

Oval Pad *ZP/ZP2 Series*

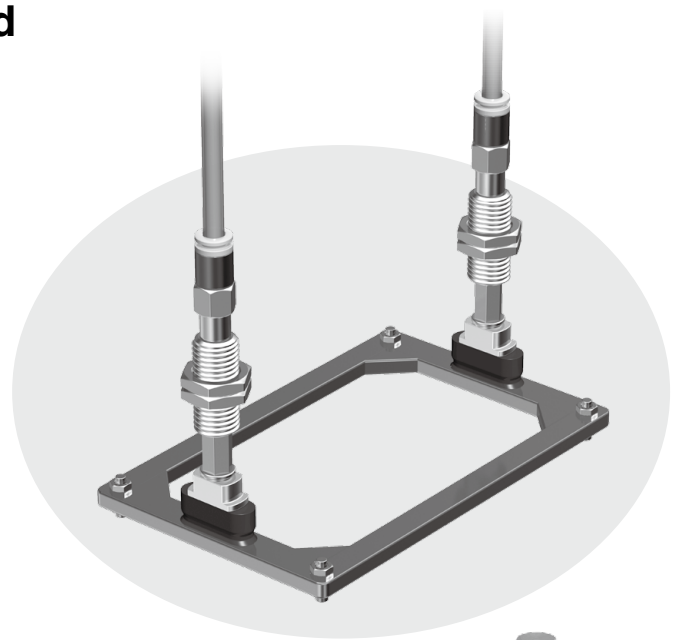
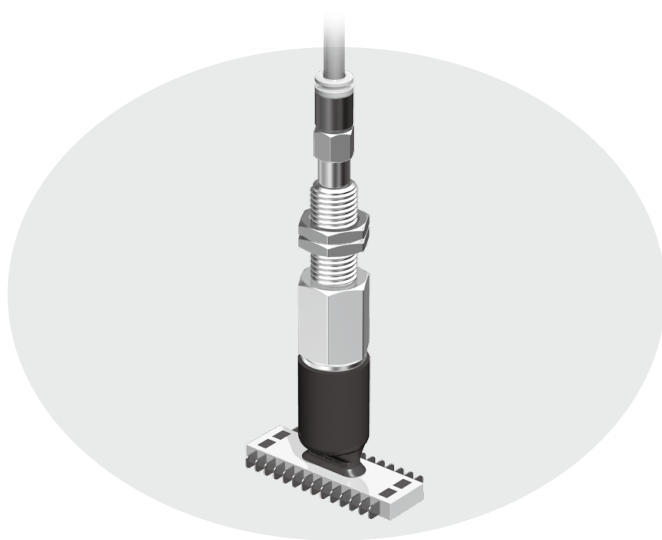
RoHS

Model Selection

2 x 4, 3.5 x 7, 4 x 10, 4 x 20, 4 x 30, 5 x 10, 5 x 20, 5 x 30, 6 x 10, 6 x 20, 6 x 30, 8 x 20, 8 x 30

Oval Flat Type

For rectangular, vertically long, and horizontally long workpieces



ZP Series



ZP2 Series

ZP Oval

ZP2 Oval

Construction

Mounting Bracket Assembly

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Mounting Bracket Assembly

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Precautions

ZP Series

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ZP2 Series

		Vacuum inlet direction	Oval flat type
Vacuum inlet direction	Single unit		p. 180
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Oval Pad *ZP/ZP2* Series Specifications

Pad Material: ZP/ZP2 Series

Material	NBR (Nitrile rubber)	Silicone rubber*1*2	Urethane rubber	FKM (Fluoro rubber)	Conductive NBR (Nitrile rubber)	Conductive silicone rubber
Color of rubber	Black	White	Brown	Black		
Rubber hardness (Shore A: ±5°)	50	40	55 to 60	60	60 to 65	50 to 60

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

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

Adapter Specifications: ZP Series

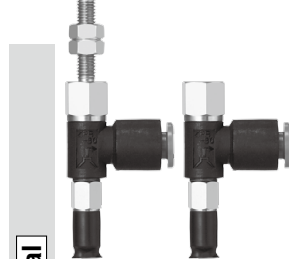
Vacuum Inlet Direction **Vertical** T Type/ZPT

Connection		Male thread	Female thread
Pad size		2004, 3507, 4010	2004, 3507, 4010
Connection thread		M5 x 0.8 M6 x 1	M4 x 0.7 M5 x 0.8
Vacuum inlet		Use the connection thread.	



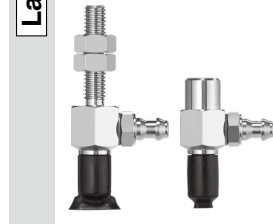
Vacuum Inlet Direction **Lateral** R Type/ZPR

Connection		Male thread	Female thread
Pad size		2004, 3507, 4010	2004, 3507, 4010
Connection thread		M5 x 0.8 M6 x 1	M4 x 0.7 M5 x 0.8
Vacuum inlet	One-touch fitting	ø4, ø6	ø4, ø6



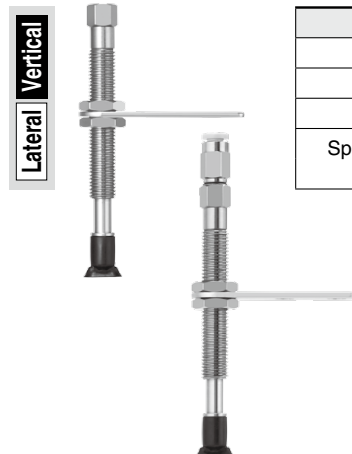
Vacuum Inlet Direction **Lateral** Y Type/ZPY

Connection		Male thread	Female thread
Pad size		2004, 3507, 4010	2004, 3507, 4010
Connection thread		M5 x 0.8 M6 x 1	M4 x 0.7 M5 x 0.8
Vacuum inlet	Barb fitting (Nylon tubing)	ø4, ø6	ø4, ø6
	Barb fitting (Soft tubing)		



Buffer Specifications: ZP Series

Pad size		2004, 3507, 4010
Non-rotating specification		J: Rotating, K: Non-rotating
Stroke [mm]		6, 10, 15, 25
Connection thread		M8 x 1
Spring reactive force [N]	At 0 stroke	0.8
	At full stroke	1.2



Adapter Specifications: ZP2 Series

Vertical



Vacuum Inlet Direction **Vertical** T Type/ZP2-T

Connection	Female thread
Pad size	3507 to 8030
Connection thread	M5 x 0.8
Vacuum inlet	Use the connection thread.

Lateral



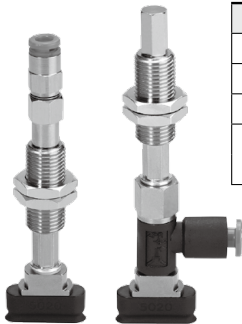
Vacuum Inlet Direction **Lateral** R Type/ZP2-R

Connection	Male thread	Female thread
Pad size	3507 to 8030	3507 to 8030
Connection thread	M5 x 0.8	M5 x 0.8
Vacuum inlet	One-touch fitting	ø4, ø6

Buffer Specifications: ZP2 Series

Vertical

Lateral



Pad diameter	3507 to 8030	
Non-rotating specification	K: Non-rotating	
Stroke [mm]	10, 20, 30, 40, 50	
Connection thread	M10 x 1	
Spring reactive force [N]	At 0 stroke	1.0
	At full stroke	3.0

Oval Pad

Oval Flat Type

ZP Series



How to Order

	Pad unit	With adapter	With buffer	Dimensions/ Models	Construction	Mounting Bracket Assembly
	ZP 20 04 UN	ZP T 20 04 UN - A5 - []	ZP T 20 04 UN J 6 - B3 - A8	p. 171	p. 185	From p. 189
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				From p. 176	p. 186	From p. 192

①
②
③
④
⑤
⑥
⑦
⑧

● Oval flat type

① Vacuum inlet direction

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

②/③ Pad size

Symbol	③ Length		
	04	07	10
② Breadth	20	● (2 x 4)	—
	35	—	● (3.5 x 7)
	40	—	● (4 x 10)

④ Material

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

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

⑤ Buffer specification

J	Rotating
K	Non-rotating

⑥ Buffer stroke

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

With adapter

⑦ Vacuum inlet

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

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

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

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

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

With buffer

⑦ Vacuum inlet

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

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

*1 Nylon tube piping

*2 Soft nylon/Polyurethane tube piping

⑧ Connection thread

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

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

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

Model Selection

ZP Oval

ZP2 Oval

Construction

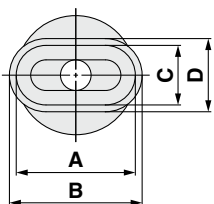
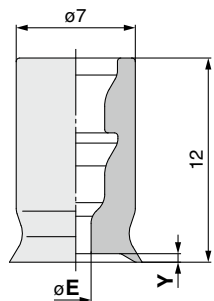
Mounting Bracket Assembly

Precautions

Dimensions/Models

Single unit **2 x 4 to 4 x 10**

ZP **2004** U **N**
① ②



Model			A	B	C	D	E	Y	
① Pad size	Form	② Material ^{*1}							
ZP	2004	U	N	4	4.6	2	2.6	1.2	0.3
	3507		S	7	7.8	3.5	4.3	1.8	0.5
	4010		F GN GS	10	11	4	5	2	0.8

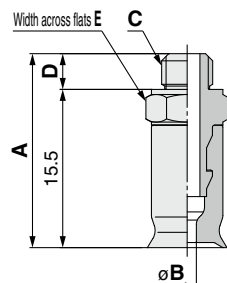
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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With adapter **2 x 4 to 4 x 10**

ZPT **2004** U **N** - **A5**
① ② ③ Vacuum inlet (Male thread)



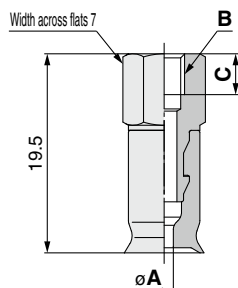
③ Vacuum inlet (Male thread)	
A5	M5 x 0.8
A6	M6 x 1

Model						A	B	C	D	E
Vacuum inlet direction	① Pad size	Form	② Material ^{*1}	③ Vacuum inlet						
ZP	T	U	N S U F GN GS	A5	2004	19	1.2	M5 x 0.8	3.5	7
					3507		1.8			
					4010		2			
	A6			2004	20	1.2	M6 x 1	4.5	8	
				3507		1.8				
				4010		2				

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

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ZPT **2004** U **N** - **B4**
① ② ③ Vacuum inlet (Female thread)

③ Vacuum inlet (Female thread)	
B4	M4 x 0.7
B5	M5 x 0.8

Model						A	B	C	
Vacuum inlet direction	① Pad size	Form	② Material ^{*1}	③ Vacuum inlet					
ZP	T	U	N S U F GN GS	B4	2004	1.2	M4 x 0.7	4	
					3507				1.8
					4010				2
				B5	2004	1.2	M5 x 0.8	5	
					3507				1.8
					4010				2

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

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Dimensions/Models

With adapter/One-touch fitting 2 x 4 to 4 x 10

ZPR **2004** U **N** - **04** - **A5**

①

②

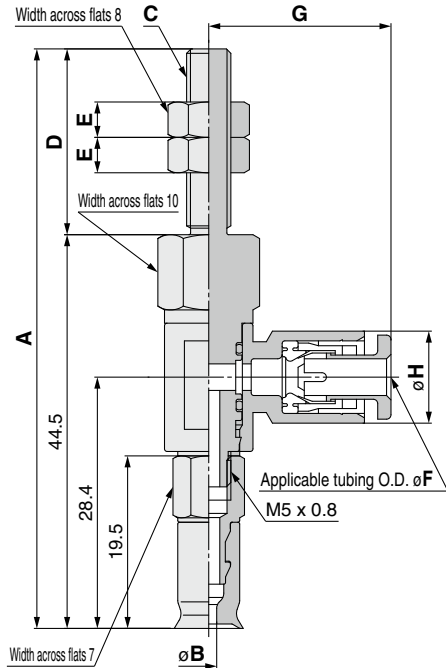
④

Connection thread
(Male thread)

Vacuum inlet
(One-touch fitting)

04	ø4
06	ø6

A5	M5 x 0.8
A6	M6 x 1



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Model						A	B	C	D	E	
Vacuum inlet direction	① Pad size	Form	②*1 Material	③ Vacuum inlet	④ Connection thread						
ZP	R	U	N S U F GN GS	04 06	A5	65.5	1.2	M5 x 0.8	21	4	
							1.8				
							2				
						A6	70.5	1.2	M6 x 1	26	4
							1.8				
							2				

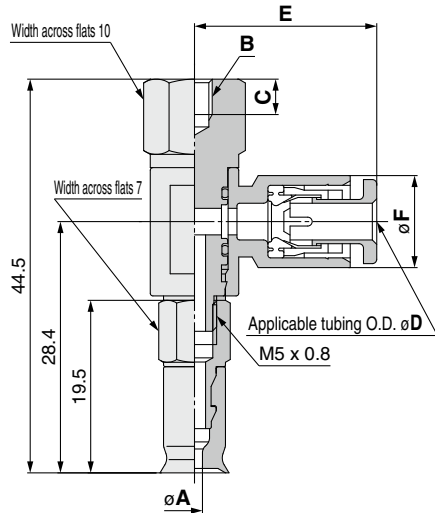
Dimensions Per Vacuum Inlet

Model						F	G	H	Fitting part min. hole size
Vacuum inlet direction	① Pad size	Form	②*1 Material	③ Vacuum inlet	④ Connection thread				
ZP	R	U	N S U F GN GS	04	A5 A6	4	20.6	10.4	ø3
				06		6	21.6	12.8	ø4

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

Dimensions/Models

With adapter/One-touch fitting 2 x 4 to 4 x 10



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ZPR **2004** **U** **N** - **04** - **B4**

①

②

③

④

Vacuum inlet
(One-touch fitting)

Connection thread
(Female thread)

04	ø4
06	ø6

B4	M4 x 0.7
B5	M5 x 0.8

		Model				A	B	C		
Vacuum inlet direction	① Pad size	Form	②*1 Material	③ Vacuum inlet	④ Connection thread					
ZP	R	2004	U	N S U F GN GS	04 06	B4	M4 x 0.7	4		
		3507								
		4010								
		2004				B5			M5 x 0.8	5
		3507								
		4010								

Dimensions Per Vacuum Inlet

		Model				D	E	F	Fitting part min. hole size
Vacuum inlet direction	① Pad size	Form	②*1 Material	③ Vacuum inlet	④ Connection thread				
ZP	R	2004 3507 4010	U	N S U F GN GS	04	B4 B5	4	20.6	10.4
		06			6				

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

Dimensions/Models

With adapter/barb fitting 2 x 4 to 4 x 10

ZPY **2004** **U** **N** - **N4** - **A5**

①

②

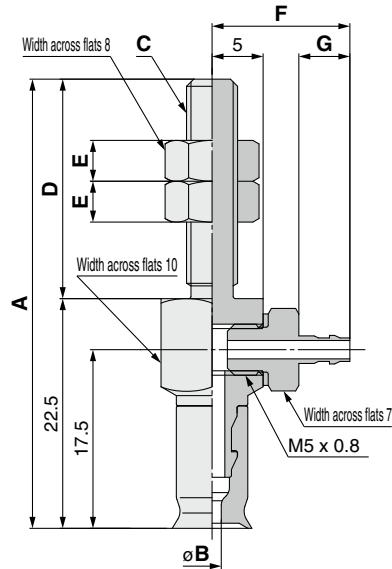
④

Connection thread (Male thread)

Vacuum inlet (Barb fitting)

A5	M5 x 0.8
A6	M6 x 1

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



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	Vacuum inlet direction	Model				A	B	C	D	E	
		① Pad size	Form	② *1 Material	③ Vacuum inlet						④ Connection thread
ZP	Y	2004	U	N S U F GN GS	N4 N6 U4 U6	A5	44	1.2	M5 x 0.8	21.5	4
		3507						1.8			
		2004			A6	49.5	1.2	M6 x 1	27	4	
		3507					1.8				
		4010					2				

Dimensions Per Vacuum Inlet

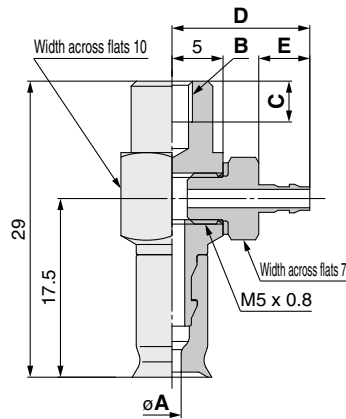
	Vacuum inlet direction	Model				F	G	Fitting part min. hole size
		① Pad size	Form	② *1 Material	③ Vacuum inlet			
ZP	Y	2004	U	N S U F GN GS	N4 U4	13.5	5	ø1.8
		3507						
		4010			N6 U6	15.5	7	ø2.5

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

Dimensions/Models

With adapter/barb fitting 2 x 4 to 4 x 10

ZPY **2004** U **N** - **N4** - **B4**



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①
②
③ Vacuum inlet
(Barb fitting)

④ Connection thread
(Female thread)

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

B4	M4 x 0.7
B5	M5 x 0.8

	Vacuum inlet direction	Model				A	B	C	
		① Pad size	Form	② ^{*1} Material	③ Vacuum inlet				④ Connection thread
ZP	Y	2004	U	N S U F GN GS	N4 N6 U4 U6	B4	1.2	M4 x 0.7	4
		3507					1.8		
		4010					2		
		2004			B5	1.2	M5 x 0.8	5	
		3507				1.8			
		4010				2			

Dimensions Per Vacuum Inlet

	Vacuum inlet direction	Model				D	E	Fitting part min. hole size	
		① Pad size	Form	② ^{*1} Material	③ Vacuum inlet				④ Connection thread
ZP	Y	2004 3507 4010	U	N S U F GN GS	N4 U4	B4 B5	13.5	5	ø1.8
		N6 U6			15.5		7	ø2.5	

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

Dimensions/Models

With buffer 2 x 4 to 4 x 10

ZPT **2004** **U** **N** **J** **6** - **B3** - **A8**

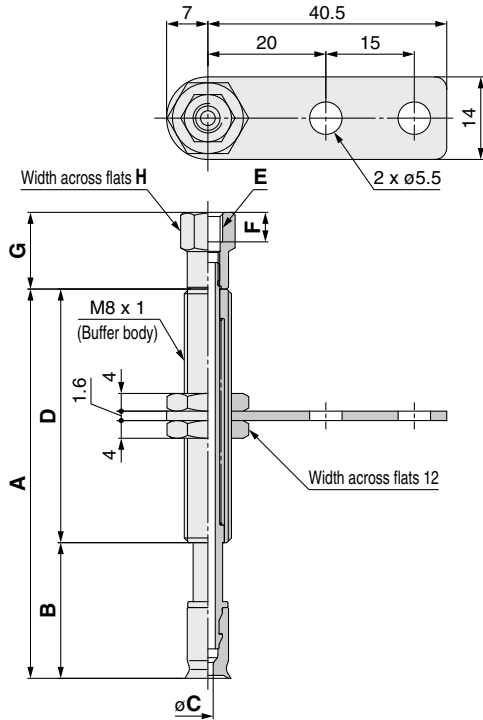
① ② ③ ④

⑥ Connection thread (Male thread)

Buffer specification ③

J	Rotating
K	Non-rotating

A8	M8 x 1
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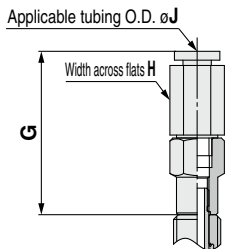


⑤ Vacuum inlet

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

		Model						A	B	C	D				
Vacuum inlet direction	① Pad size	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread								
ZP	T	2004	U	N S U F GN GS	J K	6	B3	A8	33	18	1.2	15			
						10							66	23	
						15							71	28	
						25							81	38	
						6							33	18	
						10							66	23	
	4010	U	4010		U	J K	10	B5	A8	66	23	1.8	43		
							15							71	28
							25							81	38
							6							33	18
							10							66	23
							15							71	28
4010	U	4010	U	J K	10	B5	A8	66	23	2	43				
					15							71	28		
					25							81	38		
					6							33	18		
					10							66	23		
					15							71	28		
4010	U	4010	U	J K	25	B5	A8	81	38	2	43				
					6							33	18		
					10							66	23		
					15							71	28		
					25							81	38		
					6							33	18		

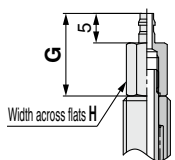
Vacuum inlet: One-touch fitting



Dimensions Per Vacuum Inlet: Female Thread

		Model						E	F	G	H		
Vacuum inlet direction	① Pad size	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread						
ZP	T	2004 3507 4010	U	N S U F GN GS	J K	6	B3	A8	M3 x 0.5	3	11	6	
						10							B5
						15 25							
ZP	T	2004 3507 4010	U	N S U F GN GS	J K	10	B5	A8	M5 x 0.8	5	13	8	
						15							
						25							

Vacuum inlet: Barb fitting



Dimensions Per Vacuum Inlet: One-touch Fitting

		Model						G	H	J	Fitting part min. hole size	
Vacuum inlet direction	① Pad size	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread					
ZP	T	2004 3507 4010	U	N S U F GN GS	J K	6	04	A8	27.7	8	4	ø2.5
						10						
						15 25						
ZP	T	2004 3507 4010	U	N S U F GN GS	J K	06	06	A8	27.7	10	6	ø2.5
						10						
						15 25						

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Dimensions Per Vacuum Inlet: Barb Fitting

		Model						G	H	Fitting part min. hole size	
Vacuum inlet direction	① Pad size	Form	②*1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	T	2004 3507 4010	U	N S U F GN GS	J K	6	N4	A8	14	6	ø1.8
						10					
						15 25					
ZP	T	2004 3507 4010	U	N S U F GN GS	J K	06	U4	A8	14	6	ø1.8
						10					
						15 25					

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

Dimensions/Models

With buffer/One-touch fitting 2 x 4 to 4 x 10

ZPR **2004** **U** **N** **J** **6** - **04** - **A8**

1

2

4

6

Connection thread
(Male thread)

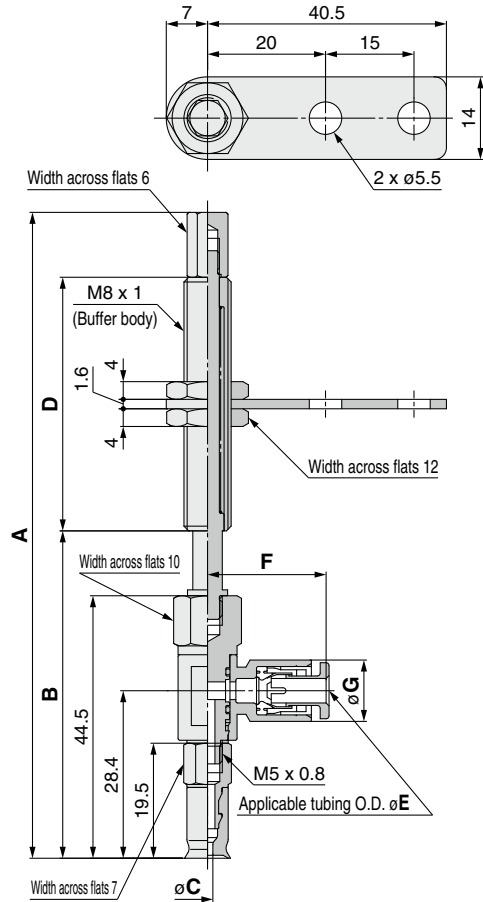
Buffer specification 3

J	Rotating
K	Non-rotating

A8	M8 x 1
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5 Vacuum inlet
(One-touch fitting)

04	ø4
06	ø6



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Buffer Assembly p. 193

	Vacuum inlet direction	Model						A	B	C	D			
		1 Pad size	Form	2 *1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet					6 Connection thread		
ZP	R	2004	U	N S U F GN GS	J K	6	04	06	A8	1.2	15			
						10					78.5	52.5	43	
						15					109.5	55.5		
		25				114.5					60.5			
		4010				1.8					6	78.5	52.5	15
											10	109.5	55.5	
	15		114.5		60.5									
	2		2		25	124.5	70.5	43						
					6	78.5	52.5							
					10	109.5	55.5							
	15	114.5	60.5											
	25	124.5	70.5											

Dimensions Per Vacuum Inlet

	Vacuum inlet direction	Model						E	F	G	Fitting part min. hole size	
		1 Pad size	Form	2 *1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet					6 Connection thread
ZP	R	2004 3507 4010	U	N S U F GN GS	J K	6	04	A8	4	20.6	10.4	ø3
						10 15 25			6	21.6	12.8	ø4

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

Dimensions/Models

With buffer/barb fitting 2 x 4 to 4 x 10

ZPY **2004** **U** **N** **J** **6** - **N4** - **A8**

① ② ③ ④

⑥ Connection thread (Male thread)

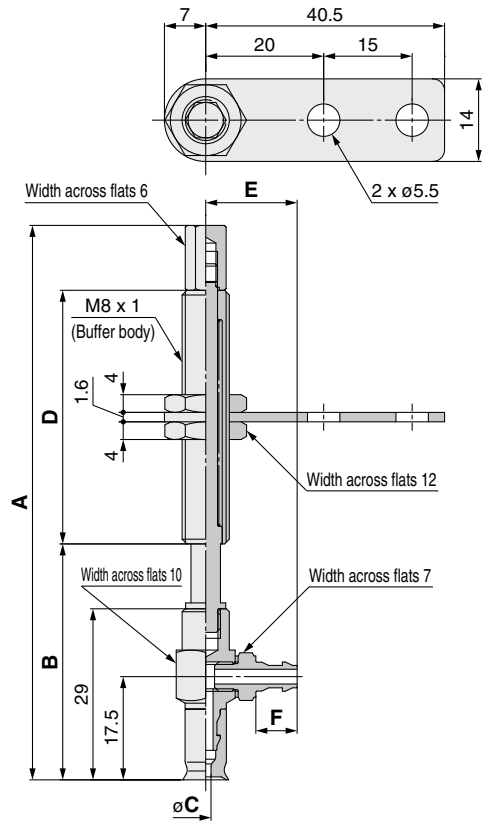
Buffer specification ③

J	Rotating
K	Non-rotating

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

⑤ Vacuum inlet (Barb fitting)

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



Construction p. 186
Buffer Assembly p. 194

		Model						A	B	C	D				
Vacuum inlet direction	① Pad size	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread								
ZP	Y	2004	U	N S U F GN GS	J K	6	N4 N6 U4 U6	A8	63	37	1.2	15			
						10			94	40		43			
						15			99	45		43			
												25	109	55	15
												6	63	37	43
												10	94	40	15
					15	99	45	43							
					25	109	55	15							
					6	63	37	43							
					10	94	40	15							
					15	99	45	43							
					25	109	55	15							

Dimensions Per Vacuum Inlet

		Model						E	F	Fitting part min. hole size	
Vacuum inlet direction	① Pad size	Form	② *1 Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	⑥ Connection thread				
ZP	Y	2004 3507 4010	U	N S U F GN GS	J K	6	N4 U4	A8	13.5	5	ø1.8
						10 15 25			N6 U6	15.5	7

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



Oval Pad

Oval Flat Type

ZP2 Series



How to Order

	Dimensions/Models	Construction	Mounting Bracket Assembly
Pad unit	ZP2- 35 07 W N	p. 180	p. 187 From p. 195
With adapter	ZP2- T 35 07 W N - B5 - □	From p. 180	p. 187 p. 195
With buffer	ZP2- T 35 07 W N K 10 - B5	From p. 183	p. 188 From p. 196

①
②
③
④
⑤
⑥
⑦

• Oval flat type • • Buffer specification: Non-rotating

① Vacuum inlet direction

Nil	Pad unit
T	Vertical
R	Lateral

②/③ Pad size

Symbol	③ Length			
	07	10	20	30
② Breadth	35 ● (3.5 x 7)	—	—	—
	40	● (4 x 10)	● (4 x 20)	● (4 x 30)
	50	● (5 x 10)	● (5 x 20)	● (5 x 30)
	60	● (6 x 10)	● (6 x 20)	● (6 x 30)
	80	—	—	● (8 x 20)

④ Material

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

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

⑤ Buffer stroke

Stroke [mm]	Pad size
	All sizes
10	●
20	●
30	●
40	●
50	●

With adapter

⑥ Vacuum inlet/⑦ Connection thread

○: ZP2-T/Vertical ●: ZP2-R/Lateral

⑥ Vacuum inlet			⑦ Connection thread			Pad size
Type	Symbol	Size	Type	Symbol	Size	All sizes
Female thread	B5	M5 x 0.8	—	Nil	—*1	○
One-touch fitting	04	ø4	Male thread	A5	M5 x 0.8	●
			Female thread	B5	M5 x 0.8	●
	06	ø6	Male thread	A5	M5 x 0.8	●
			Female thread	B5	M5 x 0.8	●

*1 Use the vacuum inlet.

With buffer

⑥ Vacuum inlet/⑦ Connection thread

○: ZP2-T/Vertical ●: ZP2-R/Lateral

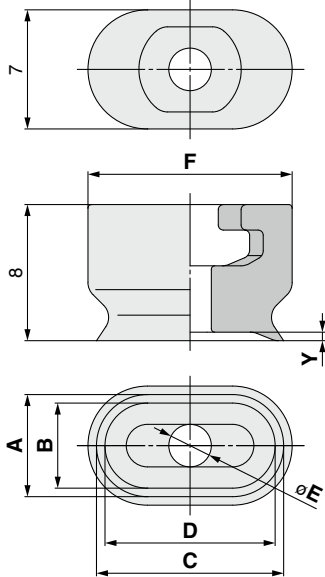
⑥ Vacuum inlet			⑦ Connection thread			Pad size
Type	Symbol	Size	Type	Symbol	Size	All sizes
Female thread	B5	M5 x 0.8	Male thread	Nil	M10 x 1	○
One-touch fitting	04	ø4		Nil		○●
	06	ø6		Nil		○●

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

Dimensions/Models

Single unit **3.5 x 7 to 8 x 30**

ZP2 - **3507** W **N**
① ②



Model	① Pad size		Form	② Material	A	B	C	D	E	F	Y
	Breadth	Length									
	ZP2	35									
40		10	4.8	4	10.8	10	2.5				
50		10	6	5	11			20	2 x 1.8		
60		10	7	6	20.8	20	2 x 2				
40		20	4.8	4	21			20	2.5		
50		20	6	5	30.8	30	3				
60		20	7	6	2 x 1.8			30	0.8		
80		20	9	8	2 x 2.5	30	0.5				
40		30	4.8	4	31			30	0.8		
50		30	6	5		30	0.5				
60		30	7	6				30	0.8		
80		30	9	8		30	0.8				

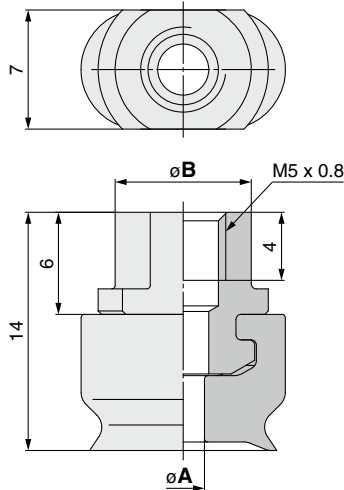
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

Construction p. 187

Mounting Bracket Assembly From p. 195

With adapter **3.5 x 7 to 8 x 30**

ZP2 - T **3507** W **N** - **B5**
① ② ③



③ Vacuum inlet
(Female thread)

B5 M5 x 0.8

Model	Vacuum inlet direction	① Pad size		Form	② Material	③ Vacuum inlet	A	B			
		Breadth	Length								
		ZP2	T						W	N S U F GN GS	B5
35	07			2.5							
40	10										
50	10			2 x 1.8							
60	10										
40	20			2 x 2							
50	20										
60	20			2.5							
80	20										
40	30			3							
50	30										
60	30			2 x 1.8							
80	30										
40	30	2 x 2.5									
50	30										
60	30	11									
80	30										
40	30	19									
50	30										
60	30	11									
80	30										
40	30	19									
50	30										

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

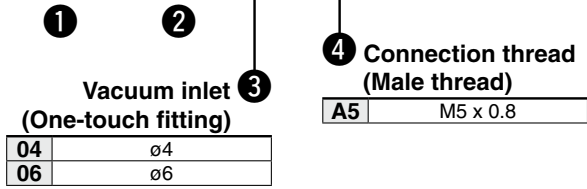
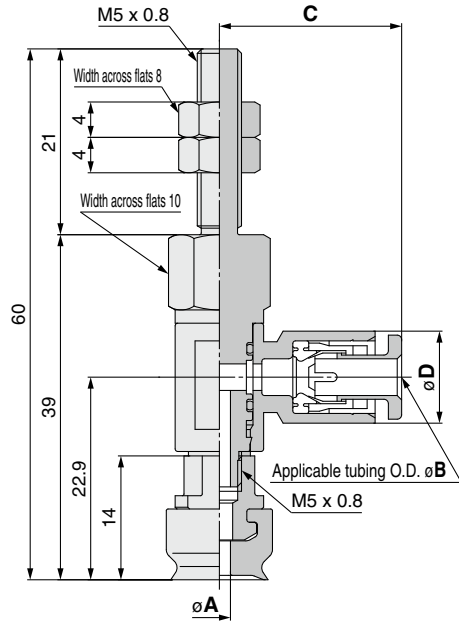
Construction p. 187

Adapter Assembly p. 195

Dimensions/Models

With adapter/One-touch fitting 3.5 x 7 to 8 x 30

ZP2 - R **3507** W **N** - **04** - **A5**



Model							A	
Vacuum inlet direction	① Pad size		② Form	③ Vacuum inlet	④ Connection thread			
	Breadth	Length		*1 Material				
ZP2	R	35	07	W	N S U F GN GS	04 06	A5	2 x 1.5
		40						2.5
		50	10					2 x 1.8
		60						2 x 2
		40						2.5
		50	20					3
	60		2 x 1.8					
	80							
	40							
	50	30						
	60							
	80			2 x 2.5				

Construction p. 187
Adapter Assembly p. 195

Dimensions Per Vacuum Inlet

Model							B	C	D	Fitting part min. hole size	
Vacuum inlet direction	① Pad size		② Form	③ Vacuum inlet	④ Connection thread						
	Breadth	Length		*1 Material							
ZP2	R	35	07	W	N S U F GN GS	04	A5	4	20.6	10.4	ø3
						06		6	21.6	12.4	ø4
		40	10			04		4	20.6	10.4	ø3
						06		6	21.6	12.4	ø4
		50	20			04		4	20.6	10.4	ø3
						06		6	21.6	12.4	ø4
	60	30	04			4	20.6	10.4	ø3		
			06			6	21.6	12.4	ø4		
	80										

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

Dimensions/Models

With adapter/One-touch fitting 3.5 x 7 to 8 x 30

ZP2 - R **3507** W **N** - **04** - **B5**

①

②

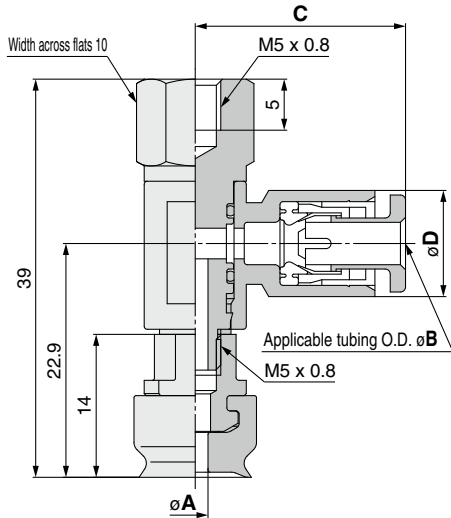
④

Connection thread (Female thread)

B5 M5 x 0.8

Vacuum inlet (One-touch fitting)

04	ø4
06	ø6



Construction p. 187

Adapter Assembly p. 195

		Model						A
Vacuum inlet direction	① Pad size Breadth Length	Form	② #1 Material	③ Vacuum inlet	④ Connection thread			
ZP2	R	35 07	W	N S U F GN GS	04 06	B5	2 x 1.5	
		40					2.5	
		50 10					2 x 1.8	
		60					2 x 2	
		40					2.5	
		50 20					3	
	60	2 x 1.8						
	80							
	40							
	50 30							
	60							
	80	2 x 2.5						

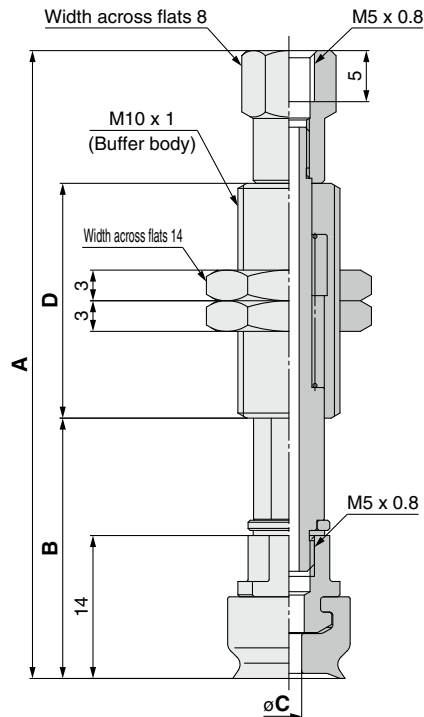
Dimensions Per Vacuum Inlet

		Model						B	C	D	Fitting part min. hole size
Vacuum inlet direction	① Pad size Breadth Length	Form	② #1 Material	③ Vacuum inlet	④ Connection thread						
ZP2	R	35 07	W	N S U F GN GS	04	B5	4	20.6	10.4	ø3	
					06		6	21.6	12.4	ø4	
		40 10			04		4	20.6	10.4	ø3	
					06		6	21.6	12.4	ø4	
		50 20			04		4	20.6	10.4	ø3	
					06		6	21.6	12.4	ø4	
	60 30	04			4	20.6	10.4	ø3			
		06			6	21.6	12.4	ø4			

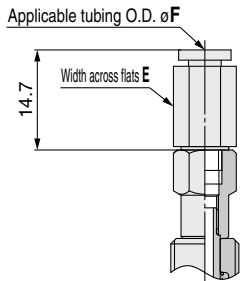
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

Dimensions/Models

With buffer 3.5 x 7 to 8 x 30



Vacuum inlet: One-touch fitting



Construction p. 188
Buffer Assembly p. 196

Dimensions Per Vacuum Inlet: One-touch Fitting

		Model					E	F	Fitting part min. hole size		
Vacuum inlet direction	Pad size Breadth Length	Form	Material	Buffer spec.	Buffer stroke	Vacuum inlet					
ZP2	T	35 07	W	N S U F GN GS	K	10 20 30 40 50	04	8	4	ø2.5	
							06	10	6		
		40					04	8	4		
							06	10	6		
							50 60	04	8		4
								06	10		6
	20	40					04	8	4		
							06	10	6		
		50 60 80					04	8	4		
							06	10	6		
							30	04	8		4
								06	10		6

ZP2 - T 3507 W N K 10 - B5

1 2 3 4
Buffer specification 3
K Non-rotating

Vacuum inlet 5

B5	M5 x 0.8	Female thread	
04	ø4	One-touch fitting	KQ2H04-M5N
06	ø6		KQ2H06-M5N

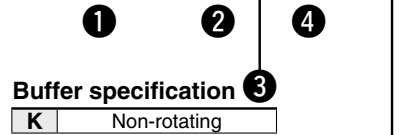
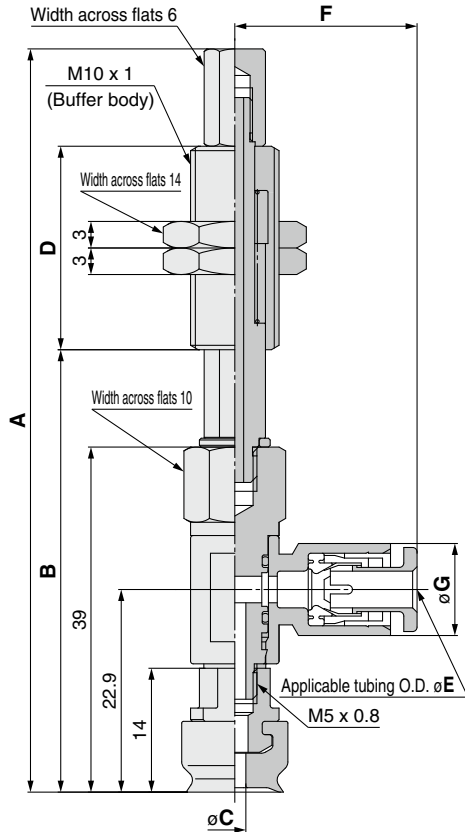
		Model					A	B	C	D	
Vacuum inlet direction	Pad size Breadth Length	Form	Material	Buffer spec.	Buffer stroke	Vacuum inlet					
ZP2	T	35 07	W	N S U F GN GS	K	10 20 30 40 50	B5	61.5	25.5	2 x 1.5	23
								99.5	35.5		51
								109.5	45.5		77
								145.5	55.5		
								155.5	65.5		
								61.5	25.5		2 x 1.5
								99.5	35.5	51	
								109.5	45.5	77	
								145.5	55.5		
								155.5	65.5		
								61.5	25.5	2.5	
								99.5	35.5		51
		109.5						45.5	77		
		145.5						55.5			
		155.5						65.5			
		61.5						25.5	2 x 1.8		23
		99.5						35.5		51	
		109.5						45.5		77	
		145.5						55.5			
		155.5						65.5			
		61.5						25.5		2 x 2	23
		99.5						35.5	51		
		109.5						45.5	77		
		145.5						55.5			
		155.5						65.5			
		61.5						25.5	2.5		23
		99.5						35.5		51	
		109.5						45.5		77	
		145.5						55.5			
		155.5						65.5			
		61.5						25.5		3	23
		99.5						35.5	51		
		109.5						45.5	77		
		145.5						55.5			
		155.5						65.5			
		61.5						25.5	2 x 1.8		23
		99.5						35.5		51	
		109.5						45.5		77	
		145.5						55.5			
		155.5						65.5			
		61.5						25.5		2 x 2.5	23
		99.5						35.5	51		
		109.5						45.5	77		
		145.5						55.5			
		155.5						65.5			

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

Dimensions/Models

With buffer/One-touch fitting 3.5 x 7 to 8 x 30

ZP2 - R 3507 W N K 10 - 04



Buffer specification 3
K Non-rotating

**Vacuum inlet 5
(One-touch fitting)**
04 ø4
06 ø6

Construction p. 188
Buffer Assembly p. 197

Vacuum inlet direction	1 Pad size		2 Form	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	A	B	C	D		
	Breadth	Length										
ZP2	R	35	07	W	N	K	10	04	06	2 x 1.5	23	
											51	
											77	
											23	
		51										
		77										
		23										
		51										
		77										
		23										
		51										
		77										
		23										
		51										
		77										
		23										
	R	50	20	W	S	F	K	10	04	06	2 x 2	51
												77
												23
												51
		77										
		23										
		51										
		77										
		23										
		51										
		77										
		23										
		51										
		77										
		23										
		51										

Dimensions Per Vacuum Inlet

Vacuum inlet direction	1 Pad size		2 Form	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	E	F	G	Fitting part min. hole size							
	Breadth	Length															
ZP2	R	35	07	W	N	K	10	20.6	10.4	ø3							
										ø4							
		40	10							ø3							
										ø4							
		50	20							ø3							
										ø4							
	60	30	ø4														
			ø3														
	R	40	20							W	S	F	K	10	21.6	12.8	ø4
																	ø3
		50	30														ø3
																	ø4
60		30	ø4														
			ø3														
80	30	ø4															
		ø3															

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

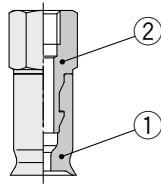
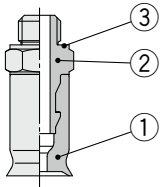
Oval Pad *ZP Series* Construction

With adapter Oval flat type: 2004/3507/4010

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

ZPT□-(A5/A6)

ZPT□-(B4/B5)



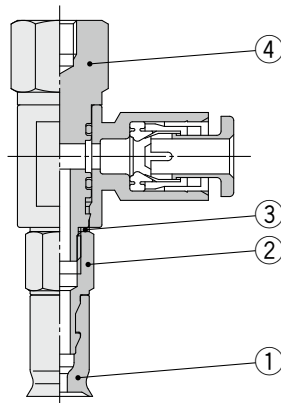
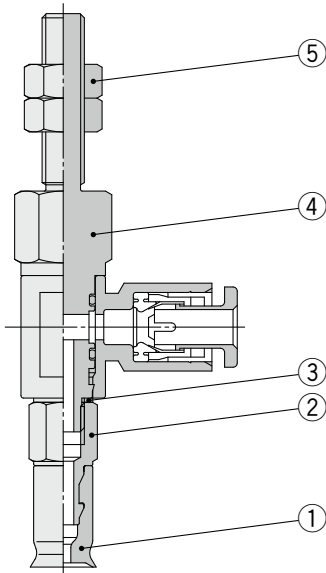
Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Oval flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Gasket	Stainless steel/NBR	

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

ZPR□-(04/06)-(A5/A6)

ZPR□-(04/06)-(B4/B5)



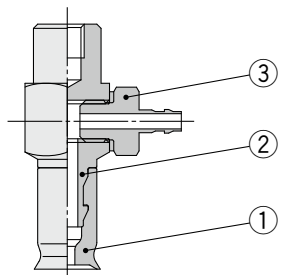
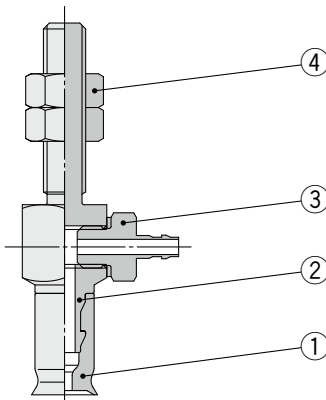
Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Oval flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Gasket	Stainless steel 304/NBR	
4	Adapter (With One-touch fitting)	Brass (Electroless nickel plating), PBT, NBR, Stainless steel, POM	
5	Nut	Rolled steel (Zinc chromated)	M5 x 0.8 M6 x 1

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

ZPY□-(N4/N6/U4/U6)-(A5/A6)

ZPY□-(N4/N6/U4/U6)-(B4/B5)



Component Parts

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

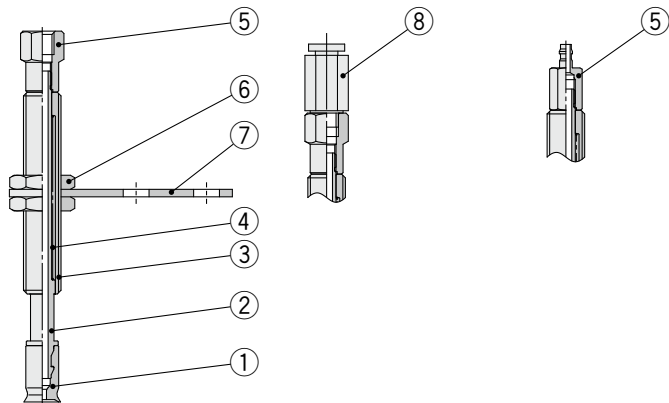
With buffer Oval flat type: 2004/3507/4010

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

ZPT□-(B3/B5)-A8

ZPT□-(04/06)-A8

ZPT□-(N4/U4)-A8

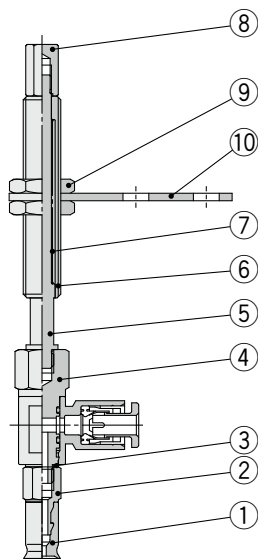


Component Parts

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

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

ZPR□-(04/06)-A8

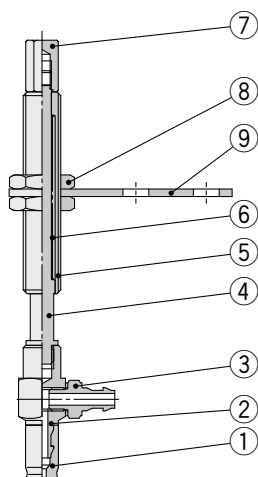


Component Parts

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

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

ZPY□-(N4/N6/U4/U6)-A8



Component Parts

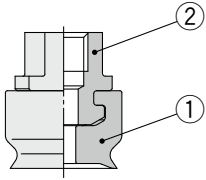
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Oval flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Barb fitting	—	
4	Piston rod	Stainless steel	
5	Buffer body	Brass (Electroless nickel plating)	
6	Return spring	Stainless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

Oval Pad *ZP2 Series* Construction

With adapter Oval flat type: 3507 to 8030

Vacuum inlet direction **Vertical** T Type/ZP2-T

ZP2-T□-B5



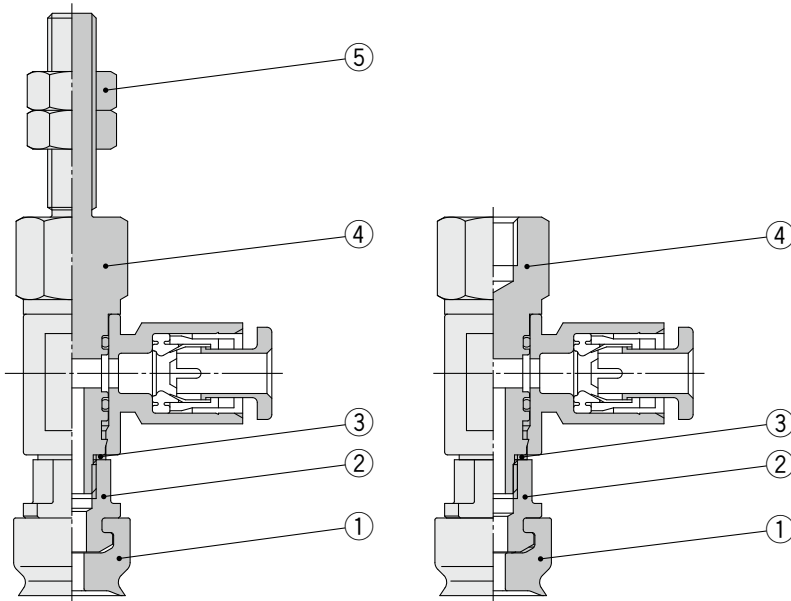
Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Oval flat type
2	Adapter	Brass (Electroless nickel plating)	

Vacuum inlet direction **Lateral** R Type/ZP2-R

ZP2-R□-(04/06)-A5

ZP2-R□-(04/06)-B5



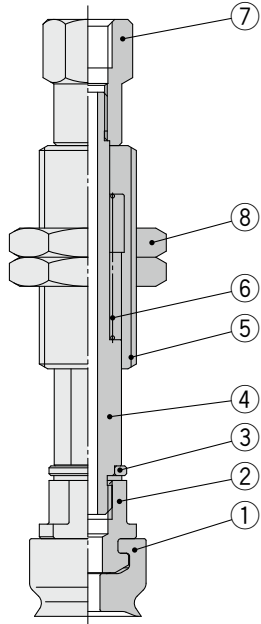
Component Parts

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

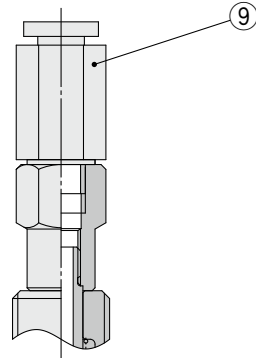
With buffer Oval flat type: 3507 to 8030

Vacuum inlet direction **Vertical** T Type/ZP2-T

ZP2-T□-B5



ZP2-T□-(04/06)

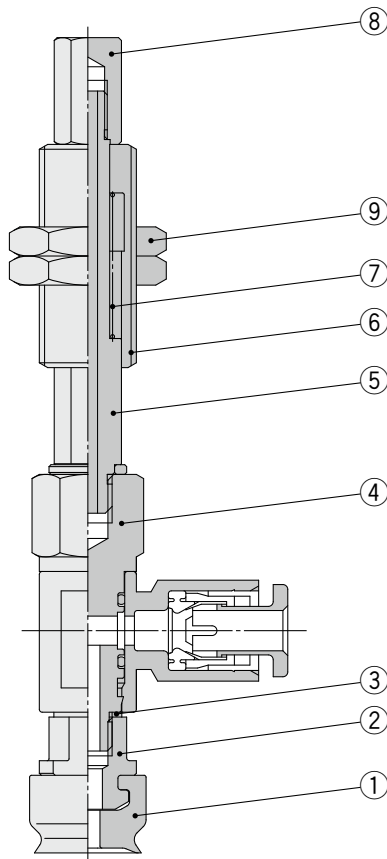


Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Oval flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Gasket	Stainless steel/NBR	
4	Piston rod	Stainless steel	
5	Buffer body	Brass (Electroless nickel plating)	
6	Return spring	Stainless steel	
7	Buffer adapter	Brass (Electroless nickel plating)	
8	Nut	Steel (Zinc chromated)	M10 x 1
9	One-touch fitting	—	

Vacuum inlet direction **Lateral** R Type/ZP2-R

ZP2-R□-(04/06)



Component Parts

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



Oval Pad Specific Product Precautions

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

Mounting

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

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

Oval Pad ZP Series

Model	Connection thread	Tightening torque [N·m]
ZP□(J/K)□-□-A8	M8 x 1	1.5 to 2.0

Oval Pad ZP2 Series

Model	Connection thread	Tightening torque [N·m]
ZP2-□K□-□	M10 x 1	2.5 to 3.5

2. Tighten the vacuum inlet male thread adapter (with a gasket seal) within the specified torque range.

Oval Pad ZP Series

Model	Connection thread	Tightening torque [N·m]
ZPT□U□-A5	M5 x 0.8	1.3 to 1.7
ZPT□U□-A6	M6 x 1	1.6 to 2.0