

Vacuum Pad

Series ZP2

More shapes and sizes of pads. Applicable for various types of work pieces. **RoHS**

Compact/Short/Nozzle $\varnothing 0.8$ to $\varnothing 15$ P.1176 to 1184

Compact,
Space-saving



Thin Flat/Flat $\varnothing 5$ to $\varnothing 30$ P.1185 to 1187

For sheets or vinyl



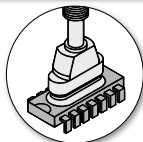
Bellows $\varnothing 2$ to $\varnothing 46$ P.1188 to 1191

For spherical work pieces or work pieces with
inclined surface



Oval 3.5×7 to 8×30 P.1192 to 1198

For rectangular
work pieces



Ball Spline Buffer $\varnothing 2$ to $\varnothing 8$ P.1199

Ball spline guide is used to the buffer.



Mark-free $\varnothing 4$ to $\varnothing 125$ P.1200 to 1204

For use where adsorption marks must not be left on work pieces.



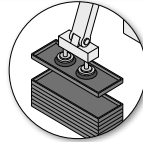
Sponge $\varnothing 4$ to $\varnothing 15$ P.1205 to 1207

For work pieces with bumps



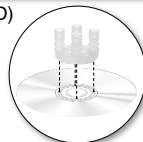
Heavy-duty $\varnothing 32$ to $\varnothing 340$ P.1208 to 1233

For heavy or large
work pieces



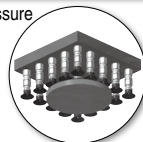
Special Configuration P.1234, 1235

For stage setting of disks (CD, DVD)
or glass substrates



Vacuum Saving Valve P.1236 to 1239

Can restrict the reduction of vacuum pressure
even when there is no workpiece.



Series ZP2/ZP Adapter/Buffer Applicable Pad List ... P.1240

Series ZP2 Mounting Adapter Part No. P.1246

Series ZP Mounting Adapter Part No. P.1249

Series ZP2 Adapter Assembly Part No. P.1252

Series ZP Adapter Assembly Part No. P.1253

Series ZP2 Buffer Assembly Part No. P.1255 to 1263

Series ZP Buffer Assembly Part No. P.1256 to 1261, P.1264 to 1267

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661



Compact Pad

Pad diameter $\varnothing 3, \varnothing 4, \varnothing 5, \varnothing 6, \varnothing 7, \varnothing 8$

Symbol/Type

U: Flat
C: Flat with rib
UT: Thin flat
B: Bellows

- 7 types of $\varnothing 3$ to $\varnothing 8$ are added.
- Applicable for the ZP series adapter

How to Order

Pad unit **ZP2-03 U N**



Pad diameter		
Symbol	Pad diameter	Blast type
03	$\varnothing 3$	
B04	$\varnothing 4$	●
05	$\varnothing 5$	
06	$\varnothing 6$	
B06	$\varnothing 6$	●
07	$\varnothing 7$	
B08	$\varnothing 8$	●

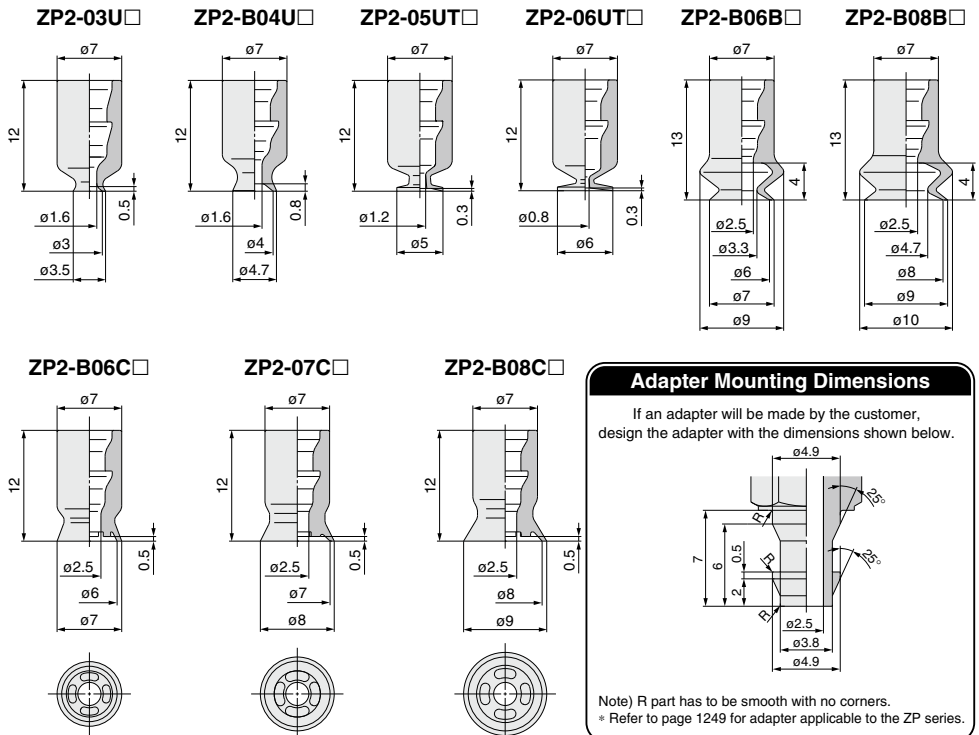
* Blast type: Work pieces can be removed easily.

Pad material	
Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
GN	Conductive NBR
GS	Conductive silicone rubber

Pad type—Pad diameter

Pad type	Pad diameter (Symbol)						
	03	B04	05	06	B06	07	B08
U (Flat)	●	●	—	—	—	—	—
C (Flat with rib)	—	—	—	—	●	●	●
UT (Thin flat)	—	—	●	●	—	—	—
B (Bellows)	—	—	—	—	●	—	●

Dimensions: Pad Unit





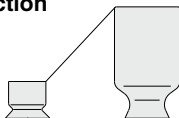
Short-type Pad

Pad diameter $\varnothing 2, \varnothing 3.5, \varnothing 4, \varnothing 5, \varnothing 6, \varnothing 8, \varnothing 10, \varnothing 15$

Symbol/Type

MU: Flat

■ Space-saving in the height direction



How to Order



Pad unit **ZP2 - B02 MU N**

Pad diameter

Symbol	Pad diameter	Blast type
B02	$\varnothing 2$	●
B035	$\varnothing 3.5$	●
B04	$\varnothing 4$	●
B05	$\varnothing 5$	●
B06	$\varnothing 6$	●
B08	$\varnothing 8$	●
B10	$\varnothing 10$	●
B15	$\varnothing 15$	●

* Blast type: Work pieces can be removed easily.

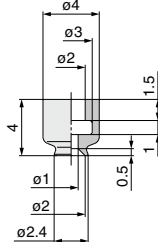
• Pad type
Symbol Type
MU Flat

Pad material

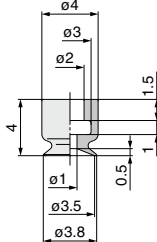
Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
GN	Conductive NBR
GS	Conductive silicone rubber

Dimensions: Pad Unit

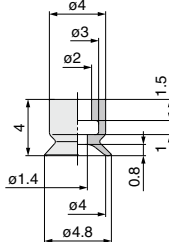
ZP2-B02MU□



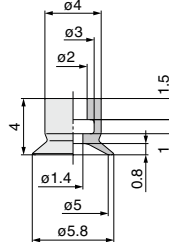
ZP2-B035MU□



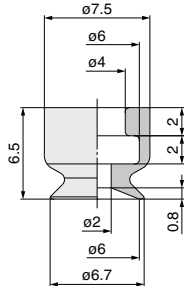
ZP2-B04MU□



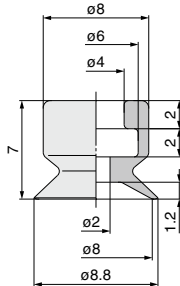
ZP2-B05MU□



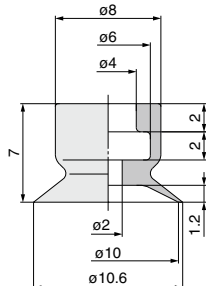
ZP2-B06MU□



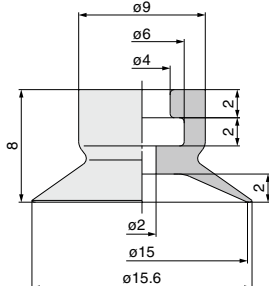
ZP2-B08MU□



ZP2-B10MU□



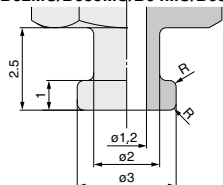
ZP2-B15MU□



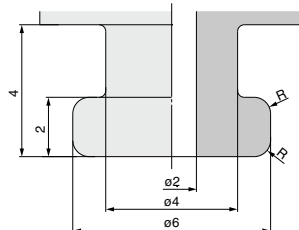
Adapter Mounting Dimensions

If an adapter will be made by the customer, design the adapter with the dimensions shown below.

Applicable pad
B02MU/B035MU/B04MU/B05MU



Applicable pad
B06MU/B08MU/B10MU/B15MU



Note) R part has to be smooth with no corners.

* Refer to page 1246 for adapter applicable to the ZP2 series.

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661

How to Order



With adapter **ZP2 - T B02 MU N - A3**

Vacuum inlet direction

Symbol	Direction
T	Vertical

Pad diameter

Symbol	Pad diameter	Blast type
B02	ø2	●
B035	ø3.5	●
B04	ø4	●
B05	ø5	●
B06	ø6	●
B08	ø8	●
B10	ø10	●
B15	ø15	●

* Blast type: Work pieces can be removed easily.

Pad type

Symbol	Type
MU	Flat

Mounting

Pad diameter (Symbol)	B02	B035	B04	B05	B06	B08	B10	B15
Thread size								
A3 (M3 x 0.5 Male thread)	●	●	●	●	—	—	—	—
H5 (M5 x 0.8 Male thread)	—	—	—	—	●	●	●	●
B5 (M5 x 0.8 Female thread)	—	—	—	—	—	—	—	—

Pad material

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

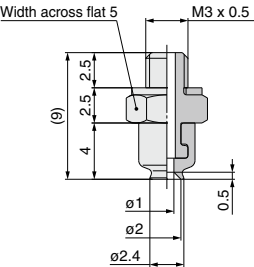
Replacement Part No.

Model	Pad unit part no.	Adapter part no.
ZP2-TB02MU□-A3	ZP2-B02MU□	ZP2A-M01P
ZP2-TB035MU□-A3	ZP2-B035MU□	
ZP2-TB04MU□-A3	ZP2-B04MU□	
ZP2-TB05MU□-A3	ZP2-B05MU□	ZP2A-M02P
ZP2-TB06MU□-H5	ZP2-B06MU□	
ZP2-TB08MU□-H5	ZP2-B08MU□	
ZP2-TB10MU□-H5	ZP2-B10MU□	ZP2A-M04
ZP2-TB15MU□-H5	ZP2-B15MU□	
ZP2-TB06MU□-B5	ZP2-B06MU□	
ZP2-TB08MU□-B5	ZP2-B08MU□	ZP2A-M04
ZP2-TB10MU□-B5	ZP2-B10MU□	
ZP2-TB15MU□-B5	ZP2-B15MU□	

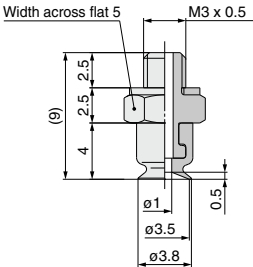
Note) □ in the table indicates the pad material.

Dimensions: With Adapter

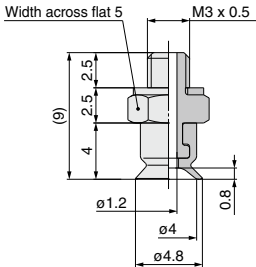
ZP2-TB02MU□-A3



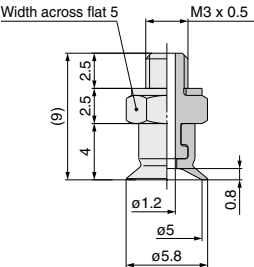
ZP2-TB035MU□-A3



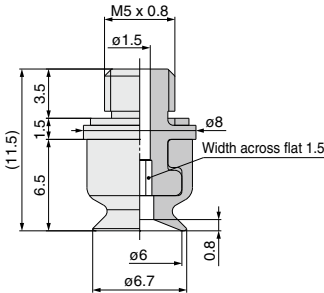
ZP2-TB04MU□-A3



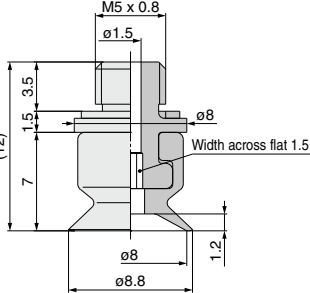
ZP2-TB05MU□-A3



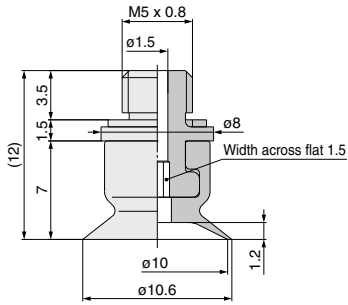
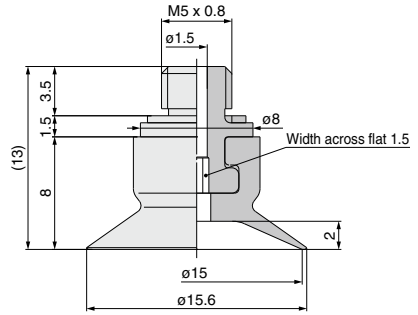
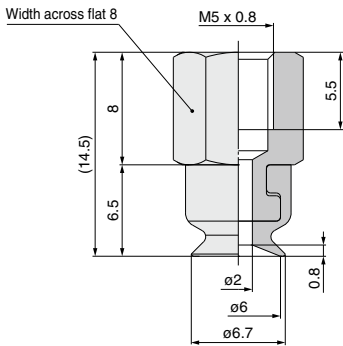
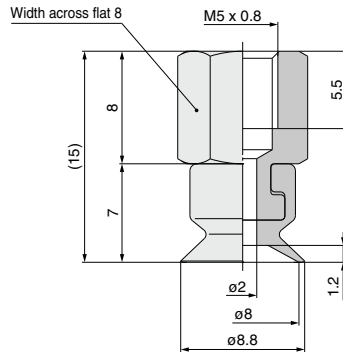
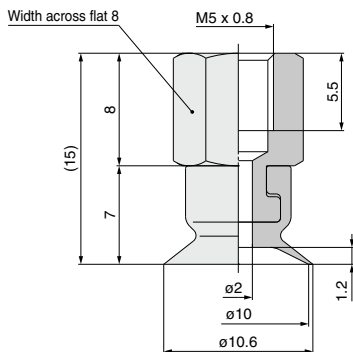
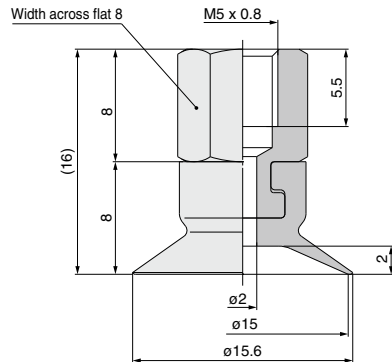
ZP2-TB06MU□-H5



ZP2-TB08MU□-H5



Dimensions: With Adapter

ZP2-TB10MU□-H5

ZP2-TB15MU□-H5

ZP2-TB06MU□-B5

ZP2-TB08MU□-B5

ZP2-TB10MU□-B5

ZP2-TB15MU□-B5

ZP3
ZP2
ZP2V
ZP
ZPT
ZPR
XT661



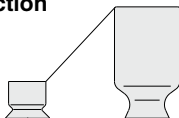
Short-type Pad

Symbol/Type

Pad diameter $\varnothing 2, \varnothing 4, \varnothing 6, \varnothing 8, \varnothing 15$

EU: Flat

■ Space-saving in the height direction



How to Order

Pad unit **ZP2 - B02 EU N**



Pad diameter

Symbol	Pad diameter	Blast type
B02	$\varnothing 2$	●
B04	$\varnothing 4$	●
B06	$\varnothing 6$	●
08	$\varnothing 8$	—
15	$\varnothing 15$	—

* Blast type: Work pieces can be removed easily.

Pad material

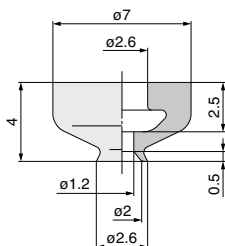
Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
GN	Conductive NBR
GS	Conductive silicone rubber

Pad type

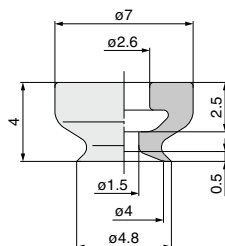
Symbol	Type
EU	Flat

Dimensions: Pad Unit

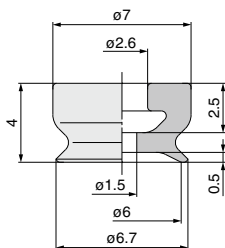
ZP2-B02EU □



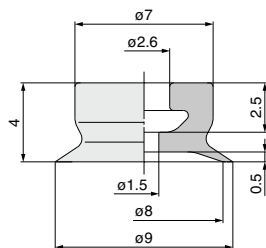
ZP2-B04EU □



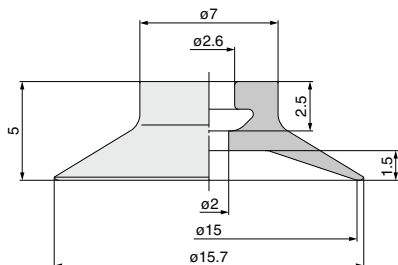
ZP2-B06EU □



ZP2-08EU □

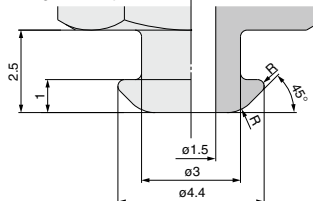


ZP2-15EU □



Adapter Mounting Dimensions

If an adapter will be made by the customer, design the adapter with the dimensions shown below.



Note) R part has to be smooth with no corners.

* Refer to page 1247 for adapter applicable to the ZP2 series.

How to Order

With adapter **ZP2 - T B02 EU N - A5**

Vacuum inlet direction

Symbol	Direction
T	Vertical

Pad diameter

Symbol	Pad diameter	Blast type
B02	ø2	●
B04	ø4	●
B06	ø6	●
08	ø8	—
15	ø15	—

* Blast type: Work pieces can be removed easily.

Pad type

Symbol	Type
EU	Flat

Mounting

Symbol	Thread size	Adapter type
A5	M5 x 0.8	Hexagon O.D.
H5	M5 x 0.8	Hexagon socket head

Pad material

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

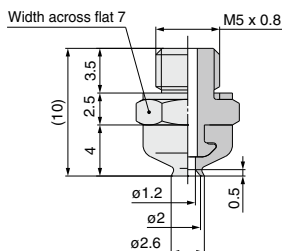
Replacement Part No.

Model	Pad unit part no.	Adapter part no.
ZP2-TB02EU□-A5	ZP2-B02EU□	ZP2A-Z01P
ZP2-TB04EU□-A5	ZP2-B04EU□	
ZP2-TB06EU□-A5	ZP2-B06EU□	
ZP2-T08EU□-A5	ZP2-08EU□	
ZP2-T15EU□-A5	ZP2-15EU□	ZP2A-Z02P
ZP2-TB02EU□-H5	ZP2-B02EU□	
ZP2-TB04EU□-H5	ZP2-B04EU□	
ZP2-TB06EU□-H5	ZP2-B06EU□	
ZP2-T08EU□-H5	ZP2-08EU□	
ZP2-T15EU□-H5	ZP2-15EU□	

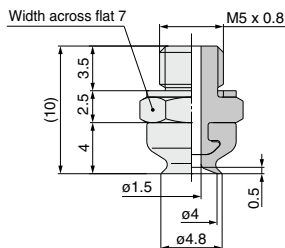
Note) □ in the table indicates the pad material.

Dimensions: With Adapter

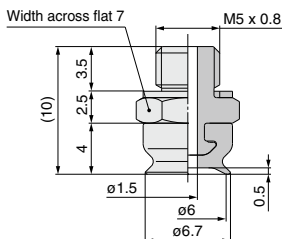
ZP2-TB02EU□-A5



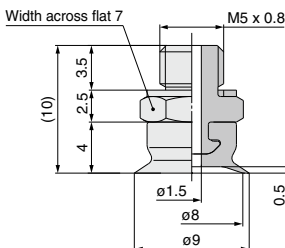
ZP2-TB04EU□-A5



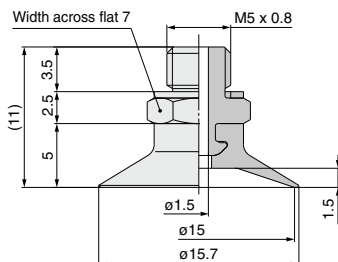
ZP2-TB06EU□-A5



ZP2-T08EU□-A5



ZP2-T15EU□-A5



ZP3

ZP2

ZP2V

ZP

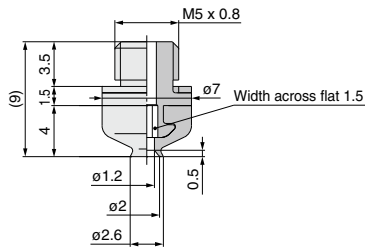
ZPT

ZPR

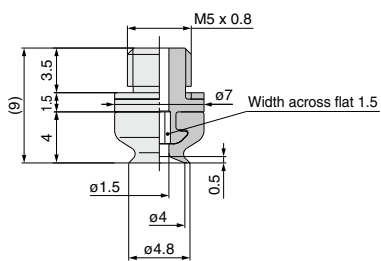
XT661

Dimensions: With Adapter

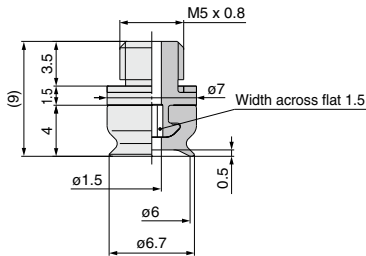
ZP2-TB02EU□-H5



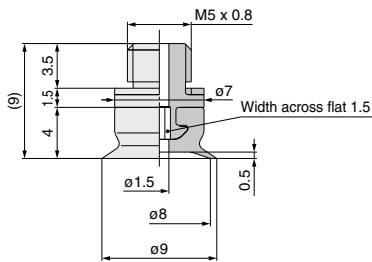
ZP2-TB04EU□-H5



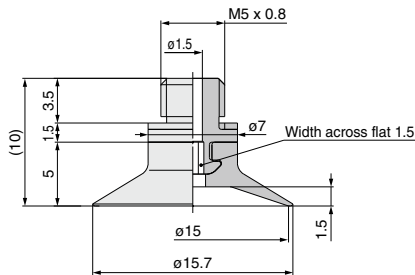
ZP2-TB06EU□-H5



ZP2-T08EU□-H5



ZP2-T15EU□-H5





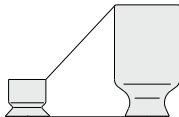
Short-type Pad

Symbol/Type

AU: Flat

Pad diameter $\rightarrow$ $\varnothing 2, \varnothing 3, \varnothing 4, \varnothing 6, \varnothing 8$

■ Space-saving in the height direction



Note) The mounting adapter is available as a special order.

How to Order

Pad unit **ZP2-02 AU N**



Pad diameter

Symbol	Pad diameter	Blast type
02	$\varnothing 2$	—
03	$\varnothing 3$	—
04	$\varnothing 4$	—
06	$\varnothing 6$	—
B08	$\varnothing 8$	●

* Blast type: Work pieces can be removed easily.

Pad material

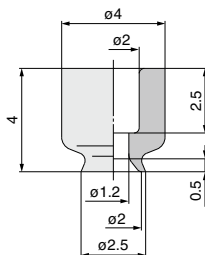
Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
GN	Conductive NBR
GS	Conductive silicone rubber

Pad type

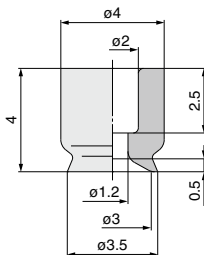
Symbol	Type
AU	Flat

Dimensions: Pad Unit

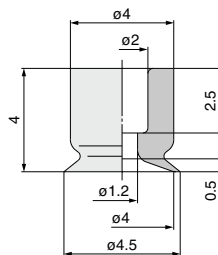
ZP2-02AU □



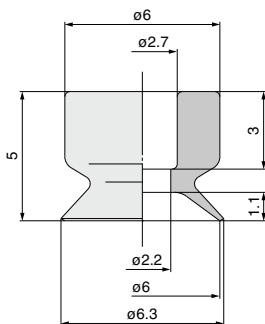
ZP2-03AU □



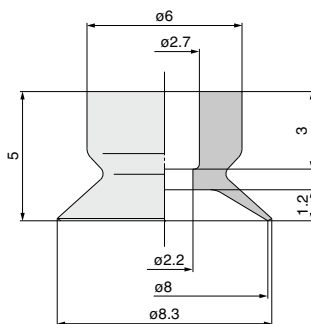
ZP2-04AU □



ZP2-06AU □



ZP2-B08AU □



ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661



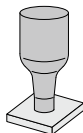
Nozzle Pad

Pad diameter $\varnothing 0.8, \varnothing 1.1$

Symbol/Type

AN: Nozzle

■ For adsorption of small components (such as IC chips)



How to Order

Pad unit **ZP2-08 AN N**

Pad diameter

Symbol	Pad diameter
08	$\varnothing 0.8$
11	$\varnothing 1.1$

Pad type

Symbol	Type
AN	Nozzle

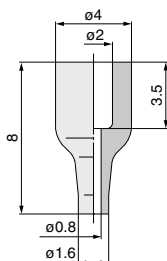
Pad material

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

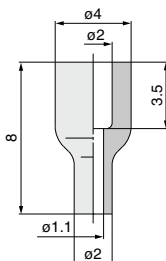


Dimensions: Pad Unit

ZP2-08AN□

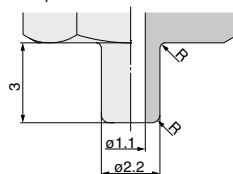


ZP2-11AN□



Adapter Mounting Dimensions

If an adapter will be made by the customer, design the adapter with the dimensions shown below.



Note) R part has to be smooth with no corners.
* Refer to page 1247 for adapter applicable to the ZP2 series.

How to Order

With adapter **ZP2-T 08 AN N-A5**

Vacuum entry direction

Symbol	Direction
T	Vertical

Pad diameter

Symbol	Pad diameter
08	$\varnothing 0.8$
11	$\varnothing 1.1$

Pad type

Symbol	Type
AN	Nozzle

Pad material

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

Mounting

Symbol	Thread size
A5	M5 x 0.8



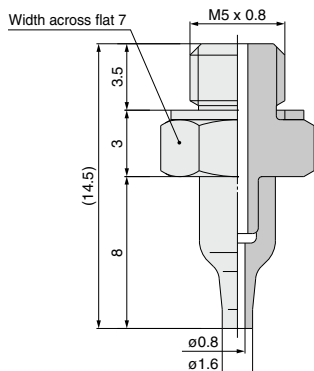
Replacement Part No.

Model	Pad unit part no.	Adapter part no.
ZP2-T08AN□-A5	ZP2-08AN□	ZP2A-Z21P
ZP2-T11AN□-A5	ZP2-11AN□	

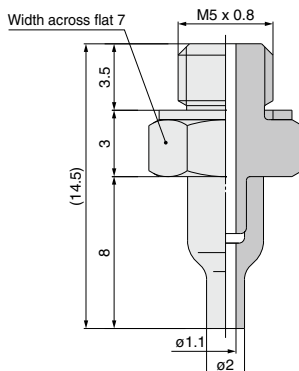
Note) □ in the table indicates the pad material.

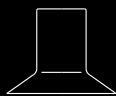
Dimensions: With Adapter

ZP2-T08AN□-A5



ZP2-T11AN□-A5





Thin Flat Pad

Pad diameter $\varnothing 5, \varnothing 6, \varnothing 11, \varnothing 14, \varnothing 18, \varnothing 20$

Symbol/Type

UT: Thin flat (Skirt)

■ For adsorption of soft work pieces such as thin sheets or vinyl. Wrinkling or deformation during adsorption is reduced.

■ Applicable for the ZP series adapter

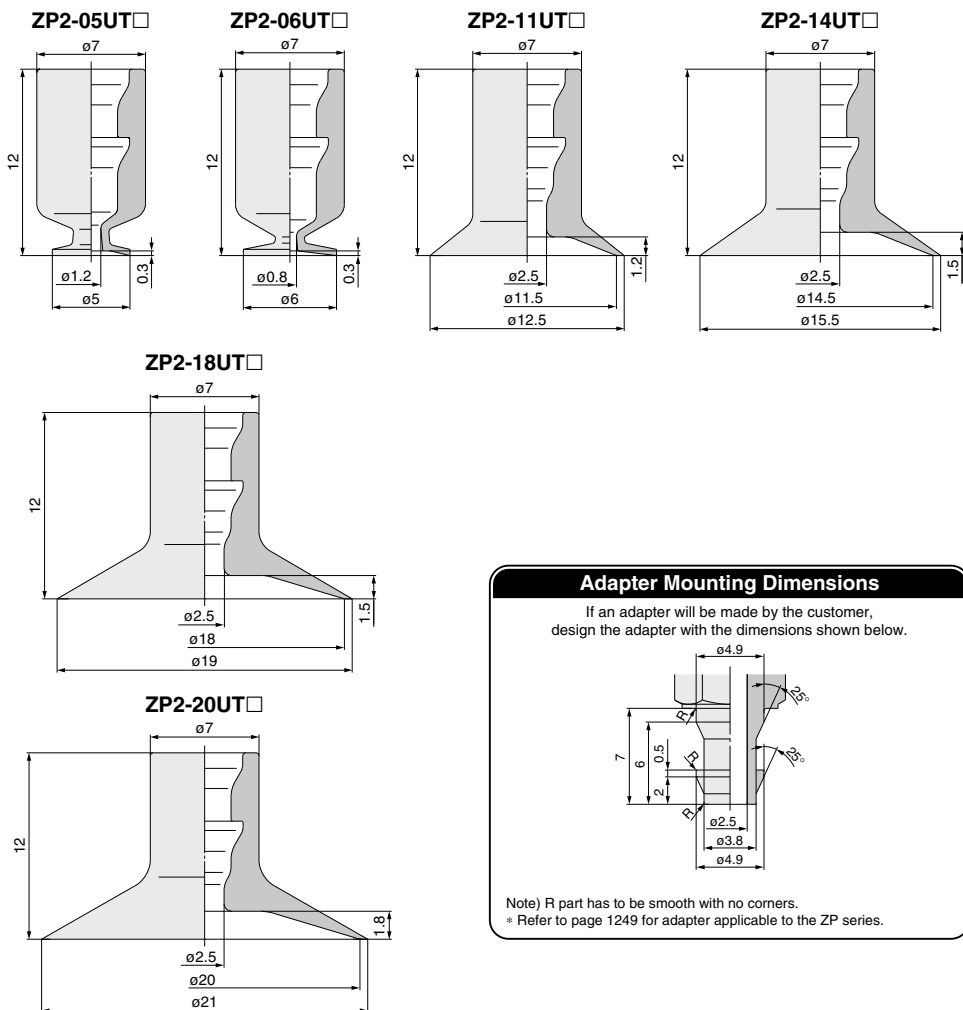
How to Order

Pad unit		ZP2 - 11 UT	N
Pad diameter		Pad type	
Symbol	Pad diameter	Symbol	Type
05	$\varnothing 5$	UT	Thin flat (Skirt)
06	$\varnothing 6$		
11	$\varnothing 11$		
14	$\varnothing 14$		
18	$\varnothing 18$		
20	$\varnothing 20$		

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

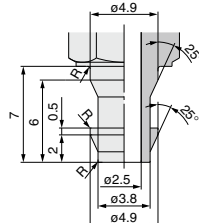


Dimensions: Pad Unit



Adapter Mounting Dimensions

If an adapter will be made by the customer, design the adapter with the dimensions shown below.



Note) R part has to be smooth with no corners.
* Refer to page 1249 for adapter applicable to the ZP series.

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661



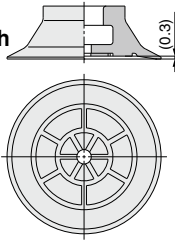
Flat Pad

Pad diameter $\varnothing 10, \varnothing 15, \varnothing 20, \varnothing 25, \varnothing 30$

Symbol/Type

MT: Thin flat
(with groove)

■ Adsorption surface with groove



How to Order

Pad unit **ZP2-B10 MT N**



Pad diameter		
Symbol	Pad diameter	Blast type
B10	$\varnothing 10$	●
B15	$\varnothing 15$	●
B20	$\varnothing 20$	●
B25	$\varnothing 25$	●
B30	$\varnothing 30$	●

* Blast type: Work pieces can be removed easily.

Pad material	
Symbol	Material
N	NBR
S	Silicone rubber
F	FKM
GN	Conductive NBR
GS	Conductive silicone rubber

■ For adsorption of thin sheets or film

Deformation of the flat surface during adsorption is reduced.

Note 1) Not suitable for transferring work pieces which apply a load.

Note 2) Wrinkling may be generated depending on the sheet thickness.

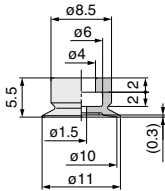
Confirm the thickness before use.

Pad type

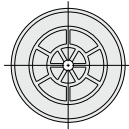
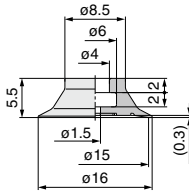
Symbol	Type
MT	Thin flat (With groove)

Dimensions: Pad Unit

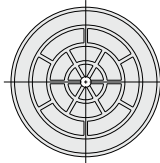
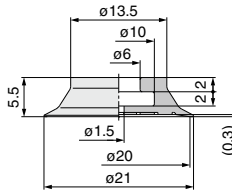
ZP2-B10MT□



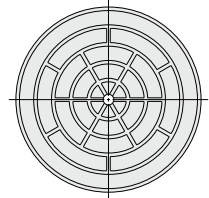
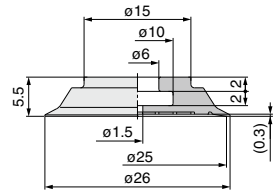
ZP2-B15MT□



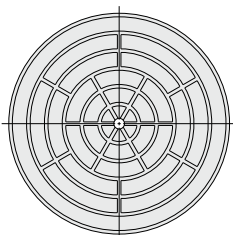
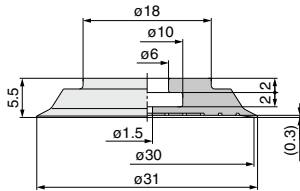
ZP2-B20MT□



ZP2-B25MT□



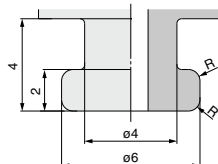
ZP2-B30MT□



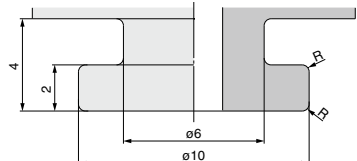
Adapter Mounting Dimensions

If an adapter will be made by the customer, design the adapter with the dimensions shown below.

Applicable pad
B10MT/B15MT



Applicable pad
B20MT/B25MT/B30MT



Note) R part has to be smooth with no corners.

* Refer to page 1246 for adapter applicable to the ZP2 series.

How to Order



With adapter **ZP2 - T B10 MT N - H5**

Vacuum inlet direction

Symbol Direction
T Vertical

Pad diameter

Symbol	Pad diameter	Blast type
B10	ø10	●
B15	ø15	●
B20	ø20	●
B25	ø25	●
B30	ø30	●

Pad type

Symbol Type
MT Thin flat (With groove)

* Blast type: Work pieces can be removed easily.

Note) Use a commercially available sealant for mounting.

Mounting

Pad diameter (Symbol)	B10	B15	B20	B25	B30
Thread size (Symbol)					
H5 (M5 x 0.8 Male thread)	●	●	●	●	●
B5 (M5 x 0.8 Female thread)	●	●	●	●	●

Pad material

Symbol	Material
N	NBR
S	Silicone rubber
F	FKM
GN	Conductive NBR
GS	Conductive silicone rubber

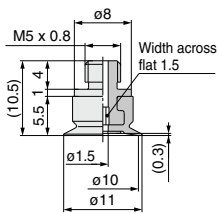
Replacement Part No.

Model	Pad unit part no.	Adapter part no.
ZP2-TB10MT□-H5	ZP2-B10MT□	ZP2A-M02
ZP2-TB15MT□-H5	ZP2-B15MT□	
ZP2-TB20MT□-H5	ZP2-B20MT□	
ZP2-TB25MT□-H5	ZP2-B25MT□	ZP2A-M03
ZP2-TB30MT□-H5	ZP2-B30MT□	
ZP2-TB10MT□-B5	ZP2-B10MT□	ZP2A-M04
ZP2-TB15MT□-B5	ZP2-B15MT□	

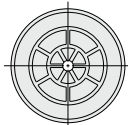
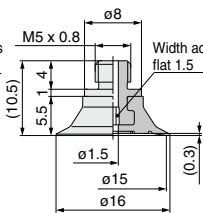
Note) □ in the table indicates the pad material.

Dimensions: With Adapter

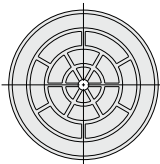
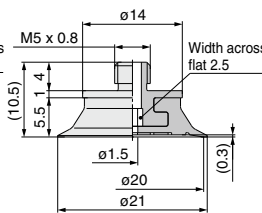
ZP2-TB10MT□-H5



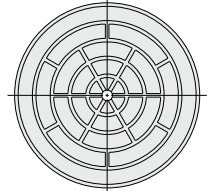
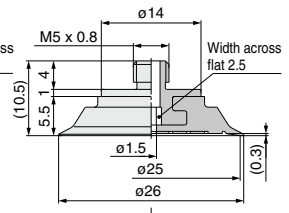
ZP2-TB15MT□-H5



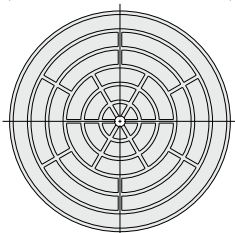
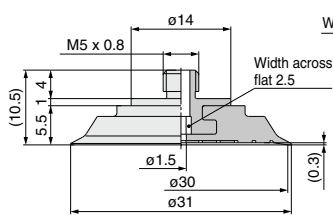
ZP2-TB20MT□-H5



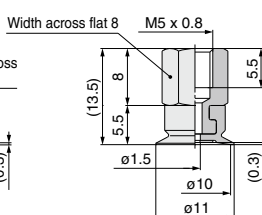
ZP2-TB25MT□-H5



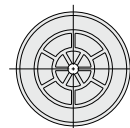
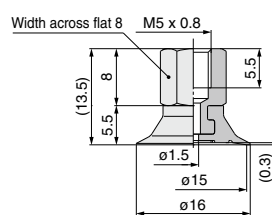
ZP2-TB30MT□-H5



ZP2-TB10MT□-B5



ZP2-TB15MT□-B5



ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661



Bellows Pad

Pad diameter $\varnothing 6, \varnothing 9, \varnothing 10, \varnothing 14, \varnothing 15, \varnothing 16, \varnothing 25, \varnothing 30$

Symbol/Type

**J: Bellows
(Multistage type)**

■ For use where there is no space for the buffer (spring type)

■ Workpieces with inclined adsorption surface

■ Applicable for the ZP series adapter



How to Order

Pad unit **ZP2-06 J N-X19**

Symbol	Pad diameter	Blast type
06	$\varnothing 6$	—
09	$\varnothing 9$	—
B10	$\varnothing 10$	●
14	$\varnothing 14$	—
B15	$\varnothing 15$	●
16	$\varnothing 16$	—
B25	$\varnothing 25$	●
B30	$\varnothing 30$	●

* Blast type: Workpieces can be removed easily.

Pad material

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

Pad type

Symbol	Type
J	Bellows (Multistage type)



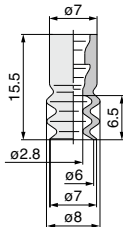
With/Without lock ring

N11	With lock ring
X19	Without lock ring (Note)

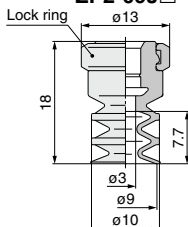
(Note) $\varnothing 6, \varnothing 10, \varnothing 15$ are not available.

Dimensions: Pad Unit

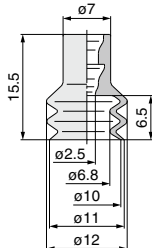
ZP2-06J



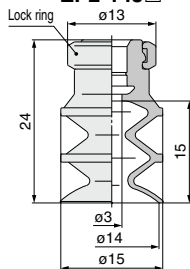
ZP2-09J



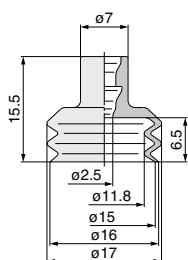
ZP2-B10J



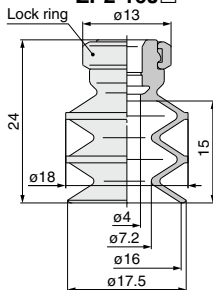
ZP2-14J



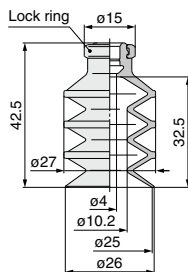
ZP2-B15J



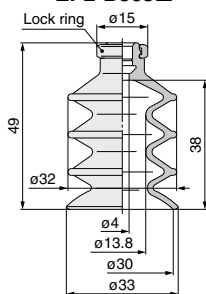
ZP2-16J



ZP2-B25J



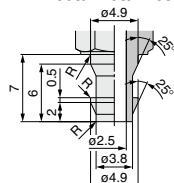
ZP2-B30J



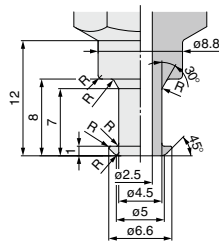
Adapter Mounting Dimensions

If an adapter will be made by the customer, design the adapter with the dimensions shown below.

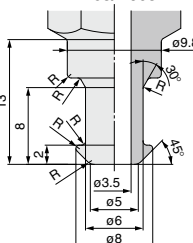
Applicable pad
06J/B10J/B15J



Applicable pad
09J/14J/16J



Applicable pad
B25J/B30J



(Note) R part has to be smooth with no corners.
* Refer to page 1249 for adapter applicable to the ZP series.



Bellows Pad

Pad diameter $\varnothing 4, \varnothing 6, \varnothing 8, \varnothing 10, \varnothing 15, \varnothing 20$

Symbol/Type

MB: Bellows

■ For use where there is no space for the buffer (spring type)

■ Workpieces with inclined adsorption surface

How to Order

Pad unit **ZP2-B04 MB N**

Pad diameter		
Symbol	Pad diameter	Blast type
B04	$\varnothing 4$	●
B06	$\varnothing 6$	●
B08	$\varnothing 8$	●
B10	$\varnothing 10$	●
B15	$\varnothing 15$	●
B20	$\varnothing 20$	●

Pad type	
Symbol	Type
MB	Bellows

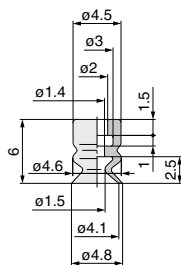
Pad material	
Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
GN	Conductive NBR
GS	Conductive silicone rubber



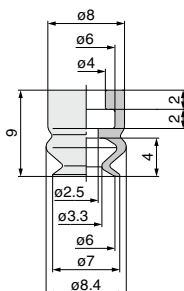
* Blast type: Workpieces can be removed easily.

Dimensions: Pad Unit

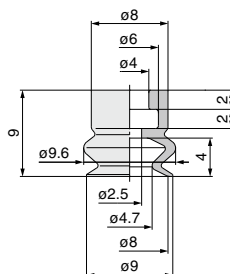
ZP2-B04MB



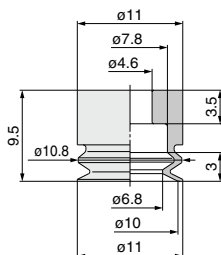
ZP2-B06MB



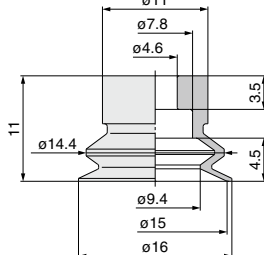
ZP2-B08MB



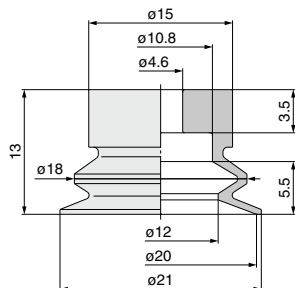
ZP2-B10MB



ZP2-B15MB



ZP2-B20MB



ZP3

ZP2

ZP2V

ZP

ZPT

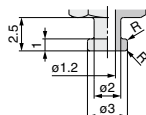
ZPR

XT661

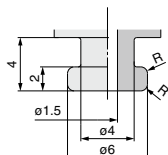
Adapter Mounting Dimensions

If an adapter will be made by the customer, design the adapter with the dimensions shown below.

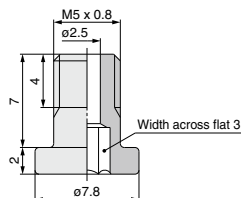
Applicable pad
B04MB



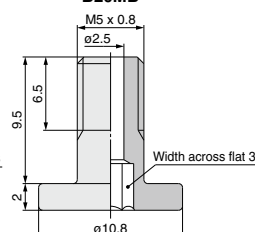
Applicable pad
B06MB/B08MB



Applicable pad
B10MB/B15MB



Applicable pad
B20MB



Note) R part has to be smooth with no corners.

* Refer to pages 1246 and 1247 for adapter applicable to the ZP2 series.

How to Order



With adapter **ZP2 - T B04 MB N - A3**

Vacuum inlet direction

Symbol	Direction
T	Vertical

Pad diameter

Symbol	Pad diameter	Blast type
B04	ø4	●
B06	ø6	●
B08	ø8	●
B10	ø10	●
B15	ø15	●
B20	ø20	●

* Blast type: Work pieces can be removed easily.

Mounting

Thread size (Symbol)	Pad diameter (Symbol)	B04	B06	B08	B10	B15	B20
A3 (M3 x 0.5 Male thread)		●	—	—	—	—	—
H5 (M5 x 0.8 Male thread)		—	●	●	●	●	—
B5 (M5 x 0.8 Female thread)		—	●	●	—	—	—

Pad material

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

Pad type

Symbol	Type
MB	Bel lows

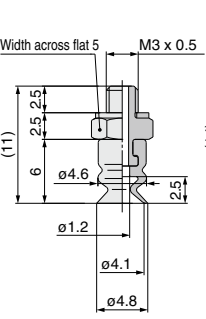
Replacement Part No.

Model	Pad unit part no.	Adapter part no.
ZP2-TB04MB□-A3	ZP2-B04MB□	ZP2A-M01P
ZP2-TB06MB□-H5	ZP2-B06MB□	ZP2A-M02P
ZP2-TB08MB□-H5	ZP2-B08MB□	ZP2A-M05
ZP2-TB10MB□-H5	ZP2-B10MB□	ZP2A-M06
ZP2-TB15MB□-H5	ZP2-B15MB□	ZP2A-M06
ZP2-TB20MB□-H5	ZP2-B20MB□	ZP2A-M04
ZP2-TB06MB□-B5	ZP2-B06MB□	
ZP2-TB08MB□-B5	ZP2-B08MB□	

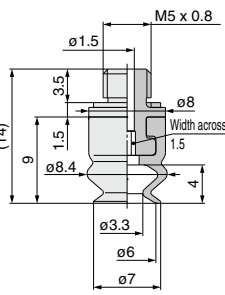
Note) □ in the table indicates the pad material.

Dimensions: With Adapter

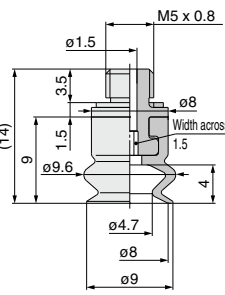
ZP2-TB04MB□□-A3



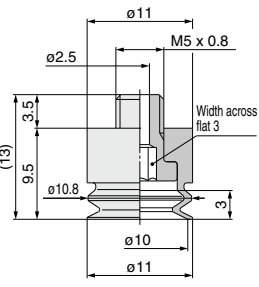
ZP2-TB06MB□□-H5



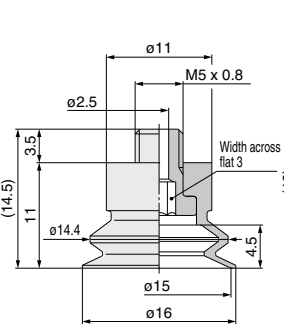
ZP2-TB08MB□□-H5



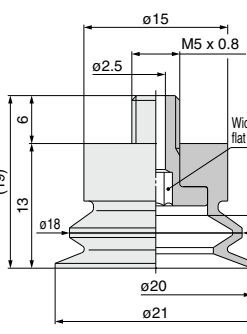
ZP2-TB10MB□□-H5



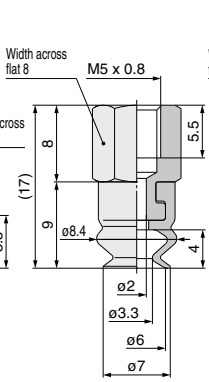
ZP2-TB15MB□□-H5



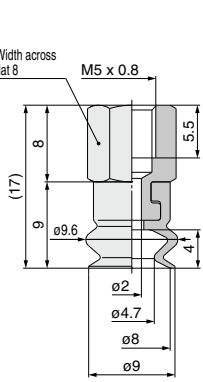
ZP2-TB20MB□□-H5



ZP2-TB06MB□□-B5



ZP2-TB08MB□□-B5





Bellows Pad

Pad diameter $\varnothing 2, \varnothing 4, \varnothing 5, \varnothing 6$

Symbol/Type

ZJ: Bellows

- For use where there is no space for the buffer (spring type)
- Work pieces with inclined adsorption surface

How to Order

Pad unit **ZP2 - 02 ZJ N**

Pad diameter

Symbol	Pad diameter
02	$\varnothing 2$
04	$\varnothing 4$
05	$\varnothing 5$
06	$\varnothing 6$

Pad material

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

Pad type

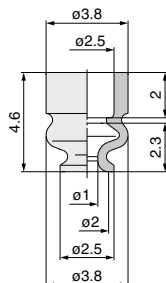
Symbol	Type
ZJ	Bellows



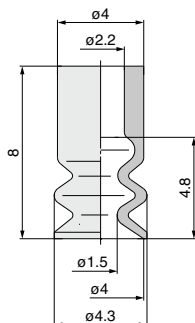
Note) The mounting adapter is available as a special order.

Dimensions: Pad Unit

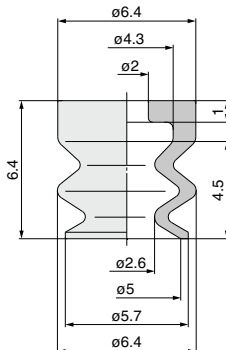
ZP2-02ZJ $\square$ [0.1g]



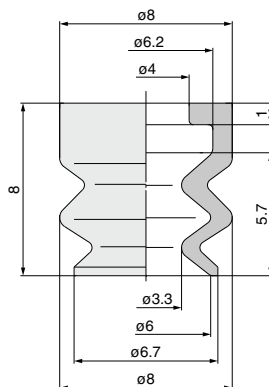
ZP2-04ZJ $\square$ [0.1g]



ZP2-05ZJ $\square$ [0.2g]



ZP2-06ZJ $\square$ [0.3g]



ZP3

ZP2

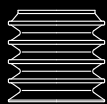
ZP2V

ZP

ZPT

ZPR

XT661



4.5-Stage Bellows Pad

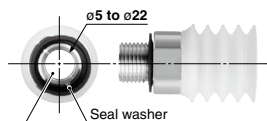
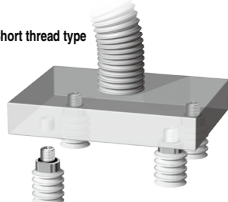
Symbol/Type

ZJ: Bellows

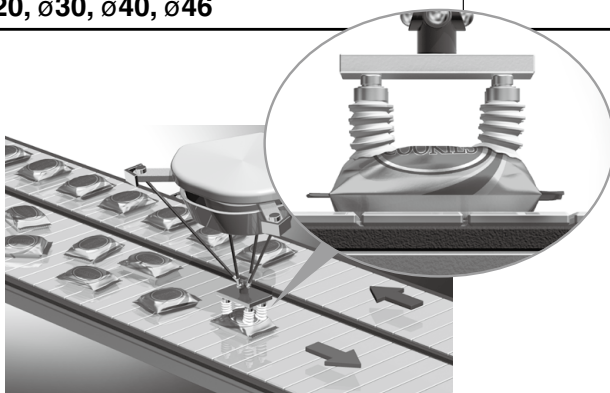
Pad diameter $\varnothing 15, \varnothing 20, \varnothing 30, \varnothing 40, \varnothing 46$

- For adsorbing workpieces flowing at high speeds
- Follows various shapes of workpieces.
- Pad material: Silicone rubber (Rubber hardness: A40, A50, A60)

● Short thread type



- Large opening size (short thread type): $\varnothing 5$ to $\varnothing 22$
For vacuum blower pumps with high suction flow rates



● One-touch fitting type

Built-in One-touch fitting

How to Order

Vertical vacuum inlet
with adapter

ZP2-T B15 ZJ S-A10-06

Pad diameter

Symbol	Pad diameter
B15	$\varnothing 15$
B20	$\varnothing 20$
B30	$\varnothing 30$
40	$\varnothing 40$
46	$\varnothing 46$

Pad type

Symbol	Type
ZJ	Bellows

Pad material

Symbol	Material	Applicable pad diameter				
		$\varnothing 15$	$\varnothing 20$	$\varnothing 30$	$\varnothing 40$	$\varnothing 46$
N	NBR	—	—	—	●	●
U	Urethane rubber	—	—	—	●	●
F	FKM	—	—	—	●	●
GN	Conductive NBR	—	—	—	●	●
GS	Conductive silicone rubber (White)	—	—	—	●	●
S	Silicone rubber (White)	●	●	●	●	●
		Hardness A40 (Note)				
		Hardness A50				
S6	Silicone rubber High-hardness type (White)	●	●	●	—	—
		Hardness A60				

Note) Identification of rubber hardness: Painted with pink 1 dot

● Vacuum inlet

Symbol	Vacuum inlet	Mounting thread size					
		A10	A16	A20	A30	AL12	AL14
Nil	Short thread	●	●	●	●	—	—
06	One-touch fitting ($\varnothing 6$)	—	—	—	—	●	●

● Mounting thread size

Type	Symbol	Thread size (Male thread)	$\varnothing 15$	$\varnothing 20$	$\varnothing 30$	$\varnothing 40$	$\varnothing 46$
Short thread	A10	M10 x 1	●	●	—	—	—
	A16	M16 x 1.5	—	—	●	—	—
	A20	M20 x 1.5	—	—	—	●	—
	A30	M30 x 1.5	—	—	—	—	●
One-touch fitting	AL12	M12 x 1	●	●	—	—	—
	AL14	M14 x 1	—	—	●	●	●

Replacement Part No. (Short Thread Type)

Product part no.	Pad unit part no.	Adapter part no.
ZP2-TB15ZJS□-A10	ZP2-B15ZJS□	ZP2A-Z31-1P
ZP2-TB20ZJS□-A10	ZP2-B20ZJS□	ZP2A-Z31-2P
ZP2-TB30ZJS□-A16	ZP2-B30ZJS□	ZP2A-Z31-3P
ZP2-T40ZJ□-A20	ZP2-40ZJS	ZP2A-Z31-4P
ZP2-T46ZJ□-A30	ZP2-46ZJS	ZP2A-Z31-5P

Replacement Part No. (One-touch Fitting Type)

Product part no.	Pad unit part no.	Adapter part no.
ZP2-TB15ZJS□-AL12-06	ZP2-B15ZJS□	ZP2A-Z32-1
ZP2-TB20ZJS□-AL12-06	ZP2-B20ZJS□	ZP2A-Z32-2
ZP2-TB30ZJS□-AL14-06	ZP2-B30ZJS□	ZP2A-Z32-3
ZP2-T40ZJ□-AL14-06	ZP2-40ZJS	ZP2A-Z32-4
ZP2-T46ZJ□-AL14-06	ZP2-46ZJS	ZP2A-Z32-5

How to Order

Pad unit **ZP2-B15ZJ S**

Pad diameter

Symbol	Pad diameter
B15	ø15
B20	ø20
B30	ø30
40	ø40
46	ø46

Pad type

Symbol	Type
ZJ	Bellows

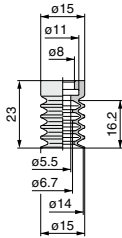
Pad material

Symbol	Material	Applicable pad diameter				
		ø15	ø20	ø30	ø40	ø46
N	NBR	—	—	—	●	●
U	Urethane rubber	—	—	—	●	●
F	FKM	—	—	—	●	●
GN	Conductive NBR	—	—	—	●	●
GS	Conductive silicone rubber (White)	—	—	—	●	●
S	Silicone rubber (White)	●	—	●	—	—
	Hardness A40 (Note)	—	—	—	—	—
	Hardness A50	—	—	—	—	—
S6	Silicone rubber High-hardness type (White)	●	●	●	—	—
	Hardness A60	—	—	—	—	—

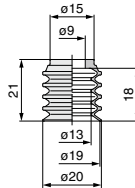
Note) Identification of rubber hardness: Painted with pink 1 dot

Dimensions: Pad Unit

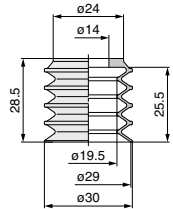
ZP2-B15ZJS□



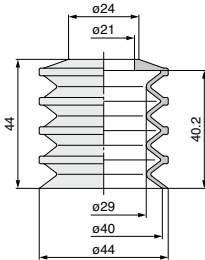
ZP2-B20ZJS□



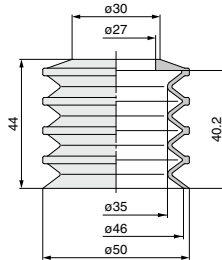
ZP2-B30ZJS□



ZP2-40ZJ□



ZP2-46ZJ□

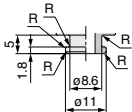


Weight	[g]
ZP2-B15ZJS□	2.0
ZP2-B20ZJS□	2.0
ZP2-B30ZJS□	4.5
ZP2-40ZJN	16.0
ZP2-40ZJS□	15.0
ZP2-40ZJU	16.0
ZP2-40ZJF	25.0
ZP2-40ZJGN	16.0
ZP2-40ZJGS	16.0
ZP2-46ZJN	19.0
ZP2-46ZJS□	17.0
ZP2-46ZJU	19.0
ZP2-46ZJF	30.0
ZP2-46ZJGN	19.0
ZP2-46ZJGS	19.0

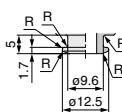
Adapter (Mounting) Dimensions

If an adapter will be made by the customer, design the adapter with the dimensions shown below.

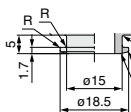
Applicable pad ZP2-B15ZJS□



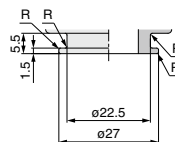
Applicable pad ZP2-B20ZJS□



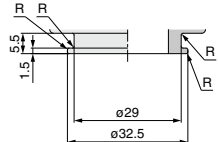
Applicable pad ZP2-B30ZJS□



Applicable pad ZP2-40ZJ□



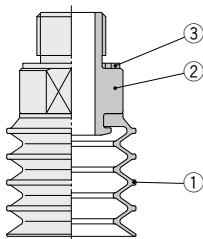
Applicable pad ZP2-46ZJ□



Note) R part has to be smooth with no corners.

Component Parts

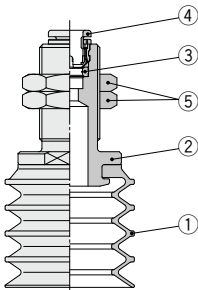
■ **Short thread type (Pad with adapter)**



Component Parts

No.	Description	Material (Surface treatment)
1	Pad	Refer to the pad material (page 1191).
2	Adapter	Aluminum alloy (Anodized)
3	Seal washer	Structural steel/NBR

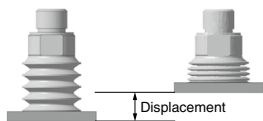
■ **One-touch fitting type (Pad with adapter)**



Component Parts

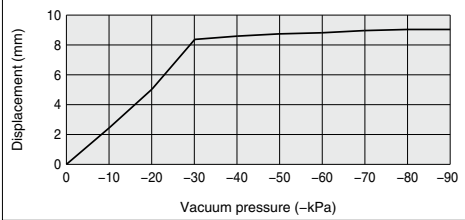
No.	Description	Material (Surface treatment)
1	Pad	Refer to the pad material (page 1191).
2	Adapter	Aluminum alloy (Anodized)
3	Seal	NBR
4	Cassette	—
5	Nut	Structural steel (Trivalent chromated)

Pad Displacement to Vacuum Pressure (Pad material: Silicone rubber)

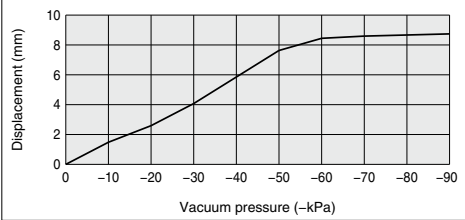


The data shown below are not guaranteed but actual measured (initial value). These values depend on the operating environment, workpiece weight and transfer method, so they cannot be guaranteed by SMC. Thorough research and confirmation are necessary before use.

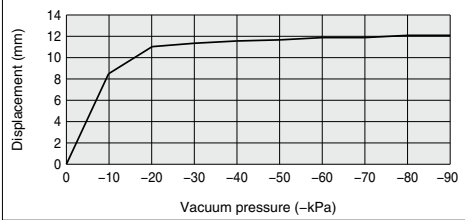
ZP2-B15ZJS



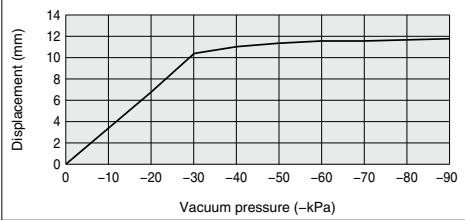
ZP2-B15ZJS6



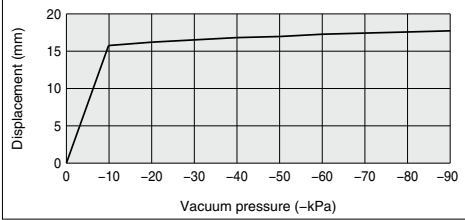
ZP2-B20ZJS



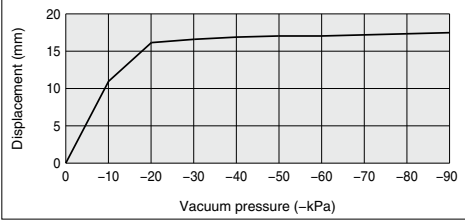
ZP2-B20ZJS6



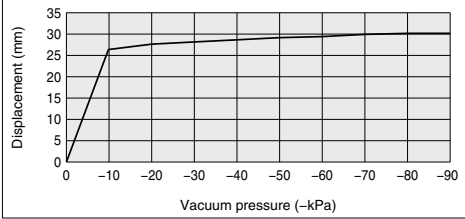
ZP2-B30ZJS



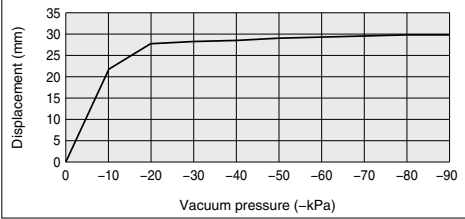
ZP2-B30ZJS6



ZP2-40ZJS



ZP2-46ZJS





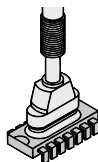
Oval Pad

Pad size **3.5 x 7 to 8 x 30**

Symbol/Type

W: Oval

■ For work pieces with limitations on the adsorption surface



How to Order

Pad unit **ZP2-3507 W N**



Pad size

Symbol	Size	Symbol	Size
3507	3.5 x 7	6020	6 x 20
4010	4 x 10	8020	8 x 20
5010	5 x 10	4030	4 x 30
6010	6 x 10	5030	5 x 30
4020	4 x 20	6030	6 x 30
5020	5 x 20	8030	8 x 30

Pad material

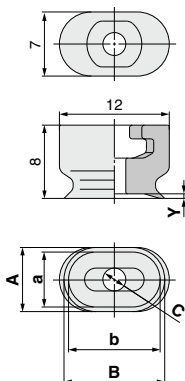
Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
GN	Conductive NBR
GS	Conductive silicone rubber

Pad type

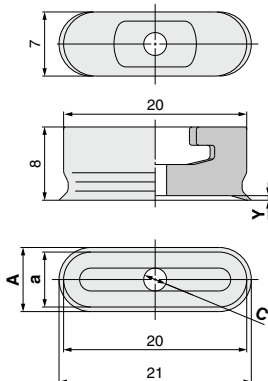
Symbol	Type
W	Oval

Dimensions: Pad Unit

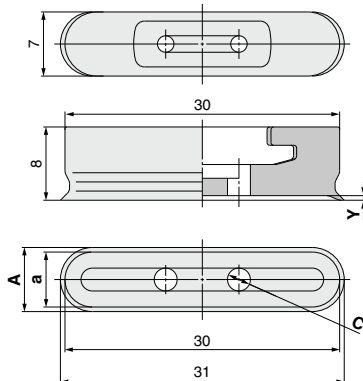
ZP2-W



ZP2-20W



ZP2-30W



Dimensions

Model	a	A	b	B	C	Y
ZP2-3507W	3.5	4.5	7	8	2 x 1.5	
ZP2-4010W	4	5				0.5
ZP2-5010W	5	6	10	11		
ZP2-6010W	6	7			2.5	

Dimensions

Model	a	A	C	Y
ZP2-4020W	4	5	2 x 1.8	
ZP2-5020W	5	6	2 x 2	0.5
ZP2-6020W	6	7	2.5	
ZP2-8020W	8	9	3	0.8

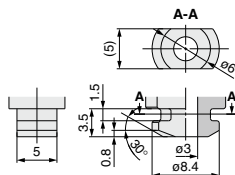
Dimensions

Model	a	A	C	Y
ZP2-4030W	4	5	2 x 1.8	
ZP2-5030W	5	6		0.5
ZP2-6030W	6	7	2 x 2.5	
ZP2-8030W	8	9		0.8

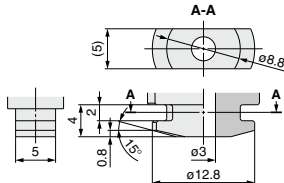
Adapter Mounting Dimensions

If an adapter will be made by the customer, design the adapter with the dimensions shown below.

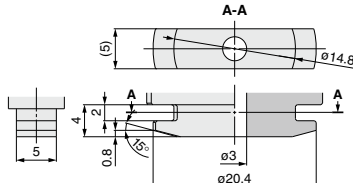
Applicable pad
3507W/4010W/5010W/6010W



Applicable pad
4020W/5020W/6020W/8020W



Applicable pad
4030W/5030W/6030W/8030W



Note) R part has to be smooth with no corners.

* Refer to page 1246 for adapter applicable to the ZP2 series.

Oval Pad: With Adapter (Vacuum Inlet Direction: Vertical) *Series ZP2*

How to Order

With adapter **ZP2 - T 3507 W N - B5**

Vacuum inlet direction

Symbol	Direction
T	Vertical

Vacuum inlet

Symbol	Thread size
B5	M5 x 0.8

Pad size

Symbol	Size	Symbol	Size
3507	3.5 x 7	6020	6 x 20
4010	4 x 10	8020	8 x 20
5010	5 x 10	4030	4 x 30
6010	6 x 10	5030	5 x 30
4020	4 x 20	6030	6 x 30
5020	5 x 20	8030	8 x 30

Pad material

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

Pad type

Symbol	Type
W	Oval

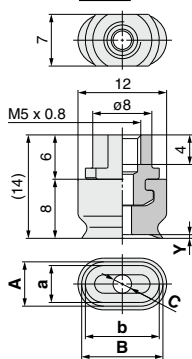
Replacement Part No.

Model	Pad unit part no.	Adapter part no.
ZP2-T3507W□-B5	ZP2-3507W□	ZP2A-001
ZP2-T4010W□-B5	ZP2-4010W□	
ZP2-T5010W□-B5	ZP2-5010W□	
ZP2-T6010W□-B5	ZP2-6010W□	
ZP2-T4020W□-B5	ZP2-4020W□	ZP2A-002
ZP2-T5020W□-B5	ZP2-5020W□	
ZP2-T6020W□-B5	ZP2-6020W□	
ZP2-T8020W□-B5	ZP2-8020W□	
ZP2-T4030W□-B5	ZP2-4030W□	ZP2A-003
ZP2-T5030W□-B5	ZP2-5030W□	
ZP2-T6030W□-B5	ZP2-6030W□	
ZP2-T8030W□-B5	ZP2-8030W□	

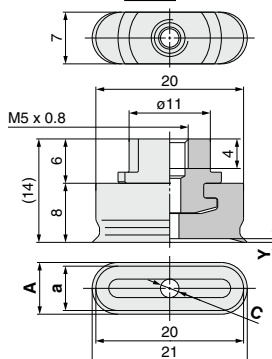
Note) □ in the table indicates the pad material.

Dimensions: With Adapter

ZP2-T□W□-B5



ZP2-T□20W□-B5



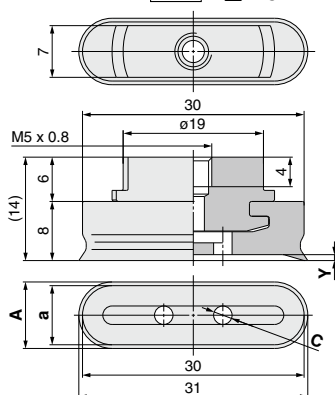
Dimensions

Model	a	A	b	B	C	Y
ZP2-T3507W□-B5	3.5	4.5	7	8	2 x 1.5	0.5
ZP2-T4010W□-B5	4	5				
ZP2-T5010W□-B5	5	6	10	11	2.5	
ZP2-T6010W□-B5	6	7				

Dimensions

Model	a	A	C	Y
ZP2-T4020W□-B5	4	5	2 x 1.8	0.5
ZP2-T5020W□-B5	5	6	2 x 2	
ZP2-T6020W□-B5	6	7	2.5	
ZP2-T8020W□-B5	8	9	3	

ZP2-T□30W□-B5



Dimensions

Model	a	A	C	Y
ZP2-T4030W□-B5	4	5	2 x 1.8	0.5
ZP2-T5030W□-B5	5	6		
ZP2-T6030W□-B5	6	7	2 x 2.5	
ZP2-T8030W□-B5	8	9		

How to Order

With buffer ZP2 - T 3507 W N K 10 - B5

Vacuum inlet direction

Symbol Direction
T Vertical

Pad size

Symbol	Size	Symbol	Size
3507	3.5 x 7	6020	6 x 20
4010	4 x 10	8020	8 x 20
5010	5 x 10	4030	4 x 30
6010	6 x 10	5030	5 x 30
4020	4 x 20	6030	6 x 30
5020	5 x 20	8030	8 x 30

Pad type

Symbol Type
W Oval

Pad material (□)

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

Buffer specification

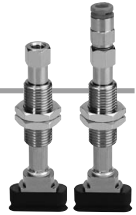
Symbol Specification
K Non-rotating

Buffer stroke (★)

Symbol	Stroke
10	10 mm
20	20 mm
30	30 mm
40	40 mm
50	50 mm

Vacuum inlet (■)

Symbol	Applicable tube O.D.
B5	M5 x 0.8
04	ø4 One-touch fitting
06	ø6 One-touch fitting



Replacement Part No.

Model	Pad unit part no.	Adapter part no.	Buffer assembly part no.
ZP2-T3507W □ K ★ ■	ZP2-3507W □	ZP2A-001	ZPB2K ★ ■ Buffer stroke Symbol Stroke 10 10 mm 20 20 mm 30 30 mm 40 40 mm 50 50 mm Vacuum inlet Symbol Applicable tube O.D. B5 M5 x 0.8 04 ø4 one-touch fitting 06 ø6 one-touch fitting
ZP2-T4010W □ K ★ ■	ZP2-4010W □		
ZP2-T5010W □ K ★ ■	ZP2-5010W □		
ZP2-T6010W □ K ★ ■	ZP2-6010W □	ZP2A-002	
ZP2-T4020W □ K ★ ■	ZP2-4020W □		
ZP2-T5020W □ K ★ ■	ZP2-5020W □		
ZP2-T6020W □ K ★ ■	ZP2-6020W □	ZP2A-003	
ZP2-T8020W □ K ★ ■	ZP2-8020W □		
ZP2-T4030W □ K ★ ■	ZP2-4030W □		
ZP2-T5030W □ K ★ ■	ZP2-5030W □		
ZP2-T6030W □ K ★ ■	ZP2-6030W □		
ZP2-T8030W □ K ★ ■	ZP2-8030W □		

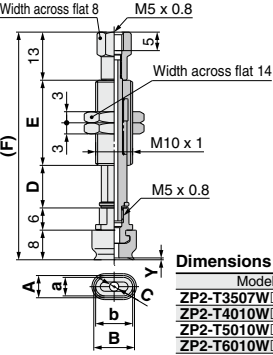
Note 1) □ in the table indicates the pad material. Note 3) ■ in the table indicates the vacuum inlet.
Note 2) ★ in the table indicates the buffer stroke.

Buffer Specifications

Stroke (mm)	10, 20, 30, 40, 50
Spring reactive force	At 0 stroke 1.0 N At full stroke 3.0 N
Nut tightening torque	2.5 to 3.5 N·m

Dimensions: With Buffer

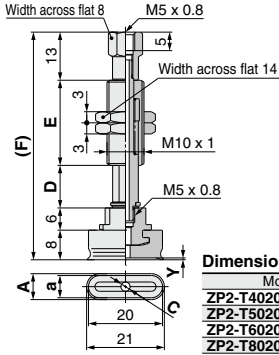
ZP2-T □ W □ K ★ -B5



Dimensions

Model	a	A	b	B	C	Y
ZP2-T3507W □ K ★ -B5	3.5	4.5	7	8	2 x 1.5	0.5
ZP2-T4010W □ K ★ -B5	4	5				
ZP2-T5010W □ K ★ -B5	5	6	10	11		2.5
ZP2-T6010W □ K ★ -B5	6	7				

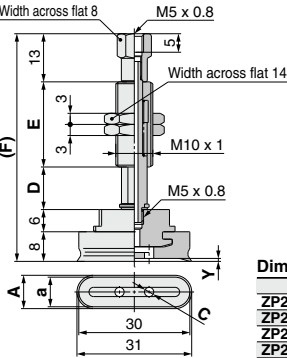
ZP2-T 20 W □ K ★ -B5



Dimensions

Model	a	A	C	Y
ZP2-T4020W □ K ★ -B5	4	5	2 x 1.8	
ZP2-T5020W □ K ★ -B5	5	6	2 x 2	0.5
ZP2-T6020W □ K ★ -B5	6	7	2.5	
ZP2-T8020W □ K ★ -B5	8	9	3	0.8

ZP2-T 30 W □ K ★ -B5



Dimensions

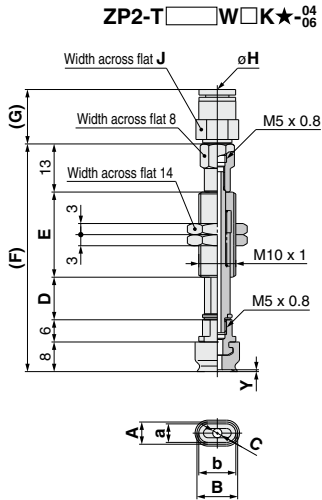
Model	a	A	C	Y
ZP2-T4030W □ K ★ -B5	4	5	2 x 1.8	
ZP2-T5030W □ K ★ -B5	5	6		0.5
ZP2-T6030W □ K ★ -B5	6	7	2 x 2.5	
ZP2-T8030W □ K ★ -B5	8	9		0.8

Dimensions common for all three drawings

Dimensions (per buffer stroke)

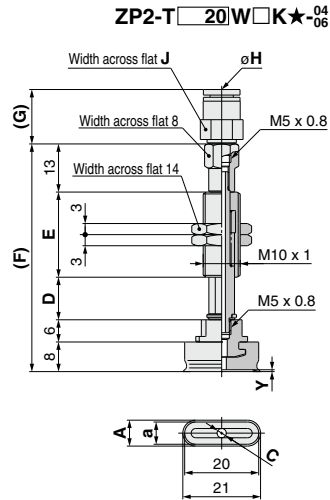
Stroke (★)	D	E	F
10	11.5	23	61.5
20	21.5		99.5
30	31.5	51	109.5
40	41.5		145.5
50	51.5	77	155.5

Dimensions: With Buffer



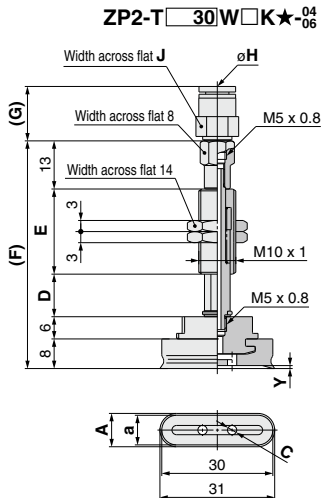
Dimensions

Model	a	A	b	B	C	Y
ZP2-T3507W K★ ⁰⁴ ₀₆	3.5	4.5	7	8	2 x 1.5	0.5
ZP2-T4010W K★ ⁰⁴ ₀₆	4	5				
ZP2-T5010W K★ ⁰⁴ ₀₆	5	6	10	11	2.5	
ZP2-T6010W K★ ⁰⁴ ₀₆	6	7				



Dimensions

Model	a	A	C	Y
ZP2-T4020W K★ ⁰⁴ ₀₆	4	5	2 x 1.8	0.5
ZP2-T5020W K★ ⁰⁴ ₀₆	5	6	2 x 2	
ZP2-T6020W K★ ⁰⁴ ₀₆	6	7	2.5	
ZP2-T8020W K★ ⁰⁴ ₀₆	8	9	3	



Dimensions

Model	a	A	C	Y
ZP2-T4030W K★ ⁰⁴ ₀₆	4	5	2 x 1.8	0.5
ZP2-T5030W K★ ⁰⁴ ₀₆	5	6		
ZP2-T6030W K★ ⁰⁴ ₀₆	6	7	2 x 2.5	
ZP2-T8030W K★ ⁰⁴ ₀₆	8	9		0.8

Dimensions common for all three drawings Dimensions (per buffer stroke)

Stroke (★)	D	E	F	H: ø4		H: ø6	
				G	J	G	J
10	11.5	23	61.5	13.9	8	14.7	10
20	21.5	51	99.5				
30	31.5		109.5				
40	41.5	77	145.5				
50	51.5		155.5				

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661

Without buffer **ZP2 - R 3507 W N - 04 - A5**

Vacuum inlet direction

Symbol	Direction
R	Lateral

Pad size

Symbol	Size
3507	3.5 x 7
4010	4 x 10
5010	5 x 10
6010	6 x 10
4020	4 x 20
5020	5 x 20
6020	6 x 20
8020	8 x 20
4030	4 x 30
5030	5 x 30
6030	6 x 30
8030	8 x 30

Pad type

Symbol	Type
W	Oval

How to Order

Pad material (□)

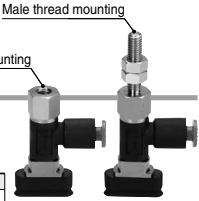
Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
GN	Conductive NBR
GS	Conductive silicone rubber

Mounting

Symbol	Thread size
A5	M5 x 0.8 (Male thread)
B5	M5 x 0.8 (Female thread)

Vacuum inlet (■)

Symbol	Applicable tube O.D.
04	ø4
06	ø6



Replacement Part No.

Model		Pad unit part no.	Adapter part no.	Type R adapter part no.			
ZP2-R3507W	■A5	ZP2-R3507W	■B5	ZP2-3507W	ZP2A-001	ZPRS-■A5	
ZP2-R4010W	■A5	ZP2-R4010W	■B5	ZP2-4010W		ZPRS-■B5	
ZP2-R5010W	■A5	ZP2-R5010W	■B5	ZP2-5010W		ZP2A-002	
ZP2-R6010W	■A5	ZP2-R6010W	■B5	ZP2-6010W			
ZP2-R4020W	■A5	ZP2-R4020W	■B5	ZP2-4020W	ZP2A-002		
ZP2-R5020W	■A5	ZP2-R5020W	■B5	ZP2-5020W			
ZP2-R6020W	■A5	ZP2-R6020W	■B5	ZP2-6020W			
ZP2-R8020W	■A5	ZP2-R8020W	■B5	ZP2-8020W			
ZP2-R4030W	■A5	ZP2-R4030W	■B5	ZP2-4030W	ZP2A-003	ZP2A-003	
ZP2-R5030W	■A5	ZP2-R5030W	■B5	ZP2-5030W			
ZP2-R6030W	■A5	ZP2-R6030W	■B5	ZP2-6030W			
ZP2-R8030W	■A5	ZP2-R8030W	■B5	ZP2-8030W			

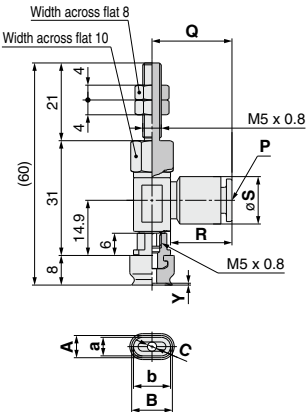
Vacuum inlet

Symbol	Applicable tube O.D.
04	φ4
06	φ6

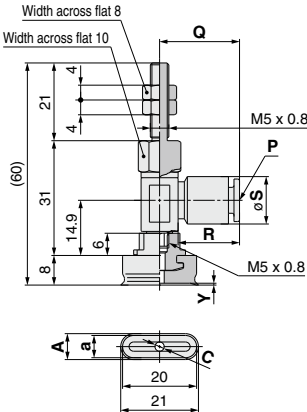
Note 1) □ in the table indicates the pad material.
Note 2) ■ in the table indicates the vacuum inlet.

Dimensions: Without Buffer

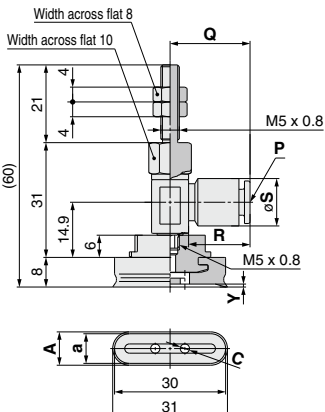
ZP2-R□W□-04-A5



ZP2-R□20W□-04-A5



ZP2-R□30W□-04-A5



Dimensions

Model	a	A	b	B	C	Y
ZP2-R3507W□-■A5	3.5	4.5	7	8	2 x 1.5	0.5
ZP2-R4010W□-■A5	4	5				
ZP2-R5010W□-■A5	5	6	10	11		
ZP2-R6010W□-■A5	6	7			2.5	

Dimensions

Model	a	A	C	Y
ZP2-R4020W□-■A5	4	5	2 x 1.8	
ZP2-R5020W□-■A5	5	6	2 x 2	0.5
ZP2-R6020W□-■A5	6	7	2.5	
ZP2-R8020W□-■A5	8	9	3	0.8

Dimensions

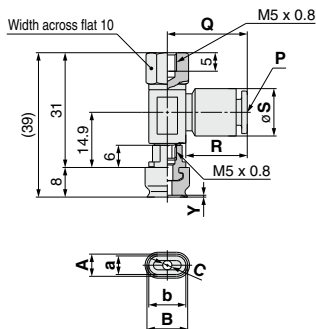
Model	a	A	C	Y
ZP2-R4030W□-■A5	4	4.8	2 x 1.8	
ZP2-R5030W□-■A5	5	6		0.5
ZP2-R6030W□-■A5	6	7	2 x 2.5	
ZP2-R8030W□-■A5	8	9		0.8

Dimensions common for all three drawings
Dimensions (per applicable tube)

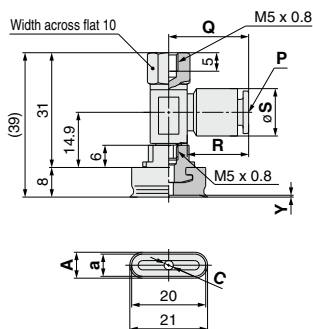
Applicable tube O.D. (■)	P	Q	R	S
ø4	4	20.6	15.6	10.4
ø6	6	21.6	16.6	12.8

Dimensions: Without Buffer

ZP2-R W -⁰⁴/₀₆-B5



ZP2-R 20 W -⁰⁴/₀₆-B5



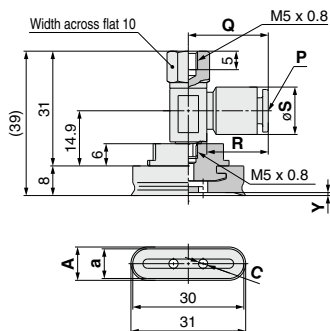
Dimensions

Model	a	A	b	B	C	Y
ZP2-R3507W -B5	3.5	4.5	7	8	2 x 1.5	0.5
ZP2-R4010W -B5	4	5				
ZP2-R5010W -B5	5	6	10	11	2.5	
ZP2-R6010W -B5	6	7				

Dimensions

Model	a	A	C	Y
ZP2-R4020W -B5	4	5	2 x 1.8	0.5
ZP2-R5020W -B5	5	6	2 x 2	
ZP2-R6020W -B5	6	7	2.5	
ZP2-R8020W -B5	8	9	3	

ZP2-R 30 W -⁰⁴/₀₆-B5



Dimensions

Model	a	A	C	Y
ZP2-R4030W -B5	4	5	2 x 1.8	0.5
ZP2-R5030W -B5	5	6		
ZP2-R6030W -B5	6	7	2 x 2.5	
ZP2-R8030W -B5	8	9		

Dimensions common for all three drawings - Dimensions (per applicable tube)

Applicable tube O.D. (■)	P	Q	R	S
ø4	4	20.6	15.6	10.4
ø6	6	21.6	16.6	12.8

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661

How to Order



With buffer ZP2 – R 3507 W **N** K 10 – 04

Vacuum inlet direction

Symbol	Direction
B	Lateral

Pad size •

Pad type •

Symbol	Type
W	Oval

- **Buffer specification**

Symbol	Specification
K	Non-rotating

vacuum inlet (■)

Symbol	Applicable tube O.D.
04	ø4
06	ø6

- **Buffer stroke (★)**

Symbol	Size	Symbol	Size
3507	3.5 x 7	6020	6 x 20
4010	4 x 10	8020	8 x 20
5010	5 x 10	4030	4 x 30
6010	6 x 10	5030	5 x 30
4020	4 x 20	6030	6 x 30
5020	5 x 20	8030	8 x 30

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

Replacement Part No.

Model	Pad unit part no.	Adapter part no.	Type R adapter part no.	Buffer assembly part no.																		
ZP2-R3507W□K★	ZP2-3507W□	ZP2A-001	ZPRS-■B5	ZPB2K★																		
ZP2-R4010W□K★	ZP2-4010W□																					
ZP2-R5010W□K★	ZP2-5010W□																					
ZP2-R6010W□K★	ZP2-6010W□																					
ZP2-R4020W□K★	ZP2-4020W□	ZP2A-002	Vacuum inlet <table><tr><th>Symbol</th><th>Applicable tube O.D.</th></tr><tr><td>04</td><td>φ4</td></tr><tr><td>06</td><td>φ6</td></tr></table>	Symbol	Applicable tube O.D.	04	φ4	06	φ6	Buffer stroke <table><tr><th>Symbol</th><th>Stroke</th></tr><tr><td>10</td><td>10 mm</td></tr><tr><td>20</td><td>20 mm</td></tr><tr><td>30</td><td>30 mm</td></tr><tr><td>40</td><td>40 mm</td></tr><tr><td>50</td><td>50 mm</td></tr></table>	Symbol	Stroke	10	10 mm	20	20 mm	30	30 mm	40	40 mm	50	50 mm
Symbol	Applicable tube O.D.																					
04	φ4																					
06	φ6																					
Symbol	Stroke																					
10	10 mm																					
20	20 mm																					
30	30 mm																					
40	40 mm																					
50	50 mm																					
ZP2-R5020W□K★	ZP2-5020W□																					
ZP2-R6020W□K★	ZP2-6020W□																					
ZP2-R8020W□K★	ZP2-8020W□																					
ZP2-R4030W□K★	ZP2-4030W□	ZP2A-003																				
ZP2-R5030W□K★	ZP2-5030W□																					
ZP2-R6030W□K★	ZP2-6030W□																					
ZP2-R8030W□K★	ZP2-8030W□																					

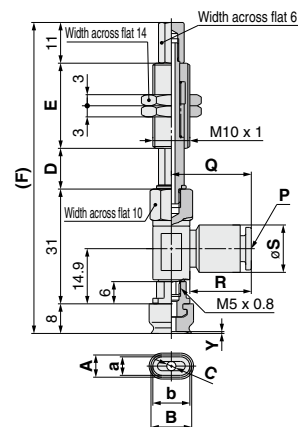
Note 1) □ in the table indicates the pad material. Note 3) ■ in the table indicates the vacuum inlet.
Note 2) ★ in the table indicates the buffer stroke.

Buffer Specifications (Non-rotating)

Stroke (mm)		10, 20, 30, 40, 50
Spring reactive force	At 0 stroke	1.0 N
	At full stroke	3.0 N
Nut tightening torque		2.5 to 3.5 N·m

Dimensions: With Buffer

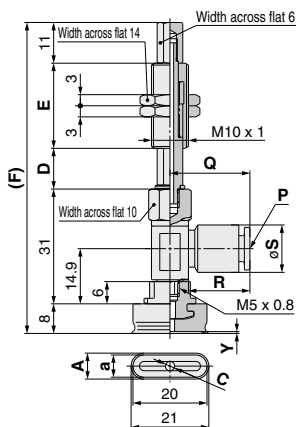
ZP2-R W K★-04
06



Dimensions

Model	a	A	b	B	C	Y
ZP2-R3507W ☐ K★-■	3.5	4.5	7	8	2x1.5	0.5
ZP2-R4010W ☐ K★-■	4	5				
ZP2-R5010W ☐ K★-■	5	6	10	11	2.5	
ZP2-R6010W ☐ K★-■	6	7				

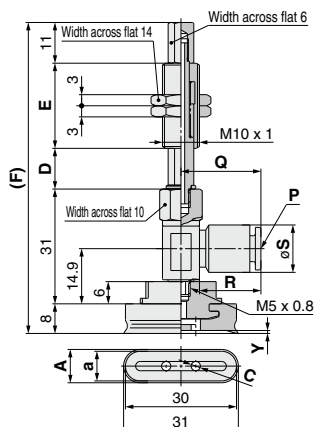
ZP2-R W K★-04
06



Dimensions

Model	a	A	C	Y
ZP2-R4020W  	4	5	2 x 1.8	0.5
ZP2-R5020W  	5	6	2 x 2	
ZP2-R6020W  	6	7	2.5	
ZP2-R8020W  	8	9	3	0.8

ZP2-R W K★-04
06



Dimensions

Model	a	A	C	Y
ZP2-R4030W  	4	5	2 x 1.8	0.5
ZP2-R5030W  	5	6		
ZP2-R6030W  	6	7	2 x 2.5	
ZP2-R8030W  	8	9		0.8

Dimensions common for all three drawings

Dimensions (per stroke)

Stroke (★)	D	E	F	Stroke (★)	D	E	F
10	11	23	84	30	31	51	132
20	21	51	122	40	41	77	168
				50	51		178

Dimensions (per applicable tube)

Applicable tube O.D. (■)	P	Q	R	S
ø4	4	20.6	15.6	10.4
ø6	6	21.6	16.6	12.8



Pad diameter **ø2, ø4, ø6, ø8**

Symbol/Type

U: Flat

■ Ball spline guide is used to the buffer.

How to Order



Symbol	Direction
T	Vertical

Pad diameter

Symbol	Pad diameter
02	ø2
04	ø4
06	ø6
08	ø8

Pad type •

Symbol	Type
U	Flat

- **Buffer stroke**

Symbol	Stroke
6	6 mm

- **Buffer specification**

Symbol	Specification
S	Ball spline

- Pad material

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

Buffer Specifications

Specifications		Ball spline
Stroke		6 mm
Spring reactive force	At 0 stroke	0.8 N
	At full stroke	1.1 N

Replacement Part No.

Model	Pad unit part no.	Adapter part no.	Buffer assembly part no.
ZP2-T02U□S6	ZP02U□	ZPT1-B5	ZP2B-T3S6
ZP2-T04U□S6	ZP04U□		
ZP2-T06U□S6	ZP06U□		
ZP2-T08U□S6	ZP08U□		

Note) □ in the table indicates the pad material.

Dimensions

ZP2-T□U□S6



Model	A	B	C	Y
ZP2-T02U□S6	2	2.6	1.2	0.5
ZP2-T04U□S6	4	4.8	1.6	0.8
ZP2-T06U□S6	6	7	2.5	
ZP2-T08U□S6	8	9		1

ZP3

ZP2

ZP2V

ZP

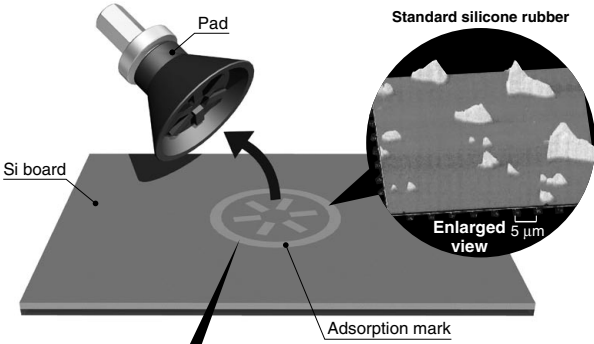
ZPT

211

AT001

Mark-free Pad Series

Minimizes the transfer of rubber constituents to the workpiece.



Pad

Si board

Standard silicone rubber

Enlarged view 5 μm

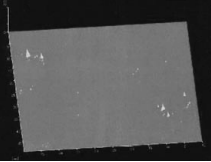
Adsorption mark

Analysis equipment:
Scanning probe microscope

Measurement conditions:
Measurement mode
Atomic force microscope DFM mode

Sample conditions:
Press the vacuum pad to the Si board for 1 hour.

Monitoring location:
Monitored at a randomly selected location where adsorption marks were likely due to contact between the vacuum pad and Si board.



5 μm

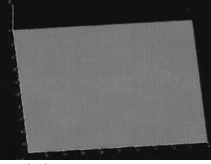
1 Mark-free NBR Pad

Minimizes the transfer of rubber constituents which is supposed to be the cause of adsorption.

Pad diameter: $\phi 4$ to $\phi 125$



Heavy-duty type



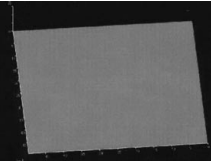
5 μm

2 Stuck Fluororesin Pad

Fluororesin sheet is baked onto the pad adsorption surface. Prevents the transfer of rubber constituents.

Pad diameter: $\phi 40$ to $\phi 125$



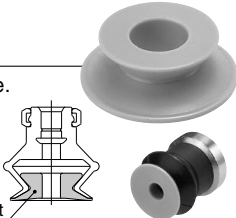


5 μm

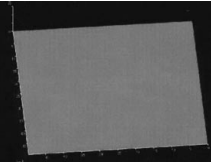
3 Resin Attachment

PEEK material is used for the pad adsorption surface. Prevents the transfer of rubber constituents.

Pad diameter: $\phi 6$ to $\phi 32$



Attachment

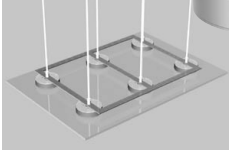


5 μm

4 Cyclone Pad

Made to Order

No adsorption mark is left because the vacuum pad does not come into contact with the workpiece.



P.1359

The above adsorption marks show sample data. Actual results will depend on the conditions.

Pad type			Material of the adsorption part (Part in contact with the workpiece)	Adsorption mark ^{*1}			Static friction ratio ^{*5}
				Condition ^{*2} (Initial value)		Operating temperature range (°C)	
				Visual checking	Vapor method ^{*3}		
Mark-free Pad Series	 Mark-free NBR pad 	Mark-free NBR (Specially treated ^{*4})	●	●	5 to 40	0.6	
	 Stuck fluororesin pad 	NBR + Stuck fluororesin	●	●	5 to 60	0.2	
		FKM + Stuck fluororesin	●	●	5 to 100		
	 Resin attachment  	PEEK	●	●	5 to 40	0.2	
		Conductive PEEK (Volume resistivity: 1 x 10 ⁶ Ωcm)	●	●			
 Cyclone pad <i>Made to Order</i> 	—	●	●	Standard: -5 to 60 (No freezing)	—		
Standard	 Series ZP (Standard material)	NBR FKM Conductive NBR/Silicone rubber	×	×	—	—	
		Silicone rubber Urethane rubber	○	×			

Adsorption mark characteristics [●: Little or no influence ○: Can be used depending on the conditions. ×: Not suitable]

* The above table is for reference when selecting the pad.

Values and evaluation are reference data only. Preparatory testing under actual operating conditions is recommended.

*1 **Adsorption mark** ——— Indicates the transfer of rubber constituents from the pad.

*2 **Condition** ——— Visual evaluation of the adsorption mark

*3 **Vapor method** ——— Method of applying vapor to the workpiece to visually check for adsorption marks

*4 **Specially treated** ——— NBR is specially treated to modify and reduce the transfer of rubber constituents.

*5 **Static friction ratio** ——— Static friction ratio when the workpiece (glass) is adsorbed by the pad. (NBR = 1 as a benchmark)
When the cyclone pad is used, the pad does not come into contact with the workpiece (glass).
The customer needs to install a guide for holding.

Cleaning method [Mark-free NBR pad/Stuck fluororesin pad/Resin attachment]

• Always clean the product before operation and when carrying out regular maintenance.

1) Hold the part other than the adsorption surface.

* Non particle-generating vinyl gloves are recommended.

2) Soak a non particle-generating cloth in 2-propanol (isopropyl alcohol) (purity > 99.5%).

* This solution is a recommendation. If not available, use **a solution with high purity which does not affect the material properties.**

3) Wipe the adsorption surface (pad/resin attachment) and the part that comes into contact with the workpiece.

4) Dry them with clean air blow. (Or, wipe again with a dry non particle-generating cloth.)



Mark-free Pad

Symbol/Type

U: Flat

Pad diameter $\varnothing 4, \varnothing 6, \varnothing 8, \varnothing 10, \varnothing 16, \varnothing 25, \varnothing 32, \varnothing 40, \varnothing 50$

- Pad which reduces the adsorption marks left on the workpiece by rubber
- The pad is made from mark-free NBR, and the NBR is then specially treated to minimize the transfer of rubber constituents to the workpiece.
- Applicable for the ZP series adapter

How to Order

Pad unit **ZP2-04 U CL-X19**



Pad diameter

Symbol	Pad diameter
04	$\varnothing 4$
06	$\varnothing 6$
08	$\varnothing 8$
10	$\varnothing 10$
16	$\varnothing 16$
25	$\varnothing 25$
32	$\varnothing 32$
40	$\varnothing 40$
50	$\varnothing 50$

With/Without lock ring

Nil	With lock ring
X19	Without lock ring (Note)

(Note) $\varnothing 10$ or larger

Pad material

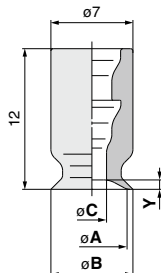
Symbol	Material
CL	Mark-free NBR

Pad type

Symbol	Type
U	Flat

Dimensions: Pad Unit

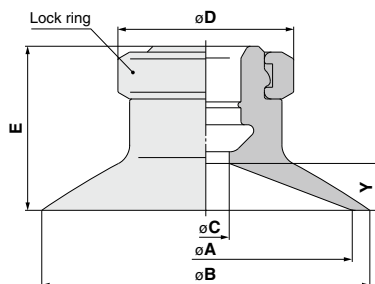
ZP2-04 to 08UCL



Dimensions

Model	A	B	C	Y
ZP2-04UCL	4	4.8	1.6	0.8
ZP2-06UCL	6	7	2.5	
ZP2-08UCL	8	9		1

ZP2-10 to 50UCL



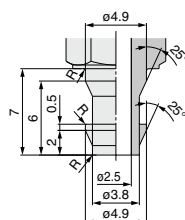
Dimensions

Model	A	B	C	D	E	Y
ZP2-10UCL	10	12		13	12	3
ZP2-16UCL	16	18	4		12.5	3.5
ZP2-25UCL	25	28		15	14	4
ZP2-32UCL	32	35			14.5	4.5
ZP2-40UCL	40	43	7	18	18.5	6.5
ZP2-50UCL	50	53			19.5	7.5

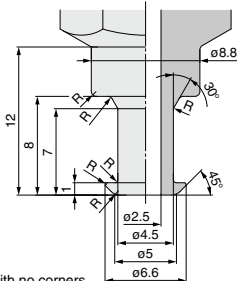
Adapter Mounting Dimensions

If an adapter will be made by the customer, design the adapter with the dimensions shown below.

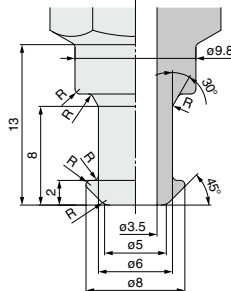
Applicable pad
04U/06U/08U



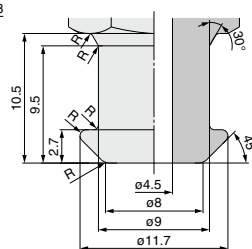
Applicable pad
10U/16U



Applicable pad
25U/32U



Applicable pad
40U/50U



(Note) R part has to be smooth with no corners.

* Refer to page 1249 for adapter applicable to the ZP series.



H: Heavy-duty
(Flat with rib)

Pad diameter **Ø40, Ø50, Ø63, Ø80, Ø100, Ø125**

- Pad which reduces the adsorption marks left on the workpiece by rubber
- The pad is made from mark-free NBR, and the NBR is then specially treated to minimize the transfer of rubber constituents to the workpiece.
- Prevents rubber constituents of the pad from transferring by baking the fluororesin sheet to the adsorption surface.

Stuck fluororesin

Pad unit **ZP2-40 H** **CL**

Pad diameter •

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

Pad type

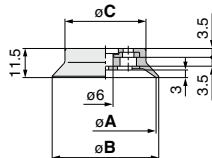
Symbol	Type
H	Heavy-duty (Flat with rib)

- Pad material

Symbol	Material
CL	Mark-free NBR
NT	NBR + Stuck fluororesin
ET	FKM + Stuck fluororesin

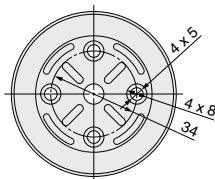
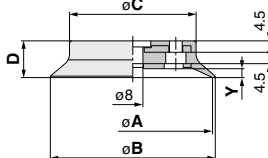
Dimensions: Pad Unit

ZP2-⁴⁰₅₀H ☐



Technical drawing of a wheel hub with dimensions: 3x4, 3x6.5, and 18.

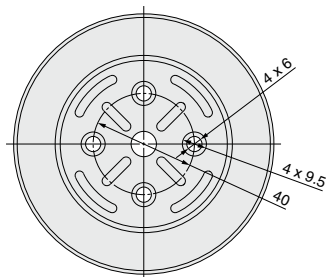
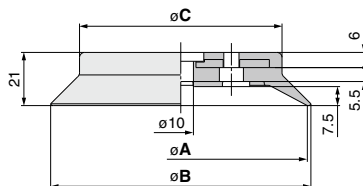
ZP2-⁶³₈₀H ☐



Model	A	B	C
ZP2-40H ☐	40	42	32
ZP2-50H ☐	50	53	42

Model	A	B	C	D	Y
ZP2-63H	63	65	50	14.5	3.5
ZP2-80H 	80	82	61	16.5	4.5

ZP2- $\frac{100}{125}$ H ☐



ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661



Resin Attachment

Pad diameter $\varnothing 6, \varnothing 8, \varnothing 10, \varnothing 13, \varnothing 16, \varnothing 20, \varnothing 25, \varnothing 32$

■ No adsorption marks (rubber constituents) are left on the workpiece.

Avoids direct contact between the workpiece and the rubber by installing a PEEK attachment to the bellows pad to prevent the transfer of rubber constituents.

■ Prevents sticking of the pad (rubber) and the workpiece.

■ Ideal for the ZP series bellows pad ($\varnothing 6$ to $\varnothing 32$)



How to Order

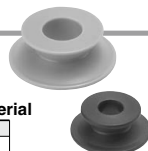
ZP2-06K P

Pad diameter

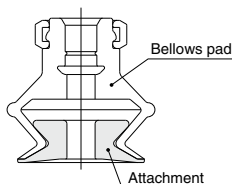
Symbol	Pad diameter
06	ZP06B ☐
08	ZP08B ☐
10	ZP10B ☐
13	ZP13B ☐
16	ZP16B ☐
20	ZP20B ☐
25	ZP25B ☐
32	ZP32B ☐

Attachment material

Symbol	Material
P	PEEK
GP	Conductive PEEK



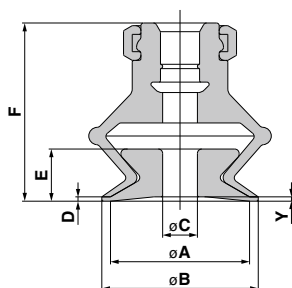
How to Order (When ordering with a pad)



- When ordering with a pad, put "*", below the part number of the pad as shown below. Note that the pad is not delivered with the attachment assembled.
- This attachment can only be assembled onto SMC's standard bellows pad.
- When the attachment is made of conductive PEEK, use conductive material for the pad.

Ordering example	ZPT06BNJ10-B5-A8	← Bellows pad part no.
	* ZP2-06KP	← Resin attachment part no.

Dimensions



Dimensions

Model	Applicable pad	A	B	C	D	E	F	Y
ZP2-06K■	ZP06B ☐	6	7	1.6				
ZP2-08K■	ZP08B ☐	8	9	3		3	13.5	
ZP2-10K■	ZP10B ☐	10	12	3.5	0.5	3.5	16.5	0.5
ZP2-13K■	ZP13B ☐	13	15	4		5.5	19	
ZP2-16K■	ZP16B ☐	16	18			6	20.5	
ZP2-20K■	ZP20B ☐	20	22	8			24.5	
ZP2-25K■	ZP25B ☐	25	27	10	1	8.5	25	1
ZP2-32K■	ZP32B ☐	32	34			11.5	30	

Note 1) ■ in the table indicates the attachment material.

Note 2) □ in the table indicates the pad material.

«Precautions»

1) Clean the product before using the attachment.

This product is not cleaned at shipment. If the product is used in the condition in which it is shipped, residual material may be left on the work pieces. Clean before usage. If you have any questions, please contact SMC.

2) The workpiece contact part of this product is made of resin and may have a larger vacuum pressure leakage during adsorption when compared to the general rubber pad. Therefore, maintain the flow rate as large as possible to minimize the pressure drop due to leakage.

3) Cannot be used for vacuum retention.

4) Customers are required to conduct the evaluation to judge whether or not the product is used.

- If contact with hard material is a problem, do not use this product.



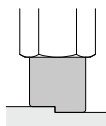
Sponge Pad

Pad diameter $\varnothing 4, \varnothing 6, \varnothing 8, \varnothing 10, \varnothing 15$

Symbol/Type

S: Sponge

■ For adsorption of work pieces with bumps



How to Order

Pad unit **ZP2-06 S GS**

Symbol	Pad diameter
04	$\varnothing 4$
06	$\varnothing 6$
08	$\varnothing 8$
10	$\varnothing 10$
15	$\varnothing 15$

Pad material

Symbol	Material
GS	Conductive silicone
GC	Conductive CR

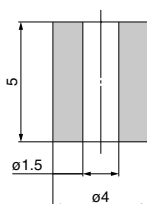
Pad type

Symbol	Type
S	Sponge

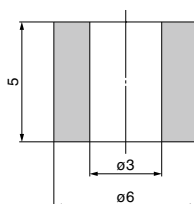


Dimensions: Pad Unit

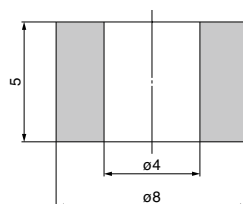
ZP2-04S□



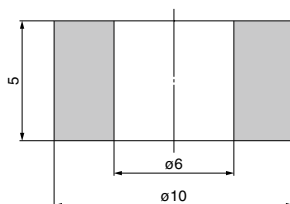
ZP2-06S□



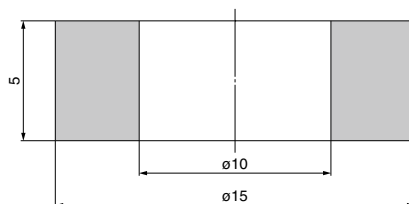
ZP2-08S□



ZP2-10S□



ZP2-15S□



ZP3

ZP2

ZP2V

ZP

ZPT

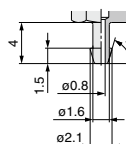
ZPR

XT661

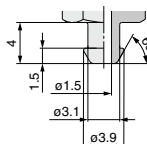
Adapter Mounting Dimensions

If an adapter will be made by the customer, design the adapter with the dimensions shown below.

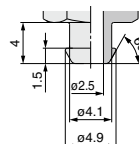
Applicable pad
04S



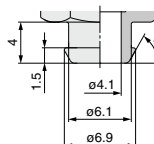
Applicable pad
06S



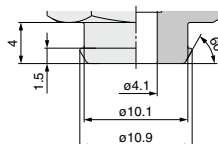
Applicable pad
08S



Applicable pad
10S



Applicable pad
15S



* Refer to pages 1247 and 1248 for adapter applicable to the ZP2 series.

How to Order

With adapter **ZP2 - T 06 S GS - A3**

Vacuum inlet direction

Symbol	Direction
T	Vertical

Pad O.D.

Symbol	Pad diameter
04	ø4
06	ø6
08	ø8
10	ø10
15	ø15

Pad type

Symbol	Type
S	Sponge

Mounting

Symbol	Thread size	Applicable pad O.D. symbol				
		04	06	08	10	15
A3	M3 x 0.5 (Male thread)	●	—	—	—	—
A5	M5 x 0.8 (Male thread)	—	●	—	—	—
B3	M3 x 0.5 (Female thread)	●	—	—	—	—
B5	M5 x 0.8 (Female thread)	—	●	—	—	—

Pad material

Symbol	Material
GS	Conductive silicone
GC	Conductive CR

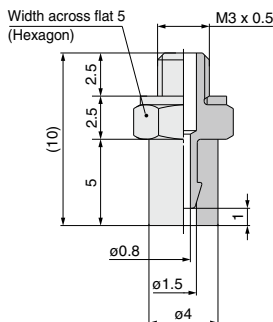
Replacement Part No.

Model	Pad unit part no.	Adapter part no.
ZP2-T04S□-A3	ZP2-04S□	ZP2A-S01P
ZP2-T06S□-A5	ZP2-06S□	ZP2A-S02P
ZP2-T08S□-A5	ZP2-08S□	ZP2A-S03P
ZP2-T10S□-A5	ZP2-10S□	ZP2A-S04P
ZP2-T15S□-A5	ZP2-15S□	ZP2A-S05P
ZP2-T04S□-B3	ZP2-04S□	ZP2A-S11
ZP2-T06S□-B5	ZP2-06S□	ZP2A-S12
ZP2-T08S□-B5	ZP2-08S□	ZP2A-S13
ZP2-T10S□-B5	ZP2-10S□	ZP2A-S14
ZP2-T15S□-B5	ZP2-15S□	ZP2A-S15

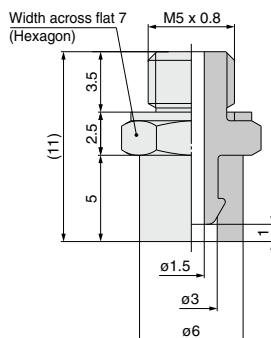
(Note) □ in the table indicates the pad material.

Dimensions: With Adapter

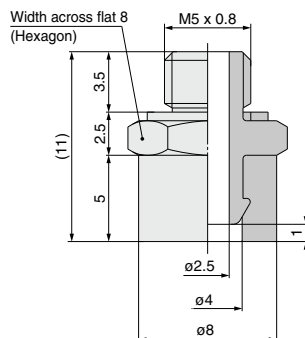
ZP2-T04S□-A3



ZP2-T06S□-A5

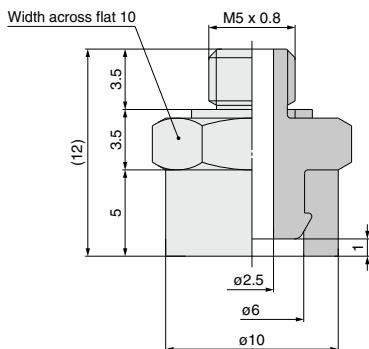


ZP2-T08S□-A5

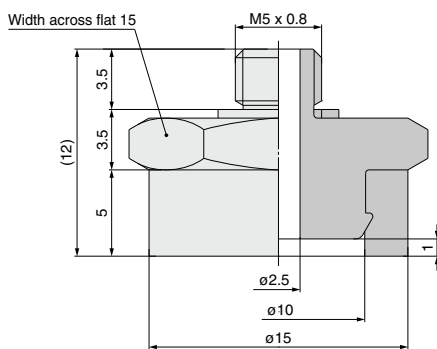


Dimensions: With Adapter

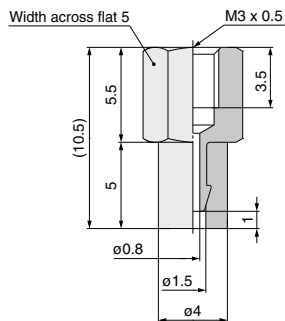
ZP2-T10S□-A5



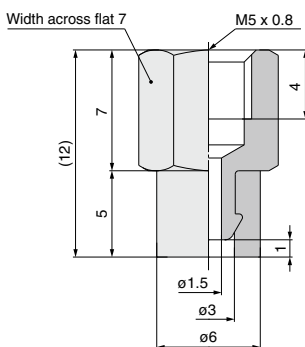
ZP2-T15S□-A5



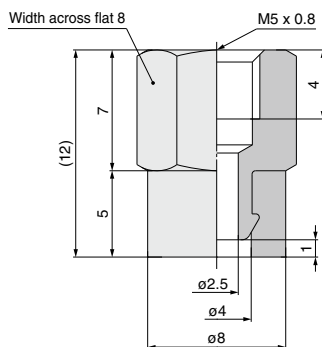
ZP2-T04S□-B3



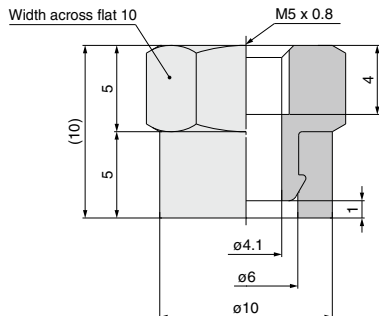
ZP2-T06S□-B5



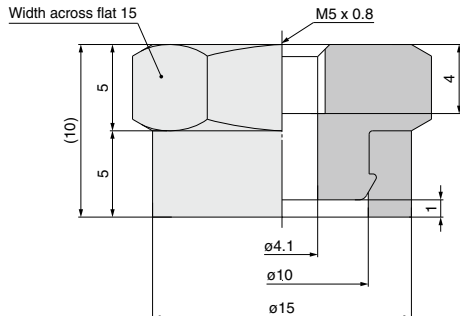
ZP2-T08S□-B5



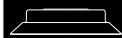
ZP2-T10S□-B5



ZP2-T15S□-B5



ZP3
ZP2
ZP2V
ZP
ZPT
ZPR
XT661



Heavy-duty Pad

Pad diameter $\varnothing 32, \varnothing 150, \varnothing 250, \varnothing 300, \varnothing 340$

Symbol/Type

H: Heavy-duty
(Flat with rib)

HT: Heavy-duty
(Thin flat with rib)

- Reinforced pad to prevent deformation when transferring heavy or large work pieces

How to Order

Pad unit **ZP2-32 H N**

Pad diameter

Symbol	Pad diameter
32	$\varnothing 32$
150	$\varnothing 150$
250	$\varnothing 250$
300	$\varnothing 300$
340	$\varnothing 340$

Pad material

Symbol	Material
N	NBR
S	Silicone rubber ^{Note)}
F	FKM
C	CR

Note) Silicone rubber is only applicable to the $\varnothing 32$ pad.

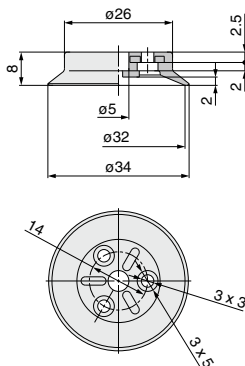
Pad type—Pad diameter

Pad type	Pad diameter (Symbol)	32	150	250	300	340
H (Flat with rib)		●	—	—	●	●
HT (Thin flat with rib)		—	●	●	—	—

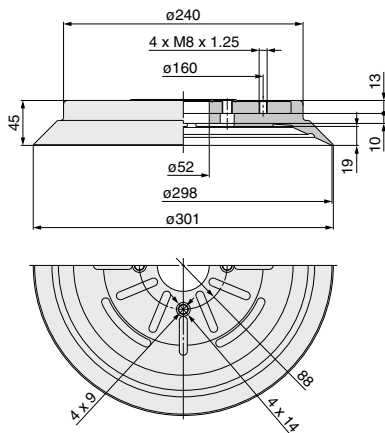
Note) The mounting adapter is available as a special order.

Dimensions: Pad Unit

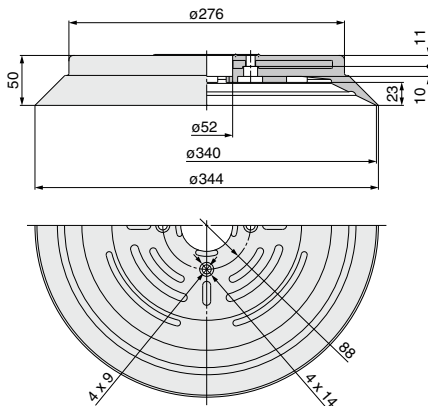
ZP2-32H□



ZP2-300H□

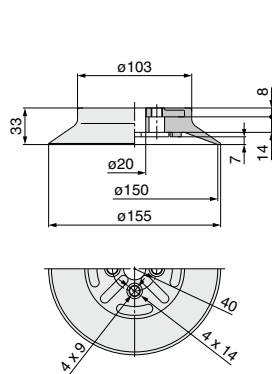


ZP2-340H□

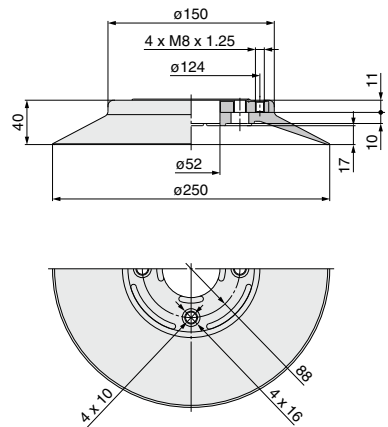


Dimensions

ZP2-150HT □



ZP2-250HT □



ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661



Pad diameter **Ø32, Ø150**

Symbol/Type

**HB: Heavy-duty
(Bellows)**

■ For heavy or large work pieces

How to Order



Pad diameter •

Symbol	Pad diameter
32	ø32
150	ø150

- Pad material

Symbol	Material
N	NBR
S	Silicone rubber ^{Notes}
F	FKM
C	CR

Note) Silicone rubber is only applicable to the ø32 pad.

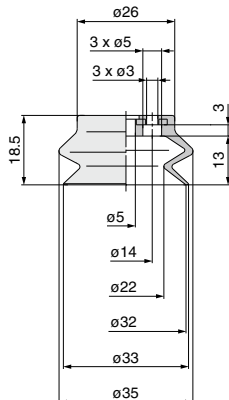
- **Pad type**

Symbol	Type
HB	Heavy-duty (Bellows)

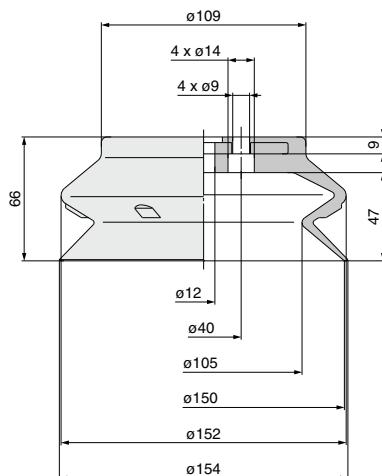
Note) The mounting adapter is available as a special order.

Dimensions: Pad Unit

ZP2-32HB ☐



ZP2-150HB ☐





Heavy-duty Pad

Symbol/Type
HW: Heavy-duty (Oval)

Pad size

30 x 50

■ For heavy or large work pieces

How to Order

Pad unit ZP2 – 3050 HW N



Pad size

Symbol	Pad size
3050	30 x 50

Pad material

Symbol	Material
N	NBR
S	Silicone rubber
F	FKM
C	CR

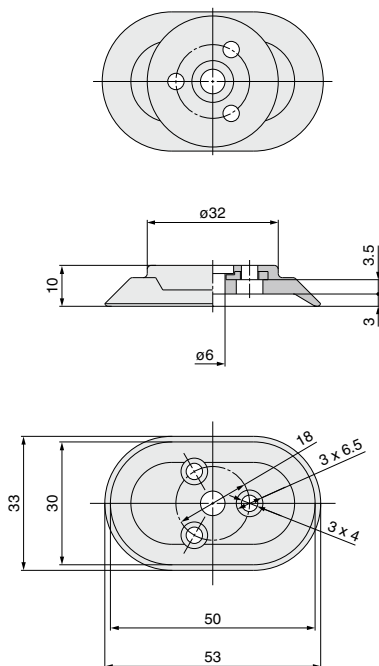
Pad type

Symbol	Type
HW	Heavy-duty (Oval)

Note) For details about the mounting bracket, refer to pages 1253, 1254, 1264, and 1265.

Dimensions: Pad Unit

ZP2-3050HW□



ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661



**H: Heavy-duty
(Flat with rib)**

Pad diameter **Ø40, Ø50, Ø63, Ø80, Ø100, Ø125**

■ For adsorption of work pieces with inclined surface



With adapter **ZP2-T F 40 H** **N**

Vacuum inlet direction •

Specification (mechanism)

- Pad material (☐)

Pad diameter •

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

Pad type

Symbol	Type
H	Heavy-duty (Flat with rib)

Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
E	FPR

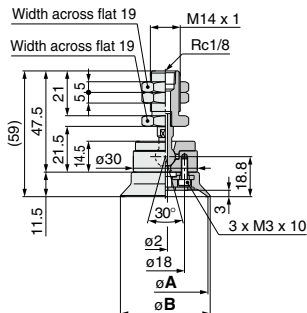
Replacement Part No.

Model	Pad unit part no.	Adapter assembly part no.	
ZP2-TF40H□	ZP40H□	ZP2A-TF1	With three M3 bolts
ZP2-TF50H□	ZP50H□		
ZP2-TF63H□	ZP63H□	ZP2A-TF2	With four M4 bolts
ZP2-TF80H□	ZP80H□		
ZP2-TF100H□	ZP100H□	ZP2A-TF3	With four M5 bolts
ZP2-TF125H□	ZP125H□		

Note) □ in the table indicates the pad material.

Dimensions: With Adapter

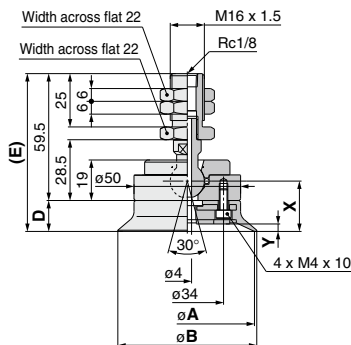
ZP2-TF₅₀H ☐



Dimensions

Model	A	B
ZP2-TF40H□	40	42
ZP2-TF50H□	50	52

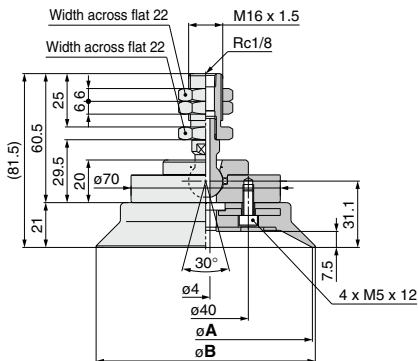
ZP2-TF₈₀⁶³H ☐



Dimensions

Model	A	B	D	E	X	Y
ZP2-TF63H□	63	65	14.5	74	23.6	3.5
ZP2-TF80H□	80	82	16.5	76	25.6	4.5

ZP2-TF₁₂₅¹⁰⁰H ☐



Dimensions

Model	A	B
ZP2-TF100H □	100	103
ZP2-TF125H □	125	128

How to Order

With adapter **ZP2 – X F 40 H N**

Vacuum inlet direction •

Symbol	Direction
X	Lateral

Specification (mechanism)

Symbol	Specification
F	Ball joint

Pad diameter

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

- Pad material (☐)

Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
E	EPR

- Pad type

Symbol	Type
H	Heavy-duty (Flat with rib)



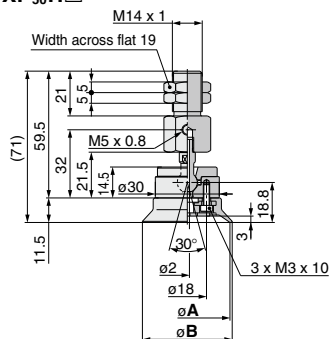
Vacuum inlet direction **Lateral**

Replacement Part No.

Model	Pad unit part no.	Adaptor assembly part no.	
ZP2-XF40H	ZP40H	ZP2A-XF1	With three M3 bolts
ZP2-XF50H	ZP50H		
ZP2-XF63H	ZP63H	ZP2A-XF2	With four M4 bolts
ZP2-XF80H	ZP80H		
ZP2-XF100H	ZP100H	ZP2A-XF3	With four M5 bolts
ZP2-XF125H	ZP125H		

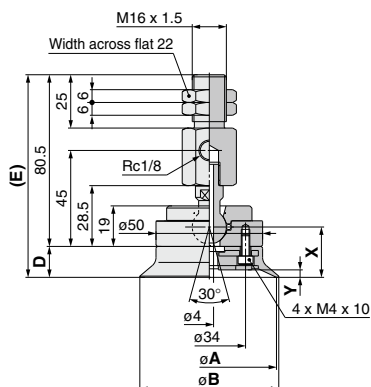
Note) □ in the table indicates the pad material.

Dimensions: With Adapter

ZP2-XF^{40/50}H□

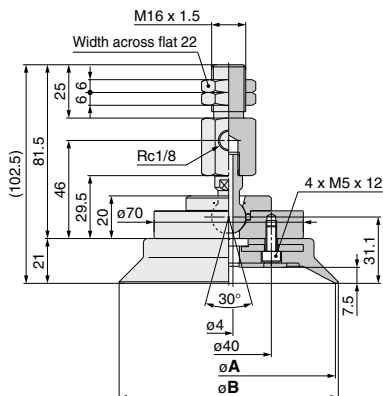
Dimensions

Model	A	B
ZP2-XF40H□	40	42
ZP2-XF50H□	50	52

ZP2-XF⁶³₈₀H□

Dimensions

Model	A	B	D	E	X	Y
ZP2-XF63H□	63	65	14.5	95	23.6	3.5
ZP2-XF80H□	80	82	16.5	97	25.6	4.5

ZP2-XF¹⁰⁰₁₂₅H□

Dimensions

Model	A	B
ZP2-XF100H□	100	103
ZP2-XF125H□	125	128

ZP3

ZP2ZP2VZP

ZPT

XT66

How to Order

With buffer **ZP2 – T F 40 H N JB 25**

Vacuum inlet direction

Symbol	Direction
T	Vertical

Specification (mechanism)

Symbol	Specification
F	Ball joint

Pad diameter

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

Pad type

Symbol	Type
H	Heavy-duty (Flat with rib)

Buffer stroke (■)

Stroke	Applicable pad	ZP40H ZP50H	ZP63H ZP80H	ZP100H ZP125H
25		●	●	●
50		●	●	●
75		●	●	●
100		—	●	●

Buffer specification

Symbol	Specification
JB	Rotating With bushing Material: Brass
JF	Rotating With bushing Material: Steel

Pad material (□)

Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
E	EPR



Vacuum inlet direction **Vertical**

Replacement Part No.

Model	Pad unit part no.	Buffer assembly part no.	
ZP2-TF40H□(JB/JF)25	ZP40H□	ZP2B-TF1(JB/JF)25	With three M3 bolts
ZP2-TF40H□(JB/JF)50		ZP2B-TF1(JB/JF)50	
ZP2-TF40H□(JB/JF)75		ZP2B-TF1(JB/JF)75	
ZP2-TF50H□(JB/JF)25	ZP50H□	ZP2B-TF1(JB/JF)25	With four M4 bolts
ZP2-TF50H□(JB/JF)50		ZP2B-TF1(JB/JF)50	
ZP2-TF50H□(JB/JF)75		ZP2B-TF1(JB/JF)75	
ZP2-TF63H□(JB/JF)25	ZP63H□	ZP2B-TF2(JB/JF)25	With four M5 bolts
ZP2-TF63H□(JB/JF)50		ZP2B-TF2(JB/JF)50	
ZP2-TF63H□(JB/JF)75		ZP2B-TF2(JB/JF)75	
ZP2-TF80H□(JB/JF)25	ZP80H□	ZP2B-TF2(JB/JF)100	With four M5 bolts
ZP2-TF80H□(JB/JF)50		ZP2B-TF2(JB/JF)25	
ZP2-TF80H□(JB/JF)75		ZP2B-TF2(JB/JF)50	
ZP2-TF100H□(JB/JF)25	ZP100H□	ZP2B-TF2(JB/JF)75	With four M5 bolts
ZP2-TF100H□(JB/JF)50		ZP2B-TF2(JB/JF)100	
ZP2-TF100H□(JB/JF)75		ZP2B-TF3(JB/JF)25	
ZP2-TF125H□(JB/JF)25	ZP125H□	ZP2B-TF3(JB/JF)50	With four M5 bolts
ZP2-TF125H□(JB/JF)50		ZP2B-TF3(JB/JF)75	
ZP2-TF125H□(JB/JF)100		ZP2B-TF3(JB/JF)100	

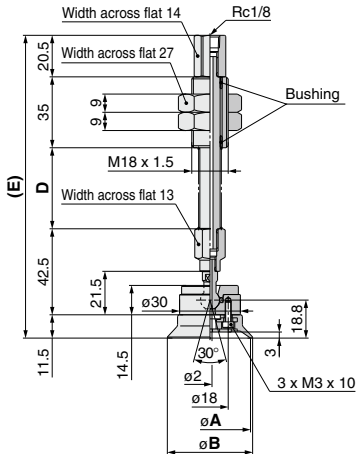
(Note) □ in the table indicates the pad material.

Buffer Specifications

Pad diameter		ø40, ø50	ø63, ø80, ø100, ø125
Stroke (mm)		25, 50, 75	25, 50, 75, 100
Spring reactive force	At 0 stroke	6.9 N	10 N
	At full stroke	11.8 N	15 N
Buffer specifications	JB	Rotating With bushing Buffer body material: Brass Nut tightening torque: 28 to 32 N·m	
	JF	Rotating With bushing Buffer body material: Steel Nut tightening torque: 48 to 52 N·m	

Dimensions: With Buffer

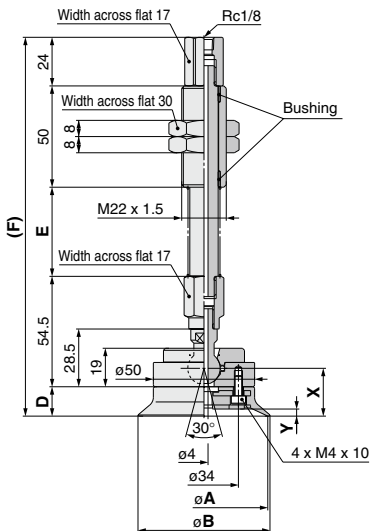
ZP2-TF⁴⁰₅₀H ☐ **JB** ☒ **JF**



Dimensions

Model	A	B	D	E
ZP2-TF40H□(JB/JF)25	40	42	40	149.5
ZP2-TF40H□(JB/JF)50			75	184.5
ZP2-TF40H□(JB/JF)75			111	220.5
ZP2-TF50H□(JB/JF)25	50	52	40	149.5
ZP2-TF50H□(JB/JF)50			75	184.5
ZP2-TF50H□(JB/JF)75			111	220.5

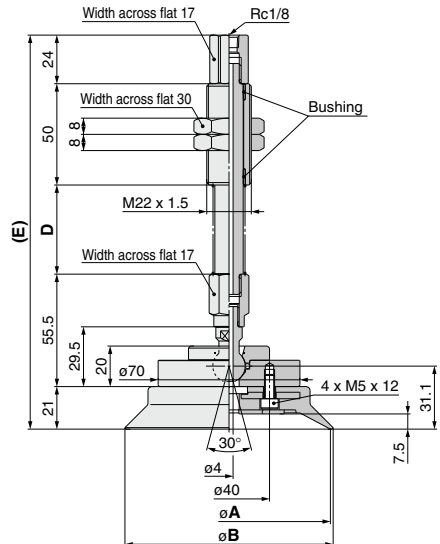
ZP2-TF⁶³₈₀H ☐ **JB** ☒ **JF**



Dimensions

Model	A	B	D	E	F	X	Y
ZP2-TF63H □(JB/JF)25	63	65	14.5	44	187	23.6	3.5
ZP2-TF63H □(JB/JF)50				80	223		
ZP2-TF63H □(JB/JF)75				120	263		
ZP2-TF63H □(JB/JF)100				155	298		
ZP2-TF80H □(JB/JF)25				44	189		
ZP2-TF80H □(JB/JF)50	80	82	16.5	80	225	25.6	4.5
ZP2-TF80H □(JB/JF)75				120	265		
ZP2-TF80H □(JB/JF)100				155	300		

ZP2-TF¹⁰⁰₁₂₅H ☐ **JB** ☒ **JF**



Dimensions

Model		A	B	D	E
100	ZP2-TF100H□(JB/JF)25	103		44	194.5
	ZP2-TF100H□(JB/JF)50			80	230.5
	ZP2-TF100H□(JB/JF)75			120	270.5
	ZP2-TF100H□(JB/JF)100			155	305.5
125	ZP2-TF125H□(JB/JF)25	128		44	194.5
	ZP2-TF125H□(JB/JF)50			80	230.5
	ZP2-TF125H□(JB/JF)75			120	270.5
	ZP2-TF125H□(JB/JF)100			155	305.5

How to Order

With buffer **ZP2 – X F 40 H N JB 25**

Vacuum inlet direction

Symbol	Direction
X	Lateral

Specification (mechanism)

Symbol	Specification
F	Ball joint

Pad diameter

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

Pad type

Symbol	Type
H	Heavy-duty (Flat with rib)

Buffer stroke (■)

Stroke	Applicable pad	ZP40H ZP50H	ZP63H ZP80H	ZP100H ZP125H
25		●	●	●
50		●	●	●
75		●	●	●
100		—	●	●

Buffer specification

Symbol	Specification
JB	Rotating With bushing Material: Brass
JF	Rotating With bushing Material: Steel

Pad material (□)

Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
E	EPR



Vacuum inlet direction **Lateral**

Replacement Part No.

Model	Pad unit part no.	Buffer assembly part no.	
ZP2-XF40H□(JB/JF)25	ZP40H□	ZP2B-XF1(JB/JF)25	With three M3 bolts
ZP2-XF40H□(JB/JF)50		ZP2B-XF1(JB/JF)50	
ZP2-XF40H□(JB/JF)75		ZP2B-XF1(JB/JF)75	
ZP2-XF50H□(JB/JF)25	ZP50H□	ZP2B-XF1(JB/JF)25	With three M3 bolts
ZP2-XF50H□(JB/JF)50		ZP2B-XF1(JB/JF)50	
ZP2-XF50H□(JB/JF)75		ZP2B-XF1(JB/JF)75	
ZP2-XF63H□(JB/JF)25	ZP63H□	ZP2B-XF2(JB/JF)25	With four M4 bolts
ZP2-XF63H□(JB/JF)50		ZP2B-XF2(JB/JF)50	
ZP2-XF63H□(JB/JF)75		ZP2B-XF2(JB/JF)75	
ZP2-XF80H□(JB/JF)25	ZP80H□	ZP2B-XF2(JB/JF)100	With four M5 bolts
ZP2-XF80H□(JB/JF)50		ZP2B-XF2(JB/JF)25	
ZP2-XF80H□(JB/JF)75		ZP2B-XF2(JB/JF)50	
ZP2-XF100H□(JB/JF)25	ZP100H□	ZP2B-XF2(JB/JF)75	With four M5 bolts
ZP2-XF100H□(JB/JF)50		ZP2B-XF2(JB/JF)100	
ZP2-XF100H□(JB/JF)75		ZP2B-XF3(JB/JF)25	
ZP2-XF125H□(JB/JF)25	ZP125H□	ZP2B-XF3(JB/JF)50	With four M5 bolts
ZP2-XF125H□(JB/JF)50		ZP2B-XF3(JB/JF)75	
ZP2-XF125H□(JB/JF)100		ZP2B-XF3(JB/JF)100	

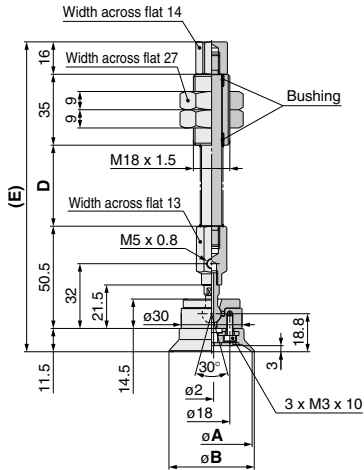
(Note) □ in the table indicates the pad material.

Buffer Specifications

Pad diameter		ø40, ø50	ø63, ø80, ø100, ø125
Stroke (mm)		25, 50, 75	25, 50, 75, 100
Spring reactive force	At 0 stroke	6.9 N	10 N
	At full stroke	11.8 N	15 N
Buffer specifications	JB	Rotating With bushing Buffer body material: Brass Nut tightening torque: 28 to 32 N·m	
	JF	Rotating With bushing Buffer body material: Steel Nut tightening torque: 48 to 52 N·m	

Dimensions: With Buffer

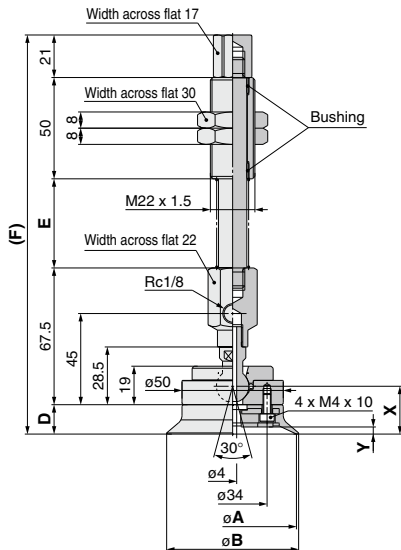
ZP2-XF⁴⁰₅₀H ☐ **JB** ☒ **JF** ☐



Dimensions

Model	A	B	D	E
ZP2-XF40H□(JB/JF)25	40	42	40	153
ZP2-XF40H□(JB/JF)50			75	188
ZP2-XF40H□(JB/JF)75			111	224
ZP2-XF50H□(JB/JF)25	50	52	40	153
ZP2-XF50H□(JB/JF)50			75	188
ZP2-XF50H□(JB/JF)75			111	224

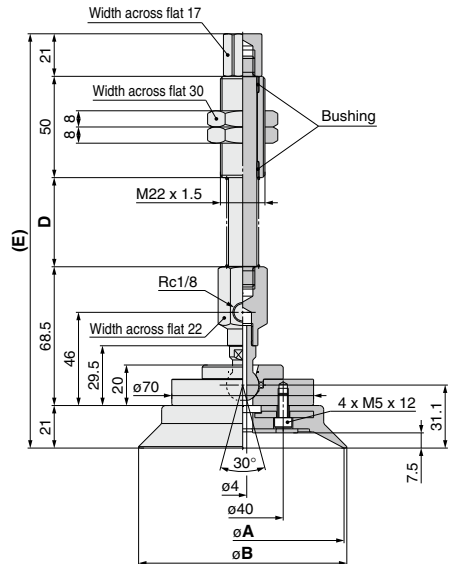
ZP2-XF⁶³₈₀H ☐ **JB** ☒ **JF**



Dimensions

Model	A	B	D	E	F	X	Y
ZP2-XF63H (JB/JF)25	63	65	14.5	44	197	23.6	3.5
ZP2-XF63H (JB/JF)50				80	233		
ZP2-XF63H (JB/JF)75				120	273		
ZP2-XF63H (JB/JF)100				155	308		
ZP2-XF80H (JB/JF)25	80	82	16.5	44	199	25.6	4.5
ZP2-XF80H (JB/JF)50				80	235		
ZP2-XF80H (JB/JF)75				120	275		
ZP2-XF80H (JB/JF)100				155	310		

ZP2-XF¹⁰⁰₁₂₅H ☐ **JB** ☒ **JF**



Dimensions

Model		A	B	D	E
100	2P2-XF100H (JB/JF)25	103		44	204.5
	2P2-XF100H (JB/JF)50			80	240.5
	2P2-XF100H (JB/JF)75			120	280.5
	2P2-XF100H (JB/JF)100			155	315.5
125	2P2-XF125H (JB/JF)25	128		44	204.5
	2P2-XF125H (JB/JF)50			80	240.5
	2P2-XF125H (JB/JF)75			120	280.5
	2P2-XF125H (JB/JF)100			155	315.5



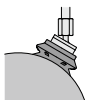
Heavy-duty Ball Joint Pad

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

Symbol/Type

HB: Heavy-duty (Bellows)

■ For adsorption of work pieces with inclined or curved surface



How to Order

With adapter **ZP2-T F 40 HB N**

Vacuum inlet direction

Symbol	Direction
T	Vertical

Specification (mechanism)

Symbol	Specification
F	Ball joint

Pad diameter

Symbol	Pad diameter
40	$\varnothing 40$
50	$\varnothing 50$
63	$\varnothing 63$
80	$\varnothing 80$
100	$\varnothing 100$
125	$\varnothing 125$

Pad type

Symbol	Type
HB	Heavy-duty (Bellows)

Pad material (□)

Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
E	EPR



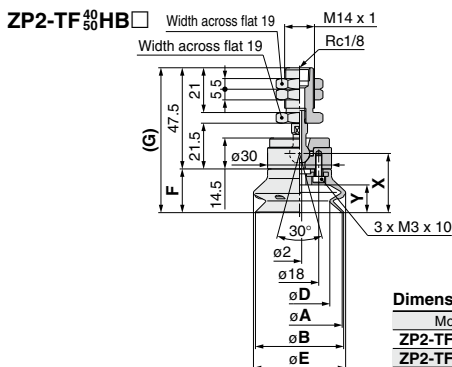
Vacuum inlet direction **Vertical**

Replacement Part No.

Model	Pad unit part no.	Adapter assembly part no.
ZP2-TF40HB□	ZP40HB□	ZP2A-TF1
ZP2-TF50HB□	ZP50HB□	
ZP2-TF63HB□	ZP63HB□	ZP2A-TF2
ZP2-TF80HB□	ZP80HB□	
ZP2-TF100HB□	ZP100HB□	ZP2A-TF3
ZP2-TF125HB□	ZP125HB□	

Note) □ in the table indicates the pad material.

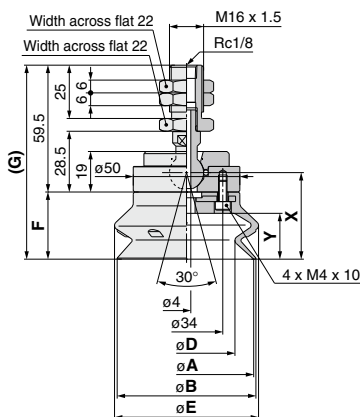
Dimensions: With Adapter



Dimensions

Model	A	B	D	E	F	G	X	Y
ZP2-TF40HB□	40	41	28	43	20.5	68	27.8	13
ZP2-TF50HB□	50	52	36	54	24	71.5	31.3	16.5

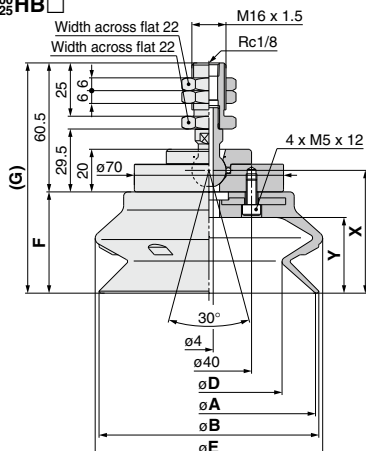
ZP2-TF $\frac{63}{80}$ HB□



Dimensions

Model	A	B	D	E	F	G	X	Y
ZP2-TF63HB□	63	65	46	68	31.5	91	40.6	21.5
ZP2-TF80HB□	80	83	58	85	37	96.5	46.1	27.5

ZP2-TF $\frac{100}{125}$ HB□



Dimensions

Model	A	B	D	E	F	G	X	Y
ZP2-TF100HB□	100	103	69	107	47.5	108	57.6	35.5
ZP2-TF125HB□	125	129	89	135	56	116.5	66.1	44

How to Order

With adapter **ZP2-X F 40 HB N**

Vacuum inlet direction

Symbol	Direction
X	Lateral

Specification (mechanism)

Symbol	Specification
F	Ball joint

Pad diameter

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

- Pad material (☐)

Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
E	EPR

- **Pad type**

Symbol	Type
HB	Heavy-duty (Bellows)



Vacuum inlet direction **Lateral**

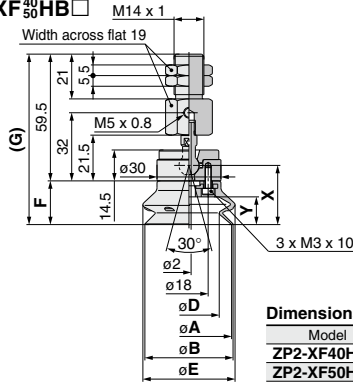
Replacement Part No.

Model	Pad unit part no.	Adapter assembly part no.	
ZP2-XF40HB ☐	ZP40HB ☐	ZP2A-XF1	With three M3 bolts
ZP2-XF50HB ☐	ZP50HB ☐		
ZP2-XF63HB ☐	ZP63HB ☐	ZP2A-XF2	With four M4 bolts
ZP2-XF80HB ☐	ZP80HB ☐		
ZP2-XF100HB ☐	ZP100HB ☐	ZP2A-XF3	With four M5 bolts
ZP2-XF125HB ☐	ZP125HB ☐		

Note) □ in the table indicates the pad material.

Dimensions: With Adapter

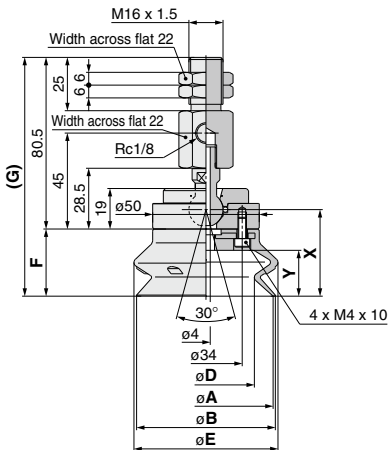
ZP2-XF⁴⁰₅₀HB ☐



Dimensions

Model	A	B	D	E	F	G	X	Y
ZP2-XF40HB□	40	41	28	43	20.5	80	27.8	13
ZP2-XF50HB□	50	52	36	54	24	83.5	31.3	16.5

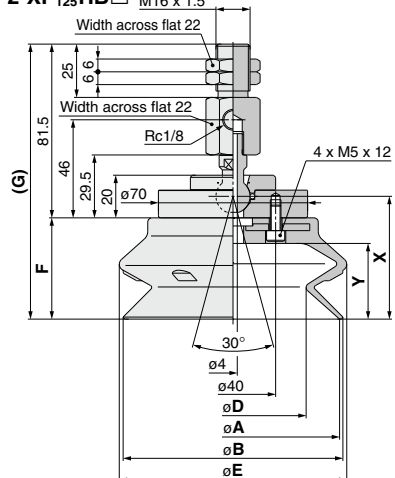
ZP2-XF⁶³₈₀HB ☐



Dimensions

Model	A	B	D	E	F	G	X	Y
ZP2-XF63HB 	63	65	46	68	31.5	112	40.6	21.5
ZP2-XF80HB 	80	83	58	85	37	117.5	46.1	27.5

ZP2-XF¹⁰⁰₁₂₅HB ☐ M16 x 1.5



Dimensions

Model	A	B	D	E	F	G	X	Y
ZP2-XF100HB	100	103	69	107	47.5	129	57.6	35.5
ZP2-XF125HB	125	129	89	135	56	137.5	66.1	44

How to Order

With buffer **ZP2 – T F 40 HB N JB 25**

Vacuum inlet direction

Symbol	Direction
T	Vertical

Specification (mechanism)

Symbol	Specification
F	Ball joint

Pad diameter

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

Pad type

Symbol	Type
HB	Heavy-duty (Bellows)

Buffer stroke (■)

Stroke	Applicable pad	ZP40HB	ZP50HB	ZP63HB	ZP80HB	ZP100HB	ZP125HB
25		●	●	●	●	●	●
50		●	●	●	●	●	●
75		●	●	●	●	●	●
100		—	—	●	●	●	●

Buffer specification

Symbol	Specification
JB	Rotating With bushing Material: Brass
JF	Rotating With bushing Material: Steel

Pad material (□)

Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
E	EPR



Vacuum inlet direction **Vertical**

Replacement Part No.

Model	Pad unit part no.	Buffer assembly part no.	
ZP2-TF40HB□(JB/JF)25	ZP40HB□	ZP2B-TF1(JB/JF)25	With three M3 bolts
ZP2-TF40HB□(JB/JF)50		ZP2B-TF1(JB/JF)50	
ZP2-TF40HB□(JB/JF)75		ZP2B-TF1(JB/JF)75	
ZP2-TF50HB□(JB/JF)25	ZP50HB□	ZP2B-TF1(JB/JF)25	With four M4 bolts
ZP2-TF50HB□(JB/JF)50		ZP2B-TF1(JB/JF)50	
ZP2-TF50HB□(JB/JF)75		ZP2B-TF1(JB/JF)75	
ZP2-TF63HB□(JB/JF)25	ZP63HB□	ZP2B-TF2(JB/JF)25	With four M4 bolts
ZP2-TF63HB□(JB/JF)50		ZP2B-TF2(JB/JF)50	
ZP2-TF63HB□(JB/JF)75		ZP2B-TF2(JB/JF)75	
ZP2-TF80HB□(JB/JF)25	ZP80HB□	ZP2B-TF2(JB/JF)100	With four M5 bolts
ZP2-TF80HB□(JB/JF)50		ZP2B-TF2(JB/JF)50	
ZP2-TF80HB□(JB/JF)75		ZP2B-TF2(JB/JF)75	
ZP2-TF100HB□(JB/JF)25	ZP100HB□	ZP2B-TF3(JB/JF)100	With four M5 bolts
ZP2-TF100HB□(JB/JF)50		ZP2B-TF3(JB/JF)50	
ZP2-TF100HB□(JB/JF)75		ZP2B-TF3(JB/JF)75	
ZP2-TF125HB□(JB/JF)25	ZP125HB□	ZP2B-TF3(JB/JF)100	With four M5 bolts
ZP2-TF125HB□(JB/JF)50		ZP2B-TF3(JB/JF)50	
ZP2-TF125HB□(JB/JF)75		ZP2B-TF3(JB/JF)75	
ZP2-TF125HB□(JB/JF)100		ZP2B-TF3(JB/JF)100	

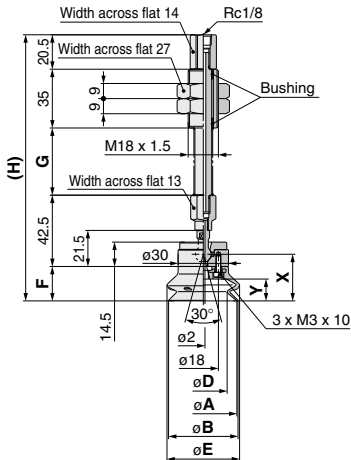
Note) □ in the table indicates the pad material.

Buffer Specifications

Pad diameter		ø40, ø50	ø63, ø80, ø100, ø125
Stroke (mm)		25, 50, 75	25, 50, 75, 100
Spring reactive force	At 0 stroke	6.9 N	10 N
	At full stroke	11.8 N	15 N
Buffer specifications	JB	Rotating With bushing Buffer body material: Brass	
		Nut tightening torque: 28 to 32 N·m Nut tightening torque: 45 to 50 N·m	
	JF	Rotating With bushing Buffer body material: Steel	
		Nut tightening torque: 48 to 52 N·m Nut tightening torque: 75 to 80 N·m	

Dimensions: With Buffer

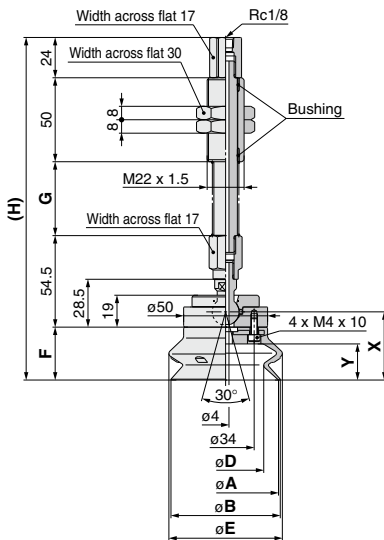
ZP2-TF⁴⁰₅₀HB ☐ **JB** ☒ **JF** ☐



Dimensions

Model	A	B	D	E	F	G	H	X	Y
ZP2-TF40HB (JB/JF)25						40	158		
ZP2-TF40HB (JB/JF)50	40	41	28	43	20.5	75	193.5	27.8	13
ZP2-TF40HB (JB/JF)75						111	229.5		
ZP2-TF50HB (JB/JF)25						40	162		
ZP2-TF50HB (JB/JF)50	50	52	36	54	24	75	197	31.3	16.5
ZP2-TF50HB (JB/JF)75						111	233		

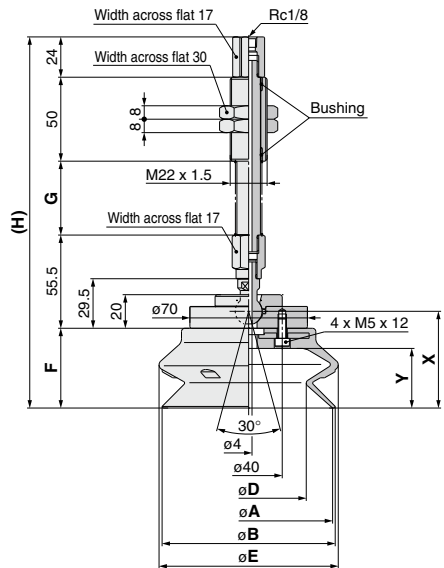
ZP2-TF⁶³₈₀HB ☐ **JB** ☐ **JF** ☒



Dimensions

Model	A	B	D	E	F	G	H	X	Y
ZP2-TF63HB (JB/JF)25						44	204		
ZP2-TF63HB (JB/JF)50	63	65	46	68	31.5	80	240	40.6	21.5
ZP2-TF63HB (JB/JF)75						120	280		
ZP2-TF63HB (JB/JF)100						155	315		
ZP2-TF80HB (JB/JF)25						44	209.5		
ZP2-TF80HB (JB/JF)50	80	83	58	85	37	80	245.5	46.1	27.5
ZP2-TF80HB (JB/JF)75						120	285.5		
ZP2-TF80HB (JB/JF)100						155	320.5		

ZP2-TF¹⁰⁰₁₂₅HB ☐ **JB** ☒ **JF** ☐



Dimensions

Model	A	B	D	E	F	G	H	X	Y
ZP2-TF100HB [JB/JF]25	100	103	69	107	47.5	44	221	57.6	35.5
ZP2-TF100HB [JB/JF]50						80	257		
ZP2-TF100HB [JB/JF]75						120	297		
ZP2-TF100HB [JB/JF]100						155	332		
ZP2-TF125HB [JB/JF]25						44	229.5		
ZP2-TF125HB [JB/JF]50	125	129	89	135	56	80	265.5	66.1	44
ZP2-TF125HB [JB/JF]75						120	305.5		
ZP2-TF125HB [JB/JF]100						155	340.5		

ZP3

ZP2

ZP2V

ZP

ZPT
ZPD

XT661

How to Order

With buffer **ZP2 – X F 40 HB N JB 25**

Vacuum inlet direction

Symbol	Direction
X	Lateral

Specification (mechanism)

Symbol	Specification
F	Ball joint

Pad diameter

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

Pad type

Symbol	Type
HB	Heavy-duty (Bellows)

Buffer stroke (■)

Stroke	Applicable pad	ZP40HB ZP50HB	ZP63HB ZP80HB	ZP100HB ZP125HB
25		●	●	●
50		●	●	●
75		—	●	●
100		—	●	●

Buffer specification

Symbol	Specification
JB	Rotating With bushing Material: Brass
JF	Rotating With bushing Material: Steel

Pad material (□)

Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
E	EPR



Vacuum inlet direction **Lateral**

Replacement Part No.

Model	Pad unit part no.	Buffer assembly part no.	
ZP2-XF40HB□(JB/JF)25	ZP40HB□	ZP2B-XF1(JB/JF)25	With three M3 bolts
ZP2-XF40HB□(JB/JF)50		ZP2B-XF1(JB/JF)50	
ZP2-XF40HB□(JB/JF)75		ZP2B-XF1(JB/JF)75	
ZP2-XF50HB□(JB/JF)25	ZP50HB□	ZP2B-XF1(JB/JF)25	With four M4 bolts
ZP2-XF50HB□(JB/JF)50		ZP2B-XF1(JB/JF)50	
ZP2-XF50HB□(JB/JF)75		ZP2B-XF1(JB/JF)75	
ZP2-XF63HB□(JB/JF)25	ZP63HB□	ZP2B-XF2(JB/JF)25	With four M4 bolts
ZP2-XF63HB□(JB/JF)50		ZP2B-XF2(JB/JF)50	
ZP2-XF63HB□(JB/JF)75		ZP2B-XF2(JB/JF)75	
ZP2-XF80HB□(JB/JF)25	ZP80HB□	ZP2B-XF2(JB/JF)100	With four M5 bolts
ZP2-XF80HB□(JB/JF)50		ZP2B-XF2(JB/JF)50	
ZP2-XF80HB□(JB/JF)75		ZP2B-XF2(JB/JF)75	
ZP2-XF100HB□(JB/JF)25	ZP100HB□	ZP2B-XF3(JB/JF)25	With four M5 bolts
ZP2-XF100HB□(JB/JF)50		ZP2B-XF3(JB/JF)50	
ZP2-XF100HB□(JB/JF)75		ZP2B-XF3(JB/JF)75	
ZP2-XF125HB□(JB/JF)25	ZP125HB□	ZP2B-XF3(JB/JF)100	With four M5 bolts
ZP2-XF125HB□(JB/JF)50		ZP2B-XF3(JB/JF)50	
ZP2-XF125HB□(JB/JF)75		ZP2B-XF3(JB/JF)75	
ZP2-XF125HB□(JB/JF)100		ZP2B-XF3(JB/JF)100	

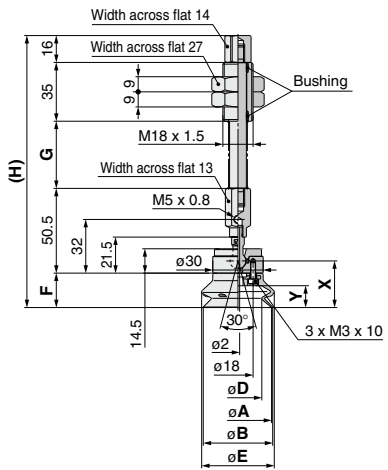
Note) □ in the table indicates the pad material.

Buffer Specifications

Pad diameter		ø40, ø50	ø63, ø80, ø100, ø125
Stroke (mm)		25, 50, 75	25, 50, 75, 100
Spring reactive force	At 0 stroke	6.9 N	10 N
	At full stroke	11.8 N	15 N
Buffer specifications	JB	Rotating With bushing Buffer body material: Brass	
		Nut tightening torque: 28 to 32 N·m Nut tightening torque: 45 to 50 N·m	
	JF	Rotating With bushing Buffer body material: Steel	
		Nut tightening torque: 48 to 52 N·m Nut tightening torque: 75 to 80 N·m	

Dimensions: With Buffer

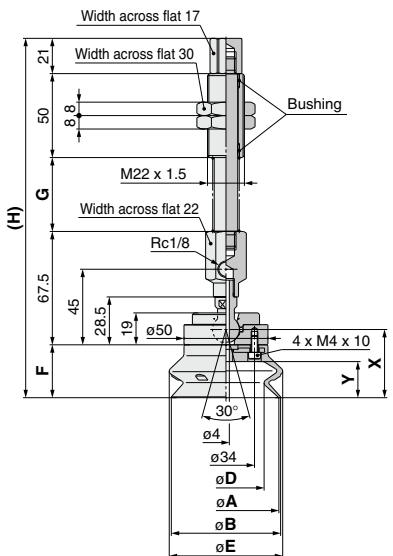
ZP2-XF⁴⁰₅₀HB □ JB ■



Dimensions

Model	A	B	D	E	F	G	H	X	Y
ZP2-XF40HB □ (JB/JF)25						40	182		
ZP2-XF40HB □ (JB/JF)50	40	41	28	43	20.5	75	197	27.8	13
ZP2-XF40HB □ (JB/JF)75						111	233		
ZP2-XF50HB □ (JB/JF)25						40	165.5		
ZP2-XF50HB □ (JB/JF)50	50	52	36	54	24	75	200.5	31.3	16.5
ZP2-XF50HB □ (JB/JF)75						111	236.5		

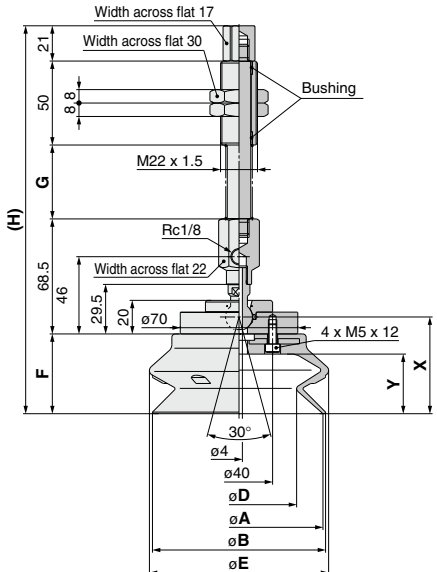
ZP2-XF⁶³₈₀HB □ JB ■



Dimensions

Model	A	B	D	E	F	G	H	X	Y
ZP2-XF63HB □ (JB/JF)25						44	214		
ZP2-XF63HB □ (JB/JF)50	63	65	46	68	31.5	80	250	40.6	21.5
ZP2-XF63HB □ (JB/JF)75						120	290		
ZP2-XF63HB □ (JB/JF)100						155	325		
ZP2-XF80HB □ (JB/JF)25						44	219.5		
ZP2-XF80HB □ (JB/JF)50	80	83	58	85	37	80	255.5	46.1	27.5
ZP2-XF80HB □ (JB/JF)75						120	295.5		
ZP2-XF80HB □ (JB/JF)100						155	330.5		

ZP2-XF¹⁰⁰₁₂₅HB □ JB ■



Dimensions

Model	A	B	D	E	F	G	H	X	Y
ZP2-XF100HB □ (JB/JF)25						44	231		
ZP2-XF100HB □ (JB/JF)50	100	103	69	107	47.5	80	267	57.6	35.5
ZP2-XF100HB □ (JB/JF)75						120	307		
ZP2-XF100HB □ (JB/JF)100						155	342		
ZP2-XF125HB □ (JB/JF)25						44	239.5		
ZP2-XF125HB □ (JB/JF)50	125	129	89	135	56	80	275.5	66.1	44
ZP2-XF125HB □ (JB/JF)75						120	315.5		
ZP2-XF125HB □ (JB/JF)100						155	350.5		

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661



Heavy-duty Pad

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

Symbol/Type

H: Heavy-duty
(Flat with rib)
HB: Heavy-duty
(Bellows)

- Reinforced pad prevents deformation when transferring heavy or large work pieces.

How to Order

Pad unit

ZP 40 H N

Pad diameter

Symbol	Pad diameter
40	$\varnothing 40$
50	$\varnothing 50$
63	$\varnothing 63$
80	$\varnothing 80$
100	$\varnothing 100$
125	$\varnothing 125$

Pad material

Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
E	EPR

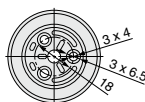
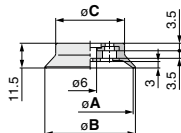
Pad type

Symbol	Type
H	Heavy-duty (Flat with rib)
HB	Heavy-duty (Bellows)

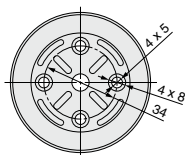
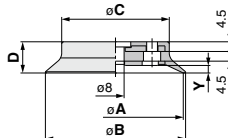


Dimensions: Pad Unit

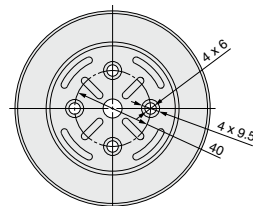
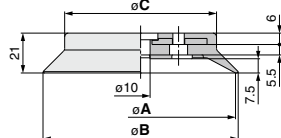
ZP_{40/50}H□



ZP_{63/80}H□



ZP_{100/125}H□



Dimensions

Model	A	B	C
ZP40H□	40	42	32
ZP50H□	50	52	42

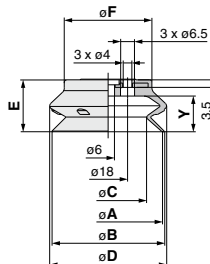
Dimensions

Model	A	B	C	D	Y
ZP63H□	63	65	50	14.5	3.5
ZP80H□	80	82	61	16.5	4.5

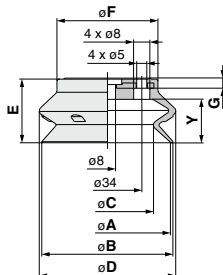
Dimensions

Model	A	B	C
ZP100H□	100	103	80
ZP125H□	125	128	104

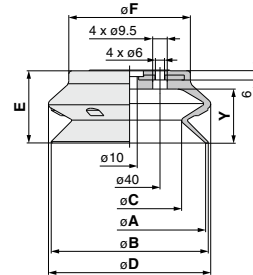
ZP_{40/50}HB□



ZP_{63/80}HB□



ZP_{100/125}HB□



Dimensions

Model	A	B	C	D	E	F	Y
ZP40HB□	40	41	28	43	20.5	30	13
ZP50HB□	50	52	36	54	24	40.5	16.5

Dimensions

Model	A	B	C	D	E	F	G	Y
ZP63HB□	63	65	46	68	31.5	50	4.5	21.5
ZP80HB□	80	83	58	85	37	64	5	27.5

Dimensions

Model	A	B	C	D	E	F	Y
ZP100HB□	100	103	69	107	47.5	80	35.5
ZP125HB□	125	129	89	135	56	105	44

How to Order

With adapter **ZPT 40 H N - A14**

Pad diameter

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

Pad type (*)

Symbol	Type
H	Heavy-duty (Flat with rib)
HB	Heavy-duty (Bellows)

Pad material (□)

Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
E	EPR

Mounting thread size (Vacuum inlet)

Mounting	Male thread	M14 x 1
		M16 x 1.5
Female thread		

Vacuum inlet direction **Vertical**

Symbol	Thread size	Pad diameter		
		ø40, ø50	ø63, ø80	ø100, ø125
A14	Rc1/8	●	—	—
A14N	NPT1/8	●	—	—
A14T	NPTF1/8	●	—	—
A16	Rc1/8	—	●	●
A16N	NPT1/8	—	●	●
A16T	NPTF1/8	—	●	●
B8	M8 x 1.25	●	●	—
B10	M10 x 1.5	●	●	—
B12	M12 x 1.75	—	●	●
B16	M16 x 1.5	—	●	●

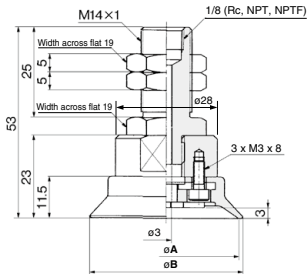
Replacement Part No.

Model	Pad unit part no.	Adapter assembly part no.	Model	Pad unit part no.	Adapter assembly part no.
ZPT40□-A14			ZPT40□-B8	ZP40□□	ZPA-T1-B8
ZPT40□-A14N	ZP40□□	ZPA-T1-N01	ZPT40□-B10		ZPA-T1-B10
ZPT40□-A14T		ZPA-T1-T01	ZPT50□-B8	ZP50□□	ZPA-T1-B8
ZPT50□-A14			ZPT50□-B10		ZPA-T1-B10
ZPT50□-A14N	ZP50□□	ZPA-T1-N01	ZPT63□-B8		ZPA-T2-B8
ZPT50□-A14T		ZPA-T1-T01	ZPT63□-B10	ZP63□□	ZPA-T2-B10
ZPT50□-A16N		ZPA-T2-N01	ZPT63□-B12		ZPA-T2-B12
ZPT63□-A14			ZPT63□-B16		ZPA-T2-B16
ZPT63□-A16	ZP63□□	ZPA-T2-T01	ZPT80□-B8		ZPA-T2-B8
ZPT63□-A16N		ZPA-T2-N01	ZPT80□-B10	ZP80□□	ZPA-T2-B10
ZPT63□-A16T		ZPA-T2-T01	ZPT80□-B12		ZPA-T2-B12
ZPT80□-A16			ZPT80□-B16		ZPA-T2-B16
ZPT80□-A16N	ZP80□□	ZPA-T3-N01	ZPT100□-B12	ZP100□□	ZPA-T3-B12
ZPT100□-A16		ZPA-T3-T01	ZPT100□-B16		ZPA-T3-B16
ZPT100□-A16N	ZP100□□	ZPA-T3-N01	ZPT125□-B12	ZP125□□	ZPA-T3-B12
ZPT100□-A16T		ZPA-T3-T01	ZPT125□-B16		ZPA-T3-B16
ZPT125□-A16					
ZPT125□-A16N	ZPT125□□	ZPA-T3-N01			
ZPT125□-A16T		ZPA-T3-T01			

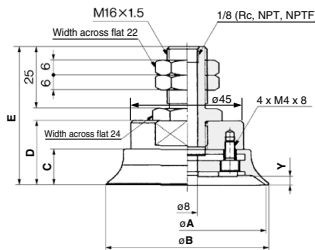
Note 1) * in the table indicates the pad type.
Note 2) □ in the table indicates the pad material.

Dimensions: With Adapter

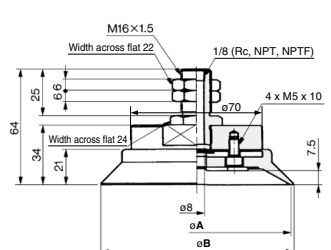
ZPT 40 H □ - A14 (Male thread)



ZPT 63 H □ - A16 (Male thread)



ZPT 100 H □ - A16 (Male thread)



Dimensions

Model	A	B
ZPT40H□-A14	40	42
ZPT50H□-A14	50	52

Dimensions

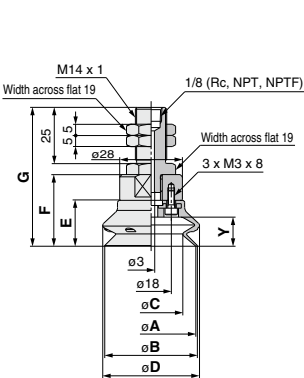
Model	A	B	C	D	E	Y
ZPT63H□-A16	63	65	14.5	26	56	3.5
ZPT80H□-A16	80	82	16.5	28	58	4.5

Dimensions

Model	A	B
ZPT100H□-A16	100	103
ZPT125H□-A16	125	128

Dimensions: With Adapter

ZPT⁴⁰₅₀HB□-A14 (Male thread)

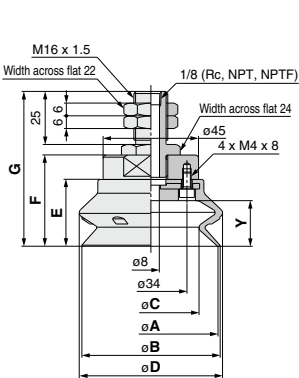


Dimensions

Model	A	B	C	D
ZPT40HB□-A14	40	41	28	43
ZPT50HB□-A14	50	52	36	54

Model	E	F	G	Y
ZPT40HB□-A14	20.5	32	62	13
ZPT50HB□-A14	24	35.5	65.5	16.5

ZPT⁶³₈₀HB□-A16 (Male thread)

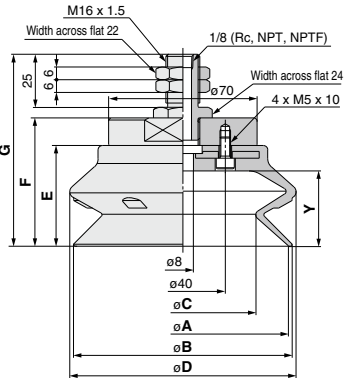


Dimensions

Model	A	B	C	D
ZPT63HB□-A16	63	65	46	68
ZPT80HB□-A16	80	83	58	85

Model	E	F	G	Y
ZPT63HB□-A16	31.5	43	73	21.5
ZPT80HB□-A16	37	48.5	78.5	27.5

ZPT¹⁰⁰₁₂₅HB□-A16 (Male thread)

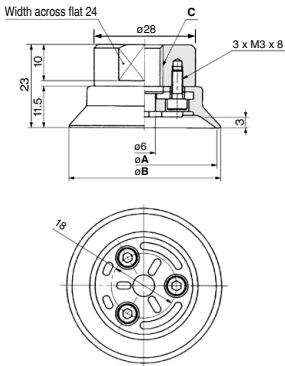


Dimensions

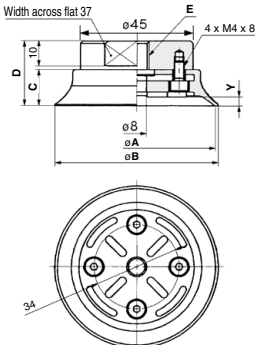
Model	A	B	C	D
ZPT100HB□-A16	100	103	69	107
ZPT125HB□-A16	125	129	89	135

Model	E	F	G	Y
ZPT100HB□-A16	47.5	60.5	90.5	35.5
ZPT125HB□-A16	56	69	99	44

ZPT⁴⁰₅₀H□-B□ (Female thread)



ZPT⁶³₈₀H□-B□ (Female thread)



Dimensions

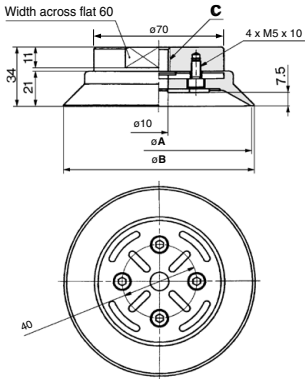
Model	A	B	C
ZPT40H□-B8	40	42	M8 x 1.25
ZPT40H□-B10			M10 x 1.5
ZPT50H□-B8	50	52	M8 x 1.25
ZPT50H□-B10			M10 x 1.5

Dimensions

Model	A	B	C	D	E	Y
ZPT63H□-B8					M8 x 1.25	
ZPT63H□-B10	63	65	14.5	26	M10 x 1.5	3.5
ZPT63H□-B12					M12 x 1.75	
ZPT63H□-B16					M16 x 1.5	
ZPT80H□-B8					M8 x 1.25	
ZPT80H□-B10	80	82	16.5	28	M10 x 1.5	4.5
ZPT80H□-B12					M12 x 1.75	
ZPT80H□-B16					M16 x 1.5	

Dimensions: With Adapter

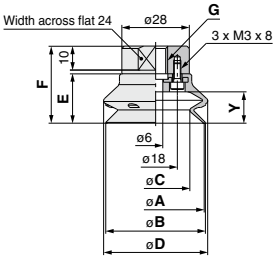
ZPT¹⁰⁰₁₂₅H□-B□ (Female thread)



Dimensions

Model	A	B	C
ZPT100H□-B12	100	103	M12 x 1.75
ZPT100H□-B16	100	103	M16 x 1.5
ZPT125H□-B12	125	128	M12 x 1.75
ZPT125H□-B16	125	128	M16 x 1.5

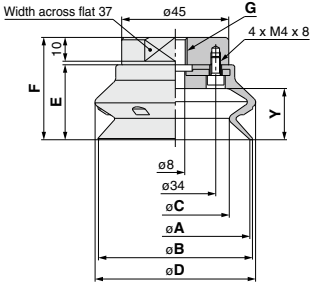
ZPT⁴⁰₅₀H□-B□ (Female thread)



Dimensions

Model	A	B	C	D	E	F	G	Y
ZPT40HB□-B8	40	41	28	43	20.5	32	M8 x 1.25	13
ZPT40HB□-B10	40	41	28	43	20.5	32	M10 x 1.5	13
ZPT50HB□-B8	50	52	36	54	24	35.5	M8 x 1.25	16.5
ZPT50HB□-B10	50	52	36	54	24	35.5	M10 x 1.5	16.5

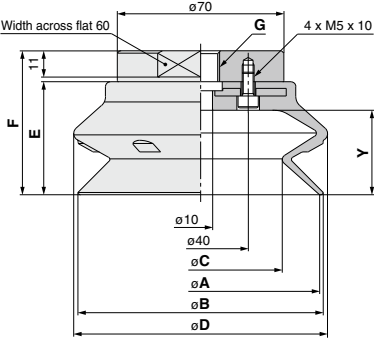
ZPT⁶³₈₀HB□-B□ (Female thread)



Dimensions

Model	A	B	C	D	E	F	G	Y
ZPT63HB□-B8	63	65	46	68	31.5	43	M8 x 1.25	21.5
ZPT63HB□-B10	63	65	46	68	31.5	43	M10 x 1.5	21.5
ZPT63HB□-B12	63	65	46	68	31.5	43	M12 x 1.75	21.5
ZPT63HB□-B16	63	65	46	68	31.5	43	M16 x 1.5	21.5
ZPT80HB□-B8	80	83	58	85	37	48.5	M8 x 1.25	27.5
ZPT80HB□-B10	80	83	58	85	37	48.5	M10 x 1.5	27.5
ZPT80HB□-B12	80	83	58	85	37	48.5	M12 x 1.75	27.5
ZPT80HB□-B16	80	83	58	85	37	48.5	M16 x 1.5	27.5

ZPT¹⁰⁰₁₂₅HB□-B□ (Female thread)



Dimensions

Model	A	B	C	D	E	F	G	Y
ZPT100HB□-B12	100	103	69	107	47.5	60.5	M12 x 1.75	35.5
ZPT100HB□-B16	100	103	69	107	47.5	60.5	M16 x 1.5	35.5
ZPT125HB□-B12	125	129	89	135	56	69	M12 x 1.75	44
ZPT125HB□-B16	125	129	89	135	56	69	M16 x 1.5	44

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661

Series ZP

How to Order

Without buffer ZPX 40 H N - B01 - B8

Pad diameter

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

Pad type (*)

Symbol	Type
H	Heavy-duty (Flat with rib)
HB	Heavy-duty (Bellows)

Vacuum inlet thread size

Symbol	Thread size
B01	Rc1/8
N01	NPT1/8
T01	NPTF1/8

Mounting thread size

Symbol	Thread size	Pad diameter		
		ø40, ø50	ø63, ø80	ø100, ø125
B8	M8 x 1.25	●	●	—
B10	M10 x 1.5	—	●	●
B12	M12 x 1.75	—	●	●

Vacuum inlet direction Lateral



Pad material (□)

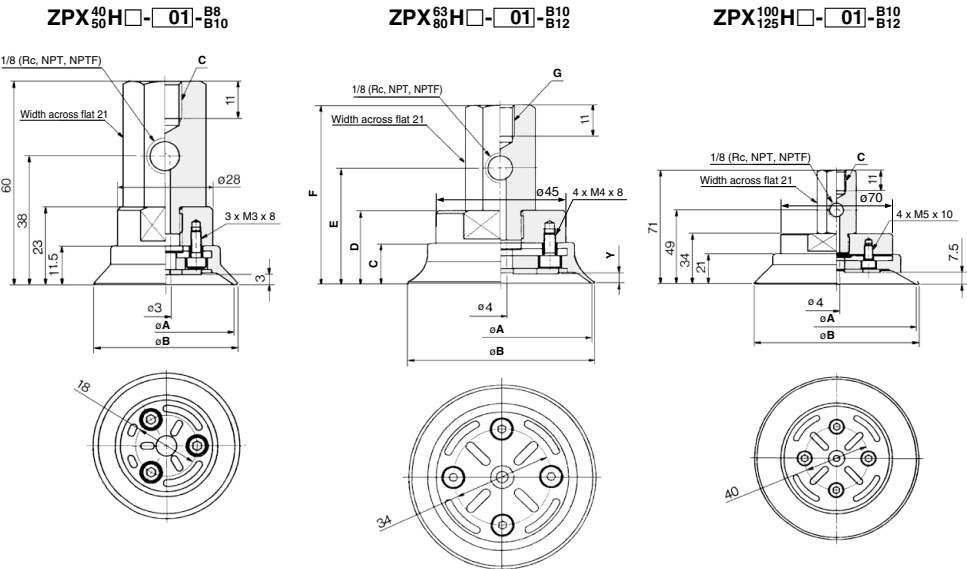
Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
E	EPR

Replacement Part No.

Model	Pad unit part no.	Adapter assembly part no.	Model	Pad unit part no.	Adapter assembly part no.
ZPX40*□-B01-B8	ZP40*□	ZPA-X1-B01-B8	ZPX80*□-B01-B10	ZP80*□	ZPA-X2-B01-B10
ZPX40*□-N01-B8		ZPA-X1-N01-B8	ZPX80*□-N01-B10		ZPA-X2-N01-B10
ZPX40*□-T01-B8		ZPA-X1-T01-B8	ZPX80*□-T01-B10		ZPA-X2-T01-B10
ZPX40*□-B01-B10		ZPA-X1-B01-B10	ZPX80*□-B01-B12		ZPA-X2-B01-B12
ZPX40*□-N01-B10		ZPA-X1-N01-B10	ZPX80*□-N01-B12		ZPA-X2-N01-B12
ZPX40*□-T01-B10		ZPA-X1-T01-B10	ZPX80*□-T01-B12		ZPA-X2-T01-B12
ZPX50*□-B01-B8	ZP50*□	ZPA-X1-B01-B8	ZPX100*□-B01-B10	ZP100*□	ZPA-X3-B01-B10
ZPX50*□-N01-B8		ZPA-X1-N01-B8	ZPX100*□-N01-B10		ZPA-X3-N01-B10
ZPX50*□-T01-B8		ZPA-X1-T01-B8	ZPX100*□-T01-B10		ZPA-X3-T01-B10
ZPX50*□-B01-B10		ZPA-X1-B01-B10	ZPX100*□-B01-B12		ZPA-X3-B01-B12
ZPX50*□-N01-B10		ZPA-X1-N01-B10	ZPX100*□-N01-B12		ZPA-X3-N01-B12
ZPX50*□-T01-B10		ZPA-X1-T01-B10	ZPX100*□-T01-B12		ZPA-X3-T01-B12
ZPX63*□-B01-B10	ZP63*□	ZPA-X2-B01-B10	ZPX125*□-B01-B10	ZP125*□	ZPA-X3-T01-B10
ZPX63*□-N01-B10		ZPA-X2-N01-B10	ZPX125*□-N01-B10		ZPA-X3-N01-B10
ZPX63*□-T01-B10		ZPA-X2-T01-B10	ZPX125*□-T01-B10		ZPA-X3-T01-B10
ZPX63*□-B01-B12		ZPA-X2-B01-B12	ZPX125*□-B01-B12		ZPA-X3-B01-B12
ZPX63*□-N01-B12		ZPA-X2-N01-B12	ZPX125*□-N01-B12		ZPA-X3-N01-B12
ZPX63*□-T01-B12		ZPA-X2-T01-B12	ZPX125*□-T01-B12		ZPA-X3-T01-B12

Note 1) * in the table indicates the pad type.
Note 2) □ in the table indicates the pad material.

Dimensions: Without Buffer



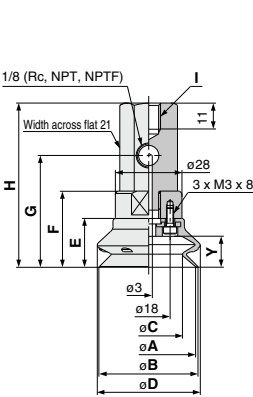
Model	A	B	C
ZPX40H□-□-B8	40	42	M8 x 1.25
ZPX40H□-□-B10	40	42	M10 x 1.5
ZPX50H□-□-B8	50	52	M8 x 1.25
ZPX50H□-□-B10	50	52	M10 x 1.5

Model	A	B	C	D	E	F	Y	G
ZPX63H□-□-B10	63	65	14.5	26	41	63	3.5	M10 x 1.5
ZPX63H□-□-B12	63	65	14.5	26	41	63	3.5	M12 x 1.75
ZPX80H□-□-B10	80	82	16.5	28	43	65	4.5	M10 x 1.5
ZPX80H□-□-B12	80	82	16.5	28	43	65	4.5	M12 x 1.75

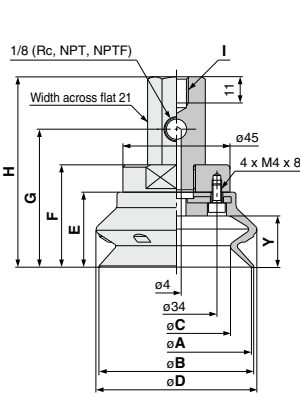
Model	A	B	C
ZPX100H□-□-B10	100	103	M10 x 1.5
ZPX100H□-□-B12	100	103	M12 x 1.75
ZPX125H□-□-B10	125	128	M10 x 1.5
ZPX125H□-□-B12	125	128	M12 x 1.75

Dimensions: Without Buffer

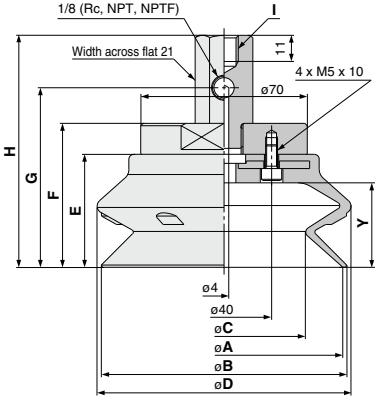
ZPX⁴⁰₅₀HB□-□01-B⁸_{B10}



ZPX⁶³₈₀HB□-□01-B¹⁰_{B12}



ZPX¹⁰⁰₁₂₅HB□-□01-B¹⁰_{B12}



Dimensions

Model	A	B	C	D	E	F
ZPX40HB□-□01-B8	40	41	28	43	20.5	32
ZPX40HB□-□01-B10						
ZPX50HB□-□01-B8	50	52	36	54	24	35.5
ZPX50HB□-□01-B10						

Model	G	H	I	Y
ZPX40HB□-□01-B8	47	69	M8 x 1.25	13
ZPX40HB□-□01-B10			M10 x 1.5	
ZPX50HB□-□01-B8	50.5	72.5	M8 x 1.25	16.5
ZPX50HB□-□01-B10			M10 x 1.5	

Dimensions

Model	A	B	C	D	E	F
ZPX63HB□-□01-B10	63	65	46	68	31.5	43
ZPX63HB□-□01-B12						
ZPX80HB□-□01-B10	80	83	58	85	37	48.5
ZPX80HB□-□01-B12						

Model	G	H	I	Y
ZPX63HB□-□01-B10	58	80	M10 x 1.5	21.5
ZPX63HB□-□01-B12			M12 x 1.75	
ZPX80HB□-□01-B10	63.5	85.5	M10 x 1.5	27.5
ZPX80HB□-□01-B12			M12 x 1.75	

Dimensions

Model	A	B	C	D	E	F
ZPX100HB□-□01-B10	100	103	69	107	47.5	60.5
ZPX100HB□-□01-B12						
ZPX125HB□-□01-B10	125	129	89	135	56	69
ZPX125HB□-□01-B12						

Model	G	H	I	Y
ZPX100HB□-□01-B10	75.5	97.5	M10 x 1.5	35.5
ZPX100HB□-□01-B12			M12 x 1.75	
ZPX125HB□-□01-B10	84	106	M10 x 1.5	44
ZPX125HB□-□01-B12			M12 x 1.75	

ZP3

ZP2

ZP2V

ZP

ZPT

ZPR

XT661

How to Order

With buffer ZPT 40 H N J 25 - B01 - A18

Pad diameter

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

Pad type (*)

Symbol	Type
H	Heavy-duty (Flat with rib)
HB	Heavy-duty (Bellows)

Pad material (□)

Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
E	EPR

Buffer body material (★)

Symbol	Material
J	Aluminum alloy
JB	Brass + With bushing
JF	Steel + With bushing

Vacuum inlet thread size

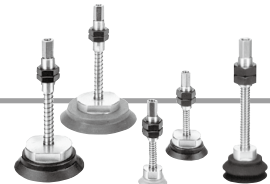
Symbol	Thread size
B01	Rc1/8
N01	NPT1/8
T01	NPTF1/8

Mounting thread size

Symbol	Thread size
A18	M18 x 1.5 (ø40 to ø80)
A22	M22 x 1.5 (ø100, ø125)

Buffer stroke (■)

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



Vacuum inlet direction **Vertical**

Buffer Specifications (Rotating)

Pad diameter	ø40 to ø80	ø100, ø125
Stroke (mm)	25, 50, 75	25, 50, 75, 100
Spring reactive force	At 0 stroke: 6.9 N At full stroke: 11.8 N	10 N 15 N

Nut Tightening Torque

(N·m)

Mounting thread size	Aluminum alloy	Brass + With bushing	Steel + With bushing
M18 x 1.5	9.5 to 10.5 N·m	28 to 32 N·m	48 to 52 N·m
M22 x 1.5	9.5 to 10.5 N·m	45 to 50 N·m	75 to 80 N·m

Replacement Part No.

Model	Pad part no.	Buffer assembly part no.
ZPT40□★25-(B/N/T)01-A18	ZP40□	ZPB-T1★25-(B/N/T)01
ZPT40□★50-(B/N/T)01-A18		ZPB-T1★50-(B/N/T)01
ZPT40□★75-(B/N/T)01-A18		ZPB-T1★75-(B/N/T)01
ZPT50□★25-(B/N/T)01-A18	ZP50□	ZPB-T1★25-(B/N/T)01
ZPT50□★50-(B/N/T)01-A18		ZPB-T1★50-(B/N/T)01
ZPT50□★75-(B/N/T)01-A18		ZPB-T1★75-(B/N/T)01
ZPT63□★25-(B/N/T)01-A18	ZP63□	ZPB-T2★25-(B/N/T)01
ZPT63□★50-(B/N/T)01-A18		ZPB-T2★50-(B/N/T)01
ZPT63□★75-(B/N/T)01-A18		ZPB-T2★75-(B/N/T)01
ZPT80□★25-(B/N/T)01-A18	ZP80□	ZPB-T2★25-(B/N/T)01
ZPT80□★50-(B/N/T)01-A18		ZPB-T2★50-(B/N/T)01
ZPT80□★75-(B/N/T)01-A18		ZPB-T2★75-(B/N/T)01
ZPT100□★25-(B/N/T)01-A22	ZP100□	ZPB-T3★25-(B/N/T)01
ZPT100□★50-(B/N/T)01-A22		ZPB-T3★50-(B/N/T)01
ZPT100□★75-(B/N/T)01-A22		ZPB-T3★75-(B/N/T)01
ZPT100□★100-(B/N/T)01-A22	ZP100□	ZPB-T3★100-(B/N/T)01
ZPT125□★25-(B/N/T)01-A22		ZPB-T3★25-(B/N/T)01
ZPT125□★50-(B/N/T)01-A22		ZPB-T3★50-(B/N/T)01
ZPT125□★75-(B/N/T)01-A22	ZP125□	ZPB-T3★75-(B/N/T)01
ZPT125□★100-(B/N/T)01-A22		ZPB-T3★100-(B/N/T)01

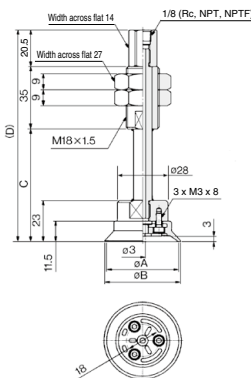
Note 1) * in the table indicates the pad type.

Note 2) □ in the table indicates the pad material.

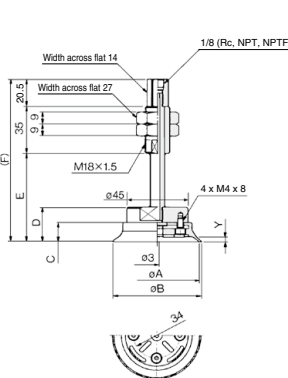
Note 3) ★ in the table indicates the buffer body material.

Dimensions: With Buffer

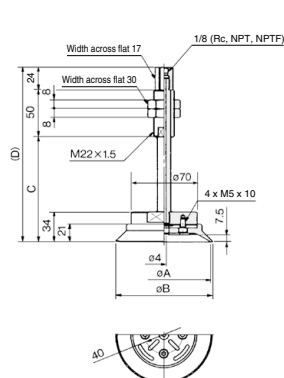
ZPT⁴⁰₅₀H□★■-□01-A18



ZPT⁶³₈₀H□★■-□01-A18



ZPT¹⁰⁰₁₂₅H□★■-□01-A22



Dimensions

Model	A	B	C	D
ZPT40H□★25-□01-A18	40	42	63	118.5
ZPT40H□★50-□01-A18	40	42	98	153.5
ZPT40H□★75-□01-A18	40	42	134	188.5
ZPT50H□★25-□01-A18	50	52	63	118.5
ZPT50H□★50-□01-A18	50	52	98	153.5
ZPT50H□★75-□01-A18	50	52	134	188.5

Dimensions

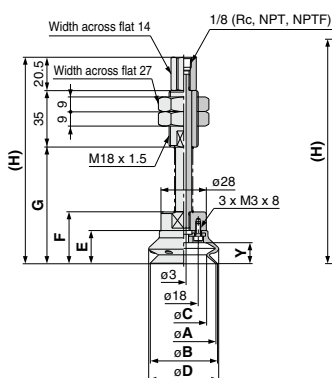
Model	A	B	C	D	E	F	Y
ZPT63H□★25-□01-A18	63	65	14.5	26	66	121.5	3.5
ZPT63H□★50-□01-A18	63	65	14.5	26	101	156.5	3.5
ZPT63H□★75-□01-A18	63	65	14.5	26	137	192.5	3.5
ZPT80H□★25-□01-A18	80	82	16.5	28	68	123.5	4.5
ZPT80H□★50-□01-A18	80	82	16.5	28	103	158.5	4.5
ZPT80H□★75-□01-A18	80	82	16.5	28	139	194.5	4.5

Dimensions

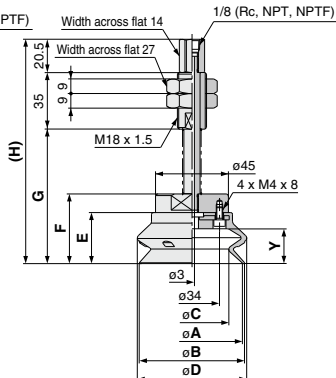
Model	A	B	C	D
ZPT100H□★25-□01-A22	100	103	78	152
ZPT100H□★50-□01-A22	100	103	114	188
ZPT100H□★75-□01-A22	100	103	154	228
ZPT100H□★100-□01-A22	100	103	189	263
ZPT125H□★25-□01-A22	125	128	78	152
ZPT125H□★50-□01-A22	125	128	114	188
ZPT125H□★75-□01-A22	125	128	154	228
ZPT125H□★100-□01-A22	125	128	189	263

Dimensions: With Buffer

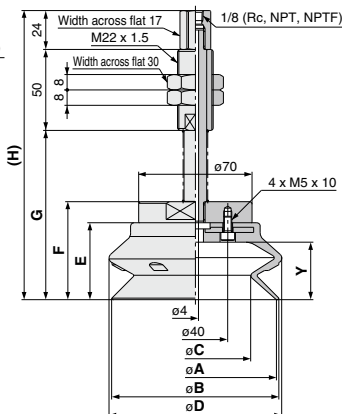
ZPT⁴⁰₅₀HB ☐ ★ ☒ - **01** - A18



ZPT⁶³₈₀HB ☐ **★** ☒ - -A18



ZPT¹⁰⁰₁₂₅HB ☐ ★ ☒ - -A22



Dimensions

Model	A	B	C	D	E
ZPT40HB-★25-01-A18	40	41	28	43	20.5
ZPT40HB-★50-01-A18					
ZPT40HB-★75-01-A18					
ZPT50HB-★25-01-A18	50	52	36	54	24
ZPT50HB-★50-01-A18					
ZPT50HB-★75-01-A18					

Model	F	G	H	Y
ZPT40HB□★25-01-A18	32	72	127.5	13
ZPT40HB□★50-01-A18		107	162.5	
ZPT40HB□★75-01-A18		143	198.5	
ZPT50HB□★25-01-A18	35.5	75.5	131	16.5
ZPT50HB□★50-01-A18		110.5	166	
ZPT50HB□★75-01-A18		146.5	202	

Dimensions

Model	A	B	C	D	E
ZPT63HB □ ★25-01-A18	63	65	46	68	31.5
ZPT63HB □ ★50-01-A18					
ZPT63HB □ ★75-01-A18					
ZPT80HB □ ★25-01-A18	80	83	58	85	37
ZPT80HB □ ★50-01-A18					
ZPT80HB □ ★75-01-A18					

Model	F	G	H	Y
ZPT63HB□★25-01-A18	43	83	138.5	21.5
ZPT63HB□★50-01-A18		118	173.5	
ZPT63HB□★75-01-A18		154	209.5	
ZPT80HB□★25-01-A18	48.5	88.5	144	27.5
ZPT80HB□★50-01-A18		123.5	179	
ZPT80HB□★75-01-A18		159.5	215	

Dimensions

Model	A	B	C	D	E
ZPT100HB□*25-□01-A22	100	103	69	107	47.5
ZPT100HB□*50-□01-A22					
ZPT100HB□*75-□01-A22					
ZPT100HB□*100-□01-A22					
ZPT125HB□*25-□01-A22					
ZPT125HB□*50-□01-A22	125	129	89	135	56
ZPT125HB□*75-□01-A22					
ZPT125HB□*100-□01-A22					

Model	F	G	H	Y
ZPT100HB□*25-[01]-A22		104.5	178.5	
ZPT100HB□*50-[01]-A22	60.5	140.5	214.5	35.5
ZPT100HB□*75-[01]-A22		180.5	254.5	
ZPT100HB□*100-[01]-A22		215.5	289.5	
ZPT125HB□*25-[01]-A22		113	187	
ZPT125HB□*50-[01]-A22	69	149	223	44
ZPT125HB□*75-[01]-A22		189	263	
ZPT125HB□*100-[01]-A22		224	298	

ZP3

ZP2

ZP2V

ZP

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How to Order

With buffer ZPX 40 H N J 25 - B01 - A18

Pad diameter

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

Pad type (*)

Symbol	Type
H	Heavy-duty (Flat with rib)
HB	Heavy-duty (Bellows)

Pad material (□)

Symbol	Material
N	NBR
S	Silicone rubber
U	Urethane rubber
F	FKM
E	EPR

Buffer body material (★)

Symbol	Material
JB	Brass + With bushing
JF	Steel + With bushing

Vacuum inlet thread size

Symbol	Thread size
B01	Rc1/8
N01	NPT1/8
T01	NPTF1/8

Mounting thread size

Symbol	Thread size
A18	M18 x 1.5 (ø40 to ø80)
A22	M22 x 1.5 (ø100, ø125)

Buffer stroke (■)

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

Buffer Specifications (Rotating)

Pad diameter	ø40 to ø80	ø100, ø125
Stroke (mm)	25, 50, 75	25, 50, 75, 100
Spring reactive force	At 0 stroke: 6.9 N At full stroke: 11.8 N	10 N 15 N

Nut Tightening Torque

Buffer body material		Aluminum alloy	Brass + bushing	Steel + bushing
Mounting thread size				
M18 x 1.5		9.5 to 10.5 N·m	28 to 32 N·m	48 to 52 N·m
M22 x 1.5		9.5 to 10.5 N·m	45 to 50 N·m	75 to 80 N·m

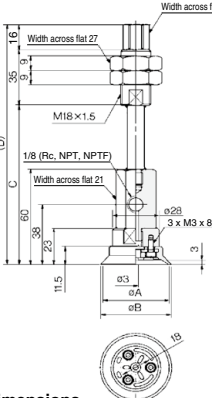
Replacement Part No.

Model	Pad unit part no.	Buffer assembly part no.
ZPX40□★25-(B/N/T)01-A18	ZP40□□	ZPB-X1★25-(B/N/T)01
ZPX40□★50-(B/N/T)01-A18		ZPB-X1★50-(B/N/T)01
ZPX40□★75-(B/N/T)01-A18		ZPB-X1★75-(B/N/T)01
ZPX50□★25-(B/N/T)01-A18	ZP50□□	ZPB-X1★25-(B/N/T)01
ZPX50□★50-(B/N/T)01-A18		ZPB-X1★50-(B/N/T)01
ZPX50□★75-(B/N/T)01-A18		ZPB-X1★75-(B/N/T)01
ZPX63□★25-(B/N/T)01-A18	ZP63□□	ZPB-X2★25-(B/N/T)01
ZPX63□★50-(B/N/T)01-A18		ZPB-X2★50-(B/N/T)01
ZPX63□★75-(B/N/T)01-A18		ZPB-X2★75-(B/N/T)01
ZPX80□★25-(B/N/T)01-A18	ZP80□□	ZPB-X2★25-(B/N/T)01
ZPX80□★50-(B/N/T)01-A18		ZPB-X2★50-(B/N/T)01
ZPX80□★75-(B/N/T)01-A18		ZPB-X2★75-(B/N/T)01
ZPX100□★25-(B/N/T)01-A22	ZP100□□	ZPB-X3★25-(B/N/T)01
ZPX100□★50-(B/N/T)01-A22		ZPB-X3★50-(B/N/T)01
ZPX100□★75-(B/N/T)01-A22		ZPB-X3★75-(B/N/T)01
ZPX100□★100-(B/N/T)01-A22	ZP125□□	ZPB-X3★100-(B/N/T)01
ZPX125□★25-(B/N/T)01-A22		ZPB-X3★25-(B/N/T)01
ZPX125□★50-(B/N/T)01-A22		ZPB-X3★50-(B/N/T)01
ZPX125□★75-(B/N/T)01-A22		ZPB-X3★75-(B/N/T)01
ZPX125□★100-(B/N/T)01-A22		ZPB-X3★100-(B/N/T)01

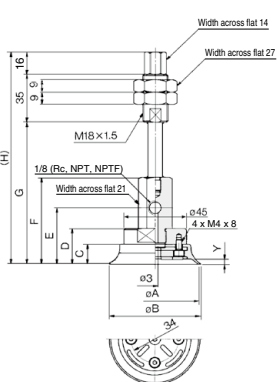
Note 1) * in the table indicates the pad type.
Note 2) □ in the table indicates the pad material.
Note 3) ★ in the table indicates the buffer body material.

Dimensions: With Buffer

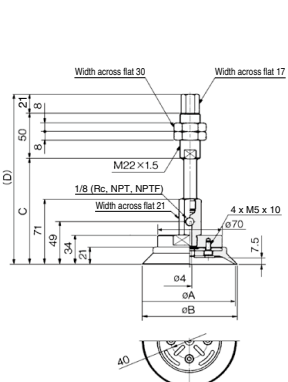
ZPX 40 H □ ★ ■ - 01 - A18



ZPX 63 80 H □ ★ ■ - 01 - A18



ZPX 100 125 H □ ★ ■ - 01 - A22



Dimensions

Model	A	B	C	D
ZPX40H□★25-01-A18	40	42	100	151
ZPX40H□★50-01-A18	40	42	135	186
ZPX40H□★75-01-A18	40	42	171	222
ZPX50H□★25-01-A18	50	52	100	151
ZPX50H□★50-01-A18	50	52	135	186
ZPX50H□★75-01-A18	50	52	171	222

Dimensions

Model	A	B	C	D	E	F	G	H	Y
ZPX63H□★25-01-A18	63	65	14.5	26	41	63	103	154	
ZPX63H□★50-01-A18	63	65	14.5	26	41	63	138	189	3.5
ZPX63H□★75-01-A18	63	65	14.5	26	41	63	174	225	
ZPX80H□★25-01-A18	80	82	16.5	28	43	65	105	156	
ZPX80H□★50-01-A18	80	82	16.5	28	43	65	140	191	4.5
ZPX80H□★75-01-A18	80	82	16.5	28	43	65	176	227	

Dimensions

Model	A	B	C	D
ZPX100H□★25-01-A22	100	103	115	186
ZPX100H□★50-01-A22	100	103	151	222
ZPX100H□★75-01-A22	100	103	191	262
ZPX100H□★100-01-A22	100	103	226	297
ZPX125H□★25-01-A22	125	128	115	186
ZPX125H□★50-01-A22	125	128	151	222
ZPX125H□★75-01-A22	125	128	191	262
ZPX125H□★100-01-A22	125	128	226	297



Vacuum Pad for Transferring Disks

■ For adsorbing and transferring disks of digital household electric appliances (CD, DVD)

- For adsorbing circular components like CD and DVD
- Bellows mechanism is realized in the pad to dampen the impact to the work.

How to Order

ZP2-Z1-001-S

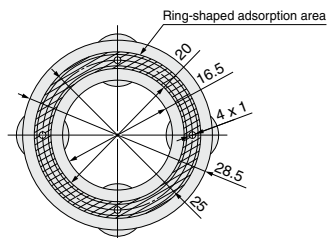
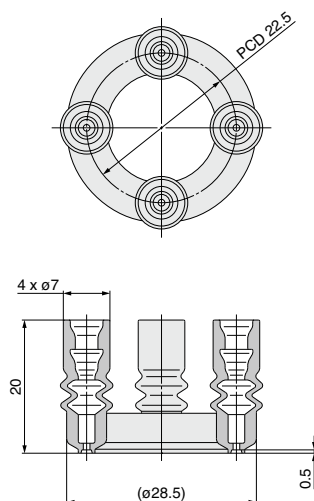


Pad material

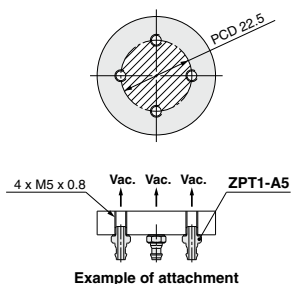
Symbol	Material
S	Silicone rubber
GS	Urethane rubber

Dimensions

ZP2-Z1-001-□□



ZPT1-A5 is a recommended adapter.
(Four adapters are necessary.)
See below for mounting.
Refer to the pages 1241 and 1249 for details.



Example of attachment



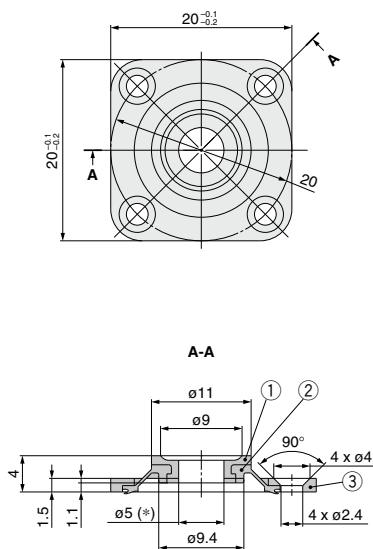
Vacuum Pad for Fixing Panel

- For adsorbing and fixing the stage of LCD panels, etc.
- Bellows mechanism allows complete contact with curved work surface.



Dimensions

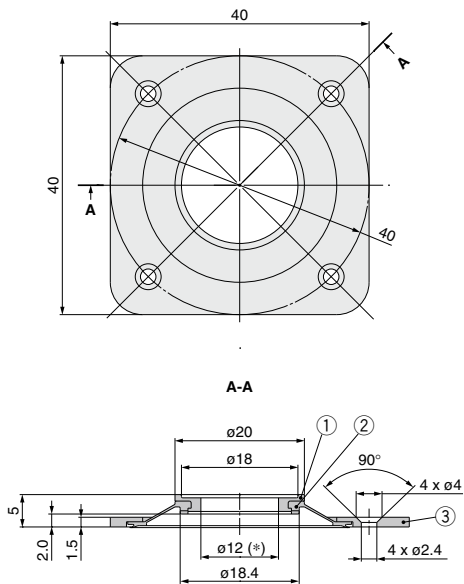
ZP2-Z002



Component Parts

No.	Part no.	Description	Material	Note
1	ZP2-Z2A	Pad	PTFE	—
2	ZP2-Z2B	Joint	FKM	—
3	ZP2-Z2C	Mounting plate	Aluminum alloy	Clear anodized

ZP2-Z003



Component Parts

No.	Part no.	Description	Material	Note
1	ZP2-Z3A	Pad	PTFE	—
2	ZP2-Z3B	Joint	FKM	—
3	ZP2-Z3C	Mounting plate	Aluminum alloy	Clear anodized

ZP3

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Take the following points into consideration when using this product.

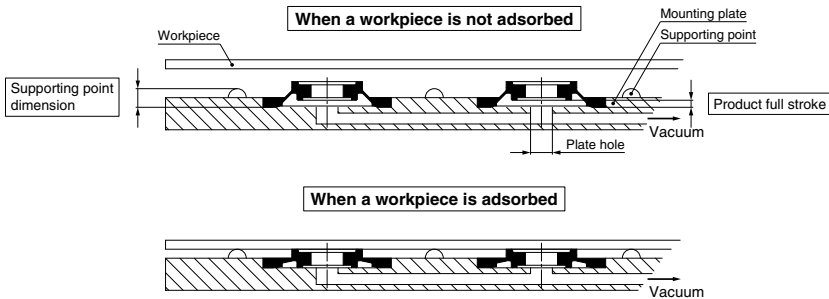
Customers are required to conduct the evaluation to judge whether or not the product is used.

- 1) This product should be used in the horizontal direction and to fix the workpiece.
- 2) The pad (resin) may have a larger vacuum pressure leakage from the lip when compared to the general rubber pad. Therefore, maintain the flow rate as large as possible to minimize the pressure drop due to leakage.
- 3) Cannot be used for vacuum retention.
- 4) Design the pad mounting parts while referring to the "Table 1: References for Designing Mounting Parts" shown below. Additionally, avoid applying the weight of the workpiece directly to the pad.
- 5) Be sure to clean the workpiece contact part of the pad before use and during periodic maintenance.

Table 1: References for Designing Mounting Parts

	Supporting point dimension	Plate hole	(Reference value) Product full stroke
ZP2-Z002	2.9 ± 0.1 mm	$\phi 5$ or less	1.1 mm
ZP2-Z003	3.0 ± 0.1 mm	$\phi 12$ or less	2.0 mm

* Use this product with its full stroke. Avoid using the product with a stroke less than the product stroke (at an intermediate position) or with a stroke exceeding the product stroke.



ZP3

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**ZPT
ZPR**

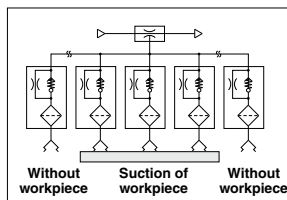
XT661



Vacuum Saving Valve

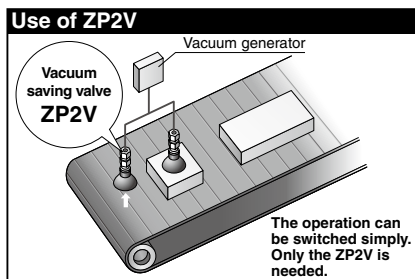
■ Can restrict the reduction of vacuum pressure even when there is no workpiece.

When multiple vacuum pads are operated by one vacuum generator, and some of them are not holding the workpiece, the reduction of vacuum pressure is restricted and the workpiece can remain held by the rest of pads.



■ No need for switching operation when changing work pieces

When the work pieces have different shapes, the control circuit can be simplified.



How to Order

ZP2V - **A5** - **03**

• Connection thread symbol for pad side

Male thread connection

Symbol	Thread size	Applicable fixed orifice size				
		0.3	0.5	0.7	1.0	
A5	M5	○	○	○	—	 Male thread Pad side
A8	M8	—	○	○	○	
AG1	R1/8	—	○	○	○	
AG1	G1/8	—	○	○	○	
AN1	NPT1/8	—	○	○	○	

Female thread connection

Symbol	Thread size	Applicable fixed orifice size				
		0.3	0.5	0.7	1.0	
B5	M5	○	○	○	—	 Female thread Pad side
B6	M6	○	○	○	○	
B01	Rc1/8	—	○	○	○	
BG1	G1/8	—	○	○	○	
BN1	NPT1/8	—	○	○	○	

• Fixed orifice size

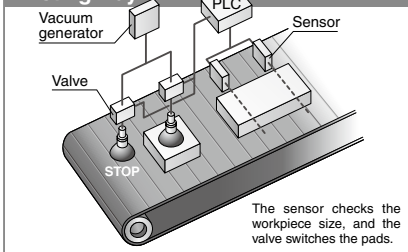
Symbol	Fixed orifice size (mm)
03	0.3
05	0.5
07	0.7
10	1.0



Specifications

Connection thread size for pad side		M5, M6			M8, R1/8, G1/8, NPT1/8		
Fixed orifice size (mm)		0.3	0.5	0.7	0.5	0.7	1.0
Fluid	Air						
Max. operating pressure range (MPa)	0 to 0.7						
Max. operating vacuum pressure range (kPa)	0 to -100						
Ambient and fluid temperature (°C)	5 to 60 (No freezing)						
Element nominal filtration rating (μm)	40						
Min. operating flow rate (L/min (ANR))		3	5	8	5	8	16

Existing way



Model Selection

Select the quantity of vacuum saving valves that can be used with one vacuum generator.

Selection Conditions

Workpiece: No leakage and several sizes

Required vacuum pressure: -50 kPa or more of vacuum pressure per vacuum pad

Part number of vacuum saving valve used: ZP2V-A8-05

(Connection thread size for pad side: M8, Fixed orifice size: $\phi 0.5$)

1 Check the flow-rate characteristics of the vacuum generator used.

From the flow-rate characteristics of the vacuum generator (Chart 1), calculate the **suction flow rate (Q1)** of the vacuum generator from the required vacuum pressure.

Vacuum pressure -50 kPa (1)→(2)→(3) = Suction flow rate (Q1) = 31 L/min (ANR).

2 Calculate the quantity (N) of vacuum saving valves.

Find the **minimum operating flow rate (Q2)** and the **suction flow rate (Q1)** of the vacuum generator from the specifications table (page 1236), and calculate the **quantity (N)** of vacuum saving valves that can be used with one vacuum generator.

Quantity of vacuum saving valves (N) = $\frac{\text{Suction flow rate of vacuum generator (Q1)}}{\text{Minimum operating flow rate (Q2)}}$

Example) Vacuum saving valve used: ZP2V-A8-05

From Table 1, Q2 can be calculated as 5.0 L/min (ANR).

$$N = \frac{31 \text{ (L/min (ANR))}}{5 \text{ (L/min (ANR))}} \approx 6 \text{ (unit)}$$

Table 1. Relationship between Minimum Operating Flow Rate and Fixed Orifice Size

Connection thread size for pad side	M8
Fixed orifice size (mm)	0.5
Minimum operating flow rate (L/min (ANR)) Q2	5.0

The above selection example is based on a general method under the given selection conditions, and may not always be applicable. For vacuum piping, select equipment and piping so that the "Minimum operating flow rate" in the specifications on page 1236 is secured. A final decision on operating conditions should be made based on test results performed at the responsibility of the customer.

Chart 1. Flow-rate Characteristics of Vacuum Generator

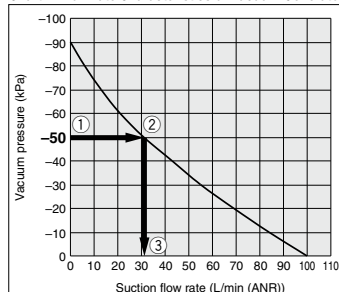
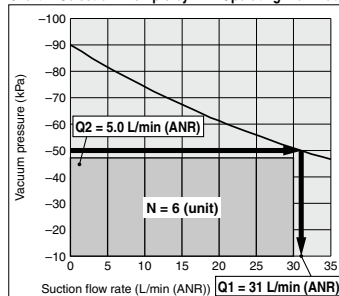


Chart 2. Selection Example by Min. Operating Flow Rate



⚠ Specific Product Precautions

Be sure to read before handling. Refer to front matter 35 for Safety Instructions and pages 899 to 901 for Vacuum Equipment Precautions.

- The product is not equipped with a vacuum holding function, and cannot be used for the purpose of holding vacuum.
- Determine the quantity of products to be used by selection, and keep the recommended pad diameter per product shown in Table 1. Also, check the operation with the customer's machine sufficiently beforehand.

Table 1. Recommended Pad Diameter per Product

Connection thread symbol for pad side	A5	B5	B6	A8	A01	B01	AG1	BG1	AN1	BN1
Thread size	M5	M6	M8	R1/8	G1/8	NPT1/8				
Recommended pad diameter (mm)	25 or less					32 to 50				

- Do not disassemble the product. Once the product is disassembled and reassembled, it will not be able to satisfy the original performance.
- When piping, do not get the pad side and vacuum generator side of the product the wrong way round. (Refer to Fig. 1.)

Enlarged view of name plate
(Vacuum generator side)

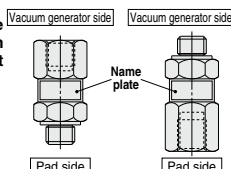
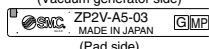


Fig. 1. Mounting direction

- For mounting and removing the product, strictly follow the instructions below.

When mounting and removing the product, use the specified places shown in page 1239 to apply tools. Also, when mounting, tighten to the specified torque shown in page 1239. Excessive torque or applying a tool to places other than the specified place can cause damage or loss of original performance.

- The reduction of the vacuum pressure while the work piece is sucked and released depends on the flow-rate characteristics of the vacuum generator. Check the flow-rate characteristics of the vacuum generator before checking the operation with the customer's machine.
- When the built-in element of the product gets clogged, replace the whole product.
- When verifying the suction using such as a pressure sensor, check the operation with the customer's machine sufficiently beforehand.
- If there is leakage between the pad and a workpiece, for example if the workpiece is permeable, the quantity of products that can be used with one vacuum generator is reduced. Take the leakage between the pad and workpiece into account and check the operation with the customer's machine sufficiently before using.
- Any mounting direction is available with this product. (Upward or lateral mounting is also available.)
- For vacuum piping, select equipment and piping so that the "Minimum operating flow rate" in the specifications on page 1236 is secured. Make sure that there are no unnecessary restrictions or leaks, etc., along the course of the piping.

If the minimum operating flow rate listed in the specifications is not secured, operation will be unstable, which may lead to suction failure or cause damage to internal parts.

ZP3

ZP2

ZP2V

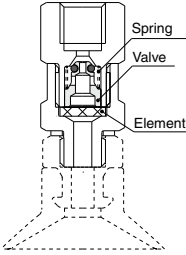
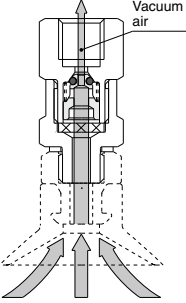
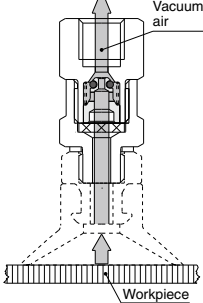
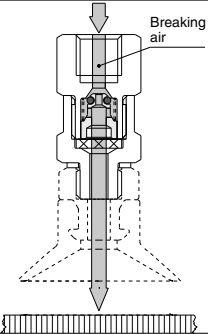
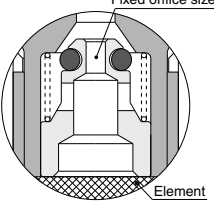
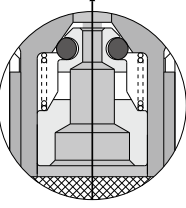
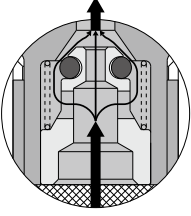
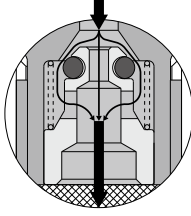
ZP

ZPT

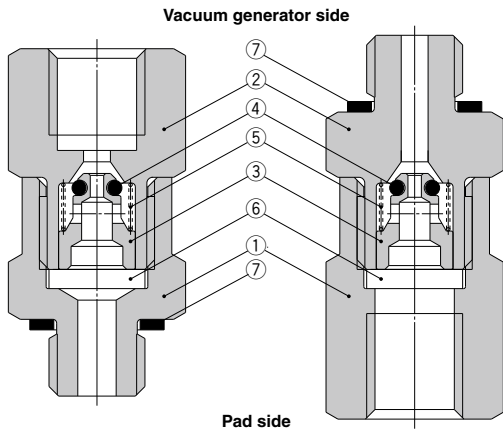
ZPR

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Working Principle

	Initial condition	When a workpiece is sucked		When a workpiece is released
		Without workpiece	With workpiece	
Air flow				
Valve operating condition	 Fixed orifice size Element Since there is no air flow, the valve remains opened by the spring force.	 Closed valve When the workpiece is separated from the vacuum pad, the valve is closed by the air flow, and the suction air can only flow through the fixed orifice. At this time, an amount of air corresponding to the fixed orifice size is sucked.	 Opened valve When the workpiece is sucked by the vacuum pad, the suction flow reduces, and the valve is opened by the spring force, which opens the path between the valve and body for suction.	 Opened valve When the workpiece is released, the valve is opened by the vacuum breaking air, and the path between the valve and body will open.

Construction



ZP2V-A□-□

ZP2V-B□-□

Vacuum generator side



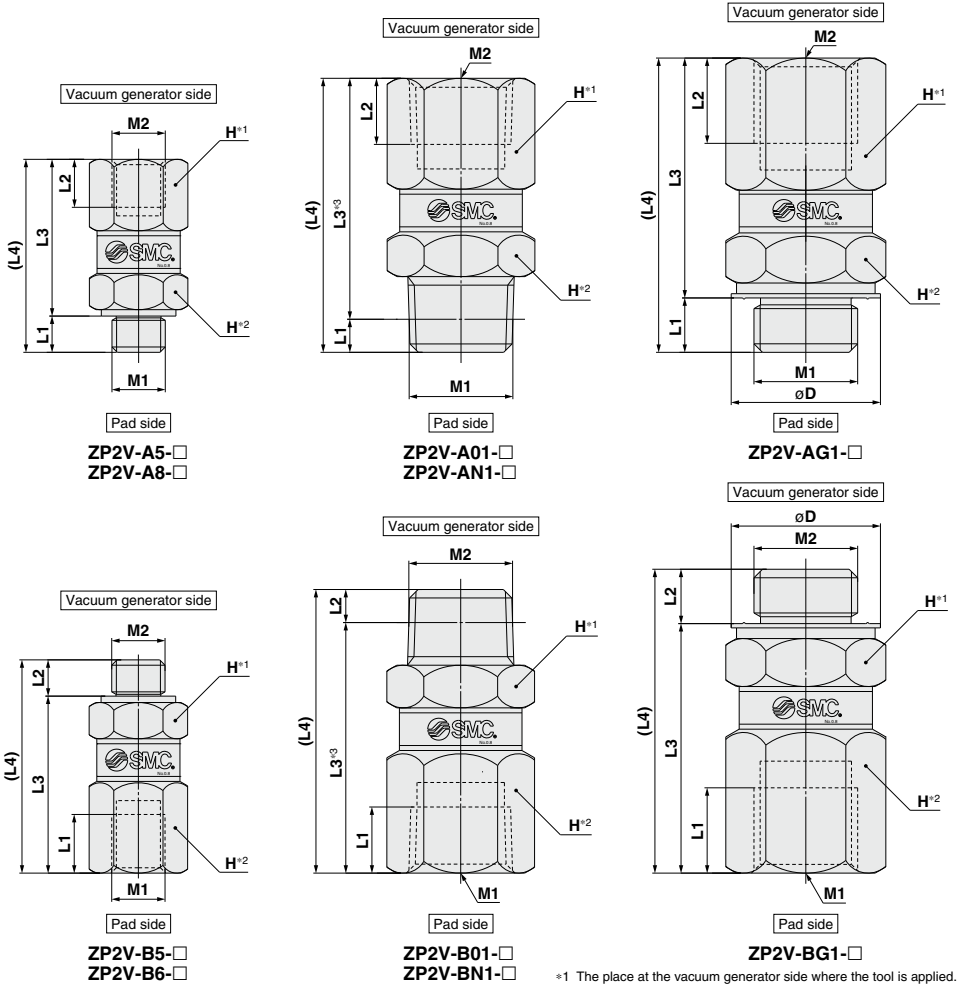
Pad side

* For the mounting direction of the product, refer to 4 on page 1237.

Component Parts

No.	Description	Material	Surface treatment
1	Body A	Brass	Electroless nickel plated
2	Body B	Brass	Electroless nickel plated
3	Valve	Aluminum	—
4	O-ring	HNBR	—
5	Spring	Stainless steel	—
6	Element	BC	—
7	Gasket	NBR + Stainless steel	—

Dimensions



ZP3
ZP2
ZP2V
ZP
ZPT
ZPR
XT661

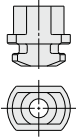
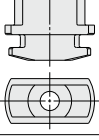
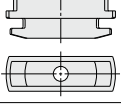
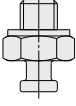
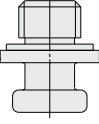
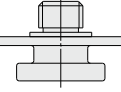
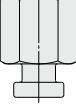
*1 The place at the vacuum generator side where the tool is applied.
*2 The place at the pad side where the tool is applied.
*3 Referential dimensions after the R, NPT thread is screwed.

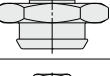
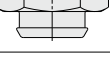
Model	M1	M2	L1	L2	L3	L4	H (Width across flat)	ϕD	W (g)	Tightening torque (N·m) Note
ZP2V-A5-□	M5 x 0.8	M5 x 0.8	3.4	4.5	14.7	18.1	8	—	6	1.0 to 1.5
ZP2V-A8-□	M8 x 1.25	M8 x 1.25	5.9	8	20.1	26	12	—	18	5.5 to 6.0
ZP2V-A01-□	R1/8	Rc1/8	3.1	6.2	22.6	25.7	12	—	18	7.0 to 9.0
ZP2V-AG1-□	G1/8	G1/8	5.1	8	22.5	27.6	13	14	23	5.5 to 6.0
ZP2V-AN1-□	NPT1/8	NPT1/8	3.2	6.9	23.3	26.5	12	—	23	7.0 to 9.0
ZP2V-B5-□	M5 x 0.8	M5 x 0.8	5.5	3.4	16.6	20	8	—	7	1.0 to 1.5
ZP2V-B6-□	M6 x 1	M6 x 1	5	4.5	16.2	20.7	8	—	7	2.0 to 2.5
ZP2V-B01-□	Rc1/8	R1/8	6.2	3.1	23.5	26.6	12	—	19	7.0 to 9.0
ZP2V-BG1-□	G1/8	G1/8	8	5.1	23.4	28.5	13	14	24	5.5 to 6.0
ZP2V-BN1-□	NPT1/8	NPT1/8	6.9	3.2	24.2	27.4	12	—	20	7.0 to 9.0

Note) When mounting and removing the product, apply a wrench or torque wrench to the place shown in Figure.
When mounting, tighten to the torque specified in the table.

Adapter/Buffer Applicable Pad List

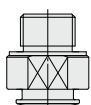
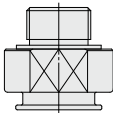
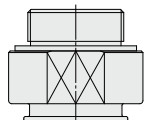
Series ZP2 Mounting Adapter Part No.

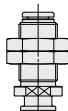
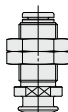
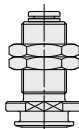
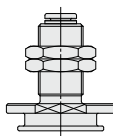
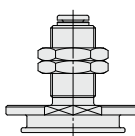
Adapter model	Applicable pad model Series ZP2	Page
ZP2A-001	 ZP2-3507W□ ZP2-4010W□ ZP2-5010W□ ZP2-6010W□	P. 1246
ZP2A-002	 ZP2-4020W□ ZP2-5020W□ ZP2-6020W□ ZP2-8020W□	P. 1246
ZP2A-003	 ZP2-4030W□ ZP2-5030W□ ZP2-6030W□ ZP2-8030W□	P. 1246
ZP2A-M01P	 ZP2-B02MU□ ZP2-B035MU□ ZP2-B04MU□ ZP2-B05MU□ ZP2-B04MB□	P. 1246
ZP2A-M02*	 ZP2-B06MU□ ZP2-B08MU□ ZP2-B10MU□ ZP2-B15MU□ ZP2-B06MB□ ZP2-B08MB□ ZP2-B10MT□ ZP2-B15MT□	P. 1246
ZP2A-M03*	 ZP2-B20MT□ ZP2-B25MT□ ZP2-B30MT□	P. 1246
ZP2A-M04	 ZP2-B06MU□ ZP2-B08MU□ ZP2-B10MU□ ZP2-B15MU□ ZP2-B06MB□ ZP2-B08MB□ ZP2-B10MT□ ZP2-B15MT□	P. 1246
ZP2A-M05	 ZP2-B10MB□ ZP2-B15MB□	P. 1246
ZP2A-M06	 ZP2-B20MB□	P. 1247

Adapter model	Applicable pad model Series ZP2	Page
ZP2A-Z01P	 ZP2-B02EU□ ZP2-B04EU□ ZP2-B06EU□ ZP2-08EU□ ZP2-15EU□	P. 1247
ZP2A-Z02P	 ZP2-B02EU□ ZP2-B04EU□ ZP2-B06EU□ ZP2-08EU□ ZP2-15EU□	P. 1247
ZP2A-Z21P	 ZP2-08AN□ ZP2-11AN□	P. 1247
ZP2A-S01P	 ZP2-04S□	P. 1247
ZP2A-S02P	 ZP2-06S□	P. 1247
ZP2A-S03P	 ZP2-08S□	P. 1247
ZP2A-S04P	 ZP2-10S□	P. 1247
ZP2A-S05P	 ZP2-15S□	P. 1248
ZP2A-S11	 ZP2-04S□	P. 1248
ZP2A-S12	 ZP2-06S□	P. 1248
ZP2A-S13	 ZP2-08S□	P. 1248
ZP2A-S14	 ZP2-10S□	P. 1248
ZP2A-S15	 ZP2-15S□	P. 1248

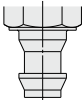
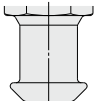
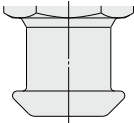
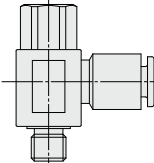
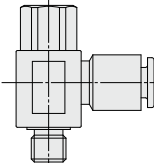
Series ZP2/ZP

Series ZP2 Mounting Adapter Part No.

Adapter part no.		Applicable pad part no. Series ZP2	Page
ZP2A-Z31-1P		ZP2-B15ZJS□	P.1248-1
ZP2A-Z31-2P		ZP2-B20ZJS□	P.1248-1
ZP2A-Z31-3P		ZP2-B30ZJS□	P.1248-1
ZP2A-Z31-4P		ZP2-40ZJ□	P.1248-1
ZP2A-Z31-5P		ZP2-46ZJ□	P.1248-1

Adapter part no.		Applicable pad part no. Series ZP2	Page
ZP2A-Z32-1		ZP2-B15ZJS□	P.1248-2
ZP2A-Z32-2		ZP2-B20ZJS□	P.1248-2
ZP2A-Z32-3		ZP2-B30ZJS□	P.1248-2
ZP2A-Z32-4		ZP2-40ZJ□	P.1248-2
ZP2A-Z32-5		ZP2-46ZJ□	P.1248-2

Series **ZP** Mounting Adapter Part No.

Adapter model		Applicable pad model		Page
		Series ZP	Series ZP2	
ZPT1-A5, A6 ZPT1-B4, B5		ZP(02, 04, 06, 08)U□ ZP(06, 08)B□ ZP(10, 13, 16)UT□ ZP(10, 13, 16)CT□ ZP2004U□ ZP3507U□ ZP4010U□	ZP2-03U□ ZP2-14UT□ ZP2-B04U□ ZP2-18UT□ ZP2-B06C□ ZP2-20UT□ ZP2-07C□ ZP2-06J□ ZP2-B08C□ ZP2-B10J□ ZP2-B06B□ ZP2-B15J□ ZP2-B08B□ ZP2-04UCL ZP2-05UT□ ZP2-06UCL ZP2-06UT□ ZP2-08UCL ZP2-11UT□	P.1249
ZPT2-A5, A6 ZPT2-B5, B6 B01, N01 T01		ZP(10, 13, 16)U□ ZP(10, 13, 16)C□ ZP(10, 13, 16)B□ ZP(10, 16)D□	ZP2-09J□ ZP2-14J□ ZP2-16J□ ZP2-10UCL ZP2-16UCL	P.1249
ZPT3-A6, A8 ZPT3-B5, B6, B8 B01, N01 T01		ZP(20, 25, 32)U□ ZP(20, 25, 32)C□ ZP(20, 25, 32)B□ ZP25D□	ZP2-B25J□ ZP2-B30J□ ZP2-25UCL ZP2-32UCL	P.1249 P.1250
ZPT4-A6, A8 ZPT4-B6, B8 B01, N01 T01		ZP(40, 50)U□ ZP(40, 50)C□ ZP(40, 50)B□ ZP40D□	ZP2-40UCL ZP2-50UCL	P.1249 P.1250
ZPRS-◇◇-(B4 / B5) ZPRS-◇◇-(A5 / A6)		ZP(02, 04, 06, 08)U□ ZP(06, 08)B□ ZP(10, 13, 16)UT□ ZP(10, 13, 16)CT□ ZP2004U□ ZP3507U□ ZP4010U□	ZP2-03U□ ZP2-14UT□ ZP2-B04U□ ZP2-18UT□ ZP2-B06C□ ZP2-20UT□ ZP2-07C□ ZP2-06J□ ZP2-B08C□ ZP2-B10J□ ZP2-B06B□ ZP2-B15J□ ZP2-B08B□ ZP2-04UCL ZP2-05UT□ ZP2-06UCL ZP2-06UT□ ZP2-08UCL ZP2-11UT□	P.1250
ZPRS-◇◇-(B5 / B6) ZPRS-◇◇-(A5 / A6)		ZP(10, 13, 16)U□ ZP(10, 13, 16)C□ ZP(10, 13, 16)B□ ZP(10, 16)D□	ZP2-09J□ ZP2-14J□ ZP2-16J□ ZP2-10UCL ZP2-16UCL	P.1250

ZP3

ZP2

ZP2V

ZP

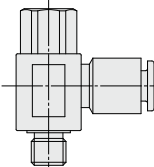
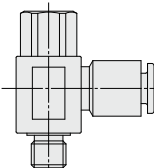
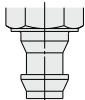
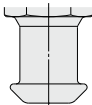
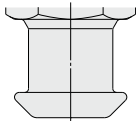
ZPT

ZPR

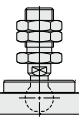
XT661

Series ZP2/ZP

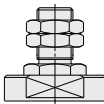
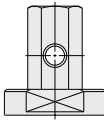
Series ZP Mounting Adapter Part No.

Adapter model		Applicable pad model		Page
		Series ZP	Series ZP2	
ZPRL-◇◇◇-(B5/B6/B8) ZPRL-◇◇◇-(A6 / A8)		ZP(20, 25, 32)U□ ZP(20, 25, 32)C□ ZP(20, 25, 32)B□ ZP25D□	ZP2-B25J□ ZP2-B30J□ ZP2-25UCL ZP2-32UCL	P.1250
ZPRL-◇◇◇-(B6 / B8) ZPRL-◇◇◇-(A6 / A8)		ZP(40, 50)U□ ZP(40, 50)C□ ZP(40, 50)B□ ZP40D□	ZP2-40UCL ZP2-50UCL	P.1250
ZPY1-◇◇◇-(B4 / B5) ZPY1-◇◇◇-(A5 / A6)		ZP(02, 04, 06, 08)U□ ZP(06, 08)B□ ZP(10, 13, 16)UT□ ZP(10, 13, 16)CT□ ZP2004U□ ZP3507U□ ZP4010U□	ZP2-03U□ ZP2-14UT□ ZP2-B04U□ ZP2-18UT□ ZP2-B06C□ ZP2-20UT□ ZP2-07C□ ZP2-06J□ ZP2-B08C□ ZP2-B10J□ ZP2-B06B□ ZP2-B15J□ ZP2-B08B□ ZP2-04UCL ZP2-05UT□ ZP2-06UCL ZP2-06UT□ ZP2-08UCL ZP2-11UT□	P.1251
ZPY2-◇◇◇-(B5 / B6) ZPY2-◇◇◇-(A5 / A6)		ZP(10, 13, 16)U□ ZP(10, 13, 16)C□ ZP(10, 13, 16)B□ ZP(10, 16)D□	ZP2-09J□ ZP2-14J□ ZP2-16J□ ZP2-10UCL ZP2-16UCL	P.1251
ZPY3-◇◇◇-(B5/B6/B8) ZPY3-◇◇◇-(A6 / A8)		ZP(20, 25, 32)U□ ZP(20, 25, 32)C□ ZP(20, 25, 32)B□ ZP25D□	ZP2-B25J□ ZP2-B30J□ ZP2-25UCL ZP2-32UCL	P.1251
ZPY4-◇◇◇-(B6 / B8) ZPY4-◇◇◇-(A6 / A8)		ZP(40, 50)U□ ZP(40, 50)C□ ZP(40, 50)B□ ZP40D□	ZP2-40UCL ZP2-50UCL	P.1251

Adapter Assembly Part No.(for Heavy-duty Ball Joint)

Adapter assembly model		Applicable pad model						Page
		Series ZP		Series ZP2				
ZP2A-TF1		ZP40H□	ZP40HB□	ZP2-40HCL	ZP2-40HNT	ZP2-40HFT	P.1252	
		ZP50H□	ZP50HB□	ZP2-50HCL	ZP2-50HNT	ZP2-50HFT		
ZP2A-TF2		ZP63H□	ZP63HB□	ZP2-63HCL	ZP2-63HNT	ZP2-63HFT		P.1252
	ZP80H□	ZP80HB□	ZP2-80HCL	ZP2-80HNT	ZP2-80HFT			
ZP2A-TF3		ZP100H□	ZP100HB□	ZP2-100HCL	ZP2-100HNT	ZP2-100HFT	P.1252	
		ZP125H□	ZP125HB□	ZP2-125HCL	ZP2-125HNT	ZP2-125HFT		
ZP2A-XF1		ZP40H□	ZP40HB□	ZP2-40HCL	ZP2-40HNT	ZP2-40HFT		P.1252
	ZP50H□	ZP50HB□	ZP2-50HCL	ZP2-50HNT	ZP2-50HFT			
ZP2A-XF2		ZP63H□	ZP63HB□	ZP2-63HCL	ZP2-63HNT	ZP2-63HFT	P.1252	
		ZP80H□	ZP80HB□	ZP2-80HCL	ZP2-80HNT	ZP2-80HFT		
ZP2A-XF3		ZP100H□	ZP100HB□	ZP2-100HCL	ZP2-100HNT	ZP2-100HFT	P.1252	
	ZP125H□	ZP125HB□	ZP2-125HCL	ZP2-125HNT	ZP2-125HFT			

Adapter Assembly Part No.(for Heavy-duty)

Adapter assembly model		Applicable pad model					Page
		Series ZP		Series ZP2			
ZPA-T1-B*		ZP40H□	ZP40HB□	ZP2-40HCL	ZP2-40HNT	ZP2-40HFT	P.1253
ZPA-T2-B*		ZP50H□	ZP50HB□	ZP2-50HCL	ZP2-50HNT	ZP2-50HFT	P.1253
ZPA-T3-B*		ZP63H□	ZP63HB□	ZP2-63HCL	ZP2-63HNT	ZP2-63HFT	P.1253
		ZP80H□	ZP80HB□	ZP2-80HCL	ZP2-80HNT	ZP2-80HFT	
ZPA-T3-B*		ZP100H□	ZP100HB□	ZP2-100HCL	ZP2-100HNT	ZP2-100HFT	P.1253
		ZP125H□	ZP125HB□	ZP2-125HCL	ZP2-125HNT	ZP2-125HFT	
ZPA-T1-01		ZP40H□	ZP40HB□	ZP2-40HCL	ZP2-40HNT	ZP2-40HFT	P.1253
ZPA-T2-01		ZP50H□	ZP50HB□	ZP2-50HCL	ZP2-50HNT	ZP2-50HFT	P.1253
ZPA-T3-01		ZP63H□	ZP63HB□	ZP2-63HCL	ZP2-63HNT	ZP2-63HFT	P.1253
		ZP80H□	ZP80HB□	ZP2-80HCL	ZP2-80HNT	ZP2-80HFT	
ZPA-T3-01		ZP100H□	ZP100HB□	ZP2-100HCL	ZP2-100HNT	ZP2-100HFT	P.1253
		ZP125H□	ZP125HB□	ZP2-125HCL	ZP2-125HNT	ZP2-125HFT	
ZPA-X1-01-B*		ZP40H□	ZP40HB□	ZP2-40HCL	ZP2-40HNT	ZP2-40HFT	P.1254
ZPA-X2-01-B*		ZP50H□	ZP50HB□	ZP2-50HCL	ZP2-50HNT	ZP2-50HFT	P.1254
ZPA-X3-01-B*		ZP63H□	ZP63HB□	ZP2-63HCL	ZP2-63HNT	ZP2-63HFT	P.1254
		ZP80H□	ZP80HB□	ZP2-80HCL	ZP2-80HNT	ZP2-80HFT	
ZPA-X3-01-B*		ZP100H□	ZP100HB□	ZP2-100HCL	ZP2-100HNT	ZP2-100HFT	P.1254
		ZP125H□	ZP125HB□	ZP2-125HCL	ZP2-125HNT	ZP2-125HFT	

ZP3

ZP2

ZP2V

ZP

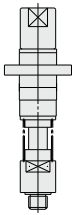
ZPT

ZPR

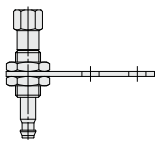
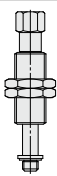
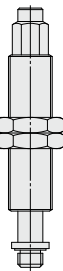
XT661

Series ZP2/ZP

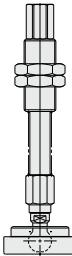
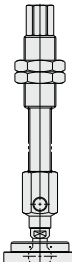
Buffer Assembly Part No.(for Ball Spline)

Buffer assembly model		Applicable pad model	Page
		Series ZP	
ZP2B-T3S6		ZP02U□ ZP04U□ ZP06U□ ZP08U□	P.1255

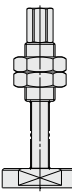
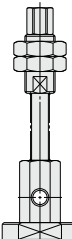
Series ZP Buffer Assembly Part No.

Buffer assembly model		Applicable pad model		Page
		Series ZP	Series ZP2	
ZPB1(J / K)■-◇◇ ZPB1(J / K)■		ZP(02, 04, 06, 08)U□ ZP(06, 08)B□ ZP(10, 13, 16)UT□ ZP(10, 13, 16)CT□ ZP2004U□ ZP3507U□ ZP4010U□	ZP2-03U□ ZP2-14UT□ ZP2-B04U□ ZP2-18UT□ ZP2-B06C□ ZP2-20UT□ ZP2-07C□ ZP2-06J□ ZP2-B08C□ ZP2-B10J□ ZP2-B06B□ ZP2-B15J□ ZP2-B08B□ ZP2-04UCL ZP2-05UT□ ZP2-06UCL ZP2-06UT□ ZP2-08UCL ZP2-11UT□	P.1256 P.1257
ZPB2(J / K)■-◇◇ ZPB2(J / K)■		ZP(10, 13, 16, 20, 25, 32)U□ ZP(10, 13, 16, 20, 25, 32)C□ ZP(10, 13, 16, 20, 25, 32)B□ ZP(10, 16, 25)D□	ZP2-09J□ ZP2-B25J□ ZP2-14J□ ZP2-B30J□ ZP2-16J□ ZP2-25UCL ZP2-10UCL ZP2-32UCL ZP2-16UCL	P.1258 P.1259
ZPB3(J / K)■-◇◇ ZPB3(J / K)■		ZP(40, 50)U□ ZP(40, 50)C□ ZP(40, 50)B□ ZP40D□	ZP2-40UCL ZP2-50UCL	P.1260 P.1261

Buffer Assembly Part No. (for Heavy-duty Ball Joint)

Buffer assembly model		Applicable pad model				Page	
		Series ZP		Series ZP2			
ZP2B-TF1(JB/JF)◆		ZP40H□	ZP40HB□	ZP2-40HCL	ZP2-40HNT	ZP2-40HFT	P.1262
ZP50H□		ZP50HB□	ZP2-50HCL	ZP2-50HNT	ZP2-50HFT		
ZP2B-TF2(JB/JF)◆		ZP63H□	ZP63HB□	ZP2-63HCL	ZP2-63HNT	ZP2-63HFT	P.1262
ZP80H□	ZP80HB□	ZP2-80HCL	ZP2-80HNT	ZP2-80HFT			
ZP2B-TF3(JB/JF)◆		ZP100H□	ZP100HB□	ZP2-100HCL	ZP2-100HNT	ZP2-100HFT	P.1262
ZP125H□		ZP125HB□	ZP2-125HCL	ZP2-125HNT	ZP2-125HFT		
ZP2B-XF1(JB/JF)◆		ZP40H□	ZP40HB□	ZP2-40HCL	ZP2-40HNT	ZP2-40HFT	P.1263
ZP50H□	ZP50HB□	ZP2-50HCL	ZP2-50HNT	ZP2-50HFT			
ZP2B-XF2(JB/JF)◆	ZP63H□	ZP63HB□	ZP2-63HCL	ZP2-63HNT	ZP2-63HFT	P.1263	
ZP80H□	ZP80HB□	ZP2-80HCL	ZP2-80HNT	ZP2-80HFT			
ZP2B-XF3(JB/JF)◆		ZP100H□	ZP100HB□	ZP2-100HCL	ZP2-100HNT	ZP2-100HFT	P.1263
ZP125H□		ZP125HB□	ZP2-125HCL	ZP2-125HNT	ZP2-125HFT		

Buffer Assembly Part No. (for Heavy-duty)

Buffer assembly model		Applicable pad model					Page
		Series ZP		Series ZP2			
ZPB-T1(J/JB/JF)◆◆01		ZP40H□ ZP40HB□	ZP2-40HCL ZP2-40HNT ZP2-40HFT	P.1264			
		ZP50H□ ZP50HB□	ZP2-50HCL ZP2-50HNT ZP2-50HFT	P.1265			
ZPB-T2(J/JB/JF)◆◆01		ZP63H□ ZP63HB□	ZP2-63HCL ZP2-63HNT ZP2-63HFT	P.1264			
		ZP80H□ ZP80HB□	ZP2-80HCL ZP2-80HNT ZP2-80HFT	P.1265			
ZPB-T3(J/JB/JF)◆◆01		ZP100H□ ZP100HB□	ZP2-100HCL ZP2-100HNT ZP2-100HFT	P.1264			
		ZP125H□ ZP125HB□	ZP2-125HCL ZP2-125HNT ZP2-125HFT	P.1265			
ZPB-X1(J/JB/JF)◆◆01		ZP40H□ ZP40HB□	ZP2-40HCL ZP2-40HNT ZP2-40HFT	P.1266			
		ZP50H□ ZP50HB□	ZP2-50HCL ZP2-50HNT ZP2-50HFT	P.1267			
ZPB-X2(J/JB/JF)◆◆01		ZP63H□ ZP63HB□	ZP2-63HCL ZP2-63HNT ZP2-63HFT	P.1266			
		ZP80H□ ZP80HB□	ZP2-80HCL ZP2-80HNT ZP2-80HFT	P.1267			
ZPB-X3(J/JB/JF)◆◆01		ZP100H□ ZP100HB□	ZP2-100HCL ZP2-100HNT ZP2-100HFT	P.1266			
		ZP125H□ ZP125HB□	ZP2-125HCL ZP2-125HNT ZP2-125HFT	P.1267			

ZP3

ZP2

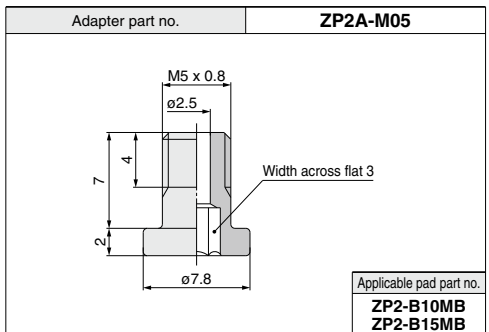
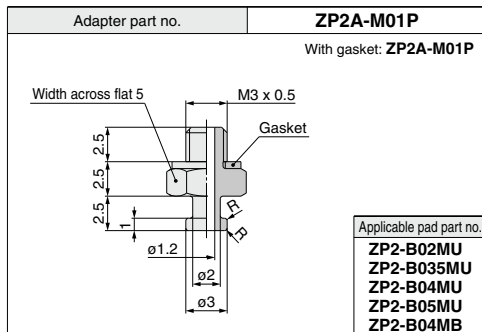
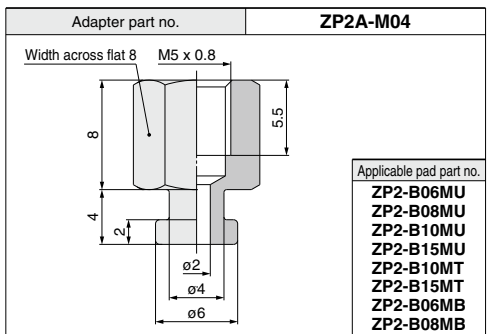
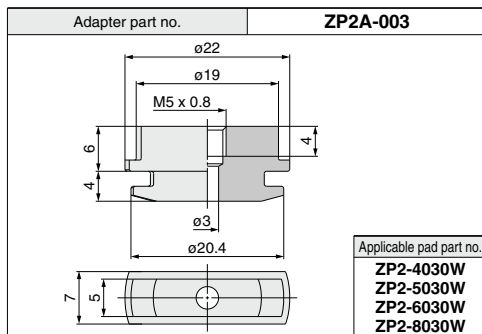
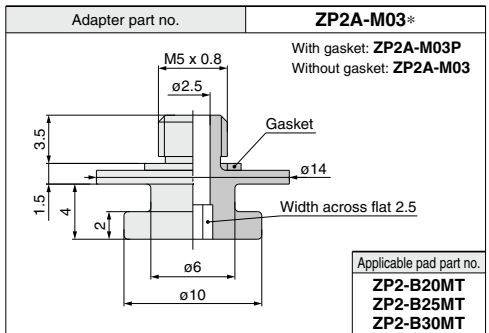
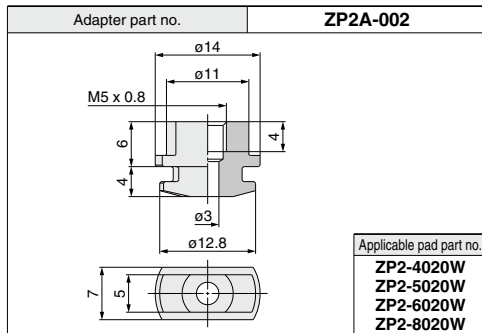
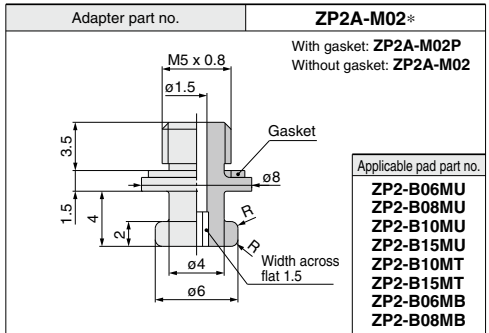
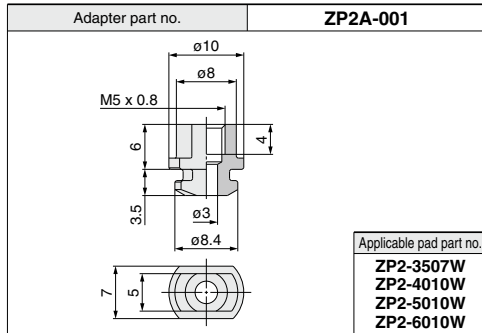
ZP2V

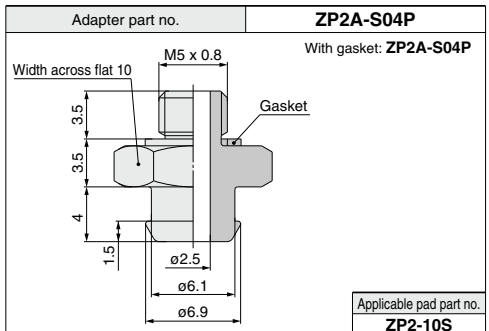
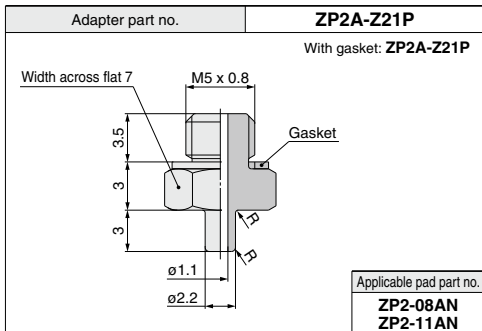
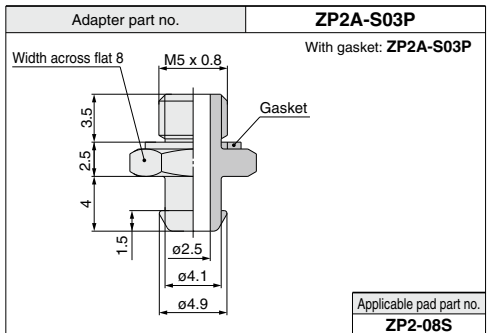
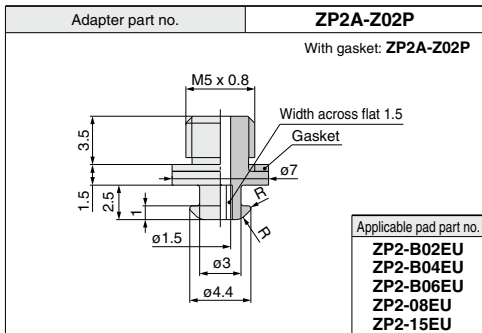
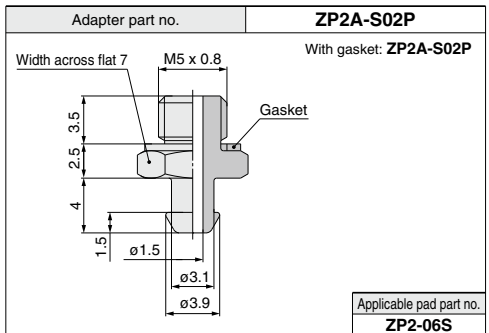
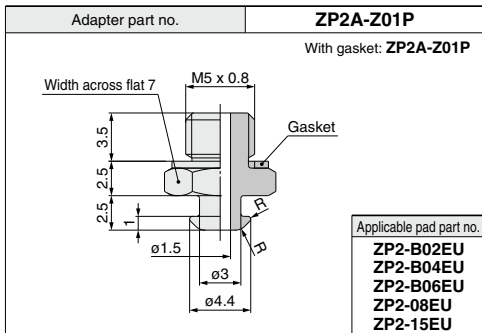
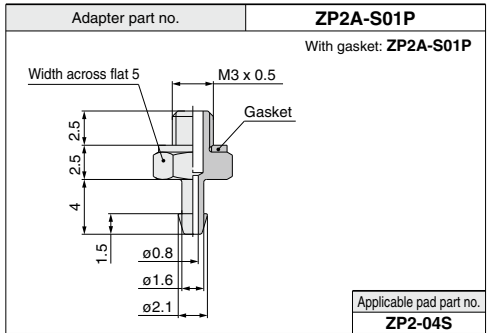
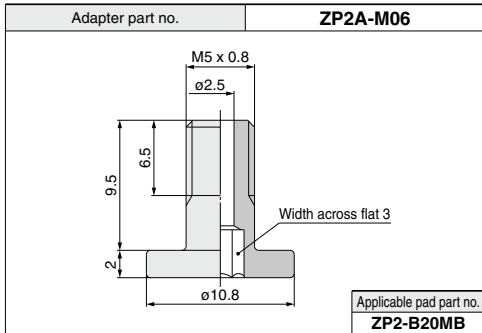
ZP

ZPT
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XT661

Mounting Adapter Part No.





ZP3

ZP2

ZP2V

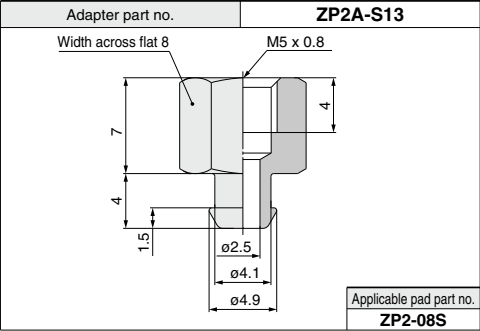
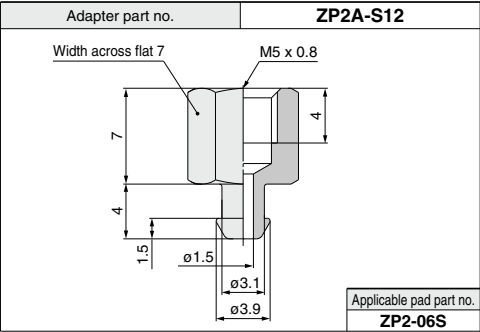
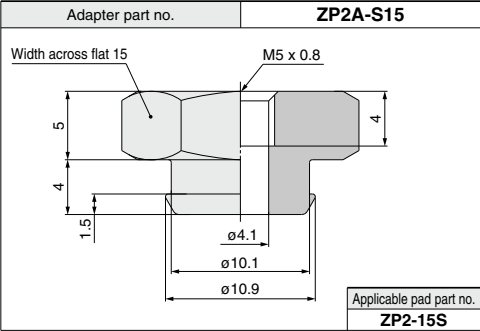
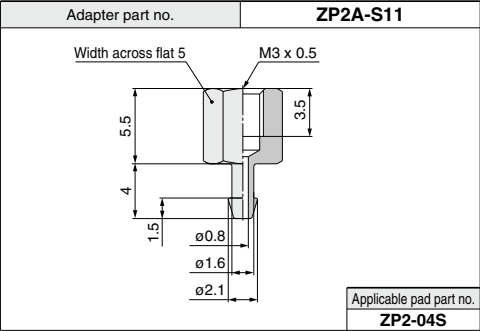
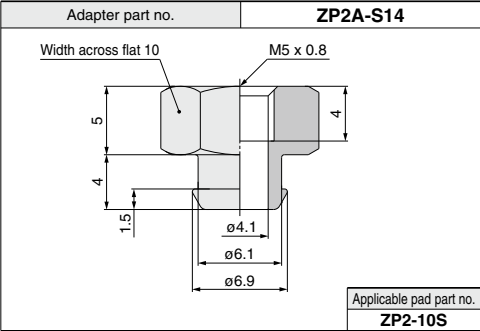
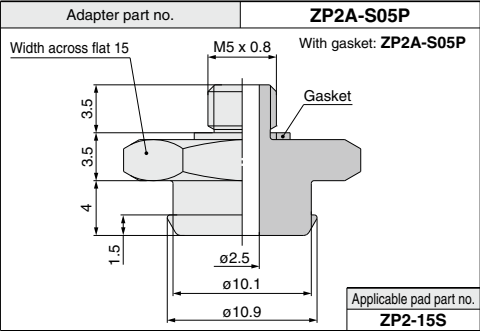
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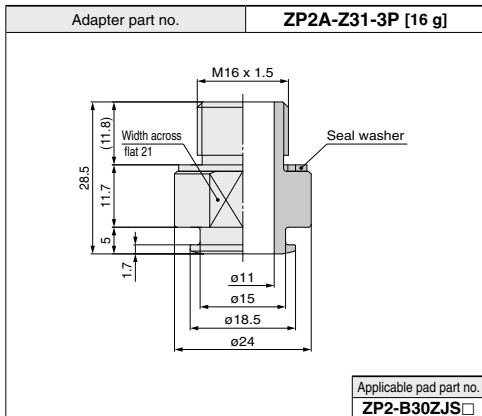
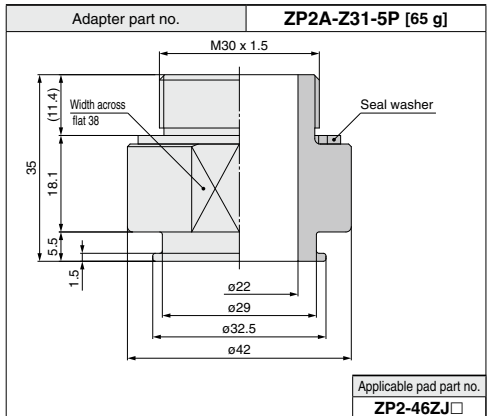
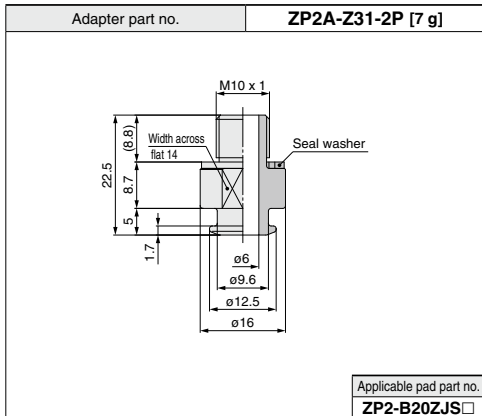
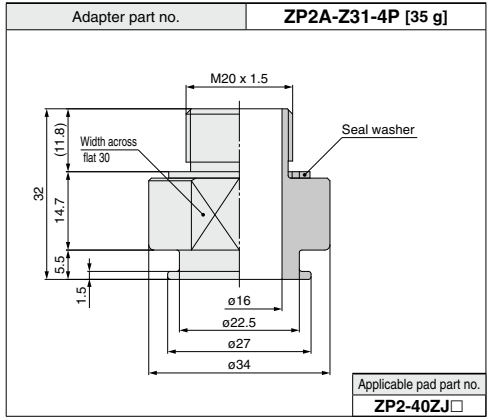
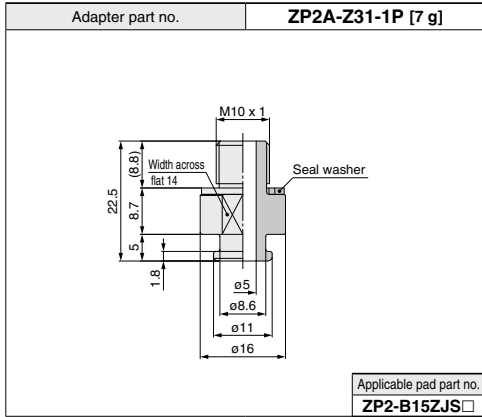
ZPT

ZPR

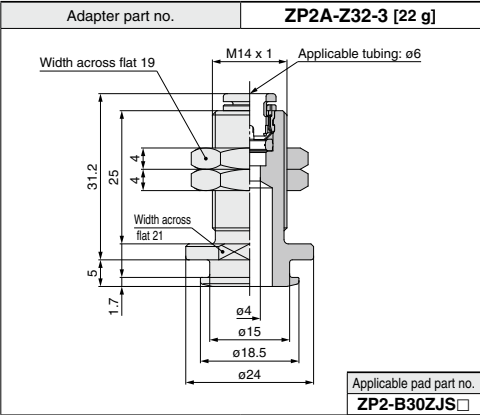
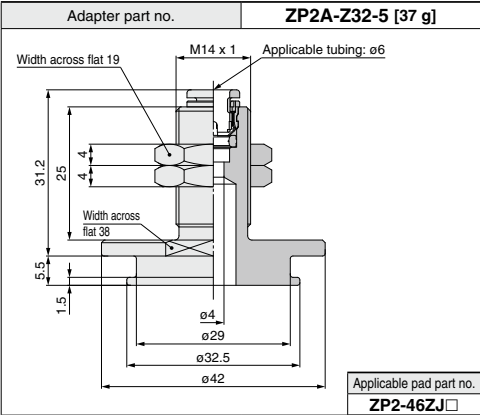
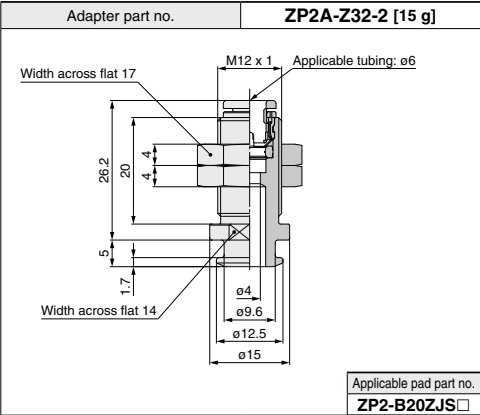
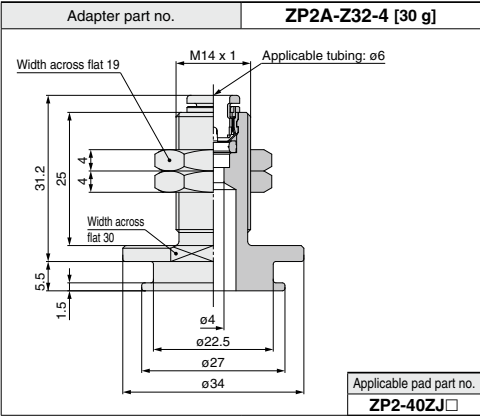
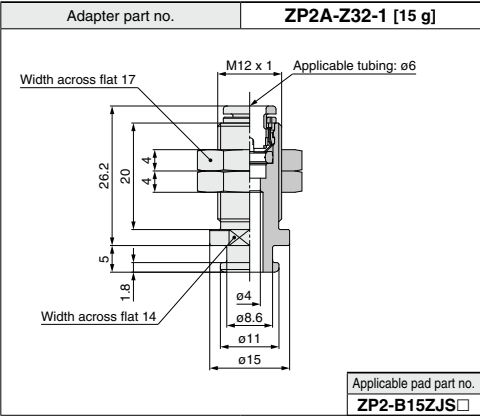
XT661

Series **ZP2**



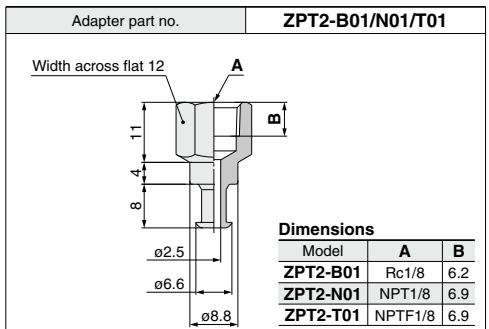
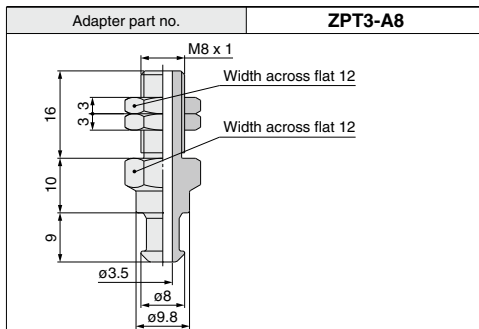
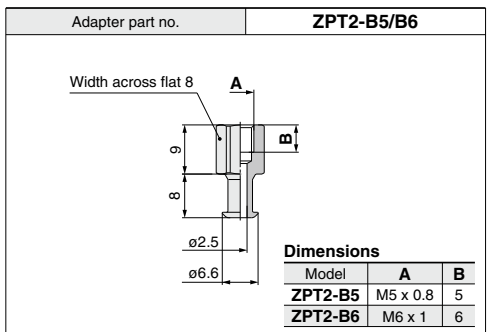
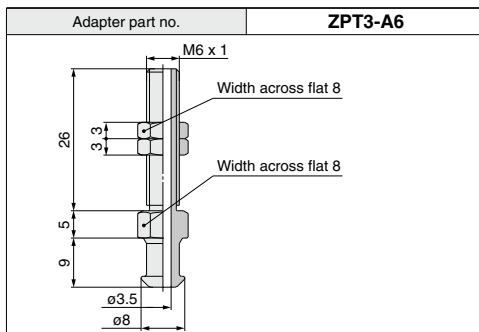
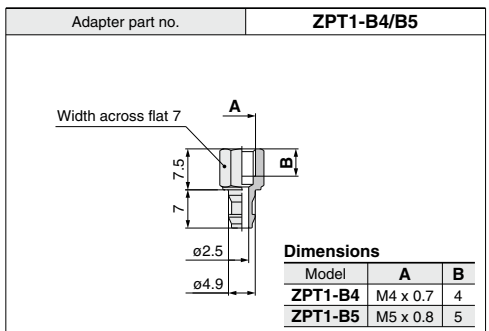
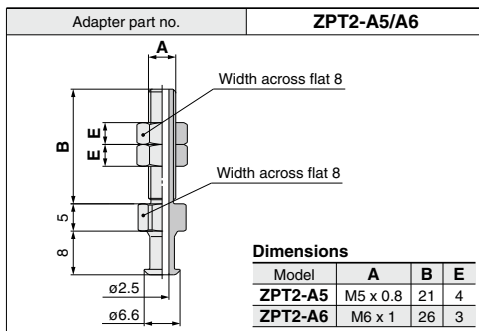
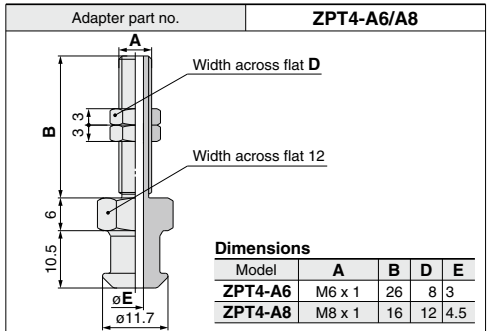
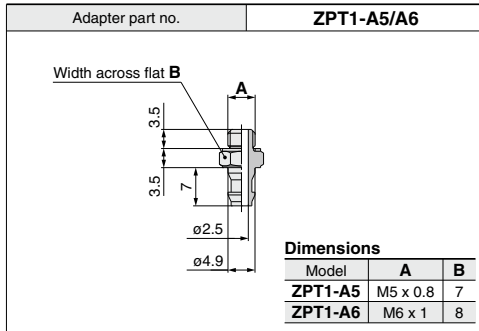


Series **ZP2**



Mounting Adapter Part No.

*Refer to page 1241 for applicable pad part no.



ZP3

ZP2

ZP2V

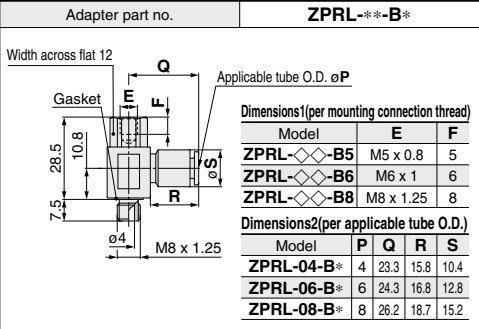
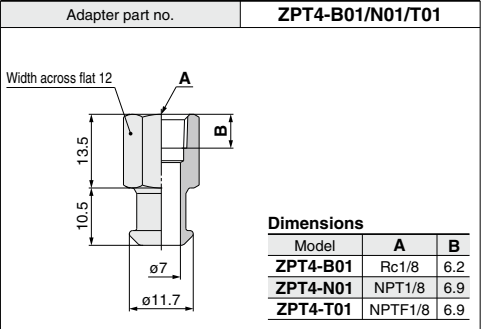
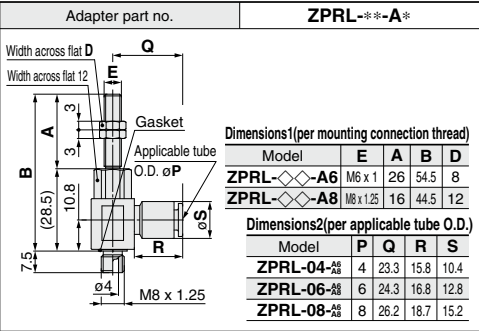
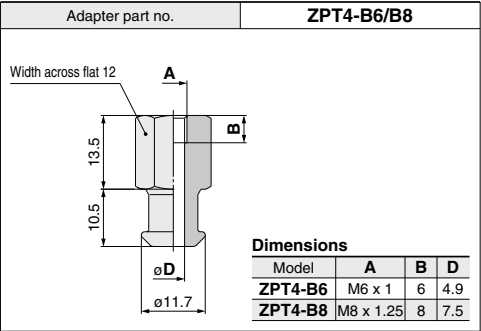
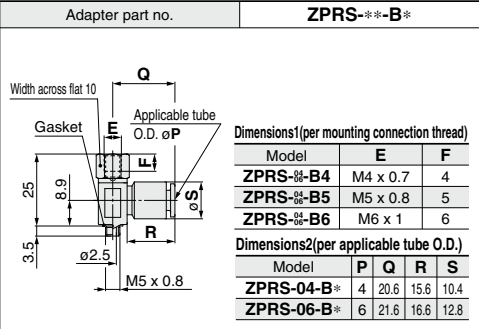
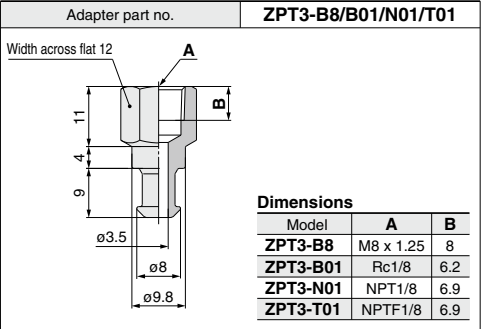
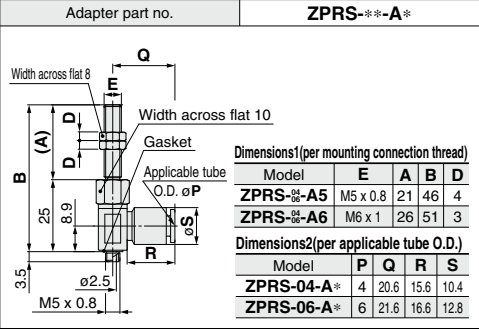
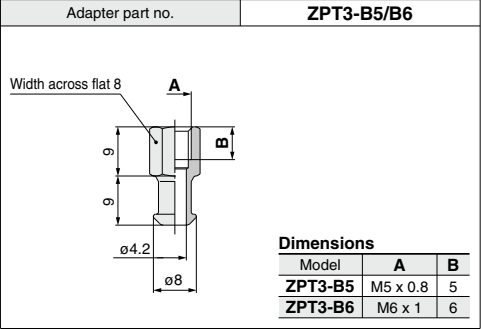
ZP

ZPT

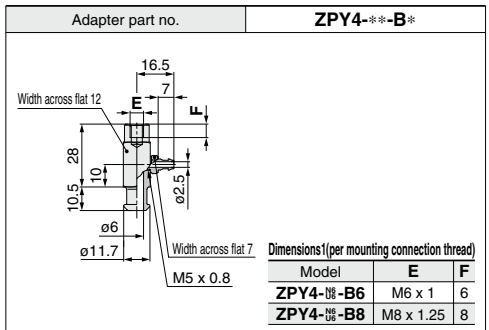
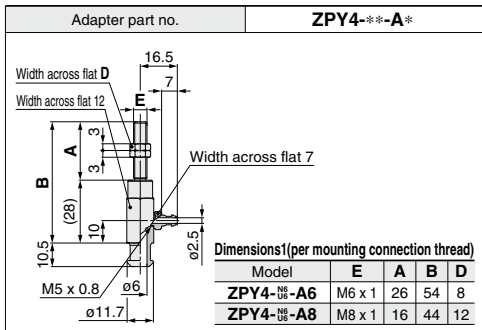
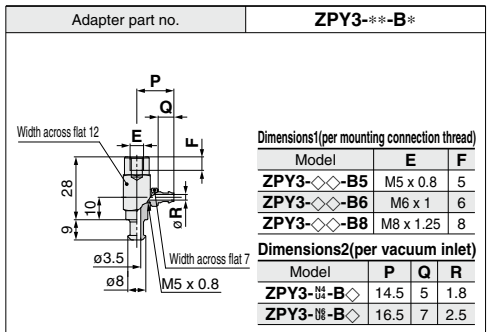
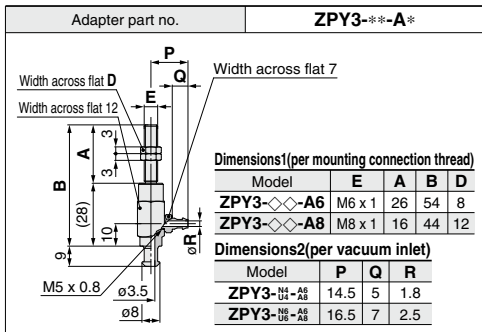
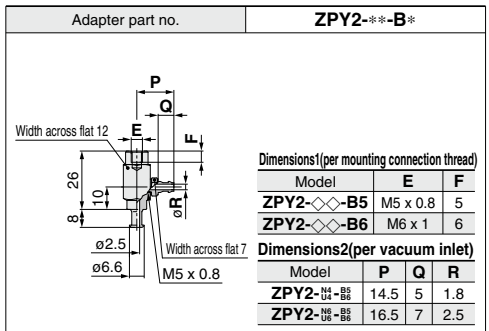
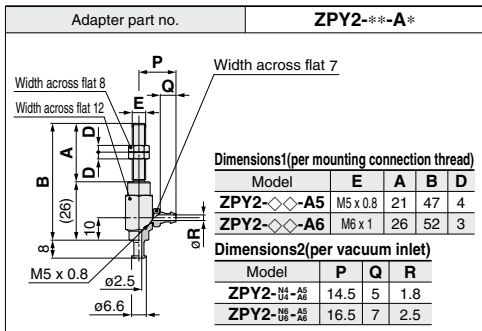
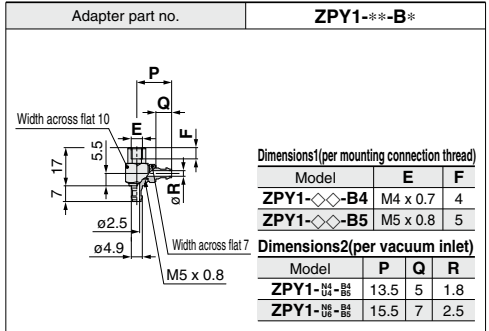
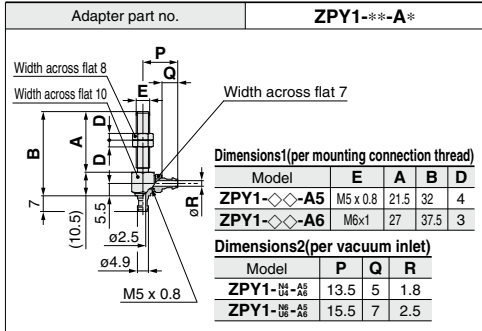
ZPR

XT661

Refer to pages 1241, 1242 for applicable pad part no.



*Refer to page 1242 for applicable pad part no.



ZP3

ZP2

ZP2V

ZP

ZPT

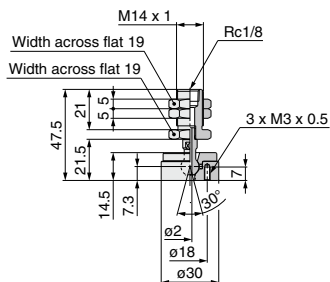
ZPR

XT661

Adapter Assembly Part No.

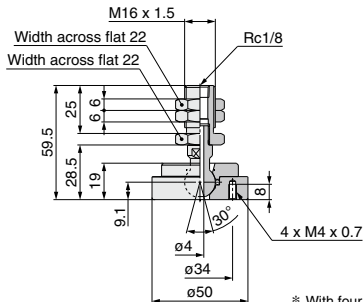
Heavy-duty Ball Joint Adapter Assembly Part No. (Type T)

Adapter assembly part no.	Applicable pad part no.
ZP2A-TF1	ZP40H□ ZP40HB□
	ZP50H□ ZP50HB□
	ZP2-40HCL ZP2-40HNT ZP2-40HFT
	ZP2-50HCL ZP2-50HNT ZP2-50HFT



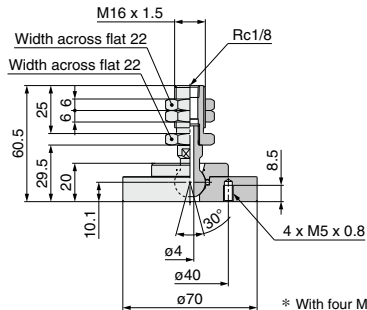
* With three M3 bolts

Adapter assembly part no.	Applicable pad part no.
ZP2A-TF2	ZP63H□ ZP63HB□
	ZP80H□ ZP80HB□
	ZP2-63HCL ZP2-63HNT ZP2-63HFT
	ZP2-80HCL ZP2-80HNT ZP2-80HFT



* With four M4 bolts

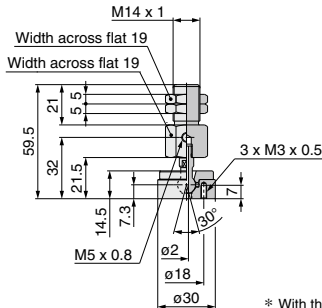
Adapter assembly part no.	Applicable pad part no.
ZP2A-TF3	ZP100H□ ZP100HB□
	ZP125H□ ZP125HB□
	ZP2-100HCL ZP2-100HNT ZP2-100HFT
	ZP2-125HCL ZP2-125HNT ZP2-125HFT



* With four M5 bolts

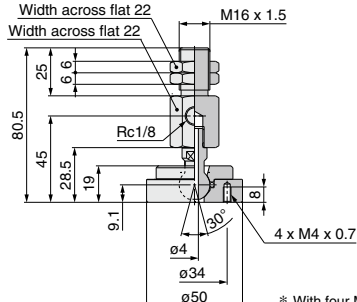
Heavy-duty Ball Joint Adapter Assembly Part No. (Type X)

Adapter assembly part no.	Applicable pad part no.
ZP2A-XF1	ZP40H□ ZP40HB□
	ZP50H□ ZP50HB□
	ZP2-40HCL ZP2-40HNT ZP2-40HFT
	ZP2-50HCL ZP2-50HNT ZP2-50HFT



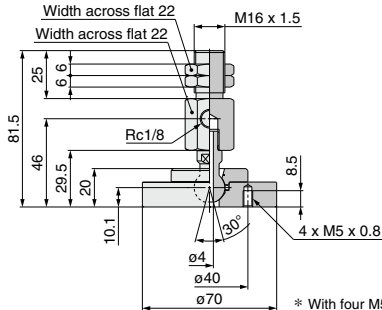
* With three M3 bolts

Adapter assembly part no.	Applicable pad part no.
ZP2A-XF2	ZP63H□ ZP63HB□
	ZP80H□ ZP80HB□
	ZP2-63HCL ZP2-63HNT ZP2-63HFT
	ZP2-80HCL ZP2-80HNT ZP2-80HFT



* With four M4 bolts

Adapter assembly part no.	Applicable pad part no.
ZP2A-XF3	ZP100H□ ZP100HB□
	ZP125H□ ZP125HB□
	ZP2-100HCL ZP2-100HNT ZP2-100HFT
	ZP2-125HCL ZP2-125HNT ZP2-125HFT

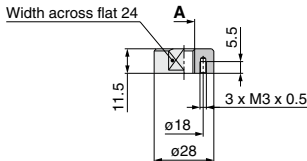


* With four M5 bolts

Adapter Assembly Part No.

Heavy-duty Adapter Assembly Part No. (Type T, Female thread)

Adapter assembly part no.	Applicable pad part no.		
ZPA-T1-B8	ZP40H□	ZP2-40HCL	ZP2-50HNT
	ZP50H□	ZP2-40HNT	ZP2-50HFT
ZPA-T1-B10	ZP40HB□	ZP2-40HFT	ZP2-3050HW□
	ZP50HB□	ZP2-50HCL	

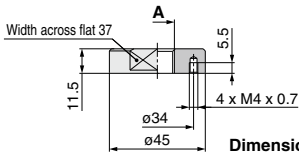


Dimensions

Model	A
ZPA-T1-B8	M8 x 1.25
ZPA-T1-B10	M10 x 1.5

*With three M3 bolts

Adapter assembly part no.	Applicable pad part no.		
ZPA-T2-B8	ZP63H□	ZP2-63HCL	ZP2-80HNT
ZPA-T2-B10	ZP80H□	ZP2-63HNT	ZP2-80HFT
ZPA-T2-B12	ZP63HB□	ZP2-63HFT	
ZPA-T2-B16	ZP80HB□	ZP2-80HCL	

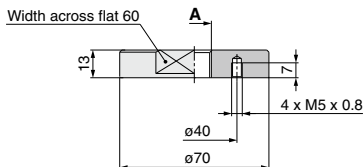


Dimensions

Model	A
ZPA-T2-B8	M8 x 1.25
ZPA-T2-B10	M10 x 1.5
ZPA-T2-B12	M12 x 1.75
ZPA-T2-B16	M16 x 1.5

*With four M4 bolts

Adapter assembly part no.	Applicable pad part no.		
ZPA-T3-B12	ZP100H□	ZP2-100HCL	ZP2-125HNT
	ZP125H□	ZP2-100HNT	ZP2-125HFT
ZPA-T3-B16	ZP100HB□	ZP2-100HFT	
	ZP125HB□	ZP2-125HCL	



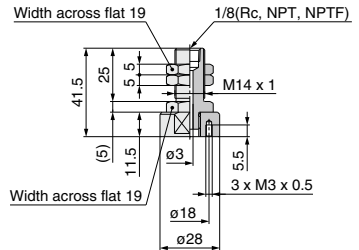
Dimensions

Model	A
ZPA-T3-B12	M12 x 1.75
ZPA-T3-B16	M16 x 1.5

*With four M5 bolts

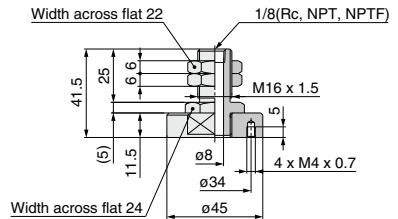
Heavy-duty Adapter Assembly Part No. (Type T, Male thread)

Adapter assembly part no.	Applicable pad part no.		
ZPA-T1-B01	ZP40H□	ZP2-40HCL	ZP2-50HNT
ZPA-T1-N01	ZP50H□	ZP2-40HNT	ZP2-50HFT
ZPA-T1-T01	ZP40HB□	ZP2-40HFT	ZP2-3050HW□
	ZP50HB□	ZP2-50HCL	



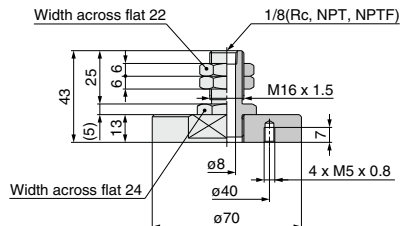
*With three M3 bolts

Adapter assembly part no.	Applicable pad part no.		
ZPA-T2-B01	ZP63H□	ZP2-63HCL	ZP2-80HNT
ZPA-T2-N01	ZP80H□	ZP2-63HNT	ZP2-80HFT
ZPA-T2-T01	ZP63HB□	ZP2-63HFT	
	ZP80HB□	ZP2-80HCL	



*With four M4 bolts

Adapter assembly part no.	Applicable pad part no.		
ZPA-T3-B01	ZP100H□	ZP2-100HCL	ZP2-125HNT
ZPA-T3-N01	ZP125H□	ZP2-100HNT	ZP2-125HFT
ZPA-T3-T01	ZP100HB□	ZP2-100HFT	
	ZP125HB□	ZP2-125HCL	



*With four M5 bolts

ZP3

ZP2

ZP2V

ZP

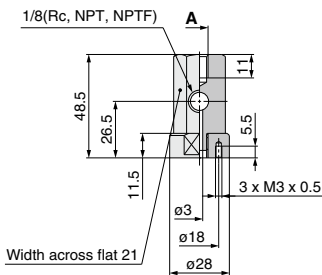
ZPT

ZPR

XT661

Heavy-duty Adapter Assembly Part No. (Type X, Female thread)

Adapter assembly part no.	Applicable pad part no.	
ZPA-X1-B01-B8	ZP40H□	ZP2-40HCL
ZPA-X1-N01-B8	ZP50H□	ZP2-40HNT
ZPA-X1-T01-B8	ZP40HB□	ZP2-40HFT
	ZP50HB□	ZP2-50HCL
ZPA-X1-B01-B10		ZP2-50HNT
ZPA-X1-N01-B10		ZP2-50HFT
ZPA-X1-T01-B10		ZP2-3050HW□

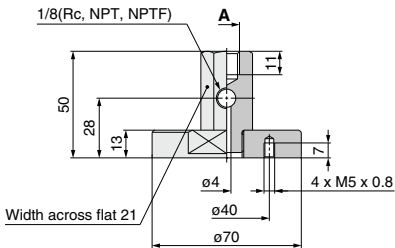


Dimensions

Model	A
ZPA-X1-□01-B8	M8 x 1.25
ZPA-X1-□01-B10	M10 x 1.5

*With three M3 bolts

Adapter assembly part no.	Applicable pad part no.	
ZPA-X3-B01-B10	ZP100H□	ZP2-100HCL
ZPA-X3-N01-B10	ZP125H□	ZP2-100HNT
ZPA-X3-T01-B10	ZP100HB□	ZP2-100HFT
	ZP125HB□	ZP2-125HCL
ZPA-X3-B01-B12		ZP2-125HNT
ZPA-X3-N01-B12		ZP2-125HFT
ZPA-X3-T01-B12		

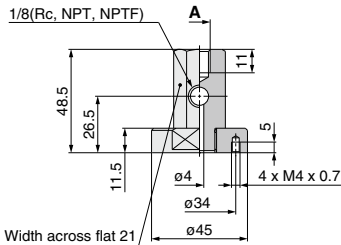


Dimensions

Model	A
ZPA-X3-□01-B10	M10 x 1.5
ZPA-X3-□01-B12	M12 x 1.75

*With four M5 bolts

Adapter assembly part no.	Applicable pad part no.	
ZPA-X2-B01-B10	ZP63H□	ZP2-63HCL
ZPA-X2-N01-B10	ZP80H□	ZP2-63HNT
ZPA-X2-T01-B10	ZP63HB□	ZP2-63HFT
ZPA-X2-B01-B12	ZP80HB□	ZP2-80HCL
ZPA-X2-N01-B12		ZP2-80HNT
ZPA-X2-T01-B12		ZP2-80HFT



Dimensions

Model	A
ZPA-X2-□01-B10	M10 x 1.5
ZPA-X2-□01-B12	M12 x 1.75

*With four M4 bolts

Series **ZP2**

Buffer Assembly Part No.

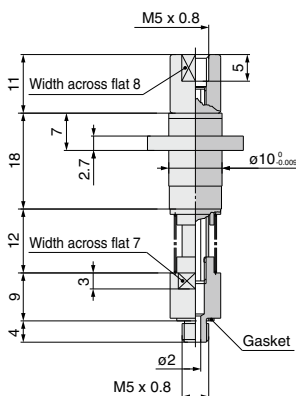
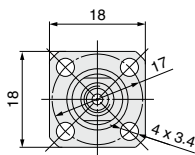
Ball Spline

Buffer assembly part no.

ZP2B-T3S6

Applicable pad part no.

ZP02U ☐
ZP04U ☐
ZP06U ☐
ZP08U ☐



ZP3

ZP2

ZP2V

ZP

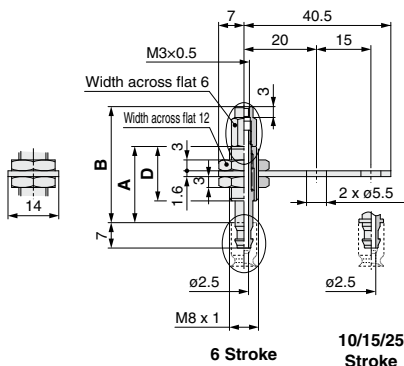
ZPT

ZPR

XT661

Vacuum Entry Vertical/Buffer Assembly Part No.

ZPB1J^{6 15}_{10 25}-B3

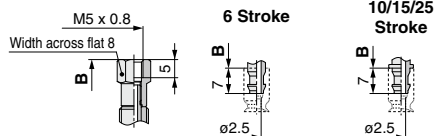


Dimensions

(Vacuum entry: Female thread M3 x 0.5)

Model	A	B	D
ZPB1J6-B3	21	32	15
ZPB1J10-B3	54	65	
ZPB1J15-B3	59	70	43
ZPB1J25-B3	69	80	

ZPB1J^{6 15}_{10 25}-B5

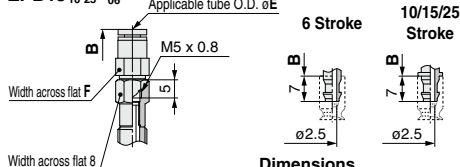


Dimensions

(Vacuum entry: Female thread M5 x 0.8)

Model	A	B	D
ZPB1J6-B5	21	34	15
ZPB1J10-B5	54	67	
ZPB1J15-B5	59	72	43
ZPB1J25-B5	69	82	

ZPB1J^{6 15}_{10 25}-04

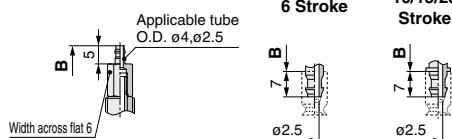


Dimensions

(Vacuum entry: One-touch type)

Model	A	D	E.4	E.6	F
ZPB1J6-04	21	15	47.9	48.7	
ZPB1J10-04	54		80.9	81.7	
ZPB1J15-04	59	43	85.9	86.7	10
ZPB1J25-04	69		95.9	96.7	

ZPB1J^{6 15}_{10 25}-N4

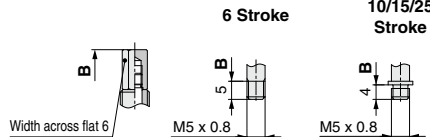


Dimensions

(Vacuum entry: Barb type)

Model	A	B	D
ZPB1J6-N4	21	35	15
ZPB1J10-N4	54	68	
ZPB1J15-N4	59	73	43
ZPB1J25-N4	69	83	

ZPB1J^{6 15}_{10 25}



Dimensions

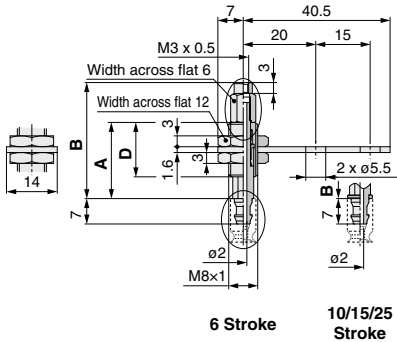
(Buffer for ZPR/ZPY)

Model	A	B	D
ZPB1J6	21	34	15
ZPB1J10	54	65	
ZPB1J15	59	70	43
ZPB1J25	69	80	

* Refer to page 897 for nut tightening torque.

Vacuum Entry Vertical/Buffer Assembly Part No.

ZPB1K^{6 15}_{10 25}-B3

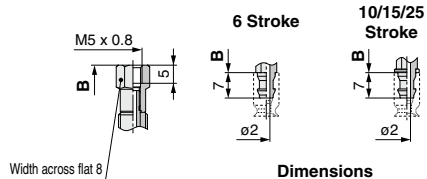


Dimensions

(Vacuum entry: Female thread M3 x 0.5)

Model	A	B	D
ZPB1K6-B3	21	32	15
ZPB1K10-B3	54	65	
ZPB1K15-B3	59	70	43
ZPB1K25-B3	69	80	

ZPB1K^{6 15}_{10 25}-B5

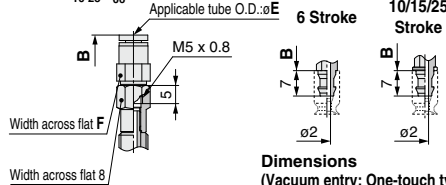


Dimensions

(Vacuum entry: Female thread M5 x 0.8)

Model	A	B	D
ZPB1K6-B5	21	34	15
ZPB1K10-B5	54	67	
ZPB1K15-B5	59	72	43
ZPB1K25-B5	69	82	

ZPB1K^{6 15 04}_{10 25 06}

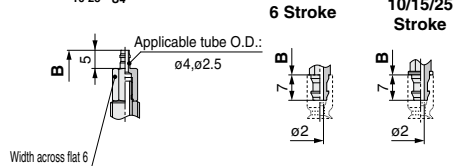


Dimensions

(Vacuum entry: One-touch type)

Model	A	D	E:4	E:6
ZPB1K6- ^{04 06} _{10 25}	21	15	47.9	48.7
ZPB1K10- ^{04 06} _{10 25}	54	80.9	8	81.7
ZPB1K15- ^{04 06} _{10 25}	59	43	85.9	86.7
ZPB1K25- ^{04 06} _{10 25}	69	95.9		96.7

ZPB1K^{6 15 N4}_{10 25 U4}

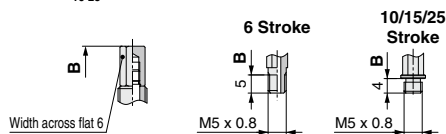


Dimensions

(Vacuum entry: Barb type)

Model	A	B	D
ZPB1K6- ^{N4 U4} _{10 25}	21	35	15
ZPB1K10- ^{N4 U4} _{10 25}	54	68	
ZPB1K15- ^{N4 U4} _{10 25}	59	73	43
ZPB1K25- ^{N4 U4} _{10 25}	69	83	

ZPB1K^{6 15}_{10 25}



Dimensions

(Buffer for ZPR/ZPY)

Model	A	B	D
ZPB1K6	21	34	15
ZPB1K10	54	65	
ZPB1K15	59	70	43
ZPB1K25	69	80	

ZP3

ZP2

ZP2V

ZP

ZPT

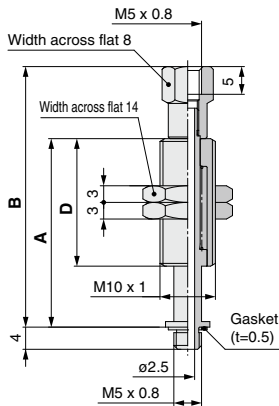
ZPR

XT661

* Refer to page 897 for nut tightening torque.

Vacuum Entry Vertical/Buffer Assembly Part No.

ZPB2J^{10 40}_{20 30}-B5

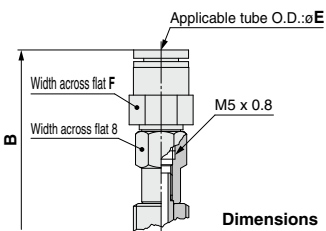


Dimensions

(Vacuum entry: Female thread M5 x 0.8)

Model	A	B	D
ZPB2J10-B5	34	47	23
ZPB2J20-B5	72	85	51
ZPB2J30-B5	82	95	
ZPB2J40-B5	118	131	
ZPB2J50-B5	128	141	77

ZPB2J^{10 40}_{20 30}-ø4

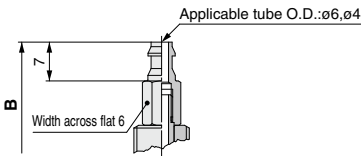


Dimensions

(Vacuum entry: One-touch type)

Model	A	D	E:4		E:6	
			B	F	B	F
ZPB2J10-ø4	34	23	60.9		61.7	
ZPB2J20-ø4	72	51	98.9		99.7	
ZPB2J30-ø4	82		108.9	8	109.7	10
ZPB2J40-ø4	118		144.9		145.7	
ZPB2J50-ø4	128	77	154.9		155.7	

ZPB2J^{10 40}_{20 30}-N6

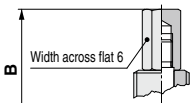


Dimensions

(Vacuum entry: Barb type)

Model	A	B	D
ZPB2J10-N6	34	49	23
ZPB2J20-N6	72	87	
ZPB2J30-N6	82	97	51
ZPB2J40-N6	118	133	
ZPB2J50-N6	128	143	77

ZPB2J^{10 40}_{20 30} (Without gasket)



Dimensions

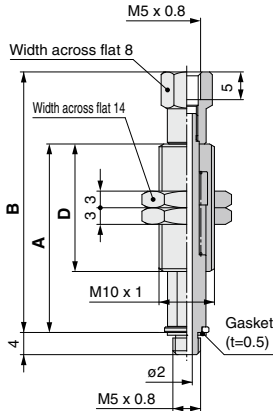
(Buffer for ZPR/ZPY)

Model	A	B	D
ZPB2J10	34	45	23
ZPB2J20	72	83	
ZPB2J30	82	93	51
ZPB2J40	118	129	
ZPB2J50	128	139	77

* Refer to page 897 for nut tightening torque.

Vacuum Entry Vertical/Buffer Assembly Part No.

ZPB2K^{10 40}_{20 50}-B5

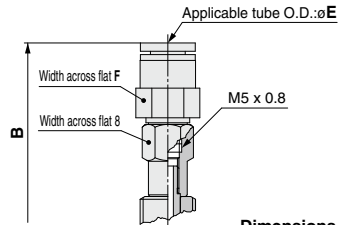


Dimensions

(Vacuum entry: Female thread M5 x 0.8)

Model	A	B	D
ZPB2K10-B5	34	47	23
ZPB2K20-B5	72	85	51
ZPB2K30-B5	82	95	
ZPB2K40-B5	118	131	77
ZPB2K50-B5	128	141	

ZPB2K^{10 40}_{20 50}-04

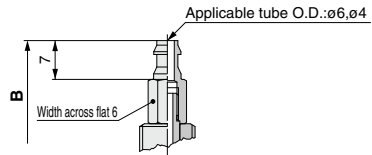


Dimensions

(Vacuum entry: One-touch type)

Model	A	D	E:4		E:6	
			B	F	B	F
ZPB2K10-04	34	23	60.9		61.7	
ZPB2K20-04	72	51	96.9		99.7	
ZPB2K30-04	82		106.9	8	109.7	10
ZPB2K40-04	118	77	144.9		145.7	
ZPB2K50-04	128		154.9		155.7	

ZPB2K^{10 40}_{20 50}-N6

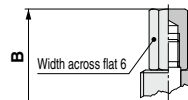


Dimensions

(Vacuum entry: Barb type)

Model	A	B	D
ZPB2K10-N6	34	49	23
ZPB2K20-N6	72	87	
ZPB2K30-N6	82	97	51
ZPB2K40-N6	118	133	
ZPB2K50-N6	128	143	77

ZPB2K^{10 40}_{20 50} (Without gasket)



Dimensions

(Buffer for ZPR/ZPY)

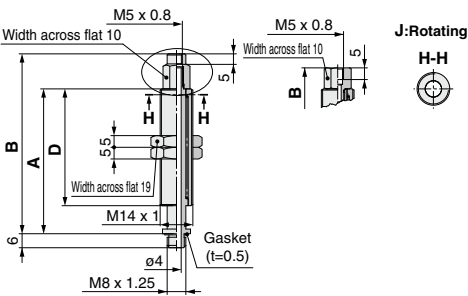
Model	A	B	D
ZPB2K10	34	45	23
ZPB2K20	72	83	
ZPB2K30	82	93	51
ZPB2K40	118	129	
ZPB2K50	128	139	77

* Refer to page 897 for nut tightening torque.

Vacuum Entry Vertical/Buffer Assembly Part No.

ZPB3J10-B5

ZPB3J²⁰₃₀-B5

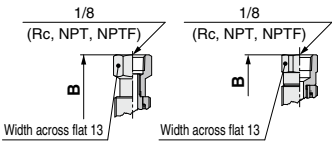


Dimensions
(Vacuum entry: Female thread M5 x 0.8)

Model	A	B	D
ZPB3J10-B5	62	77	
ZPB3J20-B5	72	81	50
ZPB3J30-B5	82	91	
ZPB3J50-B5	127	136	75

ZPB3J10-◇01

ZPB3J²⁰₃₀-◇01

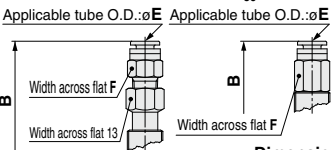


Dimensions
(Vacuum entry: 1/8 type)

Model	A	B	D
ZPB3J10-◇01	62	78.5	
ZPB3J20-◇01	72	84	50
ZPB3J30-◇01	82	94	
ZPB3J50-◇01	127	139	75

ZPB3J10-⁰⁶₀₈

ZPB3J²⁰₃₀-⁰⁶₀₈

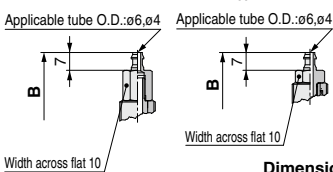


Dimensions
(Vacuum entry: One-touch type)

Model	A	D	E:6	E:8
ZPB3J10- ⁰⁶ ₀₈	62	97		102.5
ZPB3J20- ⁰⁶ ₀₈	72	50	91.9	96.9
ZPB3J30- ⁰⁶ ₀₈	82		101.9	106.9
ZPB3J50- ⁰⁶ ₀₈	127	75	146.9	151.9

ZPB3J10-^{N6}_{U6}

ZPB3J²⁰₃₀-^{N6}_{U6}



Dimensions
(Vacuum entry: Barb type)

Model	A	B	D
ZPB3J10- ^{N6} _{U6}	62	81	
ZPB3J20- ^{N6} _{U6}	72	84	50
ZPB3J30- ^{N6} _{U6}	82	94	
ZPB3J50- ^{N6} _{U6}	127	139	75

ZPB3J10
(Without gasket)

ZPB3J²⁰₃₀
(Without gasket)



Dimensions
(Buffer for ZPR/ZPY)

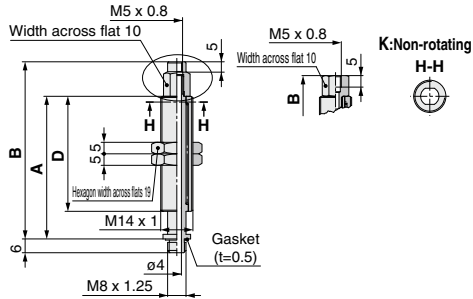
Model	A	B	D
ZPB3J10	62	80	
ZPB3J20	72	77	50
ZPB3J30	82	87	
ZPB3J50	127	132	75

* Refer to page 897 for nut tightening torque.

Vacuum Entry Vertical/Buffer Assembly Part No.

ZPB3K10-B5

ZPB3K²⁰₃₀-B5



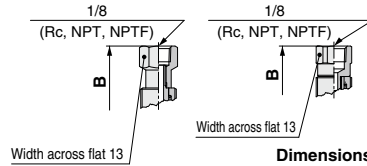
Dimensions

(Vacuum entry: Female thread M5 x 0.8)

Model	A	B	D
ZPB3K10-B5	62	77	
ZPB3K20-B5	72	81	50
ZPB3K30-B5	82	91	
ZPB3K50-B5	127	136	75

ZPB3K10-◇01

ZPB3K²⁰₃₀-◇01



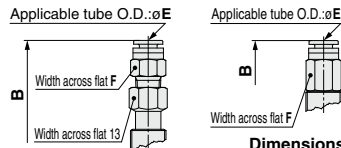
Dimensions

(Vacuum entry: 1/8 type)

Model	A	B	D
ZPB3K10-◇01	62	78.5	
ZPB3K20-◇01	72	84	50
ZPB3K30-◇01	82	94	
ZPB3K50-◇01	127	139	75

ZPB3K10-⁰⁶₅₀

ZPB3K²⁰₃₀-⁰⁶₅₀



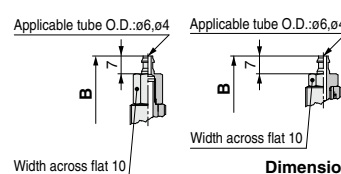
Dimensions

(Vacuum entry: One-touch type)

Model	A	D	E:6	E:8
ZPB3K10- ⁰⁶ ₅₀	62	97	102.5	
ZPB3K20- ⁰⁶ ₅₀	72	50	91.9	96.9
ZPB3K30- ⁰⁶ ₅₀	82	101.9	12	106.9
ZPB3K50- ⁰⁶ ₅₀	127	75	146.9	151.9

ZPB3K10-¹⁶₅₀

ZPB3K²⁰₃₀-¹⁶₅₀



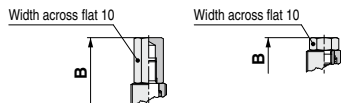
Dimensions

(Vacuum entry: Barb type)

Model	A	B	D
ZPB3K10- ¹⁶ ₅₀	62	81	
ZPB3K20- ¹⁶ ₅₀	72	84	50
ZPB3K30- ¹⁶ ₅₀	82	94	
ZPB3K50- ¹⁶ ₅₀	127	139	75

ZPB3K10
(Without gasket)

ZPB3K²⁰₃₀
(Without gasket)



Dimensions

(Buffer for ZPR/ZPY)

Model	A	B	D
ZPB3K10	62	80	
ZPB3K20	72	77	50
ZPB3K30	82	87	
ZPB3K50	127	132	75

ZP3

ZP2

ZP2V

ZP

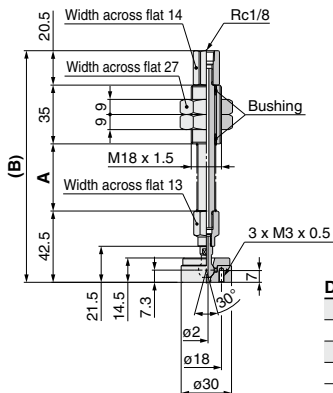
ZPT

ZPR

XT661

Heavy-duty Ball Joint Buffer Assembly Part No. (Type T)

Buffer assembly part no.	
Buffer body (Material: Brass)	Buffer body (Material: Steel)
ZP2B-TF1JB25	ZP2B-TF1JF25
ZP2B-TF1JB50	ZP2B-TF1JF50
ZP2B-TF1JB75	ZP2B-TF1JF75



Dimensions

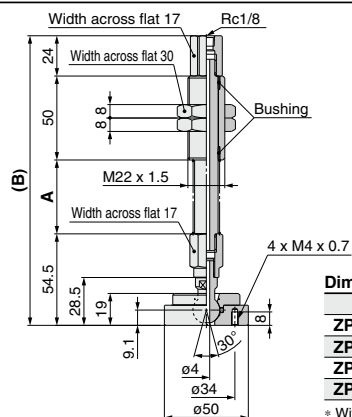
Model	A	B
ZP2B-TF1(JB/JF)25	40	138
ZP2B-TF1(JB/JF)50	75	173
ZP2B-TF1(JB/JF)75	111	209

* With three M3 bolts

Applicable pad part no.

ZP40H	☐
ZP50H	☐
ZP40HB	☐
ZP50HB	☐
ZP2-40H	☐
ZP2-50H	☐

Buffer assembly part no.	
Buffer body (Material: Brass)	Buffer body (Material: Steel)
ZP2B-TF2JB25	ZP2B-TF2JF25
ZP2B-TF2JB50	ZP2B-TF2JF50
ZP2B-TF2JB75	ZP2B-TF2JF75
ZP2B-TF2JB100	ZP2B-TF2JF100



Dimensions

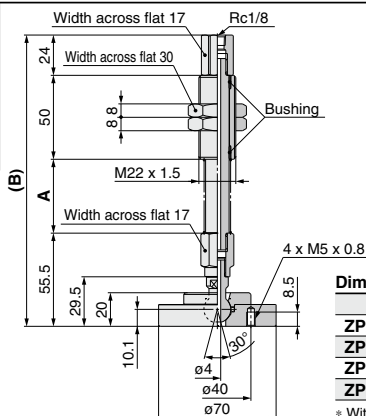
Model	A	B
ZP2B-TF2(JB/JF)25	44	172.5
ZP2B-TF2(JB/JF)50	80	208.5
ZP2B-TF2(JB/JF)75	120	248.5
ZP2B-TF2(JB/JF)100	155	283.5

* With four M4 bolts

Applicable pad part no.

ZP63H	☐
ZP80H	☐
ZP63HB	☐
ZP80HB	☐
ZP2-63H	☐
ZP2-80H	☐

Buffer assembly part no.	
Buffer body (Material: Brass)	Buffer body (Material: Steel)
ZP2B-TF3JB25	ZP2B-TF3JF25
ZP2B-TF3JB50	ZP2B-TF3JF50
ZP2B-TF3JB75	ZP2B-TF3JF75
ZP2B-TF3JB100	ZP2B-TF3JF100



Dimensions

Model	A	B
ZP2B-TF3(JB/JF)25	44	173.5
ZP2B-TF3(JB/JF)50	80	209.5
ZP2B-TF3(JB/JF)75	120	249.5
ZP2B-TF3(JB/JF)100	155	284.5

* With four M5 bolts

Applicable pad part no.

ZP100H	☐
ZP125H	☐
ZP100HB	☐
ZP125HB	☐
ZP2-100H	☐
ZP2-125H	☐

Buffer Assembly Part No.

* Refer to page 897 for nut tightening torque.

Heavy-duty Buffer Assembly Part No. (Type T)

Buffer assembly part no.		Applicable pad part no.												
Buffer body		ZP40H□												
(Material: Aluminum alloy)		ZP50H□												
ZPB-T1J25-B01		ZP40HB□												
ZPB-T1J25-N01		ZP50HB□												
ZPB-T1J25-T01		ZP2-40H□												
ZPB-T1J50-B01		ZP2-50H□												
ZPB-T1J50-N01		ZP2-3050HW□												
ZPB-T1J50-T01														
ZPB-T1J75-B01	Dimensions <table><tr><th>Model</th><th>A</th><th>B</th></tr><tr><td>ZPB-T1J25-□01</td><td>40</td><td>107</td></tr><tr><td>ZPB-T1J50-□01</td><td>75</td><td>142</td></tr><tr><td>ZPB-T1J75-□01</td><td>111</td><td>178</td></tr></table>	Model	A	B	ZPB-T1J25-□01	40	107	ZPB-T1J50-□01	75	142	ZPB-T1J75-□01	111	178	
Model		A	B											
ZPB-T1J25-□01		40	107											
ZPB-T1J50-□01	75	142												
ZPB-T1J75-□01	111	178												
ZPB-T1J75-N01														
ZPB-T1J75-T01														

* With three M3 bolts

* With three M3 bolts

Buffer assembly part no.
Buffer body
(Material: Aluminum alloy)
ZPB-T2J25-B01
ZPB-T2J25-N01
ZPB-T2J25-T01
ZPB-T2J50-B01
ZPB-T2J50-N01
ZPB-T2J50-T01
ZPB-T2J75-B01
ZPB-T2J75-N01
ZPB-T2J75-T01

Technical drawing of a buffer assembly. The drawing shows a side view of the assembly with various dimensions and labels. Key dimensions include: Width across flat 14, Width across flat 27, 1/8 (Rc, NPT, NPTF), 20.5, 35, 9.9, M18 x 1.5, A, B, 11.5, 5, 4 x M4 x 0.7, ø3, ø34, and ø45. The drawing also shows a cross-section of the buffer body with a 1/8 (Rc, NPT, NPTF) thread and a 1/8 (Rc, NPT, NPTF) thread.

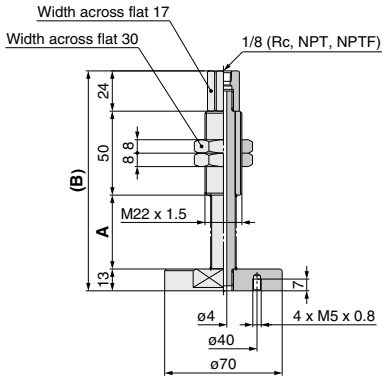
Applicable pad part no.
ZP63H□
ZP80H□
ZP63HB□
ZP80HB□
ZP2-63H□
ZP2-80H□

Dimensions

Model	A	B
ZPB-T2J25-□01	40	107
ZPB-T2J50-□01	75	142
ZPB-T2J75-□01	111	178

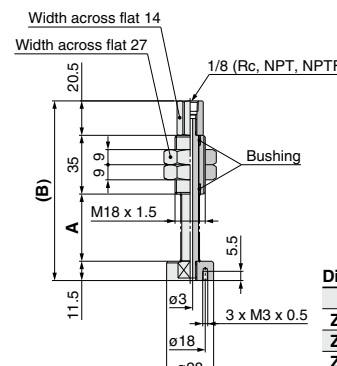
* With four M4 bolts

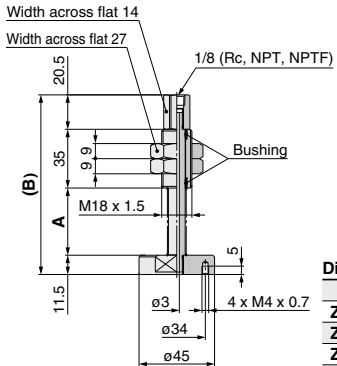
* With four M4 bolts

Buffer assembly part no.		Applicable pad part no.															
Buffer body		ZP100H□															
(Material: Aluminum alloy)		ZP125H□															
ZPB-T3J25-B01		ZP100HB□															
ZPB-T3J25-N01		ZP125HB□															
ZPB-T3J25-T01		ZP2-100H□															
ZPB-T3J50-B01		ZP2-125H□															
ZPB-T3J50-N01																	
ZPB-T3J50-T01																	
ZPB-T3J75-B01	Dimensions <table><tr><th>Model</th><th>A</th><th>B</th></tr><tr><td>ZPB-T3J25-□01</td><td>44</td><td>131</td></tr><tr><td>ZPB-T3J50-□01</td><td>80</td><td>167</td></tr><tr><td>ZPB-T3J75-□01</td><td>120</td><td>207</td></tr><tr><td>ZPB-T3J100-□01</td><td>155</td><td>242</td></tr></table>	Model	A	B	ZPB-T3J25-□01	44	131	ZPB-T3J50-□01	80	167	ZPB-T3J75-□01	120	207	ZPB-T3J100-□01	155	242	
Model		A	B														
ZPB-T3J25-□01		44	131														
ZPB-T3J50-□01	80	167															
ZPB-T3J75-□01	120	207															
ZPB-T3J100-□01	155	242															
ZPB-T3J75-N01																	
ZPB-T3J75-T01																	
ZPB-T3J100-B01	* With four M5 bolts																
ZPB-T3J100-N01																	
ZPB-T3J100-T01																	

* Refer to page 897 for nut tightening torque.

Heavy-duty Buffer Assembly Part No. (Type T)

Buffer assembly part no.			Applicable pad part no.												
Buffer body (Material: Brass)	Buffer body (Material: Steel)														
ZPB-T1JB25-B01	ZPB-T1JF25-B01	Dimensions <table><tr><th>Model</th><th>A</th><th>B</th></tr><tr><td>ZPB-T1(JB/JF)25-□01</td><td>40</td><td>107</td></tr><tr><td>ZPB-T1(JB/JF)50-□01</td><td>75</td><td>142</td></tr><tr><td>ZPB-T1(JB/JF)75-□01</td><td>111</td><td>178</td></tr></table> * With three M3 bolts	Model	A	B	ZPB-T1(JB/JF)25-□01	40	107	ZPB-T1(JB/JF)50-□01	75	142	ZPB-T1(JB/JF)75-□01	111	178	ZP40H□ ZP50H□ ZP40HB□ ZP50HB□ ZP2-40H□ ZP2-50H□ ZP2-3050WH□
Model	A		B												
ZPB-T1(JB/JF)25-□01	40		107												
ZPB-T1(JB/JF)50-□01	75		142												
ZPB-T1(JB/JF)75-□01	111		178												
ZPB-T1JB25-N01	ZPB-T1JF25-N01														
ZPB-T1JB25-T01	ZPB-T1JF25-T01														
ZPB-T1JB50-B01	ZPB-T1JF50-B01														
ZPB-T1JB50-N01	ZPB-T1JF50-N01														
ZPB-T1JB50-T01	ZPB-T1JF50-T01														
ZPB-T1JB75-B01	ZPB-T1JF75-B01														
ZPB-T1JB75-N01	ZPB-T1JF75-N01														
ZPB-T1JB75-T01	ZPB-T1JF75-T01														

Buffer assembly part no.			Applicable pad part no.
Buffer body (Material: Brass)	Buffer body (Material: Steel)		
ZPB-T2JB25-B01	ZPB-T2JF25-B01	Width across flat 14 Width across flat 27 20.5 35 9.9 11.5 A B M18 x 1.5 Bushing 1/8 (Rc, NPT, NPTF) 5 4 x M4 x 0.7 ø3 ø34 ø45	ZP63H□ ZP80H□ ZP63HB□ ZP80HB□ ZP2-63H□ ZP2-80H□
ZPB-T2JB25-N01	ZPB-T2JF25-N01		
ZPB-T2JB25-T01	ZPB-T2JF25-T01		
ZPB-T2JB50-B01	ZPB-T2JF50-B01		
ZPB-T2JB50-N01	ZPB-T2JF50-N01		
ZPB-T2JB50-T01	ZPB-T2JF50-T01		
ZPB-T2JB75-B01	ZPB-T2JF75-B01		
ZPB-T2JB75-N01	ZPB-T2JF75-N01		
ZPB-T2JB75-T01	ZPB-T2JF75-T01		

Dimensions

Model	A	B
ZPB-T2(JB/JF)25-□01	40	107
ZPB-T2(JB/JF)50-□01	75	142
ZPB-T2(JB/JF)75-□01	111	178

* With four M4 bolts

Buffer assembly part no.	
Buffer body (Material: Brass)	Buffer body (Material: Steel)
ZPB-T3JB25-B01	ZPB-T3JF25-B01
ZPB-T3JB25-N01	ZPB-T3JF25-N01
ZPB-T3JB25-T01	ZPB-T3JF25-T01
ZPB-T3JB50-B01	ZPB-T3JF50-B01
ZPB-T3JB50-N01	ZPB-T3JF50-N01
ZPB-T3JB50-T01	ZPB-T3JF50-T01
ZPB-T3JB75-B01	ZPB-T3JF75-B01
ZPB-T3JB75-N01	ZPB-T3JF75-N01
ZPB-T3JB75-T01	ZPB-T3JF75-T01
ZPB-T3JB100-B01	ZPB-T3JF100-B01
ZPB-T3JB100-N01	ZPB-T3JF100-N01
ZPB-T3JB100-T01	ZPB-T3JF100-T01

Width across flat 17

Width across flat 30

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

24

50

8.8

M22 x 1.5

13

A

B

18

11.5

18

28

1.5

3

3 x M5 x 0.8

5

1/8 (Rc, NPT, NPTF)

Bushing

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M22 x 1.5

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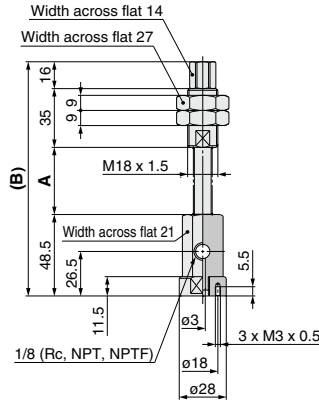
3

3 x M5 x 0

* Refer to page 897 for nut tightening torque.

Heavy-duty Buffer Assembly Part No. (Type X)

Buffer assembly part no.
Buffer body (Material: Aluminum alloy)
ZPB-X1J25-B01
ZPB-X1J25-N01
ZPB-X1J25-T01
ZPB-X1J50-B01
ZPB-X1J50-N01
ZPB-X1J50-T01
ZPB-X1J75-B01
ZPB-X1J75-N01
ZPB-X1J75-T01



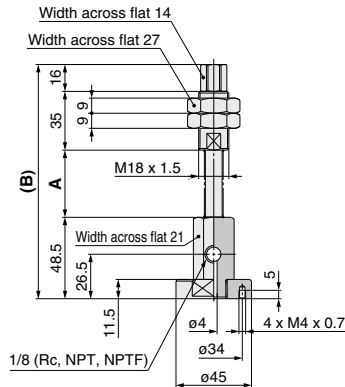
Applicable pad part no.
ZP40H□
ZP50H□
ZP40HB□
ZP50HB□
ZP2-40H□
ZP2-50H□

Dimensions

Model	A	B
ZPB-X1J25-□01	40	139.5
ZPB-X1J50-□01	75	174.5
ZPB-X1J75-□01	111	210.5

* With three M3 bolts

Buffer assembly part no.
Buffer body (Material: Aluminum alloy)
ZPB-X2J25-B01
ZPB-X2J25-N01
ZPB-X2J25-T01
ZPB-X2J50-B01
ZPB-X2J50-N01
ZPB-X2J50-T01
ZPB-X2J75-B01
ZPB-X2J75-N01
ZPB-X2J75-T01



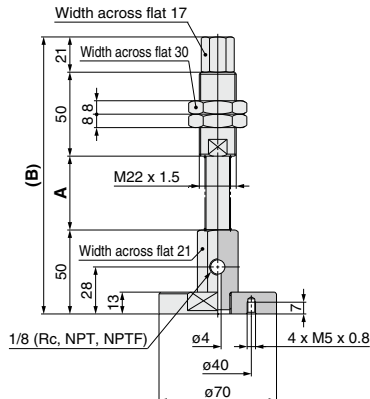
Applicable pad part no.
ZP63H□
ZP80H□
ZP63HB□
ZP80HB□
ZP2-63H□
ZP2-80H□

Dimensions

Model	A	B
ZPB-X2J25-□01	40	139.5
ZPB-X2J50-□01	75	174.5
ZPB-X2J75-□01	111	210.5

* With four M4 bolts

Buffer assembly part no.
Buffer body (Material: Aluminum alloy)
ZPB-X3J25-B01
ZPB-X3J25-N01
ZPB-X3J25-T01
ZPB-X3J50-B01
ZPB-X3J50-N01
ZPB-X3J50-T01
ZPB-X3J75-B01
ZPB-X3J75-N01
ZPB-X3J75-T01
ZPB-X3J100-B01
ZPB-X3J100-N01
ZPB-X3J100-T01



Applicable pad part no.
ZP100H□
ZP125H□
ZP100HB□
ZP125HB□
ZP2-100H□
ZP2-125H□

Dimensions

Model	A	B
ZPB-X3J25-□01	44	165
ZPB-X3J50-□01	80	201
ZPB-X3J75-□01	120	241
ZPB-X3J100-□01	155	276

* With four M5 bolts

