

# Handling Instructions 3QE-Z SERIES

Thank you for purchasing CKD product.

Please review the precautions in this Instructions thoroughly for safe operation of this equipment.

Keep this document in a safe location so that it is easily referenced as necessary.

For further information, refer to the instruction manual and product catalog

### CAUTION!! Do not remove the solenoid valve's packing until just before piping.

Foreign matter could enter the solenoid valve from the piping port and could lead to faults or malfunctions.

### WARNING

- Do not step on or place objects on the product. Failure to follow this warning may cause falling accident, falling of the product, bodily injury due to fall, malfunction due to breakage of the product, etc.
- Before inspecting, checking or adjusting the product, turn off power supply and shut down compressed air line and verify zero residual pressure.

### Installation

### WARNING

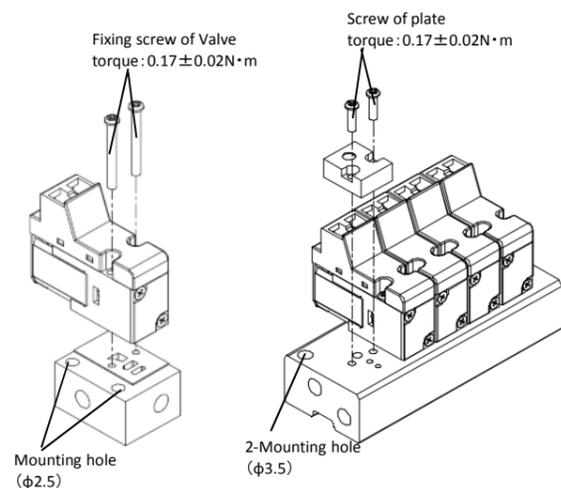
- Do not support valves with piping when installing valves. Install and fix the valve body.
- Be sure to tighten the screws with appropriate torque. Otherwise, air leakage, falling of product, damage to screws, etc. may occur.
- Avoid washing with water or solvents or painting. Resin parts could be damaged. The paint could block the pilot exhaust port and cause malfunction.
- Do not restrict the valve's exhaust port (including pilot exhaust port) to less than the piping connection port size. A breathing action is generated by valve operation at the valve's exhaust port, and foreign matter from around the exhaust port could be sucked in. If the exhaust port is installed facing upward, foreign matter could enter. Install a silencer or pipe the exhaust port so it faces downward.

### CAUTION

- Do not use as emergency cutout solenoid valve. Starting response time can be late, when leaving under elevated pressure long time.

#### <Mounting>

- For direct installation  
Secure the unit by tightening 2 screws passing through respective mounting hole.



### CAUTION

- Always flush just before piping pneumatic component. Any foreign matter that has entered during piping must be removed so it does not enter the pneumatic component.
- Tighten pipes with the appropriate torque. Pipes must be connected with the appropriate torque to prevent air leakages and screw damage.

Tightening torque

Thread size	Tightening torque N·m
M5	1.0~1.5

- Check the location of piping port by referring to product indication, etc. Wrong piping will cause malfunctioning of actuator.
- Securely insert the tube to the tube end, and make sure that the tube cannot be pulled off.
- Cut the tube at right angles using a dedicated cutting tool.
- The bending angle of piping must be larger than the minimum bend radius of the tube.

Tube diameter mm	Minimum bend radius of tubing	
	Nylon	Urethane
φ4	10	10
φ6	20	20

### Lubrication

### CAUTION

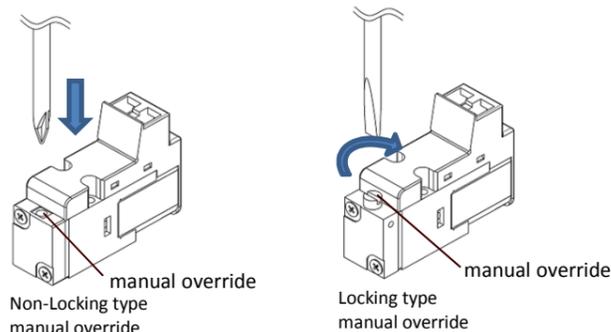
- This product is basically an oilless type, requiring no lubrication. However, it can accept class 1 turbine oil (additive-free), ISO VG32.
- The excessive refueling becomes poor in movement. Please supply quantity of appropriate oil to consumption flow quantity.

### Manual override

### WARNING

- Please do not operate manual override by excessive force. manual override is damaged.
  - Non-locking type 15~25N
  - Locking type Please turn manual override with a tool lightly. (0.1N·m or less)
- After operating the solenoid valve's manual operation device, return it to the origin (initial position) before operating the device. When operating in the operation position using the manual operation device, abnormal operation could occur, causing a hazard.
- When conducting manual operations, make sure that there are no people near the moving cylinder.

- Non-Locking type manual override  
Please push the manual override with a thin tool of the tip perpendicularly.
  - Locking type manual override  
Please turn a manual override by a negative driver in the direction of the arrow.
- After the manual override end, the manual override turns it, and, please go back up at the original position.



### Vaccum

### WARNING

- Not use it for a vacuum destruction valve. It leads to the malfunction of the valve when I use it on the vacuum condition including the vacuum destruction valve.

## Connecting electric wire

### General precautions on electric wire connection

### WARNING

- Turn power OFF before attempting wiring work. There is a risk of electric shock.

### CAUTION

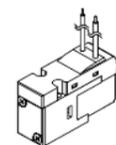
- Install wiring before check the working voltage
- The voltage will drop by simultaneous energizing and by the length of the cable. Check that the solenoid voltage drop is within 10% of the rated voltage.

### Energization for a long time

- If energizing for a long time, please use low heat and energy saving type.
- Valve performance deterioration may be accelerated if valves other than the low heat/power-saving type are continuously energizing for long periods of time. Similar caution is required in the following use.
  - During intermittent energizing, it takes longer than non-energizing.
  - During intermittent energizing, one energizing session exceeds 30 min. Consider heat dissipation when installing.

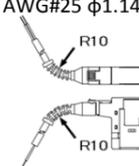
### Specific precautions

- Grommet lead wire  
Lead wire AWG#26 OD φ1.3 is used.



### EJ type connector

- Do not bend the lead wire to the degree of flexion shown right. [Lead wire AWG#25 φ1.14]

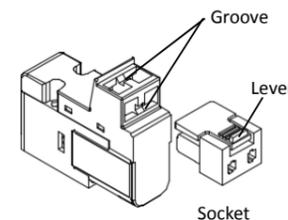


### E type connector

- The E type connector is a top/side common connector to which the sockets can be connected to either the top or side directions. Select the connection direction based on installation.

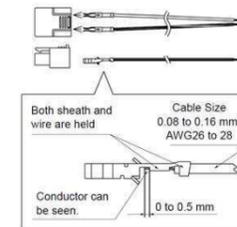
### How to mount/dismount socket

- When installing the socket, hold the lever and socket with your fingers and insert straight into the square window on the connector. Align the lever with the groove on the connector and lock. When installing from the top, face the socket so that the lever is in front. When installing from the side, face the socket so that the lever is on the top.
  - When removing the socket, press down the lever to release jaws from the groove, then pull straight out.
- The socket assembly has lead wire of AWG #26-28(0.08~0.16mm<sup>2</sup>)
  - Wiring of lead wires
    - Strip the sheath approx. 3 mm from the top end of the lead wire and align the top ends of the conductors and insert them into the contact terminal. Crimp the contact terminal with the crimp tool. When crimping, pay special attention so that the sheath sheath and conductors are held firmly, and 0 to 0.5 mm of conductor top can be observed.
    - After the crimp work has been completed, face the contact terminal



in the direction as shown in the Fig. on the right and insert it into the insertion port of the socket until it is in contact with the far position.

The lock is then activated inside the socket. After the work has been completed, lightly pull the terminal to check that the lock is activated.

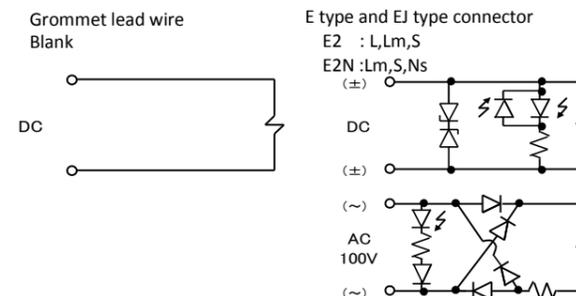


### Electrical connection diagram

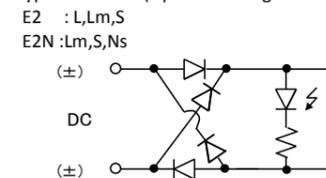
### CAUTION

- Do not use this valve in an environment where the vibration and impact exceed specifications. This may result in valve faulty operation.
- The energized state can not be maintained if power is cut off instantaneously for 30 ms or less on the power source driving the solenoid valve. If any disturbance has caused 30 ms or less instantaneous power cut of the power supply of the solenoid valve when it is continuously energized, cut the power OFF for 50 ms and over to switch the solenoid valve ON again.
- Please do not use as the voltage is gradually increased. The valve will not operate.
- AC voltage specifications have a built-in all-wave-rectified circuit. When using an SSR to turn the solenoid valve on and off, a solenoid valve reset fault may occur depending on the SSR

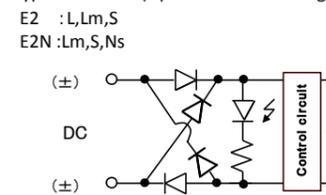
N: Without lead wire Lm: With lamp  
L: With lead wire Ns: Without socket, without terminal box  
S: With surge suppressor



E type connector (Option S : surge less type)



E type connector (Option S : Low exoergic/energy saving circuit type)



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