

Motorized Valve Troubleshooting

KZCO motorized valve actuators are built to provide years of maintenance free use when properly installed in compatible applications. Disregarding feedback signals, there are two primary types of control circuits; variable positioning (commonly polarity reversing) and on/off (commonly one or two switched signals). Always refer to the standard wiring diagrams for testing of the control harness before opening the actuator housing. As a general rule, standard actuators will rotate clockwise (viewed from top) while running to a valve closed position and counterclockwise while running to a valve open position. All *KZCO* motorized actuators currently require power to operate in either direction.

Actuator

Problem	Possible Cause	Solution
A. Motor will not run at all.	a.) Limit switch problem. b.) Cam assembly problem. c.) Integrated circuit breaker tripped. d.) Dead or open short in control harness. e.) Dead or open short in actuator control circuit. f.) Failed gearmotor.	a.) Check and adjust limit switches per instruction. b.) Check and adjust cams per instruction. c.) Disconnect power to unit for 20 seconds; reconnect power. d.) Check harness for cuts in insulation or sharp pinch point. Check for continuity of each wire in the harness. Check connectors for damage or corrosion. Repair or replace as needed. e.) Check actuator housing for damage or missing hardware. Check actuator for internal corrosion. Check for loose motor lead. Clean circuit with electrical contact cleaner and compressed air. Solder connections if necessary. Replace circuit board assembly if required. f.) Disconnect motor leads at circuit board or motor. Apply power directly to motor terminals. Motor should run continuously when power is applied. Replace motor if rotation is not smooth.
a.) Motor runs continuously.	a.) Limit switch problem. b.) Cam assembly problem. c.) Defective or damaged circuit board component.	a.) Check and adjust limit switches per instruction. b.) Check and adjust cams per instruction. c.) Replace circuit board assembly.
C. Constantly tripping integrated circuit breaker or blowing of line fuse.	a.) Valve operating torque excessive; tight from incompatible valve or media, or buildup. b.) Defective or damaged circuit board component. c.) Failed gearmotor.	a.) Remove motorized actuator from valve. Manually turn valve with torque wrench when possible. Confirm that valve torque is within actuator capability. Refer to Actuator Information chart in Engineering section of catalog. Disassemble and clean valve. b.) Many models have internal relays. Listen for audible click upon activation. Bypass circuit board assembly to test motor, see c.) Failed gearmotor. Replace circuit board assembly if needed. c.) Disconnect motor leads at circuit board or motor. Apply power directly to motor terminals. Motor should run continuously when power is applied. Replace motor if rotation is not smooth.

Valve

Problem	Possible Cause	Solution
C. Valve is leaking past ball.	a.) Seats damaged or worn out. b.) Valve is not stopping at proper closed position.	a.) Install repair kit. b.) Adjust limit switches of actuator.
D. Valve stem leaks.	a.) Worn stem seals. b.) Damaged stem or stem bore.	a.) On metal valves: tighten stem packing nut $\sim 1/4$ - $1/2$ turn. CAUTION! Over tightening stem nut could cause excessive operating torque and trip internal circuit breaker. If leak continues or for plastic valves, install repair kit. b.) Replace valve stem if available, otherwise replace valve.
E. Valve body leaks.	a.) Loose body bolts or excessive operating pressure. b.) Defective body seals.	a.) Check bolts and confirm application is within recommended pressure ratings. b.) Install repair kit or replace valve.
F. Valve operating torque excessive.	a.) Swollen seals or particulate buildup in valve chamber. b.) Valve bolts too tight. c.) Stem nut too tight or damaged stem seal.	a.) Check valve for compatibility with product. May require valve cleaning, repair kit, or new valve. b.) Loosen bolts slightly. *Plastic, bolted valves only. c.) Loosen stem nut slightly. Install repair kit if needed.