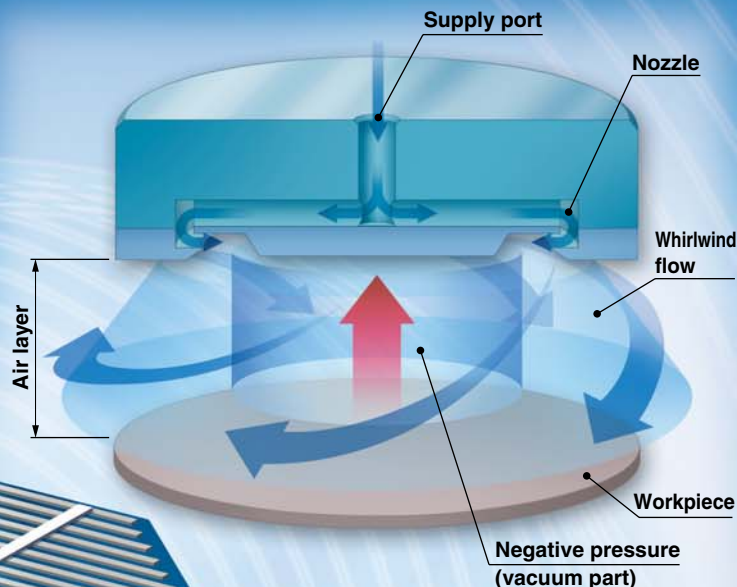


Cyclone Pad

Non-contact conveyance is possible.

Workpiece with uneven and/or viscous surface

Solar battery cell



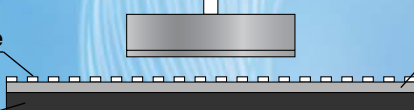
Working Principle

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.

Electrode line

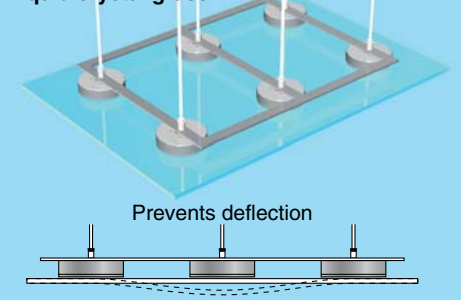
Reflection prevention (viscous) film

Substrate



Workpiece sensitive to scars or suction traces

Liquid crystal glass



Workpiece with holes

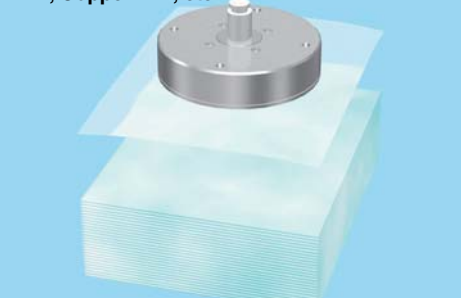
Substrate



Note) Open hole ratio within 1%

Thin workpiece

Film, Copper film, etc.



Porous workpiece

Paper, Cardboard box, Lumber, etc.



Be sure to prepare a guide prior to use.

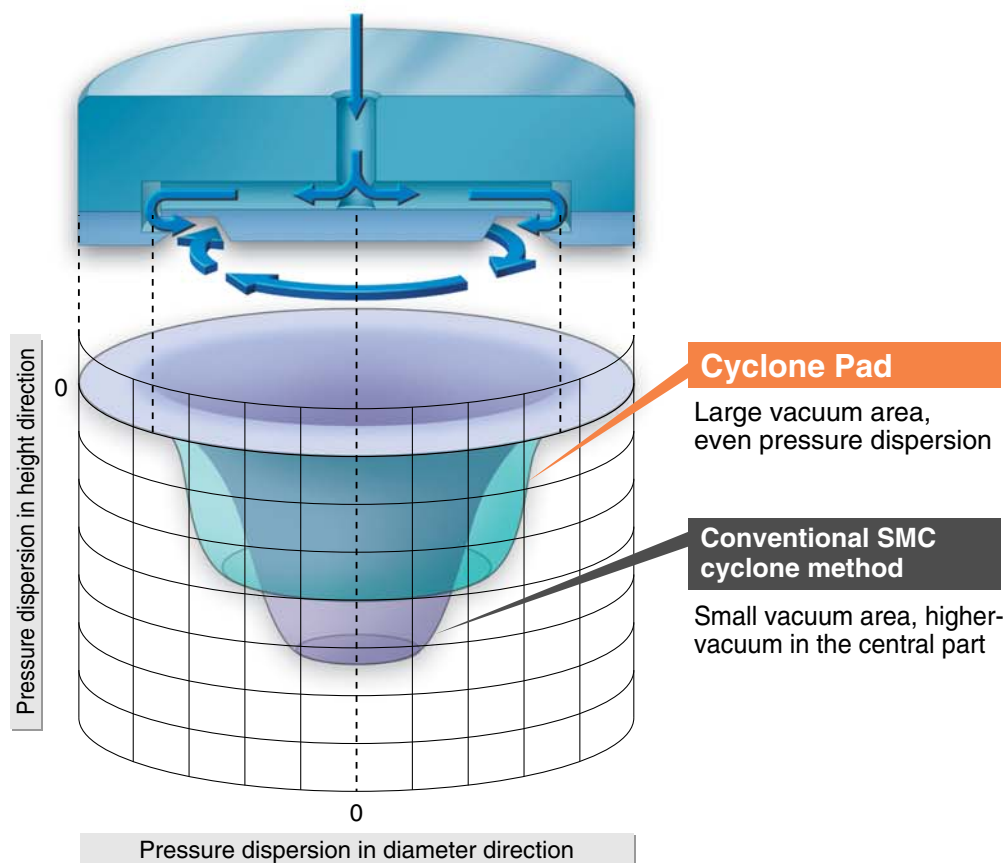
For holding and positioning a workpiece, and for preventing collision between the workpiece and pad during lifting, provide a guide. See page 4 for details.

Series XT661



P-E07-8A

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)

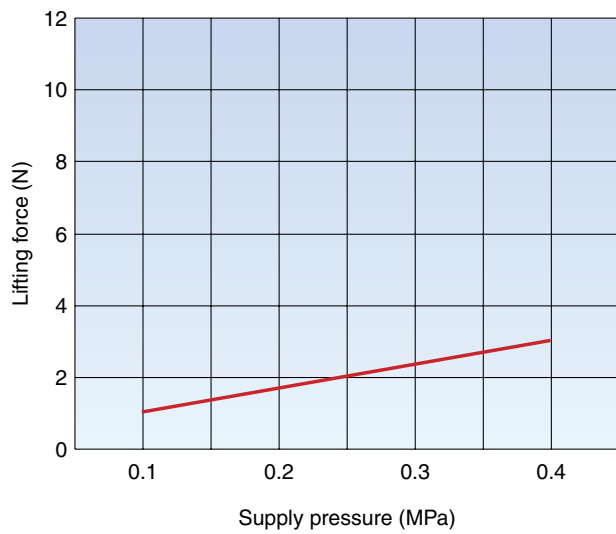
Outer body diameter (mm)	20	40	60	80	100
Lifting force N	3	11	19	27	35
Air consumption ℓ/min (ANR)	85	145	170	200	240

Grease-free

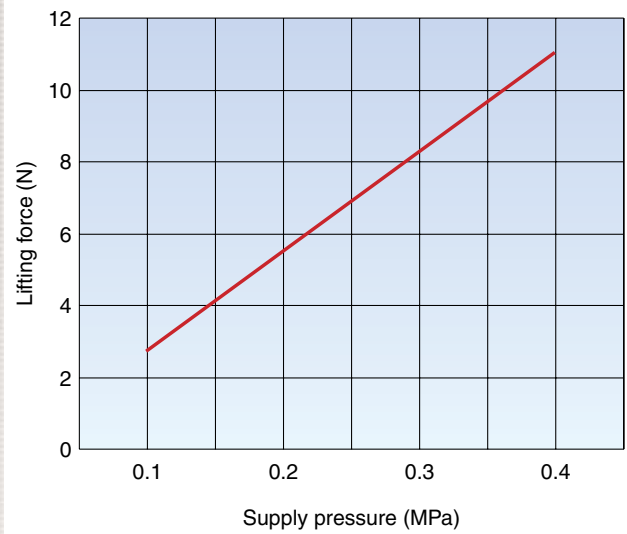


Lifting Force

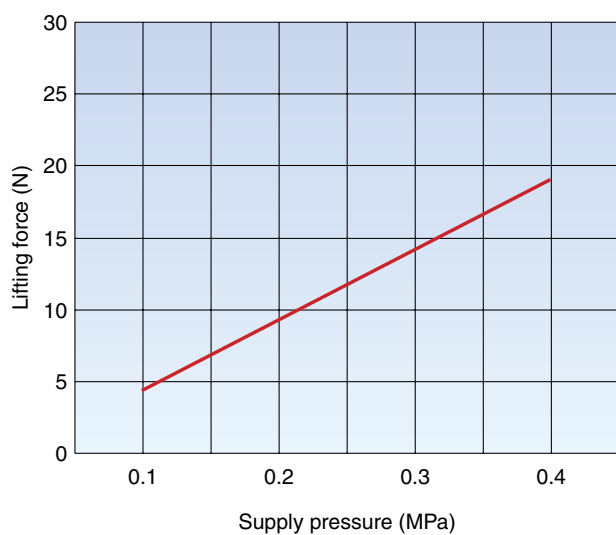
XT661-2A



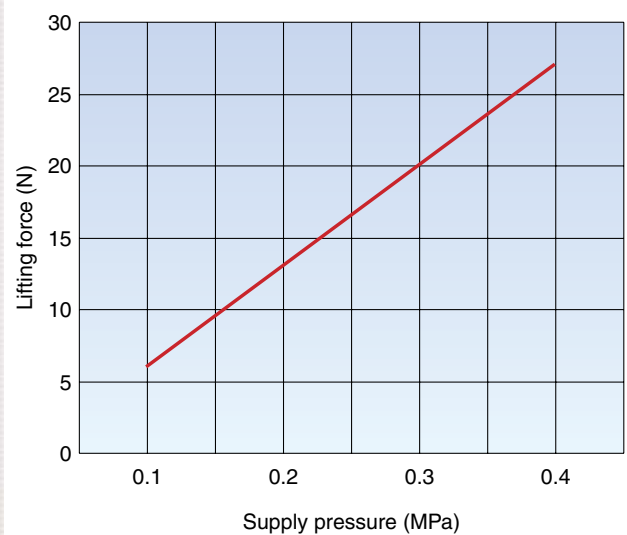
XT661-4A



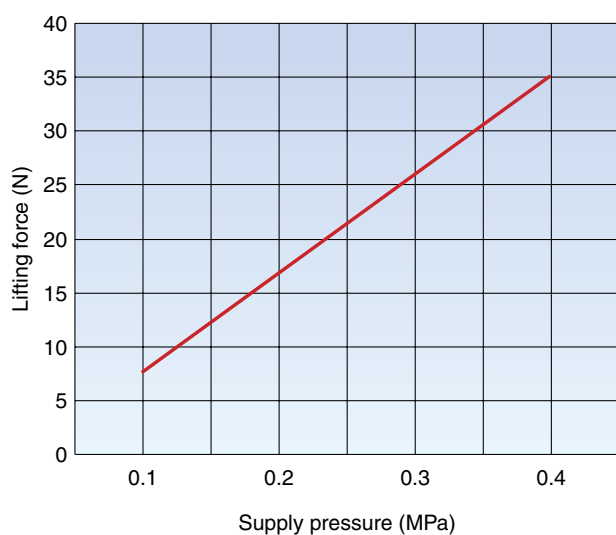
XT661-6A



XT661-8A



XT661-10A



Series **XT661**
ø20, ø40, ø60, ø80, ø100

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

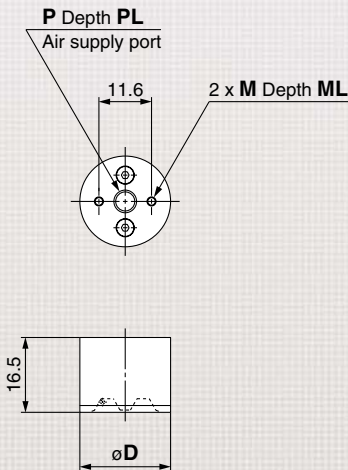
Specifications

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				

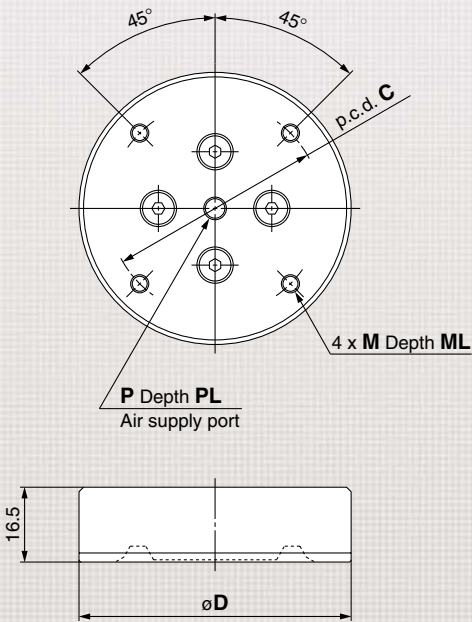
* Air purification rating: JIS B 8392-1 (ISO8573-1) Quality Degree 4, 4, 2

Dimensions

XT661-2A-R (L)



XT661-□-R (L)



Model	P	PL	M	ML	C	D
XT661-2A-R (L)	M5 x 0.8	5	M2 x 0.4	3.2	—	20
XT661-4A-R (L)	M5 x 0.8	5	M4 x 0.7	5	32.8	40
XT661-6A-R (L)	M5 x 0.8	5	M4 x 0.7	5	47	60
XT661-8A-R (L)	Rc1/8	—	M4 x 0.7	5	47	80
XT661-10A-R (L)	Rc1/8	—	M4 x 0.7	5	47	100

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.

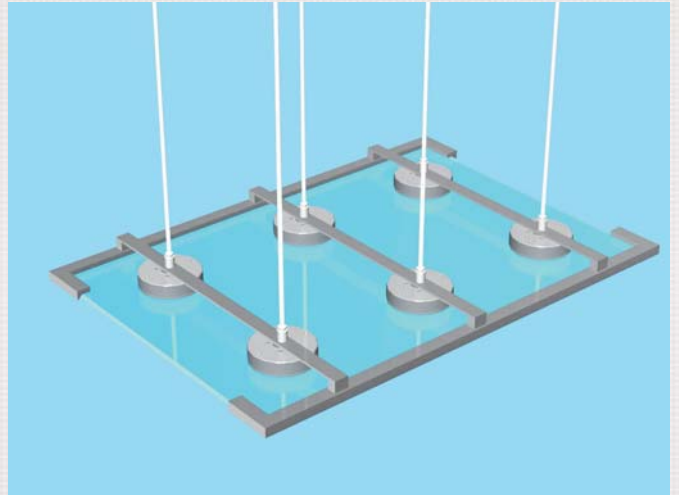
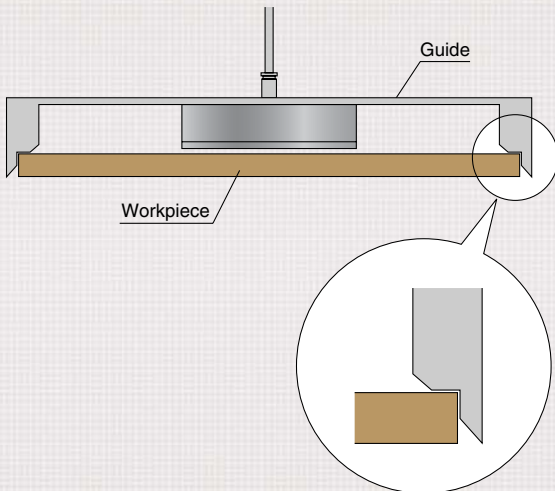
② **Preventing Contact**

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**

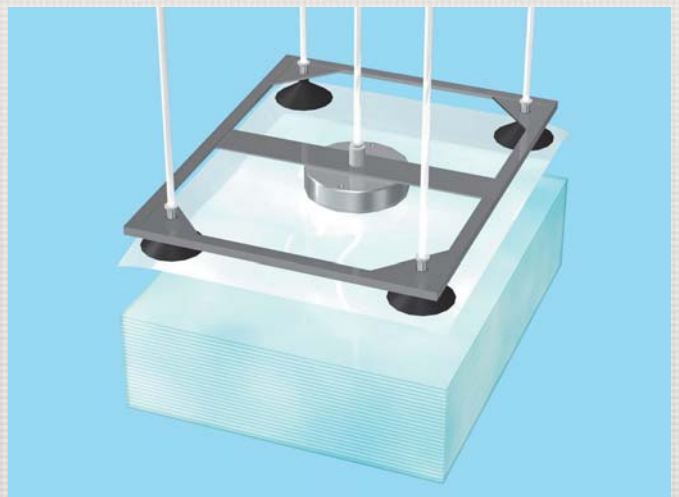
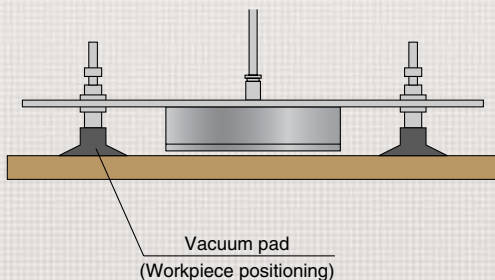
- 1) When using a single pad, the workpiece tends to rotate due to the cyclone effect.
Provide a guide to prevent the workpiece from rotating.
- 2) When using more than one pad, use even numbered, clockwise or counterclockwise whirling pads.
This can prevent the workpiece from rotating.

Example of Guide Installation



• **Example of Vacuum Pad Application**

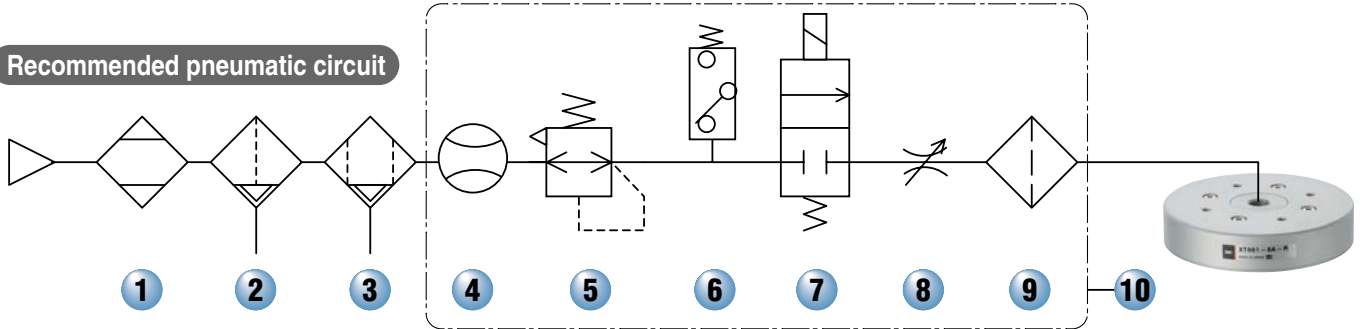
The cyclone pad can reduce the amount of surface contact while fixing the workpiece.



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.



2-Color Display Digital Flow Switch / Series PFM



5 Regulator / Series AR/SRH

Decreases the air consumption by setting to an appropriate pressure.



6 Digital Pressure Switch / Series ISE30



Remote Type Digital Pressure Switch / Series PSE



PSE300

PSE540

7 2 Port Valve / Series VCA-X15/LVA



VCA-X15 (Oil-free)

LVA

8 Restrictor / Series AS-X21

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



Oil-free (Seal material: PTFE coat treated)

9 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.



10 Clean Air Module / Series LLB

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



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