

Pinball Wizard External Timing Switches Upgrade for Existing Centers

Packaging For Switches

| | | | |
|---|---------------|---------------|------------------------------------|
| 1 | per lane pair | 84-860681-000 | Package - External Timing Switches |
| 1 | per lane | 84-200473-001 | External Timing Switch, left-hand |
| 1 | per lane | 84-200473-002 | External Timing Switch, right-hand |

Optional Items

| | | | |
|---|-----|---------------|------------------------------------|
| 1 | Ea. | 84-200472-000 | Brunswick E-Clip Installation Tool |
|---|-----|---------------|------------------------------------|

Overview

These instructions will provide a step-by-step process for replacing the existing internal limit switches with new external switches for better performance and maintenance.

This process requires:

- Creating Gutter Trap Door (if necessary)
- Removal of the Right-Hand (Ball Return) Gutter Section Where the Motor is Located
- Installation of New External Up/Down Limit Switches
- Wiring of the New Up/Down Limit Switches

Installation Instructions (Trap Door)

The Pinball Wizard gutter trap door is a removable section of gutter that allows convenient access to the Pinball Wizard Drive Motor. Refer to *Figure 1*. If your center does not have the Pinball Wizard gutter trap door modification, order package number 84-860640-000 (one per lane pair) which includes instructions and hardware for trap door installation. If your center already has the Pinball Wizard gutter trap door modification, proceed to *step 1*.

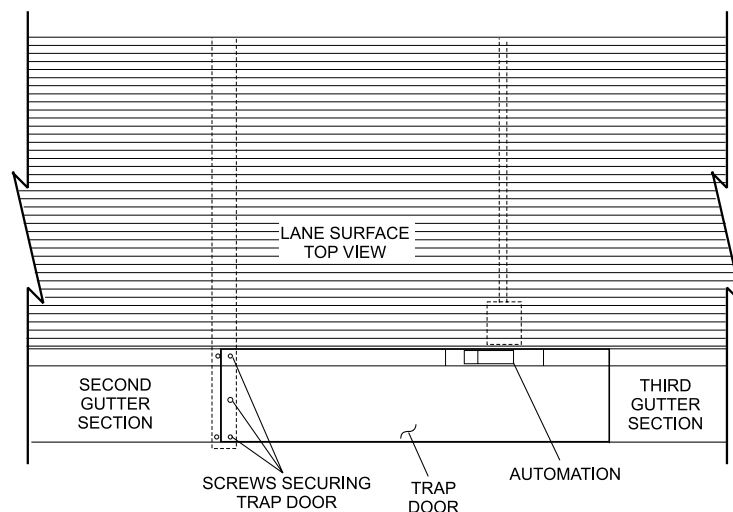


Figure 1

Installation Instructions (Pinball Wizard External Timing Switches)

1. Raise the motor drive arm to its full up position.



WARNING!

After motor drive arm is in full up position, disconnect the power cable from the Pinball Wizard Controller

2. Disconnect the motor drive arm from the rail by removing the E-clip and pin. Refer to *Figure 2*.

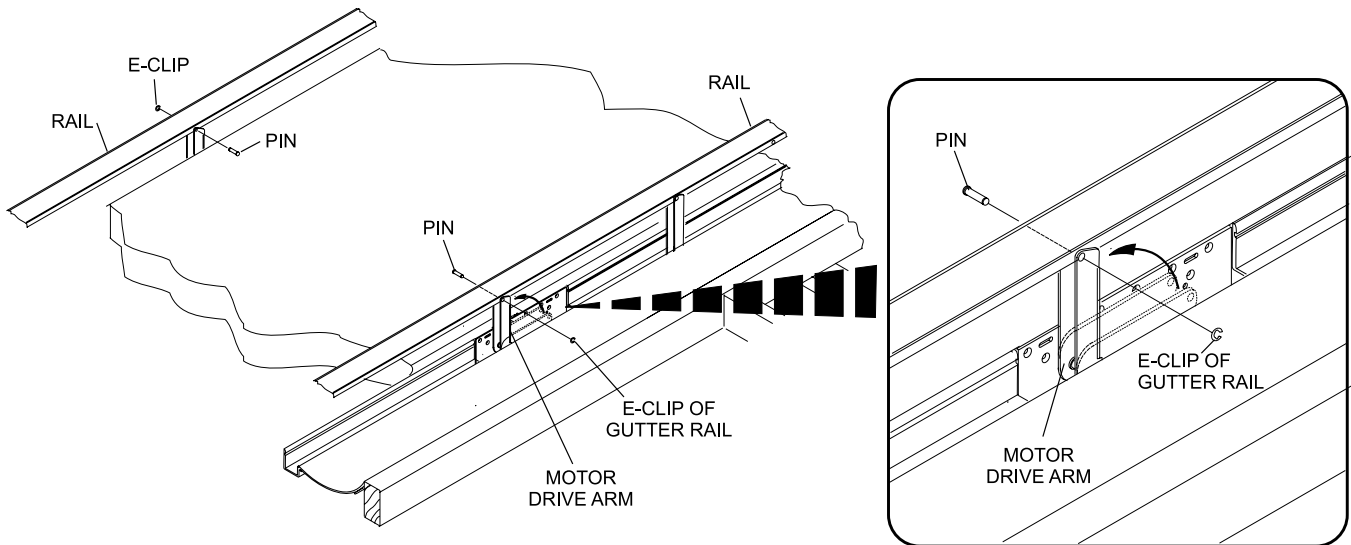


Figure 2

3. At the trap door location, remove the E-clips from the pins securing the two or three uprights to the rail. Refer to *Figure 3*.

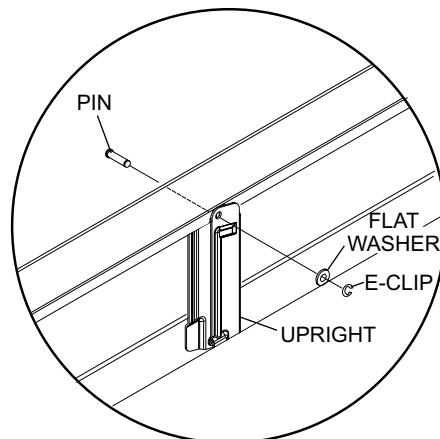


Figure 3

4. At the joint between the second gutter section and the trap door, remove the screws securing the trap door and remove the trap door. Refer to *Figure 1*.

5. With the motor drive arm in the full down position, remove and save three of the four 1/4-20 x 1/2" screws (P/N 11-010782-001) securing the motor. Refer to *Figure 4*.

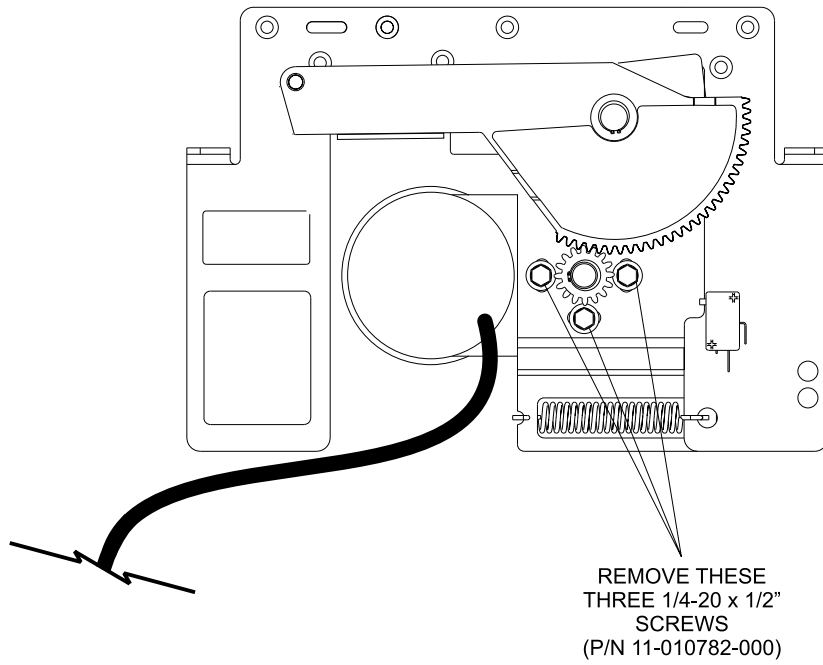


Figure 4

6. Remove the screw, 2 washers, spacer and cam gear from the external timing switch assembly. Refer to *Figure 5*.

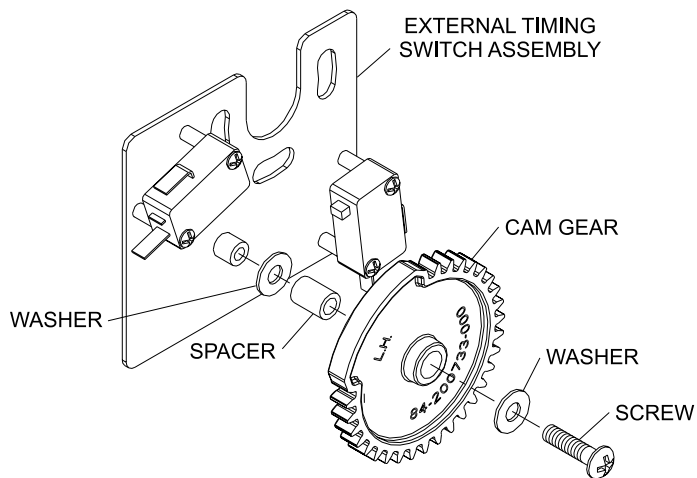


Figure 5

- Reuse the screws removed in step 5 to install the left-hand and right-hand External Timing Switch Plate (P/N 84-200473-xxx). Align the edges of the switch plate with the edges of the pivot plate. Refer to *Figure 6*.



CAUTION!

Torque screws to 100 inch pounds (11 nm).

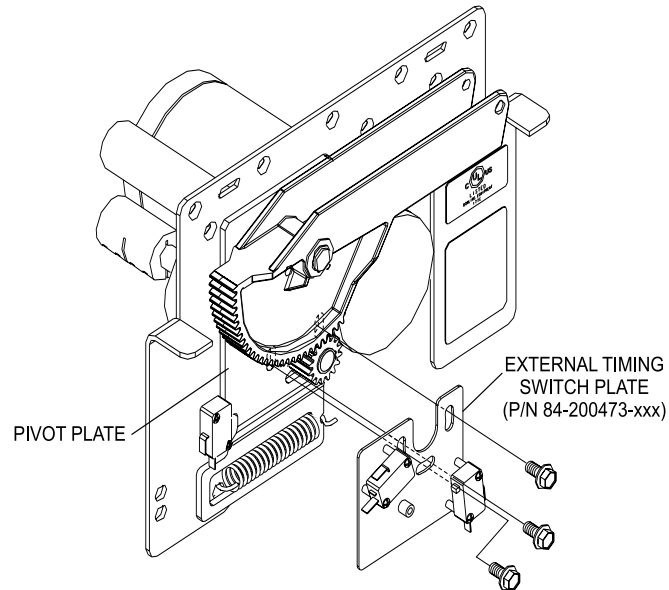


Figure 6

- Verify the external timing switch cam (P/N 84-200733-000) is labeled "RH" for the even lane motor and "LH" for the odd lane motor. Refer to *Figure 7*.

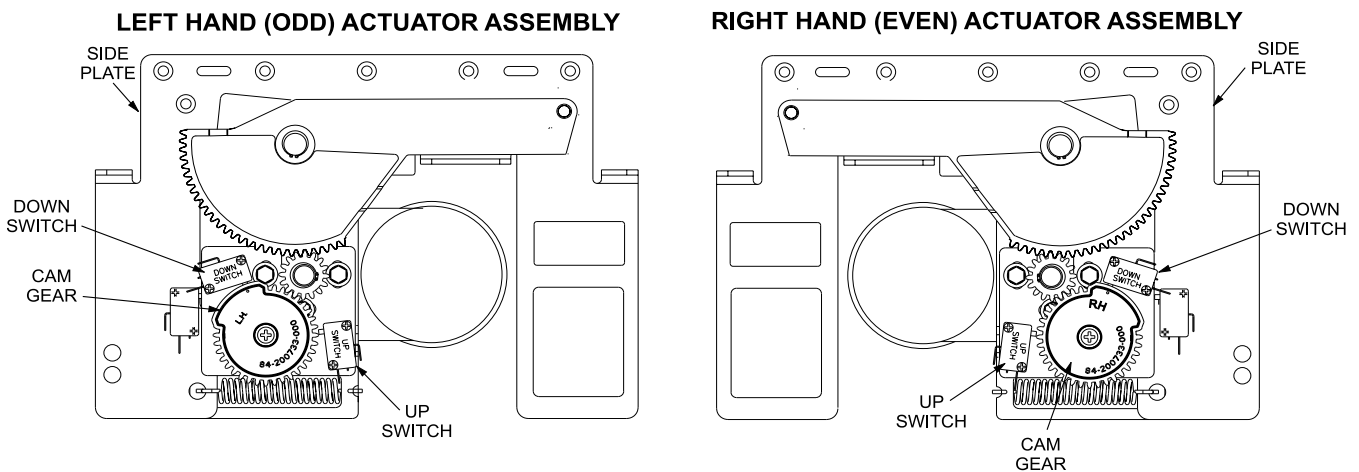


Figure 7

- The actuator arm will need to be in the full down horizontal position, Refer to *Figure 7*.
- With the actuator arm in the full down horizontal position, install and align the cam gear with the "Down Switch". Refer to *Figures 7 & 8*. Refer back to *Figure 5* for proper installation sequence of washers and spacer.

- There is a 1/16" (1.5 mm) alignment hole on the cam gear. Align this hole with the "Down Switch" plunger. Refer to *Figure 8*.

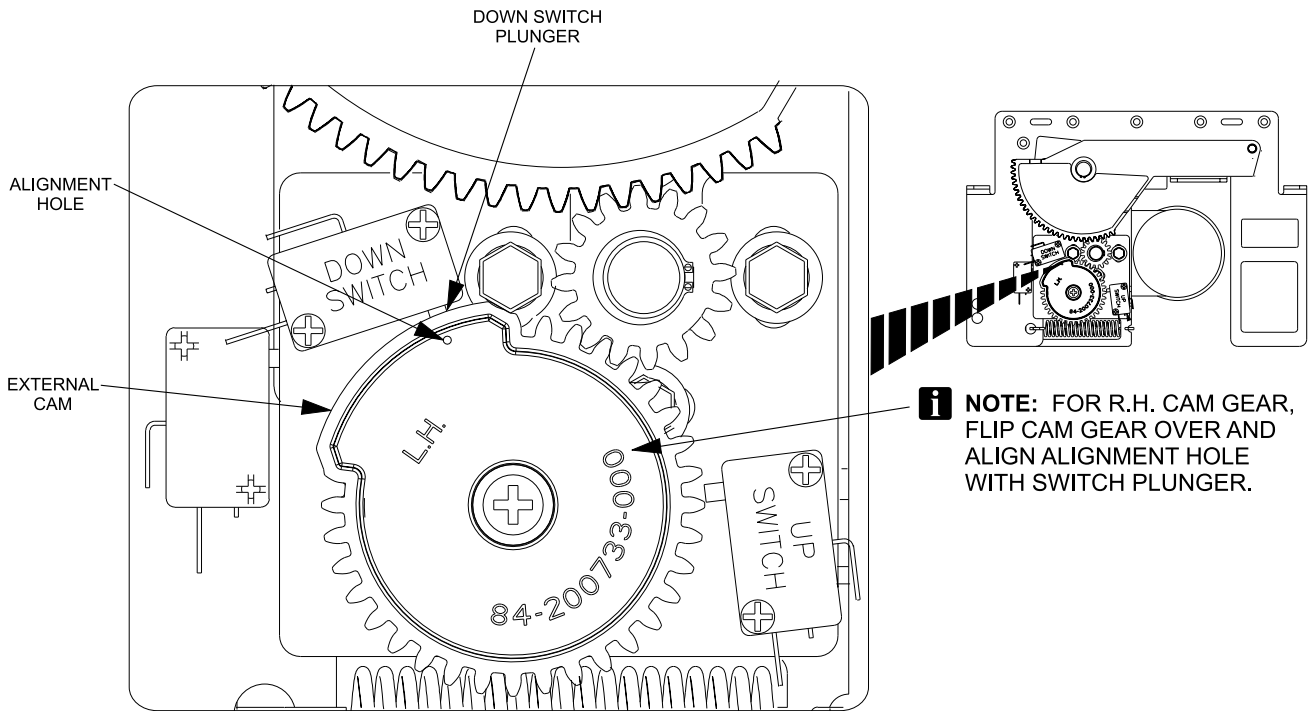


Figure 8

- Torque the cam screw to **15 inch pounds (1.7 nm)**.
- Remove the cover of the Pin Ball Wizard controller and locate "J11" and "J12" terminal strips. Refer to *Figure 9*.

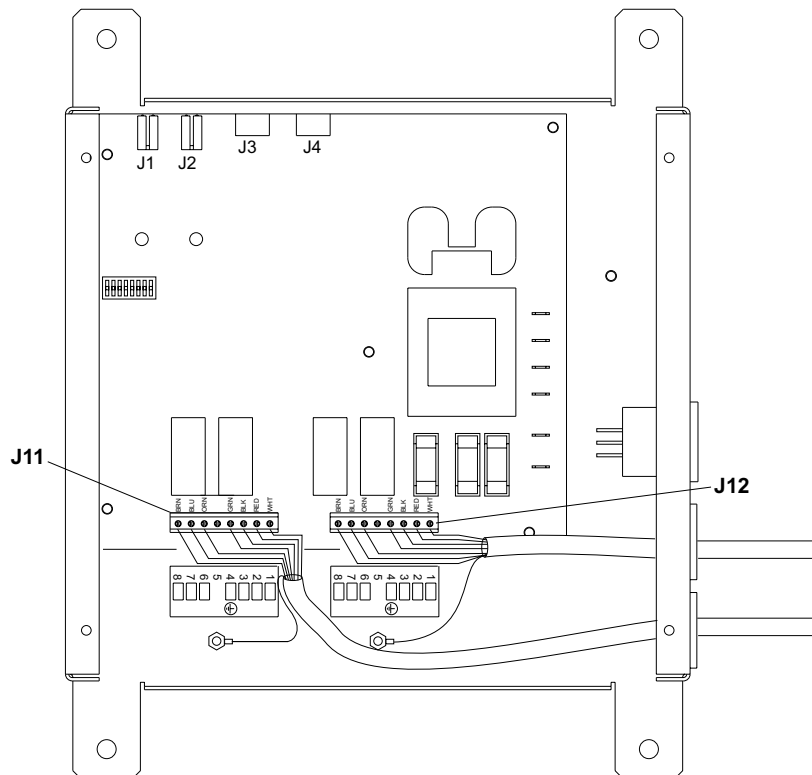


Figure 9

14. Each Left and Right motor wiring harness will have to be modified. Remove the orange, blue, and brown wires from pins 6, 7, and 8 on "J11" and "J12" terminal strip. Refer to *Figure 10*.

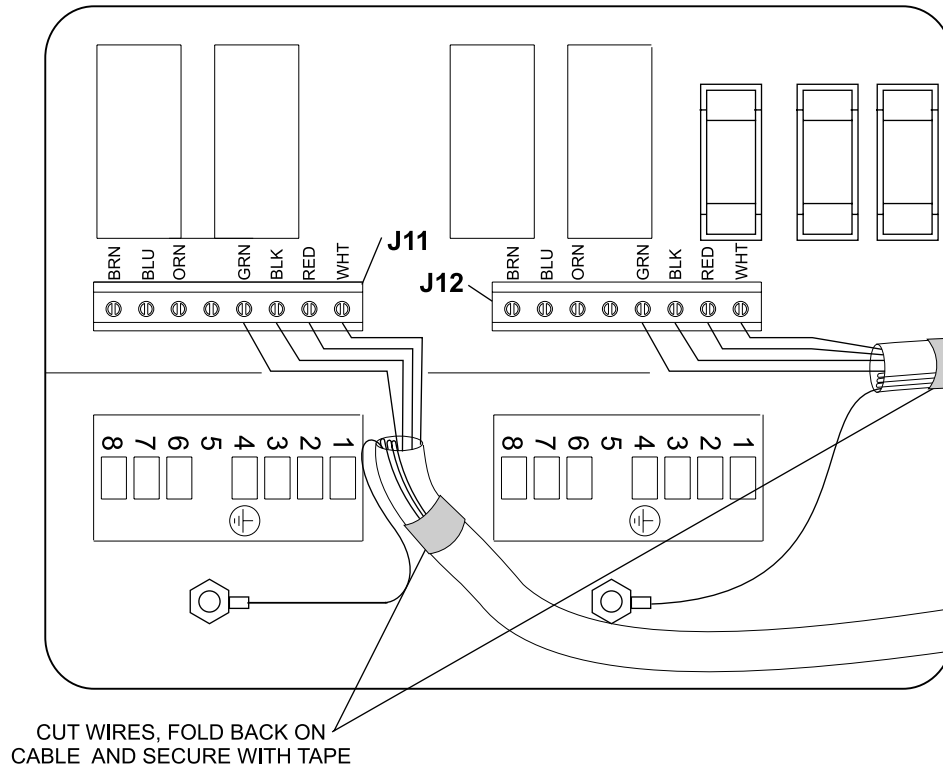


Figure 10

15. Cut the orange, blue, and brown wires. Tape the ends of each wire. Refer to *Figure 10*.



NOTE:

Do not cut the white, red, black, and green motor wires.

- Route the new orange, blue and brown wires from the left-hand and right-hand external timing switch plate (P/N 84-200473-xxx) to the Pin Ball Wizard controller. Refer to *Figure 11*.

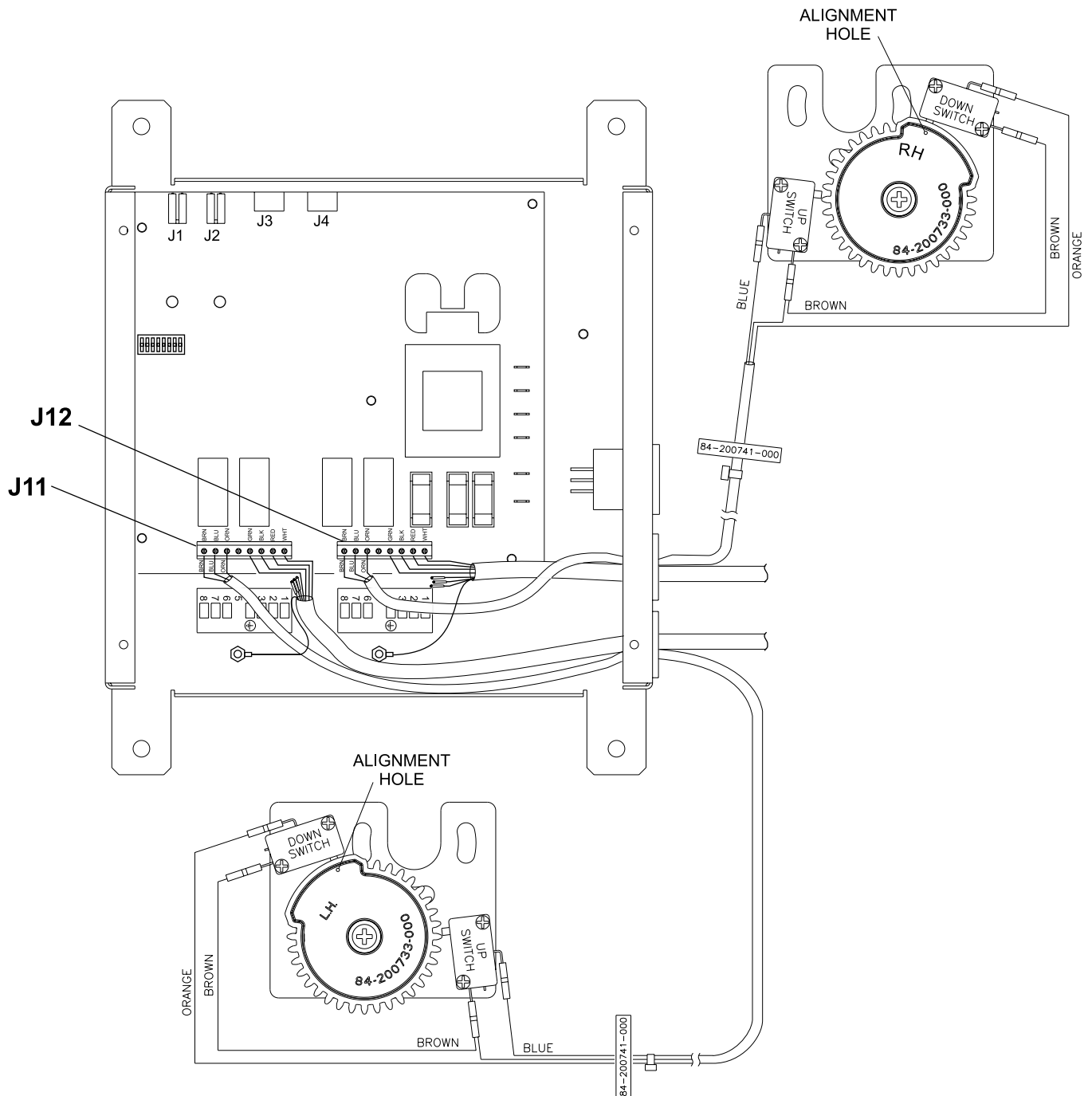


Figure 11

- Connect the new wires to “R. LANE MTR” terminal "J12" and “L. LANE MTR” terminal "J11". The orange wire to pin 6, the blue wire to pin 7, and the brown wire to pin 8. Refer to *Figure 10*.
- Replace the cover on the Pin Ball Wizard controller.
- Replace the Pinball Wizard gutter trap door and secure it with the screws.
- Replace the E-clips and pins in the motor drive arm and the upright.
- Raise and lower the rails to verify correct operation with no binding.