

FRZ Series

Instruction Manual Ver.1.1

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.

Precautions for the FRZ series

Design and selection

● Selection

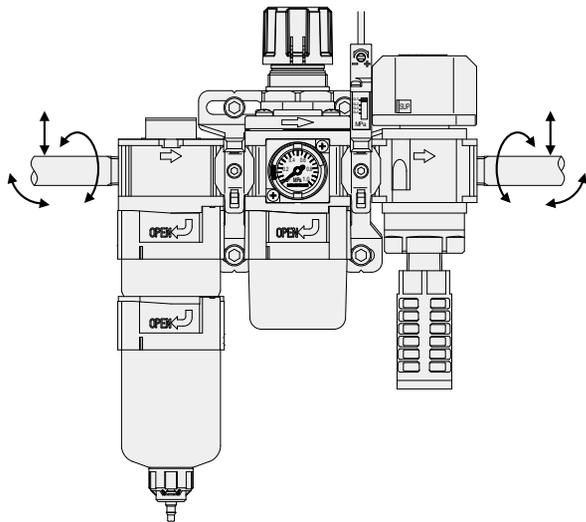
Look at the Handling Instructions and Precautions, Specifications, Various Characteristics, Dimensions, and other technical materials for each product to make the correct decision.

Mounting (installation) and piping

● Mounting (installation) direction, support, and securing

1. The products cannot be mounted (installed) if a bending moment or twisting moment is applied to the product or piping.

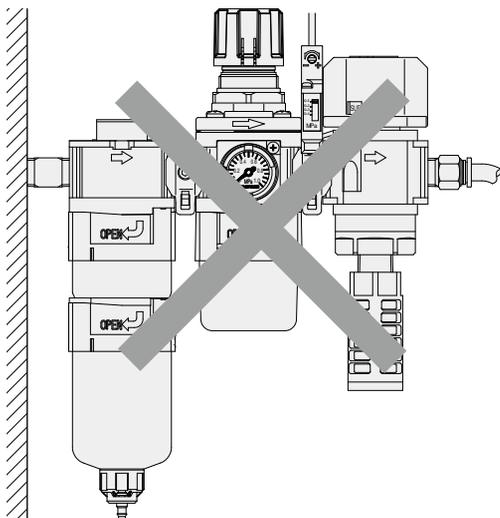
 Applying bending moment or twisting moment may damage the product.



 The muffler must be prepared by the user.
(In case of NPT thread specifications)

2. Do not attach piping so that just one side is fixed as shown in the following diagram. Support external piping separately.

 Operating the knob and the moment caused by the OUT (secondary) side pipes may damage the product's piping connections.



3. Use the D□ module or a bracket to install all the products.
4. The product can be mounted (installed) in any direction. It is also possible to install it with the bowl of the filter on top.



5. When mounting (installing) the product, always make sure it is secured and sufficiently supported.

 If the product is not securely fixed in place, it may fall over, be dropped, or operate abnormally and may cause an injury.

● Maintenance space requirements

Assure there is sufficient space for maintenance inspections and maintenance work.

See the dimension diagrams for each of the products regarding the maintenance space.

 If there is not enough allowance for maintenance space, it is impossible to remove the bowl assembly and replace the filter. Also, it is impossible to do maintenance inspections so the equipment may stop or the product may be damaged.

 If there is not enough allowance for maintenance space, it will be impossible to do maintenance inspections and maintenance work so the equipment may stop or the product may be damaged.

● Direction of flow

1. Connect the filter regulators and regulators so that the medium flows in the IN port (primary) side and out the OUT port (secondary) side.
2. Connect the residual pressure exhaust valves so that the medium flows from the 1 (P) port (primary) side to the 2 (A) port (secondary) side.
3. Use the flow marks on the products to identify the direction of flow of the medium in the filter regulators, regulators, and residual pressure exhaust valves.

See the "Handling Instructions and Precautions" for each product regarding the relationship of the flow marks and direction of flow of the medium being used .

 Connecting the products so the medium flows in reverse will cause the product to stop functioning and damage it.

● Attaching steel pipes and fittings

If steel pipes and fittings are attached to the threaded sections of the aluminum die-cast parts of the product, tighten them to the torque recommended in our standards.

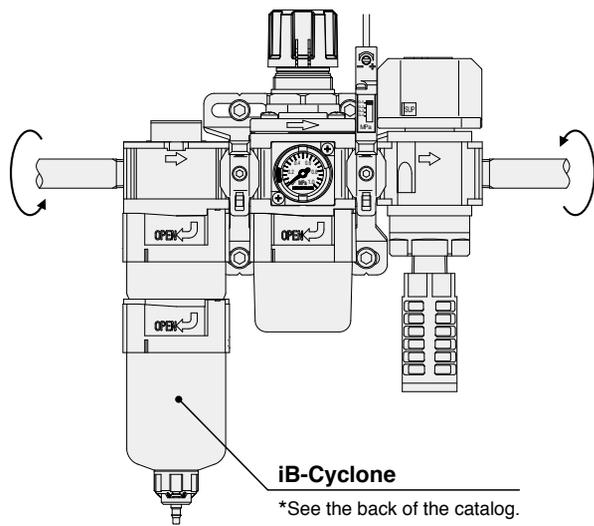
 Tightening with excessive torque may damage the product or injure workers or operators.

Recommended tightening torque

	N · m [ft · lbf]				
Connecting thread	M5	1/8	1/4	3/8	1/2
Torque	1 to 1.5 [0.74 to 1.11]	4.5 to 6.5 [3.3 to 4.8]	7 to 9 [5.2 to 6.6]	12.5 to 14.5 [9.2 to 10.7]	20 to 22 [14.8 to 16.2]

 Use a tightening torque of 3.0 to 5.0 N · m [2.21 to 3.69 ft · lbf] if the various pressure gauges are mounted on the Rc1/4 pressure port plate.

 If a muffler or something is attached to the 3 (R) port of the residual exhaust valve, tighten it to 1.8 to 2.2 N · m [1.33 to 1.63 ft · lbf].

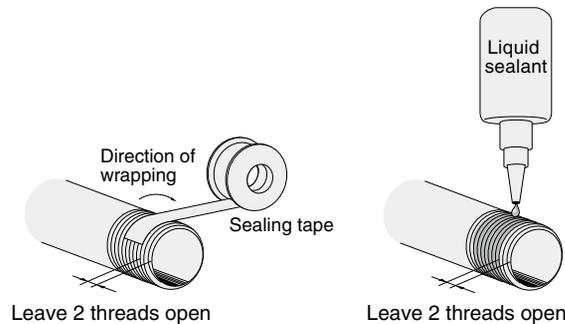


●Preventing contamination by foreign matter

1. Remove all foreign matter, such as metal chips, cutting oil, or dirt, from inside pipes with compressed air blow (flushing) and thorough washing before fitting the pipes.
2. Do not allow foreign matter, such as metal chips, or sealing tape from the piping threads, to get into the pipes when installing the pipes and fittings.

Note Foreign matter entering the piping may damage the product or reduce its performance and service life.

3. Wrap the sealing tape in the direction as shown in the diagram below leaving 1.5 to 2 threads uncovered. When using liquid sealant, apply a suitable amount and in the same way leave 1.5 to 2 threads uncovered.



Note If the sealing tape or sealant gets on the lip of pipes or fittings, bits of it may get into the pipes and cause air leaks.

4. If you are using liquid sealant, do not get it on the polycarbonate parts (the bowl of the filter regulator and the front cover of the pressure gauge).

Note If liquid sealant gets on the polycarbonate parts, it may damage them.

Medium and operating environment

●Usable medium

1. Use clean air (filtered to below 5 μm) for the medium. Contact the nearest Koganei sales office or overseas department if you are considering using something other than clean air.

2. Cannot use air that contains moisture and fluid.

Note Using air that contains too much moisture and/or fluids will cause the product's functions to stop after a short period and will reduce the product performance and service life.

3. If air that contains moisture and/or fluids is used, or if it is possible that they may be mixed in with the air being used, we recommend using the iB-Cyclone to reliably remove moisture and fluids.

Note If you use an iB-Cyclone, install an FRZ series filter regulator (without water and fluids removal functions) on the secondary side.

4. Do not use the product if the medium being used is prone to extreme pulsating or surging.

Note Medium prone to extreme pulsating or surges will cause the product's functions to stop after a short period and will reduce the product performance and service life.

●Operating environment

1. 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.
2. Cover the unit when using it in locations where it might be subject to excessive dust, dripping water, dripping oil, etc.
3. Do not use the product in environments subject to external vibration or impact.

Note External vibrations or shocks may result in damage to component parts.

4. Avoid piping that is rigid, such as steel piping, if vibrations are transmitted. Use flexible tubes so that the product is not subject to the vibrations.

●Medium and operating environment

1. The temperature of the medium and the ambient environment must be within the range in the specifications.

Note Using the product in an environment that is outside the specified temperature or with medium that is outside the specified temperature will cause the product's functions to stop after a short period and will reduce the product performance and service life.

2. Use a device, such as a freeze-type air dryer or after cooler, to lower the dew-point temperature of the medium to below the ambient temperature so condensation or frost does not occur in the secondary pipes.

Note If condensation or frost forms in the product, it may get into the secondary side.

3. Do not use medium in the product or use the product in an environment that includes corrosive components such as organic solvents, phosphate ester type hydraulic oil, sulfur dioxide, chlorine gas, freon gas, ozone, acids, alkaline, etc.

Note Using the product in an environment or with medium that is specified in the above item 3 will cause the product's functions to stop after a short period and will reduce the product performance and service life.

4. The bowl and the front cover of the pressure gauge of the filter regulator are polycarbonate. This product cannot be used in environments with the gases and fluids in item 2, nor threadlocking adhesive, leak detection fluid, hot water or where it may be exposed to them. This product also cannot be used in direct ultra-violet light. See the catalog for details.

Operation and maintenance inspections

●Method of use

Read the Handling Instructions and Precautions for each product for instructions on correct usage .

●Maintenance (maintenance inspection)

1. Performance and functions may decrease as the pneumatic equipment ages. Always conduct daily inspections of the pneumatic equipment, and confirm that all requisite system functions are satisfied, to prevent accidents from happening.
2. Read the Handling Instructions and Precautions for instructions on maintenance and replacing maintenance parts .
3. The product must be disassembled and reassembled to use the seal kit.

Note The product is no longer under warranty if it is disassembled and reassembled.

* For other details about specifications and precautions, see the catalog.

* For inquiries about the product, contact the Koganei overseas group at the number below.

KOGANEI CORPORATION
 OVERSEAS DEPARTMENT
 3-11-28, Midori-cho, Koganei City, Tokyo 184-8533, Japan
 Tel: 042-383-7271 Fax: 042-383-7276