



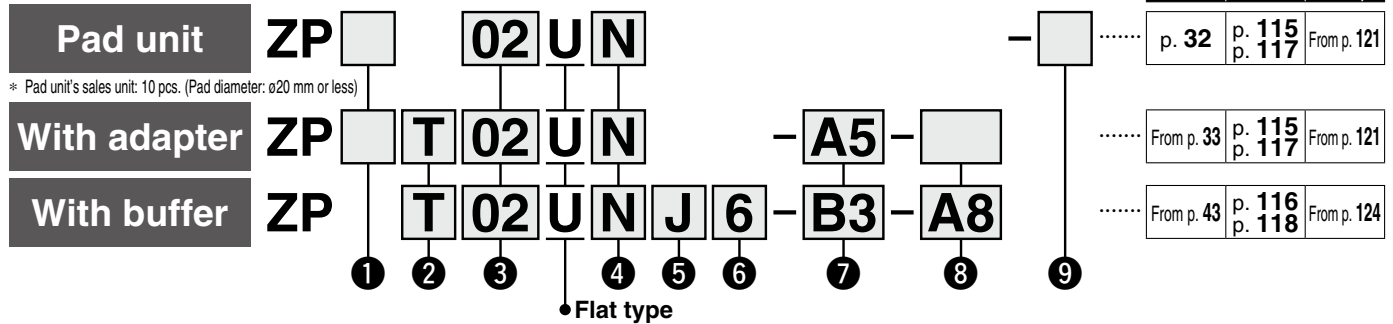
Basic Pad

Flat Type

ZP Series



How to Order



Dimensions/Models	Construction	Mounting Bracket Assembly
p. 32	p. 115 p. 117	From p. 121

From p. 33	p. 115 p. 117	From p. 121
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From p. 43	p. 116 p. 118	From p. 124
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① Adapter (Lock ring) material

Nil	Brass
S*1	Stainless steel (Stainless steel 304)

② Vacuum inlet direction

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

③ Pad diameter

02	ø2	16	ø16
04	ø4	20	ø20
06	ø6	25	ø25
08	ø8	32	ø32
10	ø10	40	ø40
13	ø13	50	ø50

④ Material

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

⑤ Buffer specification

J	Rotating
K	Non-rotating
JN*1	Rotating (Without buffer plate)
KN*1	Non-rotating (Without buffer plate)

⑥ Buffer stroke

Stroke [mm]	Pad diameter [mm]											
	ø2	ø4	ø6	ø8	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
6	●	●	●	●	—	—	—	—	—	—	—	—
10	●	●	●	●	●	—	—	—	—	—	—	—
15	●	●	●	●	—	—	—	—	—	—	—	—
20	—	—	—	—	●	●	●	●	●	●	●	●
25	●	●	●	●	—	—	—	—	—	—	—	—
30	—	—	—	—	●	●	●	●	●	●	●	●
40	—	—	—	—	●	●	●	●	●	●	—	—
50	—	—	—	—	●	●	●	●	●	●	●	●

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

With adapter

⑦ Vacuum inlet
 ○: ZP□/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]			
			ø2 to ø8	ø10 to ø16	ø20 to ø32	ø40, ø50
Male thread	A5	M5 x 0.8	○*1	—	—	—
	AS5	M5 x 0.8	—	○*1	○*1	—
	A6	M6 x 1	○*1	—	—	—
	AS6	M6 x 1	—	○*1	○*1	○*1
	AG01	G1/8	—	○*1	○*1	—
	AG02	G1/4	—	—	○*1	—
Female thread	Nil	M3 x 0.5	—	○●Connection thread: AS(A6)	○●Connection thread: A6)	○●Connection thread: A6)
		M5 x 0.8	—	○●Connection thread: A8)	○●Connection thread: A8)	
	B4	M4 x 0.7	○*1	—	—	—
	B5	M5 x 0.8	○*1	○*1	○*1	—
	B6	M6 x 1	—	○*1	○*1	○*1
	B8	M8 x 1.25	—	—	○*1	○*1
	BG01	G1/8	—	○*1	○*1	—
	BG02	G1/4	—	—	○*1	—
	B01	Rc1/8	—	○*1	○*1	○*1
	N01*4	NPT1/8	—	○*1	○*1	○*1
	T01*4	NPTF1/8	—	○*1	○*1	○*1
One-touch fitting	04	ø4	●	●	●	—
	06	ø6	●	●	●	●
	08	ø8	—	—	●	●
Barb fitting	N4	For ø4 nylon tubing*2	△	△	△	—
	N6	For ø6 nylon tubing*2	△	△	△	△
	U4	For ø4 soft tubing*3	△	△	△	—
	U6	For ø6 soft tubing*3	△	△	△	△

*1 Use the connection thread. *2 Nylon tube piping *3 Soft nylon/Polyurethane tube piping *4 Not compatible with stainless steel materials

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

Type	Symbol	Size	Pad diameter [mm]			
			ø2 to ø8	ø10 to ø16	ø20 to ø32	ø40, ø50
Male thread	A5	M5 x 0.8	●△	○*1●△	—	—
	A6	M6 x 1	—	○*1●△	—	—
	A8	M8 x 1	—	—	○*1●△	○*1●△
Female thread	B4	M4 x 0.7	●△	—	—	—
	B5	M5 x 0.8	●△	●△	—	—
	B6	M6 x 1	—	●△	●△	●△
	B8	M8 x 1.25	—	—	●△	●△

*1 ○: ZP□/Vertical comes with a vacuum inlet (female thread).

With buffer

⑦ Vacuum inlet
 ○: ZPT/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]			
			ø2 to ø8	ø10 to ø16	ø20 to ø32	ø40, ø50
Female thread	B3	M3 x 0.5	○	—	—	—
	B5	M5 x 0.8	○	○	—	—
	B01	Rc1/8	—	—	—	○
	N01	NPT1/8	—	—	—	○
	T01	NPTF1/8	—	—	—	○
One-touch fitting	04	ø4	○●	○●	○●	—
	06	ø6	○●	○●	○●	○●
	08	ø8	—	—	●	○●
Barb fitting	N4	For ø4 nylon tubing*1	○△	△	△	—
	N6	For ø6 nylon tubing*1	△	○△	○△	○△
	U4	For ø4 soft tubing*2	○△	△	△	—
	U6	For ø6 soft tubing*2	△	○△	○△	○△

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

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

Type	Symbol	Size	Pad diameter [mm]			
			ø2 to ø8	ø10 to ø16	ø20 to ø32	ø40, ø50
Male thread	A8	M8 x 1	○●△	—	—	—
	A10	M10 x 1	—	○●△	○●△	—
	A14	M14 x 1	—	—	—	○●△

⑨ Lock ring

Symbol	Pad diameter [mm]	
	ø2 to ø8	ø10 to ø50
Nil	—	With lock ring
X19	None*1	Without lock ring

*1 The lock ring cannot be used for pad diameters ø2 to ø8.

Lock ring unit

Part no.	Pad diameter [mm]
ZP□L1	ø10 to ø16
ZP□L2	ø20 to ø32
ZP□L3	ø40, ø50

□: Nil/Brass S/Stainless steel

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

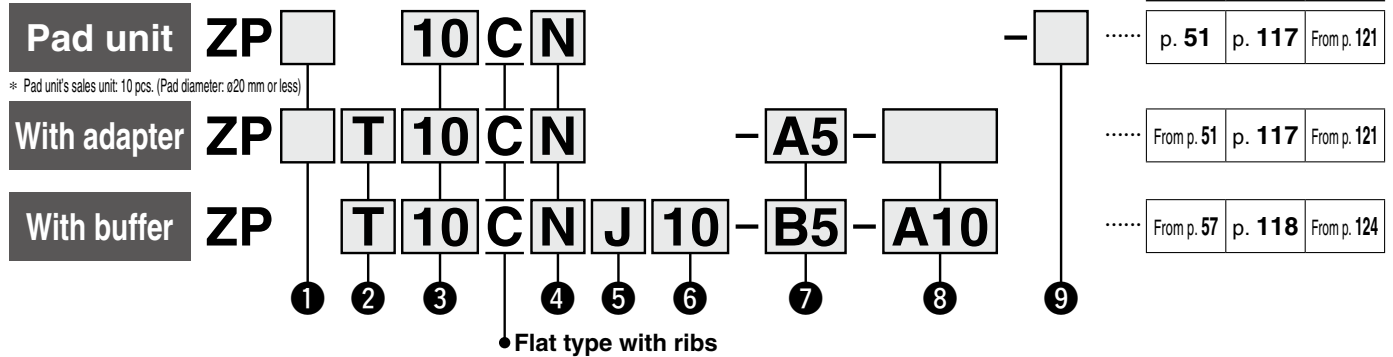


Basic Pad

Flat Type with Ribbs

ZP Series

How to Order



1 Adapter (Lock ring) material

Nil	Brass
S*1	Stainless steel (Stainless steel 304)

*1 Only applicable to the pad unit (with lock ring) and the pad with adapter (Vacuum inlet direction: Vertical (Option "T"))

2 Vacuum inlet direction

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

3 Pad diameter

10	ø10
13	ø13
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50

4 Material

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

5 Buffer specification

J	Rotating
K	Non-rotating

6 Buffer stroke

Stroke [mm]	Pad diameter [mm]							
	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
10	●	●	●	●	●	●	●	●
20	●	●	●	●	●	●	●	●
30	●	●	●	●	●	●	●	●
40	●	●	●	●	●	●	—	—
50	●	●	●	●	●	●	●	●

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

With adapter

7 Vacuum inlet
 ○: ZP□/Vertical ●: ZPR/Lateral (With One-touch fitting) △: ZPY/Lateral (With barb fitting)

Type	Symbol	Size	Pad diameter [mm]		
			ø10 to ø16	ø20 to ø32	ø40, ø50
Male thread	AS5	M5 x 0.8	○*4	○*4	—
	AS6	M6 x 1	○*4	○*4	○*4
	AG01	G1/8	○*4	○*4	—
	AG02	G1/4	—	—	○*4
Female thread	Nil	M3 x 0.5	○ (Connection thread: A5/A6)	○ (Connection thread: A6)	○ (Connection thread: A6)
	Nil	M5 x 0.8	—	○ (Connection thread: A8)	○ (Connection thread: A8)
	B5	M5 x 0.8	○*4	○*4	—
	B6	M6 x 1	○*4	○*4	○*4
	B8	M8 x 1.25	—	○*4	○*4
	BG01	G1/8	○*4	○*4	—
	BG02	G1/4	—	—	○*4
	B01	Rc1/8	○*4	○*4	○*4
	N01*3	NPT1/8	○*4	○*4	○*4
	T01*3	NPTF1/8	○*4	○*4	○*4
One-touch fitting	04	ø4	●	●	—
	06	ø6	●	●	●
	08	ø8	—	●	●
Barb fitting	N4	For ø4 nylon tubing*1	△	△	—
	N6	For ø6 nylon tubing*1	△	△	△
	U4	For ø4 soft tubing*2	△	△	—
	U6	For ø6 soft tubing*2	△	△	△

*1 Nylon tube piping *2 Soft nylon/Polyurethane tube piping
 *3 Not compatible with stainless steel materials *4 Use the connection thread.

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

Type	Symbol	Size	Pad diameter [mm]		
			ø10 to ø16	ø20 to ø32	ø40, ø50
Male thread	A5	M5 x 0.8	○*1●△	—	—
	A6	M6 x 1	○*1●△	○*1●△	○*1●△
	A8	M8 x 1	—	○*1●△	○*1●△
	B5	M5 x 0.8	●△	●△	—
Female thread	B6	M6 x 1	●△	●△	●△
	B8	M8 x 1.25	—	●△	●△

*1 ○: ZP□/Vertical comes with a vacuum inlet (female thread).

With buffer

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

Type	Symbol	Size	Pad diameter [mm]		
			ø10 to ø16	ø20 to ø32	ø40, ø50
Female thread	B5	M5 x 0.8	○	○	○
	B01	Rc1/8	—	—	○
	N01	NPT1/8	—	—	○
	T01	NPTF1/8	—	—	○
One-touch fitting	04	ø4	○●	○●	—
	06	ø6	○●	○●	○●
	08	ø8	—	●	○●
Barb fitting	N4	For ø4 nylon tubing*1	△	△	—
	N6	For ø6 nylon tubing*1	○△	○△	○△
	U4	For ø4 soft tubing*2	△	△	—
	U6	For ø6 soft tubing*2	○△	○△	○△

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

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

Type	Symbol	Size	Pad diameter [mm]		
			ø10 to ø16	ø20 to ø32	ø40, ø50
Male thread	A10	M10 x 1	○●△	○●△	—
	A14	M14 x 1	—	—	○●△

9 Lock ring

Symbol	Pad diameter	
	Nil	All sizes
X19	Without lock ring	

Part no.	Pad diameter [mm]
ZP□L1	ø10 to ø16
ZP□L2	ø20 to ø32
ZP□L3	ø40, ø50

□: Nil/Brass S/Stainless steel

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

Model Selection
 ZP Basic
 Flat Type
 Flat Type with Ribbs
 Flat, Ball Joint Type
 Bellows Type
 Thin Flat Type
 Thin Flat Type with Ribbs
 Deep Type
 Construction
 Mounting Bracket Assembly
 Precautions



Basic Pad

Flat Type Ball Joint Type

ZP Series



How to Order

	Dimensions/Models	Construction	Mounting Bracket Assembly
Pad unit ZP 10 F N	p. 62	p. 119	From p. 127
With adapter ZP T 10 F N - B5 - A8	From p. 62	p. 119	From p. 127
With buffer ZP T 10 F N J 10 - B5 - A10	From p. 65	p. 120	From p. 129

① ② ③ ④ ⑤ ⑥ ⑦
 • Ball joint type

① Vacuum inlet direction

T	Vertical
R	Lateral (With One-touch fitting)

② Pad diameter

10	ø10
13	ø13
16	ø16
20	ø20
25	ø25
32	ø32
40	ø40
50	ø50

⑤ Buffer stroke

Stroke [mm]	Pad diameter [mm]	
	ø10 to ø16	ø20 to ø50
10	●	●
20	●	●
30	●	●
40	●	—
50	●	●

③ Material

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

④ Buffer specification

J	Rotating
K	Non-rotating

*1 Uses a material compliant with a dissolution test of the FDA (U.S. Food and Drug Administration) regulation 21CFR§177.2600 for "Rubber articles intended for repeated use."

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

With adapter

⑥ Vacuum inlet/⑦ Connection thread

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

⑥ Vacuum inlet			⑦ Connection thread			Pad diameter [mm]		
Type	Symbol	Size	Type	Symbol	Size	ø10 to ø16	ø20 to ø32	ø40, ø50
Female thread	B5	M5 x 0.8	Male thread	A8	M8 x 1	○	—	—
				A10	M10 x 1	—	○	—
				A14	M14 x 1	—	—	○
—	Nil	—*1	Female thread	B5	M5 x 0.8	○	○	—
				B8	M8 x 1.25	—	○	○
				B01	Rc1/8	—	○	○
				N01	NPT1/8	—	○	○
				T01	NPTF1/8	—	○	○
				B5	M5 x 0.8	●	—	—
One-touch fitting	04	ø4	Female thread	B8	M8 x 1.25	—	●	●
				B5	M5 x 0.8	—	●	●
				B5	M5 x 0.8	—	●	●
				B8	M8 x 1.25	—	●	●

*1 Use the connection thread.

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

With buffer

⑥ Vacuum inlet

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

Type	Symbol	Size	Pad diameter [mm]		
			ø10 to ø16	ø20 to ø32	ø40, ø50
Female thread	B5	M5 x 0.8	○	—	—
	B01	Rc1/8	—	○	○
	N01	NPT1/8	—	○	○
	T01	NPTF1/8	—	○	○
One-touch fitting	04	ø4	○●	—	—
	06	ø6	○●	○●	○●
	08	ø8	—	○●	○●

⑦ Connection thread ○: ZPT/Vertical ●: ZPR/Lateral

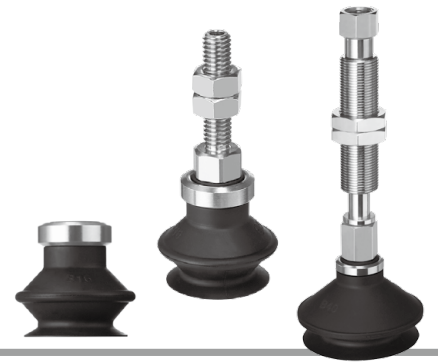
Type	Symbol	Size	Pad diameter [mm]		
			ø10 to ø16	ø20 to ø32	ø40, ø50
Male thread	A10	M10 x 1	○●	—	—
	A14	M14 x 1	—	○●	○●

Lock ring unit

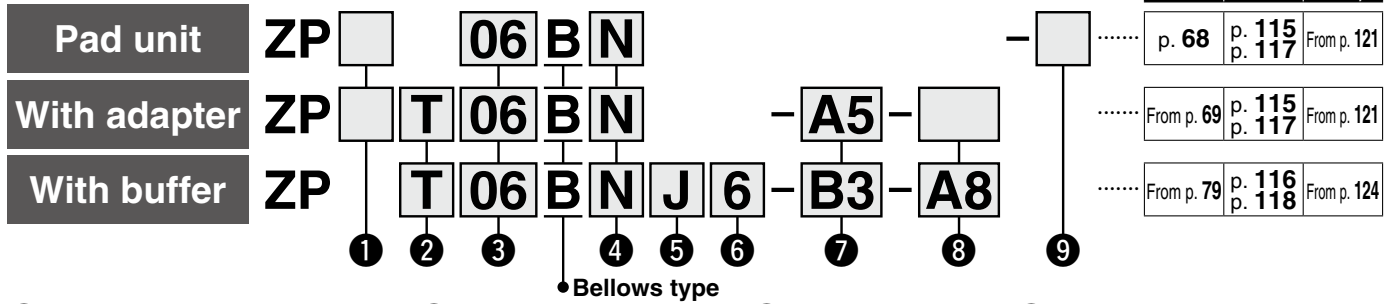
Part no.	Pad diameter [mm]
ZPLF	ø40, ø50



Basic Pad Bellows Type ZP Series



How to Order



1 Adapter (Lock ring) material

Nil	Brass
S*1	Stainless steel (Stainless steel 304)

*1 Only applicable to the pad unit (with lock ring) and the pad with adapter (Vacuum inlet direction: Vertical (Option "T"))

2 Vacuum inlet direction

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

3 Pad diameter

06	ø6	20	ø20
08	ø8	25	ø25
10	ø10	32	ø32
13	ø13	40	ø40
16	ø16	50	ø50

4 Material

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

5 Buffer specification

J	Rotating
K	Non-rotating
JN*1	Rotating (Without buffer plate)
KN*1	Non-rotating (Without buffer plate)

*1 Only for pad diameters ø6 and ø8

6 Buffer stroke

Stroke [mm]	Pad diameter [mm]									
	ø6	ø8	ø10	ø13	ø16	ø20	ø25	ø32	ø40	ø50
6	●	●	—	—	—	—	—	—	—	—
10	●	●	●	●	●	●	●	●	●	●
15	●	●	—	—	—	—	—	—	—	—
20	—	—	●	●	●	●	●	●	●	●
25	●	●	—	—	—	—	—	—	—	—
30	—	—	●	●	●	●	●	●	●	●
40	—	—	●	●	●	●	●	●	—	—
50	—	—	●	●	●	●	●	●	●	●

*1 Uses a material compliant with a dissolution test of the FDA (U.S. Food and Drug Administration) regulation 21CFR§177.2600 for "Rubber articles intended for repeated use."

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

With adapter

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

Type	Symbol	Size	Pad diameter [mm]				
			ø6, ø8	ø10 to ø16	ø20 to ø32	ø40, ø50	
Male thread	A5	M5 x 0.8	○*1	—	—	—	
	AS5	M5 x 0.8	—	○*1	○*1	—	
	A6	M6 x 1	○*1	—	—	—	
	AS6	M6 x 1	—	○*1	○*1	○*1	
	AG01	G1/8	—	○*1	○*1	—	
	AG02	G1/4	—	—	○*1	—	
Female thread	Nil	M3 x 0.5	—	○Connection thread: AS(A6)	○Connection thread: Ab	○Connection thread: Ab	
		M5 x 0.8	—	○Connection thread: Ab	○Connection thread: Ab		
	B4	M4 x 0.7	○*1	—	—		
	B5	M5 x 0.8	○*1	○*1	○*1		
	B6	M6 x 1	○*1	○*1	○*1		
	B8	M8 x 1.25	—	○*1	○*1		
	BG01	G1/8	—	○*1	—		
	BG02	G1/4	—	—	○*1		
	B01	Rc1/8	—	○*1	○*1		
	N01*4	NPT1/8	—	○*1	○*1		
	T01*4	NPTF1/8	—	○*1	○*1		
	One-touch fitting	04	ø4	●	●	●	
06		ø6	●	●	●		
08		ø8	—	●	●		
Barb fitting	N4	For ø4 nylon tubing*2	△	△	△		
	N6	For ø6 nylon tubing*2	△	△	△		
	U4	For ø4 soft tubing*3	△	△	△		
	U6	For ø6 soft tubing*3	△	△	△		

*1 Use the connection thread. *2 Nylon tube piping *3 Soft nylon/Polyurethane tube piping *4 Not compatible with stainless steel materials

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

Type	Symbol	Size	Pad diameter [mm]				
			ø6, ø8	ø10 to ø16	ø20 to ø32	ø40, ø50	
Male thread	A5	M5 x 0.8	●△	○*1●△	—	—	
	A6	M6 x 1	●△	○*1●△	—	—	
	A8	M8 x 1	—	—	○*1●△	○*1●△	
	B4	M4 x 0.7	●△	—	—	—	
Female thread	B5	M5 x 0.8	●△	●△	●△	—	
	B6	M6 x 1	—	●△	●△	—	
	B8	M8 x 1.25	—	—	●△	●△	

*1 ○: ZPT/Vertical comes with a vacuum inlet (female thread).

With buffer

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

Type	Symbol	Size	Pad diameter [mm]				
			ø6, ø8	ø10 to ø16	ø20 to ø32	ø40, ø50	
Female thread	B3	M3 x 0.5	○	—	—	—	
	B5	M5 x 0.8	○	○	○	○	
	B01	Rc1/8	—	—	—	○	
	N01	NPT1/8	—	—	—	○	
	T01	NPTF1/8	—	—	—	○	
One-touch fitting	04	ø4	○●	○●	○●	○●	
	06	ø6	○●	○●	○●	○●	
	08	ø8	—	—	●	○●	
Barb fitting	N4	For ø4 nylon tubing*1	○△	△	△	—	
	N6	For ø6 nylon tubing*1	△	○△	○△	○△	
	U4	For ø4 soft tubing*2	○△	△	△	—	
	U6	For ø6 soft tubing*2	△	○△	○△	○△	

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

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

Type	Symbol	Size	Pad diameter [mm]				
			ø6, ø8	ø10 to ø16	ø20 to ø32	ø40, ø50	
Male thread	A8	M8 x 1	○●△	—	—	—	
	A10	M10 x 1	—	○●△	○●△	—	
	A14	M14 x 1	—	—	—	○●△	

9 Lock ring

Symbol	Pad diameter [mm]	
	ø6, ø8	ø10 to ø50
Nil	With lock ring	—
X19	Without lock ring	—

*1 The lock ring cannot be used for pad diameters ø6 and ø8.

Lock ring unit

Part no.	Pad diameter [mm]
ZP□L1	ø10 to ø16
ZP□L2	ø20 to ø32
ZP□L3	ø40, ø50

□: Nil/Brass S/Stainless steel

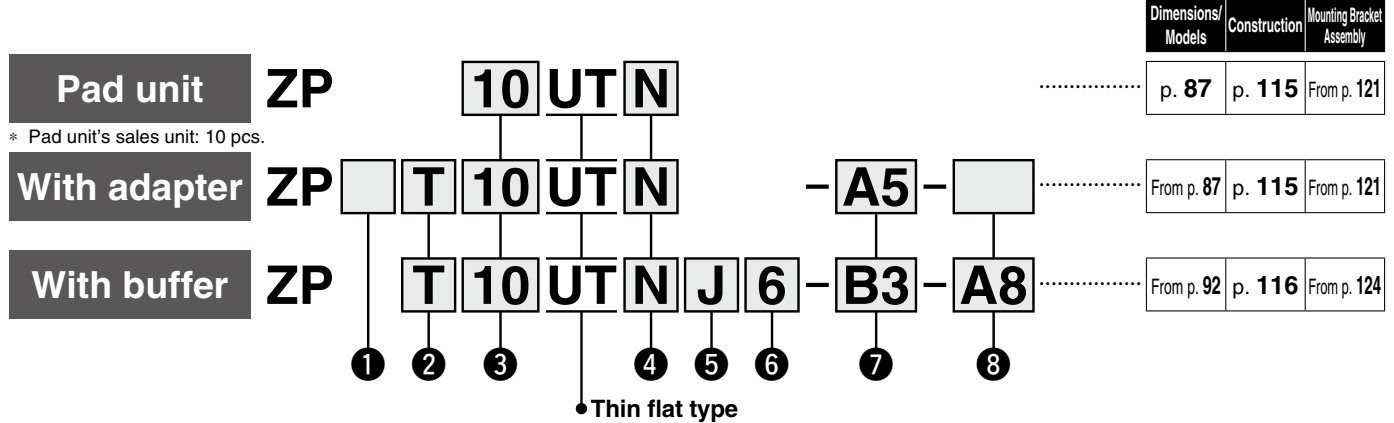
* The pad, lock ring, mounting nut, fitting, and buffer plate are shipped together but do not come assembled.



Basic Pad Thin Flat Type ZP Series



How to Order



① Adapter material

Nil	Brass
S*1	Stainless steel (Stainless steel 304)

*1 Only applicable to the pad with adapter (Vacuum inlet direction: Vertical (Option "T"))

② Vacuum inlet direction

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

③ Pad diameter

10	ø10
13	ø13
16	ø16

④ Material

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

*1 Uses a material compliant with a dissolution test of the FDA (U.S. Food and Drug Administration) regulation 21CFR§177.2600 for "Rubber articles intended for repeated use."

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

⑤ Buffer specification

J	Rotating
K	Non-rotating
JN	Rotating (Without buffer plate)
KN	Non-rotating (Without buffer plate)

⑥ Buffer stroke

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

With adapter

⑦ Vacuum inlet

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

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

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

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

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

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

With buffer

⑦ Vacuum inlet

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

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

*1 Nylon tube piping

*2 Soft nylon/Polyurethane tube piping

⑧ Connection thread

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

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball, Joint Type

Belows Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions



Basic Pad

Thin Flat Type with Ribs

ZP Series



How to Order

	Dimensions/Models	Construction	Mounting Bracket Assembly
Pad unit ZP	10 CT N	p. 96	p. 115 From p. 121
With adapter ZP	T 10 CT N - A5	From p. 96 p. 115	From p. 121
With buffer ZP	T 10 CT N J 6 - B3 - A8	From p. 101 p. 116	From p. 124

① ② ③ ④ ⑤ ⑥ ⑦ ⑧
● Thin flat type with ribs

① Adapter material

Nil	Brass
S*1	Stainless steel (Stainless steel 304)

*1 Only applicable to the pad with adapter (Vacuum inlet direction: Vertical (Option "T"))

② Vacuum inlet direction

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

③ Pad diameter

10	ø10
13	ø13
16	ø16

④ Material

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

*1 Uses a material compliant with a dissolution test of the FDA (U.S. Food and Drug Administration) regulation 21CFR§177.2600 for "Rubber articles intended for repeated use."

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

⑤ Buffer specification

J	Rotating
K	Non-rotating
JN	Rotating (Without buffer plate)
KN	Non-rotating (Without buffer plate)

⑥ Buffer stroke

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

With adapter

⑦ Vacuum inlet

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

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

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

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

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

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

With buffer

⑦ Vacuum inlet

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

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

*1 Nylon tube piping

*2 Soft nylon/Polyurethane tube piping

⑧ Connection thread

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

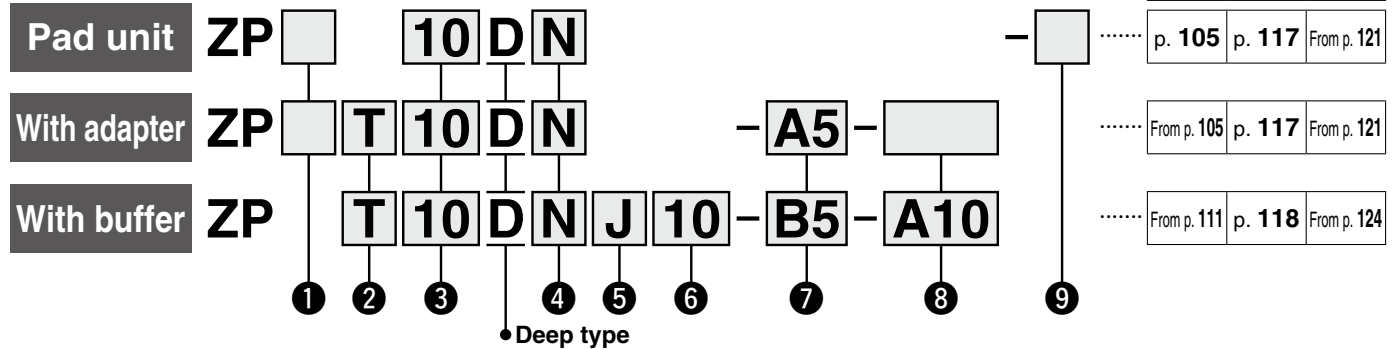
Type	Symbol	Size	Pad diameter
			All sizes
Male thread	A8	M8 x 1	○●△



Basic Pad Deep Type ZP Series



How to Order



1 Adapter (Lock ring) material

Nil	Brass
S*1	Stainless steel (Stainless steel 304)

*1 Only applicable to the pad unit (with lock ring) and the pad with adapter (Vacuum inlet direction: Vertical (Option "T"))

2 Vacuum inlet direction

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

3 Pad diameter

10	ø10
16	ø16
25	ø25
40	ø40

4 Material

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

*1 Uses a material compliant with a dissolution test of the FDA (U.S. Food and Drug Administration) regulation 21CFR§177.2600 for "Rubber articles intended for repeated use."

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

5 Buffer specification

J	Rotating
K	Non-rotating

6 Buffer stroke

Stroke [mm]	Pad diameter [mm]			
	ø10	ø16	ø25	ø40
10	●	●	●	●
20	●	●	●	●
30	●	●	●	●
40	●	●	●	—
50	●	●	●	●

With adapter

7 Vacuum inlet

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

Type	Symbol	Size	Pad diameter [mm]		
			ø10, ø16	ø25	ø40
Male thread	AS5	M5 x 0.8	○*4	○*4	—
	AS6	M6 x 1	○*4	○*4	○*4
	AG01	G1/8	○*4	○*4	—
	AG02	G1/4	—	—	○*4
Female thread	Nil	M3 x 0.5	○ (Connection thread: A5/A6)	○ (Connection thread: A6)	○ (Connection thread: A6)
		M5 x 0.8	—	○ (Connection thread: A8)	○ (Connection thread: A8)
	B5	M5 x 0.8	○*4	○*4	—
	B6	M6 x 1	○*4	○*4	○*4
	B8	M8 x 1.25	—	○*4	○*4
	BG01	G1/8	○*4	○*4	—
	BG02	G1/4	—	—	○*4
	B01	Rc1/8	○*4	○*4	○*4
	N01*3	NPT1/8	○*4	○*4	○*4
	T01*3	NPTF1/8	○*4	○*4	○*4
One-touch fitting	04	ø4	●	●	—
	06	ø6	●	●	●
	08	ø8	—	●	●
Barb fitting	N4	For ø4 nylon tubing*1	△	△	—
	N6	For ø6 nylon tubing*1	△	△	△
	U4	For ø4 soft tubing*2	△	△	—
	U6	For ø6 soft tubing*2	△	△	△

*1 Nylon tube piping *2 Soft nylon/Polyurethane tube piping
*3 Not compatible with stainless steel materials *4 Use the connection thread.

8 Connection thread

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

Type	Symbol	Size	Pad diameter [mm]		
			ø10, ø16	ø25	ø40
Male thread	A5	M5 x 0.8	○*1●△	—	—
	A6	M6 x 1	○*1●△	○*1●△	○*1●△
	A8	M8 x 1	—	○*1●△	○*1●△
Female thread	B5	M5 x 0.8	●△	●△	—
	B6	M6 x 1	●△	●△	●△
	B8	M8 x 1.25	—	●△	●△

*1 ○: ZP□/Vertical comes with a vacuum inlet (female thread).

With buffer

7 Vacuum inlet

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

Type	Symbol	Size	Pad diameter [mm]			
			ø10, ø16	ø25	ø40	
Female thread	B5	M5 x 0.8	○	○	○	
	B01	Rc1/8	—	—	○	
	N01	NPT1/8	—	—	○	
	T01	NPTF1/8	—	—	○	
One-touch fitting	04	ø4	○●	○●	—	
	06	ø6	○●	○●	○●	
	08	ø8	—	●	○●	
Barb fitting	N4	For ø4 nylon tubing*1	△	△	—	
	N6	For ø6 nylon tubing*1	○△	○△	○△	
	U4	For ø4 soft tubing*2	△	△	—	
	U6	For ø6 soft tubing*2	○△	○△	○△	

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

8 Connection thread

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

Type	Symbol	Size	Pad diameter [mm]		
			ø10, ø16	ø25	ø40
Male thread	A10	M10 x 1	○●△	○●△	—
	A14	M14 x 1	—	—	○●△

9 Lock ring

Symbol	Pad diameter	
	Nil	All sizes
X19	Without lock ring	

Lock ring unit

Part no.	Pad diameter [mm]
ZP□L1	ø10, ø16
ZP□L2	ø25
ZP□L3	ø40

□: Nil/Brass S/Stainless steel

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

Model Selection

ZP Basic

Flat Type

Flat Type with Ribs

Flat, Ball, Joint Type

BelloWS Type

Thin Flat Type

Thin Flat Type with Ribs

Deep Type

Construction

Mounting Bracket Assembly

Precautions