

ZP3E Series

Ball Joint Type High Rigidity Pad (ø32 ~ ø125)
With Adapter / With Buffer

How to Order



With Adapter

ZP3E

TF

32

UM

N

AL14

With Buffer

ZP3E

TF

32

UM

N

JB

10

① Vacuum inlet direction	
TF	Vertical
YF	Lateral

② Pad diameter (mm)	
32	ø32
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
125	ø125

⑤ Buffer specification	
JB	Rotating(Brass,With Bushing)
JF	Rotating(Steel,With Bushing)

③ Pad type	
UM	Flat type with groove
BM	Belows type with ribs and groove

④ Material	
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
GN	Conductive NBR
GS	Conductive silicone rubber

Green symbol is customized models.

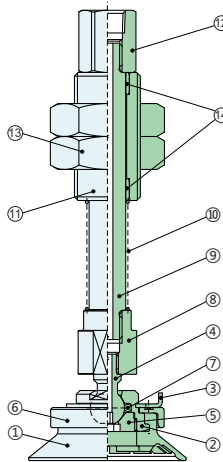
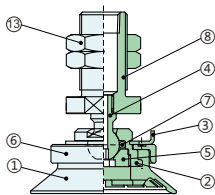
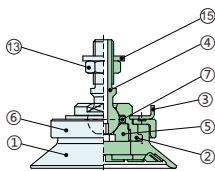
⑥ Buffer stroke	
10	10 mm
25	25 mm
30	30 mm
50	50 mm
75	75 mm
100	100 mm

⑦ Vacuum inlet		ZP3E-T / Vertical		ZP3E-Y / Lateral	
		ø32~ø50	ø63~ø125	ø32~ø50	ø63~ø125
Male Thread	AL6	M6 x 1	●	—	—
	AL12	M12 x 1.25	—	●	—
	AL14	M14 x 1	●	—	—
	AL16	M16 x 1.5	—	●	●
Female Thread	B8	M8 x 1.25	●	—	—
	B12	M12 x 1.75	—	●	●

Spring reactiveforce

Pad diameter (mm)	Tightening torque ± 5% [N·m]		Buffer stroke (mm)	Spring reactiveforce [N]	
	Brass,With Bushing(JB)	Steel,With Bushing(JF)		At 0 stroke	At full stroke
ø32~ø50	30	50	10	5	6.5
			25	6.9	11.8
			30	5	8.5
			50,75	6.9	11.8
ø63~ø125	45	75	10	—	11.5
			25	10	15
			30		13.5
			50,75,100		15

Construction



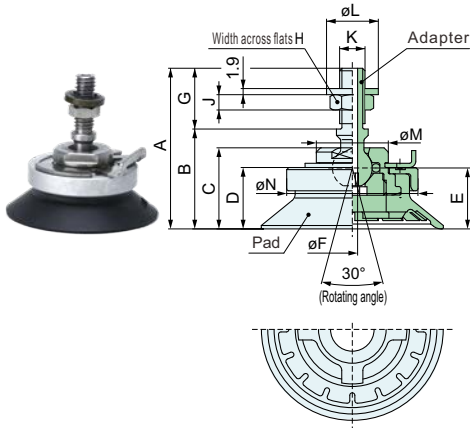
Component Parts

No.	Description	Material (Surface treatment)	Note
1	Vacuum pad	NBR, Silicone rubber, Urethane rubber, FKM	Pad form: Flat typewith groove, Bellows type with groove
2	Plate	Stainless steel	
3	Stopper	Stainless steel	
4	Shaft	Stainless steel	
5	Shaft ring	Stainless steel	
6	Holder	Aluminum alloy(Clear anodized)	
7	O-ring	FKM	
8	Adapter	Aluminum alloy(Clear anodized)	
9	Piston rod	Stainless steel(Hard chrome plating) Structural steel (Hard chrome plating)	Vertical: ZP3E-TF Lateral: ZP3E-YF
10	Return spring	Stainless steel	
11	Buffer body	Brass (Electroless nickel plating) steel (Nickel plating)	JB JF
12	Buffer adapter	Brass (Electroless nickel plating)	
13	Nut	Structural steel (Nickel plating)	
14	Bushing	—	
15	Seal washer	Soft iron/NBR	

Dimensions

Green symbol is customized models. (mm)

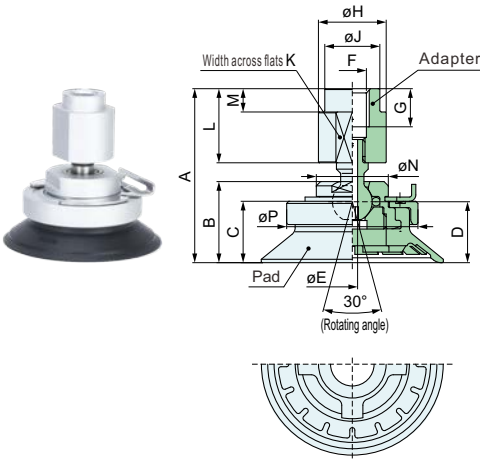
UM Set Screw Vertical



Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑦ Connection thread	A	B	C	D	E	øF	G	H	J	K	øL	øM	øN	Adapter
ZP3E	TF	32	UM	N S U F G N G S	AL6	39.6	23.6	19.2	14.5	14.4	2.5	16	8	3	M6 x 1	11.5	17	31	ZP3EU-F1-TAL6
		40				40	24	19.7	15	14.9								40	ZP3EU-F2-TAL6
		63			AL12	56.5	36.5	30.5	21.5	22.6	4	20	17	7	M12 x 1.25	18	32	50	ZP3EU-F3-TAL12
		80																61	ZP3EU-F4-TAL12
		100				59	39	33	24	25.1								78.6	ZP3EU-F5-TAL12

Model for refer: ZP3E-TF50UMN-AL6

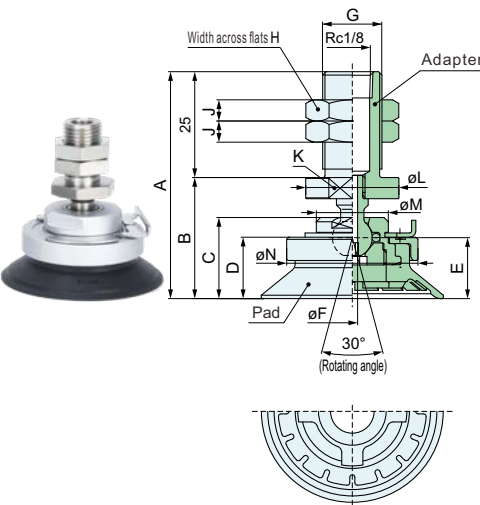
UM Female Thread Vertical



Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑦ Connection thread	A	B	C	D	øE	F	G	øH	øJ	K	L	M	øN	øP	Adapter
ZP3E	TF	32	UM	N S U F G N G S	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	ZP3EU-F1-TB8
		40				41.6	19.7	15	14.9										40	ZP3EU-F2-TB8
		63			B12	63.5	30.5	21.5	22.6	4	M12 x 1.75	11	26	18	22	27	6	32	50	ZP3EU-F3-TB12
		80																	61	ZP3EU-F4-TB12
		100				66	33	24	25.1										78.6	ZP3EU-F5-TB12

Model for refer: ZP3E-TF63UMN-B12

UM Male Thread Vertical



Model	①	②	③	④	⑦	A	B	C	D	E	øF	G	H	J	K	øL	øM	øN	Adapter
	Vacuum inlet direction	Pad dia.	Pad type	Pad Material	Connection thread														
ZP3E	TF	32	UM	N S U F G N G S	AL14	53.6	28.6	19.2	14.5	14.4	2.5	M14 x 1	19	5	Width across flats 19	22	17	31	ZP3EU-F1-TAL14
		40				54.1	29.1	19.7	15	14.9									ZP3EU-F2-TAL14
		63			AL16	66.5	41.5	30.5	21.5	22.6	4	M16 x 1.5	22	6	Width across flats 24	32		50	ZP3EU-F3-TAL16
		80																61	ZP3EU-F4-TAL16
		100				69	44	33	24	25.1								78.6	ZP3EU-F5-TAL16
125																			

Model for refer: ZP3E-TF50UMN-AL14

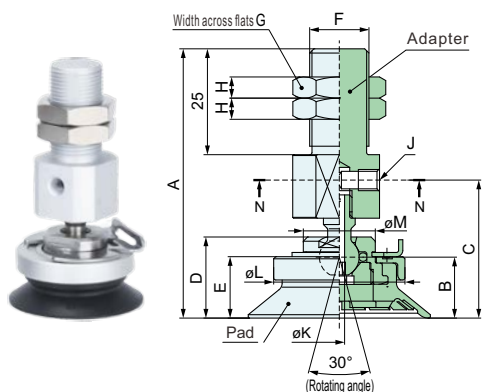
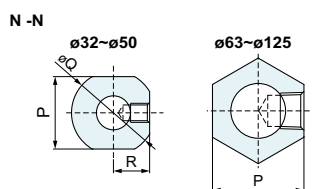
ZP3E Series

Ball Joint Type High Rigidity Pad UM (ø32 ~ ø125)
With Adapter **Lateral**

Dimensions

Green symbol is customized models. (mm)

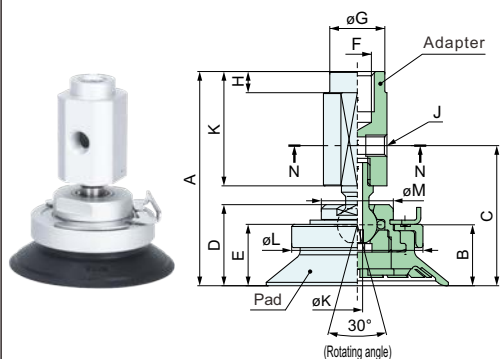
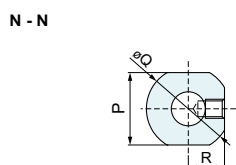
UM Male Thread Lateral



Model	①	②	③	④	⑦	A	B	C	D	E	F	G	H	J	øK	øL	øM	P	øQ	R	Adapter			
	Vacuum inlet direction	Pad dia.	Pad type	Pad Material	Connection thread																			
ZP3E	YF	32	UM	N S U F G N G S	AL14	63.6	14.4	32.6	19.2	14.5	M14 x 1	19	5	M5 x 0.8	2.5	31	17	Width across flats 19	22	9.5	ZP3EU-F1-YAL14			
		40				64.1	14.9	33.1	19.7	15						40					ZP3EU-F2-YAL14			
		63			AL16	88.5	22.6	53.5	30.5	21.5	M16 x 1.5	22	6	Rc1/8	4	50	32	Width across flats 24				ZP3EU-F3-YAL16		
		80				91	25.1	56	33	24						61						ZP3EU-F4-YAL16		
		100																				78.6	ZP3EU-F5-YAL16	
		125																						

Model for refer: ZP3E-YF50UMN-AL14

UM Female Thread Lateral



Model	①	②	③	④	⑦																Adapter			
	Vacuum inlet direction	Pad dia.	Pad type	Pad Material	Connection thread	A	B	C	D	E	F	øG	H	J	øK	øL	øM	P	øQ	R				
ZP3E	YF	32	UM	N S U F G N G S	B8	50.6	14.4	33.1	19.2	14.5	M8 x 1.25	13	5	M5 x 0.8	27	31	17	Width across flats 16	19	8.5	ZP3EU-F1-YB8			
		40				511	14.9	33.6	19.7	15						40					ZP3EU-F2-YB8			
		63			B12	76.5	22.6	53.5	30.5	21.5	M12 x 1.75	18	6	Rc1/8	40	50	32	Width across flats 28	24	12.5	ZP3EU-F3-YB12			
		80				79	25.1	56	33	24						61					ZP3EU-F4-YB12			
		100																						
		125																						

Model for refer: ZP3E-YF50UMN-B8

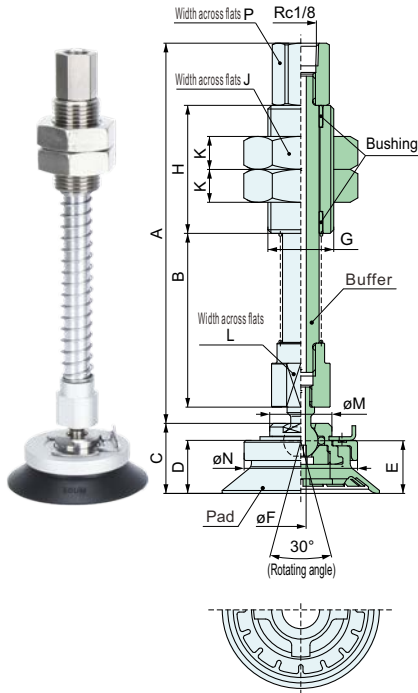
Ball Joint Type High Rigidity Pad UM ($\phi 32 \sim \phi 125$)
With Buffer

ZP3E Series

Dimensions

Green symbol is customized models. (mm)

UM With Buffer Vertical



Dimensions Per Pad

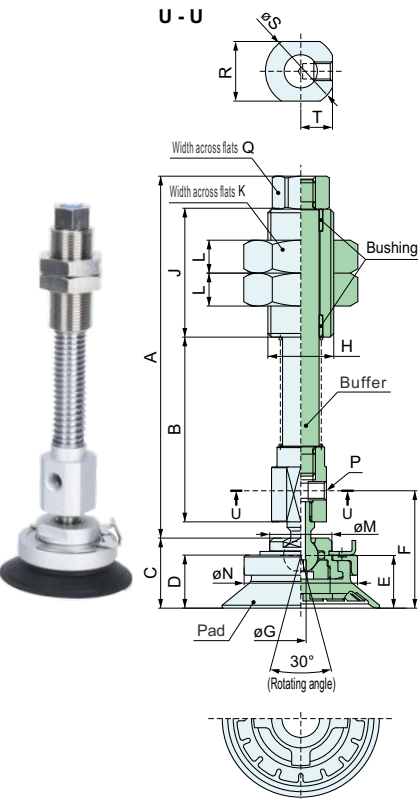
Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑤ Buffer spec.	⑥ Buffer stroke	C	D	E	ϕN
ZP3E	TF	32	UM	N S U F G N G S	J B J F	10	19.2	14.5	14.4	31
		40				25				
		50				30				
		63				50	19.7	15	14.9	40
		80				75				
		100				10	30.5	21.5	22.6	50
		125				25				
						30				
						50	33	24	25.1	61
						75				78.6
						100				

Dimensions Per Buffer

Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑤ Buffer spec.	⑥ Buffer stroke	A	B	F	G	H	J	K	L	øM	P			
ZP3E	TF	32 40 50	UM	N S U F G N G S	J B J F	10	104	47.5	2.5	M18 x 1.5	35	27	9	14	17	14			
						25	114	57.5											
						30	129	72.5											
						50	149	92.5											
						75	185	128.5											
		63 80 100 125				10	138	62	4	M22 x 1.5	50	30	8	22	32	17			
						25	147	71											
						30	163	87											
						50	183	107											
						75	223	147											
						100	258	182											

Model for refer: ZP3E-TF80UMNJB10

UM With Buffer Lateral



Dimensions Per Pad

Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑤ Buffer spec.	⑥ Buffer stroke	C	D	E	F	ϕN
ZP3E	YF	32	UM	N S U F G N G S	J B J F	10	19.2	14.5	14.4	32.1	31
		40				25					
		50				30					
		63				50	19.7	15	14.9	32.6	40
		80				75					
		100				10	30.5	21.5	22.6	53.5	50
		125				25					
						30					
						50	33	24	25.1	56	61
						75					
						100					78.6

Dimensions Per Buffer

Model	①	②	③	④	⑤	⑥	A	B	øG	H	J	K	L	øM	P	Q	R	øS	T			
	Vacuum inlet direction	Pad dia.	Pad type	Pad Material	Buffer spec.	Buffer stroke																
ZP3E	YF	32 40 50	UM	N S U F G N G S	J B J F	10	99	50.5	2.5	M18 x 1.5	35	27	9	17	M5 x 0.8	14	16	19	8.5			
						25	109	60.5														
						30	124	75.5														
						50	144	95.5														
						75	180	131.5														
		63 80 100 125				10	134.5	68.5	4	M22 x 1.5	50	30	8	32	Rc1/8	17	24	28	12.5			
						25	143.5	77.5														
						30	159.5	93.5														
						50	179.5	113.5														
						75	219.5	153.5														
						100	254.5	188.5														

Model for refer: ZP3E-YF80UMNJB10

ZP3E Series

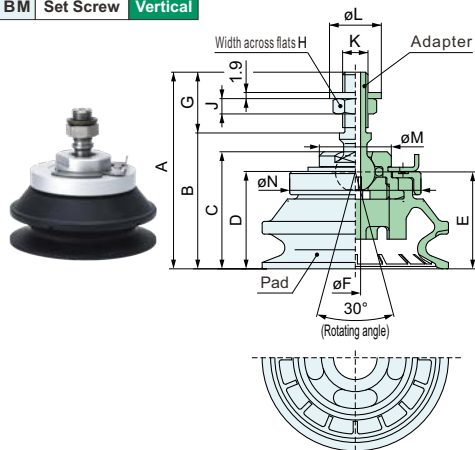
Ball Joint Type High Rigidity Pad BM ($\phi 32 \sim \phi 125$)

With Adapter **Vertical**

Dimensions

Green symbol is customized models. (mm)

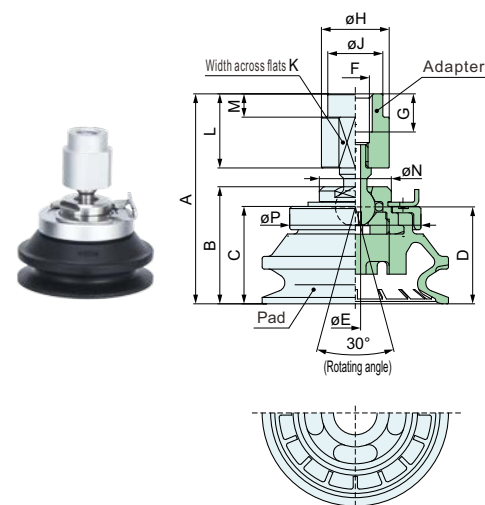
BM Set Screw **Vertical**



Model	①	②	③	④	⑦	A	B	C	D	E	øF	G	H	J	K	øL	øM	øN	Adapter	
	Vacuum inlet direction	Pad dia.	Pad type	Pad Material	Connection thread															
ZP3E	TF	32	BM	N S U F G N S	AL6	46	30	25.7	21	20.9	2.5	16	8	3	M6 x 1	11.5	17	31	ZP3EU-F1-TAL6	
		40				48	32	27.7	23	22.9									40	ZP3EU-F2-TAL6
		50				51.6	35.6	31.2	26.5	26.4									50	ZP3EU-F3-TAL12
		63			AL12	70	50	44	35	36.1	4	20	17	7	M12 x 1.25	18	32	61	ZP3EU-F4-TAL12	
		80				78	58	52	43	44.1								78.6	ZP3EU-F5-TAL12	
		100				87.5	67.5	61.5	52.5	53.6								93.8	ZP3EU-F6-TAL12	
		125				97	77	71	62	63.1										

Model for refer: ZP3E-TF50BMN-AL6

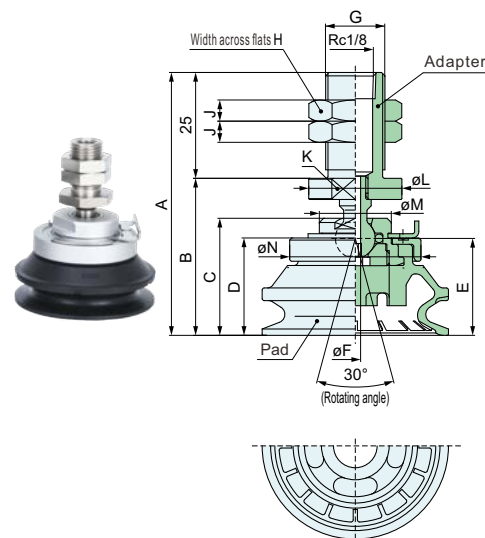
BM Female Thread **Vertical**



Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑦ Conection thread	A	B	C	D	øE	F	G	øH	øJ	K	L	M	øN	øP	Adapter	
ZP3E	TF	32	BM	N S U F G N S	B8	47.6	25.7	21	20.9											31	ZP3EU-F1-TB8
		40				49.6	27.7	23	22.9	2.5	M8 x 1.25	9	16	13	14	17.5	5.5	17		40	ZP3EU-F2-TB8
		50				53.1	31.2	26.5	26.4											50	ZP3EU-F3-TB12
		63			B12	77	44	35	36.1											61	ZP3EU-F4-TB12
		80				85	52	43	44.1	4	M12 x 1.75	11	26	18	22	27	6	32		78.6	ZP3EU-F5-TB12
		100				94.5	61.5	52.5	53.6											93.8	ZP3EU-F6-TB12
		125				104	71	62	63.1												

Model for refer: ZP3E-TF63BMN-B12

BM Male Thread **Vertical**



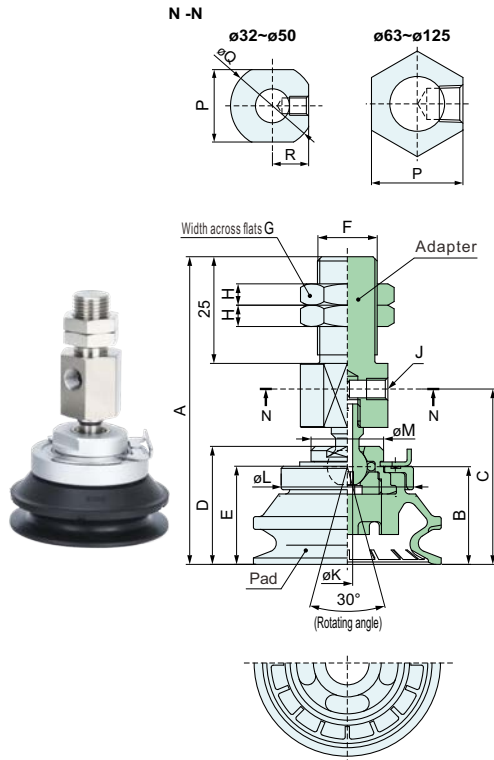
Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑦ Connection thread	A	B	C	D	E	øF	G	H	J	K	øL	øM	øN	Adapter
ZP3E	TF	32	BM	N S U F G N S	AL14	60.1	35.1	25.7	21	20.9	2.5	M14 x 1	19	5	Width across flats 19	22	17	31	ZP3EU-F1-TAL14
		40				62.1	37.1	27.7	23	22.9									ZP3EU-F2-TAL14
		50				65.6	40.6	31.2	26.5	26.4									ZP3EU-F3-TAL16
		63			AL16	80	55	44	35	36.1	4	M16 x 1.5	22	6	Width across flats 24	32	50	ZP3EU-F4-TAL16	
		80				88	63	52	43	44.1								61	ZP3EU-F5-TAL16
		100				97.5	72.5	61.5	52.5	53.6								78.6	ZP3EU-F6-TAL16
		125				107	82	71	62	63.1								93.8	ZP3EU-F6-TAL16

Model for refer: ZP3E-TF50BMN-AL14

Dimensions

Green symbol is customized models. (mm)

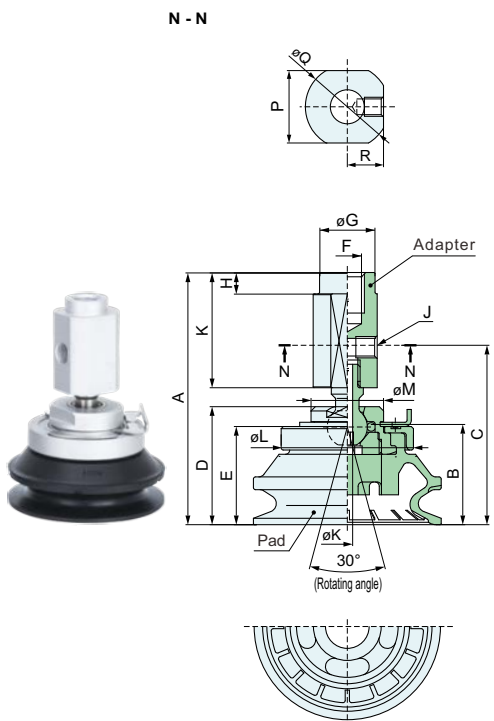
BM Male Thread Lateral



Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑦ Connection thread	A	B	C	D	E	F	G	H	J	øK	øL	øM	P	øQ	R	Adapter
ZP3E	YF	32	BM	N S U F G N G S	AL14	70.1	20.9	39.1	25.7	21	M14 x 1	19	5	M5 x 0.8	2.5	31	17	Width across flats 19	22	9.5	ZP3EU-F1-YAL14
		40				72.1	22.9	41.1	27.7	23											ZP3EU-F2-YAL14
		50				75.6	26.4	44.6	31.2	26.5											ZP3EU-F3-YAL16
		63			AL16	102	36.1	67	44	35	M16 x 1.5	22	6	Rc1/8	4	50	32	Width across flats 24			ZP3EU-F4-YAL16
		80				110	44.1	75	52	43											ZP3EU-F5-YAL16
		100				119.5	53.6	84.5	61.5	52.5											ZP3EU-F6-YAL16
		125				129	63.1	94	71	62						61	78.6				

Model for refer: ZP3E-YF50BMN-AL14

BM Female Thread Lateral



Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑦ Connection thread	A	B	C	D	E	F	øG	H	J	øK	øL	øM	P	øQ	R	Adapter
ZP3E	YF	32	BM	N S U F G N G S	B8	57.1	20.9	39.6	25.7	21	M8 x 1.25	13	5	M5 x 0.8	27	31	17	Width across flats 16	19	8.5	ZP3EU-F1-YB8
		40				59.1	22.9	41.6	27.7	23											ZP3EU-F2-YB8
		50				62.6	26.4	45.1	31.2	26.5											ZP3EU-F3-YB12
		63			B12	90	36.1	67	44	35	M12 x 1.75	18	6	Rc1/8	40	50	32	Width across flats 28	24	12.5	ZP3EU-F4-YB12
		80				98	44.1	75	52	43											ZP3EU-F5-YB12
		100				107.5	53.6	84.5	61.5	52.5											ZP3EU-F6-YB12
		125				117	63.1	94	71	62						78.6	93.8				

Model for refer: ZP3E-YF50BMN-B8

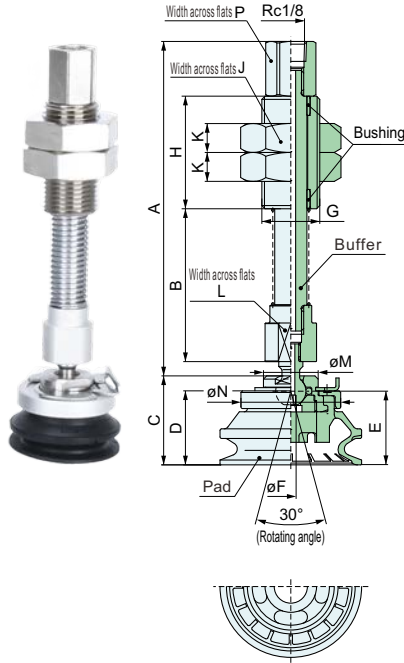
ZP3E Series

Ball Joint Type High Rigidity Pad BM ($\phi 32 \sim \phi 125$)
With Buffer

Dimensions

Green symbol is customized models. (mm)

BM With Buffer Vertical



Dimensions Per Pad

Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑤ Buffer spec.	⑥ Buffer stroke	C	D	E	ϕN
ZP3E	TF	32	BM	N S U F G N G S	J B J F	10	25.7	21	20.9	31
		40				25	27.7	23	22.9	
		50				30	31.2	26.5	26.4	
		63				50	44	35	36.1	40
		80				75	52	43	44.1	50
		100				10	61.5	52.5	53.6	61
		125				25	71	62	63.1	78.6
						30				93.8
						50				
						75				

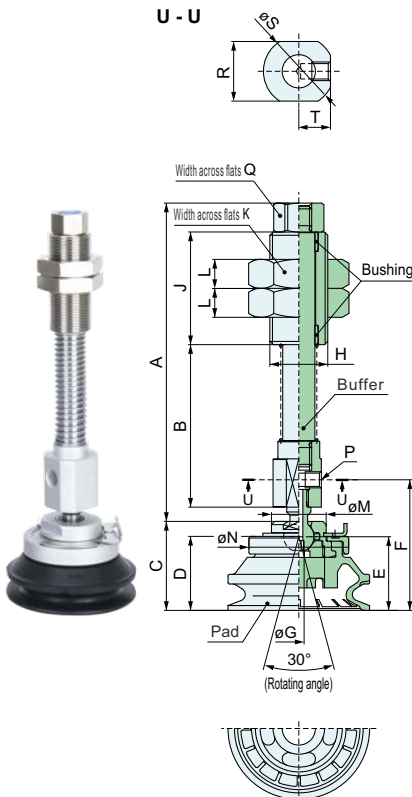
Dimensions Per Buffer

Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑤ Buffer spec.	⑥ Buffer stroke	A	B	F	G	H	J	K	L	øM	P			
ZP3E	TF	32 40 50	BM	N S U F G N G S	J B J F	10	104	47.5	2.5	M18 x 1.5	35	27	9	14	17	14			
						25	114	57.5											
						30	129	72.5											
						50	149	92.5											
						75	185	128.5											
		63 80 100 125				10	138	62	4	M22 x 1.5	50	30	8	22	32	17			
						25	147	71											
						30	163	87											
						50	183	107											
						75	223	147											
						100	258	182											

Model for refer: ZP3E-TF80BMNJB10

BM With Buffer Lateral

U - U



Dimensions Per Pad

Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑤ Buffer spec.	⑥ Buffer stroke	C	D	E	F	ϕN
ZP3E	YF	32	BM	N S U F G N G S	J B J F	10	25.7	21	20.9	38.6	31
		40				25	27.7	23	22.9	40.6	
		50				30	31.2	26.5	26.4	44.1	
		63				50	44	35	36.1	67	50
		80				75	52	43	44.1	75	61
		100				10	61.5	52.5	53.6	84.5	78.6
		125				25	71	62	63.1	94	93.8
						30					
						50					
						75					

Dimensions Per Buffer

Model							A	B	øG	H	J	K	L	øM	P	Q	R	øS	T			
	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑤ Buffer spec.	⑥ Buffer stroke																
ZP3E	YF	32 40 50	BM	N S U F G N G S	J B J F	10	99	50.5	2.5	M18 x 1.5	35	27	9	17	M5 x 0.8	14	16	19	8.5			
						25	109	60.5														
						30	124	75.5														
						50	144	95.5														
						75	180	131.5														
		63 80 100 125				10	134.5	68.5	4	M22 x 1.5	50	30	8	32	Rc1/8	17	24	28	12.5			
						25	143.5	77.5														
						30	159.5	93.5														
						50	179.5	113.5														
						75	219.5	153.5														
					100	254.5	188.5															

Model for refer: ZP3E-YF80BMNJB10

ZP3E Series

ZP3EA-T1-B(8/10)
ZP3EA-T2-B(8/10)
ZP3EA-T3-B(12/18)
ZP3EA-T4-B(12/18)
ZP3EA-T5-B(12/18)
ZP3EA-T6-B(12/18)

ZP3E-UM **ZP3E-BM**

Model	32	40	50	63	80	100	125
ZP3EA-T1-B(8/10)	●	—	—	—	—	—	—
ZP3EA-T2-B(8/10)	—	●	—	—	—	—	—
ZP3EA-T3-B(12/18)	—	—	●	●	—	—	—
ZP3EA-T4-B(12/18)	—	—	—	●	●	—	—
ZP3EA-T5-B(12/18)	—	—	—	—	●	●	—
ZP3EA-T6-B(12/18)	—	—	—	—	—	—	●

Model	A10				A16		
	32	40	50	63	80	100	125
ZP3EA-TAL14	●	—	—	—	—	—	—
ZP3EA-TAL16	—	—	—	—	●	—	—
ZP3EA-Y8	●	—	—	—	—	—	—
ZP3EA-Y12	—	—	—	—	●	—	—
ZP3EA-YAL14	●	—	—	—	—	—	—
ZP3EA-YAL16	—	—	—	—	●	—	—
ZP3EB-T1JB(10/25/30/50/75)	●	—	—	—	—	—	—
ZP3EB-T2JB(10/25/30/50/75/100)	—	—	—	—	●	—	—
ZP3EB-T1JB(10/25/30/50/75)	●	—	—	—	—	—	—
ZP3EB-T2JB(10/25/30/50/75/100)	—	—	—	—	●	—	—

ZP3EA-TAL14
ZP3EA-TAL16

ZP3EA-Y8
ZP3EA-YB12

ZP3EA-YAL14
ZP3EA-YAL16

ZP3EB-T1JB(10/25/30/50/75)
ZP3EB-T2JB(10/25/30/50/75/100)

ZP3EB-T1JB(10/25/30/50/75)
ZP3EB-T2JB(10/25/30/50/75/100)

[illegible]