

# Oval Pad *ZP/ZP2 Series*

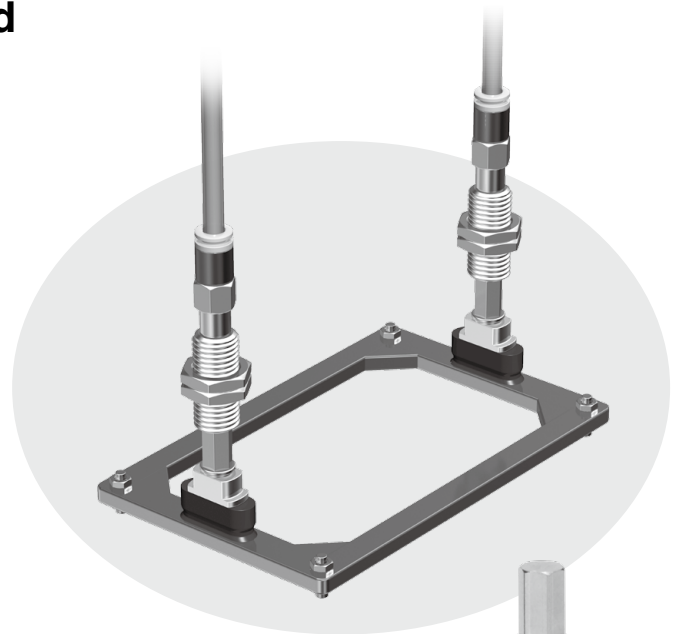
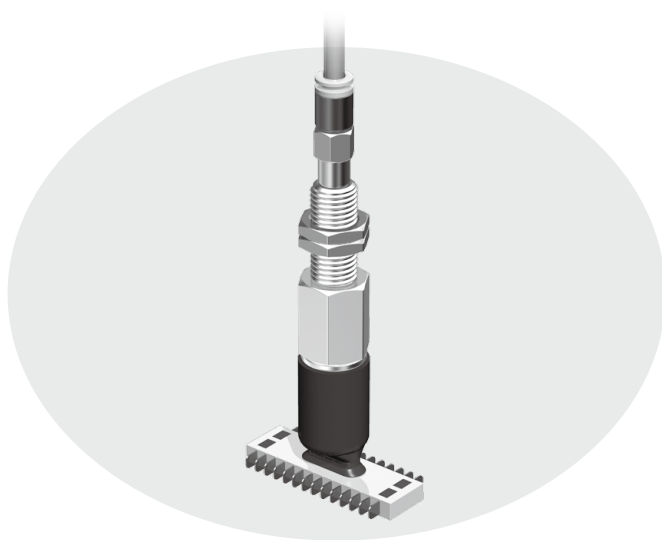
RoHS

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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Precautions

## ZP Series

		Vacuum inlet direction	Oval flat type
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## ZP2 Series

		Vacuum inlet direction	Oval flat type
Vacuum inlet direction	Single unit		p. 180
Vertical	ZP2-T With adapter		p. 180
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Vertical	ZP2-T With buffer		p. 183
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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.	



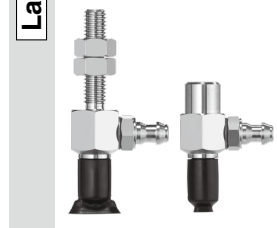
### Vacuum Inlet Direction **Lateral** R Type/ZPR

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



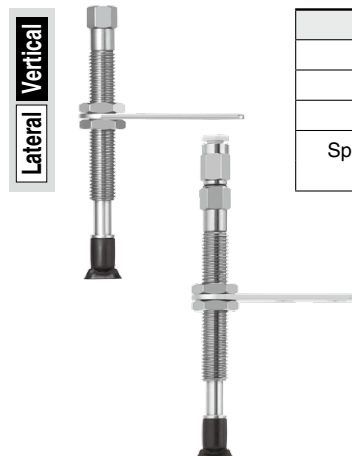
### Vacuum Inlet Direction **Lateral** Y Type/ZPY

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
	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

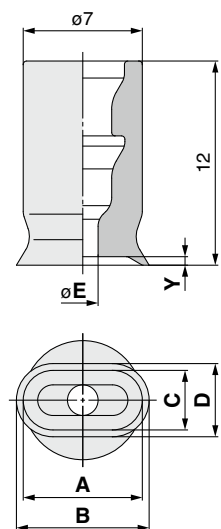


Pad diameter	3507 to 8030	
Non-rotating specification	K: Non-rotating	
Stroke [mm]	10, 20, 30, 40, 50	
Connection thread	M10 x 1	
Spring reactive force [N]	At 0 stroke	1.0
	At full stroke	3.0



## Dimensions/Models

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



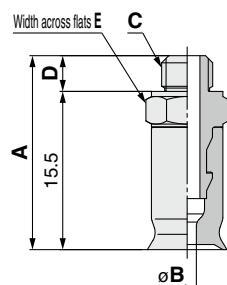
ZP **2004** **U** **N**  
① ②

Model				A	B	C	D	E	Y
① Pad size	Form	② Material							
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**



ZP **T** **2004** **U** **N** - **A5**  
① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

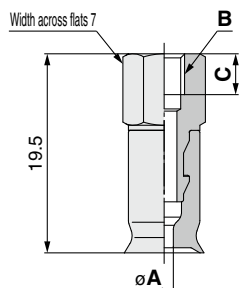
④ Vacuum inlet (Male thread)

A5	M5 x 0.8
A6	M6 x 1

Model							A	B	C	D	E
① Adapter material	Vacuum inlet direction	② Pad size	Form	③ Material	④ Vacuum inlet						
ZP	Nil S	T	2004	U	N S U F GN GS	A5	19	1.2	M5 x 0.8	3.5	7
			3507					1.8			
			4010					2			
			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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ZP **T** **2004** **U** **N** - **B4**  
① ② ③ ④

① Adapter material

Nil	Brass
S	Stainless steel (Stainless steel 304)

④ Vacuum inlet (Female thread)

B4	M4 x 0.7
B5	M5 x 0.8

Model							A	B	C	
① Adapter material	Vacuum inlet direction	② Pad size	Form	③ Material	④ Vacuum inlet					
ZP	Nil S	T	2004	U	N S U F GN GS	B4	1.2	M4 x 0.7	4	
			3507							1.8
			4010							2
			2004				5	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

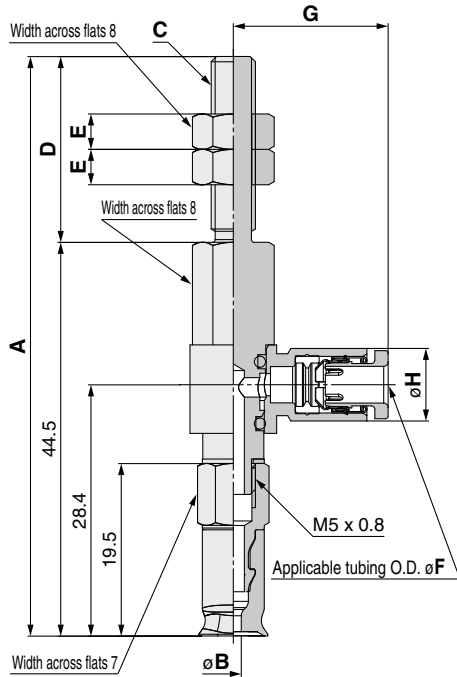
④

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	2004	U	N S U F GN GS	04 06	A5	65.5	1.2	M5 x 0.8	21	4
		3507					1.8				
		4010					2				
		2004				A6	70.5	1.2	M6 x 1	26	4
		3507					1.8				
		4010					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	2004	U	N S U F GN GS	04	4	17.5	8.2	ø2.5
		06			A5 A6				

\*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**

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

①

②

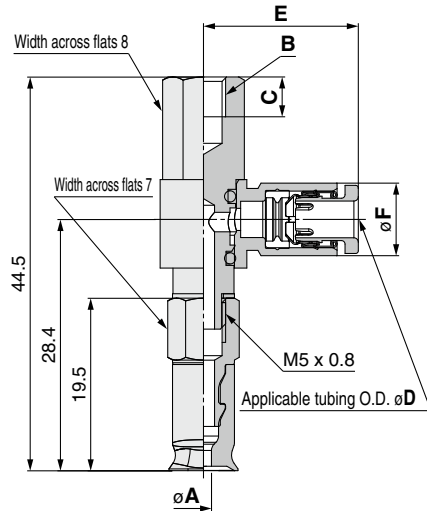
④

**Connection thread  
(Female thread)**

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

<b>04</b>	ø4
<b>06</b>	ø6

<b>B4</b>	M4 x 0.7
<b>B5</b>	M5 x 0.8



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		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	1.2	M4 x 0.7	4.5
		3507					1.8		
		4010					2		
		2004				B5	1.2	M5 x 0.8	5.5
		3507					1.8		
		4010					2		

**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	U	N S U F GN GS	04	B4 B5	4	17.5	8.2	ø2.5
		3507			06		6	18.3	10.4	ø4

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



**Dimensions/Models**

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

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

①

②

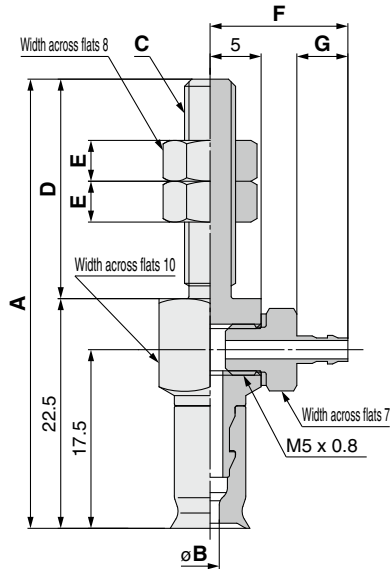
④

**Connection thread (Male thread)**

**Vacuum inlet (Barb fitting)**

<b>A5</b>	M5 x 0.8
<b>A6</b>	M6 x 1

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



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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	Y	2004	U	N S U F GN GS	N4 N6 U4 U6	A5	M5 x 0.8	21.5	4	
		3507								44
		2004			A6	M6 x 1	27	4		
		3507							49.5	1.2 1.8 2
4010										

**Dimensions Per Vacuum Inlet**

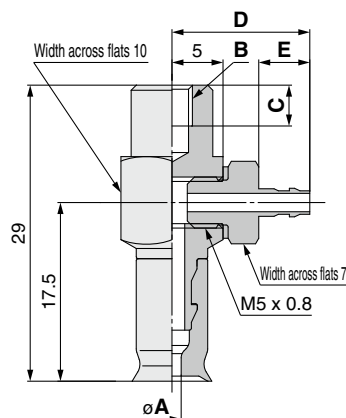
		Model				F	G	Fitting part min. hole size	
Vacuum inlet direction	① Pad size	Form	② *1 Material	③ Vacuum inlet	④ Connection thread				
ZP	Y	2004 3507 4010	U	N S U F GN GS	N4 U4 N6 U6	A5 A6	13.5	5	ø1.8
							15.5	7	ø2.5

\*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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**Adapter Assembly** p. 191

1

2

Vacuum inlet **3**  
(Barb fitting)

**4** Connection thread  
(Female thread)

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

<b>B4</b>	M4 x 0.7
<b>B5</b>	M5 x 0.8

	Vacuum inlet direction	Model				A	B	C	
		1 Pad size	Form	2 <sup>*1</sup> 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

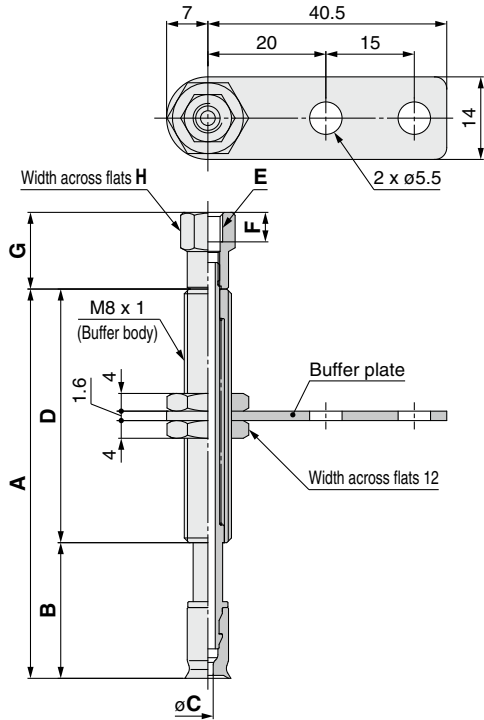
	Vacuum inlet direction	Model				D	E	Fitting part min. hole size	
		1 Pad size	Form	2 <sup>*1</sup> Material	3 Vacuum inlet				4 Connection thread
ZP	Y	2004 3507 4010	U	N S U F GN GS	N4 U4	B4 B5	13.5	5	ø1.8
		N6 U6			15.5		7	ø2.5	

\*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**

The drawings show the type with a buffer plate.



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

**Buffer specification 3**

<b>J</b>	Rotating
<b>K</b>	Non-rotating
<b>JN</b>	Rotating (Without buffer plate)
<b>KN</b>	Non-rotating (Without buffer plate)

**6 Connection thread (Male thread)**

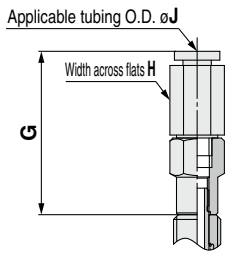
<b>A8</b>	M8 x 1
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**5 Vacuum inlet**

<b>B3</b>	M3 x 0.5	Female thread	
<b>B5</b>	M5 x 0.8	Female thread	
<b>04</b>	ø4	One-touch fitting	KQ2H04-M5N
<b>06</b>	ø6	One-touch fitting	KQ2H06-M5N
<b>N4</b>	For ø4 nylon tubing	Barb fitting	
<b>U4</b>	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 JN KN	6	B3 B5 04 06 N4 U4	A8	33	18	1.2	15							
						10			66	23		43							
						15			71	28									
												25				81	38		
												6				33	18	1.8	15
												10				66	23		43
					15				71	28									
					25				81	38									
					6				33	18	2	15							
					10				66	23		43							
					15				71	28									
					25				81	38									

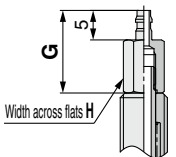
**Vacuum inlet: One-touch fitting**



**Dimensions Per Vacuum Inlet: Female Thread**

		Model						E	F	G	H	
Vacuum inlet direction	1 Pad 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 JN KN	6	B3	A8	M3 x 0.5	3	11	6
						10			B5	M5 x 0.8	5	13
						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 JN KN	6	04	A8	27.7	8	4	ø2.5
						10				06	10	
						15						
				25								

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- Buffer Assembly p. 192

**Dimensions Per Vacuum Inlet: Barb Fitting**

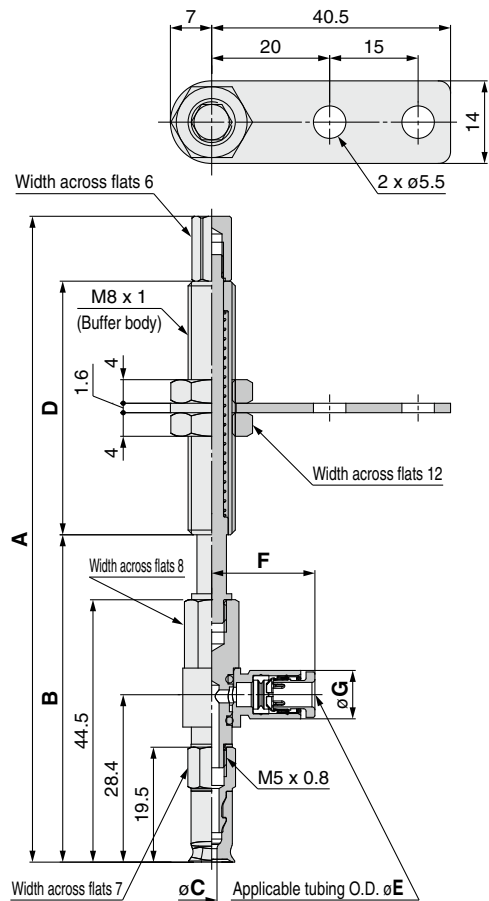
		Model						G	H	Fitting part min. hole size	
Vacuum inlet direction	1 Pad size	Form	2*1 Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet	6 Connection thread				
ZP	T	2004 3507 4010	U	N S U F GN GS	J K JN KN	6	N4	A8	14	6	ø1.8
						10					
						15					
				25							

\*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

The drawings show the type with a buffer plate.



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

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>Buffer specification</b>			<b>Connection thread (Male thread)</b>		
<b>J</b>	Rotating		<b>A8</b> M8 x 1		
<b>K</b>	Non-rotating				
<b>JN</b>	Rotating (Without buffer plate)		<b>5 Vacuum inlet (One-touch fitting)</b>		
<b>KN</b>	Non-rotating (Without buffer plate)				
<b>04</b>	ø4		<b>06</b> ø6		
<b>06</b>	ø6				

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

### Dimensions Per Vacuum Inlet

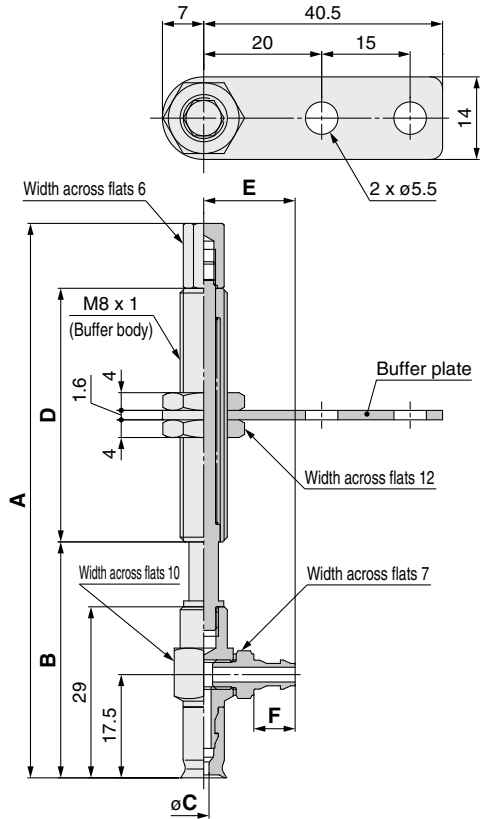
	Vacuum inlet direction	Model						E	F	G	Fitting part min. hole size	
		<b>1</b> Pad size	Form	<b>2</b> *1 Material	<b>3</b> Buffer spec.	<b>4</b> Buffer stroke	<b>5</b> Vacuum inlet					<b>6</b> Connection thread
ZP	R	2004 3507 4010	U	N S U F GN GS	J K JN KN	6	04	A8	4	17.5	8.2	ø2.5
						10			6	18.3	10.4	ø4
						25						

\*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**

The drawings show the type with a buffer plate.



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

① ② ③ ④

**Buffer specification ③**

<b>J</b>	Rotating
<b>K</b>	Non-rotating
<b>JN</b>	Rotating (Without buffer plate)
<b>KN</b>	Non-rotating (Without buffer plate)

⑥ **Connection thread (Male thread)**

<b>A8</b>	M8 x 1
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⑤ **Vacuum inlet (Barb fitting)**

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

		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 JN KN	6	N4 N6 U4 U6	A8	63	37	1.2	15						
						10			94	40		43						
						15			99	45		43						
												25	109	55				
												6	63	37		15		
												10	94	40		43		
					15	99	45		43									
					25	109	55		43									
					6	63	37		15									
					10	94	40		43									
					15	99	45		43									
					25	109	55		43									

**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 JN KN	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

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

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 30)
	50	—	(5 x 10)	(5 x 30)
	60	—	(6 x 10)	(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

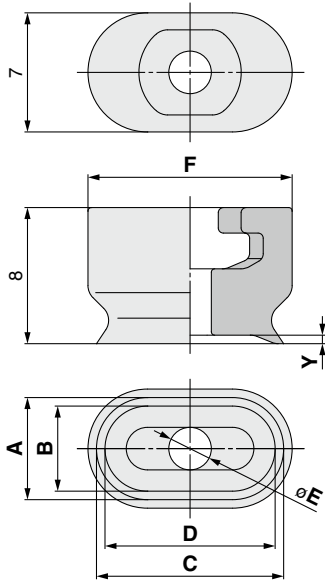
⑥ Vacuum inlet			⑦ Connection thread			Pad size
Type	Symbol	Size	Type	Symbol	Size	All sizes
Female thread	B5	M5 x 0.8	Male thread	Nil	M10 x 1	○
One-touch fitting	04	ø4		Nil		○●
	06	ø6		Nil		○●

\* 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	0.5				

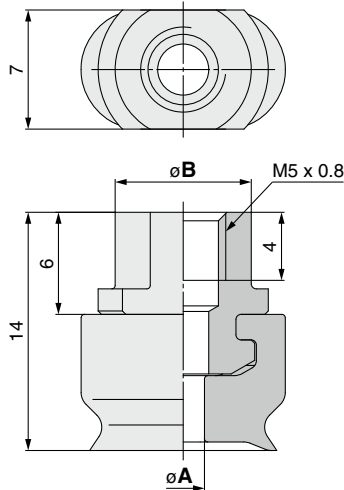
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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
40	10			2.5						
50	10			2 x 1.8	11					
60	10			2 x 2						
40	20			2.5	19					
50	20			3						
60	20			2 x 1.8						
40	30			2 x 2.5						
50	30									
60	30									
80	30									

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

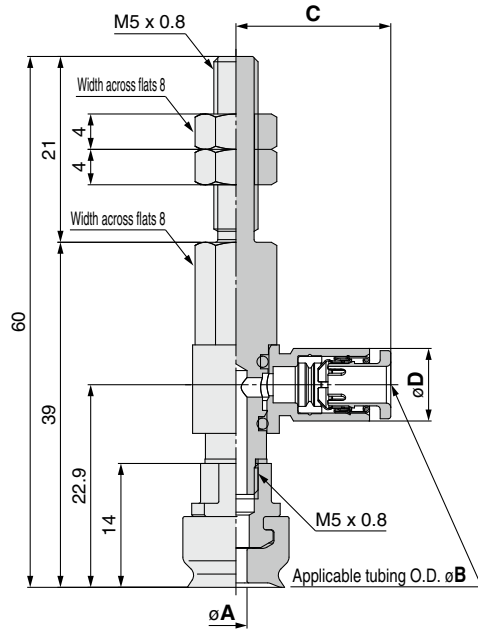
Construction p. 187

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**



<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b> Connection thread (Male thread)
<b>04</b>	<b>06</b>	<b>04</b>	<b>A5</b> M5 x 0.8
		Vacuum inlet (One-touch fitting)	
<b>04</b>	<b>06</b>	<b>ø4</b>	<b>ø6</b>

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	20					2.5
		50						3
	60		2 x 1.8					
	80							
	40	30	2 x 1.8					
	50							
	60		2 x 2.5					
	80							

- 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 06	A5	4	17.5	8.2	ø2.5
		40						6	18.3	10.4	ø4
		50	10					4	17.5	8.2	ø2.5
		60						6	18.3	10.4	ø4
		40	20					4	17.5	8.2	ø2.5
		50						6	18.3	10.4	ø4
	60		4					17.5	8.2	ø2.5	
	80		6					18.3	10.4	ø4	
	40	30	4					17.5	8.2	ø2.5	
	50		6					18.3	10.4	ø4	
	60										
	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

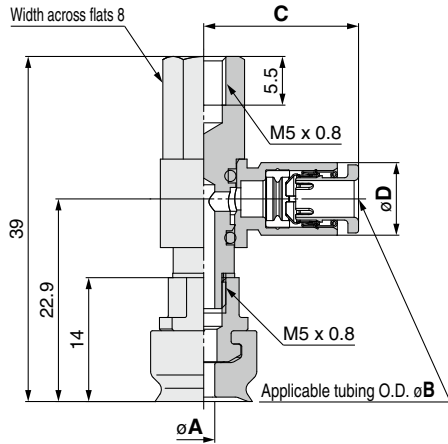
④

Connection thread (Female thread)

**B5** M5 x 0.8

Vacuum inlet (One-touch fitting)

<b>04</b>	ø4
<b>06</b>	ø6



Construction p. 187  
Adapter Assembly p. 195

Model							A	
Vacuum inlet direction	① Pad size (Breadth, Length)		② Form	③ Material	④ Vacuum inlet	⑤ Connection thread		
ZP2	R	35	07	W	N S U F GN GS	04 06	B5	2 x 1.5
		40	10					2.5
		50						2 x 1.8
		60						2 x 2
		80	2.5					
		40	20					3
	60	2 x 1.8						
	80	2 x 2.5						

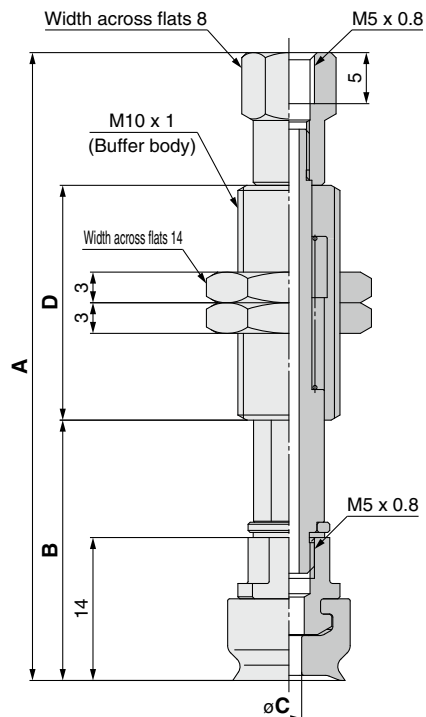
**Dimensions Per Vacuum Inlet**

Model							B	C	D	Fitting part min. hole size	
Vacuum inlet direction	① Pad size (Breadth, Length)		② Form	③ Material	④ Vacuum inlet	⑤ Connection thread					
ZP2	R	35	07	W	N S U F GN GS	04	B5	4	17.5	8.2	ø2.5
						06		6	18.3	10.4	ø4
		40	10			04		4	17.5	8.2	ø2.5
						06		6	18.3	10.4	ø4
						04		4	17.5	8.2	ø2.5
		06	6					18.3	10.4	ø4	
	60	20	04	4		17.5	8.2	ø2.5			
				06		6	18.3	10.4	ø4		
			80	30		04	4	17.5	8.2	ø2.5	
	06	6				18.3	10.4	ø4			

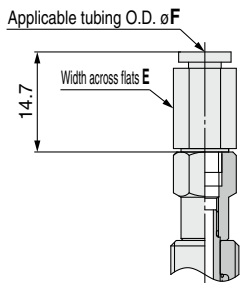
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

**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 ① Breadth Length	Form ②	Material ③	Buffer spec. ④	Buffer stroke ⑤						
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 ④  
**Buffer specification** ③  
K Non-rotating

**Vacuum inlet** ⑤

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

		Model					A	B	C	D		
Vacuum inlet direction	Pad size ① Breadth Length	Form ②	Material ③	Buffer spec. ④	Buffer stroke ⑤							
ZP2	T	35 07	W	N S U F GN GS	K	B5	10	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			
								10	61.5		25.5	23
								20	99.5		35.5	51
								30	109.5		45.5	77
								40	145.5		55.5	
								50	155.5		65.5	
								10	61.5		25.5	23
								20	99.5		35.5	51
		30					109.5	45.5	77			
		40					145.5	55.5				
		50					155.5	65.5				
		10					61.5	25.5	23			
		20					99.5	35.5	51			
		30					109.5	45.5	77			
		40					145.5	55.5				
		50					155.5	65.5				
		10					61.5	25.5	23			
		20					99.5	35.5	51			
		30					109.5	45.5	77			
		40					145.5	55.5				
		50					155.5	65.5				
		10					61.5	25.5	23			
		20					99.5	35.5	51			
		30					109.5	45.5	77			
		40					145.5	55.5				
		50					155.5	65.5				
		10					61.5	25.5	23			
		20					99.5	35.5	51			
		30					109.5	45.5	77			
		40					145.5	55.5				
		50					155.5	65.5				
		10					61.5	25.5	23			
		20					99.5	35.5	51			
		30					109.5	45.5	77			
		40					145.5	55.5				
		50					155.5	65.5				
		10					61.5	25.5	23			
		20					99.5	35.5	51			
		30					109.5	45.5	77			
		40					145.5	55.5				
		50					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**

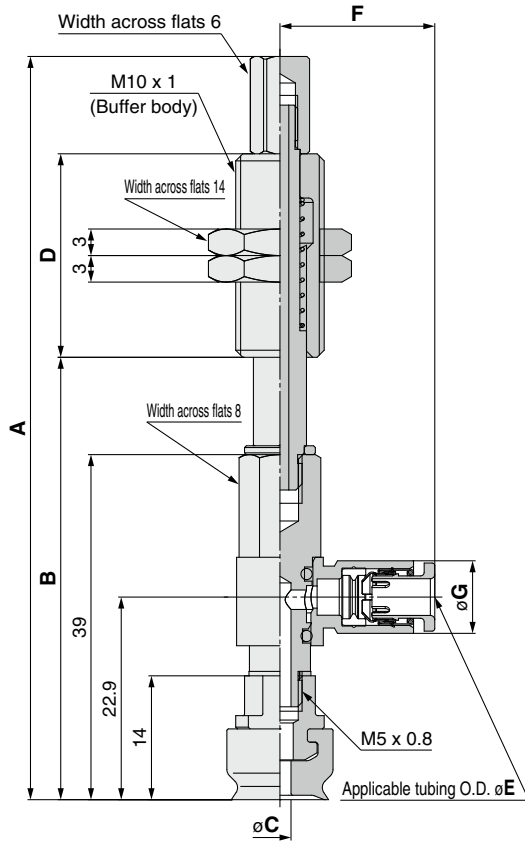
① ② ④

Buffer specification ③

K	Non-rotating
---	--------------

Vacuum inlet ⑤  
(One-touch fitting)

04	ø4
06	ø6



Construction	p. 188
Buffer Assembly	p. 197

**Dimensions Per Vacuum Inlet**

		Model								
Vacuum inlet direction	① Pad size Breadth Length	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke	⑤ Vacuum inlet	E	F	G	Fitting part min. hole size
	35 07									
	40 10									
	40 20									
	50 20									
	50 30									
	60 30									
	60 30									
	80 30									

		Model										
Vacuum inlet direction	Form	① Pad size		② Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet	A	B	C	D	
		Breadth	Length									
ZP2	R	35	07	W	N S U F GN GS	K	10 20 30 40 50	04 06	84	50	2 x 1.5	23
									122	60		51
									132	70		77
									168	80		
									178	90		
			84						50	2 x 1.5	23	
			122						60		51	
			132						70		77	
			168						80			
			178						90			
			84						50	2.5	23	
			122						60		51	
			132						70		77	
			168						80			
			178						90			
		84	50						2 x 1.8	23		
		122	60							51		
		132	70							77		
		168	80									
		178	90									
		84	50						2 x 2	23		
		122	60							51		
		132	70							77		
		168	80									
		178	90									
		84	50						2.5	23		
		122	60							51		
		132	70							77		
		168	80									
		178	90									
84	50	3	23									
122	60		51									
132	70		77									
168	80											
178	90											
84	50	2 x 1.8	23									
122	60		51									
132	70		77									
168	80											
178	90											
84	50	2 x 2.5	23									
122	60		51									
132	70		77									
168	80											
178	90											

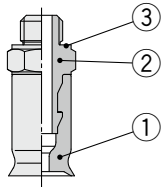
\*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

# Oval Pad *ZP Series* Construction

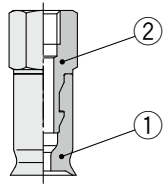
With adapter Oval flat type: 2004/3507/4010

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

ZP□T□-(A5/A6)



ZP□T□-(B4/B5)

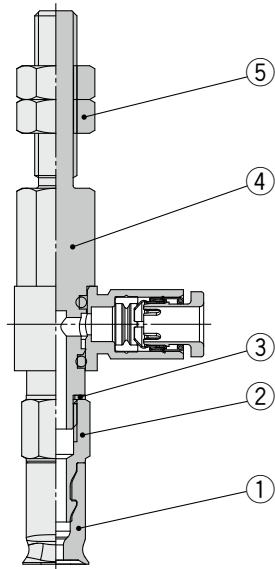


## Component Parts

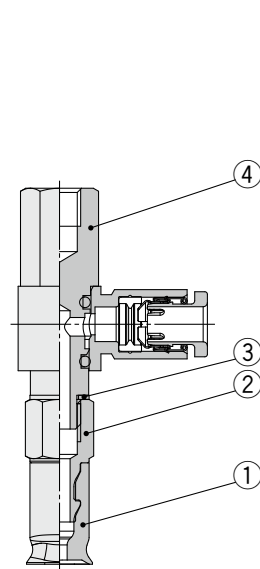
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Oval flat type
2	Adapter	Brass (Electroless nickel plating)	ZPT
		Stainless steel	ZPST
3	Gasket	Stainless steel/NBR	ZPT
		Stainless steel/FKM	ZPST

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

ZPR□-(04/06)-(A5/A6)



ZPR□-(04/06)-(B4/B5)

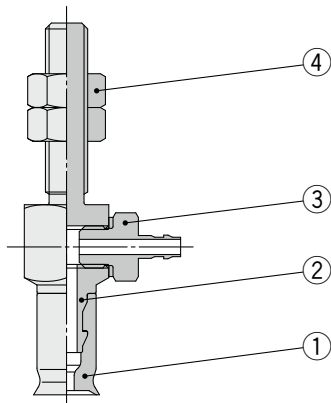


## Component Parts

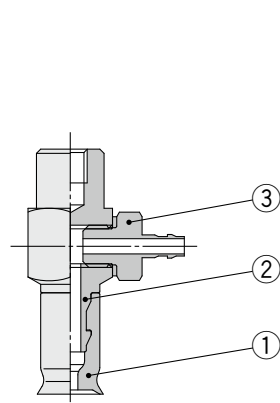
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Oval flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Gasket	Stainless steel 304/NBR	
4	Adapter (With One-touch fitting)	Brass (Electroless nickel plating), PBT, NBR, Stainless 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

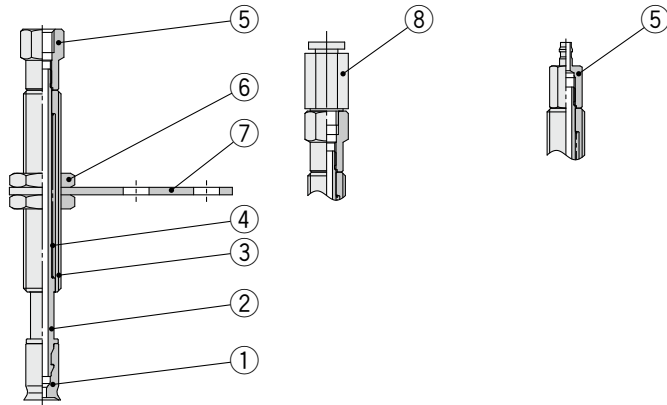
**With buffer** Oval flat type: 2004/3507/4010

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

ZPT□-(B3/B5)-A8

ZPT□-(04/06)-A8

ZPT□-(N4/U4)-A8

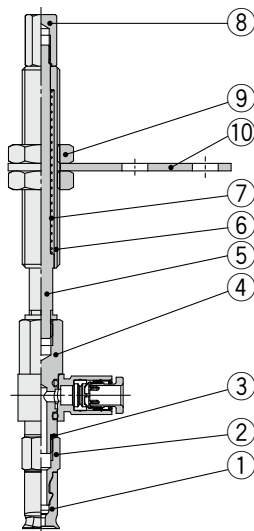


**Component Parts**

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

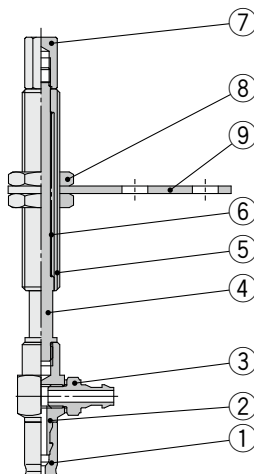


**Component Parts**

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**

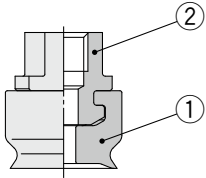
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Oval flat type
2	Adapter	Brass (Electroless nickel plating)	
3	Barb fitting	—	
4	Piston rod	Stainless steel	
5	Buffer body	Brass (Electroless nickel plating)	
6	Return spring	Stainless 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



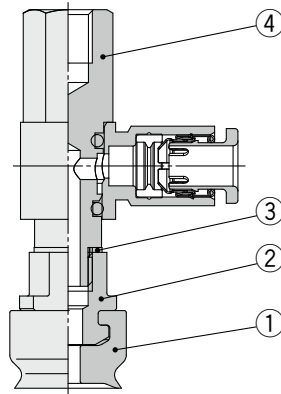
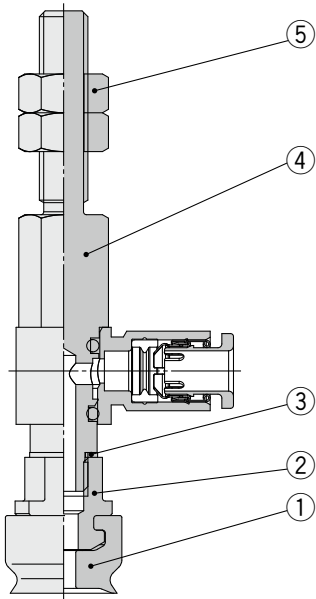
## Component Parts

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



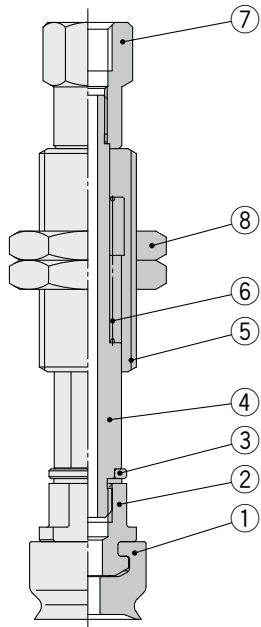
## Component Parts

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

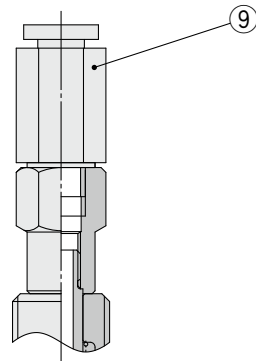
With buffer Oval flat type: 3507 to 8030

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

ZP2-T□-B5



ZP2-T□-(04/06)

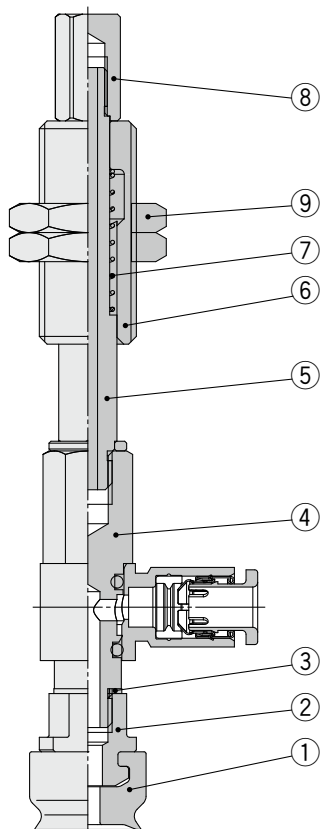


Component Parts

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]
ZP□T□U□-A5	M5 x 0.8	1.3 to 1.7
ZP□T□U□-A6	M6 x 1	1.6 to 2.0