

REMOTE CONTROL

ELECTRIC ACTUATOR INSTRUCTION & OPERATION MANUAL

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1. General

All actuators manufactured by Remote Control are thoroughly tested and checked before shipment to our customers. If an immediate installation is not possible, actuator should be kept in a dry place. Please do not remove the plugs from the conduit entries until ready for wiring.

2. Operation

2.1 Auto/Manual Operation

Auto/Manual shift operation is as follows:

1) Manual Override

Turn the hand/auto declutching lever to engage. (Handwheel may have to be turned slightly.) After engaging the clutch, turn the handwheel to either "Opened" or "Closed".

2) Auto Operation by Motor

After completion of wiring, motor operation is automatically and instantly restored by electrically energizing the motor.

CAUTION READ BEFORE OPERATION

When the actuator is operated for the first time, it is important to check the correct rotation of the motor. Otherwise, serious damage may result.

- 1) Put the position of the valve at 45 degrees by turning the handwheel; energize the actuator to open or close and check for proper valve rotation.
- 2) If the rotating direction is reversed, stop immediately and recheck the wiring.

2.2 Indication of Valve Position

The indicator on the top of the actuator shows the valve to be "Opened" or "Closed"



3. Electrical Wiring

3.1 Removing Top Cover

Using a hex-key wrench, remove the 4 screws at the corners of the top cover. Then remove the top cover from the body and look for wiring diagram in vinyl envelope.

3.2 Wiring

Make power and control connections to the terminal strip in accordance with the wiring diagram. Be sure to connect the two ground lugs (internal one marked by sticker, outer is between two mechanical stop bolts). Be sure that the voltage of power supply is in accordance with specification on the name plate.

3.2 Sealing Conduit entries (3/4" NPT)

All conduit entries must be sealed even if not used.

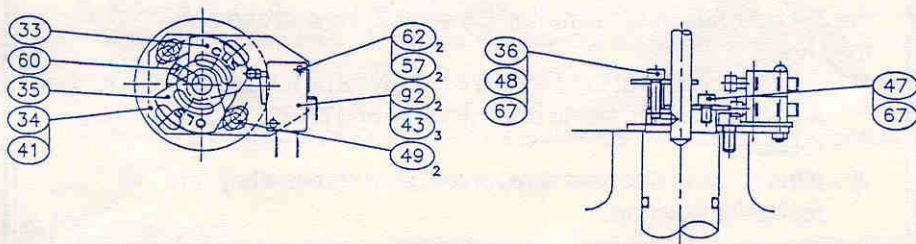
4. Travel Limit Switch Setting

4.1 Closed Limit Switch Setting

- 1) Pull the declutch lever and move the valve to the full "Closed" position by turning the handwheel clockwise.
- 2) Using a hex-key wrench, loosen the screw on the lower cam (Close Limit Switch).
- 3) Adjust the cam to trip the lower limit switch, and tighten the screw.

4.2 Open Limit Switch Setting

- 1) Pull the declutch lever and move the valve to the full "Opened" position by turning the handwheel counter-clockwise.
- 2) Using a hex-key wrench, loosen the screw on the upper cam (Open Limit Switch).
- 3) Adjust the cam to trip the upper limit switch, and tighten the screw.



*33 is the lower Cam for Closed Limit Switch • *35 is the upper Cam for Open Limit Switch

4.3 Mechanical Travel Stops

- 1) For both ends of the travel limit, set the mechanical stop bolts one turn beyond the limit switch trip point.
- 2) If the stop bolts make contact before the Open/Close Switch trips rotate the stop bolts 2 turns counter clockwise.

4.4 Switch Operation Test

After Open/Close limit switch setting and mechanical stop bolt checking, operate the valve to Open-Close, Close - Open several times with the switch in control panel in order to check Open/Close indication lamp.

5 Torque Switch

Generally speaking, it is not necessary to reset the torque switches because they are factory set to the rated torque of the actuator. If necessary to reset, however, please contact Remote Control.

WARNING:

The torque switches are set with special measuring devices to protect the actuator and valve. If the torque switches are reset without consulting Remote Control, or authorized service centers, the warranty may be voided.

6. Adaption

6.1 Preparation of Drive Bushing

A drive bushing is supplied with the actuator, and it is assembled on the bottom of the center column with 4 retaining screws.

1) Removing Drive Bushing

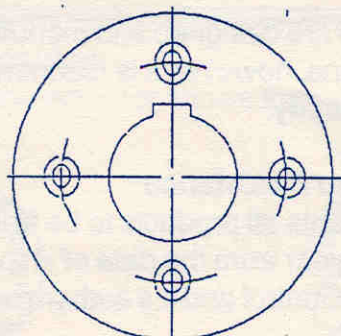
Using socket hex-key wrench, remove the drive bushing from actuator.

2) Machining of Drive Bushing

When matching the bore and keyway, the direction of keyway should be aligned with one of 4 screws holes of the drive bushing.

3) Reassembling the Drive Bushing

- Check that the actuator and valve are in the same relative position (Open or Closed) If not, rotate the actuator to the same position of valve.
- Line up the keyway in the drive bushing with the keyway on the valve shaft or coupler.
- ★ The actuator can mount in one of four quadrants which is determined by the position of the drive bushing in the actuator.
- Insert the drive bushing to center column and attach it with the 4 retaining screws.



6.2 Adaption of Drive Bushing to Valve Stem

The base flange of the RCEL Actuator is machined conforming to ISO 5211/1. Adapter or yoke can be used between valve & actuator.

Actuator Size	Base	No of Bolt	Thread	B.C.D.	Tap Depth	Max Bore
RCEL-6, -9	F07	4	M8	2.76	.55	.87
RCEL-15, -19	F07, F10	4	M8, M10	2.76, 4.02	.55	.87
RCEL-28, -38, -50	F10, F12	4	M10, M12	4.02, 4.92	.67	1.26
RCEL-60, -80, -100	F12, F14	4	M12, M16	4.92, 5.51	.75	1.65
RCEL-150, -200, -250	F16	4	M20	6.50	.75	2.95

7. Trouble Shooting

7.1 Mechanical Trouble

- 1) Move the valve using the handwheel after pulling the declutch lever.
- 2) Check the movement of mechanical position indicator.
- 3) If the handwheel does not move, the valve is stuck. Valve needs to be disassembled and repaired.
- 4) If the handwheel moves well without any interruption, check the adaptor joining the actuator and the valve.
- 5) If the valve moves by the handwheel, check the electrical function.

7.2 Electrical Trouble

Check the function of control panel first, and then actuator later.

- 1) Check the main power supply, relays, fuses, all lamps and switches.
- 2) If there is a problem in the control panel as listed above, replace the defective parts. If there is no electrical problem then check the actuator.
- 3) Check the installed motor and replace it, if necessary.
- 4) In case of the torque switch tripping, turn the main power off and follow the same procedure as mechanical trouble shooting. (Torque switch's trip suggests the actuator is working without any electrical trouble.)
- 5) If a faulty limit switch is found by electric circuit check, adjust or replace.
- 6) All other electrical problems can be solved by replacing the defective parts.

8. Maintenance

Remote Control actuators are designed and manufactured for long life under normal operating conditions, however, it is recommended to make an operational check twice yearly.

9. Warranty & Technical Assistance

Remote Control Inc. warrants all products to be free of defects in workmanship and materials for one (1) year from the date of shipment. Technical assistance is available from Remote Control and it's authorized service centers.