

Valvcon™ V-series option "K" mechanical brake kit part number VC099715

Installation, maintenance and
operating instructions

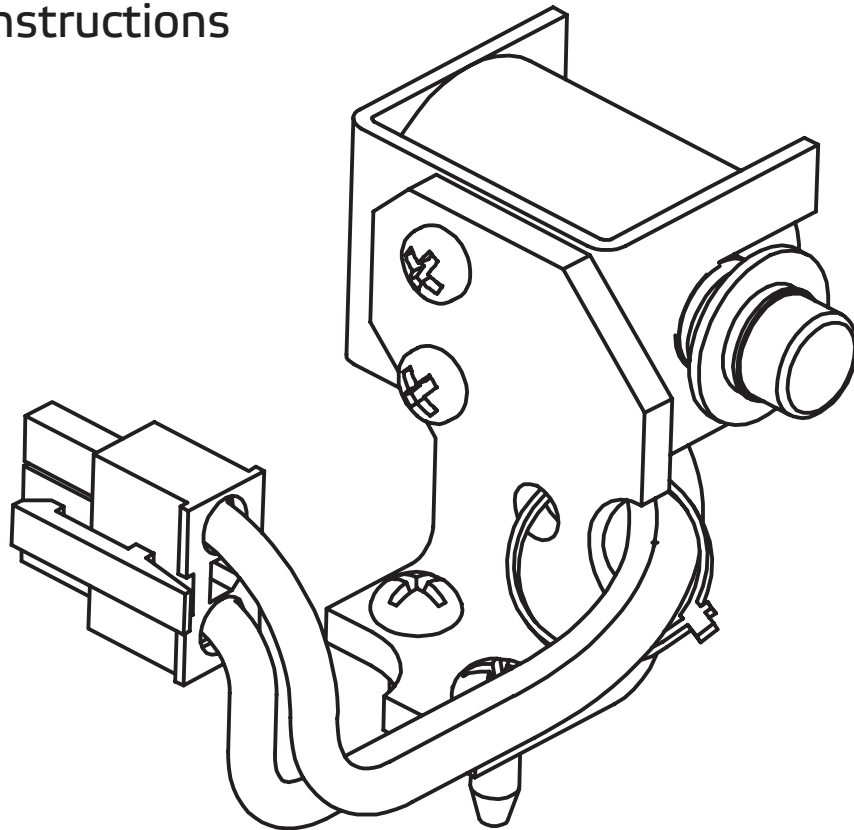


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READ THESE INSTRUCTIONS FIRST!

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 Option “K” Mechanical Brake Kit. Please read these instructions carefully and save them for future reference.

1.1 DESCRIPTION

The mechanical brake option is a holding brake that acts directly on the gear train, to lock the output of the actuator at all times when the motor is not powered. The Option “K” Brake uses the mechanical advantage of the 3000:1 gear reduction to lock the actuator output in position. It will hold against a force as great as the torque rating of the actuator. The Option “K” Brake draws 4 watts and is universal to all standard V- and I- Series actuators. It is simple to install with a plug-in connector and two Phillips mounting screws. No additional brackets are required.

The highly efficient Valvcon hardened steel spur gear system requires that the Option “K” Brake be installed on all butterfly valve and damper applications. It is also recommended on PVC ball valves and resilient seated valves.

The Option “K” Brake Kit, P/N VC099715 is universal to standard 115 VAC, 230 VAC, large enclosure, small enclosure V- & I-Series actuators.

No capacitor changes or additional customer wiring is required for brake installation & operation.

1.2 SAFETY PRECAUTIONS

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 V/LV and I/LI actuators with the letter “N” preceding the voltage designator in the part number on the product nameplate.

2. INSTALLATION

2.1 TOOLS REQUIRED

- Hex Wrench – 5mm (Small Enclosure)
- Hex Wrench – 6mm (Large Enclosure)
- Philips Screw Driver #1

2.2 PARTS VERIFICATION

TABLE 1	
Parts List for Option “K” Mechanical Brake	
Part Description	Qty
Screw, #6-32X 3/8"	2
Wire Tie, Nylon	1
Brake Sub-Assembly	1
Spring	1
Plunger	1
Instruction Sheet	1

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:

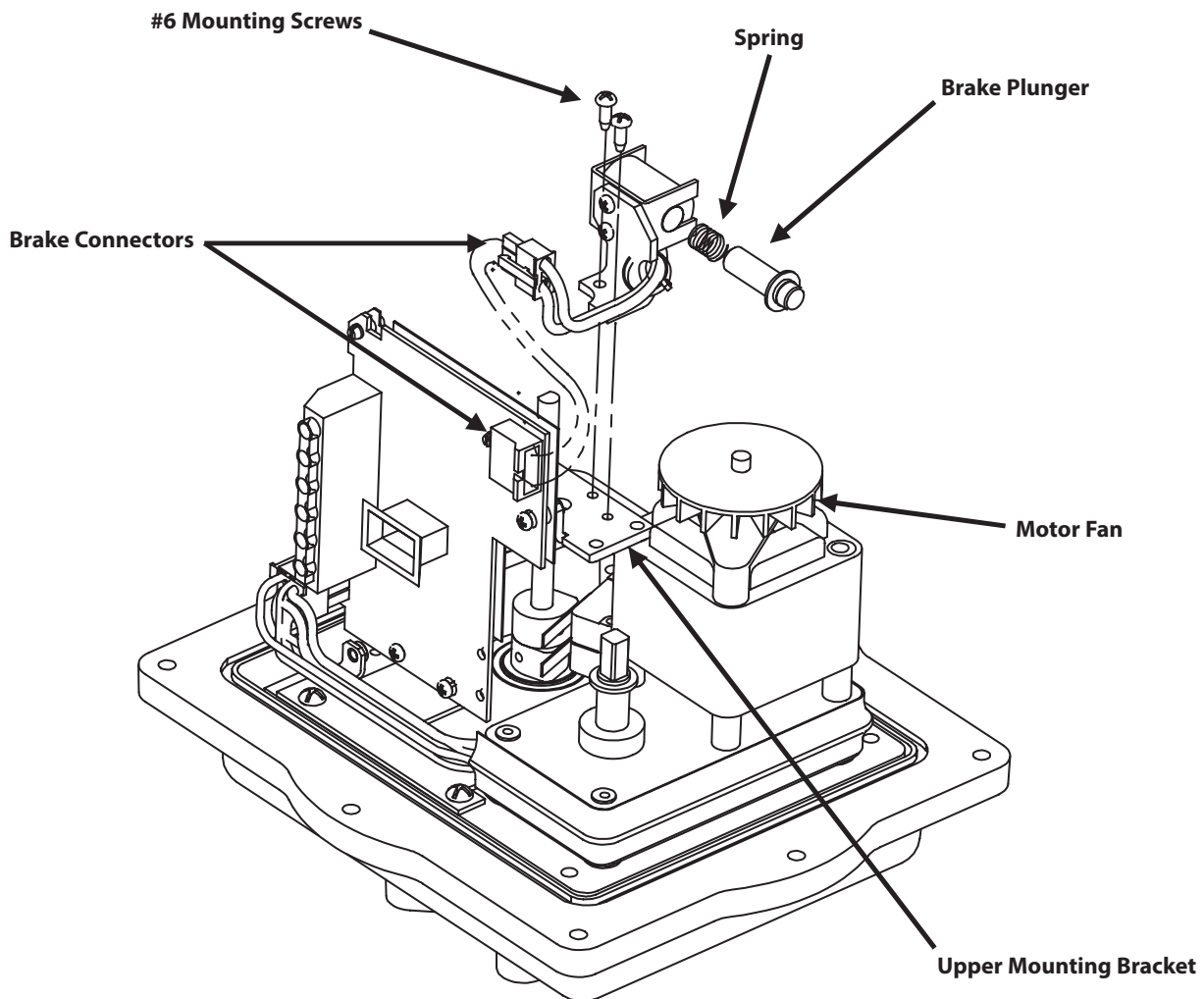
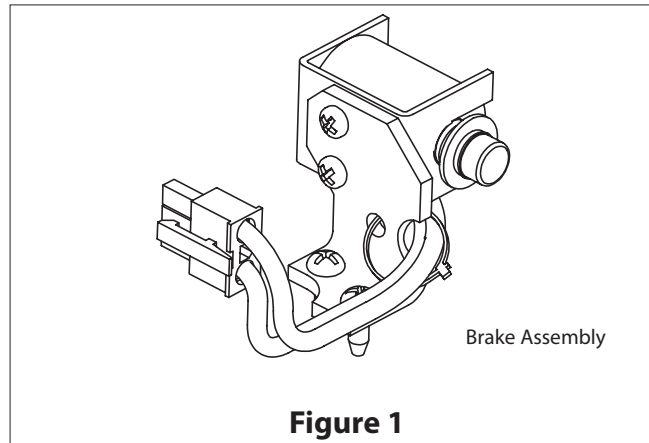
WHENEVER WORKING INSIDE THE ACTUATOR, CARE MUST BE TAKEN TO AVOID DAMAGE TO THE MACHINED FLANGE SURFACES ON THE COVER AND BASE CASTINGS. FAILURE TO DO SO CAN VOID THE ACTUATOR'S ENVIRONMENTAL CERTIFICATION

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.

2.3 INSTALLATION INSTRUCTIONS

1. Remove cover.
2. Place spring over the pointed end of the brake plunger shaft. Insert the pointed end of the plunger into the round hole in the brake solenoid assembly where indicated in (Figure 2).
3. Holding the plunger into the solenoid, secure the brake sub assembly to the upper mounting bracket with the two #6 screws. Properly positioned, the spring should push the plunger pad into contact with the edge of the motor fan. (If plunger is contacting between motor fan blades, the brake is not properly installed.)
4. Plug the brake assembly male connector into the female connector that is located in the upper corner of the Motor Board. Use the nylon wire tie to secure the wires to the upper mounting bracket to prevent interference with any other parts.



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.

3. OPERATION

When power is supplied to the actuator motor, the brake solenoid withdraws the brake plunger from contact with the motor fan. The travel distance between the motor fan and the brake plunger should be approximately 0.025" during normal operation.

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