




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

Safety Precautions

Be sure to read this section before use.

Refer to Intro Page 63 for general precautions regarding pneumatic components and refer to “ Safety precautions” for detailed precautions for individual series.

Product-specific cautions: Compact regulator RB500 Series

Design/selection

CAUTION

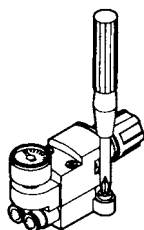
- Avoid using this product where strong pulsations of pressure or vibration are applied.
- When installing between a solenoid valve and actuator, avoid use of this product in a circuit where back pressure is applied.
- Differential pressure between primary and secondary sides is to be 0.1 MPa or more.

- Usage may not always be possible in a sealed circuit at the secondary side or in a balance circuit and so consult with CKD.
- 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.
- Avoid use in applications released into the atmosphere.

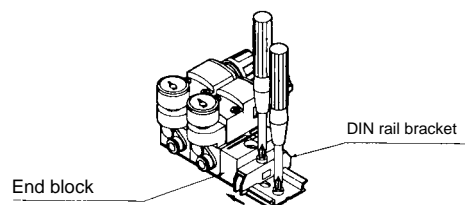
Mounting, installation and adjustment

CAUTION

- When transporting or installing the product, do not drop it. Failure of indicator accuracy may occur.
- Do not install the product in a location with high temperatures or high humidity. Otherwise, malfunctions may result.
- When installing a pressure gauge, be sure to use a wrench on the width across flats. If another section is used, air leakage or damage could result.
- When installing or piping, observe the following points.
 - Confirm the direction of the IN arrow indicating the air inlet before connecting. A reverse connection could result in improper operation.
 - Do not move or swing the product by the pressure adjustment knob.
 - When installing a compact regulator, use M4 plain washer attached screws, and fix with tightening torque of 1.4 to 2.0 N·m or less.



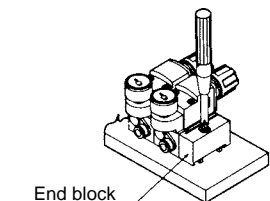
- When installing a block manifold with DIN rail, fix the DIN rail while fixing the bracket between the manifold end blocks.
Recommended tightening torque of DIN rail bracket is 1.4 to 2.0 N·m. Fix DIN rail bracket, while making no gaps between end blocks. Care must be taken when expanding, maintaining or disassembling regulator blocks.



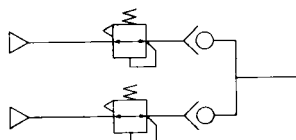
- Do not install this product in a location where it may be subject to vibrations or shocks.
- Before mounting the air pipe to be used, flush it out well.
- Tighten with 3.5 N·m or less tightening torque when mounting a pressure gauge or a fitting for external porting to the pressure gauge mounting board

- When installing the product directly without using DIN rail (direct mount), fix end blocks on both sides with M4 set screws.

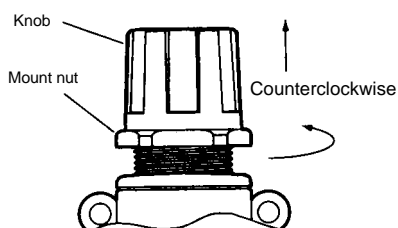
Recommended tightening torque is 1.4 to 2.0 N·m. Install the product on a fully flat surface. If the seating surface is small, external pressure from above may damage the manifold connection section. If a flat seating plane is not available, use DIN rail mount.



- When using in parallel as below, the OUT side of the circuit must not be closed. If a closed circuit is required, be sure to install a check valve on each OUT side.



- When installing on a panel, loosen the mounting nut; it will function as a jack and make the knob easily removable. Fix the product on a panel with a mount nut.



- A push-in fitting is used for the regulator piping. The tube may come off or air leakage may occur depending on diametric accuracy, wall thickness, or hardness of piping tube. Use a CKD specified tube. When mounting or dismantling a fitting, press the release ring evenly, then pull out the tube without twisting it. To reuse the tube, cut the section scored by the chuck finger.

Tube	O.D. (mm)	Outer ø-tolerance (mm)	Bore size (mm)	Min. bending range (mm)
Soft nylon F-1500 Series	ø4	±0.1	ø2.5	10
	ø6		ø4	20
	ø8		ø5.7	30
Urethane U-9500 Series	ø4	+0.1 -0.15	ø2	10
	ø6		ø4	20
	ø8	+0.1 -0.2	ø5	30
Urethane NU Series	ø4	±0.1	ø2.5	8
	ø6		ø4.5	15
	ø8		ø6	24

- Securely insert piping tube into push-in fitting and check that tube does not dislocate before use.
- Cut the push-in fitting tube at right angles with a dedicated tool.

Use/maintenance

CAUTION

Working air quality

- Use clean compressed air filtered with a 5 µm air filter.
- Use only compressed air. Air containing corrosive gases, fluids or chemicals could result in improper pressure adjustment due to body damage or rubber swelling.
- Service life could be shortened due to splashed lubricant and rubber part deterioration when using ultra dry air.

Working environment

Avoid using the products in the following environments.

- When ambient temperature exceeds the range of 5 to 60°C.
- 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.

Pressure management

- Turn the pressure adjustment knob clockwise to increase the secondary pressure and counterclockwise to lower the pressure. When adjusting the pressure, pull up the knob to check that the lock is not applied.
- Pressure higher than the primary pressure cannot be set.
- Set the regulator pressure setting to increase. After setting the pressure, lock the pressure adjustment knob.

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 Filt
Film Resist FR
Oil-ProhR
Med Press FR
No Cu/ PTFE FRL
Adaptor 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