

Mounting, installation and adjustment

1. Installation

⚠ CAUTION

- Be sure to read the instruction manual thoroughly before installing the product.
- Do not apply external force to the coil during installation.
- When installing the valve, make sure that no tension is applied to the coil lead wire.
- When carrying the product, hold the body. (Do not dangle the product from the lead wire when carrying it.)
- After installation, check for leaks from pipes, for proper wire connections and that the product is installed correctly.

2. Piping

⚠ CAUTION

- Observe the effective thread length for the piping threads. Chamfer the end of the thread section by approx. a half-pitch.
- Before piping, flush the inside of the pipe with 0.3 MPa of air, and remove foreign matter such as dirt, metal chips, rust and sealing tape.
- If excessive sealant (sealing tape, gel-type sealant) is applied when piping, it could enter the product and cause malfunctions.
- When applying or wrapping sealant on the piping material, apply or wind it from the pipe end along the thread section, and leave 1.5 to 2 threads uncovered.
- Dirt or foreign matter in fluid could prevent the product from functioning correctly. As a guideline, install an 80 mesh or more filter for water flow.
- Make sure not to use the wrong supply port when connecting the pipes to the product.
- Install a by-pass circuit and use an elbow union for piping to simplify the maintenance and repair work.
- When controlling fluid in a tank, pipe at a level slightly above the bottom of the tank so that the foreign matter accumulated at the bottom does not flow out.
- If the pipe vibrates when the solenoid valve is opened and closed, securely fix the piping.
- For steam fluids, steam generated from a boiler will contain a large amount of drainage. Always install a drain trap.
- For steam fluids, the make-up water in the boiler will contain substances such as "calcium salt" and "magnesium salt". As these substances will react with oxygen and carbon gas, and cause scales and sludge to form, always install a "water softener" and a filter for steam.
- When the regulator 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 inlet, use piping of a piping size that matches the port size of the valve. Do not use a needle valve.

■ Thermal insulation cover

When using an insulating cover for piping, use an insulating cover structure that can be disassembled for maintenance purposes. Avoid placing an insulating cover on the entire solenoid valve or on the coil section. The coil could burn.

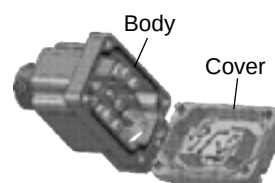
■ Refer to the table below for the piping tightening torque.

Piping nominal diameter	Recommended piping tightening torque (Nm)
Rc1/4	23 to 25
Rc3/8	31 to 33
Rc1/2	41 to 43
Rc3/4	62 to 65
Rc1	83 to 86
Rc1 1/4	97 to 100
Rc1 1/2	104 to 108
Rc2	132 to 136

3. Wiring

⚠ CAUTION

- For 200 VAC wiring, never wire with the blue wire (100 VAC). The coil could burn.
- Use with the allowable voltage range. Usage outside the allowable voltage range may lead to malfunction or coil damage.
- Provide a circuit breaker, such as a fuse, on the control circuit to protect electrical equipment.
- If the electric circuit system is vulnerable to solenoid surge, insert a surge absorber in parallel to the solenoid.
- As a guide, use a wire with a nominal cross section of 0.5 mm² or more. Make sure that excessive force is not applied to the lead wire.
- Use of a switching circuit which does not generate contact chattering will increase the durability of the solenoid valves and motor driven valves.
- How to connect HP terminal box
 - Mounting
 - Install this product in a place not subject to vibration.
 - Secure sufficient space for maintenance and repair work.
 - Wiring
 - Provide a circuit breaker, such as a fuse, on the control circuit.
 - Use a wire with a nominal cross section of 0.5 mm² or more.
 - Protect the wiring with a conduit if required. When attaching the conduit fitting, fix by holding the width across flats of the terminal box body.
 - For terminal box wiring, use a round crimp terminal for copper wire (JIS C2805 R1.25-3).
 - The tightening torque of terminal screws and cover fixing screws is 0.5 N·m.
 - The structure uses position locking to keep the cover from detaching from the body. Note that the cover may be damaged if load is applied to it while it is open.



EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/ AD
APK/ ADK
DryAir
EX- XPLNprf
XPLNprf
HVB/ HVL
S ◇ B/ NAB
LAD/ NAD
Water- Rela
NP/NAP/ NVP
SNP
CHB/G
MXB/G
Other valves
SWD/ MWD
DustColl
CVE/ CVSE
CCH/ CPE/D
LifeSci
Gas- Combus
Auto- Water
Outdoor
SpecFld
Custom
Ending

Use/maintenance

1. When using the product

⚠ CAUTION

■ Sudden leakage

With the pilot operated 2-port valve, if the pressure is suddenly applied when the pump starts while the valve is closed, the valve may open for an instant causing fluid to leak. Caution is required during use.

■ Operation

Do not apply back pressure. This could lead to malfunction.

■ Water hammer

If the water hammer poses problems, consider using the CKD "RSV type" solenoid valve or a motor valve.

2. Maintenance and inspection

⚠ WARNING

■ Do not touch coils or actuators with hands or body while the power is ON or immediately after it is turned OFF.

The solenoid valve coil and actuator will heat up when energized. Depending on the product, direct contact could cause burns and so use caution.

■ Do not touch the electrical wiring connections (bare, live parts) with hands or body when they are energized. There is a risk of electric shock.

Touching electrical wiring connections while power is on may lead to electrical shock. When disassembling or assembling, make sure to turn the power OFF in advance.

■ Use this product under the max. working pressure and max. working pressure differential.

■ To ensure ideal use, inspect the product every six months. This frequency varies with the frequency of use.

⚠ CAUTION

■ Do not use valves as footing or place any heavy objects on top of the valves.

■ If you use the products under a continuously energized state or infrequently, contact CKD.

■ If the product has been out of use for one month or more, perform a test run before starting the actual operation.

■ Carefully read the instruction manual before starting maintenance.

■ Always turn the power OFF and release any fluids or pressure before starting maintenance.

■ Pay attention to clogging of the strainer and filter.

3. Disassembly/assembly

⚠ CAUTION

■ When cleaning the product, use a low-polluting cleaning agent such as a neutral detergent. (Note that the rubber parts must be replaced. There is a risk of expansion.)

■ When the product will not be used for one month or more after using water or hot water, completely remove any water or hot water left in the product. Water or hot water residue will cause rusting and may lead to malfunction or leaks.

If residual water cannot be eliminated, operate the valve several times a day and pass water through to ensure optimum use.

■ Contact CKD with questions about repair parts, etc.

■ Tightening torque

When disassembling or assembling, tighten the body bolt, core assembly and nut with the following tightening torques.

		Body bolt tightening torque	Core assembly tightening torque	Nut tightening torque
KZV3	8A	3 to 4 Nm	45 to 60 Nm	8 to 16 Nm
	10A			
	15A	5 to 7 Nm		
	20A			
	25A	9 to 12 Nm		
	32A			
	40A			
50A	18 to 28 Nm			