



CAUTION !

- Please ensure that the O-ring seal is in good condition prior to cover installation.
- Installation, maintenance and repair works must be performed by trained personnel.
- Do not use any tools to increase force on handwheel for operating as this can damage the actuator or valve.

Installation Notices

- Please read operation manual and wiring diagram carefully before installation.
- Verify that supply voltage is in accordance with the data on nameplate to prevent short circuit or electrical/electronic parts damage caused by incorrect power input.
- Turn power off before wiring or maintenance.
- Connect the ground wire to PE point inside the electric actuator.
- To avoid functional failure caused by static, do not touch any components on the PCBA with metal tools or bare hands.
- Do not parallel wire multiple actuators together without using an extra relay or equipping with Isolation Relay Module.
- Use suitable water-proof cable gland to ensure it fits the conduit entry size, diameter of the cable and the enclosure protection of the actuator when wiring. The water-proof cable gland must be tightened and flattened to the cable after wiring procedure and use original black water-proof plug to seal unused conduit entry and fasten the top cover of the actuator to prevent dust or water from entering the actuator. The red plastic dust-proof plug is not meant for long-term use. Replace it with suitable water-proof connector to ensure the enclosure protection rating.
- Actuator should be installed in an upright or horizontal position. Do not mount upside down or below a horizontal position.
- These units are not designed to operate in vacuum spaces or where an explosive atmosphere exists.
- Periodically inspect actuator enclosure to prevent dust from accumulating.
- Please obey the local environment regulation for equipment scrapping.
- If the actuator is installed in a low-temperature environment and not operated according to the rated duty cycle, the initial startup time may be delayed.

Sizing

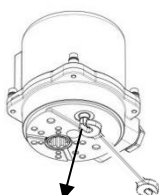
- The actuator shall be sized to ensure that its torque output meets the load requirements of valve and its ability to overcome the required duty cycle of application. (As a MINIMUM, a 30% safety factor when calculating the torque requirement. Refer to the example below.)

- If the maximum torque of 5" valve is 80 Nm
 $\rightarrow 80 \times 1.3$ (safety factor) = 104 Nm
104 Nm < 150 Nm (OM-3) → OK!
 104 Nm > 90 Nm (OM-2) → Not OK!

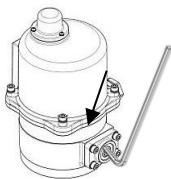
- In cases where the actuator does not directly fit onto the valve, a mounting kit is required. Please ensure the bracket and coupling are properly designed and manufactured to withstand the torque output of the actuator.

Manual Device Installation

- OM-1, OM-AM, OM-J



Manual Position

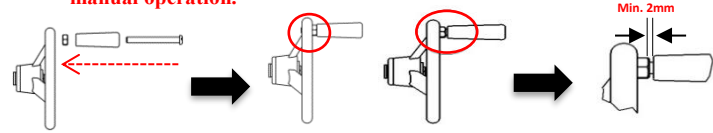


Manual Position

| Model | Wrench | Torque |
|-------|--------|--------|
| | mm | Nm |
| OM-1 | 8 | 5 |
| OM-AM | 5 | 5 |
| OM-J | 5 | 7 |

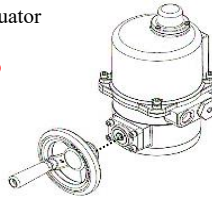
● OM-AM (Optional)

- Pass the screw through the handle and tighten the nut onto handwheel.
 - ⚠ Do not overtighten.
- Secure the handle to the wheel with the slotted screw and tighten the locknut all the way down to the wheel. Ensure that the locknut is locked between the wheel and the handle.
 - ⚠ Leave a 2 mm gap between the locknut and the handle as the figure below to allow the handle free to rotate and then to have a smooth manual operation.



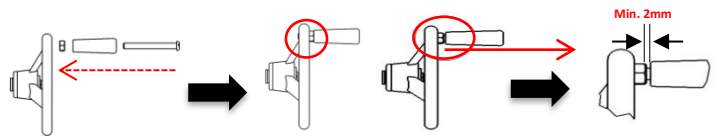
- After aligning the handwheel shaft, insert it into the actuator mounting hole.

- ⚠ After manual operation is completed, be sure to remove the handwheel.
- ⚠ Do not install the handwheel on the actuator during electric operation to avoid potential hazards.



● OM-2 to OM-13, OM-F, OM-G and OM-H

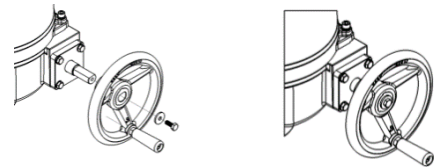
- Pass the screw through the handle and tighten the nut onto handwheel.
 - ⚠ Do not overtighten.
- Secure the handle to the wheel with the slotted screw and tighten the locknut all the way down to the wheel. Ensure that the locknut is locked between the wheel and the handle.
 - ⚠ Leave a 2 mm gap between the locknut and the handle as the figure below to allow the handle free to rotate and then to have a smooth manual operation.



- Slide fixing screw through washers and handwheel and secure them to override shaft as shown in the figure below.

- ⚠ Turn off power when installing handwheel.

- Assembly completed as shown in the figure below.



Valve Mounting Instructions

- Make sure both the valve and actuator are in the same position before mounting, either fully-open or fully-closed. If not, use the manual override to correct this.
- Once mounted together, either directly or with a mounting kit, ensure that they are properly secured together and all fasteners are tightened.
 - ⚠ Remove all of valve handle parts, for example, the handle or open/close mechanical stops so as to not interfere with the actuator.
- Check again that the valve and actuator are in the same position.
- Remove the conduit entry plug to relieve the pressure inside the actuator for the ease of the top cover removal and gently remove the cover.
 - ⚠ The power must be off before removing the cover.
- Refer to operation manual section 4.2 (P.10) for wiring notices and connect the wires according to the wiring diagram labeled inside the cover of actuator.
 - ⚠ Before operating a three-phase voltage actuator, please manually operate it to mid-travel position by the handwheel and power up to check if it rotates properly in order to verify the phase sequence is correct. If it is incorrect, please correct the phase errors by changing the connection of any two of power supply wires U, V, W to prevent the actuator from mechanical damages.
- Supply power to actuator.
 - ⚠ Care must be taken at all times as there are live circuits present that may cause electrical shock.
- Re-calibration may be require for the end positions, refer to Actuator Set-up section for further instructions.
- Assemble the cover and secure cover screws firmly after setting.
 - ⚠ Please ensure that the O-ring is in good condition prior to cover installation.

Actuator Set-up

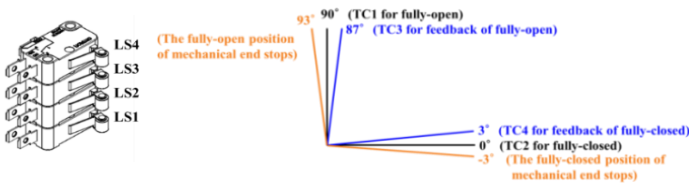
CAUTION:

- The power must be off during this procedure so as to avoid damage to the actuator.
- Do not make adjustments to the mechanical end stops when actuator is in motion.
- All steps below must be completed before normal operation.

Instructions - Fully-open and fully-closed position limit switches

- The travel cams are set to control the open and closed position of the actuator. When the travel cams activate the limit switch, the actuator will start to run; otherwise, it will stop.
- The standard is equipped with two limit switches (LS1 & LS2) and cams (TC1 & TC2).
LS1 & LS2 : LS1 is for open and LS2 is for close. Travel limit settings for starting and cutting off the motor power to reach the fully-open and fully-closed positions.
LS3 & LS4 are optional. They allow external equipment to confirm that the valve has reached the fully-open and fully-closed positions.

⚠ **LS3 (LS4) should activate before LS1 (LS2).**



Instructions – Dry contact sequence diagram:

- The state of dry contact feedback signal:
 - Solid line (—): Dry contact in conductive state.
 - Dotted line (---): Dry contact in non-conductive state.

【OM-1, OM-A, OM-AM and OM-J】

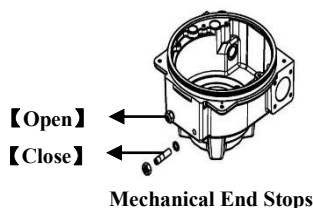
| Symbol | Contact | Position | |
|----------------------|---------|----------|-----|
| | | 100% | 0% |
| LS4 (Dry Contact) | A - F | --- | — |
| | A - E | --- | — |
| LS3 (Dry Contact) | A - C | — | --- |
| | A - B | --- | — |

【OM-2 to OM-13, OM-F, OM-G and OM-H】

| Symbol | Contact | Position | |
|----------------------|---------|----------|-----|
| | | 100% | 0% |
| LS4 (Dry Contact) | D - F | --- | — |
| | D - E | --- | — |
| LS3 (Dry Contact) | A - C | — | --- |
| | A - B | --- | — |

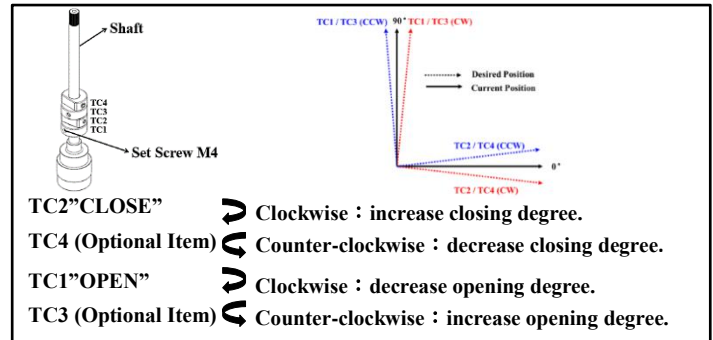
Adjustment Steps

- Turn power off and remove the top cover.
- Loosen the locknut and unwind both Open and Close Mechanical end stop screws for 7 turns.
⚠ **Mechanical end stops setting is available for OM-2 to OM-13, OM-F, OM-G, and OM-H.**
- Refer to below illustrations to adjust the TC1 - TC4 to set the fully-open and fully-closed position.



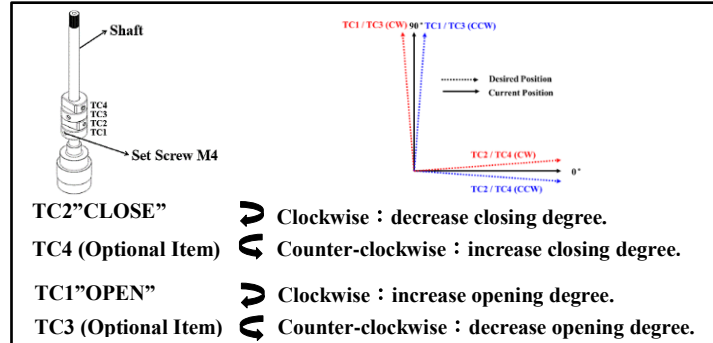
【OM-A and OM-AM】

Tool : 2 mm Allen Key



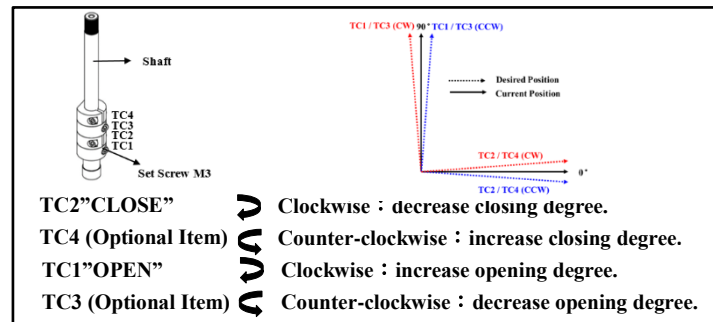
【OM-1】

Tool : 2 mm Allen Key



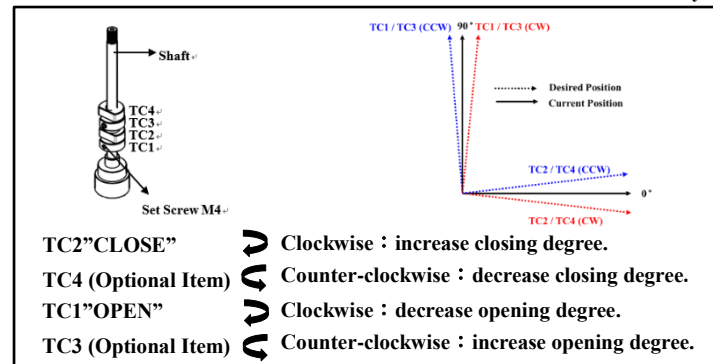
【OM-2 to OM-13, OM-F, OM-G and OM-H】

Tool : 2.5 mm Allen Key



【OM-J】

Tool : 2 mm Allen Key



- Supply power to the fully-open position. Screw in the Open (left) Mechanical end stop screw until it bottoms out, and then turn back for 1/2, 3/4 or 1 turn based on the actuator model listed below.
 - OM-2 to OM-6, OM-F, OM-G and OM-H : 1 turn.
 - OM-7 to OM-8 : 3/4 turn.
 - OM-9 to OM-13 : 1/2 turn.
- Tighten the locknut of mechanical end stops. (Max. Torque : 5.88 Nm)
- Supply power to the fully-closed position. Screw in the Close (right) Mechanical end stop screw until it bottoms out, and then turn back for 1/2, 3/4 or 1 turn based on the actuator model listed below.
 - OM-2 to OM-6, OM-F, OM-G and OM-H : 1 turn.
 - OM-7 to OM-8 : 3/4 turn.
 - OM-9 to OM-13 : 1/2 turn.
- Tighten the locknut of mechanical end stops. (Max. Torque : 5.88 Nm)
- Supply the power to confirm that the limit switches achieve the fully open-close stroke.
- The setting procedure is now completed.