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Trouble Shooting Guide for Electric Crossing Arm (Series 7000) and Stop Arm (Series 6000)

The current issue of the board has 7 connectors. Read **left to right**:

- M+. Connects to **red** motor wire.
- R+. Connects to constant 12 volts from bus.
- GS. Connects to vehicle ground.
- Y. Connects to 12 volts when door is opened.
- M-. Connects to **black** motor wire.
- BS. Connects to **blue** wire going to limit switch.
- W. Some units have a **white** wire connected to limit switch. If this is the case connect to W. Otherwise not used.

Perform the following steps sequentially. Replace all tested connections after test. Measure voltages to vehicle frame, not to actuator ground. Measure colored connectors at female attached to wire. Use volt meter or test light.

PROBLEM: Unit does not open and motor does not run-Open cover to Unit.

- Measure red on R+ to ground on unit. (Not the ground on the bus). Does it read 12 volts? Yes. Go to next step. No. Correct 12 volts from bus or ground connection on unit and bus.
- Remove **yellow** connector, check for 12V. If no 12V, repair feed from vehicle door switch. If 12V present, go to next step.
- Remove plastic cap from motor and inspect connections. Check 12V on top black connector. If no 12V, circuit board is defective. If 12V present, go text step.
- Measure voltage of bottom **red** connector on motor. If no voltage is present (ground) motor is defective. If 12V present, go to next step.
- Measure voltage on end of resistor on circuit board at right end (closest to the **white** wire). If zero volts (ground), motor is stalled or gear assembly is seized. If 12V present at resistor end, go to next step.
- Still measuring voltage from the right end of resistor, move tester ground from vehicle frame to actuator ground on 7/16" nut. If 12V still present, circuit board is defective. If 12V are not present, the actuator ground is faulty.

PROBLEM: Unit extends but does not retract when door is closed.

- Inspect the limit switch and drive arm stop tab for breakage.
- Remove 12V red connector (next to green). Check for 12V. If not present, repair feed from vehicle. If 12V present go to next step.
- Remove yellow connection from board. Does the unit close?
Yes. Correct faulty door switch on bus. No. Go to next step.
- Remove plastic cap from motor. Measure at top black motor connector. If 12V are present, go to next step. If not, then measure the voltage at bottom red connector of the motor. If 12V, then the motor is defective. If zero volts (ground), and then go to next step.
- Measure voltage at blue connector on switch. If 12V, then switch is defective. If not present, then circuit board is defective.
- Measure voltage at right end of resistor on circuit board (closest to the white wire). If 12V, then motor is stalled or gear assembly is seized. If no voltage present, then circuit board is defective.

PROBLEM: Unit does not open when motor runs.

- Drive arm loose (tighten set screw) or broken.
- Linkage off pivot, missing or broken spring retainer, or linkage arm broken.
- Gears stripped in motor gearbox.

PROBLEM: Unit cycles and will not stop.

- For the actuator arm to complete a rotation, the stop tab must be broken. The switch will also be damaged by a complete rotation.

PROBLEM: Arm stops in wrong position.

- Drive arm loose (tighten set screw) or broken.
- Linkage arm or hinge bracket damaged.
- Motor gears partially stripped.

PROBLEM: Arm is loose.

- Motor gear assembly broken or stripped.
- Drive arm loose or broken.
- Linkage arm broken.
- Linkage off pivot, missing or broken spring retainer, or linkage broken.