

Compact Type ZP3 Series

RoHS

Model Selection

ø1.5, ø2, ø3.5, ø4, ø6, ø8, ø10, ø13, ø16

Flat Type, Flat Type with Groove, Bellows Type, Bellows Type with Ribs

Overall length shortened For the flat type (Pad diameter: ø2)

ZP3 Compact

Flat Type

Flat Type with Groove

Bellows Type

Bellows Type with Ribs

Construction

Mounting Bracket Assembly

Precautions

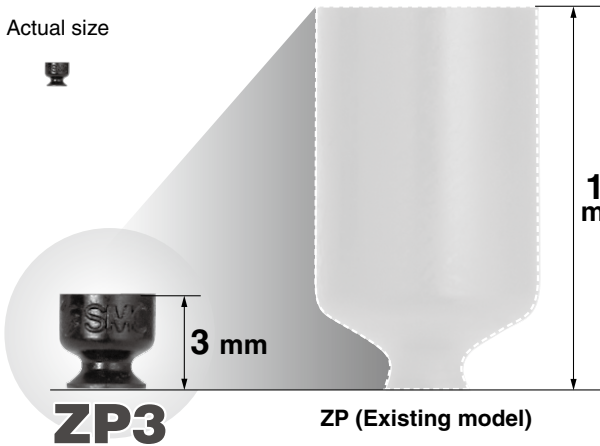
Pad unit

Max. 9 mm shorter

With adapter

Max. 11 mm shorter

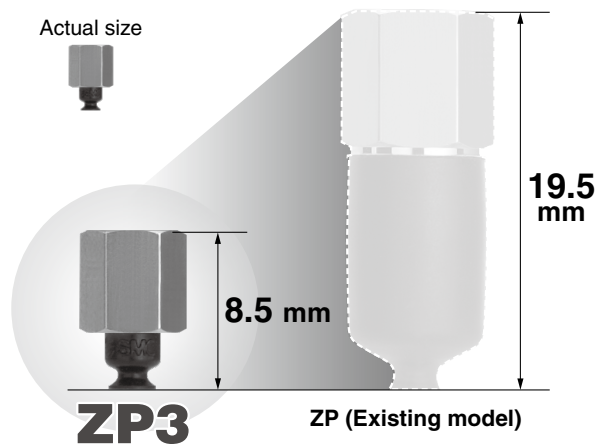
Actual size



ZP3

ZP (Existing model)

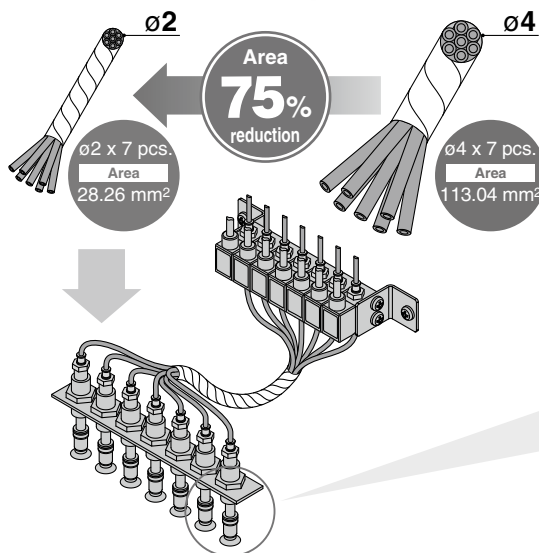
Actual size



ZP3

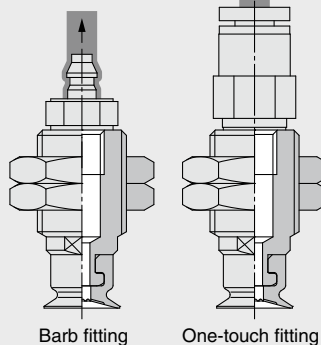
ZP (Existing model)

Space saving ø2 piping reduces working space!



Vertical

- Male thread
- Female thread
- Barb fitting (Applicable tubing: ø2)
- One-touch fitting (Applicable tubing: ø2)

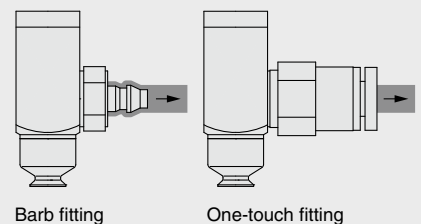


Barb fitting

One-touch fitting

Lateral

- Female thread
- Barb fitting (Applicable tubing: ø2)
- One-touch fitting (Applicable tubing: ø2)



Barb fitting

One-touch fitting

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Flat Type with Groove	
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Bellows Type

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Bellows Type with Ribs

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Improved functions

Improved removability

Adsorption surface is shot-blasted

Micro-dents and bumps on the surface facilitate easy removal.

With groove

Less contact surface with the workpiece makes it easy to remove.



Construction to prevent the pad from coming off

The new shape of the part which connects with the adapter prevents the pad from coming off.



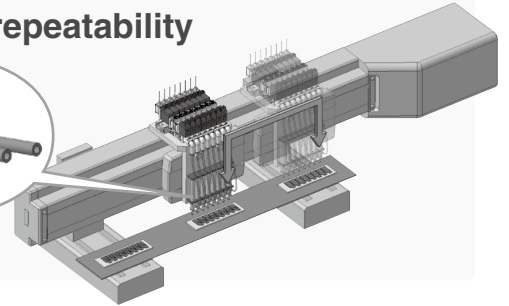
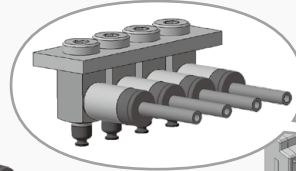
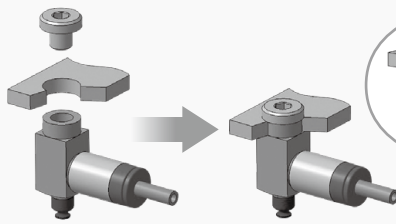
Pad diameter from $\phi 1.5$

Easier identification

SMC logo mark

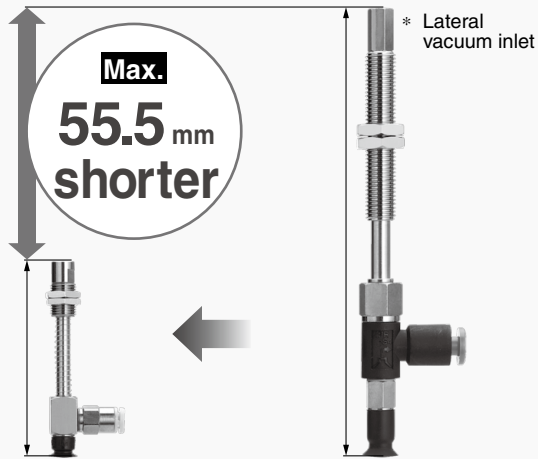


Fixing boss which allows for easy mounting and repeatability



Compact buffer body

Overall length shortened



ZP3

ZP

Pad diameter $\phi 8$, Flat type, With One-touch fitting

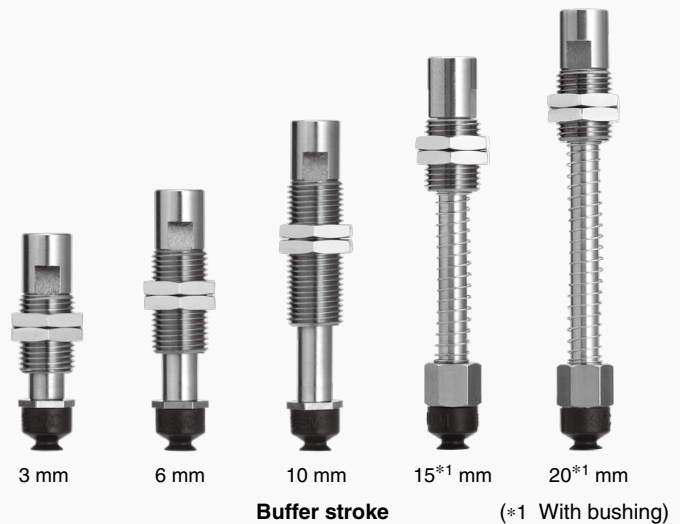
ZP3

Stroke	Overall length [mm]
3	40
6	46
10	56
15	59
20	66.5
25	—

ZP

Stroke	Overall length [mm]
3	—
6	78.5
10	109.5
15	114.5
20	—
25	124.5

Short stroke type: 3 mm available



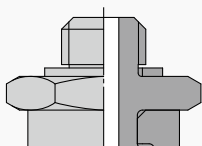
Buffer stroke

(*1 With bushing)

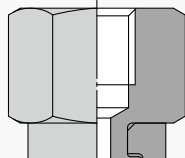
Pad diameter	Buffer specifications	Stroke [mm]				
		3	6	10	15	20
$\phi 1.5, \phi 2, \phi 3.5$	Rotating, Non-rotating	●	●	—	—	—
	Rotating	●	●	●	—	—
$\phi 4, \phi 6, \phi 8, \phi 10, \phi 13, \phi 16$	Rotating, With bushing	—	—	—	●	●
	Non-rotating	●	●	●	●	●

Wide selection of piping

Male thread

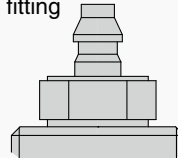


Female thread

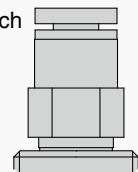



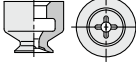

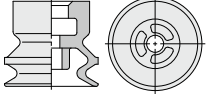


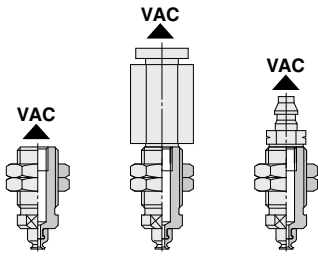
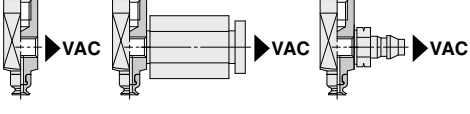
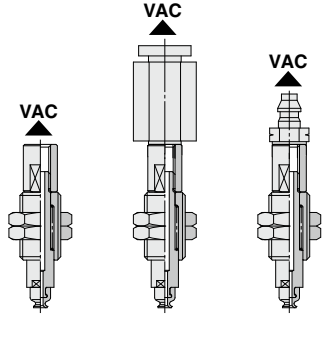
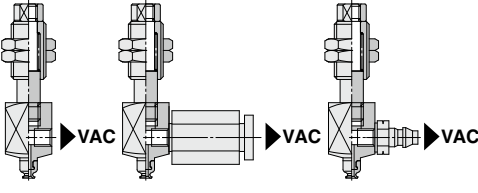
For $\phi 2$ piping!

Barb fitting



One-touch fitting



		Vacuum inlet direction									
		Flat type	Flat type with groove	Bellows type	Bellows type with ribs						
Vacuum inlet direction	Single unit					p. 137	p. 143	p. 149	p. 155		
	Vertical	ZP3-T With adapter					p. 137	p. 143	p. 149	p. 155	
		ZP3-T With adapter					p. 138	p. 144	p. 150	p. 156	
		Lateral	ZP3-Y With adapter					p. 139	p. 145	p. 151	p. 157
			ZP3-T With buffer					p. 140	p. 146	p. 152	p. 158
	Lateral	ZP3-Y With buffer					p. 141	p. 147	p. 153	p. 159	

Model Selection

ZP3 Compact

Flat Type

Flat Type with Groove

Bellows Type

Bellows Type with Ribs

Construction

Mounting Bracket Assembly

Precautions

Compact Type *ZP3 Series* Specifications

Pad Material

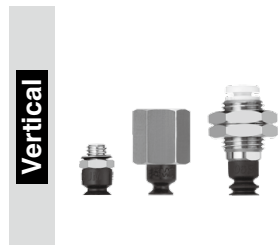
Material	NBR (Nitrile rubber)	Silicone rubber *1*2	Urethane rubber	FKM (Fluoro rubber)	Conductive NBR (Nitrile rubber)	Conductive silicone rubber	Semiconductive silicone rubber
Color of rubber	Black	White	Brown	Black			
Rubber hardness (Shore A: ±5°)	60		55 to 60	60			55

*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

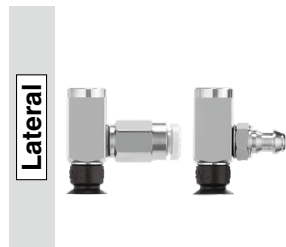
Vacuum Inlet Direction **Vertical** T Type/ZP3-T



Connection		Male thread					Female thread		
Pad diameter		ø1.5 to ø3.5		ø4 to ø8		ø10 to ø16		ø1.5 to ø3.5	ø4 to ø16
Connection thread		M3 x 0.5	M6 x 0.75	M5 x 0.8	M10 x 1	M5 x 0.8	M12 x 1	M3 x 0.5	M5 x 0.8
Vacuum inlet	Female thread	Use the connection thread.	M3 x 0.5	Use the connection thread.	M5 x 0.8	Use the connection thread.	M5 x 0.8	Use the connection thread.	Use the connection thread.
	One-touch fitting		ø2, ø4		ø2, ø4		ø2, ø4, ø6		
	Barb fitting*1		ø2, ø4		ø2, ø4		ø2, ø4, ø6		

*1 ø2 polyurethane tubing, ø4, ø6 soft tubing

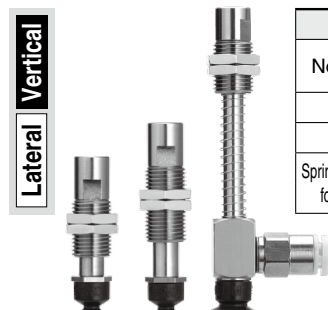
Vacuum Inlet Direction **Lateral** Y Type/ZP3-Y



Connection		Female thread		
Pad diameter		ø1.5 to ø3.5	ø4 to ø8	ø10 to ø16
Connection thread		M3 x 0.5	M5 x 0.8	M5 x 0.8
Vacuum inlet	Female thread	M3 x 0.5	M5 x 0.8	M5 x 0.8
	One-touch fitting	ø2, ø4	ø2, ø4	ø2, ø4, ø6
	Barb fitting*1	ø2, ø4	ø2, ø4	ø2, ø4, ø6

*1 ø2 polyurethane tubing, ø4, ø6 soft tubing

Buffer Specifications



Pad diameter		ø1.5 to ø3.5		ø4 to ø16		
Non-rotating specification		J: Rotating	K: Non-rotating	J: Rotating	JB: Rotating, With bushing	K: Non-rotating
Stroke [mm]		3, 6		3, 6, 10	15, 20	3, 6, 10, 15, 20
Connection thread		M6 x 0.75	M8 x 0.75	M8 x 0.75		
Spring reactive force [N]	At 0 stroke	0.2		0.2		
	At full stroke	0.4	0.5	0.5		



Compact Type

Flat Type

ZP3 Series

Pad diameter: $\varnothing 1.5$, $\varnothing 2$, $\varnothing 3.5$



Model Selection

ZP3 Compact

Flat Type

Flat Type with Groove

Bellows Type

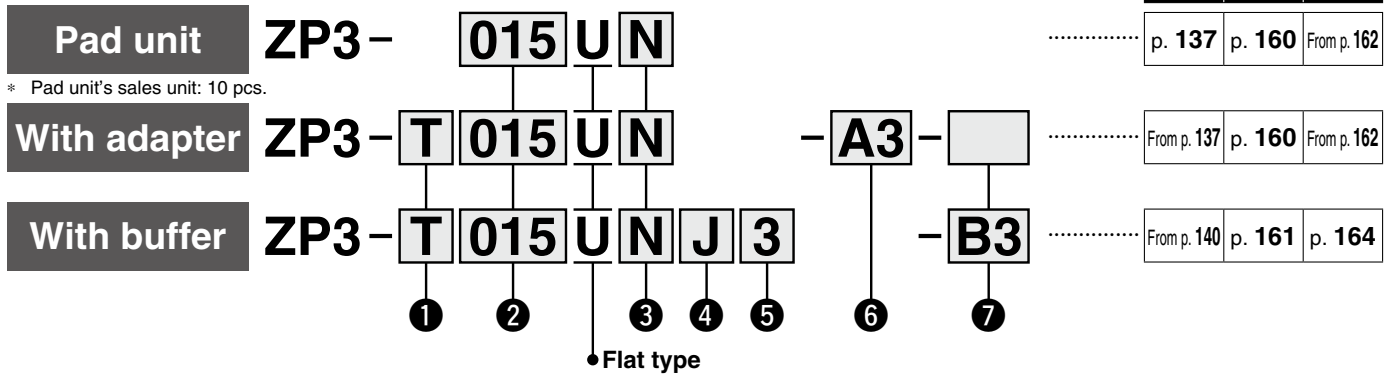
Bellows Type with Ribs

Construction

Mounting Bracket Assembly

Precautions

How to Order



① Vacuum inlet direction

Nil	Pad unit
T	Vertical
Y	Lateral

② Pad diameter

015	$\varnothing 1.5$
02	$\varnothing 2$
035	$\varnothing 3.5$

③ 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"

④ Buffer specification

J	Rotating
K	Non-rotating

⑤ Buffer stroke

Stroke [mm]	Pad diameter	
	All sizes	
3	○	●
6	○	●

With adapter

⑥ Connection thread/⑦ Vacuum inlet

Type	⑥ Connection thread		Type	⑦ Vacuum inlet		Pad diameter
	Symbol	Size		Symbol	Size	
Male thread	A3	M3 x 0.5	—	Nil	—*1	○
			Female thread	B3	M3 x 0.5	○
	A6	M6 x 0.75	One-touch fitting	02	$\varnothing 2$	○
			Barb fitting	04	$\varnothing 4$	○
				U2	For $\varnothing 2$ polyurethane tubing*2	○
Female thread	B3	M3 x 0.5	—	Nil	—*1	○
			Female thread	B3	M3 x 0.5	●
			One-touch fitting	02	$\varnothing 2$	●
			Barb fitting	04	$\varnothing 4$	●
				U2	For $\varnothing 2$ polyurethane tubing	●
U4	For $\varnothing 4$ soft tubing	●				

*1 Use the connection thread.

*2 Polyurethane tube piping

*3 Soft nylon/Polyurethane tube piping

With buffer

⑦ Vacuum inlet

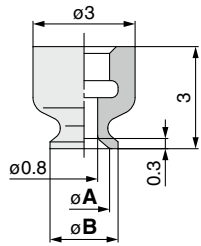
Type	Symbol	Size	Pad diameter	
			○	●
Female thread	B3	M3 x 0.5	○	●
One-touch fitting	02	$\varnothing 2$	○	●
	04	$\varnothing 4$	○	●
Barb fitting	U2	For $\varnothing 2$ polyurethane tubing	○	●
	U4	For $\varnothing 4$ soft tubing	○	●

* It is not necessary to select a connection thread.

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

Dimensions/Models

Single unit $\varnothing 1.5$ to $\varnothing 3.5$



Construction p. 160

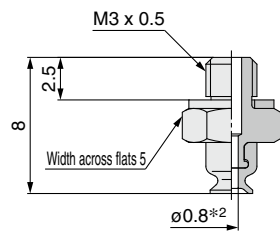
Mounting Bracket Assembly From p. 162

ZP3 - **015** U **N**
① ②

Model	Model		A	B
	① Pad dia.	② Form Material ^{*1}		
ZP3	015	U N S U F GN GS	1.5	2
	02		2	2.5
	035		3.5	4

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

With adapter $\varnothing 1.5$ to $\varnothing 3.5$



Construction p. 160

Adapter Assembly p. 162

ZP3 - T **015** U **N** - **A3**
① ② ③

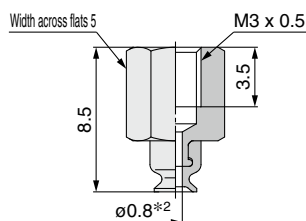
③ Connection thread
(Male thread)

A3	M3 x 0.5
-----------	----------

Model	Vacuum inlet direction	Model		③ Connection thread
		① Pad dia.	② Form Material ^{*1}	
ZP3	T	015	U N S U F GN GS	A3
		02		
		035		

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

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



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Adapter Assembly p. 162

ZP3 - T **015** U **N** - **B3**
① ② ③

③ Connection thread
(Female thread)

B3	M3 x 0.5
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Model	Vacuum inlet direction	Model		③ Connection thread
		① Pad dia.	② Form Material ^{*1}	
ZP3	T	015	U N S U F GN GS	B3
		02		
		035		

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

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

Dimensions/Models

With adapter $\varnothing 1.5$ to $\varnothing 3.5$

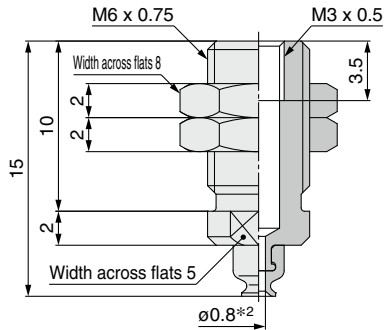
ZP3 - T 015 U N - A6 - B3

① ②

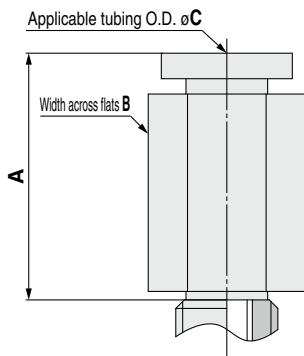
Connection thread (Male thread)
A6 M6 x 0.75

④ Vacuum inlet

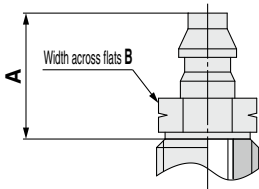
B3	M3 x 0.5	Female thread
02	$\varnothing 2$	One-touch fitting
04	$\varnothing 4$	One-touch fitting
U2	For $\varnothing 2$ polyurethane tubing	Barb fitting
U4	For $\varnothing 4$ soft tubing	



Vacuum inlet: One-touch fitting



Vacuum inlet: Barb fitting



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Adapter Assembly p. 163

Model		①	②	③	④
Vacuum inlet direction	Pad dia.	Form	Material*1	Connection thread	Vacuum inlet
ZP3	T	015 02 035	U N S U F G N S	A6	B3

Dimensions Per Vacuum Inlet: One-touch Fitting

Model		①	②	③	④	A	B	C	Fitting part min. hole size	Fitting part no.
Vacuum inlet direction	Pad dia.	Form	Material*1	Connection thread	Vacuum inlet					
ZP3	T	015 02 035	U N S U F G N S	A6	02	13	5.5	2	$\varnothing 1.2$	KQ2H02-M3G
					04	14.5	8	4		KQ2H04-M3G

Dimensions Per Vacuum Inlet: Barb Fitting

Model		①	②	③	④	A	B	Fitting part min. hole size	Fitting part no.
Vacuum inlet direction	Pad dia.	Form	Material*1	Connection thread	Vacuum inlet				
ZP3	T	015 02 035	U N S U F G N S	A6	U2	6.5	4.5	$\varnothing 0.9$	M-3AU-2
					U4	7.4	5	$\varnothing 1.2$	M-3AU-4-X83

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

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

Dimensions/Models

With adapter $\varnothing 1.5$ to $\varnothing 3.5$

ZP3 - Y 015 U N - B3 - B3

①

②

③

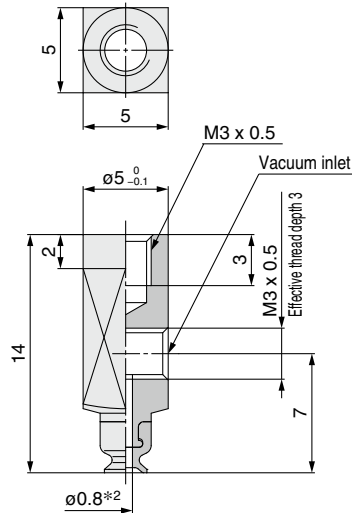
④

Connection thread (Female thread)

B3	M3 x 0.5
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④ Vacuum inlet

B3	M3 x 0.5	Female thread
02	$\varnothing 2$	One-touch fitting
04	$\varnothing 4$	One-touch fitting
U2	For $\varnothing 2$ polyurethane tubing	Barb fitting
U4	For $\varnothing 4$ soft tubing	

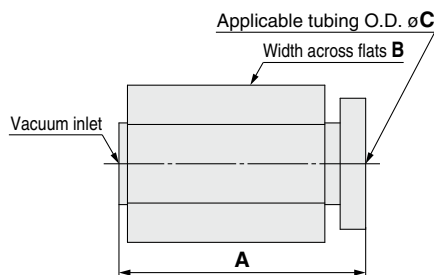


Model					
Vacuum inlet direction	① Pad dia.	Form	② Material*1	③ Connection thread	④ Vacuum inlet
ZP3	Y	015 02 035	U	N S U F GN GS	B3 B3

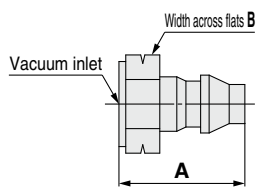
Dimensions Per Vacuum Inlet: One-touch Fitting

Model						A	B	C	Fitting part min. hole size	Fitting part no.	
Vacuum inlet direction	① Pad dia.	Form	② Material*1	③ Connection thread	④ Vacuum inlet						
ZP3	Y	015 02 035	U	N S U F GN GS	B3	02	13	5.5	2	$\varnothing 1.2$	KQ2H02-M3G
							04	14.5	8		4

Vacuum inlet: One-touch fitting



Vacuum inlet: Barb fitting



Dimensions Per Vacuum Inlet: Barb Fitting

Model						A	B	Fitting part min. hole size	Fitting part no.	
Vacuum inlet direction	① Pad dia.	Form	② Material*1	③ Connection thread	④ Vacuum inlet					
ZP3	Y	015 02 035	U	N S U F GN GS	B3	U2	6.5	4.5	$\varnothing 0.9$	M-3AU-2
						U4	7.4	5	$\varnothing 1.2$	M-3AU-4-X83

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

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

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Adapter Assembly p. 162

Dimensions/Models

With buffer $\varnothing 1.5$ to $\varnothing 3.5$

ZP3 - T 015 U N J 3 - B3

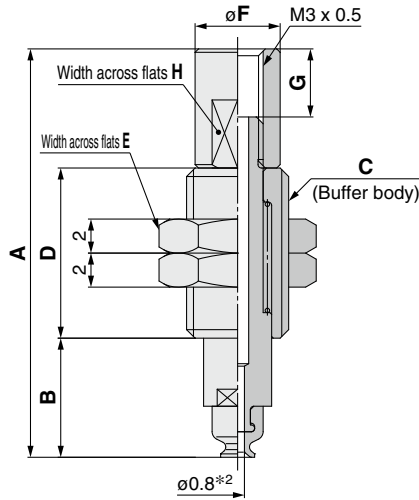
① ② ③ ④ ⑤

⑤ Vacuum inlet

Buffer specification ③

J	Rotating
K	Non-rotating

B3	M3 x 0.5	Female thread
02	$\varnothing 2$	One-touch fitting
04	$\varnothing 4$	Barb fitting
U2	For $\varnothing 2$ polyurethane tubing	Barb fitting
U4	For $\varnothing 4$ soft tubing	



		Model					A	B	C	D	E	F	G	H
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet								
ZP3	T	015 02 035	U	N S U F GN GS	J	3	24	7	M6 x 0.75	10	8	5	4	4
						6								
					K	3	26.5	8	M8 x 0.75	11	10	7	3	6
						6								

Dimensions Per Vacuum Inlet: One-touch Fitting

		Model					J	K	L	Fitting part min. hole size	Fitting part no.
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet					
ZP3	T	015 02 035	U	N S U F GN GS	J K	3 6	13	5.5	2	$\varnothing 1.2$	KQ2H02-M3G
											04

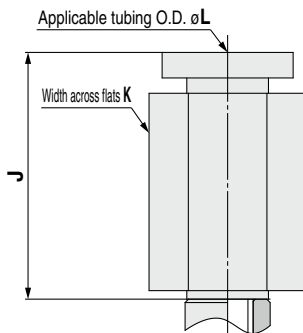
Dimensions Per Vacuum Inlet: Barb Fitting

		Model					J	K	Fitting part min. hole size	Fitting part no.
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet				
ZP3	T	015 02 035	U	N S U F GN GS	J K	3 6	6.5	4.5	$\varnothing 0.9$	M-3AU-2
										U4

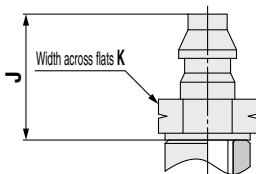
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Vacuum inlet: One-touch fitting



Vacuum inlet: Barb fitting



Construction	p. 161
Buffer Assembly	p. 164

Dimensions/Models

With buffer $\varnothing 1.5$ to $\varnothing 3.5$

ZP3 - Y 015 U N J 3 - B3

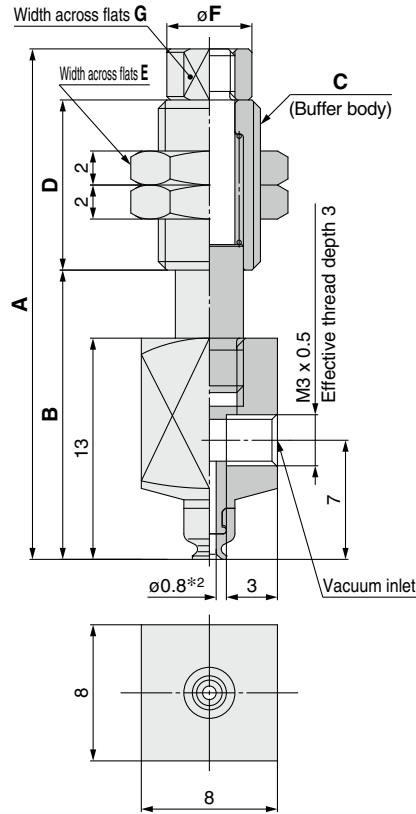
① ② ③ ④

⑤ Vacuum inlet

Buffer specification ③

J	Rotating
K	Non-rotating

B3	M3 x 0.5	Female thread
02	$\varnothing 2$	One-touch fitting
04	$\varnothing 4$	
U2	For $\varnothing 2$ polyurethane tubing	
U4	For $\varnothing 4$ soft tubing	



		Model					A	B	C	D	E	F	G	
	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet							
ZP3	Y	015 02 035	U	N S U F GN GS	J	3	B3	30	17	M6 x 0.75	10	8	5	4
						6		37	20		14			
					K	3	34	17	M8 x 0.75	11	10	7	6	
						6	40.5	20		14.5				

Dimensions Per Vacuum Inlet: One-touch Fitting

		Model					H	J	K	Fitting part min. hole size	Fitting part no.	
	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet					
ZP3	Y	015 02 035	U	N S U F GN GS	J K	3 6	02	13	5.5	2	$\varnothing 1.2$	KQ2H02-M3G
							04	14.5	8	4		KQ2H04-M3G

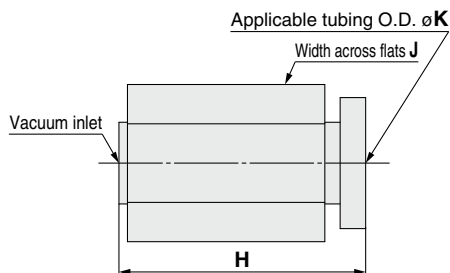
Dimensions Per Vacuum Inlet: Barb Fitting

		Model					H	J	Fitting part min. hole size	Fitting part no.	
	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet				
ZP3	Y	015 02 035	U	N S U F GN GS	J K	3 6	U2	6.5	4.5	$\varnothing 0.9$	M-3AU-2
							U4	7.4	5	$\varnothing 1.2$	M-3AU-4-X83

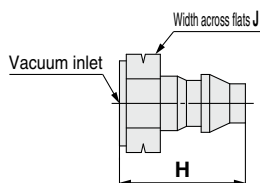
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Vacuum inlet: One-touch fitting



Vacuum inlet: Barb fitting



Construction	p. 161
Buffer Assembly	p. 164



Compact Type Flat Type with Groove

ZP3 Series

Pad diameter: $\varnothing 4, \varnothing 6, \varnothing 8, \varnothing 10, \varnothing 13, \varnothing 16$



Model Selection

How to Order

	Dimensions/Models	Construction	Mounting Bracket Assembly
Pad unit ZP3- 04 UM N	p. 143	p. 160	From p. 162
With adapter ZP3- T 04 UM N - A5 - []	From p. 143	p. 160	From p. 162
With buffer ZP3- T 04 UM N J 3 - B5	From p. 146	p. 161	p. 164

①
②
③
④
⑤
⑥
⑦

• Flat type with groove

① Vacuum inlet direction

Nil	Pad unit
T	Vertical
Y	Lateral

② Pad diameter

04	$\varnothing 4$
06	$\varnothing 6$
08	$\varnothing 8$
10	$\varnothing 10$
13	$\varnothing 13$
16	$\varnothing 16$

③ Material

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

- *1 Compliant with the FDA (USA Food and Drug Administration) regulation 21CFR§177.2600 for "Rubber articles intended for repeated use"
- *2 Compliant with the standards for "Rubber apparatus (excluding baby drinking apparatus) and containers/packaging" (D3) (Partial revision: Ministry of Health, Labour, and Welfare Notification No. 595, 2012) in Section 3 "Apparatus and Containers/Packaging" of the Food Sanitation Act, Article 18 "Specifications and Standards for Food and Food Additives, etc." (Ministry of Health and Welfare Notification No. 370, 1959).

④ Buffer specification

J	Rotating
JB	Rotating, With bushing
K	Non-rotating

⑤ Buffer stroke

Stroke [mm]	Buffer specification		
	J	JB	K
3	●	—	●
6	●	—	●
10	●	—	●
15	—	●	●
20	—	●	●

With adapter

⑥ Connection thread/ ⑦ Vacuum inlet ○: ZP3-T/Vertical ●: ZP3-Y/Lateral

Type	⑥ Connection thread		⑦ Vacuum inlet		Pad diameter [mm]	
	Symbol	Size	Symbol	Size	$\varnothing 4$ to $\varnothing 8$	$\varnothing 10$ to $\varnothing 16$
Male thread	A5	M5 x 0.8	—	Nil	Use the connection thread.	○ ○ ○
			Female thread	B5	M5 x 0.8	○ ○ —
				One-touch fitting	02	$\varnothing 2$
			Barb fitting	04	$\varnothing 4$	○ ○ —
				U2	For $\varnothing 2$ polyurethane tubing*1	○ ○ —
			U4	For $\varnothing 4$ soft tubing*2	○ ○ —	
	A10	M10 x 1	Female thread	B5	M5 x 0.8	— ○ ○
				One-touch fitting	02	$\varnothing 2$
			Barb fitting	04	$\varnothing 4$	— ○ ○
				06	$\varnothing 6$	— ○ ○
			Barb fitting	U2	For $\varnothing 2$ polyurethane tubing*1	— ○ ○
				U4	For $\varnothing 4$ soft tubing*2	— ○ ○
A12	M12 x 1	Female thread	B5	M5 x 0.8	— ○ ○	
			One-touch fitting	02	$\varnothing 2$	— ○ ○
		Barb fitting	04	$\varnothing 4$	— ○ ○	
			06	$\varnothing 6$	— ○ ○	
		Barb fitting	U2	For $\varnothing 2$ polyurethane tubing*1	— ○ ○	
			U4	For $\varnothing 4$ soft tubing*2	— ○ ○	
Female thread	B5	M5 x 0.8	—	Nil	Use the connection thread.	○ ○ ○
			Female thread	B5	M5 x 0.8	● ● ●
				One-touch fitting	02	$\varnothing 2$
			Barb fitting	04	$\varnothing 4$	● ● ●
				06	$\varnothing 6$	— ● ●
			Barb fitting	U2	For $\varnothing 2$ polyurethane tubing*1	● ● ●
U4	For $\varnothing 4$ soft tubing*2	● ● ●				
Barb fitting	U6	For $\varnothing 6$ soft tubing*2	— ● ●			

With buffer

⑦ Vacuum inlet ○: ZP3-T/Vertical ●: ZP3-Y/Lateral

Type	Symbol	Size	Pad diameter [mm]	
			$\varnothing 4$ to $\varnothing 8$	$\varnothing 10$ to $\varnothing 16$
Female thread	B5	M5 x 0.8	○ ● ○ ●	○ ● ○ ●
One-touch fitting	02	$\varnothing 2$	○ ● ○ ●	○ ● ○ ●
	04	$\varnothing 4$	○ ● ○ ●	○ ● ○ ●
	06	$\varnothing 6$	— ○ ●	○ ● ○ ●
Barb fitting	U2	For $\varnothing 2$ polyurethane tubing*1	○ ● ○ ●	○ ● ○ ●
	U4	For $\varnothing 4$ soft tubing*2	○ ● ○ ●	○ ● ○ ●
	U6	For $\varnothing 6$ soft tubing*2	— ○ ●	○ ● ○ ●

- *1 Polyurethane tube piping
- *2 Soft nylon/Polyurethane tube piping
- * It is not necessary to select a connection thread.

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

ZP3 Compact

Flat Type

Flat Type with Groove

Bellows Type

Bellows Type with Ribs

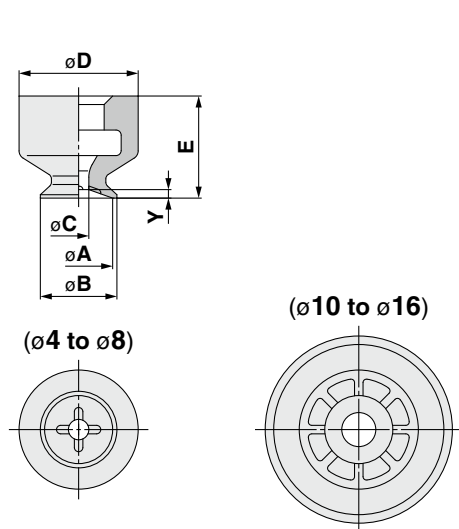
Construction

Mounting Bracket Assembly

Precautions

Dimensions/Models

Single unit $\phi 4$ to $\phi 16$



ZP3 - **04** UM **N**

① ②

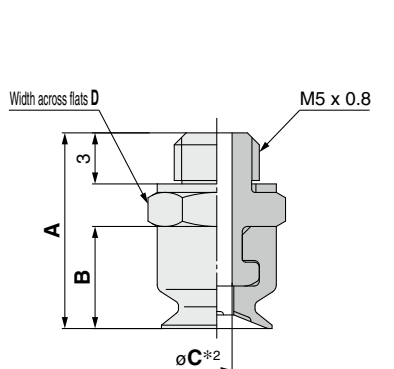
Model	① Pad dia.	Form	② Material ^{*1}	A	B	C	D	E	Y
	06		S	6	6.5	2			
	08		U	8	8.5				
	10		F	10	11	9	7	7	1
	13		GN	13	14				
	16		GS	16	17				

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

Construction p. 160

Mounting Bracket Assembly From p. 162

With adapter $\phi 4$ to $\phi 16$



ZP3 - T **04** UM **N** - **A5**

① ② ③

③ Connection thread
(Male thread)

A5 M5 x 0.8

Model	Vacuum inlet direction	① Pad dia.	Form	② Material ^{*1}	③ Connection thread	A	B	C ^{*2}	D
		06		S					
		08		U					
		10		F		12.5	7	1.8	10
		13		GN					
		16		GS					

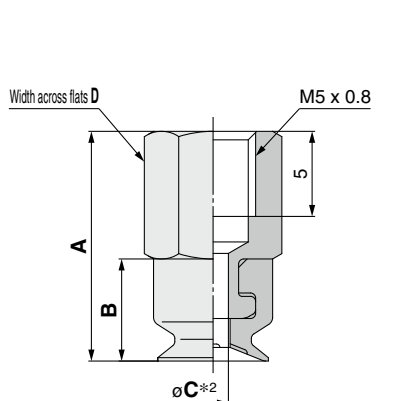
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber, HS: Semiconductive silicone rubber

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

Construction p. 160

Adapter Assembly p. 162

With adapter $\phi 4$ to $\phi 16$



ZP3 - T **04** UM **N** - **B5**

① ② ③

③ Connection thread
(Female thread)

B5 M5 x 0.8

Model	Vacuum inlet direction	① Pad dia.	Form	② Material ^{*1}	③ Connection thread	A	B	C ^{*2}	D
		06		S					
		08		U					
		10		F		14.5	7	1.8	10
		13		GN					
		16		GS					

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

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

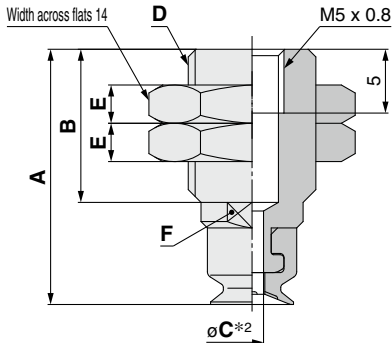
Construction p. 160

Adapter Assembly p. 162

Dimensions/Models

With adapter $\phi 4$ to $\phi 16$

Pad diameter: $\phi 4$ to $\phi 6$



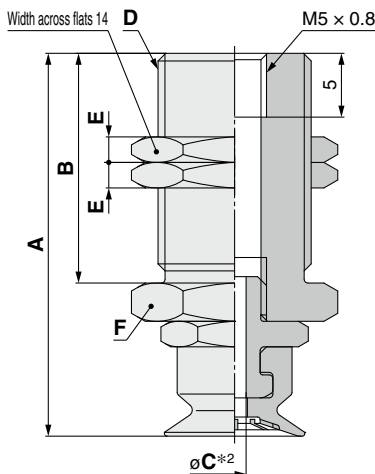
ZP3 - T 04 UM N - A10 - B5

① Pad dia. ② Material ③ Connection thread (Male thread) ④ Vacuum inlet

A10	M10 x 1
A12	M12 x 1

B5	M5 x 0.8	Female thread
02	$\phi 2$	One-touch fitting
04	$\phi 4$	
06	$\phi 6$	
U2	For $\phi 2$ polyurethane tubing	Barb fitting
U4	For $\phi 4$ soft tubing	
U6	For $\phi 6$ soft tubing	

Pad diameter: $\phi 10$ to $\phi 16$

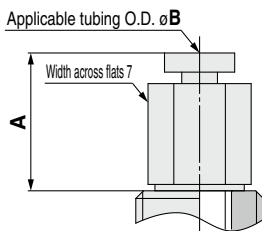


		Model				A	B	C*2	D	E	F
Vacuum inlet direction	Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Connection thread						
ZP3	T	04	UM	N S U F GN GS HS	A10	B5	1.2	M10 x 1	3	Width across flats 7	
		06 08									
		10 13 16			A12	1.8	M12 x 1	2	Width across flats 14		

Dimensions Per Vacuum Inlet: One-touch Fitting

		Model				A	B	Fitting part min. hole size	Fitting part no.	
Vacuum inlet direction	Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Connection thread					④ Vacuum inlet
ZP3	T	04 06 08	UM	N S U F GN GS HS	A10	02	10.8	2	$\phi 1.4$	KQ2H02-M5N
						04	3	4	$\phi 1.8$	
		10 13 16			A12	02	10.8	2	$\phi 1.4$	KQ2H02-M5N
						04	3	4	$\phi 1.8$	
					06		3.2	6	$\phi 1.8$	

Vacuum inlet: One-touch fitting ($\phi 2$)

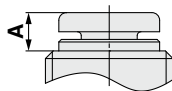


Dimensions Per Vacuum Inlet: Barb Fitting

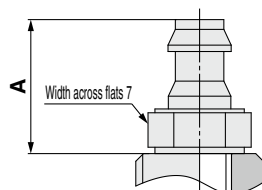
		Model				A	Fitting part min. hole size	Fitting part no.	
Vacuum inlet direction	Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Connection thread				④ Vacuum inlet
ZP3	T	04 06 08	UM	N S U F GN GS HS	A10	U2	6.5	$\phi 0.9$	M-5AU-2
						U4	8.5	$\phi 1.8$	M-5AU-4
		10 13 16			A12	U2	6.5	$\phi 0.9$	M-5AU-2
						U4	8.5	$\phi 1.8$	M-5AU-4
					U6		10.5	$\phi 2.5$	M-5AU-6

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber, HS: Semiconductive silicone rubber
*2 Indicates the minimum hole size of the adapter or vacuum pad

Vacuum inlet: Built-in One-touch fitting ($\phi 4, \phi 6$)



Vacuum inlet: Barb fitting



Dimensions/Models

With adapter $\varnothing 4$ to $\varnothing 16$

ZP3 - Y **04** UM **N** - **B5** - **B5**

①

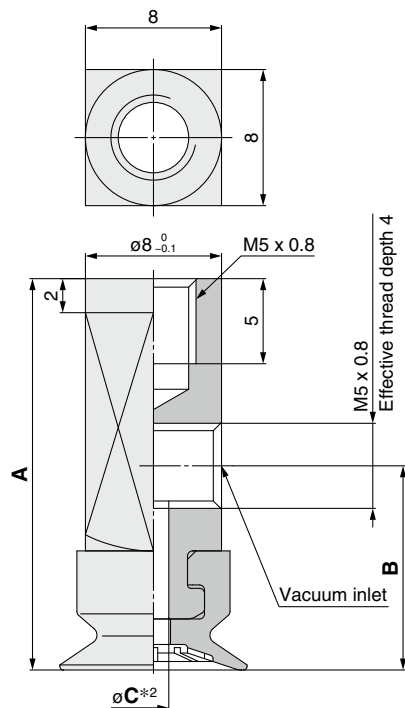
②

Connection thread
(Female thread)

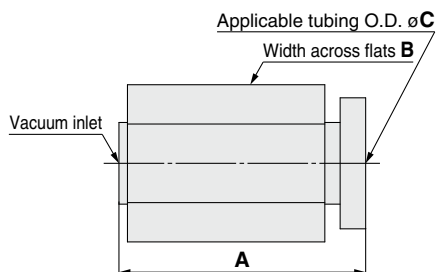
B5	M5 x 0.8
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④ Vacuum inlet

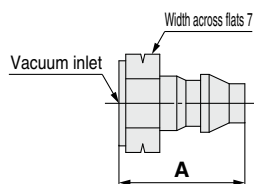
B5	M5 x 0.8	Female thread
02	$\varnothing 2$	One-touch fitting
04	$\varnothing 4$	
06	$\varnothing 6$	
U2	For $\varnothing 2$ polyurethane tubing	Barb fitting
U4	For $\varnothing 4$ soft tubing	
U6	For $\varnothing 6$ soft tubing	



Vacuum inlet: One-touch fitting



Vacuum inlet: Barb fitting



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Adapter Assembly p. 162

ZP3	Y	Model						A	B	C*2		
		Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Connection thread	④ Vacuum inlet					
		04	UM	N S U F GN GS HS	B5	B5	22	11	1.2			
		06										
		08										
		10										
		13										
		16										
										23	12	2

Dimensions Per Vacuum Inlet: One-touch Fitting

ZP3	Y	Model						A	B	C	Fitting part min. hole size	Fitting part no.
		Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Connection thread	④ Vacuum inlet					
		04	UM	N S U F GN GS HS	B3	02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N	
		06				04	14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N	
		08				02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N	
		10				04	14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N	
		13				06	10	6	$\varnothing 2.5$	KQ2H06-M5N		
		16										

Dimensions Per Vacuum Inlet: Barb Fitting

ZP3	Y	Model						A	Fitting part min. hole size	Fitting part no.
		Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Connection thread	④ Vacuum inlet			
		04	UM	N S U F GN GS HS	B5	U2	6.5	$\varnothing 0.9$	M-5AU-2	
		06				U4	8.5	$\varnothing 1.8$	M-5AU-4	
		08				U2	6.5	$\varnothing 0.9$	M-5AU-2	
		10				U4	8.5	$\varnothing 1.8$	M-5AU-4	
		13				U6	10.5	$\varnothing 2.5$	M-5AU-6	
		16								

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

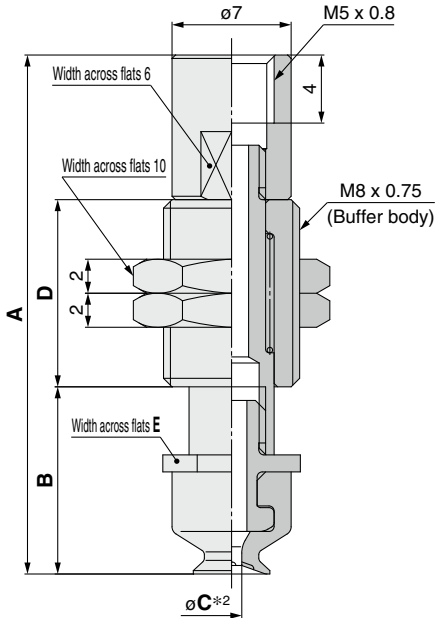
*2 Indicates the minimum hole size of the adapter or vacuum pad

Dimensions/Models

With buffer $\varnothing 4$ to $\varnothing 16$

ZP3 - T **04** **UM** **N** **J** **3** - **B5**

① ② ③ ④ ⑤



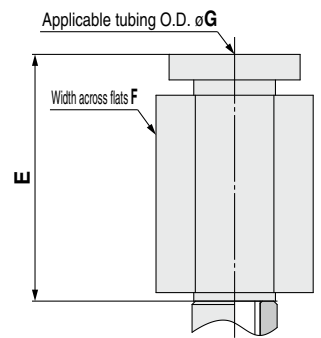
Buffer specification ③

J	Rotating
JB	Rotating, With bushing
K	Non-rotating

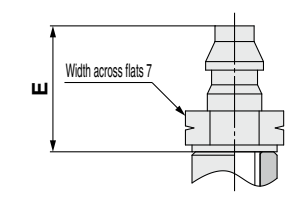
⑤ Vacuum inlet

B5	M5 x 0.8	Female thread
02	$\varnothing 2$	One-touch fitting
04	$\varnothing 4$	
06	$\varnothing 6$	
U2	For $\varnothing 2$ polyurethane tubing	
U4	For $\varnothing 4$ soft tubing	
U6	For $\varnothing 6$ soft tubing	

Vacuum inlet: One-touch fitting



Vacuum inlet: Barb fitting



Construction p. 161
Buffer Assembly p. 164

		Model					A	B	C*2	D	E				
Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke										
ZP3	T	04	UM	N S U F GN GS HS	J K	3	30.5	11	1.2	11	7				
						6	37	14		14.5					
						10	47	18		20.5					
		06 08			JB K	3	30.5	11	11						
						6	37	14	14.5						
						10	47	18	20.5						
	10 13 16	JB K	B5	15	55	36.5	1.8	10							
				20	62.5	44		10							
				15	55	36.5		10							
				20	62.5	44		10							
				3	31.5	12		11							
				6	38	15		14.5							
												10	48	19	20.5
												15	56	37.5	10
												20	63.5	45	10

Dimensions Per Vacuum Inlet: One-touch Fitting

		Model					E	F	G	Fitting part min. hole size	Fitting part no.		
Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke								
ZP3	T	04 06 08	UM	N S U F GN GS HS	J JB K	3	02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N	
						6	04	14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N	
						10	02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N	
		13 16			JB K	B5	15	04	14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N
							20	06	14.7	10	6	$\varnothing 2.5$	KQ2H06-M5N

Dimensions Per Vacuum Inlet: Barb Fitting

		Model					E	Fitting part min. hole size	Fitting part no.		
Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Buffer stroke						
ZP3	T	04 06 08	UM	N S U F GN GS HS	J JB K	3	U2	6.5	$\varnothing 0.9$	M-5AU-2	
						6	U4	8.5	$\varnothing 1.8$	M-5AU-4	
						10	U2	6.5	$\varnothing 0.9$	M-5AU-2	
		13 16			JB K	B5	15	U4	8.5	$\varnothing 1.8$	M-5AU-4
							20	U6	10.5	$\varnothing 2.5$	M-5AU-6

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber, HS: Semiconductive silicone rubber
*2 Indicates the minimum hole size of the adapter or vacuum pad

Dimensions/Models

With buffer $\varnothing 4$ to $\varnothing 16$

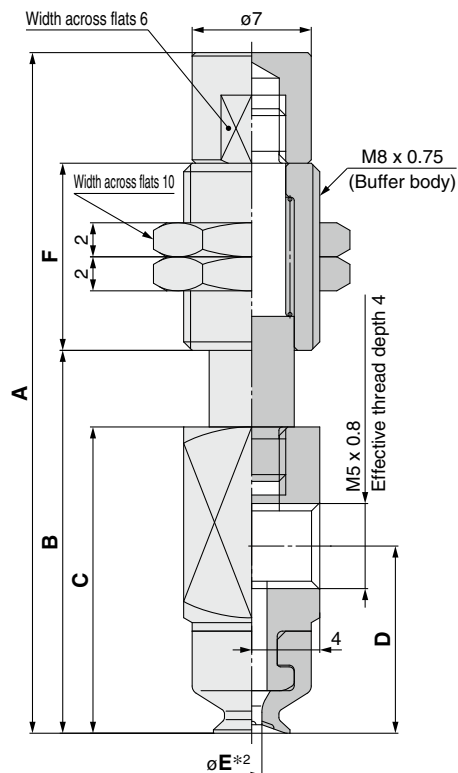
ZP3 - Y **04** **UM** **N** **J** **3** - **B5**

①

②

④

⑤ Vacuum inlet



Buffer specification ③

J	Rotating
JB	Rotating, With bushing
K	Non-rotating

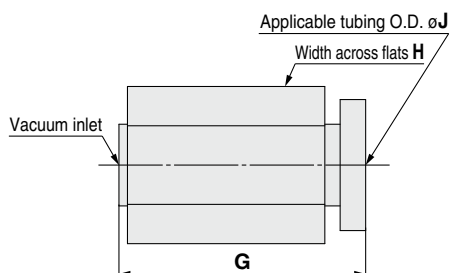
B5	M5 x 0.8	Female thread
02	$\varnothing 2$	One-touch fitting
04	$\varnothing 4$	
06	$\varnothing 6$	
U2	For $\varnothing 2$ polyurethane tubing	Barb fitting
U4	For $\varnothing 4$ soft tubing	
U6	For $\varnothing 6$ soft tubing	

		Model					A	B	C	D	E*2	F
Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Vacuum inlet							
ZP3	Y	04	UM	N S U F GN GS HS	J K	B5	3	40	22.5	18	11	11
							6	46	25			14.5
							10	56	29			20.5
		3			40		22.5	11				
		6			46		25	14.5				
		10			56		29	20.5				
	06 08	JB K	15	59	42.5	1.2	10					
			20	66.5	50							
			15	59	42.5							
	10 13 16	J K	JB K	3	41	23.5	1.8	10				
				6	47	26						
				10	57	30						
15 20	JB K	JB K	15	60	43.5	1.8	10					
			20	67.5	57							
			20	67.5	57							

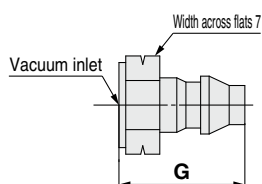
Dimensions Per Vacuum Inlet: One-touch Fitting

		Model					G	H	J	Fitting part min. hole size	Fitting part no.		
Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Vacuum inlet								
ZP3	Y	04 06 08	UM	N S U F GN GS HS	J K	3 6 10 15 20	02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N	
							04	14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N	
							02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N	
		10 13 16			JB K		JB K	04	14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N
								06	14.7	10	6	$\varnothing 2.5$	KQ2H06-M5N
								06	14.7	10	6	$\varnothing 2.5$	KQ2H06-M5N

Vacuum inlet: One-touch fitting



Vacuum inlet: Barb fitting



Dimensions Per Vacuum Inlet: Barb Fitting

		Model					G	Fitting part min. hole size	Fitting part no.		
Vacuum inlet direction	① Pad dia.	② Form	③ Material	④ Buffer spec.	⑤ Vacuum inlet						
ZP3	Y	04 06 08	UM	N S U F GN GS HS	J K	3 6 10 15 20	U2	6.5	$\varnothing 0.9$	M-5AU-2	
							U4	8.5	$\varnothing 1.8$	M-5AU-4	
							U2	6.5	$\varnothing 0.9$	M-5AU-2	
		10 13 16			JB K		JB K	U4	8.5	$\varnothing 1.8$	M-5AU-4
								U4	8.5	$\varnothing 1.8$	M-5AU-4
								U6	10.5	$\varnothing 2.5$	M-5AU-6

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

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

Construction p. 161

Buffer Assembly p. 164



Compact Type

Bellows Type

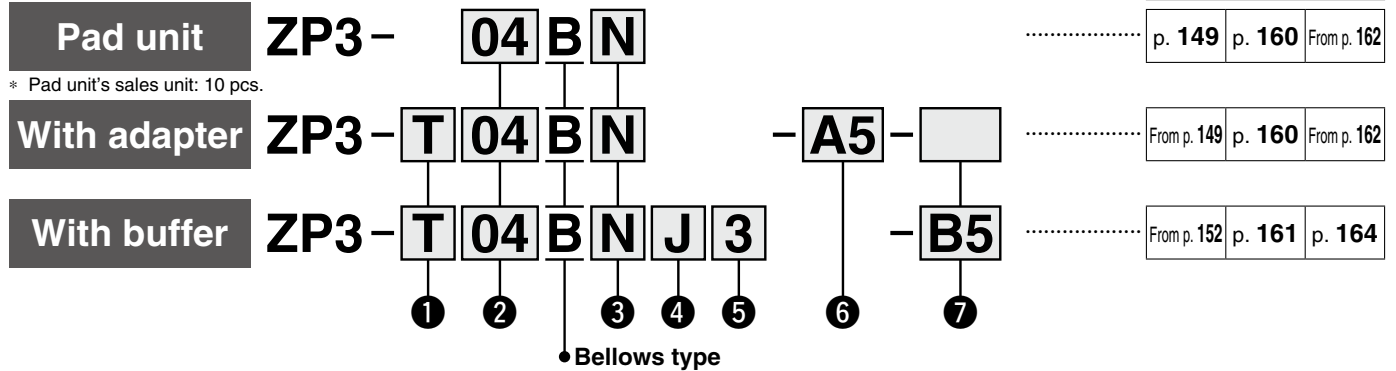
ZP3 Series

Pad diameter: $\varnothing 4$, $\varnothing 6$, $\varnothing 8$



Model Selection

How to Order



① Vacuum inlet direction

Nil	Pad unit
T	Vertical
Y	Lateral

② Pad diameter

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

③ Material

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

④ Buffer specification

J	Rotating
JB	Rotating, With bushing
K	Non-rotating

⑤ Buffer stroke

Stroke [mm]	Buffer specification		
	J	JB	K
3	●	—	●
6	●	—	●
10	●	—	●
15	—	●	●
20	—	●	●

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

With adapter

⑥ Connection thread/ ⑦ Vacuum inlet

○: ZP3-T/Vertical ●: ZP3-Y/Lateral

⑥ Connection thread			⑦ Vacuum inlet			Pad diameter
Type	Symbol	Size	Type	Symbol	Size	All sizes
Male thread	A5	M5 x 0.8	—	Nil	Use the connection thread.	○
			Female thread	B5	M5 x 0.8	○
	A10	M10 x 1	One-touch fitting	02	$\varnothing 2$	○
			Barb fitting	04	$\varnothing 4$	○
				U2	For $\varnothing 2$ polyurethane tubing	○
Female thread	B5	M5 x 0.8	—	Nil	Use the connection thread.	○
			Female thread	B5	M5 x 0.8	●
			One-touch fitting	02	$\varnothing 2$	●
			Barb fitting	04	$\varnothing 4$	●
				U2	For $\varnothing 2$ polyurethane tubing*1	●
U4	For $\varnothing 4$ soft tubing*2	●				

*1 Polyurethane tube piping

*2 Soft nylon/Polyurethane tube piping

With buffer

⑦ Vacuum inlet

○: ZP3-T/Vertical ●: ZP3-Y/Lateral

Type	Symbol	Size	Pad diameter
All sizes			
Female thread	B5	M5 x 0.8	○●
One-touch fitting	02	$\varnothing 2$	○●
	04	$\varnothing 4$	○●
Barb fitting	U2	For $\varnothing 2$ polyurethane tubing*1	○●
	U4	For $\varnothing 4$ soft tubing*2	○●

* It is not necessary to select a connection thread.

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

ZP3 Compact

Flat Type

Flat Type with Groove

Bellows Type

Bellows Type with Ribs

Construction

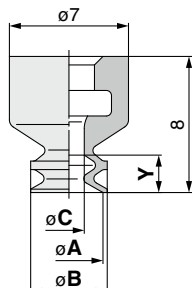
Mounting Bracket Assembly

Precautions

Dimensions/Models

Single unit $\varnothing 4$ to $\varnothing 8$

ZP3 - **04** **B** **N**
① ②



Construction p. 160

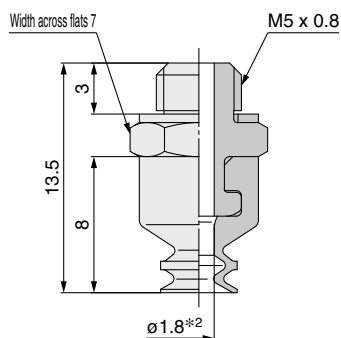
Mounting Bracket Assembly From p. 162

Model	① Pad dia.	Form	② Material ^{*1}	A	B	C	Y
				ZP3	04	B	N S U F GN GS
	06			6	7		3
	08			8	9		

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

With adapter $\varnothing 4$ to $\varnothing 8$

ZP3 - T **04** **B** **N** - **A5**
① ② ③



Construction p. 160

Adapter Assembly p. 162

③ Connection thread
(Male thread)

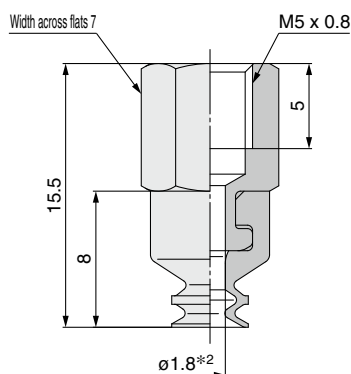
A5 M5 x 0.8

Model	Vacuum inlet direction	① Pad dia.	Form	② Material ^{*1}	③ Connection thread
					ZP3

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

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

ZP3 - T **04** **B** **N** - **B5**
① ② ③



Construction p. 160

Adapter Assembly p. 162

③ Connection thread
(Female thread)

B5 M5 x 0.8

Model	Vacuum inlet direction	① Pad dia.	Form	② Material ^{*1}	③ Connection thread
					ZP3

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

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

Dimensions/Models

With adapter ø4 to ø8

ZP3 - T **04** B **N** - **A10** - **B5**

①

②

③

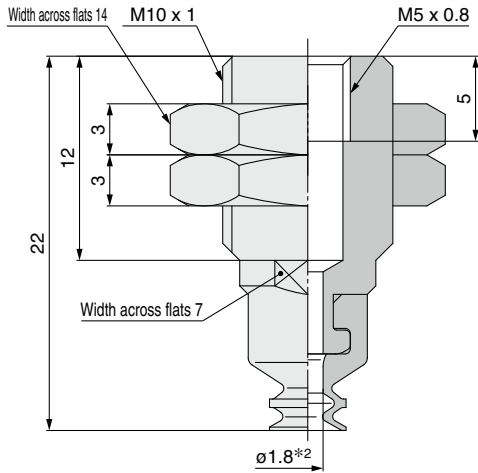
④

Connection thread (Female thread)

A10	M10 x 1
------------	---------

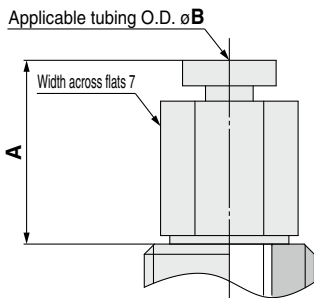
Vacuum inlet

B5	M5 x 0.8	Female thread
02	ø2	One-touch fitting
04	ø4	Barb fitting
U2	For ø2 polyurethane tubing	Barb fitting
U4	For ø4 soft tubing	



Model					
Vacuum inlet direction	① Pad dia.	Form	② Material*1	③ Connection thread	④ Vacuum inlet
ZP3	T	04 06 08	B	N S U F GN GS	A10 B5

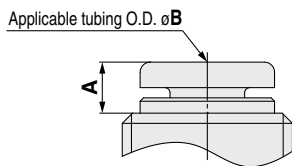
Vacuum inlet: One-touch fitting (ø2)



Dimensions Per Vacuum Inlet: One-touch Fitting

Model						A	B	Fitting part min. hole size	Fitting part no.
Vacuum inlet direction	① Pad dia.	Form	② Material*1	③ Connection thread	④ Vacuum inlet				
ZP3	T	04 06 08	B	N S U F GN GS	A10			ø1.4	KQ2H02-M5N
									02
					04	3	4	ø1.8	

Vacuum inlet: Built-in One-touch fitting (ø4)



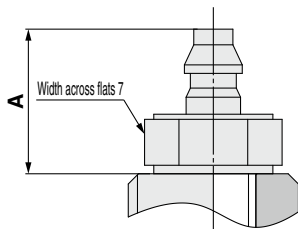
Dimensions Per Vacuum Inlet: Barb Fitting

Model						A	Fitting part min. hole size	Fitting part no.
Vacuum inlet direction	① Pad dia.	Form	② Material*1	③ Connection thread	④ Vacuum inlet			
ZP3	T	04 06 08	B	N S U F GN GS	A10			ø0.9
								U2
					U4	8.5	ø1.8	M-5AU-4

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

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

Vacuum inlet: Barb fitting



Construction	p. 160
Adapter Assembly	p. 163

Dimensions/Models

With adapter $\varnothing 4$ to $\varnothing 8$

ZP3 - Y **04** **B** **N** - **B5** - **B5**

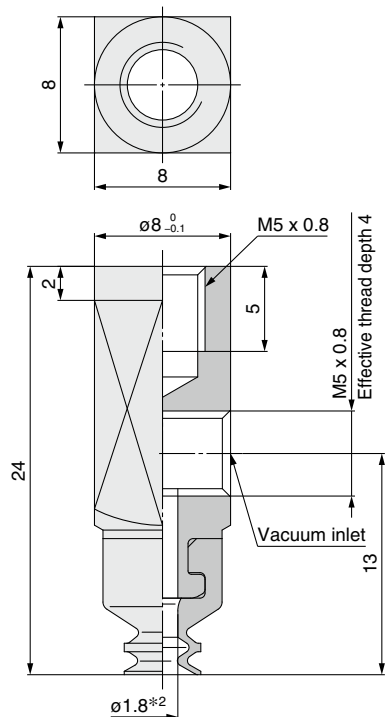
① ②

③
Connection thread
(Female thread)

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

④ Vacuum inlet

B5	M5 x 0.8	Female thread
02	$\varnothing 2$	One-touch fitting
04	$\varnothing 4$	Barb fitting
U2	For $\varnothing 2$ polyurethane tubing	Barb fitting
U4	For $\varnothing 4$ soft tubing	

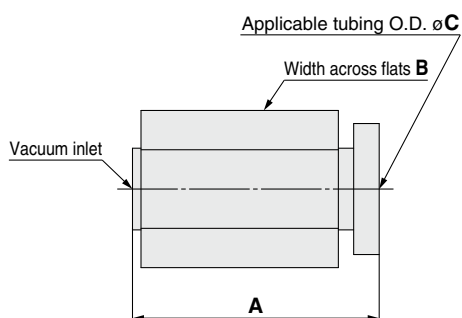


Model					
Vacuum inlet direction	① Pad dia.	Form	② Material*1	③ Connection thread	④ Vacuum inlet
ZP3	Y	04 06 08	B	N S U F GN GS	B5 B5

Dimensions Per Vacuum Inlet: One-touch Fitting

Model						A	B	C	Fitting part min. hole size	Fitting part no.	
Vacuum inlet direction	① Pad dia.	Form	② Material*1	③ Connection thread	④ Vacuum inlet						
ZP3	Y	04 06 08	B	N S U F GN GS	B5	02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N
							14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N

Vacuum inlet: One-touch fitting



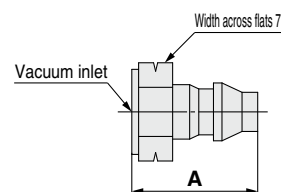
Dimensions Per Vacuum Inlet: Barb Fitting

Model						A	Fitting part min. hole size	Fitting part no.	
Vacuum inlet direction	① Pad dia.	Form	② Material*1	③ Connection thread	④ Vacuum inlet				
ZP3	Y	04 06 08	B	N S U F GN GS	B5	U2	6.5	$\varnothing 0.9$	M-5AU-2
						U4	8.5	$\varnothing 1.8$	M-5AU-4

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

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

Vacuum inlet: Barb fitting



Construction	p. 160
Adapter Assembly	p. 162

Dimensions/Models

With buffer $\varnothing 4$ to $\varnothing 8$

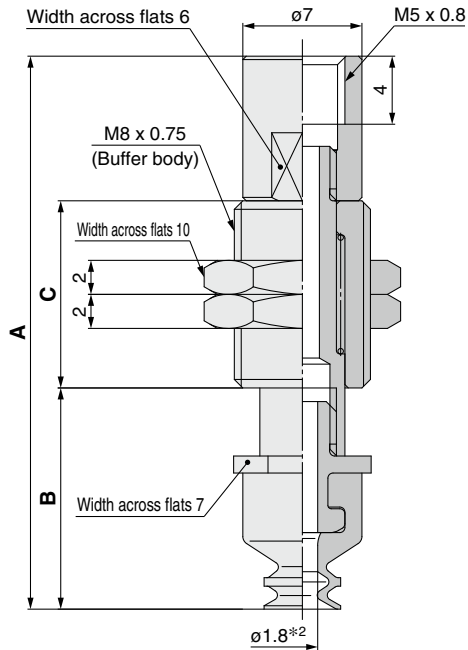
ZP3 - T 04 B N J 3 - B5

① ② ③ ④ ⑤ Vacuum inlet

Buffer specification ③

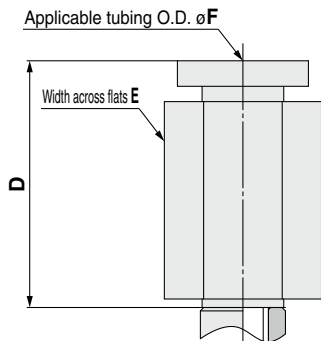
J	Rotating
JB	Rotating, With bushing
K	Non-rotating

B5	M5 x 0.8	Female thread
02	$\varnothing 2$	One-touch fitting
04	$\varnothing 4$	Barb fitting
U2	For $\varnothing 2$ polyurethane tubing	
U4	For $\varnothing 4$ soft tubing	



		Model					A	B	C	
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet				
ZP3	T	04 06 08	B	N S U F GN GS	J	3	B5	32.5	13	11
					K	6		39	16	14.5
						10		49	20	20.5
						15		57	38.5	
						20		64.5	46	10

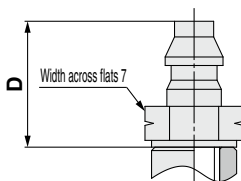
Vacuum inlet: One-touch fitting



Dimensions Per Vacuum Inlet: One-touch Fitting

		Model					D	E	F	Fitting part min. hole size	Fitting part no.
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet					
ZP3	T	04 06 08	B	N S U F GN GS	J	3	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N
					JB	6					
					K	10 15 20					
						04	14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N

Vacuum inlet: Barb fitting



Dimensions Per Vacuum Inlet: Barb Fitting

		Model					D	Fitting part min. hole size	Fitting part no.
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet			
ZP3	T	04 06 08	B	N S U F GN GS	J	3	6.5	$\varnothing 0.9$	M-5AU-2
					JB	6			
					K	10 15 20			
						U4	8.5	$\varnothing 1.8$	M-5AU-4

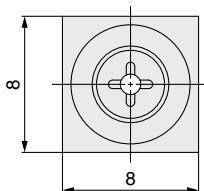
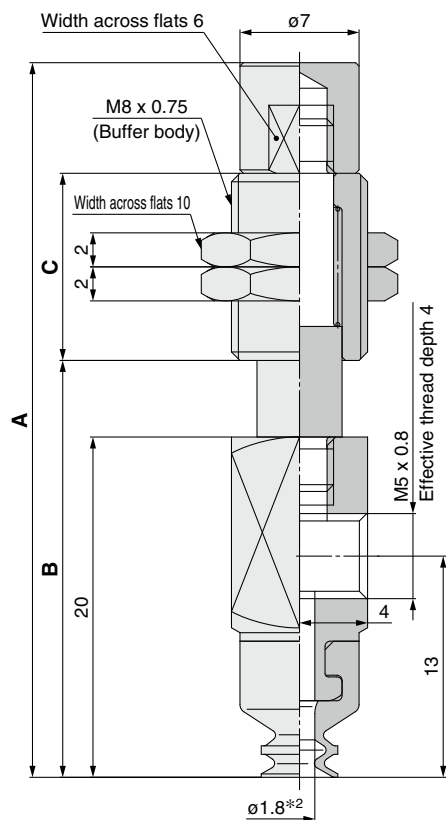
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

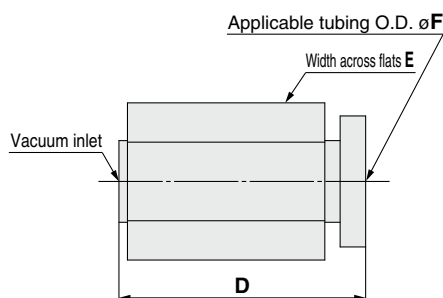
- Construction p. 161
- Buffer Assembly p. 164

Dimensions/Models

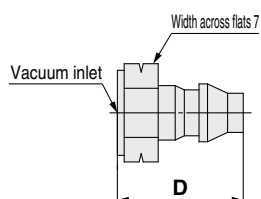
With buffer $\varnothing 4$ to $\varnothing 8$



Vacuum inlet: One-touch fitting



Vacuum inlet: Barb fitting



ZP3 - Y **04** **B** **N** **J** **3** - **B5**

1	2	3	4	5 Vacuum inlet		
Buffer specification 3						
J	Rotating			B5	M5 x 0.8	Female thread
JB	Rotating, With bushing			02	$\varnothing 2$	One-touch fitting
K	Non-rotating			04	$\varnothing 4$	Barb fitting
				U2	For $\varnothing 2$ polyurethane tubing	
				U4	For $\varnothing 4$ soft tubing	

		Model					A	B	C	
Vacuum inlet direction	1 Pad dia.	Form	2 ^{*1} Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet				
ZP3	Y	04 06 08	B	N S U F GN GS	J K	3	B5	42	24.5	11
						6		48	27	14.5
						10		58	31	20.5
						15		61	44.5	
						20		68.5	52	10

Dimensions Per Vacuum Inlet: One-touch Fitting

		Model					D	E	F	Fitting part min. hole size	Fitting part no.	
Vacuum inlet direction	1 Pad dia.	Form	2 ^{*1} Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet						
ZP3	Y	04 06 08	B	N S U F GN GS	J JB K	3	02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N
						6 10 15 20		14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N

Dimensions Per Vacuum Inlet: Barb Fitting

		Model					D	Fitting part min. hole size	Fitting part no.	
Vacuum inlet direction	1 Pad dia.	Form	2 ^{*1} Material	3 Buffer spec.	4 Buffer stroke	5 Vacuum inlet				
ZP3	Y	04 06 08	B	N S U F GN GS	J JB K	3	U2	6.5	$\varnothing 0.9$	M-5AU-2
						6 10 15 20		8.5	$\varnothing 1.8$	M-5AU-4

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

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

Construction p. 161

Buffer Assembly p. 164



Compact Type

Bellows Type with Ribs

ZP3 Series

Pad diameter: $\varnothing 10, \varnothing 13, \varnothing 16$



Model Selection

ZP3 Compact

Flat Type

Flat Type with Groove

Bellows Type

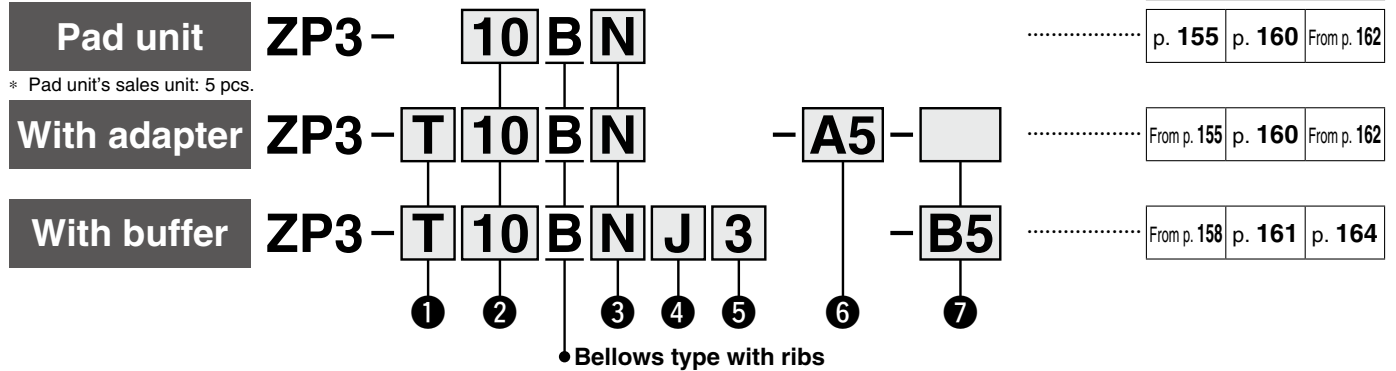
Bellows Type with Ribs

Construction

Mounting Bracket Assembly

Precautions

How to Order



① Vacuum inlet direction

Nil	Pad unit
T	Vertical
Y	Lateral

② Pad diameter

10	$\varnothing 10$
13	$\varnothing 13$
16	$\varnothing 16$

③ 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"

④ Buffer specification

J	Rotating
JB	Rotating, With bushing
K	Non-rotating

⑤ Buffer stroke

Stroke [mm]	Buffer specification		
	J	JB	K
3	●	—	●
6	●	—	●
10	●	—	●
15	—	●	●
20	—	●	●

With adapter

⑥ Connection thread/⑦ Vacuum inlet

○: ZP3-T/Vertical ●: ZP3-Y/Lateral

⑥ Connection thread		⑦ Vacuum inlet		Pad diameter	
Type	Symbol	Type	Symbol	All sizes	
Male thread	A5	—	Nil	Use the connection thread. ○	
		Female thread	B5	M5 x 0.8 ○	
	One-touch fitting	A12	M12 x 1	02	$\varnothing 2$ ○
				04	$\varnothing 4$ ○
				06	$\varnothing 6$ ○
				Barb fitting	U2
			U4	For $\varnothing 4$ soft tubing ○	
			U6	For $\varnothing 6$ soft tubing ○	
Female thread	B5	—	Nil	Use the connection thread. ○	
		Female thread	B5	M5 x 0.8 ●	
	One-touch fitting	B5	M5 x 0.8	02	$\varnothing 2$ ●
				04	$\varnothing 4$ ●
				06	$\varnothing 6$ ●
				Barb fitting	U2
			U4	For $\varnothing 4$ soft tubing*2 ●	
			U6	For $\varnothing 6$ soft tubing*2 ●	

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

With buffer

⑦ Vacuum inlet

○: ZP3-T/Vertical ●: ZP3-Y/Lateral

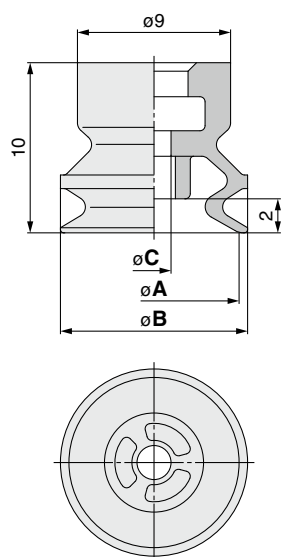
Type	Symbol	Size	Pad diameter
Female thread	B5	M5 x 0.8	○●
		$\varnothing 2$	○●
One-touch fitting	02	$\varnothing 2$	○●
		$\varnothing 4$	○●
		$\varnothing 6$	○●
Barb fitting	U2	For $\varnothing 2$ polyurethane tubing	○●
		For $\varnothing 4$ soft tubing	○●
		For $\varnothing 6$ soft tubing	○●

* It is not necessary to select a connection thread.

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

Dimensions/Models

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



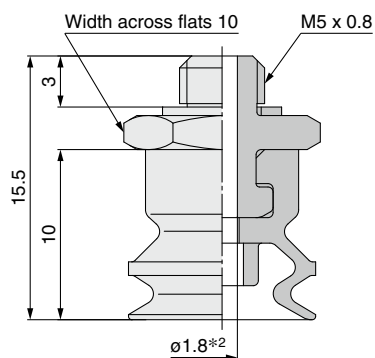
ZP3 - 10 B N
① ②

	Model			A	B	C
	① Pad dia.	Form	② Material ^{*1}			
ZP3	10	B	N S U F GN GS	10	11	2
	13			13	14	3
	16			16	17	

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

Construction p. 160
Mounting Bracket Assembly From p. 162

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



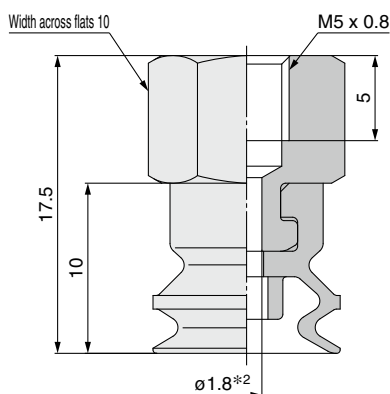
ZP3 - T 10 B N - A5
① ② ③

③ Connection thread (Male thread)
A5 M5 x 0.8

	Vacuum inlet direction	Model			③ Connection thread
		① Pad dia.	Form	② Material ^{*1}	
ZP3	T	10	B	N S U F GN GS	A5
		13			
		16			

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber
 *2 Indicates the minimum hole size of the adapter or vacuum pad

Construction p. 160
Adapter Assembly p. 162



ZP3 - T 10 B N - B5
① ② ③

③ Connection thread (Female thread)
B5 M5 x 0.8

	Vacuum inlet direction	Model			③ Connection thread
		① Pad dia.	Form	② Material ^{*1}	
ZP3	T	10	B	N S U F GN GS	B5
		13			
		16			

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber
 *2 Indicates the minimum hole size of the adapter or vacuum pad

Construction p. 160
Adapter Assembly p. 162

Dimensions/Models

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

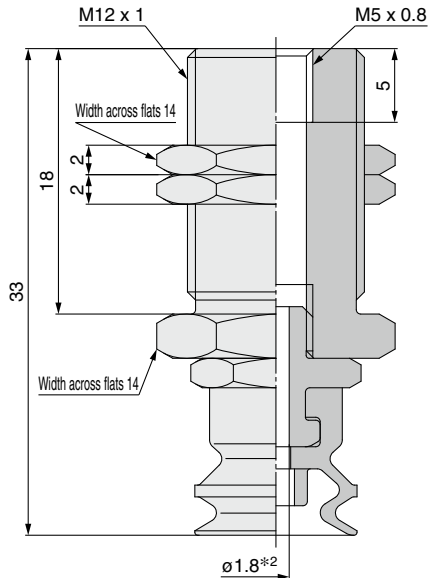
ZP3 - T 10 B N - A12 - B5

① ②

Connection thread (Male thread)
A12 M12 x 1

④ Vacuum inlet

B5	M5 x 0.8	Female thread
02	$\varnothing 2$	One-touch fitting
04	$\varnothing 4$	
06	$\varnothing 6$	
U2	For $\varnothing 2$ polyurethane tubing	Barb fitting
U4	For $\varnothing 4$ soft tubing	
U6	For $\varnothing 6$ soft tubing	

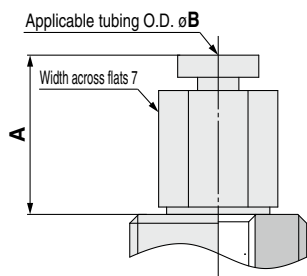


		Model				
	Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Connection thread	④ Vacuum inlet
ZP3	T	10 13 16	B	N S U F GN GS	A12	B5

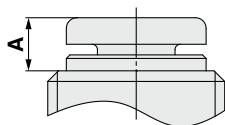
Dimensions Per Vacuum Inlet: One-touch Fitting

		Model				A	B	Fitting part min. hole size	Fitting part no.	
	Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Connection thread					④ Vacuum inlet
ZP3	T	10 13 16	B	N S U F GN GS	A12	02	10.8	2	$\varnothing 1.4$	KQ2H02-M5N
						04	3	4	$\varnothing 1.8$	
						06	3.2	6		

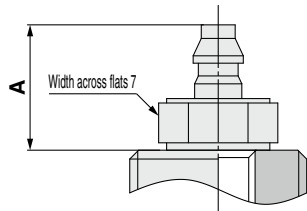
Vacuum inlet: One-touch fitting



Vacuum inlet: Built-in One-touch fitting ($\varnothing 4, \varnothing 6$)



Vacuum inlet: Barb fitting



Dimensions Per Vacuum Inlet: Barb Fitting

		Model				A	Fitting part min. hole size	Fitting part no.	
	Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Connection thread				④ Vacuum inlet
ZP3	T	10 13 16	B	N S U F GN GS	A12	U2	6.5	$\varnothing 0.9$	M-5AU-2
						U4	8.5	$\varnothing 1.8$	M-5AU-4
						U6	10.5	$\varnothing 2.5$	M-5AU-6

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

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

Construction p. 160
Adapter Assembly p. 163

Dimensions/Models

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

ZP3 - Y **10** **B** **N** - **B5** - **B5**

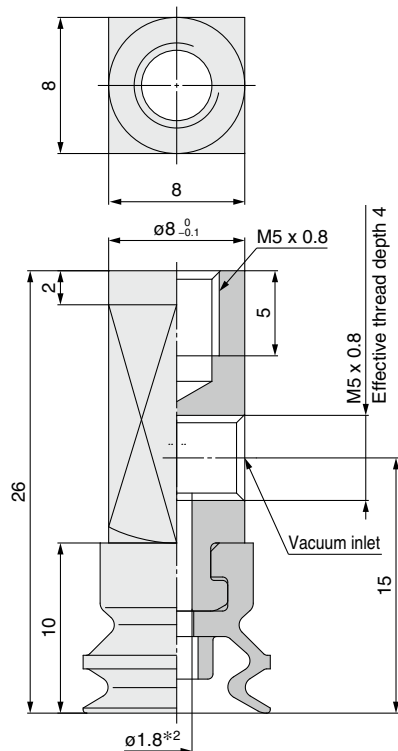
① ②

③ Connection thread
(Female thread)

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

④ Vacuum inlet

B5	M5 x 0.8	Female thread
02	$\varnothing 2$	One-touch fitting
04	$\varnothing 4$	
06	$\varnothing 6$	
U2	For $\varnothing 2$ polyurethane tubing	Barb fitting
U4	For $\varnothing 4$ soft tubing	
U6	For $\varnothing 6$ soft tubing	

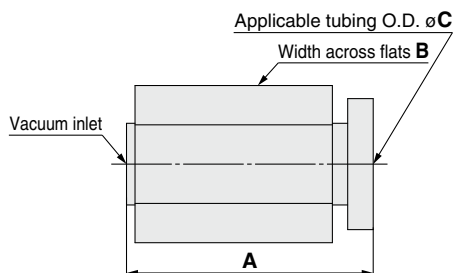


	Model					
	Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Connection thread	④ Vacuum inlet
ZP3	Y	10 13 16	B	N S U F GN GS	B5	B5

Dimensions Per Vacuum Inlet: One-touch Fitting

	Model					A	B	C	Fitting part min. hole size	Fitting part no.								
	Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Connection thread						④ Vacuum inlet							
ZP3	Y	10 13 16	B	N S U F GN GS	B5	14.7	8	4	$\varnothing 2.5$	02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N			
										04								KQ2H04-M5N
										06								KQ2H06-M5N

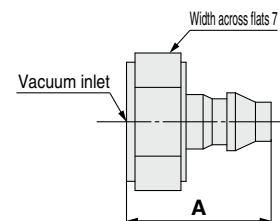
Vacuum inlet: One-touch fitting



Dimensions Per Vacuum Inlet: Barb Fitting

	Model					A	Fitting part min. hole size	Fitting part no.			
	Vacuum inlet direction	① Pad dia.	Form	②*1 Material	③ Connection thread				④ Vacuum inlet		
ZP3	Y	10 13 16	B	N S U F GN GS	B5	10.5	$\varnothing 2.5$	U2	6.5	$\varnothing 0.9$	M-5AU-2
								U4	8.5	$\varnothing 1.8$	M-5AU-4
								U6			

Vacuum inlet: Barb fitting



Construction p. 160

Adapter Assembly p. 162

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

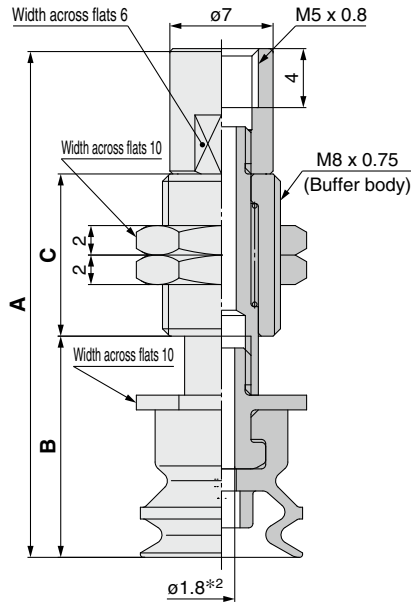
*2 Indicates the minimum hole size of the adapter or vacuum pad

Dimensions/Models

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

ZP3 - T 10 B N J 3 - B5

① ② ③ ④ ⑤



Buffer specification ③

J	Rotating
JB	Rotating, With bushing
K	Non-rotating

⑤ Vacuum inlet

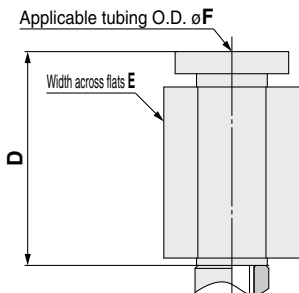
B5	M5 x 0.8	Female thread
02	$\varnothing 2$	One-touch fitting
04	$\varnothing 4$	
06	$\varnothing 6$	
U2	For $\varnothing 2$ polyurethane tubing	
U4	For $\varnothing 4$ soft tubing	
U6	For $\varnothing 6$ soft tubing	

		Model					A	B	C	
	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke				⑤ Vacuum inlet
ZP3	T	10 13 16	B	N S U F GN GS	J K JB K	3	B5	34.5	15	11
						6		41	18	14.5
						10		51	22	20.5
						15		59	40.5	10
						20		66.5	48	

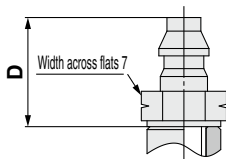
Dimensions Per Vacuum Inlet: One-touch Fitting

		Model					D	E	F	Fitting part min. hole size	Fitting part no.	
	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke						⑤ Vacuum inlet
ZP3	T	10 13 16	B	N S U F GN GS	J JB K	3	02 04 06	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N
						6		14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N
						10						
						15		10	6	$\varnothing 2.5$	KQ2H06-M5N	
						20						

Vacuum inlet: One-touch fitting



Vacuum inlet: Barb fitting



Dimensions Per Vacuum Inlet: Barb Fitting

		Model					D	Fitting part min. hole size	Fitting part no.	
	Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke				⑤ Vacuum inlet
ZP3	T	10 13 16	B	N S U F GN GS	J JB K	3	U2 U4 U6	6.5	$\varnothing 0.9$	M-5AU-2
						6		8.5	$\varnothing 1.8$	M-5AU-4
						10				
						15		10.5	$\varnothing 2.5$	M-5AU-6
						20				

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

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

Construction	p. 161
Buffer Assembly	p. 164

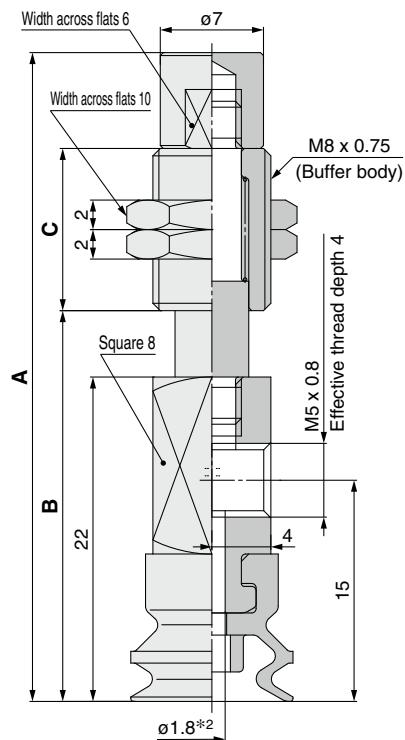
Dimensions/Models

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

ZP3 - Y **10** **B** **N** **J** **3** - **B5**

① ② ③ ④

⑤ Vacuum inlet



Buffer specification ③

J	Rotating
JB	Rotating, With bushing
K	Non-rotating

B5	M5 x 0.8	Female thread
02	$\varnothing 2$	One-touch fitting
04	$\varnothing 4$	
06	$\varnothing 6$	
U2	For $\varnothing 2$ polyurethane tubing	Barb fitting
U4	For $\varnothing 4$ soft tubing	
U6	For $\varnothing 6$ soft tubing	

		Model					A	B	C	
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet				
ZP3	Y	10 13 16	B	N S U F GN GS	J K JB K	3	B5	44	26.5	11
						6		50	29	14.5
						10		60	33	20.5
						15		63	46.5	
						20		70.5	54	10

Dimensions Per Vacuum Inlet: One-touch Fitting

		Model					D	E	F	Fitting part min. hole size	Fitting part no.		
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet							
ZP3	Y	10 13 16	B	N S U F GN GS	J K JB K	3	02	10.8	7	2	$\varnothing 1.4$	KQ2H02-M5N	
						6							
						10							
						15		04	14.7	8	4	$\varnothing 2.5$	KQ2H04-M5N
						20							
						06							

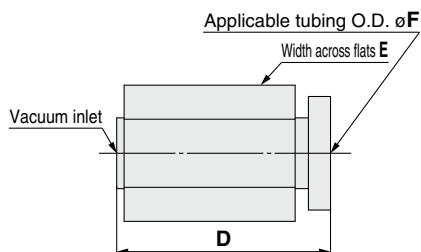
Dimensions Per Vacuum Inlet: Barb Fitting

		Model					D	Fitting part min. hole size	Fitting part no.	
Vacuum inlet direction	① Pad dia.	Form	② ^{*1} Material	③ Buffer spec.	④ Buffer stroke	⑤ Vacuum inlet				
ZP3	Y	10 13 16	B	N S U F GN GS	J K JB K	3	U2	6.5	$\varnothing 0.9$	M-5AU-2
						6				
						10				
						15	U4	8.5	$\varnothing 1.8$	M-5AU-4
						20				
						U6				

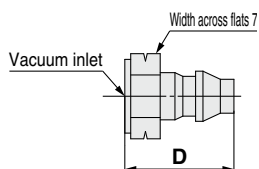
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, GN: Conductive NBR, GS: Conductive silicone rubber

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

Vacuum inlet: One-touch fitting



Vacuum inlet: Barb fitting



Construction	p. 161
Buffer Assembly	p. 164

Compact Type ZP3 Series Construction

Model
Selection

With adapter

Flat type: $\varnothing 1.5$ to $\varnothing 3.5$

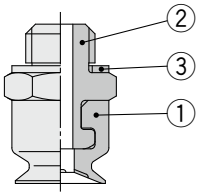
Flat type with groove: $\varnothing 4$ to $\varnothing 16$

Bellows type: $\varnothing 4$ to $\varnothing 8$

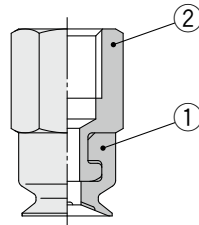
Bellows type with ribs: $\varnothing 10$ to $\varnothing 16$

Vacuum inlet direction **Vertical** T Type/ZP3-T

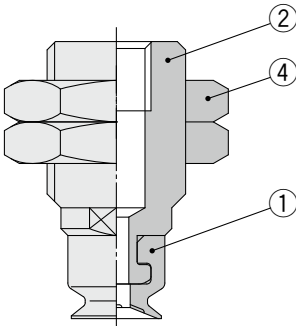
ZP3-T□-A□



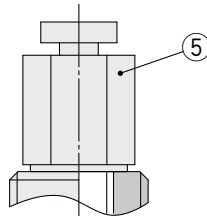
ZP3-T□-B□



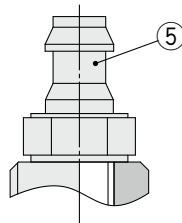
ZP3-T□-A□-B□



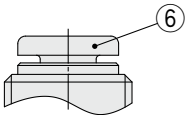
ZP3-T□-A□-(02/04)



ZP3-T□-A□-(U2/U4/U6)



ZP3-T□-A10-04
ZP3-T□-A12-(04/06)



Component Parts

No.	Description	Material	Note	
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Flat type with groove Bellows type Bellows type with ribs	
		Semiconductive silicone rubber	Flat type with groove	
		2	Adapter	Brass (Electroless nickel plating)
		3	Gasket	Stainless steel/NBR
4	Nut	Structural steel (Trivalent chromated)	M6 x 0.75 M12 x 1	
		Steel (Zinc chromated)	M10 x 1	
		5	Fitting	—
6	Cassette	—	—	

ZP3
Compact

Flat Type

Flat Type
with Groove

Bellows Type

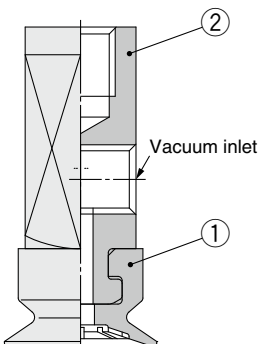
Bellows Type
with Ribs

Construction

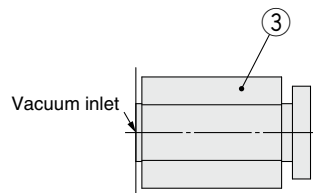
Mounting
Bracket
Assembly

Vacuum inlet direction **Lateral** Y Type/ZP3-Y

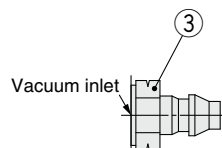
ZP3-Y□-B□-B□



ZP3-Y□-B□-(02/04/06)



ZP3-Y□-B□-(U2/U4/U6)



Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Flat type with groove Bellows type Bellows type with ribs
		Semiconductive silicone rubber	Flat type with groove
		2	Adapter
3	Fitting	—	—

Precautions

With buffer

Flat type: $\varnothing 1.5$ to $\varnothing 3.5$

Flat type with groove: $\varnothing 4$ to $\varnothing 16$

Bellows type: $\varnothing 4$ to $\varnothing 8$

Bellows type with ribs: $\varnothing 10$ to $\varnothing 16$

Vacuum inlet direction **Vertical** T Type/ZP3-T

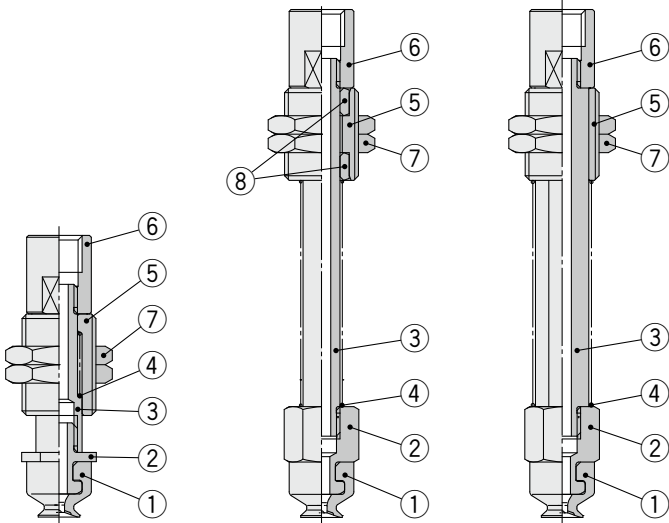
ZP3-T□(J/K)□-B□

ZP3-T□JB□-B□

ZP3-T□K(15/20)□-B□

ZP3-T□-(02/04/06)

ZP3-T□-(U2/U4/U6)



Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Flat type with groove Bellows type Bellows type with ribs
		Semiconductive silicone rubber	Flat type with groove
2	Adapter	Brass (Electroless nickel plating)	
3	Piston rod	Stainless steel	
4	Return spring	Stainless steel	
5	Buffer body	Brass (Electroless nickel plating)	
6	Buffer adapter	Brass (Electroless nickel plating)	
7	Nut	Structural steel (Trivalent chromated)	M6 x 0.75 M8 x 0.75
8	Bushing	—	
9	Fitting	—	

Vacuum inlet direction **Lateral** Y Type/ZP3-Y

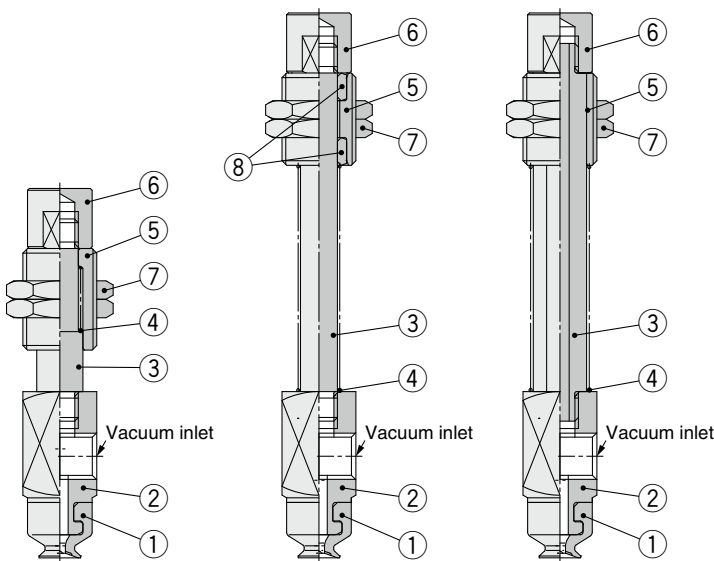
ZP3-Y□(J/K)□-B□

ZP3-Y□JP□-B□

ZP3-Y□K(15/20)□-B□

ZP3-Y□-(02/04/06)

ZP3-Y□-(U2/U4/U6)



Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Conductive NBR, Conductive silicone rubber	Flat type Flat type with groove Bellows type Bellows type with ribs
		Semiconductive silicone rubber	Flat type with groove
2	Adapter	Brass (Electroless nickel plating)	
3	Piston rod	Stainless steel	
4	Return spring	Stainless steel	
5	Buffer body	Brass (Electroless nickel plating)	
6	Buffer adapter	Brass (Electroless nickel plating)	
7	Nut	Structural steel (Trivalent chromated)	M6 x 0.75 M8 x 0.75
8	Bushing	—	
9	Fitting	—	



Basic/Compact Type Specific Product Precautions

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

Mounting

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

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

Basic Type ZP Series

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

Compact Type ZP3 Series

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

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

Basic Type ZP Series

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

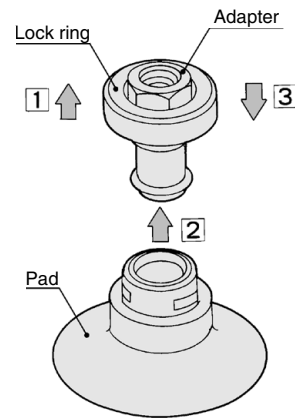
Compact Type ZP3 Series

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

How to Replace the Pad

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

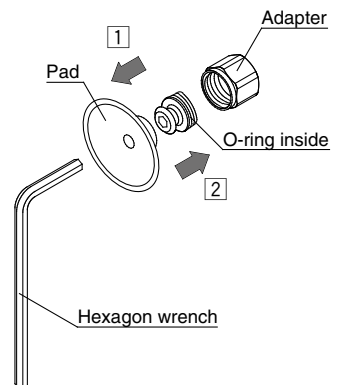
- 1 Pull the lock ring upward, and, after lifting it up to the adapter, remove the old pad by pulling it downward.
- 2 While holding the lock ring in the raised position, place a new pad onto the adapter.
- 3 Confirm that the pad is securely in place, and then return the lock ring to its original position.



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

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

- 1 Insert a hexagon wrench into the bottom of the pad, loosen the screw, and remove the old pad from the adapter.
- 2 Place a new pad on the adapter, and, after confirming that the O-ring is in place, retighten the screw with the hexagon wrench.



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

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

