High Rigidity Pad *ZP3E Series* RoHS

ø32, ø40, ø50, ø63, ø80, ø100, ø125

Flat Type with Groove, Bellows Type with Ribs and Groove

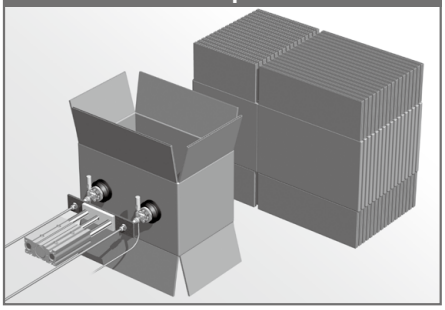
Stable suction position, Improved ease of removal

Number of mounting screws reduced (4 pcs. → 1 pc.)

Pad and metal parts can be disposed of separately.

Improved uneven workpiece surface suction

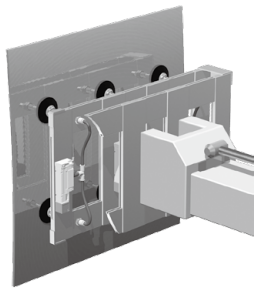
For carton formers/palletizers



For the adsorption of glass workpieces

For use where adsorption marks must not be left on workpieces

For the adsorption of car bodies



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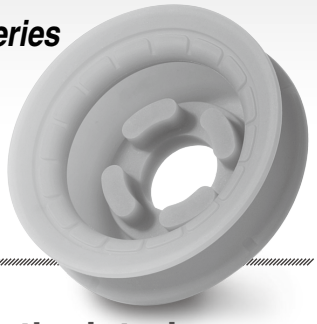
High Rigidity Pad *ZP3E Series*



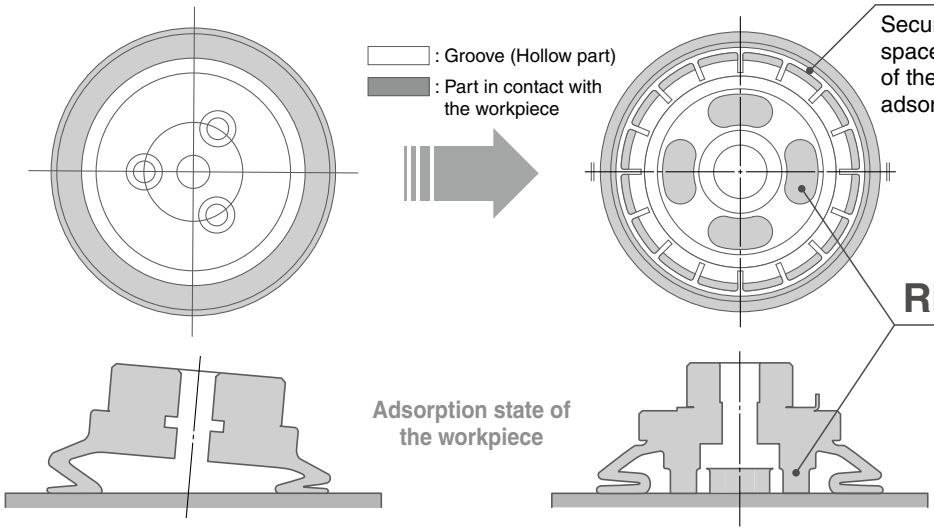
Stability of suction position

Groove and rib formed to adsorb with entire surface

- **Groove on the adsorption surface secures the interior space.**
- **The ribs reduce inclinations during the transport of workpieces.**

ZP (Existing model/Bellows pad)

ZP3E (Bellows pad)



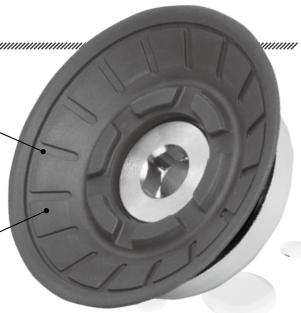
Improved ease of removal

With groove

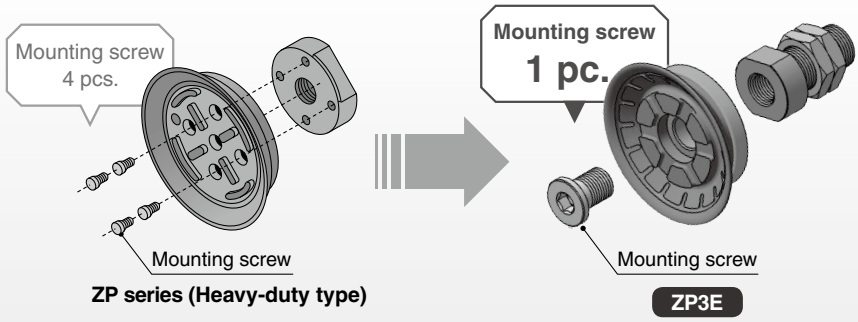
The dents and bumps on the adsorption surface prevent workpieces from sticking to the pad. This facilitates easy removal.

Shot-blasted

Micro-dents and bumps are formed on the adsorption surface. Workpieces can be removed easily.



Reduced number of mounting screws



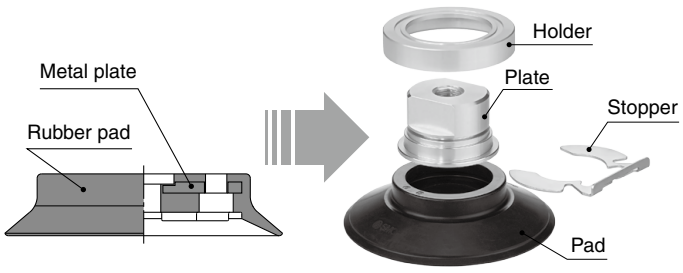
ZP series (Heavy-duty type)

ZP3E

Can be disposed of separately

The rubber pad and metal parts can be separated.

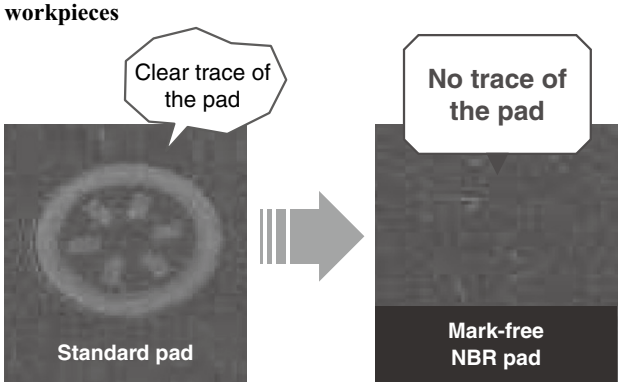
The metal parts and rubber parts can be separated completely.



ZP series (Heavy-duty type) ZP3E

Mark-free

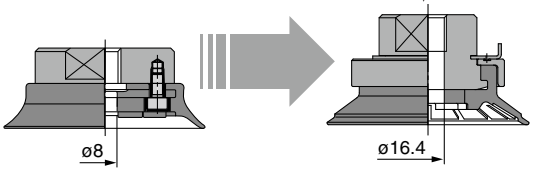
For use where adsorption marks must not be left on workpieces



Suction flow rate increased

Applicable to workpieces with large suction flow rates and high permeability and to vacuum blow pumps with large suction flow rates

Double suction port size
(Pad diameter: ø63, ø80 Compared with the ZP series)



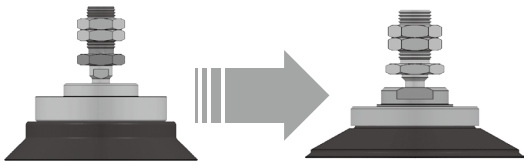
	ZP (Existing model)		ZP3E	
Pad diameter	Suction port	Area [mm²]	Suction port	Area [mm²]
ø32	—	—	ø8.4	55.4
ø40	ø6	28.3		
ø50				
ø63	ø8	50.2	ø16.4	211
ø80				
ø100	ø10	78.52		
ø125				

Ball joint type pad with reduced weight

Weight reduced by changes to the internal structure and materials

∗ The pad material weighed was NBR.

Weight reduced by up to 290 g

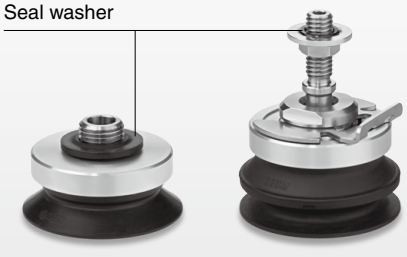


	ZP2/Flat type	ZP3E/Flat type with groove
Pad diameter	Weight [g]	Weight [g]
ø32	—	56
ø40	91	57
ø50	110	75
ø63	230	150
ø80	270	160
ø100	430	190
ø125	560	270

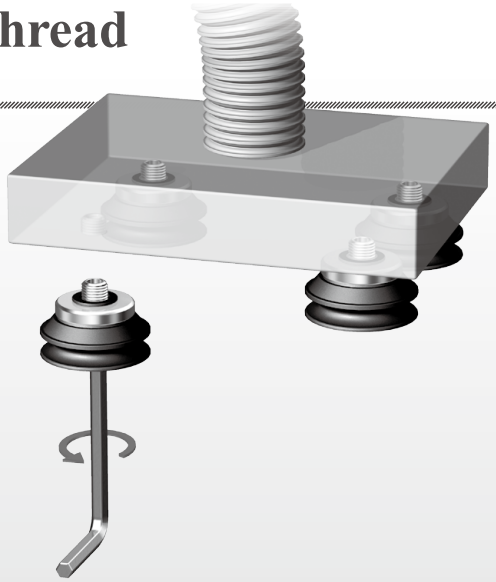
Direct mounting type with a male thread has been added.

Direct mounting

- Reduced height
- Easy mounting due to tightening only requiring a hexagonal wrench



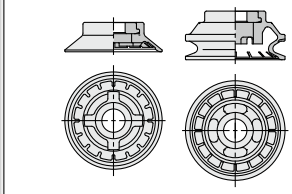
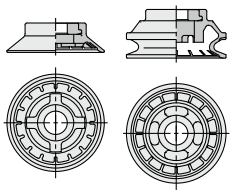
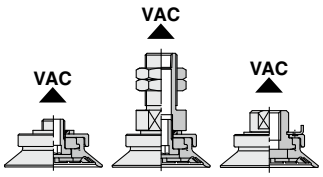
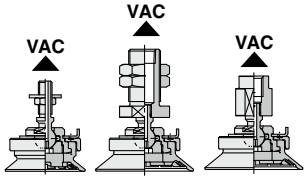
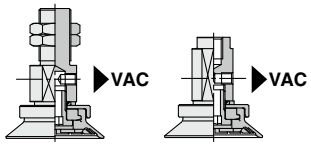
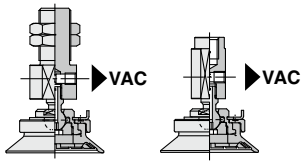
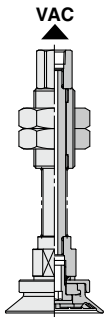
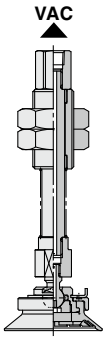
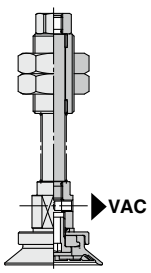
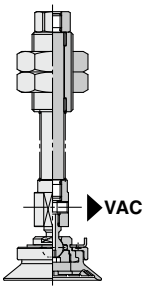
ZP3E



Variations

Standard Type

Ball Joint Type

Vacuum inlet direction		Vacuum inlet direction	Standard Type: Flat type with groove	Standard Type: Bellows type with ribs and groove	Ball Joint Type: Vacuum inlet direction	Ball Joint Type: Flat type with groove	Ball Joint Type: Bellows type with ribs and groove
Vacuum inlet direction	Single unit		p. 209	p. 221		p. 215	p. 227
Vertical	ZP3E-T With adapter		p. 209 p. 210	p. 221 p. 222		p. 215 p. 216	p. 227 p. 228
Lateral	ZP3E-Y With adapter		p. 211	p. 223		p. 217	p. 229 p. 230
Vertical	ZP3E-T With buffer		p. 212	p. 224		p. 218	p. 231
Lateral	ZP3E-Y With buffer		p. 213	p. 225		p. 219	p. 232

High Rigidity Pad *ZP3E Series*
Specifications

Pad Material

Material	NBR (Nitrile rubber)	Silicone rubber*1	Urethane rubber	FKM (Fluoro rubber)	Mark-free NBR
Color of rubber	Black	White	Brown	Black	
Rubber hardness (±5°)	A55/S	A50/S		A60/S	
Identification (Symbol)	—	—	—	Ⓕ	—

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

Adapter Specifications

Vertical

Vacuum Inlet Direction **Vertical** T Type/ZP3E-T

Connection		Male thread				Female thread	
Pad diameter		ø32 to ø50		ø63 to ø125		ø32 to ø50	ø63 to ø125
Connection thread		M10 x 1	M14 x 1	M16 x 1.5	M16 x 1.5	M8 x 1.25 M10 x 1.5	M12 x 1.75 M18 x 1.5
Vacuum inlet	Female thread	Use the connection thread.	Rc1/8	Use the connection thread.	Rc1/8	Use the connection thread.	Use the connection thread.

Lateral

Vacuum Inlet Direction Lateral Y Type/ZP3E-Y

Connection		Male thread		Female thread	
Pad diameter		ø32 to ø50	ø63 to ø125	ø32 to ø50	ø63 to ø125
Connection thread		M14 x 1	M16 x 1.5	M8 x 1.25	M12 x 1.75
Vacuum inlet	Female thread	M5 x 0.8	Rc1/8	M5 x 0.8	Rc1/8

Buffer Specifications

Vertical
Lateral

Pad diameter		ø32 to ø50			ø63 to ø125		
Non-rotating specification		JB: Rotating, With bushing					
Stroke [mm]		10	30	50	10	30	50
Connection thread		M18 x 1.5			M22 x 1.5		
Spring reactive force [N]	At 0 stroke	5.0			10.0		
	At full stroke	6.5	8.5	10.5	11.5	13.5	15.5

Adapter Specifications (Ball Joint Type)

Ball joint rotating angle	30°

Vertical

Vacuum Inlet Direction Vertical T Type/ZP3E-TF

Connection		Male thread				Female thread	
Pad diameter		ø32 to ø50		ø63 to ø125		ø32 to ø50	ø63 to ø125
Connection thread		M6 x 1	M14 x 1	M12 x 1.25	M16 x 1.5	M8 x 1.25	M12 x 1.75
Vacuum inlet	Female thread	Use the connection thread.	Rc1/8	Use the connection thread.	Rc1/8	Use the connection thread.	Use the connection thread.

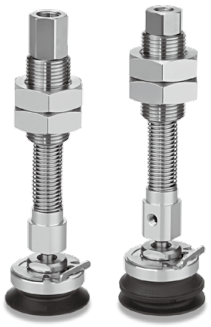
Lateral

Vacuum Inlet Direction Lateral Y Type/ZP3E-YF

Connection		Male thread		Female thread	
Pad diameter		ø32 to ø50	ø63 to ø125	ø32 to ø50	ø63 to ø125
Connection thread		M14 x 1	M16 x 1.5	M8 x 1.25	M12 x 1.75
Vacuum inlet	Female thread	M5 x 0.8	Rc1/8	M5 x 0.8	Rc1/8

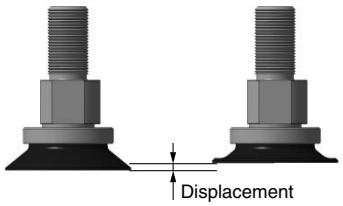
Buffer Specifications (Ball Joint Type)

Vertical Lateral



Pad diameter		ø32 to ø50			ø63 to ø125		
Non-rotating specification		JB: Rotating, With bushing					
Stroke [mm]		10	30	50	10	30	50
Connection thread		M18 x 1.5			M22 x 1.5		
Spring reactive force [N]	At 0 stroke	5.0			10.0		
	At full stroke	6.5	8.5	10.5	11.5	13.5	15.5

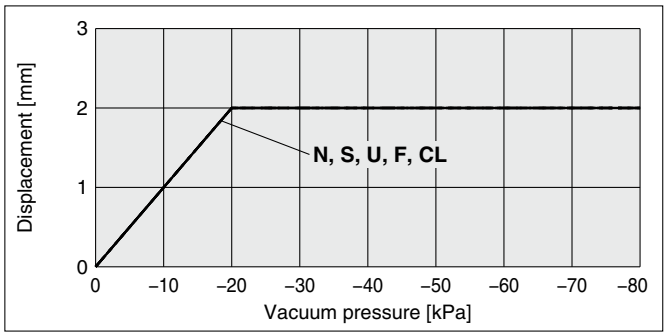
Pad Displacement to Vacuum Pressure (Flat Type with Groove)



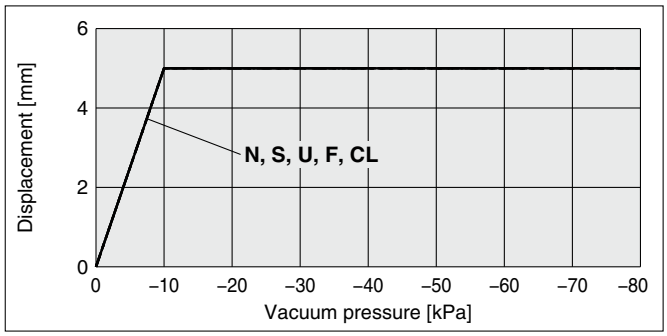
The data shown below are only for reference and are not guaranteed. These values depend on the operating environment, workpiece mass and transfer method. Therefore, thorough research and confirmation are necessary before use.

NBR (N): ——— Silicone rubber (S): ····· Urethane rubber (U): – – – – – FKM (F): —·—·— Mark-free NBR (CL): —··—··

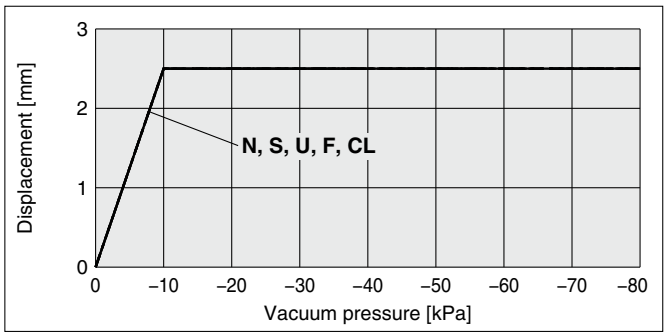
ZP3E-32UM□



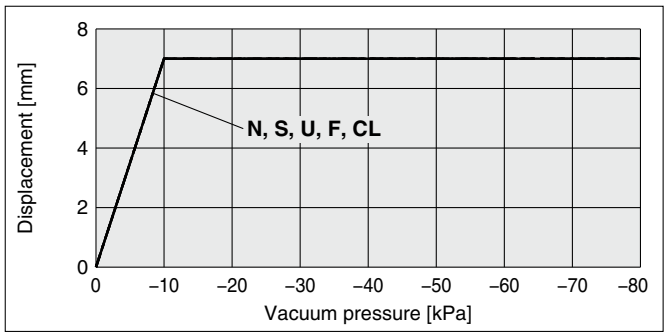
ZP3E-80UM□



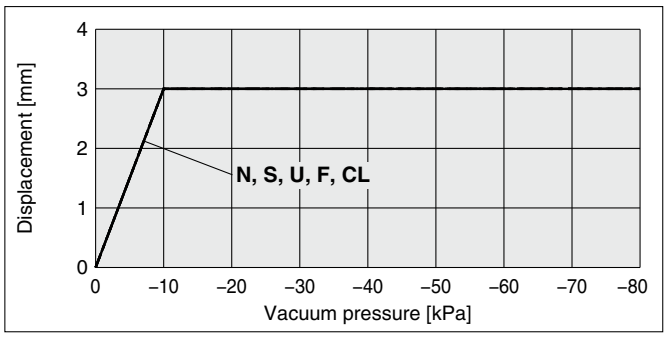
ZP3E-40UM□



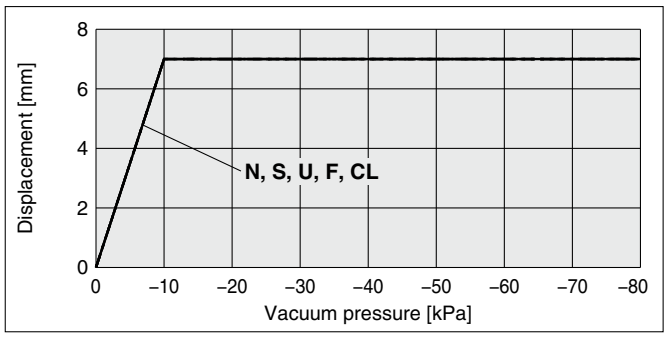
ZP3E-100UM□



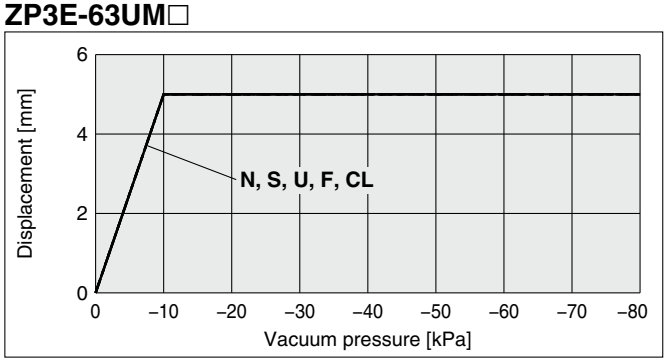
ZP3E-50UM□



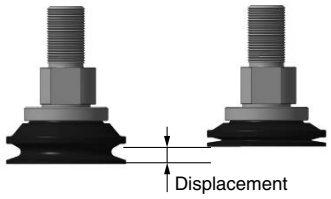
ZP3E-125UM□



ZP3E-63UM□



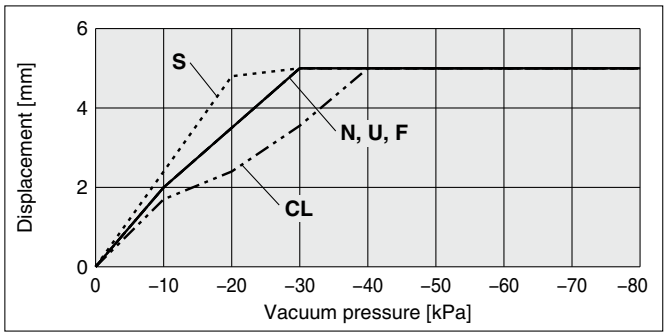
Pad Displacement to Vacuum Pressure (Bellows Type with Groove)



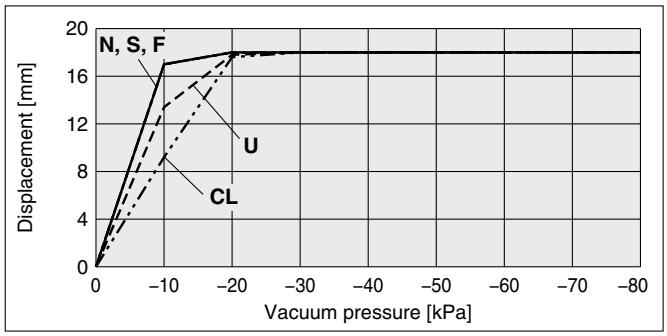
The data shown below are only for reference and are not guaranteed. These values depend on the operating environment, workpiece mass and transfer method. Therefore, thorough research and confirmation are necessary before use.

NBR (N): ——— Silicone rubber (S): ····· Urethane rubber (U): – – – – – FKM (F): —·—·— Mark-free NBR (CL):—··—··

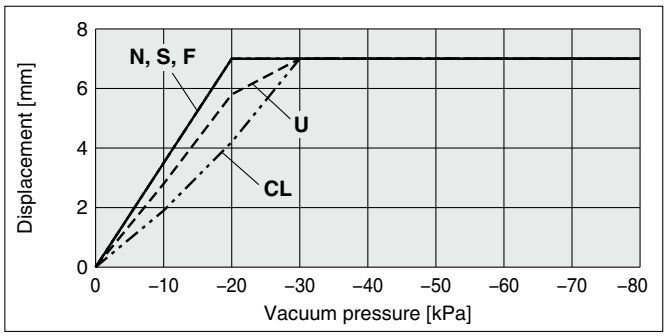
ZP3E-32BM□



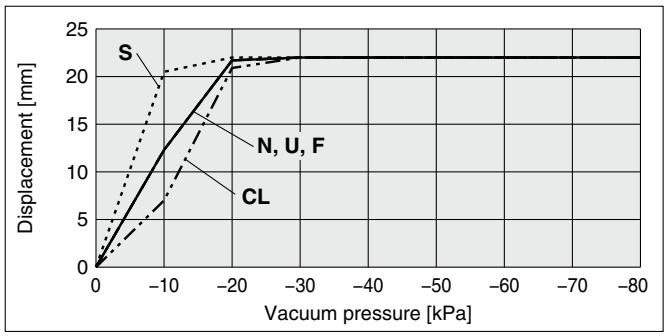
ZP3E-80BM□



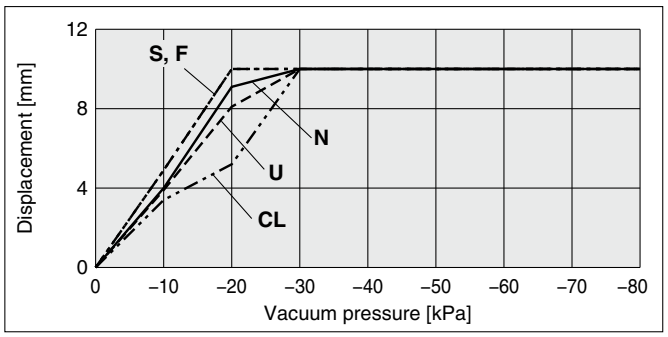
ZP3E-40BM□



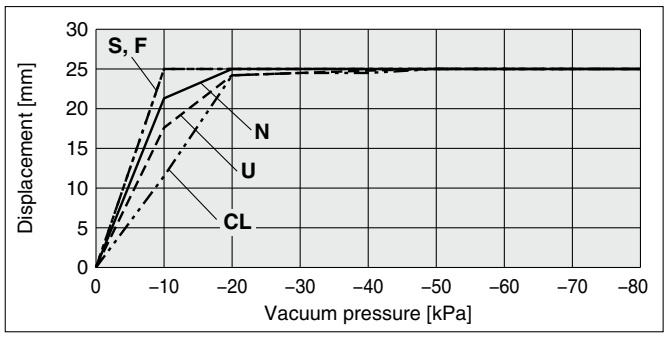
ZP3E-100BM□



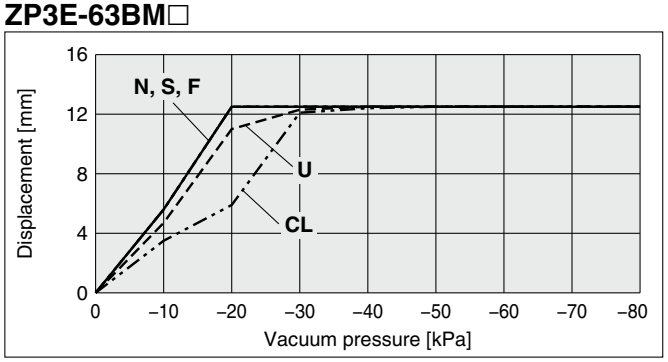
ZP3E-50BM□

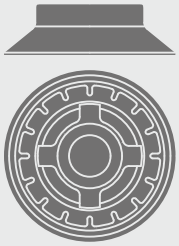


ZP3E-125BM□



ZP3E-63BM□





High Rigidity Pad
Flat Type with Groove
ZP3E Series

How to Order

		Dimensions/ Models	Construction	Mounting Bracket Assembly
Pad unit	ZP3E− 32 UM N − P (7)	p. 209	p. 233	From p. 237
With adapter	ZP3E − T 32 UM N − A10 (6)	From p. 209	From p. 233	From p. 237
With buffer	ZP3E − T 32 UM N JB 10 (1 2 3 4 5)	From p. 212	p. 234	p. 240

● Flat type with groove

❶ Vacuum inlet direction

Nil	Pad unit
T	Vertical
Y	Lateral

❷ Pad diameter

32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
125	ø125

❸ Material

N	NBR
S	Silicone rubber*1
U	Urethane rubber
F	FKM
CL	Mark-free NBR

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

❹ Buffer specification

JB	Rotating, With bushing

❺ Buffer stroke

Stroke [mm]	Pad diameter
	All sizes
10	●
30	●
50	●

❻ Connection thread

○: ZP3E-T/Vertical ●: ZP3E-Y/Lateral

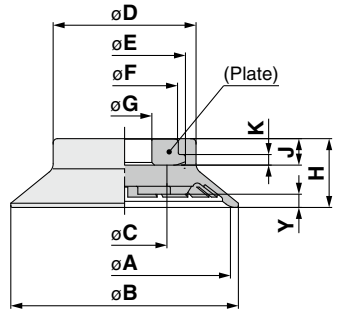
❻ Connection thread			Vacuum inlet		Pad diameter [mm]	
Type	Symbol	Size	Type	Size	ø32 to ø50	ø63 to ø125
Male thread	**A10**	M10 x 1	Use the connection thread.		○	—
	A16	M16 x 1.5			—	○
Female thread	**B8**	M8 x 1.25			○	—
	B10	M10 x 1.5			○	—
	B12	M12 x 1.75			—	○
	B18	M18 x 1.5			—	○
Male thread	**AL14**	M14 x 1	Female thread	Rc1/8	○	—
				M5 x 0.8	●	—
	AL16	M16 x 1.5		Rc1/8	—	○●
Female thread	**B8**	M8 x 1.25		M5 x 0.8	●	—
	B12	M12 x 1.75		Rc1/8	—	●

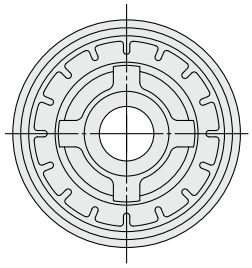
❼ Plate

Nil	Without plate
P	With plate

Dimensions/Models

Single unit ø32 to ø125





ZP3E – 32 UM N – P
❶ ❷ ❸

❸ **Plate**

Nil	Without plate
P	With plate

Model					A	B	C	D	E	F	G	H	J	K	Y
❶ Pad dia.		Form	❷ *1 Material	❸ Plate											
ZP3E	32	UM	N S U F CL	Nil P	32	35	16	27	23	20	10.3	13	5	2	2
	40				40	43									2.5
	50				50	53		36	31	27		13.5			3
	63				63	66	24	45	39	34	16.3	19.5	8	3	5
	80				80	83									
	100				100	103		56	49.5	43		22			7
	125				125	128		73	65	58					

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

Construction	p. 233
Mounting Bracket Assembly	From p. 237

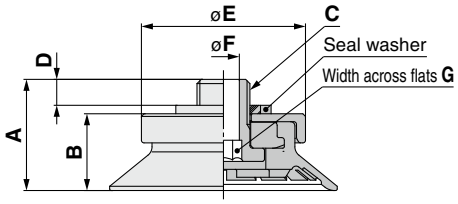
With adapter ø32 to ø125

ZP3E – T 32 UM N – A10
❶ ❷ ❸

❸ **Connection thread (Male thread)**

A10	M10 x 1
A16	M16 x 1.5

Vacuum inlet direction Vertical



Model						A	B	C	D	E	F	G
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread							
ZP3E	T	32	UM	N S U F CL	A10	21	14.5	M10 x 1	4.9	31	6	6
		40				21.5	15			40		
		50				30.5	21.1	M16 x 1.5	7.4	48.9	10	10
		63			A16							
		80								60.1		
		100				33	23.6					
		125								77.8		

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

Construction	p. 233
Adapter Assembly	p. 237

Dimensions/Models

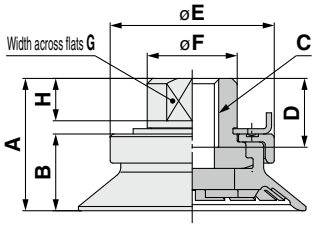
With adapter ø32 to ø125

ZP3E – T 32 UM N – B8
❶ ❷ ❸

❸ **Connection thread (Female thread)**

B8	M8 x 1.25
B10	M10 x 1.5
B12	M12 x 1.75
B18	M18 x 1.5

Vacuum inlet direction Vertical



Construction	p. 233
Adapter Assembly	p. 238

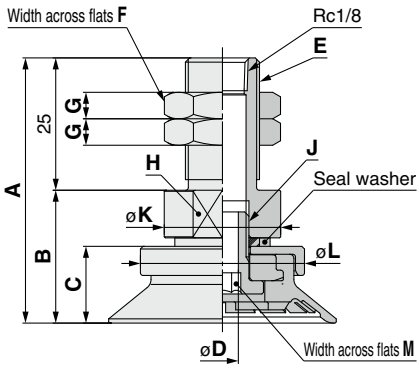
Model						A	B	C	D	E	F	G	H
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread								
ZP3E	T	32 40	UM	N S U F CL	B8	25	14.5	M8 x 1.25	9.5	31	17	14	8
		50				25.5	15			40			
		32 40			B10	25	14.5	M10 x 1.5	13	31			
		50				25.5	15			40			
		63 80			B12	36	21.5	M12 x 1.75	12	50	32	24	12
		100				38.5	24			61			
		125								78.6			
		63 80			B18	36	21.5	M18 x 1.5	18	50			
		100				38.5	24			61			
		125								78.6			

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

ZP3E – T 32 UM N – AL14
❶ ❷ ❸

❸ **Connection thread (Male thread)**

AL14	M14 x 1
AL16	M16 x 1.5



Construction	p. 233
Adapter Assembly	p. 237

Model						A	B	C	D	E	F	G	H	J	K	L	M
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread												
ZP3E	T	32 40	UM	N S U F CL	AL14	50.1	25.1	14.5	6	M14 x 1	19	4	Width across flats 19	M10 x 1	22	31	6
		50				50.6	25.6	15								40	
		63 80			AL16	63.1	38.1	21.1	10	M16 x 1.5	22	6	Width across flats 24	M16 x 1.5		48.9	10
		100				65.6	40.6	23.6								60.1	
		125														77.8	

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

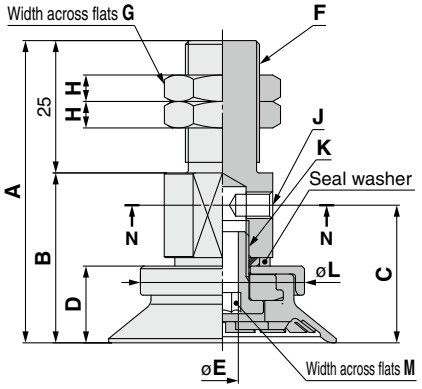
Dimensions/Models

With adapter ø32 to ø125

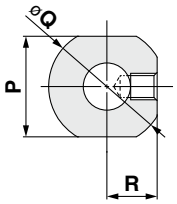
ZP3E – Y 32 UM N – AL14
❶ ❷ ❸ Connection thread (Male thread)

AL14	M14 x 1
AL16	M16 x 1.5

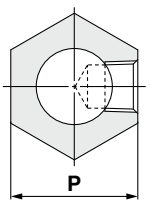
Vacuum inlet direction Lateral



N-N (ø32 to ø50)



N-N (ø63 to ø125)



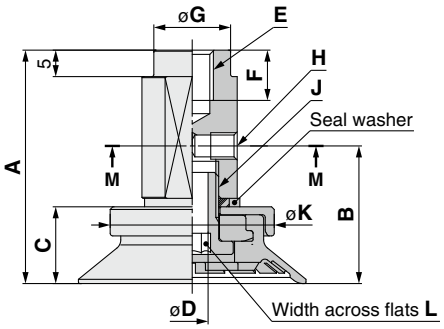
Model						A	B	C	D	E	F	G	H	J	K	L	M	P	Q	R
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread															
ZP3E	Y	32 40	UM	N S U F CL	AL14	57.1	32.1	26	14.5	6	M14 x 1	19	4	M5 x 0.8/ Effective thread depth 5	M10 x 1	31	6	Width across flats 19	22	9.5
		50				57.6	32.6	26.5	15							40				
		63 80			AL16	72.6	47.6	37.6	21.1	10	M16 x 1.5	22	6	Rc1/8	M16 x 1.5	48.9	10	Width across flats 24		
		100				75.1	50.1	40.1	23.6							60.1				
		125														77.8				

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

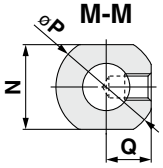
Construction	p. 233
Adapter Assembly	p. 239

ZP3E – Y 32 UM N – B8
❶ ❷ ❸ Connection thread (Female thread)

B8	M8 x 1.25
B12	M12 x 1.75



M-M



Model						A	B	C	D	E	F	G	H	J	K	L	N	P	Q
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread														
ZP3E	Y	32 40	UM	N S U F CL	B8	44.1	26	14.5	6	M8 x 1.25	9.5	14.5	M5 x 0.8/ Effective thread depth 5	M10 x 1	31	6	16	19	8.5
		50				44.6	26.5	15							40				
		63 80			B12	61.6	37.6	21.1	10	M12 x 1.75	12	19	Rc1/8	M16 x 1.5	48.9	10	24	28	12.5
		100				64.1	40.1	23.6							60.1				
		125													77.8				

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

Construction	p. 234
Adapter Assembly	p. 239

Dimensions/Models

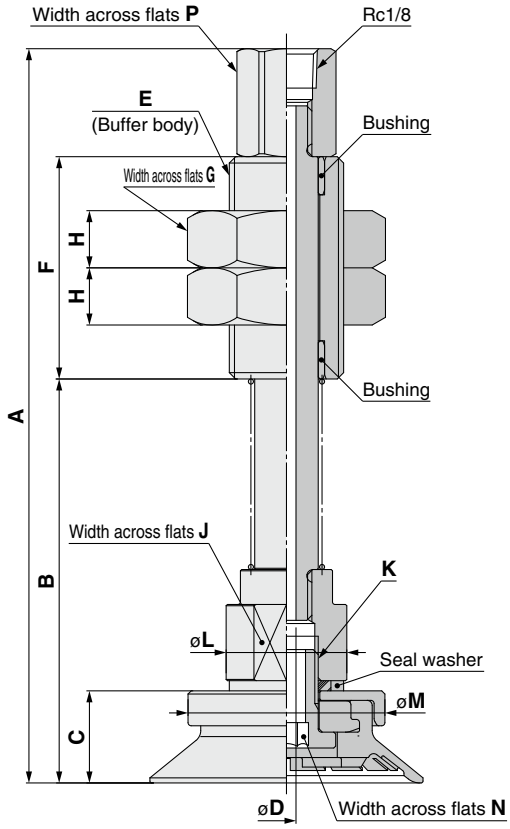
With buffer ø32 to ø125

ZP3E – T 32 UM N JB 10
❶ ❷ ❹

❸ **Buffer specification**

JB	Rotating, With bushing

Vacuum inlet direction Vertical



Construction p. 234
Buffer Assembly p. 240

Model							A	B	C	D	E	F	G	H	J	K	L	M	N	P
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Buffer spec.	❹ Buffer stroke														
ZP3E	T	32 40	UM	N S U F CL	JB	10	115.6	63.6	14.5	3	M18 x 1.5	35	27	11	16	M10 x 1	19	31	6	14
						30	140.6	88.6												
						50	160.6	108.6												
		50				10	116.1	64.1	15									40		
						30	141.1	89.1												
						50	161.1	109.1												
		63 80				10	151.1	81.1	21.1	4	M22 x 1.5	50	30	8	24	M16 x 1.5	28	48.9	10	17
						30	176.1	106.1												
						50	196.1	126.1												
		100				10	153.6	83.6	23.6									60.1		
						30	178.6	108.6												
						50	198.6	128.6												
		125				10	153.6	83.6										77.8		
						30	178.6	108.6												
						50	198.6	128.6												

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

Dimensions/Models

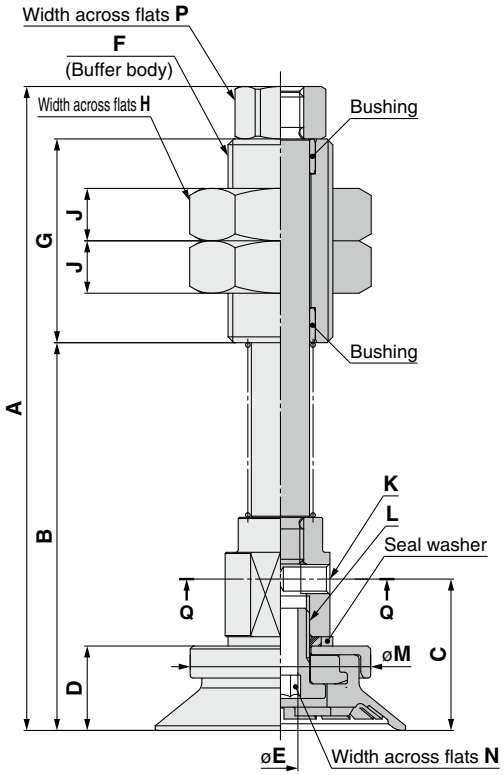
With buffer ø32 to ø125

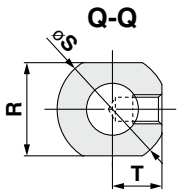
ZP3E – Y 32 UM N JB 10
❶ ❷ ❹

❸ **Buffer specification**

JB	Rotating, With bushing

Vacuum inlet direction **Lateral**





Construction	p. 234
Buffer Assembly	p. 240

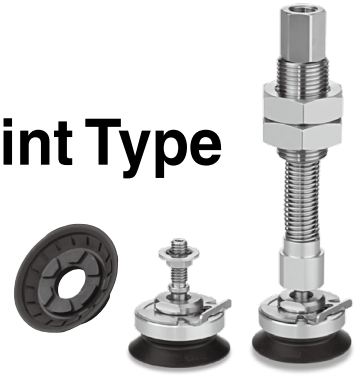
Model							A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Buffer spec.	❹ Buffer stroke																	
ZP3E	Y	32 40	UM	N S U F CL	JB	10	110.6	66.6	26	14.5	6	M18 x 1.5	35	27	11	M5 x 0.8/ Effective thread depth 5	M10 x 1	31	6	14	16	19	8.5
						30	135.6	91.6															
						50	155.6	111.6															
		50				10	111.1	67.1	26.5	15								40					
						30	136.1	92.1															
						50	156.1	112.1															
		63 80				10	148.1	88.1	37.6	21.1	10	M22 x 1.5	50	30	8	Rc1/8	M16 x 1.5	48.9	10	17	24	28	12.5
						30	173.1	113.1															
						50	193.1	133.1															
		100				10	150.6	90.6	40.1	23.6								60.1					
						30	175.6	115.6															
						50	195.6	135.6															
		125				10	150.6	90.6										77.8					
						30	175.6	115.6															
						50	195.6	135.6															

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

High Rigidity Pad

Flat Type with Groove Ball Joint Type

ZP3E Series



How to Order

		Dimensions/ Models	Construction	Mounting Bracket Assembly
Pad unit	ZP3E− 32 UM N	p. 215	p. 235	From p. 241
With adapter	ZP3E− T F 32 UM N − AL6 (6)	From p. 215	From p. 235	From p. 241
With buffer	ZP3E− T F 32 UM N JB 10	From p. 218	p. 236	p. 244

(1) Ball joint (2) (3) Flat type with groove (4) (5)

(1) Vacuum inlet direction

Nil	Pad unit
T	Vertical
Y	Lateral

(2) Pad diameter

32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
125	ø125

(3) Material

N	NBR
S	Silicone rubber*1
U	Urethane rubber
F	FKM
CL	Mark-free NBR

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

(4) Buffer specification

JB	Rotating, With bushing

(5) Buffer stroke

Stroke [mm]	Pad diameter: All sizes
10	●
30	●
50	●

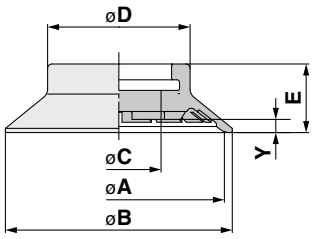
(6) Connection thread

○: ZP3E-T/Vertical ●: ZP3E-Y/Lateral

(6) Connection thread			Vacuum inlet		Pad diameter [mm]	
Type	Symbol	Size	Type	Size	ø32 to ø50	ø63 to ø125
Male thread	**AL6**	M6 x 1	Use the connection thread.		○	—
	AL12	M12 x 1.25			—	○
	AL14	M14 x 1	Female thread	Rc1/8	○	—
				M5 x 0.8	●	—
	AL16	M16 x 1.5		Rc1/8	—	○●
Female thread	**B8**	M8 x 1.25	Use the connection thread.		○	—
	B12	M12 x 1.75			—	○
	B8	M8 x 1.25	Female thread	M5 x 0.8	●	—
	B12	M12 x 1.75		Rc1/8	—	●

Dimensions/Models

Single unit ø32 to ø125



Construction	p. 235
Mounting Bracket Assembly	From p. 241

ZP3E – 32 UM N
❶ ❷

Model	❶ Pad dia.	Form	❷ *1 Material	A	B	C	D	E	Y
ZP3E	32	UM	N S U F CL	32	35	16	27	13	2
	40			40	43				2.5
	50			50	53		36	13.5	3
	63			63	66	24	45	19.5	5
	80			80	83				
	100			100	103		56	22	7
	125			125	128		73		

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

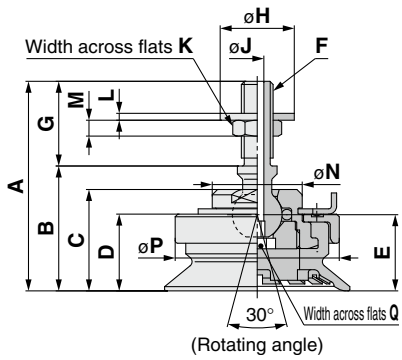
With adapter ø32 to ø125

ZP3E – T F 32 UM N – AL6
❶ ❷ ❸

❸ **Connection thread (Male thread)**

AL6	M6 x 1
AL12	M12 x 1.25

Vacuum inlet direction Vertical



Construction	p. 235
Adapter Assembly	p. 241

Model	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
ZP3E	TF	32	UM	N S U F CL	AL6	39.6	23.6	19.2	14.5	14.4	M6 x 1	16	14	2.5	8	1.3	4	17	31	2.5
		40				40.1	24.1	19.7	15	14.9									40	
		50			AL12	56.5	36.5	30.5	21.5	22.6	M12 x 1.25	20	24.3	4	19	2	7	32	50	4
		63																		
		80																		
		100				59	39	33	24	25.1									61	
		125																	78.6	

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

Dimensions/Models

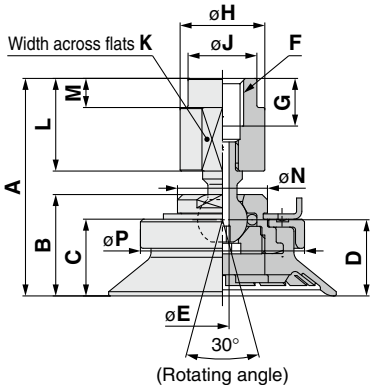
With adapter ø32 to ø125

ZP3E – T F 32 UM N – B8
❶ ❷ ❸

❸ **Connection thread (Female thread)**

B8	M8 x 1.25
B12	M12 x 1.75

Vacuum inlet direction Vertical



Construction	p. 235
Adapter Assembly	p. 242

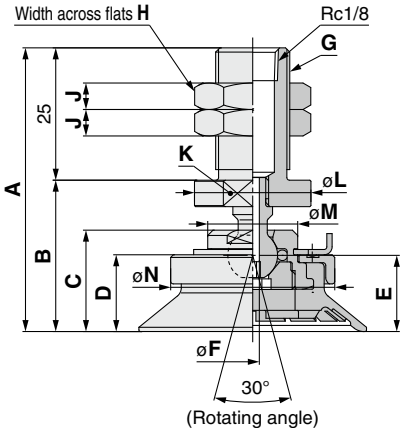
Model						A	B	C	D	E	F	G	H	J	K	L	M	N	P
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread														
ZP3E	TF	32	UM	N S U F CL	B8	41.1	19.2	14.5	14.4	2.5	M8 x 1.25	9	16	13	14	17.5	5.5	17	31
		40				41.6	19.7	15	14.9										40
		50			B12	63.5	30.5	21.5	22.6	4	M12 x 1.75	11	26	18	22	27	6	32	50
		63																	
		80				66	33	24	25.1										61
		100																	
		125																	78.6

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

ZP3E – T F 32 UM N – AL14
❶ ❷ ❸

❸ **Connection thread (Male thread)**

AL14	M14 x 1
AL16	M16 x 1.5



Construction	p. 235
Adapter Assembly	p. 242

Model						A	B	C	D	E	F	G	H	J	K	L	M	N
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread													
ZP3E	TF	32	UM	N S U F CL	AL14	53.6	28.6	19.2	14.5	14.4	2.5	M14 x 1	19	4	Width across flats 19	22	17	31
		40				54.1	29.1	19.7	15	14.9								40
		50			AL16	66.5	41.5	30.5	21.5	22.6	4	M16 x 1.5	22	6	Width across flats 24		32	50
		63																
		80				69	44	33	24	25.1								61
		100																
		125																78.6

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

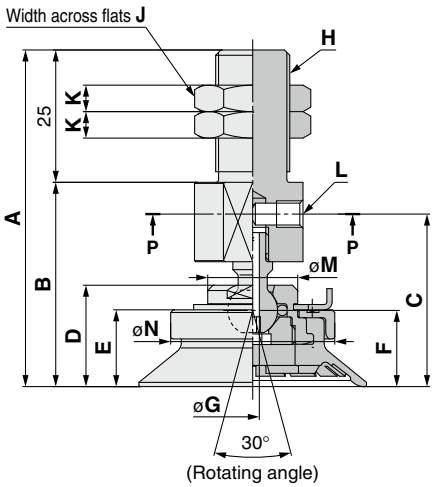
Dimensions/Models

With adapter ø32 to ø125

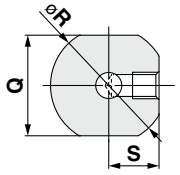
ZP3E – Y F 32 UM N – AL14
❶ ❷ ❸ Connection thread (Male thread)

AL14	M14 x 1
AL16	M16 x 1.5

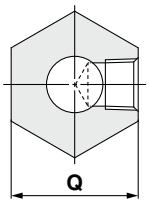
Vacuum inlet direction Lateral



P-P (ø32 to ø50)



P-P (ø63 to ø125)



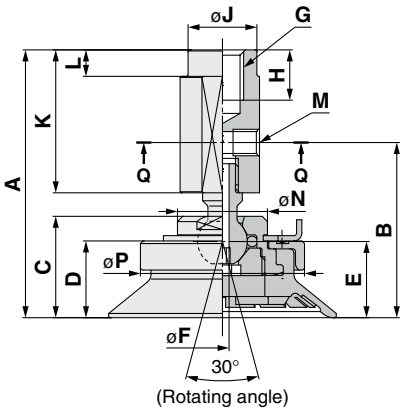
Model		❶		❷	❸																	
	Vacuum inlet direction	Pad dia.	Form	*1 Material	Connection thread	A	B	C	D	E	F	G	H	J	K	L	M	N	Q	R	S
ZP3E	YF	32 40 50	UM	N S U F CL	AL14	63.6 64.1	38.6 39.1	32.6 33.1	19.2 19.7	14.5 15	14.4 14.9	2.5	M14 x 1	19	4	M5 x 0.8/ Effective thread depth 5	17	31 40	19	22	9.5
		63 80 100 125			AL16	88.5 91	63.5 66	53.5 56	30.5 33	21.5 24	22.6 25.1	4	M16 x 1.5	22	6	Rc1/8	32	50 61 78.6	24		

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

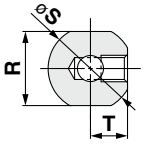
Construction	p. 235
Adapter Assembly	p. 243

ZP3E – Y F 32 UM N – B8
❶ ❷ ❸ Connection thread (Female thread)

B8	M8 x 1.25
B12	M12 x 1.75



Q-Q



Model		❶		❷	❸																		
	Vacuum inlet direction	Pad dia.	Form	*1 Material	Connection thread	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T
ZP3E	YF	32 40 50	UM	N S U F CL	B8	50.6 51.1	33.1 33.6	19.2 19.7	14.5 15	14.4 14.9	2.5	M8 x 1.25	9.5	13	27	5	M5 x 0.8/ Effective thread depth 5	17	31 40	14	16	7
		63 80 100 125			B12	76.5 79	53.5 56	30.5 33	21.5 24	22.6 25.1	4	M12 x 1.75	11.5	18	40	6	Rc1/8	32	50 61 78.6	22	26	11

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

Construction	p. 236
Adapter Assembly	p. 243

Dimensions/Models

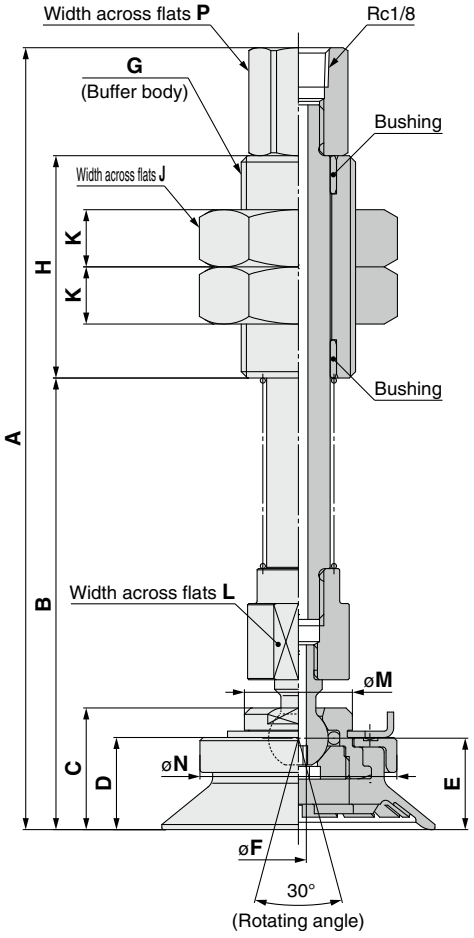
With buffer ø32 to ø125

ZP3E – T F 32 UM N JB 10
❶ ❷ ❹

❸ **Buffer specification**

JB	Rotating, With bushing

Vacuum inlet direction Vertical



Construction	p. 236
Buffer Assembly	p. 244

Model							A	B	C	D	E	F	G	H	J	K	L	M	N	P
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Buffer spec.	❹ Buffer stroke														
ZP3E	TF	32 40	UM	N S U F CL	JB	10	123.1	71.1	19.2	14.5	14.4	2.5	M18 x 1.5	35	27	11	14	17	31	14
						30	148.1	96.1												
						50	168.1	116.1												
		50				10	123.6	71.6	19.7	15	14.9								40	
						30	148.6	96.6												
						50	168.6	116.6												
		63 80				10	168.5	98.5	30.5	21.5	22.6	4	M22 x 1.5	50	30	8	22	32	50	17
						30	193.5	123.5												
						50	213.5	143.5												
		100				10	171	101	33	24	25.1								61	
						30	196	126												
						50	216	146												
		125				10	171	101											78.6	
						30	196	126												
						50	216	146												

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

Dimensions/Models

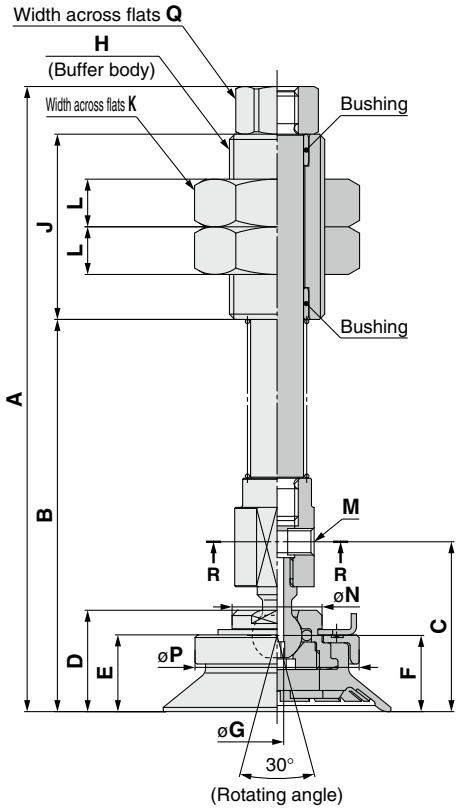
With buffer ø32 to ø125

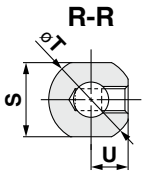
ZP3E – Y F 32 UM N JB 10
❶ ❷ ❹

❸ **Buffer specification**

JB	Rotating, With bushing

Vacuum inlet direction **Lateral**





Construction	p. 236
Buffer Assembly	p. 244

Model							A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	S	T	U
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Buffer spec.	❹ Buffer stroke																		
ZP3E	YF	32 40	UM	N S U F CL	JB	10	118.1	74.1	32.1	19.2	14.5	14.4	2.5	M18 x 1.5	35	27	11	M5 x 0.8/ Effective thread depth 5	17	31	14	14	16	7
						30	143.1	99.1																
						50	163.1	119.1																
		50				10	118.6	74.6	32.6	19.7	15	14.9								40				
						30	143.6	99.6																
						50	163.6	119.6																
		63 80				10	165	105	53.5	30.5	21.5	22.6	4	M22 x 1.5	50	30	8	Rc1/8	32	50	17	22	26	11
						30	190	130																
						50	210	150																
		100				10	167.5	107.5	56	33	24	25.1								61				
						30	192.5	132.5																
						50	212.5	152.5																
		125				10	167.5	107.5												78.6				
						30	192.5	132.5																
						50	212.5	152.5																

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

High Rigidity Pad

Bellows Type with Ribs and Groove

ZP3E Series

How to Order

		Dimensions/ Models	Construction	Mounting Bracket Assembly
Pad unit	ZP3E− 32 BM N − P (7)	p. 221	p. 233	From p. 237
With adapter	ZP3E − T 32 BM N − A10 (6)	From p. 221	From p. 233	From p. 237
With buffer	ZP3E − T (1) 32 (2) BM N (3) JB (4) 10 (5)	From p. 224	p. 234	p. 240

● Bellows type with ribs and groove

❶ Vacuum inlet direction

Nil	Pad unit
T	Vertical
Y	Lateral

❷ Pad diameter

32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
125	ø125

❸ Material

N	NBR
S	Silicone rubber*1
U	Urethane rubber
F	FKM
CL	Mark-free NBR

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

❹ Buffer specification

JB	Rotating, With bushing

❺ Buffer stroke

Stroke [mm]	Pad diameter
	All sizes
10	●
30	●
50	●

❻ Connection thread

○: ZP3E-T/Vertical ●: ZP3E-Y/Lateral

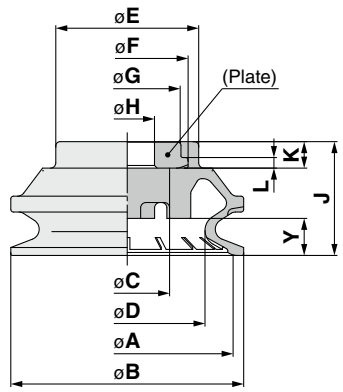
❻ Connection thread			Vacuum inlet		Pad diameter [mm]	
Type	Symbol	Size	Type	Size	ø32 to ø50	ø63 to ø125
Male thread	A10	M10 x 1	Use the connection thread.		○	—
	A16	M16 x 1.5			—	○
Female thread	B8	M8 x 1.25			○	—
	B10	M10 x 1.5			○	—
	B12	M12 x 1.75			—	○
	B18	M18 x 1.5			—	○
Male thread	AL14	M14 x 1	Female thread	Rc1/8	○	—
				M5 x 0.8	●	—
	AL16	M16 x 1.5		Rc1/8	—	○●
Female thread	B8	M8 x 1.25		M5 x 0.8	●	—
	B12	M12 x 1.75		Rc1/8	—	●

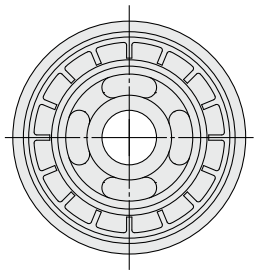
❼ Plate

Nil	Without plate
P	With plate

Dimensions/Models

Single unit ø32 to ø125





ZP3E – 32 BM N – P
❶ ❷ ❸

❸ **Plate**

Nil	Without plate
P	With plate

	Model				A	B	C	D	E	F	G	H	J	K	L	Y
	❶ Pad dia.	Form	❷ *1 Material	❸ Plate												
ZP3E	**32**	**BM**	**N S U F CL**	**Nil P**	32	35	16	23.3	27	23	20	10.3	19.5	5	2	5
	40				40	44		29.4					21.5			7
	50				50	54		37	36	31	27		25			10
	63				63	68	24	45.8	45	39	34	16.3	33	8	3	12.5
	80				80	85		57	56	49.5	43		41			18
	100				100	106		71.5	73	65	58		50.5			22
	125				125	133		90.3	88	80	71		60			25

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

Construction	p. 233
Mounting Bracket Assembly	From p. 237

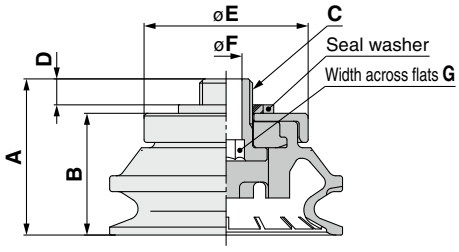
With adapter ø32 to ø125

ZP3E – T 32 BM N – A10
❶ ❷ ❸

❸ **Connection thread (Male thread)**

A10	M10 x 1
A16	M16 x 1.5

Vacuum inlet direction Vertical



	Model					A	B	C	D	E	F	G
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread							
ZP3E	**T**	**32**	**BM**	**N S U F CL**	**A10**	27.5	21	M10 x 1	4.9	31	6	6
		40				29.5	23					
		50				33	26.5			40		
		63			**A16**	44	34.6	M16 x 1.5	7.4	48.9	10	10
		80				52	42.6			60.1		
		100				61.5	52.1			77.8		
		125				71	61.6			93		

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

Construction	p. 233
Adapter Assembly	p. 237

Dimensions/Models

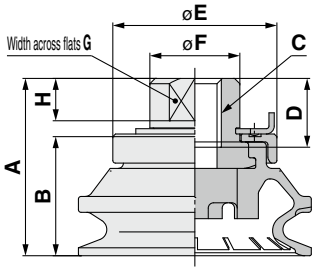
With adapter ø32 to ø125

ZP3E – T 32 BM N – B8
❶ ❷ ❸

❸ **Connection thread (Female thread)**

B8	M8 x 1.25
B10	M10 x 1.5
B12	M12 x 1.75
B18	M18 x 1.5

Vacuum inlet direction Vertical



Construction	p. 233
Adapter Assembly	p. 238

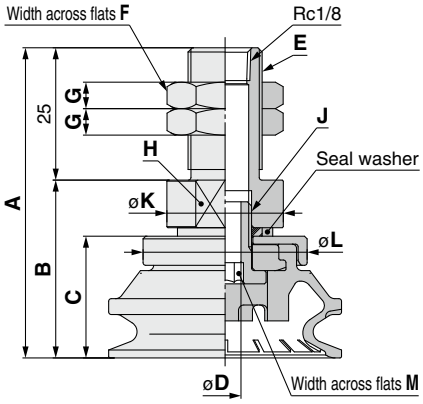
Model						A	B	C	D	E	F	G	H
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread								
ZP3E	T	32	BM	N S U F CL	B8	31.5	21	M8 x 1.25	9.5	31	17	14	8
		40				33.5	23			40			
		50				37	26.5						
		32			B10	31.5	21	M10 x 1.5	13	31			
		40				33.5	23			40			
		50				37	26.5						
		63			B12	49.5	35	M12 x 1.75	12	50	32	24	12
		80				57.5	43			61			
		100				67	52.5			78.6			
		125				76.5	62			93.8			
		63			B18	49.5	35	M18 x 1.5	18	50			
		80				57.5	43			61			
		100				67	52.5			78.6			
		125				76.5	62			93.8			

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

ZP3E – T 32 BM N – AL14
❶ ❷ ❸

❸ **Connection thread (Male thread)**

AL14	M14 x 1
AL16	M16 x 1.5



Construction	p. 233
Adapter Assembly	p. 237

Model						A	B	C	D	E	F	G	H	J	K	L	M
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread												
ZP3E	T	32	BM	N S U F CL	AL14	56.6	31.6	21	6	M14 x 1	19	4	Width across flats 19	M10 x 1	22	31	6
		40				58.6	33.6	23								40	
		50				62.1	37.1	26.5									
		63			AL16	76.6	51.6	34.6	10	M16 x 1.5	22	6	Width across flats 24	M16 x 1.5		48.9	10
		80				84.6	59.6	42.6								60.1	
		100				94.1	69.1	52.1								77.8	
		125				103.6	78.6	61.6								93	

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

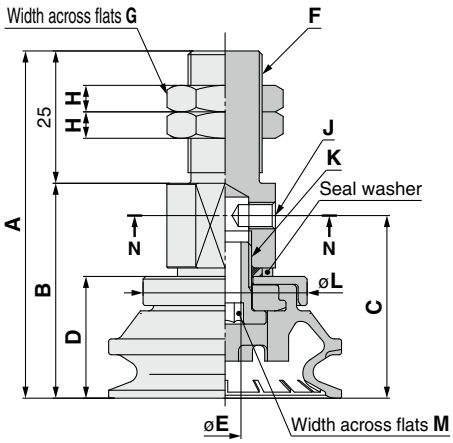
Dimensions/Models

With adapter ø32 to ø125

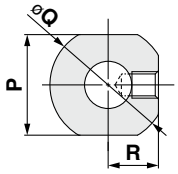
ZP3E – Y 32 BM N – AL14
❶ ❷ ❸ Connection thread (Male thread)

AL14	M14 x 1
AL16	M16 x 1.5

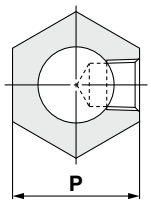
Vacuum inlet direction Lateral



N-N (ø32 to ø50)



N-N (ø63 to ø125)



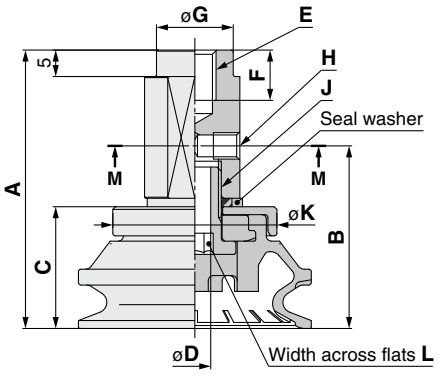
Model	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread	A	B	C	D	E	F	G	H	J	K	L	M	P	Q	R
ZP3E	Y	32	BM	NSUFCL	AL14	63.6	38.6	32.5	21	6	M14 x 1	19	4	M5 x 0.8/ Effective thread depth 5	M10 x 1	31	6	Width across flats 19	22	9.5
		40				65.6	40.6	34.5	23							40				
		50				69.1	44.1	38	26.5											
		63			AL16	86.1	61.1	51.1	34.6	10	M16 x 1.5	22	6	Rc1/8	M16 x 1.5	48.9	10	Width across flats 24		
		80				94.1	69.1	59.1	42.6							60.1				
		100				103.6	78.6	68.6	52.1							77.8				
		125				113.1	88.1	78.1	61.6							93				

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

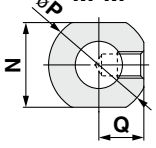
Construction	p. 233
Adapter Assembly	p. 239

ZP3E – Y 32 BM N – B8
❶ ❷ ❸ Connection thread (Female thread)

B8	M8 x 1.25
B12	M12 x 1.75



M-M



Model	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread	A	B	C	D	E	F	G	H	J	K	L	N	P	Q
ZP3E	Y	32	BM	NSUFCL	B8	50.6	32.5	21	6	M8 x 1.25	9.5	14.5	M5 x 0.8/ Effective thread depth 5	M10 x 1	31	6	16	19	8.5
		40				52.6	34.5	23											
		50				56.1	38	26.5							40				
		63			B12	75.1	51.1	34.6	10	M12 x 1.75	12	19	Rc1/8	M16 x 1.5	48.9	10	24	28	12.5
		80				83.1	59.1	42.6							60.1				
		100				92.6	68.6	52.1							77.8				
		125				102.1	78.1	61.6							93				

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

Construction	p. 234
Adapter Assembly	p. 239

Dimensions/Models

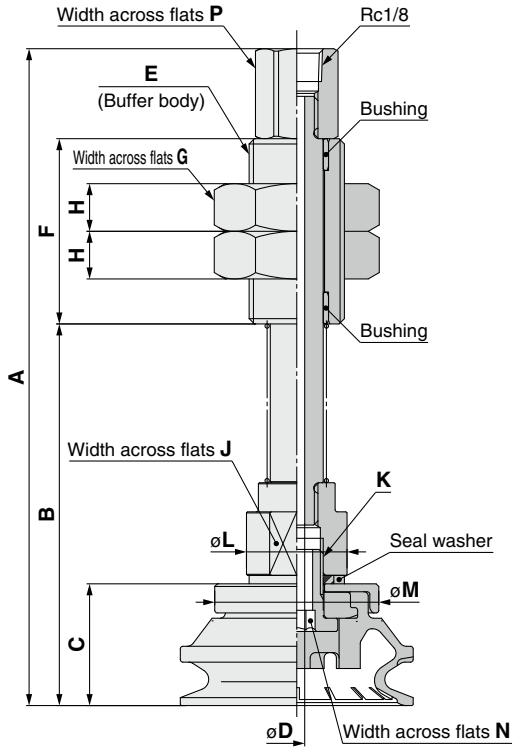
With buffer ø32 to ø125

ZP3E – T 32 BM N JB 10
❶ ❷ ❸ ❹

❸ **Buffer specification**

JB	Rotating, With bushing

Vacuum inlet direction Vertical



Construction	p. 234
Buffer Assembly	p. 240

Model							A	B	C	D	E	F	G	H	J	K	L	M	N	P
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Buffer spec.	❹ Buffer stroke														
ZP3E	T	32	BM	N S U F CL	JB	10	122.1	70.1	21	3	M18 x 1.5	35	27	11	16	M10 x 1	19	31	6	14
						30	147.1	95.1												
						50	167.1	115.1												
		40				10	124.1	72.1	23											
						30	149.1	97.1												
						50	169.1	117.1												
		50				10	127.6	75.6	26.5									40		
						30	152.6	100.6												
						50	172.6	120.6												
		63				10	164.6	94.6	34.6	4	M22 x 1.5	50	30	8	24	M16 x 1.5	28	48.9	10	17
						30	189.6	119.6												
						50	209.6	139.6												
		80				10	172.6	102.6	42.6									60.1		
						30	197.6	127.6												
						50	217.6	147.6												
		100				10	182.1	112.1	52.1									77.8		
						30	207.1	137.1												
						50	227.1	157.1												
		125				10	191.6	121.6	61.6									93		
						30	216.6	146.6												
						50	236.6	166.6												

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

Dimensions/Models

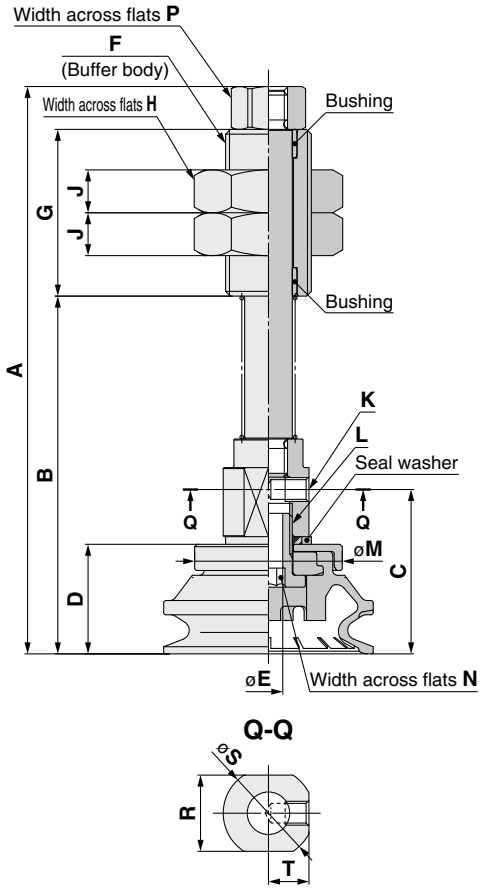
With buffer ø32 to ø125

ZP3E – Y 32 BM N JB 10
❶ ❷ ❸ ❹

❸ **Buffer specification**

JB	Rotating, With bushing

Vacuum inlet direction **Lateral**



Construction	p. 234
Buffer Assembly	p. 240

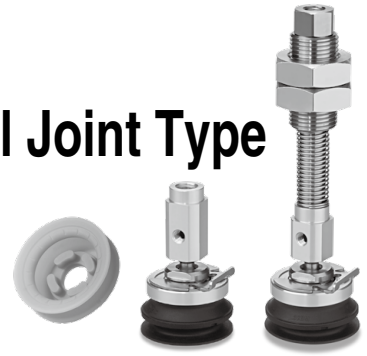
Model							A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Buffer spec.	❹ Buffer stroke																	
ZP3E	Y	32	BM	N S U F CL	JB	10	117.1	73.1	32.5	21	6	M18 x 1.5	35	27	11	M5 x 0.8/ Effective thread depth 5	M10 x 1	31	6	14	16	19	8.5
						30	142.1	98.1															
						50	162.1	118.1															
		40				10	119.1	75.1	34.5	23													
						30	144.1	100.1															
						50	164.1	120.1															
		50				10	122.6	78.6	38	26.5								40					
						30	147.6	103.6															
						50	167.6	123.6															
		63				10	161.6	101.6	51.1	34.6	10	M22 x 1.5	50	30	8	Rc1/8	M16 x 1.5	48.9	10	17	24	28	12.5
						30	186.6	126.6															
						50	206.6	146.6															
		80				10	169.6	109.6	59.1	42.6								60.1					
						30	194.6	134.6															
						50	214.6	154.6															
		100				10	179.1	119.1	68.6	52.1								77.8					
						30	204.1	144.1															
						50	224.1	164.1															
		125				10	188.6	128.6	78.1	61.6								93					
						30	213.6	153.6															
						50	233.6	173.6															

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

High Rigidity Pad

Bellows Type with Ribs and Groove Ball Joint Type

ZP3E Series



How to Order

		Dimensions/ Models	Construction	Mounting Bracket Assembly
Pad unit	ZP3E− 32 BM N	p. 227	p. 235	From p. 241
With adapter	ZP3E− T F 32 BM N − AL6 (6)	From p. 227	From p. 235	From p. 241
With buffer	ZP3E− T F 32 BM N JB 10 (1) (2) (3) (4) (5)	From p. 231	p. 236	p. 244

Ball joint ● ● Bellows type with ribs and groove

❶ Vacuum inlet direction

Nil	Pad unit
T	Vertical
Y	Lateral

❷ Pad diameter

32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
125	ø125

❸ Material

N	NBR
S	Silicone rubber*1
U	Urethane rubber
F	FKM
CL	Mark-free NBR

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

❹ Buffer specification

JB	Rotating, With bushing

❺ Buffer stroke

Stroke [mm]	Pad diameter
	All sizes
10	●
30	●
50	●

❻ Connection thread

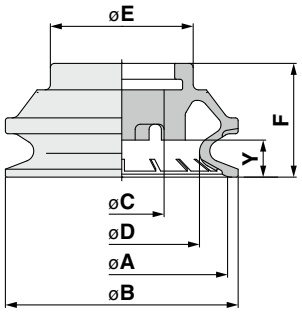
○: ZP3E-T/Vertical ●: ZP3E-Y/Lateral

❻ Connection thread			Vacuum inlet		Pad diameter [mm]	
Type	Symbol	Size	Type	Size	ø32 to ø50	ø63 to ø125
Male thread	**AL6**	M6 x 1	Use the connection thread.		○	—
	AL12	M12 x 1.25			—	○
	AL14	M14 x 1	Female thread	Rc1/8	○	—
				M5 x 0.8	●	—
	AL16	M16 x 1.5		Rc1/8	—	○●
Female thread	**B8**	M8 x 1.25	Use the connection thread.		○	—
	B12	M12 x 1.75			—	○
	B8	M8 x 1.25	Female thread	M5 x 0.8	●	—
	B12	M12 x 1.75		Rc1/8	—	●

Dimensions/Models

Single unit ø32 to ø125

ZP3E – 32 BM N
❶ ❷



Construction	p. 235
Mounting Bracket Assembly	From p. 241

	Model ❶ Pad dia.	Form	❷ *1 Material	A	B	C	D	E	F	Y
ZP3E	32	BM	N S U F CL	32	35	16	23.3	27	19.5	5
	40			40	44		29.4		21.5	7
	50			50	54		37	36	25	10
	63			63	68	24	45.8	45	33	12.5
	80			80	85		57	56	41	18
	100			100	106		71.5	73	50.5	22
	125			125	133		90.3	88	60	25

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

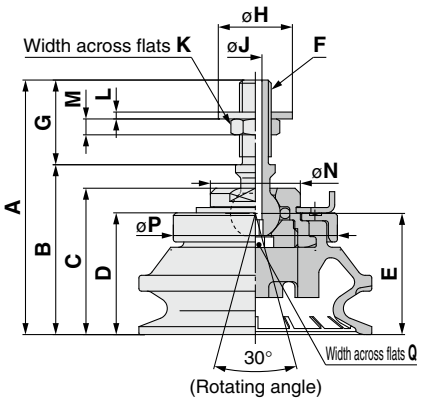
With adapter ø32 to ø125

ZP3E – T F 32 BM N – AL6
❶ ❷ ❸

❸ **Connection thread (Male thread)**

AL6	M6 x 1
AL12	M12 x 1.25

Vacuum inlet direction Vertical



Construction	p. 235
Adapter Assembly	p. 241

	Model Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
ZP3E	TF	32	BM	N S U F CL	AL6	46.1	30.1	25.7	21	20.9	M6 x 1	16	14	2.5	8	1.3	4	17	31	2.5
		40				48.1	32.1	27.7	23	22.9										
		50				51.6	35.6	31.2	26.5	26.4									40	
		63			AL12	70	50	44	35	36.1	M12 x 1.25	20	24.3	4	19	2	7	32	50	4
		80				78	58	52	43	44.1									61	
		100				87.5	67.5	61.5	52.5	53.6									78.6	
		125				97	77	71	62	63.1									93.8	

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

Dimensions/Models

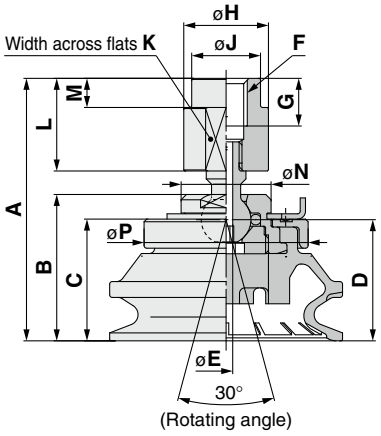
With adapter ø32 to ø125

ZP3E – T F 32 BM N – B8
❶ ❷ ❸

❸ **Connection thread (Female thread)**

B8	M8 x 1.25
B12	M12 x 1.75

Vacuum inlet direction Vertical



Construction	p. 235
Adapter Assembly	p. 242

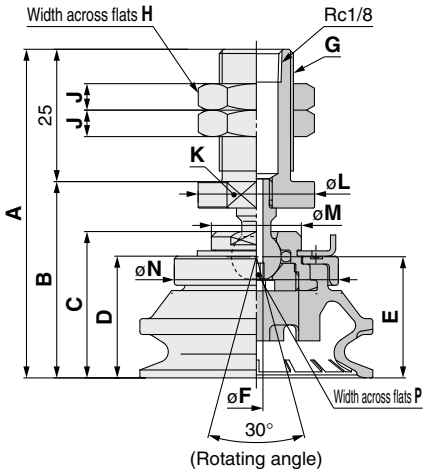
Model						A	B	C	D	E	F	G	H	J	K	L	M	N	P
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread														
ZP3E	TF	32	BM	N S U F CL	B8	47.6	25.7	21	20.9	2.5	M8 x 1.25	9	16	13	14	17.5	5.5	17	31
		40				49.6	27.7	23	22.9										
		50				53.1	31.2	26.5	26.4										40
		63			B12	77	44	35	36.1	4	M12 x 1.75	11	26	18	22	27	6	32	50
		80				85	52	43	44.1										61
		100				94.5	61.5	52.5	53.6										78.6
		125				104	71	62	63.1										93.8

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

ZP3E – T F 32 BM N – AL14
❶ ❷ ❸

❸ **Connection thread (Male thread)**

AL14	M14 x 1
AL16	M16 x 1.5



Construction	p. 235
Adapter Assembly	p. 242

Model						A	B	C	D	E	F	G	H	J	K	L	M	N
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread													
ZP3E	TF	32	BM	N S U F CL	AL14	60.1	35.1	25.7	21	20.9	2.5	M14 x 1	19	4	Width across flats 19	22	17	31
		40				62.1	37.1	27.7	23	22.9								
		50				65.6	40.6	31.2	26.5	26.4								40
		63			AL16	80	55	44	35	36.1	4	M16 x 1.5	22	6	Width across flats 24		32	50
		80				88	63	52	43	44.1								61
		100				97.5	72.5	61.5	52.5	53.6								78.6
		125				107	82	71	62	63.1								93.8

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

Dimensions/Models

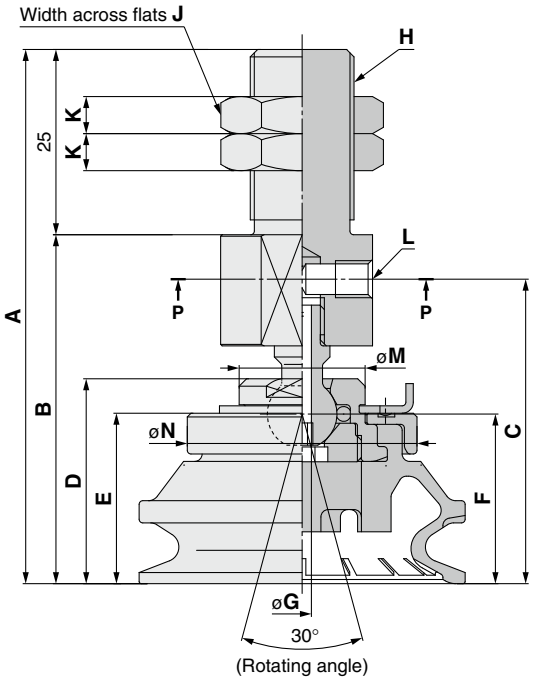
With adapter ø32 to ø125

ZP3E – Y F [32] BM [N] – [AL14]
❶ ❷ ❸

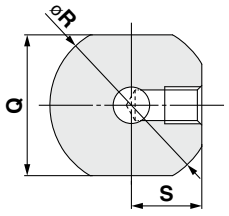
❸ **Connection thread (Male thread)**

AL14	M14 x 1
AL16	M16 x 1.5

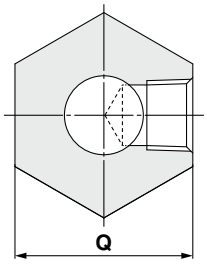
Vacuum inlet direction **Lateral**



P-P
(ø**32** to ø**50**)



P-P
(ø**63** to ø**125**)



Construction	p. 235
Adapter Assembly	p. 243

Model						A	B	C	D	E	F	G	H	J	K	L	M	N	Q	R	S
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread																
ZP3E	YF	32	BM	N S U F CL	AL14	70.1	45.1	39.1	25.7	21	20.9	2.5	M14 x 1	19	4	M5 x 0.8/ Effective thread depth 5	17	31	19	22	9.5
		40				72.1	47.1	41.1	27.7	23	22.9										
		50				75.6	50.6	44.6	31.2	26.5	26.4							40			
		63			AL16	102	77	67	44	35	36.1	4	M16 x 1.5	22	6	Rc1/8	32	50	24		
		80				110	85	75	52	43	44.1							61			
		100				119.5	94.5	84.5	61.5	52.5	53.6							78.6			
		125				129	104	94	71	62	63.1							93.8			

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

Dimensions/Models

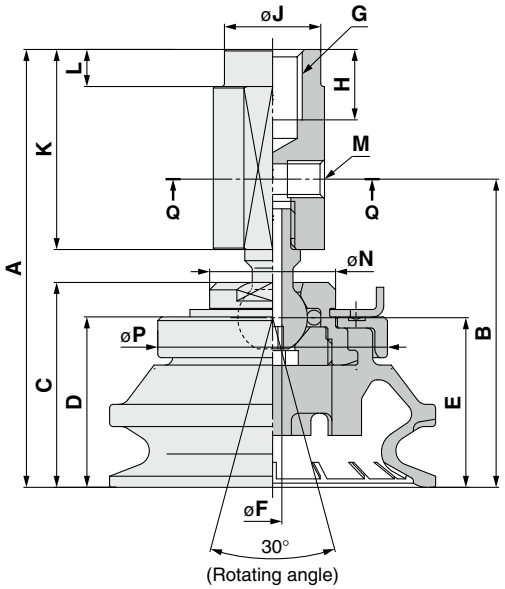
With adapter ø32 to ø125

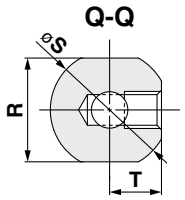
ZP3E – Y F [32] BM [N] – [B8]
❶ ❷

❸ **Connection thread (Female thread)**

B8	M8 x 1.25
B12	M12 x 1.75

Vacuum inlet direction Lateral





Construction	p. 236
Adapter Assembly	p. 243

Model						A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Connection thread																	
ZP3E	YF	32	BM	NSUFCL	B8	57.1	39.6	25.7	21	20.9	2.5	M8 x 1.25	9.5	13	27	5	M5 x 0.8/ Effective thread depth 5	17	31	14	16	7
		40				59.1	41.6	27.7	23	22.9												
		50				62.6	45.1	31.2	26.5	26.4									40			
		63			B12	90	67	44	35	36.1	4	M12 x 1.75	11.5	18	40	6	Rc1/8	32	50	22	26	11
		80				98	75	52	43	44.1									61			
		100				107.5	84.5	61.5	52.5	53.6									78.6			
		125				117	94	71	62	63.1									93.8			

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

Dimensions/Models

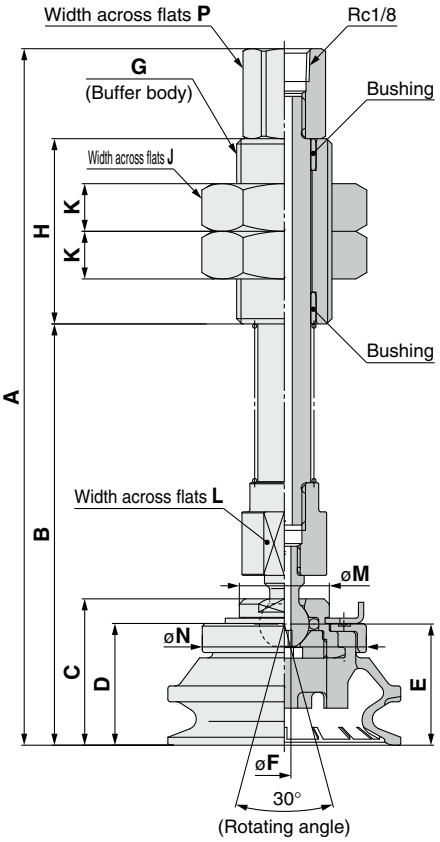
With buffer ø32 to ø125

ZP3E – T F 32 BM N JB 10
❶ ❷ ❹

❸ **Buffer specification**

JB	Rotating, With bushing

Vacuum inlet direction Vertical



Construction	p. 236
Buffer Assembly	p. 244

Model							A	B	C	D	E	F	G	H	J	K	L	M	N	P
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Buffer spec.	❹ Buffer stroke														
ZP3E	TF	32	BM	N S U F CL	JB	10	129.6	77.6	25.7	21	20.9	2.5	M18 x 1.5	35	27	11	14	17	31	14
						30	154.6	102.6												
						50	174.6	122.6												
		40				10	131.6	79.6	27.7	23	22.9									
						30	156.6	104.6												
						50	176.6	124.6												
		50				10	135.1	83.1	31.2	26.5	26.4								40	
						30	160.1	108.1												
						50	180.1	128.1												
		63				10	182	112	44	35	36.1	4	M22 x 1.5	50	30	8	22	32	50	17
						30	207	137												
						50	227	157												
		80				10	190	120	52	43	44.1								61	
						30	215	145												
						50	235	165												
		100				10	199.5	129.5	61.5	52.5	53.6								78.6	
						30	224.5	154.5												
						50	244.5	174.5												
		125				10	209	139	71	62	63.1								93.8	
						30	234	164												
						50	254	184												

*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

Dimensions/Models

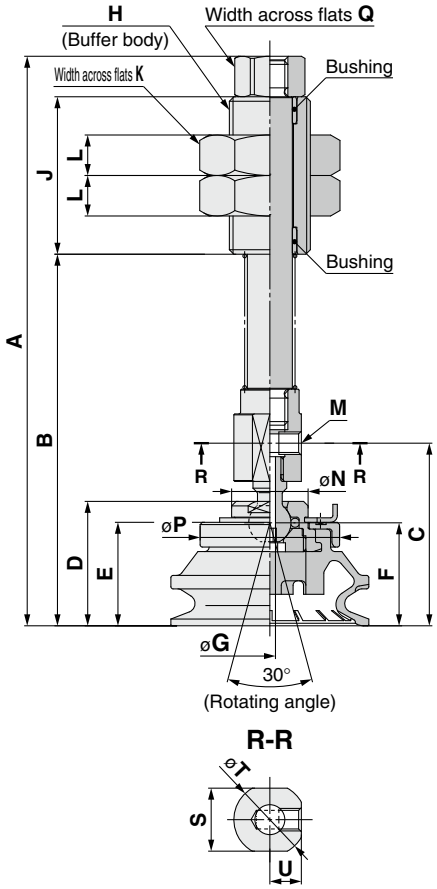
With buffer ø32 to ø125

ZP3E – Y F 32 BM N JB 10
❶ ❷ ❹

❸ **Buffer specification**

JB	Rotating, With bushing

Vacuum inlet direction Lateral



Construction	p. 236
Buffer Assembly	p. 244

Model							A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	S	T	U
	Vacuum inlet direction	❶ Pad dia.	Form	❷ *1 Material	❸ Buffer spec.	❹ Buffer stroke																		
ZP3E	YF	32	BM	N S U F CL	JB	10	124.6	80.6	38.6	25.7	21	20.9	2.5	M18 x 1.5	35	27	11	M5 x 0.8/ Effective thread depth 5	17	31	14	14	16	7
						30	149.6	105.6																
						50	169.6	125.6																
		40				10	126.6	82.6	40.6	27.7	23	22.9												
						30	151.6	107.6																
						50	171.6	127.6																
		50				10	130.1	86.1	44.1	31.2	26.5	26.4								40				
						30	155.1	111.1																
						50	175.1	131.1																
		63				10	178.5	118.5	67	44	35	36.1	4	M22 x 1.5	50	30	8	Rc1/8	32	50	17	22	26	11
						30	203.5	143.5																
						50	223.5	163.5																
		80				10	186.5	126.5	75	52	43	44.1								61				
						30	211.5	151.5																
						50	231.5	171.5																
		100				10	196	136	84.5	61.5	52.5	53.6								78.6				
						30	221	161																
						50	241	181																
		125				10	205.5	145.5	94	71	62	63.1								93.8				
						30	230.5	170.5																
						50	250.5	190.5																

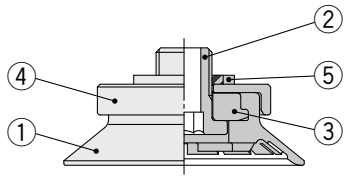
*1 N: NBR, S: Silicone rubber, U: Urethane rubber, F: FKM, CL: Mark-free NBR

Construction

With adapter | Flat type with groove: ø32 to ø125 | Bellows type with ribs and groove: ø32 to ø125

Vacuum inlet direction **Vertical** T Type/ZP3E-T

ZP3E-T□-A□

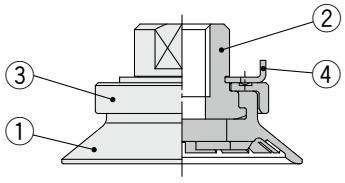


Component Parts

No.	Description	Material	Note
1	**Pad**	NBR, Silicone rubber, Urethane rubber, FKM, Mark-free NBR	Flat type with groove Bellows type with ribs and groove
2	**Set screw**	Brass (Electroless nickel plating)	
3	**Plate**	Aluminum alloy (Clear anodized)	
4	**Holder**	Aluminum alloy (Clear anodized)	Pad diameter: ø32 to ø50
		Structural steel (Electroless nickel plating)	Pad diameter: ø63 to ø125
5	**Seal washer**	Steel strip/NBR	

Vacuum inlet direction **Vertical** T Type/ZP3E-T

ZP3E-T□-B□

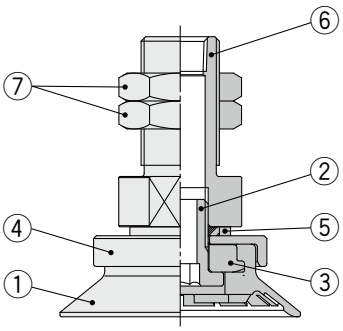


Component Parts

No.	Description	Material	Note
1	**Pad**	NBR, Silicone rubber, Urethane rubber, FKM, Mark-free NBR	Flat type with groove Bellows type with ribs and groove
2	**Plate**	Aluminum alloy (Clear anodized)	
3	**Holder**	Aluminum alloy (Clear anodized)	
4	**Stopper**	Stainless steel	

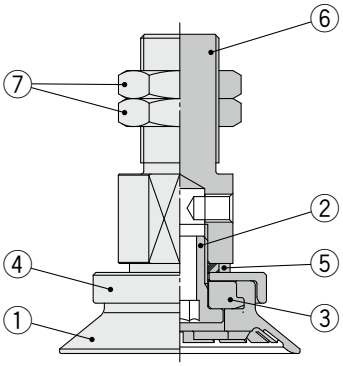
Vacuum inlet direction **Vertical** T Type/ZP3E-T

ZP3E-T□-AL□



Vacuum inlet direction Lateral Y Type/ZP3E-Y

ZP3E-Y□-AL□



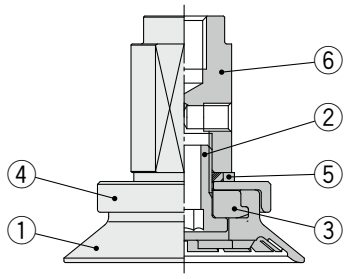
Component Parts

No.	Description	Material	Note
1	**Pad**	NBR, Silicone rubber, Urethane rubber, FKM, Mark-free NBR	Flat type with groove Bellows type with ribs and groove
2	**Set screw**	Brass (Electroless nickel plating)	
3	**Plate**	Aluminum alloy (Clear anodized)	
4	**Holder**	Aluminum alloy (Clear anodized)	Pad diameter: ø32 to ø50
		Structural steel (Electroless nickel plating)	Pad diameter: ø63 to ø125
5	**Seal washer**	Steel strip/NBR	
6	**Adapter**	Aluminum alloy (Clear anodized)	Pad diameter: ø32 to ø50
		Brass (Electroless nickel plating)	Pad diameter: ø63 to ø125
7	**Nut**	Steel (Zinc chromated)	Pad diameter: ø32 to ø50 M14 x 1
		Special steel (Zinc chromated)	Pad diameter: ø63 to ø125 M16 x 1.5

With adapter Flat type with groove: ø32 to ø125 | Bellows type with ribs and groove: ø32 to ø125

Vacuum inlet direction Lateral Y Type/ZP3E-Y

ZP3E-Y□-B□



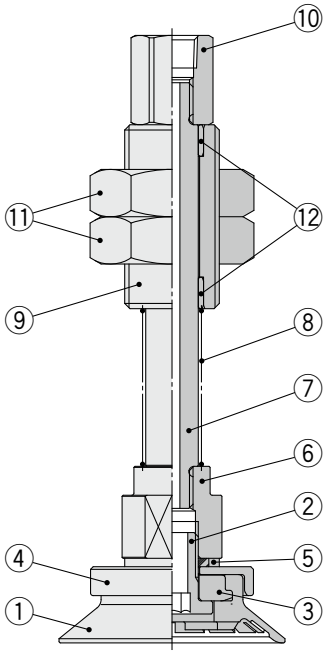
Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Mark-free NBR	Flat type with groove Bellows type with ribs and groove
2	Set screw	Brass (Electroless nickel plating)	
3	Plate	Aluminum alloy (Clear anodized)	
4	Holder	Aluminum alloy (Clear anodized)	Pad diameter: ø32 to ø50
		Structural steel (Electroless nickel plating)	Pad diameter: ø63 to ø125
5	Seal washer	Steel strip/NBR	
6	Adapter	Aluminum alloy (Clear anodized)	

With buffer Flat type with groove: ø32 to ø125 | Bellows type with ribs and groove: ø32 to ø125

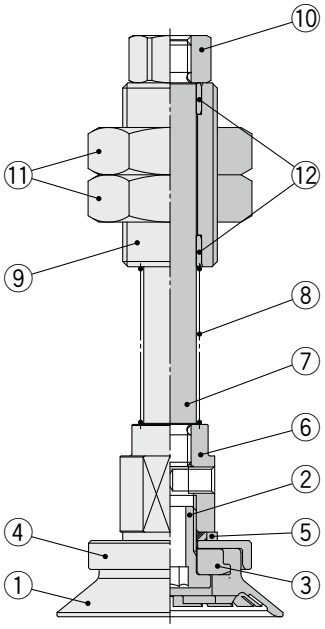
Vacuum inlet direction Vertical T Type/ZP3E-T

ZP3E-T□



Vacuum inlet direction Lateral Y Type/ZP3E-Y

ZP3E-Y□



Component Parts

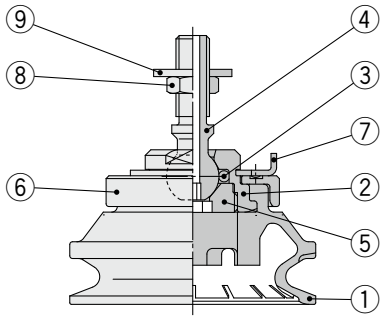
No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Mark-free NBR	Flat type with groove Bellows type with ribs and groove
2	Set screw	Brass (Electroless nickel plating)	
3	Plate	Aluminum alloy (Clear anodized)	
4	Holder	Aluminum alloy (Clear anodized)	Pad diameter: ø32 to ø50
		Structural steel (Electroless nickel plating)	Pad diameter: ø63 to ø125
5	Seal washer	Soft iron/NBR (Zinc chromated)	
6	Adapter	Aluminum alloy (Clear anodized)	
7	Piston rod	Structural steel (Hard chrome plating)	
8	Return spring	Stainless steel	
9	Buffer body	Brass (Electroless nickel plating)	
10	Buffer adapter	Brass (Electroless nickel plating)	
11	Nut	Steel (Zinc chromated)	M18 x 1.5
		Structural steel (Nickel plating)	M22 x 1.5
12	Bushing	—	

Construction

With adapter | Flat type with groove: ø32 to ø125 | Bellows type with ribs and groove: ø32 to ø125

Vacuum inlet direction Vertical T Type/ZP3E-TF

ZP3E-TF□-AL□

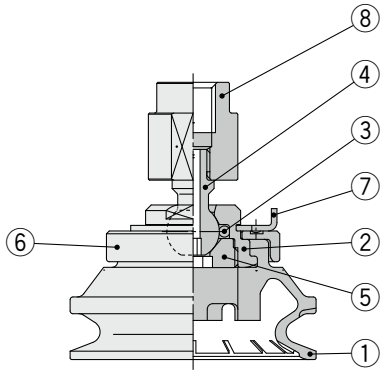


Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Mark-free NBR	Flat type with groove Bellows type with ribs and groove
2	Plate	Stainless steel	Pad diameter: ø32 to ø50
		Aluminum alloy (Clear anodized)	Pad diameter: ø63 to ø125
3	O-ring	FKM	
4	Shaft	Stainless steel	
5	Shaft ring	Stainless steel	
6	Holder	Aluminum alloy (Clear anodized)	
7	Stopper	Stainless steel	
8	Nut	Steel (Zinc chromated)	M14 x 1
		Special steel (Zinc chromated)	M16 x 1.5
9	Seal washer	Soft iron/NBR (Zinc chromated)	

Vacuum inlet direction Vertical T Type/ZP3E-TF

ZP3E-TF□-B□

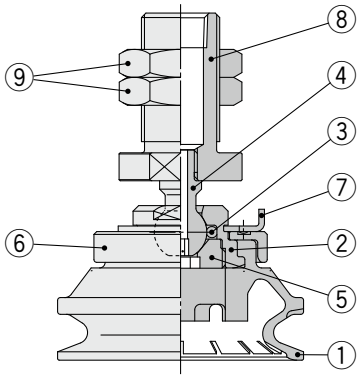


Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Mark-free NBR	Flat type with groove Bellows type with ribs and groove
2	Plate	Stainless steel	
3	O-ring	FKM	
4	Shaft	Stainless steel	
5	Shaft ring	Stainless steel	
6	Holder	Aluminum alloy (Clear anodized)	
7	Stopper	Stainless steel	
8	Adapter	Aluminum alloy (Clear anodized)	

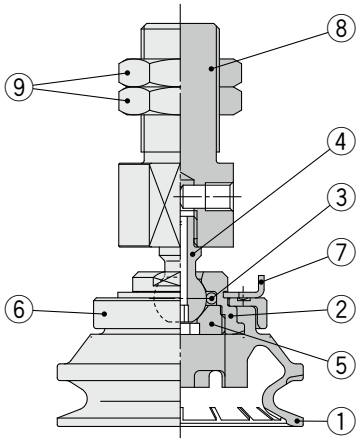
Vacuum inlet direction Vertical T Type/ZP3E-TF

ZP3E-TF□-AL□



Vacuum inlet direction Lateral Y Type/ZP3E-YF

ZP3E-YF□-AL□



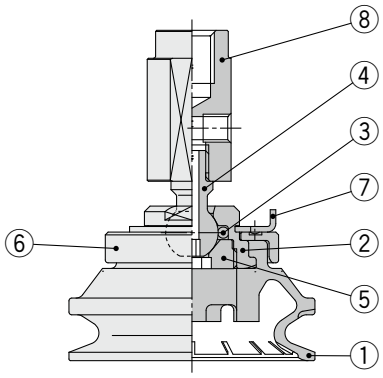
Component Parts

No.	Description	Material	Note
1	Pad	NBR, Silicone rubber, Urethane rubber, FKM, Mark-free NBR	Flat type with groove Bellows type with ribs and groove
2	Plate	Stainless steel	
3	O-ring	FKM	
4	Shaft	Stainless steel	
5	Shaft ring	Stainless steel	
6	Holder	Aluminum alloy (Clear anodized)	
7	Stopper	Stainless steel	
8	Adapter	Aluminum alloy (Clear anodized)	Pad diameter: ø32 to ø50 M14 x 1
		Brass (Electroless nickel plating)	Pad diameter: ø63 to ø125 M16 x 1.5
9	Nut	Steel (Zinc chromated)	M14 x 1
		Special steel (Zinc chromated)	M16 x 1.5

With adapter Flat type with groove: ø32 to ø125 | Bellows type with ribs and groove: ø32 to ø125

Vacuum inlet direction Lateral Y Type/ZP3E-YF

ZP3E-YF□-B□



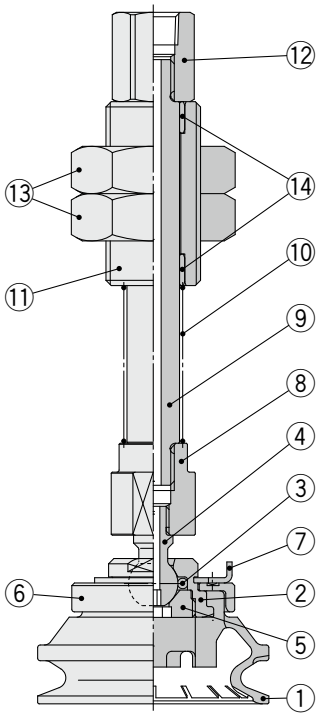
Component Parts

No.	Description	Material	Note
1	**Pad**	NBR, Silicone rubber, Urethane rubber, FKM, Mark-free NBR	Flat type with groove Bellows type with ribs and groove
2	**Plate**	Stainless steel	
3	**O-ring**	FKM	
4	**Shaft**	Stainless steel	
5	**Shaft ring**	Stainless steel	
6	**Holder**	Aluminum alloy (Clear anodized)	
7	**Stopper**	Stainless steel	
8	**Adapter**	Aluminum alloy (Clear anodized)	

With buffer Flat type with groove: ø32 to ø125 | Bellows type with ribs and groove: ø32 to ø125

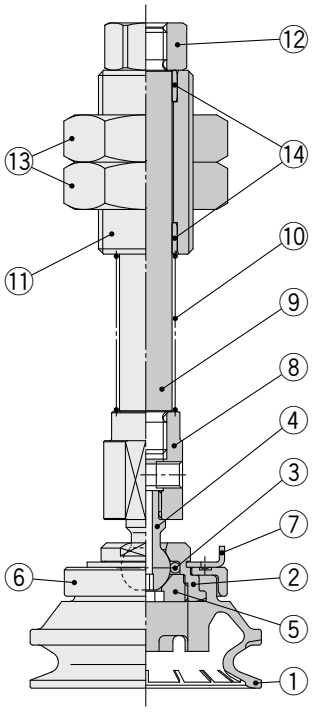
Vacuum inlet direction Vertical T Type/ZP3E-TF

ZP3E-TF□



Vacuum inlet direction Lateral Y Type/ZP3E-YF

ZP3E-YF□



Component Parts

No.	Description	Material	Note
1	**Pad**	NBR, Silicone rubber, Urethane rubber, FKM, Mark-free NBR	Flat type with groove Bellows type with ribs and groove
2	**Plate**	Stainless steel	Pad diameter: ø32 to ø50
		Aluminum alloy (Clear anodized)	Pad diameter: ø63 to ø125
3	**O-ring**	FKM	
4	**Shaft**	Stainless steel	
5	**Shaft ring**	Stainless steel	
6	**Holder**	Aluminum alloy (Clear anodized)	
7	**Stopper**	Stainless steel	
8	**Adapter**	Aluminum alloy (Clear anodized)	
9	**Piston rod**	Structural steel (Electroless nickel plating)	
10	**Return spring**	Stainless steel	
11	**Buffer body**	Brass (Electroless nickel plating)	
12	**Buffer adapter**	Brass (Electroless nickel plating)	
13	**Nut**	Steel (Zinc chromated)	M18 x 1.5
		Structural steel (Nickel plating)	M22 x 1.5
14	**Bushing**	—	

Mounting Bracket Assembly

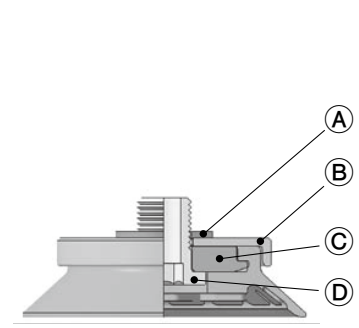
Adapter Assembly: Vacuum Inlet Direction Vertical T Type/ZP3E-T

Product part no.

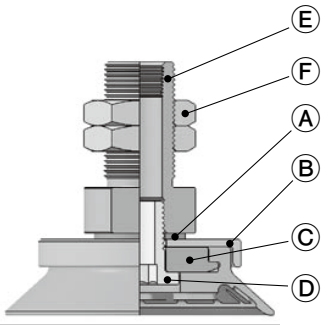
ZP3E - T ① ② □ - ③(A10/A16/AL14/AL16)

- ① Pad diameter
- ② Pad form
- □ Pad material
- ③(A10/A16/AL14/AL16) Connection thread (Male thread)

Component parts



ZP3E-T(32 to 50)(UM/BM)□-A10
ZP3E-T(63 to 125)(UM/BM)□-A16



ZP3E-T(32 to 50)(UM/BM)□-AL14
ZP3E-T(63 to 125)(UM/BM)□-AL16

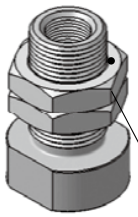
Ⓐ Seal washer

Ⓑ Holder

Ⓒ Plate

Ⓓ Set screw

Ⓔ Male thread adapter (With mounting nut)



		Symbol	① Pad diameter symbol						
			32	40	50	63	80	100	125
Ⓐ Seal washer		M10 x 1	ZP3EA-SW10			—			
		M16 x 1.5	—			ZP3EA-SW16			
Ⓑ Holder	② Pad form	Flat type with groove UM	ZP3EA-H1A		ZP3EA-H2A	ZP3EA-H3A		ZP3EA-H4A	ZP3EA-H5A
		Bellows type with ribs and groove BM				ZP3EA-H3A	ZP3EA-H4A	ZP3EA-H5A	ZP3EA-H6A
Ⓒ Plate		Flat type with groove UM	ZP3EA-P1		ZP3EA-P2	ZP3EA-P3		ZP3EA-P4	ZP3EA-P5
		Bellows type with ribs and groove BM				ZP3EA-P3	ZP3EA-P4	ZP3EA-P5	ZP3EA-P6
Ⓓ Set screw			ZP3EA-A10			ZP3EA-A16			
Ⓔ Male thread adapter	③ Connection thread	M10 x 1 A10	—						
		M16 x 1.5 A16	—						
		M14 x 1 AL14	ZP3EA-TAL14			—			
		M16 x 1.5 AL16	—			ZP3EA-TAL16			
Ⓕ Mounting nut (Single unit)		M14 x 1	ZPNA-M14			—			
		M16 x 1.5	—			RBQ16J			

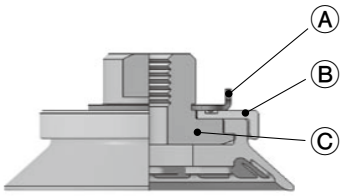
Adapter Assembly: Vacuum Inlet Direction **Vertical** T Type/ZP3E-T

Product part no.

ZP3E - T ① ② □ - ③(B8/B10/B12/B18)

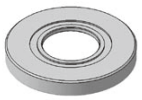
- ① Pad diameter
- ② Pad form
- □ Pad material
- ③(B8/B10/B12/B18) Connection thread (Female thread)

Component parts



Ⓐ**Stopper**

Ⓑ**Holder**



Ⓒ**Female thread plate**

						Symbol	❶Pad diameter symbol						
							32	40	50	63	80	100	125
Ⓐ**Stopper**							ZP3EA-S1			ZP3EA-S2			
Ⓑ**Holder**				❷Pad form	Flat type with groove	UM	ZP3EA-H1B		ZP3EA-H2B	ZP3EA-H3B		ZP3EA-H4B	ZP3EA-H5B
					Bellows type with ribs and groove	BM				ZP3EA-H3B	ZP3EA-H4B	ZP3EA-H5B	ZP3EA-H6B
Ⓒ**Female thread plate**	❷**Pad form**	Flat type with groove	UM	❸**Connection thread**	M8 x 1.25	B8	ZP3EA-PT1-B8		ZP3EA-PT2-B8	—			
					M10 x 1.5	B10	ZP3EA-PT1-B10		ZP3EA-PT2-B10	—			
					M12 x 1.75	B12	—			ZP3EA-PT3-B12		ZP3EA-PT4-B12	ZP3EA-PT5-B12
					M18 x 1.5	B18	—			ZP3EA-PT3-B18		ZP3EA-PT4-B18	ZP3EA-PT5-B18
		Bellows type with ribs and groove	BM		M8 x 1.25	B8	ZP3EA-PT1-B8		ZP3EA-PT2-B8	—			
					M10 x 1.5	B10	ZP3EA-PT1-B10		ZP3EA-PT2-B10	—			
					M12 x 1.75	B12	—			ZP3EA-PT3-B12	ZP3EA-PT4-B12	ZP3EA-PT5-B12	ZP3EA-PT6-B12
					M18 x 1.5	B18	—			ZP3EA-PT3-B18	ZP3EA-PT4-B18	ZP3EA-PT5-B18	ZP3EA-PT6-B18

Adapter Assembly: Vacuum Inlet Direction Lateral Y Type/ZP3E-Y

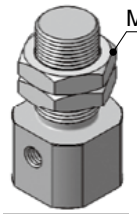
Product part no.

ZP3E - Y ① ② □ - ③

- ① Pad diameter
- ② Pad form
- □ Pad material
- ③ Connection thread (Male/Female thread)

Component parts

Ⓔ Male thread adapter (With mounting nut)



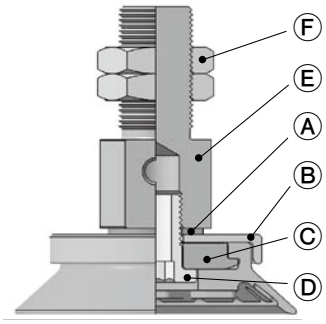
Ⓔ Female thread adapter

Ⓐ Seal washer

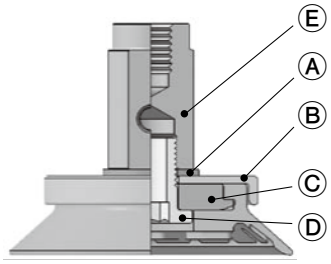
Ⓑ Holder

Ⓒ Plate

Ⓓ Set screw



ZP3E-Y(32 to 50)(UM/BM)□-AL14
ZP3E-Y(63 to 125)(UM/BM)□-AL16



ZP3E-Y(32 to 50)(UM/BM)□-B8
ZP3E-Y(63 to 125)(UM/BM)□-B12

			Symbol	① Pad diameter symbol						
				32	40	50	63	80	100	125
Ⓐ Seal washer		M10 x 1		ZP3EA-SW10			—			
		M16 x 1.5		—			ZP3EA-SW16			
Ⓑ Holder	② Pad form	Flat type with groove	UM	ZP3EA-H1A		ZP3EA-H2A	ZP3EA-H3A		ZP3EA-H4A	ZP3EA-H5A
		Bellows type with ribs and groove	BM				ZP3EA-H3A	ZP3EA-H4A	ZP3EA-H5A	ZP3EA-H6A
Ⓒ Plate	② Pad form	Flat type with groove	UM	ZP3EA-P1		ZP3EA-P2	ZP3EA-P3		ZP3EA-P4	ZP3EA-P5
		Bellows type with ribs and groove	BM				ZP3EA-P3	ZP3EA-P4	ZP3EA-P5	ZP3EA-P6
Ⓓ Set screw				ZP3EA-A10			ZP3EA-A16			
Ⓔ Adapter	③ Connection thread: Male thread	M14 x 1	AL14	ZP3EA-YAL14			—			
		M16 x 1.5	AL16	—			ZP3EA-YAL16			
	③ Connection thread: Female thread	M8 x 1.25	B8	ZP3EA-YB8			—			
		M12 x 1.75	B12	—			ZP3EA-YB12			
Ⓕ Mounting nut (Single unit)		M14 x 1		ZPNA-M14			—			
		M16 x 1.5		—			RBQ16J			

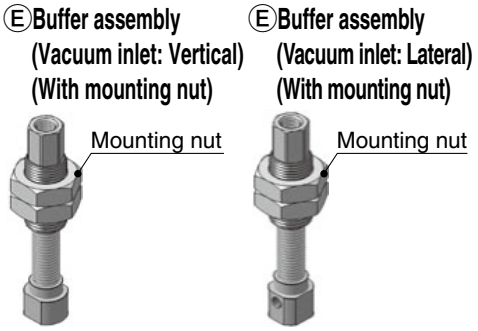
Buffer Assembly: Vacuum Inlet Direction Vertical T Type/ZP3E-T, Lateral Y Type/ZP3E-Y

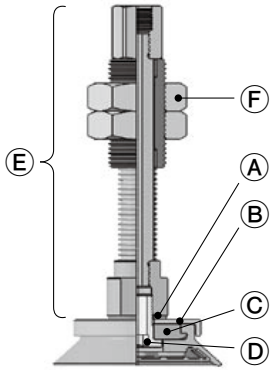
Product part no.

ZP3E - (T/Y) ① ② □ JB ③

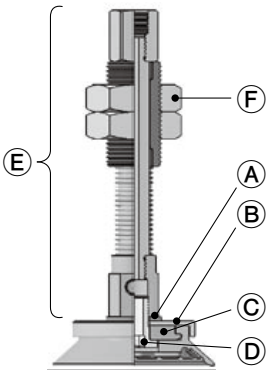
- ① Pad diameter
- ② Pad form
- □ Pad material
- ③ Buffer stroke

Component parts

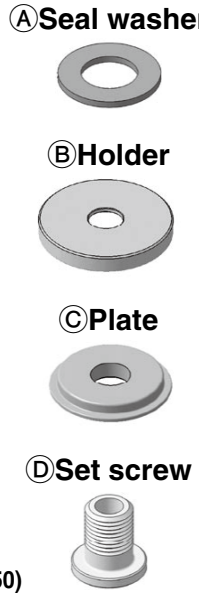




ZP3E-T(32 to 125)(UM/BM)□JB(10 to 50)



ZP3E-Y(32 to 125)(UM/BM)□JB(10 to 50)



			Symbol	① Pad diameter symbol						
				32	40	50	63	80	100	125
Ⓐ Seal washer		M10 x 1		ZP3EA-SW10			—			
		M16 x 1.5		—			ZP3EA-SW16			
Ⓑ Holder	② Pad form	Flat type with groove	UM	ZP3EA-H1A		ZP3EA-H2A	ZP3EA-H3A		ZP3EA-H4A	ZP3EA-H5A
		Bellows type with ribs and groove	BM				ZP3EA-H3A	ZP3EA-H4A	ZP3EA-H5A	ZP3EA-H6A
Ⓒ Plate	② Pad form	Flat type with groove	UM	ZP3EA-P1		ZP3EA-P2	ZP3EA-P3		ZP3EA-P4	ZP3EA-P5
		Bellows type with ribs and groove	BM				ZP3EA-P3	ZP3EA-P4	ZP3EA-P5	ZP3EA-P6
Ⓓ Set screw				ZP3EA-A10			ZP3EA-A16			
Ⓔ Buffer assembly				ZP3EB-(T/Y)1JB③			ZP3EB-(T/Y)2JB③			
Ⓕ Mounting nut (Single unit)		M18 x 1.5		NT-05			—			
		M22 x 1.5		—			ZPNA-M22			

[Buffer assembly part number example]

Product part no. **ZP3E-T32UMN JB 10**

Buffer assembly **ZP3EB-T1 JB 10**

③ Buffer stroke

High Rigidity Pad *ZP3E* Ball Joint Type *Series*
Mounting Bracket Assembly

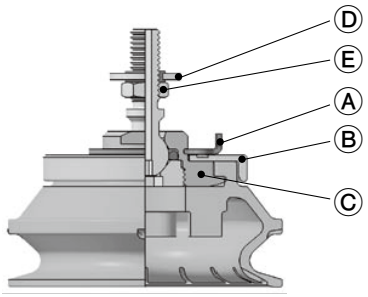
Adapter Assembly: Vacuum Inlet Direction **Vertical** T Type/ZP3E-TF

Product part no.

ZP3E - TF ① ② □ - ③(AL6/AL12)

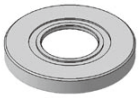
- ① Pad diameter
- ② Pad form
- □ Pad material
- ③(AL6/AL12) Connection thread (Male thread)

Component parts

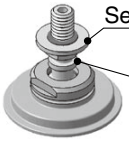


Ⓐ Stopper

Ⓑ Holder



Ⓒ Ball joint unit
(With seal washer
With mounting nut)



			Symbol	① Pad diameter symbol						
				32	40	50	63	80	100	125
Ⓐ Stopper				ZP3EA-S1			ZP3EA-S2			
Ⓑ Holder	② Pad form	Flat type with groove	UM	ZP3EA-H1B		ZP3EA-H2B	ZP3EA-H3B		ZP3EA-H4B	ZP3EA-H5B
		Bellows type with ribs and groove	BM				ZP3EA-H3B	ZP3EA-H4B	ZP3EA-H5B	ZP3EA-H6B
Ⓒ Ball joint unit	② Pad form	Flat type with groove	UM	ZP3EA-F1-AL6		ZP3EA-F2-AL6	ZP3EA-F3-AL12		ZP3EA-F4-AL12	ZP3EA-F5-AL12
		Bellows type with ribs and groove	BM				ZP3EA-F3-AL12	ZP3EA-F4-AL12	ZP3EA-F5-AL12	ZP3EA-F6-AL12
Ⓓ Seal washer (Single unit)		M6 x 1		ZP3EA-SW6			—			
		M12 x 1.25		—			ZP3EA-SW12			
Ⓔ Mounting nut (Single unit)		M6 x 1		SNJ-006C			—			
		M12 x 1.25		—			ZPNA-M12			

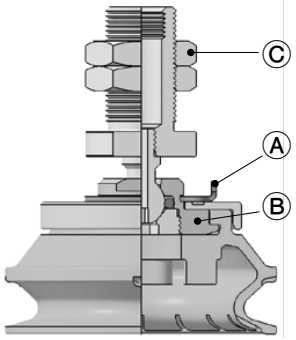
Adapter Assembly: Vacuum Inlet Direction **Vertical** T Type/ZP3E-TF

Product part no.

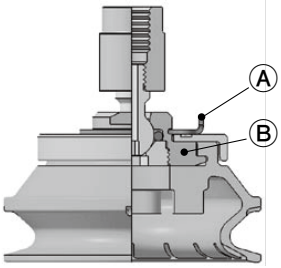
ZP3E - TF ① ② □ - ③(AL14/AL16/B8/B12)

- ① Pad diameter
- ② Pad form
- □ Pad material
- ③(AL14/AL16/B8/B12) Connection thread (Male/Female thread)

Component parts



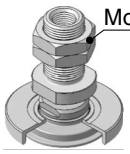
ZP3E-TF(32 to 125)(UM/BM)□-(AL14/AL16)



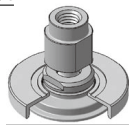
ZP3E-TF(32 to 125)(UM/BM)□-(B8/B12)

Ⓐ Stopper

Ⓑ Ball joint unit (Male thread) (With mounting nut)



Ⓑ Ball joint unit (Female thread)



						Symbol	❶ Pad diameter symbol						
							32	40	50	63	80	100	125
Ⓐ Stopper							ZP3EA-S1			ZP3EA-S2			
Ⓑ Ball joint unit	❷ Pad form: Flat type with groove		UM	❸ Connection thread	Male thread	M14 x 1	AL14	ZP3EU-F1-TAL14		ZP3EU-F2-TAL14	—			
						M16 x 1.5	AL16	—			ZP3EU-F3-TAL16		ZP3EU-F4-TAL16	ZP3EU-F5-TAL16
					Female thread	M8 x 1.25	B8	ZP3EU-F1-TB8		ZP3EU-F2-TB8	—			
						M12 x 1.75	B12	—			ZP3EU-F3-TB12		ZP3EU-F4-TB12	ZP3EU-F5-TB12
		Bellows type with ribs and groove	BM		Male thread	M14 x 1	AL14	ZP3EU-F1-TAL14		ZP3EU-F2-TAL14	—			
						M16 x 1.5	AL16	—			ZP3EU-F3-TAL16	ZP3EU-F4-TAL16	ZP3EU-F5-TAL16	ZP3EU-F6-TAL16
					Female thread	M8 x 1.25	B8	ZP3EU-F1-TB8		ZP3EU-F2-TB8	—			
						M12 x 1.75	B12	—			ZP3EU-F3-TB12	ZP3EU-F4-TB12	ZP3EU-F5-TB12	ZP3EU-F6-TB12
Ⓒ Mounting nut (Single unit)						M14 x 1		ZPNA-M14			—			
						M16 x 1.5		—			RBQ16J			

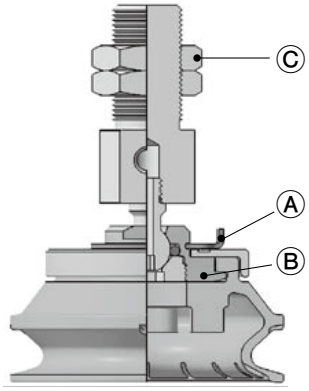
Adapter Assembly: Vacuum Inlet Direction Lateral Y Type/ZP3E-YF

Product part no.

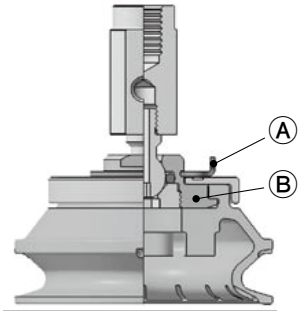
ZP3E - YF ① ② □ - ③

- ① Pad diameter
- ② Pad form
- □ Pad material
- ③ Connection thread (Male/Female thread)

Component parts



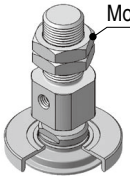
ZP3E-YF(32 to 125)(UM/BM)□-(AL14/AL16)



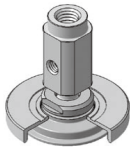
ZP3E-YF(32 to 125)(UM/BM)□-(B8/B12)

Ⓐ Stopper

Ⓑ Ball joint unit (Male thread) (With mounting nut)



Ⓑ Ball joint unit (Female thread)



						Symbol	❶ Pad diameter symbol						
							32	40	50	63	80	100	125
Ⓐ Stopper							ZP3EA-S1			ZP3EA-S2			
Ⓑ Ball joint unit	❷ Pad form: Flat type with groove	UM	❸ Connection thread: Male thread	M14 x 1		AL14	ZP3EU-F1-YAL14		ZP3EU-F2-YAL14	—			
				M16 x 1.5		AL16	—			ZP3EU-F3-YAL16		ZP3EU-F4-YAL16	ZP3EU-F5-YAL16
			Female thread	M8 x 1.25		B8	ZP3EU-F1-YB8		ZP3EU-F2-YB8	—			
				M12 x 1.75		B12	—			ZP3EU-F3-YB12		ZP3EU-F4-YB12	ZP3EU-F5-YB12
	❷ Pad form: Bellows type with ribs and groove	BM	❸ Connection thread: Male thread	M14 x 1		AL14	ZP3EU-F1-YAL14		ZP3EU-F2-YAL14	—			
				M16 x 1.5		AL16	—			ZP3EU-F3-YAL16	ZP3EU-F4-YAL16	ZP3EU-F5-YAL16	ZP3EU-F6-YAL16
			Female thread	M8 x 1.25		B8	ZP3EU-F1-YB8		ZP3EU-F2-YB8	—			
				M12 x 1.75		B12	—			ZP3EU-F3-YB12	ZP3EU-F4-YB12	ZP3EU-F5-YB12	ZP3EU-F6-YB12
Ⓒ Mounting nut (Single unit)				M14 x 1			ZPNA-M14			—			
				M16 x 1.5			—			RBQ16J			

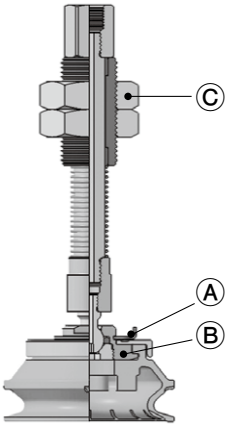
Buffer Assembly: Vacuum Inlet Direction Vertical T Type/ZP3E-TF, Lateral Y Type/ZP3E-YF

Product part no.

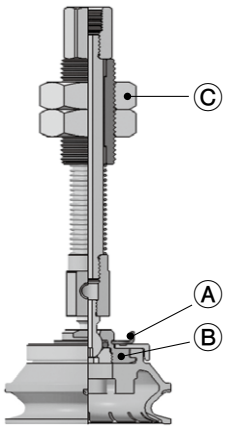
ZP3E - (T/Y) F ① ② □ JB ③

- ① Pad diameter
- ② Pad form
- □ Pad material
- ③ Buffer stroke

Component parts



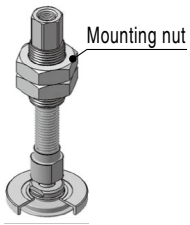
ZP3E-TF(32 to 125)(UM/BM)□JB(10 to 50)



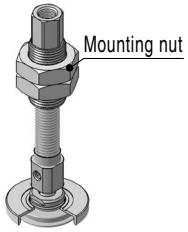
ZP3E-YF(32 to 125)(UM/BM)□JB(10 to 50)

Ⓐ Stopper

Ⓑ Ball joint buffer unit (Male thread) (With mounting nut)



Ⓑ Ball joint buffer unit (Female thread) (With mounting nut)



			Symbol	① Pad diameter symbol						
				32	40	50	63	80	100	125
Ⓐ Stopper				ZP3EA-S1			ZP3EA-S2			
Ⓑ Ball joint buffer unit	② Pad form	Flat type with groove	UM	ZP3EU-(T/Y)F1JB③		ZP3EU-(T/Y)F2JB③	ZP3EU-(T/Y)F3JB③		ZP3EU-(T/Y)F4JB③	ZP3EU-(T/Y)F5JB③
		Bellows type with ribs and groove	BM	ZP3EU-(T/Y)F1JB③		ZP3EU-(T/Y)F2JB③	ZP3EU-(T/Y)F3JB③	ZP3EU-(T/Y)F4JB③	ZP3EU-(T/Y)F5JB③	ZP3EU-(T/Y)F6JB③
Ⓒ Mounting nut (Single unit)		M18 x 1.5		NT-05			—			
		M22 x 1.5		—			ZPNA-M22			

[Buffer unit part number example]

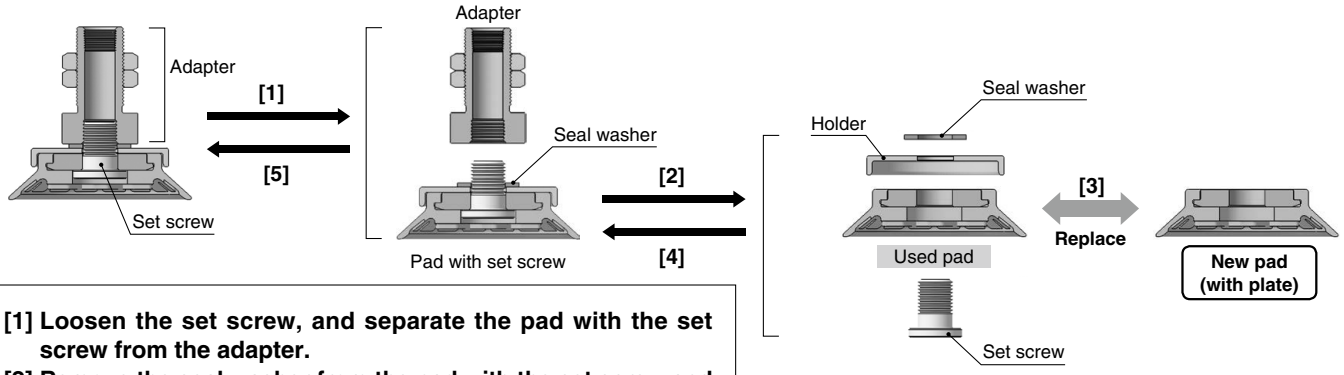
Product part no. **ZP3E-TF32UMN JB 10**

Buffer assembly **ZP3EU-TF1 JB 10**

③ Buffer stroke

ZP3E Series
How to Replace the Pad

With Set Screw



[1] Loosen the set screw, and separate the pad with the set screw from the adapter.
[2] Remove the seal washer from the pad with the set screw and separate it into seal washer, holder, pad and set screw. ∗1
[3] Replace the pad (with plate) with a new one.
[4] Insert the set screw from the suction surface side of the new pad, and mount the holder and seal washer in order.
[5] Mount the adapter onto the set screw. ∗2

∗1 When mounting and removing the seal washer, rotate the set screw while the seal washer is being held.

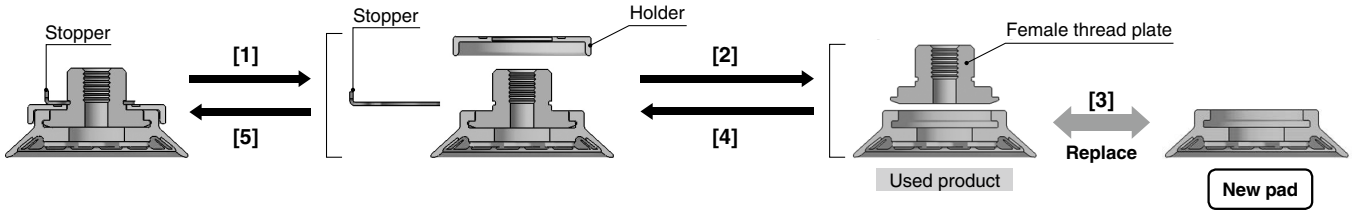
∗2 Refer to the tightening torque shown in Table 1 for adapter mounting.

Table 1: Recommended Set Screw Tightening Torque

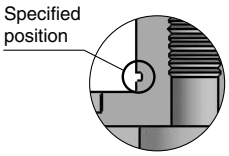
Product specifications			Tightening torque [N·m]
Pad diameter	Product part no.	Mounting thread size	
ø32 to ø50	**ZP3E-(32 to 50)UM□□**	M10 x 1	8 to 10
	ZP3E-(32 to 50)BM□□		
ø63 to ø125	**ZP3E-(63 to 125)UM□□**	M16 x 1.5	13 to 15
	ZP3E-(63 to 125)BM□□		

∗ Refer to “Pad Unit (with Plate)” shown below for the replacement method for pads with plate.

With Stopper (with Female Thread Plate/with Ball Joint Unit)

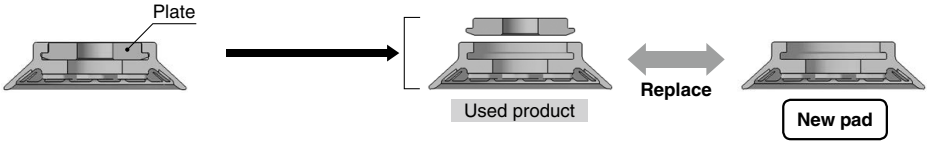


[1] Pull out the stopper horizontally and remove the holder from the product.
[2] Remove the female plate.
[3] Replace the pad with a new one.
[4] Insert the female thread plate into the new pad.
[5] Mount the holder and insert the stopper into the specified position.



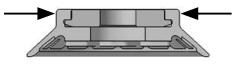
∗ Refer to “Pad Unit (with Plate)” shown below for the replacement method for pads with plate.

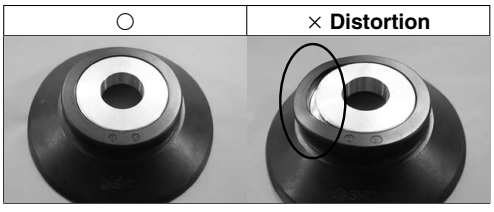
Pad Unit (with Plate)



Remove the plate and replace the pad with a new one. Reassemble the product.

∗ Press the outer circumference of the plate insertion area by hand to eliminate distortion.





∗ The same replacement method is applicable to the replacement of the pad unit with a female thread plate or ball joint unit.

High Rigidity Pad
Specific Product Precautions

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

Mounting

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

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

High Rigidity ZP3E Series

Model	Connection thread	Tightening torque [N·m]
ZP3E-□(32 to 50)□JB□	M18 x 1.5	28 to 32
ZP3E-□(63 to 125)□JB□	M22 x 1.5	45 to 50