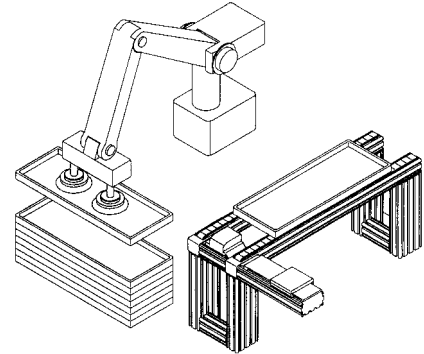


Vacuum Pads for Heavy Duty Material Handling

Series ZPT/ZPX

Ideal for heavy weight material or objects with a large surface area
Examples: CRT, Car body







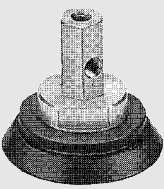

Pad diameters $\varnothing 40, \varnothing 50, \varnothing 63, \varnothing 80, \varnothing 100, \varnothing 125$

Pad materials NBR, Silicon rubber, Urethane rubber, Fluorine rubber, EPR

- ZX
- ZR
- ZM
- ZY
- ZH
- ZU
- ZL
- ZF
- ZP
- ZCU
- CYV

Vacuum related

Variations

Style	Without buffer		With buffer		Page	
	Mounting	Vacuum entry	Mounting	Vacuum entry		
 <p>Series ZPT</p> <p>Vertical vacuum entry</p>	Male thread Female thread	Female thread Common (Use vacuum entry)		Buffer mounting (Male thread) Female thread		3.9-74 to 3.9-78
 <p>Series ZPX</p> <p>Lateral vacuum entry</p>	Female thread	Female thread		Buffer mounting (Male thread) Female thread		3.9-79 to 3.9-82

Series ZPT ZPX	Buffer stroke	Pad dia.					
		$\varnothing 40$	$\varnothing 50$	$\varnothing 63$	$\varnothing 80$	$\varnothing 100$	$\varnothing 125$
	25	○	○	○	○	○	○
	50	○	○	○	○	○	○
	75	○	○	○	○	○	○
	100	—	—	—	—	○	○

Pad material and Characteristics

◎ : Little or no influence ○ : Can be used depending on conditions X : Not suitable

Material	Item	Durometer HS ($\pm 5^\circ$)	Temperature range ($^\circ\text{C}$)	Oil resistance (Gasoline)	Oil resistance (Benzol)	Alkali resistance	Acid resistance	Weatherability	Ozone resistance	Abrasion resistance	Water resistance	Solvents (benzene, toluene)
NBR		50°	0 to 120	◎	X	○	○	X	X	◎	○	X
Silicon rubber		50°	-30 to 200	X	X	○	X	◎	◎	X	○	X
Urethane rubber		60°	0 to 60	◎	X	X	X	○	◎	◎	X	X
Fluorine rubber		60°	0 to 250	◎	◎	X	◎	◎	◎	○	◎	◎
EPR		50°	-20 to 150	X	X	◎	○	◎	◎	○	◎	X

The above table covers only general characteristics of subject rubber materials.

Pad materials used by SMC pass nominal JIS material standards; however, actual performance depends on operating conditions.

Series ZPT/ZPX

Selecting The Vacuum Pad

A vacuum pad diameter (ϕD) can be determined by calculation if the lifting force needed to perform the work function is known. The weight of the workpiece and any potential dynamic forces involved during movement (lifting, stopping, rotating, etc.) need to be considered. The area of one pad can be divided to an equivalent area of multiple pads (n) as necessary, based on these forces and the shape of the load.

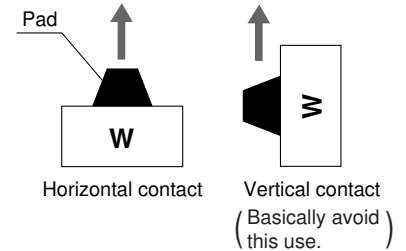
Calculation Method: Pad Diameter

A vacuum pad diameter with applied safety factor based on lifting orientation of workpiece (vertical or horizontal) can be derived from calculations or by using the Selection Graph shown below.

Calculations

$$\phi D = \sqrt{\frac{4}{3.14} \times \frac{1}{P} \times \frac{W}{n} \times t \times 1000}$$

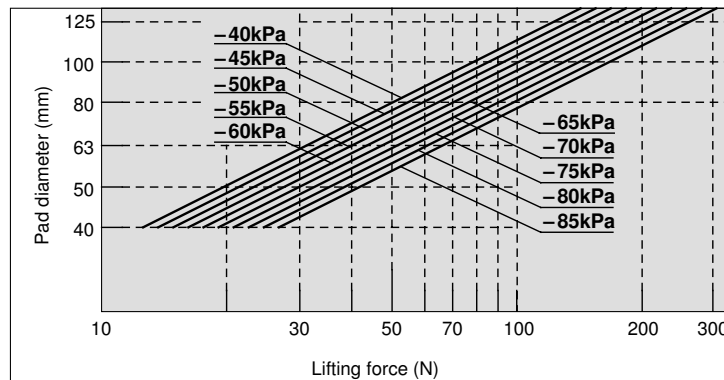
- ϕD : Pad diameter (mm)
- n : Number of pads used
- W : Lifting force (N)
- P : Stable vacuum pressure (kPa)
- t : Factor of safety:
Horizontal pad contact: ≥ 4 (dynamic)
Vertical pad contact: ≥ 8 (dynamic)



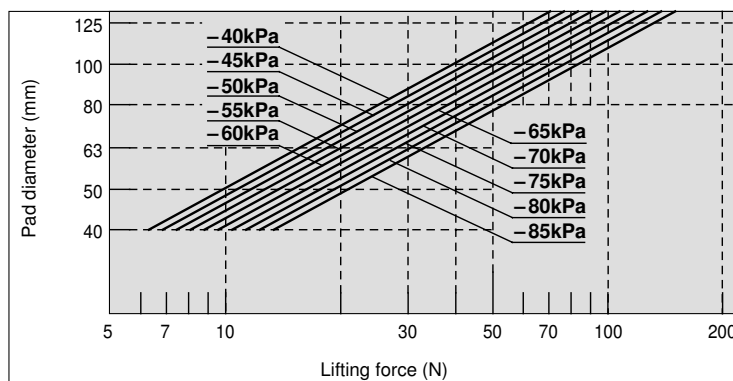
Graphical Method

The pad diameter required for horizontal (selection graphs ① and ②) or vertical contact can be found by setting the weight of the work the number of pads to contact the workpiece and the stable adsorption vacuum pressure.

Selection Graph ① Selection graph of pad diameter by lift force horizontal (Reference value)



Selection Graph ② Selection graph of pad diameter by lift force vertical (Reference value)



How to Read the Graph

Example: Work load 20kg (Lifting force: 196N)
Conditions: Desired number of pads 5 pcs.
Working vacuum pressure -60kPa
Horizontal lifting

(Selection procedure)

From left condition
Lifting force per pad: $196N \div 5 \text{ pcs.} = 39.2N$
From Selection Graph ① as horizontal lifting
Lifting force 39.2N
Extend to the y-axis from the corresponding point of vacuum pressure -60kPa; result is to select a pad diameter bigger than 63mm.

Series ZPT/ZPX

Application Data

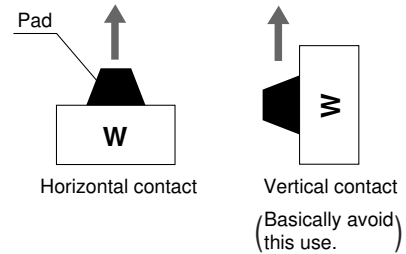
Theoretical Lifting Force

Theoretical lifting force for pad can be derived from calculations or taken directly from theoretical lifting force table.

Calculations

$$W = P \times S \times 0.1 \times \frac{1}{t}$$

- W**: Lifting force (N)
P: Stable vacuum pressure (kPa)
S: Pad area (cm²)
t: Factor of safety:
 Horizontal pad contact: ≥ 4 (dynamic)
 Vertical pad contact: ≥ 8 (dynamic)



Theoretical Lifting Force Table

Determine theoretical lifting force (excluding safety factor) from pad diameter size and working vacuum pressure. Divide the result by the appropriate safety factor to determine applicable lifting force.

$$\text{Lifting force} = \text{Theoretical lifting force} \div t$$

Table of Theoretical Lifting Force (Theoretical lifting force = $P \times S \times 0.1$)

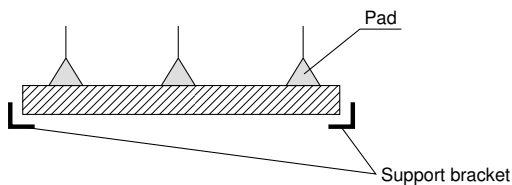
Pad diameter (mm)	ø40	ø50	ø63	ø80	ø100	ø125	N
Adsorption area cm ²	12.6	19.6	31.2	50.3	78.5	122.7	
Vacuum pressure kPa	-85	107	167	264.9	427	667.3	1042.6
	-80	101	157	249.3	401.9	628	981.3
	-75	94.5	147	233.7	376.8	588.8	920
	-70	88.2	137	218.1	351.7	549.5	858.6
	-65	81.9	127	202.5	326.6	510.3	797.3
	-60	75.6	118	187	301.4	471	736
	-55	69.3	108	171.4	276.3	431.8	674.6
	-50	63.0	98.0	155.8	251.2	392.5	613.3
	-45	56.7	88.2	140.2	226.1	353.3	552
-40	50.4	78.4	124.6	201	314	490.7	

- ZX
- ZR
- ZM
- ZY
- ZH
- ZU
- ZL
- ZF
- ZP
- ZCU
- CYV
- Vacuum related



Precautions for Use

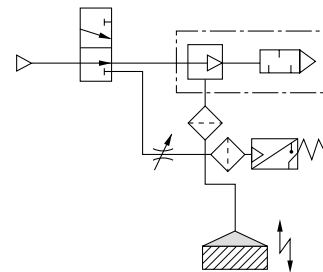
① The quantity and placement of pads should be considered when transferred work has a large surface area.



Install support brackets to prevent work from dropping according to your requirements.

② Vacuum response time and vacuum breaking time are influenced by internal volume of large bellows size pad, which has more volume than the large flat ribbed type pad. When response time is important, consider the following measures:

- Use a larger capacity ejector.
- Set a vacuum breaking valve.



Series ZPT

Vertical Vacuum Entry without Buffer



Standard Specifications

Connection	Vacuum entry direction		Vertical	
	Mounting		Male thread	Female thread
	Thread diameter	ø40, ø50 ø63, ø80 ø100, ø125	M14 X 1 M16 X 1.5 M16 X 1.5	M8/M10 M8/M10/M12/M16 X 1.5 M12/M16 X 1.5
Vacuum entry port		Rc(PT) 1/8	Use the mounting port	

Pad Style

Pad diameter (mm)	ø40, ø50, ø63, ø80, ø100, ø125
Material (colour)	NBR (Black), Silicon rubber (White), Urethane rubber (Brown), Fluorine rubber (Black with mark F), EPR (Black with mark E)
Durometer	NBR/Silicon rubber/EPR (50°), Urethane rubber/Fluorine rubber (60°)

Weight Table (Other materials) (g)

Pad diameter	Silicon rubber	Urethane rubber	Fluorine rubber	EPR
ø40	-1	0	5	-1
ø50	-1	0	8	0
ø63	-2	0	16	0
ø80	-3	1	27	-1
ø100	-5	1	53	-1
ø125	-8	3	84	0

Add NBR weight to the table above for other materials.

Weight Table (NBR)

Model	Weight (g)	Model	Weight (g)
ZPT40HN-A14	71	ZPT80HN-A16	178
ZPT40HN-B8	38	ZPT80HN-B8	144
ZPT40HN-B10	37	ZPT80HN-B10	143
ZPT50HN-A14	83	ZPT80HN-B12	141
ZPT50HN-B8	50	ZPT80HN-B16	139
ZPT50HN-B10	49	ZPT100HN-A16	350
ZPT63HN-A16	149	ZPT100HN-B12	301
ZPT63HN-B8	115	ZPT100HN-B16	299
ZPT63HN-B10	114	ZPT125HN-A16	414
ZPT63HN-B12	112	ZPT125HN-B12	365
ZPT63HN-B16	110	ZPT125HN-B16	363

How to Order

ZPT **40** **H** **N** - **A14**

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

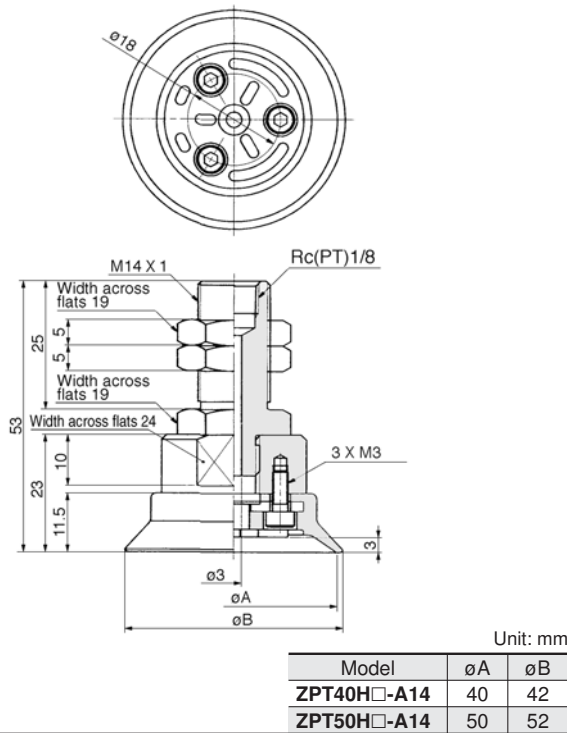
Vacuum entry/Mounting thread diameter			
	ø40/ø50	ø63/ø80	ø100/ø125
A14 M14 X 1	●	—	—
A16 M16 X 1.5	—	●	●
B8 M8	●	●	—
B10 M10	●	●	—
B12 M12	—	●	●
B16 M16 X 1.5	—	●	●

Pad style	
H	Heavy duty pad

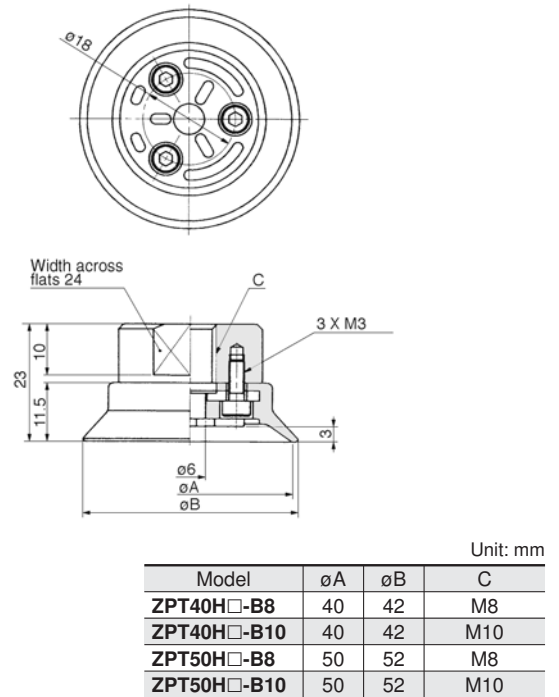
Material	
N	NBR
S	Silicon rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

Vertical Vacuum Entry without Buffer *Series ZPT*

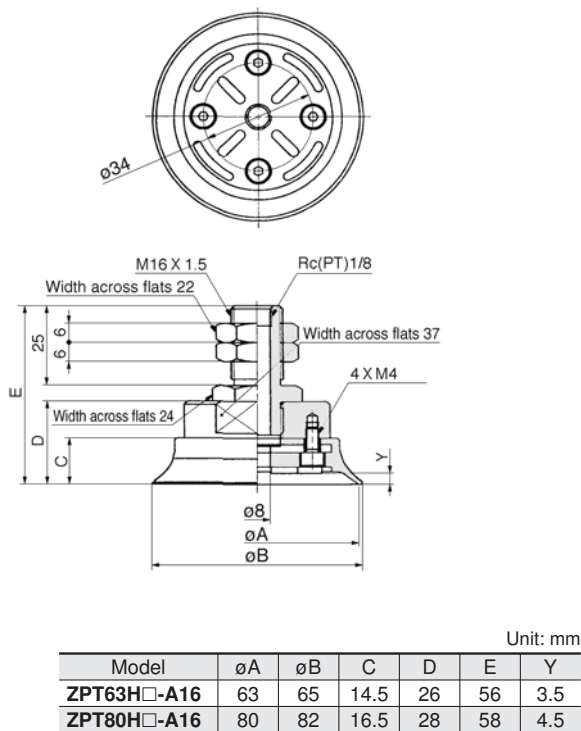
ZPT₅₀⁴⁰H□-A14 (Male thread)



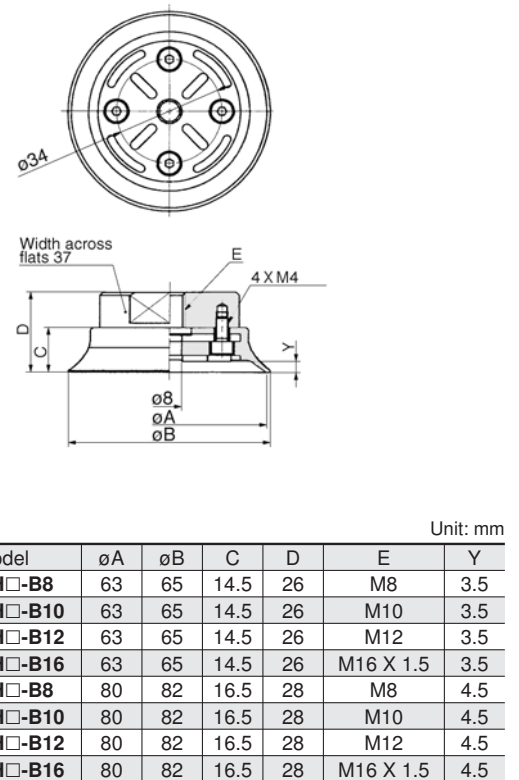
ZPT₅₀⁴⁰H□-B□ (Female thread)



ZPT₈₀⁶³H□-A16 (Male thread)



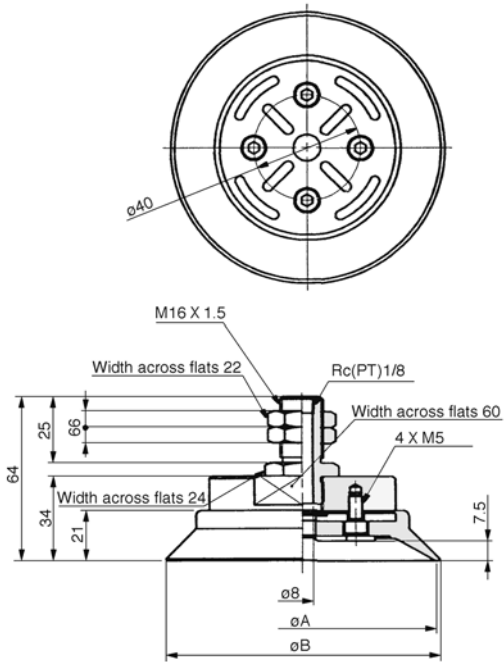
ZPT₈₀⁶³H□-B□ (Female thread)



- ZX
- ZR
- ZM
- ZY
- ZH
- ZU
- ZL
- ZF
- ZP
- ZCU
- CYV
- Vacuum related

Series ZPT

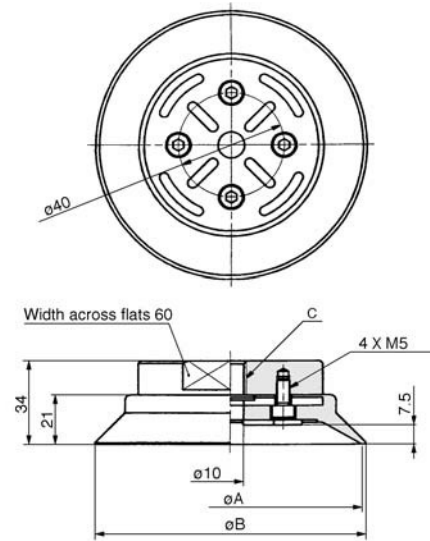
ZPT₁₀₀₁₂₅H□-A16 (Male thread)



Unit: mm

Model	øA	øB
ZPT100H□-A16	100	103
ZPT125H□-A16	125	128

ZPT₁₀₀₁₂₅H□-B□ (Female thread)



Unit: mm

Model	øA	øB	C
ZPT100H□-B12	100	103	M12
ZPT100H□-B16	100	103	M16 X 1.5
ZPT125H□-B12	125	128	M12
ZPT125H□-B16	125	128	M16 X 1.5

Series ZPT

Vertical Vacuum Entry with Buffer



Standard Specifications

Connection	Vacuum entry direction	Vertical	
	Mounting	Male thread	
	Thread diameter	ø40, ø50	M18 X 1.5
		ø63, ø80	M18 X 1.5
	ø100, ø125	M22 X 1.5	
	Vacuum entry port	Rc (PT) ^{1/8}	

	Buffer style	Rotating (J)
Buffer stroke	ø40 to ø80	25, 50, 75 (mm)
	ø100, ø125	25, 50, 75, 100 (mm)

Pad Style

Pad diameter (mm)	ø40, ø50, ø63, ø80, ø100, ø125
Material (colour)	NBR (Black), Silicon rubber (White), Urethane rubber (Brown), Fluorine rubber (Black with mark F), EPR (Black with mark E)
Durometer	NBR/Silicon rubber/EPR (50°), Urethane rubber/Fluorine rubber (60°)

Weight Table (Other materials) (g)

Pad diameter	Silicon rubber	Urethane rubber	Fluorine rubber	EPR
ø40	-1	0	5	-1
ø50	-1	0	8	0
ø63	-2	0	16	0
ø80	-3	1	27	-1
ø100	-5	1	53	-1
ø125	-8	3	84	0

Add NBR weight to the table above for other materials.

Weight Table (NBR)

Model	Weight (g)	Model	Weight (g)
ZPT40HNJ25-B01-A18	125	ZPT80HNJ50-B01-A18	251
ZPT40HNJ50-B01-A18	145	ZPT80HNJ75-B01-A18	272
ZPT40HNJ75-B01-A18	166	ZPT100HNJ25-B01-A22	489
ZPT50HNJ25-B01-A18	137	ZPT100HNJ50-B01-A22	529
ZPT50HNJ50-B01-A18	157	ZPT100HNJ75-B01-A22	574
ZPT50HNJ75-B01-A18	195	ZPT100HNJ100-B01-A22	613
ZPT63HNJ25-B01-A18	202	ZPT125HNJ25-B01-A22	553
ZPT63HNJ50-B01-A18	222	ZPT125HNJ50-B01-A22	593
ZPT63HNJ75-B01-A18	243	ZPT125HNJ75-B01-A22	638
ZPT80HNJ25-B01-A18	214	ZPT125HNJ100-B01-A22	677

How to Order

ZPT 40 H N J 25 — B01 — A18

Pad diameter

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

Mounting thread diameter

A18	M18 X 1.5 (ø40 to ø80)
A22	M22 X 1.5 (ø100, ø125)

Vacuum entry

B01	Rc(PT) ^{1/8}
-----	-----------------------

Pad style

H	Heavy duty pad
---	----------------

Material

N	NBR
S	Silicon rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

Buffer stroke (Without detent)

Stroke	ø40	ø50	ø63	ø80	ø100	ø125
25	●	●	●	●	●	●
50	●	●	●	●	●	●
75	●	●	●	●	●	●
100	—	—	—	—	●	●

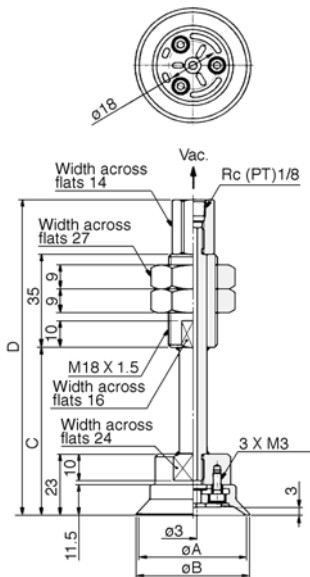
Spring reactive force

Pad diameter	ø40 to ø80	ø100, ø125
0 stroke	6.9N	10N
Stroke end	11.8N	15N

ZX
ZR
ZM
ZY
ZH
ZU
ZL
ZF
ZP
ZCU
CYV
Vacuum related

Series ZPT

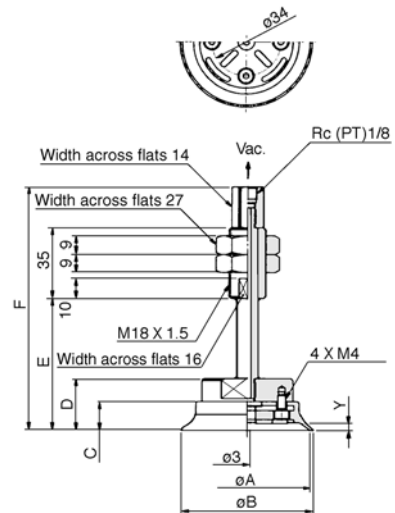
ZPT₅₀⁴⁰H□J□-B01-A18 (with buffer)



Unit: mm

Model	φA	φB	C	D
ZPT40H□J25-B01-A18	40	42	63	118.5
ZPT40H□J50-B01-A18	40	42	98	153.5
ZPT40H□J75-B01-A18	40	42	134	189.5
ZPT50H□J25-B01-A18	50	52	63	118.5
ZPT50H□J50-B01-A18	50	52	98	153.5
ZPT50H□J75-B01-A18	50	52	134	189.5

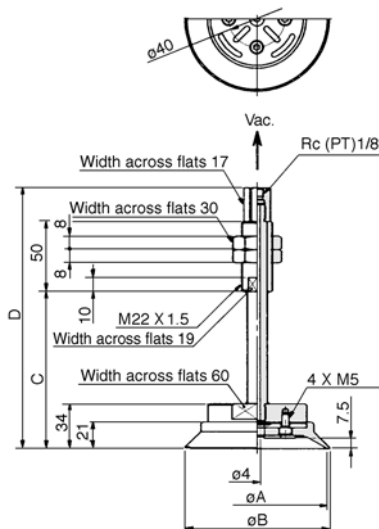
ZPT₈₀⁶³H□J□-B01-A18 (with buffer)



Unit: mm

Model	φA	φB	C	D	E	F	Y
ZPT63H□J25-B01-A18	63	65	14.5	26	66	121.5	3.5
ZPT63H□J50-B01-A18	63	65	14.5	26	101	156.5	3.5
ZPT63H□J75-B01-A18	63	65	14.5	26	137	192.5	3.5
ZPT80H□J25-B01-A18	80	83	16.5	28	68	123.5	4.5
ZPT80H□J50-B01-A18	80	83	16.5	28	103	158.5	4.5
ZPT80H□J75-B01-A18	80	83	16.5	28	139	194.5	4.5

ZPT₁₂₅¹⁰⁰H□J□-B01-A22 (with buffer)



Unit: mm

Model	φA	φB	C	D
ZPT100H□J25-B01-A22	100	103	78	152
ZPT100H□J50-B01-A22	100	103	114	188
ZPT100H□J75-B01-A22	100	103	154	228
ZPT100H□J100-B01-A22	100	103	189	263
ZPT125H□J25-B01-A22	125	128	78	152
ZPT125H□J50-B01-A22	125	128	114	188
ZPT125H□J75-B01-A22	125	128	154	228
ZPT125H□J100-B01-A22	125	128	189	263

Series ZPX

Lateral Vacuum Entry without Buffer



Standard Specifications

Mounting	Vacuum entry direction	Lateral	
	Connection	Female thread	
	Thread diameter	ø40, ø50	M8/M10
		ø63, ø80	M10/M12
ø100, ø125		M10/M12	
Vacuum entry port		Rc(PT) 1/8	

Pad Style

Pad diameter (mm)	ø40, ø50, ø63, ø80, ø100, ø125
Material (colour)	NBR (Black), Silicon rubber (White), Urethane rubber (Brown), Fluorine rubber (Black with mark F), EPR (Black with mark E)
Durometer	NBR/Silicon rubber/EPR (50°), Urethane rubber/Fluorine rubber (60°)

Weight Table (Other materials) (g)

Pad diameter	Silicon rubber	Urethane rubber	Fluorine rubber	EPR
ø40	-1	0	5	-1
ø50	-1	0	8	0
ø63	-2	0	16	0
ø80	-3	1	27	-1
ø100	-5	1	53	-1
ø125	-8	3	84	0

Add NBR weight to the table above for other materials.

Weight Table (NBR)

Model	Weight (g)	Model	Weight (g)
ZPX40H□-B01-B8	148	ZPX100H□-B01-B10	418
ZPX40H□-B01-B10	150	ZPX100H□-B01-B12	414
ZPX50H□-B01-B8	160	ZPX125H□-B01-B10	482
ZPX50H□-B01-B10	158	ZPX125H□-B01-B12	478
ZPX63H□-B01-B10	229		
ZPX63H□-B01-B12	219		
ZPX80H□-B01-B10	258		
ZPX80H□-B01-B12	254		

How to Order

ZPX **40** **H** **N** - **B01** - **B8**

Pad diameter

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

Mounting thread diameter

		ø40/ø50	ø63/ø80	ø100/ø125
B8	M8	●	—	—
B10	M10	●	●	●
B12	M12	—	●	●

Vacuum entry

B01	Re(PT) 1/8
-----	------------

Pad style

H	Heavy duty pad
---	----------------

Material

N	NBR
S	Silicon rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

ZX

ZR

ZM

ZY

ZH

ZU

ZL

ZF

ZP

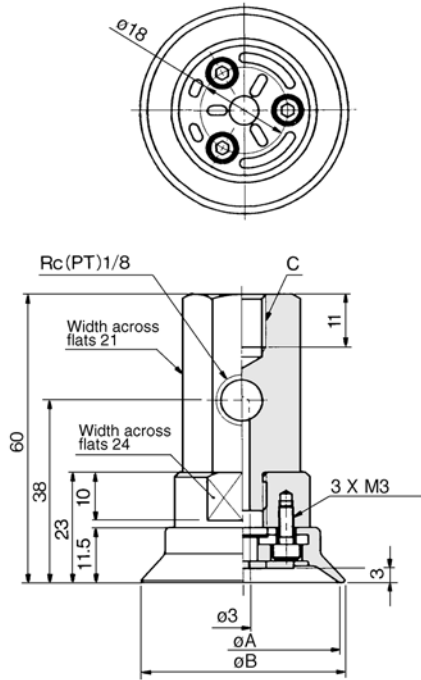
ZCU

CYV

Vacuum related

Series ZPX

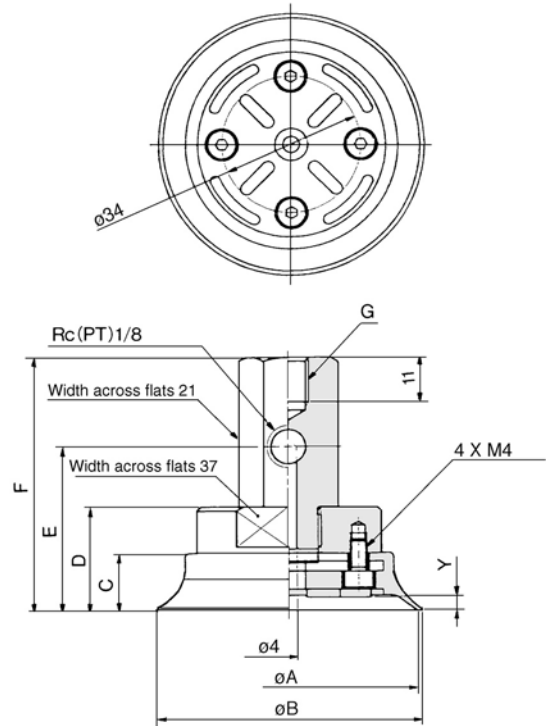
ZPX₅₀⁴⁰H□-B01-B□ (Female thread)



Unit: mm

Model	øA	øB	C
ZPX40H□-B01-B8	40	42	M8
ZPX40H□-B01-B10	40	42	M10
ZPX50H□-B01-B8	50	52	M8
ZPX50H□-B01-B10	50	52	M10

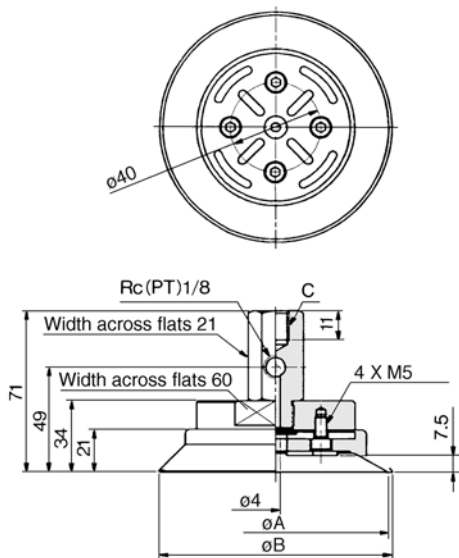
ZPX₈₀⁶³H□-B01-B□ (Female thread)



Unit: mm

Model	øA	øB	C	D	E	F	Y	G
ZPX63H□-B01-B10	63	65	14.5	26	41	63	3.5	M10
ZPX63H□-B01-B12	63	65	14.5	26	41	63	3.5	M12
ZPX80H□-B01-B10	80	82	16.5	28	43	65	4.5	M10
ZPX80H□-B01-B12	80	82	16.5	28	43	65	4.5	M125

ZPX₁₂₅¹⁰⁰H□-B01-B□ (Female thread)



Unit: mm

Model	øA	øB	C
ZPX100H□-B01-B10	100	103	M10
ZPX100H□-B01-B12	100	103	M12
ZPX125H□-B01-B10	125	128	M10
ZPX125H□-B01-B12	125	128	M12

Series ZPX

Lateral Vacuum Entry with Buffer



Standard Specifications

Mounting	Vacuum entry direction	Lateral	
	Connection	Male thread	
	Thread diameter	ø40, ø50	M18 X 1.5
		ø63, ø80	M18 X 1.5
ø100, ø125		M22 X 1.5	
Vacuum entry port		Rc(PT) 1/8	

Buffer style		Rotating (J)
Buffer stroke	ø40 to ø80	25, 50, 75 (mm)
	ø100, ø125	25, 50, 75, 100 (mm)

Pad Style

Pad diameter (mm)	ø40, ø50, ø63, ø80, ø100, ø125
Material (colour)	NBR (Black), Silicon rubber (White), Urethane rubber (Brown), Fluorine rubber (Black with mark F), EPR (Black with mark E)
Durometer	NBR/Silicon rubber/EPR (50°), Urethane rubber/Fluorine rubber (60°)

Weight Table (Other materials) (g)

Pad diameter	Silicon rubber	Urethane rubber	Fluorine rubber	EPR
ø40	-1	0	5	-1
ø50	-1	0	8	0
ø63	-2	0	16	0
ø80	-3	1	27	-1
ø100	-5	1	53	-1
ø125	-8	3	84	0

Add NBR weight to the table above for other materials.

Weight Table (NBR)

Model	Weight (g)	Model	Weight (g)
ZPX40HNJ25-B01-A18	266	ZPX80HNJ50-B01-A18	401
ZPX40HNJ50-B01-A18	287	ZPX80HNJ75-B01-A18	424
ZPX40HNJ75-B01-A18	310	ZPX100HNJ25-B01-A22	638
ZPX50HNJ25-B01-A18	278	ZPX100HNJ50-B01-A22	677
ZPX50HNJ50-B01-A18	299	ZPX100HNJ75-B01-A22	721
ZPX50HNJ75-B01-A18	322	ZPX100HNJ100-B01-A22	760
ZPX63HNJ25-B01-A18	351	ZPX125HNJ25-B01-A22	702
ZPX63HNJ50-B01-A18	372	ZPX125HNJ50-B01-A22	741
ZPX63HNJ75-B01-A18	395	ZPX125HNJ75-B01-A22	785
ZPX80HNJ25-B01-A18	380	ZPX125HNJ100-B01-A22	824

How to Order

ZPX 40 H N J 25 — B01 — A18

Pad diameter (mm)

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

Mounting thread diameter

A18	M8 (ø40 to ø80)
A22	M10 (ø100, ø125)

Vacuum entry

B01	Rc(PT)1/8
-----	-----------

Pad style

H	Heavy duty pad
---	----------------

Material

N	NBR
S	Silicon rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

Buffer stroke (Rotating)

Stroke	ø40	ø50	ø63	ø80	ø100	ø125
25	●	●	●	●	●	●
50	●	●	●	●	●	●
75	●	●	●	●	●	●
100	—	—	—	—	●	●

Spring reactive force

Pad diameter	ø40 to ø80	ø100, ø125
0 Stroke	6.9N	10N
Stroke end	11.8N	15N

ZX

ZR

ZM

ZY

ZH

ZU

ZL

ZF

ZP

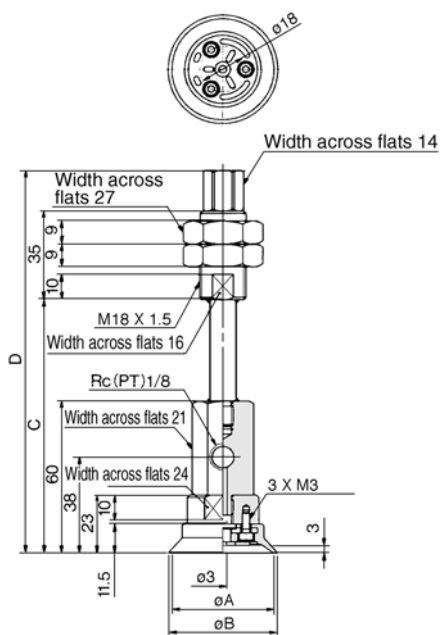
ZCU

CYV

Vacuum related

Series ZPX

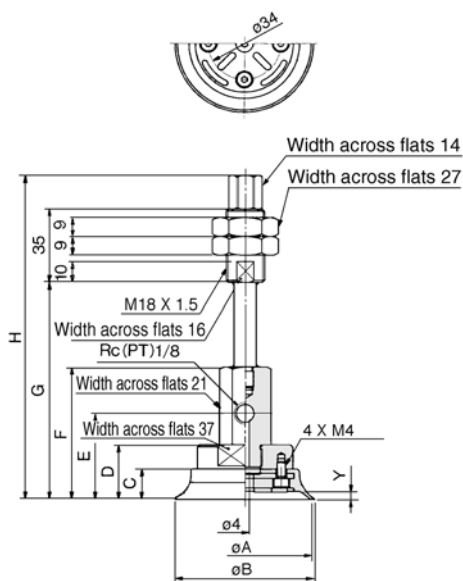
ZPX₅₀⁴⁰H□J□-B01-A18 (with buffer)



Unit: mm

Model	ϕA	ϕB	C	D
ZPX40H□J25-B01-A18	40	42	100	151
ZPX40H□J50-B01-A18	40	42	135	186
ZPX40H□J75-B01-A18	40	42	171	222
ZPX50H□J25-B01-A18	50	52	100	151
ZPX50H□J50-B01-A18	50	52	135	186
ZPX50H□J75-B01-A18	50	52	171	222

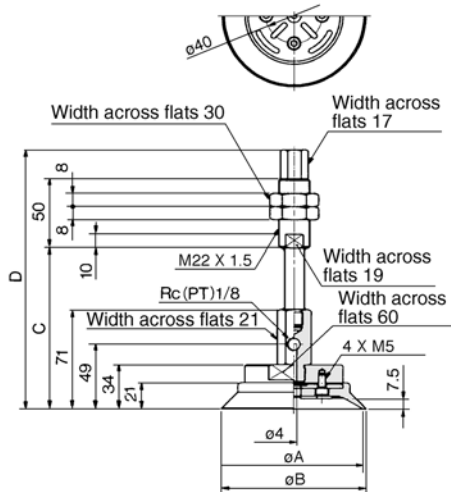
ZPX₈₀⁶³H□J□-B01-A18 (with buffer)



Unit: mm

Model	ϕA	ϕB	C	D	E	F	G	H	Y
ZPX63H□J25-B01-A18	63	65	14.5	26	41	63	103	154	3.5
ZPX63H□J50-B01-A18	63	65	14.5	26	41	63	136	189	3.5
ZPX63H□J75-B01-A18	63	65	14.5	26	41	63	172	225	3.5
ZPX80H□J25-B01-A18	80	82	16.5	28	43	65	105	156	4.5
ZPX80H□J50-B01-A18	80	82	16.5	28	43	65	138	191	4.5
ZPX80H□J75-B01-A18	80	82	16.5	28	43	65	174	227	4.5

ZPX₁₂₅¹⁰⁰H□J□-B01-A18 (with buffer)



Unit: mm

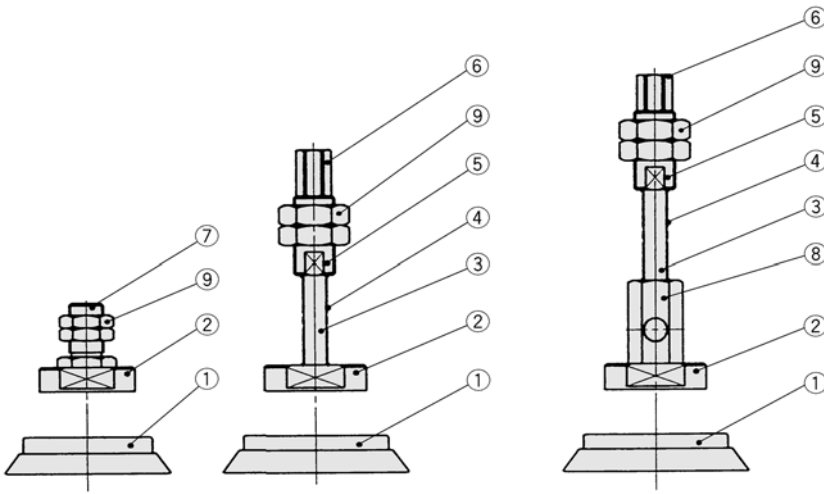
Model	ϕA	ϕB	C	D
ZPX100H□J25-B01-A22	100	103	115	186
ZPX100H□J50-B01-A22	100	103	151	222
ZPX100H□J75-B01-A22	100	103	191	262
ZPX100H□J100-B01-A22	100	103	226	297
ZPX125H□J25-B01-A22	125	128	115	186
ZPX125H□J50-B01-A22	125	128	151	222
ZPX125H□J75-B01-A22	125	128	191	262
ZPX125H□J100-B01-A22	125	128	226	297

Vacuum Pads for Heavy Duty Material Handling Series ZPT/ZPX

Construction

Series ZPT

Series ZPX



Component Parts

No.	Description	Material	Surface treatment
①	Pad	NBR, Silicone rubber, Urethane rubber, Fluorine rubber, EPR	————
②	Adaptor plate	Aluminum	————
③	Piston rod	Carbon steel	Hard chrome plated
④	Spring	Stainless steel	————
⑤	Buffer body	Aluminum	————
⑥	Buffer adaptor	Brass	Electroless nickel plated
⑦	Adaptor A	Brass	Electroless nickel plated
⑧	X type adaptor	Brass	Electroless nickel plated
⑨	Mounting nut	Rolled steel	Black zinc chromated

Replacement Parts: Pad Unit

How to Order/Pad Unit

ZP 40 H N

Pad diameter: 40, 50, 63, 80, 100, 125
 Pad style: H (Heavy duty)
 Material: N (NBR), S (Silicon rubber), U (Urethane rubber), F (Fluorine rubber), E (EPR)

Pad diameter	Material
40	ø40
50	ø50
63	ø63
80	ø80
100	ø100
125	ø125

Material	Material
N	NBR
S	Silicon rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

Pad Unit Weight

(NBR)

Model	Weight (g)
ZP40HN	15
ZP50HN	27
ZP63HN	57
ZP80HN	86
ZP100HN	160
ZP125HN	224

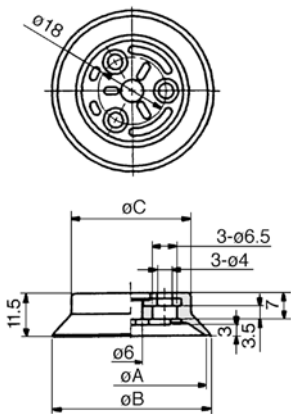
(g)

Pad diameter	Silicon rubber	Urethane rubber	Fluorine rubber	EPR
ø40	-1	0	5	-1
ø50	-1	0	8	0
ø63	-2	0	16	0
ø80	-3	1	27	-1
ø100	-5	1	53	-1
ø125	-8	3	84	0

Add NBR weight to the table on the right for other materials.

Dimensions

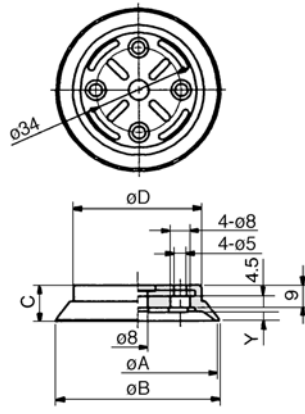
ZP₄₀⁵⁰H□



Unit: mm

Model	øA	øB	øC
ZP40H□	40	42	32
ZP50H□	50	52	42

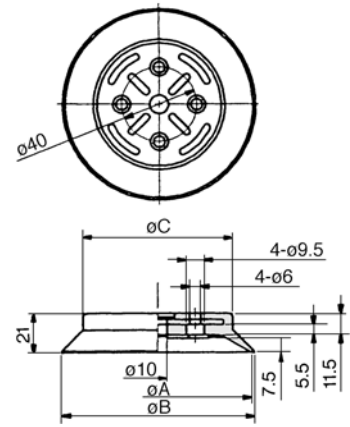
ZP₆₃⁸⁰H□



Unit: mm

Model	øA	øB	C	D	Y
ZP63H□	63	65	14.5	54	3.5
ZP80H□	80	82	16.5	68	4.5

ZP₁₀₀¹²⁵H□



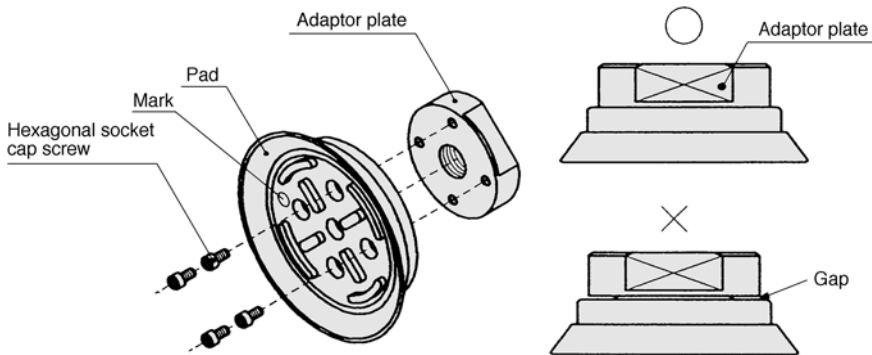
Unit: mm

Model	øA	øB	øC
ZP100H□	100	103	80
ZP125H□	125	128	104

ZX
ZR
ZM
ZY
ZH
ZU
ZL
ZF
ZP
ZCU
CYV
Vacuum related

Series ZPT/ZPX

How to Assemble/Disassemble



Remove bolts with a hex. key wrench from the pad underside. Tighten new pad with the bolts ensuring there is no gap between the adaptor plate and the pad.

How to Distinguish Different Pad Materials

Checking the mark on the pad's interior surface as shown in the figure on the left.

Material	Color	Mark
NBR	Black	—
Silicon rubber	White	—
Urethane rubber	Brown	—
Fluorine rubber	Black	F
EPR	Black	E

Replacement Parts/Mounting Nut

How to Order

ZPNA—M16

Mounting thread

M16	M16 X 1.5
M18	M18 X 1.5
M22	M22 X 1.5

Mounting nut part number of "M14 X 1" is "SN-015A".

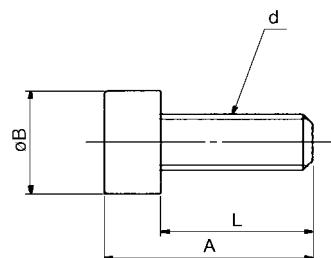
Dimensions

Part number	A	B	d	H
SN-015A	19	21.9	M14 X 1	5
ZPNA-M16	22	25.4	M16 X 1.5	6
ZPNA-M18	27	31.2	M18 X 1.5	9
ZPNA-M22	30	34.6	M22 X 1.5	8

Unit: mm

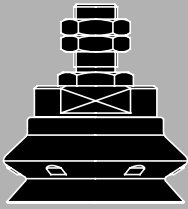
Bolts

Dimensions



A	øB	d	L
11	5.5	M3	8
12	7	M4	8
15	8.5	M5	10

Unit: mm



Large Size Bellows Style Vacuum Pad

Series **ZPT/ZPX**

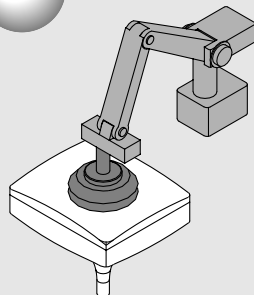
Pad diameter: $\varnothing 40$, $\varnothing 50$, $\varnothing 63$, $\varnothing 80$, $\varnothing 100$, $\varnothing 125$

For loads with a curved surface
 For heavyweight loads
 For loads with large surface area

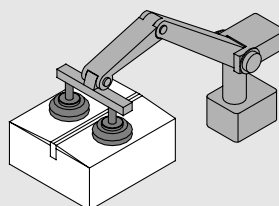


- ZX
- ZR
- ZM
- ZH
- ZU
- ZL
- ZF
- ZP**
- ZCU
- CYV
- Vacuum related

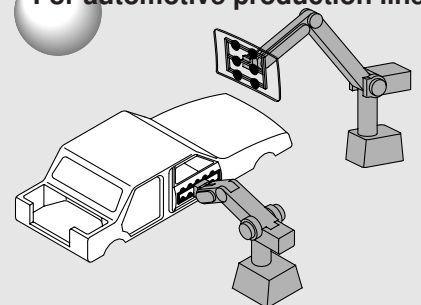
For transfer of CRT



For transfer of cardboard box



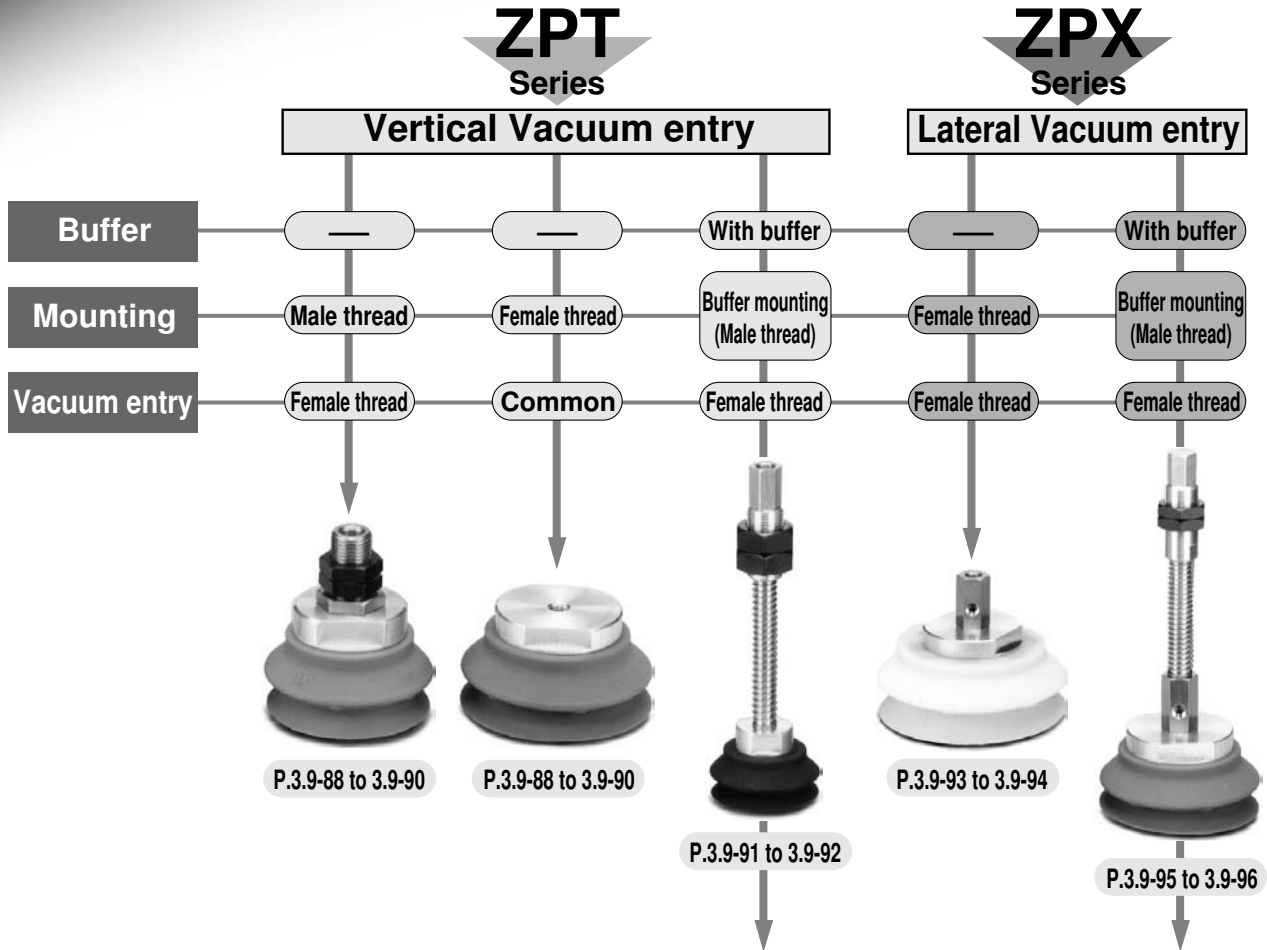
For automotive production line



Large Size Bellows Style Vacuum Pad

Series ZPT/ZPX

Pad diameter: $\varnothing 40$, $\varnothing 50$, $\varnothing 63$, $\varnothing 80$, $\varnothing 100$, $\varnothing 125$
 Pad material: NBR, Silicone rubber, Urethane rubber, Fluorine rubber, EPR



		Buffer stroke						
		Pad dia.	$\varnothing 40$	$\varnothing 50$	$\varnothing 63$	$\varnothing 80$	$\varnothing 100$	$\varnothing 125$
Buffer stroke	25	●	●	●	●	●	●	
	50	●	●	●	●	●	●	
	75	●	●	●	●	●	●	
	100	—	—	—	—	●	●	

Pad Materials and Characteristics

◎: Little or no influence ○: Can be used depending on conditions. X: Not suitable

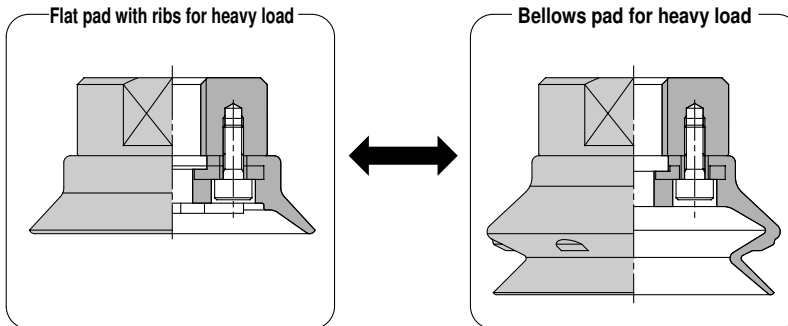
Material	Item	Durometer HS ($\pm 5^\circ$)	Temperature range ($^\circ\text{C}$)	Oil resistance (gasoline)	Oil resistance (benzol)	Alkali resistance	Acid resistance	Weatherability	Ozone resistance	Abrasion resistance	Waterproof	Solvents (benzene, toluene)
NBR		50°	0 to 120	◎	X	○	○	X	X	◎	○	X
Silicone rubber		50°	-30 to 250	X	X	○	X	◎	◎	X	○	X
Urethane rubber		60°	0 to 60	◎	X	X	X	○	◎	◎	X	X
Fluorine rubber		60°	0 to 250	◎	◎	X	◎	◎	◎	○	◎	◎
EPR		50°	-20 to 150	X	X	◎	○	◎	◎	○	◎	X

The above table covers only general characteristics of subject rubber materials.

Pad material used SMC pass nominal JIS material standards; however, actual performance depends on operating conditions.

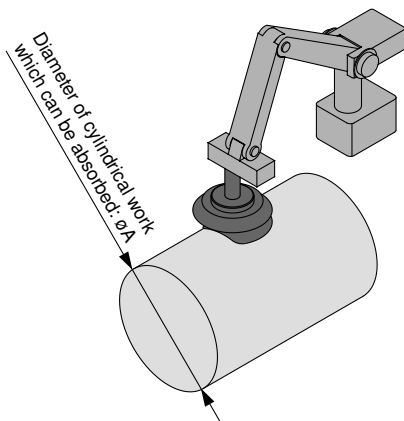
Interchangeable with flat pad with ribs for heavy loads

When changing to a different shape pad due to load change, the pad can be easily interchanged.



Possible combination — Same pad diameter, $\phi 40$ and $\phi 50$, $\phi 63$ and $\phi 80$, $\phi 100$ and $\phi 125$

Possible adsorption to cylindrical loads with easy fit to the load shape.



*Pushing force for adsorption is almost equivalent to return force of buffer spring.

Table 1: Diameter of cylindrical work which can be absorbed. (Reference value)

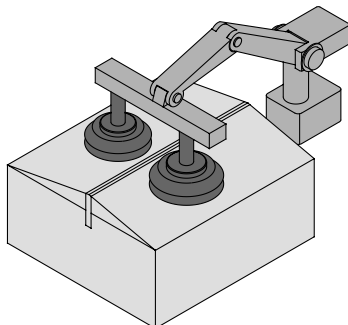
Model	Dia. of cylindrical work which can be absorbed: $\phi A^{(1)}$
ZP 40HB□	$\phi 80$ or more
50HB□	$\phi 100$ or more
63HB□	$\phi 120$ or more
80HB□	$\phi 160$ or more
100HB□	$\phi 180$ or more
125HB□	$\phi 230$ or more

Note 1) Consult SMC when requiring a diameter smaller than shown in table.

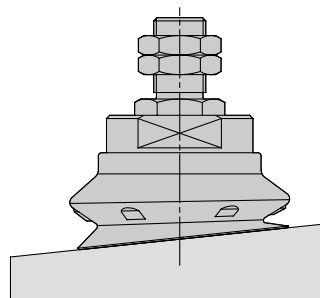
Note 2) Regard values mentioned above as reference only, since actual valves may depend on operating conditions.

Pad shape permits adsorption to sloped surfaces.

●When work shape or angles are transformed during adsorption or transportation.
(Example of a cardboard box)



●When adsorbed surface of work is sloped.
(Maximum angle: 5° *)



*Regard values mentioned above as reference only, since actual valves may depend on operating conditions.

ZX

ZR

ZM

ZY

ZH

ZU

ZL

ZF

ZP

ZCU

CYV

Vacuum related

Large Size
Bellows Style

Vertical
Vacuum
Entry

Series ZPT

Without Buffer



Specifications

Mounting	Vacuum entry direction	Vertical		
	Connection	Male thread	Female thread	
	Thread dia.	ø40, ø50	M14 X 1	M8/M10
		ø63, ø80	M16 X 1.5	M8/M10/M12/M16 X 1.5
	ø100, ø125	M16 X 1.5	M12/M16 X 1.5	
	Vacuum entry port	Rc(PT) 1/8	Use connection for mounting	

Pad Style

Pad dia. (mm)	ø40, ø50, ø63, ø80, ø100, ø125
Material (colour)	NBR (black), Silicone rubber (white), Urethane rubber (brown), Fluorine rubber (black with mark F), EPR (black with mark E)
Durometer	NBR/Silicon rubber/EPR (50°), Urethane/Fluorine rubber (60°)

Weight Table

(g)

NBR

Part No.	Weight	Part No.	Weight
ZPT40HBN-A14	73	ZPT 80HBN-A16	195
-B 8	40	-B 8	161
-B10	39	-B10	160
ZPT50HBN-A14	89	-B12	158
-B 8	56	-B16	156
-B10	55	ZPT100HBN-A16	396
ZPT63HBN-A16	155	-B12	347
-B 8	121	-B16	345
-B10	120	ZPT125HBN-A16	580
-B12	118	-B12	531
-B16	116	-B16	529

Add NBR weight to below table for other materials.

Pad dia.	Silicone	Urethane	Fluorine	EPR
ø40	-1	+1	+10	0
ø50	-2	+1	+19	0
ø63	-3	+2	+37	0
ø80	-6	+2	+61	0
ø100	-12	+4	+121	-1
ø125	-22	+7	+228	-3

How to Order

ZPT 40 HB N-A14

Pad dia. (mm)

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

Pad style

HB	Large size bellows
----	--------------------

Vacuum entry/ Mounting thread diameter

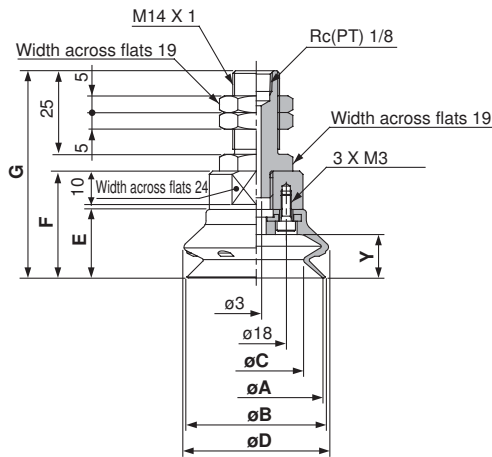
		ø40/ø50	ø63/ø80	ø100/ø125
A14	M14 X 1	●	—	—
A16	M16 X 1.5	—	●	●
B 8	M 8	●	●	—
B10	M10	●	●	—
B12	M12	—	●	●
B16	M16 X 1.5	—	●	●

Material

N	NBR
S	Silicone rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

Without Buffer Series ZPT

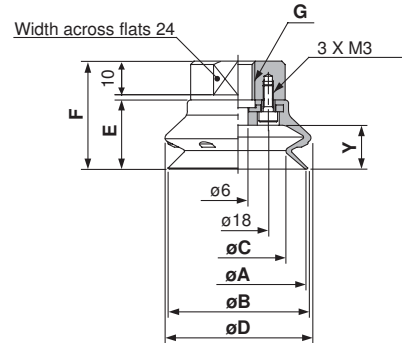
ZPT⁴⁰₅₀HB□-A14 (Male thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	Y
ZPT40HB□-A14	40	41.4	28.4	43.2	20.5	32	62	13
ZPT50HB□-A14	50	51.9	35.7	54	24	35.5	65.5	16.5

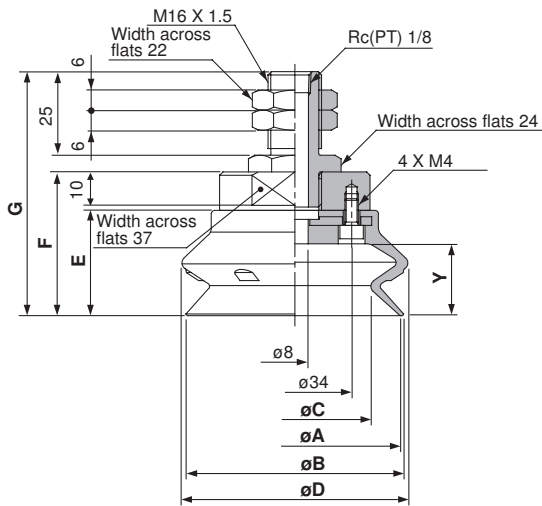
ZPT⁴⁰₅₀HB□-B□ (Female thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	Y
ZPT40HB□-B 8	40	41.4	28.4	43.2	20.5	32	M8	13
-B10							M10	
ZPT50HB□-B 8	50	51.9	35.7	54	24	35.5	M8	16.5
-B10							M10	

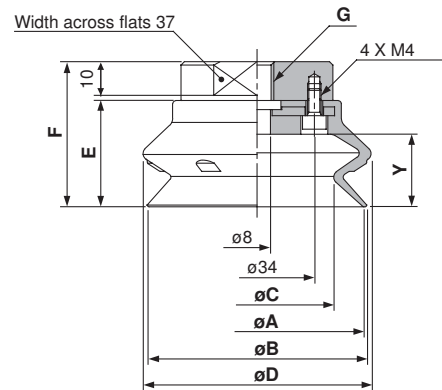
ZPT⁶³₈₀HB□-A16 (Male thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	Y
ZPT63HB□-A16	63	65.1	45.5	67.6	31.5	43	73	21.5
ZPT80HB□-A16	80	83	58.4	85.1	37	48.5	78.5	27.5

ZPT⁶³₈₀HB□-B□ (Female thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	Y
ZPT63HB□-B 8	63	65.1	45.5	67.6	31.5	43	M8	21.5
-B10							M10	
-B12							M12	
-B16							M16 X 1.5	
ZPT80HB□-B 8	80	83	58.4	85.1	37	48.5	M85	27.5
-B10							M10	
-B12							M12	
-B16							M16 X 1.5	

ZX

ZR

ZM

ZY

ZH

ZU

ZL

ZF

ZP

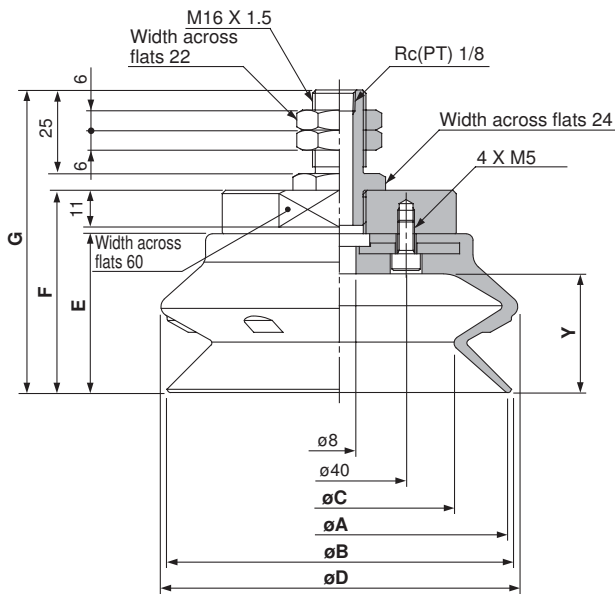
ZCU

CYV

Vacuum related

Series ZPT

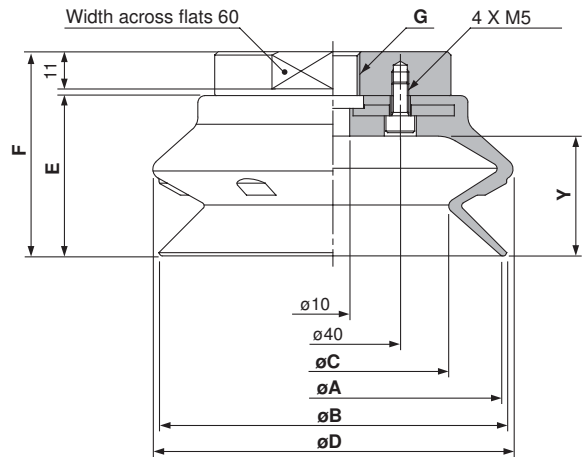
ZPT₁₀₀¹⁰⁰HB□-A16 (Male thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	Y
ZPT100HB□-A16	100	103	68.5	107	47.5	60.5	90.5	35.5
ZPT125HB□-A16	125	128.5	88.5	135	56	69	99	44

ZPT₁₀₀¹⁰⁰HB□-B□ (Female thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	Y
ZPT100HB□-B12	100	103.1	68.6	106.7	47.5	60.5	M12	35.5
-B16							M16 X 1.5	
ZPT125HB□-B12	125	128.5	88.6	135	56	69	M12	44
-B16							M16 X 1.5	

Large size
Bellows Style

Vertical
Vacuum
Entry

Series ZPT

With Buffer



Specifications

Mounting Thread dia.	Vacuum entry direction	Vertical
	Connection	Male thread
	ø40, ø50	M18 X 1.5
	ø63, ø80	M18 X 1.5
	ø100, ø125	M22 X 1.5
Vacuum entry port		Rc(PT) 1/8

	Buffer style	Rotating (J)
Buffer stroke	ø40 to ø80	25, 50, 75 (mm)
	ø100, ø125	25, 50, 75, 100 (mm)

Pad Style

Pad dia. (mm)	ø40, ø50, ø63, ø80, ø100, ø125
Material (colour)	NBR (black), Silicone rubber (white), Urethane rubber (brown), Fluorine rubber (black with mark F), EPR (black with mark E)
Durometer	NBR/Silicone rubber/EPR (50°), Urethane/Fluorine rubber (60°)

Weight Table

NBR

Part No.	Weight	Part No.	Weight
ZPT40HBNJ25-B01-A18	127	ZPT 80HBNJ50-B01-A18	268
50-B01-A18	147	75-B01-A18	289
75-B01-A18	168	ZPT100HBNJ25-B01-A22	535
ZPT50HBNJ25-B01-A18	143	50-B01-A22	575
50-B01-A18	163	75-B01-A22	620
75-B01-A18	201	100-B01-A22	659
ZPT63HBNJ25-B01-A18	208	ZPT125HBNJ25-B01-A22	719
50-B01-A18	228	50-B01-A22	759
75-B01-A18	249	75-B01-A22	804
ZPT80HBNJ25-B01-A18	231	100-B01-A22	843

Add NBR weight to below table for other materials.

Pad dia.	Silicone	Urethane	Fluorine	EPR
ø40	-1	+1	+10	0
ø50	-2	+1	+19	0
ø63	-3	+2	+37	0
ø80	-6	+2	+61	0
ø100	-12	+4	+121	-1
ø125	-22	+7	+228	-3

ZX

ZR

ZM

ZY

ZH

ZU

ZL

ZF

ZP

ZCU

CYV

Vacuum related

How to Order

ZPT 40 HB N J 25 - B01 - A18

Pad dia. (mm)

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

Pad style
HB Large size bellows

Spring force

ø40 to ø80	First mounting load	6.9N
	Second mounting load	11.8N
ø100, ø150	First mounting load	10N
	Second mounting load	15N

Material

N	NBR
S	Silicone rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

Vacuum entry

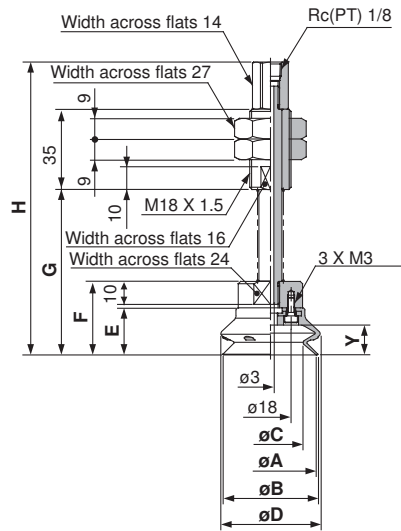
B01	Rc(PT) 1/8
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Applicable buffer stroke (Rotating)

Stroke	ø40	ø50	ø63	ø80	ø100	ø125
25	●	●	●	●	●	●
50	●	●	●	●	●	●
75	●	●	●	●	●	●
100	—	—	—	—	●	●

Series ZPT

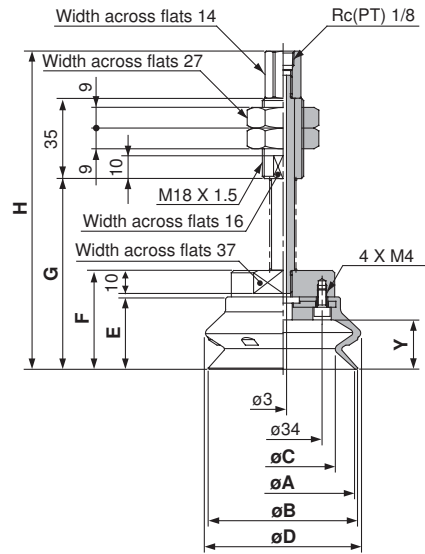
ZPT₄₀⁵⁰HB□J□-B01-A18 (Male thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	H	Y
ZPT40HB□J25-B01-A18							72	127.5	
50-B01-A18	40	41.4	28.4	43.2	20.5	32	107	162.5	13
75-B01-A18							143	198.5	
ZPT50HB□J25-B01-A18							75.5	131	
50-B01-A18	50	51.9	35.7	54	24	35.5	110.5	166	16.5
75-B01-A18							146.5	202	

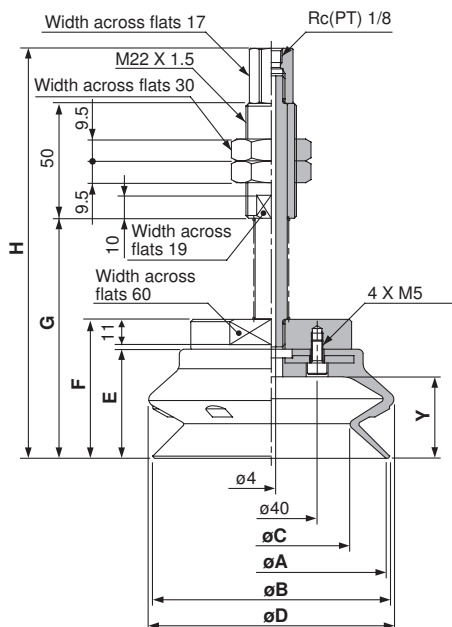
ZPT₆₃⁸⁰HB□J□-B01-A18 (Male thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	H	Y
ZPT63HB□J25-B01-A18							83	138.5	
50-B01-A18	63	65.1	45.5	67.6	31.5	43	118	173.5	21.5
75-B01-A18							154	209.5	
ZPT80HB□J25-B01-A18							88.5	144	
50-B01-A18	80	83	58.5	85.1	37	48.5	123.5	179	27.5
75-B01-A18							159.5	215	

ZPT₁₀₀¹²⁵HB□J□-B01-A22 (Male thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	H	Y
ZPT100HB□J25-B01-A22							104.5	178.5	
50-B01-A22	100	103.1	68.6	106.7	47.5	60.5	140.5	214.5	35.5
75-B01-A22							180.5	254.5	
100-B01-A22							215.5	289.5	
ZPT125HB□J25-B01-A22							113	187	
50-B01-A22	125	128.5	88.6	135	56	69	149	223	44
75-B01-A22							189	263	
100-B01-A22							224	298	

Large size
Bellows Style

Lateral
Vacuum
Entry

Series ZPX

Without Buffer



Specifications

Mounting	Vacuum entry direction		Lateral
	Connection		Female thread
	Thread dia.	ø40, ø50	M8 M10
		ø63, ø80	M10 M12
ø100, ø125		M10 M12	
Vacuum entry port			Rc(PT) 1/8

Pad Style

Pad dia. (mm)	ø40, ø50, ø63, ø80, ø100, ø125
Material (colour)	NBR (black), Silicone rubber (white), Urethane rubber (brown), Fluorine rubber (black with mark F), EPR (black with mark E)
Durometer	NBR/Silicone rubber/EPR (50°), Urethane/Fluorine rubber (60°)

Weight Table

(g)

NBR

Part No.	Weight	Part No.	Weight
ZPX40HBN-B01-B 8	150	ZPX 80HBN-B01-B10	275
-B10	152	-B12	271
ZPX50HBN-B01-B 8	166	ZPX100HBN-B01-B10	464
-B10	164	-B12	460
ZPX63HBN-B01-B10	235	ZPX125HBN-B01-B10	648
-B12	225	-B12	644

Add NBR weight to below table for other materials.

Pad dia.	Silicone	Urethane	Fluorine	EPR
ø40	-1	+1	+10	0
ø50	-2	+1	+19	0
ø63	-3	+2	+37	0
ø80	-6	+2	+61	0
ø100	-12	+4	+121	+1
ø125	-22	+7	+228	+3

ZX

ZR

ZM

ZY

ZH

ZU

ZL

ZF

ZP

ZCU

CYV

Vacuum related

How to Order

ZPX 40 HB N - B01 - B10

Pad dia. (mm)

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

Pad style

HB Large size bellows

Vacuum entry/Mounting

thread diameter	ø40/ø50	ø63/ø80	ø100/ø125
B 8	M8	●	—
B10	M10	●	●
B12	M12	—	●

Vacuum entry

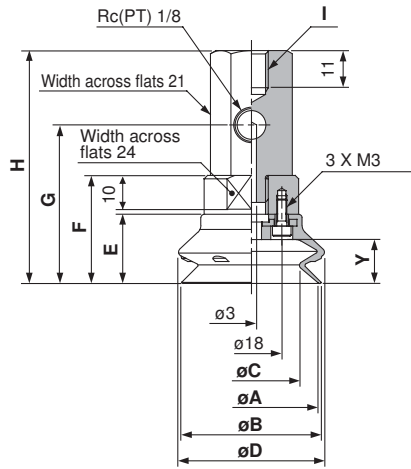
B01 Rc(PT) 1/8

Material

N	NBR
S	Silicone rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

Series ZPX

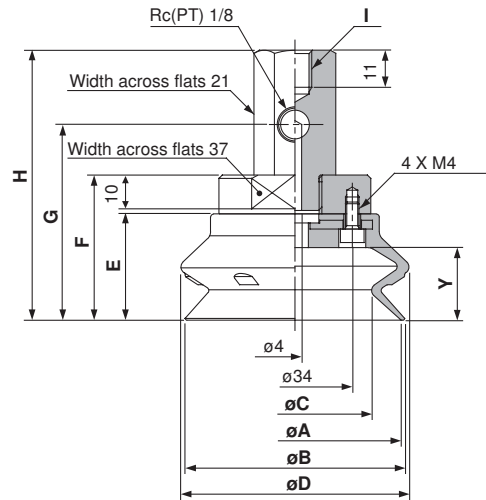
ZPX₅₀⁴⁰HB□-B01-B□ (Female thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	H	I	Y
ZPX40HB□-B01-B 8	40	41.4	28.4	43.2	20.5	32	47	69	M8	13
-B10									M10	
ZPX50HB□-B01-B 8	50	51.9	35.7	54	24	35.5	50.5	72.5	M8	16.5
-B10									M10	

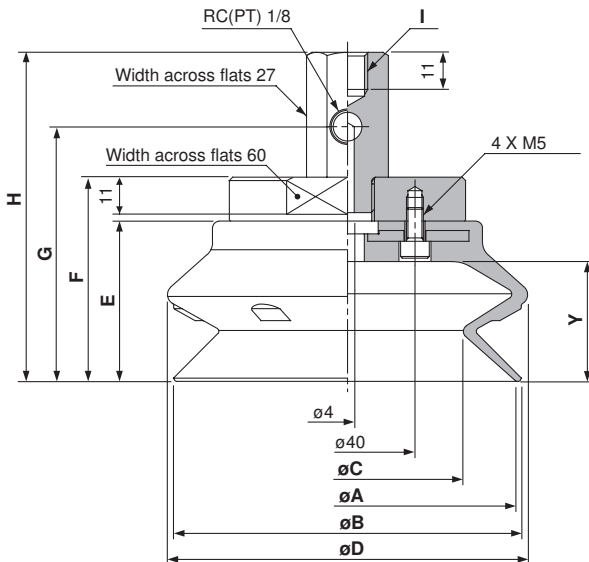
ZPX₈₀⁶³HB□-B01-B□ (Female thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	H	I	Y
ZPX63HB□-B01-B10	63	65.1	45.5	67.6	31.5	43	58	80	M10	21.5
-B12									M12	
ZPX80HB□-B01-B10	80	83	58.4	85.1	37	48.5	63.5	85.5	M10	27.5
-B12									M12	

ZPX₁₂₅¹⁰⁰HB□-B01-B□ (Female thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	H	I	Y
ZPX100HB□-B01-B10	100	103.1	68.6	106.7	47.5	60.5	75.5	97.5	M10	35.5
-B12									M12	
ZPX125HB□-B01-B10	125	128.5	88.6	135	56	69	84	106	M10	44
-B12									M12	

Large size
Bellows Style

Lateral
Vacuum
Entry

Series ZPX With Buffer



Specifications

Mounting Thread dia.	Vacuum entry direction	Lateral
	Connection	Male thread
	ø40, ø50	M18 X 1.5
	ø63, ø80	M18 X 1.5
	ø100, ø125	M22 X 1.5
Vacuum entry port		Rc(PT) 1/8

Buffer stroke	Buffer style	Rotating (J)
	ø40 to ø80	25, 50, 75 (mm)
	ø100, ø125	25, 50, 75, 100 (mm)

Pad Style

Pad dia. (mm)	ø40, ø50, ø63, ø80, ø100, ø125
Material (colour)	NBR (black), Silicone rubber (white), Urethane rubber (brown), Fluorine rubber (black with mark F), EPR (black with mark E)
Durometer	NBR/Silicone rubber/EPR (50°), Urethane/Fluorine rubber (60°)

Weight Table

NBR

Part No.	Weight	Part No.	Weight
ZPX40HBNJ25-B01-A18	268	ZPX 80HBNJ50-B01-A18	418
50-B01-A18	289	75-B01-A18	441
75-B01-A18	312	ZPX100HBNJ25-B01-A22	684
ZPX50HBNJ25-B01-A18	284	50-B01-A22	723
50-B01-A18	305	75-B01-A22	767
75-B01-A18	328	100-B01-A22	806
ZPX63HBNJ25-B01-A18	357	ZPX125HBNJ25-B01-A22	868
50-B01-A18	378	50-B01-A22	907
75-B01-A18	401	75-B01-A22	951
ZPX80HBNJ25-B01-A18	397	100-B01-A22	990

Add NBR weight to below table for other materials.

Pad dia.	Silicone	Urethane	Fluorine	EPR
ø40	-1	+1	+10	0
ø50	-2	+1	+19	0
ø63	-3	+2	+37	0
ø80	-6	+2	+61	0
ø100	-12	+4	+121	-1
ø125	-22	+7	+228	-3

How to Order

ZPX 40 HB N J 25 - B01 - A18

Pad dia. (mm)

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

Pad style

HB	Large size bellows
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Spring force

Stroke	First mounting load	Second mounting load
ø40 to ø80	First mounting load	6.9N
	Second mounting load	11.8N
ø100, ø150	First mounting load	10N
	Second mounting load	15N

Material

N	NBR
S	Silicone rubber
U	Urethane rubber
F	Fluorine rubber
E	EPR

Vacuum entry

B01	Rc(PT) 1/8
-----	------------

Applicable buffer stroke (Rotating)

Stroke	ø40	ø50	ø63	ø80	ø100	ø125
25	●	●	●	●	●	●
50	●	●	●	●	●	●
75	●	●	●	●	●	●
100	—	—	—	—	●	●

Mounting thread diameter

A18	M18 X 1.5 (ø40 to ø80)
A22	M22 X 1.5 (ø100, ø125)

ZX

ZR

ZM

ZY

ZH

ZU

ZL

ZF

ZP

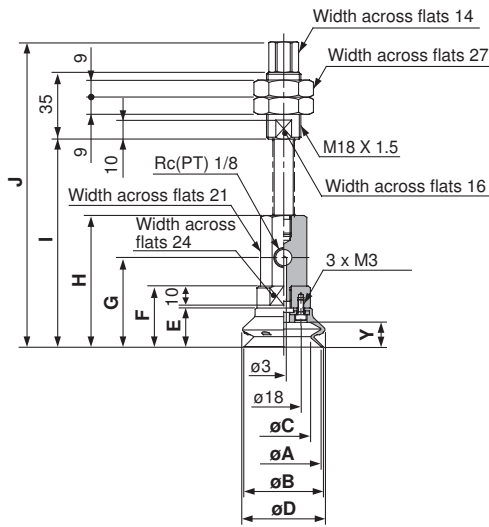
ZCU

CYV

Vacuum related

Series ZPX

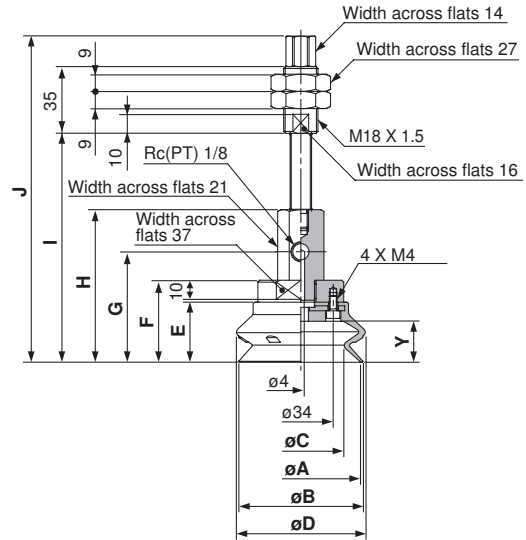
ZPX₅₀⁴⁰HB□J□-B01-A18 (Male thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	H	I	J	Y
ZPX40HB□J25-B01-A18									109	160	
50-B01-A18	40	41.4	28.4	43.2	20.5	32	47	69	144	195	13
75-B01-A18									180	231	
ZPX50HB□J25-B01-A18									112.5	163.5	
50-B01-A18	50	51.9	35.7	54	24	35.5	50.5	72.5	147.5	198.5	16.5
75-B01-A18									183.5	234.5	

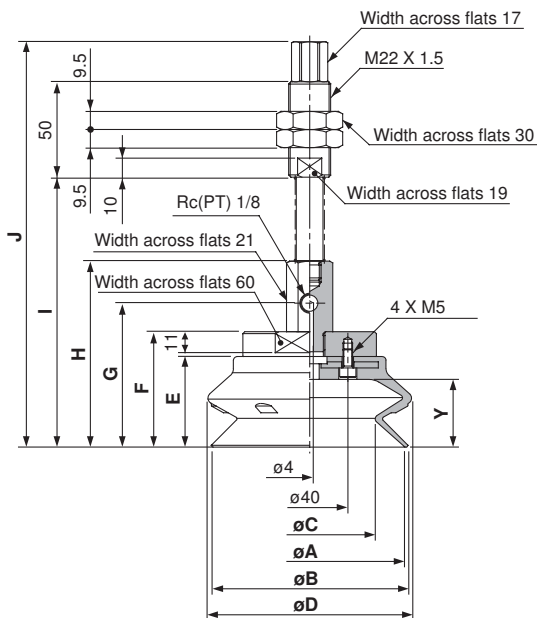
ZPX₈₀⁶³HB□J□-B01-A18 (Male thread)



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	H	I	J	Y
ZPX63HB□J25-B01-A18									120	171	
50-B01-A18	63	65.1	45.5	67.6	31.5	43	58	80	155	206	21.5
75-B01-A18									191	242	
ZPX80HB□J25-B01-A18									125.5	176.5	
50-B01-A18	80	83	58.4	85.1	37	48.5	63.5	85.5	160.5	211.5	27.5
75-B01-A18									196.5	247.5	

ZPX₁₂₅¹⁰⁰HB□J□-B01-A22 (Male thread)



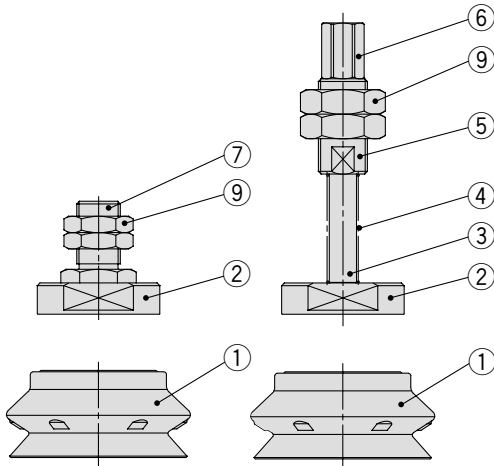
Dimensions (mm)

Part No.	A	B	C	D	E	F	G	H	I	J	Y
ZPX100HB□J25-B01-A22									141.5	212.5	
50-B01-A22	100	103.1	68.6	106.7	47.5	60.5	75.5	97.5	177.5	248.5	35.5
75-B01-A22									217.5	288.5	
100-B01-A22									252.5	323.5	
ZPX125HB□J25-B01-A22									150	221	
50-B01-A22	125	128.5	88.6	135	56	69	84	106	186	257	44
75-B01-A22									226	297	
100-B01-A22									261	332	

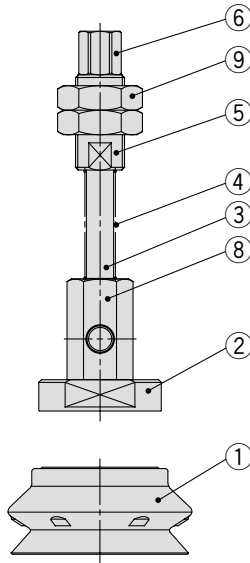
Large Size Bellows Style Series ZPT/ZPX

Construction

Series ZPT



Series ZPX



Spare parts

No.	Description	Material	Surface treatment
①	Pad	NBR, Silicone rubber, Urethane rubber, Fluorine rubber, EPR	—
②	Adaptor plate	Aluminum	Hard chrome plated
③	Piston rod	Carbon steel	—
④	Spring	Stainless steel	—
⑤	Buffer body	Aluminum	Electroless nickel plated
⑥	Buffer adaptor	Brass	Electroless nickel plated
⑦	Adaptor A	Brass	Electroless nickel plated
⑧	X type adaptor	Brass	Electroless nickel plated
⑨	Mounting nut	Rolled steel	Black zinc chromated

ZX

ZR

ZM

ZY

ZH

ZU

ZL

ZF

ZP

ZCU

CYV

Vacuum related

Replacement Parts/Pad Unit

How to Order

ZP 40 HB N

Pad dia. (mm) Material

40	ø40	N	NBR
50	ø50	S	Silicone rubber
63	ø63	U	Urethane rubber
80	ø80	F	Fluorine rubber
100	ø100	E	EPR
125	ø125		

Pad style
HB Large size bellows

Weight Table

(g)

NBR

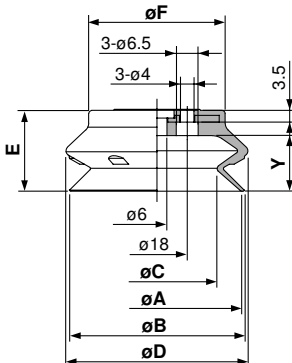
Part No.	Weight
ZP 40HBN	17
ZP 50HBN	33
ZP 63HBN	63
ZP 80HBN	103
ZP100HBN	206
ZP125HBN	390

Add NBR weight to below table for other materials.

Pad dia.	Silicone	Urethane	Fluorine	EPR
ø40	-1	+1	+10	0
ø50	-2	+1	+19	0
ø63	-3	+2	+37	0
ø80	-6	+2	+61	0
ø100	-12	+4	+121	-1
ø125	-22	+7	+228	-3

Dimensions

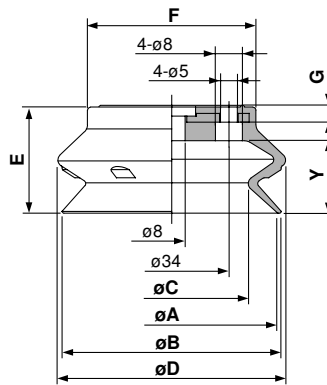
ZP₅₀⁴⁰HB□



Dimensions (mm)

Part No.	A	B	C	D	E	F	Y
ZP40HB□	40	41.4	28.4	43.2	20.5	30	13
ZP50HB□	50	51.9	35.7	54	24	40.5	16.5

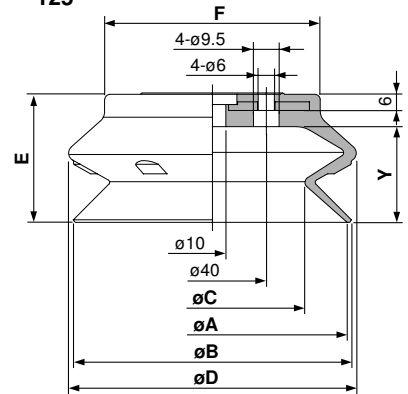
ZP₈₀⁶³HB□



Dimensions (mm)

Part No.	A	B	C	D	E	F	G	Y
ZP63HB□	63	65.1	45.5	67.6	31.5	50	4.5	21.5
ZP80HB□	80	83	58.4	85.1	37	64	5	27.5

ZP₁₂₅¹⁰⁰HB□



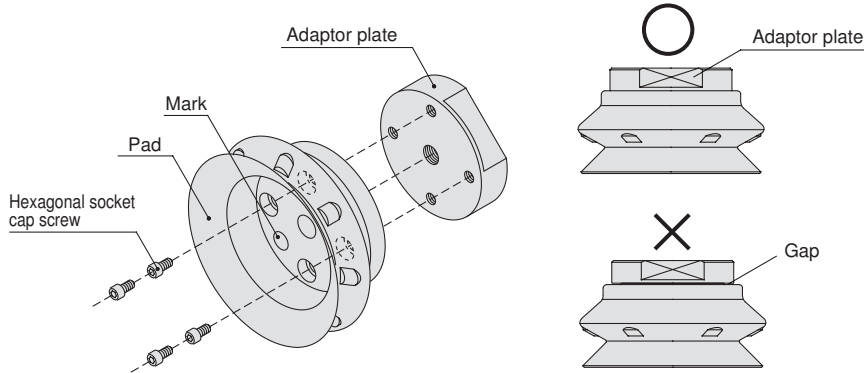
Dimensions (mm)

Part No.	A	B	C	D	E	F	Y
ZP100HB□	100	103.1	68.6	106.7	47.5	80	35.5
ZP125HB□	125	128.5	88.6	135	56	105	44

Series ZPT/ZPX

How to Assemble/Disassemble

Remove bolts with a hex. key wrench from the pad underside. Tighten new pad with the bolts ensuring there is no gap between the adaptor plate and the pad.



How to Distinguish Different Pad Materials

Check for the indicator mark on the pad's interior surface as shown in the figure at left.

Material	Color	Mark
NBR	Black	—
Silicone rubber	White	—
Urethane rubber	Brown	—
Fluorine rubber	Black	(F)
EPR	Black	(E)

Replacement Parts/Mounting Nut

How to Order

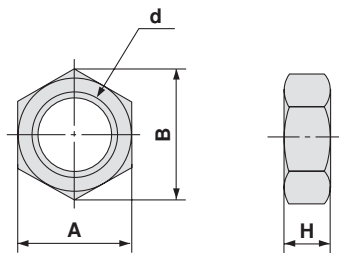
ZPNA—M16

Mounting thread

M16	M16 X 1.5
M18	M18 X 1.5
M22	M22 X 1.5

Mounting nut part number for "M14 X 1" is "SN-015A".

Dimensions

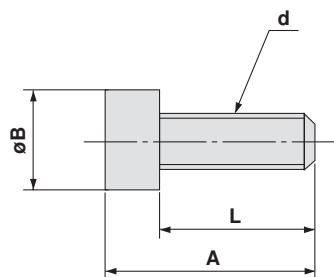


Dimensions

Part No.	A	B	d	H
SN-015A	19	21.9	M14 X 1	5
ZPNA-M16	22	25.4	M16 X 1.5	6
ZPNA-M18	27	31.2	M18 X 1.5	9
ZPNA-M22	30	34.6	M22 X 1.5	8

Bolts (Hexagonal Socket Head Cap Screw)

Dimensions



Dimensions

A	B	d	L
11	5.5	M3	8
12	7	M4	8
15	8.5	M5	10