

With Lock Ring (ø10 ~ ø32)
Ball Joint Type **ZP Series**

How to Order



Ball joint type
with adapter

ZP ① Vacuum inlet direction TF ② Pad diameter 10 ③ Pad type U ④ Material N — ⑦ Vacuum inlet B5 — ⑧ Connection thread

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

Green symbol is customized models.

① Vacuum inlet direction		③ Pad type	④ Material	② Pad diameter (mm)					
				10	13	16	20	25	32
TF	Vertical	⑦ Vacuum inlet	Female thread	B5	M5 x 0.8	●	●	●	●
		⑧ Connection thread	Male thread	A8	M8 x 1.0	●	●	●	●
		⑦ Vacuum inlet	Female thread	B5	M5 x 0.8	●	●	●	●
			Female thread	B8	M8 x 1.25	●	●	●	●
RF	Lateral	⑦ Vacuum inlet	One-touch fitting	B01	Rc1/8	●	●	●	●
			One-touch fitting	04	ø4	●	●	●	●
			One-touch fitting	06	ø6	●	●	●	●
			One-touch fitting	08	ø8	●	●	●	●
		⑧ Connection thread	Female thread	B5	M5 x 0.8	●	●	●	●
			Female thread	B8	M8 x 1.25	●	●	●	●
			Female thread	B5	M5 x 0.8	●	●	●	●
			Female thread	B8	M8 x 1.25	●	●	●	●



Ball joint type
with buffer

ZP ① Vacuum inlet direction TF ② Pad diameter 10 ③ Pad type U ④ Material N ⑤ Buffer specification J ⑥ Buffer stroke 10 — ⑦ Vacuum inlet B5 — ⑧ Connection thread A10

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

Green symbol is customized models.

⑤ Buffer specification	
J	Rotating
K	Non-rotating

① Vacuum inlet direction		③ Pad type	④ Material	② Pad diameter (mm)					
				10	13	16	20	25	32
TF	Vertical	⑦ Vacuum inlet	Female thread	B5	M5 x 0.8	●	●	●	●
		⑧ Connection thread	Male thread	A10	M10 x 1.0	●	●	●	●
		⑦ Vacuum inlet	One-touch fitting	B01	Rc1/8	●	●	●	●
			One-touch fitting	04	ø4	●	●	●	●
RF	Lateral	⑦ Vacuum inlet	One-touch fitting	06	ø6	●	●	●	●
			One-touch fitting	08	ø8	●	●	●	●
			One-touch fitting	04	ø4	●	●	●	●
			One-touch fitting	06	ø6	●	●	●	●
		⑧ Connection thread	Male thread	A10	M10 x 1.0	●	●	●	●
			Male thread	A14	M14 x 1.0	●	●	●	●
			Male thread	A10	M10 x 1.0	●	●	●	●
			Male thread	A14	M14 x 1.0	●	●	●	●

ZP Series

With Lock Ring(ø10 ~ ø32)

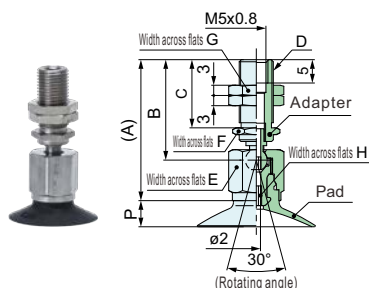
Ball Joint Type With Adapter

Vertical

Dimensions

Green symbol is customized models. (mm)

ZPTF Vertical U/C



Dimensions Per pad

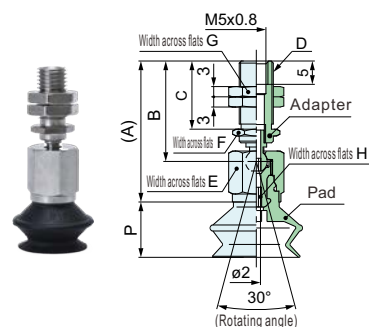
② Pad dia.	10	13	16	20	25	32
P	4	4	4.5	6	6	6.5

Dimensions Per adapter

Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑦ Vacuum inlet	⑧ Connection thread	A	B	C	D	E	F	G	H	Adapter	⑦ Vacuum inlet	⑧ Connection thread
ZP	TF	10	U	N	B	A8	35	23.5	15	M8x1	12	10	12	2.5	ZPTF1	B5	A8
		13					42	30	20	M10x1	14	12	14	3			
		16															
		20															
		25				A10									ZPTF2		A10
		32															

Model for refer: ZPTF32US-B5-A10 Adapter for refer:ZPTF2-B5-A10

ZPTF Vertical B



Dimensions Per pad

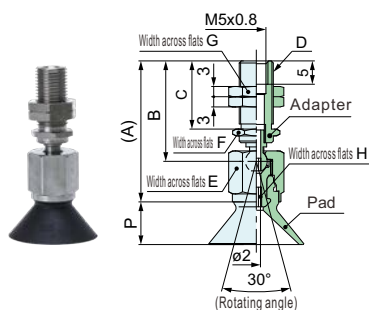
② Pad dia.	10	13	16	20	25	32
P	8	8	8.5	15.5	15.5	16

Dimensions Per adapter

Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑦ Vacuum inlet	⑧ Connection thread	A	B	C	D	E	F	G	H	Adapter	⑦ Vacuum inlet	⑧ Connection thread
ZP	TF	10	B	N	B	A8	35	23.5	15	M8x1	12	10	12	2.5	ZPTF1	B5	A8
		13					42	30	20	M10x1	14	12	14	3			
		16															
		20															
		25				A10									ZPTF2		A10
		32															

Model for refer: ZPTF10BS-B5-A8 Adapter for refer:ZPTF1-B5-A8

ZPTF Vertical D



Dimensions Per pad

② Pad dia.	10	16	25
P	7	7.5	12

Dimensions Per adapter

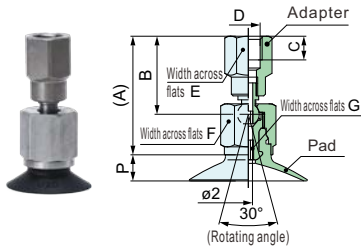
Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑦ Vacuum inlet	⑧ Connection thread	A	B	C	D	E	F	G	H	Adapter	⑦ Vacuum inlet	⑧ Connection thread
ZP	TF	10	D	N	B	A8	35	23.5	15	M8x1	12	10	12	2.5	ZPTF1	B5	A8
		16					42	30	20	M10x1	14	12	14	3			
		25				A10									ZPTF2		A10

Model for refer: ZPTF10DS-B5-A8 Adapter for refer:ZPTF1-B5-A8

Dimensions

Green symbol is customized models. (mm)

ZPTF **Vertical** U/C



Dimensions Per pad

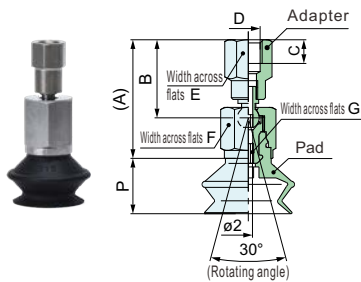
② Pad dia.	10	13	16	20	25	32
P	4	4	4.5	6	6	6.5

Dimensions Per adapter

Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑦ Vacuum inlet	A	B	C	D	E	F	G	Adapter	⑦ Vacuum inlet
ZP	TF	10	U	N	B5	28.5	17	5	M5x0.8	8	12	2.5	ZPTF1	B5
		13												
		16												
ZP	TF	20	F	S	B8	35.5	23.5	8	M8x1.25	12	14	3	ZPTF2	B8
		25												
		32							Rc1/8	14				B01

Model for refer: ZPTF25US-B8 Adapter for refer: ZPTF2-B8

ZPTF **Vertical** B



Dimensions Per pad

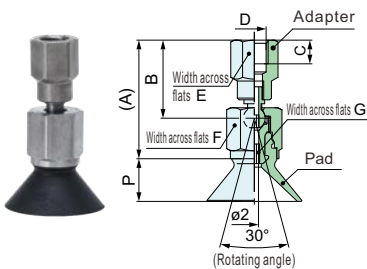
② Pad dia.	10	13	16	20	25	32
P	8	8	8.5	15.5	15.5	16

Dimensions Per adapter

Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑦ Vacuum inlet	A	B	C	D	E	F	G	Adapter	⑦ Vacuum inlet
ZP	TF	10	B	N	B5	28.5	17	5	M5x0.8	8	12	2.5	ZPTF1	B5
		13												
		16												
ZP	TF	20	F	S	B8	35.5	23.5	8	M8x1.25	12	14	3	ZPTF2	B8
		25												
		32							Rc1/8	14				B01

Model for refer: ZPTF25BN-B8 Adapter for refer: ZPTF2-B8

ZPTF **Vertical** D



Dimensions Per pad

② Pad dia.	10	16	25
P	7	7.5	12

Dimensions Per adapter

Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑦ Vacuum inlet	A	B	C	D	E	F	G	Adapter	⑦ Vacuum inlet
ZP	TF	10	D	N	B5	28.5	17	5	M5x0.8	8	12	2.5	ZPTF1	B5
		16												
		25				35.5	23.5	8	M8x1.25	12	14	3	ZPTF2	B8
ZP	TF	10	F	S	B01									
		16												
		25							Rc1/8	14				B01

Model for refer: ZPTF25DS-B8 Adapter for refer: ZPTF2-B8

ZP Series

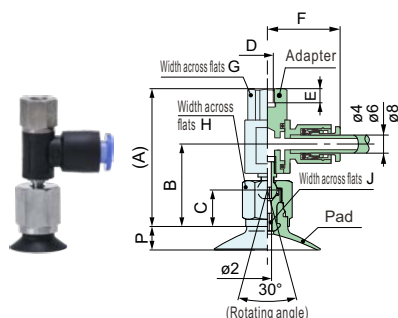
With Lock Ring(ø10 ~ ø32)

Ball Joint Type With Adapter **Lateral**

Dimensions

Green symbol is customized models. (mm)

ZPRF **Lateral** U/C



Dimensions Per pad

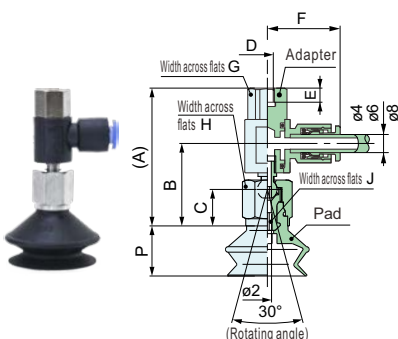
② Pad dia.	10	13	16	20	25	32
P	4	4	4.5	6	6	6.5

Dimensions Per adapter

Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑦ Vacuum inlet	⑧ Connection thread	A	B	C	D	E	F	G	H	J	Adapter	⑦ Vacuum inlet	⑧ Connection thread
ZP	RF	10	U	N	04	B5	41	24.9	11.5	M5x0.8	5	04: 20.6	10	12	2.5	ZPRF1	04	B5
		13										06: 21.6					06	
		16																
		20					46	28.8	12	M5x0.8	5	06: 24.3	12	14	3	ZPRF2	06	B5
		25								M8x1.25	8	08: 26.2					08	B8
		32																

Model for refer: ZPRF10US-04-B5 Adapter for refer:ZPRF1-04-B5

ZPRF **Lateral** B



Dimensions Per pad

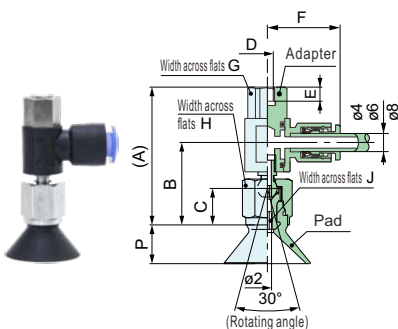
② Pad dia.	10	13	16	20	25	32
P	8	8	8.5	15.5	15.5	16

Dimensions Per adapter

Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑦ Vacuum inlet	⑧ Connection thread	A	B	C	D	E	F	G	H	J	Adapter	⑦ Vacuum inlet	⑧ Connection thread
ZP	RF	10	B	N	04	B5	41	24.9	11.5	M5x0.8	5	04: 20.6	10	12	2.5	ZPRF1	04	B5
		13										06: 21.6					06	
		16																
		20					46	28.8	12	M5x0.8	5	06: 24.3	12	14	3	ZPRF2	06	B5
		25								M8x1.25	8	08: 26.2					08	B8
		32																

Model for refer: ZPRF32BN-06-B5 Adapter for refer:ZPRF2-06-B5

ZPRF **Lateral** D



Dimensions Per pad

② Pad dia.	10	16	25
P	7	7.5	12

Dimensions Per adapter

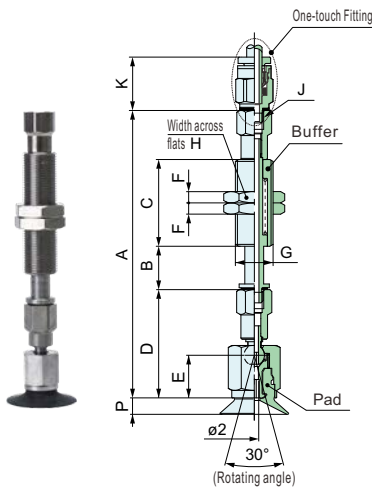
Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑦ Vacuum inlet	⑧ Connection thread	A	B	C	D	E	F	G	H	J	Adapter	⑦ Vacuum inlet	⑧ Connection thread
ZP	RF	10	D	N	04	B5	41	24.9	11.5	M5x0.8	5	04: 20.6	10	12	2.5	ZPRF1	04	B5
		16										06: 21.6					06	
		25					46	28.8	12	M5x0.8	5	06: 24.3	12	14	3	ZPRF2	06	B5
										M8x1.25	8	08: 26.2					08	B8

Model for refer: ZPRF25DGN-06-B8 Adapter for refer:ZPRF2-06-B8

Dimensions

Green symbol is customized models. (mm)

ZPTF **Vertical** U/C



Dimensions Per pad

② Pad dia.	10	13	16	20	25	32
P	4	4	4.5	6	6	6.5

Dimensions Per buffer

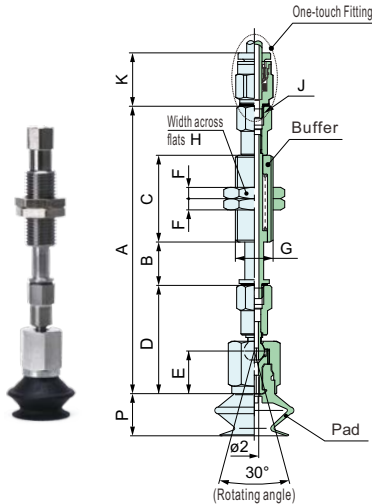
Model	①	②	③	④	⑤	⑥	⑦	⑧	A	B	C	D	E	F	G	H	J	Buffer	⑤	⑥	⑦	⑧		
	Vacuum inlet direction	Pad dia.	Pad type	Pad Material	Buffer spec.	Buffer stroke	Vacuum inlet	Connection thread											Buffer spec.	Buffer stroke	Vacuum inlet	Connection thread		
ZP	TF	10 13 16	U C	N S U F G N S	J K	10	B5 04 06	A10	82	11.5	23	28.5	11.5	3	M10 x1	14	M5 x0.8	ZPTF1	J K	⑤	⑥	B5 04 06	A10	
						20			120	21.5	51									20				
						30			130	31.5	77									30				
						40			166	41.5	77									40				
						50			176	51.5	77									50				
						10			120.5	12.5	50									10				
		20 25 32	C			20	B01 06 08	A14	126	22.5	50	33.5	42	5	M14 x1	19	Rc1/8	ZPTF2	J K	20	⑥	B01 06 08	A14	
						30			136	32.5	75									30				
						50			181	52.5	75									50				
						10			120.5	12.5	50									10				
						20			126	22.5	50									20				
						30			136	32.5	75									30				

Dimensions Per Vacuum Inlet: One-touch Fitting

Model	*-04-A10	*-06-A10	*-06-A14	*-08-A14
K	14.8	14.8	18.5	24

Model for refer: ZPTF10UNJ10-B5-A10 Buffer for refer: ZPTF1-J10-B5-A10

ZPTF **Vertical** B



Dimensions Per pad

② Pad dia.	10	13	16	20	25	32
P	8	8	8.5	15.5	15.5	16

Dimensions Per buffer

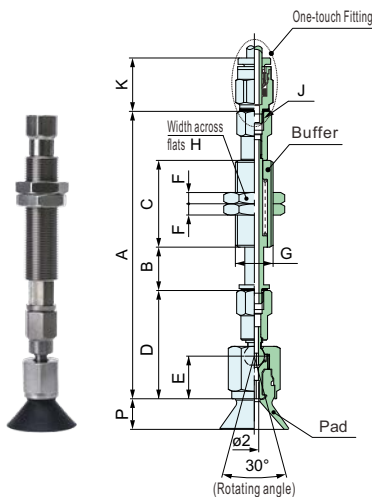
Model	①	②	③	④	⑤	⑥	⑦	⑧	A	B	C	D	E	F	G	H	J	Buffer	⑤	⑥	⑦	⑧	
	Vacuum inlet direction	Pad dia.	Pad type	Pad Material	Buffer spec.	Buffer stroke	Vacuum inlet	Connection thread											Buffer spec.	Buffer stroke	Vacuum inlet	Connection thread	
ZP	TF	10 13 16	B	N S U F G N S	J K	10	B5 04 06	A10	82	11.5	23	28.5	11.5	3	M10 x1	14	M5 x0.8	ZPTF1	J K		10	B5 04 06	A10
						20			120	21.5	51									20			
						30			130	31.5	77									30			
						40			166	41.5	77									40			
						50			176	51.5	77									50			
						10			120.5	12.5	50									10			
	20 25 32	C			20	B01 06 08	A14	126	22.5	50	33.5	42	5	M14 x1	19	Rc1/8	ZPTF2	J K		20	B01 06 08	A14	
					30			136	32.5	75									30				
					50			181	52.5	75									50				
					10			120.5	12.5	50									10				
					20			126	22.5	50									20				
					30			136	32.5	75									30				

Dimensions Per Vacuum Inlet: One-touch Fitting

Model	*-04-A10	*-06-A10	*-06-A14	*-08-A14
K	14.8	14.8	18.5	24

Model for refer: ZPTF10BNJ10-B5-A10 Buffer for refer: ZPTF1-J10-B5-A10

ZPTF **Vertical** D



Dimensions Per pad

② Pad dia.	10	16	25
P	7	7.5	12

Dimensions Per buffer

Model	①	②	③	④	⑤	⑥	⑦	⑧	A	B	C	D	E	F	G	H	J	Buffer	⑤	⑥	⑦	⑧	
	Vacuum inlet direction	Pad dia.	Pad type	Pad Material	Buffer spec.	Buffer stroke	Vacuum inlet	Connection thread											Buffer spec.	Buffer stroke	Vacuum inlet	Connection thread	
ZP	TF	10 16	D	N S U F G N S	J K	10	B5 04 06	A10	82	11.5	23	28.5	11.5	3	M10 x1	14	M5 x0.8	ZPTF1	J K	10	B5 04 06	A10	
						20			120	21.5	51									20			
						30			130	31.5	77									30			
						40			166	41.5	77									40			
						50			176	51.5	77									50			
						10			120.5	12.5	50									10			
		25	C			20	B01 06 08	A14	126	22.5	50	33.5	42	5	M14 x1	19	Rc1/8	ZPTF2	J K	20	B01 06 08	A14	
						30			136	32.5	75									30			
						50			181	52.5	75									50			
						10			120.5	12.5	50									10			
						20			126	22.5	50									20			
						30			136	32.5	75									30			

Dimensions Per Vacuum Inlet: One-touch Fitting

Model	*-04-A10	*-06-A10	*-06-A14	*-08-A14
K	14.8	14.8	18.5	24

Model for refer: ZPTF10DNJ10-B5-A10 Buffer for refer: ZPTF1-J10-B5-A10

ZP Series

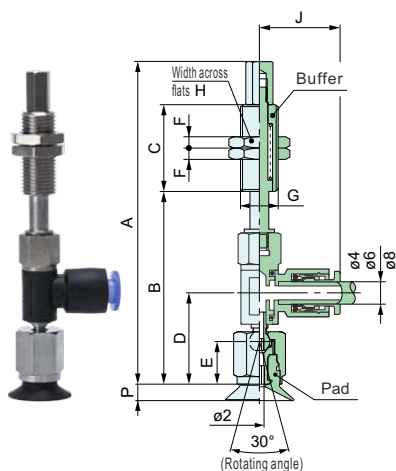
With Lock Ring(ø10 ~ ø32)

Ball Joint Type With Buffer **Lateral**

Dimensions

Green symbol is customized models. (mm)

ZPRF Lateral U/C



Dimensions Per pad

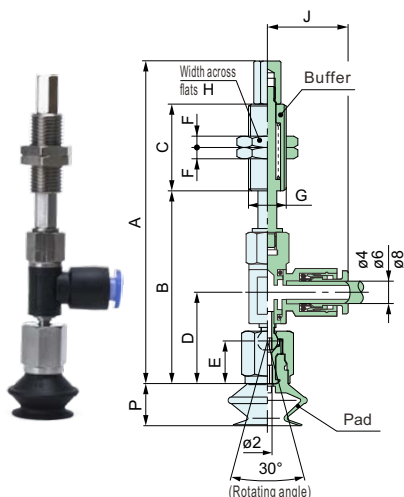
② Pad dia.	10	13	16	20	25	32
P	4	4	4.5	6	6	6.5

Dimensions Per buffer

Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑤ Buffer spec.	⑥ Buffer stroke	⑦ Vacuum inlet	⑧ Connection thread	A	B	C	D	E	F	G	H	J	Buffer	⑤ Buffer spec.	⑥ Buffer stroke	⑦ Vacuum inlet	⑧ Connection thread
ZP	RF	10 13 16	U C	N S U F G N G S	J K	10	04 06	A10	86	52	23	24.9	11.5	3	M10 x1	14	04: 20.6 06: 21.6	ZPRF1	J K	10	04 06	A10
						20			124	62	51									20		
						30			134	72	77									30		
						40			170	82										40		
						50			180	92										50		
						10			126	58										10		
	RF	20 25 32	U C	N S U F G N G S	J K	20	04 06	A14	123	68	50	28.8	12	5	M14 x1	19	06: 24.3 08: 26.2	ZPRF2	J K	20	04 06	A14
						30			133	78										30		
						50			178	98	75									50		

Model for refer: ZPRF10USJ10-06-A10 Buffer for refer:ZPRF1-J10-06-A10

ZPRF Lateral B



Dimensions Per pad

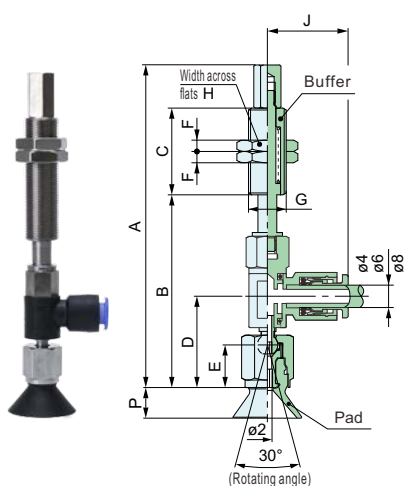
② Pad dia.	10	13	16	20	25	32
P	8	8	8.5	15.5	15.5	16

Dimensions Per buffer

Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑤ Buffer spec.	⑥ Buffer stroke	⑦ Vacuum inlet	⑧ Connection thread	A	B	C	D	E	F	G	H	J	Buffer	⑤ Buffer spec.	⑥ Buffer stroke	⑦ Vacuum inlet	⑧ Connection thread
ZP	RF	10 13 16	B	N S U F G N G S	J K	10	04 06	A10	86	52	23	24.9	11.5	3	M10 x1	14	04: 20.6 06: 21.6	ZPRF1	J K	10	04 06	A10
						20			124	62	51									20		
						30			134	72	77									30		
						40			170	82										40		
						50			180	92										50		
						10			126	58										10		
	RF	20 25 32	B	N S U F G N G S	J K	20	04 06	A14	123	68	50	28.8	12	5	M14 x1	19	06: 24.3 08: 26.2	ZPRF2	J K	20	04 06	A14
						30			133	78										30		
						50			178	98	75									50		

Model for refer: ZPRF10BNJ10-06-A10 Buffer for refer:ZPRF1-J10-06-A10

ZPRF Lateral D



Dimensions Per pad

② Pad dia.	10	16	25
P	7	7.5	12

Dimensions Per buffer

Model	① Vacuum inlet direction	② Pad dia.	③ Pad type	④ Pad Material	⑤ Buffer spec.	⑥ Buffer stroke	⑦ Vacuum inlet	⑧ Connection thread	A	B	C	D	E	F	G	H	J	Buffer	⑤ Buffer spec.	⑥ Buffer stroke	⑦ Vacuum inlet	⑧ Connection thread
ZP	RF	10 16	D	N S U F G N G S	J K	10	04 06	A10	86	52	23	24.9	11.5	3	M10 x1	14	04: 20.6 06: 21.6	ZPRF1	J K	10	04 06	A10
						20			124	62	51									20		
						30			134	72	77									30		
						40			170	82										40		
						50			180	92										50		
						10			126	58										10		
	RF	25	D	N S U F G N G S	J K	20	04 06	A14	123	68	50	28.8	12	5	M14 x1	19	06: 24.3 08: 26.2	ZPRF2	J K	20	04 06	A14
						30			133	78										30		
						50			178	98	75									50		

Model for refer: ZPRF10DGSJ10-06-A10 Buffer for refer:ZPRF1-J10-06-A10