

## P2 KIT ASSEMBLY INSTRUCTIONS

### Kit Contents:

- 1 clear (or gray tinted) lexan cut to your track - **display panel**
- 1 ABS black lexan cut to your track - **back panel**
- 2 aluminum square tubing - **side posts**
- 1 top rail** - tapped for voltage regulator
- 1 bottom rail** -  $\frac{1}{2}$ " shorter than top rail (Not included with the Quick Mount Option)
- 1 string of **circuit boards**
- 1 pkg. of **hardware** (4 4-40 screws, spacers & small nuts per lane; **2** 8-32 flat head screws; **2** 6-32 round-head screws; **2** large nuts; **2** pressed nuts; **12** self-tapping screws, black grommets)
- 3 various size **decals**
- 1 AC adapter**
- 1 computerized paper **template**

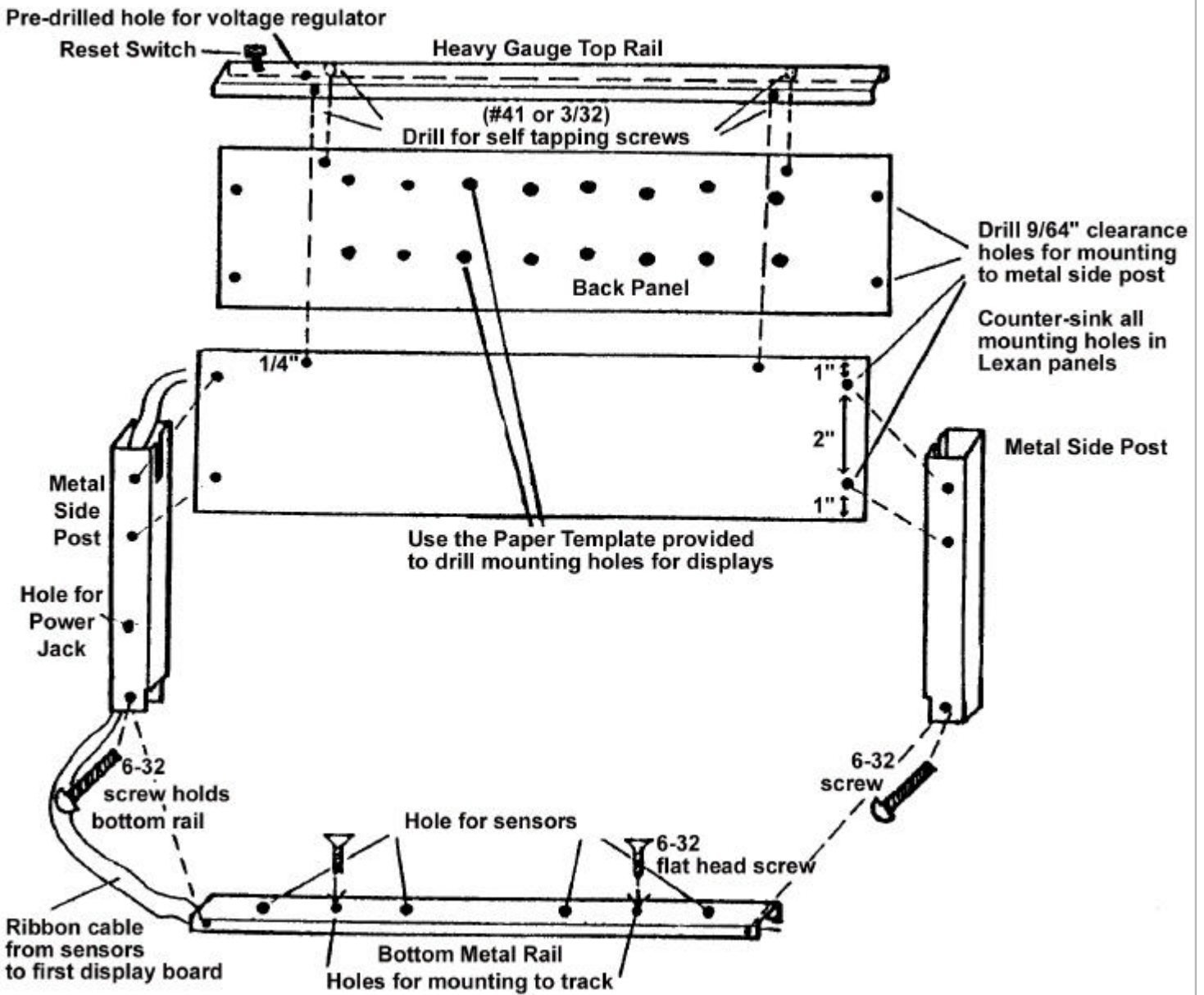
### Tools Needed for Assembly:

- drill and drill bits; 1/4" countersink
- Philips screwdriver
- tape
- glue gun or silicon glue

### Quick Test:

1. Lay boards on a nonconductive surface (wood, Formica, etc.). Make sure none of the boards are touching each other and that sensors have plenty of incandescent light. Bolt the "tagged" voltage regulator to the threaded hole in the top rail (discard nut).
2. Plug the power adapter into the timer then into an electrical outlet. All the display boards will light up with "0". If one or more boards displays a number other than "0", then its sensor is in the shade. Unplug unit and try again with more light.
3. Put the boards in test mode by depressing the reset switch and keeping it depressed. Cover each sensor. Each boards will display a number "7". This is the correct reading for test mode. If you did not get this reading, please call us for help.

## P2 Diagram



## **P2 KIT ASSEMBLY:**

### **STEP 1- DRILL MOUNTING HOLES**

Tape template to smooth side of black **back panel**. Also tape display panel to back panel. With panels together, only drill holes for sides and top mounting screws using 9/64 bit. Remove display panel. Drill circuit board mounting holes on back panel only using 9/64 bit. Counter-sink holes on front side of display panel and rough side of back panel.

### **STEP 2- ATTACH CIRCUIT BOARDS**

Anchor circuit boards to back panel by inserting 4-40 screws from textured side; anchor spacers, then circuit board, then small nuts. Attach metal side posts with self-tapping screws to back panel. NOTE: see diagram for proper placement. Feed ribbon cable with the "power jack" and sensors into metal side post. Attach power jack into hole on side post. Attach display panel to unit with self-tapping screws.

### **STEP 3- MARK, DRILL AND ATTACH TOP RAIL**

Mark and drill a 31/64 hole for the reset switch ½ inch from the left end of top rail (end with pre-drilled hole for voltage regulator.) Temporarily place top rail in unit with pre-drilled holes close to voltage regulator. Mark mounting holes on top rail. Remove top rail and drill mounting holes in top rail using 3/32 bit. Anchor voltage regulator and reset switch. Attach top rail with self-tapping screws. (HINT: use soap on threads of screws.)

### **STEP 4- MARK, DRILL AND ATTACH BOTTOM RAIL**

(If you purchased the "Quick Mount" option, disregard this step and refer to the "Beta-Craft Quick Mount Instructions Page")

On bottom rail, mark off ¾" from left side. From that point, mark and drill holes for sensors using same measurements of centers of lanes of your track using 3/16 bit. Mark and drill 2 timer mounting holes between outer sensors using ¼" bit. Press (hammer) threaded inserts into these holes through the bottom side of the rail. Press grommets into sensor holes. Place bottom rail between ends of side posts making sure sensor holes measure same as centers of lanes on track. Drill a hole through both side post and bottom rail using 9/64 bit. Secure with 6-32 round head screws and nuts. Push sensors into grommets. Glue wire and sensors in place. Test unit. (It does not need to be attached to track to do this.)

### **STEP 5- DECORATE**

"Cut & paste" the *Fast Track* decals to the front and back panels of your timer for a professional look (see brochure).

### **How to install your *FAST TRACK* single digit sequence of finish display timer (model P2 or P2XL)**

Enclosed you will find the Fast Track finish line and AC adapter (and any optional equipment ordered). The Fast Track finish line contains all the electronics, sensors and displays for the Fast Track system. To install the Fast Track finish line to your track, mark the finish line on your track with a pencil. Now mark the midpoint of each lane where it crosses the finish line. This should be the same spacing as the sensors in the bottom rail of your Fast Track timer and was manufactured according to the measurements provided on the order form. If the spacing is not the same call me at (859)384-3571. If the spacing looks correct then drill a hole in the center of each lane with a 3/16 drill bit. Measure the distance from the mounting screws on the Fast Track timer to the closest sensor. Mark the spots between lanes on your track where the mounting screws go and drill them with a 3/16 drill bit. These mounting holes should be countersunk with a 1/4 inch bit so that the heads of the mounting screws are flush with the surface of the track. Once these holes are drilled you are ready to mount the Fast Track finish line to your track. Remove the screw in the bottom corner of the finish line opposite the power jack. With this screw removed the finish line can now hinge open. (If you remove the wrong screw it can't be opened due to the wires running to the sensors) Remove and save the 2 mounting screws. Now with the Fast Track finish line open, run the bottom rail under the track. Close the finish line and replace the bolt. Check for proper alignment of all of the holes in the track. If a hole in the track does not match that of the sensors in the rail or the mounting holes you will have to ream out the holes in the track that do not match. Once you have good hole alignment, make sure the sensors are located at least 1/4" below the surface of the track. (If the track is too thin add a board between the bottom of the track and the timer sensors to achieve the proper thickness.) Now insert the two mounting screws in the countersunk holes through the top of the track and into the threaded holes in the bottom rail. Once the finish line is secured to the track you can connect the AC adapter (or optional battery pack if ordered). Plug it in and you are ready to run.

### **How to operate the *FAST TRACK* timer**

Press and hold the reset button located on the top of the timer to start the test mode. All displays should be zeros. If a display is showing a seven, then something is blocking it's sensor. If one or more displays show a seven, then skip this section and read "If you have problems" below. If all zeros are displayed, then you are ready to race. Put the cars in their starting position. Press and release the reset switch. Release the starting gate. Watch as the cars race toward the finish line. When the first car crosses the finish line the display over that lane will display a "1". As the second car crosses, its display will show a "2" and so on for each lane of your track. If two cars cross the finish line together within less than 0.0002 of a second, a tie will be displayed.

### **If you have problems**

1) If a display shows a seven with the reset button depressed then the infrared sensor in the bottom rail is not receiving the signal from the infrared transmitter in the top of the finish line banner. Check the holes in the track. Make sure nothing is blocking them. Can you see the infrared sensors through the holes in the track?

Check the infrared transmitters in the top of the finish line banner. They should be positioned directly over the sensors, if not, they can be gently bent to give a more perfect alignment with the sensors below. You can also check the infrared transmitters with Radio Shack's infrared detector Cat. No. 276-099. (costs about \$8.00). This detector works only at a very close range, 1-2 inches.

2) If nothing is working. Then unplug the power adapter from the side post of the finish line banner. Now reconnect the power adapter. Make sure the outlet is functional and plug it in. Put your hands over all the holes in the finish line. If the display lights now work then there may be a problem in the reset button.

3) If you still have a problem give me a call, Stuart Ferguson, at (859)384-3571 or (859)384-1547. We offer a full 2 year warranty. If it hasn't been abused we'll fix or replace it free, less shipping, or refund the purchase price if we are unable to meet your satisfaction.