

TROUBLE SHOOTING THE EXTENDED STOP ARM

V4.1 Electric Actuator

For the Mechanical Technician:

Warranty items are simple, send it back, we will check out and send you a new one NO CHARGE if there is a defect.

OVERVIEW: The electronic control board is powered by a 15 amp fuse directly from your fuse panel or solenoid. A splitter is used to tap into the control wire for the bus's red flashing lights and this sends a signal current to the electronic control board to start operating. The electronic control board uses this signal to start the operations of the Extended Stop Arm. Current is switched to the Linear Actuator to cause it to open the Extended Stop Arm. Current is sent to the lights to both flash and strobe on the sign. Should there be an obstacle in the way of the Extended Stop Arm, it will retract automatically.

1 light of the sign does not work:

If only 1 light does not work, replace just one light. They are plug in, so there is no wiring to do. If the sign has not been hit, request another light under warranty.

None of the sign lights work:

Open the yellow box and check the control board. Disconnect the USB end and look at the board, the lights should alternate when the red lights are on.

If this works on the board, follow it out to the "breakaway" connection. When this is disconnected, and the usb is connected to the board, does the board still flash?

If No the problem is in the board to arm wire. Replace it.

If YES (it still flashes on the board) then the problem is in the wiring within the arm. Request a new arm under warranty.

the Lights on the extended Sign do not turn off:

This is a warranty issue and you need to call back and ask for a new arm to be sent out overnight.

The arm will not extend:

Open the yellow box and check the control board. Disconnect the Actuator Wires at the top of the board. The tabs on the board say actuator 1 and actuator 2 .

When the red lights are off, the light on the board should be at Actuator 2.

When the red lights are turned on, the light on the board should be at actuator 1.

Check with a multi electrical meter that there is 12 volts across these two positions.

If this is true and the actuator does not work, the actuator needs to be replaced.

This would be a warranty issue if no accident occurred.

The Shear Pins broke without an accident occurring.

Check the dates on your service records for when they were last replaced. Both shear pins need to be replaced with the monthly maintenance of the bus. Order more shear pins.

The actuator does not work

Test the actuator to a battery to determine whether it functions. If not, most likely this has ruined the electronic board as well. This is caused by a mechanical failure or accident. Check with driver for accident, and request report accordingly. New parts can be ordered with the issue of a Purchase Order

The arm retracted on its own:

When the arm hits something it will retract on it's own to protect the integrity of the arm and bus. This will remain against the bus for 10 seconds while the red lights on the bus are flashing. Then it will attempt to come out again. If there is no obstruction, it will stay out. If there is still an obstruction it will return to the side of the bus for another 10 seconds and repeat this until there is no obstruction.

Small obstructions can occur near the frame or with the cotter pin at the top that could cause the arm to retract. Extend the arm and watch for the point of contact where the retraction occurs to troubleshoot where the obstruction is occurring. If it is the frame, it can be bent or adjusted to allow the free movement of the arm.

In high winds, the arm might react as if it hit something and retract to the side of the bus. This should only be a rare occurrence. Similar to having your umbrella blow inside out in a surge of wind. The arm will withstand 50 mph winds with no affect once completely extended, or will hold against the side of the bus while traveling at up to 75 mph..

The sign has been in an accident:

Usually when this happens, you will need to replace the damaged items. Have a Purchase Order issued for the parts needed, or use a credit card. Please call it in to 336-671-0838 and tell them you need it sent over night express.

Sign does not stay tight to side of bus

The sign frame may be shimmed to force the aluminum arm tighter to the bus. CAREFUL here as it should not press against the bumper continually. This could cause the actuator to overwork trying to get it to pull in tighter than possible. This will burn out the actuator and ruin the electronic board. This would also cause excessive noise when hitting the side of the bus.

Stop sign lights hit side of ribs on bus:

Holding the aluminum frame at point of connection with the stop sign use the other hand at the far end of the stop sign and bend it back slightly such that it does not hit. This does not have to be to the extreme, just enough to keep it from hitting the side of the bus.

Sign or arm covers bus numbering or lettering

Move bus decals further down the bus.

A fuse "blows" in the circuit	This is an indicator that an electrical fault has occurred. Most likely the actuator is drawing too much power, either from a previous accident or some physical overload. Correct the physical problem before replacing the fuse. Replacing with a larger fuse will ruin the electronic board.
Arm extending slowly	The electric actuator is designed to extend and retract in 5 seconds in either direction. If the actuator is extending in more time, the actuator has most likely been damaged in an accident. Listen to the actuator as it extends, if you hear grinding of gears, a replacement should be ordered.
Arm is extended half-way	Bus driver turned off bus before the arm was retracted fully. Turn on bus, retract arm fully.
No lights working on Speciality sign	<p>Check Speciality wiring to see if it is broken or damaged</p> <p>Check Speciality lights to see if they are broken or damaged</p> <p>Check Speciality relay to see if it is broken or damaged</p> <p>If the bus uses a high-voltage relay, check to see if the splitter going to the relay is loose or damaged. Re-attach if necessary.</p>
Arm Extends on its own	<p>This can occur if a small amount of current is sent to the stop lights for any reason. One rare situation is when the escape hatch or emergency door is not secured tightly, the vibration of the Hatch triggers the lights and extends the sign. Both of these have momentary contact switches which will start the Red lights, and therefore our electronic board to send out the Extended Stop Arm.</p> <p>Current could also be being sent by a bad switch at the control panel.</p> <p>A bus driver could be operating the controls incorrectly.</p>
Speciality Lights Working, but nothing on the Extended Stop Arm works	<p>Open the yellow control box and look for the lights on the control board. There should be 3 red lights at the bottom of the board and one at the Actuator 2 tab on top. If these are not working, a power source is lost. Connection between speciality cables and control box is bad. Check the splitter cable for integrity. Loose connections are a prime suspect.</p> <p>Ground wire in the control box is not connected.</p> <p>Power wire to Control Box is not connected.</p> <p>Fuse to control box is blown</p> <p>Solenoid connection could be bad</p> <p>If the Control board will not light up with a good power source and ground, then it has burned out for some reason. If this is not due to an accident or connection error return as defective.</p>
Loose support screws	If a supporting screw for the extended stop arm is missing or loose, replace with an appropriate sized screw. The system has a redundancy of support, however all support screws are recommended.
Field Modifications	Changes to design or function void manufacture's warranty.