

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

Installation, maintenance and
operating instructions

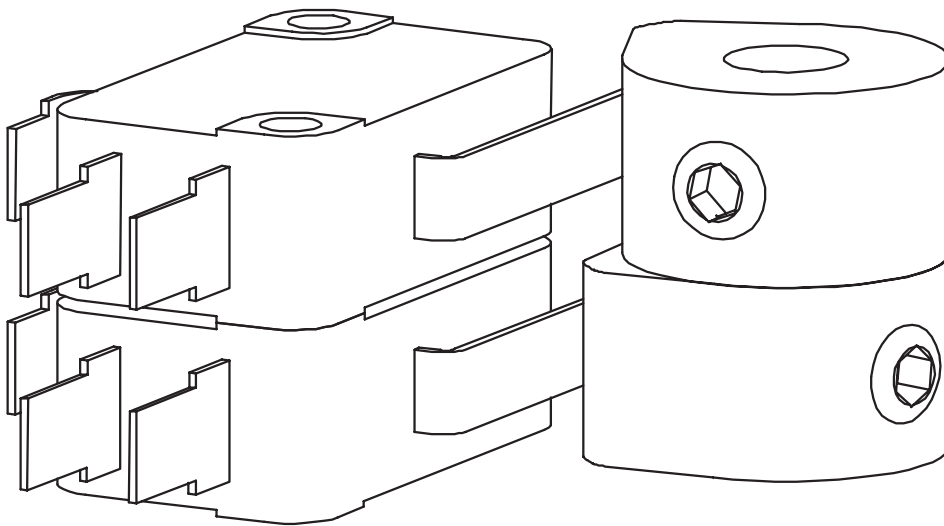


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READ THESE INSTRUCTIONS FIRST!

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

This instruction manual contains important information regarding the installation, operation, and troubleshooting of the Valvcon™ V-Series Additional Limit Switch Kit. Please read these instructions carefully and save them for future reference.

1.1 DESCRIPTION

The V-Series additional limit switches option provides two dry contacts and are fully adjustable to trip at any position throughout the cycle of the actuator. Each switch is operated by a stainless steel cam that is mounted directly onto the output drive shaft. Additional switches are often used for position indication or to interlock other devices (such as in sequencing operations).

The switches are single pole, double throw switches rated for 1/3 HP, 11A @ 125/230 VAC, CSA certified. Auxiliary switch kit P/N VC099000 is universal to all standard V-Series actuators. The kit provides “flying wiring leads” for termination inside the enclosure using the supplied 6-position terminal block.

1.2 SAFETY PRECAUTIONS

Additional switches provide dry contacts only. Power to the switches, if required, must be supplied externally.

WARNING

DO NOT EXCEED THE ACTUATOR PERFORMANCE LIMITATIONS!

EXCEEDING THE TORQUE LIMITATIONS MARKED ON THE ACTUATOR IDENTIFICATION NAMEPLATE LABEL MAY CAUSE DAMAGE TO THE ACTUATOR AND/OR FINAL DRIVE ELEMENT.

WARNING

DO NOT EXCEED THE ACTUATOR ELECTRICAL LIMITATIONS!

EXCEEDING THE ELECTRICAL LIMITATIONS MARKED ON THE ACTUATOR IDENTIFICATION NAMEPLATE LABEL MAY CAUSE DAMAGE TO THE ACTUATOR AND/OR PERSONAL INJURY.

WARNING

BEWARE OF MOVEMENT OF THE FINAL DRIVE ELEMENT AND ANY LINKAGE BETWEEN IT AND THE ACTUATOR!

KEEP HANDS, OTHER PARTS OF THE BODY, TOOLS AND OTHER OBJECTS OUT OF THE WAY OF MOVING PARTS. FAILURE TO DO THIS MAY RESULT IN DAMAGE OR PERSONAL INJURY!

WARNING

ACTUATORS SHOULD BE PROPERLY GROUNDED AND WIRED IN ACCORDANCE WITH LOCAL ELECTRICAL CODE; SEE IDENTIFICATION NAMEPLATE LABEL FOR MAXIMUM CURRENT DRAW.

This option will fit all V-Series actuators with the letter “N” preceding the voltage designator in the part number on the product identification nameplate label.

2. INSTALLATION

2.1 TOOLS REQUIRED

Hex Wrench – 5mm (Small Enclosure)

Hex Wrench – 6mm (Large Enclosure)

Philips Screw Driver #1

Torx Driver #T20

Hex Wrench – 1/16” (supplied with kit P/N VC099000)

2.2 PARTS VERIFICATION

Verify that the kit contains all parts listed in Table 1 below:

Table 1	
Parts List	
Description	Qty
Wrench, Cam 1/16”	1
Wire Tie, Nylon	4
Screw, #4-40x2” Rd Hd, Phillips	2
Cam, V-Series, Stainless	2
Screw, Set, Cam, #6-32x3/16”	2
Terminal Block, 6 Position	1
Switch, W/Wire Harness, Standard	2
Instruction Sheet	1

2.3 INSTALLATION INSTRUCTIONS

WARNING

WHENEVER WORKING INSIDE THE ACTUATOR BE SURE TO FOLLOW ALL GUIDELINES, AND HEED ALL WARNINGS IN THIS OPTION KIT INSTALLATION MANUAL. BE SURE TO READ AND FOLLOW THE INSTRUCTIONS SUPPLIED WITH THE ACTUATOR CAREFULLY, AND HEED ANY ADDITIONAL WARNINGS.

WARNING

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..

WARNING

WHENEVER WORKING INSIDE THE ACTUATOR, CARE MUST BE TAKEN TO AVOID DAMAGE TO THE MACHINED FLANGE SURFACES ON THE COVER AND BASE CASTINGS. FAILURE TO DO SO CAN VOID THE ACTUATOR’S ENVIRONMENTAL CERTIFICATION

WARNING

USE CARE WHENEVER WORKING WITH THE ACTUATOR COVER REMOVED. DAMAGE, SCRATCHES, OR DENTS ON THE MACHINED FLANGE SURFACES OF THE ENCLOSURE MAY VOID COMPLIANCE WITH NEMA, CSA, UL, AND/OR IEC SPECIFICATIONS

1. Remove cover.
2. Remove upper support bracket by removing the motor bracket screw and the board to bracket screw. Loosen setscrew and remove gear on camshaft, if installed. Refer to Figure 1, below.
3. Remove and discard the two screws that secure existing switches in place. Place additional switches on top of existing switches. Replace original screws with 2", #4-40 screws. Secure all four switches in the original mounting location.
4. Slide additional cams onto camshaft on top of existing cams. Rotate cam to desired position and tighten setscrew.
5. Replace upper support bracket and any optional hardware.
6. If terminating inside the enclosure, secure the terminal block as indicated in the diagram above. Cut wires to proper length to avoid interference with any other parts. Secure switch wires to the terminal block as indicated in Table 2 below. (Switches are counted from the bottom up)

NOTE: Route the switch wire leads through conduit opening in such a way as to prevent interference with any other parts.

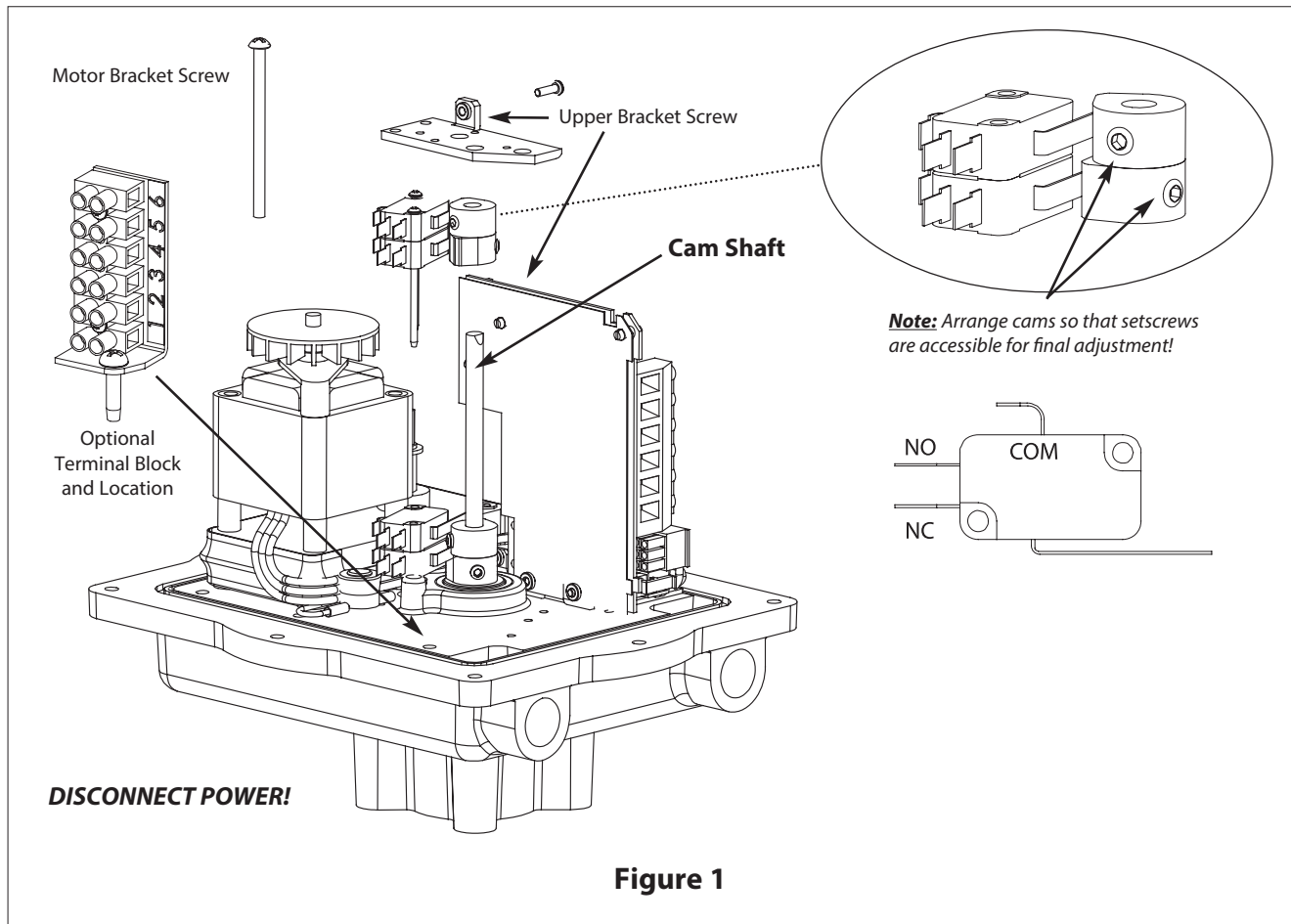


Table 2			
Recommended Connections for Optional Limit Switch Terminal Block			
Switch	Wire Lead		Terminal
Upper	NO	BLACK	6
Upper	COM	WHITE	5
Upper	NC	RED	4
Lower	NO	BLACK	3
Lower	COM	WHITE	2
Lower	NC	RED	1

3. OPERATION

Additional switches provide dry contacts only. Power to the switches, if required, must be supplied externally.

2.4 PROPER ACTUATOR COVER REPLACEMENT

NOTE: For actuators including hazardous location certification. Prior to installing cover, inspect machined flange surfaces for any damage, scratches, or dents. Damage, scratches, or dents that will not fit completely in a circle having a diameter of 1/64" will void hazardous location certifications. If such imperfections are present the damaged enclosure parts(s) must be replaced. See product series IMO for captive cover screw specifications. Consult the factory for replacement parts.

1. Remove the override shaft from the actuator cover bushing; if the actuator is equipped with a handwheel, remove the handwheel before removing the top piece of the "two-piece" shaft from the cover bushing.
2. Install the override shaft on the square motor shaft; if the actuator is equipped with a handwheel, install the bottom piece of the "two-piece" shaft on the motor shaft and then install the top piece of the shaft onto the bottom piece of the shaft.
3. Align cover so that the override shaft will pass through the override bushing and carefully push it down so that the cover flange contacts the base flange.
4. Once the cover is properly seated, tighten the screws to secure the cover; a cross pattern is recommended for uniform distribution of load.
5. If the position indicator is not seated to the output/cam shaft, turn until it drops into place in order to ensure accurate visual position indication.

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