

Bernoulli Gripper

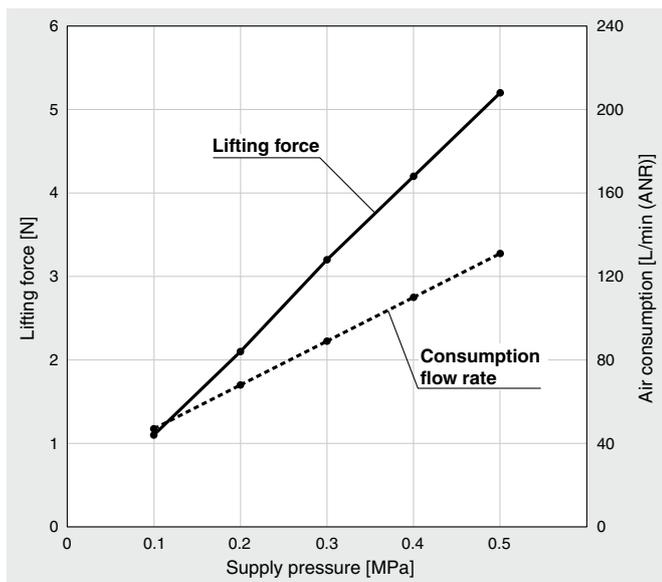
ø20

The ZNC20-X1 Bernoulli gripper is to be discontinued as of February 2023. Consider selecting a ZNC series (body size ø20) Bernoulli gripper as a substitute. [Click here for details.](#)

A type with a mounting plate has been added. For the adsorption transfer of thin cloths, films, printed circuit boards, etc.



Lifting Force and Air Consumption



Application Examples For the adsorption of thin cloths

Body size: ø20

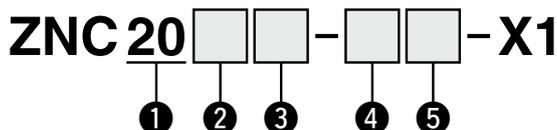
Body size: ø40

For the adsorption of plastic cases

* The body mounting adapter should be provided by the customer.

The ZNC20-X1 Bernoulli gripper is to be discontinued as of February 2023. Consider selecting a ZNC series (body size ø20) Bernoulli gripper as a substitute. [Click here for details.](#)

How to Order



1 Body size

20	ø20 mm
-----------	--------

2 Body material

Nil	Aluminum
P	Resin
S	Stainless steel

3 Mounting plate

Nil	Without mounting plate	
T	With mounting plate	Aluminum
TS		Stainless steel

* The mounting plate is shipped together with the product but does not come assembled.
 * The piping methods for types with and without a mounting plate are shown in Table 1.

4 Attachment

Nil	Basic type (Without attachment)	
PN	With stopper	NBR (Black)
PS		Silicone rubber (White)
VS	With vibration suppression cover	Stainless steel

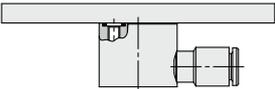
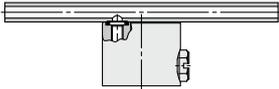
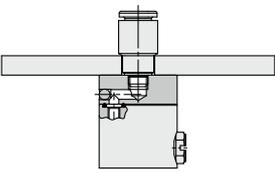
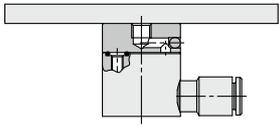
* The stopper and vibration suppression cover cannot be used in combination.

5 Pressure sensor

Nil	None
S	With pressure sensor Part no.: PSE541-M5-X2

* The pressure sensor is shipped together with the product but does not come assembled.

Table (1) Piping

	Side ported	Body ported (Requires no piping)
Without mounting plate	 <p>Can be used by blocking the supply port on the top surface of the product with the mounting surface and connecting from the side port</p>	 <p>Can be used by connecting the piping inside the mounting surface with the supply port on the top surface of the product</p>
With mounting plate	 <p>Can be used by mounting a fitting on the supply port on the top surface of the product and connecting</p>	 <p>Can be used by blocking the supply port on the top surface of the product with the mounting plate and connecting from the side port</p>

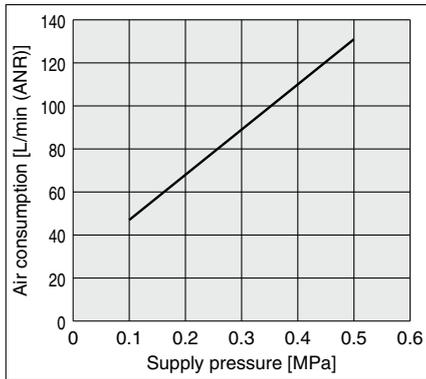
Specifications

Model		ZNC20	
Lifting force [N]*1, *3		5.2	
Air consumption [L/min(ANR)]*2, *3		131	
Type		Bernoulli	
Fluid		Air	
Operating pressure		0.1 to 0.5 MPa	
Proof pressure		0.75 MPa	
Ambient and operating temperatures*4	Body material	Aluminum	-5 to 80°C (0 to 50°C)
		Resin	-5 to 40°C (0 to 40°C)
		Stainless steel	-5 to 80°C (0 to 50°C)
Grease		Grease-free	
Weight [g]*5	Body material	Aluminum	12
		Resin	7
		Stainless steel	34
Pressure sensor*6		PSE541-M5-X2 (Grease-free) Rated pressure range: 0 to -101 kPa	

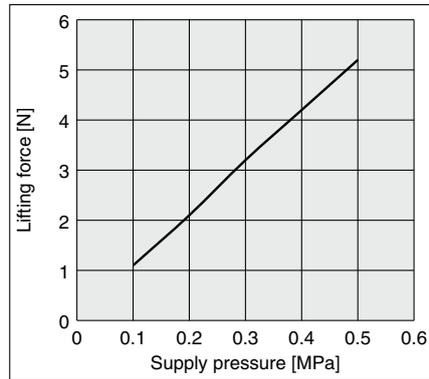
- *1 Lifting force of the basic type at the max. supply pressure
Value when a flat, non-breathable workpiece is adsorbed
- *2 Air consumption at the max. supply pressure
- *3 The values are for when the connection is as follows: Fitting min. hole diameter: ø2.5, Tubing size: ø6 x ø4, Length: 500 mm
- *4 No freezing or condensation. The values in () are for models with a pressure sensor.
- *5 The weight value is for the basic type without a mounting plate or plug. Add the mounting plate weight if needed. (Aluminum: 6.5 g, Stainless steel: 17.6 g)
- *6 For pressure sensor details, refer to the PSE540 series in the **Web Catalog** and the Operation Manual.

ZNC20-X1

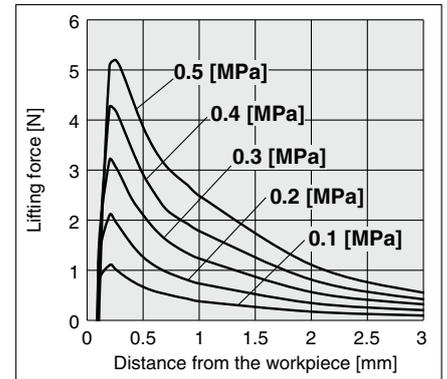
Air Consumption



Lifting Force



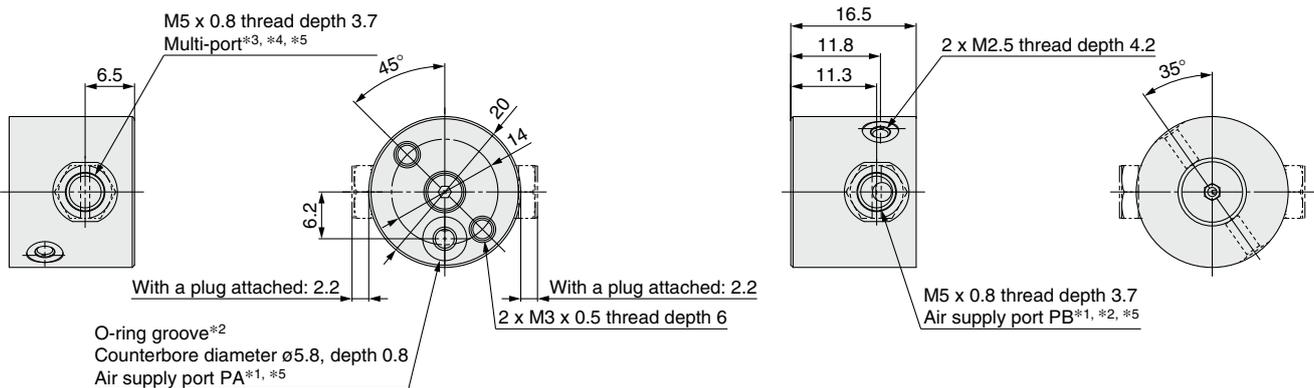
Lifting Force–Distance from the Workpiece



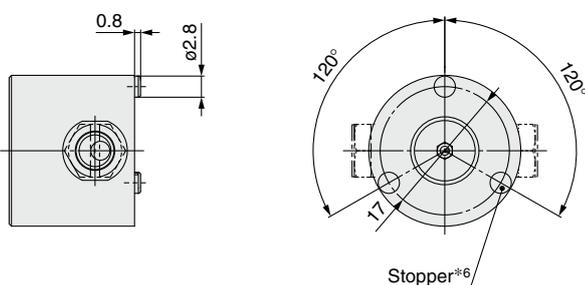
- * The lifting force changes depending on the shape, size, surface unevenness, breathability, flexibility, etc., of the workpiece. Use the values shown in the graphs above as a reference, and confirm using the actual machine.
- * For the lifting force when using a stopper or vibration suppression cover, use the following values as a guide for the distance from the workpiece. With stopper: 1 mm, With vibration suppression cover: 1.5 mm

Dimensions

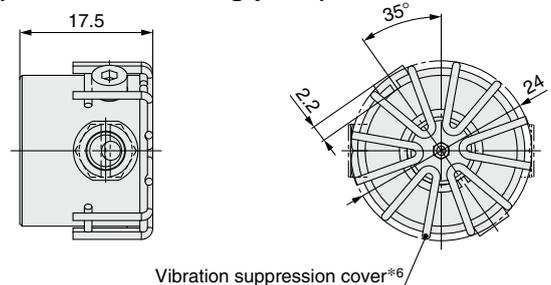
Basic type/Without mounting plate



With stopper (Without mounting plate)



With vibration suppression cover (Without mounting plate)



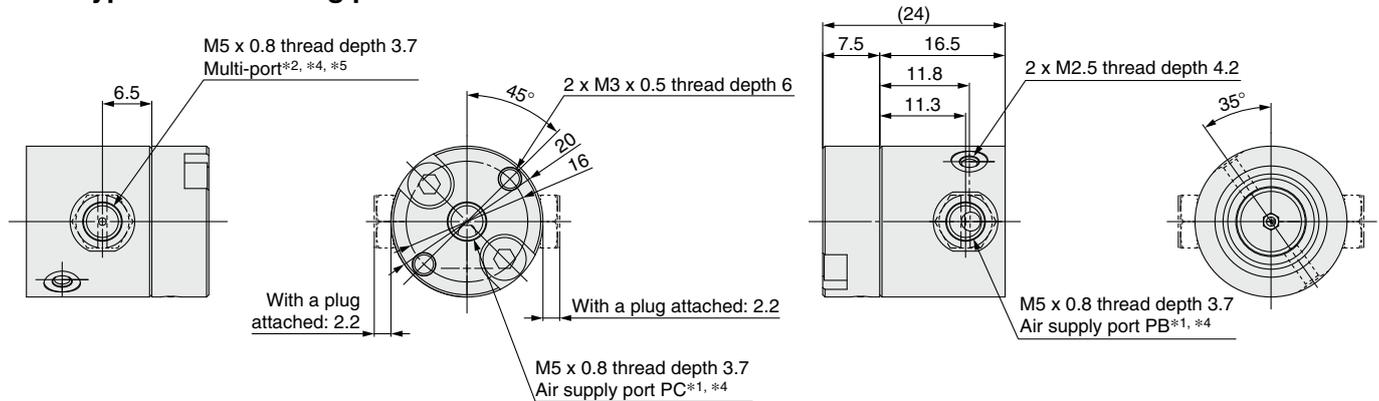
- *1 Supply air to either air supply port PA or PB. Plug the unused air supply port.
- *2 An O-ring (5.8 x 3.8 x 1) and a plug for the air supply port PB are included with the product. Be sure to attach the O-ring. For details on how to mount the product, refer to the "Specific Product Precautions."
- *3 Use the multi-port as a sensor mounting or release port.
- *4 Seal the multi-port with a plug when not in use.
- *5 The product is shipped with a plug in the multi-port. After determining which port to use, it is recommended that adhesive be applied to the threads of the air supply port and the multi-port.

- *6 The stopper and vibration suppression cover cannot be used in combination.
- * The pressure sensor is shipped together with the product but does not come assembled.
- * For pressure sensor details, refer to the PSE540 series in the **Web Catalog** and the Operation Manual.

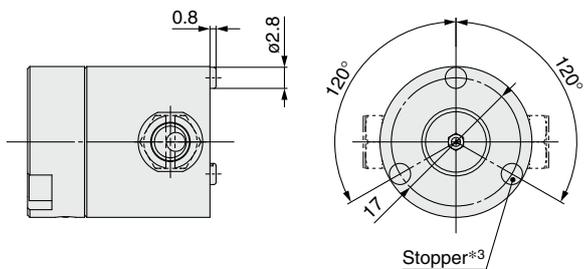
ZNC20-X1

Dimensions

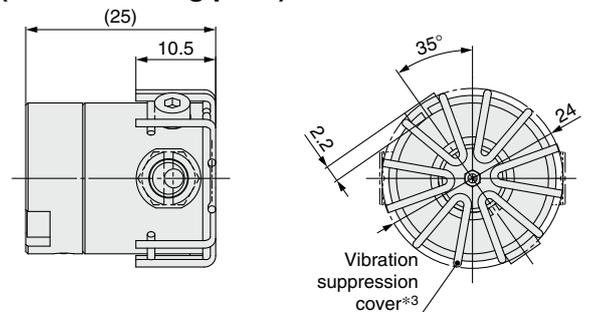
Basic type/With mounting plate



With stopper (With mounting plate)



With vibration suppression cover (With mounting plate)



- *1 Be sure to change the mounting plate direction in accordance with whether air supply port PB or PC is used. Also, be sure to mount the product in accordance with the mounting method described in the "Specific Product Precautions."
- *2 Seal the multi-port with a plug when not in use.
- *3 The stopper and cover cannot be used together.
- *4 The product is shipped with a plug in the multi-port. After determining which port to use, it is recommended that adhesive be applied to the threads of the air supply port and the multi-port.

- *5 Use the multi-port as a sensor mounting or release port.
- * The mounting plate comes with 1 O-ring (5.8 x 3.8 x 1), 1 plug for air supply port PB, and 2 mounting screws. The mounting plate does not come assembled.
- * For pressure sensor details, refer to the PSE540 series in the **Web Catalog** and the Operation Manual.
- * The pressure sensor is shipped together with the product but does not come assembled.



ZNC20-X1

Specific Product Precautions 1

Be sure to read this before handling the products.

Mounting

<Without Mounting Plate>

When mounting the product, be sure to attach the O-ring included with the product. Also, the mounting surface should be smooth (Recommended surface roughness: Rz 25 or less).

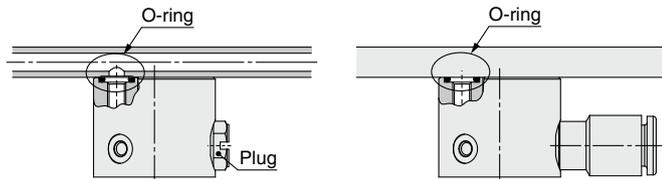
When using the product without piping (body ported), seal the side port with the attached plug.

When piping from the side, cover the supply port on the top of the product with the mounting surface.

Installation on a mounting surface with a rough surface, scratches or dents, or mounting an unsuitable O-ring may cause sealing failure.

Attached O-ring

Model	Size
ZNC20□	5.8 x 3.8 x 1



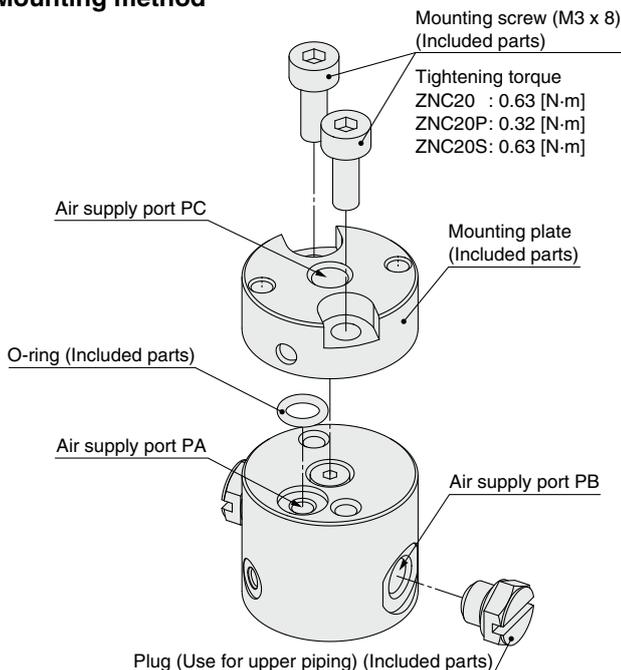
Requires no piping (Body ported)

Side ported

Assembly

The mounting plate is shipped together with the product but does not come assembled. Please follow the assembly instructions below. In addition, be sure to change the mounting plate direction in accordance with the piping method.

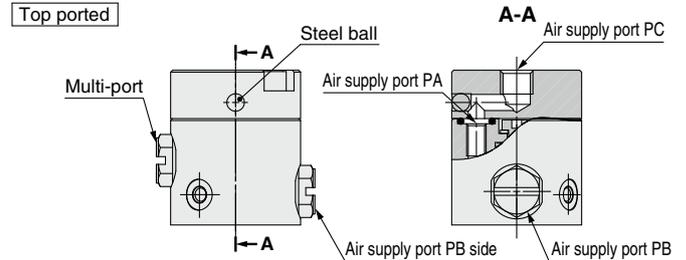
Mounting method



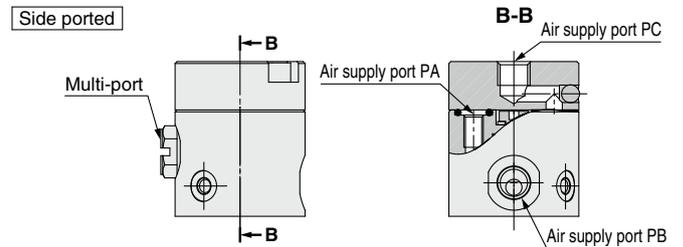
* The drawing above shows the top ported type.

Assembly

Mounting direction



If the steel ball is visible the multi-port is on the left and the air supply port PB is on the right, the air supply port PA and the air supply port PB are interconnected.



If the steel ball is not visible the multi-port is on the left and the air supply port PB is on the right, the air supply port PA is plugged.



ZNC20-X1

Specific Product Precautions 2

Be sure to read this before handling the products.

Handling

Use fittings with the following specifications or recommended part numbers.

[Top ported]

If the fitting external dimensions are too large, it may interfere with the product mounting bolt.

[Side ported]

If the fitting dimensions are not compatible with the product, it may interfere with the product body. Therefore, such fittings cannot be used.

If the fitting external dimensions are too large, it may protrude from the product mounting surface, interfering with the mounting portion, or it may protrude from the product suction surface, interfering with the workpiece.

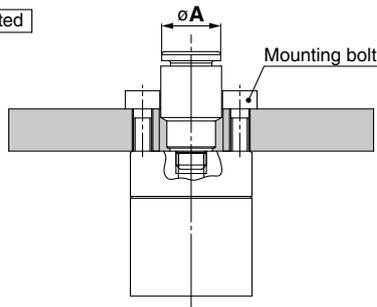
Regardless of the piping direction, if the fitting min. hole diameter is too small, the product may fail to operate properly.

Specifications

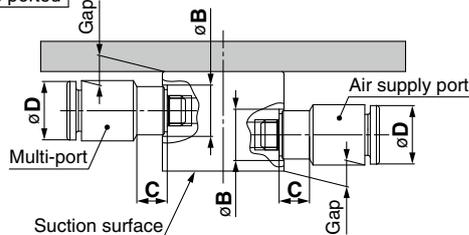
[mm]

Model	Top ported	Side ported			Min. hole dia
	A	B	C	D	
ZNC20	10 or less	8.3 or less	1 or more	10 or less	2.5 or more

Top ported



Side ported



Recommended Part Numbers List

Series	Variations	Model	Top ported	Side ported
			ZNC20T	ZNC20
One-touch fittings	Male connector	KQ2H04-M5□	●	●
	Hexagon socket head male connector	KQ2S04-M5□	●	●
	Hexagon socket head male connector	KQ2S06-M5□	●	●
Metal One-touch fittings	Hexagon socket head male connector	KQB2S04-M5	●	●
Miniature fittings	Barb fitting for nylon tubing	M-5AN-6	●	●
	Barb fitting for soft tubing	M-5AU-6	●	●
	Hose nipple	M-5H-6	●	×
Stainless steel One-touch fittings <small>Metal parts: Stainless steel 303</small>	Male connector	KQ2H04-M5G1	●	●
	Hexagon socket head male connector	KQ2S04-M5G1	●	●
	Hexagon socket head male connector	KQ2S06-M5G1	●	×
Stainless steel 317 One-touch fittings	Hexagon socket head male connector	KQG2S04-M5	●	●
Miniature fittings/ Stainless steel 316	Barb fitting for soft tubing	MS-5AU-6	●	●
	Hose nipple	MS-5H-6	●	×

●: Applicable, ×: Not applicable

 **Safety Instructions** Be sure to read the "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" before use.

SMC Corporation

Akihabara UDX 15F,
4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN
Phone: 03-5207-8249 Fax: 03-5298-5362
<https://www.smcworld.com>
© 2021 SMC Corporation All Rights Reserved

Specifications are subject to change without prior notice
and any obligation on the part of the manufacturer.

D-G

Printing ZX 3600KS Printed in Japan.