

# iB-Cyclone

## Instruction Manual

Ver.4.1

Thank you for purchasing this Koganei product.  
Before using it, be sure to read this manual and make sure you use it correctly.  
Keep this manual in a safe place for future reference.



### General Precautions

1. Always check the catalog and other reference materials for correct product piping. Improper piping creates the risk of abnormal operation of the actuator.
2. Do not use the product in locations that are subject to direct sunlight (ultraviolet rays); locations with high humidity and temperature, dust, salt, or iron powder. Do not use fluids in the product or use the product in an environment that includes corrosive fluids such as organic solvents, phosphate ester type hydraulic oil, sulfur dioxide, chlorine gas, acids, etc. Also, do not store them. It could lead to early shutdown of some functions, a sudden degradation of performance, and a reduced operating life. For information about materials, see Major Parts and Materials.
3. Before performing piping work, thoroughly flush the inside of the pipes with compressed air.  
Machining chips, sealing tape, rust and other debris getting entered in during piping work may result in lowered performance and functionality or function stoppage.
4. This product cannot be used when the medium or ambient atmosphere includes any of the following substances:  
Organic solvents, phosphate ester type hydraulic oil, sulfur dioxide, chlorine gas, fluorine gas, ozone, acids, or other corrosive gasses.
5. The bowl material is polycarbonate. This product cannot be used in environments with the above gasses and fluids, nor threadlocking adhesive, leak detection fluid, hot water or where it may be exposed to them. This product cannot be used in direct ultra-violet light. See the reference materials in the catalog for details.
6. Cover the unit or take other measures when using it in locations where it might be subject to excessive dust, dripping water, dripping oil, etc.
7. Do not exceed the specified volume of water for the product. The water droplets may splash into the secondary side. See the separation characteristics in the catalog for details.
8. If mist or condensation forms in the product, it may splash into the secondary side.

### Operating environment and medium

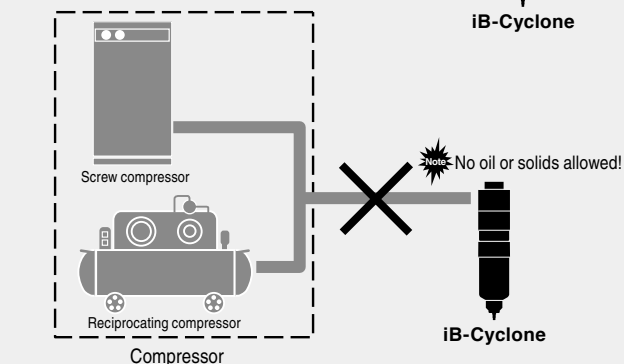
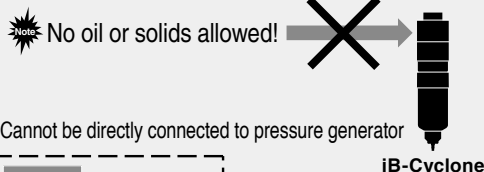
- Usable medium
1. Use cleaned air (filtered to below 40 μm) for the medium. If you are considering using something other than cleaned air, contact the nearest Koganei sales office or overseas department.
  2. Air that is mixed with oil or solids cannot be used.

**Note** Using air that contains oil or solids may cause the product to stop functioning, may lower performance, or shorten the service life.



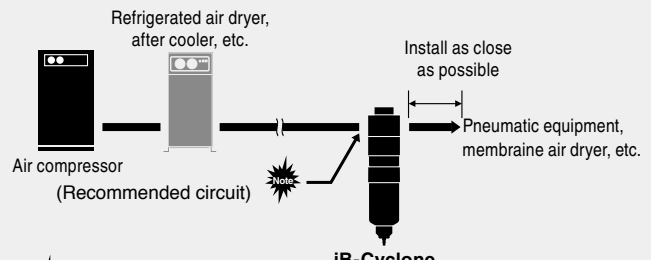
### Mounting and Piping

**CAUTION** Air must be free from oil and solids before use.



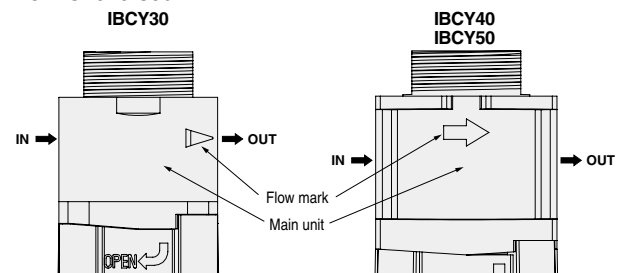
**Note** Perform sufficient countermeasures to remove oil and solids from air when using iB-Cyclone.  
If countermeasures are not performed, the performance of the device will fall dramatically, air will leak, and it will not work well.

**CAUTION** iB-Cyclone cannot remove humidity.



- Note**
1. The iB-Cyclone is for removing water. Steam in pressurized air cannot be removed (dehumidifying cannot be done). Use a membrane air dryer or something on the secondary side if dehumidifying is needed.
  2. Place a device to lower the supplying air from the ambient temperature, by using a refrigerated air dryer or after cooler in the air line so condensation does not occur in the secondary side of piping of the iB-Cyclone. Also, install the iB-Cyclone as close as to the using pneumatic equipment.

1. Install in a location where the air supply and the ambient temperature is under 60°C [140°F].
2. Install vertically so the piping connection portion is up and the drain outlet is down.
3. Allow enough space to easily do maintenance tasks, such as turning the guard button and attaching and removing the bowl.
4. Tighten the mounting ring to less than 5.0 N·m [3.69 ft·lbf] when installing the bracket.
5. Connect the piping so the air flows in the direction of the arrow (flow mark) on the product. The water removal function will be ineffective if the flow is reversed.



6. Do not place any weight of the product's piping or apply excessive torque on the product. When tightening the piping, hold the main unit and tighten it to the torque recommended in the diagram below.

### Recommended tightening torque

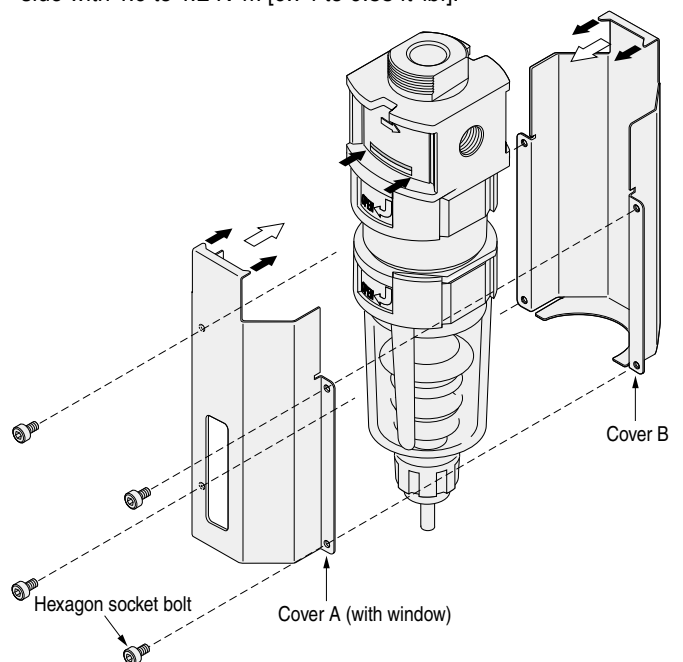
	N·m [ft·lbf]			
Connecting thread	1/8	1/4	3/8	1/2
Torque	4.5~6.5 [3.3~4.8]	7~9 [5.2~6.6]	12.5~14.5 [9.2~10.7]	20~22 [14.8~16.2]

7. Large moment and vibration are easily transmitted from steel or non-flexible piping, place a flexible hose between the product and the piping to prevent this from affecting the product.

### Mounting and removing the metal cover

Use the following procedure to mount the metal cover.

- ① Enclose the body of the iB-Cyclone using cover A and cover B as shown by the black arrows in the diagram below.
- ② Tighten the hexagon socket bolts in the 4 locations from the A cover side with 1.0 to 1.2 N·m [0.74 to 0.88 ft·lbf].

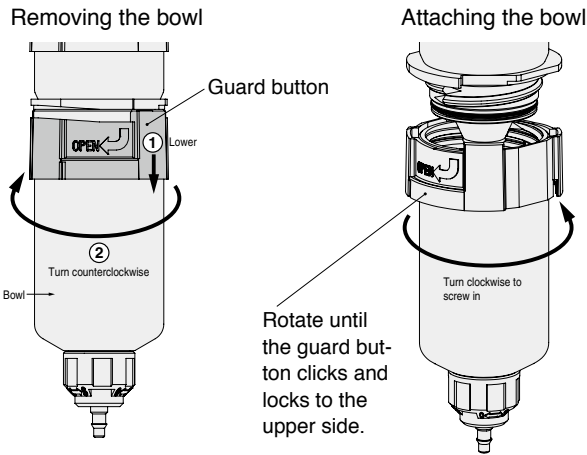


To remove the metal cover, remove the 4 hexagon socket bolts.

●Periodic maintenance

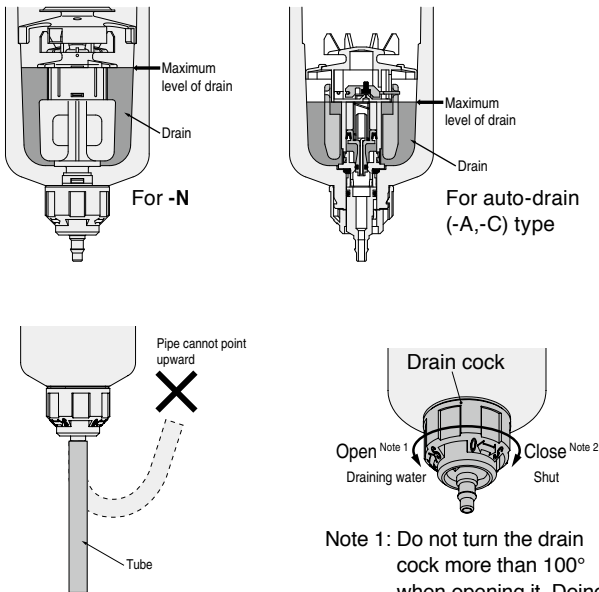
**Bowl**

- 1. Do periodic inspections to look for cracks, scratches, or other deterioration in the bowl (clear plastic part).
- 2. If you find any cracks, scratches, or other deterioration, replace the bowl with a new one, because it may cause a breakdown. See catalog for information about ordering bowls.
- 3. Replace the bowl with a new one if it becomes dirty or the transparency is reduced. To wash the bowl, use diluted household neutral detergent to wash it and then rinse it off with water.
- 4. Remove and replace the bowl as shown in the diagram below (release all pressure from inside the product before starting work).



**Drain cock**

- 1. If the volume of water is greater than that shown in the left side diagram below, the water removal function is greatly reduced. Be sure to drain before the water volume reaches the level shown in the left side diagram below. Turn the drain cock with your hand in the case.
- 2. A tube with an inner diameter of  $\phi 4$  [0.157 in] can be attached to the drain cock. Make sure the drain cock is closed (locked) before attaching the tube. Do not allow tubing to become severely bent or twisted in the vicinity of the fitting. Lateral force may damage the fitting. Do not point the pipe upward and use a pipe that is under 5 m [16.4 ft].
- 3. If you are using the auto-drain type, the water that collects on the primary side is flushed all at once. If collected water exceeds the maximum level in the right of the diagram below, it could lead to a malfunction. Be careful that it does not exceed the maximum level.

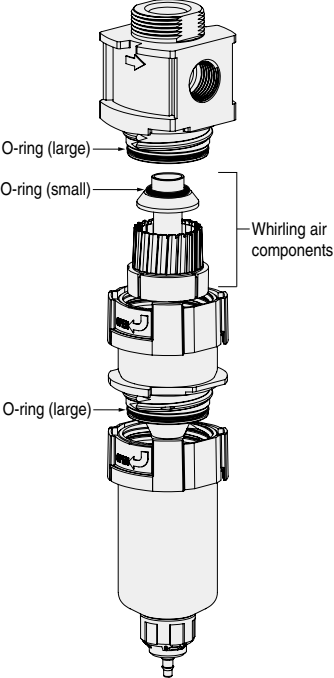


Note: Cut the end of the tube connected to the fitting straight across, and insert completely and securely as shown in the diagram. Also, after installing it, lightly pull it to confirm that it does not come out.

- Note 1: Do not turn the drain cock more than 100° when opening it. Doing so may damage the drain cock.
- Note 2: When closing the drain cock, rotate it firmly until it clicks and locks.

**Whirling air components**

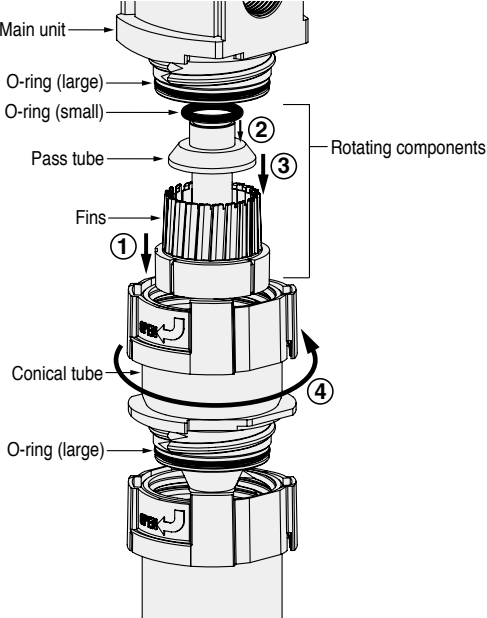
- 1. Dust collecting in the whirling air components reduces the separation function. If this happens, disassemble and wash the product to remove the dust as shown in the diagram below (release all pressure from inside the product before starting work).
- 2. Use a Seal Kit to replace the o-rings when reassembling the whirling air components. See catalog for information about ordering seal kits.



**Assembly method**

Reassemble according to the following procedure.

- ① Insert the fins into the conical tube and press them in with your hand.
- ② Attach a new o-ring (small) to the pass tube.
- ③ Fit the pass tube to the fins (fit it so it touches the seating of the fins).
- ④ Replace the two o-rings (large) and connect the conical tube to the main unit.



\* For other details about specifications and precautions, see the catalog.  
\* For inquiries about the product, contact the Koganei overseas group at the number below.