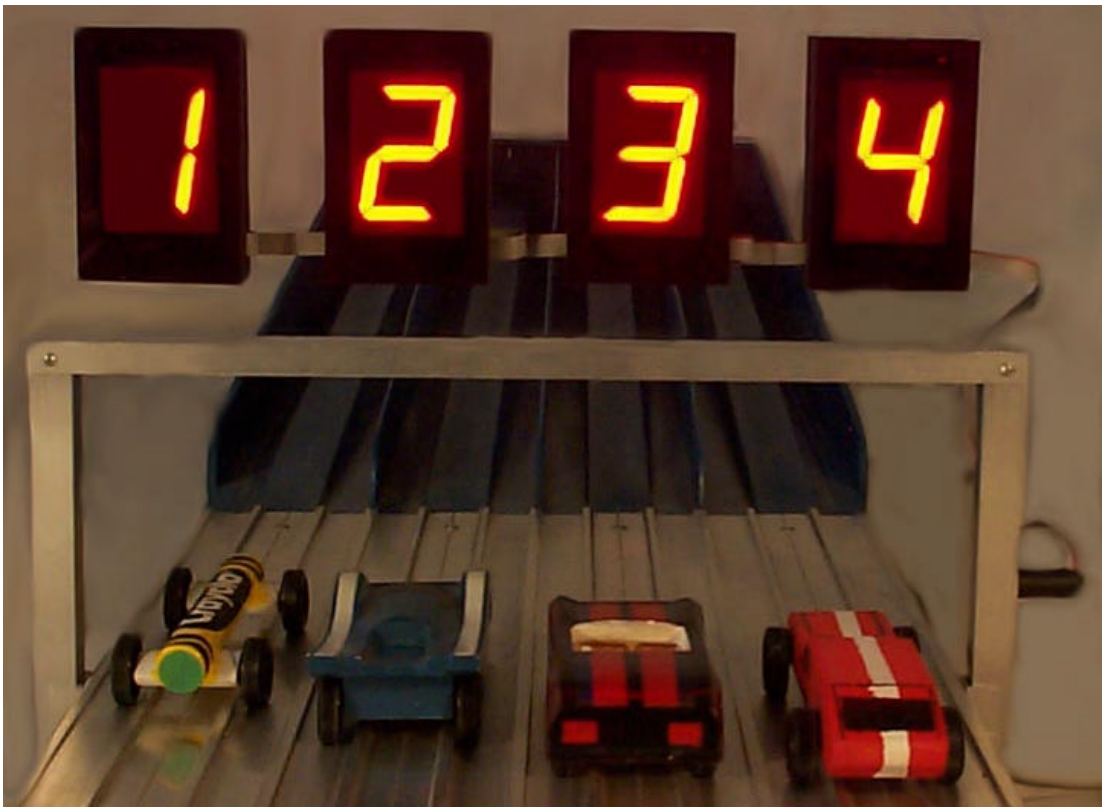
SmartLine

INSTALLATION MANUAL

VERSION 2.0



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Installing the Finish Line

We thank you for purchasing the eTekGadget SmartLine Finish Line system. This manual will assist you with the installation of the SmartLine Finish Line system. Use this procedure if you already have a track and need to drill the holes and mount the timer yourself.

BestTrack and Piantedosi track manufacturers will pre-drill the track for our timer. We will supply the mounting method for these tracks so the installation is simplified. It is highly recommended that you ask the manufacturer to pre-drill the holes if you are buying a new track.

A Quick Overview

The installation of the sensors in your track involves drilling a ¼inch hole in the middle of each lane about one foot from the end of the track.

For tracks with side rails, a 'C' shaped bracket can be installed on the sides to hold the finish line in place.
A "foot" for the finish line is available for tracks that do not have side rails where the bracket can be mounted.
A mounting bar may be used for tracks such as Piantedosi's Freedom Track.

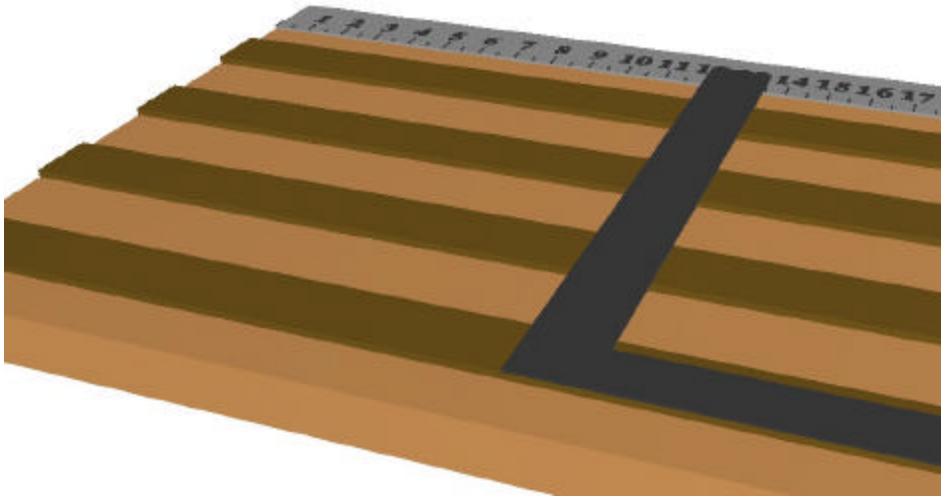
The mounting method desired or the track manufacturer must be specified when ordering.

Tools needed

- A ¼inch high-speed drill bit. For a wooden track a Forstner type drill bit will drill a cleaner edged hole.
- A small Phillips head screwdriver.
- A square to mark a line across the track.
- Two straight strips of wood or metal long enough to span the width of the track.
- Four clamps to temporarily hold the strips on the track.
- A small rectangle of sheet metal or metal strip about 1 inch wide and 2 inches long to be used as a drill guide.

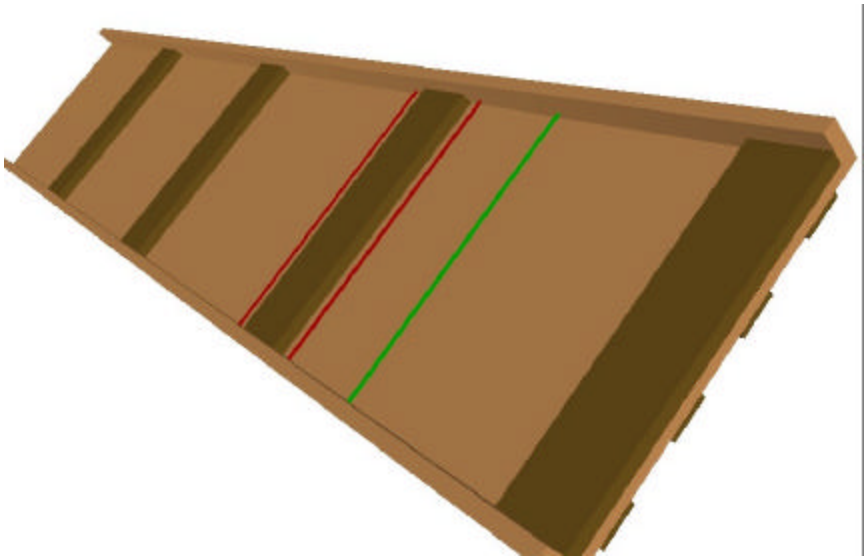
Choose a Location

Choose a location for the finish line. About one foot from the end of the last track section is a good location for the finish line. You will need about 3/8 (.375) inch of clearance



under the track for the sensors. This is an issue only for tracks which lay flat on the floor.

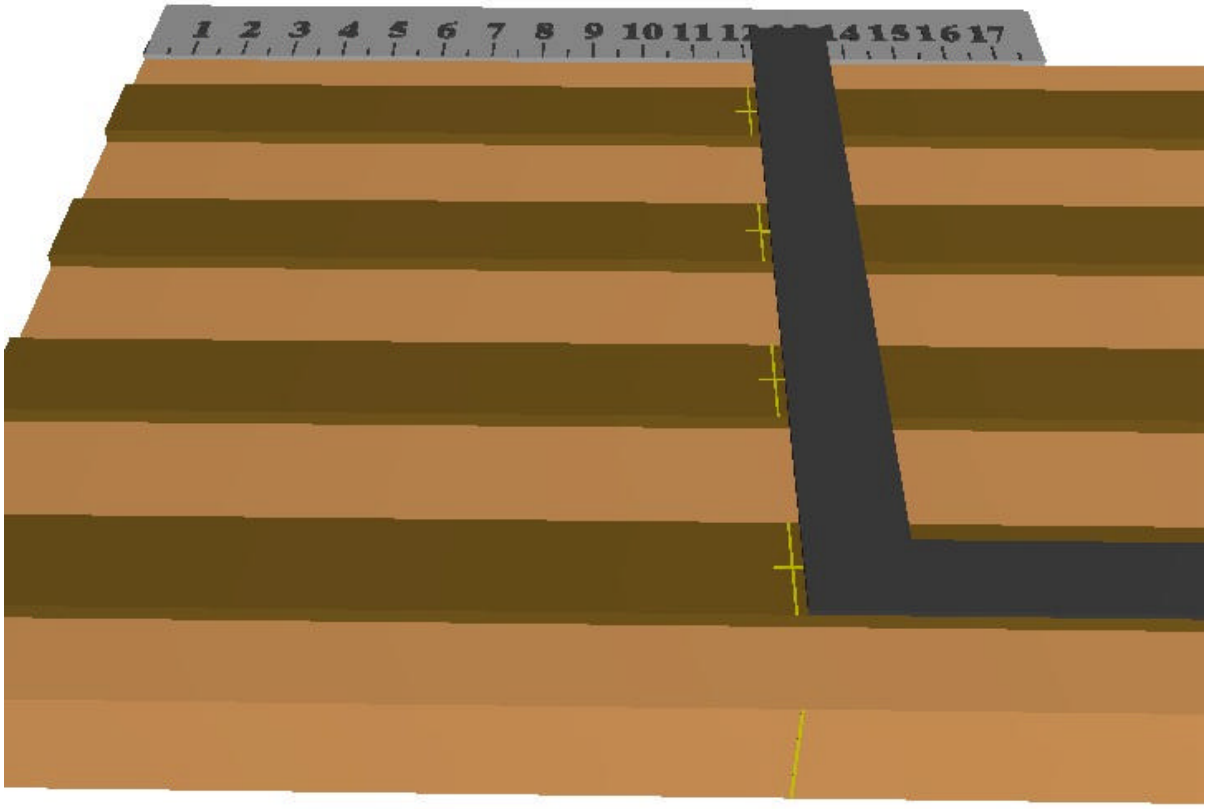
Check the underside of the track to make sure the location is clear. The picture shows the underside of a track section with bad locations in red and a good location in green.



The photo sensors and their associated wiring will be located on the underside of the track. Allow about two inches of clearance on either side of the finish line for the wiring.

Mark the Line

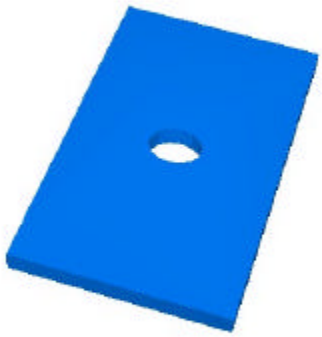
Using the square mark a line across the track where the finish line will be.
Mark the center of each lane on the raised center of each lane. The center marks need to be within 1/16 inch of the center, so you don't have to be extremely accurate. However, make the marks as close to center as possible. The reason for this is that the front tip of the cars will trigger the sensor and it is best to have it as close to the center as possible.



If your track has side rails, extend the line down on both side rails. This mark will be used to mount the 'C' bracket on the side of the track.

Make the Drill Guide

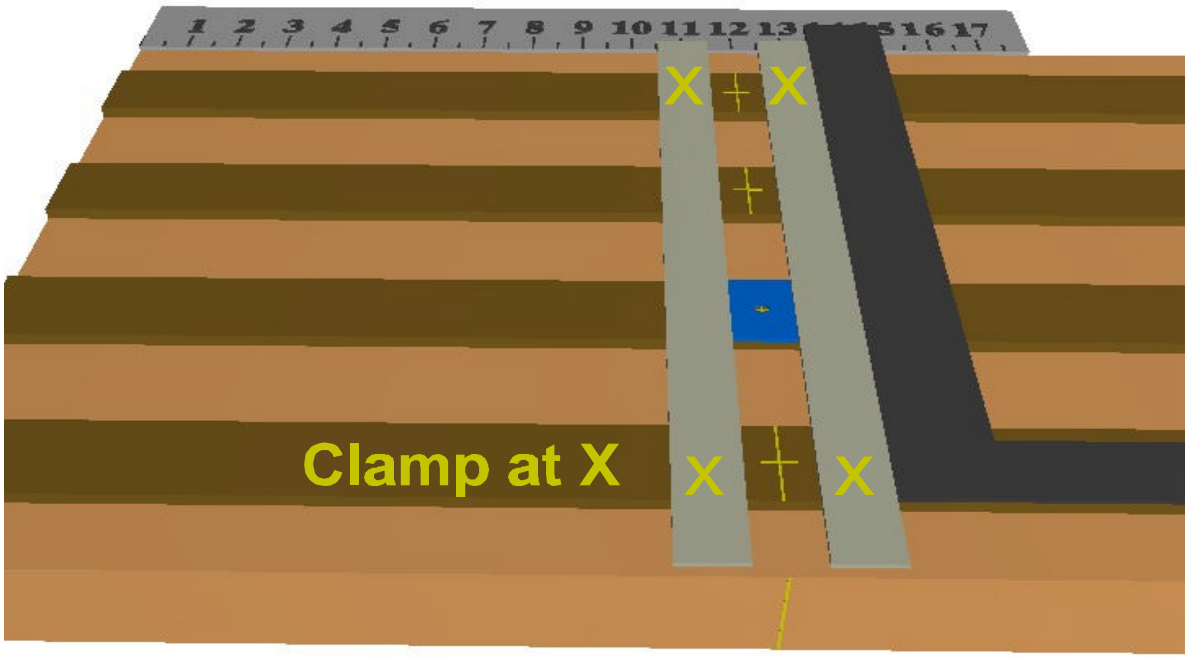
Mark the center of the metal plate and drill a ¼inch hole.



This plate will serve as your drill guide for drilling the sensor holes in the track.

Clamp strips in place

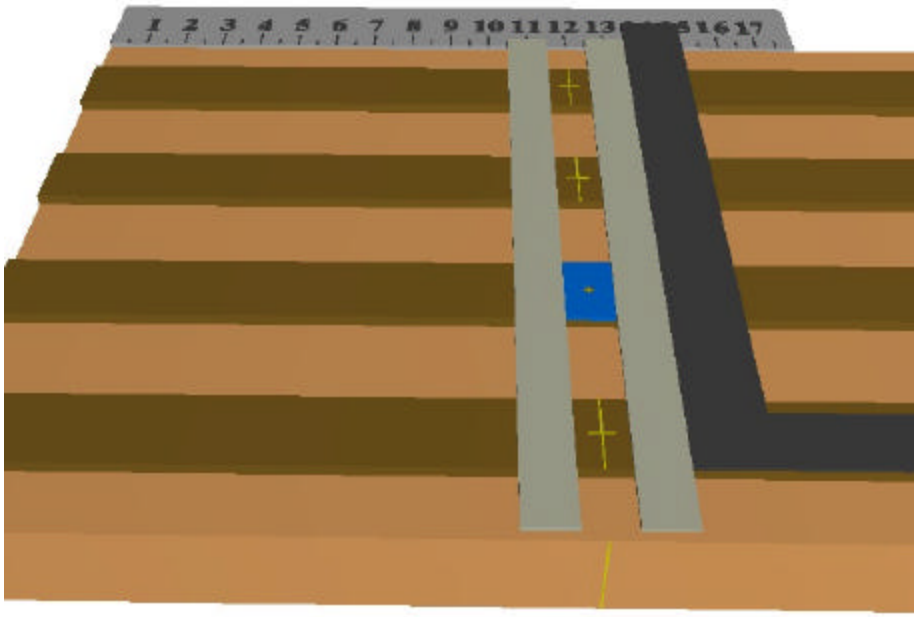
Clamp the long wood or metal strips in place while sighting the centers of the hole with the drill guide plate. It is very **important** to use the square to make sure that the holes are all parallel to the side of the track. Position the strips as square to the track as possible.



The advantage to using this method is that the drill guide will locate each lane's hole accurately along the track length.

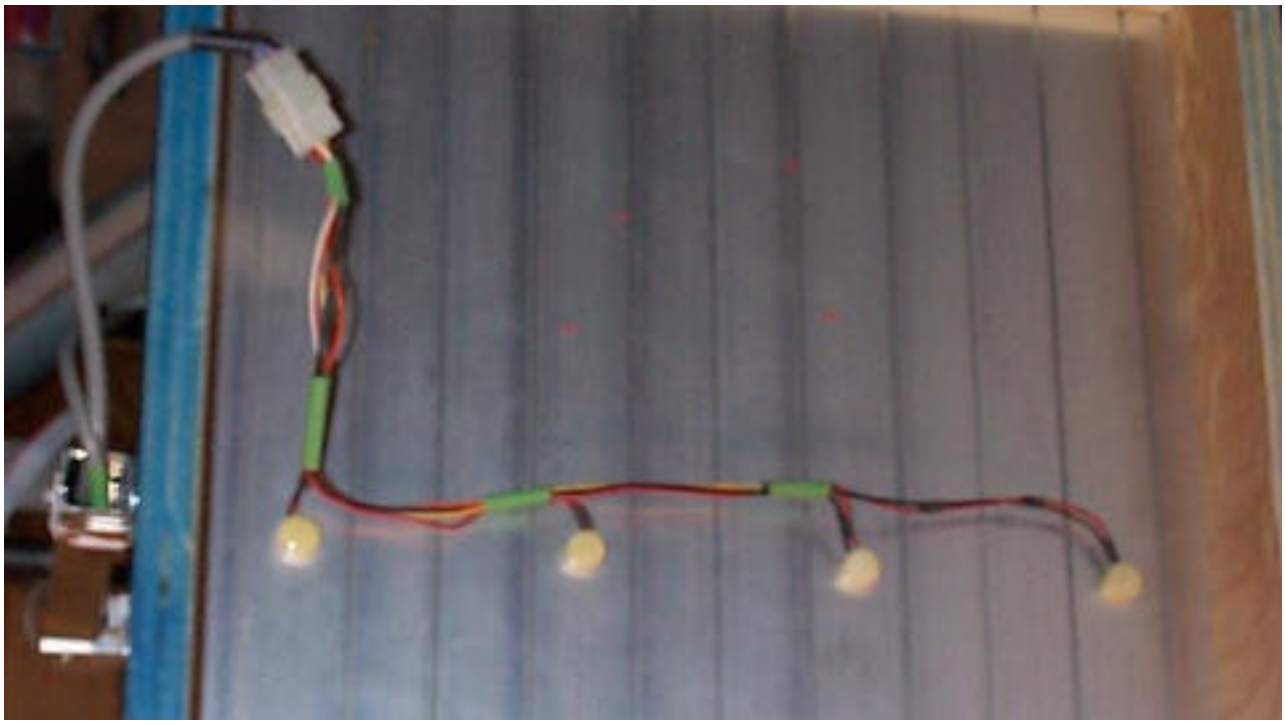
Drill the Holes

Using the drill guide placed between the clamped down strips, drill the sensor holes with a ¼inch drill. Hold the drill guide **firmly** in place while drilling the hole. The clamped strips will prevent it from moving along the length of the track, keeping the holes in perfect line. Do not remove the clamps until you have drilled all of the holes. The picture shows the drill guide in blue.



Install the Sensors

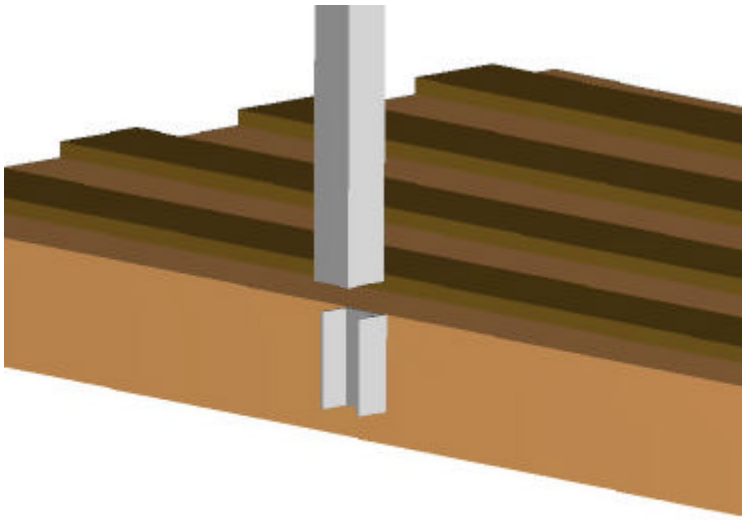
The sensors are installed from the bottom of the track.



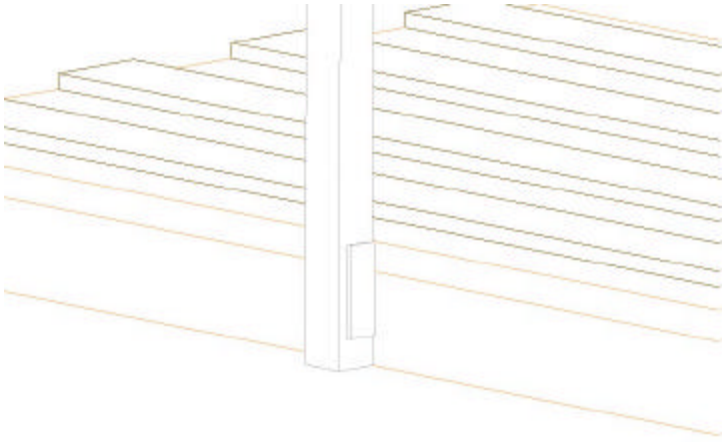
If your track is wood, they will probably slide into the ¼inch holes nicely. If your track is aluminum, depending on the exact diameter of the drill you used, the fit might be a little tight. If a sensor gets stuck, **do not try to pull it out from the back**. Push it out from the top with the back of a ¼or 3/16 inch drill bit. If the fit is too tight you can file or ream the hole to be a little larger. Don't file much. File a little and try the sensor again.

Install the Side Brackets

The side “C” Brackets are installed by lining up the center of the bracket with the line that was drawn in alignment with the sensors and drilling the mounting screw holes with the ¼inch bit.



After the side “C” Bracket is installed simply slide the SmartLine Finish Line leg into each slot.



If you use the foot or the bar mounting method, the timer will be placed over the holes in the track. It is not difficult to line them up.

Connections

The SmartLine lends itself to dynamic racing, since the on-board co-processor can complete timing calculations with results being passed to a computer.

SmartLine system consists of:

1- SmartLine system unit with 1 – 8 displays.
2- AC Power Adapter.
3- RS-232 cable.
4- Reset/Start gate switch included on 35’ or 50’ cable

Follow these easy steps to complete the installation:

1. Plug the displays connector into the socket on the leg of the timer labeled Display on the chart below. This socket is keyed so that it can only be inserted in one direction. Note: The displays are stuck onto the Plexiglas with Velcro pads. This allows the displays to be removed and attached to the Space Derby (or any other) finish line frame without having to buy another set of displays.
2. Plug the Start switch/Reset button cable into the leg of the timer in the socket labeled Start/Reset.
3. Plug the 9-pin RS-232 interface cable into the SmartLine Finish Line and a COM port on your PC. You may also use a USB to RS232 cable if needed.
4. Plug the power cable into the socket labeled Power in the leg of the SmartLine Finish Line Timer system unit.
5. Using the AC adapter, plug the SmartLine Finish Line into a source of power.