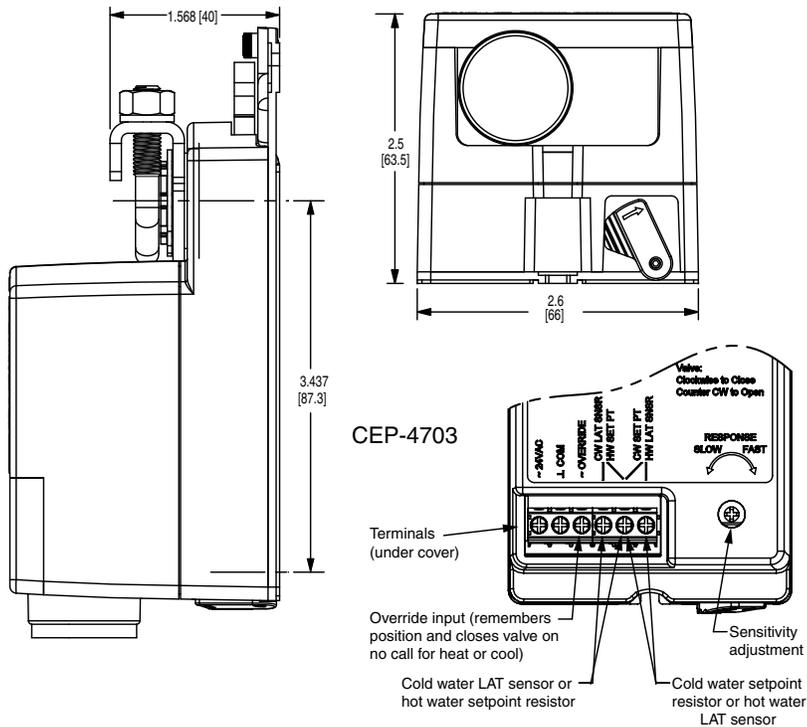


## Installation Guide

### CEP-4703 Mounting



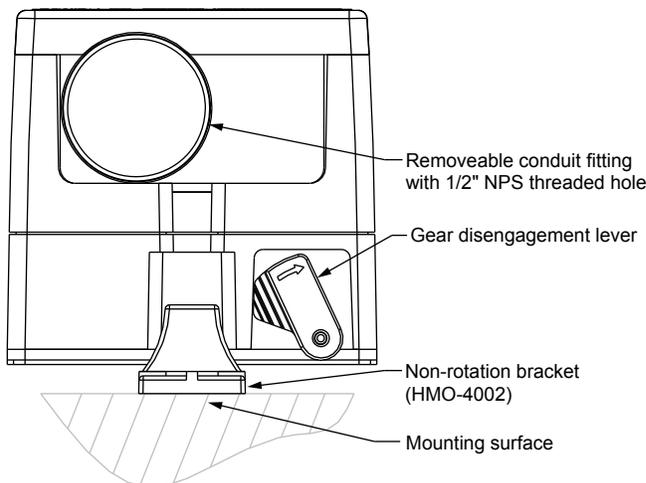
**NOTE:** This mounting section is specific to the CEP-4703. For mounting a CEP-4703V, see [CEP-4703V Valve Mounting on page 2](#).

1. Ensure the damper or valve shaft can move freely through its entire range of motion, and fix any binding before installing the actuator. Turn the damper blade to its fully closed position.
2. Press (to the right) and hold the gear disengagement lever, rotate the actuator to the fully closed position, and release the lever.

**NOTE:** Depending on the damper-seal design, backing the actuator off its stop approximately 5° may provide tight damper shut-off.

3. Align the actuator and slide it onto the shaft.
4. Leaving a gap between the actuator and mounting surface to prevent any binding, finger-tighten the nuts on the V-bolt.
5. Insert the non-rotation bracket (HMO-4002 supplied or HMO-4001 "T" bracket available separately) into the slot at the base of the actuator (as shown in the illustration).
6. Secure the non-rotation bracket with two (2) #8 or #10 self-tapping screws.
7. Evenly tighten the V-bolt nuts 30 to 35 in-lb.
8. If desired, use a 7/64-inch hex key wrench to loosen and position the end-stop screw.

**NOTE:** The two holes at the top of the actuator are NOT for use in direct-coupled applications. They are for remote mounting, such as with the optional HLO-4001 Crank Arm Kit (see the [Data Sheet](#)).



# CEP-4703V Valve Mounting

NOTE: To assemble a quick-mount "V" actuator on a valve body, see the [HPO-5074 Installation Guide](#) on the KMC web site.

1. Clean the lines upstream from the valve. Remove any debris larger than 0.06" (0.015 mm).
2. Align the valve's flow indicator with the system flow.
3. Mount the valve so the actuator is positioned over the valve body.

## ⚠ CAUTION

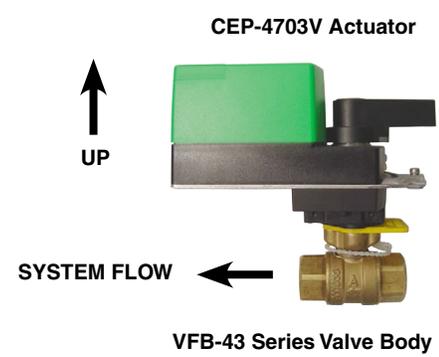
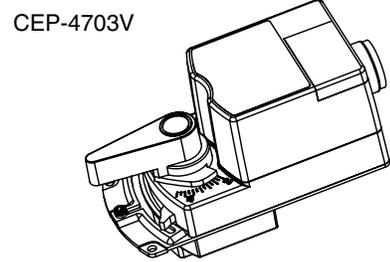
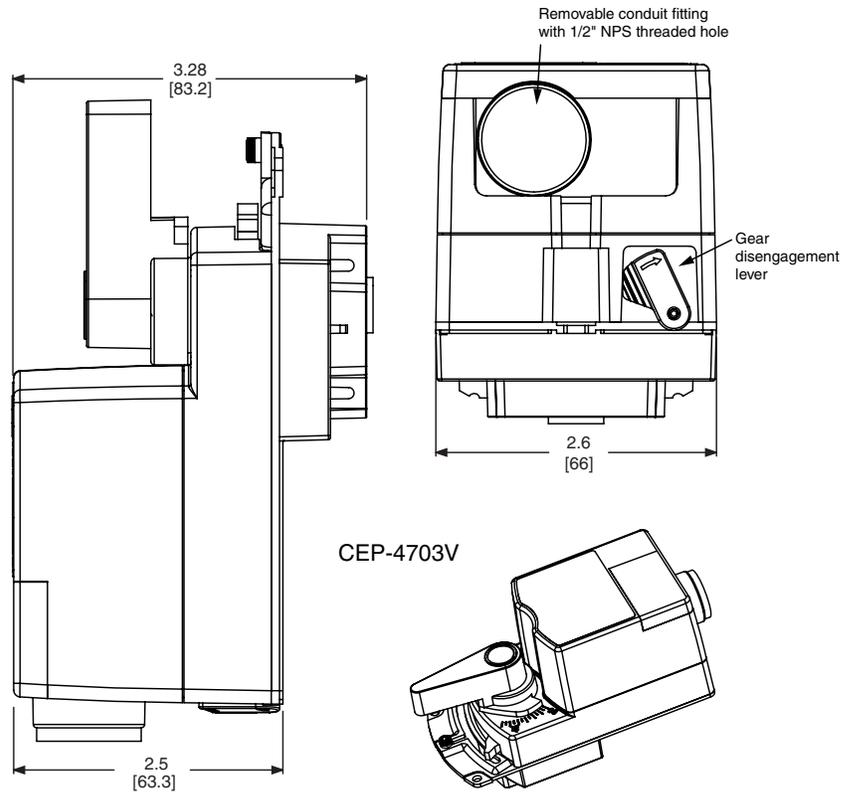
To prevent condensation from dripping onto the actuator housing, mount the valve with the actuator in the upright position or, at most, at a 45° angle.

4. Seal valves with approved pipe sealant.
5. Using two wrenches, secure the valve to the pipe. Torque should not exceed 75 ft-lb. (102 N•m).
6. Eliminate air from the system to keep the valves full of fluid during operation.

NOTE: If the system experiences large amounts of debris, steps should be taken to keep the system clean.

## ⚠ CAUTION

Using mineral oil lubricants or other incompatible substances in system fluids may damage EPDM rubber seals in valves. Before using any lubricant or additive in a water or ethylene glycol base, consult the substance manufacturer for compatibility with EPDM (Ethylene Propylene Diene Monomer).



**ACTION:**  
 Full CW = Valve Closed (System Off)  
 Full CCW = Valve Open (System On)

# Wiring Connections

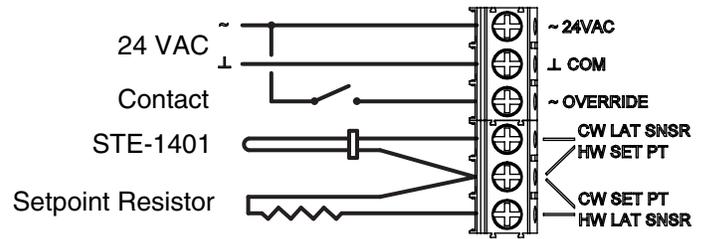
1. Loosen the screw on the conduit fitting and lift up to remove the fitting.
2. Using a utility knife or drill, cut the red plug to accept wiring or replace the plug with an application-specific fitting.

NOTE: The red plug (or similar fitting) protects internal components from debris, helping to ensure long actuator life.

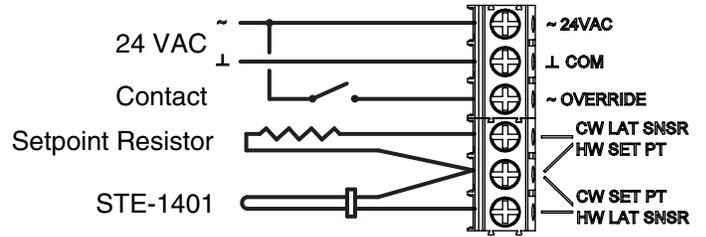
3. Thread wires through the plugged opening and connect to the terminal block as shown.
4. Reinstall the conduit fitting and tighten the screw.

Setpoint Resistor*			
°F	Ohms	°F	Ohms
<i>Chilled Water</i>		<i>Hot Water</i>	
54	16.9K	94	6.98K
56	16.2K	96	6.65K
58	15.4K	98	6.34K
60	14.7K	100	6.04K
62	14.0K	102	5.90K
*1/4 Watt, 1%			

## Configured for Cooling



## Configured for Heating



Contact Closed = System On; Open = System Off

CW to Close; CCW to Open

# Operation

After the mechanical and electrical installations have been completed, cycle the actuator to verify the direction of rotation for normal operation.

When the CEP-4703/4703V is connected to power:

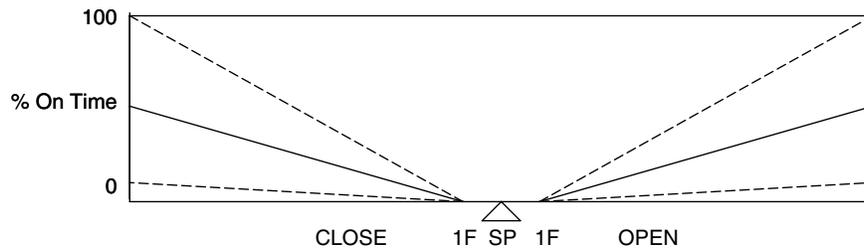
1. The actuator drives to the fully closed position (for two minutes). If the Override signal is present (contact closed across two terminals), indicating system On, the actuator waits one more minute and then starts controlling. If the Override

signal is absent (contact open), indicating system Off, the actuator waits in the closed position.

2. Whenever the system goes Off, the actuator stores its current position and then drives to the fully closed position.
3. Whenever the system goes On, the actuator returns to its previous (stored) position, waits one minute, and resumes controlling.

When controlling, the CEP-4703/4703V control sequence is as shown in the diagram.

## Control Sequence



% On-Time Slope Adjustable Via Sensitivity Adjustment

Maximum = 30% per °F (faster response but less stable)

Minimum = 3% per °F (slower response but more stable)

% On-Time Period = 1 Minute

## Troubleshooting

### No Rotation or Wrong Stroke Range

NOTE: Pausing for up to two minutes is part of normal operation. See [Operation on page 3](#).

- Check that the shaft moves freely. (Press and hold the gear disengagement lever and manually rotate the shaft.)
- Check wiring. (See Wiring Issues section below.)
- Check for a tripped circuit breaker to the transformer, for proper supply voltage from the transformer (or power supply), and for enough capacity (VA) for all connected devices. See their respective data sheets and [Tips for Connecting 24-Volt Power Application Note \(AN0604D\)](#) available on the KMC Controls web site.
- Check the adjustable stop position.

### Wiring Issues

- Check for correct wiring at the each device.
- Use a voltmeter and ohmmeter to check the terminals for expected values.
- See [Tips for Connecting 24-Volt Power Application Note \(AN0604D\)](#).

NOTE: **Wiring must be adequate to avoid excessive voltage drop on long runs! Allow plenty of “cushion” in measurements. A meter may be too slow to register transient dips or peaks during startup.**

## Maintenance

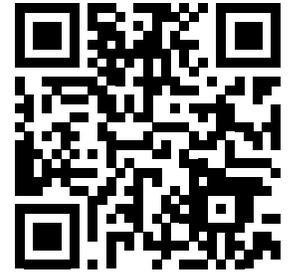
No routine maintenance is required. Careful installation will also ensure long term reliability and performance.

## Accessories

HCO-1151	Weather shield kit
HLO-4001	Crank arm kit
HMO-4001	Non-rotation “T” bracket
HMO-4002	Replacement non-rotation bracket
STE-1401	Duct temperature sensor (Type III, 10K)

## More Information

For specifications and other information, see the [CEP-4703/4703V Data Sheet](#) on the [KMC web site](#).



For information on assembling a quick-mount CEP-4703V actuator on a valve body, see the [HPO-5074 Installation Guide](#).



## Important Notices

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