



Pneumatic Components

# To Use This Product Safely

Please read before use.  
Refer to "Fluid Control Valves (No. RJ-013AA)" for general precautions for the control components.

Individual Precautions : Direct acting 2-port solenoid valve CXU10-FAB3, CXU30-FAB4U Series  
Pilot kick 2-port solenoid valve CXU30-ADK Series

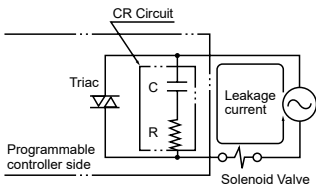
At Design / Selection

**WARNING**

- Operating fluids
  - ① When using this valve for dry air or inert gas, the life can be shortened considerably due to wear. Use a valve intended for dry air.
  - ② This valve cannot be used for maintaining vacuum.
  - ③ Cannot be used with combustion gas.

**CAUTION**

- Fluid viscosity  
The fluid viscosity must be 50 mm<sup>2</sup>/s or less. Malfunctions could occur if the viscosity is higher than 50 mm<sup>2</sup>/s.
- Leakage current from other control components  
When operating the solenoid valve with a programmable controller etc., please verify that the leakage current of the programmable controller output is within the following specifications.



| Model No.                 | Voltage      |              |              |              |
|---------------------------|--------------|--------------|--------------|--------------|
|                           | 100 VAC      | 200 VAC      | 12 VDC       | 24 VDC       |
| CXU10-FAB3<br>CXU30-FAB4U | 6 mA or less | 3 mA or less | 1 mA or less | 2 mA or less |
| CXU30-ADK                 | 6 mA or less | 3 mA or less | 2 mA or less | 1 mA or less |



Pneumatic Components

# To Use This Product Safely

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Refer to "Fluid Control Valves (No. RJ-013AA)" for general precautions for the control components.

Individual Precautions : Pilot Operated 2-Port Solenoid Valves for Compressed Air CXU10-EXA Series

At Design / Selection

1. Confirmation of Specifications

**WARNING**

- Use within the product's specific specification range. Do not use at pressures or temperatures outside the specification range, as this may cause damage or malfunction. (See specifications). Fluids other than air are not guaranteed.
- Operating fluids  
Dedicated for compressed air.  
Active gases cannot be used.
- This product is a pilot operated solenoid valve that opens and closes the valve using the pressure difference before and after the solenoid, so a pressure difference ( $\Delta P = P1 - P2$ ) of 0.01 MPa or more must be secured when the valve is opened to ensure valve opening operation. In the following cases, the pressure difference  $\Delta P$  and flow rate may not be attained.
  - When the flow rate is reduced before/after the solenoid valve with a throttling section, nozzle, or long piping.
  - When air supply on the primary side of the solenoid valve is low (insufficient Regulators capacity, a throttling section, long piping, etc.)
  - When air consumption of a components sharing the air supply source (Regulators, etc.) on the primary side of the solenoid valve increases constantly or temporarily.
  - When the flow rate changes/decreases due to the fluctuation of the source pressure of the air supply on the primary side of the solenoid valve.
  - When multiple solenoid valves connected in parallel piping are opened simultaneously (The drop in solenoid valve source pressure causes the pressure difference between the primary side and the secondary side to diminish.)

**CAUTION**

- When the Regulators and solenoid valve are directly coupled, the parts could mutually vibrate, causing resonance and chattering.
- If the piping cross-sectional area on the fluid inlet is reduced, the operation may become unstable due to differential pressure failure during valve operation. For the fluid supply side, use a piping size that matches the port size of the valve.

2. Design for Safety

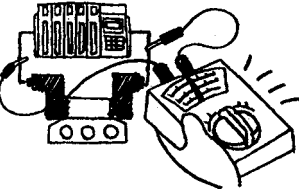
**WARNING**

- Take measures to prevent physical harm or property damage in the event of breakdown of this product.
- Protection characteristics (IPX5) of DIN terminal box connection
  - IPX5 (IEC60529 [IEC529 : 1989-11]) standards are applied to the test. Avoid use in conditions where water or cutting oil directly contacts the valve.

**CAUTION**

- Check for leakage current to avoid malfunction due to leakage current from other control devices.
  - When using a programmable controller, leakage current may affect the solenoid valve and cause malfunction. Note that the values that are affected by leakage current depend on the solenoid valve.

Programmable controller



|             |                |
|-------------|----------------|
| For 100 VAC | 2.0 mA or less |
| For 12 VDC  | 1.5 mA or less |
| For 24 VDC  | 1.8 mA or less |

- Observe the following precautions when using nylon or Urethane Tubing tubes as the piping material.
  - Use flame-resistant tubes where they could come in contact with spatter.
  - When using the standard push-in fitting on the spiral tube, fix the base of the tube with a hose clamp. Rotation may occur, reducing holding capacity.

3. Operating Environment

- Use clean air.
  - Do not use the compressed air if it contains chemicals, synthetic oils containing organic solvents, salt, or corrosive gas, as it can cause damage and/or operation failure.
  - The ozone content in the compressed air should be 0.1 ppm or less. A higher ozone content may cause malfunction and leakage.

4. Durability

**WARNING**

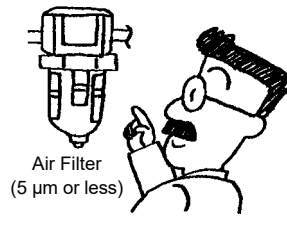
- Continuous energizing during use may accelerate degradation of the solenoid valve, but it differs depending on the Operating conditions. Set an appropriate replacement time. It is not designed to function as a safety valve, such as an emergency shut-off valve. When using in such a system, always take separate measures that will ensure safety.

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Component Products site (<https://www.ckd.co.jp/kiki/en/>) → 'model No.' → [Instruction Manual](#).

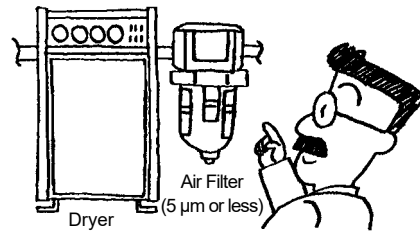
5. Pneumatic Air Source

CAUTION

- Install a pneumatic filter just before the pneumatic components circuit.



- Do not supply anything other than compressed air.
- Use clean compressed air that does not contain corrosive gases.
- Use dry compressed air that does not cause moisture inside the piping.



- Drain will occur if there is a temperature drop inside the pneumatic piping or pneumatic equipment.
- Drain enters the air passage inside the pneumatic equipment, instantaneously blocking the passage and causing malfunction.
- Rust occurs due to drain, causing malfunction of pneumatic equipment.

- Use compressed air that does not contain oxidized oil, tar, carbon, etc. from the air compressor.
  - Oxidized oil, tar, carbon, etc. enter and adhere inside the pneumatic equipment, increasing the resistance of sliding parts and causing malfunction.

- Use compressed air that does not contain solid foreign matter.
  - Any solid foreign matter in the compressed air can enter the pneumatic components and cause wear, locking, or internal leakage in the sliding parts.

6. Surge suppressor

CAUTION

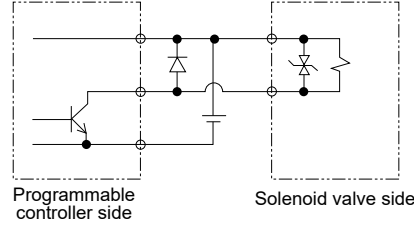
- The surge suppressor included with the solenoid valve aims to protect the output contact for driving the solenoid valve. There is no protection for other peripheral devices, and those devices may be damaged or malfunction by a surge. The suppressor absorbs a surge voltage generated by other devices, and burns itself out protecting the output contact. Note the following points.

- The surge suppressor functions to limit a voltage surge in the solenoid valve, which can reach several hundred volts, to a low voltage level that the output contact can withstand. Depending on the output circuit used, this may be insufficient and could result in damage or malfunction. Confirm in advance whether the surge suppressor is suitable for the withstand voltage of both the solenoid valve in use and the output device, circuit structure and the degree of return delay time. When necessary, provide other surge countermeasures. CKD's solenoid valve with surge suppressor can counter inverse voltage surge which occurs when the valve is turned OFF to the level shown in the table below.

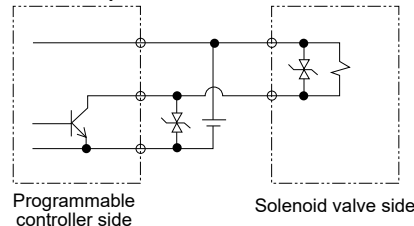
| Specification voltage | Inverse voltage when OFF |
|-----------------------|--------------------------|
| 12 VDC                | Approx. 27 V             |
| 24 VDC                | Approx. 47 V             |

- If the output unit is an NPN type, a surge voltage equaling the voltage shown in the table above plus the power supply voltage may be applied to the output transistor. Make sure to implement a contact protection circuit to avoid the risk.

[Output transistor protection circuit: Installation example 1]



[Output transistor protection circuit: Installation example 2]



Pneumatic Equipment  
To Use This Product Safely

Please read before use.  
Refer to "Directional control valve ② (No.RJ-012AA)" for general precautions for valves.

Individual Precautions:Pilot operated 5-port valve CXU30-4G2R Series / residual pressure exhaust 3-port solenoid valve CXU30-VE

At Design / Selection

1. Surge suppressor

CAUTION

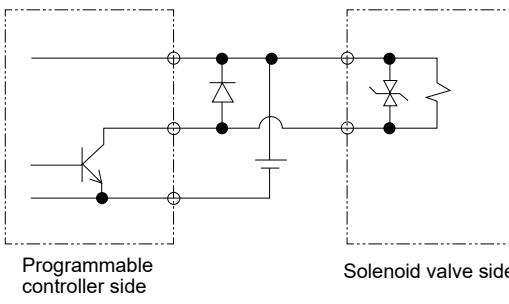
- The surge suppressor included with the solenoid valve aims to protect the output contact for driving the solenoid valve. There is no protection for other peripheral devices, and those devices may be damaged or malfunction by a surge. The suppressor absorbs a surge voltage generated by other devices, and burns itself out protecting the output contact. The following points must be taken into consideration.

- The surge suppressor functions to limit a voltage surge in the solenoid valve, which can reach several hundred volts, to a low voltage level that the output contact can withstand. Depending on the output circuit used, this may be insufficient and could result in damage or malfunction. Confirm in advance whether the surge suppressor is suitable for the withstand voltage of both the solenoid valve in use and the output device, circuit structure and the degree of return delay time. When necessary, provide other surge countermeasures. CKD's solenoid valve with surge suppressor can counter inverse voltage surge which occurs when the valve is turned OFF to the level shown in the table below.

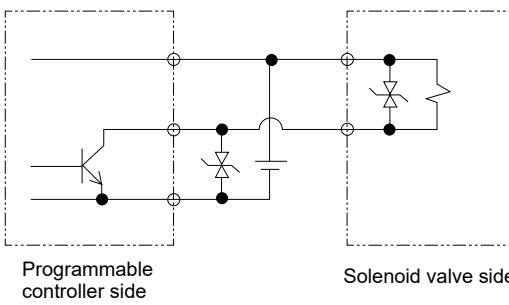
| Specification voltage | Inverse voltage when OFF |
|-----------------------|--------------------------|
| 24 VDC                | Approx. 47 V             |

- If the output unit is an NPN type, a surge voltage equaling the voltage shown in the table above plus the power supply voltage may be applied to the output transistor. Make sure to implement a contact protection circuit to avoid the risk.

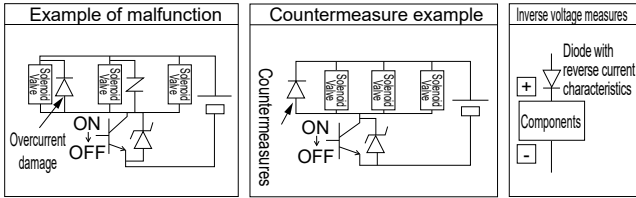
[Output transistor protection circuit : Installation example 1]



[Output transistor protection circuit : Installation example 2]



- If another components or solenoid valve is connected in parallel to the solenoid valves, the inverse voltage surge generated when the valve is turned OFF would apply to those components. Even in the case of a solenoid valve with 24 VDC surge suppressor, a surge voltage may reach negative tens of volts for some models. This inverse voltage may cause damage or malfunction to other parallel connected components. A components that is susceptible to inverse polarity voltages (example : Avoid parallel connection with the LED indicator lamp. When driving several solenoid valves in parallel, the surge from other solenoid valves could enter the surge suppressor of one solenoid valve and cause it to burn. When driving several solenoid valves with surge suppressors in parallel, surge current could concentrate at the surge suppressor with the lowest voltage limit and cause similar burning. Even if the solenoid valve is the same, the surge suppressor's voltage limit can be inconsistent, and in the worst case, could result in burning. Avoid driving multiple solenoid valves in parallel.



- The surge suppressor incorporated in the solenoid valve will often be short-circuited if it is damaged by overvoltage or overcurrent from other solenoid valves. Where there is a failed surge suppressor, if a large current flows when the output is ON, in the worst case scenario, the output circuit or solenoid valve could be damaged or ignited. Do not continue energizing the solenoid valve if the surge suppressor becomes faulty. Additionally, to prevent large currents from continuing to flow, connect an overcurrent protection circuit to the power supply and drive circuit, or use a power supply with overcurrent protection.

2. 100 VAC specifications

CAUTION

- The models with 100 VAC specifications have a built-in full-wave rectifier circuit. Depending on the type of SSR used to turn ON/OFF the solenoid valve, recovery failure of the valve may result. Use caution when selecting SSRs. (Consulting the manufacturer of the relay or PLC is recommended.)

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Component Products site (<https://www.ckd.co.jp/kiki/en/>) → 'model No.' → Instruction Manual.

3. Exhaust check valve

CAUTION

- The exhaust check valve is a check valve. Note that when operating the cylinder rod directly without pressurization, the check valve opens and the cylinder rod does not move. (CXU30-4G2R)
  - The solenoid valve for 2-position single, 2-position double, and 3-position ABR connection mounted to CXU30-4G2R is provided with the "exhaust check valve" as standard.
  - With components that are affected by a small amount of leakage or pressure of low friction cylinders, etc., the functions may not operate properly.
  - If you do not need the release check valve, contact CKD. Otherwise, choose a gasket "4G2R-GASKET" which is not equipped with a release check valve.

4. Manual override

WARNING

- CXU30-4G2R and CXU30-VE Series are internal pilot operated solenoid valves. If air is not supplied to port P, the main valve will not be switched even if the manual override is operated.
- A manual protective cover is provided as standard. The manual protective cover is closed when the valve is shipped to protect it, which cannot be seen when delivered. Open the protective cover and operate the manual override. Note that the protective cover will not close unless the locking manual override is released.
- The manual override is used for both non-locking and locking. The lock is applied by pressing down and turning the manual override. For locking, be sure to press down and turn. If manual override is turned without being pressed down, it could be damaged or air could leak.

5. Other precautions

CAUTION

- CXU30-4G2R Series
  - Continuous energizing for long periods may accelerate degradation of the solenoid valve. Furthermore, use caution under the following Operating conditions, as with continuous energization.
    - When the energized time exceeds non-energized time in intermittent operation
    - When one energizing session exceeds 30min in intermittent energizingConsider heat dissipation when installing the product.
  - When using the AC voltage type in a continuously energized state, the temperature of the coil's outer surface will be high. It may burn, so do not touch it when it is energized.
- CXU30-VE Series
  - This valve is specifically designed to start and stop a device. This valve should not be used for cylinder repeat operation or as a normal 3-way valve.
  - Provide heat removal measures when you use the products with continuous current application for an extended period of time.

6. Pressure switch

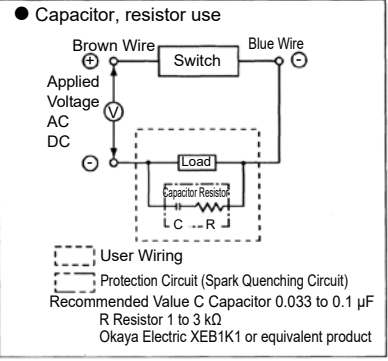
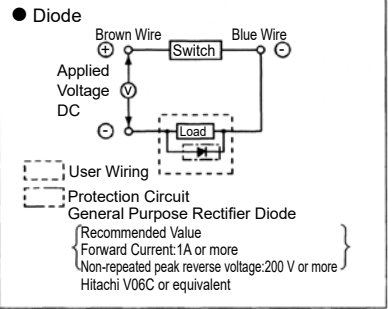
CAUTION

- Setting pressure
  - Pressure displayed on the scale plate is used as a guideline. When setting the pressure, please set it while checking with a separate pressure gauge.
  - Pressure displayed on the scale plate is the value when the contact is OFF. When setting to the value when the contact turns ON, set the pressure display on the scale plate smaller than the value obtained by subtracting the hysteresis. (Refer to the chart below) If not set, it may not operate at the set value. (Hysteresis refers to the pressure range from when the switch operates once with the set pressure to when the pressure drops and the switch turns OFF.)
- Installation
  - Do not drop or bump the product when handling it.
  - Wire such that repeated bending or tension are not applied to the lead wires. Otherwise, this could lead to disconnection.
  - Do not use the product near a strong magnetic field or large current (large magnet or spot welding machine, etc.). This may cause malfunction.
  - To ensure the IP65 equivalent degree of protection for the pressure switch, install the included M3 fitting and extend the tube to a location where water will not enter. The tightening torque of M3 is 0.3 to 0.6 Fittings N·m. Do not plug the atmospheric pressure inlet port. Plugging could cause malfunctions to occur. Cannot be used outdoors.
  - Do not pressurize the atmospheric release port or blow it with compressed air. Product performance could decrease or the product could be damaged.

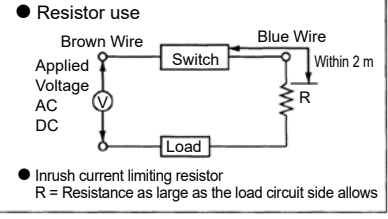
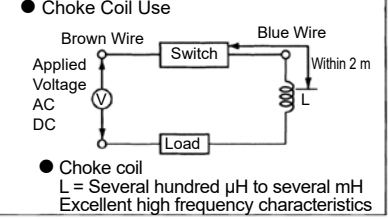
Wiring

- Connecting the lead wire
  - ① Do not connect the lead directly to the power supply. Connect the load serially. Failure to do so may result in burning out the lamp or melting the contact.
  - ② When using for DC, connect so that the brown wire is on the + side and the blue wire is on the - side. If connected in reverse, the lamp will not light up.
  - ③ When connecting to an AC relay or PC input, if half-wave rectification is performed in those circuits, the switch lamp may not light up. In that case, reversing the polarity of the switch lead wire connection will light up the lamp.

- Contact capacity
  - Do not use outside the specified range of load voltage and load current. It may cause failure such as lamp burnout or contact welding. Also, if it falls below the rated current value, the lamp may not light up.
- Contact protection
  - ① When you use the product with a conductive load such as a relay, provide a contact protection circuit as shown below. If a protection circuit is not installed, it may cause contact welding.



- ② If DC wiring exceeds 50m or AC wiring exceeds 10m, the wiring capacity will be reached, and a rush current will occur, damaging the switch or shortening the service life. If the wiring length exceeds the limit, install a contact protection circuit.



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# To Use This Product Safely

Please read before use. For general pneumatic components precautions, see Intro 27 for details.

## Individual Precautions : F.R.L. components (modular design)

### At Design / Selection

#### 1. Common

##### WARNING

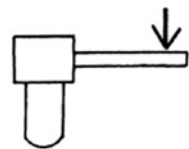
■ This product is designed for industrial use. Do not use for medical purposes, or in any equipment or circuit that concerns human life.

■ Air Filters, lubricator, Drain Separators plastic bowl, lubricator drip window, and pressure gauge lens. Material is polycarbonate. It cannot be used in environments containing synthetic oil, organic solvents, chemicals, cutting oil, screw locking agent, leakage detection solutions, or hot water, etc., or where these substances may come in contact with the product. Refer to P. 516 for details on plastic bowl chemical resistance.

##### Piping Load Torque

Do not apply piping load or torque to the body and piping parts.

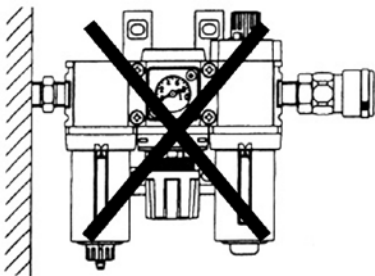
| Series Name        | 1000-W | 2000-W | 3000-W | 4000-W | 6000-W | 8000-W |
|--------------------|--------|--------|--------|--------|--------|--------|
| Maximum Torque N·m | 15     | 15     | 50     | 50     | 100    | 100    |



With the 1000-W Series in particular, application of a torque of 30 N·m or more on the piping is "hazardous" as the piping could be damaged. Use the product within the specified torque, even when using the pipe adaptor.

Avoid the manner of piping shown below.

Avoid cantilever fixed piping, as excessive force can easily cause damage. With the 1000-W Series in particular, application of a torque of 30 N·m or more on the piping is "hazardous" as the piping could be damaged. Use the product within the specified torque, even when using the pipe adaptor.



■ Each product has an O-link groove for modular connection on its OUT side. Select piping that can be sealed at or below the O-link groove diameter.

| Series Name     | 1000-W | 2000-W | 3000-W | 4000-W | 6000-W | 8000-W |
|-----------------|--------|--------|--------|--------|--------|--------|
| Groove Diameter | ø17.6  | ø25.4  | ø25.4  | ø25.4  | ø41.2  | ø41.2  |

##### CAUTION

##### High moisture levels

Install the air dryer and drain separator before the air filter. If there is a lot of moisture from the compressor, hot and highly humid air could shorten the device's life or result in corrosion.

##### Dry air

Rubber parts for the regulator could deteriorate quickly, so use of a fluoro rubber valve assembly is recommended. Contact CKD when required.

##### Water-lubricated compressor circuit

Be careful not to mix chlorine-based substances into the compressed air.

■ Use the auto-drain under the Operating conditions below. It may cause malfunction.

NO auto-drain (exhaust when not pressurized) : For "F" and "FF"

- Use a compressor with a capacity of 0.75 kw {90 l/min [ANR]} or more.

- Set the Operating pressure to 0.1 MPa or more. (Until 0.1 MPa is reached, air is purged together with the initial drainage.)

NC auto-drain (no exhaust when not pressurized) : For "F1", "FF1"

- A compressor with a capacity of 0.75 kw or less can also be used.

- Set the Operating pressure to 0.15 MPa or more. For 1000 Series NC auto-drain
- Set the Operating flow rate to less than or equal to the max. Operating flow rate.

- Avoid use of this in places with high vibration, such as where a compressor is installed, because air could leak from the drain outlet when the float vibrates.

- Avoid drain overflow. It will cause operation faults.

#### 2. Regulator, filter/regulator

##### WARNING

■ Output pressure exceeding the Regulators' set pressure could result in damage or faulty operation of the secondary side devices. Be sure to install a safety device.

■ The Regulators cannot process residual pressure (release secondary pressure) when the primary pressure is released. Use a regulator with a check valve when residual pressure must be processed. If the product is not equipped with a check valve, residual pressure may or may not be possible.

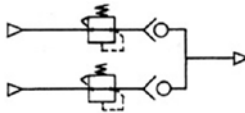
■ As the Regulators may not always be usable when used with a secondary side sealed circuit or balance circuit, consult with CKD.

##### CAUTION

■ Vibrations may occur depending on the usage and piping conditions. Lower the primary pressure if vibrations occur. Select the proper size as pulsation can occur easily if the flow rate is extremely small in respect to the max. flow rate.

■ The setting range for the Regulators' secondary pressure should be within 85 % of that of the primary side. Otherwise, the pressure drop may increase.

■ When using Regulators in parallel as below, do not use the OUT side as a closed circuit. If a closed circuit is required, install a check valve on the OUT side of each regulator.



#### 3. Lubricator

##### WARNING

■ Do not use as lubrication for air motor or bearings. Lubrication may not be possible when used very frequently, such as in a press machine.

##### CAUTION

■ If the Operating air quantity is low for the lubricator, oil may not drip. Check the min. air quantity required for dripping oil.

#### 4. Pressure switch

##### CAUTION

■ When using a pressure switch PPR or Digital Pressure Sensors PPX, avoid using it together with the lubricator. These are not splash-proof and so they may become inoperable if oil comes into contact with them.

#### 5. Residual pressure exhaust valve

##### WARNING

■ Precautions for the residual pressure exhaust valve

- The EXH port is dedicated for installation of the silencer. Tighten with a torque of 3N·m or less (manual tightening). Do not connect pipes where their loads or torque, etc., may be applied to the EXH port.
- When the exhaust operation is incomplete due to air quality, manually operate the exhaust of the knob (turn → pull up).

##### CAUTION

■ Pressure and flow characteristics and relief start pressure may be less than the standard Regulators (R3000 Series, etc.). Depending on use, such as when back pressure rises, the set pressure may increase 0.2 MPa. It is recommended to use a pressure gauge compatible with a set pressure of +0.2 MPa.

■ Set the primary pressure to 0.1 MPa or more than the set pressure. Pressure adjustment faults or leaks from the relief valve could result depending on use.

■ When used in applications where the primary pressure is 0.7 MPa or more, keep the difference in primary and set pressure within 0.4 MPa. Pulsation could occur if the difference in pressures is large or if secondary piping is large. If so, lower the primary side pressure or restrict the secondary line. If vibrations continue, contact CKD.

■ When the primary pressure is released, the secondary pressure flows to the primary side. If a problem occurs in another device due to the inflow of secondary side fluid to the primary side, provide a circuit to retain the pressure. When the product is left with the primary pressure released for long periods, return the set pressure to 0. Pulsation could occur if the bottom rubber is deformed.

■ Do not use in locations where ultraviolet rays are directly irradiated.

■ The set pressure changes from the initial set point due to the Operating environment and conditions, as well as aging of part materials. Check the pressure periodically and reset if it has changed.

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Component Products site (<https://www.ckd.co.jp/kiki/en/>) → 'model No.' → Instruction Manual.

About Chemical Resistance of Plastics

WARNING

- The chemical resistance of plastic parts is shown below.
- Avoid using products in an atmosphere where chemicals are contained in compressed air or atmosphere, or where they could adhere to parts.
- Use in the above state could lead to bowl damage and accidents.
- Avoid using with these chemicals or in an atmosphere containing these chemicals.
- A metal bowl is available if these chemicals must be used.

Chemical resistance of plastic bowl/body Use a metal bowl in an atmosphere containing the following chemicals. Also, since some inspection liquids, sealants, and adhesives contain the following chemical components, please confirm when selecting.

| Type of Chemical    | Classification of Chemical        | Main Products of Chemical                                                                                                                        | General Usage Examples                                                                                                                                  | Polycarbonate Bowl | Nylon Bowl | Nylon body |
|---------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------|------------|
| Inorganic Chemicals | Acid                              | Hydrochloric acid, sulfuric acid, hydrofluoric acid, phosphoric acid, chromic acid, etc.                                                         | Acid washing of metals, acidic degreasing solutions, coating treatment solutions, etc.                                                                  | x                  | x          | x          |
|                     | Alkali                            | Alkali substances such as caustic soda, caustic potash, calcium hydroxide, aqueous ammonia, and sodium carbonate                                 | Alkaline degreasing liquid for metals<br>Water-soluble cutting fluid, leak detection agent                                                              | x                  | ○          | ○          |
|                     | Inorganic Salt                    | Sodium sulfide, sodium nitrate, potassium dichromate, sodium sulfate, etc.                                                                       |                                                                                                                                                         | x                  | ○          | ○          |
| Organic Chemicals   | Aromatic Hydrocarbons             | Benzene, toluene, xylene, ethylbenzene, styrene, etc.                                                                                            | Contained in paint thinner (benzene, toluene, xylene)                                                                                                   | x                  | x          | x          |
|                     | Chlorinated Aliphatic Hydrocarbon | Methyl chloride, ethylene chloride, methylene chloride, acetylene chloride, chloroform, trichlorethylene, perchlorethylene, carbon tetrachloride | Organic solvent-based cleaning liquid for metals (trichlorethylene, perchlorethylene, carbon tetrachloride, etc.)                                       | x                  | ○          | ○          |
|                     | Chlorinated Aromatic Hydrocarbon  | Chlorobenzene, dichlorobenzene, hexachlorobenzene (B.H.C), etc.                                                                                  | Pesticide                                                                                                                                               | x                  | ○          | ○          |
|                     | Petroleum Component               | Solvent naphtha, gasoline, kerosene                                                                                                              |                                                                                                                                                         | x                  | ○          | ○          |
|                     | Alcohol                           | Methyl alcohol, ethyl alcohol, cyclohexanol, benzyl alcohol                                                                                      | Used as antifreeze agent<br>Leak detection agent                                                                                                        | x                  | x          | x          |
|                     | Phenol                            | Carbolic acid, cresol, naphthol, etc.                                                                                                            | Disinfectant                                                                                                                                            | x                  | x          | x          |
|                     | Ether                             | Methyl ether, methyl ethyl ether, ethyl ether                                                                                                    | Brake fluid additive                                                                                                                                    | x                  | ○          | ○          |
|                     | Ketone                            | Acetone, methyl ethyl ketone, cyclohexanone, acetophenone, etc.                                                                                  |                                                                                                                                                         | x                  | x          | x          |
|                     | Carboxylic Acid                   | Formic acid, acetic acid, butyric acid, acrylic acid, oxalic acid, phthalic acid, etc.                                                           | Dyes and oxalic acid are used as aluminum treatment agents, and phthalic acid is used as a base material for paints.<br>Used as leakage detection agent | x                  | x          | x          |
|                     | Ester                             | Dimethyl phthalate (DMP), diethyl phthalate (DEP), dibutyl phthalate (DBP), dioctyl phthalate (DOP)                                              | Lubricant, synthetic oil, rust preventing agent additives<br>Used as plasticizer for synthetic resin                                                    | x                  | ○          | ○          |
|                     | Oxyacid                           | Glycolic acid, lactic acid, malic acid, citric acid, tartaric acid                                                                               |                                                                                                                                                         | x                  | x          | x          |
|                     | Nitro Compounds                   | Nitromethane, nitroethane, nitroethylene, nitrobenzene, etc.                                                                                     |                                                                                                                                                         | x                  | ○          | ○          |
|                     | Amine                             | Methylamine, dimethylamine, ethylamine, aniline, acetanilide, etc.                                                                               | Brake fluid additive                                                                                                                                    | x                  | x          | x          |
|                     | Nitrile                           | Acetonitrile, acrylonitrile, benzonitrile, acetoisonitrile, etc.                                                                                 | Raw material for nitrile rubber                                                                                                                         | x                  | ○          | ○          |

○ Mark : Usable x : Not available (Plastic will become damaged.)



Pneumatic components (Air unit CXU Series)

To Use This Product Safely

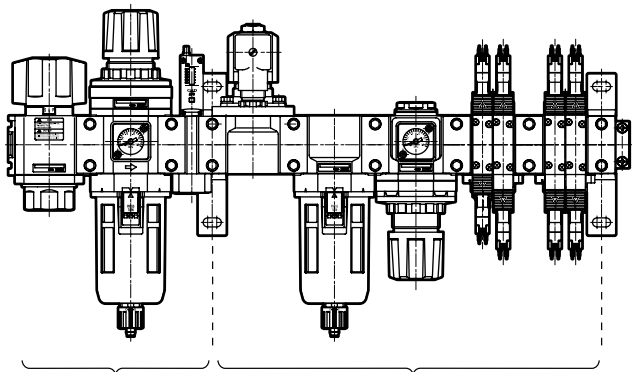
Please read before use.  
For general pneumatic components precautions, see Intro 27 for details.

Individual Precautions : Air unit CXU Series

At Design / Selection

CAUTION

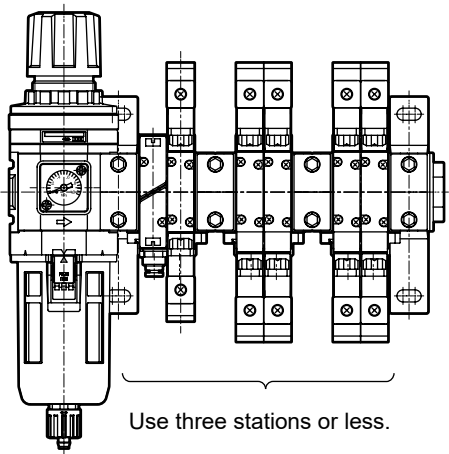
- Use the T type brackets at regular intervals.  
Joiners cantilevered on one end should have no more than 3 stations, and on both ends should have no more than 5 stations.



Up to three stations when supported on one end. Up to five stations when supported on both ends.

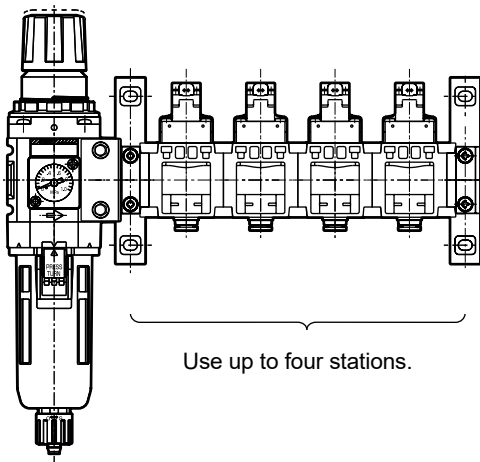
- When a pilot operated 5-port valve (CXU30-4G2R) is used at max. flow rate, use with up to three stations.

One station consists of two solenoid valves. Up to six solenoid valves can be used.



Use three stations or less.

- When using the pilot operated 2-port solenoid valve (CXU10-EXA) at the maximum flow rate  
As a guideline, use one station when a 1000 Series Regulators is connected, and up to four stations when a 3000 Series Regulators is connected.



Use up to four stations.

- With the 1000 Series combined unit, the bracket may twist up on one side. In this case, tighten and fix the bracket with screws so that it is mounted stably and so no problems will arise with use.

- Notes on selecting CXU13-UN  
If the 1000 Series and 3000 Series are combined together with a single support, the joiner may be damaged by the load. Handle with support at both ends.

- Tighten the fixing screw for the 1000 Series joiner with N·m 1 to 1.2, and the fixing screw for the 3000 Series joiner with N·m 3 to 4.

For precautions regarding mounting, installation, adjustment, operation, and maintenance, please refer to the CKD Component Products site (<https://www.ckd.co.jp/kiki/en/>) → 'model No.' → Instruction Manual.

|                                               |
|-----------------------------------------------|
| F.R.L.                                        |
| Filter<br>Regulator                           |
| Filter                                        |
| Regulator                                     |
| Lubricator                                    |
| Drain<br>Separator                            |
| Mechanical<br>Pressure SW                     |
| Residual<br>Pressure<br>Exhaust Valve         |
| Slow Start<br>Valve                           |
| Antibacterial/<br>Bacteria<br>Removing Filter |
| Ozone<br>FR                                   |
| Silicone/<br>OzoneRemover                     |
| Flame<br>Resistant FR                         |
| Oil-free<br>Regulator                         |
| Medium<br>Pressure FR                         |
| No copper/<br>PTFE/<br>Specification          |
| Air Unit<br>Equipment                         |
| Adapter<br>Joiner                             |
| Pressure<br>Gauge                             |
| Compact<br>F.R.L.                             |
| Large<br>F.R.L.                               |
| Precision<br>Regulator                        |
| Clean<br>FR                                   |
| Electro-<br>Pneumatic<br>Regulator            |
| Air<br>Booster                                |
| Ending                                        |

|                                               |
|-----------------------------------------------|
| F.R.L.                                        |
| Filter<br>Regulator                           |
| Filter                                        |
| Regulator                                     |
| Lubricator                                    |
| Drain<br>Separator                            |
| Mechanical<br>Pressure SW                     |
| Residual<br>Pressure<br>Exhaust Valve         |
| Slow Start<br>Valve                           |
| Antibacterial/<br>Bacteria<br>Removing Filter |
| Ozone<br>FR                                   |
| Silicone/<br>OzoneRemover                     |
| Flame<br>Resistant FR                         |
| Oil-free<br>Regulator                         |
| Medium<br>Pressure FR                         |
| No copper/<br>PTFE/<br>Specification          |
| Air Unit<br>Equipment                         |
| Adapter<br>Joiner                             |
| Pressure<br>Gauge                             |
| Compact<br>F.R.L.                             |
| Large<br>F.R.L.                               |
| Precision<br>Regulator                        |
| Clean<br>FR                                   |
| Electro-<br>Pneumatic<br>Regulator            |
| Air<br>Booster                                |
| Ending                                        |