

Provide a guide in accordance with the application and/or configuration of a workpiece.

① **Holding/Positioning a Workpiece**

Due to non-contact, a workpiece may slide during conveyance. To hold the workpiece, provide a guide, etc. for the side of the workpiece.

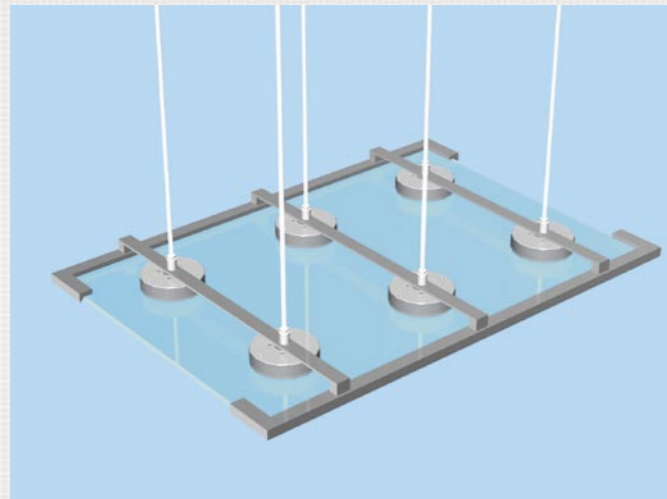
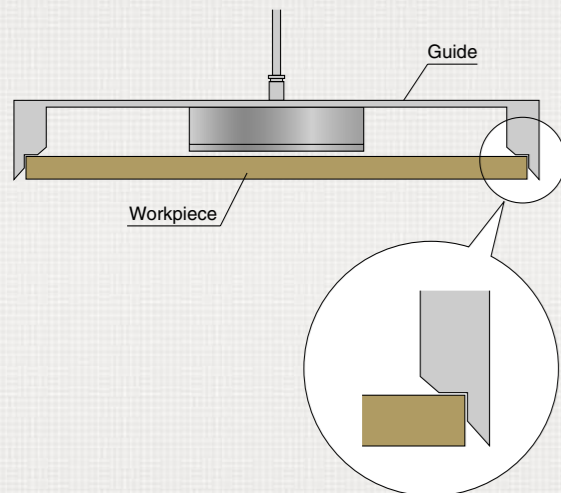
② **Preventing Contact**

Depending on the operating conditions, the workpiece surface may contact the pad when lifted. To prevent contact, provide a guide to distance the workpiece.

③ **Preventing Rotation**

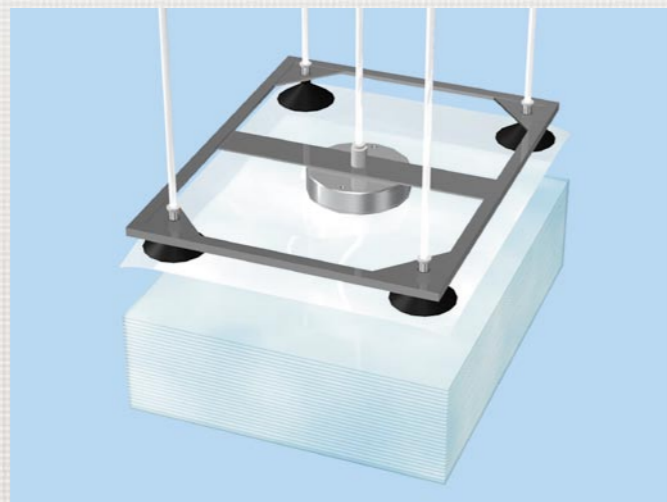
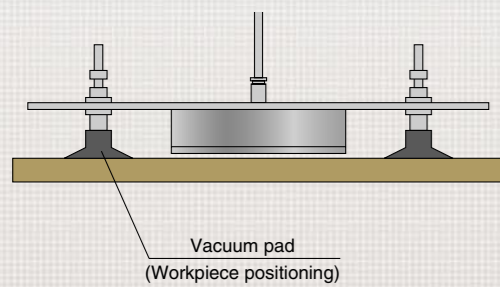
- 1) When using a single pad, the workpiece tends to rotate due to the cyclone effect. Provide a guide to prevent the workpiece from rotating.
- 2) When using more than one pad, use even numbered, clockwise or counterclockwise whirling pads. This can prevent the workpiece from rotating.

Example of Guide Installation



• **Example of Vacuum Pad Application**

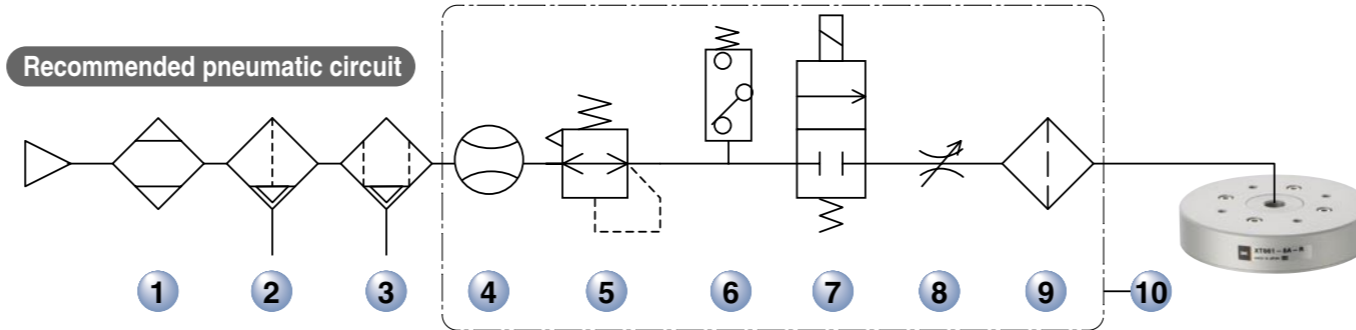
The cyclone pad can reduce the amount of surface contact while fixing the workpiece.



Related Products

SMC can provide all pneumatic equipment required for supplying air to the cyclone pad.

Recommended pneumatic circuit



① **Air Dryer / Series IDF**

Decreases the dew point of compressed air. Limits moisture generation which can lead to damage.



② **Air Filter / Series AF**

Eliminates solid foreign matters such as powder particles in the compressed air.



③ **Mist Separator / Series AFM**

Eliminates oil mist which is difficult to eliminate with an air filter.



④ **Digital Flow Switch / Series PF2A**

Decreases the air consumption by flow control.



⑤ **2-Color Display Digital Flow Switch / Series PFM**

Decreases the air consumption by flow control.



⑥ **Regulator / Series AR/SRH**

Decreases the air consumption by setting to an appropriate pressure.



⑦ **Digital Pressure Switch / Series ISE30**

Monitors air pressure and provides a signal when it reaches a set point.



⑧ **Remote Type Digital Pressure Switch / Series PSE**

Monitors air pressure and provides a signal when it reaches a set point.



⑨ **2 Port Valve / Series VCA-X15/LVA**

Controls air flow to the pad.



⑩ **Restrictor / Series AS-X21**

Regulates to the appropriate air volume depending upon the installation condition. Decreases the air consumption.



⑪ **Clean Air Filter / Series SFD**

Built-in capillary element. Nominal filtration rating: 0.01 μm. Adopted hollow fiber elements with over 99.99% filtering efficiency don't contaminate workpieces.



⑫ **Clean Air Module / Series LLB**

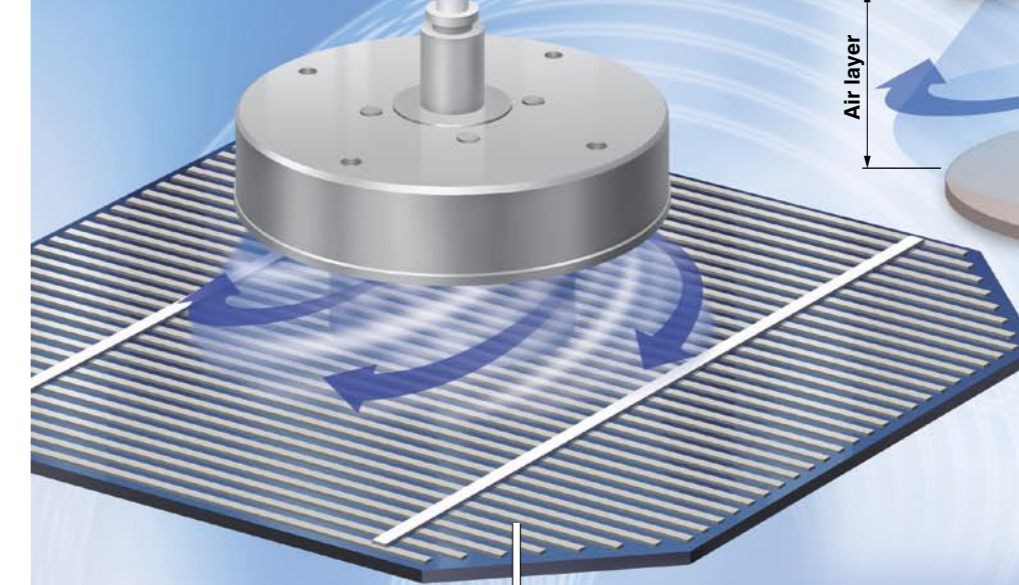
Modularizes clean equipment. Nominal filtration rating: 0.01 μm. Wetted parts: Grease-free, Silicon-free.



Cyclone Pad

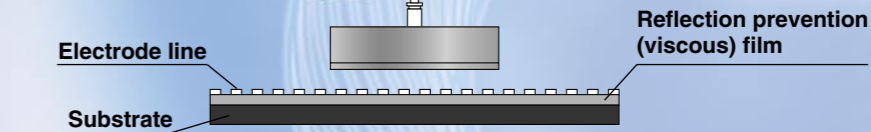
Non-contact conveyance is possible.

Workpiece with uneven and/or viscous surface
Solar battery cell

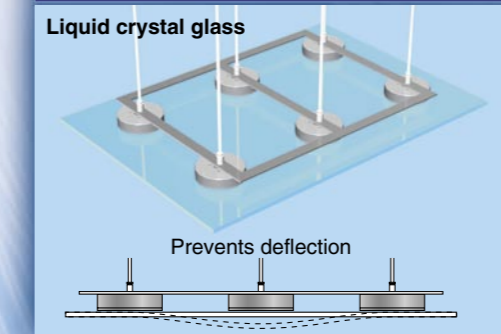


Working Principle

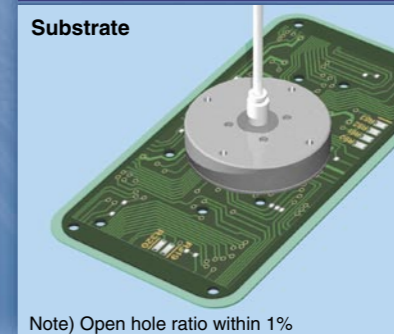
Air from the supply port is ejected from a nozzle on the cylindrical side to generate a whirlwind flow inside the cylinder and leading to the vacuum. (Cyclone effect.) Supply air is discharged to the atmosphere from between the suction surface and the workpiece. As a result, an air layer is generated between the cyclone pad and the workpiece, resulting in the workpiece being lifted without contact.



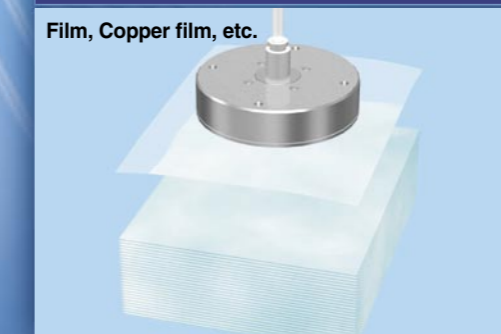
Workpiece sensitive to scars or suction traces



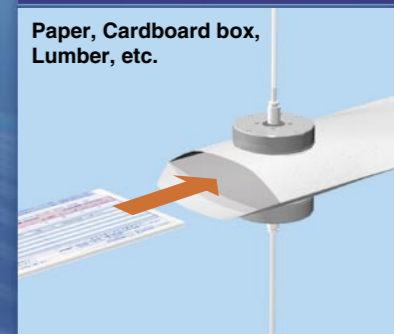
Workpiece with holes



Thin workpiece



Porous workpiece



Be sure to prepare a guide prior to use.
For holding and positioning a workpiece, and for preventing collision between the workpiece and pad during lifting, provide a guide. See page 4 for details.

Series XT661

SMC Corporation

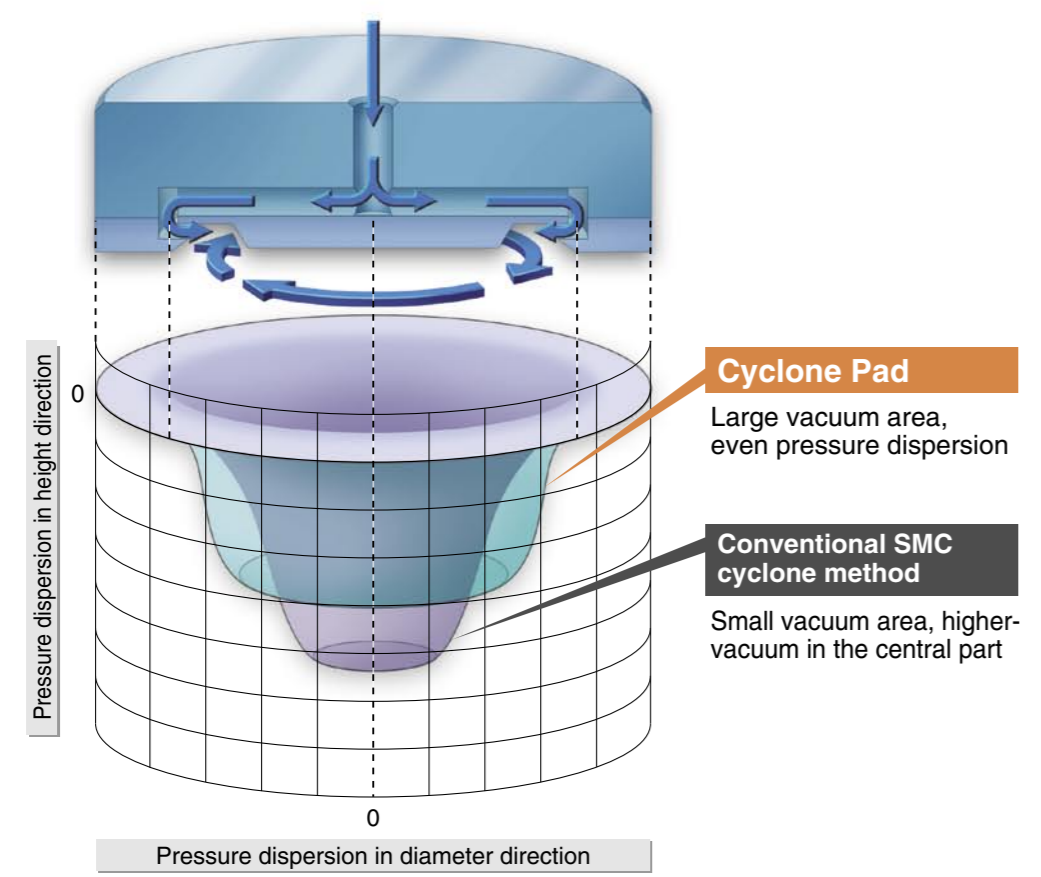
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4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN
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URL <http://www.smcworld.com>
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Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.

Original groove-channel design (PAT.PEND)

provides cyclone effect

with larger suction area and more even pressure dispersion!



Lifting force *50% improved,

Air consumption *50% reduced

(* comparison with conventional SMC cyclone method with an outer size of 60 mm)

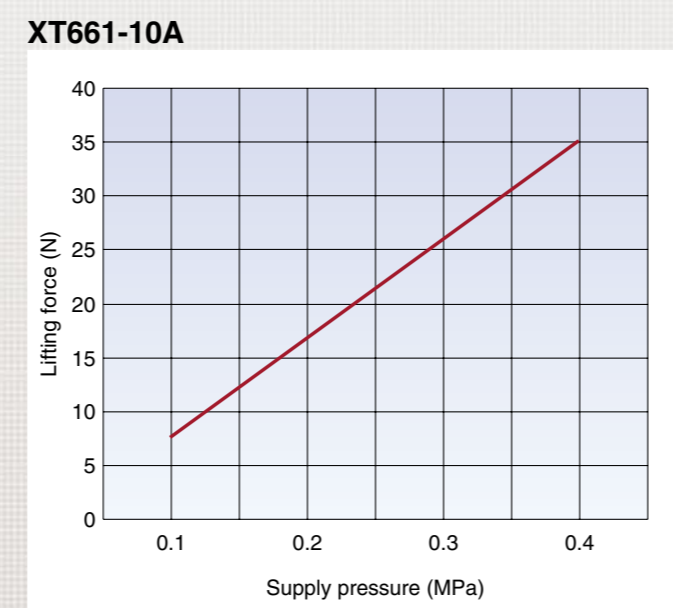
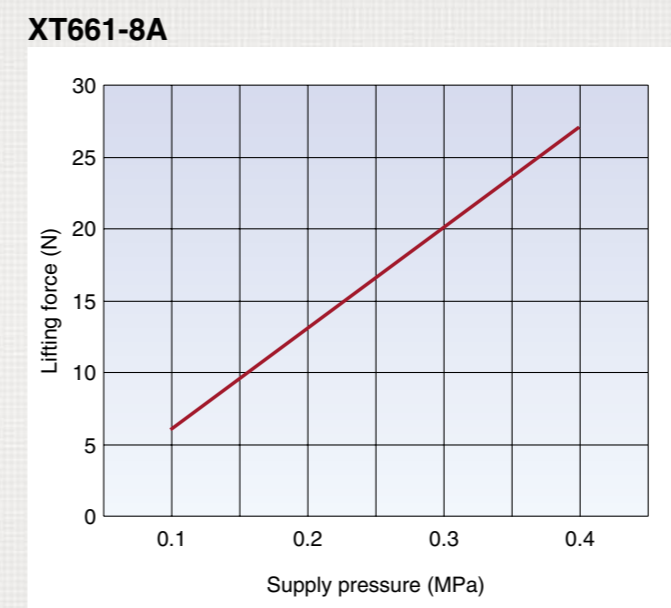
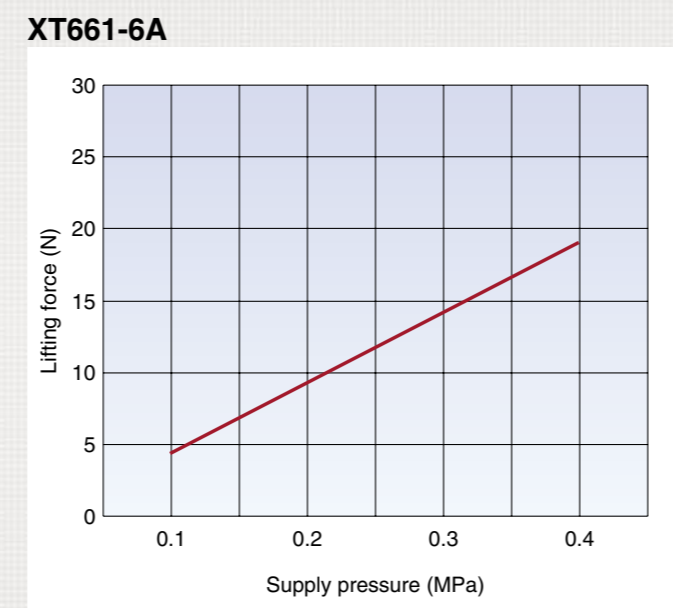
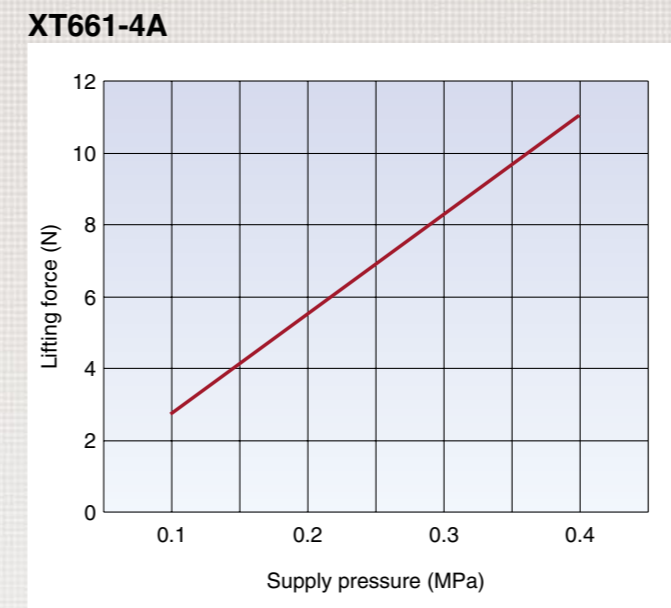
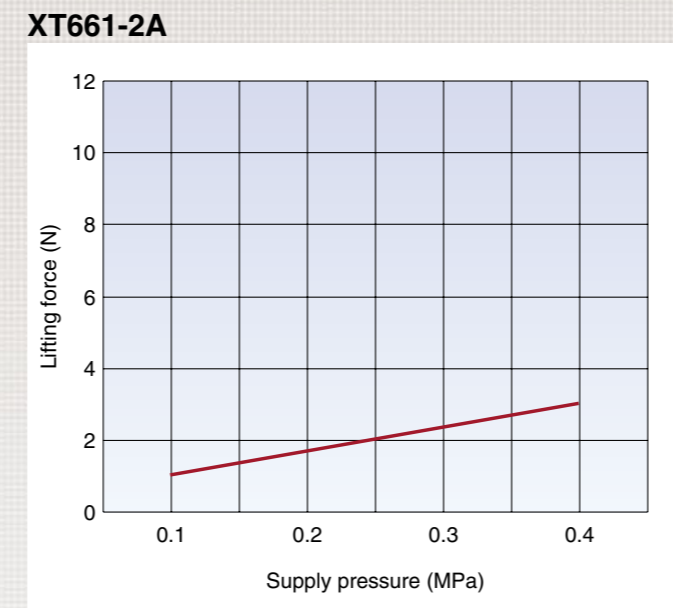
(Supply pressure 0.4 MPa)

Outer body diameter (mm)	20	40	60	80	100
Lifting force N	3	11	19	27	35
Air consumption ℓ/min (ANR)	85	145	170	200	240

Grease-free



Lifting Force



How to Order

XT661-4A-R

Outer body diameter

2A	20 mm
4A	40 mm
6A	60 mm
8A	80 mm
10A	100 mm

Direction of whirling air

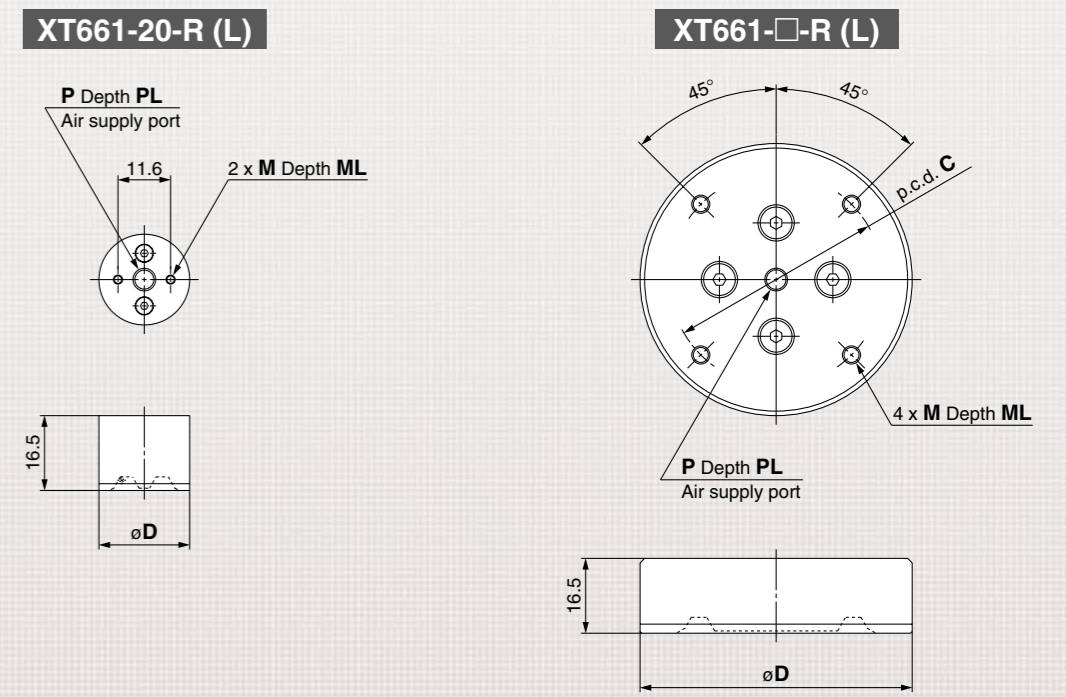
R	Clockwise
L	Counterclockwise

Specifications

Outer body diameter (mm)	20	40	60	80	100
Piping port size	M5 x 0.8			Rc1/8	
Fluid	Air*				
Operating pressure	0.01 to 0.5 MPa				
Proof pressure	0.75 MPa				
Ambient and operating temperature	-5 to 60°C (with no condensation)				
Grease	Grease-free				

* Air purification rating: JIS B 8392-1 (ISO8573-1) Quality Degree 4, 4, 2

Dimensions



Model	P	PL	M	ML	C	D
XT661-20-R (L)	M5 x 0.8	5	M2 x 0.4	3.2	—	20
XT661-40-R (L)	M5 x 0.8	5	M4 x 0.7	5	32.8	40
XT661-60-R (L)	M5 x 0.8	5	M4 x 0.7	5	47	60
XT661-80-R (L)	Rc1/8	—	M4 x 0.7	5	47	80
XT661-100-R (L)	Rc1/8	—	M4 x 0.7	5	47	100

(mm)