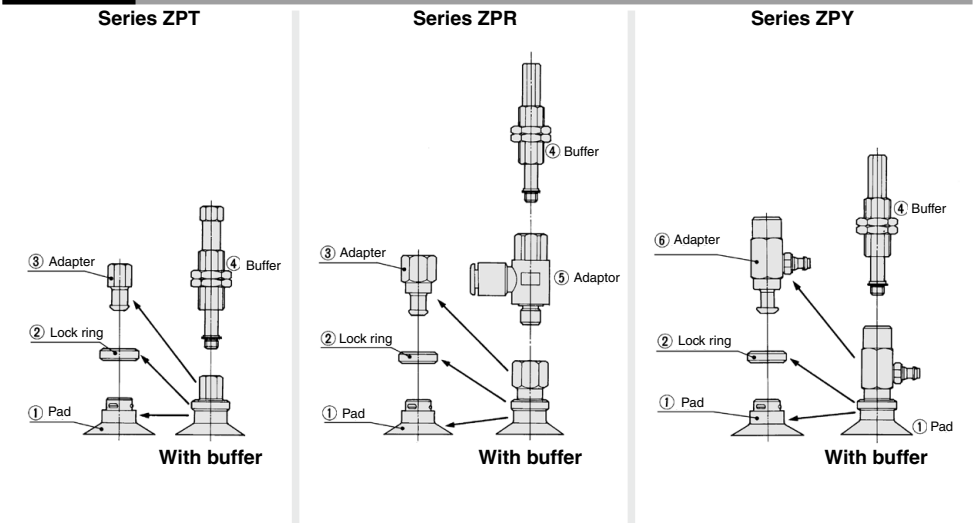
ZPR

XT661

Vacuum Pad/Components

Refer to pages 1332 to 1337 for part numbers of ㉓ to ㉖.

Construction

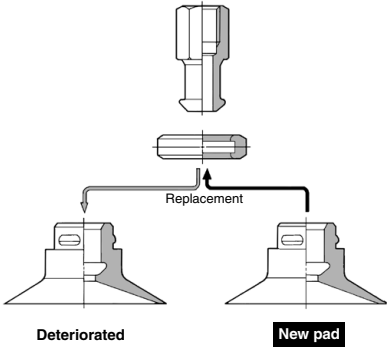


Component Parts

No.	Description	Material	Note
1	Pad	Conductive NBR, Conductive silicon rubber, NBR, Silicon rubber, Urethane rubber, FKM	
2	Lock ring	Brass	Electroless nickel plated
3	Adapter	Brass	Electroless nickel plated
4	Buffer	Brass	Electroless nickel plated
5	Adapter (with One-touch fitting)	Brass, PBT	Electroless nickel plated
6	Adapter (with barb fitting)	Brass	Electroless nickel plated

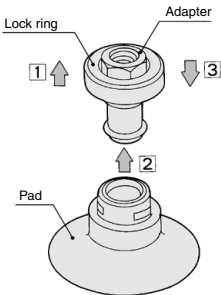
Maintenance of Pad

Since pads are essentially rubber, deterioration is unavoidable. The rate of deterioration depends upon factors such as conditions of use, environment and temperature. Regular maintenance should be performed. If any damage, splitting, cracking or abrasion has occurred in a pad which appears to be harmful, replace it immediately. Also, take care not to damage the outside surface of the pad.



How to Replace

1. Pull the lock ring upward, and after lifting it 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 adaptor.
3. Confirm that the pad is securely in place, and then return the lock ring to its original position.



Replacement Parts: Pad Unit

How to Order Pad Unit

ZP 10 U N - X19

Pad dia. ↓

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

Lock ring ↓

NII	With lock ring
-X19	Without lock ring (ø10 or larger)

Material ↓

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

Pad type ↓

U	Flat
C	Flat with ribs
D	Deep
B	Bellows

How to Order Lock Ring Unit

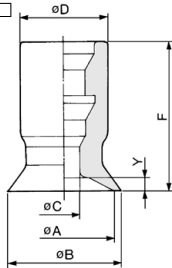
ZPL 1

Applicable pad dia. ↓

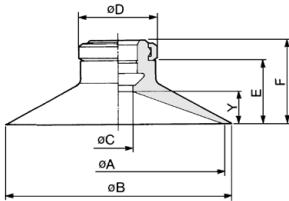
1	ø10 to ø16
2	ø20 to ø32
3	ø40, ø50

Flat (U) Refer to page 1331 for the Elliptic.

ZP02U□ to 08U□



ZP10U□ to 50U□

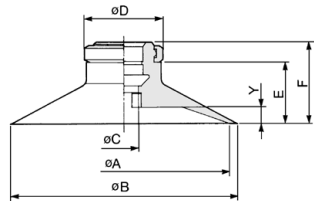


Model	Size	A	B	C	D	E	F	Y
ZP02U□	U02	2	2.6	1.2	7	—	12	0.5
ZP04U□	U04	4	4.8	1.6	7	—	12	0.8
ZP06U□	U06	6	7	2.5	7	—	12	0.8
ZP08U□	U08	8	9	2.5	7	—	12	1
ZP10U□	U10	10	12	4	13	7.7	12	3
ZP13U□	U13	13	15	4	13	7.7	12	3
ZP16U□	U16	16	18	4	13	8.2	12.5	3.5
ZP20U□	U20	20	23	4	15	9.5	14	4
ZP25U□	U25	25	28	4	15	9.5	14	4
ZP32U□	U32	32	35	4	15	10	14.5	4.5
ZP40U□	U40	40	43	7	18	13.7	18.5	6.5
ZP50U□	U50	50	53	7	18	14.7	19.5	7.5

* Put in the symbol for material at the end of model no.

Flat with Ribs (C)

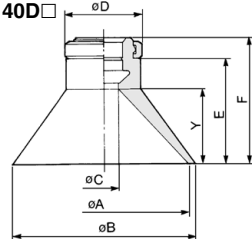
ZP10C□ to 50C□



Model	Size	A	B	C	D	E	F	Y
ZP10C□	C10	10	12	4	13	7.7	12	1.7
ZP13C□	C13	13	15	4	13	7.7	12	1.8
ZP16C□	C16	16	18	4	13	8.2	12.5	1.2
ZP20C□	C20	20	23	4	15	9.5	14	1.7
ZP25C□	C25	25	28	4	15	9.5	14	1.8
ZP32C□	C32	32	35	4	15	10	14.5	2.3
ZP40C□	C40	40	43	7	18	13.7	18.5	3.3
ZP50C□	C50	50	53	7	18	14.7	19.5	3.8

Deep (D)

ZP10D□ to 40D□



Model	Size	A	B	C	D	E	F	Y
ZP10D□	D10	10	12	4	13	10.7	15	6
ZP16D□	D16	16	18	4	13	11.7	16	7
ZP25D□	D25	25	28	4	15	15.5	20	10
ZP40D□	D40	40	43	7	18	24.2	29	17

ZP3

ZP2

ZP2V

ZP

ZPT

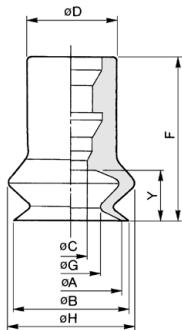
ZPR

XT661

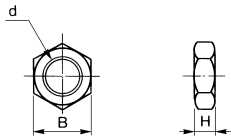
Replacement Parts: Pad Unit

Bellows (B)

Pad diameter: $\phi 6$ to $\phi 8$
ZP06B□ to 08B□

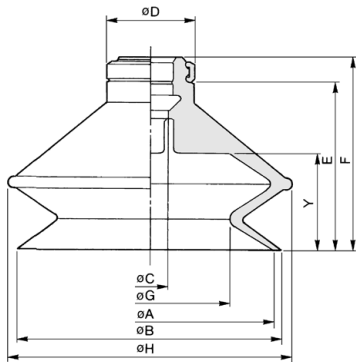


Adapter/Buffer Mounting Nut



Model	d	H	B
NTJ-015A	M5 x 0.8	4	8
ZPNA-M6	M6 x 1	3	8
ZPNA-M8	M8 x 1	3	12
ZPNA-M10	M10 x 1	3	14
ZPNA-M14	M14 x 1	5	19

Pad diameter: $\phi 10$ to $\phi 50$
ZP10B□ to 50B□



Model	Size	A	B	C	D	E	F	G	H	Y
ZP06B□	B06	6	7	2.5	7	—	13	3.3	9	4
ZP08B□	B08	8	9	2.5	7	—	13	4.7	10	4
ZP10B□	B10	10	12	4	13	11.7	16	6	14	5.5
ZP13B□	B13	13	15	4	13	14.2	18.5	9	19	7.5
ZP16B□	B16	16	18	4	13	15.7	20	10	21	8.5
ZP20B□	B20	20	22	4	15	19	23.5	12	25	10.5
ZP25B□	B25	25	27	4	15	19.5	24	16	28	10.5
ZP32B□	B32	32	34	4	15	24.5	29	19	37	14
ZP40B□	B40	40	43	7	18	29.2	34	24	48	16
ZP50B□	B50	50	53	7	18	33.2	38	32	57	19

* Put in the symbol for material at the end of model no.

Replacement Parts: Pad Unit

How to Order/Pad Unit

Thin flat (UT), Thin flat with ribs (CT)

ZP 10 UT N

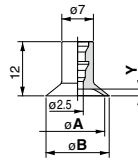
Pad diameter	
10	ø10
13	ø13
16	ø16

Pad type	
UT	Thin flat
CT	Thin flat with ribs

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

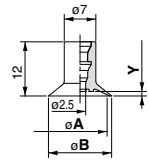
Dimensions

Thin flat



ZP□□UT□□

Thin flat with ribs



ZP□□CT□□

Dimensions (mm)

Model	A	B	Y
ZP10UT□□	10	11	1
ZP13UT□□	13	14	1.5
ZP16UT□□	16	17	

Dimensions (mm)

Model	A	B	Y
ZP10CT□□	10	11	0.8
ZP13CT□□	13	14	1
ZP16CT□□	16	17	

Elliptic

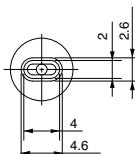
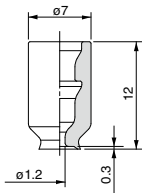
ZP 2004 U N

Pad diameter (Breadth x Length)	
2004	2 x 4
3507	3.5 x 7
4010	4 x 10

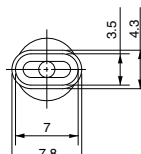
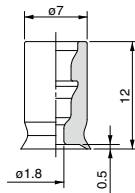
Pad type	
U	Flat

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

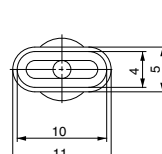
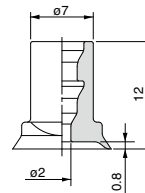
Dimensions



ZP2004U□□



ZP3507U□□



ZP4010U□□

ZP3

ZP2

ZP2V

ZP

ZPT
ZPR

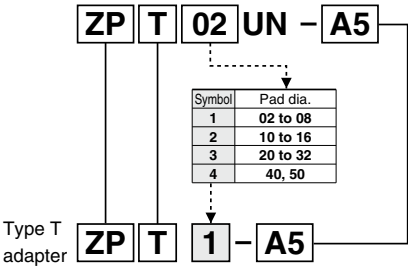
XT661

Replacement Parts: Series ZPT Adapter

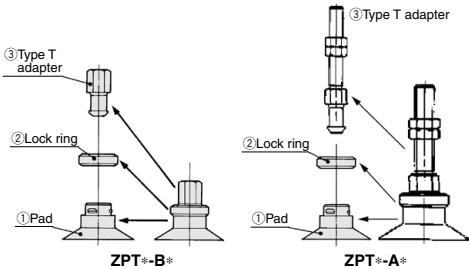
Appropriate adaptor or buffer can be selected for the currently used pad model.

- Without buffer
- The same symbol
- ◀..... Replacement of the symbol

[Pad model no.]



Construction



Applicable pad diameter: ø2 to ø8
2 x 4, 3.5 x 7, 4 x 10
ø10 to ø16 (Thin section series)

Model	①Pad	②Lock ring	③Type T adaptor
ZPT▲▲□**A5	ZP▲▲□**	—	ZPT1-A5
ZPT▲▲□**A6			ZPT1-A6
ZPT▲▲□**B4			ZPT1-B4
ZPT▲▲□**B5			ZPT1-B5

Note 1) Applicable pad diameter (▲▲): 02, 04, 06, 08, 10, 13, 16, 2004, 3507, 4010

Note 2) Applicable pad form (□): U, C, B, UT, CT

Applicable pad diameter: ø10 to ø16

Model	①Pad	②Lock ring	③Type T adaptor
ZPT▲▲□**A5	ZP▲▲□***X19	ZPL1	ZPT2-A5
ZPT▲▲□**A6			ZPT2-A6
ZPT▲▲□**B5			ZPT2-B5
ZPT▲▲□**B6			ZPT2-B6
ZPT▲▲□**◇01			ZPT2-◇01

Note 1) Applicable pad diameter (▲▲): 10, 13, 16

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Vacuum entry port (◇): B, N, T

Applicable pad diameter: ø20 to ø32

Model	①Pad	②Lock ring	③Type T adaptor
ZPT▲▲□**A6	ZP▲▲□**X19	ZPL2	ZPT3-A6
ZPT▲▲□**A8			ZPT3-A8
ZPT▲▲□**B5			ZPT3-B5
ZPT▲▲□**B6			ZPT3-B6
ZPT▲▲□**B8			ZPT3-B8
ZPT▲▲□**◇01			ZPT3-◇01

Note 1) Applicable pad diameter (▲▲): 20, 25, 32

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Vacuum entry port (◇): B, N, T

Applicable pad diameter: ø40, ø50

Model	①Pad	②Lock ring	③Type T adaptor
ZPT▲▲□**A6	ZP▲▲□***X19	ZPL3	ZPT4-A6
ZPT▲▲□**A8			ZPT4-A8
ZPT▲▲□**B6			ZPT4-B6
ZPT▲▲□**B8			ZPT4-B8
ZPT▲▲□**◇01			ZPT4-◇01

Note 1) Applicable pad diameter (▲▲): 40, 50

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Vacuum entry port (◇): B, N, T

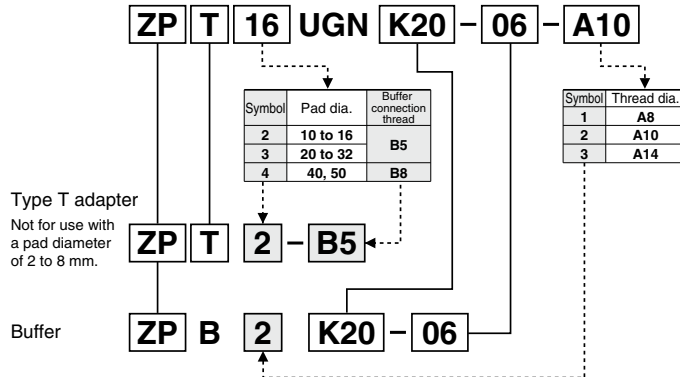
Replacement Parts: Series ZPT Adapter/Buffer

● With buffer

— The same symbol
 ⋯ Replacement of the symbol

Construction

[Pad model no.]



* Refer to ø2 to ø8 for Thin flat, Thin flat with ribs, and Elliptic.

Applicable pad diameter: ø2 to ø8
 2 x 4, 3.5 x 7, 4 x 10
 ø10 to ø16 (Thin section series)

Model	①Pad	②Lock ring	③Type T adapter	④Buffer
ZPT▲▲□□(J-K)■-B3-A8	ZP▲▲□□	—	—	ZPB1(J-K)■-B3
ZPT▲▲□□(J-K)■-B5-A8				ZPB1(J-K)■-B5
ZPT▲▲□□(J-K)■-N4-A8				ZPB1(J-K)■-N4
ZPT▲▲□□(J-K)■-U4-A8				ZPB1(J-K)■-U4
ZPT▲▲□□(J-K)■-04-A8				ZPB1(J-K)■-04
ZPT▲▲□□(J-K)■-06-A8				ZPB1(J-K)■-06

Note 1) Applicable pad diameter (▲▲): 02, 04, 06, 08, 10, 13, 16, 2004, 3507, 4010

Note 2) Applicable pad form (□): U, C, B, UT, CT

Note 3) Applicable buffer stroke (■): 6, 10, 15, 25mm

Applicable pad diameter: ø10 to ø16

Model	①Pad	②Lock ring	③Type T adapter	④Buffer
ZPT▲▲□□(J-K)■-B5-A10	ZP▲▲□□-X19	ZPL1	ZPT2-B5	ZPB2(J-K)■-B5
ZPT▲▲□□(J-K)■-N6-A10				ZPB2(J-K)■-N6
ZPT▲▲□□(J-K)■-U6-A10				ZPB2(J-K)■-U6
ZPT▲▲□□(J-K)■-04-A10				ZPB2(J-K)■-04
ZPT▲▲□□(J-K)■-06-A10				ZPB2(J-K)■-06

Note 1) Applicable pad diameter (▲▲): 10, 13, 16

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Applicable buffer stroke (■): 10, 20, 30, 40, 50mm

Applicable pad diameter: ø20 to ø32

Model	①Pad	②Lock ring	③Type T adapter	④Buffer
ZPT▲▲□□(J-K)■-B5-A10	ZP▲▲□□-X19	ZPL2	ZPT3-B5	ZPB2(J-K)■-B5
ZPT▲▲□□(J-K)■-N6-A10				ZPB2(J-K)■-N6
ZPT▲▲□□(J-K)■-U6-A10				ZPB2(J-K)■-U6
ZPT▲▲□□(J-K)■-04-A10				ZPB2(J-K)■-04
ZPT▲▲□□(J-K)■-06-A10				ZPB2(J-K)■-06

Note 1) Applicable pad diameter (▲▲): 20, 25, 32

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Applicable buffer stroke (■): 10, 20, 30, 40, 50mm

Applicable pad diameter: ø40, ø50

Model	①Pad	②Lock ring	③Type T adapter	④Buffer
ZPT▲▲□□(J-K)■-B5-A14	ZP▲▲□□-X19	ZPL3	ZPT4-B8	ZPB3(J-K)■-B5
ZPT▲▲□□(J-K)■-01-A14				ZPB3(J-K)■-01
ZPT▲▲□□(J-K)■-N6-A14				ZPB3(J-K)■-N6
ZPT▲▲□□(J-K)■-U6-A14				ZPB3(J-K)■-U6
ZPT▲▲□□(J-K)■-06-A14				ZPB3(J-K)■-06
ZPT▲▲□□(J-K)■-08-A14				ZPB3(J-K)■-08

Note 1) Applicable pad diameter (▲▲): 40, 50

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Applicable buffer stroke (■): 10, 20, 30, 50mm

Note 4) Vacuum entry port (◊): B, N, T

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

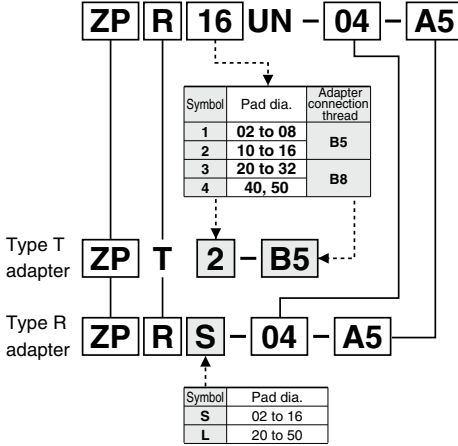
XT661

Replacement Parts: Series ZPR Adapter

● Without buffer

— The same symbol
 ◀..... Replacement of the symbol

[Pad model no.]



Applicable pad diameter: ø2 to ø8

2 x 4, 3.5 x 7, 4 x 10
 ø10 to ø16 (Thin section series)

Model	①Pad	②Lock ring	③Type T adapter	④Type R adapter
ZPT▲▲□***-◇-A5	ZP▲▲□**	—	ZPT1-B5	ZPRS-◇-A5
ZPT▲▲□***-◇-A6				ZPRS-◇-A6
ZPT▲▲□***-◇-B4				ZPRS-◇-B4
ZPT▲▲□***-◇-B5				ZPRS-◇-B5

Note 1) Applicable pad diameter (▲▲): 02, 04, 06, 08, 10, 13, 16, 2004, 3507, 4010

Note 2) Applicable pad form (□): U, C, B, UT, CT

Note 3) Vacuum entry port (◇◇): 04, 06

Applicable pad diameter: ø20 to ø32

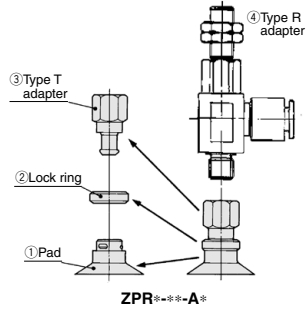
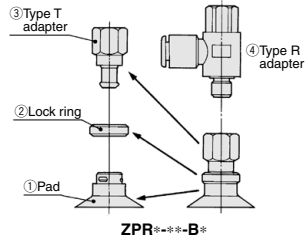
Model	①Pad	②Lock ring	③Type T adapter	④Type R adapter
ZPT▲▲□***-◇-A6	ZP▲▲□**X19	ZPL2	ZPT3-B8	ZPRL-◇-A6
ZPT▲▲□***-◇-A8				ZPRL-◇-A8
ZPT▲▲□***-◇-B5				ZPRL-◇-B5
ZPT▲▲□***-◇-B6				ZPRL-◇-B6
ZPT▲▲□***-◇-B8				ZPRL-◇-B8

Note 1) Applicable pad diameter (▲▲): 20, 25, 32

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Vacuum entry port (◇◇): 04, 06, 08

Construction



Applicable pad diameter: ø10 to ø16

Model	①Pad	②Lock ring	③Type T adapter	④Type R adapter
ZPT▲▲□***-◇-A5	ZP▲▲□**X19	ZPL1	ZPT2-B5	ZPRS-◇-A5
ZPT▲▲□***-◇-A6				ZPRS-◇-A6
ZPT▲▲□***-◇-B5				ZPRS-◇-B5
ZPT▲▲□***-◇-B6				ZPRS-◇-B6
ZPT▲▲□***-◇-B8				ZPRS-◇-B8

Note 1) Applicable pad diameter (▲▲): 10, 13, 16

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Vacuum entry port (◇◇): 04, 06

Applicable pad diameter: ø40, ø50

Model	①Pad	②Lock ring	③Type T adapter	④Type R adapter
ZPT▲▲□***-◇-A6	ZP▲▲□**X19	ZPL3	ZPT4-B8	ZPRL-◇-A6
ZPT▲▲□***-◇-A8				ZPRL-◇-A8
ZPT▲▲□***-◇-B6				ZPRL-◇-B6
ZPT▲▲□***-◇-B8				ZPRL-◇-B8
ZPT▲▲□***-◇-B8				ZPRL-◇-B8

Note 1) Applicable pad diameter (▲▲): 40, 50

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Vacuum entry port (◇◇): 06, 08

Replacement Parts: Series ZPR Adapter/Buffer

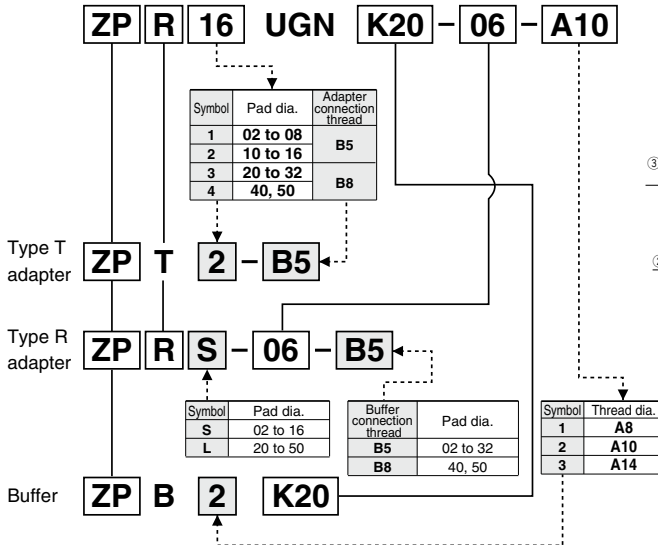
Note) For products with buffer, buffer and type R adapter are bonded at the time of purchase.

● With buffer

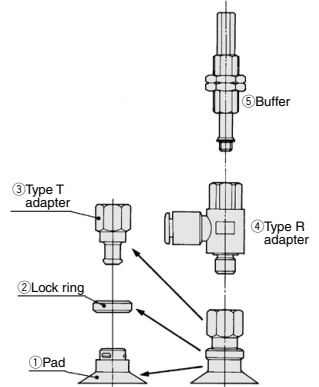
— The same symbol

⋯ Replacement of the symbol

[Pad model no.]



Construction



* Refer to ø2 to ø8 for Thin flat, Thin flat with ribs, and Elliptic.

Applicable pad diameter: ø2 to ø8

2 x 4, 3.5 x 7, 4 x 10

ø10 to ø16 (Thin section series)

Model	① Pad	② Lock ring	③ Type T adapter	④ Type R adapter	⑤ Buffer
ZPR▲▲□□(J-K)■-◇-A8	ZP▲▲□□	—	ZPT1-B5	ZPRS-◇-B5	ZPB1(J-K)■

Note 1) Applicable pad diameter (▲▲): 02, 04, 06, 08, 10, 13, 16, 2004, 3507, 4010

Note 2) Applicable pad form (□): U, C, B, UT, CT

Note 3) Applicable buffer stroke (■): 6, 10, 15, 25mm

Note 4) Vacuum entry port (◇): 04, 06

Applicable pad diameter: ø10 to ø16

Model	① Pad	② Lock ring	③ Type T adapter	④ Type R adapter	⑤ Buffer
ZPR▲▲□□(J-K)■-◇-A10	ZP▲▲□□-X18	ZPL1	ZPT2-B5	ZPRS-◇-B5	ZPB2(J-K)■

Note 1) Applicable pad diameter (▲▲): 10, 13, 16

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Applicable buffer stroke (■): 10, 20, 30, 40, 50mm

Note 4) Vacuum entry port (◇): 04, 06

Applicable pad diameter: ø20 to ø32

Model	① Pad	② Lock ring	③ Type T adapter	④ Type R adapter	⑤ Buffer
ZPR▲▲□□(J-K)■-◇-A10	ZP▲▲□□-X19	ZPL2	ZPT3-B8	ZPRL-◇-B8	ZPB2(J-K)■

Note 1) Applicable pad diameter (▲▲): 20, 25, 32

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Applicable buffer stroke (■): 10, 20, 30, 40, 50mm

Note 4) Vacuum entry port (◇): 04, 06, 08

Applicable pad diameter: ø40, ø50

Model	① Pad	② Lock ring	③ Type T adapter	④ Type R adapter	⑤ Buffer
ZPR▲▲□□(J-K)■-◇-A14	ZP▲▲□□-X19	ZPL3	ZPT4-B8	ZPRL-◇-B8	ZPB3(J-K)■

Note 1) Applicable pad diameter (▲▲): 40, 50

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Applicable buffer stroke (■): 10, 20, 30, 50mm

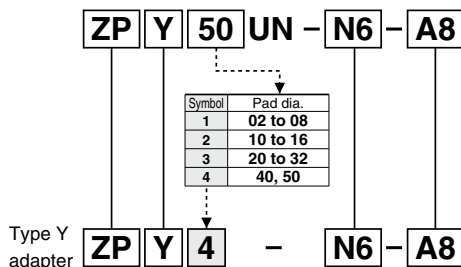
Note 4) Vacuum entry port (◇): 06, 08

Replacement Parts: Series ZPY Adapter

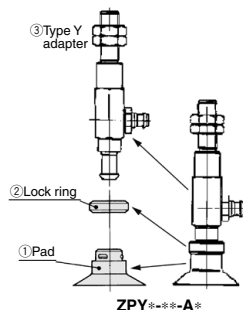
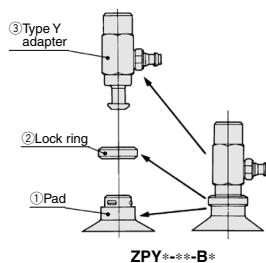
● Without buffer

— The same symbol
 ⋯ Replacement of the symbol

[Pad model no.]



Construction



Applicable pad diameter: ø2 to ø8

2 x 4, 3.5 x 7, 4 x 10
 ø10 to ø16 (Thin section series)

Model	① Pad	② Lock ring	③ Type Y adapter
ZPY▲▲□□*~◇◇-A5	ZP▲▲□□*	—	ZPY1-◇◇-A5
ZPY▲▲□□*~◇◇-A6			ZPY1-◇◇-A6
ZPY▲▲□□*~◇◇-B4			ZPY1-◇◇-B4
ZPY▲▲□□*~◇◇-B5			ZPY1-◇◇-B5

Note 1) Applicable pad diameter (▲▲): 02, 04, 06, 08, 10, 13, 16, 2004, 3507, 4010

Note 2) Applicable pad form (□): U, C, B, UT, CT

Note 3) Vacuum entry port (◇◇): N4, N6, U4, U6

Applicable pad diameter: ø10 to ø16

Model	① Pad	② Lock ring	③ Type Y adapter
ZPY▲▲□□*~◇◇-A5	ZP▲▲□□*~X19	ZPL1	ZPY2-◇◇-A5
ZPY▲▲□□*~◇◇-A6			ZPY2-◇◇-A6
ZPY▲▲□□*~◇◇-B5			ZPY2-◇◇-B5
ZPY▲▲□□*~◇◇-B6			ZPY2-◇◇-B6

Note 1) Applicable pad diameter (▲▲): 10, 13, 16

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Vacuum entry port (◇◇): N4, N6, U4, U6

Applicable pad diameter: ø20 to ø32

Model	① Pad	② Lock ring	③ Type Y adapter
ZPY▲▲□□*~◇◇-A6	ZP▲▲□□*~X19	ZPL2	ZPY3-◇◇-A6
ZPY▲▲□□*~◇◇-A8			ZPY3-◇◇-A8
ZPY▲▲□□*~◇◇-B5			ZPY3-◇◇-B5
ZPY▲▲□□*~◇◇-B6			ZPY3-◇◇-B6
ZPY▲▲□□*~◇◇-B8			ZPY3-◇◇-B8

Note 1) Applicable pad diameter (▲▲): 20, 25, 32

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Vacuum entry port (◇◇): N4, N6, U4, U6

Applicable pad diameter: ø40, ø50

Model	① Pad	② Lock ring	③ Type Y adapter
ZPY▲▲□□*~◇◇-A6	ZP▲▲□□*~X19	ZPL3	ZPY4-◇◇-A6
ZPY▲▲□□*~◇◇-A8			ZPY4-◇◇-A8
ZPY▲▲□□*~◇◇-B6			ZPY4-◇◇-B6
ZPY▲▲□□*~◇◇-B8			ZPY4-◇◇-B8

Note 1) Applicable pad diameter (▲▲): 40, 50

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Vacuum entry port (◇◇): N6, U6

Replacement Parts: Series ZPY Adapter/Buffer

Note) For products with buffer, buffer and type Y adapter are bonded at the time of purchase.

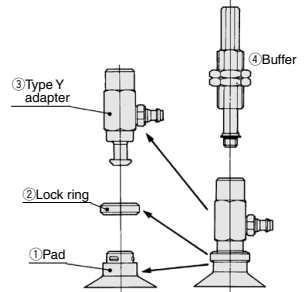
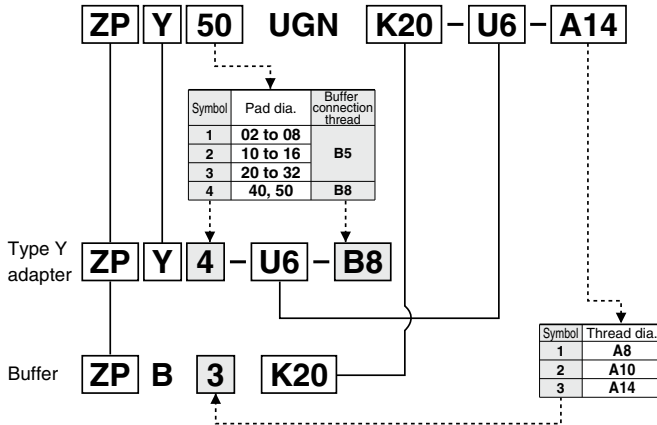
● With buffer

— The same symbol

⋯ Replacement of the symbol

Construction

[Pad model no.]



* Refer to ø2 to ø8 for Thin flat, Thin flat with ribs, and Elliptic.

Applicable pad diameter: ø2 to ø8
2 x 4, 3.5 x 7, 4 x 10
ø10 to ø16 (Thin section series)

Model	① Pad	② Lock ring	③ Type Y adapter	④ Buffer
ZPY▲▲□** (J-K) ■■-◇◇-A8	ZP▲▲□**	—	ZPY1-◇◇-B5	ZPB1 (J-K) ■■

Note 1) Applicable pad diameter (▲▲): 02, 04, 06, 08, 10, 13, 16, 2004, 3507, 4010

Note 2) Applicable pad form (□): U, C, B, UT, CT

Note 3) Applicable buffer stroke (■■): 6, 10, 15, 25mm

Note 4) Vacuum entry port (◇◇): N4, N6, U4, U6

Applicable pad diameter: ø20 to ø32

Model	① Pad	② Lock ring	③ Type Y adapter	④ Buffer
ZPY▲▲□** (J-K) ■■-◇◇-A10	ZP▲▲□**-X19	ZPL2	ZPY3-◇◇-B5	ZPB2 (J-K) ■■

Note 1) Applicable pad diameter (▲▲): 20, 25, 32

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Applicable buffer stroke (■■): 10, 20, 30, 40, 50mm

Note 4) Vacuum entry port (◇◇): N4, N6, U4, U6

Applicable pad diameter: ø10 to ø16

Model	① Pad	② Lock ring	③ Type Y adapter	④ Buffer
ZPY▲▲□** (J-K) ■■-◇◇-A10	ZP▲▲□**-X19	ZPL1	ZPY2-◇◇-B5	ZPB2 (J-K) ■■

Note 1) Applicable pad diameter (▲▲): 10, 13, 16

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Applicable buffer stroke (■■): 10, 20, 30, 40, 50mm

Note 4) Vacuum entry port (◇◇): N4, N6, U4, U6

Applicable pad diameter: ø40, ø50

Model	① Pad	② Lock ring	③ Type Y adapter	④ Buffer
ZPY▲▲□** (J-K) ■■-◇◇-A14	ZP▲▲□**-X19	ZPL3	ZPY4-◇◇-B8	ZPB3 (J-K) ■■

Note 1) Applicable pad diameter (▲▲): 40, 50

Note 2) Applicable pad form (□): U, C, D, B

Note 3) Applicable buffer stroke (■■): 10, 20, 30, 50mm

Note 4) Vacuum entry port (◇◇): N6, U6

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661

Vacuum Pad: Ball Joint Type

Series ZPT/ZPR

Pad Diameter: $\varnothing 10$, $\varnothing 13$, $\varnothing 16$, $\varnothing 20$, $\varnothing 25$, $\varnothing 32$, $\varnothing 40$, $\varnothing 50$



ZP3

ZP2

ZP2V

ZP

ZPT
ZPR

XT661

Series ZPT: Vertical Vacuum Entry Type

Series ZPR: Lateral Vacuum Entry Type One-touch Fitting

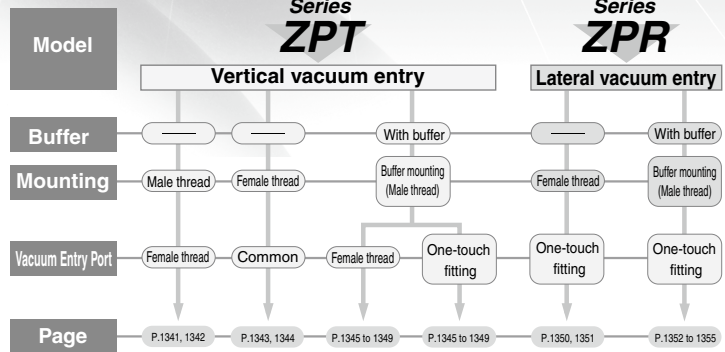
Vacuum Pad: Ball Joint Type

Series ZPT/ZPR

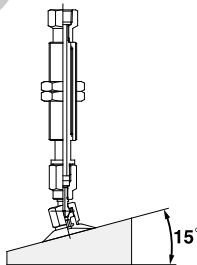
Pad diameter: $\varnothing 10$, $\varnothing 13$, $\varnothing 16$, $\varnothing 20$, $\varnothing 25$, $\varnothing 32$, $\varnothing 40$, $\varnothing 50$

Pad material: NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber

Series Variations



Adsorption is possible even on a slanted surface.



Inclination 15°
(Rotation 30°)

		Buffer stroke							
Buffer stroke	Pad dia.	$\varnothing 10$	$\varnothing 13$	$\varnothing 16$	$\varnothing 20$	$\varnothing 25$	$\varnothing 32$	$\varnothing 40$	$\varnothing 50$
		●	●	●	●	●	●	●	●
10 mm		●	●	●	●	●	●	●	●
20 mm		●	●	●	●	●	●	●	●
30 mm		●	●	●	●	●	●	●	●
40 mm		●	●	●	—	—	—	—	—
50 mm		●	●	●	●	●	●	●	●

Vacuum Pad: Ball Joint Type

Vertical Vacuum Entry

Without Buffer/Male Thread

Series ZPT



How to Order

ZPT 25 F GN - B5 - A8

Pad diameter

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

Pad type

F	Ball joint type
---	-----------------

Mounting

Symbol	Mounting	Pad dia.
A8	M8 x 1	ø10 to ø16
A10	M10 x 1	ø20 to ø32
A14	M14 x 1	ø40, ø50

Vacuum entry port

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

Material

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

Note) Pads are exclusively ball joint type and are not interchangeable with other pads.

Specifications

Vacuum entry direction		Vertical	
Connection		Mounting	Vacuum entry port
		Male thread	Female thread
Pad diameter	ø10 to ø16	M8 x 1	M5 x 0.8
	ø20 to ø32	M10 x 1	
	ø40, ø50	M14 x 1	
Ball joint rotation		30°	

Weight

Pad dia.	Mounting (Male thread)	(g)
		Vacuum entry (Female thread) M5 x 0.8
ø10 to ø16	M8 x 1	20
ø20 to ø32	M10 x 1	24
ø40, ø50	M14 x 1	55

ZP3

ZP2

ZP2V

ZP

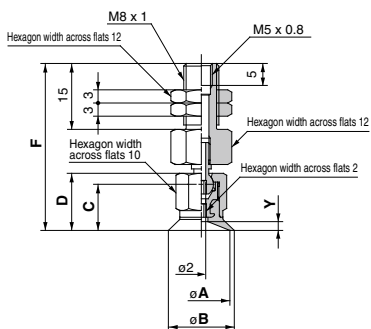
ZPT

ZPR

XT661

Series ZPT

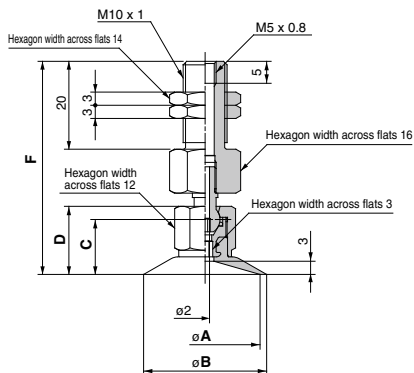
ZPT¹⁰₁₃¹⁶F□□-B5-A8 (Without buffer/Male thread)



Dimensions

Dimensions						(mm)
Model	A	B	C	D	F	Y
ZPT10F□□-B5-A8	10	12	10	12.5	37.5	1.5
ZPT13F□□-B5-A8	13	15	10.5	13	38	2
ZPT16F□□-B5-A8	16	18				

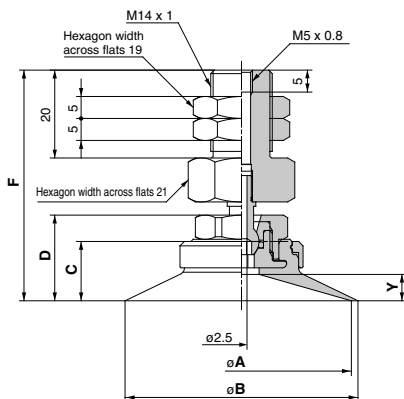
ZPT²⁰₃₂F□□-B5-A10 (Without buffer/Male thread)



Dimensions

Model	A	B	C	D	F
ZPT20F□□-B5-A10	20	22	12.5	15.5	48.5
ZPT25F□□-B5-A10	25	28			
ZPT32F□□-B5-A10	32	35	13	16	49

ZPT⁴⁰₅₀F□□-B5-A14 (Without buffer/Male thread)



Dimensions

Dimensions (mm)						
Model	A	B	C	D	F	Y
ZPT40F□□-B5-A14	40	43	12.5	18.5	51.5	5
ZPT50F□□-B5-A14	50	53	13.5	19.5	52.5	6

Vacuum Pad: Ball Joint Type Vertical Vacuum Entry Without Buffer/Female Thread

Series ZPT

RoHS



How to Order

ZPT 20 F GS - B01

Pad diameter ●

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

Pad type ●

F	Ball joint type
---	-----------------

Vacuum entry/
Mounting diameter ●

Connection	Symbol	Mounting	Pad dia.		
			ø10 to ø16	ø20 to ø32	ø40, ø50
Female thread	B5	M5 x 0.8	●	●	—
	B8	M8 x 1.25	—	●	●
	B01	Rc 1/8	—	●	●
	N01	NPT 1/8	—	●	●
	T01	NPTF 1/8	—	●	●

● Material

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

Note) Pads are exclusively ball joint type and are not interchangeable with other pads.

Specifications

Vacuum entry direction		Vertical
Connection		Connection/Vacuum entry
		Female thread
Pad diameter	ø10 to ø16	M5 x 0.8
		M5 x 0.8
	ø20 to ø32	M8 x 1.25
		1/8 (Rc, NPT, NPTF)
	ø40, ø50	M8 x 1.25
		1/8 (Rc, NPT, NPTF)
Ball joint rotation		30°

Weight

Pad dia.	Vacuum entry (Female thread)		
	M5 x 0.8	M8 x 1.25	1/8 (Rc, NPT, NPTF)
ø10 to ø16	10	—	—
ø20 to ø32	14	17	19
ø40, ø50	—	47	46

(g)

ZP3

ZP2

ZP2V

ZP

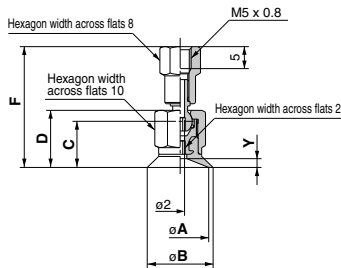
ZPT

ZPR

XT661

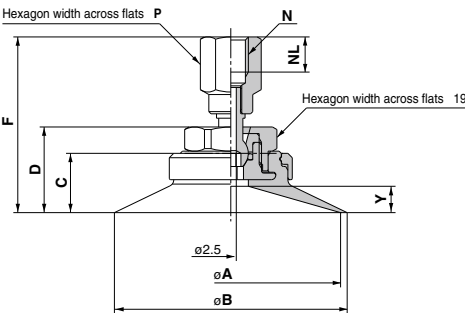
Series **ZPT**

ZPT¹⁰₁₃¹⁶**F**□□-**B5** (Without buffer/Female thread)



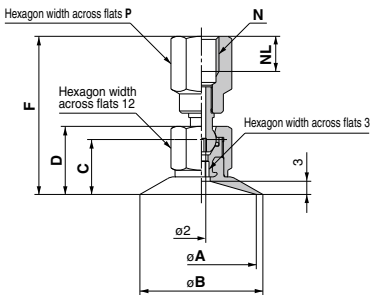
Dimensions (mm)						
Model	A	B	C	D	F	Y
ZPT10F □□- B5	10	12	10	12.5	27	1.5
ZPT13F □□- B5	13	15	10.5	13	27.5	
ZPT16F □□- B5	16	18				2

ZPT⁴⁰₅₀⁵⁰**F**□□-^{B8}₀₁ (Without buffer/Female thread)



Dimensions (mm)									
Model	A	B	C	D	N: M8 x 1.25			N: 1/8 (Rc, NPT, NPTF)	
					F	NL	P	F	P
ZPT40F □□-□□□	40	43	12.5	18.5	39	8	12	39	14
ZPT50F □□-□□□	50	53	13.5	19.5	40			40	

ZPT²⁰₂₅³²**F**□□-^{B5}₀₁ (Without buffer/Female thread)



Dimensions (mm)												
Model	A	B	C	D	N: M5 x 0.8			N: M8 x 1.25			N: 1/8 (Rc, NPT, NPTF)	
					F	NL	P	F	NL	P	F	P
ZPT20F□□-□□□	20	22	12.5	15.5	32	5	9	36	8	12	36	14
ZPT25F□□-□□□	25	28			32			36.5			36.5	
ZPT32F□□-□□□	32	35	13	16	32							

Vacuum Pad: Ball Joint Type

Vertical Vacuum Entry: With Buffer

Series ZPT

How to Order

ZPT 10 F GN J 20 - 04 - A10

Pad diameter

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

Pad type

F	Ball joint type
---	-----------------

Material

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

Buffer type

J	Rotating
K	Non-rotating

Mounting

(Refer to "Table (1)" for applications.)

Vacuum entry port

(Refer to "Table (1)" for applications.)

Table (1) Vacuum Entry/Mounting

Pad dia.			Mounting	
			ø10 to ø16	ø20 to ø50
Connection	Thread dia./Port size	Symbol	M10 x 1	M14 x 1
			A10	A14
Female thread	M5 x 0.8	B5	●	—
	Rc 1/8	B01	—	●
	NPT 1/8	N01	—	●
	NPTF 1/8	T01	—	●
One-touch fitting	ø4 tube	04	●	—
	ø6 tube	06	●	●
	ø8 tube	08	—	●

Tightening torque

(N·m)

Mounting thread dia.	Torque
M10 x 1	2.5 to 3.5
M14 x 1	6.5 to 7.5

Buffer stroke

Symbol	Stroke	Pad dia.	
		ø10 to ø16	ø20 to ø50
10	10 mm	●	●
20	20 mm	●	●
30	30 mm	●	●
40	40 mm	●	—
50	50 mm	●	●

Note) Pads are exclusively ball joint type and are not interchangeable with other pads.

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661



Specifications

Vacuum entry direction		Vertical		
Connection		Mounting	Vacuum entry port	
		Buffer male thread	Female thread	One-touch fitting
Pad dia.	ø10 to ø16	M10 x 1	M5 x 0.8	ø4 tube
	ø20 to ø50	M14 x 1	1/8 (Rc, NPT, NPTF)	ø6 tube
Ball joint rotation		30°		

Buffer Type

Pad dia.	ø10 to ø16		ø20 to ø50	
Mounting	M10 x 1		M14 x 1	
Stroke (mm)	10, 20, 30, 40, 50		10, 20, 30, 50	
Spring reactive force	0 stroke	1.0 N	0 stroke	2.0 N
	Full Stroke	3.0 N	Full Stroke	5.0 N
Non-rotating specification	Without non-rotating (J), With non-rotating (K)			

Weight

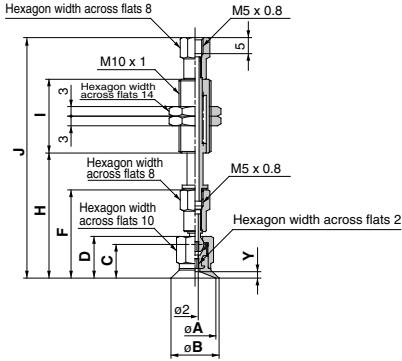
Pad dia.	Vacuum entry port					(g)
	Female thread		One-touch fitting			
	M5 x 0.8	1/8 (Rc, NPT, NPTF)	ø4 tube	ø6 tube	ø8 tube	
ø10 to ø16	30	—	32	33	—	
ø20 to ø32	—	128	—	133	139	
ø40, ø50	—	158	—	159	167	

Weight by Stroke

Pad dia. (L)	Stroke (mm)				(g)
	20	30	40	50	
ø10 to ø16	+10.5	+12.5	+22.5	+24	
ø20 to ø50	+37.5	+40	—	+66.5	

Vacuum Pad: Ball Joint Type Vertical Vacuum Entry: With Buffer *Series ZPT*

ZPT¹⁰₁₃¹⁶F□□_k10-B5-A10 (With buffer/Female thread)



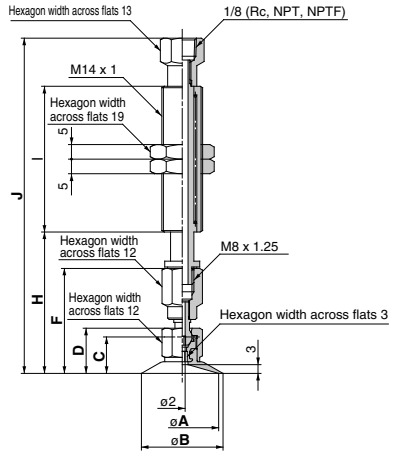
Dimensions: 10 mm Stroke

Model	A	B	C	D	F	H	I	J	Y
ZPT10F□□10-B5-A10	10	12	10	12.5	27	38.5		74.5	1.5
ZPT13F□□10-B5-A10	13	15					23		
ZPT16F□□10-B5-A10	16	18	10.5	13	27.5	39		75	2

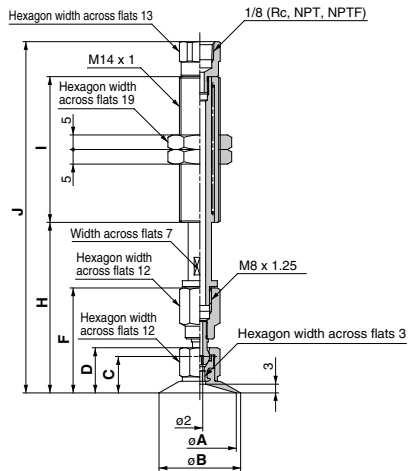
Additional Dimensions by Stroke (mm)

Stroke	H	I	J
20	+10	+28	+38
30	+20		+48
40	+30	+54	+84
50	+40		+94

ZPT²⁰₂₅³²F□□_k10-□01-A14 (With buffer/Female thread)



Stroke: 10 mm



Stroke: 20 to 50 mm

Dimensions: 10 mm Stroke

Model	A	B	C	D	F	H	I	J
ZPT20F□□10-□01-A14	20	22	12.5	15.5	36	48.5	50	115
ZPT25F□□10-□01-A14	25	28						
ZPT32F□□10-□01-A14	32	35	13	16	36.5	49		115.5

Additional Dimensions by Stroke (mm)

Stroke	H	I	J
20	+10		+5.5
30	+20	±0	+15.5
50	+40	+25	+60.5

ZP3

ZP2

ZP2V

ZP

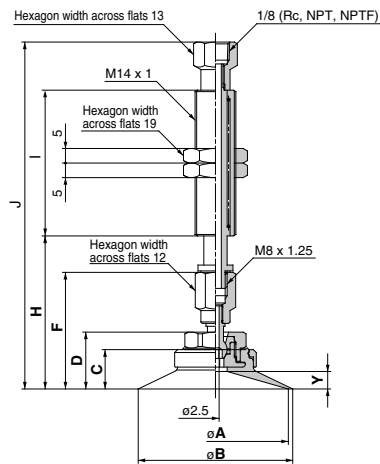
ZPT

ZPR

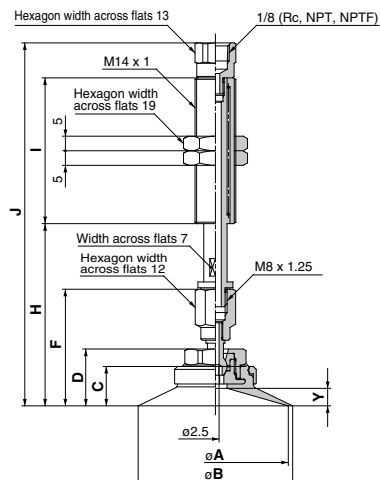
XT661

Series **ZPT**

ZPT⁴⁰₅₀F□□J¹⁰□□01-A14 (With buffer/Female thread)



Stroke: 10 mm



Stroke: 20 to 50 mm

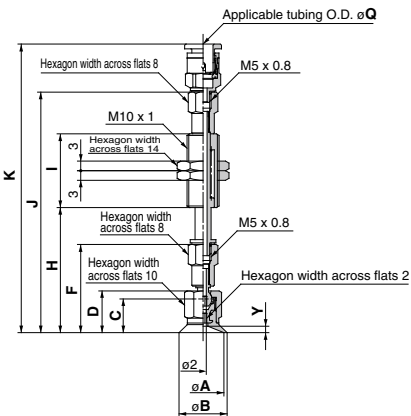
Dimensions: 10 mm Stroke

Model	A	B	C	D	F	H	I	J	Y
ZPT40F□□□10-□□01-A14	40	43	12.5	18.5	39	51.5	50	118	5
ZPT50F□□□10-□□01-A14	50	53	13.5	19.5	40	52.5		119	6

Additional Dimensions by Stroke

Stroke	H	I	J
20	+10	+5.5	
30	+20	±0	+15.5
50	+40	+25	+60.5

ZPT¹⁰₁₆F□□J¹⁰□□0-A10 (With buffer/One-touch fitting)



Dimensions: 10 mm Stroke

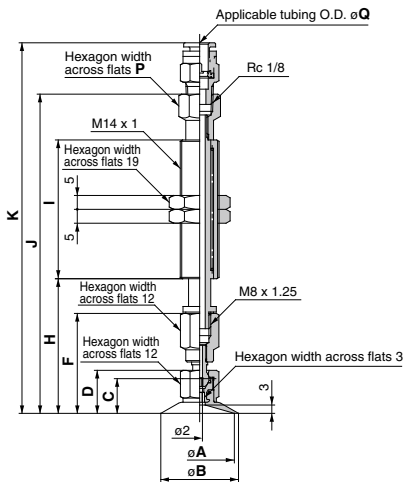
Model	A	B	C	D	F	H	I	J	Q: 4	Q: 6	Y
ZPT10F□□□10-□□0-A10	10	12	10	12.5	27	38.5		74.5	88.5	89.5	1.5
ZPT13F□□□10-□□0-A10	13	15					23	75	89	90	
ZPT16F□□□10-□□0-A10	16	18	10.5	13	27.5	39		75	89	90	2

Additional Dimensions by Stroke (mm)

Stroke	H	I	J	K
20	+10			+38
30	+20	+28		+48
40	+30	+54		+84
50	+40			+94

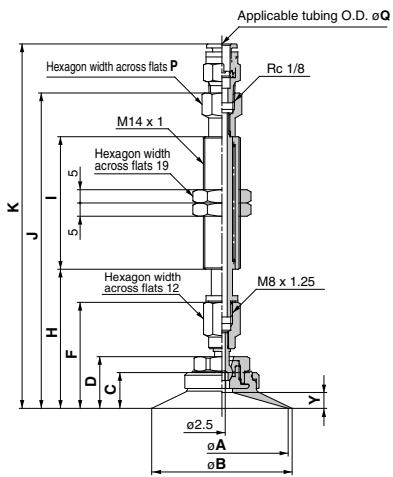
Series ZPT

ZPT²⁰₂₅³²F□□_K10-0□-A14 (With buffer/One-touch fitting)

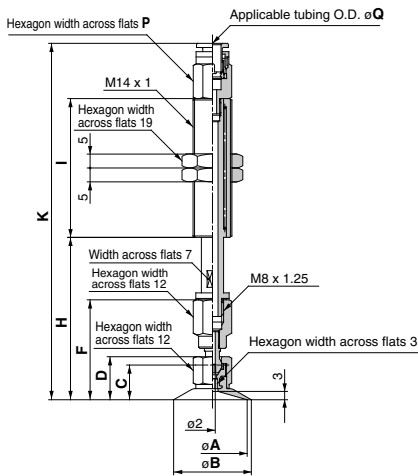


Stroke: 10 mm

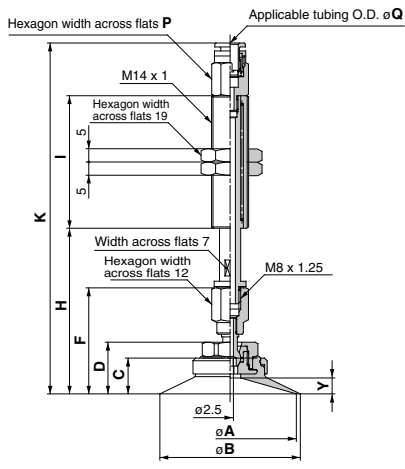
ZPT⁴⁰₅₀F□□ J_K10-0□-A14 (With buffer/One-touch fitting)



Stroke: 10 mm



Stroke: 20 to 50 mm



Stroke: 20 to 50 mm

Dimensions: 10 mm Strokes

Dimensions: 10 mm Strokes (mm)										
Model	A	B	C	D	F	H	I	J	Q: 6	
									K	P
ZPT20F□□□□□10-0□-A14	20	22	125	15.5	36	48.5	50	115	133.5	137
ZPT25F□□□□□10-0□-A14	25	28	15	16	36.5	49		115.5	134	137.5
ZPT32F□□□□□10-0□-A14	32	35	13	16	36.5	49				

Additional Dimensions by Stroke

Stroke		Q: 6		Q: 8	
H	I	K	P	K	P
20	+10	-5.1		-5.6	
30	+20	±0	-1	+4.4	+1
50	+40	+25	+4.9	+49.4	

Dimensions: 10 mm Strokes

Dimensions: 10 mm Strokes (mm)

Model	A	B	C	D	F	H	I	J	Q: 6		Q: 8		Y
									K	P	K	P	
ZPT40F□□□□□□□□□□-A14	40	43	12.5	18.5	39	51.5	50	118	136.5	13	140	13	5
ZPT50F□□□□□□□□□□-A14	50	53	13.5	19.5	40	52.5		119	137.5		141		6

Additional Dimensions by Stroke

Stroke		H	I	Q: 6		Q: 8	
				K	P	K	P
20	+10	±0	-5.1			-5.6	
30	+20		+4.9	-1		+4.4	+1
50	+40		+25	+49.9		+49.4	

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661

Vacuum Pad: Ball Joint Type Lateral Vacuum Entry Without Buffer/Female Thread

Series ZPR



How to Order

ZPR 10 F GS - 06 - B5

Pad diameter

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

Pad type

F	Ball joint type
---	-----------------

Material

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

Mounting

(Refer to "Table (1)" for applications.)

Vacuum entry port

(Refer to "Table (1)" for applications.)

Table (1) Vacuum Entry/Mounting

Pad dia.			Mounting thread diameter		
			ø10 to ø16	ø20 to ø50	
Connection	Thread dia./ Port size	Symbol	M5 x 0.8	M5 x 0.8	M8 x 1.25
			B5	B5	B8
Vacuum entry	One-touch fitting	ø4 tube	04	●	—
		ø6 tube	06	●	●
		ø8 tube	08	—	●

Note) Pads are exclusively ball joint type and are not interchangeable with other pads.

Specifications

Vacuum entry direction		Lateral	
Connection		Mounting	Vacuum entry port
		Female thread	One-touch fitting
Pad dia.	ø10 to ø16	M5 x 0.8	ø4 tube
			ø6 tube
	ø20 to ø50	M5 x 0.8	ø6 tube
			ø8 tube
		M8 x 1.25	ø6 tube
			ø8 tube
Ball joint rotation		30°	

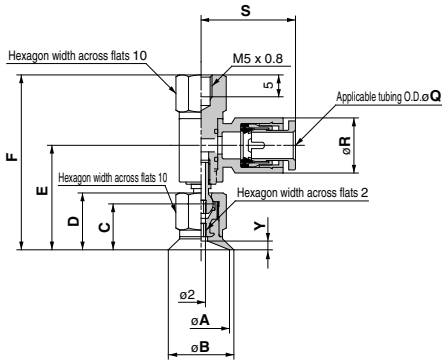
Weight

Pad dia.	Mounting female thread	Vacuum entry (One-touch fitting)		
		ø4 tube	ø6 tube	ø8 tube
ø10 to ø16	M5 x 0.8	18	19	—
ø20 to ø32	M5 x 0.8	—	22	23
	M8 x 1.25	—	21	22
ø40, ø50	M5 x 0.8	—	58	60
	M8 x 1.25	—	57	59

(g)

Lateral Vacuum Entry: Without Buffer **Series ZPR**

ZPR¹⁰₁₃F□□-0□-B5 (Without buffer/Female thread)
16



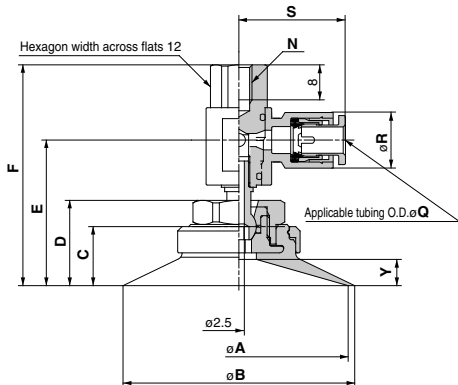
Dimensions (mm)

Model	A	B	C	D	E	F	Y
ZPR10F□□-0□-B5	10	12	10	12.5	23.4	39.5	1.5
ZPR13F□□-0□-B5	13	15	10.5	13	23.9	40	2
ZPR16F□□-0□-B5	16	18					

Dimensions by Tubing Diameter (mm)

Pad diameter (mm)	Q: 4		Q: 6	
	R	S	R	S
φ10 to φ16	10.4	20.6	12.8	21.6

ZPR⁴⁰₅₀F□□-0□-B8 (Without buffer/Female thread)



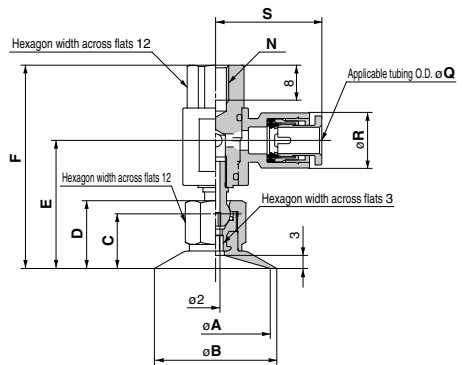
Dimensions (mm)

Model	A	B	C	D	E	F	N	Y
ZPR40F□□-0□-B8	40	43	12.5	18.5	32.3	49.5	M8 x 1.25	5
ZPR50F□□-0□-B8	50	53	13.5	19.5	33.3	50.5		6

Dimensions by Tubing Diameter (mm)

Pad diameter (mm)	Q: 6		Q: 8	
	R	S	R	S
φ40, φ50	12.8	24.3	15.2	26.2

ZPR²⁰₂₅F□□-0□-B₈⁵ (Without buffer/Female thread)
32



Dimensions (mm)

Model	A	B	C	D	E	F	N
ZPR20F□□-0□-B5	20	22	12.5	15.5	29.3	46.5	M5 x 0.8
ZPR20F□□-0□-B8							M8 x 1.25
ZPR25F□□-0□-B5	25	28					M5 x 0.8
ZPR25F□□-0□-B8							M8 x 1.25
ZPR32F□□-0□-B5	32	35	13	16	29.8	47	M5 x 0.8
ZPR32F□□-0□-B8							M8 x 1.25

Dimensions by Tubing Diameter (mm)

Pad diameter (mm)	Q: 6		Q: 8	
	R	S	R	S
φ20 to φ32	12.8	24.3	15.2	26.2

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661

Vacuum Pad: Ball Joint Type

Lateral Vacuum Entry

With Buffer

Series ZPR

How to Order

ZPR 10 F GN J 30 - 06 - A10

Pad diameter

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

Pad type

F	Ball joint type
----------	-----------------

Material

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

Buffer type

J	Rotating
K	Non-rotating

Mounting

(Refer to "Table (1)" for applications.)

Vacuum entry port

(Refer to "Table (1)" for applications.)

Table (1) Vacuum Entry/Mounting

Pad dia.			Mounting	
			ø10 to ø16	ø20 to ø50
Connection	Thread dia./ Port size	Symbol	A10	A14
	Symbol			
Vacuum entry	One-touch fitting	ø4 tube 04	●	—
		ø6 tube 06	●	●
		ø8 tube 08	—	●

Tightening torque

(N·m)

Mounting thread dia.	Torque
M10 x 1	2.5 to 3.5
M14 x 1	6.5 to 7.5

Buffer stroke

Symbol	Stroke	Pad dia.	
		ø10 to ø16	ø20 to ø50
10	10 mm	●	●
20	20 mm	●	●
30	30 mm	●	●
40	40 mm	●	—
50	50 mm	●	●

Note) Pads are exclusively ball joint type and are not interchangeable with other pads.



Specifications

Vacuum entry direction		Lateral	
Connection		Mounting	Vacuum entry port
		Male thread	One-touch fitting
Pad dia.	ø10 to ø16	M10 x 1	ø4 tube
	ø20 to ø50	M14 x 1	ø6 tube
Ball joint rotation		30°	

Buffer Type

Pad dia.	ø10 to ø16		ø20 to ø50	
Mounting	M10 x 1		M14 x 1	
Stroke (mm)	10, 20, 30, 40, 50		10, 20, 30, 50	
Spring reactive force	0 stroke	1.0 N	0 stroke	2.0 N
	Full Stroke	3.0 N	Full Stroke	5.0 N
Non-rotating specification	Without non-rotating (J), With non-rotating (K)			

Weight

Pad dia.	Vacuum entry port		
	One-touch fitting		
	ø4 tube	ø6 tube	ø8 tube
ø10 to ø16	34	35	—
ø20 to ø32	—	38	39
ø40, ø50	—	134	136

Weight by Stroke

Pad dia.	Stroke (mm)			
	20	30	40	50
ø10 to ø16	+10.5	+12.5	+22.5	+24
ø20 to ø50	+37.5	+40	—	+66.5

ZP3

ZP2

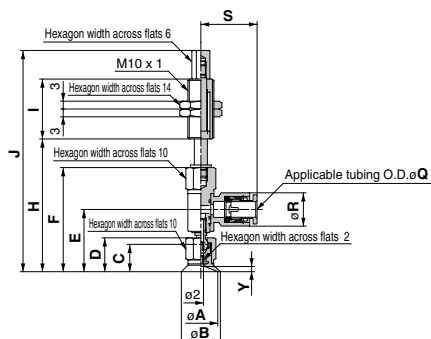
ZP2V

ZP

ZPT
ZPR

XT661

ZPR¹⁰₁₃F□□^J_K10-0□-A10 (With buffer)



Dimensions: 10 mm Stroke

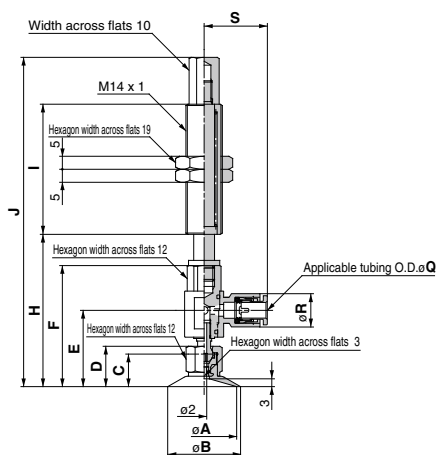
Dimensions: 10 mm Stroke (mm)								
Model	A	B	C	D	E	F	H	I
ZPR10F□□□□10-0□-A10	10	12	10	12.5	23.4	39.5	50.5	23
ZPR13F□□□□10-0□-A10	13	15	10.5	13	23.9	40	51	
ZPR16F□□□□10-0□-A10	16	18						85

					(mm)
Model	Q: 4		Q: 6		Y
	R	S	R	S	
ZPR10F□□10-0□-A10	10.4	20.6	12.8	21.6	1.5
ZPR13F□□10-0□-A10					2
ZPR16F□□10-0□-A10					

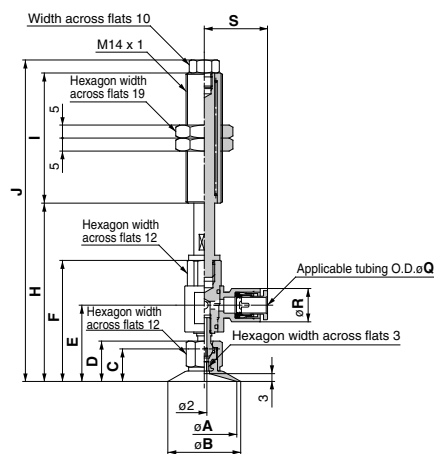
Additional Dimensions by Stroke

Stroke	H	I	J
20	+10	+28	+38
30	+20		+48
40	+30	+54	+84
50	+40		+94

ZPR²⁰₂₅F□□^J_K10-0□-A14 (With buffer)



Stroke: 10 mm



Stroke: 20 to 50 mm

Dimensions: 10 mm Stroke

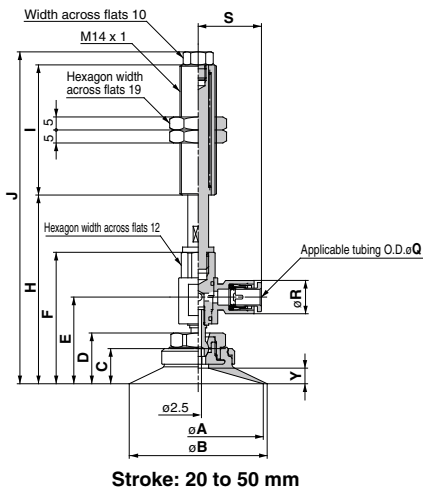
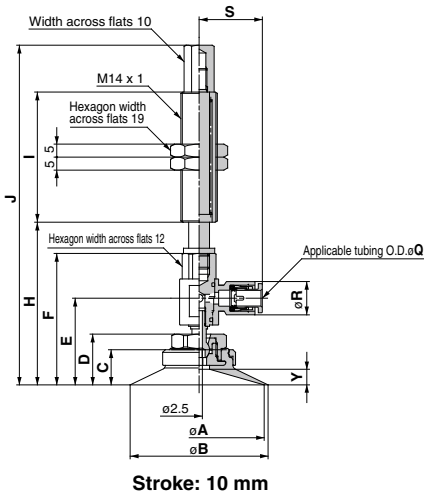
Model	A	B	C	D	E	F	H	I	J
ZPR20F□□□10-□-A14	20	22	12.5	15.5	29.3	46.5	58.5	50	126.5
ZPR25F□□□10-□-A14	25	28							
ZPR32F□□□10-□-A14	32	35	13	16	29.8	47	59		127

Model	Q: 6		Q: 8	
	R	S	R	S
ZPR20F□□□10-0□-A14	12.8	24.3	15.2	26.2
ZPR25F□□□10-0□-A14				
ZPR32F□□□10-0□-A14				

**Additional Dimensions
by Stroke** (mm)

Stroke	H	I	J
20	+10	±0	-3
30	+20		+7
50	+40	+25	+52

ZPR⁴⁰₅₀F□□K10-0□-A14 (With buffer)



Dimensions: 10 mm Stroke

Dimensions: 10 mm Stroke

Model	A	B	C	D	E	F	H	I	J	(mm)				Y
										Q: 6		Q: 8		
										R	S	R	S	
ZPR40F□□□10-0□-A14	40	43	12.5	18.5	32.3	49.5	61.5	50	129.5	12.8	24.3	15.2	26.2	5
ZPR50F□□□10-0□-A14	50	53	13.5	19.5	33.3	50.5	62.5		130.5					6

Additional Dimensions by Stroke

(mm)			
Stroke	H	I	J
20	+10	±0	-3
30	+20		+7
50	+40	+25	+52

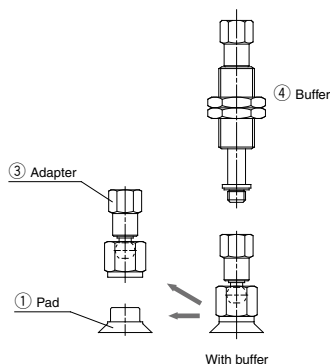
- ZP3
- ZP2
- ZP2V
- ZP
- ZPT
- ZPR
- XT661

Series ZPT/ZPR

Component Parts

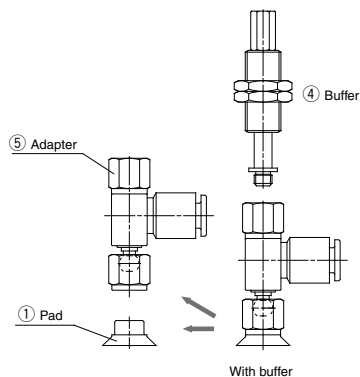
Series ZPT

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

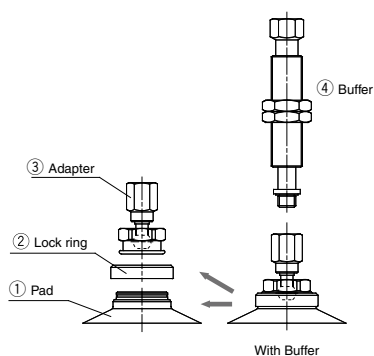


Series ZPR

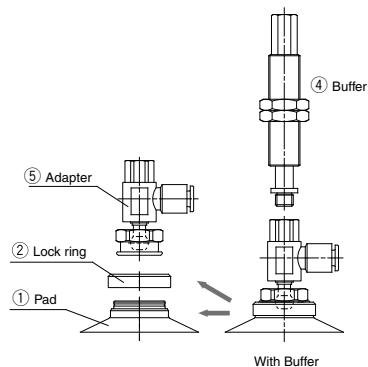
Pad Diameter: $\varnothing 10$ to $\varnothing 32$



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



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



Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	
2	Lock ring	Aluminum	Black anodized
3	Adapter	Brass, Stainless steel	Electroless nickel plated
4	Buffer	Brass	Electroless nickel plated
5	Adapter	Brass, Stainless steel, PBT	Electroless nickel plated

Series ZPT/ZPR

Replacement Parts

Pad, Individual Unit

How to Order

ZP 10 F GN

Pad diameter
(mm)

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

Material

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

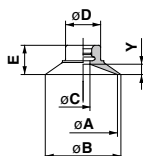
Pad type

F Ball joint type

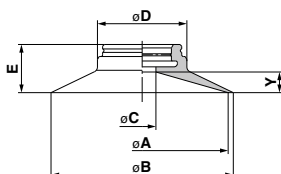
Note) Pads are exclusively ball joint type and are not interchangeable with other pads.

Dimensions

Ball joint type: ø10 to ø32



Ball joint type: ø40, ø50



(mm)

Model	A	B	C	D	E	Y
ZP10F□□	10	12	3	8.2	6.5	1.5
ZP13F□□	13	15			7	2
ZP16F□□	16	18				
ZP20F□□	20	22	4	10.2	8.5	3
ZP25F□□	25	28			9	
ZP32F□□	32	35				
ZP40F□□	40	43	10	26	13	5
ZP50F□□	50	53	8		14	6

Lock Ring, Individual Unit

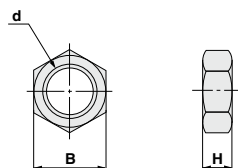
How to Order

ZPL F

For ball joint type
(ø40, ø50)

Mounting Nut

Dimensions



Model	d	H	B
ZPNA-M10	M10 x 1	3	14
ZPNA-M14	M14 x 1	5	19
ZPNA-M8	M8 x 1	3	12

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661



Series ZPT/ZPR Specific Product Precautions

Be sure to read before handling.

Refer to front matter 35 for Safety Instructions and pages 899 to 901 for Vacuum Equipment Precautions.

Caution on Design

Warning

1. In case where the workpieces are heavy or dangerous objects, etc., take measures to address a possible loss of adsorption force (installation of drop prevention guide, etc.).

In the case of transportation by vacuum adsorption using vacuum pads, adsorption force is lost when there is a drop in vacuum pressure.

Furthermore, since vacuum pressure can also deteriorate due to wear and cracking of pads, and vacuum leakage from piping, etc., be certain to perform maintenance on vacuum equipment.

Selection

Caution

1. The pad materials which can be used differ depending upon the operating environment.

An appropriate pad material should be selected.

Furthermore, since vacuum pads are manufactured for use with industrial products, they should not come into direct contact with medicines or food products, etc.

2. Depending upon the weight and shape of the workpieces, the diameter, quantity and shape of pads suitable for use will vary.

Use the pad lifting force table for reference.

Also, the pads to be selected will differ based upon conditions other than the above, such as the condition of the workpiece surface (presence or absence of oil or water), the workpiece material and its gas permeability. Confirmation is necessary by actually performing vacuum adsorption on the subject workpieces.

3. Use a buffer for adsorption on fragile workpieces.

The cushioning performed by the buffer is also necessary when there is variation in the height of workpieces. When it is desired to perform further positioning of pads and workpieces, a detent buffer can be used.

4. The life of the buffer will be reduced if lateral force is applied to the buffer shaft.

Note that sometimes a load is applied to the buffer by a piping tube (pulling or pressing, etc. in a lateral direction).

5. Do not apply an impact or large force to a pad when adsorbing a workpiece.

This will cause deformation, cracking and wear of the pad to be accelerated. The stiffening ribs, etc. should touch lightly, while staying within the pad skirt's deformation range. Positioning should be performed accurately. Especially in the case of small diameter pads.

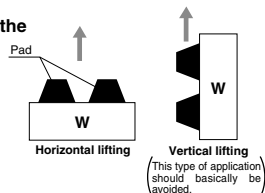
6. When transporting in an upward direction, factors such as acceleration, wind pressure and impact force must be considered in addition to the workpiece weight.

Use caution particularly when lifting items such as glass plates and circuit boards, because a large force will be applied by wind pressure. When a workpiece which is oriented vertically is transported horizontally, large forces are applied by acceleration when movement is started and stopped. Further, in cases where the pad and workpiece can slip easily, accelerations and decelerations of horizontal movement should be kept low.

7. When transporting flat shaped workpieces that have large surface areas using multiple pads, care must be taken in arranging the pads, giving consideration to balance of the workpieces.

8. Use caution since the workpiece could rotate during transfer.

Use of more than one pad for each workpiece is recommended.



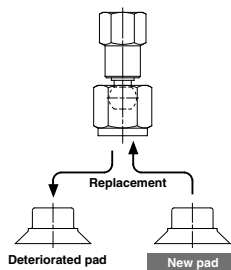
Maintenance

Caution

1. Perform pad maintenance regularly.

Since pads are essentially rubber, deterioration is unavoidable. The rate of deterioration depends upon factors such as conditions of use, environment and temperature. Regular maintenance should be performed. If any damage, splitting, cracking or abrasion has occurred in a pad which appears to be harmful, replace it immediately.

Also, take care not to damage the outside of the pad.



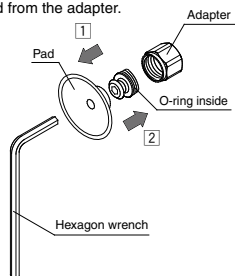
How to Assemble/Disassemble

Caution

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

1. Insert a hexagon wrench from 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: $\phi 40$, $\phi 50$

1. Pull the lock ring upward, and after lifting it to the adapter, remove the old pad by pulling it downward.

2. When 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.

