

Bellows Pad (4.5-Stage)

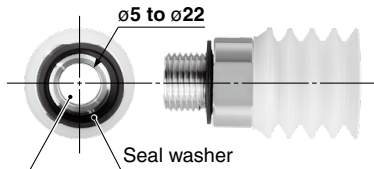
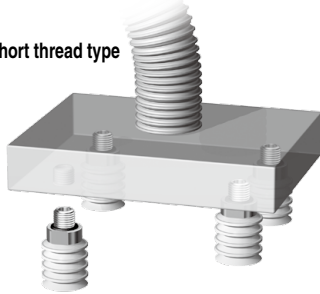
Symbol/Form

ZJ: Bellows type

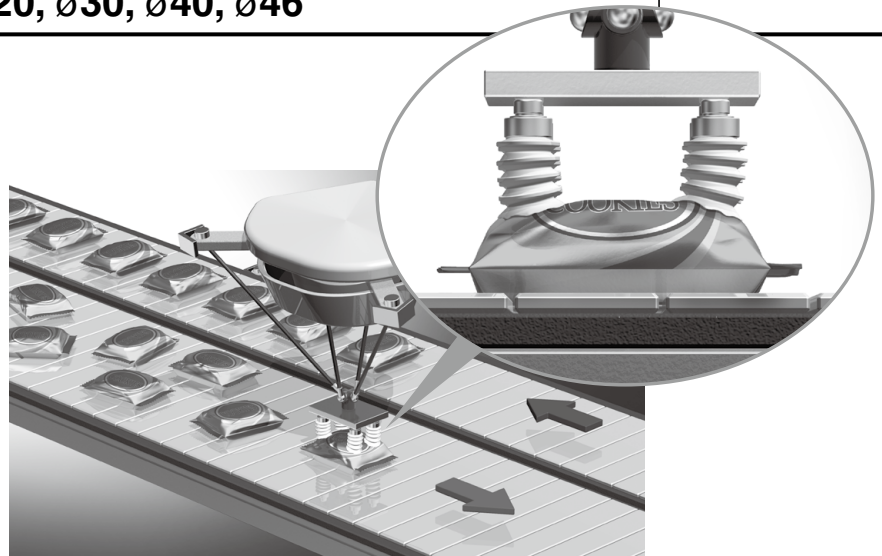
Pad diameter $\varnothing 15, \varnothing 20, \varnothing 30, \varnothing 40, \varnothing 46$

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

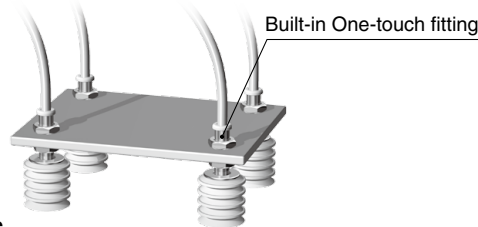
• Short thread type



- 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

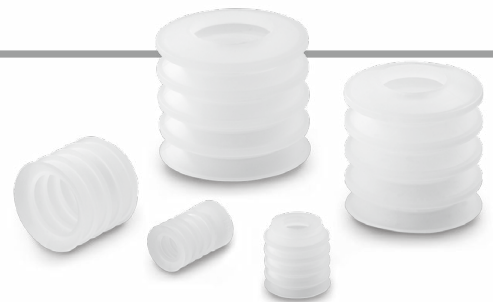
Symbol	Material	Applicable pad diameter					
		$\varnothing 15$	$\varnothing 20$	$\varnothing 30$	$\varnothing 40$	$\varnothing 46$	
N	NBR	—	—	—	●	●	
U	Urethane rubber	—	—	—	●	●	
F	FKM	—	—	—	●	●	
GN	Conductive NBR	—	—	—	●	●	
GS	Conductive silicone rubber (Black)	—	—	—	●	●	
S	Silicone rubber*1*2 (White)	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

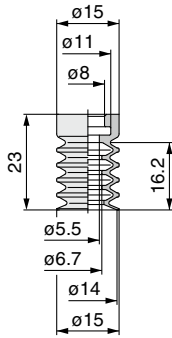
Mounting Bracket Assembly

Precautions

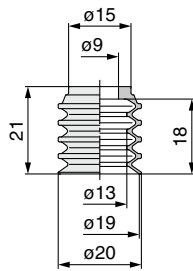
Bellows Pad (4.5-Stage) **ZP2 Series**

Dimensions: Pad Unit

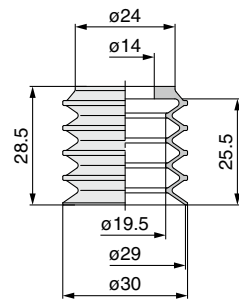
ZP2-B15ZJ □



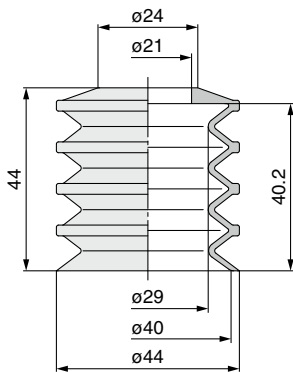
ZP2-B20ZJ □



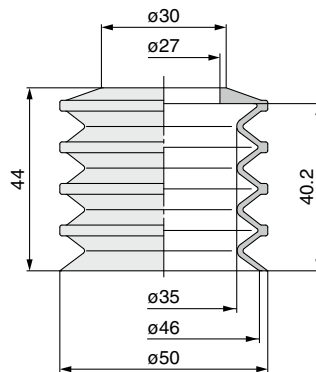
ZP2-B30ZJ □



ZP2-40ZJ □



ZP2-46ZJ □



Weight	[g]
ZP2-B15ZJ □	2.0
ZP2-B20ZJ □	2.0
ZP2-B30ZJ □	4.5
ZP2-40ZJN	16.0
ZP2-40ZJ □	15.0
ZP2-40ZJU	16.0
ZP2-40ZJF	25.0
ZP2-40ZJGN	16.0
ZP2-40ZJGS	16.0
ZP2-46ZJN	19.0
ZP2-46ZJ □	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	φ15*1
B20	φ20*1
B30	φ30*1
40	φ40
46	φ46

*1 Pad O.D.

Pad form

Symbol	Form
ZJ	Bellows type (4.5-stage)

Pad material

Symbol	Material	Applicable pad diameter					
		φ15	φ20	φ30	φ40	φ46	
N	NBR	—	—	—	●	●	
U	Urethane rubber	—	—	—	●	●	
F	FKM	—	—	—	●	●	
GN	Conductive NBR	—	—	—	●	●	
GS	Conductive silicone rubber (Black)	—	—	—	●	●	
S	Silicone rubber*1*2 (White)	Rubber hardness	40	●	●	—	—
		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(φ6)	—	—	—	—	●	●

Connection thread

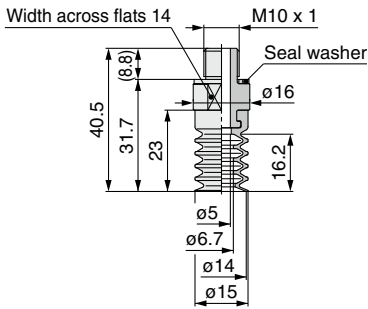
Type	Symbol	Size	φ15	φ20	φ30	φ40	φ46
Short thread	A10	M10 x 1	●	●	—	—	—
	A16	M16 x 1.5	—	—	●	—	—
	A20	M20 x 1.5	—	—	—	●	—
	A30	M30 x 1.5	—	—	—	—	●
One-touch fitting	AL12	M12 x 1	●	●	—	—	—
	AL14	M14 x 1	—	—	●	●	●

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

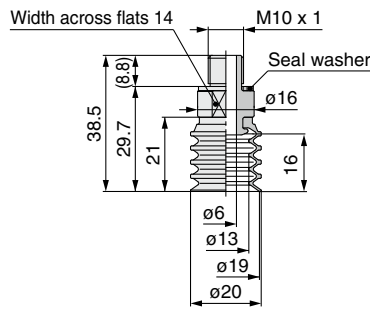
Dimensions

■ Vacuum inlet: Short thread type

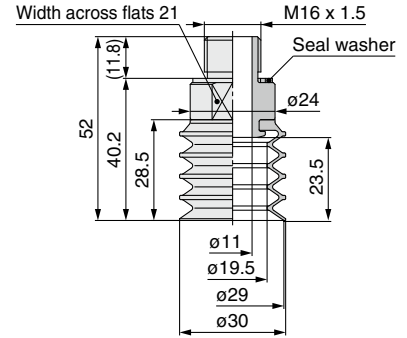
ZP2-TB15ZJ□-A10



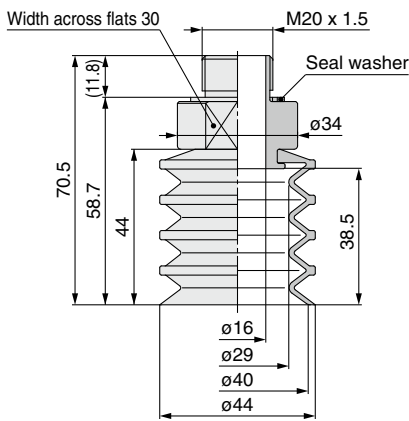
ZP2-TB20ZJ□-A10



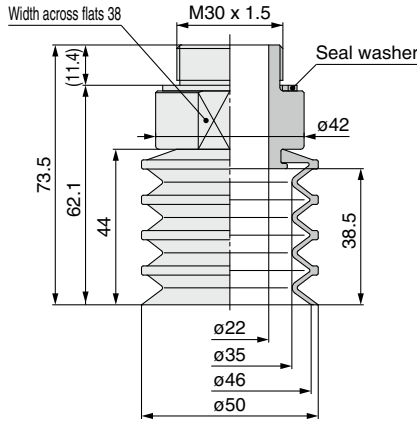
ZP2-TB30ZJ□-A16



ZP2-T40ZJ□-A20



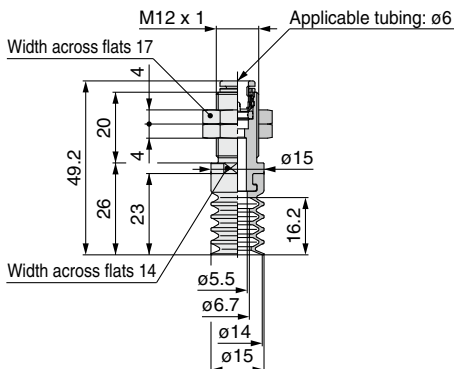
ZP2-T46ZJ□-A30



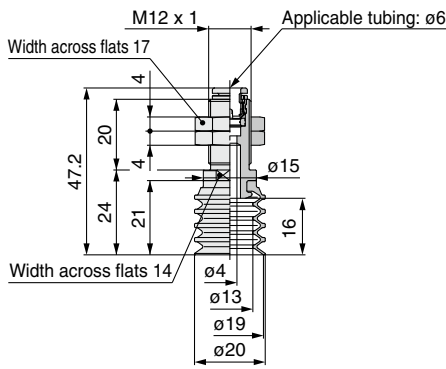
Weight	[g]
ZP2-TB15ZJ□-A10	9.0
ZP2-TB20ZJ□-A10	9.0
ZP2-TB30ZJ□-A16	20.5
ZP2-T40ZN-A20	51.0
ZP2-T40ZJ□-A20	50.0
ZP2-T40ZJU-A20	51.0
ZP2-T40ZJF-A20	60.0
ZP2-T40ZJGN-A20	51.0
ZP2-T40ZJGS-A20	51.0
ZP2-T46ZJN-A30	84.0
ZP2-T46ZJ□-A30	82.0
ZP2-T46ZJU-A30	84.0
ZP2-T46ZJF-A30	95.0
ZP2-T46ZJGN-A30	84.0
ZP2-T46ZJGS-A30	84.0

■ Vacuum inlet: One-touch fitting type

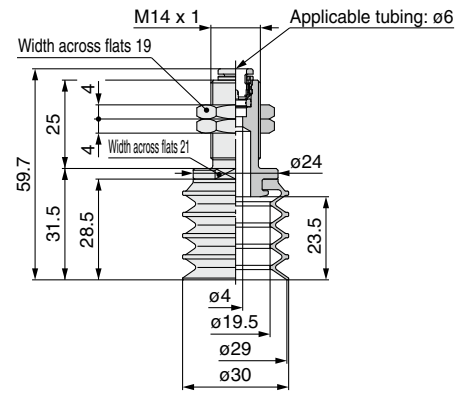
ZP2-TB15ZJ□-AL12-06



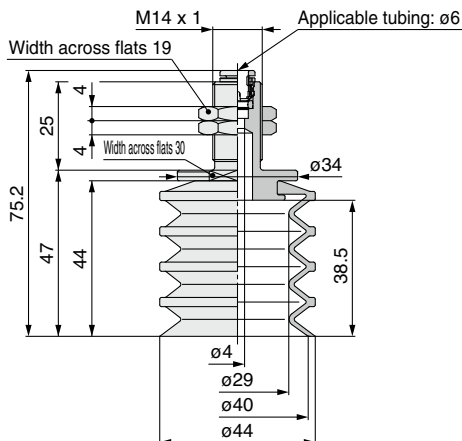
ZP2-TB20ZJ□-AL12-06



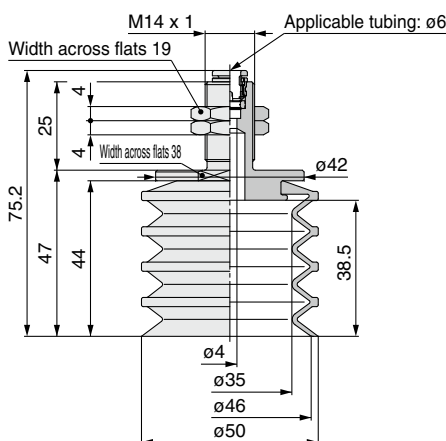
ZP2-TB30ZJ□-AL14-06



ZP2-T40ZJ□-AL14-06



ZP2-T46ZJ□-AL14-06



Weight	[g]
ZP2-TB15ZJ□-AL12-06	17.0
ZP2-TB20ZJ□-AL12-06	17.0
ZP2-TB30ZJ□-AL14-06	26.5
ZP2-T40ZJN-AL14-06	46.0
ZP2-T40ZJ□-AL14-06	45.0
ZP2-T40ZJU-AL14-06	46.0
ZP2-T40ZJF-AL14-06	55.0
ZP2-T40ZJGN-AL14-06	46.0
ZP2-T40ZJGS-AL14-06	46.0
ZP2-T46ZJN-AL14-06	56.0
ZP2-T46ZJ□-AL14-06	54.0
ZP2-T46ZJU-AL14-06	56.0
ZP2-T46ZJF-AL14-06	67.0
ZP2-T46ZJGN-AL14-06	56.0
ZP2-T46ZJGS-AL14-06	56.0

Model Selection

For Special Applications

Mark-free

For Film Adsorption

Multistage

Flat

Nozzle

Sponge

For Disk Adsorption

For Panel Holding

Ball Spine Buffer

Construction

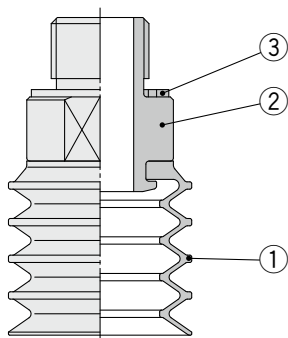
Mounting Bracket Assembly

Precautions

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

Component Parts

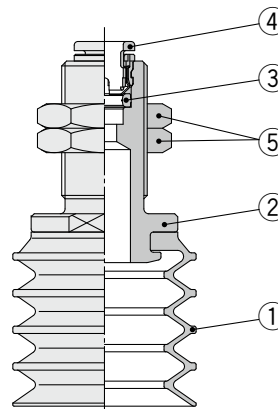
■ Short thread type (Pad with adapter)



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

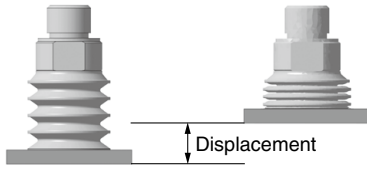
■ One-touch fitting type (Pad with adapter)



Component Parts

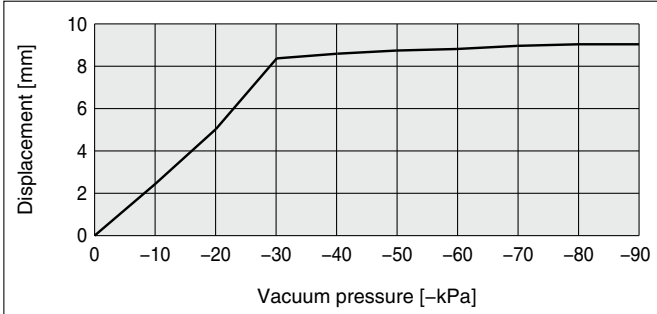
No.	Description	Material (Surface treatment)
1	Pad	Refer to the pad material (page 276).
2	Adapter	Aluminum alloy (Anodized)
3	Seal	NBR
4	Cassette	—
5	Nut	Steel (Zinc chromated)

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

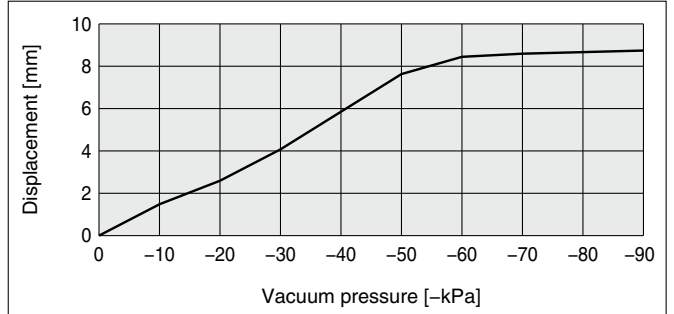


The data shown below are not guaranteed but actual measured (initial value). These values depend on the operating environment, workpiece weight and transfer method, so they cannot be guaranteed by SMC. Thorough research and confirmation are necessary before use.

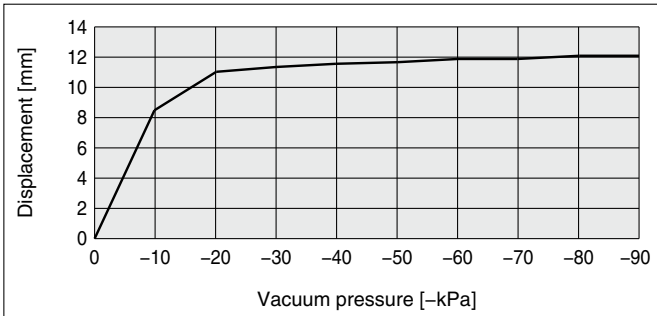
ZP2-B15ZJS



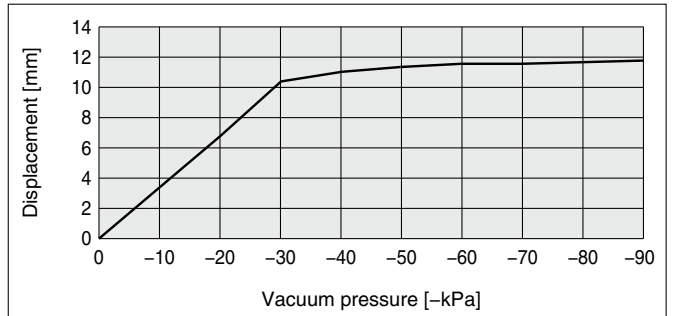
ZP2-B15ZJS6



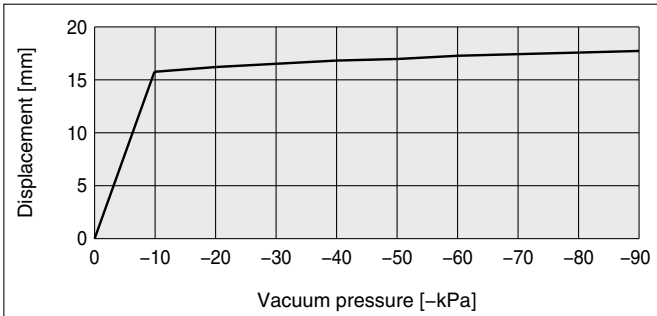
ZP2-B20ZJS



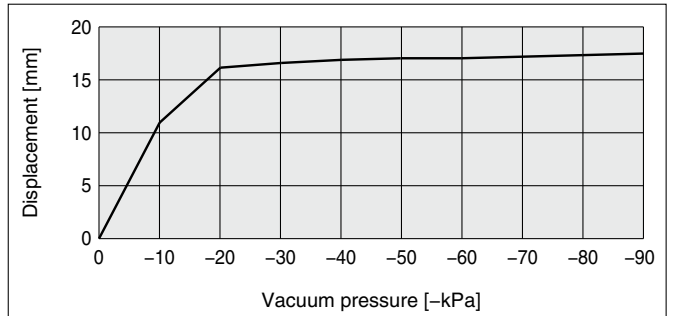
ZP2-B20ZJS6



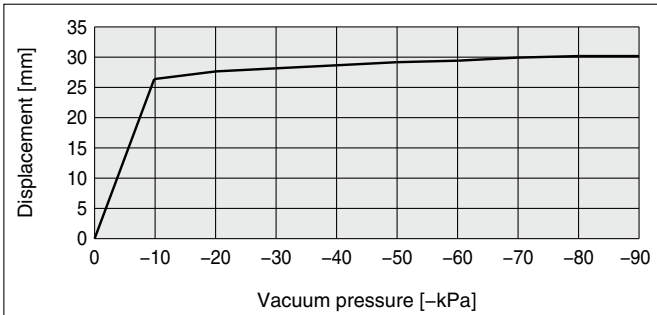
ZP2-B30ZJS



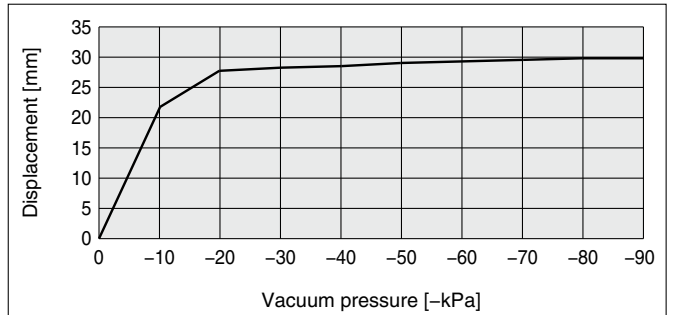
ZP2-B30ZJS6



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

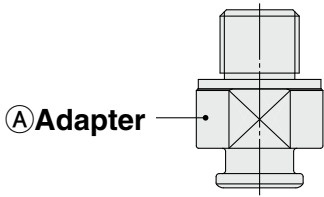
Construction

Mounting Bracket Assembly

Precautions

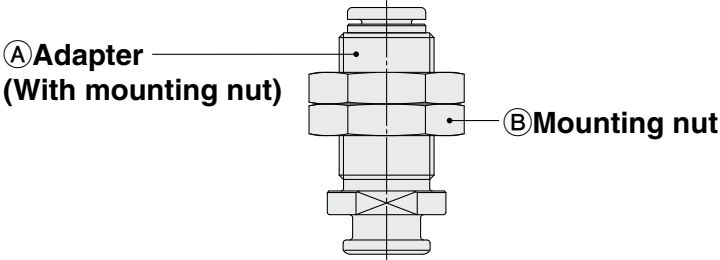
Bellows Pad (4.5-Stage) *ZP2 Series* Mounting Bracket Assembly

Adapter Assembly

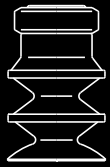
Product part no.	<p style="text-align: center;">ZP2 - T ① ZJ □ - ②</p> <p style="text-align: center;"> Pad diameter Bellows type Pad material Connection thread (Male thread) </p>
Component parts	 <p>① Adapter</p>

		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
- Supports blast type*¹ pads

*¹ Allows for the easy removal of workpieces

* 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**



With/Without lock ring

Nil With lock ring
X19 Without lock ring*³

Pad diameter

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

Pad material

Symbol	Material
N	NBR
S	Silicone rubber* ¹ , * ²
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"

*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).

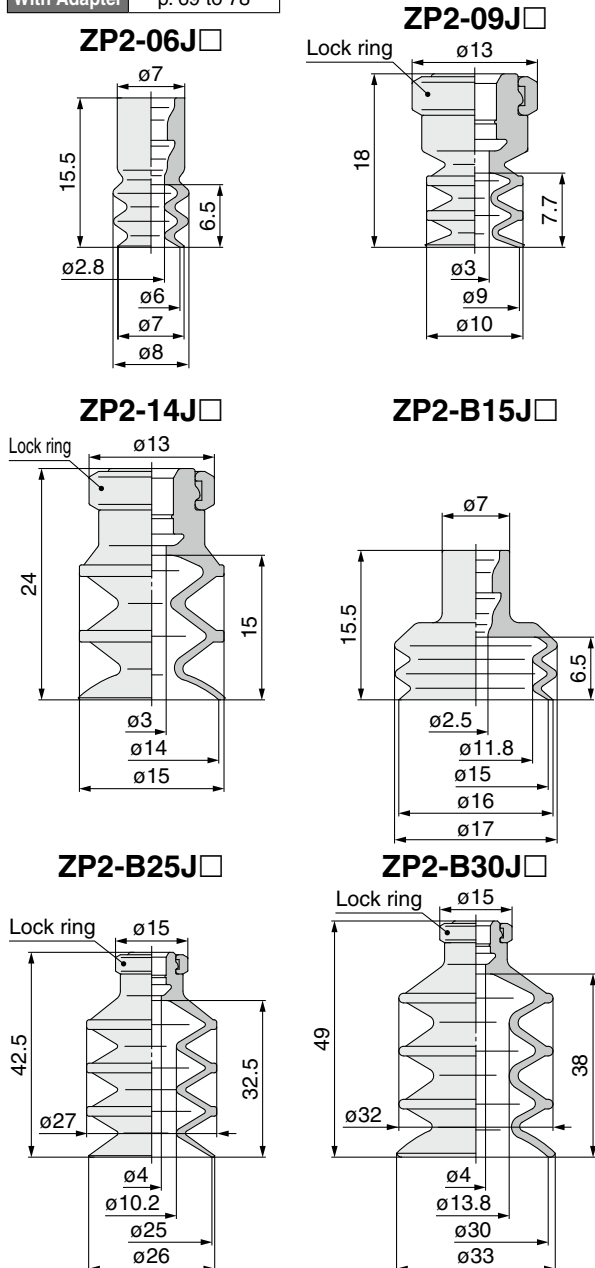
Pad form

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.

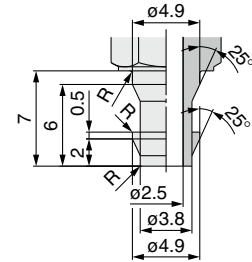
With Adapter p. 69 to 78



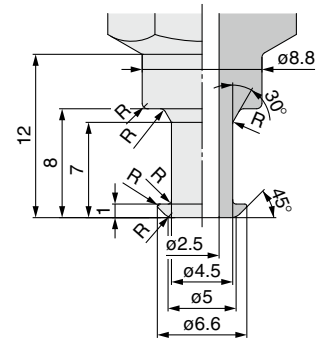
Adapter Mounting Dimensions

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

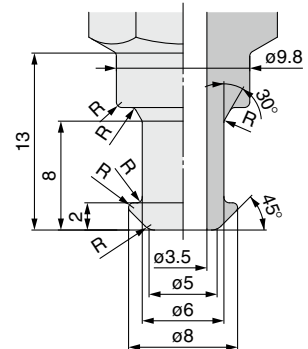
Applicable pad 06J/B10J/B15J



Applicable pad 09J/14J/16J



Applicable pad B25J/B30J



* 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

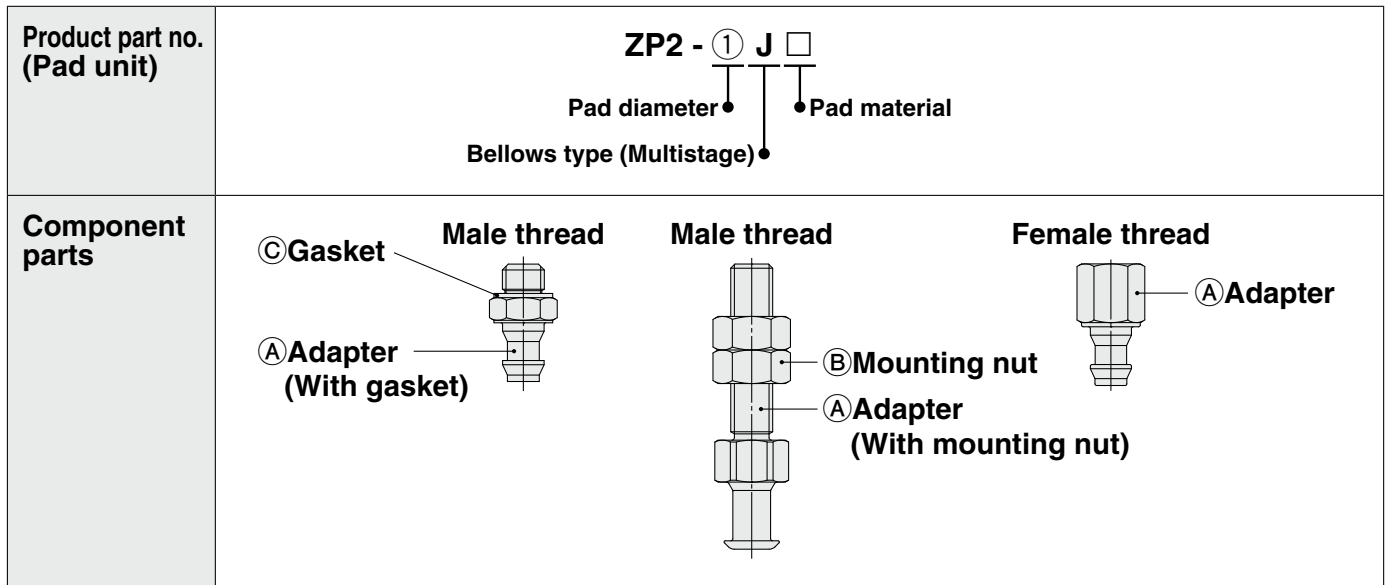
Construction

Mounting Bracket Assembly

Precautions

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

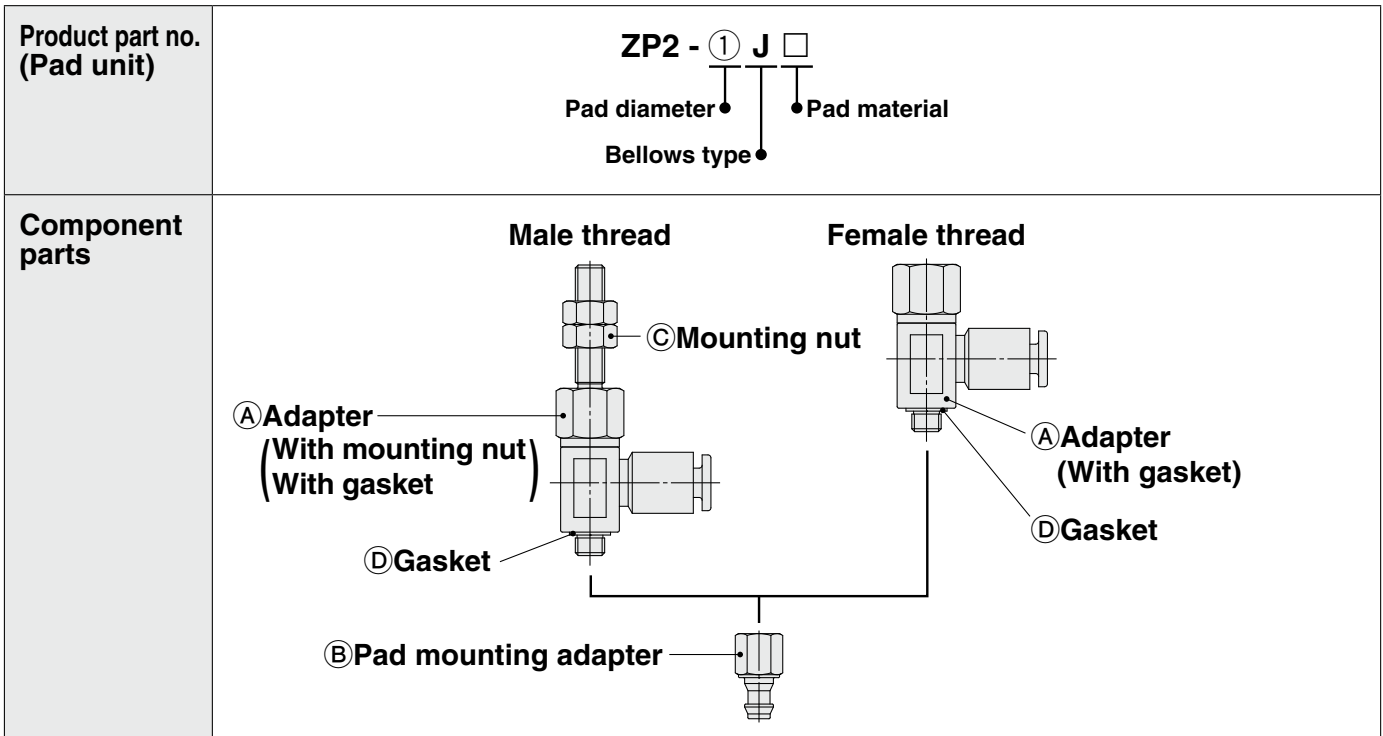
Adapter Assembly



						① Pad diameter symbol								
						06	B10	B15	09	14	16	B25	B30	
① Adapter	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	Male thread	M5 x 0.8	Female thread	Use the connection thread.	—			ZPT2-A5			—	
				M6 x 1			—			ZPT2-A6			ZPT3-A6	
				M8 x 1			—			—			ZPT3-A8	
				M4 x 0.7			ZPT1-B4			—			—	
		M5 x 0.8	ZPT1-B5				ZPT2-B5			—				
		M6 x 1	—				ZPT2-B6			ZPT3-B6				
		M8 x 1.25	—				—			ZPT3-B8				
		Rc1/8	—				ZPT2-B01			ZPT3-B01				
		NPT1/8	—				ZPT2-N01			ZPT3-N01				
		NPTF1/8	—				ZPT2-T01			ZPT3-T01				
	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

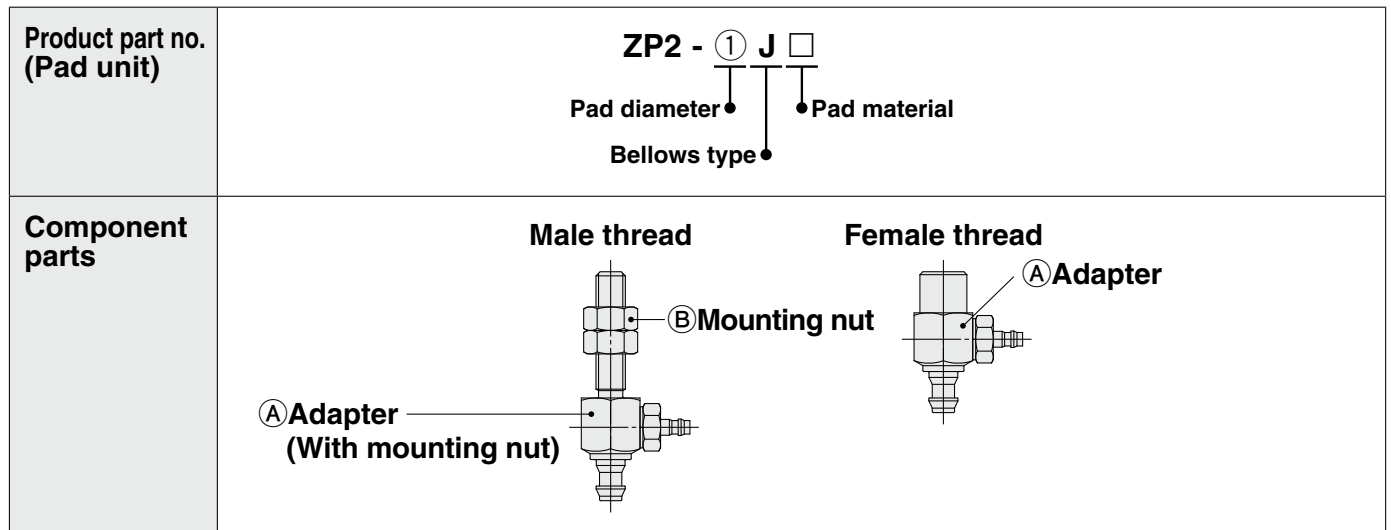


		① Pad diameter symbol								
		06	B10	B15	09	14	16	B25	B30	
① Adapter	Vacuum inlet	④ Connection thread	Male thread	M5 x 0.8	ZPRS-04-A5		ZPRS-04-A5			
				M6 x 1	ZPRS-04-A6		ZPRS-04-A6		ZPRL-04-A6	
				M8 x 1	—		—		ZPRL-04-A8	
		Female thread	M4 x 0.7	ZPRS-04-B4		—		—		
			M5 x 0.8	ZPRS-04-B5		ZPRS-04-B5		ZPRL-04-B5		
			M6 x 1	—		ZPRS-04-B6		ZPRL-04-B6		
	④ Connection thread	Male thread	M8 x 1.25	—		—		ZPRL-04-B8		
			M5 x 0.8	ZPRS-06-A5		ZPRS-06-A5		—		
			M6 x 1	ZPRS-06-A6		ZPRS-06-A6		ZPRL-06-A6		
		Female thread	M8 x 1	—		—		ZPRL-06-A8		
			M4 x 0.7	ZPRS-06-B4		—		—		
			M5 x 0.8	ZPRS-06-B5		ZPRS-06-B5		ZPRL-06-B5		
④ Connection thread	Male thread	M6 x 1	—		—		ZPRL-06-B6			
		M8 x 1.25	—		—		ZPRL-06-B8			
		M6 x 1	—		—		ZPRL-08-A6			
	Female thread	M8 x 1	—		—		ZPRL-08-A8			
		M5 x 0.8	—		—		ZPRL-08-B5			
		M6 x 1	—		—		ZPRL-08-B6			
④ Connection thread	Male thread	M8 x 1.25	—		—		ZPRL-08-B8			
		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
① Adapter	Vacuum inlet	For nylon tubing	Male thread	M5 x 0.8	ZPY1-N4-A5		ZPY2-N4-A5			
				M6 x 1	ZPY1-N4-A6		ZPY2-N4-A6		ZPY3-N4-A6	
				M8 x 1	—		—		ZPY3-N4-A8	
			Female thread	M4 x 0.7	ZPY1-N4-B4		—		—	
				M5 x 0.8	ZPY1-N4-B5		ZPY2-N4-B5		ZPY3-N4-B5	
				M6 x 1	—		ZPY2-N4-B6		ZPY3-N4-B6	
		For soft tubing	Male thread	M5 x 0.8	ZPY1-N6-A5		ZPY2-N6-A5		—	
				M6 x 1	ZPY1-N6-A6		ZPY2-N6-A6		ZPY3-N6-A6	
				M8 x 1	—		—		ZPY3-N6-A8	
			Female thread	M4 x 0.7	ZPY1-N6-B4		—		—	
				M5 x 0.8	ZPY1-N6-B5		ZPY2-N6-B5		ZPY3-N6-B5	
				M6 x 1	—		ZPY2-N6-B6		ZPY3-N6-B6	
	Connection thread	Male thread	M5 x 0.8	ZPY1-U4-A5		ZPY2-U4-A5		—		
			M6 x 1	ZPY1-U4-A6		ZPY2-U4-A6		ZPY3-U4-A6		
			M8 x 1	—		—		ZPY3-U4-A8		
			Female thread	M4 x 0.7	ZPY1-U4-B4		—		—	
				M5 x 0.8	ZPY1-U4-B5		ZPY2-U4-B5		ZPY3-U4-B5	
				M6 x 1	—		ZPY2-U4-B6		ZPY3-U4-B6	
		Female thread	M8 x 1.25	—		—		ZPY3-U4-B8		
			M5 x 0.8	ZPY1-U6-A5		ZPY2-U6-A5		—		
			M6 x 1	ZPY1-U6-A6		ZPY2-U6-A6		ZPY3-U6-A6		
			M8 x 1	—		—		ZPY3-U6-A8		
			Male thread	M4 x 0.7	ZPY1-U6-B4		—		—	
				M5 x 0.8	ZPY1-U6-B5		ZPY2-U6-B5		ZPY3-U6-B5	
M6 x 1	—			ZPY2-U6-B6		ZPY3-U6-B6				
Female thread	M8 x 1.25	—		—		ZPY3-U6-B8				
	M5 x 0.8	NTJ-015A		NTJ-015A		—				
	M6 x 1	SNJ-006C		SNJ-006C		SNJ-006C				
② Mounting nut (Single unit)		M8 x 1	—		—		RB08J			