

Valvcon™ LCR-series option "S2" additional limit switches

Installation, maintenance and
operating instructions

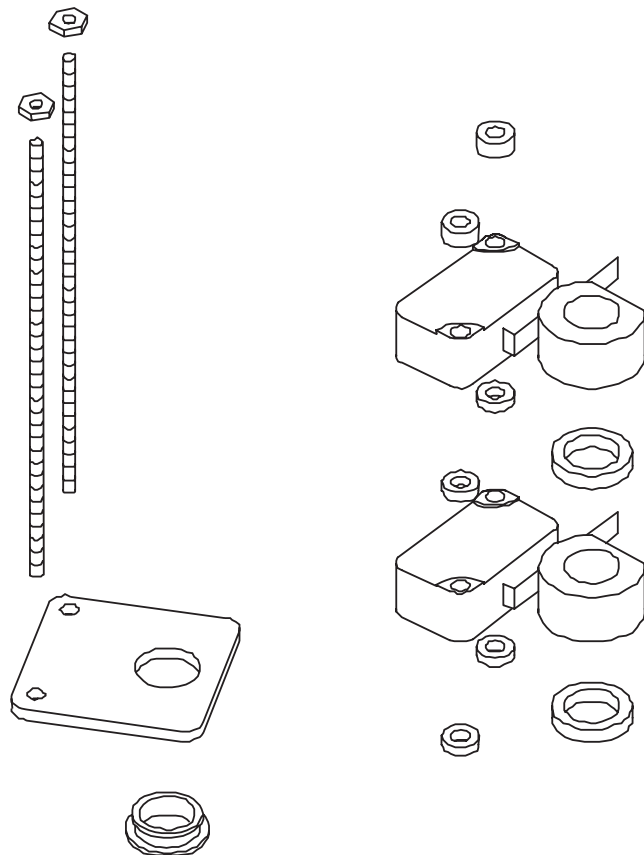


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READ THESE INSTRUCTIONS FIRST!

These instructions provide information about safe handling and operation of the valve.

If you require additional assistance, please contact the manufacturer or manufacturer's representative.

SAVE THESE INSTRUCTIONS!

Addresses and phone numbers are printed on the back cover.

1. GENERAL

1.1 DESCRIPTION

Neles LCR-Series Limit Switch kit allows the user to add two additional limit switches to an actuator in the field. Standard LCR-Series actuators are shipped with two (2) limit switches installed – one (1) to operate at the fully open position and one (1) to operate at the fully closed position. Two additional limit switches may be installed to operate at any actuator position or to provide position feedback. This IMO is intended for use with any Valvcon LCR-Series Actuator.

2. PARTS LIST

- 2 Limit Switches
- 2 Cams
- 2 #4-40 Studs
- 2 #4-40 Nuts
- 2 Limit Switch Wiring Harnesses 2 Wire Ties
- 4 #6 x .090" spacers
- 2 #6 x .150" spacers
- 2 .090" Cam spacers 3/8" ID, 17/32" OD
- 1 Cam Shaft Support Bracket

3. TOOLS REQUIRED

- Screwdriver
- 1/4" Nut Driver
- 1/16" Hex Wrench

4. INSTALLATION

CAUTION:

DANGEROUS VOLTAGES ARE PRESENT INSIDE THE ACTUATOR COVER UNLESS THE POWER SUPPLY TO THE ACTUATOR HAS BEEN SHUT OFF OR DISCONNECTED. USE EXTREME CAUTION WHENEVER WORKING ON THE ACTUATOR WITH THE COVER REMOVED.

A. Remove Actuator Cover

Remove the actuator cover by removing the screws securing the cover to the base. NOTE: 24 VAC actuators use a large capacitor that is permanently attached to the actuator cover. Be careful when removing the cover to prevent unnecessary strain on the capacitor wires.

B. Install the Limit Switches, Cams and Cam Shaft Support Bracket

Remove the Limit Switch screws, which secure the existing Limit Switches in place, retaining the spacers between the existing two limit switches.

Replace Limit Switch screws with the #4-40 X 2.5" Studs, (provided) ; refer to **Figure 1** for proper switch, spacer, cam and cam shaft support bracket orientation.

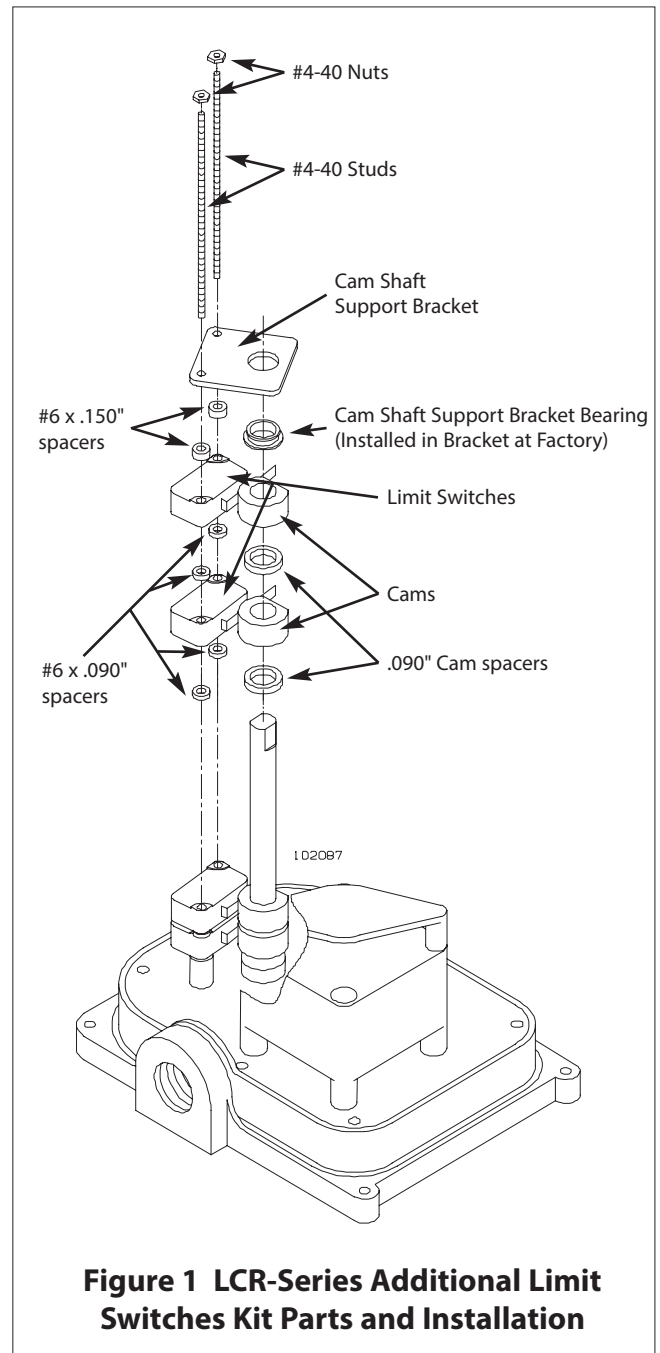


Figure 1 LCR-Series Additional Limit Switches Kit Parts and Installation

C. Set the Cams

- 1) Drive the actuator to the desired trip point.
- 2) Rotate the Cam slowly to the point where the Limit Switch "clicks" closed. The limit switch arm will be depressed
- 3a) If the Limit Switch is to operate at a given point during the opening cycle of the actuator, rotate the Cam counterclockwise until it "clicks" open.
- 3b) If the Limit Switch is to operate at a given point during the closing cycle of the actuator, rotate the Cam clockwise until it "clicks" open

- 4) The cam should rest on the cam spacer below it, and the spacer should rest on the cam below it. Tighten the Cam set screw to secure the Cam in position. Do not over-tighten the screws (use less than 8 in/lbs of tightening torque).
- 5) Operate the actuator to verify the proper setting of the Cams.

D. Install the Wiring Assembly

- 1) Attach the White Wires to the Common (COM) spadeconnector on the new Limit Switches.
- 2) Attach the Black Wires to the Normally Open (NO)spade connector on the new Limit Switches.
- 3) Attach the Red Wires to the Normally Closed (NC) spade connector on the new Limit Switches.
- 4) Attach the three wires to the terminal strip in accordance with the proper wiring diagram provided in **Figures 2 & 3**.
- 5) Using the supplied Wire Ties, secure the Limit Switch wires so they avoid contact with any moving parts.

E. Replace Actuator Cover

NOTE: When reinstalling the cover, follow the normal practice of tightening the cover screws in a crosspattern to insure that the cover is pulled down flat without over-stressing a corner.

5. WIRING

The identification label on each actuator specifies the voltage and current requirements for the actuator. For convenience, **Figure 2** shows the standard power and control wiring connections for AC actuators and **Figure 3** shows the standard power and control wiring connections for DC actuators. For 120VAC actuators, #18 or #20 AWG wiring may be used for short runs. #16 AWG is recommended for longer runs. Be sure to follow local wiring codes.

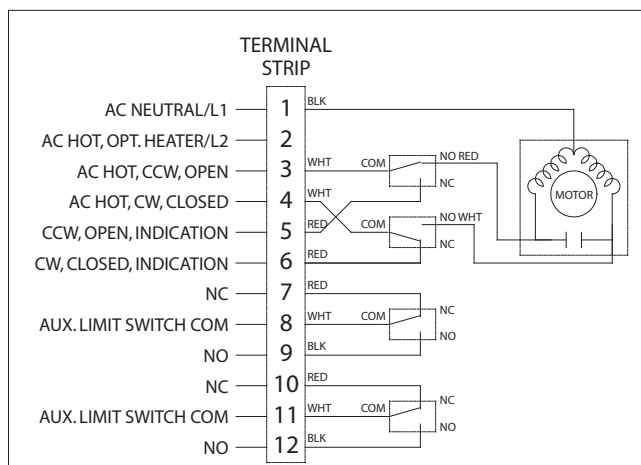


Figure 2 LCR-Series AC Wiring

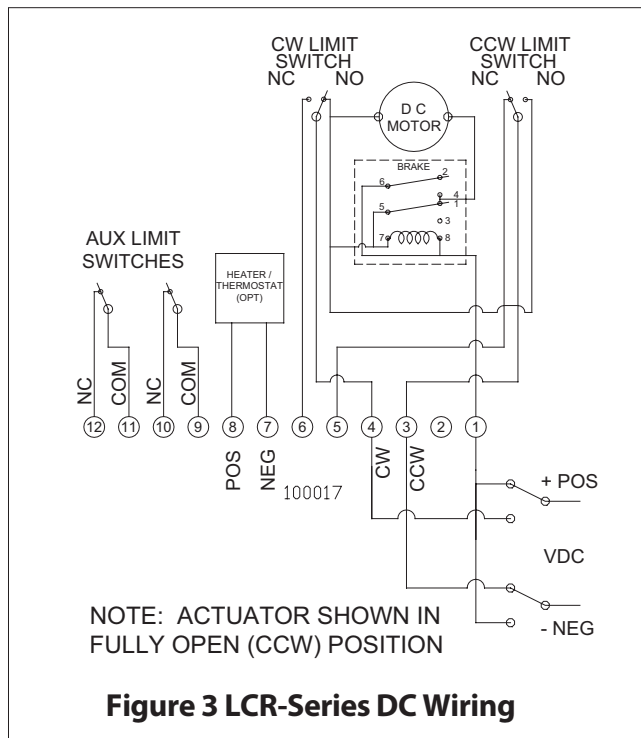


Figure 3 LCR-Series DC Wiring

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