



Pneumatic components (F.R.L. unit (precision))

# Safety Precautions

Be sure to read this section before use.

Refer to Intro Page 63 for precautions for general pneumatic components.

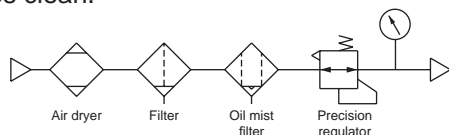
Product-specific cautions: Precision regulator RPE1000 Series

## Design/selection

### WARNING

- Use the product in the range of conditions specified for the product. ■ Working fluid must be clean air from which solids, water and oil have been sufficiently removed using an air dryer, filter and oil mist filter. Never supply oiled air.

As well, when secondary side pressure, etc., is turned OFF, air on the secondary side will pass through the regulator and be discharged from the EXH port. Thus, if secondary piping or load side interior is dirty, malfunction, characteristics deterioration, etc., may occur. Keep the inside of the pipes clean.



### CAUTION

- Keep the pressure difference between the primary and secondary sides to 0.1 MPa or more. Depending on the circuit used and usage conditions, pulsation or noise may occur due to the resonance of the airflow (especially when blowing air). In this case, increase the secondary side capacity or use the primary pressure as low as possible.

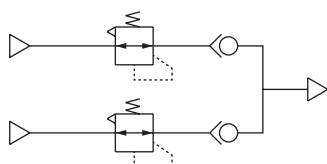
- Pulsation may occur when capacity is insufficient, such as when a switch valve is installed directly to the secondary side of the regulator. In such a case, increase the secondary side capacity of the regulator for use.
- If the regulator is repeatedly turned ON and OFF with the directional switching valve on the primary side, the set pressure may change greatly. Thus, the directional switching valve should be installed on the secondary side.
- Output pressure exceeding the regulator's set pressure could result in damage or faulty operation of the secondary side devices. Be sure to install a safety device.
- Do not operate the pressure adjustment knob while the primary side is released to the atmosphere, as performance could deteriorate.
- Select the RP2000 Series if the maximum flow rate of the regulator exceeds the maximum relief flow rate.
- Each product has an O-ring groove for modular connection on its OUT side. Select piping that can be sealed at or below the O-ring groove diameter.

Series	RPE1000
Groove diameter	ø17.6

## Mounting, installation and adjustment

### CAUTION

- Check IN and OUT indications indicating the air inlet and outlet before connecting. A reverse connection could result in improper operation. ■ Do not move or swing the product by the pressure adjustment knob.
- Do not install this product in a location where it may be subject to vibrations or shocks.
- Flush air pipes before connecting the regulator.
- Use sealing tape when piping. Do not use liquid and solid sealant. In addition, ensure that the sealing tape does not enter.
- When using in parallel as shown at left, do not use



the secondary side as a closed circuit. If a closed circuit is required, be sure to set a check valve on the respective secondary sides.

- Install so that the EXH port is not plugged.
- When installing on a panel, completely loosen and remove the pressure adjustment knob, insert the body into the ø12.5 panel hole, and fix it to the panel with the panel mounting nut. Then turn the pressure adjustment knob to attach it to the body. Panel mounting nut recommended tightening torque 2 to 3N·m
- Use appropriate torque to tighten the pipes when connecting them.
  - The purpose is to prevent air leakage and damage to bolts.
  - First tighten the bolts by hand to ensure that the threads are not damaged, then use a tool.

[Recommended values]

Port thread	Tightening torque N·m
Rc1/8	3 to 5
Rc1/4	6 to 8

## During use/maintenance

### ⚠ CAUTION

#### ■ Working fluid

- Use only compressed air. Air containing corrosive gases, fluids or chemicals could result in improper pressure adjustment due to body damage or rubber deterioration.

#### ■ Environment

This product is an indoor use this product in the following environments.

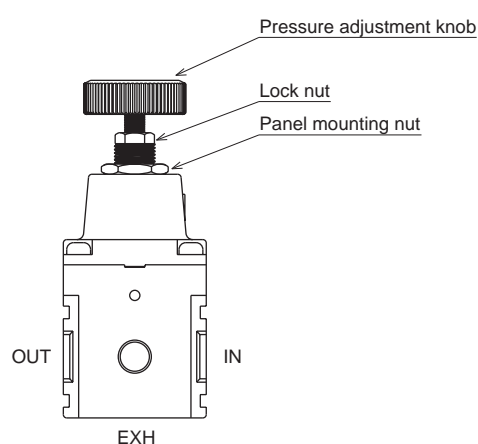
- When ambient temperature exceeds the range of -5 to 60°C.
- Where air freezes.
- Places where the unit will be exposed to dripping water and/or coolant.
- Highly humid places where dew condenses due to temperature fluctuations.
- Where salt air or splashing seawater contacts the product.
- In atmospheres containing corrosive gases, liquids and chemicals.
- Where the product is exposed to direct sunlight.
- Locations with vibration or impact.
- Locations where the surroundings are very dusty.

#### ■ When using the product

- When there is no air consumption in the secondary side, air is released from the EXH port. As this is necessary for precise pressure control, do not block the EXH port. Air 1 l/min or less is released into the atmosphere from the EXH port.
- Check primary pressure before setting pressure.
- Pressure higher than the primary pressure cannot be set.
- Turn the pressure adjustment knob clockwise to increase secondary pressure, and counterclockwise to lower pressure.
- After adjusting the pressure, tighten the lock nut, and then set the pressure adjustment knob.
- Since the set pressure also changes due to the changes in the ambient environment temperature, using at a constant temperature is recommended.
- Due to the product structure, the secondary side pressure may not be 0 MPa even if the pressure adjustment knob is completely loosened.

#### ■ Maintenance

- Pneumatic components must be disassembled and assembled by qualified personnel.
- Pneumatic Pressure Skill Test Class 2 or higher level is required.
- Read the relevant product instruction manual thoroughly and fully familiarize yourself with the task before disassembling or assembling pneumatic components.
- Personnel must be fully familiar with pneumatic component structure and operational principles and safety requirements.
- Before conducting maintenance, turn the power OFF, stop the supply of pressure and make sure that there is no residual pressure.



F.R.L.
F.R.
F (Filtr)
R (Reg)
L (Lub)
Drain Separ
Mech Press SW
Res press exh valve
SlowStart
Anti-bac/Bac-remove Filtr
Film Resist FR
Oil-ProhR
Med Press FR
No Cu/ PTFE FRL
Outdrs FRL
Adapter Joiner Press Gauge
CompFRL
LgFRL
PrecsR
VacF/R
Clean FR
ElecPneuR
AirBoost
Speed Ctrl
Silncr
CheckV/ other
Fit/Tube
Nozzle
Air Unit
PresCompn
Electro Press SW
ContactSW
AirSens
PresSW Cool
Air Flo Sens/Ctrl
WaterRISens
TotAirSys (Total Air)
TotAirSys (Gamma)
Gas generator
RefrDry
DesicDry
HiPolymDry
MainFiltr
Dischrg etc
Ending