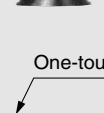
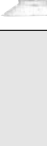


Vacuum Pad

Series ZP

Series		Without Buffer		With buffer		Non-rotating Stroke ø2 to ø8: 6, 10, 15, 25mm ø10 to ø32: 10, 20, 30, 40, 50mm ø40, ø50: 10, 20, 30, 50mm								
 P.10-16 to P.10-41 Series ZPT Vertical Vacuum Entry	Vacuum Entry	Mounting	VAC	Vacuum Entry	Mounting	VAC								
	Male thread	(Common)		Female thread	Buffer body		Female thread							
	Female thread	(Common)		Barb fitting	Buffer body		Barb fitting							
				One-touch fitting	Buffer body		One-touch fitting							
 P.10-42 to P.10-57 Series ZPR Lateral Vacuum Entry With One-touch fitting			VAC											
	One-touch fitting	Male thread		One-touch fitting	Buffer body		One-touch fitting							
	One-touch fitting	Female thread												
 P.10-58 to P.10-71 Series ZPY Lateral Vacuum Entry With barb fitting			VAC											
	Barb fitting	Male thread		Barb fitting	Buffer body		Barb fitting							
	Barb fitting	Female thread												
Pad style (Compatible with all models)		Flat style (U)  Flat with ribs (C)  Deep style (D)  Bellows style (B) 												
		Pad diameter	ø2	ø4	ø6	ø8	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
		Flat	●	●	●	●	●	●	●	●	●	●	●	●
		Flat with ribs	—	—	—	—	●	●	●	●	●	●	●	●
		Deep	—	—	—	—	●	—	●	—	●	—	●	—
		Bellows	—	—	●	●	●	●	●	●	●	●	●	●
Pad diameter (ø 2 to ø 125)		ø2 to ø125 (Option: ø150 to ø250) 												
Pad material		NBR (Black), Silicon rubber (White), Urethane rubber (Brown), Fluorine rubber (Black with green mark), Conductive NBR (Black with one white mark), Conductive silicon rubber (Black with two white marks)												

Option

① Long stroke ② Oval pad ③ Ball joint pad ④ Large size pad

Pad material and Characteristics

◎ : Little or no influence ○ : Can be used depending on conditions X : Not suitable

Material	Item	Durometer HS (±5°)	Operating press. range (°C)	Oil resistance (gasoline)	Oil resistance (benzol)	Alkaline resistance	Acid resistance	Weatherability	Ozone resistance	Abrasion resistance	Water resistance	Solvents (benzene, toluene)
NBR	50°	50°	0 to 120	◎	X	○	○	○	X	◎	○	X
Silicon rubber	40°	40°	-30 to 200	X	X	○	X	◎	◎	X	○	X
Urethane rubber	60°	60°	0 to 60	◎	X	X	X	○	◎	◎	X	X
Fluorine rubber	60°	60°	0 to 250	◎	◎	X	◎	◎	◎	◎	◎	◎
Conductive NBR	50°	50°	0 to 100	○	X	○	X	○	X	○	○	X
Conductive silicon rubber	50°	50°	-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 JIS standards; however the actual performance depends on operating conditions.

ZPT Vertical Vacuum Entry/without Buffer

Specifications

Vacuum entry	Direction		Vertical	
	Connection		Male thread	Female thread
	Thread dia.	ø2 to ø8	M5, M6	M4, M5
		ø10 to ø16	M5, M6	M5, M6, Rc(PT) 1/8
		ø20 to ø32	M6, M8 X 1	M5, M6, M8, Rc(PT) 1/8
		ø40, 50	M6, M8 X 1	M6, M8, Rc(PT) 1/8
Mounting		Use connection for vacuum entry		

Pad Style

Pad style	Flat	Flat with ribs	Deep	Bellows
Pad dia. (mm)	2, 4, 6, 8, 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 (colour)	NBR(Black), Silicon rubber (White), Urethane rubber (Brown), Fluorine rubber (Black with green mark) Conductive NBR (Black with one white mark), Conductive silicon rubber (Black with two white marks)			
Durometer	NBR (50°), Silicon rubber (40°), Urethane rubber/Fluorine rubber (60°) Conductive NBR (50°), Conductive silicon rubber (50°)			

Weight Table/Male Thread (Female Thread)

(g)

Model	Flat					Flat with ribs				Deep				Bellows				
	M4	M5	M6	M8	Rc(PT) 1/8	M5	M6	M8	Rc(PT) 1/8	M5	M6	M8	Rc(PT) 1/8	M4	M5	M6	M8	Rc(PT) 1/8
ZPT02 to ZPT08	— (3.5)	2.5 (3)	3.5 (—)	—	—	—	—	—	—	—	—	—	—	— (3.5) (Not for ø2, ø4)	2.5 (3) (Not for ø2, ø4)	3.5 (—) (Not for ø2, ø4)	—	—
ZPT10	—	—	—	—	—	—	—	—	—	10 (7)	12 (6)	— (13)	—	—	—	—	—	—
ZPT13	—	10 (6.5)	12 (6)	—	— (13)	10 (6.5)	12 (6)	—	— (12)	—	—	—	—	—	10 (6.5)	12 (6)	—	— (13)
ZPT16	—	—	—	—	—	—	—	—	—	11 (7)	13 (7)	15 (13)	—	—	—	—	—	—
ZPT20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ZPT25	—	— (8.5)	15 (8)	26 (17)	— (16)	— (8.5)	15 (8)	26 (17)	— (16)	— (10)	15 (10)	15 (18)	— (17)	—	— (8.5)	15 (8)	16 (17)	— (16)
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

Model

Model	Pad dia.	Applicable pad shape				Connection/Thread dia.	
		Flat (U)	Flat with ribs (C)	Deep (D)	Bellows (B)	Male thread	Female thread
ZPT02□□-□	2	●	—	—	—	M5	M4 M5
ZPT04□□-□	4	●	—	—	—		
ZPT06□□-□	6	●	—	—	●		
ZPT08□□-□	8	●	—	—	●		
ZPT10□□-□	10	●	●	●	●	M5	M5 M6
ZPT13□□-□	13	●	●	—	●	M6	Rc(PT) 1/8
ZPT16□□-□	16	●	●	●	●		
ZPT20□□-□	20	●	●	—	●	M6	M5 M6 M8
ZPT25□□-□	25	●	●	●	●	M8 X 1	Rc(PT) 1/8
ZPT32□□-□	32	●	●	—	●		
ZPT40□□-□	40	●	●	●	●	M6	M6 M8
ZPT50□□-□	50	●	●	—	●	M8 X 1	Rc(PT) 1/8



P.10-78 to 10-83

Vertical Vacuum Entry without Buffer *Series ZPT*

How to Order

Series ZPT
without buffer

Pad dia. (mm)

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 style
(Refer to Table ① for applications.)

U	Flat
C	Flat with rids
D	Deep
B	Bellows

ZPT 02 U N A5

Vacuum entry

Thread	Symbol	Thread dia.	ø2 to ø8	ø10 to ø16	ø20 to ø32	ø40 to ø50
Male thread	A5	M5	●	●	—	—
	A6	M6	●	●	●	●
	A8	M8 X 1	—	—	●	●
Female thread	B4	M4	●	—	—	—
	B5	M5	●	●	●	—
	B6	M6	—	●	●	●
	B8	M8	—	—	●	●
	B01	Rc(PT)1/8	—	●	●	●

Material

N	NBR
S	Silicon rubber
U	Urethane rubber
F	Fluorine rubber
GN*	Conductive NBR (ø2 to ø16)
GS*	Conductive silicon rubber (ø2 to ø16)

*ø20 and larger are manufactured upon receipt of order.

Table ① Pad Dia. /Pad Style

Type \ Dia. (mm)	2	4	6	8	10	13	16	20	25	32	40	50
Flat	●	●	●	●	●	●	●	●	●	●	●	●
Flat with rids	—	—	—	—	●	●	●	●	●	●	●	●
Deep	—	—	—	—	●	—	●	—	●	—	●	—
Bellows	—	—	●	●	●	●	●	●	●	●	●	●

⚠ Precaution

Design

⚠ Warning

- ① **In cases where the work pieces 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

- ① **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.

- ② **Depending upon the weight and shape of the work pieces, 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 work piece surface (presence or absence of oil or water), the work piece material and its gas permeability. Confirmation is necessary by actually performing vacuum adsorption testing on the subject work pieces.

- ③ **Use a buffer for adsorption on fragile work pieces.**

The cushioning by the buffer is necessary when there is variation in the height of work pieces. When further positioning of pads and work pieces is desired, 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 forces to a pad when adsorbing a work piece.**

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 work piece 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 work piece 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 work piece can slip easily, accelerations and decelerations of horizontal movement should be kept low.

- ⑦ **When transporting flat work pieces that have large surface areas using multiple pads, care must be taken when arranging the pads to balance the work piece.**

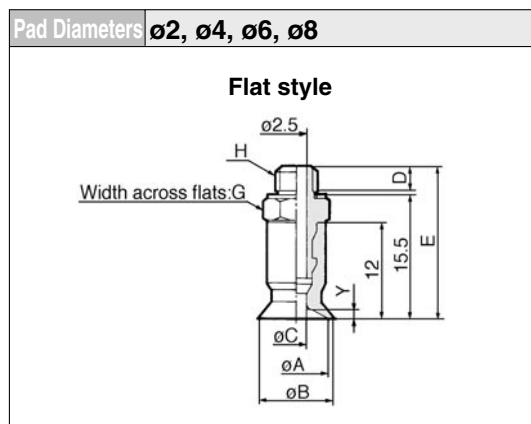
Maintenance

⚠ Caution

- ① **Perform pad maintenance regularly.**

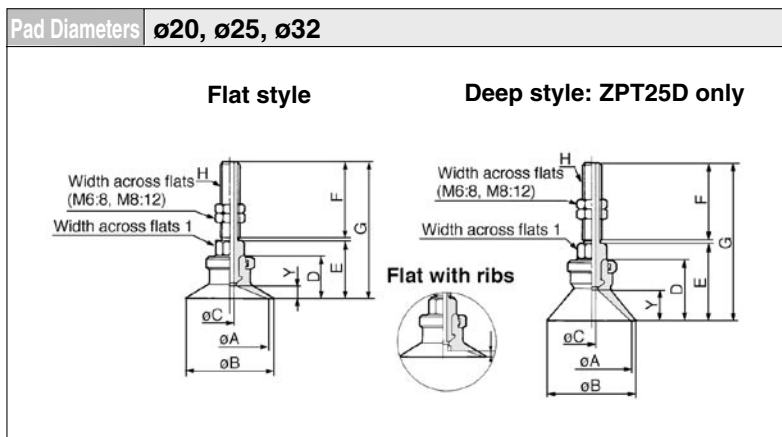
Since pads are essentially rubber, deterioration is unavoidable. The rate of deterioration depends upon factors such as conditions of use, environment and temperature. Regular maintenance should be performed. If any damage, splitting, cracking or abrasion has occurred in a pad which appears to be harmful,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

Connection	Male Thread	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Vertical	Mounting	Use Connection for Vacuum Entry



Flat style

Model	ϕA	ϕB	ϕC	H: M5			H: M6			Y
				D	E	G	D	E	G	
ZPT02U	2	2.6	1.2	3	19	7	4	20	8	0.8
ZPT04U	4	4.8	1.6							
ZPT06U	6	7	2.5							
ZPT08U	8	9								1

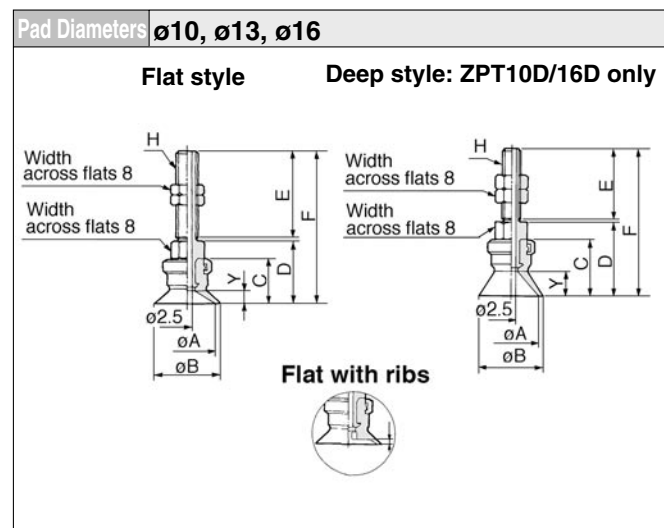


Flat style/Flat with ribs

Model	ϕA	ϕB	D	H: M6					H: M8 X 1					Y	
				ϕC	E	F	G	I	ϕC	E	F	G	I	Flat	Flat w/ ribs
ZPT20 ^U _C	20	23	14	3	19	25	45	8	3.5	24	15	40	12	4	1.7
ZPT25 ^U _C	25	28													1.8
ZPT32 ^U _C	32	35													2.3

Deep style

Model	ϕA	ϕB	D	H: M6					H: M8 X 1					Y
				ϕC	E	F	G	I	ϕC	E	F	G	I	
ZPT25D	25	28	20	3	25	25	51	8	3.5	30	15	46	12	10

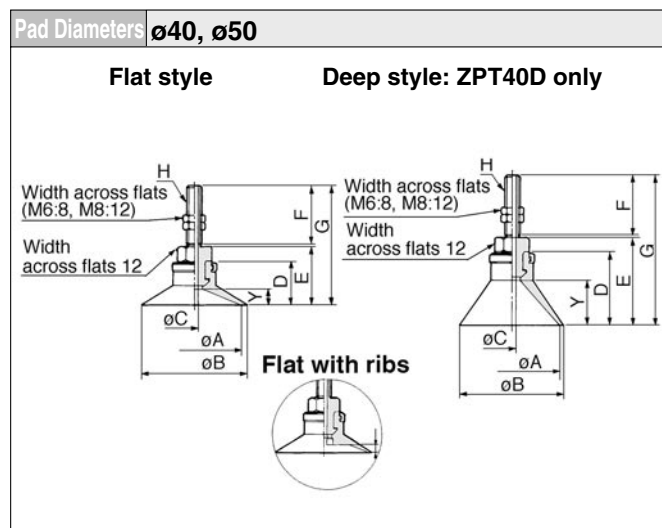


Flat style/Flat with ribs

Model	ϕA	ϕB	C	D	H: M5		H: M6		Y	
					E	F	E	F	Flat	Flat w/ ribs
ZPT10 ^U _C	10	12	12	17	20	38	25	43	3	1.7
ZPT13 ^U _C	13	15								1.8
ZPT16 ^U _C	16	18								1.2

Deep style

Model	ϕA	ϕB	C	D	H: M5		H: M6		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



Flat style/Flat with ribs

Model	ϕA	ϕB	D	E	H: M6			H: M8 X 1			Y	
					ϕC	F	G	ϕC	F	G	Flat	Flat w/ ribs
ZPT40 ^U _C	40	43	18.5	24.5	3	25	50.5	4.5	15	40.5	6.5	3.3
ZPT50 ^U _C	50	53	19.5	25.5								

Deep style

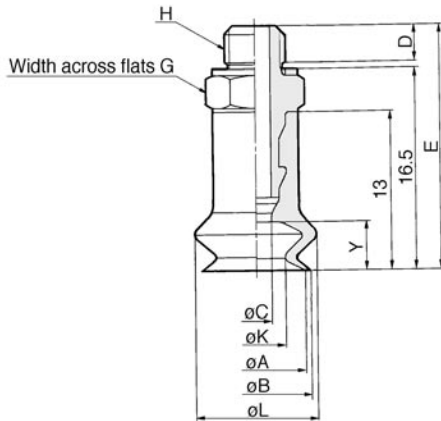
Model	ϕA	ϕB	D	E	H: M6			H: M8 X 1			Y
					ϕC	F	G	ϕC	F	G	
ZPT40D	40	43	29	35.5	3	25	61	4.5	15	51	17

Vertical Vacuum Entry without Buffer *Series ZPT*

Connection	Male Thread	Pad Style	Bellows
Vacuum Entry	Vertical	Mounting	Use Connection for Vacuum Entry

Pad Diameters **ø6, ø8**

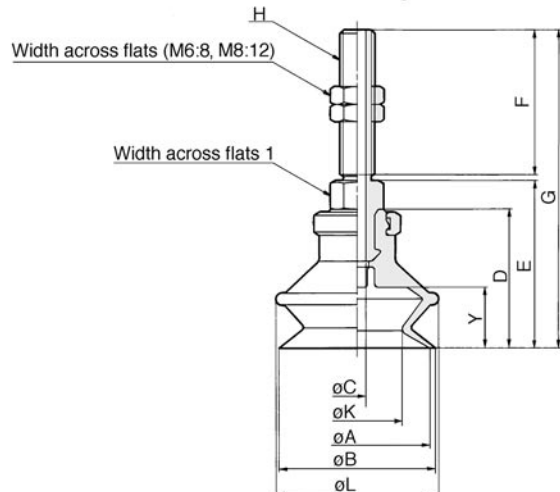
Bellows style



Model	øA	øB	øC	H: M5			H: M6			øK	øL	Y
				D	E	G	D	E	G			
ZPT06B	6	7	2.5	3	20	7	4	21	8	3.3	9.1	4
ZPT08B	8	9								4.7	10.1	

Pad Diameters **ø20, ø25, ø32**

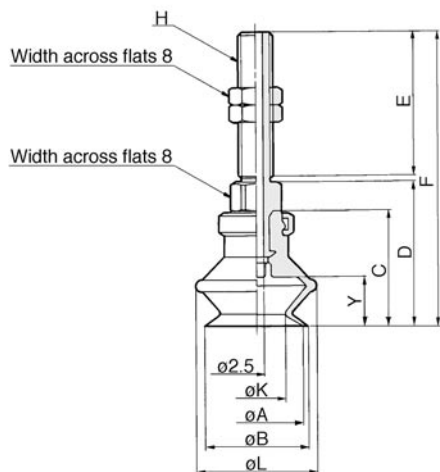
Bellows style



Model	øA	øB	D	H: M6					H: M8 X 1					øK	øL	Y
				øC	E	F	G	I	øC	E	F	G	I			
ZPT20B	20	22	23.5		28.5		54.5		33.5		49.5			12.4	25	10.5
ZPT25B	25	27	24	3	29	25	55	8	34	15	50	12		15.6	28	10.5
ZPT32B	32	34	29		34		60		39		55			18.9	37	14

Pad Diameters **ø10, ø13, ø16**

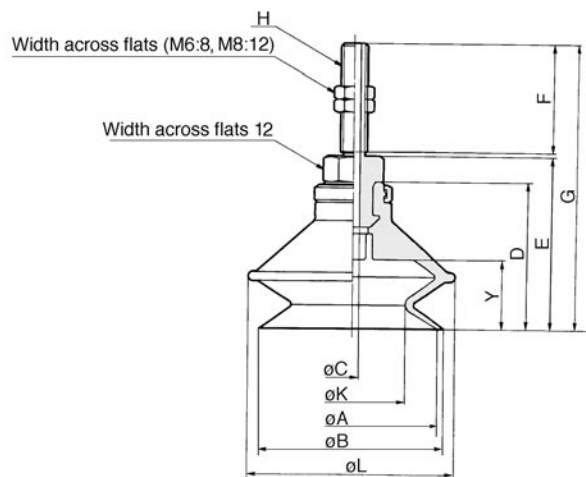
Bellows style



Model	øA	øB	øC	D	H: M5		H: M6		øK	øL	Y
					E	F	E	F			
ZPT10B	10	12	16	21		42		47	5.5	13.8	5.5
ZPT13B	13	15	18.5	23.5	20	44.5	25	49.5	8.7	19	7.5
ZPT16B	16	18	20	25		46		51	9.9	21	8.5

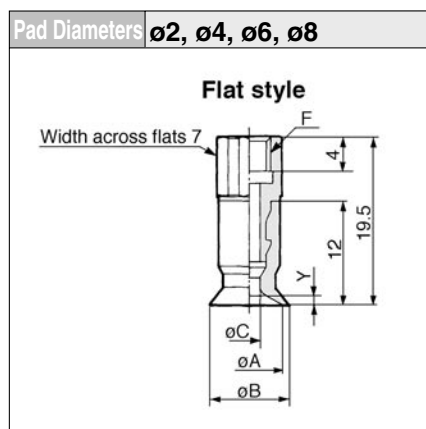
Pad Diameters **ø40, ø50**

Bellows style



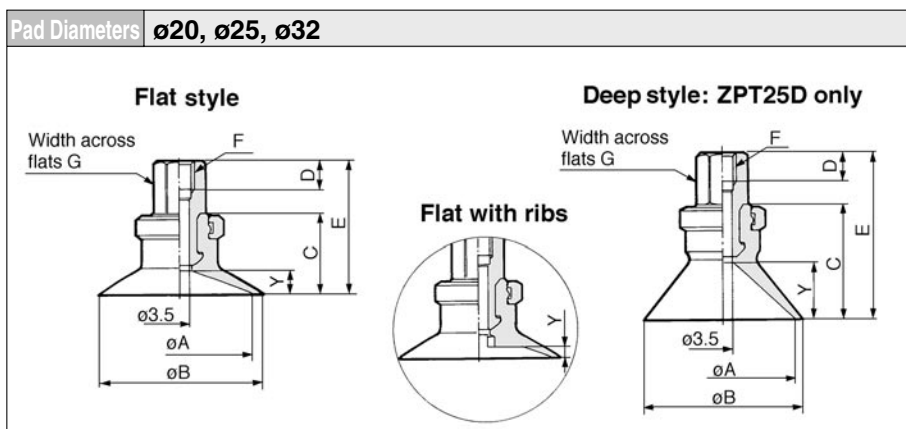
Model	øA	øB	D	E	H: M6			H: M8 X 1			øK	øL	Y
					øC	F	G	øC	F	G			
ZPT40B	40	43	34	40			66	4.5	15	56	24.4	48	16
ZPT50B	50	53	38	44	3	25	70			60	32.4	57	19

Connection	Female Thread	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Vertical	Mounting	Use Connection for Vacuum Entry



Flat style

Model	ϕA	ϕB	C	F	Y
ZPT02U	2	2.6	1.2	M4	0.8
ZPT04U	4	4.8	1.6		
ZPT06U	6	7	2.5	M5	1
ZPT08U	8	9			



Flat style/Flat with ribs

Model	ϕA	ϕB	C	F: M5			F: M6			F: M8			F: Rc(PT) 1/8			Y	
				D	E	G	D	E	G	D	E	G	D	E	G	Flat	Flat w/ ribs
ZPT20 ^U _C	20	23	14	5	23	8	6	23	8	8	29	12	6.2	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

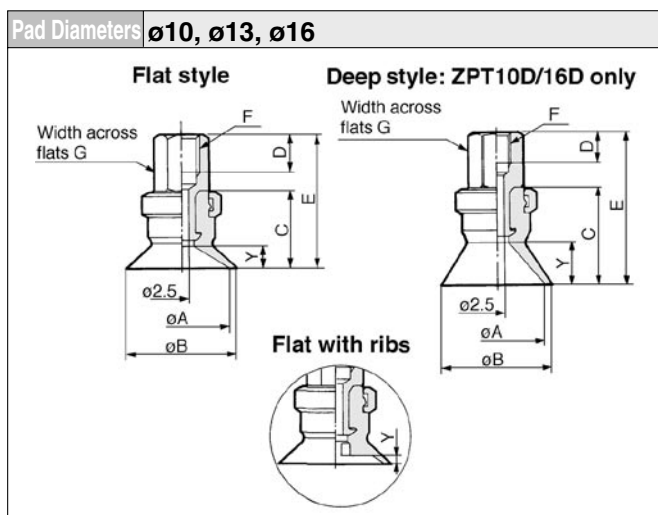


Weight Table

Weight table for female thread:
Refer to p.10-16.

Deep style

Model	ϕA	ϕB	C	F: M5			F: M6			F: M8			F: Rc(PT) 1/8			Y
				D	E	G	D	E	G	D	E	G	D	E	G	
ZPT25D	25	28	20	5	29	8	6	29	8	8	35	12	6.2	35	12	10

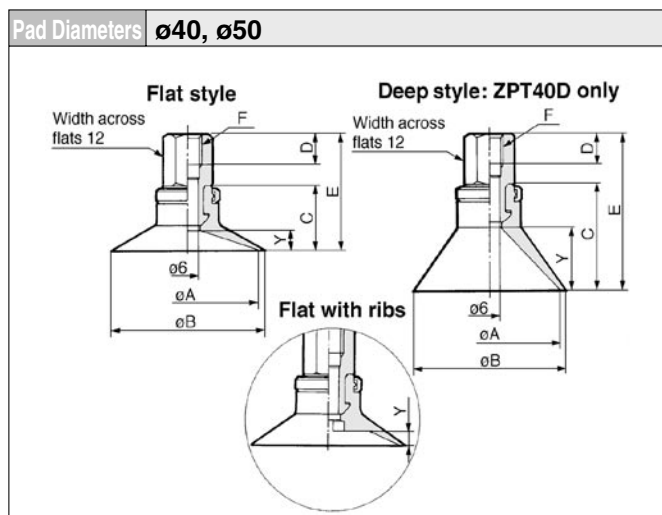


Flat style/Flat with ribs

Model	øA	øB	C	F: M5			F: M6			F: Rc(PT)1/8			Y					
				D	E	G	D	E	G	D	E	G	Flat	Flat w/ ribs				
ZPT10 ^U _C	10	12	12	5	21	8	6	21	8	6.2	27	12	3	1.7				
ZPT13 ^U _C	13	15																1.8
ZPT16 ^U _C	16	18			12.5			21.5						21.5			27.5	

Deep style

Model	ϕA	ϕB	C	F: M5			F: M6			F: Rc(PT) 1/8			Y
				D	E	G	D	E	G	D	E	G	
ZPT10D	10	12	15	5	24	8	6	24	8	6.2	30	12	6
ZPT16D	16	18	16		25			25			31		7



Flat style/Flat with ribs

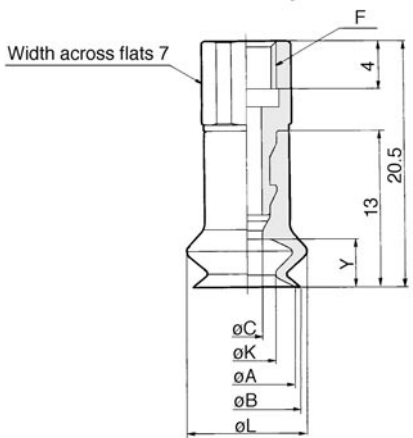
Model	øA	øB	C	F: M6	F: M8	F: Rc(PT)1/8	E	Y	
				D	D	D		Flat	Flat w/ ribs
ZPT40 ^U _C	40	43	18.5	6	8	6.2	32	6.5	3.3
ZPT50 ^U _C	50	53	19.5				33	7.5	3.8

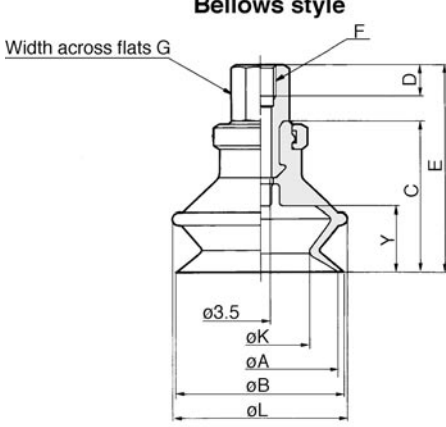
Deep style

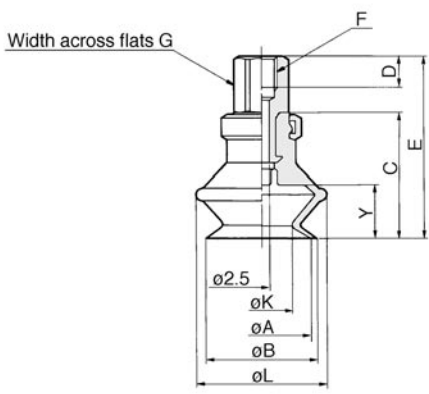
Model	øA	øB	C	F: M6	F: M8	F: Rc(PT)1/8	E	Y
				D	D	D		
ZPT40D	40	43	29	6	8	6.2	42.5	17

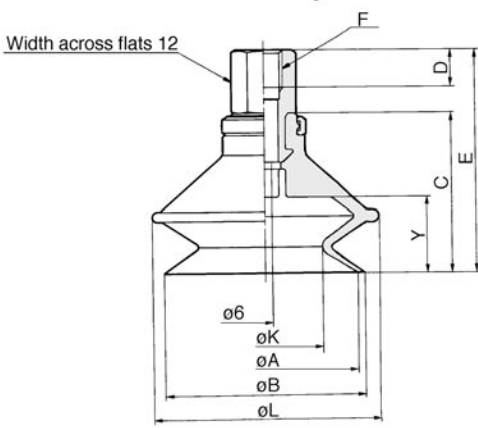
Vertical Vacuum Entry without Buffer *Series ZPT*

Connection	Female Thread	Pad Style	Bellows
Vacuum Entry	Vertical	Mounting	Use Connection for Vacuum Entry

Pad Diameters ø6, ø8							
Bellows style 							
Model	øA	øB	øC	F	øK	øL	Y
ZPT06B	6	7	2.5	M4	3.3	9.1	4
ZPT08B	8	9		M5	4.7	10.1	

Pad Diameters ø20, ø25, ø32							
Bellows style 							
Model	øA	øB	øC	F: M5			Y
				D	E	G	
Model	øA	øB	øC	F: M6			Y
				D	E	G	
Model	øA	øB	øC	F: M8			Y
				D	E	G	
Model	øA	øB	øC	F: Rc(PT) 1/8			Y
				D	E	G	
ZPT20B	20	22	23.5	5	32.5	8	10.5
ZPT25B	25	27	24	5	33	8	10.5
ZPT32B	32	34	29	5	38	8	14

Pad Diameters ø10, ø13, ø16							
Bellows style 							
Model	øA	øB	øC	F: M5			Y
				D	E	G	
Model	øA	øB	øC	F: M6			Y
				D	E	G	
Model	øA	øB	øC	F: Rc(PT) 1/8			Y
				D	E	G	
ZPT10B	10	12	16	5	25	8	5.5
ZPT13B	13	15	18.5	5	27.5	8	7.5
ZPT16B	16	18	20	5	29	8	8.5

Pad Diameters ø40, ø50							
Bellows style 							
Model	øA	øB	øC	F: M6			Y
				D	E	G	
Model	øA	øB	øC	F: M8			Y
				D	E	G	
Model	øA	øB	øC	F: Rc(PT) 1/8			Y
				D	E	G	
ZPT40B	40	43	34	6	47.5	16	16
ZPT50B	50	53	38	6	51.5	19	19

ZPT Vertical Vacuum Entry with Buffer

Specifications

Vacuum entry direction			Vertical		
Vacuum entry	Connection		Female thread	Barb fitting	One-touch fitting
	Thread dia.	ø2 to ø8	M3 M5	ø4 Nylon tube ø4 Urethane tube	ø4 tube ø6 tube
		ø10 to ø32	M5	ø6 Nylon tube ø6 Urethane tube	ø4 tube ø6 tube
		ø40 to ø50	M5 Rc (PT) 1/8	ø6 Nylon tube ø6 Urethane tube	ø6 tube ø8 tube
	Mounting	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 style			Rotating (J)/Non-rotating (K)		
Buffer stroke			For ø2 to ø8 ——— 6, 10, 15, 25mm		
			For ø10 to ø32 ——— 10, 20, 30, 40, 50mm		
			For ø40, ø50 ——— 10, 20, 30, 50mm		

Spring Reactive Force

Pad dia. (mm)	0 stroke	Stroke end
ø2 to ø8	0.8N	1.2N
ø10 to ø32	1.0N	3.0N
ø40, ø50	2.0N	5.0N

Pad Style

Pad style	Flat	Flat with ribs	Deep	Bellows
Pad dia. ø(mm)	2, 4, 6, 8, 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 (colour)	NBR (Black), Silicon (White), Urethane rubber (Brown)/ Fluorine rubber (Black with green mark) Conductive NBR (Black with one white mark), Conductive silicon rubber (Black with two white marks)			
Hardness	NBR (50°), Silicon (40°), Urethane rubber/Fluorine rubber (60°) Conductive NBR (50°), Conductive silicon rubber (50°)			

Weight Table

Stroke	Pad style		Flat/Flat with ribs							Deep						Bellows							
	Connection Model		Female thread			One-touch fitting			Barb fitting	Female thread			One-touch fitting			Barb fitting	Female thread			One-touch fitting			Barb fitting
			B3	B5	B01	04	06	08	□□□□	B5	B01	04	06	08	□□□□	B3	B5	B01	04	06	08	□□□□	
6	ZPT	02 to 08	22	24	—	26	27	—	22	—	—	—	—	—	22	24	—	26	27	—	22		
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 Model (mm)	10	15	20	25	30	40	50
ZPT02 to 08	+6	+7	—	+8	—	—	—
ZPT10 to 25	—	—	+11	—	+13	+23	+24
ZPT40. 50	—	—	+38	—	+40	—	+67



P.10-78 to 10-83

Vertical Vacuum Entry with Buffer *Series ZPT*

How to Order

Series ZPT with buffer

ZPT 16 U GS K 20 06 A10

Pad dia. (mm)

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) diameter
(Refer to Table ③ for applications.)

Vacuum entry
(Refer to Table ③ for applications.)

Buffer stroke
(Refer to Table ② for applications.)

Buffer style

J	Rotating
K	Non-rotating

Pad style
(Refer to Table ① for applications.)

U	Flat
C	Flat with ribs
D	Deep
B	Bellows

Material

N	NBR
S	Silicon rubber
U	Urethane rubber
F	Fluorine rubber
GN*	Conductive NBR (ø2 to ø16)
GS*	Conductive silicon rubber (ø2 to ø16)

*ø20 and larger are manufactured upon receipt of order.

Table ① Pad Dia. /Pad Style

Dia. (mm)	2	4	6	8	10	13	16	20	25	32	40	50
Style												
Flat	●	●	●	●	●	●	●	●	●	●	●	●
Flat with ribs	—	—	—	—	●	●	●	●	●	●	●	●
Deep	—	—	—	—	●	—	●	—	●	—	●	—
Bellows	—	—	●	●	●	●	●	●	●	●	●	●

Table ② Pad Dia. /Stroke

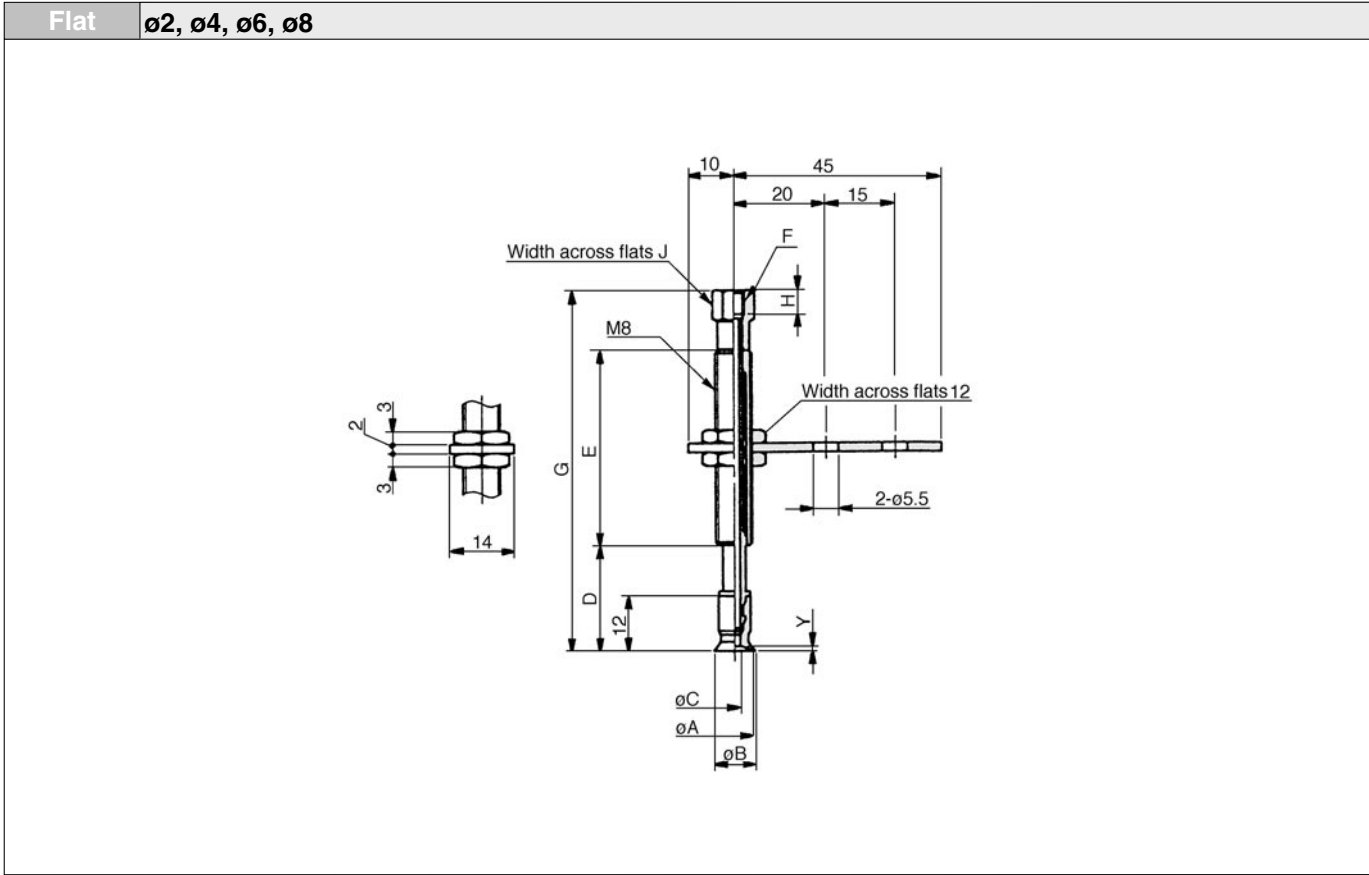
Dia. (mm)	2	4	6	8	10	13	16	20	25	32	40	50
Stroke												
6mm	●	●	●	●	—	—	—	—	—	—	—	—
10mm	●	●	●	●	●	●	●	●	●	●	●	●
15mm	●	●	●	●	—	—	—	—	—	—	—	—
20mm	—	—	—	—	●	●	●	●	●	●	●	●
25mm	●	●	●	●	—	—	—	—	—	—	—	—
30mm	—	—	—	—	●	●	●	●	●	●	●	●
40mm	—	—	—	—	●	●	●	●	●	●	—	—
50mm	—	—	—	—	●	●	●	●	●	●	●	●

Table ③ Vacuum Entry/Mounting Thread Dia.

	Symbol	Thread dia. /Port size	ø2 to ø8	ø10 to ø32	ø40, ø50
Vacuum entry	Female thread	B3	M3	●	—
		B5	M5	●	●
		B01	Rc(PT) 1/8	—	●
	Barb fitting	N4	ø4 Nylon tube	●	—
		N6	ø6 Nylon tube	—	●
		U4	ø4 Urethane tube	●	—
Mounting	One-touch fitting	U6	ø6 Urethane tube	—	●
		04	ø4 tube	●	—
		06	ø6 tube	●	●
	Male thread	08	ø8 tube	—	●
		A8	M8 X 1	●	—
		A10	M10 X 1	—	—
		A14	M14 X 1	—	●

Series **ZPT**

Connection	Female Thread (Buffer)	Pad Style	Flat
Vacuum Entry	Vertical	Mounting	Buffer Body



Flat style

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

Dimensions by stroke

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

Vertical Vacuum Entry with Buffer *Series ZPT*

Connection	Female Thread (Buffer)	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Vertical	Mounting	Buffer Body

Flat/Flat with ribs	ø10, ø13, ø16	Deep	ø10, ø16
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Flat with ribs

Flat style/Flat with ribs

Model	A	B	C	D	Y	
					Flat	Flat with ribs
ZPT10 ^U _C □□□□□-B5-A10	10	12	12	21	3	1.7
ZPT13 ^U _C □□□□□-B5-A10	13	15				1.8
ZPT16 ^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□□ ^U _C □□□□10-B5-A10	32.5	68.5	33	69	23
ZPT□□ ^U _C □□□□20-B5-A10	42.5	106.5	43	107	51
ZPT□□ ^U _C □□□□30-B5-A10	52.5	116.5	53	117	
ZPT□□ ^U _C □□□□40-B5-A10	62.5	152.5	63	153	77
ZPT□□ ^U _C □□□□50-B5-A10	72.5	162.5	73	163	

Deep style

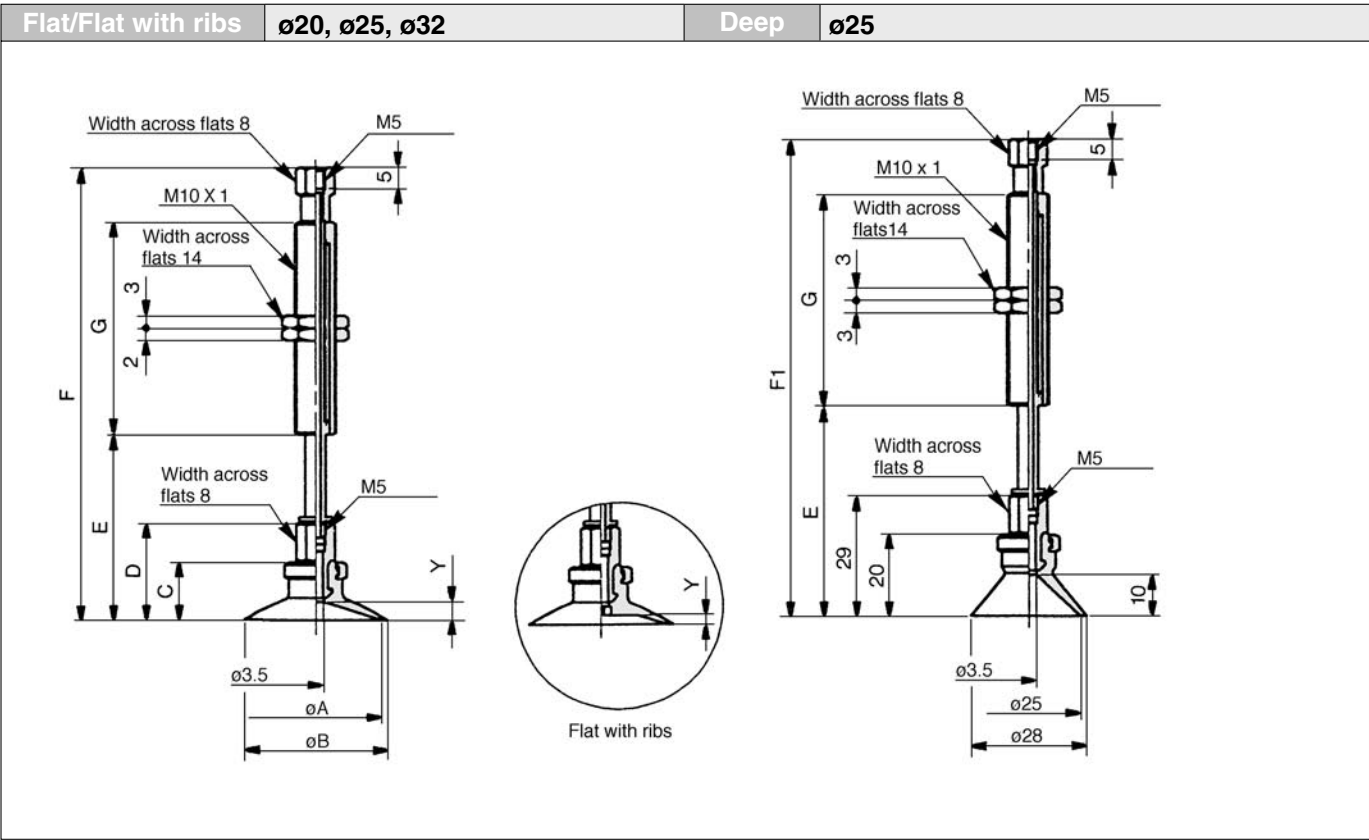
Model	A	B	C	D	Y
ZPT10D□□□□□-B5-A10	10	12	15	24	6
ZPT16D□□□□□-B5-A10	16	18	16	25	7

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	

Series ZPT

Connection	Female Thread (Buffer)	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Vertical	Mounting	Buffer Body



Flat style/Flat with ribs

Model	A	B	C	D	Y	
					Flat	Flat with ribs
ZPT20 ^U _C □□□□□-B5-A10	20	23	14	23	4	1.7
ZPT25 ^U _C □□□□□-B5-A10	25	28				1.8
ZPT32 ^U _C □□□□□-B5-A10	32	35	14.5	23.5	4.5	2.3

Dimensions by stroke

Model	ø20, ø25		ø32		G
	E	F	E	F	
ZPT□□ ^U _C □□□□□10-B5-A10	34.5	70.5	35	71	23
ZPT□□ ^U _C □□□□□20-B5-A10	44.5	108.5	45	109	51
ZPT□□ ^U _C □□□□□30-B5-A10	54.5	118.5	55	119	
ZPT□□ ^U _C □□□□□40-B5-A10	64.5	154.5	65	155	77
ZPT□□ ^U _C □□□□□50-B5-A10	74.5	164.5	75	165	

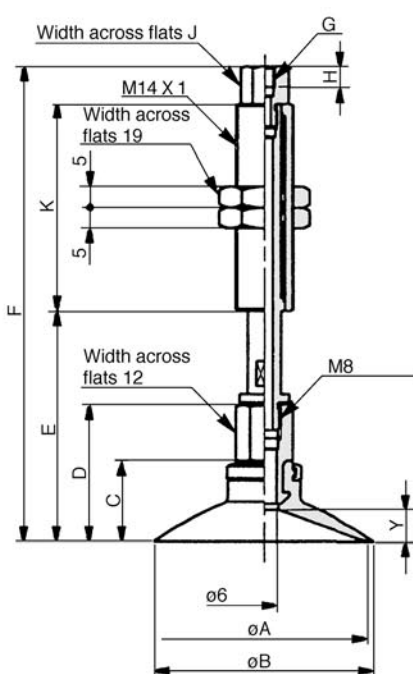
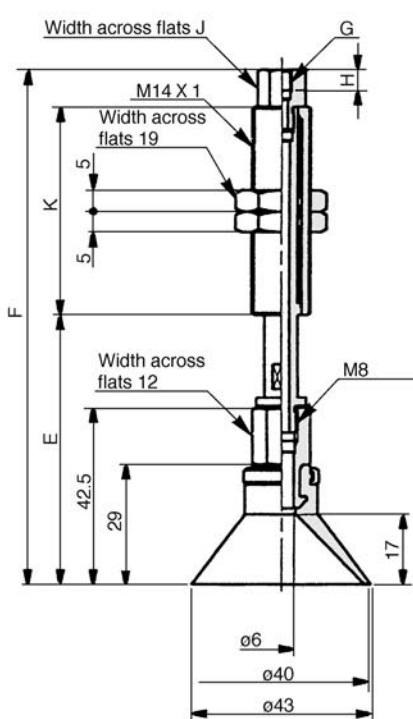
Deep style

Model	E	F	G
ZPT25D□□□10-B5-A10	40.5	76.5	23
ZPT25D□□□20-B5-A10	50.5	114.5	51
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	

Vertical Vacuum Entry with Buffer *Series ZPT*

Connection	Female Thread (Buffer)	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Vertical	Mounting	Buffer Body

Flat/Flat with ribs	ø40, ø50	Deep	ø40
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Flat style/Flat with ribs

Model	A	B	C	D	Y	
					Flat	Flat with ribs
ZPT40 ^U □□□□□-B□□-A14	40	43	18.5	32	6.5	3.3
ZPT50 ^U □□□□□-B□□-A14	50	53	19.5	33	7.5	3.8

Dimensions by stroke

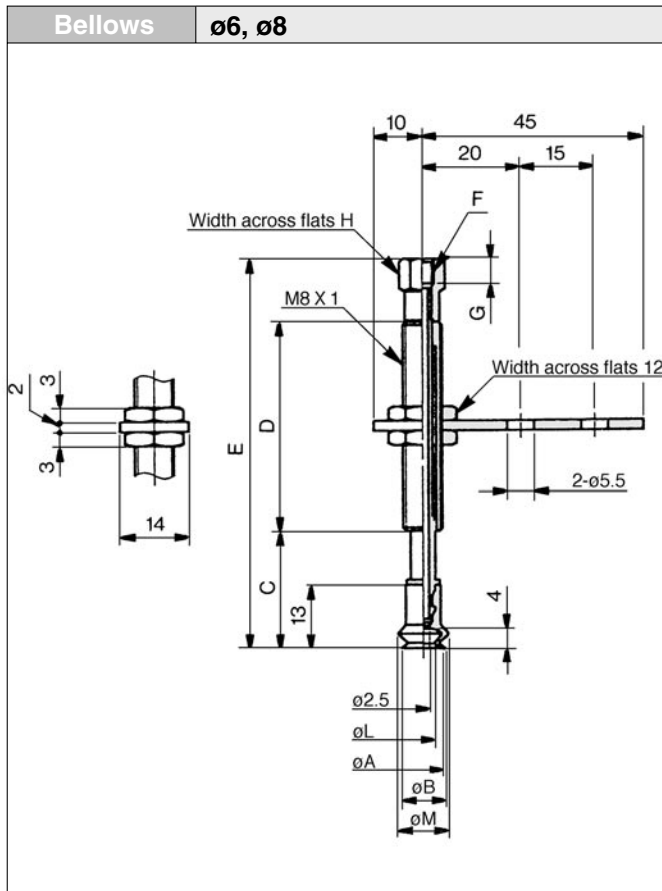
Model	E		G: M5 X 0.8				G: Rc(PT)1/8				K
	ø40	ø50	F		H	J	F		H	J	
			ø40	ø50			ø40	ø50			
ZPT□□ ^U □□□□10-B□□-A14	44.5	45.5	109.5	110.5	5	10	111	112	6.2	13	50
ZPT□□ ^U □□□□20-B□□-A14	54.5	55.5	113.5	114.5			116.5	117.5			
ZPT□□ ^U □□□□30-B□□-A14	64.5	65.5	123.5	124.5			126.5	127.5			
ZPT□□ ^U □□□□50-B□□-A14	84.5	85.5	168.5	169.5			171.5	172.5			75

Deep style

Model	E	G: M5 X 0.8			G: Rc(PT) 1/8			K
		F	H	J	F	H	J	
ZPT40D□□□10-B□□-A14	55	120	5	10	121.5	6.2	13	50
ZPT40D□□□20-B□□-A14	65	124			127			
ZPT40D□□□30-B□□-A14	75	134			137			
ZPT40D□□□50-B□□-A14	95	179			182			

Series ZPT

Connection	Female Thread (Buffer)	Pad Style	Bellows
Vacuum Entry	Vertical	Mounting	Buffer Body

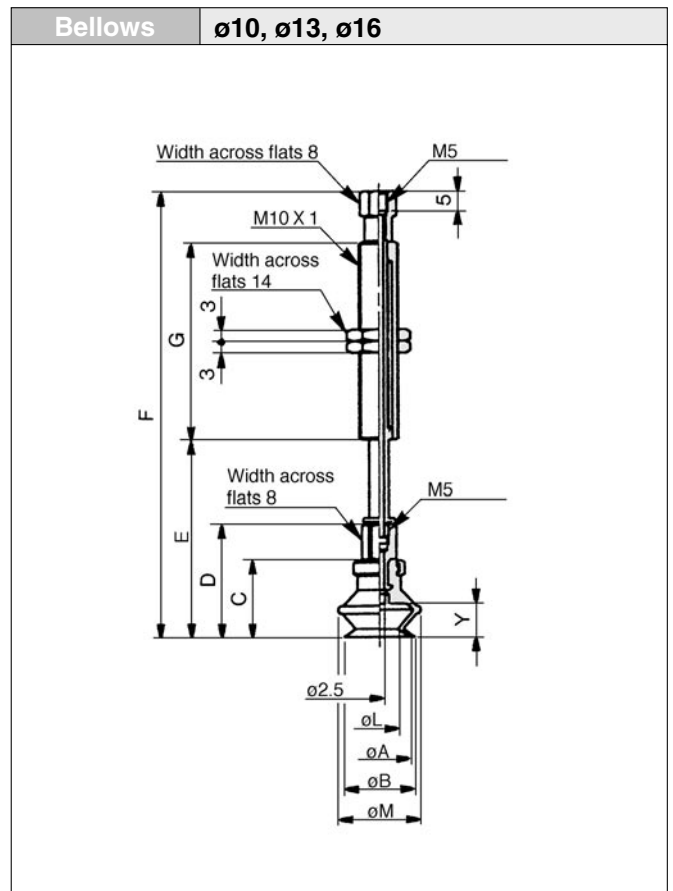


Bellows style

Model	A	B	L	M
ZPT06B- -B-A8	6	7	3.3	9.1
ZPT08B- -B-A8	8	9	4.7	10.1

Dimensions by stroke

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



Bellows style

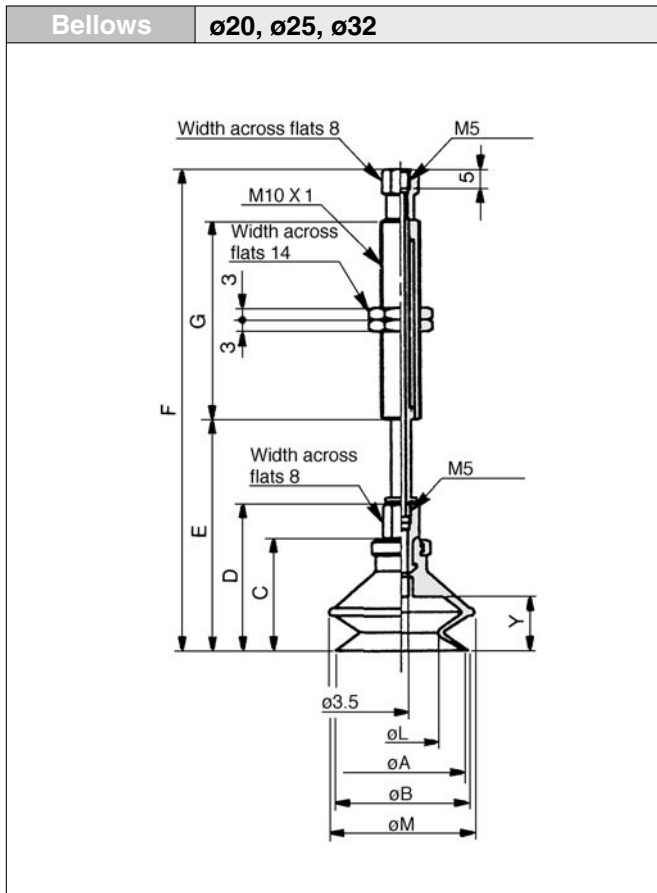
Model	A	B	C	D	L	M	Y
ZPT10B- -B5-A10	10	12	16	25	5.5	13.8	5.5
ZPT13B- -B5-A10	13	15	18.5	27.5	8.7	19	7.5
ZPT16B- -B5-A10	16	18	20	29	9.9	21	8.5

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	77
ZPT- -B- -40-B5-A10	66.5	156.5	69	159	70.5	160.5	
ZPT- -B- -50-B5-A10	76.5	166.5	79	169	80.5	170.5	

Vertical Vacuum Entry with Buffer *Series ZPT*

Connection	Female Thread (Buffer)	Pad Style	Bellows
Vacuum Entry	Vertical	Mounting	Buffer Body

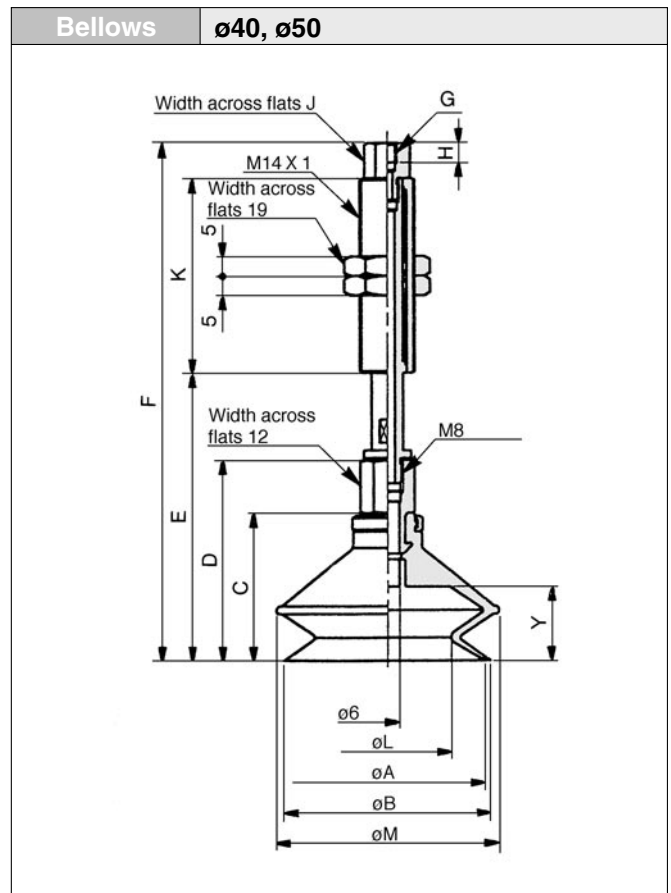


Bellows style

Model	A	B	C	D	L	M	Y
ZPT20B□□□□-B5-A10	20	22	23.5	32.5	12.4	25	10.5
ZPT25B□□□□-B5-A10	25	27	24	33	15.6	28	
ZPT32B□□□□-B5-A10	32	34	29	38	18.9	37	

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	
ZPT□□B□□□50-B5-A10	84	174	84.5	174.5	89.5	179.5	77



Bellows style

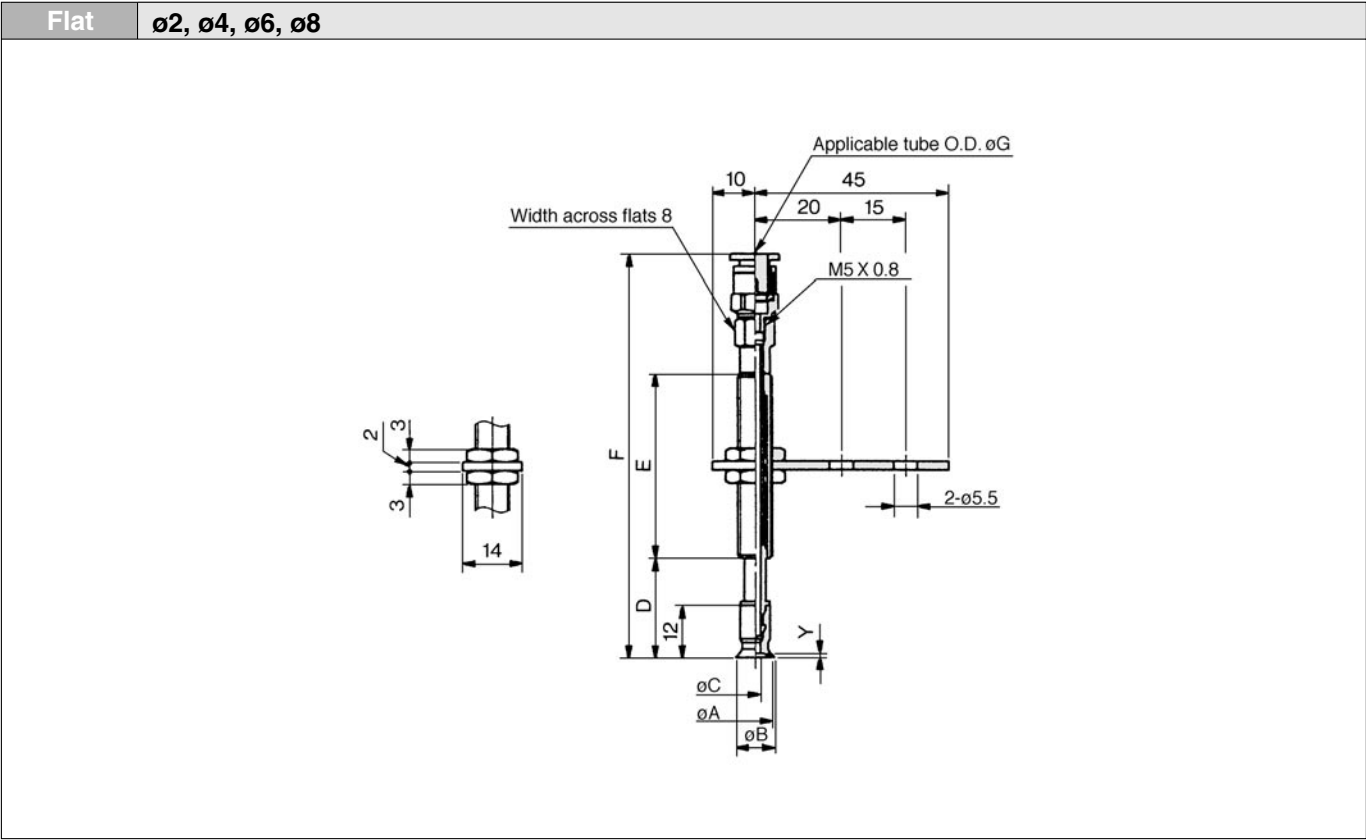
Model	A	B	C	D	L	M	Y
ZPT40B□□□□-B□□-A14	40	43	34	47.5	24.4	48	16
ZPT50B□□□□-B□□-A14	50	53	38	51.5	32.4	57	19

Dimensions by stroke

Model	E		G: M5				G: Rc(PT) ¹ / ₈				K
	ø40	ø50	F		H	J	F		H	J	
			ø40	ø50			ø40	ø50			
ZPT□□B□□□10-B□□-A14	60	64	125	129	5	10	126.5	130.5	6.2	13	50
ZPT□□B□□□20-B□□-A14	70	74	129	133			132	136			
ZPT□□B□□□30-B□□-A14	80	84	139	143			142	146			
ZPT□□B□□□50-B□□-A14	100	104	184	188			187	191			

Series **ZPT**

Connection	One-touch Fitting (Buffer)	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Vertical	Mounting	Buffer Body



Flat style

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

Dimensions by stroke

Model	D	E	F	
			G: ø4	G: ø6
ZPT□□U□□□ 6-0□-A8	18	15	60	61
ZPT□□U□□□10-0□-A8	23	43	93	94
ZPT□□U□□□15-0□-A8	28		98	99
ZPT□□U□□□25-0□-A8	38		108	109

Vertical Vacuum Entry with Buffer *Series ZPT*

Connection	One-touch Fitting (Buffer)	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Vertical	Mounting	Buffer Body

Flat/Flat with ribs	ø10, ø13, ø16	Deep	ø10, ø16
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Flat with ribs

Flat style/Flat with ribs

Model	A	B	C	D	Y	
					Flat	Flat with ribs
ZPT10 $\frac{U}{C}$ □□□□□-0□-A10	10	12	12	21	3	1.7
ZPT13 $\frac{U}{C}$ □□□□□-0□-A10	13	15				1.8
ZPT16 $\frac{U}{C}$ □□□□□-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: ø4	G: ø6		G: ø4	G: ø6	
ZPT□□ ^U _C □□□10-0□-A10	32.5	82.5	83.5	33	83	84	23
ZPT□□ ^U _C □□□20-0□-A10	42.5	120.5	121.5	43	121	122	51
ZPT□□ ^U _C □□□30-0□-A10	52.5	130.5	131.5	53	131	132	
ZPT□□ ^U _C □□□40-0□-A10	62.5	166.5	167.5	63	167	168	77
ZPT□□ ^U _C □□□50-0□-A10	72.5	176.5	177.5	73	177	178	

Deep style

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: ø4	G: ø6		G: ø4	G: ø6	
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	

Series ZPT

Connection	One-touch Fitting (Buffer)	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Vertical	Mounting	Buffer Body

Flat/Flat with ribs	ø20, ø25, ø32	Deep	ø25
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Applicable tube O.D. øG

Width across flats 8

M5

M10 X 1

Width across flats 14

Width across flats 8

M5

ø3.5

øA

øB

Y

Flat with ribs

Applicable tube O.D. øG

Width across flats 8

M5

M10 X 1

Width across flats 14

Width across flats 8

M5

ø3.5

ø25

ø28

10

Y

Flat with ribs

Flat style/Flat with ribs

Model	A	B	C	D	Y	
					Flat	Flat with ribs
ZPT20 ^U _C □□□□-0□-A10	20	23	14	23	4	1.7
ZPT25 ^U _C □□□□-0□-A10	25	28				1.8
ZPT32 ^U _C □□□□-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: ø4	G: ø6		G: ø4	G: ø6	
ZPT□□ ^U _C □□□□10-0□-A10	34.5	84.5	85.5	35	85	86	23
ZPT□□ ^U _C □□□□20-0□-A10	44.5	122.5	123.5	45	123	124	51
ZPT□□ ^U _C □□□□30-0□-A10	54.5	132.5	133.5	55	133	134	
ZPT□□ ^U _C □□□□40-0□-A10	64.5	168.5	169.5	65	169	170	77
ZPT□□ ^U _C □□□□50-0□-A10	74.5	178.5	179.5	75	179	180	

Deep style

Model	E	F		H
		G: ø4	G: ø6	
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	

Vertical Vacuum Entry with Buffer *Series ZPT*

Connection	One-touch Fitting (Buffer)	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Vertical	Mounting	Buffer Body

Flat/Flat with ribs	ø40, ø50	Deep	ø40
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Flat with ribs

Flat style/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

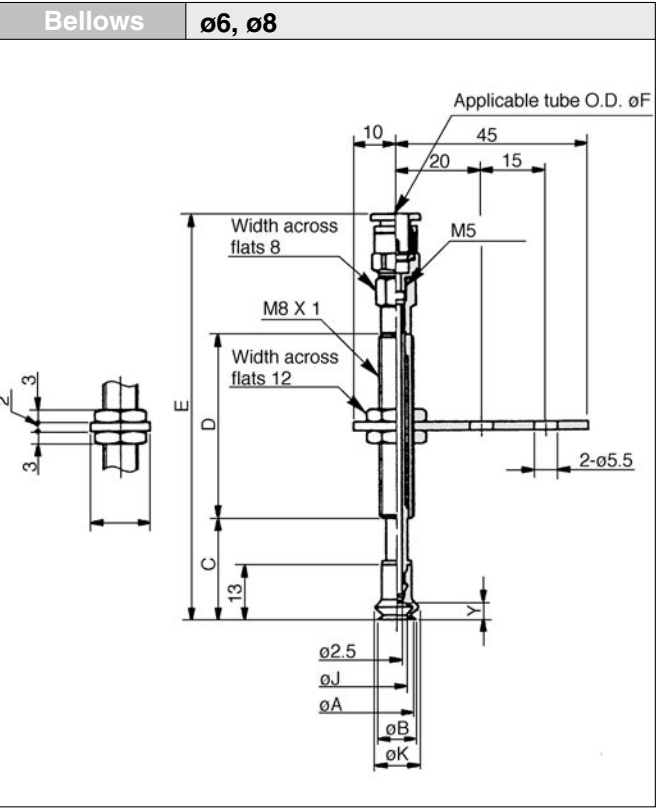
Model	ø40			ø50			H
	E	F		E	F		
		G: ø6	G: ø8		G: ø6	G: ø8	
ZPT□□ $\frac{U}{C}$ □□□□10-0□-A14	44.5	129.5	135	45.5	130.5	136	50
ZPT□□ $\frac{U}{C}$ □□□□20-0□-A14	54.5	124.4	129.4	55.5	125.4	130.4	
ZPT□□ $\frac{U}{C}$ □□□□30-0□-A14	64.5	134.4	139.4	65.5	135.4	140.4	
ZPT□□ $\frac{U}{C}$ □□□□50-0□-A14	84.5	179.4	184.4	85.5	180.4	185.4	75

Deep style

Model	E	F		H
		G: ø6	G: ø8	
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	

Series **ZPT**

Connection	One-touch Fitting (Buffer)	Pad Style	Bellows
Vacuum Entry	Vertical	Mounting	Buffer Body

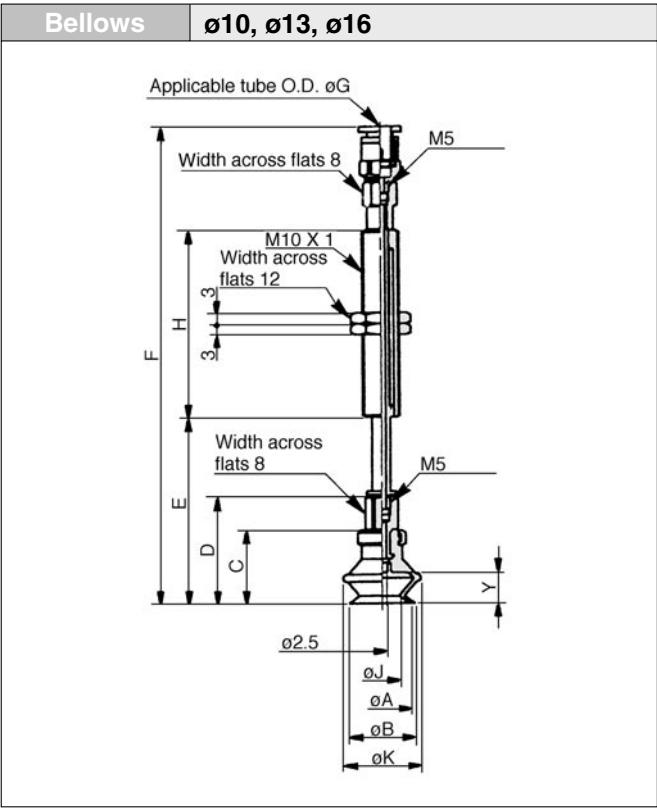


Bellows style

Model	A	B	J	K
ZPT06B□□□□-0□-A8	6	7	3.3	9.1
ZPT08B□□□□-0□-A8	8	9	4.7	10.1

Dimensions by stroke

Model	C	D	E	
			F: ø4	F: ø6
ZPT□□B□□□ 6-0□-A8	19	15	61	62
ZPT□□B□□□10-0□-A8	24	43	94	95
ZPT□□B□□□15-0□-A8	29		99	100
ZPT□□B□□□25-0□-A8	39		109	110



Bellows style

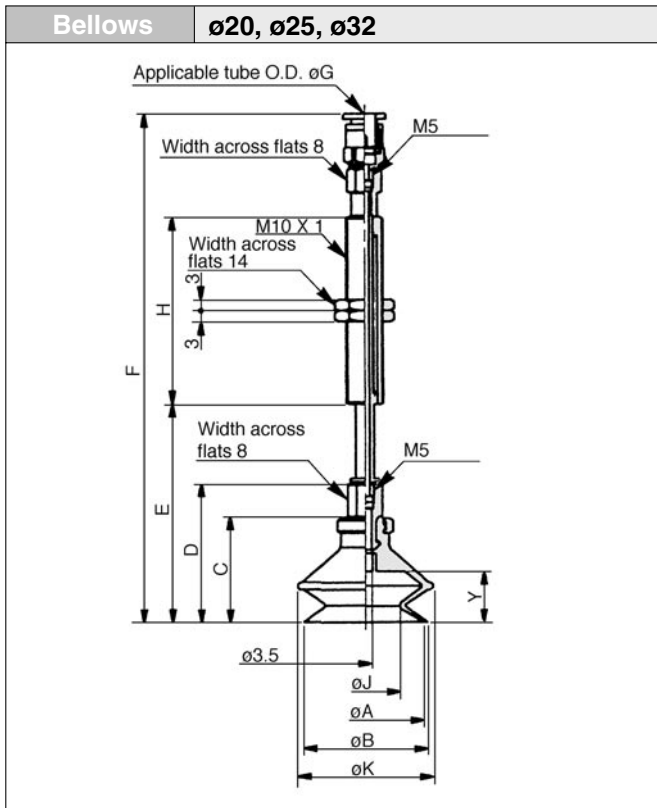
Model	A	B	C	D	J	K	Y
ZPT10B□□□□-0□-A10	10	12	16	25	5.5	13.8	5.5
ZPT13B□□□□-0□-A10	13	15	18.5	27.5	8.7	19	7.5
ZPT16B□□□□-0□-A10	16	18	20	29	9.9	21	8.5

Dimensions by stroke

Model	ø10			ø13			ø16			H
	E	F		E	F		E	F		
		G: ø4	G: ø6		G: ø4	G: ø6		G: ø4	G: ø6	
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	

Vertical Vacuum Entry with Buffer *Series ZPT*

Connection	One-touch Fitting (Buffer)	Pad Style	Bellows
Vacuum Entry	Vertical	Mounting	Buffer Body

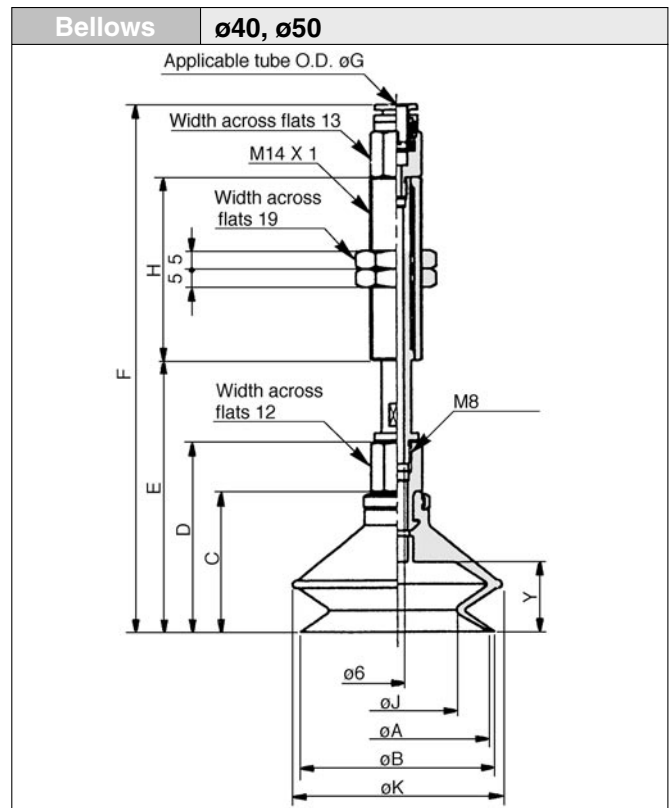


Bellows style

Model	A	B	C	D	J	K	Y
ZPT20B□□□□-0□-A10	20	22	23.5	32.5	12.4	25	10.5
ZPT25B□□□□-0□-A10	25	27	24	33	15.6	28	
ZPT32B□□□□-0□-A10	32	34	29	38	18.9	37	

Dimensions by stroke

Model	ø20			ø25			ø32			H
	E	F		E	F		E	F		
		G: ø4	G: ø6		G: ø4	G: ø6		G: ø4	G: ø6	
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	
ZPT□□B□□□40-0□-A10	74	178	179	74.5	178.5	179.5	79.5	183.5	184.5	77
ZPT□□B□□□50-0□-A10	84	188	189	84.5	188.5	189.5	89.5	193.5	194.5	



Bellows style

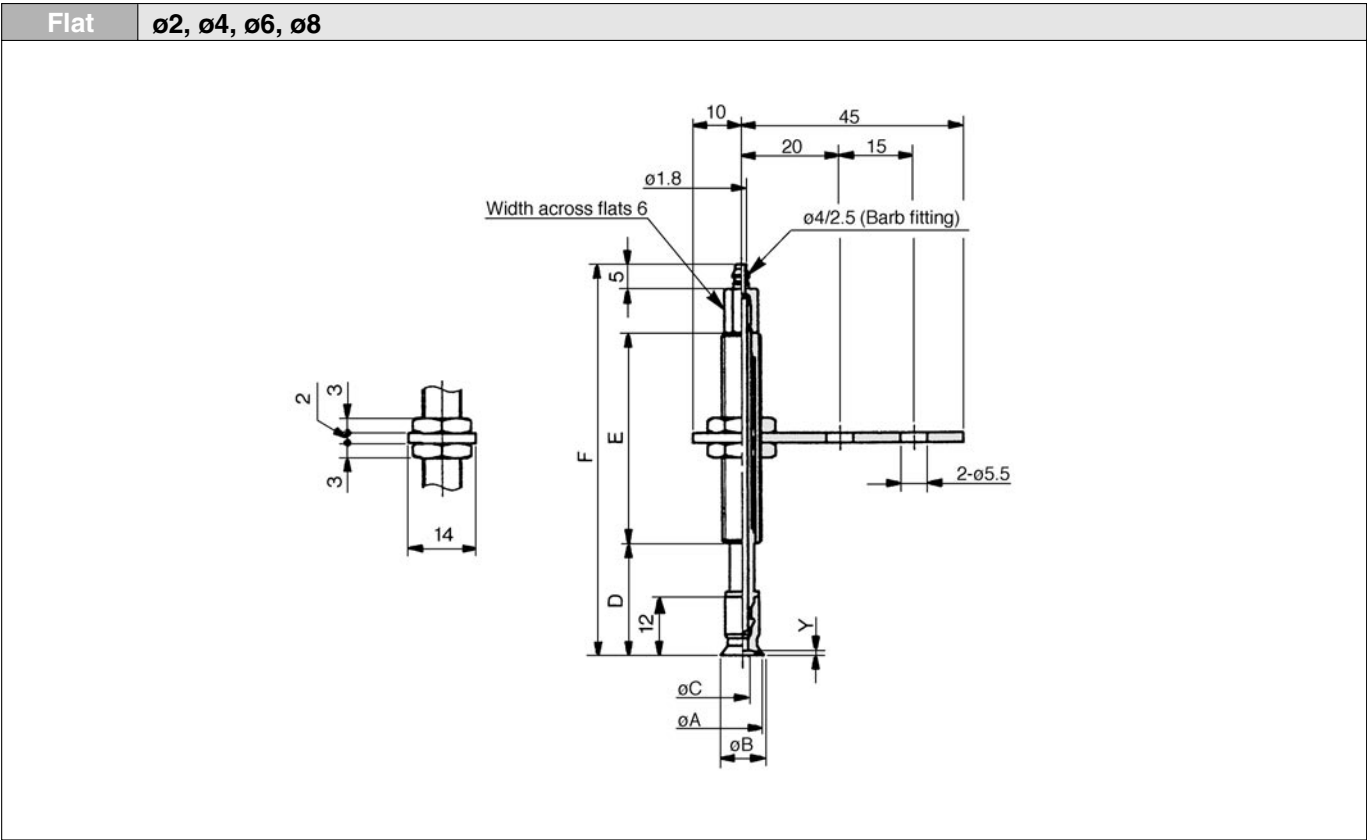
Model	A	B	C	D	J	K	Y
ZPT40B□□□□-0□-A14	40	43	34	47.5	24.4	48	16
ZPT50B□□□□-0□-A14	50	53	38	51.5	32.4	57	19

Dimensions by stroke

Model	ø40			ø50			H
	E	F		E	F		
		G: ø6	G: ø8		G: ø6	G: ø8	
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

Series **ZPT**

Connection	Barb Fitting (Buffer)	Pad Style	Flat
Vacuum Entry	Vertical	Mounting	Buffer Body



Flat style

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

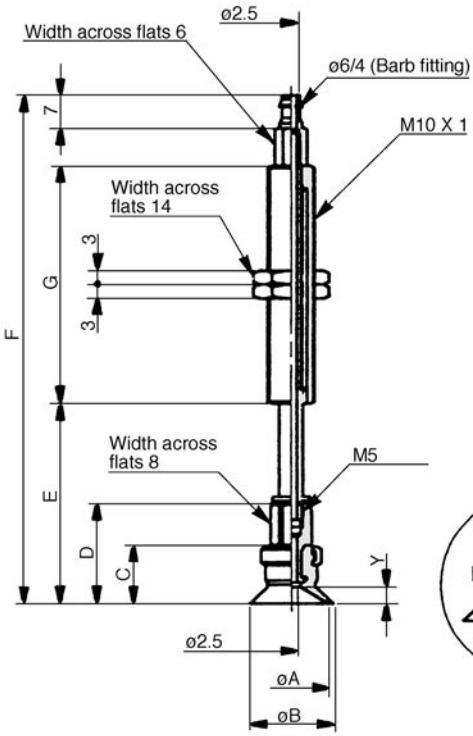
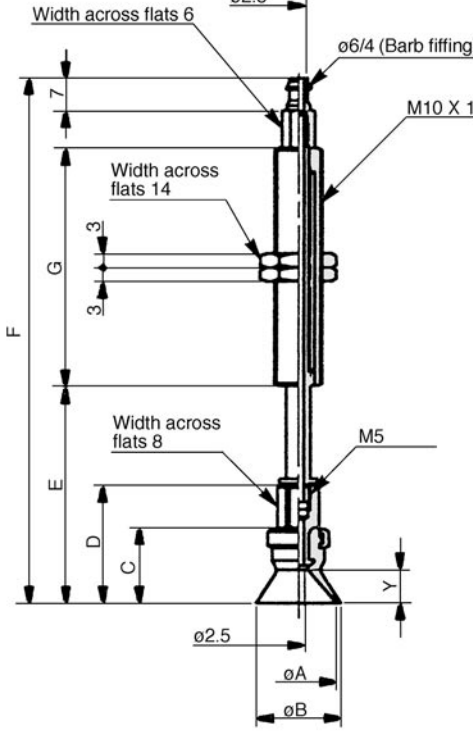
Dimensions by stroke

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

Vertical Vacuum Entry with Buffer *Series ZPT*

Connection	Barb Fitting (Buffer)	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Vertical	Mounting	Buffer Body

Flat/Flat with ribs	ø10, ø13, ø16	Deep	ø10, ø16
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Flat style/Flat with ribs

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

Dimensions by stroke

Model	ø10, ø13		ø16		G
	E	F	E	F	
ZPT□□ ^U _C □□□□10-□6-A10	32.5	70.5	33	71	23
ZPT□□ ^U _C □□□□20-□6-A10	42.5	108.5	43	109	51
ZPT□□ ^U _C □□□□30-□6-A10	52.5	118.5	53	119	
ZPT□□ ^U _C □□□□40-□6-A10	62.5	154.5	63	155	77
ZPT□□ ^U _C □□□□50-□6-A10	72.5	164.5	73	165	

Deep style

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

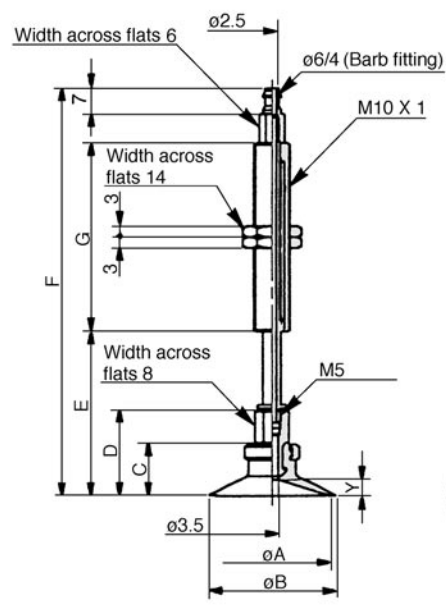
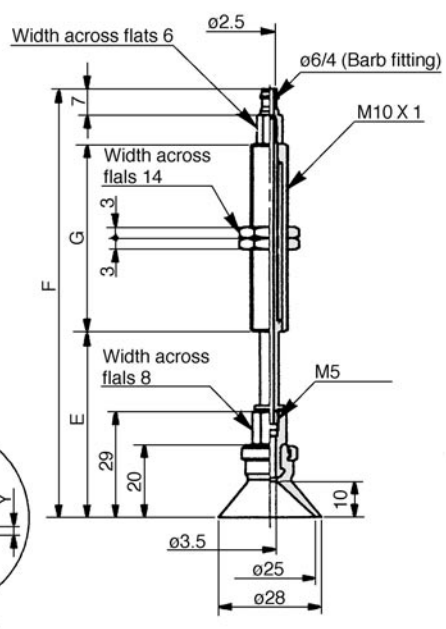
Dimensions by stroke

Model	ø10		ø16		G
	E	F	E	F	
ZPT□□D□□□10-□6-A10	35.5	73.5	36.5	74.5	23
ZPT□□D□□□20-□6-A10	45.5	111.5	46.5	112.5	51
ZPT□□D□□□30-□6-A10	55.5	121.5	56.5	122.5	
ZPT□□D□□□40-□6-A10	65.5	157.7	66.5	158.5	77
ZPT□□D□□□50-□6-A10	75.5	167.5	76.5	168.5	

Series ZPT

Connection	Barb Fitting (Buffer)	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Vertical	Mounting	Buffer Body

Flat/Flat with ribs	ø20, ø25, ø32	Deep	ø25
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Flat style/Flat with ribs

Model	A	B	C	D	Y	
					Flat	Flat with ribs
ZPT20 ^U _C □□□□□□□□6-A10	20	23	14	23	4	1.7
ZPT25 ^U _C □□□□□□□□6-A10	25	28				1.8
ZPT32 ^U _C □□□□□□□□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□□ ^U _C □□□□□□□□10-□□6-A10	34.5	72.5	35	73	23
ZPT□□ ^U _C □□□□□□□□20-□□6-A10	44.5	110.5	45	111	51
ZPT□□ ^U _C □□□□□□□□30-□□6-A10	54.5	120.5	55	121	
ZPT□□ ^U _C □□□□□□□□40-□□6-A10	64.5	156.5	65	157	77
ZPT□□ ^U _C □□□□□□□□50-□□6-A10	74.5	166.5	75	167	

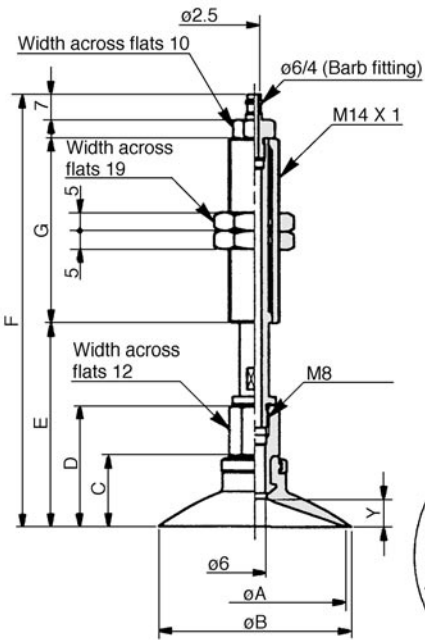
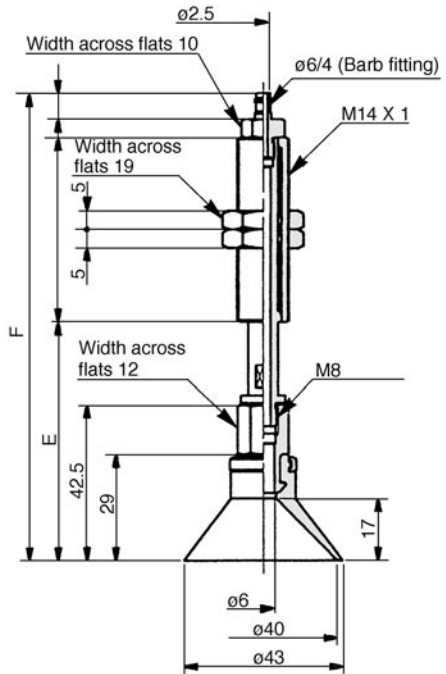
Deep style

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	

Vertical Vacuum Entry with Buffer *Series ZPT*

Connection	Barb Fitting (Buffer)	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Vertical	Mounting	Buffer Body

Flat/Flat with ribs	ø40, ø50	Deep	ø40
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Flat with ribs

Flat style/Flat with ribs

Model	A	B	C	D	Y	
					Flat	Flat with ribs
ZPT40 ^U □□□□□□□□□□6-A14	40	43	18.5	32	6.5	3.3
ZPT50 ^U □□□□□□□□□□6-A14	50	53	19.5	33	7.5	3.8

Dimensions by stroke

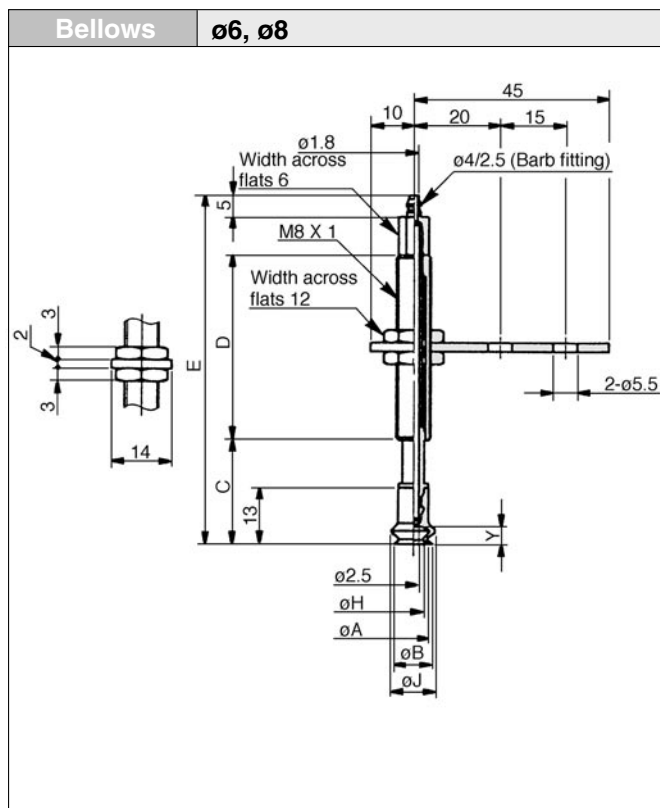
Model	ø40		ø50		G
	E	F	E	F	
ZPT□□ ^U □□□□10-□6-A14	44.5	113.5	45.5	114.5	50
ZPT□□ ^U □□□□20-□6-A14	54.5	116.5	55.5	117.5	
ZPT□□ ^U □□□□30-□6-A14	64.5	126.5	65.5	127.5	
ZPT□□ ^U □□□□50-□6-A14	84.5	171.5	85.5	172.5	75

Deep style

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

Series ZPT

Connection	Barb Fitting (Buffer)	Pad Style	Bellows
Vacuum Entry	Vertical	Mounting	Buffer Body

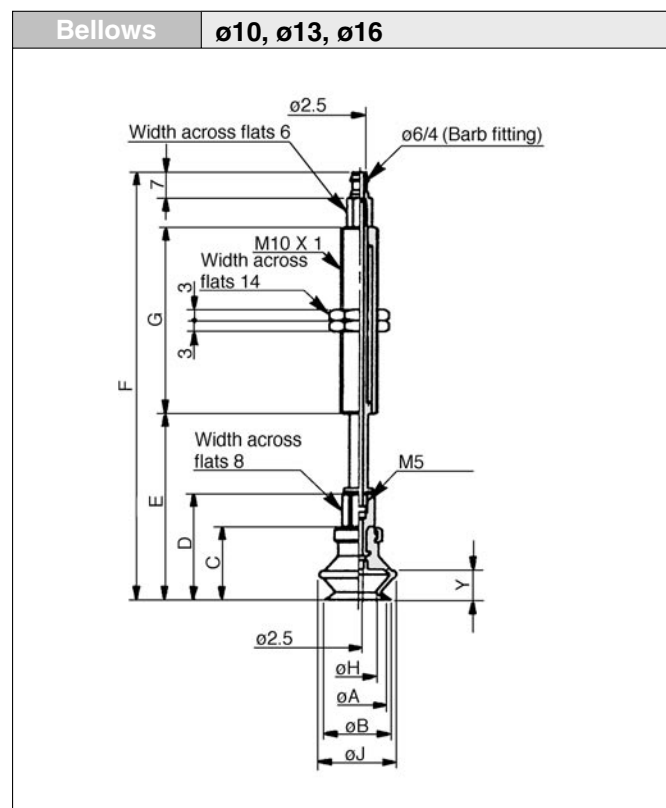


Bellows style

Model	A	B	H	J
ZPT06B □□□□□-□4-A8	6	7	3.3	9.1
ZPT08B □□□□□-□4-A8	8	9	4.7	10.1

Dimensions by stroke

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



Bellows style

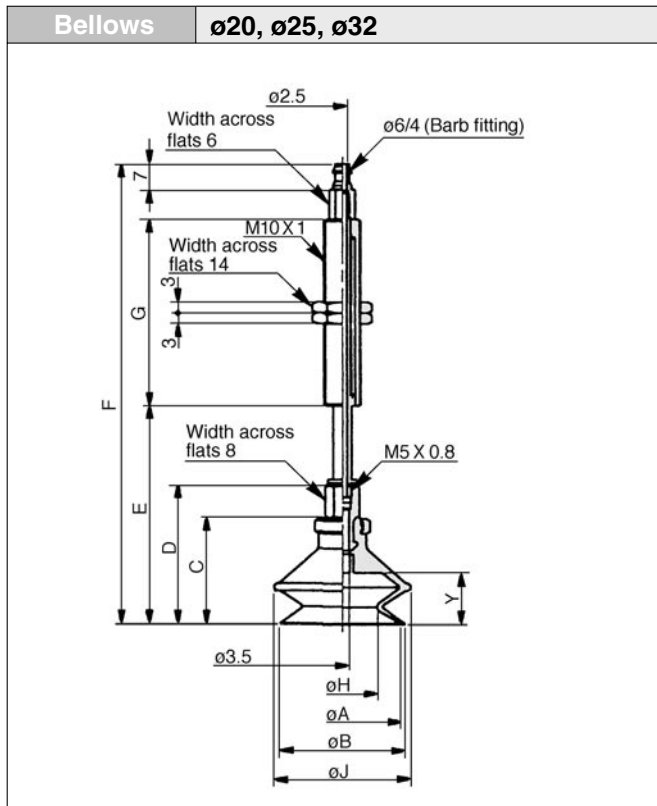
Model	A	B	C	D	H	J	Y
ZPT10B □□□□□-□ 6-A10	10	12	16	25	5.5	13.8	5.5
ZPT13B □□□□□-□ 6-A10	13	15	18.5	27.5	8.7	19	7.5
ZPT16B □□□□□-□ 6-A10	16	18	20	29	9.9	21	8.5

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	

Vertical Vacuum Entry with Buffer *Series ZPT*

Connection	Barb Fitting (Buffer)	Pad Style	Bellows
Vacuum Entry	Vertical	Mounting	Buffer Body

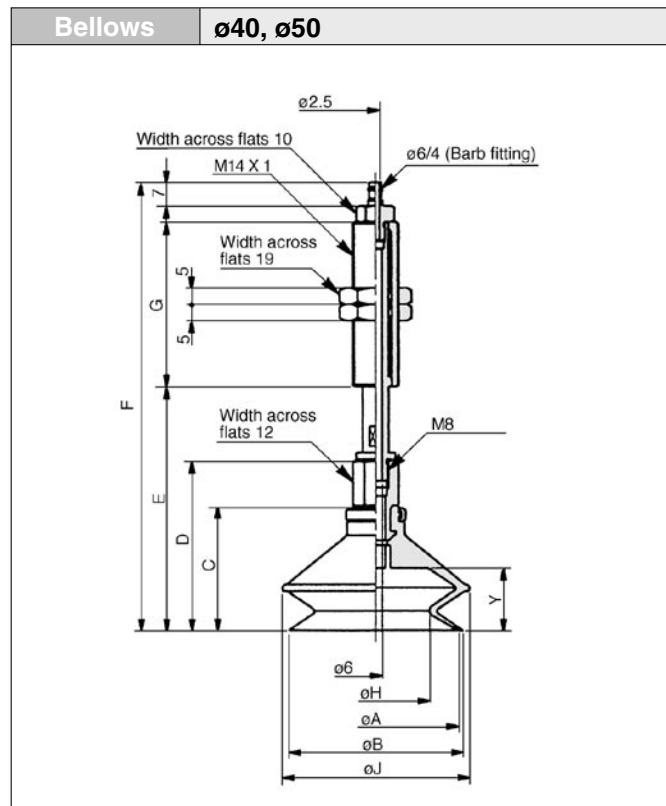


Bellows style

Model	A	B	C	D	H	J	Y
ZPT20B□□□□□-□6A10	20	22	23.5	32.5	12.4	25	10.5
ZPT25B□□□□□-□6A10	25	27	24	33	15.6	28	
ZPT32B□□□□□-□6A10	32	34	29	38	18.9	37	

Dimensions by stroke

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



Bellows style

Model	A	B	C	D	H	J	Y
ZPT40B□□□□□-□6A14	40	43	34	47.5	24.4	48	16
ZPT50B□□□□□-□6A14	50	53	38	51.5	32.4	57	19

Dimensions by stroke

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



Specifications

Vacuum entry	Direction		Lateral	
	Connection		One-touch fitting	
	Tube dia.	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.	ø2 to ø8	M5, M6	M4, M5
		ø10 to ø16	M5, M6	M5, M6
		ø20 to ø32	M6, M8 X 1	M5, M6, M8
		ø40 to ø50	M6, M8 X 1	M6, M8

Pad Style

Pad style	Flat	Flat with ribs	Deep	Bellows
Pad dia. ø(mm)	2, 4, 6, 8, 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 (colour)	NBR (Black), Silicon rubber (White), Urethane rubber (Brown), Fluorine rubber (Black with green mark) Conductive NBR (Black with one white mark), Conductive silicon rubber (Black with two white marks)			
Durometer	NBR (50°), Silicon rubber (40°), Urethane rubber/Fluorine rubber (60°) Conductive NBR (50°), Conductive silicon rubber (50°)			

Weight Table/Male Thread (Female Thread)

(g)

Model	Pad style		Flat				Flat with ribs			Deep			Bellows			
	Connection	Pad style	M4	M5	M6	M8	M5	M6	M8	M5	M6	M8	M4	M5	M6	M8
ZPR02 to ZPR08	—	—	—	26 (20)	27 (—)	—	—	—	—	—	—	—	19 (Except for ø2, ø4)	26(20) (Except for ø2, ø4)	27(—) (Except for 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	—	—	—	—	64 (56)	67 (54)	—	64 (56)	67 (54)	—	65 (57)	68 (55)	—	—	64 (56)	67 (54)
ZPR50	—	—	—	—	66 (58)	69 (56)	—	67 (59)	70 (57)	—	—	—	—	—	66 (58)	69 (56)

*(): Figures for female thread connections.



P.10-78 to 10-83

Lateral Vacuum Entry without Buffer *Series ZPR*

Model

Model	Pad dia. ø(mm)	Pad style				Vacuum entry (One-touch fitting)	Mounting thread	
		Flat (U)	Flat with ribs (C)	Deep (D)	Bellows (B)		Male thread	Female thread
ZPR02	2	●	—	—	—	● ø4/ø6 tube	● M5 M6	● M4 M5
ZPR04	4	●	—	—	—			
ZPR06	6	●	—	—	●			
ZPR08	8	●	—	—	●			
ZPR10	10	●	●	●	●	● ø4/ø6 tube	● M5 M6	● M5 M6
ZPR13	13	●	●	—	●			
ZPR16	16	●	●	●	●			
ZPR20	20	●	●	—	●	● ø4/ø6/ø8 tube	● M6 M8 X 1	● M5 M6 M8
ZPR25	25	●	●	●	●			
ZPR32	32	●	●	—	●			
ZPR40	40	●	●	●	●			
ZPR50	50	●	●	—	●	● ø6/ø8 tube	● M6 M8 X 1	● M6 M8

How to Order

Series ZPR
without buffer

ZPR 02 U N 04 A5

Pad dia. (mm)

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 style



(Refer to Table ① for applications.)

U	Flat
C	Flat with ribs
D	Deep
B	Bellows

Mounting thread



(Refer to Table ② for applications.)

Vacuum entry



(Refer to Table ② for applications.)

Table ② Vacuum Entry/Mounting Thread Dia.

Connection	Symbol	Thread dia. /Port size	ø2 to ø8	ø10 to ø16	ø20 to ø32	ø40 to ø50
Vacuum entry	04	ø4 tube	●	●	●	—
	06	ø6 tube	●	●	●	●
	08	ø8 tube	—	—	●	●
Mounting	Male thread	A5	M5	●	—	—
		A6	M6	●	●	●
		A8	M8 X 1	—	●	●
	Female thread	B4	M4	●	—	—
		B5	M5	●	●	—
		B6	M6	—	●	●
	B8	M8	—	—	●	●

Material

N	NBR
S	Silicon rubber
U	Urethane rubber
F	Fluorine rubber
GN*	Conductive NBR (ø2 to ø16)
GS*	Conductive silicon rubber (ø2 to ø16)

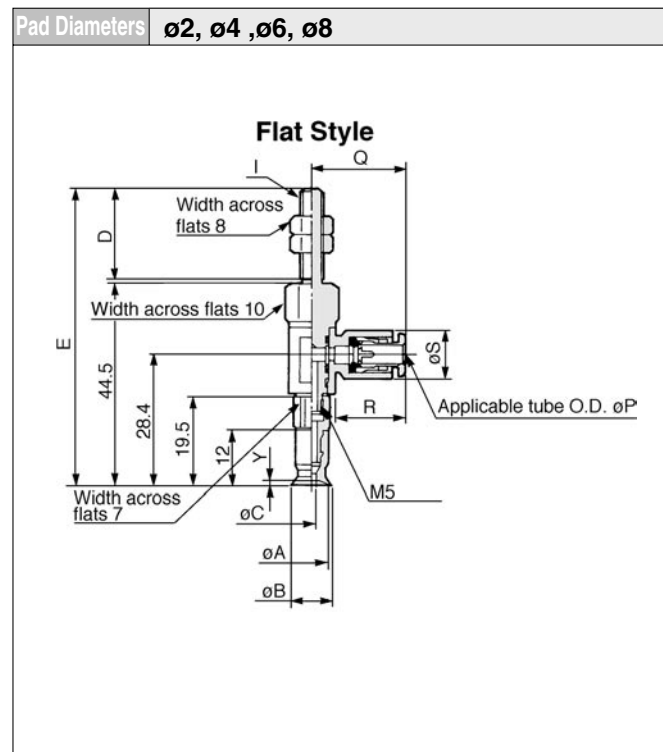
*ø20 and larger are manufactured upon receipt of order.

Table ① Pad Dia. /Pad Style

Style \ Dia. (mm)	2	4	6	8	10	13	16	20	25	32	40	50
Flat	●	●	●	●	●	●	●	●	●	●	●	●
Flat with ribs	—	—	—	—	●	●	●	●	●	●	●	●
Deep	—	—	—	—	●	—	●	—	●	—	●	—
Bellows	—	—	●	●	●	●	●	●	●	●	●	●

Series ZPR

Connection	One-touch Fitting	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Lateral	Mounting	Male Thread

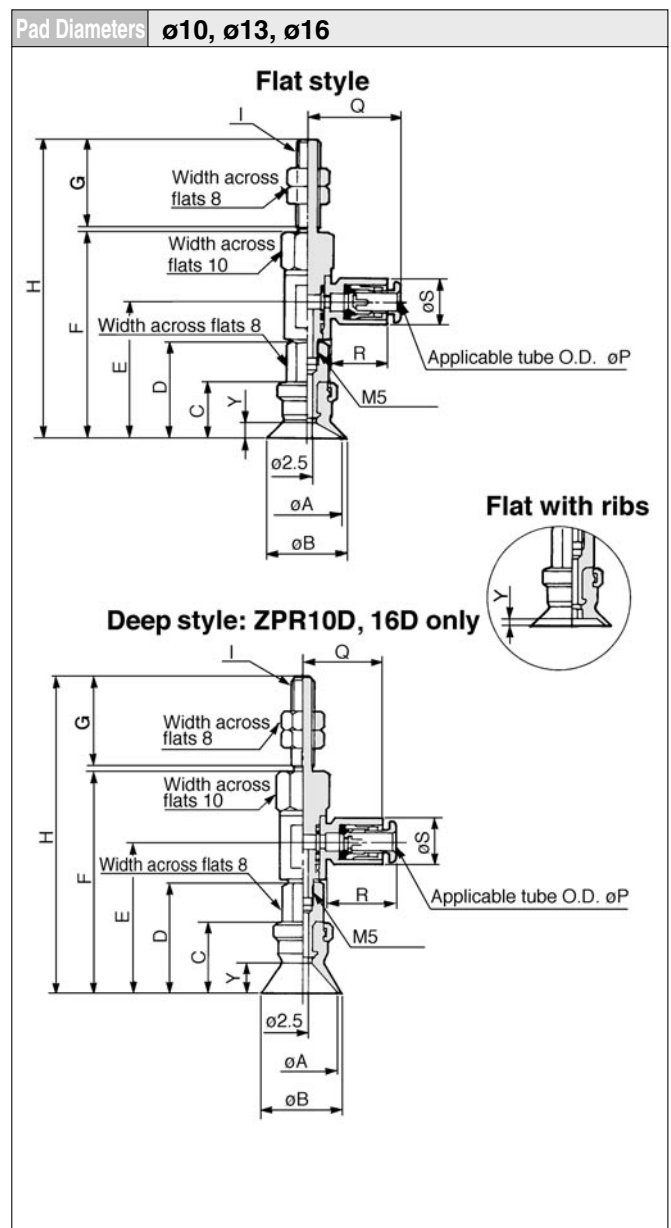


Flat style

Model	øA	øB	øC	I: M5		I: M6		Y
				D	E	D	E	
ZPR02U	2	2.6	1.2	20	65.5	25	70.5	0.8
ZPR04U	4	4.8	1.6					
ZPR06U	6	7	2.5					
ZPR08U	8	9	2.5					1

Applicable tube

Applicable tube O.D.	øP	Q	R	øS
ø4	4	20.6	15.6	10.4
ø6	6	21.6	16.6	12.8



Flat style/Flat with ribs

Model	øA	øB	C	D	E	F	I: M5		I: M6		Y	
							G	H	G	H	Flat	Flat w/ ribs
ZPR10 _U	10	12	12	21	29.9	46	20	67	25	72	3	1.7
ZPR13 _U	13	15	12	21	29.9	46						1.8
ZPR16 _U	16	18	12.5	21.5	30.4	46.5						1.2

Deep style

Model	øA	øB	C	D	E	F	I: M5		I: M6		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					7

Applicable tube

Applicable tube O.D.	øP	Q	R	øS
ø4	4	20.6	15.6	10.4
ø6	6	21.6	16.6	12.8

Lateral Vacuum Entry without Buffer *Series ZPR*

Connection	One-touch Fitting	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Lateral	Mounting	Male Thread

Pad Diameters **ø20, ø25, ø32**

Flat style

Technical drawing of a flat style pad assembly. The drawing shows a side view of the pad with various dimensions labeled: H (total height), G (height from base to top flange), F (height from base to middle flange), E (height from base to bottom flange), D (height from base to top of bottom flange), C (height from base to bottom of bottom flange), Y (height from base to bottom of bottom flange), Q (width across flats 12), I (width across flats 12), R (width across flats 12), S (width across flats 12), and M8 (thread size). The drawing also shows the width across flats 12 (M6:8, M8:12) and the width across flats 12. The base is labeled with dimensions ø3.5, øA, and øB. A detail view of the bottom flange is shown with the label 'Flat with ribs'.

Deep style: ZPR25D only

Technical drawing of a deep style pad assembly (ZPR25D only). The drawing shows a side view of the pad with various dimensions labeled: H (total height), G (height from base to top flange), F (height from base to middle flange), E (height from base to bottom flange), D (height from base to top of bottom flange), C (height from base to bottom of bottom flange), Y (height from base to bottom of bottom flange), Q (width across flats 12), I (width across flats 12), R (width across flats 12), S (width across flats 12), and M8 (thread size). The drawing also shows the width across flats 12 (M6:8, M8:12) and the width across flats 12. The base is labeled with dimensions ø3.5, øA, and øB. A detail view of the bottom flange is shown with the label 'Flat with ribs'.

Flat style/Flat with ribs

Model	øA	øB	C	D	E	F	I: M6		I: M8 X 1		Y	
							G	H	G	H	Flat	Flat w/ ribs
ZPR20 ^U _C	20	23	14	29	39.8	57.6	25	83.5	15	73.5	4	1.7
ZPR25 ^U _C	25	28										1.8
ZPR32 ^U _C	32	35										14.5

Deep style

Model	øA	øB	C	D	E	F	I: M6		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 tube

Applicable tube O.D.	øP	Q	R	øS
ø4	4	23.3	15.8	10.4
ø6	6	24.3	16.8	12.8
ø8	8	26.2	18.7	15.2

Pad Diameters

ø40, ø50

Flat style

Technical drawing of a flat style pad assembly. The diagram shows a side view of the pad with various dimensions labeled. Key dimensions include: L (total length), Q (flange diameter), G (height from base to top flange), H (total height), F (height from base to middle flange), E (height from base to bottom flange), D (height from base to mounting bracket), C (height from base to mounting bracket), Y (height from base to mounting bracket), I (width across flats for M6.8 and M8-12 bolts), Width across flats (M6.8, M8-12), Width across flats 12, ø3.5 (base diameter), øA (mounting bracket diameter), øB (flange diameter), øS (tube outer diameter), R (flange thickness), Applicable tube O.D. øP, and M8 (mounting bracket).

Flat with ribs

Circular inset showing a cross-section of a pad with ribs.

Deep style: ZPR40D only

Technical drawing of a deep style pad assembly. The diagram shows a side view of the pad with various dimensions labeled. Key dimensions include: L (total length), Q (flange diameter), H (total height), F (height from base to middle flange), E (height from base to bottom flange), D (height from base to mounting bracket), C (height from base to mounting bracket), Y (height from base to mounting bracket), I (width across flats for M6.8 and M8-12 bolts), Width across flats (M6.8, M8-12), Width across flats 12, ø6 (base diameter), øA (mounting bracket diameter), øB (flange diameter), øS (tube outer diameter), R (flange thickness), Applicable tube O.D. øP, and M8 (mounting bracket).

Flat style/Flat with ribs

Model	øA	øB	C	D	E	F	I: M6		I: M8 X 1		Y	
							G	H	G	H	Flat	Flat w/ ribs
ZPR40^{UC}	40	43	18.5	32	42.8	60.6	25	86.5	15	76.5	6.5	3.3
ZPR50^{UC}	50	53	19.5	33	43.8	61.6		87.5		77.5	7.5	3.8

Deep style

Model	øA	øB	C	D	E	F	I: M6		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 tube

Applicable tube O.D.	øP	Q	R	øS
ø6	6	24.3	16.8	12.8
ø8	8	26.2	18.7	15.2

Series ZPR

Connection	One-touch Fitting	Pad Style	Bellows
Vacuum Entry	Lateral	Mounting	Male Thread

Pad Diameters

ø6, ø8

Bellows style

Width across flats 8

Width across flats 10

E

45.5

29.4

20.5

13

Y

Width across flats 7

øC

øK

øA

øB

øL

Q

R

øS

Applicable O.D. øP

Model	øA	øB	øC	I: M5		I: M6		øK	øL	Y
				D	E	D	D			
ZPR06B	6	7	2.5	20	66.5	25	71.5	3.3	9.1	4
ZPR08B	8	9						4.7	10.1	

Applicable tube

Applicable tube O.D.	øP	Q	R	øS
ø4	4	20.6	15.6	10.4
ø6	6	21.6	16.6	12.8

Pad Diameters

ø20, ø25, ø32

Bellows style

Technical drawing of a bellows style fitting. The drawing shows a side view of the fitting with various dimensions labeled. The dimensions are: G (width across flats for M6:8, M8:12), H (total height), F (height from base to top of bellows), E (height from base to center of bellows), D (height from base to bottom of bellows), C (height from base to top of bellows), Y (height from base to bottom of bellows), Q (height from base to top of bellows), R (height from base to center of bellows), S (height from base to center of bellows), and P (height from base to center of bellows). The drawing also shows the applicable tube O.D. øP. The drawing includes labels for 'Width across flats (M6:8, M8:12)', 'Width across flats 12', and 'Applicable tube O.D. øP'. The drawing also shows the dimensions ø3.5, øK, øA, øB, and øL.

Model	øA	øB	C	D	E	F	I: M6		I: M8 X 1		øK	øL	Y
							G	H	G	H			
ZPR20B	20	22	23.5	38.5	49.3	67.1	25	93	15	83	12.4	25	10.5
ZPR25B	25	27	24	39	49.8	67.6		93.5		83.5	15.6	28	10.5
ZPR32B	32	34	29	44	54.8	72.6		98.5		88.5	18.9	37	14

Applicable tube

Applicable tube O.D.	øP	Q	R	øS
ø4	4	23.3	15.8	10.4
ø6	6	24.3	16.8	12.8
ø8	8	26.2	18.7	15.2

Pad Diameters

ø10, ø13, ø16

Bellows style

Technical drawing of a bellows style fitting. The drawing shows a cross-section of the fitting with various dimensions labeled. The dimensions are: I (total height), Q (height from top flange to bottom flange), Width across flats 8 (top), ø (top flange diameter), Width across flats 10 (middle), H (height from top flange to middle flange), Width across flats 8 (bottom), F (height from top flange to bottom flange), E (height from middle flange to bottom flange), D (height from top flange to bottom flange), C (height from middle flange to bottom flange), Y (height from bottom flange to bottom flange), R (radius of the bottom flange), øS (diameter of the bottom flange), Applicable tube O.D. øP (diameter of the tube), ø2.5 (diameter of the bottom flange), øK (diameter of the bottom flange), øA (diameter of the bottom flange), øB (diameter of the bottom flange), and øL (diameter of the bottom flange).

Model	øA	øB	C	D	E	F	I: M5		I: M6		øK	øL	Y
							G	H	G	H			
ZPR10B	10	12	16	25	33.9	50	20	71	25	76	5.5	13.8	5.5
ZPR13B	13	15	18.5	27.5	36.4	52.5		73.5		78.5	8.7	19	7.5
ZPR16B	16	18	20	29	37.9	54		75		80	9.9	21	8.5

Applicable tube

Applicable tube O.D.	øP	Q	R	øS
ø4	4	20.6	15.6	10.4
ø6	6	21.6	16.6	12.8

Pad Diameters $\varnothing 40, \varnothing 50$

Bellows style

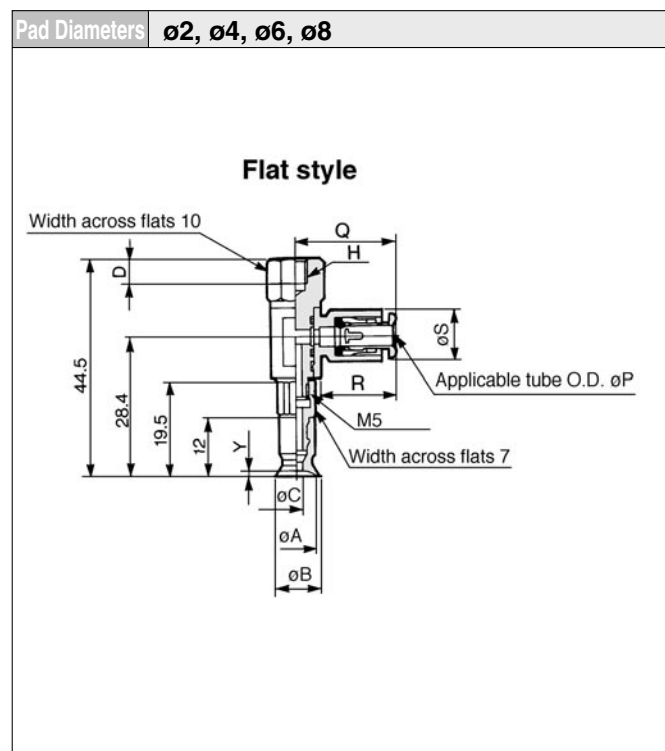
Model	øA	øB	C	D	E	F	I: M6		I: M8 X 1		øK	øL	Y
							G	H	G	H			
ZPR40B	40	43	34	47.5	58.3	76.1	25	102	15	92	24.4	48	16
ZPR50B	50	53	38	51.5	62.3	80.1		106		96	32.4	57	19

Applicable tube

Applicable tube O.D.	øP	Q	R	øS
ø6	6	24.3	16.8	12.8
ø8	8	26.2	18.7	15.2

Lateral Vacuum Entry without Buffer *Series ZPR*

Connection	One-touch Fitting	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Lateral	Mounting	Female Thread

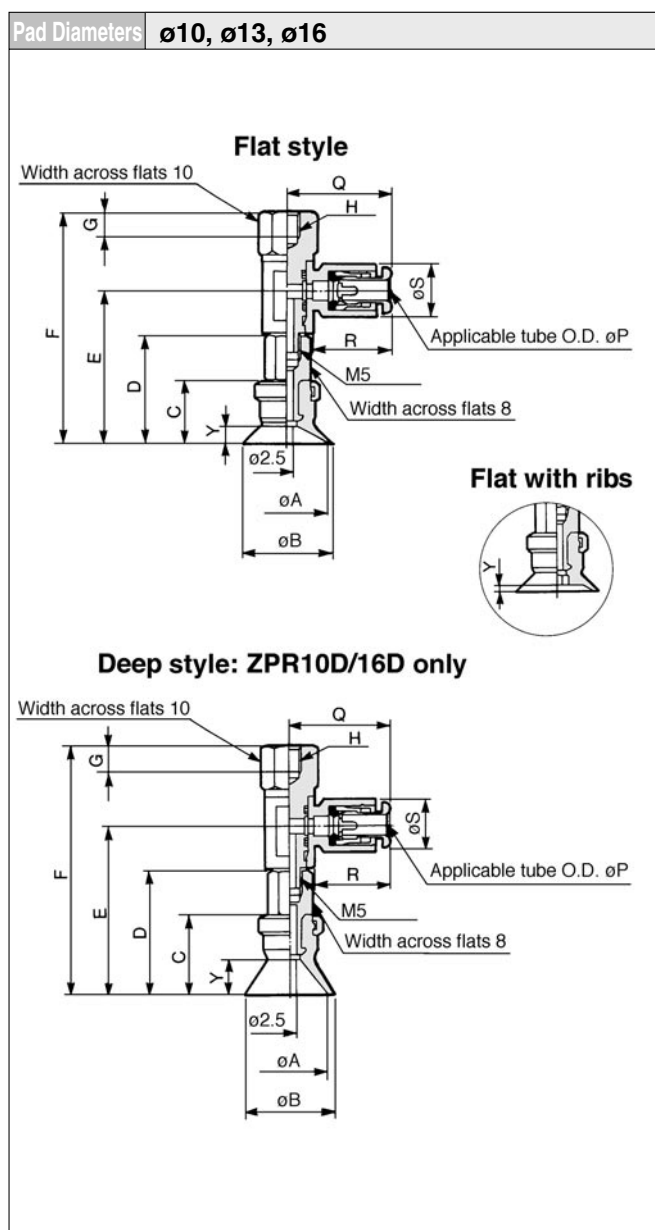


Flat style

Model	øA	øB	øC	H: M4 D	H: M5 D	Y
ZPR02U	2	2.6	1.2	4	5	0.8
ZPR04U	4	4.8	1.6			
ZPR06U	6	7	2.5			
ZPR08U	8	9	2.5			1

Applicable tube

Applicable tube O.D.	øP	Q	R	øS
ø4	4	20.6	15.6	10.4
ø6	6	21.6	16.6	12.8



Flat style/Flat with ribs

Model	øA	øB	C	D	E	F	H: M5 G	H: M6 G	Y
									Flat Flat with ribs
ZPR10 _C	10	12	12	21	29.9	46	5	6	3 1.7
ZPR13 _C	13	15							1.8
ZPR16 _C	16	18							3.5 1.2

Deep style

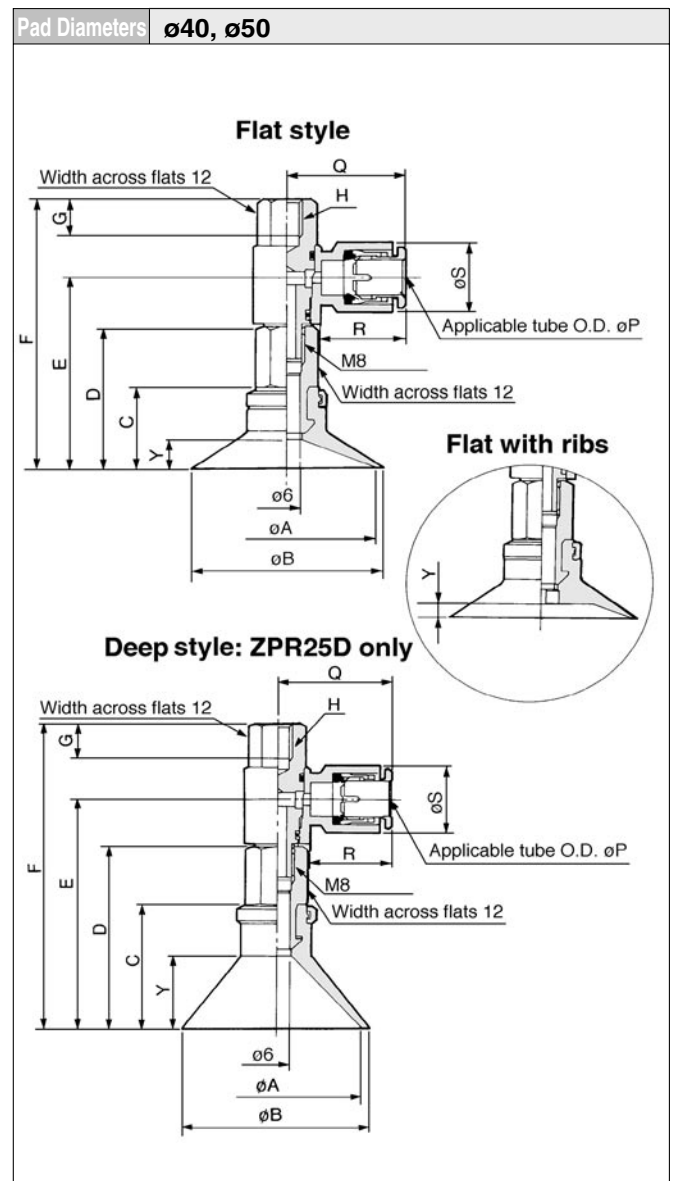
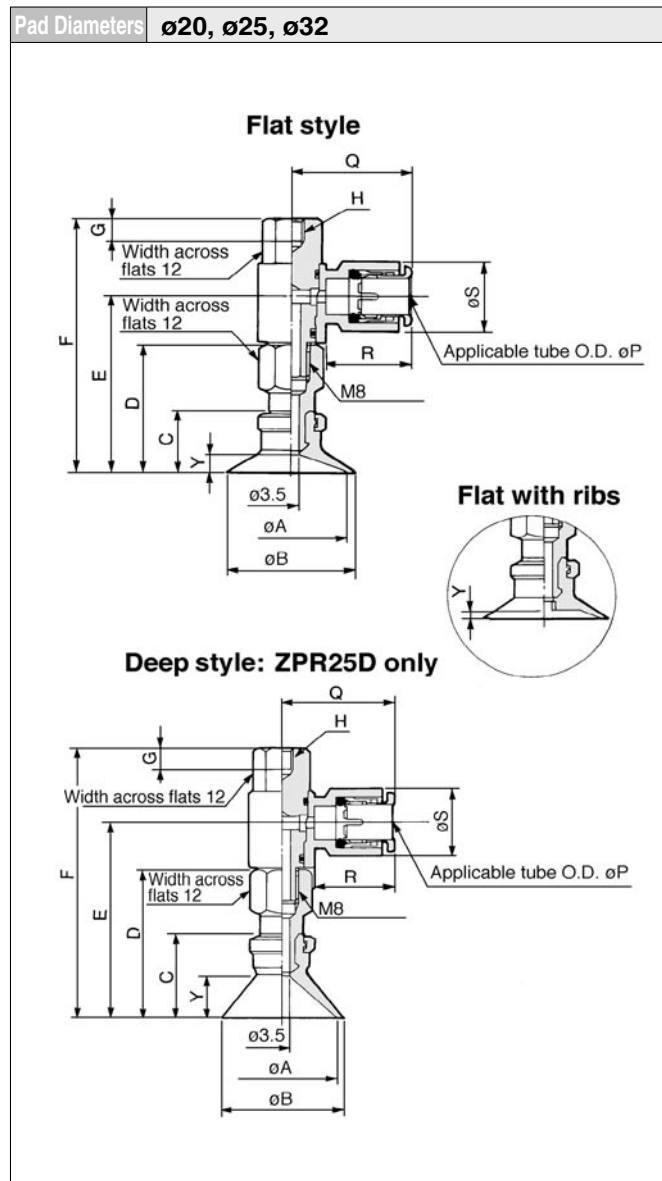
Model	øA	øB	C	D	E	F	H: M5 G	H: M6 G	Y
ZPR10D	10	12	15	24	32.9	49	5	6	6
ZPR16D	16	18	16	25	33.9	50			7

Applicable tube

Applicable tube O.D.	øP	Q	R	øS
ø4	4	20.6	15.6	10.4
ø6	6	21.6	16.6	12.8

Series ZPR

Connection	One-touch Fitting	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Lateral	Mounting	Female Thread



Flat style/Flat with ribs

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

Deep style

Model	øA	øB	C	D	E	F	H: M5	H: M6	H: M8	Y
							G	G	G	
ZPR25D	25	28	20	35	45.8	63.6	5	6	8	10

Applicable tube

Applicable tube O.D.	øP	Q	R	øS
ø4	4	23.3	15.8	10.4
ø6	6	24.3	16.8	12.8
ø8	8	26.2	18.7	15.2

Flat style/Flat with ribs

Model	øA	øB	C	D	E	F	H: M6	H: M8	Y	
							G	G	Flat	Flat with ribs
ZPR40 _U C	40	43	18.5	32	42.8	60.6	6	8	6.5	3.3
ZPR50 _U C	50	53	19.5	33	43.8	61.6			7.5	3.8

Deep style

Model	øA	øB	C	D	E	F	H: M6	H: M8	Y
							G	G	
ZPR40D	40	43	29	42.5	53.3	71.1	6	8	17

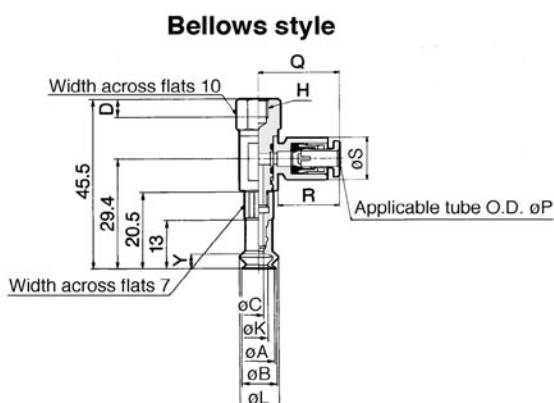
Applicable tube

Applicable tube O.D.	øP	Q	R	øS
ø6	6	24.3	16.8	12.8
ø8	8	26.2	18.7	15.2

Lateral Vacuum Entry without Buffer *Series ZPR*

Connection	One-touch Fitting	Pad Style	Bellows
Vacuum Entry	Lateral	Mounting	Female Thread

Pad Diameters **ø6, ø8**

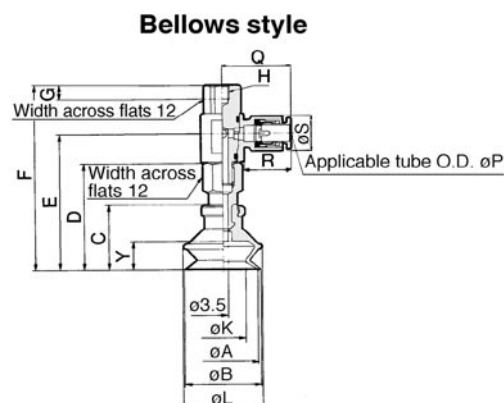


Model	øA	øB	øC	H: M4 D	H: M5 D	øK	øL	Y
ZPR06B	6	7	2.5	4	5	3.3	9.1	4
ZPR08B	8	9	2.5	4	5	4.7	10.1	4

Applicable tube

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

Pad Diameters **ø20, ø25, ø32**

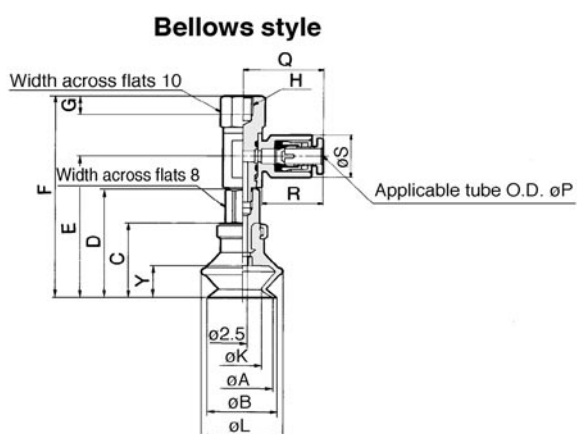


Model	øA	øB	C	D	E	F	H: M5 G	H: M6 G	H: M8 G	øK	øL	Y
ZPR20B	20	22	23.5	38.5	49.3	67.1	5	6	8	12.4	25	10.5
ZPR25B	25	27	24	39	49.8	67.6	5	6	8	15.6	28	10.5
ZPR32B	32	34	29	44	54.8	72.6	5	6	8	18.9	37	14

Applicable tube

Applicable tube O.D.	øP	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

Pad Diameters **ø10, ø13, ø16**

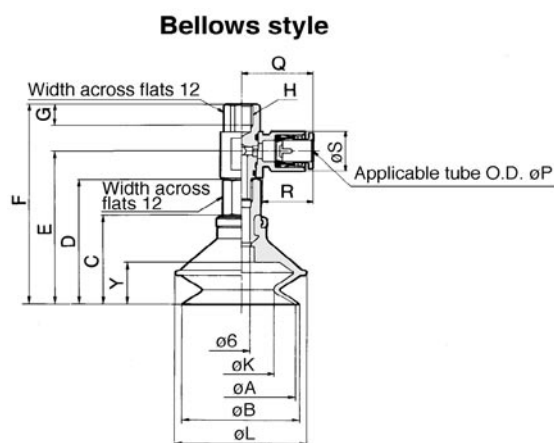


Model	øA	øB	C	D	E	F	H: M5 G	H: M6 G	øK	øL	Y
ZPR10B	10	12	16	25	33.9	50	5	6	5.5	13.8	5.5
ZPR13B	13	15	18.5	27.5	36.4	52.5	5	6	8.7	19	7.5
ZPR16B	16	18	20	29	37.9	54	5	6	9.9	21	8.5

Applicable tube

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

Pad Diameters **ø40, ø50**



Model	øA	øB	C	D	E	F	H: M6 G	H: M8 G	øK	øL	Y
ZPR40B	40	43	34	47.5	58.3	76.1	6	8	24.4	48	16
ZPR50B	50	53	38	51.5	62.3	80.1	6	8	32.4	57	19

Applicable tube

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



ZPR

Lateral Vacuum Entry with Buffer With One-touch Fitting



Specifications

Vacuum entry	Direction	
	Connection	
Applicable tube dia.	Lateral	
	With One-touch fitting	
	ø4, ø6 tube	
	ø4, ø6 tube	
Thread dia.	ø4, ø6, ø8 tube	
	ø4, ø8 tube	
	M8 X 1 Male thread	
	M10 X 1 Male thread	
Mounting	M10 X 1 Male thread	
	M14 X 1 Male thread	

Buffer style	Rotating (J)/Non-rotating (K)
Buffer stroke	For ø2 to ø8 — 6, 10, 15, 25mm
	For ø10 to ø32 — 10, 20, 30, 40, 50mm
	For ø40, ø50 — 10, 20, 30, 50mm

Pad Style

Pad style	Flat	Flat with ribs	Deep	Bellows
Pad dia. ø(mm)	2, 4, 6, 8 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 (colour)	NBR (Black), Silicon rubber (White), Urethane rubber (Brown), Fluorine rubber (Black with green mark) Conductive NBR (Black with one white mark), Conductive silicon rubber (Black with two white marks)			
Durometer	NBR (50°), Silicon rubber (40°), Urethane rubber/Fluorine rubber (60°) Conductive NBR (50°), Conductive silicon rubber (50°)			

Spring Reactive Force

N

Pad dia. (mm)	0 stroke	Stroke end
ø2 to ø8	0.8N	1.2N
ø10 to ø32	1.0N	3.0N
ø40, ø50	2.0N	5.0N

Weight Table

(g)

Stroke (mm)	Pad style	Flat/Flat with ribs			Deep			Bellows		
	Vacuum entry Model	04	06	08	04	06	08	04	06	08
6	ZPR 02 to 08	38	39	—	—	—	—	38	39	—
10	ZPR 10 to 16	39	40	—	39	40	—	40	41	—
10	ZPR 20 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)

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



P.10-78 to 10-83

Lateral Vacuum Entry with Buffer *Series ZPR*

How to Order

Series ZPR with buffer

ZPR 16 U GS K 20 06 A10

Pad dia. (mm)

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 ③ for applications.)

Vacuum entry

(Refer to Table ③ for applications.)

Buffer stroke

(Refer to Table ③ for applications.)

Buffer

J	Rotating
K	Non-rotating

Pad style

(Refer to Table ① for applications.)

U	Flat
C	Flat with ribs
D	Deep
B	Bellows

Material

N	NBR
S	Silicon rubber
U	Urethane rubber
F	Fluorine rubber
GN*	Conductive NBR (ø2 to ø16)
GS*	Conductive silicon rubber (ø2 to ø16)

*ø20 or larger are manufactured upon receipt of order.

Table ① Pad Dia. /Pad Style

Style \ Dia.(mm)	2	4	6	8	10	13	16	20	25	32	40	50
Flat	●	●	●	●	●	●	●	●	●	●	●	●
Flat with ribs	—	—	—	—	●	●	●	●	●	●	●	●
Deep	—	—	—	—	●	—	●	—	●	—	●	—
Bellows	—	—	●	●	●	●	●	●	●	●	●	●

Table ② Pad Dia. /Stroke

Stroke \ Dia.(mm)	2	4	6	8	10	13	16	20	25	32	40	50
6mm	●	●	●	●	—	—	—	—	—	—	—	—
10mm	●	●	●	●	●	●	●	●	●	●	●	●
15mm	●	●	●	●	—	—	—	—	—	—	—	—
20mm	—	—	—	—	●	●	●	●	●	●	●	●
25mm	●	●	●	●	—	—	—	—	—	—	—	—
30mm	—	—	—	—	●	●	●	●	●	●	●	●
40mm	—	—	—	—	●	●	●	●	●	●	—	—
50mm	—	—	—	—	●	●	●	●	●	●	●	●

Table ③ Vacuum Entry/Mounting Thread Dia.

	Symbol	Thread dia. /Port size	ø2 to ø8	ø10 to ø16	ø20 to ø32	ø40/ø50
Vacuum entry	One-touch fitting	04 ø4 tube	●	●	●	—
		06 ø6 tube	●	●	●	●
		08 ø8 tube	—	—	●	●
Mounting thread	Male thread	A8 M8 X 1	●	—	—	—
		A10 M10 X 1	—	●	●	—
		A14 M14 X 1	—	—	—	●

Series ZPR

Connection	One-touch Fitting	Pad Style	Flat
Vacuum Entry	Lateral	Mounting	Male Thread

Flat	ø2, ø4, ø6, ø8
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Flat style

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

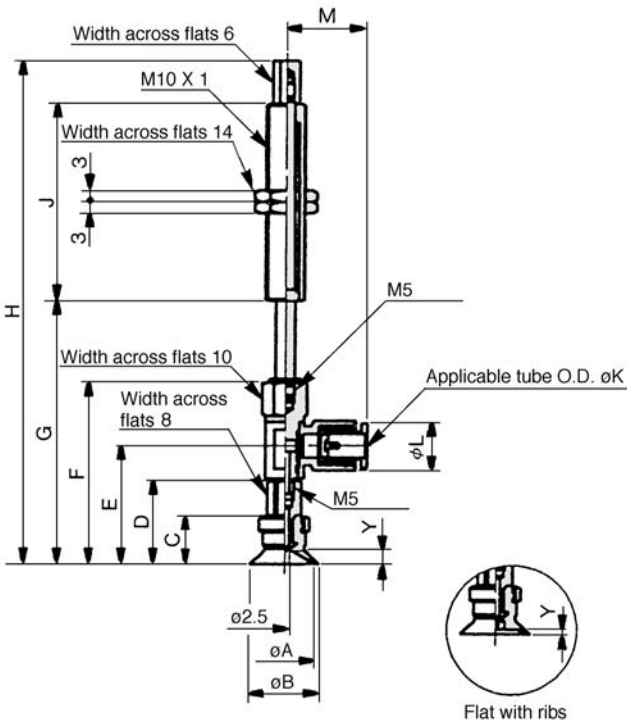
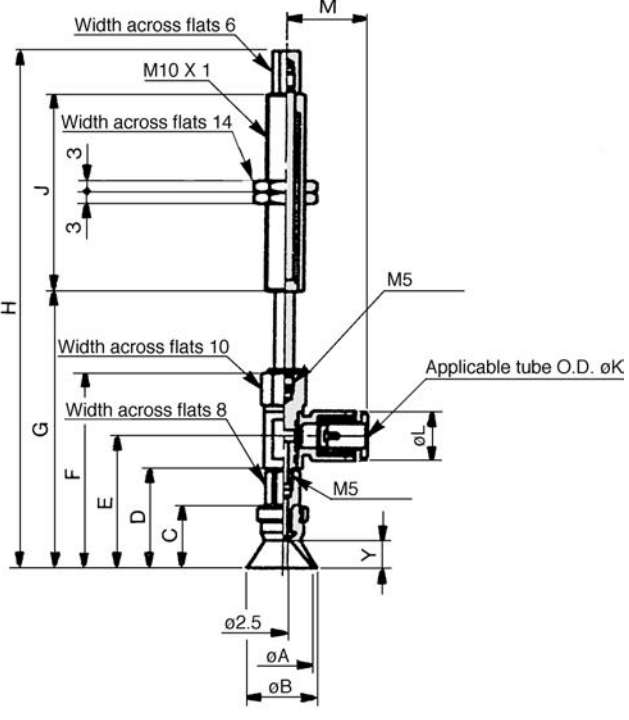
Dimensions by stroke

Model	D	E	F	G: ø4		G: ø6	
				H	J	H	J
ZPR□□U□□□ 6-0□-A8	52.5	78.5	15	10.4	20.6	12.8	21.6
ZPR□□U□□□10-0□-A8	55.5	109.5	43				
ZPR□□U□□□15-0□-A8	60.5	114.5					
ZPR□□U□□□25-0□-A8	70.5	124.5					

Lateral Vacuum Entry with Buffer *Series ZPR*

Connection	One-touch Fitting	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Lateral	Mounting	Male Thread

Flat/Flat with ribs	ø10, ø13, ø16	Deep	ø10, ø16
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Flat style/Flat with ribs

Model	A	B	C	D	E	F	Y	
							Flat	Flat w/ ribs
ZPR10 ^U _C □□□□□-0□A10	10	12	12	21	29.9	46	3	1.7
ZPR13 ^U _C □□□□□-0□A10	13	15	12	21	29.9	46	3	1.8
ZPR16 ^U _C □□□□□-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□□ ^U _C □□□□-10□A10	57	91	57.5	91.5	23
ZPR□□ ^U _C □□□□-10□A10	67	129	67.5	129.5	51
ZPR□□ ^U _C □□□□-10□A10	77	139	77.5	139.5	51
ZPR□□ ^U _C □□□□-10□A10	87	175	87.5	175.5	77
ZPR□□ ^U _C □□□□-10□A10	97	185	97.5	185.5	77

Deep style

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□□D□□□□10-0□A10	60	83	61	84	23
ZPR□□D□□□□20-0□A10	70	132	71	133	51
ZPR□□D□□□□30-0□A10	80	142	81	143	51
ZPR□□D□□□□40-0□A10	90	178	91	179	77
ZPR□□D□□□□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

Series ZPR

Connection	One-touch Fitting	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Lateral	Mounting	Male Thread

Flat/Flat with ribs	ø20, ø25, ø32	Deep	ø25
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Flat with ribs

Flat style/Flat with ribs

Model	A	B	C	D	E	F	Y	
							Flat	Flat w/ ribs
ZPR20 ^U _C □□□□-0□-A10	20	23	14	29	39.8	57.6	4	1.7
ZPR25 ^U _C □□□□-0□-A10	25	28		29	39.8	57.6	4	1.8
ZPR22 ^U _C □□□□-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□□ ^U _C □□□□10-0□-A10	68.6	102.6	69.1	103.1	23
ZPR□□ ^U _C □□□□20-0□-A10	78.6	140.6	79.1	141.1	51
ZPR□□ ^U _C □□□□30-0□-A10	88.6	150.6	89.1	151.1	
ZPR□□ ^U _C □□□□40-0□-A10	98.6	186.6	99.1	187.1	77
ZPR□□ ^U _C □□□□50-0□-A10	108.6	196.6	109.6	197.1	

Deep style

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

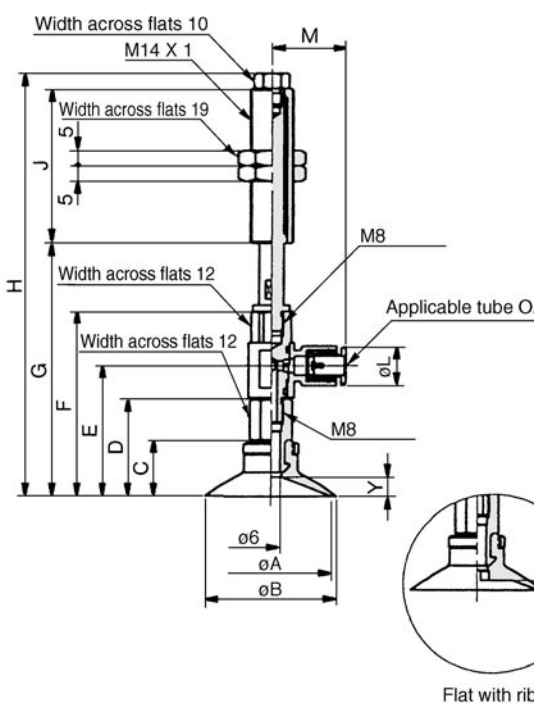
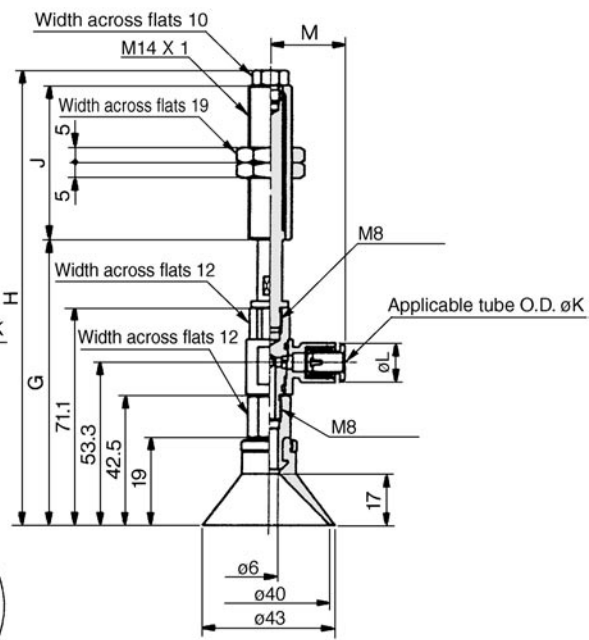
One-touch fitting

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

Lateral Vacuum Entry with Buffer *Series ZPR*

Connection	One-touch Fitting	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Lateral	Mounting	Male Thread

Flat/Flat with ribs	ø40, ø50	Deep	ø40
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Flat style/Flat with ribs

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

Dimensions by stroke

Model	ø40		ø32		J
	G	H	G	H	
ZPR□□ ^U _C □□□□10-0□-A14	72.6	140.6	73.6	141.6	50
ZPR□□ ^U _C □□□□20-0□-A14	82.6	137.6	83.6	138.6	
ZPR□□ ^U _C □□□□30-0□-A14	92.6	147.6	93.6	148.6	
ZPR□□ ^U _C □□□□50-0□-A14	112.6	192.6	113.6	193.6	75

Deep style

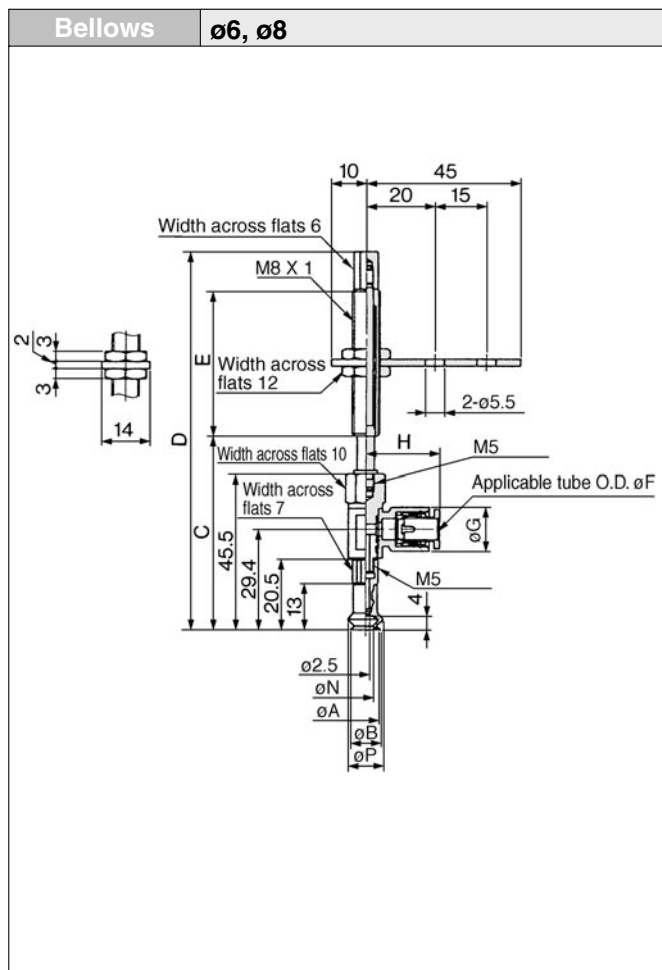
Model	G	H	J
ZPR40D□□□10-0□-A14	83.1	151.1	50
ZPR40D□□□20-0□-A14	93.1	148.1	
ZPR40D□□□30-0□-A14	103.1	158.1	
ZPR40D□□□50-0□-A14	123.1	203.1	75

One-touch fitting

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

Series ZPR

Connection	One-touch Fitting	Pad Style	Bellows
Vacuum Entry	Lateral	Mounting	Male Thread

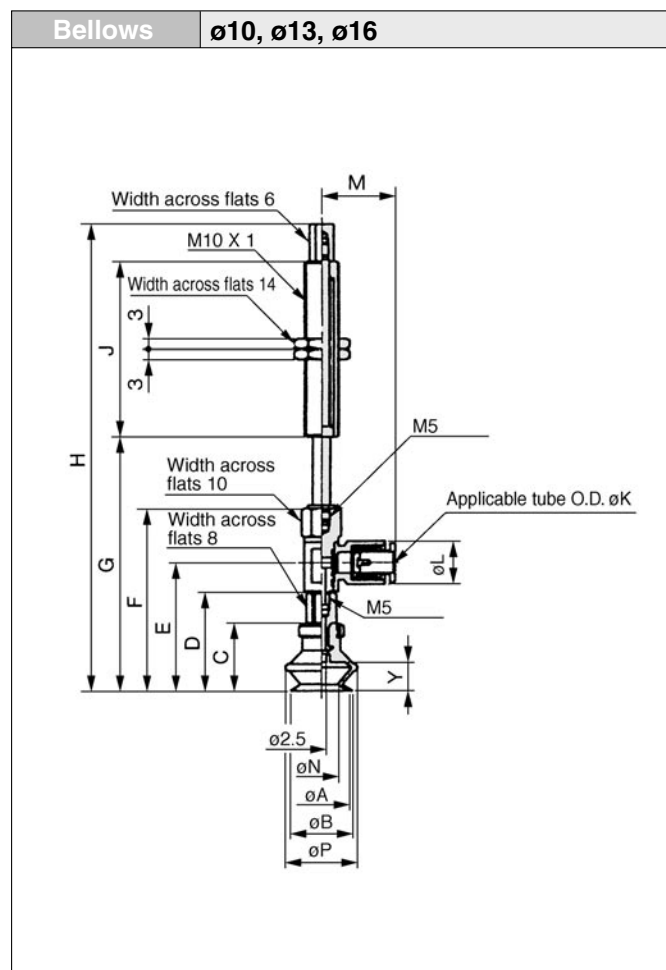


Bellows style

Model	A	B	N	P
ZPR06B□□□□-0□-A8	6	7	3.3	9.1
ZPR08B□□□□-0□-A8	8	9	4.7	10.1

Dimensions by stroke

Model	C	D	E	F: ø4		F: ø6	
				G	H	G	H
ZPR□□B□□□ 6-0□-A8	53.5	79.5	15	10.4	20.6	12.8	21.6
ZPR□□B□□□10-0□-A8	56.5	110.5	43				
ZPR□□B□□□15-0□-A8	61.5	115.5					
ZPR□□B□□□25-0□-A8	71.5	125.5					



Bellows style

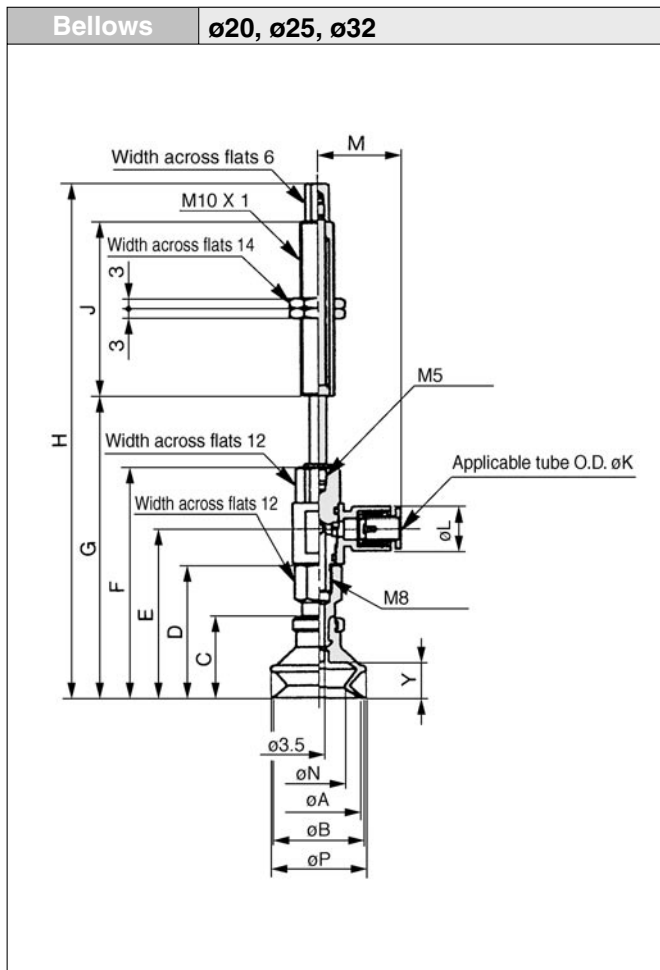
Model	A	B	C	D	E	F	N	P	Y
ZPR10B □□□□□-0□- A10	10	12	16	25	33.9	50	5.5	13.8	5.5
ZPR13B □□□□□-0□- A10	13	15	18.5	27.5	36.4	52.5	8.7	19	7.5
ZPR16B □□□□□-0□- A10	16	18	20	29	37.9	54	9.9	21	8.5

Dimensions by stroke

Model	ø10		ø13		ø16		J	K: ø4		K: ø6	
	G	H	G	H	G	H		L	M	L	M
ZPR□□B□□□10-0□-A10	61	95	63.5	97.5	65	99	23	10.4	20.6	12.8	21.6
ZPR□□B□□□20-0□-A10	71	133	73.5	135.5	75	137	51				
ZPR□□B□□□30-0□-A10	81	143	83.5	145.5	85	147	77				
ZPR□□B□□□40-0□-A10	91	179	93.5	181.5	95	183					
ZPR□□B□□□50-0□-A10	101	189	103.5	191.5	105	193					

Lateral Vacuum Entry with Buffer *Series ZPR*

Connection	One-touch Fitting	Pad Style	Bellows
Vacuum Entry	Lateral	Mounting	Male Thread

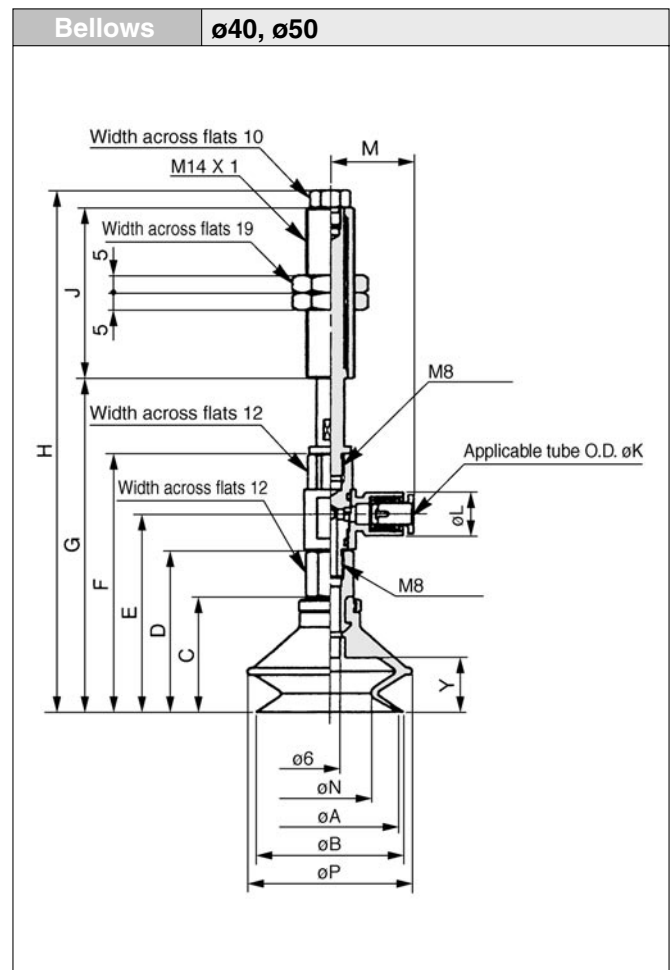


Bellows style

Model	A	B	C	D	E	F	N	P	Y
ZPR20B□□□□-0□-A10	20	22	23.5	38.5	49.3	67.1	12.4	25	10.5
ZPR25B□□□□-0□-A10	25	27	24	39	49.8	67.6	15.6	28	
ZPR32B□□□□-0□-A10	32	34	29	44	54.8	72.6	18.9	37	

Dimensions by stroke

Model	ø20		ø25		ø32		J	K: ø4		K: ø6		K: ø8	
	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	10.4	23.3	12.8	24.3	15.2	26.2
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	160.1	98.6	160.6	103.6	165.6	77						
ZPR□□B□□□40-0□-A10	108.1	196.1	108.6	196.6	113.6	201.6							
ZPR□□B□□□50-0□-A10	118.1	206.1	118.6	206.6	123.6	211.6							

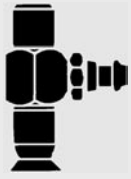


Bellows style

Model	A	B	C	D	E	F	N	P	Y
ZPR40B□□□□-0□-A14	40	43	34	47.5	58.3	76.1	24.4	48	16
ZPR50B□□□□-0□-A14	50	53	38	51.5	62.3	80.1	32.4	57	19

Dimensions by stroke

Model	ø40		ø50		J	K: ø6		K: ø8	
	G	H	G	H		L	M	L	M
ZPR□□B□□□10-0□-A14	88.1	156.1	92.1	160.1	50	12.8	24.3	15.2	26.2
ZPR□□B□□□20-0□-A14	98.1	153.1	102.1	157.1					
ZPR□□B□□□30-0□-A14	108.1	163.1	112.1	167.1					
ZPR□□B□□□50-0□-A14	128.1	208.1	132.1	212.1	75				



ZPY

Lateral Vacuum Entry without Buffer With Barb Fitting



Specifications

Vacuum Entry	Direction		Lateral	
	Connection		With barb fitting	
	Applicable tube dia.	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, ø50	ø6 Nylon tube, ø6 Urethane tube	
Mounting	Connection		Male thread	Female thread
	Thread dia.	ø2 to ø8	M5, M6	M4, M5
		ø10 to ø16	M5, M6	M5, M6
		ø20 to ø32	M6, M8 X 1	M5, M6, M8
		ø40, ø50	M6, M8 X 1	M6, M8

Pad Style

Pad style	Flat	Flat with ribs	Deep	Bellows
Pad dia. ø(mm)	2, 4, 6, 8, 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 (colour)	NBR (Black), Silicon rubber (White), Urethane rubber (Brown), Fluorine rubber (Black with green mark) Conductive NBR (Black with one white mark), Conductive silicon rubber (Black with two white marks)			
Hardness	NBR (50°), Silicon rubber (40°), Urethane rubber/Fluorine rubber (60°) Conductive NBR (50°), Conductive silicon rubber (50°)			

Weight Table/Male Thread (Female Thread)

Model	Flat			Flat with ribs			Deep			Bellows (g)		
	M5	M6	M8	M5	M6	M8	M5	M6	M8	M5	M6	M8
ZPY02 to ZPY08	15 (11)	15 (11)	—	—	—	—	—	—	—	15(11) except for ø2, ø4	15(11) except for 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.



P.10-78 to 10-83

Lateral Vacuum Entry without Buffer *Series ZPY*

Model

Model	Pad dia. ø(mm)	Pad style				Vacuum entry (Barb fitting)	Mounting thread	
		Flat (U)	Flat w/ ribs (C)	Deep (D)	Bellows (B)		Male thread	Female thread
ZPY02	2	●	—	—	—	● ø4, ø6 tube	● M5 M6	● M4 M5
ZPY04	4	●	—	—	—			
ZPY06	6	●	—	—	●			
ZPY08	8	●	—	—	●			
ZPY10	10	●	●	●	●			
ZPY13	13	●	●	—	●			
ZPY16	16	●	●	●	●	● ø4, ø6 tube	● M6 M8 X 1	● M5 M6 M8
ZPY20	20	●	●	—	●			
ZPY25	25	●	●	●	●			
ZPY32	32	●	●	—	●			
ZPY40	40	●	●	●	●	● ø6 tube	● M6 M8 X 1	● M6 M8
ZPY50	50	●	●	—	●			

How to Order

Series ZPY
without buffer

ZPY 02 U N N4 A5

Pad dia. (mm)

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



(Refer to Table ① for applications.)

Pad style

U	Flat
C	Flat with ribs
D	Deep
B	Bellows

Mounting thread



(Refer to Table ② for applications.)

Vacuum entry



(Refer to Table ② for applications.)

Table ② Vacuum Entry/Mounting Thread Dia.

Connection	Symbol	Thread Dia. /Port size	ø2 to ø8	ø10 to ø16	ø20 to ø32	ø40, ø50
Vacuum Entry	N4	ø4 Nylon tube	●	●	●	—
	N6	ø6 Nylon tube	●	●	●	●
	U4	ø4 Urethane tube	●	●	●	—
	U6	ø6 Urethane tube	●	●	●	●
Mounting	A5	M5	●	●	—	—
	A6	M6	●	●	●	●
	A8	M8 X 1	—	—	●	●
	B4	M4	●	—	—	—
	B5	M5	●	●	●	—
	B6	M6	—	●	●	●
	B8	M8	—	—	●	●

Material

N	NBR
S	Silicon rubber
U	Urethane rubber
F	Fluorine rubber
GN*	Conductive NBR (ø2 to ø16)
GS*	Conductive silicon rubber (ø2 to ø16)

*ø20 or larger are manufactured upon receipt of order.

Table ① Pad Dia. /Pad Style

Style \ Dia. (mm)	2	4	6	8	10	13	16	20	25	32	40	50
Flat	●	●	●	●	●	●	●	●	●	●	●	●
Flat with ribs	—	—	—	—	●	●	●	●	●	●	●	●
Deep	—	—	—	—	●	—	●	—	●	—	●	—
Bellows	—	—	●	●	●	●	●	●	●	●	●	●

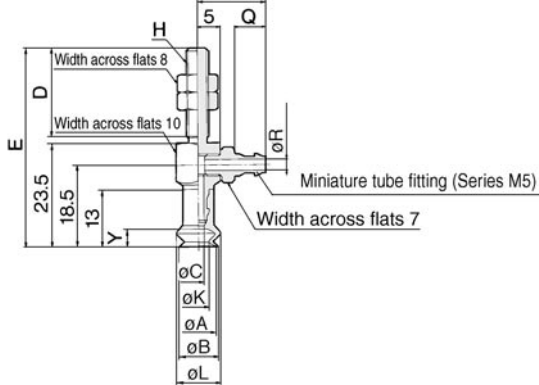
Lateral Vacuum Entry without Buffer *Series ZPY*

Connection Barb Fitting
Vacuum Entry Lateral

Pad Style Bellows
Mounting Male Thread

Pad Diameters **ø6, ø8**

Bellows style



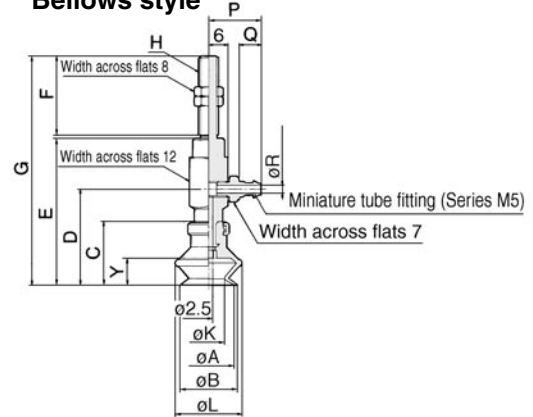
Model	øA	øB	øC	H: M5		H: M6		øK	øL	Y
				D	E	D	E			
ZPY06B	6	7	2.5	20	45	25	50.5	3.3	9.1	4
ZPY08B	8	9						4.7	10.1	

Applicable tube

Applicable tube	P	Q	øR
N4 (Nylon tube, ø4, ø2.5)	13.5	5	1.8
N6 (Nylon tube, ø6, ø4)	15.5	7	2.5
U4 (Urethane tube, ø4, ø2.5)	13.5	5	1.8
U6 (Urethane tube, ø6, ø4)	15.5	7	2.5

Pad Diameters **ø20, ø25, ø32**

Bellows style



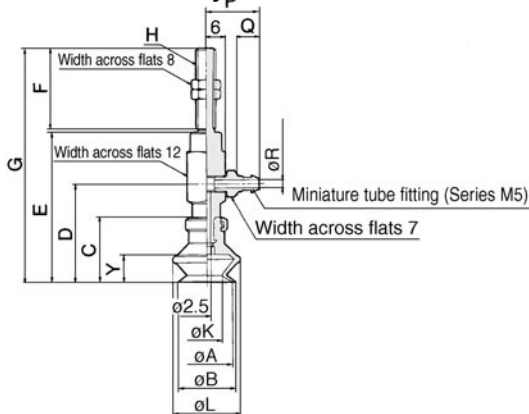
Model	øA	øB	C	D	E	H: M6		H: M8 X 1		øK	øL	Y
						F	G	F	G			
ZPY20B	20	22	23.5	33.5	51.5			79.5		69.5	12.4	25
ZPY25B	25	27	24	34	52	25	80	15		70	15.6	28
ZPY32B	32	34	29	39	57		85			75	18.9	37

Applicable tube

Applicable tube	P	Q	øR
N4 (Nylon tube, ø4, ø2.5)	14.5	5	1.8
N6 (Nylon tube, ø6, ø4)	16.5	7	2.5
U4 (Urethane tube, ø6, ø2.5)	14.5	5	1.8
U6 (Urethane tube, ø6, ø4)	16.5	7	2.5

Pad Diameters **ø10, ø13, ø16**

Bellows style



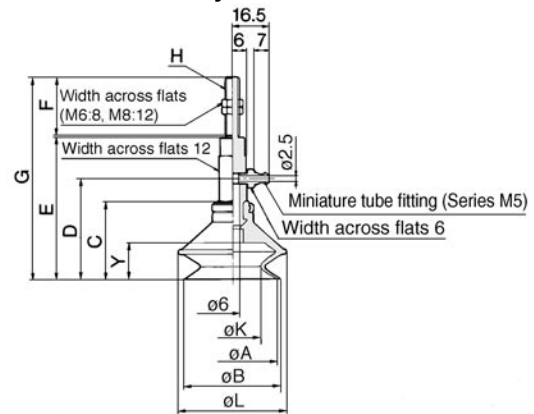
Model	øA	øB	C	D	E	H: M5		H: M6		øK	øL	Y
						F	G	F	G			
ZPY10B	10	12	16	26	42			63		68	5.5	13.8
ZPY13B	13	15	18.5	28.5	44.5	20	65.5	25		70.5	8.7	19
ZPY16B	16	18	20	30	46		67			72	9.9	21

Applicable tube

Applicable tube	P	Q	øR
N4 (Nylon tube, ø4, ø2.5)	14.5	5	1.8
N6 (Nylon tube, ø6, ø4)	16.5	7	2.5
U4 (Urethane tube, ø4, ø2.5)	14.5	5	1.8
U6 (Urethane tube, ø6, ø4)	16.5	7	2.5

Pad Diameters **ø40, ø50**

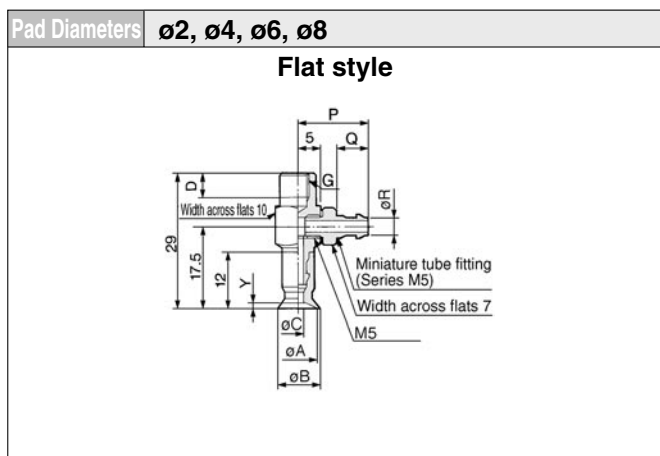
Bellows style



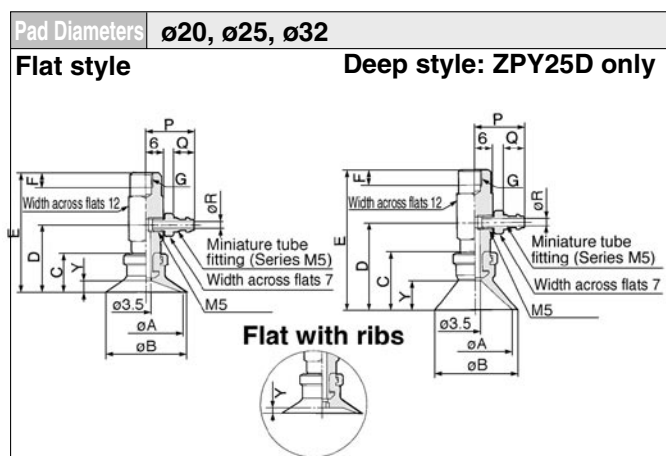
Model	øA	øB	C	D	E	H: M6		H: M8 X 1		øK	øL	Y
						F	G	F	G			
ZPY40B	40	43	34	44	62			88		78	24.4	48
ZPY50B	50	53	38	48	66	25	92	15		82	32.4	57

Series ZPY

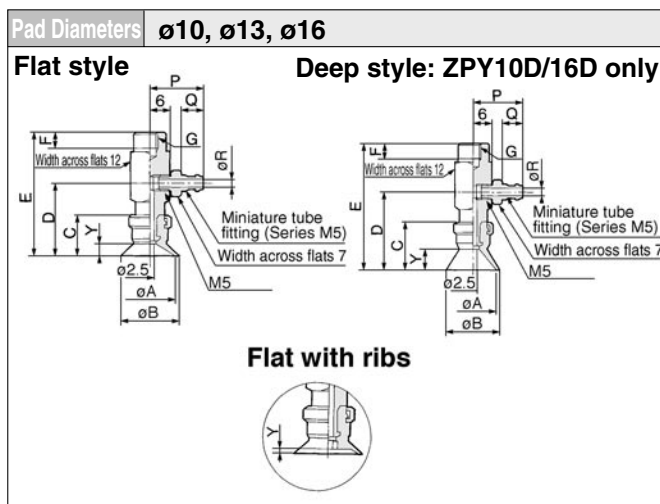
Connection	Barb Fitting	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Lateral	Mounting	Female Thread



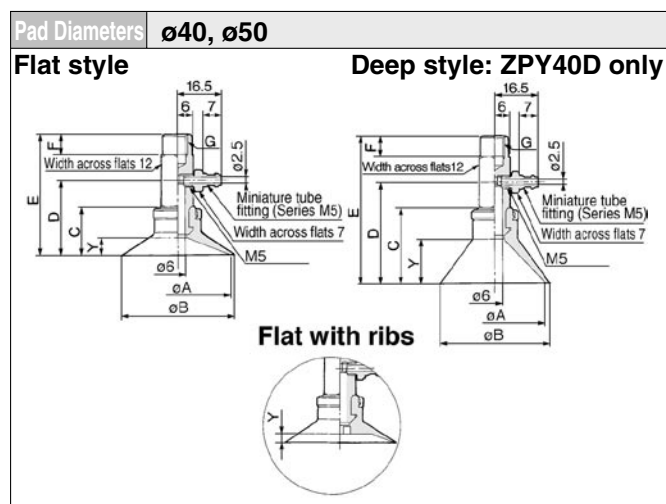
Flat style/Flat with ribs							Applicable tube			
Model	ØA	ØB	ØC	E: M4	E: M5	Y	Applicable type O.D	P	Q	ØR
ZPY02U	2	2.6	1.2	4	5	0.8	N4 (Nylon tube $\phi 4, \phi 2.5$)	13.5	5	1.8
ZPY04U	4	4.8	1.6			0.8	N6 (Nylon tube $\phi 6, \phi 4$)	15.5	7	2.5
ZPY06U	6	7	2.5			1	U4 (Soft tube $\phi 4, \phi 2.5$)	13.5	5	1.8
ZPY08U	8	9	2.5			1	U6 (Soft tube $\phi 6, \phi 4$)	15.5	7	2.5



Flat style/Flat with ribs							Applicable tube			
Model	ØA	ØB	C	D	E	Y	Applicable type O.D	P	Q	ØR
ZPY20U	20	23	14	24	42	1.7	N4 (Nylon tube $\phi 4, \phi 2.5$)	14.5	5	1.8
ZPY25U	25	28	14.5	24.5	42.5	1.8	N6 (Nylon tube $\phi 6, \phi 4$)	16.5	7	2.5
ZPY32U	32	35	14.5	24.5	42.5	2.3	U4 (Soft tube $\phi 4, \phi 2.5$)	14.5	5	1.8
							U6 (Soft tube $\phi 6, \phi 4$)	16.5	7	2.5



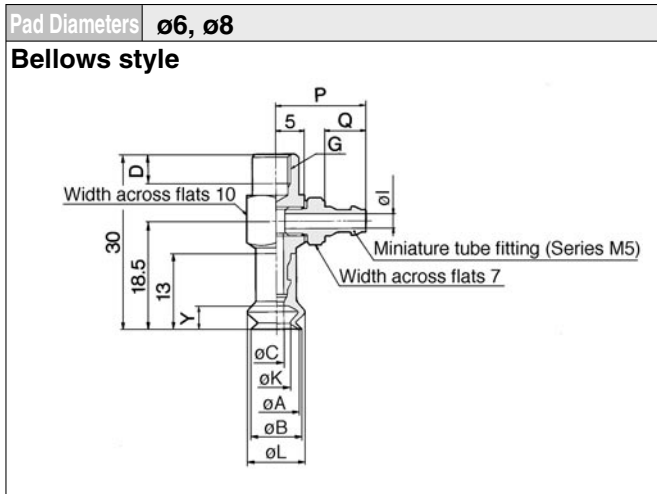
Flat style/Flat with ribs							Applicable tube			
Model	ØA	ØB	C	D	E	Y	Applicable type O.D	P	Q	ØR
ZPY10U	10	12	12	22	38	1.7	N4 (Nylon tube $\phi 4, \phi 2.5$)	14.5	5	1.8
ZPY13U	13	15	12.5	22.5	38.5	1.8	N6 (Nylon tube $\phi 6, \phi 4$)	16.5	7	2.5
ZPY16U	16	18	12.5	22.5	38.5	1.2	U4 (Soft tube $\phi 4, \phi 2.5$)	14.5	5	1.8
							U6 (Soft tube $\phi 6, \phi 4$)	16.5	7	2.5



Flat style/Flat with ribs							Applicable tube			
Model	ØA	ØB	C	D	E	Y	Applicable type O.D	P	Q	ØR
ZPY40U	40	43	18.5	28.5	46.5	6.5	N4 (Nylon tube $\phi 4, \phi 2.5$)	14.5	5	1.8
ZPY50U	50	53	19.5	29.5	47.5	3.8	N6 (Nylon tube $\phi 6, \phi 4$)	16.5	7	2.5
							U4 (Soft tube $\phi 4, \phi 2.5$)	14.5	5	1.8
							U6 (Soft tube $\phi 6, \phi 4$)	16.5	7	2.5

Lateral Vacuum Entry without Buffer *Series ZPY*

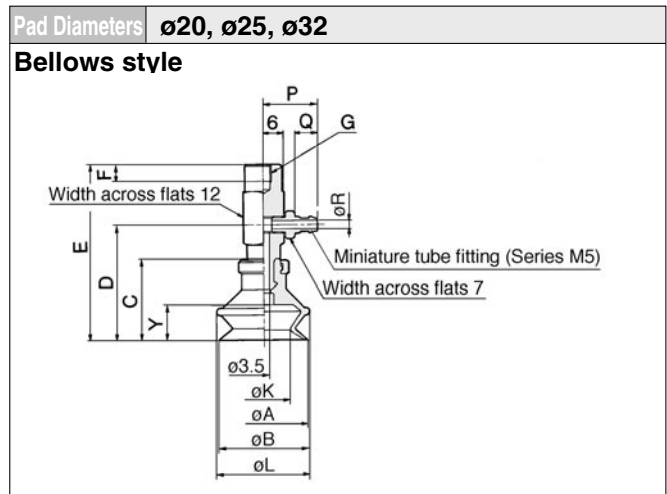
Connection	Barb Fitting	Pad Style	Bellows
Vacuum Entry	Lateral	Mounting	Female Thread



Model	ϕA	ϕB	ϕC	G: M4 D	G: M5 D	ϕK	ϕL	Y
ZPY06B	6	7	2.5	4	5	3.3	9.1	4
ZPY08B	8	9	2.5	4	5	4.7	10.1	4

Applicable tube

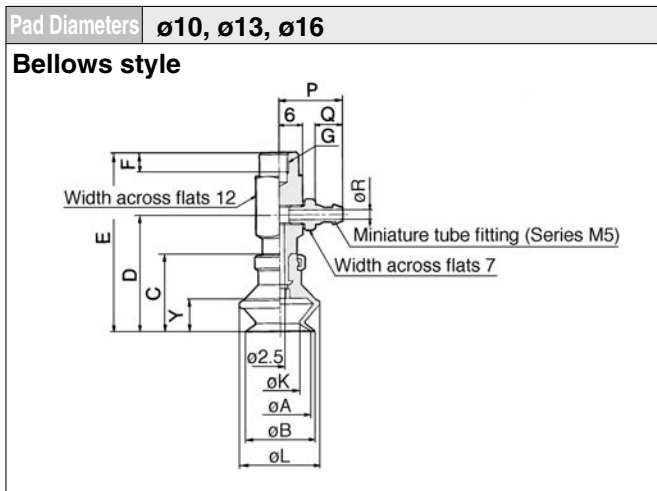
Applicable tube	P	Q	ϕR
N4 (Nylon tube, $\phi 4, \phi 2.5$)	13.5	5	1.8
N6 (Nylon tube, $\phi 6, \phi 4$)	15.5	7	2.5
U4 (Urethane tube, $\phi 4, \phi 2.5$)	13.5	5	1.8
U6 (Urethane tube, $\phi 6, \phi 4$)	15.5	7	2.5



Model	ϕA	ϕB	C	D	E	G: M5 F	G: M6 F	G: M8 F	ϕK	ϕL	Y
ZPY20B	20	22	23.5	33.5	51.5				12.4	25	10.5
ZPY25B	25	27	24	34	52	5	6	8	15.6	28	10.5
ZPY32B	32	34	29	39	57				18.9	37	14

Applicable tube

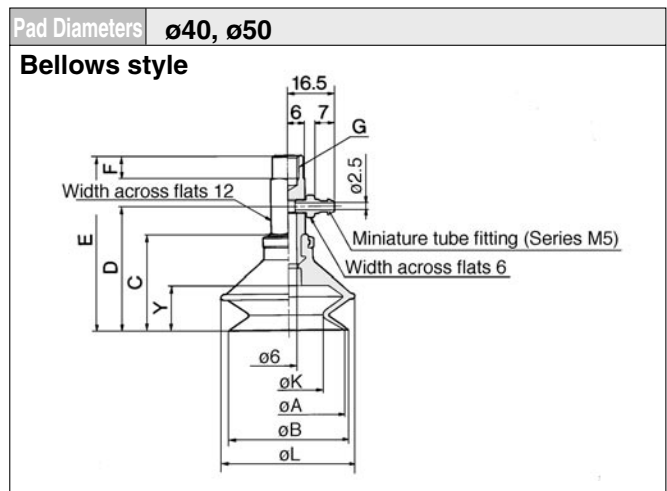
Applicable tube	P	Q	ϕR
N4 (Nylon tube, $\phi 4, \phi 2.5$)	14.5	5	1.8
N6 (Nylon tube, $\phi 6, \phi 4$)	16.5	7	2.5
U4 (Urethane tube, $\phi 4, \phi 2.5$)	14.5	5	1.8
U6 (Urethane tube, $\phi 6, \phi 4$)	16.5	7	2.5



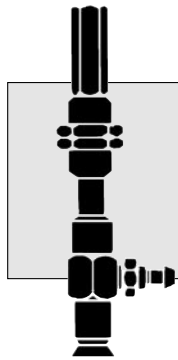
Model	ϕA	ϕB	C	D	E	G: M5 F	G: M6 F	ϕK	ϕL	Y
ZPY10B	10	12	16	26	42			5.5	13.8	5.5
ZPY13B	13	15	18.5	28.5	44.5	5	6	8.7	19	7.5
ZPY16B	16	18	20	30	46			9.9	21	8.5

Applicable tube

Applicable tube	P	Q	ϕR
N4 (Nylon tube, $\phi 4, \phi 2.5$)	14.5	5	1.8
N6 (Nylon tube, $\phi 6, \phi 4$)	16.5	7	2.5
U4 (Urethane tube, $\phi 4, \phi 2.5$)	14.5	5	1.8
U6 (Urethane tube, $\phi 6, \phi 4$)	16.5	7	2.5



Model	ϕA	ϕB	C	D	E	G: M6 F	G: M8 F	ϕK	ϕL	Y
ZPY40B	40	43	34	44	62			24.4	48	16
ZPY50B	50	53	38	48	66	6	8	32.4	57	19



ZPY

Lateral Vacuum Entry with Buffer With Barb Fitting

Specifications

Vacuum entry	Direction		Lateral
	Connection		With barb fitting
	Applicable tube dia.	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, ø50		ø6 Nylon tube, ø6 Urethane tube	
Mounting	Thread dia.	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, ø50	M14 X 1 Male thread
Buffer style			Rotating (J)/Non-rotating (K)
Buffer stroke			ø2 to ø8 — 6mm
			ø10 to ø50 — 10mm

Pad Style

Pad style	Flat	Flat with ribs	Deep	Bellows
Pad dia. ø(mm)	2, 4, 6, 8, 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 (Colour)	NBR (Black), Silicon rubber (White), Urethane rubber (Brown), Fluorine rubber (Black with green mark) Conductive NBR (Black with one white mark), Conductive silicon rubber (Black with two white marks)			
Hardness	NBR (50°), Silicon rubber (40°), Urethane rubber/Fluorine rubber (60°) Conductive NBR (50°), Conductive silicon rubber (50°)			

Spring Reactive Force

N

Pad dia. (mm)	0 Stroke	Stroke end
ø2 to ø8	0.8N	1.2N
ø10 to ø32	1.0N	3.0N
ø40, ø50	2.0N	5.0N

Weight Table

(g)

Stroke (mm)	Pad Model	Flat/Flat w/ ribs	Deep	Bellows
6	ZPY 02 to 08	33	—	33
10	ZPY 10 to 16	45	45	46
10	ZPY 20 to 25	50	51	53
	ZPY 32	52	—	58
10	ZPY 40	115	117	127
	ZPY 50	132	—	134

Weight by Stroke

(g)

Model	Stroke (mm)	10	15	20	25	30	40	50
ZPY02 to 08		+7	+8	—	+9	—	—	—
ZPY10 to 25		—	—	+12	—	+14	+26	+28
ZPY40/50		—	—	-5.5	—	-1.5	—	+30



P.10-78 to 10-83

Lateral Vacuum Entry with Buffer *Series ZPY*

How to Order

Series ZPY
with buffer

ZPY 16 U GS K 20 U6 A10

Pad dia. (mm)

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 style



(Refer to Table ① for applications.)

U	Flat
C	Flat with ribs
D	Deep
B	Bellows

Material

N	NBR
S	Silicon rubber
U	Urethane rubber
F	Fluorine rubber
GN*	Conductive NBR (ø2 to ø16)
GS*	Conductive silicon rubber (ø2 to ø16)

*ø20 or larger are manufactured upon receipt of order.

Mounting thread



(Refer to Table ③ for applications.)

Vacuum entry



(Refer to Table ③ for applications.)

Buffer stroke



(Refer to Table ② for applications.)

Buffer style

J	Rotating
K	Non-rotating

Table ① Pad Dia. /Pad Style

Dia. (mm) \ Style	2	4	6	8	10	13	16	20	25	32	40	50
Flat	●	●	●	●	●	●	●	●	●	●	●	●
Flat with ribs	—	—	—	—	●	●	●	●	●	●	●	●
Deep	—	—	—	—	●	—	●	—	●	—	●	—
Bellows	—	—	●	●	●	●	●	●	●	●	●	●

Table ② Pad Dia. /Stroke

Dia. (mm) \ Stroke	2	4	6	8	10	13	16	20	25	32	40	50
6mm	●	●	●	●	—	—	—	—	—	—	—	—
10mm	●	●	●	●	●	●	●	●	●	●	●	●
15mm	●	●	●	●	—	—	—	—	—	—	—	—
20mm	—	—	—	—	●	●	●	●	●	●	●	●
25mm	●	●	●	●	—	—	—	—	—	—	—	—
30mm	—	—	—	—	●	●	●	●	●	●	●	●
40mm	—	—	—	—	●	●	●	●	●	●	—	—
50mm	—	—	—	—	●	●	●	●	●	●	●	●

Table ③ Vacuum Entry/Mounting Thread Dia.

	Symbol	Thread dia. /Port size	ø2 to ø8	ø10 to ø32	ø40, ø50
Vacuum entry	N4	ø4 Nylon tube	●	●	—
	N6	ø6 Nylon tube	●	●	●
	U4	ø4 Urethane tube	●	●	—
	U6	ø6 Urethane tube	●	●	●
Mounting	A8	M8 X 1	●	—	—
	A10	M10 X 1	—	●	—
	A14	M14 X 1	—	—	●

Series ZPY

Connection	Barb Fitting	Pad Style	Flat
Vacuum Entry	Lateral	Mounting	Male Thread

Flat	ø2, ø4, ø6, ø8
-------------	-----------------------

Flat style

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

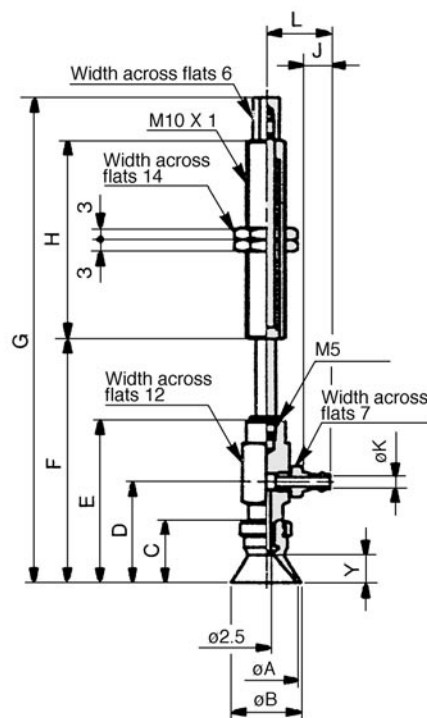
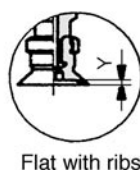
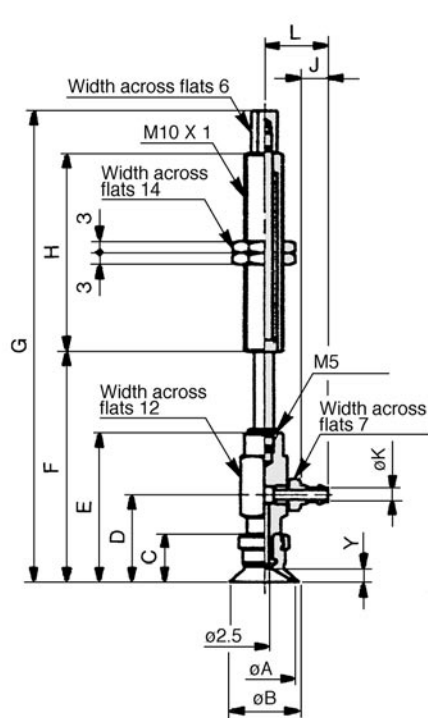
Dimensions by stroke

Model	D	E	F	ø4 tube			ø6 tube		
				G	H	J	G	H	J
ZPY□□U□□□ 6-□□-A8	37	63	15	5	1.8	12.5	7	2.5	15.5
ZPY□□U□□□10-□□-A8	40	94	43						
ZPY□□U□□□15-□□-A8	45	99							
ZPY□□U□□□25-□□-A8	55	109							

Lateral Vacuum Entry with Buffer *Series ZPY*

Connection	Barb Fitting	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Lateral	Mounting	Male Thread

Flat/Flat with ribs	ø10, ø13, ø16	Deep	ø10, ø16
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Flat style/Flat with ribs

Model	A	B	C	D	E	Y	
						Flat	Flat w/ ribs
ZPY10 ^U □□□□□-□□-□□A10	10	12	12	22	38	3	1.7
ZPY13 ^U □□□□□-□□-□□A10	13	15	12	22	38	3	1.8
ZPY16 ^U □□□□□-□□-□□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□□ ^U □□□□□10-□□-□□A10	49	83	49.5	83.5	23
ZPY□□ ^U □□□□□20-□□-□□A10	59	121	59.5	121.5	51
ZPY□□ ^U □□□□□30-□□-□□A10	69	131	69.5	131.5	51
ZPY□□ ^U □□□□□40-□□-□□A10	79	167	79.5	167.5	77
ZPY□□ ^U □□□□□50-□□-□□A10	89	177	89.5	177.5	77

Deep style

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□□D□□□□□10-□□-□□A10	52	86	53	87	23
ZPY□□D□□□□□20-□□-□□A10	62	124	63	125	51
ZPY□□D□□□□□30-□□-□□A10	72	134	73	135	51
ZPY□□D□□□□□40-□□-□□A10	82	170	83	171	77
ZPY□□D□□□□□50-□□-□□A10	92	180	93	181	77

Dimensions by tube

Model	J	K	L
ZPY□□□□□□□□□□□4-A10	5	1.8	14.5
ZPY□□□□□□□□□□□6-A10	7	2.5	16.5

Series ZPY

Connection	Barb Fitting	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Lateral	Mounting	Male Thread

Flat/Flat with ribs	ø20, ø25, ø32	Deep	ø25
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Flat style/Flat with ribs

Model	A	B	C	D	E	Y	
						Flat	Flat w/ ribs
ZPY20 ^U _C □□□□□-□□A10	20	23	14	24	42	4	1.7
ZPY25 ^U _C □□□□□-□□A10	25	28					1.8
ZPY32 ^U _C □□□□□-□□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□□ ^U _C □□□□10-□□A10	53	87	53.5	87.5	23
ZPY□□ ^U _C □□□□20-□□A10	63	125	63.5	125.5	51
ZPY□□ ^U _C □□□□30-□□A10	73	135	73.5	135.5	77
ZPY□□ ^U _C □□□□40-□□A10	83	171	83.5	171.5	
ZPY□□ ^U _C □□□□50-□□A10	93	181	93.5	181.5	

Deep style

Model	F	G	H
ZPY25D□□□10-□□A10	59	93	23
ZPY25D□□□20-□□A10	69	131	51
ZPY25D□□□30-□□A10	79	141	77
ZPY25D□□□40-□□A10	89	177	
ZPY25D□□□50-□□A10	99	187	

Dimensions by tube

Model	J	K	L
ZPY□□□□□□□□□□4-A10	5	1.8	14.5
ZPY□□□□□□□□□□6-A10	7	2.5	16.5

Lateral Vacuum Entry with Buffer *Series ZPY*

Connection	Barb Fitting	Pad Style	Flat/Flat with Ribs/Deep
Vacuum Entry	Lateral	Mounting	Male Thread

Flat/Flat with ribs	ø40, ø50	Deep	ø40
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Flat with ribs

Flat style/Flat with ribs

Model	A	B	C	D	E	Y	
						Flat	Flat w/ ribs
ZPY40 ^U _C □□□□□□-□6-A14	40	43	18.5	28.5	46.5	6.5	3.3
ZPY50 ^U _C □□□□□□-□6-A14	50	53	19.5	29.5	47.5	7.5	3.8

Dimensions by stroke

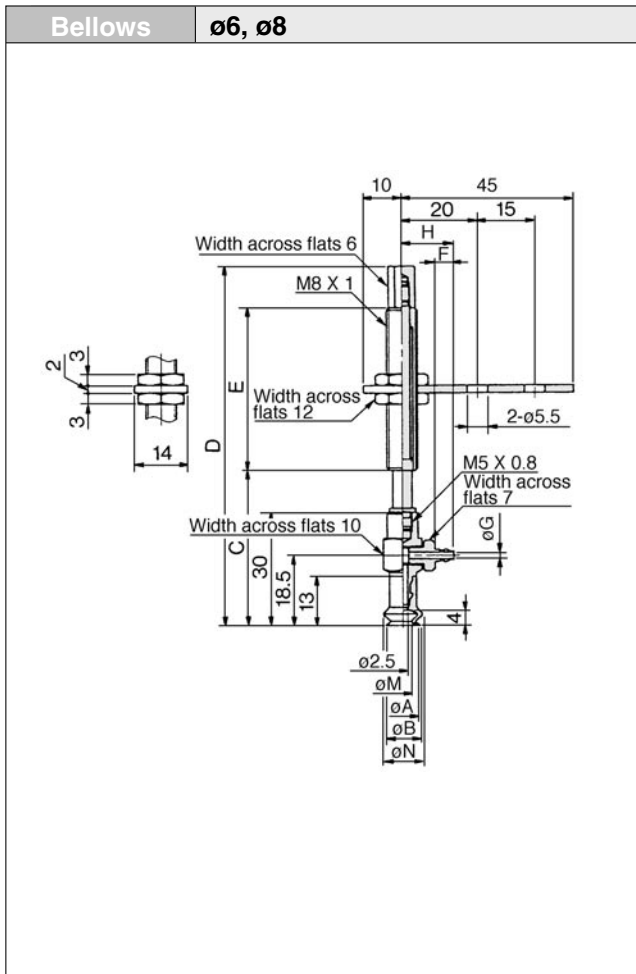
Model	ø40		ø50		H
	F	G	F	G	
ZPY□□ ^U _C □□□□□10-□6-A14	58.5	126.5	59.5	127.5	50
ZPY□□ ^U _C □□□□□20-□6-A14	68.5	123.5	69.5	124.5	
ZPY□□ ^U _C □□□□□30-□6-A14	78.5	133.5	79.5	134.5	
ZPY□□ ^U _C □□□□□40-□6-A14	98.5	178.5	99.5	179.5	75

Deep style

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

Series ZPY

Connection	Barb Fitting	Pad Style	Bellows
Vacuum Entry	Lateral	Mounting	Male Thread

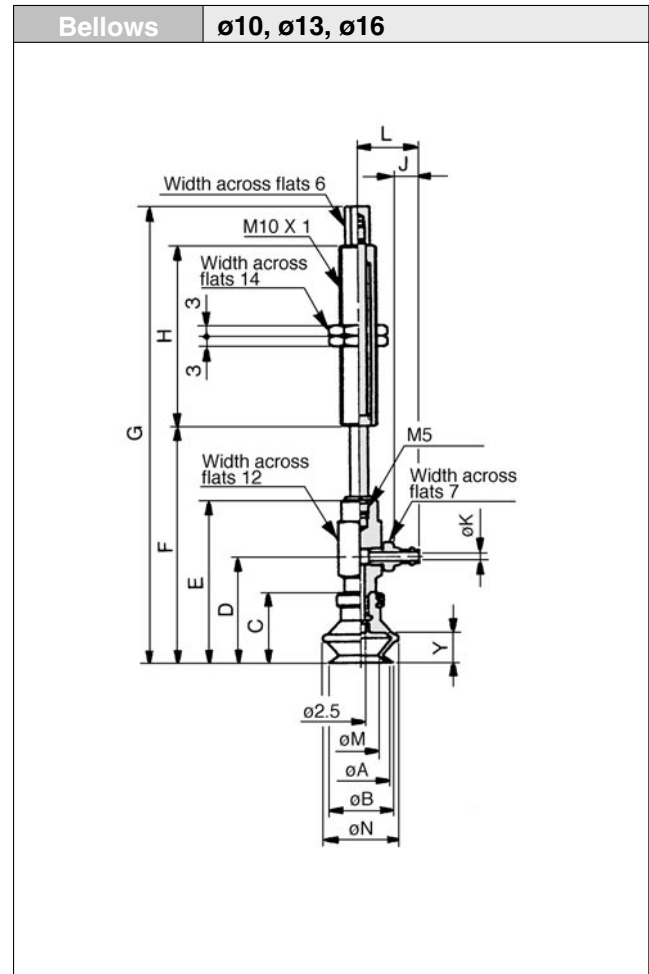


Bellows style

Model	A	B	M	N
ZPY06B□□□□□-□□- A8	6	7	3.3	9.1
ZPY08B□□□□□-□□- A8	8	9	4.7	10.1

Dimensions by stroke

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



Bellows style

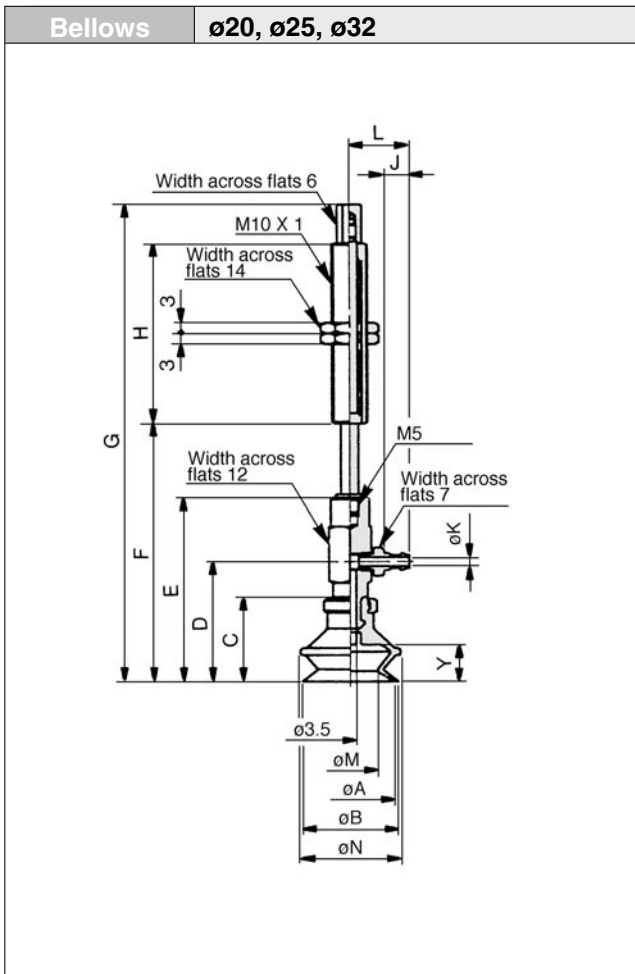
Model	A	B	C	D	E	M	N	Y
ZPY10B□□□□□-□□- A10	10	12	16	25	42	5.5	13.8	5.5
ZPY13B□□□□□-□□- A10	13	15	18.5	28.5	44.5	8.7	19	7.5
ZPY16B□□□□□-□□- A10	16	18	20	30	46	9.9	21	8.5

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□□□□10-□□- A10	53	87	55.5	89.5	57	91	23	5	1.8	14.5	7	2.5	16.5
ZPY□□B□□□□20-□□- A10	63	125	65.5	127.5	67	129	51						
ZPY□□B□□□□30-□□- A10	73	135	75.5	137.5	77	139	77						
ZPY□□B□□□□40-□□- A10	83	171	85.5	173.5	87	175	77						
ZPY□□B□□□□50-□□- A10	93	181	95.5	183.5	97	185	77						

Lateral Vacuum Entry with Buffer *Series ZPY*

Connection	Barb Fitting	Pad Style	Bellows
Vacuum Entry	Lateral	Mounting	Male Thread

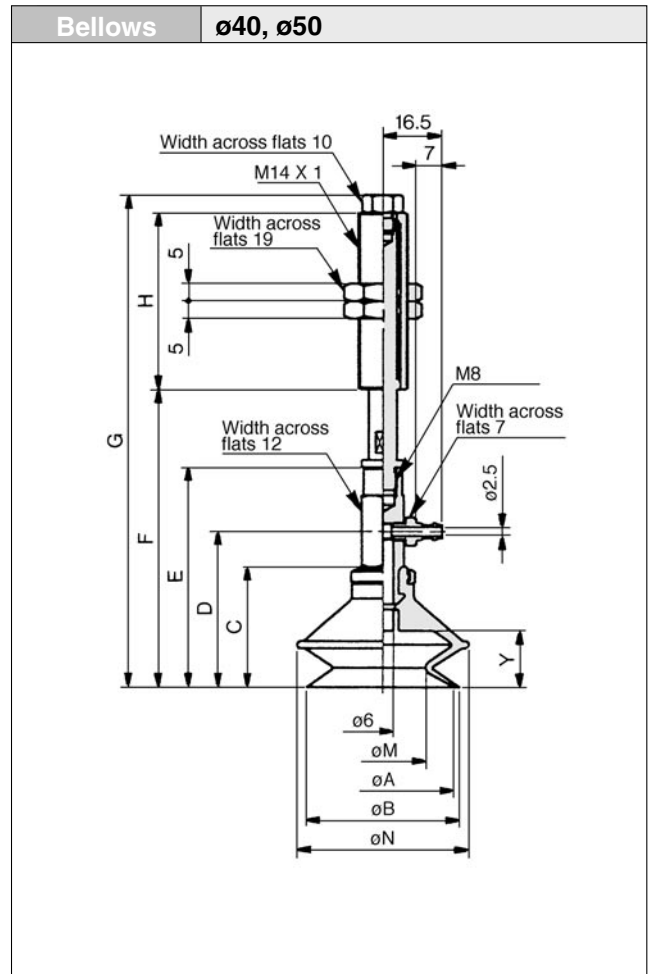


Bellows style

Model	A	B	C	D	E	M	N	Y
ZPY20B□□□□□-□□-A10	20	22	23.5	33.5	51.5	12.4	25	10.5
ZPY25B□□□□□-□□-A10	25	27	24	34	52	15.6	28	
ZPY32B□□□□□-□□-A10	32	34	29	39	57	18.9	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	5	1.8	14.5	7	2.5	16.5
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	77						
ZPY□□B□□□40-□□-A10	94.5	182.5	95	183	100	188							
ZPY□□B□□□50-□□-A10	104.5	192.5	105	193	110	198							



Bellows style

Model	A	B	C	D	E	M	N	Y
ZPY40B□□□□□-□6-A14	40	43	34	44	62	24.4	48	16
ZPY50B□□□□□-□6-A14	50	53	38	48	66	32.4	57	19

Dimensions by stroke

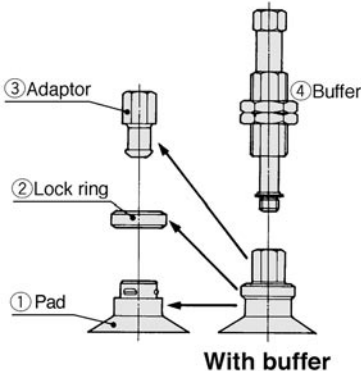
Model	ø40		ø50		H
	F	G	F	G	
ZPY□□B□□□□10-□6-A14	74	142	78	146	50
ZPY□□B□□□□20-□6-A14	84	139	88	143	
ZPY□□B□□□□30-□6-A14	94	149	98	153	
ZPY□□B□□□□50-□6-A14	114	194	118	198	75

Vacuum Pad/Components

Refer to p.10-75 for part nos. of ③ to ⑥.

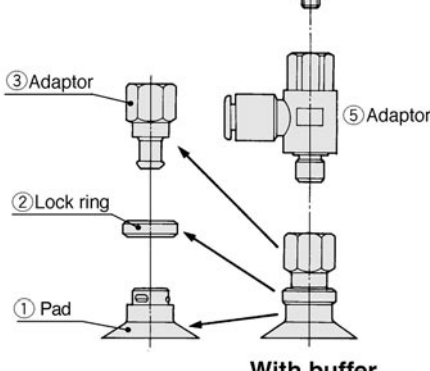
Construction

Series ZPT



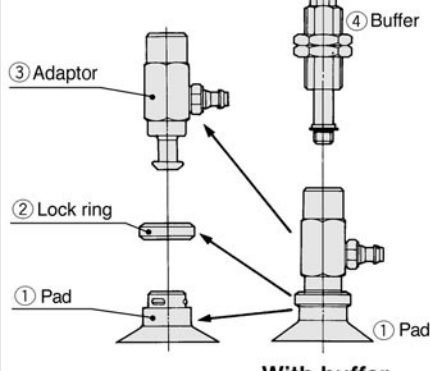
With buffer

Series ZPR



With buffer

Series ZPY



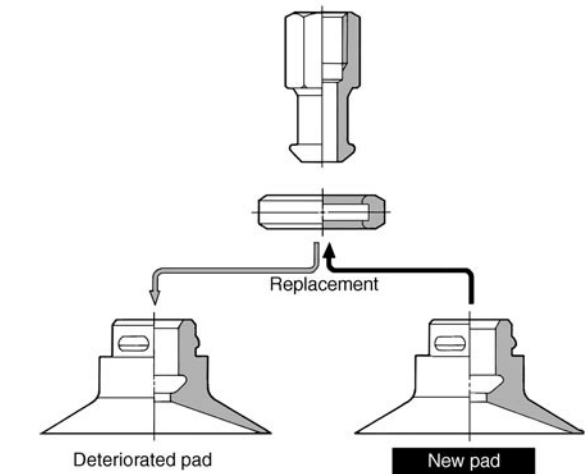
With buffer

Component Parts

No.	Description	Material	Note
①	Pad	Conductive NBR, Conductive silicon rubber, NBR, Silicon rubber, Urethane rubber, Fluorine rubber	
②	Lock ring	Brass	Electroless nickel plated
③	Adaptor	Brass	Electroless nickel plated
④	Buffer	Brass	Electroless nickel plated
⑤	Adaptor	Brass, PBT	Electroless nickel plated
⑥	Adaptor	Brass	Electroless nickel plated

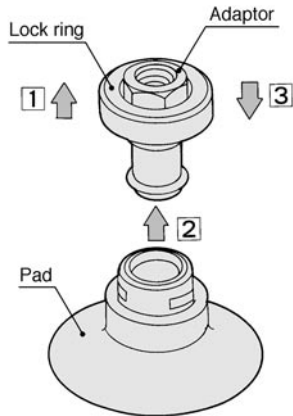
Maintenance of Pad

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.



Replacement of Pad

- ① Pull the lock ring upward, and after lifting it to the adaptor, 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 (With lock ring/Without lock ring)

Pad Unit/How to Order

ZP 10 U N X19

Pad diameter (mm)

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

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

Material

N	NBR
S	Silicon rubber
U	Urethane rubber
F	Fluorine rubber
GN*	Conductive NBR (ø2 to ø16)
GS*	Conductive silicon rubber (ø2 to ø16)

Pad style

U	Flat
C	Flat with ribs
D	Deep
B	Bellows

*ø20 or larger are manufactured upon receipt of order.

Lock Ring Unit/How to Order

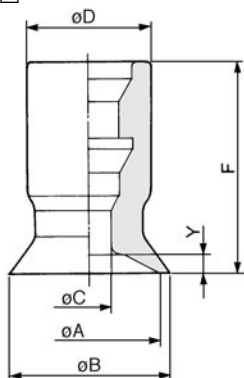
ZPL 1

Applicable pad dia. (mm)

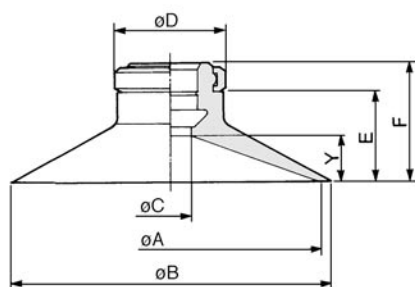
1	ø10 to ø16
2	ø20 to ø32
3	ø40, ø50

Flat style (U)

ZP02U□ to 08U□



ZP10U□ to 50U□

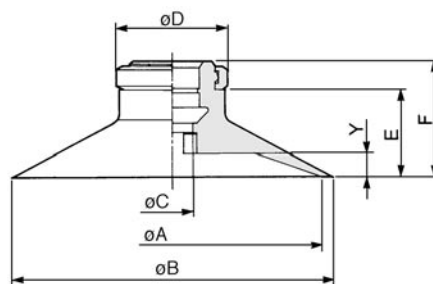


Model	Nom.size	øA	øB	øC	øD	E	F	Y
ZP02U□	U02	2	2.6	1.2	7	—	12	0.8
ZP04U□	U04	4	4.8	1.6	7	—	12	0.8
ZP06U□	U06	6	7	2.5	7	—	12	0.8
ZP08U□	U08	8	9	2.5	7	—	12	1
ZP10U□	U10	10	12	4	13	7.7	12	3
ZP13U□	U13	13	15	4	13	7.7	12	3
ZP16U□	U16	16	18	4	13	8.2	12.5	3.5
ZP20U□	U20	20	23	4	15	9.5	14	4
ZP25U□	U25	25	28	4	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)

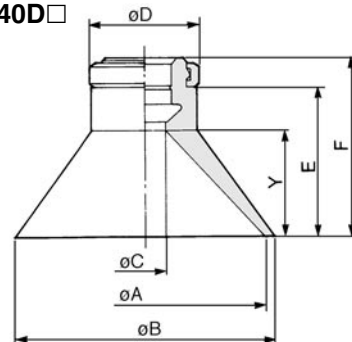
ZP10C□ to 50C□



Model	Nom.size	øA	øB	øC	øD	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 style (D)

ZP10D□ to 40D□



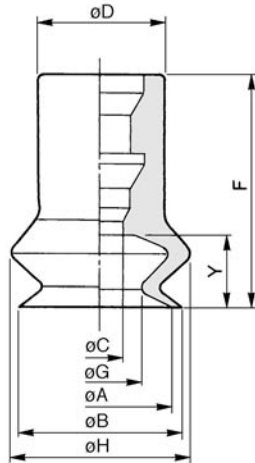
Model	Nom.size	øA	øB	øC	øD	E	F	Y
ZP10D□	D10	10	12	4	13	10.7	15	6
ZP16D□	D16	16	18	4	13	11.7	16	7
ZP25D□	D25	25	28	4	15	15.5	20	10
ZP40D□	D40	40	43	7	18	24.2	29	17

Replacement Parts: Pad Unit (With lock ring/Without lock ring)

Bellows (B)/With lock ring

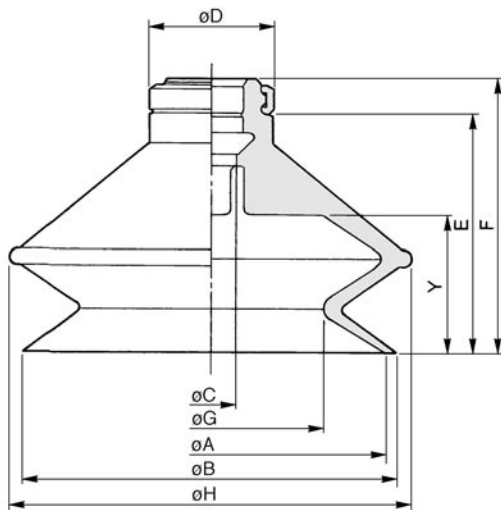
Pad diameter: $\phi 6$ to $\phi 8$

ZP06B□ to 08B□



Pad diameter: $\phi 10$ to $\phi 50$

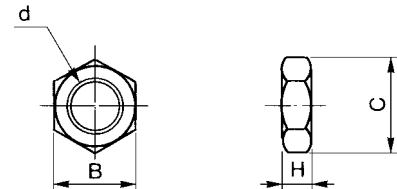
ZP10B□ to 50B□



Model	Nom.size	ϕA	ϕB	ϕC	ϕD	E	F	ϕG	ϕH	Y
ZP06B□	B06	6	7	2.5	7	—	13	3.3	9.1	4
ZP08B□	B08	8	9	2.5	7	—	13	4.7	10.1	4
ZP10B□	B10	10	12	4	13	11.7	16	5.5	13.8	5.5
ZP13B□	B13	13	15	4	13	14.2	18.5	8.7	19	7.5
ZP16B□	B16	16	18	4	13	15.7	20	9.9	21	8.5
ZP20B□	B20	20	22	4	15	19	23.5	12.4	25	10.5
ZP25B□	B25	25	27	4	15	19.5	24	15.6	28	10.5
ZP32B□	B32	32	34	4	15	24.5	29	18.9	37	14
ZP40B□	B40	40	43	7	18	29.2	34	24.4	48	16
ZP50B□	B50	50	53	7	18	33.2	38	32.4	57	19

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

Buffer mounting nut



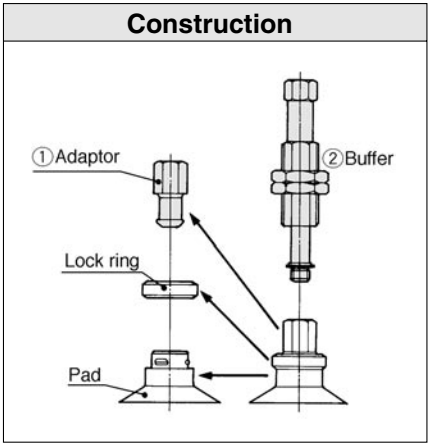
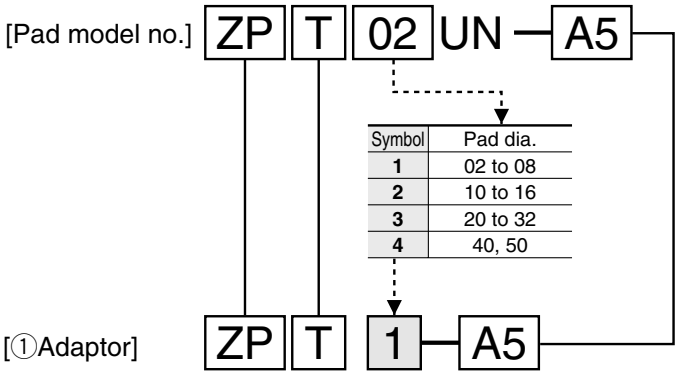
Model	Pad diameter	d	H	B	C
SNJ-010A	$\phi 2$ to $\phi 8$	M8 X 1	3	12	13.9
SNJ-015A	$\phi 10$ to $\phi 32$	M10 X 1	3	14	16.2
SN-015A	$\phi 40$, $\phi 50$	M14 X 1	5	19	21.9

Replacement Parts: Adaptor/Buffer (Series ZPT)

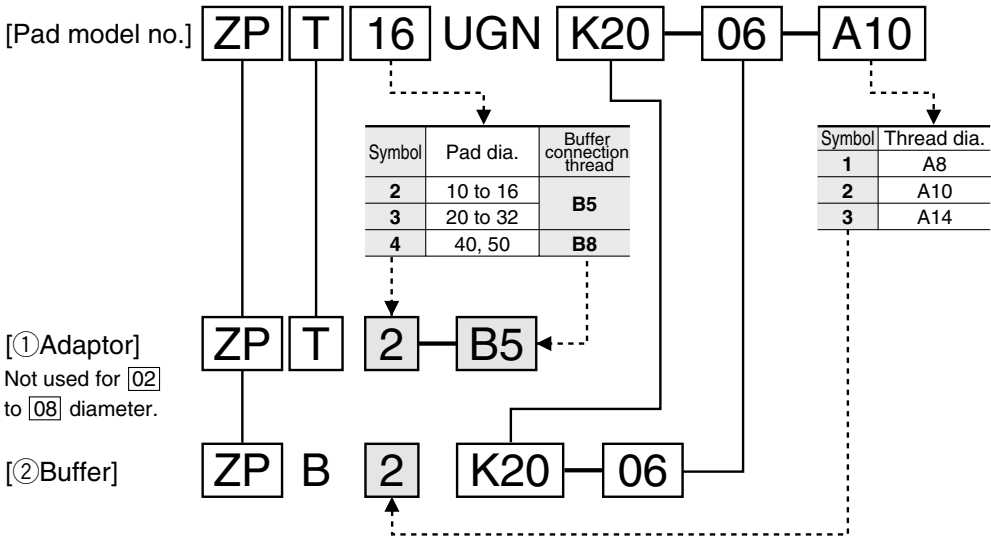
Appropriate adaptor or buffer can be selected for the currently used pad model.

Without Buffer

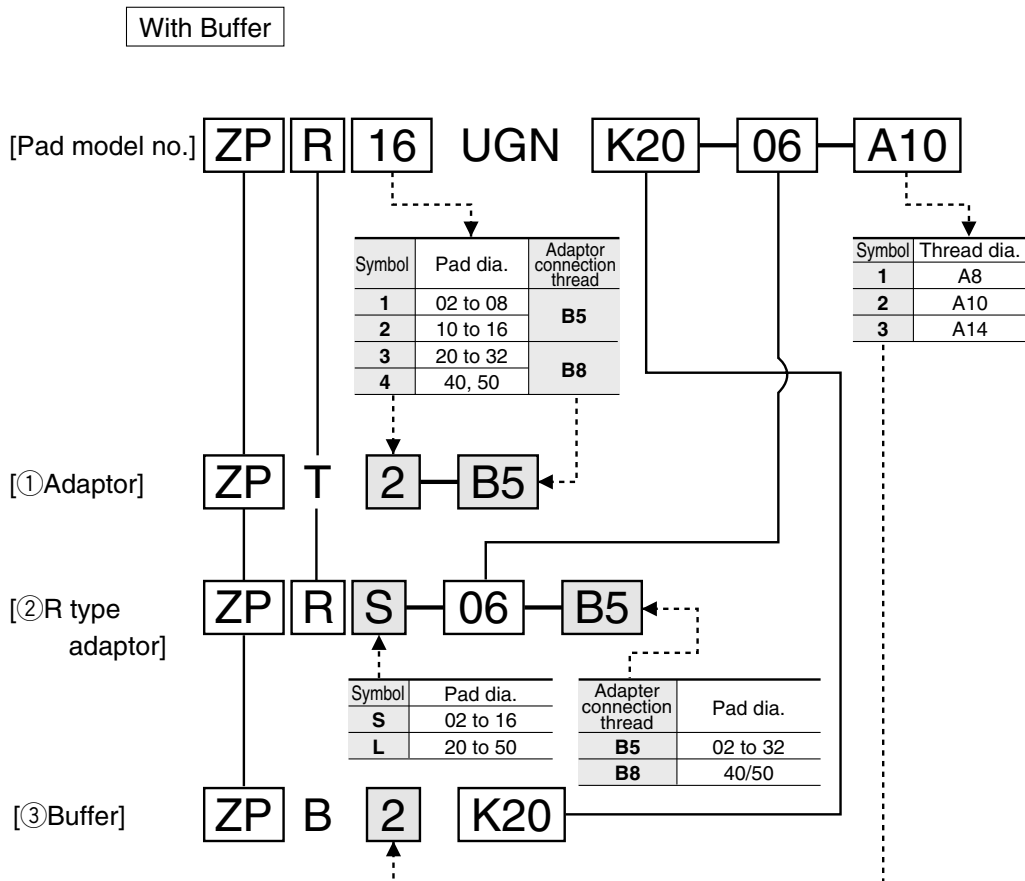
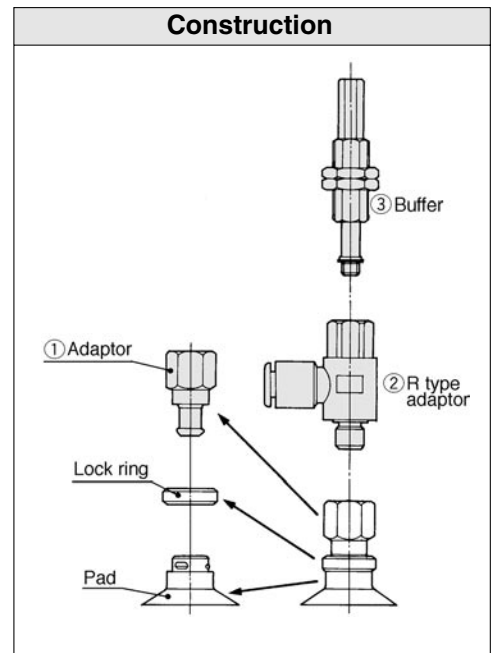
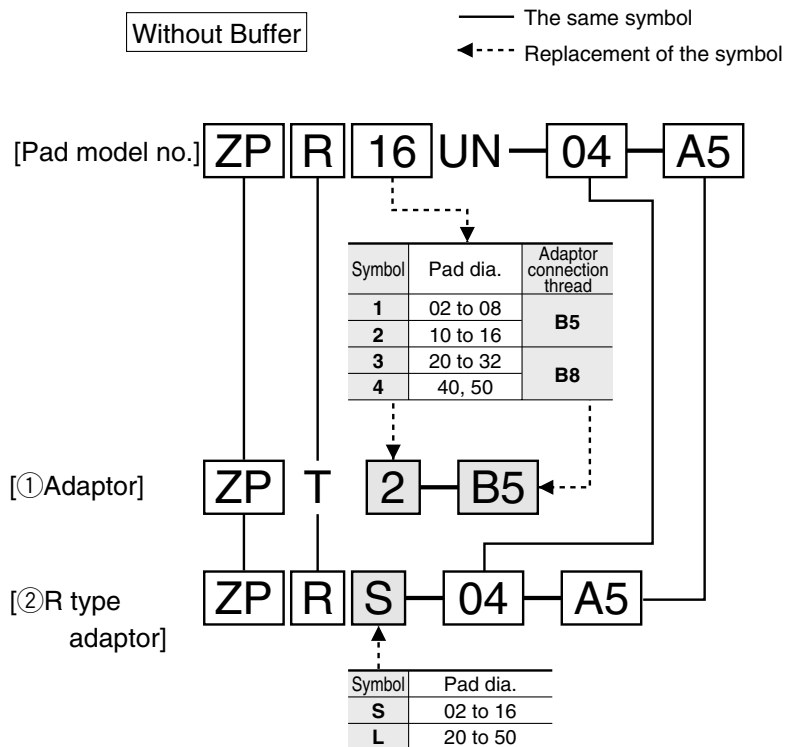
— The same symbol
←----- Replacement of the symbol



With Buffer



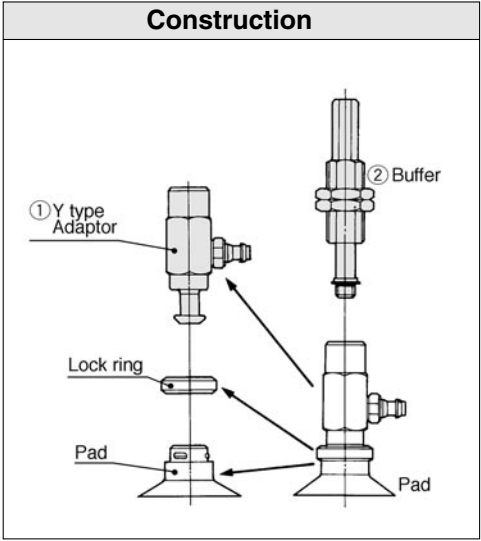
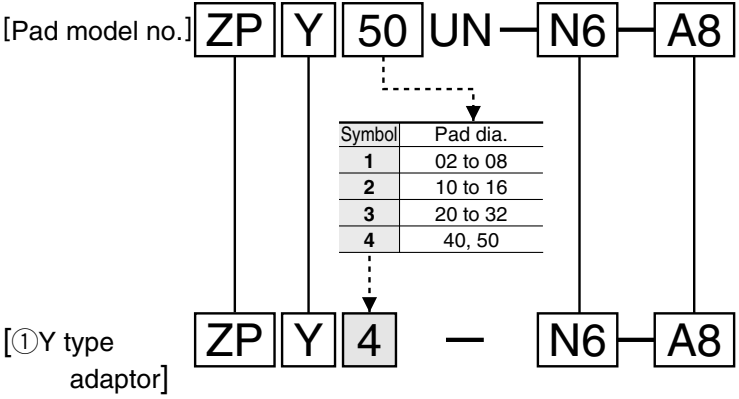
Replacement Parts: Adaptor/Buffer (Series ZPR)



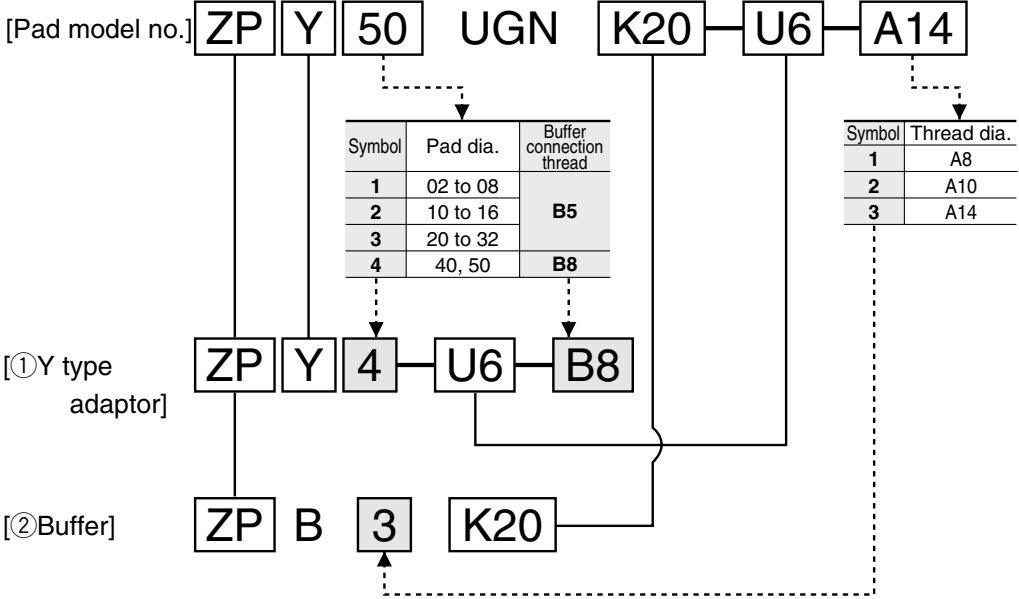
Replacement Parts: Adaptor/Buffer (Series ZPY)

Without Buffer

— The same symbol
←---- Replacement of the symbol



With Buffer



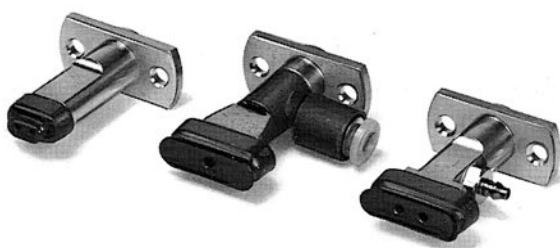
Series ZP (Consult SMC for detailed specifications, dimensions and delivery.)

Made to Order Specifications



① Oval Pad/without Buffer

Non-standard oval pads without buffer for the ZPT, ZPR, and ZPY series.



Specifications

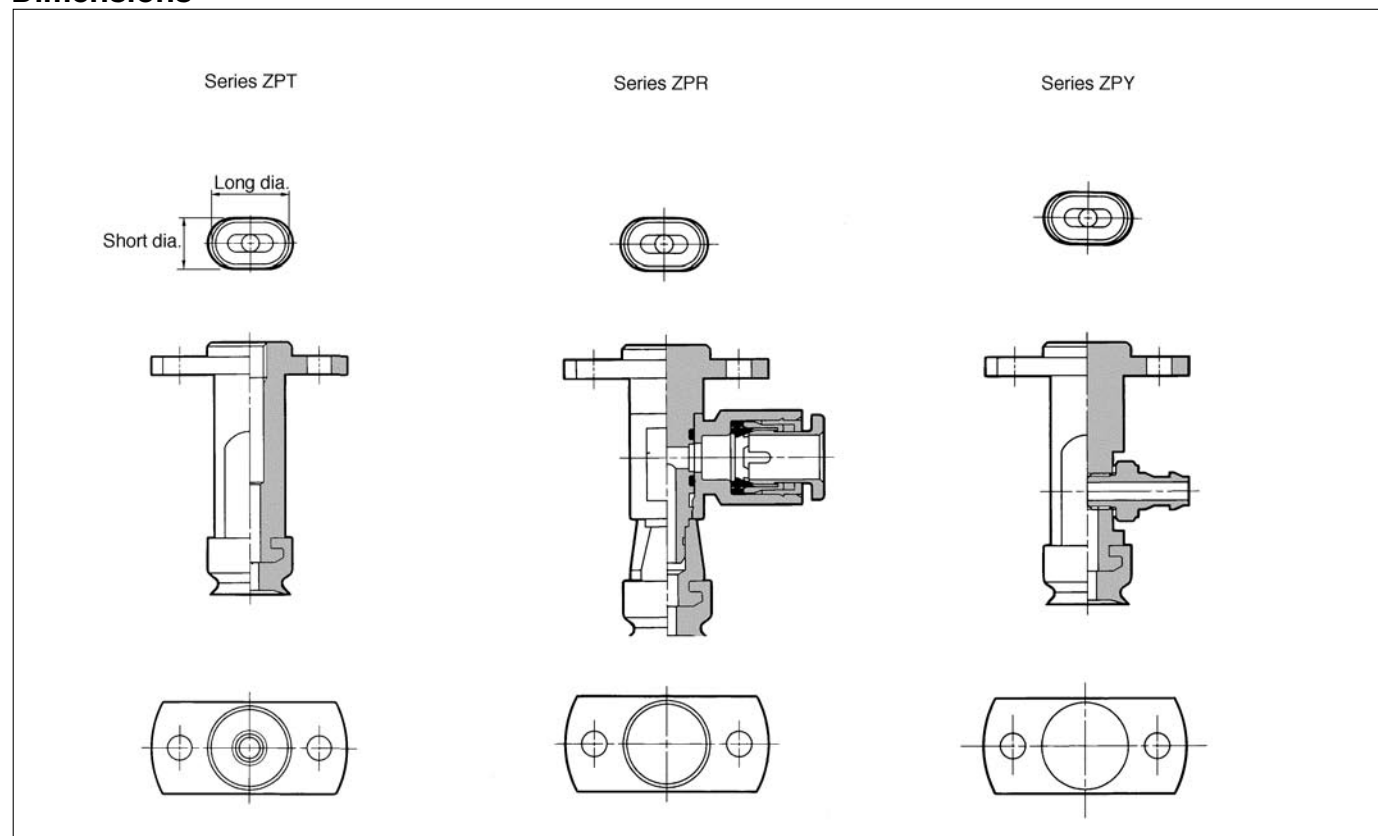
Applicable model		ZPT/ZPR/ZPY (without buffer)		
Series	Direction	ZPT	ZPR	ZPY
	Vacuum entry	Vertical	Lateral	Lateral
Mounting connection	Connection	Female thread	One-touch fitting	Barb fitting
	Two $\phi 3.5$ mounting holes are provided. Mount the pad with bolts at the desired position.			
Pad material		NBR, Silicon rubber, Urethane rubber, Fluorine rubber, Conductive NBR, Conductive silicon rubber		

Applicable pad diameter

Symbol	Short dia. X Long dia. (mm)
3507	3.5 X 7
4010	4 X 10
4020	4 X 20
4030	4 X 30
5010	5 X 10
5020	5 X 20

Symbol	Short dia. X Long dia. (mm)
5030	5 X 30
6010	6 X 10
6020	6 X 20
6030	6 X 30
8020	8 X 20
8030	8 X 30

Dimensions



Series ZP (Consult SMC for detailed specifications, dimensions and delivery.)

Made to Order Specifications

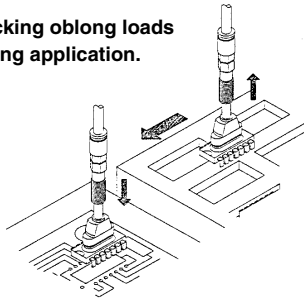


2 Oval Pad/with Buffer

Non-standard oval pads with buffer for the ZPT, ZPR, and ZPY series.



Suitable for picking oblong loads in a space saving application.



Specifications

Applicable model		ZPT/ZPR/ZPY (without buffer)		
Series	Direction	ZPT	ZPR	ZPY
	Connection	Vertical Female thread Barb fitting One-touch fitting	Lateral One-touch fitting	Lateral Barb fitting
Mounting connection		Male thread	Male thread	Male/Female thread
Buffer style		Non-rotating (K)		
Pad material		NBR, Silicon rubber, Urethane rubber, Fluorine rubber, Conductive NBR, Conductive silicon rubber		

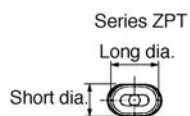
*Consult SMC for applicable strokes.

Applicable pad diameter

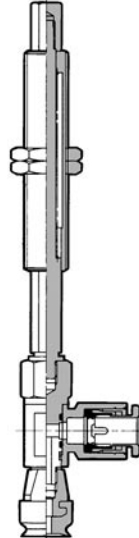
Symbol	Short dia. X Long dia. (mm)
3507	3.5 X 7
4010	4 X 10
4020	4 X 20
4030	4 X 30
5010	5 X 10
5020	5 X 20

Symbol	Short dia. X Long dia. (mm)
5030	5 X 30
6010	6 X 10
6020	6 X 20
6030	6 X 30
8020	8 X 20
8030	8 X 30

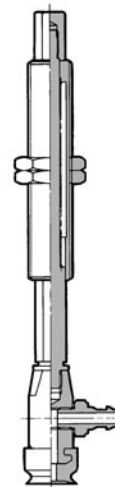
Dimensions



Series ZPR



Series ZPY



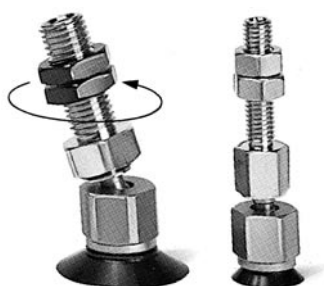
Series ZP (Consult SMC for detailed specifications, dimensions and delivery.)

Made to Order Specifications



③ Ball-joint Pad/without Buffer

Ideal for picking loads with a sloped surface.



Specifications

Applicable model		ZPT/ZPR/ZPY (without buffer)		
Tilt angle		±15°		
Series		ZPT	ZPR	ZPY
Vacuum entry	Direction	Vertical	Lateral	Lateral
	Connection	Male thread Female thread Barb fitting One-touch fitting	One-touch fitting	Barb fitting
	Mounting connection	Common to the vacuum entry	Male thread/ Female thread	Male thread/ Female thread
	Applicable pad shape	Flat style (U) only		
Pad material		NBR, Silicon rubber, Urethane rubber, Fluorine rubber, Conductive NBR, Conductive silicon rubber		
Applicable pad dia.		ø10, ø13, ø16, ø20, ø25, ø32, ø40, ø50		

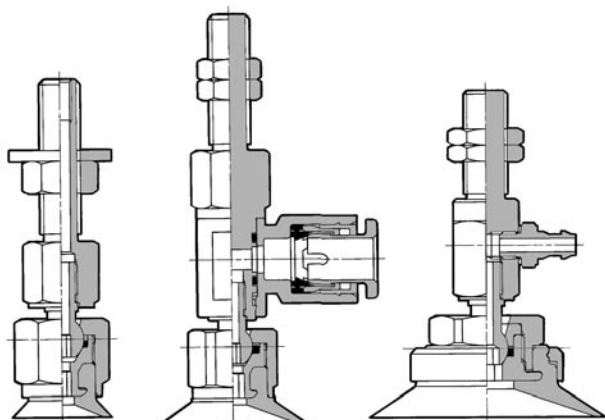
Dimensions

Male thread

Series ZPT

Series ZPR

Series ZPY

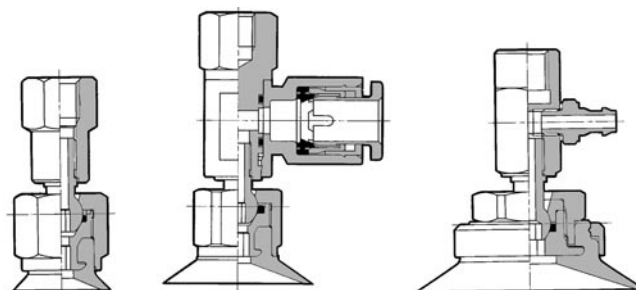


Female thread

Series ZPT

Series ZPR

Series ZPY



④ Ball-joint Pad/with Buffer

Ideal for picking loads with a sloped surface.



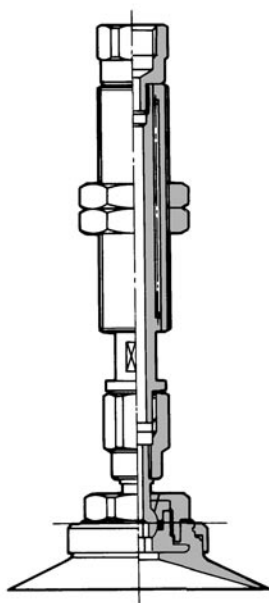
Specifications

Applicable model	ZPT/ZPR/ZPY (with buffer)		
Tilt angle	±15°		
Series	ZPT	ZPR	ZPY
Direction	Vertical	Lateral	Lateral
Vacuum entry	Female thread One-touch fitting Barb fitting	One-touch fitting	Barb fitting
Mounting connection	Male thread	Male thread	Male thread
Buffer style	Rotating (J), Non-rotating (K)		
Applicable pad shape	Flat style (U) only		
Pad material	NBR, Silicon rubber, Urethane rubber, Fluorine rubber, Conductive NBR, Conductive silicon rubber		
Applicable pad dia.	ø10, ø13, ø16, ø20, ø25, ø32, ø40, ø50		

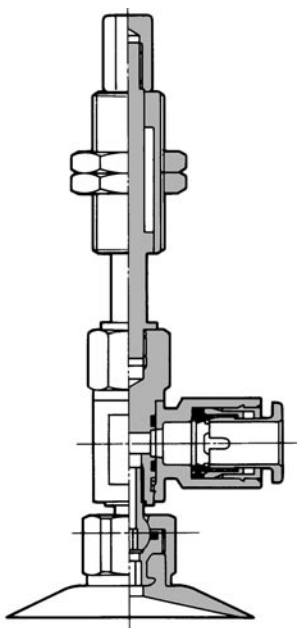
*Consult SMC for applicable strokes.

Dimensions

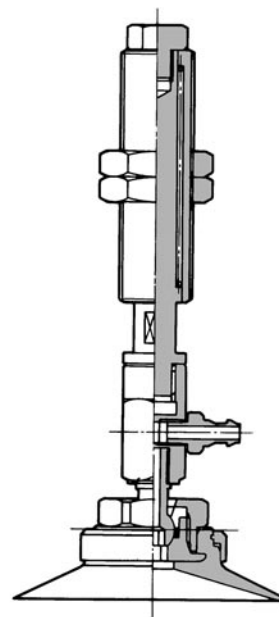
Series ZPT



Series ZPR



Series ZPY



⑤ Heavy Duty Vacuum Pad/without Buffer

Pad for heavy duty material handling (ø150 to ø250).



Specifications

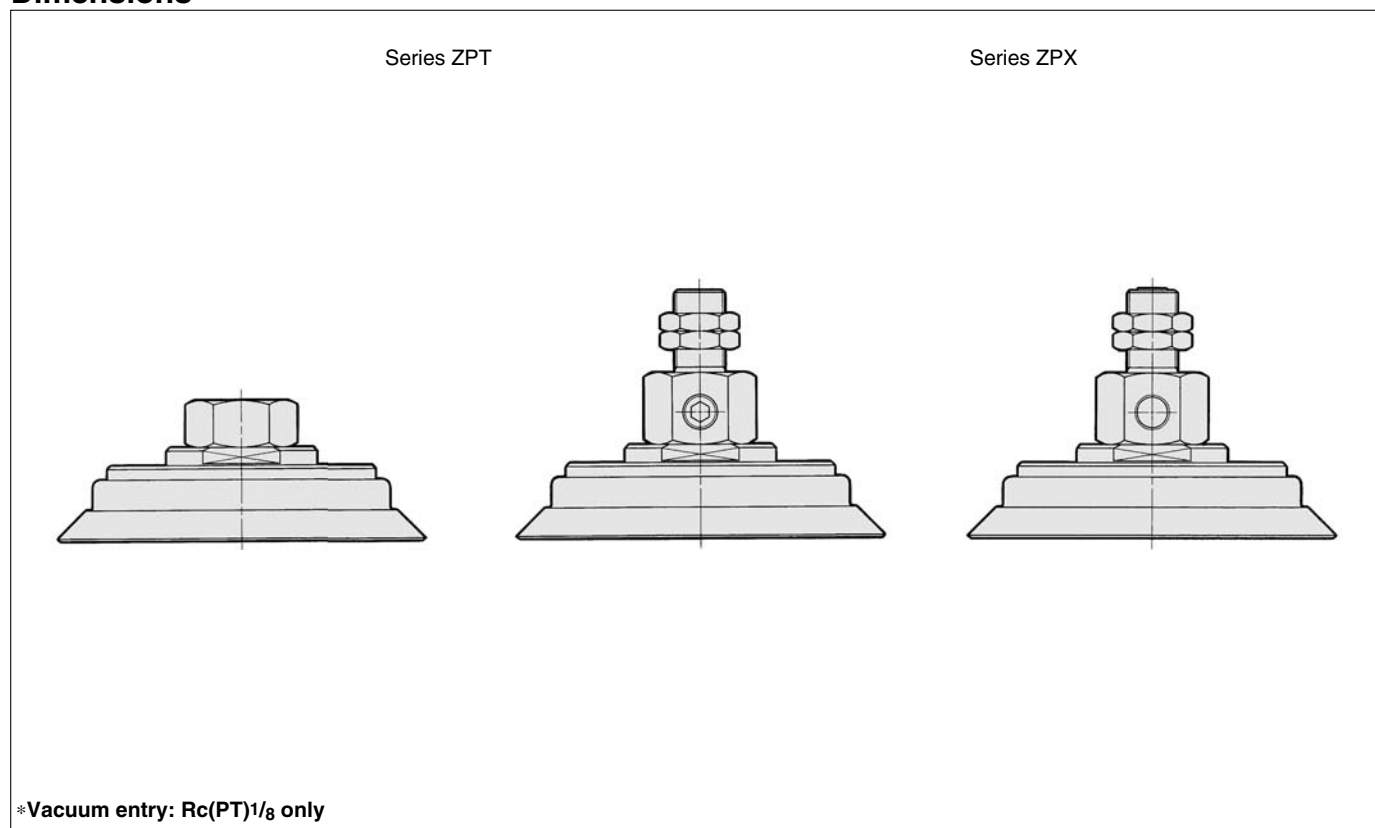
Applicable model		ZPT/ZPX (without buffer)	
Series		ZPT	ZPX
Pad diameter		ø150, ø200, ø250	ø150, ø200, ø250
Vacuum entry	Direction	Vertical	
	Connection	Female thread	Female thread
Applicable pad shape		Flat with ribs (H) only	
Mounting connection		Male thread/Female thread	Male thread/Female thread
Pad material		NBR, Silicon rubber, Urethane rubber, Fluorine rubber, Ethylene-propylene rubber	

Mounting thread

Series	Connection	Pad dia. (mm)	
		ø150/ø200	ø250
ZPT	Male thread	●	●
	Female thread	●	●
ZPX	Female thread	●	●

*Ball-joint type can be manufactured.

Dimensions



⑥ Vacuum Pad for Heavy Duty Material Handling/with Buffer

Pad for heavy duty material handling (ø150 to ø250)



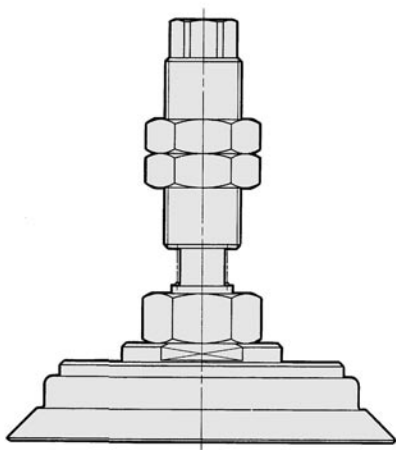
Specifications

Applicable model	ZPT/ZPX (with buffer)	
Series	ZPT	ZPX
Pad diameter	ø150, ø200, ø250	
Vacuum entry	Direction	Vertical
	Connection	Female thread
		Lateral
		Female thread
Applicable pad shape	Flat with ribs (H) only	
Mounting connection	Male thread	
Buffer style	Rotating (J)	
Pad material	NBR, Silicon rubber, Urethane rubber, Fluorine rubber, Ethylene-propylene rubber	

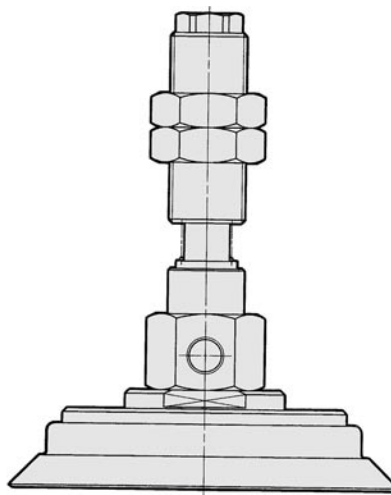
*Consult SMC for applicable strokes.

Dimensions

Series ZPT



Series ZPX



Vacuum Pads for Heavy Duty Material Handling

Series ZPT/ZPX

Ideal for heavy weight material or objects with a large surface area
Examples: CRT, Car body

Pad diameters $\phi 40$, $\phi 50$, $\phi 63$, $\phi 80$, $\phi 100$, $\phi 125$

Pad materials NBR, Silicon rubber, Urethane rubber, Fluorine rubber, EPR

Variations

Style	Without buffer			With buffer			Page
	Mounting	Vacuum entry		Mounting	Vacuum entry		
Series ZPT Vertical vacuum entry	Male thread	Female thread		Buffer mounting (Male thread)	Female thread		10-88 to 10-92
	Female thread	Common (Use vacuum entry)					
Series ZPX Lateral vacuum entry	Female thread	Female thread		Buffer mounting (Male thread)	Female thread		10-93 to 10-98

Series ZPT ZPX	Pad dia.						
	Buffer stroke	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$	$\phi 125$
	25	○	○	○	○	○	○
	50	○	○	○	○	○	○
	75	○	○	○	○	○	○
	100	—	—	—	—	○	○

Pad material and Characteristics

◎: Little or no influence ○: Can be used depending on conditions X: Not suitable

Material	Item	Durometer HS ($\pm 5^\circ$)	Temperature range ($^\circ\text{C}$)	Oil resistance (Gasoline)	Oil resistance (Benzol)	Alkali resistance	Acid resistance	Weatherability	Ozone resistance	Abrasion resistance	Water resistance	Solvents (benzene, toluene)
NBR		50°	0 to 120	◎	X	○	○	X	X	◎	○	X
Silicon rubber		50°	-30 to 200	X	X	○	X	◎	◎	X	○	X
Urethane rubber		60°	0 to 60	◎	X	X	X	○	◎	◎	X	X
Fluorine rubber		60°	0 to 250	◎	◎	X	◎	◎	◎	○	◎	◎
EPR		50°	-20 to 150	X	X	◎	○	◎	◎	○	◎	X

The above table covers only general characteristics of subject rubber materials.

Pad materials used by SMC pass nominal JIS material standards; however, actual performance depends on operating conditions.

Selecting The Vacuum Pad

A vacuum pad diameter (ϕD) can be determined by calculation if the lifting force needed to perform the work function is known. The weight of the workpiece and any potential dynamic forces involved during movement (lifting, stopping, rotating, etc.) need to be considered. The area of one pad can be divided to an equivalent area of multiple pads (n) as necessary, based on these forces and the shape of the load.

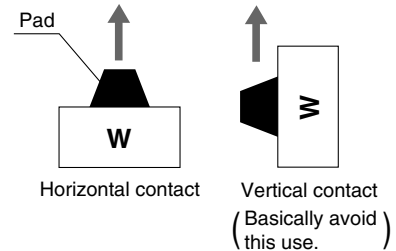
Calculation Method: Pad Diameter

A vacuum pad diameter with applied safety factor based on lifting orientation of workpiece (vertical or horizontal) can be derived from calculations or by using the Selection Graph shown below.

Calculations

$$\phi D = \sqrt{\frac{4}{3.14} \times \frac{1}{P} \times \frac{W}{n} \times t \times 1000}$$

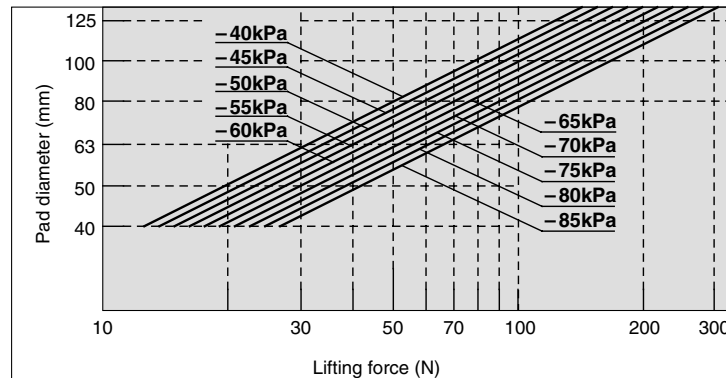
ϕD : Pad diameter (mm)
 n : Number of pads used
 W : Lifting force (N)
 P : Stable vacuum pressure (kPa)
 t : Factor of safety:
 Horizontal pad contact: ≥ 4 (dynamic)
 Vertical pad contact: ≥ 8 (dynamic)



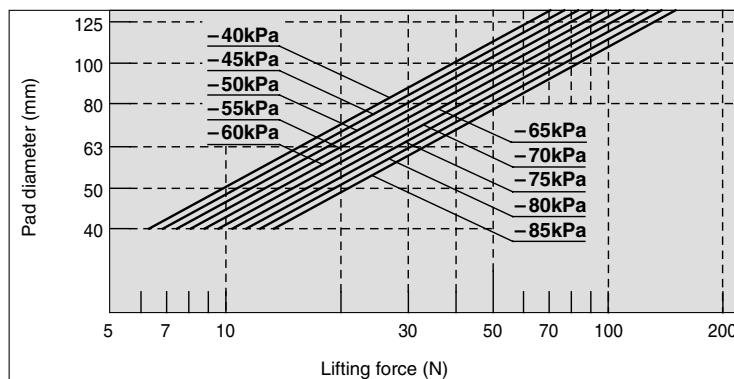
Graphical Method

The pad diameter required for horizontal (selection graphs ① and ②) or vertical contact can be found by setting the weight of the work the number of pads to contact the workpiece and the stable adsorption vacuum pressure.

Selection Graph① Selection graph of pad diameter by lift force horizontal (Reference value)



Selection Graph② Selection graph of pad diameter by lift force vertical (Reference value)



How to Read the Graph

Example: Work load 20kg (Lifting force: 196N)
 Conditions: Desired number of pads 5 pcs.
 Working vacuum pressure -60kPa
 Horizontal lifting

Selection procedure

From left condition
 Lifting force per pad: $196\text{N} \div 5 \text{ pcs.} = 39.2\text{N}$
 From Selection Graph ① as horizontal lifting
 Lifting force 39.2N
 Extend to the y-axis from the corresponding point of vacuum pressure -60kPa; result is to select a pad diameter bigger than 63mm.

Series ZPT/ZPX

Application Data

Theoretical Lifting Force

Theoretical lifting force for pad can be derived from calculations or taken directly from theoretical lifting force table.

Calculations

$$W = P \times S \times 0.1 \times \frac{1}{t}$$

W: Lifting force (N)

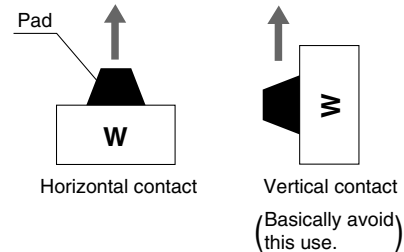
P : Stable vacuum pressure (kPa)

S : Pad area (cm²)

t : Factor of safety:

Horizontal pad contact: ≥ 4 (dynamic)

Vertical pad contact: ≥ 8 (dynamic)



Theoretical Lifting Force Table

Determine theoretical lifting force (excluding safety factor) from pad diameter size and working vacuum pressure. Divide the result by the appropriate safety factor to determine applicable lifting force.

Lifting force = Theoretical lifting force ÷ t

Table of Theoretical Lifting Force (Theoretical lifting force = $P \times S \times 0.1$)

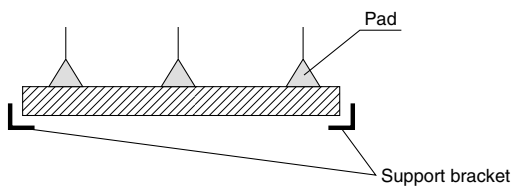
N

Pad diameter (mm)		ø40	ø50	ø63	ø80	ø100	ø125
Adsorption area cm ²		12.6	19.6	31.2	50.3	78.5	122.7
Vacuum pressure kPa	–85	107	167	264.9	427	667.3	1042.6
	–80	101	157	249.3	401.9	628	981.3
	–75	94.5	147	233.7	376.8	588.8	920
	–70	88.2	137	218.1	351.7	549.5	858.6
	–65	81.9	127	202.5	326.6	510.3	797.3
	–60	75.6	118	187	301.4	471	736
	–55	69.3	108	171.4	276.3	431.8	674.6
	–50	63.0	98.0	155.8	251.2	392.5	613.3
	–45	56.7	88.2	140.2	226.1	353.3	552
–40	50.4	78.4	124.6	201	314	490.7	



Precautions for Use

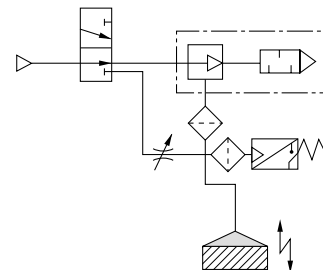
- ①The quantity and placement of pads should be considered when transferred work has a large surface area.



Install support brackets to prevent work from dropping according to your requirements.

- ② Vacuum response time and vacuum breaking time are influenced by internal volume of large bellows size pad, which has more volume than the large flat ribbed type pad. When response time is important, consider the following measures:

- Use a larger capacity ejector.
- Set a vacuum breaking valve.



Series ZPT

Vertical Vacuum Entry without Buffer



Standard Specifications

Connection	Vacuum entry direction		Vertical	
	Mounting		Male thread	Female thread
	Thread diameter	ø40, ø50	M14 X 1	M8/M10
		ø63, ø80	M16 X 1.5	M8/M10/M12/M16 X 1.5
		ø100, ø125	M16 X 1.5	M12/M16 X 1.5
Vacuum entry port		Rc(PT) 1/8	Use the mounting port	

Pad Style

Pad diameter (mm)	ø40, ø50, ø63, ø80, ø100, ø125
Material (colour)	NBR (Black), Silicon rubber (White), Urethane rubber (Brown), Fluorine rubber (Black with mark F), EPR (Black with mark E)
Durometer	NBR/Silicon rubber/EPR (50°), Urethane rubber/Fluorine rubber (60°)

Weight Table (Other materials) (g)

Pad diameter	Silicon rubber	Urethane rubber	Fluorine rubber	EPR
ø40	-1	0	5	-1
ø50	-1	0	8	0
ø63	-2	0	16	0
ø80	-3	1	27	-1
ø100	-5	1	53	-1
ø125	-8	3	84	0

Add NBR weight to the table above for other materials.

Weight Table (NBR)

Model	Weight (g)	Model	Weight (g)
ZPT40HN-A14	71	ZPT80HN-A16	178
ZPT40HN-B8	38	ZPT80HN-B8	144
ZPT40HN-B10	37	ZPT80HN-B10	143
ZPT50HN-A14	83	ZPT80HN-B12	141
ZPT50HN-B8	50	ZPT80HN-B16	139
ZPT50HN-B10	49	ZPT100HN-A16	350
ZPT63HN-A16	149	ZPT100HN-B12	301
ZPT63HN-B8	115	ZPT100HN-B16	299
ZPT63HN-B10	114	ZPT125HN-A16	414
ZPT63HN-B12	112	ZPT125HN-B12	365
ZPT63HN-B16	110	ZPT125HN-B16	363

How to Order

ZPT 40 H N A14

Pad diameter (mm)

40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
125	ø125

Vacuum entry/Mounting

thread diameter	ø40/ø50	ø63/ø80	ø100/ø125
A14 M14 X 1	●	—	—
A16 M16 X 1.5	—	●	●
B8 M8	●	●	—
B10 M10	●	●	—
B12 M12	—	●	●
B16 M16 X 1.5	—	●	●

Pad style

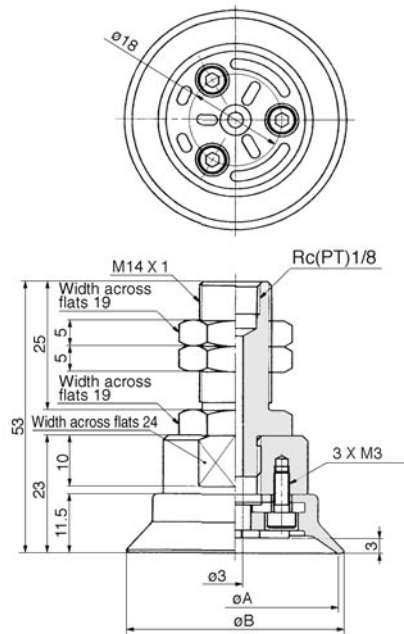
H	Heavy duty pad
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Material

N	NBR
S	Silicon rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

Vertical Vacuum Entry without Buffer *Series ZPT*

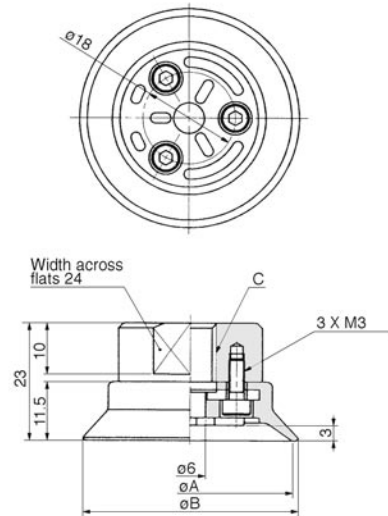
ZPT₅₀⁴⁰H□-A14 (Male thread)



Unit: mm

Model	øA	øB
ZPT40H□-A14	40	42
ZPT50H□-A14	50	52

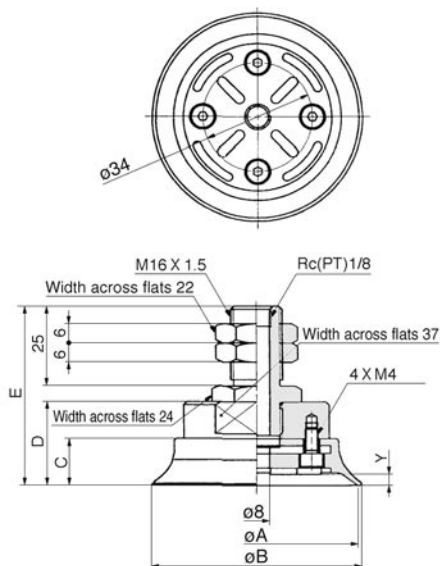
ZPT₅₀⁴⁰H□-B□ (Female thread)



Unit: mm

Model	øA	øB	C
ZPT40H□-B8	40	42	M8
ZPT40H□-B10	40	42	M10
ZPT50H□-B8	50	52	M8
ZPT50H□-B10	50	52	M10

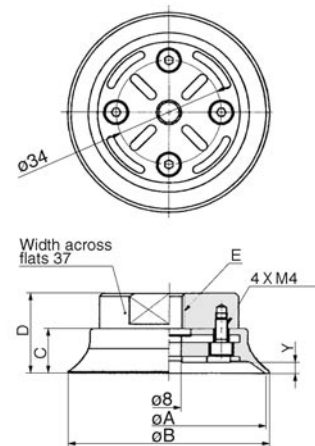
ZPT₈₀⁶³H□-A16 (Male thread)



Unit: mm

Model	øA	øB	C	D	E	Y
ZPT63H□-A16	63	65	14.5	26	56	3.5
ZPT80H□-A16	80	82	16.5	28	58	4.5

ZPT₈₀⁶³H□-B□ (Female thread)

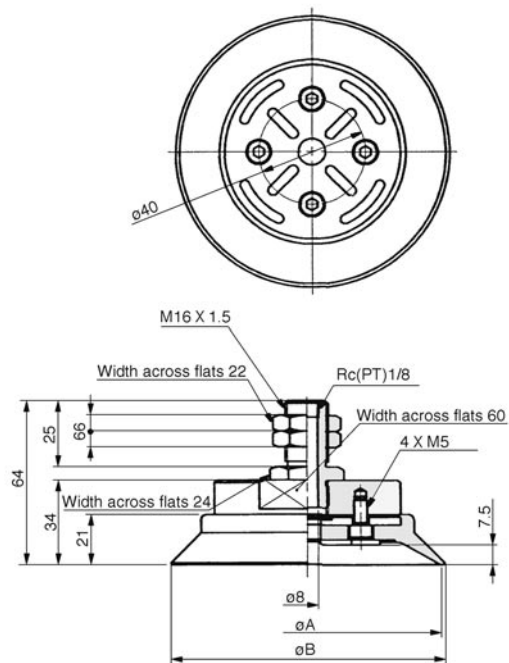


Unit: mm

Model	øA	øB	C	D	E	Y
ZPT63H□-B8	63	65	14.5	26	M8	3.5
ZPT63H□-B10	63	65	14.5	26	M10	3.5
ZPT63H□-B12	63	65	14.5	26	M12	3.5
ZPT63H□-B16	63	65	14.5	26	M16 X 1.5	3.5
ZPT80H□-B8	80	82	16.5	28	M8	4.5
ZPT80H□-B10	80	82	16.5	28	M10	4.5
ZPT80H□-B12	80	82	16.5	28	M12	4.5
ZPT80H□-B16	80	82	16.5	28	M16 X 1.5	4.5

Series **ZPT**

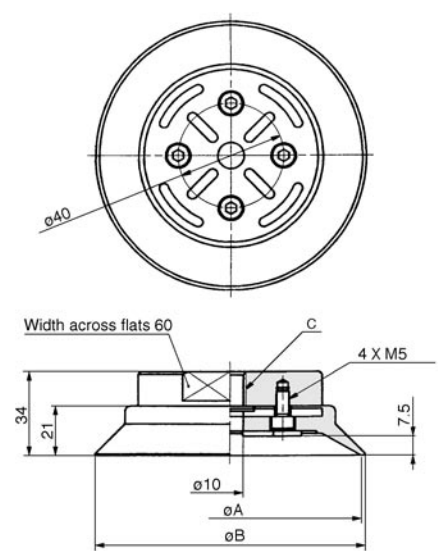
ZPT¹⁰⁰₁₂₅H□-A16 (Male thread)



Unit: mm

Model	ϕA	ϕB
ZPT100H□-A16	100	103
ZPT125H□-A16	125	128

ZPT¹⁰⁰₁₂₅H□-B□ (Female thread)



Unit: mm

Model	ϕA	ϕB	C
ZPT100H□-B12	100	103	M12
ZPT100H□-B16	100	103	M16 X 1.5
ZPT125H□-B12	125	128	M12
ZPT125H□-B16	125	128	M16 X 1.5

Series ZPT

Vertical Vacuum Entry with Buffer



Standard Specifications

Connection	Vacuum entry direction		Vertical
	Mounting		Male thread
	Thread diameter	ø40, ø50	M18 X 1.5
		ø63, ø80	M18 X 1.5
		ø100, ø125	M22 X 1.5
Vacuum entry port			Rc (PT) ^{1/8}

Buffer style		Rotating (J)
Buffer stroke	ø40 to ø80	25, 50, 75 (mm)
	ø100, ø125	25, 50, 75, 100 (mm)

Pad Style

Pad diameter (mm)	ø40, ø50, ø63, ø80, ø100, ø125
Material (colour)	NBR (Black), Silicon rubber (White), Urethane rubber (Brown), Fluorine rubber (Black with mark F), EPR (Black with mark E)
Durometer	NBR/Silicon rubber/EPR (50°), Urethane rubber/Fluorine rubber (60°)

Weight Table (Other materials) (g)

Pad diameter	Silicon rubber	Urethane rubber	Fluorine rubber	EPR
ø40	-1	0	5	-1
ø50	-1	0	8	0
ø63	-2	0	16	0
ø80	-3	1	27	-1
ø100	-5	1	53	-1
ø125	-8	3	84	0

Add NBR weight to the table above for other materials.

Weight Table (NBR)

Model	Weight (g)	Model	Weight (g)
ZPT40HNJ25-B01-A18	125	ZPT80HNJ50-B01-A18	251
ZPT40HNJ50-B01-A18	145	ZPT80HNJ75-B01-A18	272
ZPT40HNJ75-B01-A18	166	ZPT100HNJ25-B01-A22	489
ZPT50HNJ25-B01-A18	137	ZPT100HNJ50-B01-A22	529
ZPT50HNJ50-B01-A18	157	ZPT100HNJ75-B01-A22	574
ZPT50HNJ75-B01-A18	195	ZPT100HNJ100-B01-A22	613
ZPT63HNJ25-B01-A18	202	ZPT125HNJ25-B01-A22	553
ZPT63HNJ50-B01-A18	222	ZPT125HNJ50-B01-A22	593
ZPT63HNJ75-B01-A18	243	ZPT125HNJ75-B01-A22	638
ZPT80HNJ25-B01-A18	214	ZPT125HNJ100-B01-A22	677

How to Order

ZPT 40 H N J 25 — B01 — A18

Pad diameter	
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
125	ø125

Mounting thread diameter	
A18	M18 X 1.5 (ø40 to ø80)
A22	M22 X 1.5 (ø100, ø125)

Vacuum entry	
B01	Rc(PT) ^{1/8}

Pad style	
H	Heavy duty pad

Buffer stroke (Without detent)

Stroke	ø40	ø50	ø63	ø80	ø100	ø125
25	●	●	●	●	●	●
50	●	●	●	●	●	●
75	●	●	●	●	●	●
100	—	—	—	—	●	●

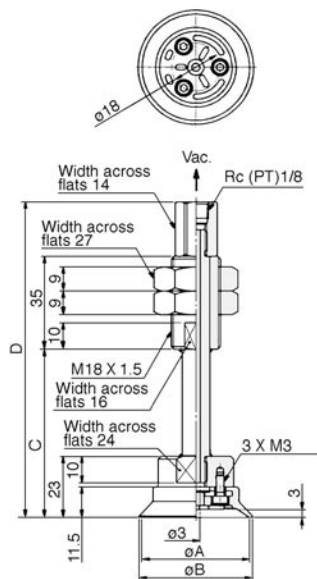
Material	
N	NBR
S	Silicon rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

Spring reactive force

Pad diameter	ø40 to ø80	ø100, ø125
0 stroke	6.9N	10N
Stroke end	11.8N	15N

Series ZPT

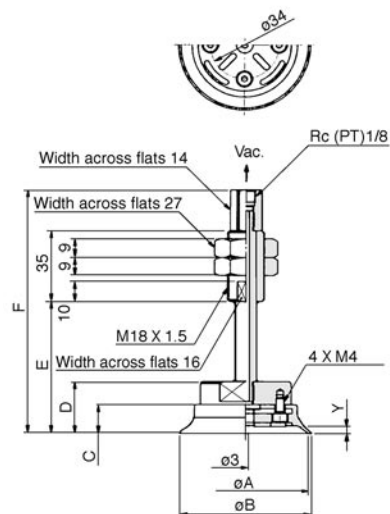
ZPT₅₀⁴⁰H□J□-B01-A18 (with buffer)



Unit: mm

Model	øA	øB	C	D
ZPT40H□J25-B01-A18	40	42	63	118.5
ZPT40H□J50-B01-A18	40	42	98	153.5
ZPT40H□J75-B01-A18	40	42	134	189.5
ZPT50H□J25-B01-A18	50	52	63	118.5
ZPT50H□J50-B01-A18	50	52	98	153.5
ZPT50H□J75-B01-A18	50	52	134	189.5

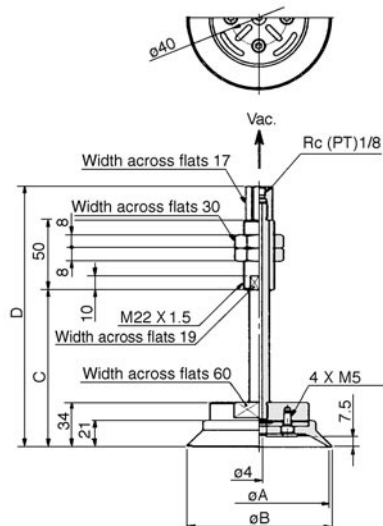
ZPT₈₀⁶³H□J□-B01-A18 (with buffer)



Unit: mm

Model	øA	øB	C	D	E	F	Y
ZPT63H□J25-B01-A18	63	65	14.5	26	66	121.5	3.5
ZPT63H□J50-B01-A18	63	65	14.5	26	101	156.5	3.5
ZPT63H□J75-B01-A18	63	65	14.5	26	137	192.5	3.5
ZPT80H□J25-B01-A18	80	83	16.5	28	68	123.5	4.5
ZPT80H□J50-B01-A18	80	83	16.5	28	103	158.5	4.5
ZPT80H□J75-B01-A18	80	83	16.5	28	139	194.5	4.5

ZPT₁₂₅¹⁰⁰H□J□-B01-A22 (with buffer)



Unit: mm

Model	øA	øB	C	D
ZPT100H□J25-B01-A22	100	103	78	152
ZPT100H□J50-B01-A22	100	103	114	188
ZPT100H□J75-B01-A22	100	103	154	228
ZPT100H□J100-B01-A22	100	103	189	263
ZPT125H□J25-B01-A22	125	128	78	152
ZPT125H□J50-B01-A22	125	128	114	188
ZPT125H□J75-B01-A22	125	128	154	228
ZPT125H□J100-B01-A22	125	128	189	263

Series ZPX

Lateral Vacuum Entry without Buffer



Standard Specifications

Mounting	Vacuum entry direction	Lateral
	Connection	Female thread
	Thread diameter	ø40, ø50
		ø63, ø80
		ø100, ø125
	Vacuum entry port	Rc(PT) 1/8

Pad Style

Pad diameter (mm)	ø40, ø50, ø63, ø80, ø100, ø125
Material (colour)	NBR (Black), Silicon rubber (White), Urethane rubber (Brown), Fluorine rubber (Black with mark F), EPR (Black with mark E)
Durometer	NBR/Silicon rubber/EPR (50°), Urethane rubber/Fluorine rubber (60°)

Weight Table (Other materials) (g)

Pad diameter	Silicon rubber	Urethane rubber	Fluorine rubber	EPR
ø40	-1	0	5	-1
ø50	-1	0	8	0
ø63	-2	0	16	0
ø80	-3	1	27	-1
ø100	-5	1	53	-1
ø125	-8	3	84	0

Add NBR weight to the table above for other materials.

Weight Table (NBR)

Model	Weight (g)	Model	Weight (g)
ZPX40H□-B01-B8	148	ZPX100H□-B01-B10	418
ZPX40H□-B01-B10	150	ZPX100H□-B01-B12	414
ZPX50H□-B01-B8	160	ZPX125H□-B01-B10	482
ZPX50H□-B01-B10	158	ZPX125H□-B01-B12	478
ZPX63H□-B01-B10	229		
ZPX63H□-B01-B12	219		
ZPX80H□-B01-B10	258		
ZPX80H□-B01-B12	254		

How to Order

ZPX 40 H N — B01 — B8

Pad diameter	
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
125	ø125

Mounting thread diameter		ø40/ø50	ø63/ø80	ø100/ø125
B8	M8	●	—	—
B10	M10	●	●	●
B12	M12	—	●	●

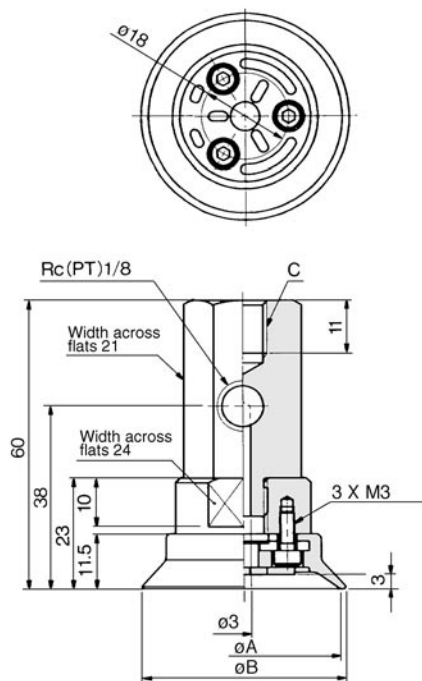
Vacuum entry	
B01	Re(PT) 1/8

Pad style	
H	Heavy duty pad

Material	
N	NBR
S	Silicon rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

Series ZPX

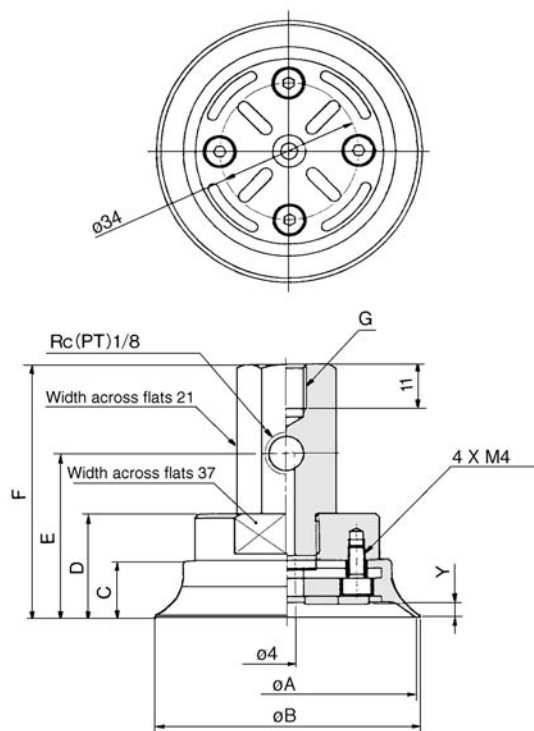
ZPX⁴⁰₅₀H□-B01-B□ (Female thread)



Unit: mm

Model	øA	øB	C
ZPX40H□-B01-B8	40	42	M8
ZPX40H□-B01-B10	40	42	M10
ZPX50H□-B01-B8	50	52	M8
ZPX50H□-B01-B10	50	52	M10

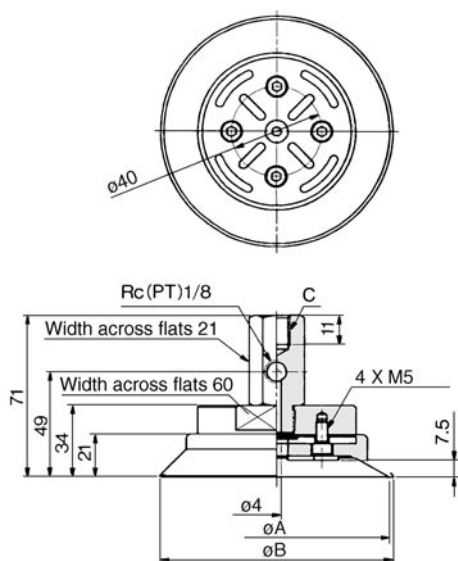
ZPX⁶³₈₀H□-B01-B□ (Female thread)



Unit: mm

Model	øA	øB	C	D	E	F	Y	G
ZPX63H□-B01-B10	63	65	14.5	26	41	63	3.5	M10
ZPX63H□-B01-B12	63	65	14.5	26	41	63	3.5	M12
ZPX80H□-B01-B10	80	82	16.5	28	43	65	4.5	M10
ZPX80H□-B01-B12	80	82	16.5	28	43	65	4.5	M125

ZPX¹⁰⁰₁₂₅H□-B01-B□ (Female thread)



Unit: mm

Model	øA	øB	C
ZPX100H□-B01-B10	100	103	M10
ZPX100H□-B01-B12	100	103	M12
ZPX125H□-B01-B10	125	128	M10
ZPX125H□-B01-B12	125	128	M12

Series ZPX

Lateral Vacuum Entry with Buffer



Standard Specifications

Mounting	Vacuum entry direction		Lateral
	Connection		Male thread
	Thread diameter	ø40, ø50	M18 X 1.5
		ø63, ø80	M18 X 1.5
ø100, ø125		M22 X 1.5	
Vacuum entry port			Rc(PT) 1/8

Buffer style		Rotating (J)
Buffer stroke	ø40 to ø80	25, 50, 75 (mm)
	ø100, ø125	25, 50, 75, 100 (mm)

Pad Style

Pad diameter (mm)	ø40, ø50, ø63, ø80, ø100, ø125
Material (colour)	NBR (Black), Silicon rubber (White), Urethane rubber (Brown), Fluorine rubber (Black with mark F), EPR (Black with mark E)
Durometer	NBR/Silicon rubber/EPR (50°), Urethane rubber/Fluorine rubber (60°)

Weight Table (Other materials) (g)

Pad diameter	Silicon rubber	Urethane rubber	Fluorine rubber	EPR
ø40	-1	0	5	-1
ø50	-1	0	8	0
ø63	-2	0	16	0
ø80	-3	1	27	-1
ø100	-5	1	53	-1
ø125	-8	3	84	0

Add NBR weight to the table above for other materials.

Weight Table (NBR)

Model	Weight (g)	Model	Weight (g)
ZPX40HNJ25-B01-A18	266	ZPX80HNJ50-B01-A18	401
ZPX40HNJ50-B01-A18	287	ZPX80HNJ75-B01-A18	424
ZPX40HNJ75-B01-A18	310	ZPX100HNJ25-B01-A22	638
ZPX50HNJ25-B01-A18	278	ZPX100HNJ50-B01-A22	677
ZPX50HNJ50-B01-A18	299	ZPX100HNJ75-B01-A22	721
ZPX50HNJ75-B01-A18	322	ZPX100HNJ100-B01-A22	760
ZPX63HNJ25-B01-A18	351	ZPX125HNJ25-B01-A22	702
ZPX63HNJ50-B01-A18	372	ZPX125HNJ50-B01-A22	741
ZPX63HNJ75-B01-A18	395	ZPX125HNJ75-B01-A22	785
ZPX80HNJ25-B01-A18	380	ZPX125HNJ100-B01-A22	824

How to Order

ZPX 40 H N J 25 — B01 — A18

Pad diameter (mm)	
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
125	ø125

Mounting thread diameter	
A18	M8 (ø40 to ø80)
A22	M10 (ø100, ø125)

Vacuum entry	
B01	Rc(PT) 1/8

Pad style	
H	Heavy duty pad

Material	
N	NBR
S	Silicon rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

Buffer stroke (Rotating)

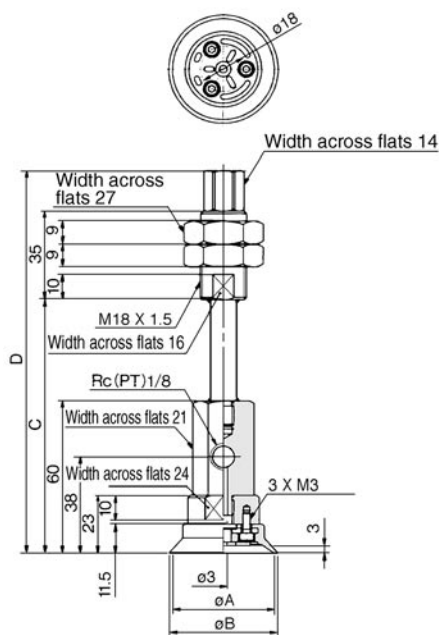
Stroke	ø40	ø50	ø63	ø80	ø100	ø125
25	●	●	●	●	●	●
50	●	●	●	●	●	●
75	●	●	●	●	●	●
100	—	—	—	—	●	●

Spring reactive force

Pad diameter	ø40 to ø80	ø100, ø125
0 Stroke	6.9N	10N
Stroke end	11.8N	15N

Series ZPX

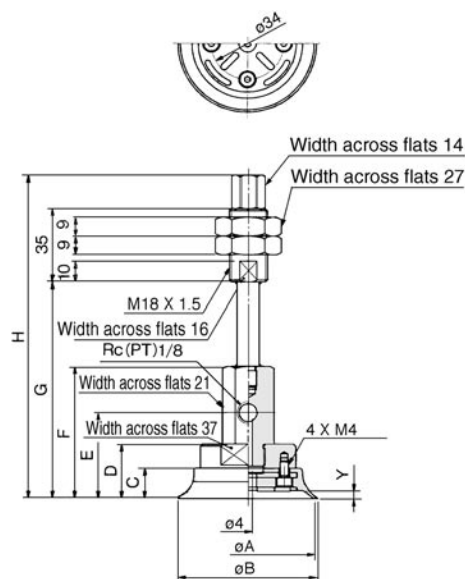
ZPX₅₀⁴⁰H□J□-B01-A18 (with buffer)



Unit: mm

Model	øA	øB	C	D
ZPX40H□J25-B01-A18	40	42	100	151
ZPX40H□J50-B01-A18	40	42	135	186
ZPX40H□J75-B01-A18	40	42	171	222
ZPX50H□J25-B01-A18	50	52	100	151
ZPX50H□J50-B01-A18	50	52	135	186
ZPX50H□J75-B01-A18	50	52	171	222

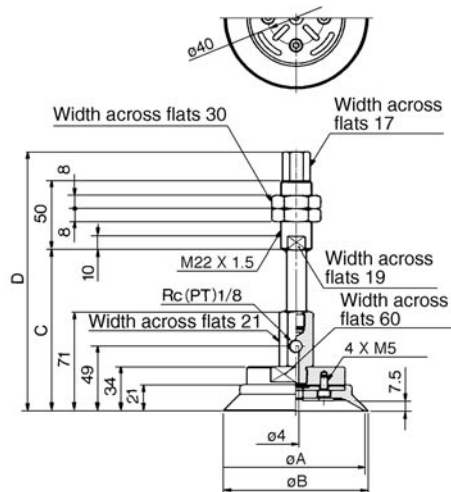
ZPX₈₀⁶³H□J□-B01-A18 (with buffer)



Unit: mm

Model	ϕA	ϕB	C	D	E	F	G	H	Y
ZPX63H□J25-B01-A18	63	65	14.5	26	41	63	103	154	3.5
ZPX63H□J50-B01-A18	63	65	14.5	26	41	63	136	189	3.5
ZPX63H□J75-B01-A18	63	65	14.5	26	41	63	172	225	3.5
ZPX80H□J25-B01-A18	80	82	16.5	28	43	65	105	156	4.5
ZPX80H□J50-B01-A18	80	82	16.5	28	43	65	138	191	4.5
ZPX80H□J75-B01-A18	80	82	16.5	28	43	65	174	227	4.5

ZPX₁₂₅¹⁰⁰H□J□-B01-A18 (with buffer)



Unit: mm

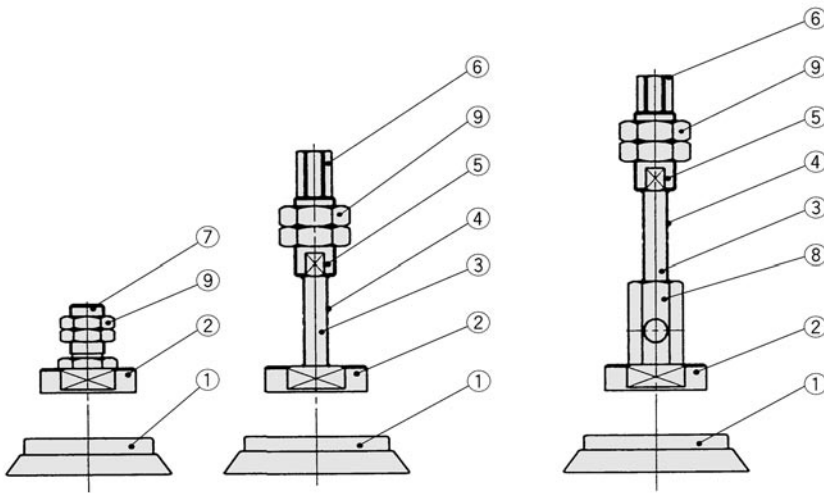
Model	σ_A	σ_B	C	D
ZPX100H□J25-B01-A22	100	103	115	186
ZPX100H□J50-B01-A22	100	103	151	222
ZPX100H□J75-B01-A22	100	103	191	262
ZPX100H□J100-B01-A22	100	103	226	297
ZPX125H□J25-B01-A22	125	128	115	186
ZPX125H□J50-B01-A22	125	128	151	222
ZPX125H□J75-B01-A22	125	128	191	262
ZPX125H□J100-B01-A22	125	128	226	297

Vacuum Pads for Heavy Duty Material Handling *Series ZPT/ZPX*

Construction

Series ZPT

Series ZPX



Component Parts

No.	Description	Material	Surface treatment
①	Pad	NBR, Silicone rubber, Urethane rubber, Fluorine rubber, EPR	—
②	Adaptor plate	Aluminum	—
③	Piston rod	Carbon steel	Hard chrome plated
④	Spring	Stainless steel	—
⑤	Buffer body	Aluminum	—
⑥	Buffer adaptor	Brass	Electroless nickel plated
⑦	Adaptor A	Brass	Electroless nickel plated
⑧	X type adaptor	Brass	Electroless nickel plated
⑨	Mounting nut	Roller steel	Black zinc chromated

Replacement Parts: Pad Unit

How to Order/Pad Unit

ZP 40 H N		
Pad diameter	Material	Pad style
40 ø40	N NBR	H Heavy duty
50 ø50	S Silicon rubber	
63 ø63	U Urethane rubber	
80 ø80	F Fluorine rubber	
100 ø100	E EPR	
125 ø125		

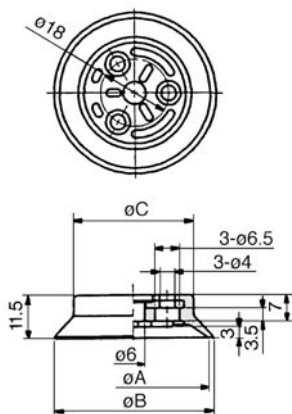
Pad Unit Weight

(NBR)		(g)				
Model	Weight (g)	Pad diameter	Silicon rubber	Urethane rubber	Fluorine rubber	EPR
ZP40HN	15	ø40	-1	0	5	-1
ZP50HN	27	ø50	-1	0	8	0
ZP63HN	57	ø63	-2	0	16	0
ZP80HN	86	ø80	-3	1	27	-1
ZP100HN	160	ø100	-5	1	53	-1
ZP125HN	224	ø125	-8	3	84	0

Add NBR weight to the table on the right for other materials.

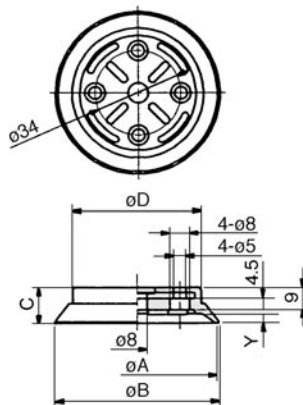
Dimensions

ZP⁴⁰₅₀H□



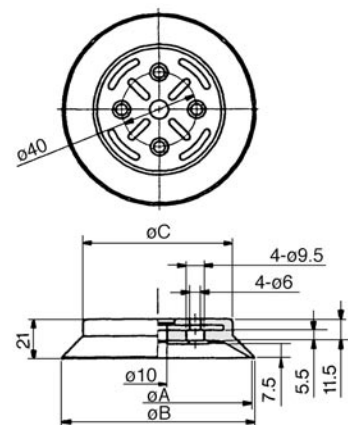
Model	øA	øB	øC
ZP40H□	40	42	32
ZP50H□	50	52	42

ZP⁶³₈₀H□



Model	øA	øB	C	D	Y
ZP63H□	63	65	14.5	54	3.5
ZP80H□	80	82	16.5	68	4.5

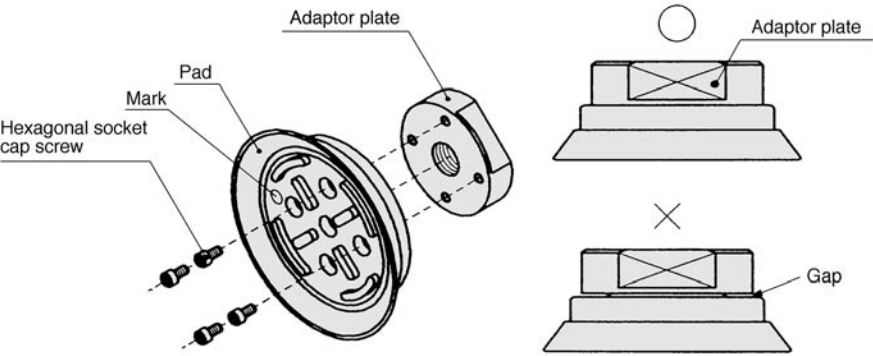
ZP¹⁰⁰₁₂₅H□



Model	øA	øB	øC
ZP100H□	100	103	80
ZP125H□	125	128	104

Series ZPT/ZPX

How to Assemble/Disassemble



Remove bolts with a hex. key wrench from the pad underside. Tighten new pad with the bolts ensuring there is no gap between the adaptor plate and the pad.

How to Distinguish Different Pad Materials

Checking the mark on the pad's interior surface as shown in the figure on the left.

Material	Color	Mark
NBR	Black	—
Silicon rubber	White	—
Urethane rubber	Brown	—
Fluorine rubber	Black	F
EPR	Black	E

Replacement Parts/Mounting Nut

How to Order

ZPNA—M16

Mounting thread

M16	M16 X 1.5
M18	M18 X 1.5
M22	M22 X 1.5

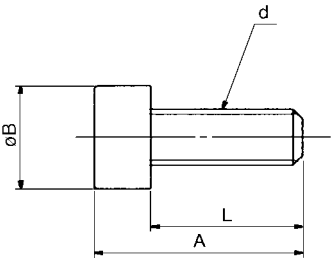
Mounting nut part number of "M14 X 1" is "SN-015A".

Dimensions

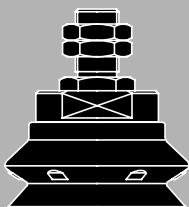
Unit: mm				
Part number	A	B	d	H
SN-015A	19	21.9	M14 X 1	5
ZPNA-M16	22	25.4	M16 X 1.5	6
ZPNA-M18	27	31.2	M18 X 1.5	9
ZPNA-M22	30	34.6	M22 X 1.5	8

Bolts

Dimensions



Unit: mm			
A	øB	d	L
11	5.5	M3	8
12	7	M4	8
15	8.5	M5	10



Large Size Bellows Style Vacuum Pad

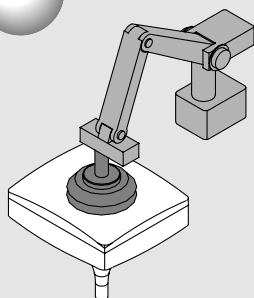
Series **ZPT/ZPX**

Pad diameter: $\varnothing 40$, $\varnothing 50$, $\varnothing 63$, $\varnothing 80$, $\varnothing 100$, $\varnothing 125$

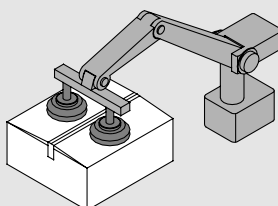
For loads with a curved surface
For heavyweight loads
For loads with large surface area



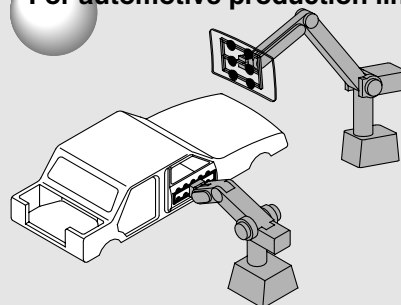
For transfer of CRT



For transfer of
cardboard box



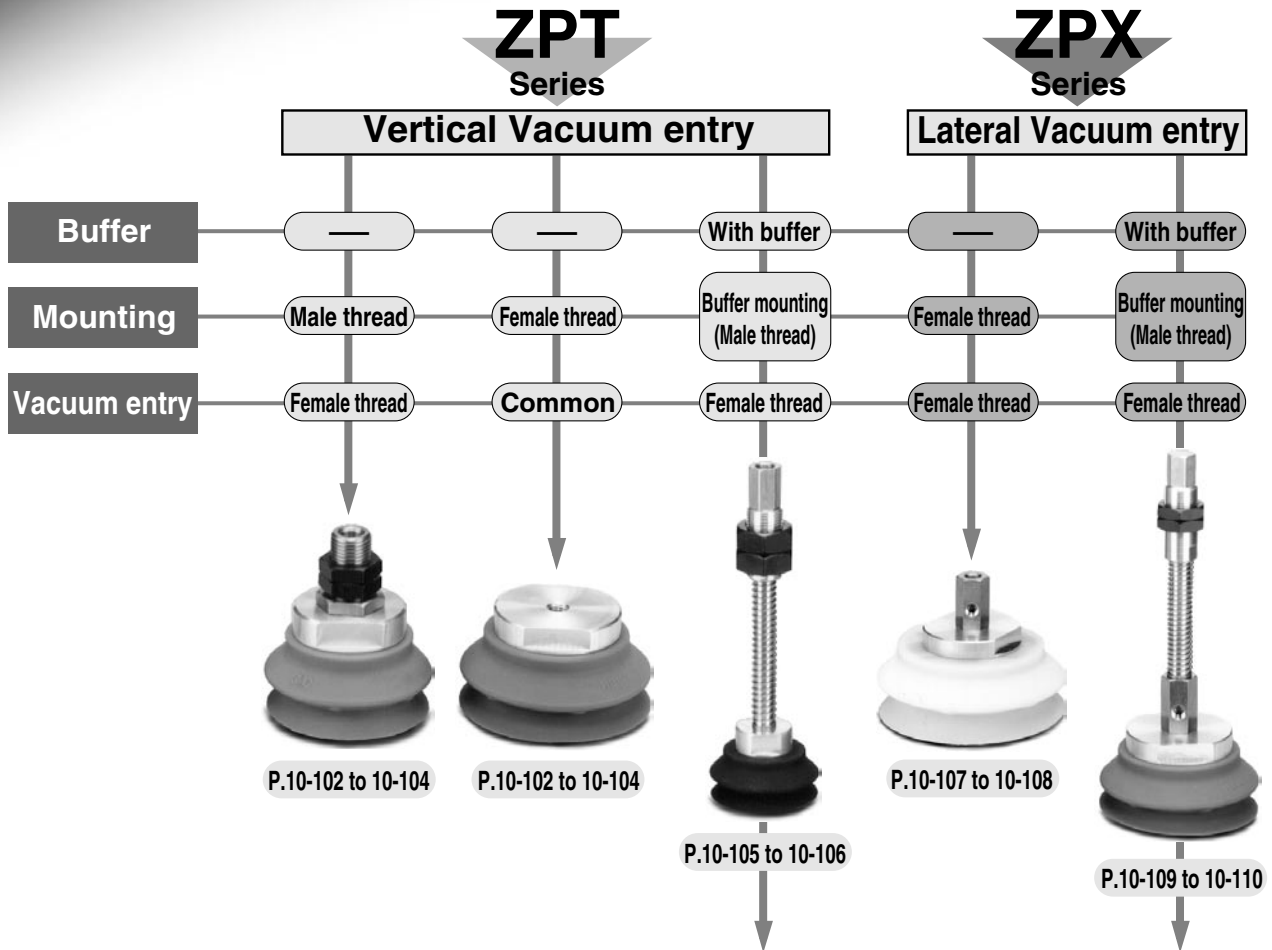
For automotive production line



Large Size Bellows Style Vacuum Pad

Series ZPT/ZPX

Pad diameter: $\phi 40$, $\phi 50$, $\phi 63$, $\phi 80$, $\phi 100$, $\phi 125$
 Pad material: NBR, Silicone rubber, Urethane rubber, Fluorine rubber, EPR



Buffer stroke						
Pad dia.	$\phi 40$	$\phi 50$	$\phi 63$	$\phi 80$	$\phi 100$	$\phi 125$
25	●	●	●	●	●	●
50	●	●	●	●	●	●
75	●	●	●	●	●	●
100	—	—	—	—	●	●

Pad Materials and Characteristics

◎: Little or no influence ○: Can be used depending on conditions. X: Not suitable

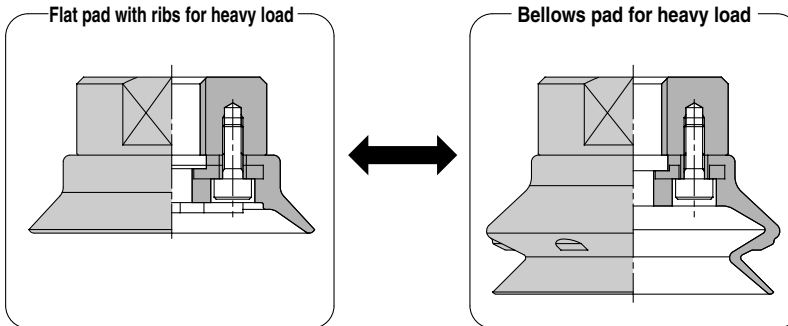
Material	Item	Durometer HS ($\pm 5^\circ$)	Temperature range ($^\circ\text{C}$)	Oil resistance (gasoline)	Oil resistance (benzol)	Alkali resistance	Acid resistance	Weatherability	Ozone resistance	Abrasion resistance	Waterproof	Solvents (benzene, toluene)
NBR		50°	0 to 120	◎	X	○	○	X	X	◎	○	X
Silicone rubber		50°	-30 to 250	X	X	○	X	◎	◎	X	○	X
Urethane rubber		60°	0 to 60	◎	X	X	X	○	◎	◎	X	X
Fluorine rubber		60°	0 to 250	◎	◎	X	◎	◎	◎	○	◎	◎
EPR		50°	-20 to 150	X	X	◎	○	◎	◎	○	◎	X

The above table covers only general characteristics of subject rubber materials.

Pad material used SMC pass nominal JIS material standards; however, actual performance depends on operating conditions.

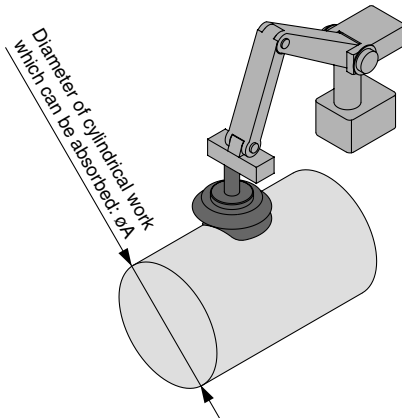
Interchangeable with flat pad with ribs for heavy loads

When changing to a different shape pad due to load change, the pad can be easily interchanged.



Possible combination — Same pad diameter, $\phi 40$ and $\phi 50$, $\phi 63$ and $\phi 80$, $\phi 100$ and $\phi 125$

Possible adsorption to cylindrical loads with easy fit to the load shape.



*Pushing force for adsorption is almost equivalent to return force of buffer spring.

Table 1: Diameter of cylindrical work which can be absorbed. (Reference value)

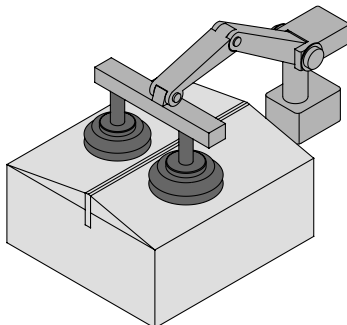
Model	Dia. of cylindrical work which can be absorbed: $\phi A^{(1)}$
ZP 40HB □	$\phi 80$ or more
50HB □	$\phi 100$ or more
63HB □	$\phi 120$ or more
80HB □	$\phi 160$ or more
100HB □	$\phi 180$ or more
125HB □	$\phi 230$ or more

Note 1) Consult SMC when requiring a diameter smaller than shown in table.

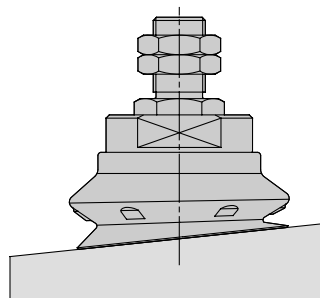
Note 2) Regard values mentioned above as reference only, since actual valves may depend on operating conditions.

Pad shape permits adsorption to sloped surfaces.

●When work shape or angles are transformed during adsorption or transportation.
(Example of a cardboard box)



●When adsorbed surface of work is sloped.
(Maximum angle: 5° *)



*Regard values mentioned above as reference only, since actual valves may depend on operating conditions.

Large Size
Bellows Style

Vertical
Vacuum
Entry

Series ZPT

Without Buffer



Specifications

Mounting	Vacuum entry direction		Vertical	
	Connection		Male thread	Female thread
	Thread dia.	ø40, ø50	M14 X 1	M8/M10
		ø63, ø80	M16 X 1.5	M8/M10/M12/M16 X 1.5
		ø100, ø125	M16 X 1.5	M12/M16 X 1.5
Vacuum entry port		Rc(PT) 1/8	Use connection for mounting	

Pad Style

Pad dia. (mm)	ø40, ø50, ø63, ø80, ø100, ø125
Material (colour)	NBR (black), Silicone rubber (white), Urethane rubber (brown), Fluorine rubber (black with mark F), EPR (black with mark E)
Durometer	NBR/Silicon rubber/EPR (50°), Urethane/Fluorine rubber (60°)

Weight Table

(g)

NBR

Part No.	Weight	Part No.	Weight
ZPT40HBN-A14	73	ZPT 80HBN-A16	195
-B 8	40	-B 8	161
-B10	39	-B10	160
ZPT50HBN-A14	89	-B12	158
-B 8	56	-B16	156
-B10	55	ZPT100HBN-A16	396
ZPT63HBN-A16	155	-B12	347
-B 8	121	-B16	345
-B10	120	ZPT125HBN-A16	580
-B12	118	-B12	531
-B16	116	-B16	529

Add NBR weight to below table for other materials.

Pad dia.	Silicone	Urethane	Fluorine	EPR
ø40	-1	+1	+10	0
ø50	-2	+1	+19	0
ø63	-3	+2	+37	0
ø80	-6	+2	+61	0
ø100	-12	+4	+121	-1
ø125	-22	+7	+228	-3

How to Order

ZPT 40 HB N A14

Pad dia. (mm)

40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
125	ø125

Pad style

HB	Large size bellows
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Vacuum entry/ Mounting

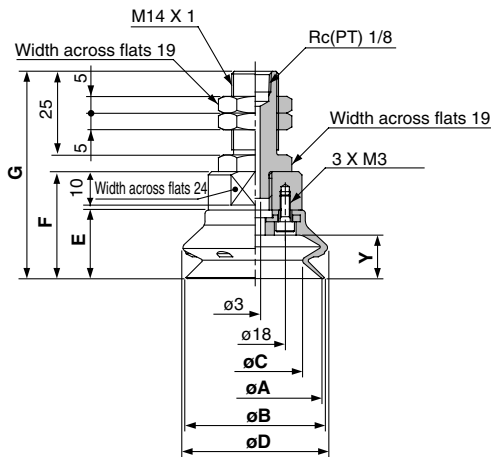
thread diameter		ø40/ø50	ø63/ø80	ø100/ø125
A14	M14 X 1	●	—	—
A16	M16 X 1.5	—	●	●
B 8	M 8	●	●	—
B10	M10	●	●	—
B12	M12	—	●	●
B16	M16 X 1.5	—	●	●

Material

N	NBR
S	Silicone rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

Without Buffer *Series ZPT*

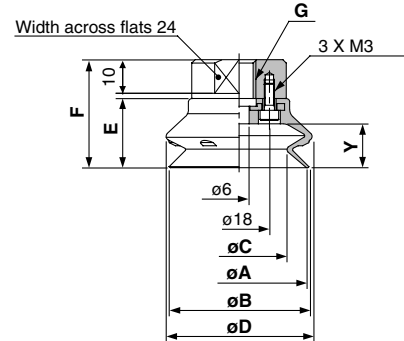
ZPT⁴⁰₅₀HB□-A14 (Male thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	Y
ZPT40HB□-A14	40	41.4	28.4	43.2	20.5	32	62	13
ZPT50HB□-A14	50	51.9	35.7	54	24	35.5	65.5	16.5

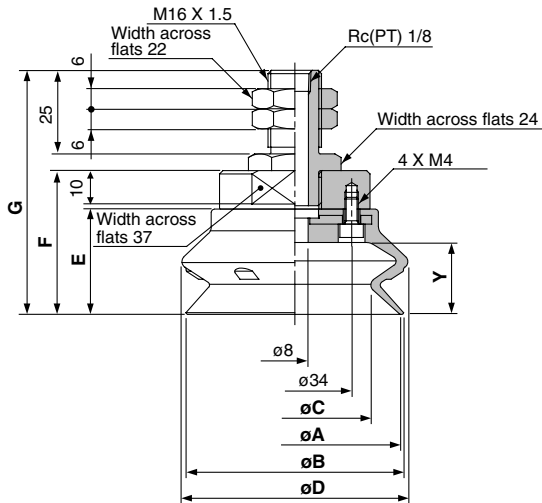
ZPT⁴⁰₅₀HB□-B□ (Female thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	Y
ZPT40HB□-B 8	40	41.4	28.4	43.2	20.5	32	M8	13
-B10							M10	
ZPT50HB□-B 8	50	51.9	35.7	54	24	35.5	M8	16.5
-B10							M10	

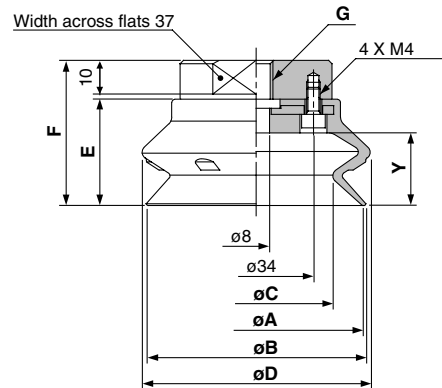
ZPT⁶³₈₀HB□-A16 (Male thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	Y
ZPT63HB□-A16	63	65.1	45.5	67.6	31.5	43	73	21.5
ZPT80HB□-A16	80	83	58.4	85.1	37	48.5	78.5	27.5

ZPT⁶³₈₀HB□-B□ (Female thread)

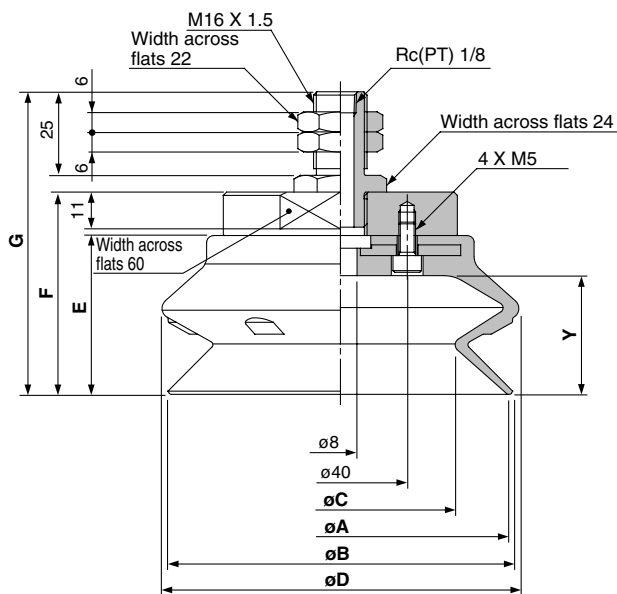


Dimensions (mm)

Part No.	A	B	C	D	E	F	G	Y
ZPT63HB□-B 8	63	65.1	45.5	67.6	31.5	43	M8	21.5
-B10							M10	
-B12							M12	
-B16							M16 X 1.5	
ZPT80HB□-B 8	80	83	58.4	85.1	37	48.5	M85	27.5
-B10							M10	
-B12							M12	
-B16							M16 X 1.5	

Series ZPT

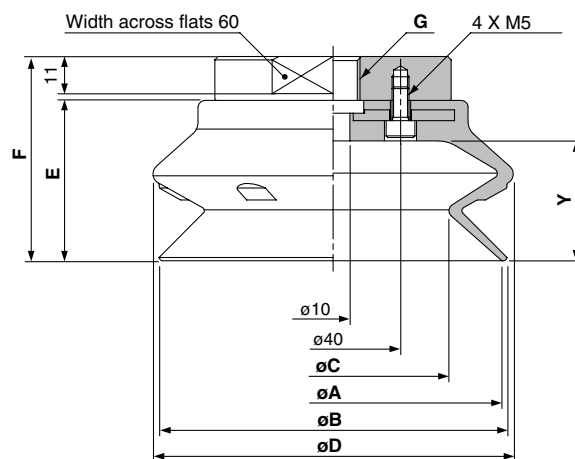
ZPT¹⁰⁰₁₂₅HB□-A16 (Male thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	Y
ZPT100HB□-A16	100	103	68.5	107	47.5	60.5	90.5	35.5
ZPT125HB□-A16	125	128.5	88.5	135	56	69	99	44

ZPT¹⁰⁰₁₂₅HB□-B□ (Female thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	Y
ZPT100HB□-B12	100	103.1	68.6	106.7	47.5	60.5	M12	35.5
-B16							M16 X 1.5	
ZPT125HB□-B12	125	128.5	88.6	135	56	69	M12	44
-B16							M16 X 1.5	

Large size
Bellows Style

Vertical
Vacuum
Entry

Series ZPT

With Buffer



Specifications

Mounting	Vacuum entry direction		Vertical
	Connection		Male thread
	Thread dia.	ø40, ø50	M18 X 1.5
		ø63, ø80	M18 X 1.5
		ø100, ø125	M22 X 1.5
Vacuum entry port			Rc(PT) 1/8

Buffer style		Rotating (J)
Buffer stroke	ø40 to ø80	25, 50, 75 (mm)
	ø100, ø125	25, 50, 75, 100 (mm)

Pad Style

Pad dia. (mm)	ø40, ø50, ø63, ø80, ø100, ø125
Material (colour)	NBR (black), Silicone rubber (white), Urethane rubber (brown), Fluorine rubber (black with mark F), EPR (black with mark E)
Durometer	NBR/Silicone rubber/EPR (50°), Urethane/Fluorine rubber (60°)

Weight Table

(g)

NBR

Part No.	Weight	Part No.	Weight
ZPT40HBNJ25-B01-A18	127	ZPT 80HBNJ50-B01-A18	268
50-B01-A18	147	75-B01-A18	289
75-B01-A18	168	ZPT100HBNJ25-B01-A22	535
ZPT50HBNJ25-B01-A18	143	50-B01-A22	575
50-B01-A18	163	75-B01-A22	620
75-B01-A18	201	100-B01-A22	659
ZPT63HBNJ25-B01-A18	208	ZPT125HBNJ25-B01-A22	719
50-B01-A18	228	50-B01-A22	759
75-B01-A18	249	75-B01-A22	804
ZPT80HBNJ25-B01-A18	231	100-B01-A22	843

Add NBR weight to below table for other materials.

Pad dia.	Silicone	Urethane	Fluorine	EPR
ø40	-1	+1	+10	0
ø50	-2	+1	+19	0
ø63	-3	+2	+37	0
ø80	-6	+2	+61	0
ø100	-12	+4	+121	-1
ø125	-22	+7	+228	-3

How to Order

ZPT 40 HB N J 25 - B01 - A18

Pad dia. (mm)

40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
125	ø125

Pad style

HB	Large size bellows
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Spring force

ø40 to ø80	First mounting load	6.9N
	Second mounting load	11.8N
ø100, ø150	First mounting load	10N
	Second mounting load	15N

Material

N	NBR
S	Silicone rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

Vacuum entry

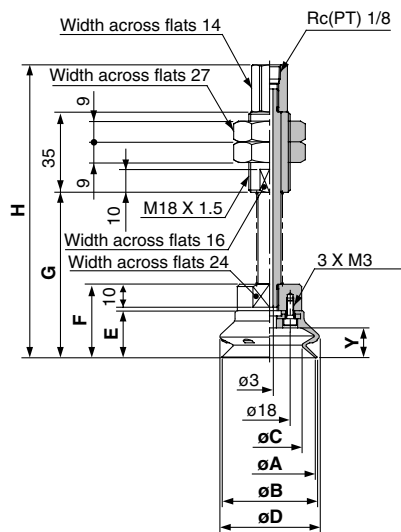
B01	Rc(PT) 1/8
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Applicable buffer stroke (Rotating)

Stroke	ø40	ø50	ø63	ø80	ø100	ø125
25	●	●	●	●	●	●
50	●	●	●	●	●	●
75	●	●	●	●	●	●
100	—	—	—	—	●	●

Series ZPT

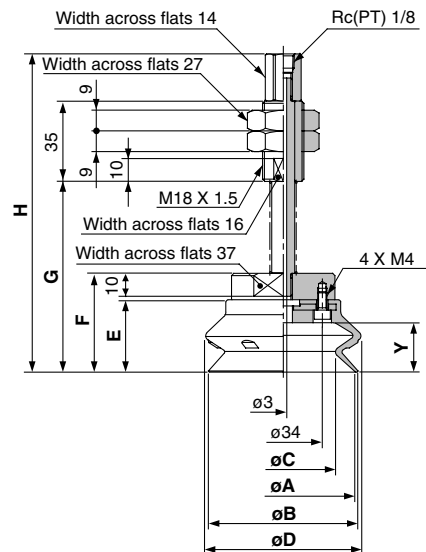
ZPT₄₀⁵⁰HB□J□-B01-A18 (Male thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	H	Y
ZPT40HB□J25-B01-A18							72	127.5	
50-B01-A18	40	41.4	28.4	43.2	20.5	32	107	162.5	13
75-B01-A18							143	198.5	
ZPT50HB□J25-B01-A18							75.5	131	
50-B01-A18	50	51.9	35.7	54	24	35.5	110.5	166	16.5
75-B01-A18							146.5	202	

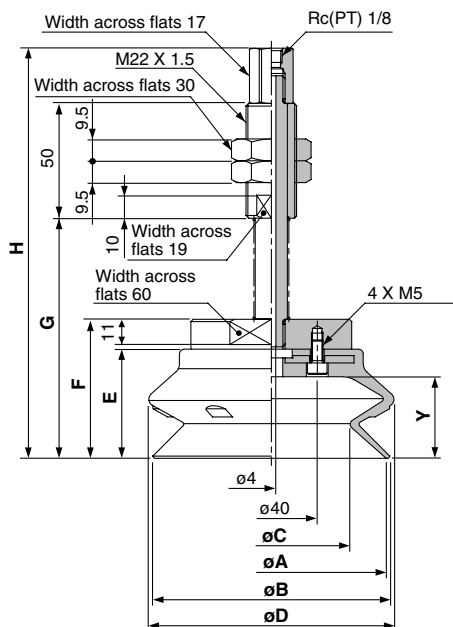
ZPT₆₃⁸⁰HB□J□-B01-A18 (Male thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	H	Y
ZPT63HB□J25-B01-A18							83	138.5	
50-B01-A18	63	65.1	45.5	67.6	31.5	43	118	173.5	21.5
75-B01-A18							154	209.5	
ZPT80HB□J25-B01-A18							88.5	144	
50-B01-A18	80	83	58.5	85.1	37	48.5	123.5	179	27.5
75-B01-A18							159.5	215	

ZPT₁₀₀¹²⁵HB□J□-B01-A22 (Male thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	H	Y
ZPT100HB□J25-B01-A22							104.5	178.5	
50-B01-A22	100	103.1	68.6	106.7	47.5	60.5	140.5	214.5	35.5
75-B01-A22							180.5	254.5	
100-B01-A22							215.5	289.5	
ZPT125HB□J25-B01-A22							113	187	
50-B01-A22	125	128.5	88.6	135	56	69	149	223	44
75-B01-A22							189	263	
100-B01-A22							224	298	

Large size
Bellows Style

Lateral
Vacuum
Entry

Series ZPX

Without Buffer



Specifications

Mounting	Vacuum entry direction		Lateral
	Connection		Famale thread
	Thread dia.	ø40, ø50	M8 M10
		ø63, ø80	M10 M12
		ø100, ø125	M10 M12
Vacuum entry port		Rc(PT) 1/8	

Pad Style

Pad dia. (mm)	ø40, ø50, ø63, ø80, ø100, ø125
Material (colour)	NBR (black), Silicone rubber (white), Urethane rubber (brown), Fluorine rubber (black with mark F), EPR (black with mark E)
Durometer	NBR/Silicone rubber/EPR (50°), Urethane/Fluorine rubber (60°)

Weight Table

(g)

NBR

Part No.	Weight	Part No.	Weight
ZPX40HBN-B01-B 8	150	ZPX 80HBN-B01-B10	275
-B10	152	-B12	271
ZPX50HBN-B01-B 8	166	ZPX100HBN-B01-B10	464
-B10	164	-B12	460
ZPX63HBN-B01-B10	235	ZPX125HBN-B01-B10	648
-B12	225	-B12	644

Add NBR weight to below table for other materials.

Pad dia.	Silicone	Urethane	Fluorine	EPR
ø40	-1	+1	+10	0
ø50	-2	+1	+19	0
ø63	-3	+2	+37	0
ø80	-6	+2	+61	0
ø100	-12	+4	+121	+1
ø125	-22	+7	+228	+3

How to Order

ZPX 40 HB N - B01 - B10

Pad dia. (mm)

40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
125	ø125

Pad style

HB Large size bellows

Vacuum entry/Mounting

thread diameter		ø40/ø50	ø63/ø80	ø100/ø125
B 8	M8	●	—	—
B10	M10	●	●	●
B12	M12	—	●	●

Vacuum entry

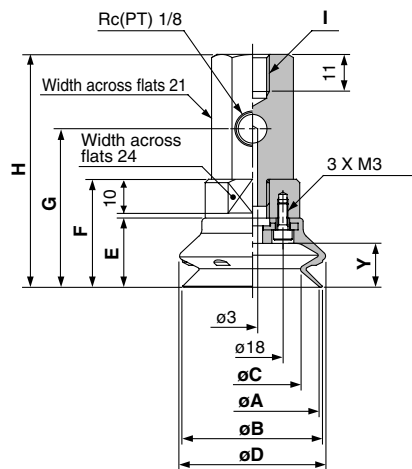
B01 Rc(PT) 1/8

Material

N	NBR
S	Silicone rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

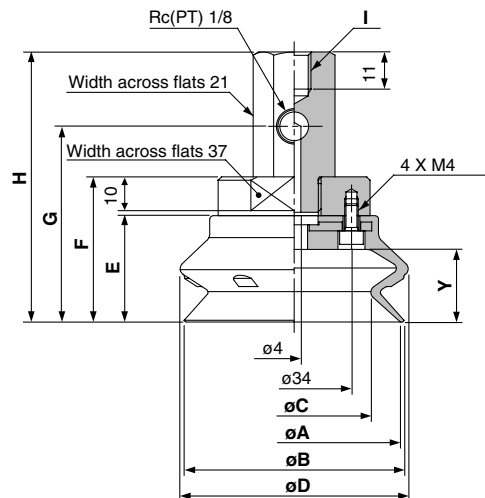
Series ZPX

ZPX₄₀⁵⁰HB□-B01-B□ (Female thread)



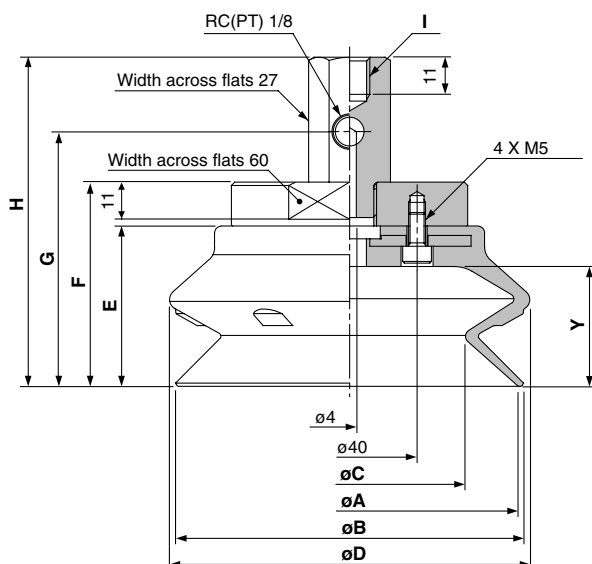
Dimensions (mm)									
Part No.	A	B	C	D	E	F	G	H	I
ZPX40HB□-B01-B 8	40	41.4	28.4	43.2	20.5	32	47	69	M8
-B10									M10
ZPX50HB□-B01-B 8	50	51.9	35.7	54	24	35.5	50.5	72.5	M8
-B10									M10

ZPX₆₃⁸⁰HB□-B01-B□ (Female thread)



Dimensions (mm)									
Part No.	A	B	C	D	E	F	G	H	I
ZPX63HB□-B01-B10	63	65.1	45.5	67.6	31.5	43	58	80	M10
-B12									M12
ZPX80HB□-B01-B10	80	83	58.4	85.1	37	48.5	63.5	85.5	M10
-B12									M12

ZPX₁₀₀¹²⁵HB□-B01-B□ (Female thread)



Dimensions (mm)									
Part No.	A	B	C	D	E	F	G	H	I
ZPX100HB□-B01-B10	100	103.1	68.6	106.7	47.5	60.5	75.5	97.5	M10
-B12									M12
ZPX125HB□-B01-B10	125	128.5	88.6	135	56	69	84	106	M10
-B12									M12

Large size
Bellows Style

Lateral
Vacuum
Entry

Series ZPX

With Buffer



Specifications

Mounting	Vacuum entry direction	Lateral
	Connection	Male thread
	Thread dia.	ø40, ø50 M18 X 1.5 ø63, ø80 M18 X 1.5 ø100, ø125 M22 X 1.5
	Vacuum entry port	Rc(PT) 1/8

Buffer style		Rotating (J)
Buffer stroke	ø40 to ø80	25, 50, 75 (mm)
	ø100, ø125	25, 50, 75, 100 (mm)

Pad Style

Pad dia. (mm)	ø40, ø50, ø63, ø80, ø100, ø125
Material (colour)	NBR (black), Silicone rubber (white), Urethane rubber (brown), Fluorine rubber (black with mark F), EPR (black with mark E)
Durometer	NBR/Silicone rubber/EPR (50°), Urethane/Fluorine rubber (60°)

Weight Table

(g)

NBR

Part No.	Weight	Part No.	Weight
ZPX40HBNJ25-B01-A18	268	ZPX 80HBNJ50-B01-A18	418
50-B01-A18	289	75-B01-A18	441
75-B01-A18	312	ZPX100HBNJ25-B01-A22	684
ZPX50HBNJ25-B01-A18	284	50-B01-A22	723
50-B01-A18	305	75-B01-A22	767
75-B01-A18	328	100-B01-A22	806
ZPX63HBNJ25-B01-A18	357	ZPX125HBNJ25-B01-A22	868
50-B01-A18	378	50-B01-A22	907
75-B01-A18	401	75-B01-A22	951
ZPX80HBNJ25-B01-A18	397	100-B01-A22	990

Add NBR weight to below table for other materials.

Pad dia.	Silicone	Urethane	Fluorine	EPR
ø40	-1	+1	+10	0
ø50	-2	+1	+19	0
ø63	-3	+2	+37	0
ø80	-6	+2	+61	0
ø100	-12	+4	+121	-1
ø125	-22	+7	+228	-3

How to Order

ZPX 40 HB N J 25 - B01 - A18

Pad dia. (mm)

40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
125	ø125

Pad style

HB	Large size bellows
----	--------------------

Spring force

ø40 to ø80	First mounting load	6.9N
	Second mounting load	11.8N
ø100, ø150	First mounting load	10N
	Second mounting load	15N

Material

N	NBR
S	Silicone rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

Vacuum entry

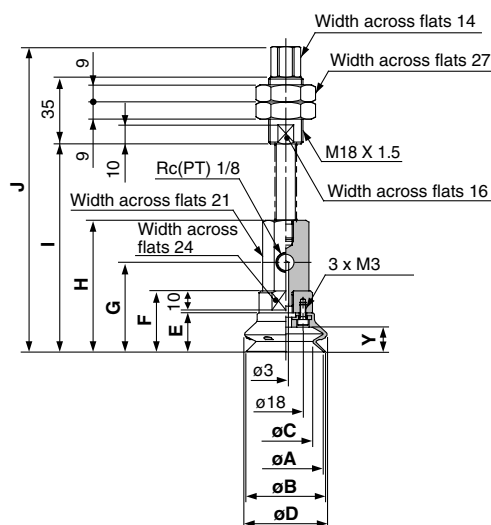
B01	Rc(PT) 1/8
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Applicable buffer stroke (Rotating)

Stroke	ø40	ø50	ø63	ø80	ø100	ø125
25	●	●	●	●	●	●
50	●	●	●	●	●	●
75	●	●	●	●	●	●
100	—	—	—	—	●	●

Series ZPX

ZPX₅₀⁴⁰HB□J□-B01-A18 (Male thread)

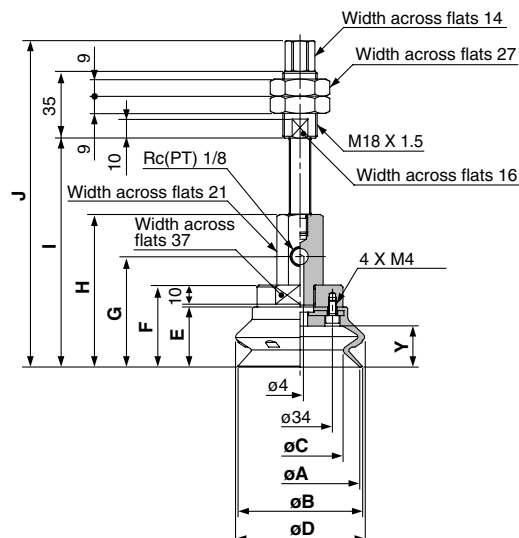


Dimensions

(mm)

Part No.	A	B	C	D	E	F	G	H	I	J	Y
ZPX40HB□J25-B01-A18									109	160	
50-B01-A18	40	41.4	28.4	43.2	20.5	32	47	69	144	195	13
75-B01-A18									180	231	
ZPX50HB□J25-B01-A18									112.5	163.5	
50-B01-A18	50	51.9	35.7	54	24	35.5	50.5	72.5	147.5	198.5	16.5
75-B01-A18									183.5	234.5	

ZPX₈₀⁶³HB□J□-B01-A18 (Male thread)

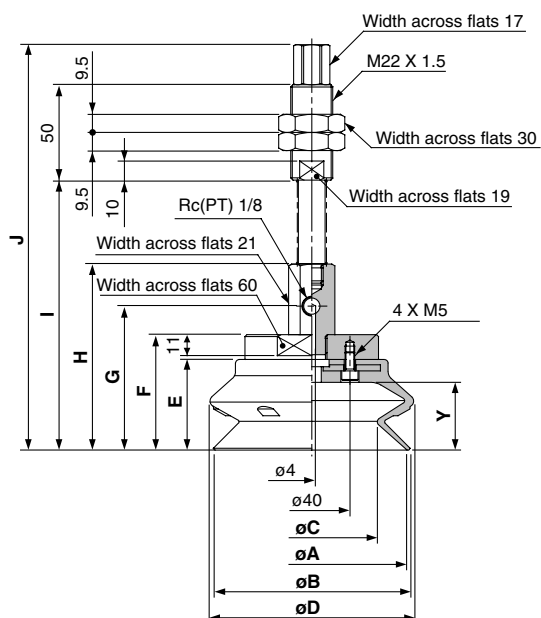


Dimensions

(mm)

Part No.	A	B	C	D	E	F	G	H	I	J	Y
ZPX63HB□J25-B01-A18										120	171
50-B01-A18	63	65.1	45.5	67.6	31.5	43	58	80	155	206	21.5
75-B01-A18									191	242	
ZPX80HB□J25-B01-A18									125.5	176.5	
50-B01-A18	80	83	58.4	85.1	37	48.5	63.5	85.5	160.5	211.5	27.5
75-B01-A18									196.5	247.5	

ZPX₁₂₅¹⁰⁰HB□J□-B01-A22 (Male thread)



Dimensions

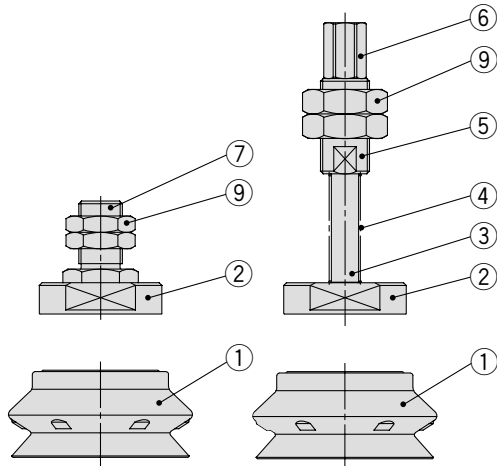
(mm)

Part No.	A	B	C	D	E	F	G	H	I	J	Y
ZPX100HB□J25-B01-A22									141.5	212.5	
50-B01-A22	100	103.1	68.6	106.7	47.5	60.5	75.5	97.5	177.5	248.5	35.5
75-B01-A22									217.5	288.5	
100-B01-A22									252.5	323.5	
ZPX125HB□J25-B01-A22									150	221	
50-B01-A22	125	128.5	88.6	135	56	69	84	106	186	257	44
75-B01-A22									226	297	
100-B01-A22									261	332	

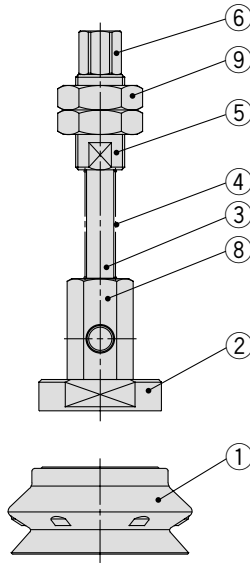
Large Size Bellows Style *Series ZPT/ZPX*

Construction

Series ZPT



Series ZPX



Spare parts

No.	Description	Material	Surface treatment
①	Pad	NBR, Silicone rubber, Urethane rubber, Fluorine rubber, EPR	—
②	Adaptor plate	Aluminum	Hard chrome plated
③	Piston rod	Carbon steel	—
④	Spring	Stainless steel	—
⑤	Buffer body	Aluminum	Electroless nickel plated
⑥	Buffer adaptor	Brass	Electroless nickel plated
⑦	Adaptor A	Brass	Electroless nickel plated
⑧	X type adaptor	Brass	Electroless nickel plated
⑨	Mounting nut	Rolled steel	Black zinc chromated

Replacement Parts/Pad Unit

How to Order

ZP 40 HB N

Pad dia. (mm) Material

40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
125	ø125

Pad style
HB Large size bellows

N	NBR
S	Silicone rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

Weight Table

(g)

NBR

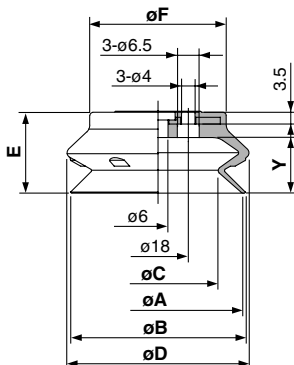
Part No.	Weight
ZP 40HBN	17
ZP 50HBN	33
ZP 63HBN	63
ZP 80HBN	103
ZP100HBN	206
ZP125HBN	390

Add NBR weight to below table for other materials.

Pad dia.	Silicone	Urethane	Fluorine	EPR
ø40	-1	+1	+10	0
ø50	-2	+1	+19	0
ø63	-3	+2	+37	0
ø80	-6	+2	+61	0
ø100	-12	+4	+121	-1
ø125	-22	+7	+228	-3

Dimensions

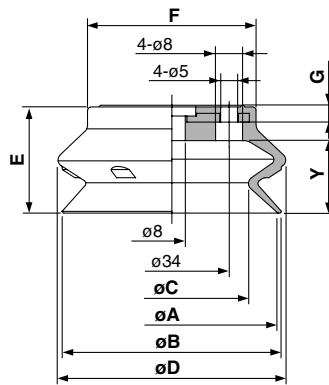
ZP⁴⁰₅₀HB□



Dimensions (mm)

Part No.	A	B	C	D	E	F	Y
ZP40HB□	40	41.4	28.4	43.2	20.5	30	13
ZP50HB□	50	51.9	35.7	54	24	40.5	16.5

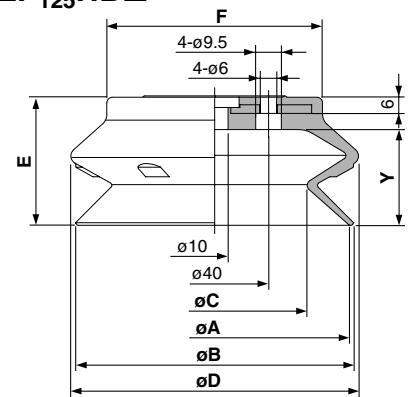
ZP⁶³₈₀HB□



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	Y
ZP63HB□	63	65.1	45.5	67.6	31.5	50	4.5	21.5
ZP80HB□	80	83	58.4	85.1	37	64	5	27.5

ZP¹⁰⁰₁₂₅HB□



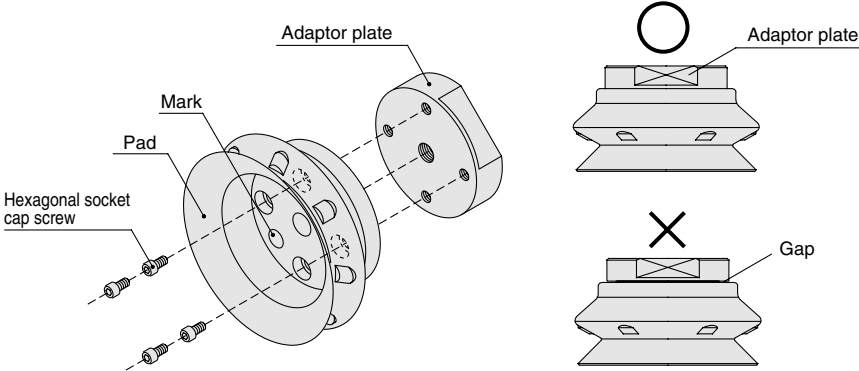
Dimensions (mm)

Part No.	A	B	C	D	E	F	Y
ZP100HB□	100	103.1	68.6	106.7	47.5	80	35.5
ZP125HB□	125	128.5	88.6	135	56	105	44

Series ZPT/ZPX

How to Assemble/Disassemble

Remove bolts with a hex. key wrench from the pad underside. Tighten new pad with the bolts ensuring there is no gap between the adaptor plate and the pad.



How to Distinguish Different Pad Materials

Check for the indicator mark on the pad's interior surface as shown in the figure at left.

Material	Color	Mark
NBR	Black	—
Silicone rubber	White	—
Urethane rubber	Brown	—
Fluorine rubber	Black	(F)
EPR	Black	(E)

Replacement Parts/Mounting Nut

How to Order

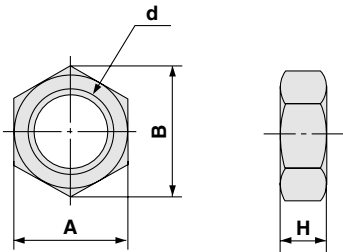
ZPNA—M16

● Mounting thread

M16	M16 X 1.5
M18	M18 X 1.5
M22	M22 X 1.5

Mounting nut part number for "M14 X 1" is "SN-015A".

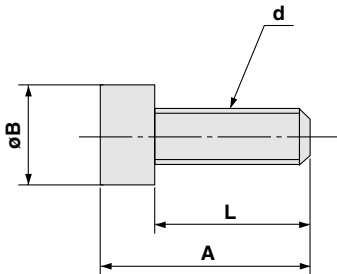
Dimensions



Dimensions (mm)				
Part No.	A	B	d	H
SN-015A	19	21.9	M14 X 1	5
ZPNA-M16	22	25.4	M16 X 1.5	6
ZPNA-M18	27	31.2	M18 X 1.5	9
ZPNA-M22	30	34.6	M22 X 1.5	8

Bolts (Hexagonal Socket Head Cap Screw)

Dimensions



Dimensions (mm)			
A	B	d	L
11	5.5	M3	8
12	7	M4	8
15	8.5	M5	10

Basic Pad Series **ZP** Mounting Bracket Assembly

Adapter Assembly: Vacuum Inlet Direction **Vertical** T Type/ZPT

Product part no.	ZPT ① ② □ - ③ Pad diameter • Vacuum inlet (Male/Female thread) Pad form • Pad material
Component parts	Ⓒ Gasket Ⓐ Adapter (With gasket) Male thread Thin flat type/Thin flat type with ribs: ø02 to ø08 ø10 to ø16 Male thread Ⓑ Mounting nut Ⓐ Adapter (With mounting nut) ø10 to ø50 Female thread Ⓐ Adapter ø02 to ø50

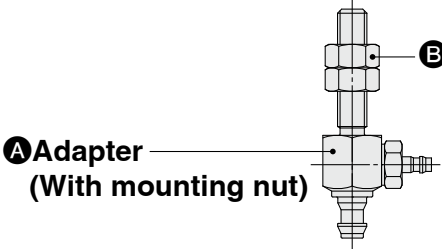
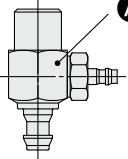
		Symbol	① Pad diameter symbol														
			02	04	06	08	10	13	16	10	13	16	20	25	32	40	50
② Pad form	Flat type	U	●	●	●	●	—	—	—	●	●	●	●	●	●	●	●
	Flat type with ribs	C	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●
	Bellows type	B	—	—	●	●	—	—	—	●	●	●	●	●	●	●	●
	Thin flat type	UT	—	—	—	—	●	●	●	—	—	—	—	—	—	—	—
	Thin flat type with ribs	CT	—	—	—	—	●	●	●	—	—	—	—	—	—	—	—
	Deep type	D	—	—	—	—	—	—	—	●	—	●	—	●	—	●	—
Ⓐ Adapter	③ Vacuum inlet Male thread	M5 x 0.8	A5 ZPT1-A5						ZPT2-A5			—			—		
		M6 x 1	A6 ZPT1-A6						ZPT2-A6			ZPT3-A6			ZPT4-A6		
		M8 x 1	A8 —						—			ZPT3-A8			ZPT4-A8		
	Female thread	M4 x 0.7	B4 ZPT1-B4						—			—			—		
		M5 x 0.8	B5 ZPT1-B5						ZPT2-B5			ZPT3-B5			—		
		M6 x 1	B6 —						ZPT2-B6			ZPT3-B6			ZPT4-B6		
		M8 x 1.25	B8 —						—			ZPT3-B8			ZPT4-B8		
		Rc1/8	B01 —						ZPT2-B01			ZPT3-B01			ZPT4-B01		
		NPT1/8	N01 —						ZPT2-N01			ZPT3-N01			ZPT4-N01		
		NPTF1/8	T01 —						ZPT2-T01			ZPT3-T01			ZPT4-T01		
Ⓑ Mounting nut (Single unit)	M5 x 0.8		—						NTJ-015A			—			—		
	M6 x 1		—						ZPNA-M6			ZPNA-M6			ZPNA-M6		
	M8 x 1		—						—			ZPNA-M8			ZPNA-M8		
Ⓒ Gasket (Single unit)	For M5 x 0.8		M-5G2						—			—			—		
	For M6 x 1		M-6G						—			—			—		

Adapter Assembly: With One-touch Fitting, Vacuum Inlet Direction Lateral R Type/ZPR

Product part no.	ZPR ① ② □ - ③ - ④ Pad diameter Pad form Pad material Connection thread (Male/Female thread) Vacuum inlet (One-touch fitting)
Component parts	Male thread Female thread

					Symbol	① Pad diameter symbol																	
						02	04	06	08	10	13	16	10	13	16	20	25	32	40	50			
② Pad form					Flat type	U	●	●	●	●	—	—	—	●	●	●	●	●	●	●	●		
					Flat type with ribs	C	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●	●	●
					Bellows type	B	—	—	●	●	—	—	—	●	●	●	●	●	●	●	●	●	●
					Thin flat type	UT	—	—	—	—	●	●	●	—	—	—	—	—	—	—	—	—	—
					Thin flat type with ribs	CT	—	—	—	—	●	●	●	—	—	—	—	—	—	—	—	—	—
					Deep type	D	—	—	—	—	—	—	—	●	—	●	—	●	—	—	●	—	●
④ Adapter	③ Vacuum inlet (One-touch fitting)	ø4	04	④ Connection thread	Male thread	M5 x 0.8	A5	ZPRS-04-A5						ZPRS-04-A5			—			—			
						M6 x 1	A6	ZPRS-04-A6						ZPRS-04-A6			ZPRL-04-A6			—			
						M8 x 1	A8	—						—			ZPRL-04-A8			—			
		Female thread	M4 x 0.7		B4	ZPRS-04-B4						—			—			—					
			M5 x 0.8		B5	ZPRS-04-B5						ZPRS-04-B5			ZPRL-04-B5			—					
			M6 x 1		B6	—						ZPRS-04-B6			ZPRL-04-B6			—					
		M8 x 1.25	B8		—						—			ZPRL-04-B8			—						
			ø6		06	Male thread	M5 x 0.8	A5	ZPRS-06-A5						ZPRS-06-A5			—			—		
							M6 x 1	A6	ZPRS-06-A6						ZPRS-06-A6			ZPRL-06-A6			ZPRL-06-A6		
		M8 x 1					A8	—						—			ZPRL-06-A8			ZPRL-06-A8			
		Female thread	M4 x 0.7		B4	ZPRS-06-B4						—			—			—					
			M5 x 0.8		B5	ZPRS-06-B5						ZPRS-06-B5			ZPRL-06-B5			—					
	M6 x 1		B6	—						ZPRS-06-B6			ZPRL-06-B6			ZPRL-06-B6							
	ø8	08	Male thread	M8 x 1.25	B8	—						—			ZPRL-06-B8			ZPRL-06-B8					
				M6 x 1	A6	—						—			ZPRL-08-A6			ZPRL-08-A6					
				M8 x 1	A8	—						—			ZPRL-08-A8			ZPRL-08-A8					
				M5 x 0.8	B5	—						—			ZPRL-08-B5			—					
				M6 x 1	B6	—						—			ZPRL-08-B6			ZPRL-08-B6					
				M8 x 1.25	B8	—						—			ZPRL-08-B8			ZPRL-08-B8					
③ Pad mounting adapter					ZPT1-B5						ZPT2-B5			ZPT3-B8			ZPT4-B8						
⑤ Mounting nut (Single unit)					M5 x 0.8	NTJ-015A						NTJ-015A			—			—					
					M6 x 1	ZPNA-M6						ZPNA-M6			ZPNA-M6			ZPNA-M6					
					M8 x 1	—						—			ZPNA-M8			ZPNA-M8					
⑥ Gasket (Single unit)					M-5G2						M-5G2			ZP-8G2			ZP-8G2						

Adapter Assembly: With Barb Fitting, Vacuum Inlet Direction Lateral Y Type/ZPY

Product part no.	ZPY ① ② □ - ③ - ④ Pad diameter ● Pad form ● Vacuum inlet (Barb fitting) ● Connection thread (Male/Female thread) ● Pad material ●
Component parts	Male thread  A Adapter (With mounting nut) Female thread  A Adapter

					Symbol	① Pad diameter symbol																		
						02	04	06	08	10	13	16	10	13	16	20	25	32	40	50				
② Pad form					Flat type	U	●	●	●	●	—	—	—	●	●	●	●	●	●	●				
					Flat type with ribs	C	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●	●		
					Bellows type	B	—	—	●	●	—	—	—	●	●	●	●	●	●	●	●	●		
					Thin flat type	UT	—	—	—	—	●	●	●	—	—	—	—	—	—	—	—	—		
					Thin flat type with ribs	CT	—	—	—	—	●	●	●	—	—	—	—	—	—	—	—	—		
					Deep type	D	—	—	—	—	—	—	—	●	—	●	—	●	—	●	—	—		
④ Adapter	③ Vacuum inlet (Barb fitting)	For nylon tubing	ø4	N4	④ Connection thread	Male thread	M5 x 0.8	A5	ZPY1-N4-A5					ZPY2-N4-A5			—			—				
							M6 x 1	A6	ZPY1-N4-A6					ZPY2-N4-A6			ZPY3-N4-A6			—				
							M8 x 1	A8	—					—			ZPY3-N4-A8			—				
			Female thread	M4 x 0.7		B4	ZPY1-N4-B4					—			—			—						
				M5 x 0.8		B5	ZPY1-N4-B5					ZPY2-N4-B5			ZPY3-N4-B5			—						
				M6 x 1		B6	—					ZPY2-N4-B6			ZPY3-N4-B6			—						
	ø6	N6	Male thread	M8 x 1.25		B8	—					—			ZPY3-N4-B8			—						
				M5 x 0.8		A5	ZPY1-N6-A5					ZPY2-N6-A5			—			—						
				M6 x 1		A6	ZPY1-N6-A6					ZPY2-N6-A6			ZPY3-N6-A6			ZPY4-N6-A6						
			Female thread	M8 x 1		A8	—					—			ZPY3-N6-A8			ZPY4-N6-A8						
				M4 x 0.7		B4	ZPY1-N6-B4					—			—			—						
				M5 x 0.8		B5	ZPY1-N6-B5					ZPY2-N6-B5			ZPY3-N6-B5			—						
	For soft tubing	ø4	U4	Male thread		M6 x 1	B6	—					ZPY2-N6-B6			ZPY3-N6-B6			ZPY4-N6-B6					
						M8 x 1.25	B8	—					—			ZPY3-N6-B8			ZPY4-N6-B8					
						M5 x 0.8	A5	ZPY1-U4-A5					ZPY2-U4-A5			—			—					
				Female thread		M6 x 1	A6	ZPY1-U4-A6					ZPY2-U4-A6			ZPY3-U4-A6			—					
						M8 x 1	A8	—					—			ZPY3-U4-A8			—					
						M4 x 0.7	B4	ZPY1-U4-B4					—			—			—					
						M5 x 0.8	B5	ZPY1-U4-B5					ZPY2-U4-B5			ZPY3-U4-B5			—					
						M6 x 1	B6	—					ZPY2-U4-B6			ZPY3-U4-B6			—					
		ø6	U6	Male thread		M8 x 1.25	B8	—					—			ZPY3-U4-B8			—					
						M5 x 0.8	A5	ZPY1-U6-A5					ZPY2-U6-A5			—			—					
						M6 x 1	A6	ZPY1-U6-A6					ZPY2-U6-A6			ZPY3-U6-A6			ZPY4-U6-A6					
				Female thread		M8 x 1	A8	—					—			ZPY3-U6-A8			ZPY4-U6-A8					
						M4 x 0.7	B4	ZPY1-U6-B4					—			—			—					
						M5 x 0.8	B5	ZPY1-U6-B5					ZPY2-U6-B5			ZPY3-U6-B5			—					
	③ Mounting nut (Single unit)					ø6	U6	Male thread	M6 x 1	B6	—					ZPY2-U6-B6			ZPY3-U6-B6			ZPY4-U6-B6		
									M8 x 1.25	B8	—					—			ZPY3-U6-B8			ZPY4-U6-B8		
									M5 x 0.8	A5	NTJ-015A					—			—			—		

Buffer Assembly: Vacuum Inlet Direction **Vertical** T Type/ZPT

Product part no.	ZPT ① ② □ (J/K) ③ - ④ - ⑤ Pad diameter ● Pad form ● Pad material ● J: Rotating, K: Non-rotating ● Buffer stroke ● Vacuum inlet (Female thread/One-touch fitting/Barb fitting) ● Connection thread (Male thread) ●
Component parts	

			Symbol	① Pad diameter symbol															
				02	04	06	08	10	13	16	10	13	16	20	25	32	40	50	
② Pad form	Flat type		U	●	●	●	●	—	—	—	●	●	●	●	●	●	●	●	
	Flat type with ribs		C	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●	
	Bellows type		B	—	—	●	●	—	—	—	●	●	●	●	●	●	●	●	
	Thin flat type		UT	—	—	—	—	●	●	●	—	—	—	—	—	—	—	—	
	Thin flat type with ribs		CT	—	—	—	—	●	●	●	—	—	—	—	—	—	—	—	
	Deep type		D	—	—	—	—	—	—	—	●	—	●	—	●	—	●	—	
③ Buffer stroke	Stroke		6	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—	
			10	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
			15	●	●	●	●	●	●	●	●	—	—	—	—	—	—	—	
			20	—	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●
			25	●	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—
			30	—	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●
			40	—	—	—	—	—	—	—	—	●	●	●	●	●	●	—	—
			50	—	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●
⑤ Connection thread	Male thread	M8 x 1	A8	●							—			—			—		
		M10 x 1	A10	—							●			●			—		
		M14 x 1	A14	—							—			—			●		
④ Buffer	④ Vacuum inlet	Female thread	M3 x 0.5	B3	ZPB1(J/K)③-B3							—			—			—	
			M5 x 0.8	B5	ZPB1(J/K)③-B5							ZPB2(J/K)③-B5			ZPB2(J/K)③-B5			ZPB3(J/K)③-B5	
			Rc1/8	B01	—							—			—			ZPB3(J/K)③-B01	
			NPT1/8	N01	—							—			—			ZPB3(J/K)③-N01	
		One-touch fitting	NPTF1/8	T01	—							—			—			ZPB3(J/K)③-T01	
			Barb fitting	ø4	04	ZPB1(J/K)③-04							ZPB2(J/K)③-04			ZPB2(J/K)③-04			—
	ø6			06	ZPB1(J/K)③-06							ZPB2(J/K)③-06			ZPB2(J/K)③-06			ZPB3(J/K)③-06	
	ø8			08	—							—			—			ZPB3(J/K)③-08	
	For ø4 nylon tubing			N4	ZPB1(J/K)③-N4							—			—			—	
	For ø6 nylon tubing			N6	—							ZPB2(J/K)③-N6			ZPB2(J/K)③-N6			ZPB3(J/K)③-N6	
	Barb fitting	For ø4 soft tubing	U4	ZPB1(J/K)③-U4							—			—			—		
		For ø6 soft tubing	U6	—							ZPB2(J/K)③-U6			ZPB2(J/K)③-U6			ZPB3(J/K)③-U6		
	⑥ Pad mounting adapter				—							ZPT2-B5			ZPT3-B5			ZPT4-B8	
⑦ Buffer plate (Single unit)				ZPB1							—			—			—		
⑧ Mounting nut (Single unit)				ZPNA-M8							ZPNA-M10			ZPNA-M10			ZPNA-M14		
⑨ Gasket (Single unit)				—							M-5G2			M-5G2			ZP-8G2		

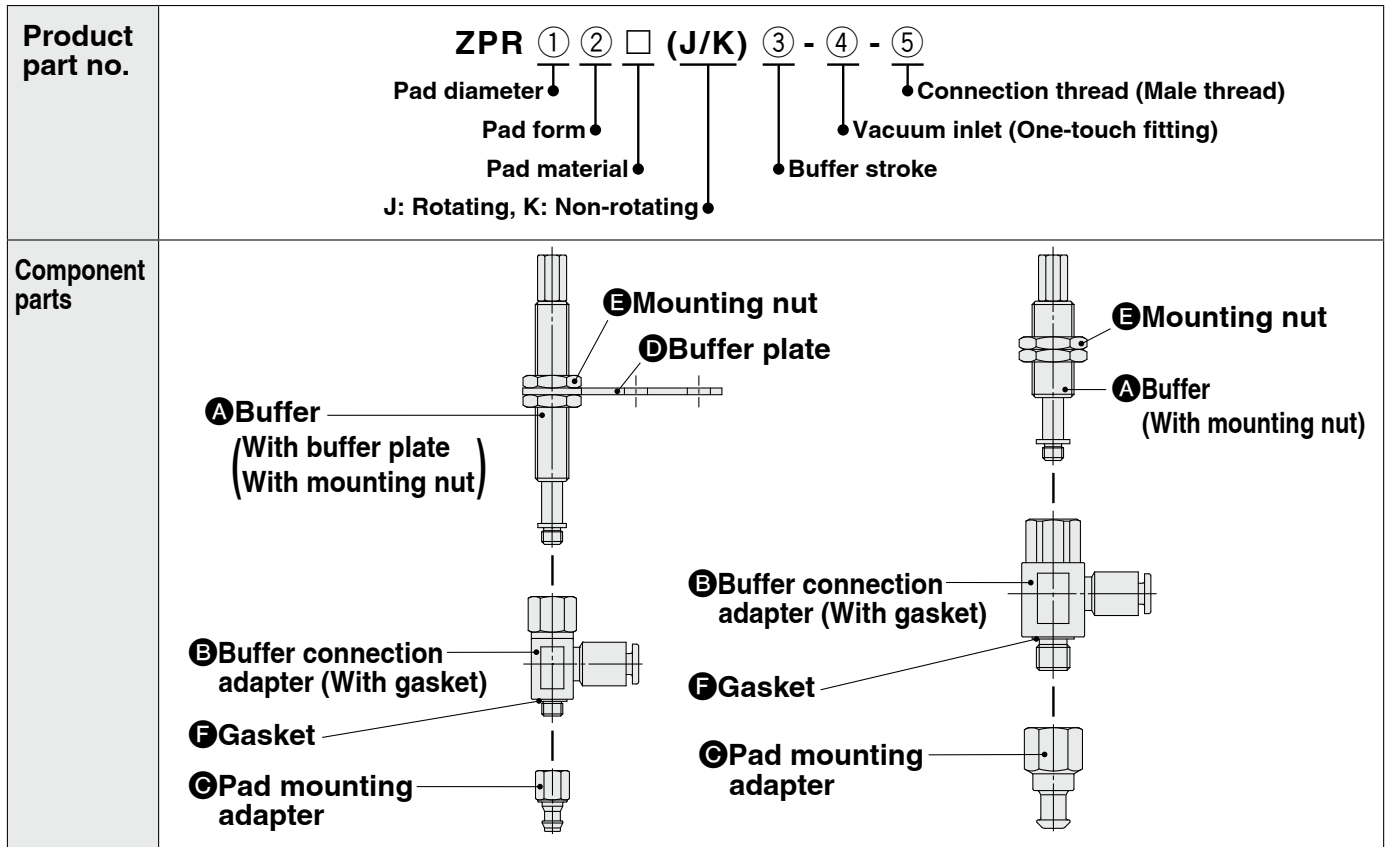
[Buffer assembly part number example]

Product part no. ZPT08UN J 10 - 04 - A8

Buffer assembly ZPB1 J 10 - 04

③ Buffer stroke

Buffer Assembly: With One-touch Fitting, Vacuum Inlet Direction Lateral R Type/ZPR



				Symbol	① Pad diameter symbol															
					02	04	06	08	10	13	16	10	13	16	20	25	32	40	50	
② Pad form	Flat type			U	●	●	●	●	—	—	—	●	●	●	●	●	●	●	●	
	Flat type with ribs			C	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●	
	Bellows type			B	—	—	●	●	—	—	—	●	●	●	●	●	●	●	●	
	Thin flat type			UT	—	—	—	—	●	●	●	—	—	—	—	—	—	—	—	
	Thin flat type with ribs			CT	—	—	—	—	●	●	●	—	—	—	—	—	—	—	—	
	Deep type			D	—	—	—	—	—	—	—	●	—	●	—	●	—	●	—	
③ Buffer stroke	Stroke			6	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—	
				10	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
				15	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—	—
				20	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●	●
				25	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—	—
				30	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●	●
				40	—	—	—	—	—	—	—	●	●	●	●	●	●	●	—	—
⑤ Connection thread	Male thread	M8 x 1	A8	●							—			—			—			
		M10 x 1	A10	—							●			●			—			
		M14 x 1	A14	—							—			—			●			
④ Buffer				ZPB1(J/K)③							ZPB2(J/K)③			ZPB2(J/K)③			ZPB3(J/K)③			
⑥ Buffer connection adapter	④ Vacuum inlet	One-touch fitting	ø4	04	ZPRS-04-B5							ZPRS-04-B5			ZPRL-04-B5			—		
			ø6	06	ZPRS-06-B5							ZPRS-06-B5			ZPRL-06-B5			ZPRL-06-B8		
			ø8	08	—							—			ZPRL-08-B5			ZPRL-08-B8		
⑦ Pad mounting adapter				ZPT1-B5							ZPT2-B5			ZPT3-B8			ZPT4-B8			
⑧ Buffer plate (Single unit)				ZPB1							—			—			—			
⑨ Mounting nut (Single unit)				ZPNA-M8							ZPNA-M10			ZPNA-M10			ZPNA-M14			
⑩ Gasket (Single unit)				M-5G2							M-5G2			ZP-8G2			ZP-8G2			

[Buffer assembly part number example]

Product part no. **ZPR10BN** K 20 - 04 - A10

Buffer assembly **ZPB2** K 20

③ Buffer stroke

Buffer Assembly: With Barb Fitting, Vacuum Inlet Direction **Lateral** Y Type/ZPY

Product part no.	ZPY ① ② □ (J/K) ③ - ④ - ⑤ Pad diameter ● Pad form ● Pad material ● J: Rotating, K: Non-rotating ● Buffer stroke ● Vacuum inlet (Barb fitting) ● Connection thread (Male thread) ●
Component parts	① Buffer (With buffer plate) (With mounting nut) ② Pad mounting adapter ③ Buffer plate ④ Mounting nut ⑤ Buffer (With mounting nut) ⑥ Pad mounting adapter

			Symbol	① Pad diameter symbol															
				02	04	06	08	10	13	16	10	13	16	20	25	32	40	50	
② Pad form	Flat type		U	●	●	●	●	—	—	—	●	●	●	●	●	●	●	●	
	Flat type with ribs		C	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●	
	Bellows type		B	—	—	●	●	—	—	—	●	●	●	●	●	●	●	●	
	Thin flat type		UT	—	—	—	—	●	●	●	—	—	—	—	—	—	—	—	
	Thin flat type with ribs		CT	—	—	—	—	●	●	●	—	—	—	—	—	—	—	—	
	Deep type		D	—	—	—	—	—	—	—	●	—	●	—	●	—	●	—	
③ Buffer stroke	Stroke		6	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—	
			10	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
			15	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—	
			20	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●	
			25	●	●	●	●	●	●	●	—	—	—	—	—	—	—	—	
			30	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●	
			40	—	—	—	—	—	—	—	●	●	●	●	●	●	—	—	
			50	—	—	—	—	—	—	—	—	●	●	●	●	●	●	●	●
⑤ Connection thread	Male thread	M8 x 1	A8	●							—			—			—		
		M10 x 1	A10	—							●			●			—		
		M14 x 1	A14	—							—			—			●		
④ Buffer				ZPB1(J/K)③							ZPB2(J/K)③			ZPB2(J/K)③			ZPB3(J/K)③		
⑥ Pad mounting adapter	④ Vacuum inlet	Barb fitting	For ø4 nylon tubing	N4	ZPY1-N4-B5							ZPY2-N4-B5			ZPY3-N4-B5			—	
			For ø6 nylon tubing	N6	ZPY1-N6-B5							ZPY2-N6-B5			ZPY3-N6-B5			ZPY4-N6-B8	
			For ø4 soft tubing	U4	ZPY1-U4-B5							ZPY2-U4-B5			ZPY3-U4-B5			—	
			For ø6 soft tubing	U6	ZPY1-U6-B5							ZPY2-U6-B5			ZPY3-U6-B5			ZPY4-U6-B8	
⑦ Buffer plate (Single unit)				ZPB1							—			—			—		
⑧ Mounting nut (Single unit)				ZPNA-M8							ZPNA-M10			ZPNA-M10			ZPNA-M14		

[Buffer assembly part number example]

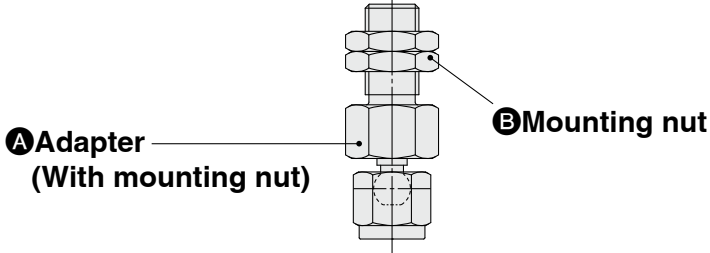
Product part no. ZPY50CN J 50 - N6 - A14

Buffer assembly ZPB3 J 50

③ Buffer stroke

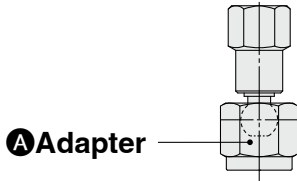
Ball Joint Type
Basic Pad Series ZP
Mounting Bracket Assembly

Adapter Assembly: Vacuum Inlet Direction **Vertical** T Type/ZPT□F

Product part no.	ZPT ① F □ - ② - ③ Pad diameter ● Pad material ● Vacuum inlet (Female thread) ● Connection thread (Male thread) ●
Component parts	 A Adapter (With mounting nut) B Mounting nut

				Symbol				Symbol	① Pad diameter symbol							
									10	13	16	20	25	32	40	50
④ Adapter	② Vacuum inlet	Female thread	M5 x 0.8	B5	③ Connection thread	Male thread	M8 x 1	A8	ZPTF1-B5-A8			—			—	
						M10 x 1	A10	—			ZPTF2-B5-A10			—		
						M14 x 1	A14	—			ZPTF3-B5-A14					
⑤ Mounting nut (Single unit)						M8 x 1	ZPNA-M8			—			—			
						M10 x 1	—			ZPNA-M10			—			
						M14 x 1	—			ZPNA-M14						

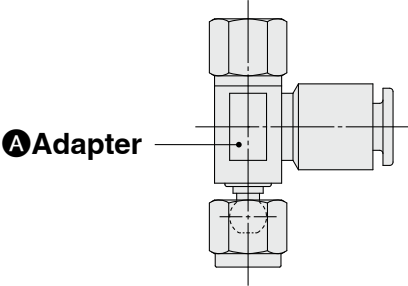
Adapter Assembly: Vacuum Inlet Direction **Vertical** T Type/ZPT□F

Product part no.	ZPT ① F □ - ② Pad diameter ● Pad material ● Vacuum inlet (Female thread) ●
Component parts	 A Adapter

				Symbol	① Pad diameter symbol								
					10	13	16	20	25	32	40	50	
A Adapter	② Vacuum inlet	Female thread	M5 x 0.8	B5	ZPTF1-B5			ZPTF2-B5			—		
			M8 x 1.25	B8	—			ZPTF2-B8			ZPTF3-B8		
			Rc1/8	B01	—			ZPTF2-B01			ZPTF3-B01		
			NPT1/8	N01	—			ZPTF2-N01			ZPTF3-N01		
			NPTF1/8	T01	—			ZPTF2-T01			ZPTF3-T01		

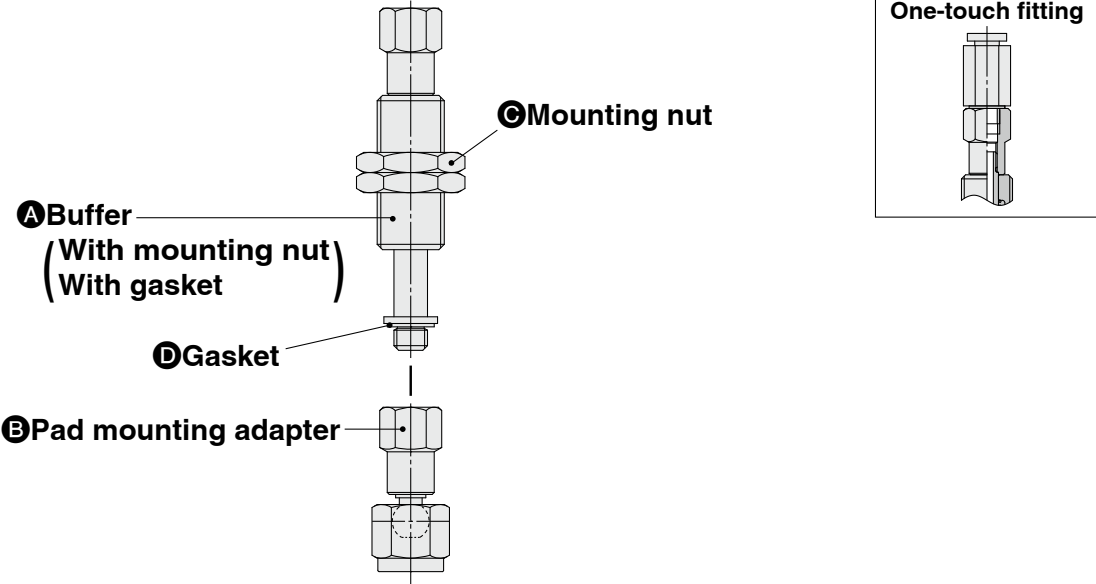
Basic Pad
Mounting Bracket Assembly *Series ZP*

■ Adapter Assembly: With One-touch Fitting, Vacuum Inlet Direction Lateral R Type/ZPR□F

Product part no.	ZPR ① F □ - ② - ③ ● Pad diameter ● Pad material ● Vacuum inlet (One-touch fitting) ● Connection thread (Female thread)
Component parts	

				Symbol			Symbol	① Pad diameter symbol							
								10	13	16	20	25	32	40	50
① Adapter	② Vacuum inlet	One-touch fitting	ø4	04	③ Connection thread	Female thread	M5 x 0.8	B5	ZPRF1-04-B5			—		—	
			ø6	06			M5 x 0.8	B5	ZPRF1-06-B5			ZPRF2-06-B5		ZPRF3-06-B5	
							M8 x 1.25	B8	—			ZPRF2-06-B8		ZPRF3-06-B8	
	M5 x 0.8	B5					—			ZPRF2-08-B5		ZPRF3-08-B5			
	M8 x 1.25	B8					—			ZPRF2-08-B8		ZPRF3-08-B8			

Buffer Assembly: Vacuum Inlet Direction **Vertical** T Type/ZPT□F

Product part no.	ZPT ① F □ (J/K) ② - ③ - ④ Pad diameter • Pad material • Connection thread (Male thread) • Vacuum inlet (Female thread/One-touch fitting) J: Rotating, K: Non-rotating • Buffer stroke			
Component parts	 ① Mounting nut ② Buffer (With mounting nut) (With gasket) ③ Gasket ④ Pad mounting adapter One-touch fitting			

			Symbol	① Pad diameter symbol								
				10	13	16	20	25	32	40	50	
② Buffer stroke	Stroke		10	●	●	●	●	●	●	●	●	
			20	●	●	●	●	●	●	●	●	
			30	●	●	●	●	●	●	●	●	
			40	●	●	●	—	—	—	—	—	
			50	●	●	●	●	●	●	●	●	
④ Connection thread	Male thread	M10 x 1	A10	●			—			—		
		M14 x 1	A14	—			●			●		
③ Buffer	③ Vacuum inlet	Female thread	M5 x 0.8	B5	ZPB2(J/K)③-B5			—			—	
			Rc1/8	B01	—			ZPB3(J/K)③-B01			ZPB3(J/K)③-B01	
		NPT1/8	N01	—			ZPB3(J/K)③-N01			ZPB3(J/K)③-N01		
		NPTF1/8	T01	—			ZPB3(J/K)③-T01			ZPB3(J/K)③-T01		
	One-touch fitting	ø4	04	ZPB2(J/K)③-04			—			—		
		ø6	06	ZPB2(J/K)③-06			ZPB3(J/K)③-06			ZPB3(J/K)③-06		
		ø8	08	—			ZPB3(J/K)③-08			ZPB3(J/K)③-08		
		⑤ Pad mounting adapter			ZPTF1-B5			ZPTF2-B8			ZPTF3-B8	
⑥ Mounting nut (Single unit)	M10 x 1		ZPNA-M10			—			—			
	M14 x 1		—			ZPNA-M14			ZPNA-M14			
⑦ Gasket (Single unit)				M-5G2			ZP-8G2			ZP-8G2		

[Buffer assembly part number example]

Product part no. ZPT20FN J 10 - 06 - A14

Buffer assembly ZPB3 J 10

② Buffer stroke

Basic Pad Mounting Bracket Assembly *Series ZP*

■ Buffer Assembly: With One-touch Fitting, Vacuum Inlet Direction Lateral R Type/ZPR□F

Product part no.	ZPR ① F □ (J/K) ② - ③ - ④ Pad diameter ● Pad material ● J: Rotating, K: Non-rotating ● Buffer stroke ● Connection thread (Male thread) ● Vacuum inlet (One-touch fitting) ●
Component parts	Ⓐ Buffer (With mounting nut) Ⓑ Pad mounting adapter Ⓒ Mounting nut

				Symbol	① Pad diameter symbol								
					10	13	16	20	25	32	40	50	
② Buffer stroke	Stroke			10	●	●	●	●	●	●	●	●	●
				20	●	●	●	●	●	●	●	●	●
				30	●	●	●	●	●	●	●	●	●
				40	●	●	●	—	—	—	—	—	—
				50	●	●	●	●	●	●	●	●	●
④ Connection thread	Male thread	M10 x 1	A10	●			—			—			
		M14 x 1	A14	—			●			●			
Ⓐ Buffer				ZPB2(J/K)②			ZPB3(J/K)②			ZPB3(J/K)②			
Ⓑ Pad mounting adapter	③ Vacuum inlet	One-touch fitting	ø4	04	ZPRF1-04-B5			—			—		
			ø6	06	ZPRF1-06-B5			ZPRF2-06-B5			ZPRF3-06-B5		
			ø8	08	—			ZPRF2-08-B5			ZPRF3-08-B5		
Ⓒ Mounting nut (Single unit)			M10 x 1		ZPNA-M10			—			—		
			M14 x 1		—			ZPNA-M14			ZPNA-M14		

[Buffer assembly part number example]

Product part no. ZPR10FN K 30 - 06 - A10

Buffer assembly ZPB2 K 30

② Buffer stroke