

Bellows Pad (4.5-Stage)

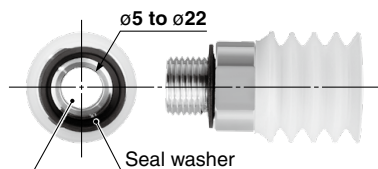
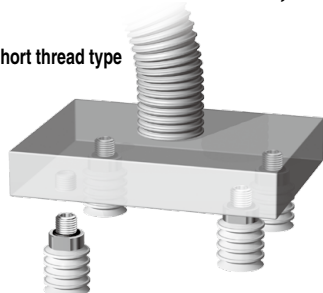
Symbol/Form

ZJ: Bellows type

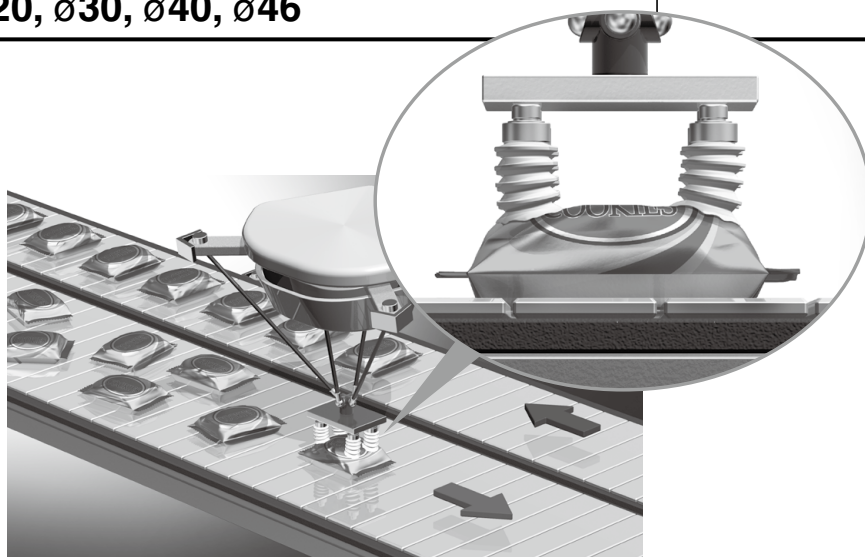
Pad diameter $\varnothing 15, \varnothing 20, \varnothing 30, \varnothing 40, \varnothing 46$

- For adsorbing workpieces moving at high speeds
- Follows various shapes of workpieces
- Pad material: Silicone rubber (Rubber hardness: A40, A50, A60)

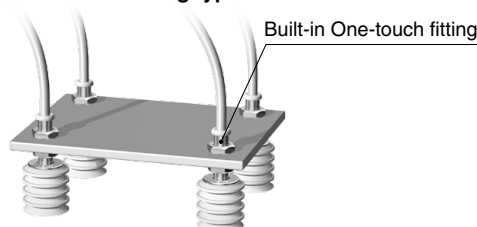
• Short thread type



- Large opening size (short thread type): $\varnothing 5$ to $\varnothing 22$
For vacuum blower pumps with high suction flow rates



• One-touch fitting type



How to Order

Pad unit **ZP2 - B15 ZJ S**

Symbol	Pad diameter
B15	$\varnothing 15^{*1}$
B20	$\varnothing 20^{*1}$
B30	$\varnothing 30^{*1}$
40	$\varnothing 40$
46	$\varnothing 46$

*1 Pad O.D.

Symbol	Form
ZJ	Bellows type (4.5-stage)

• Pad material

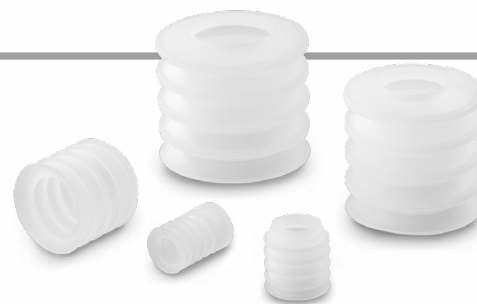
Symbol	Material	Applicable pad diameter					
		$\varnothing 15$	$\varnothing 20$	$\varnothing 30$	$\varnothing 40$	$\varnothing 46$	
N	NBR	—	—	—	●	●	
U	Urethane rubber	—	—	—	●	●	
F	FKM	—	—	—	●	●	
GN	Conductive NBR	—	—	—	●	●	
GS	Conductive silicone rubber (Black)	—	—	—	●	●	
S	Silicone rubber*1*2 (White)	Rubber hardness (Shore A: $\pm 5^\circ$)	40	●	●	●	—
			50	—	—	—	●
S6	Silicone rubber*1 High-hardness type (White)	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).

Mounting Bracket Part Nos.

Adapter Assembly p. 281

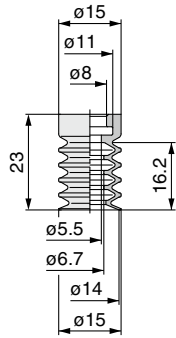


Model Selection
For Special Applications
Mark-free
For Film Adsorption
Multistage
Flat
Nozzle
Sponge
For Disk Adsorption
For Panel Holding
Ball Spine Buffer
Construction
Mounting Bracket Assembly
Precautions

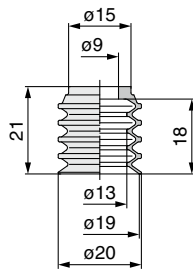
Bellows Pad (4.5-Stage) **ZP2 Series**

Dimensions: Pad Unit

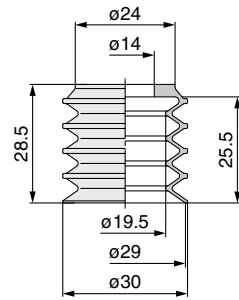
ZP2-B15ZJS □



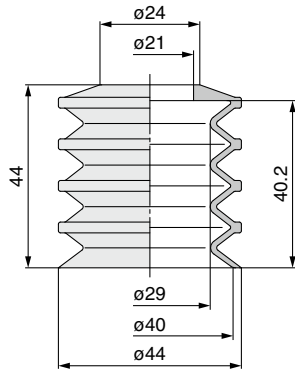
ZP2-B20ZJS □



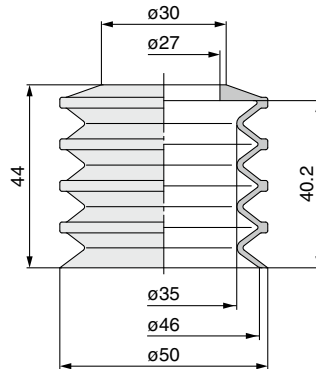
ZP2-B30ZJS □



ZP2-40ZJ □



ZP2-46ZJ □



Weight	[g]
ZP2-B15ZJS □	2.0
ZP2-B20ZJS □	2.0
ZP2-B30ZJS □	4.5
ZP2-40ZJN	16.0
ZP2-40ZJS □	15.0
ZP2-40ZJU	16.0
ZP2-40ZJF	25.0
ZP2-40ZJGN	16.0
ZP2-40ZJGS	16.0
ZP2-46ZJN	19.0
ZP2-46ZJS □	17.0
ZP2-46ZJU	19.0
ZP2-46ZJF	30.0
ZP2-46ZJGN	19.0
ZP2-46ZJGS	19.0

How to Order

Vertical vacuum inlet with adapter

ZP2 - T B15 ZJ S - A10 - 06



Pad diameter

Symbol	Pad diameter
B15	ø15*1
B20	ø20*1
B30	ø30*1
40	ø40
46	ø46

*1 Pad O.D.

Pad form

Symbol	Form
ZJ	Bellows type (4.5-stage)

Pad material

Symbol	Material	Applicable pad diameter					
		ø15	ø20	ø30	ø40	ø46	
N	NBR	—	—	—	●	●	
U	Urethane rubber	—	—	—	●	●	
F	FKM	—	—	—	●	●	
GN	Conductive NBR	—	—	—	●	●	
GS	Conductive silicone rubber (Black)	—	—	—	●	●	
S	Silicone rubber*1*2 (White)	Rubber hardness	40	●	●	—	—
		(Shore A: ±5°)	50	—	—	●	●
S6	Silicone rubber*1*2 High-hardness type (White)	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).

Vacuum inlet

Symbol	Vacuum inlet	Connection thread					
		A10	A16	A20	A30	AL12	AL14
Nil	Short thread	●	●	●	●	—	—
06	One-touch fitting(ø6)	—	—	—	—	●	●

Connection thread

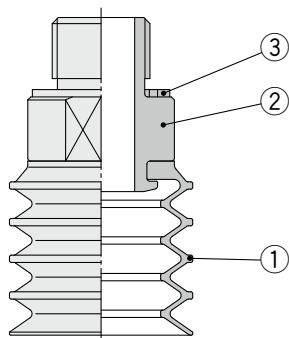
Type	Symbol	Size	ø15	ø20	ø30	ø40	ø46
Short thread	A10	M10 x 1	●	●	—	—	—
	A16	M16 x 1.5	—	—	●	—	—
	A20	M20 x 1.5	—	—	—	●	—
	A30	M30 x 1.5	—	—	—	—	●
One-touch fitting	AL12	M12 x 1	●	●	—	—	—
	AL14	M14 x 1	—	—	●	●	●

* The pad is shipped together but does not come assembled.

Bellows Pad (4.5-Stage) **ZP2 Series**

Component Parts

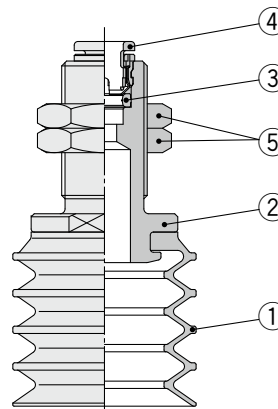
■ Short thread type (Pad with adapter)



Component Parts

No.	Description	Material (Surface treatment)
1	Pad	Refer to the pad material (page 276).
2	Adapter	Aluminum alloy (Anodized)
3	Seal washer	Structural steel/NBR

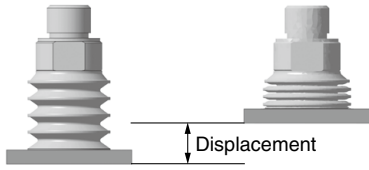
■ One-touch fitting type (Pad with adapter)



Component Parts

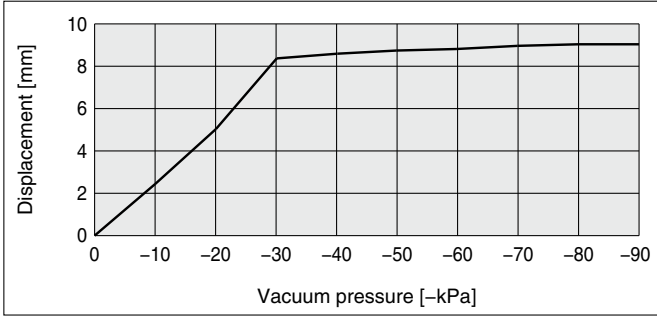
No.	Description	Material (Surface treatment)
1	Pad	Refer to the pad material (page 276).
2	Adapter	Aluminum alloy (Anodized)
3	Seal	NBR
4	Cassette	—
5	Nut	Steel (Zinc chromated)

Pad Displacement to Vacuum Pressure (Pad material: Silicone rubber)

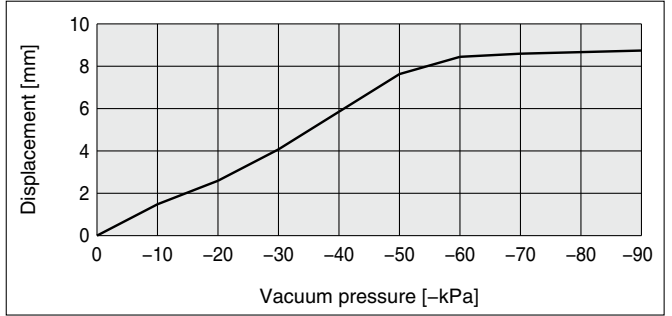


The data shown below are not guaranteed but actual measured (initial value). These values depend on the operating environment, workpiece weight and transfer method, so they cannot be guaranteed by SMC. Thorough research and confirmation are necessary before use.

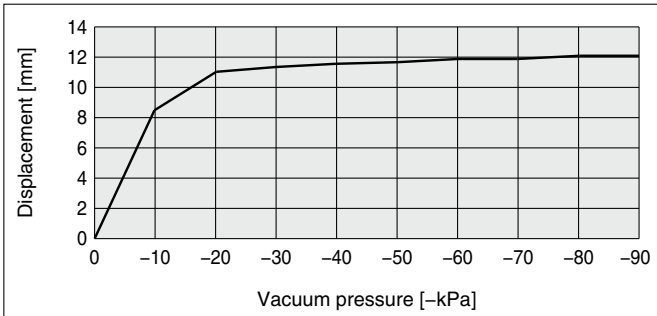
ZP2-B15ZJS



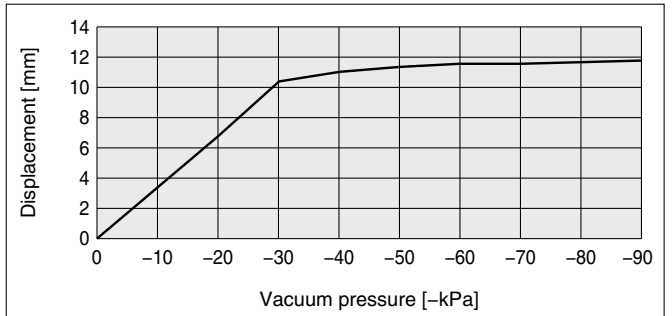
ZP2-B15ZJS6



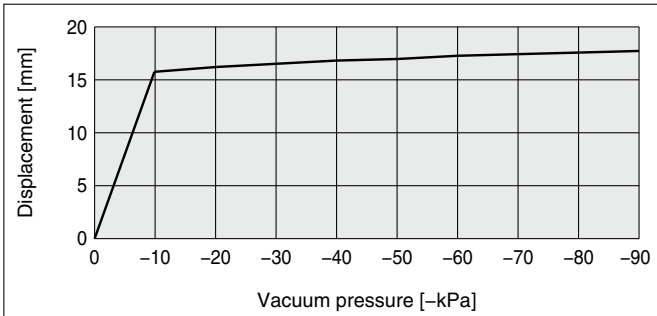
ZP2-B20ZJS



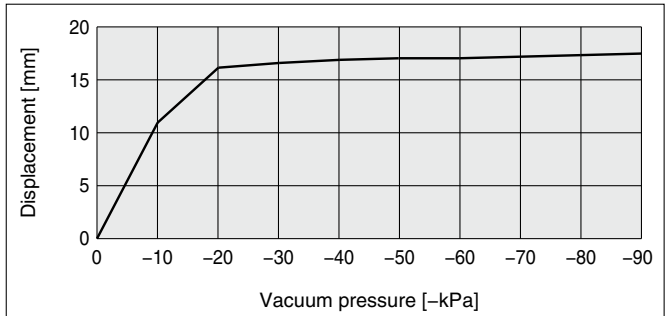
ZP2-B20ZJS6



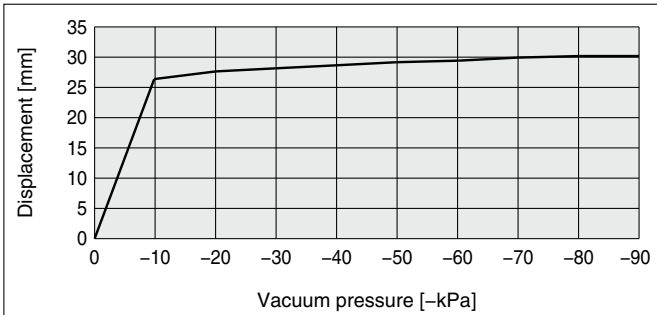
ZP2-B30ZJS



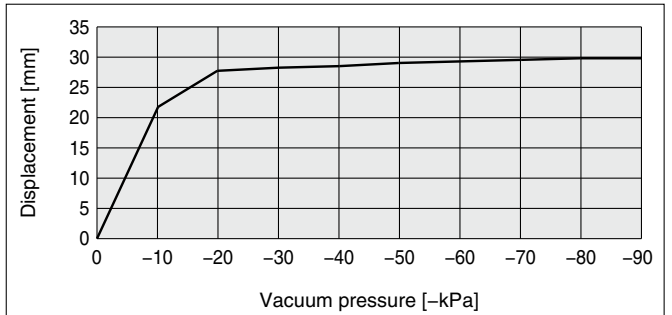
ZP2-B30ZJS6



ZP2-40ZJS



ZP2-46ZJS



Model Selection

For Special Applications

Mark-free

For Film Adsorption

Multistage

Flat

Nozzle

Sponge

For Disk Adsorption

For Panel Holding

Ball Spine Buffer

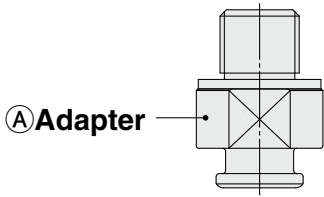
Construction

Mounting Bracket Assembly

Precautions

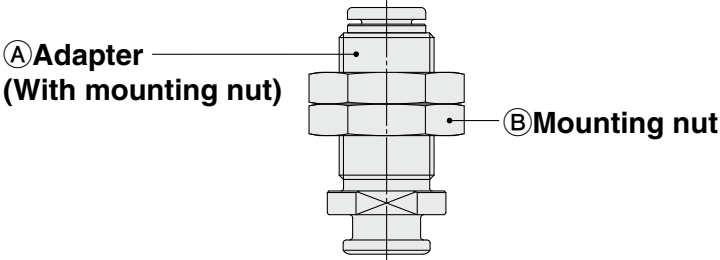
Bellows Pad (4.5-Stage) *ZP2 Series* Mounting Bracket Assembly

Adapter Assembly

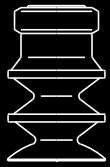
Product part no.	<p style="text-align: center;">ZP2 - T ① ZJ □ - ②</p> <p style="text-align: center;"> Pad diameter Bellows type Pad material Connection thread (Male thread) </p>
Component parts	 <p>① Adapter</p>

		Symbol	① Pad diameter symbol						
			B15	B20	B30	40	46		
① Adapter	② Connection thread Male thread (Short thread)	M10 x 1	A10	ZP2A-Z31-1P	ZP2A-Z31-2P	—			
		M16 x 1.5	A16	—		ZP2A-Z31-3P	—		
		M20 x 1.5	A20	—			ZP2A-Z31-4P	—	
		M30 x 1.5	A30	—				ZP2A-Z31-5P	

Adapter Assembly

Product part no.	<p style="text-align: center;">ZP2 - T ① ZJ □ - ② ③</p> <p style="text-align: center;"> Pad diameter Bellows type Pad material Vacuum inlet (One-touch fitting) Connection thread (Male thread) </p>
Component parts	 <p>① Adapter (With mounting nut)</p> <p>② Mounting nut</p>

		Symbol			Symbol	① Pad diameter symbol					
						B15	B20	B30	40	46	
① Adapter	② Connection thread Male thread	M12 x 1	AL12	③ Vacuum inlet One-touch fitting	ø6	06	ZP2A-Z32-1	ZP2A-Z32-2	—		
		M14 x 1	AL14				—		ZP2A-Z32-3	ZP2A-Z32-4	ZP2A-Z32-5
② Mounting nut (Single unit)				M12 x 1	ZPNA-M12C		—				
				M14 x 1	—		ZPNA-M14				



Bellows Pad (2.5/3.5-Stage)

Symbol/Form

J: Bellows type

Pad diameter $\phi 6, \phi 9, \phi 10, \phi 14, \phi 15, \phi 16, \phi 25, \phi 30$

- For use where there is no space for a buffer (spring type)
- For workpieces with inclined adsorption surfaces

* The pad and lock ring are shipped together.

Mounting Bracket Part Nos.

Adapter Assembly p. 283 to 285



How to Order

Pad unit **ZP2-06JN-X19**

Pad diameter		
Symbol	Pad diameter	Blast type
06	$\phi 6$	—
09	$\phi 9$	—
B10	$\phi 10$	●
14	$\phi 14$	—
B15	$\phi 15$	●
16	$\phi 16$	—
B25	$\phi 25$	●
B30	$\phi 30$	●

* Blast type: Workpieces can be removed easily.

Pad material

Symbol	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"

With/Without lock ring

Symbol	With lock ring	Without lock ring*2
Nil	With lock ring	Without lock ring*2
X19	Without lock ring*2	Without lock ring*2

*2 $\phi 6, \phi 10,$ and $\phi 15$ are not available.

Pad form

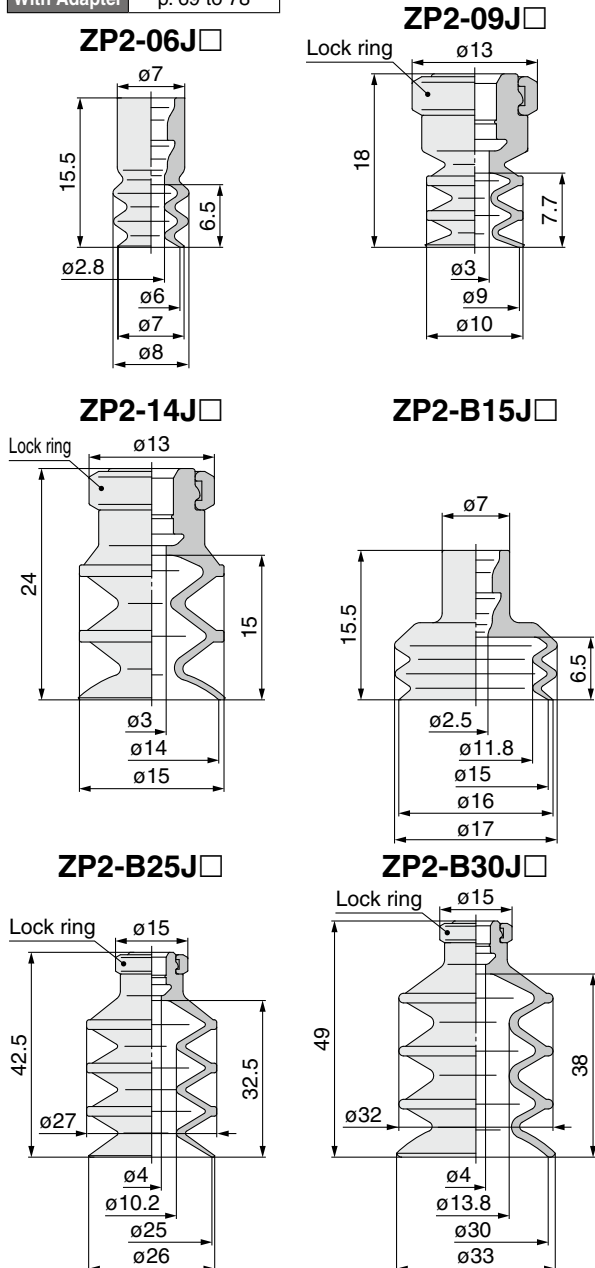
Symbol	Form
J	Bellows type (2.5/3.5-stage)



Dimensions: Pad Unit

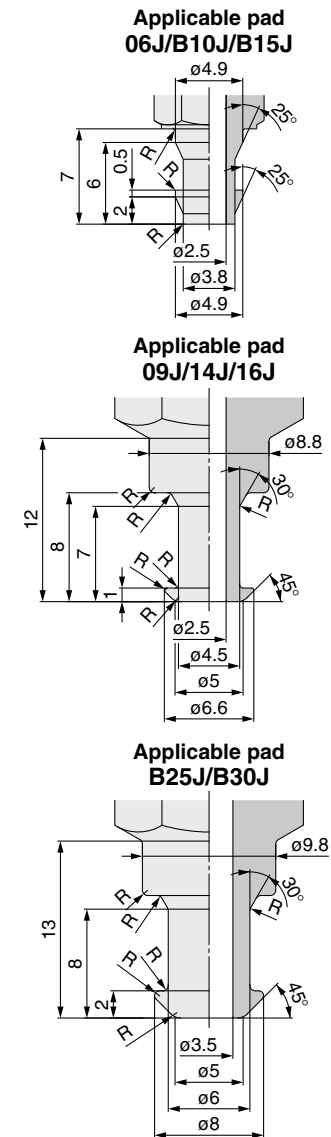
* The dimensions of the mounting bracket are the same as the ZP series. Refer to the mounting bracket dimensions on the following pages.

With Adapter p. 69 to 78



Adapter Mounting Dimensions

If an adapter will be made by the customer, design the adapter with the dimensions shown below.



* The R part has to be smooth with no corners.

Model Selection
For Special Applications
Mark-free
For Film Adsorption
Multistage
Flat
Nozzle
Sponge
For Disk Adsorption
For Panel Holding
Ball Spine Buffer
Construction
Mounting Bracket Assembly
Precautions

Bellows Pad (2.5/3.5-Stage) *ZP2 Series* Mounting Bracket Assembly

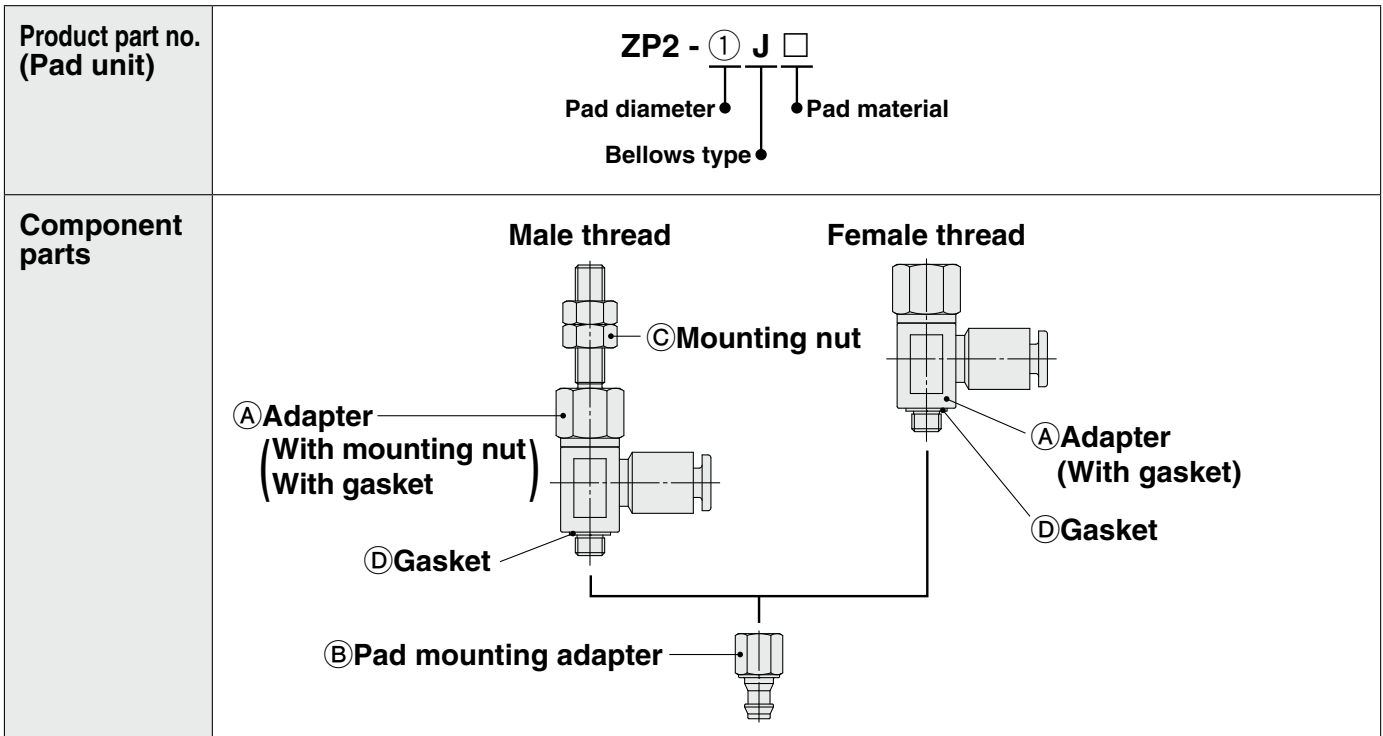
Adapter Assembly

Product part no. (Pad unit)	<p style="text-align: center;">ZP2 - T ① J □</p> <p style="text-align: center;">Pad diameter Pad material</p> <p style="text-align: center;">Bellows type (Multistage)</p>		
Component parts	<p>③ Gasket Male thread Male thread Female thread</p> <p>① Adapter (With gasket) ② Mounting nut ① Adapter (With mounting nut)</p>		

					① Pad diameter symbol							
					06	B10	B15	09	14	16	B25	B30
① Vacuum inlet	Male thread	M5 x 0.8	Male thread	Use the connection thread.	ZPT1-A5			—				
		M6 x 1			ZPT1-A6			—				
	Female thread	Connection thread	M3 x 0.5	Male thread	M5 x 0.8	—			ZPT2-A5			
			M5 x 0.8		M6 x 1	—			ZPT2-A6			
			M4 x 0.7		M8 x 1	—			ZPT3-A8			
			M5 x 0.8		ZPT1-B4			—				
		Female thread	Use the connection thread.	M6 x 1	ZPT1-B5			ZPT2-B5			—	
				M8 x 1.25	—			ZPT2-B6			ZPT3-B6	
				Rc1/8	—			ZPT2-B01			ZPT3-B01	
				NPT1/8	—			ZPT2-N01			ZPT3-N01	
	② Mounting nut (Single unit)	M5 x 0.8		—		NTJ-015A			—			
		M6 x 1		—		SNJ-006C						
M8 x 1		—		—			RB08J					
③ Gasket (Single unit)	For M5 x 0.8	10 pcs.*1	ZP-5G2		—			—				
		100 pcs.*1	M-5G2		—			—				
	For M6 x 1	10 pcs.*1	ZP-6G2		—			—				
		100 pcs.*1	M-6G		—			—				

*1 The gasket (single unit) sales unit is shown.

Adapter Assembly: With One-touch Fitting

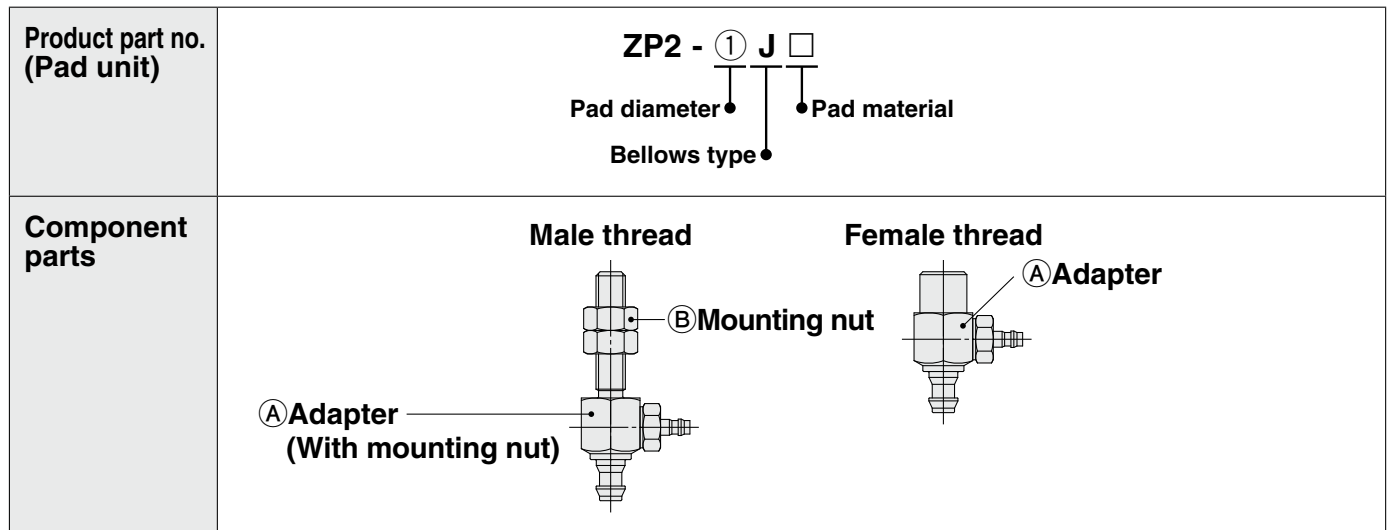


		① Pad diameter symbol								
		06	B10	B15	09	14	16	B25	B30	
① Adapter	Vacuum inlet	Connection thread	Male thread	M5 x 0.8	ZPRS-04-A5		ZPRS-04-A5			
				M6 x 1	ZPRS-04-A6		ZPRS-04-A6	ZPRL-04-A6		
				M8 x 1	—		—	ZPRL-04-A8		
		Female thread	M4 x 0.7	ZPRS-04-B4		—				
			M5 x 0.8	ZPRS-04-B5		ZPRS-04-B5	ZPRL-04-B5			
			M6 x 1	—		ZPRS-04-B6	ZPRL-04-B6			
	ø4	Connection thread	Male thread	M5 x 0.8	ZPRS-06-A5		ZPRS-06-A5			
				M6 x 1	ZPRS-06-A6		ZPRS-06-A6	ZPRL-06-A6		
				M8 x 1	—		—	ZPRL-06-A8		
		Female thread	M4 x 0.7	ZPRS-06-B4		—				
			M5 x 0.8	ZPRS-06-B5		ZPRS-06-B5	ZPRL-06-B5			
			M6 x 1	—		ZPRS-06-B6	ZPRL-06-B6			
ø6	Connection thread	Male thread	M5 x 0.8	ZPRS-06-A5		ZPRS-06-A5				
			M6 x 1	ZPRS-06-A6		ZPRS-06-A6	ZPRL-06-A6			
			M8 x 1	—		—	ZPRL-06-A8			
	Female thread	M4 x 0.7	ZPRS-06-B4		—					
		M5 x 0.8	ZPRS-06-B5		ZPRS-06-B5	ZPRL-06-B5				
		M6 x 1	—		ZPRS-06-B6	ZPRL-06-B6				
ø8	Connection thread	Male thread	M6 x 1	—		—	ZPRL-08-A6			
			M8 x 1	—		—	ZPRL-08-A8			
			M5 x 0.8	—		—	ZPRL-08-B5			
	Female thread	M6 x 1	—		—	ZPRL-08-B6				
		M8 x 1.25	—		—	ZPRL-08-B8				
		M5 x 0.8	—		—	ZPRL-08-B5				
② Pad mounting adapter			ZPT1-B5		ZPT2-B5		ZPT3-B8			
③ Mounting nut (Single unit)		M5 x 0.8	NTJ-015A		NTJ-015A		—			
		M6 x 1	SNJ-006C		SNJ-006C		SNJ-006C			
		M8 x 1	—		—		RB08J			
④ Gasket (Single unit)		10 pcs.*1	ZP-5G2		ZP-5G2		ZP-8G2			
		100 pcs.*1	M-5G2		M-5G2		—			

*1 The gasket (single unit) sales unit is shown.

Bellows Pad (2.5/3.5-Stage) Mounting Bracket Assembly **ZP2 Series**

Adapter Assembly: With Barb Fitting



						① Pad diameter symbol								
						06	B10	B15	09	14	16	B25	B30	
(A) Adapter	Vacuum inlet	For nylon tubing	ø4	Male thread	M5 x 0.8	ZPY1-N4-A5			ZPY2-N4-A5					
				Male thread	M6 x 1	ZPY1-N4-A6			ZPY2-N4-A6			ZPY3-N4-A6		
				Male thread	M8 x 1	—			—			ZPY3-N4-A8		
			Female thread	Female thread	M4 x 0.7	ZPY1-N4-B4			—			—		
				Female thread	M5 x 0.8	ZPY1-N4-B5			ZPY2-N4-B5			ZPY3-N4-B5		
				Female thread	M6 x 1	—			ZPY2-N4-B6			ZPY3-N4-B6		
		ø6	Male thread	Male thread	M5 x 0.8	ZPY1-N6-A5			ZPY2-N6-A5			—		
				Male thread	M6 x 1	ZPY1-N6-A6			ZPY2-N6-A6			ZPY3-N6-A6		
				Male thread	M8 x 1	—			—			ZPY3-N6-A8		
			Female thread	Female thread	M4 x 0.7	ZPY1-N6-B4			—			—		
				Female thread	M5 x 0.8	ZPY1-N6-B5			ZPY2-N6-B5			ZPY3-N6-B5		
				Female thread	M6 x 1	—			ZPY2-N6-B6			ZPY3-N6-B6		
	For soft tubing	ø4	Male thread	Male thread	M5 x 0.8	ZPY1-U4-A5			ZPY2-U4-A5			—		
				Male thread	M6 x 1	ZPY1-U4-A6			ZPY2-U4-A6			ZPY3-U4-A6		
				Male thread	M8 x 1	—			—			ZPY3-U4-A8		
			Female thread	Female thread	M4 x 0.7	ZPY1-U4-B4			—			—		
				Female thread	M5 x 0.8	ZPY1-U4-B5			ZPY2-U4-B5			ZPY3-U4-B5		
				Female thread	M6 x 1	—			ZPY2-U4-B6			ZPY3-U4-B6		
		ø6	Male thread	Male thread	M5 x 0.8	ZPY1-U6-A5			ZPY2-U6-A5			—		
				Male thread	M6 x 1	ZPY1-U6-A6			ZPY2-U6-A6			ZPY3-U6-A6		
				Male thread	M8 x 1	—			—			ZPY3-U6-A8		
			Female thread	Female thread	M4 x 0.7	ZPY1-U6-B4			—			—		
				Female thread	M5 x 0.8	ZPY1-U6-B5			ZPY2-U6-B5			ZPY3-U6-B5		
				Female thread	M6 x 1	—			ZPY2-U6-B6			ZPY3-U6-B6		
ø6	Female thread	Female thread	M8 x 1.25	—			—			ZPY3-U6-B8				
		Female thread	M5 x 0.8	NTJ-015A			NTJ-015A			—				
		Female thread	M6 x 1	SNJ-006C			SNJ-006C			SNJ-006C				
ø6	Female thread	Female thread	M8 x 1	—			—			RB08J				