

Resolving conveyor problems

The conveyor motor is powered with 110/230 volts of AC power. AC is provided to the motor when the solid state relay activates. The relay controls the “hot” line of AC to the motor while neutral is connected directly to the motor. The relay is turned on by the main board (TL2034X) by Q5 (Tip 122). It provides ground to the relay. The relay gets it +12 volt power from a set of safety sensors. These sensors are at the front of the conveyor which protect the players from getting injured. When the sensors are blocked, it will interrupt the power going to the relay.

**** DANGER ** High voltage is present on the relay and the follow steps should only be preformed by a qualified technician.**

Step 1: Check AC voltage to relay. Use a voltage meter set to AC and measure Pin 1 (brown wire) of the solid state relay and any neutral wire from the power module (blue wire). If you get 0v, move your probe off pin 1 and move it to pin 2. Do you have 110/230 volts present?

Yes, continue.

No, Check all AC connections from power module including pins in the connector. Repair/replace as necessary. AC is also connected to the 15/12 volt supplies, check AC (game would have other issues!).

Step 2: Check the + 12 DC voltage to the relay. Use a voltage meter set to DC and measure pin 3 (orange wire) with your red probe and put the black probe on any ground from the power supply. Is +12 volts DC present?

Yes, continue.

No, move to the front of the cabinet. Then connect your red probe to orange/white coming out of the safety sensor. Then connect your black probe to the black wire. Is +12 VDC present?

Yes, follow the wire to the relay looking for breaks or bad pins in the wire harness connectors.

No, use a jumper wire and short the orange/blue wire to the orange/white wire together (at the safety sensor harness). Start a game, is the conveyor working now?

Yes, replace safety sensors or check alignment.

No, continue.



We recommend the use of “Pledge” Furniture Polish on both the conveyor belt and plastic ramp at least once a week.

Step 3: Check the +12 voltage to the safety sensor. Connect the red prove on the orange/blue wire and the black probe on the black wire.

Step 4: Use a jumper wire and connect one end to any DC ground from the power supply. Touch the other end to Pin 4 (violet/orange wire). Did the conveyor come on?

TIP122 NPN Power Darlington Transistor

TO-220

On the Main board (TL2034X) Q5 (Tip122) enables the relay that turns on the conveyor. See section “How to test Tip122 and IRL 540 transistors in and out of circuit”

Yes, move the wire to the metal tab of Q5 (careful, a small spark will occur).

If the conveyor came on there is an issue with the CPU board turning Q5 on. Replace TL2034X board.

If the conveyor comes on with relay grounded but not when Q5’s tab is shorted to ground, check Q5 (see section “How to test Tip122 and IRL 540 transistors in and out of circuit” on how). Replace if necessary. Retest.

No (conveyor never came on), measure AC again. With the ground wire connected to pin 4 of the relay, put one probe on AC neutral and measure pin 1 then pin 2 on the relay. You should read 110 on both.

If not, replace relay and retest.

If present, check wire harness to motor and motor harness pins. Repair/replace as necessary.

If all tests fine, replace conveyor motor or AC cap (VERY RARE FAILURE).