

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 manual override device 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 PCB with metal tools or bare hands.
- Do not parallel wire multiple actuators together without using an extra relay.
- 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 proper 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.

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 < 200 Nm (CM-200) \rightarrow OK!
 104 Nm > 100 Nm (CM-100) \rightarrow Not OK!

- In cases where the actuator does not fit directly 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 Override Device Setting



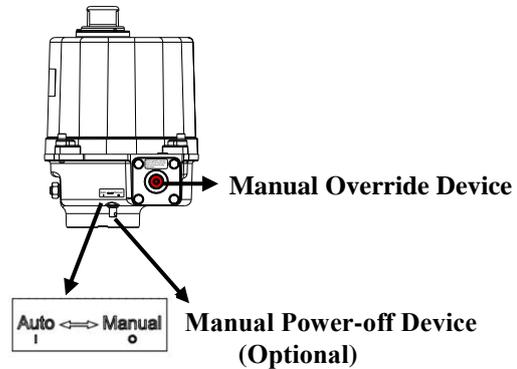
WARNING !

- Ensure power is OFF before operating the manual override device if manual power-off device is not equipped.
- If manual power-off device is equipped, ensure the switch is in "Manual" mode before operating manually. Switch back to "Auto" mode before operating electrically again.
- Reconfirm it switches to "Auto" mode if the actuator didn't react after supplying power.

Users can open or close the actuator with the manual override device. Please remove the red dust-proof plug on the manual override device when manual operation is required and put the red dust-proof plug back after finishing the manual operation.

- Use the tool to insert the manual power-off device to switch the actuator from electrical operation (Auto) to manual operation (Manual).
- Remove the red dust-proof plug from the manual override device and refer the table below to open or close the actuator.

Model No.	Allen Key	Fully-open \rightarrow Fully-closed
CM-100 to CM-200	8 mm	10 turns
CM-300 to CM-600	10 mm	8.5 turns



- After finishing the manual override device operation, switch the actuator from manual operation (Manual) back to electrical operation (Auto).

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 4.3 (P.8) 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 manual override device 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

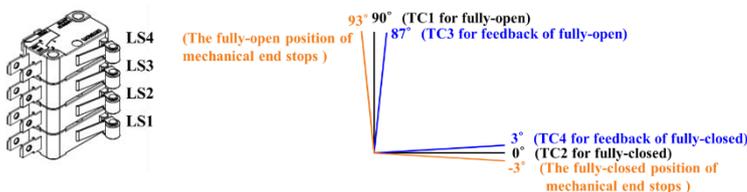
CAUTION :

- 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:

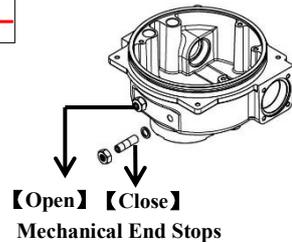
- The state of dry contact feedback signal:
 - Solid line (—): Dry contact in conductive state.
 - Dotted line (----): Dry contact in non-conductive state.

【CM-100 to CM-600】

Symbol	Contact	Position	
		100%	0%
LS4 (Dry Contact)	D - F	Conductive (Solid)	Non-conductive (Dotted)
	D - E	Conductive (Solid)	Non-conductive (Dotted)
LS3 (Dry Contact)	A - C	Conductive (Solid)	Non-conductive (Dotted)
	A - B	Conductive (Solid)	Non-conductive (Dotted)

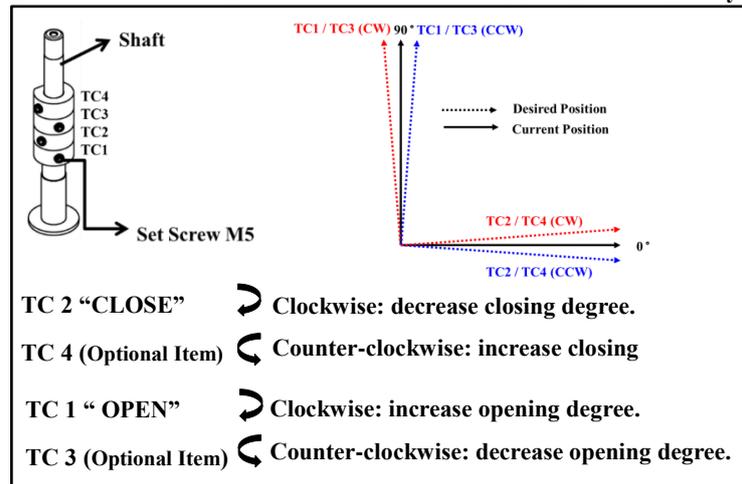
Adjustment Steps

- Turn power off.
- Loosen the locknut and unwind both Open and Close Mechanical end stop screws for 7 turns.
- Refer to below illustrations to adjust the TC1 - TC4 to set the fully-open and fully-closed position.



【CM-100 to CM-600】

Tool : 2.5 mm Allen Key



- Supply the power and unwind the mechanical end stop screws to the fully-open position for 1 turn.
- Tighten the locknut.
- Supply the power and unwind the mechanical end stop screws to the fully-closed position for 1 turn.
- Tighten the locknut of mechanical end stops.
- Supply the power to confirm that the limit switches achieve the fully open-close stroke.
- The setting procedure is now completed.