

### K2 KIT ASSEMBLY INSTRUCTIONS

#### with Remote Start Switch

(If you have ordered the Quick Mount or have a Best Track, the contents of your kit will differ from this list. Please refer to the Mounting instruction sheet for a list mounting items.)

#### Kit Contents:

- 1 clear (or gray tinted) lexan **display panel** - cut to fit your track
- 1 ABS black lexan **back panel** - cut to fit your track
- 2 aluminum square tubing - **side posts**
- 1 **top rail** - tapped for voltage regulator
- \*1 **bottom rail** - 1/2" shorter than top rail (If you have the Quick Mount option, this part and those marked "\*" will not be included in this kit).
- 1 string of **circuit boards**
- 1 pkg. of **hardware** containing: 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 press nuts; 12 self-tapping screws, & \*1 black grommet per lane
- 3 various size **decals**
- 1 35 ft. wire with **reset switch** (with Laser gate option, we don't include the remote start switch).
- 1 **AC adapter**
- 1 computerized paper **template**
- 1 CD with Fast Track Utility Software, and a Computer Interface Cable. (These are included in case you want to upgrade your timer via your computer serial port. See the "Computer Data Option" in this instruction packet for the computer/timer options available.)

#### Tools Needed for Assembly:

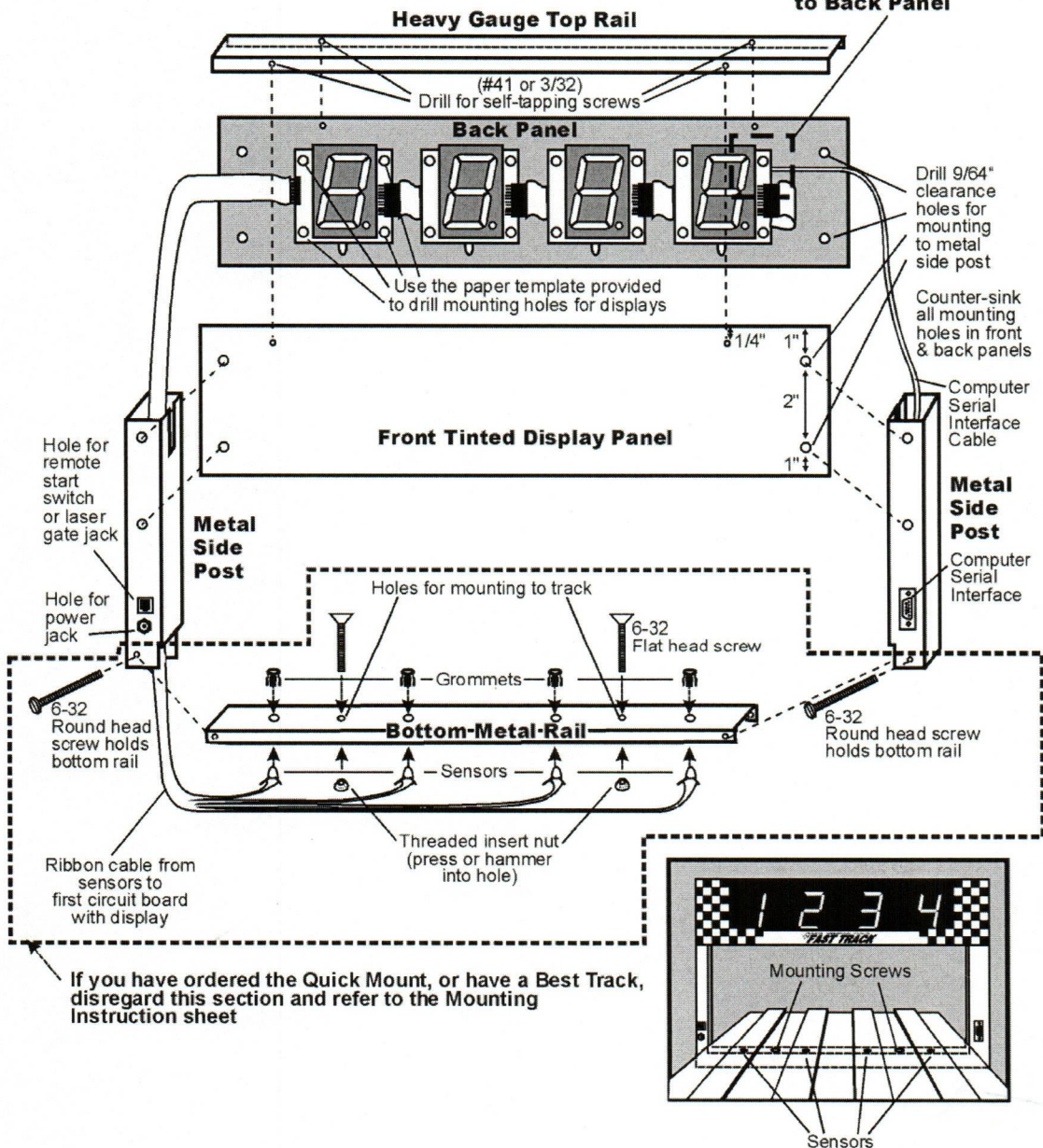
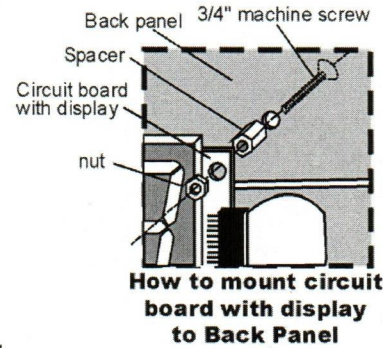
- drill and drill bits; 1/4" countersink
- Philips screwdriver
- Tape
- punch
- hot glue gun or silicon glue (If you use silicon glue, it will have to cure for 24 hours before you can use your timer).

#### **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.
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 remote start switch and keeping it depressed. Cover each sensor. Each board will display a dash "-". This is the correct reading for test mode. If you did not get this reading, please call us for help at: 1-888-693-3729 (office) or (859)380-3882 (cell).

\*If you have ordered the Quick Mount option, these items will not be included in this kit.

## K2 Diagram (With Remote Start Switch)



## **K2 KIT ASSEMBLY:**

### **with Remote Reset Switch**

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

Tape template to smooth side of black back panel. Also tape display panel to back panel. Center punch where the template indicates a hole should be drilled. 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. Connect the brown plug coming from the serial side post to the brown connector on the back side of the circuit board making sure teeth align properly. Attach metal side posts with self-tapping screws to back panel. See diagram for proper placement. Feed ribbon cable with the jacks and sensors into metal side post. Attach power jack and remote start switch jack into holes on side post.

Attach display panel to unit with self-tapping screws.

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

Temporarily place top rail in unit. Mark mounting holes on top rail and punch. Remove top rail and drill mounting holes in top rail using 3/32 bit. 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" or have a Best Track, disregard this step and refer to the "Mounting Instructions" page)

On bottom rail, mark off 3/4" 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 1/4" 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 with hot glue or silicon glue (if you use silicon glue, it will have to cure for 24 hours before you can use your timer).

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 drawing of finished timer on the diagram).

## Micro Wizard Instructions

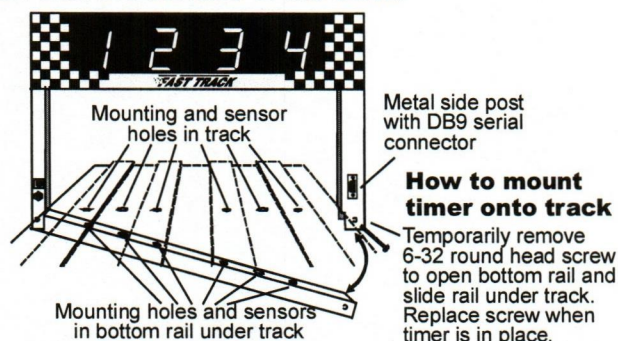
### How to install **FAST TRACK** K2 sequence of finish display timer with remote start switch

Enclosed you will find the Fast Track finish line, AC adapter, remote start switch, CD with the Fast Track utility program and a computer interface cable\* (plus any optional equipment ordered). The Fast Track finish line contains all the electronics, sensors and displays for the Fast Track system.

(If you ordered the Quick Mount or have a Best Track, disregard this section and refer to the Mounting Instruction sheet for installing your timer).

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 1-888-693-3729 (office) or (859)380-3882 (cell).

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.

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.

### Connecting the start switch and AC adapter

Connect the start switch to your track so that the car release lever on your track closes the start switch as the cars wait at the starting line (see illustration on next page). When the cars are released, the switch should open. Run the start switch cable under the track all the way back to the finish line. Plug the start switch connector into the small socket in the side post of the timer. Once the finish line is secured to the track, you can connect the AC adapter (or optional battery pack if ordered) to the large socket in the side post. Plug it in and you are ready to run.

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

Close the starting gate so that the start switch is pushed in. All displays should be zeros. If a display is showing a dash, then something is blocking it's sensor. If one or more displays show a dash, then skip this section and read "If you have problems" below. If all zeros are displayed without a decimal point, then you are ready to race. (The zeros will appear with a decimal point

\*The computer cable and utility software CD are included for the computer data option, and for use when upgrading your timer. See "Computer Data Option" in this instruction packet.

**NOTE:** In order to run Race Management Software with this timer, it must have the Computer Serial Interface (PS) option.

when the timer is held in reset mode.)

Put the cars in their starting position. Press and release the remote start switch. Release the starting gate. 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. Ties are very rare.

### If you have problems

1) If a display shows a dash 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.

If nothing is working: 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 remote reset switch.

If you still have a problem, give me a call, Stuart Ferguson, at 1-888-693-3729 (office) or (859)380-3882 (cell). We offer a full 2 year warranty. If it hasn't been abused we'll fix or replace it free, including ground shipping, or refund the purchase price if we are unable to meet your satisfaction.

### If you are trying to use the timer in direct sunlight

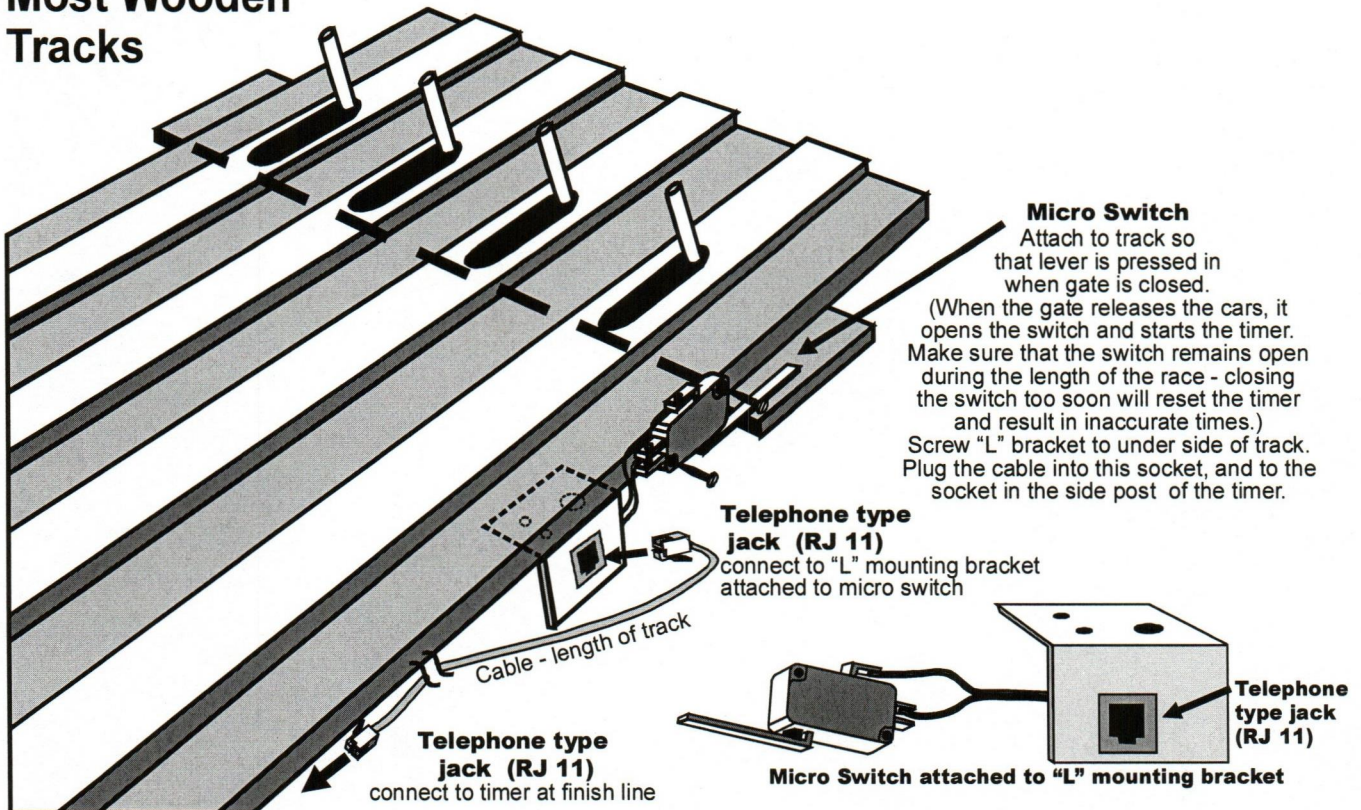
You may have trouble running our timer in direct sunlight, although it may run in shade. Here are several ways to improve the performance in sunlight:

- Make sure no light is getting to the back of the sensors. Cover the back of the sensors with black tape.
- Use a small hole in the track. 1/8 inch hole should work fine.
- Make the interior of the hole flat black, or other dark color, so indirect light is not reflected down to the sensor.
- Make the sensor hole deep. It should be at least 1/2 inch deep for best results.

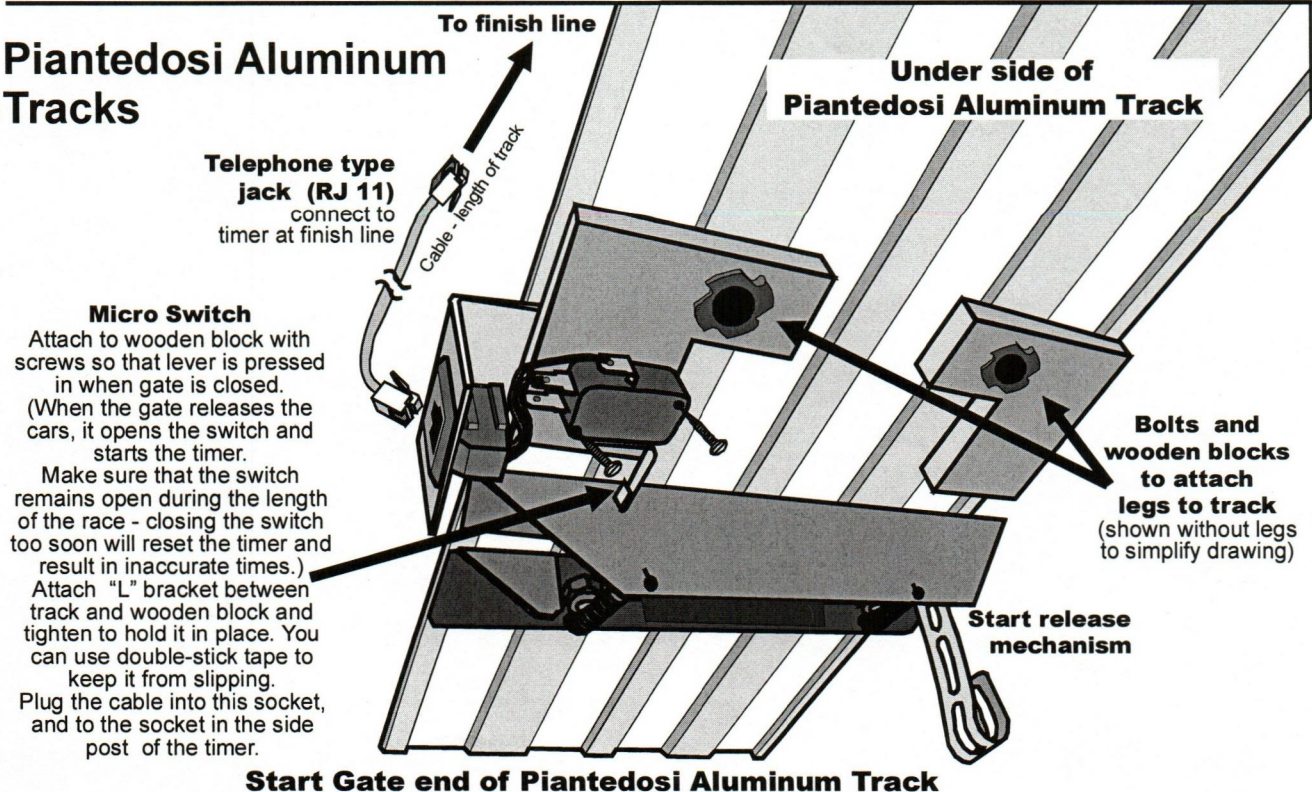
We have used J-B Weld, or J-B Kwik epoxy to fix holes that were too big. You can fill the big hole with the epoxy, then redrill them to a smaller size. The new hole is a flat gray color that works well.

## Remote Start Switch Diagram

### Most Wooden Tracks



### Piantedosi Aluminum Tracks



## Micro Wizard Instructions

### Computer Data Option

Your K2 timer is fully duplexed and software upgradable via your computer com port.

**NOTE:** In order to run Race Management Software with this timer, it must have the Computer Serial Interface (PS) option.

#### Software Options (visible in the "Features" box)

- |          |                    |  |
|----------|--------------------|--|
| <b>S</b> | - Serial Race Data | Sends the actual time race data from the Micro Wizard timer to the computer. This is the raw data for any race management software.  |
| <b>M</b> | - Mask Lanes       | This command will prevent data from being sent from unused lanes – useful for eliminator races or trials.  |
| <b>R</b> | - Reverse Lanes    | This command reverses the data stream sent from our timer. Some race management software will require the data sent from the timer in reverse lane order. This can also be used with our remote display to make a double-faced timer at the end of your track. |
| <b>E</b> | - Eliminator       | Sets timer to score only a first and second place, for lane pairs. Makes 3 races on a 6-lane track or 2 races on a 4-lane track.   |
| <b>F</b> | - Force Print      | Forces the timer to end the race and send the results of all lanes that have finished. This is a great feature for when a car crashes, burns and falls off the track.  |
| <b>L</b> | - Reset Laser      | When the race is over, you can actually reset the laser gate from your computer! Does nothing if you do not have a laser gate.   |
| <b>C</b> | - Count Down Clock | Enter the minutes from which the timer will count down. Click "set countdown time" button and watch it go! Nice feature to show the intermission length between race events.   |
| <b>U</b> | - Unused           | For future use.  |

The screenshot shows the 'Fast Track Setup' window with the following callouts:

- Choose the number of lanes your timer has.** (Points to 'Number of Lanes' with radio buttons 1-6, where 6 is selected.)
- Choose the com port for your timer's input.** (Points to 'Comm Port' with radio buttons 1-4, where 1 is selected.)
- Redraws the screen** (Points to the 'Refresh' button.)
- Option R Above** (Points to the 'Reverse Lane Order' button.)
- Option E Above** (Points to the 'Eliminator' radio button under 'Mode'.)
- Option L Above** (Points to the 'Reset Laser' button.)
- Option C Above** (Points to the 'Set Countdown Timer' button.)
- This converts the race data to the old timer format. (to be used with older race manager software programs)** (Points to the 'Old (only 1st place marked)' radio button under 'Data Format'.)
- Option F Above** (Points to the 'Force Print' button.)
- This feature is enabled only with a password. The letters represent the options you have. ("O" means you do not have that option).** (Points to the 'Features' text field containing 'UCLFERMS'.)
- TO UPGRADE OPTIONS:** Call Micro Wizard for a code and type it in this text field (Points to the 'Set Feature' button.)

Other visible elements in the window include: 'About Fast Track Utility', 'Fast Track Setup', 'Rom Loader', 'Lanes In Use' checkboxes (all checked), 'Restore Lane Order' button, 'Serial Number' field (1010), and 'Set Countdown Time' field (0).

## Commands that can be given through the serial port using hyper terminal

### Commands:

- BL** **Boot load command**  
Reloads the firmware in your timer – requires a Micro Wizard file with a hex extension.
- M(A-G)** **Mask unused lanes**  
**MA** would mask out lane A. **MB** would mask out lane B and so on. **MG** would enable all lanes by clearing the mask.
- RL (0-6\*)** **Reverse lane if 0 is set to normal** \* Number of Lanes of your track  
This command reverses the data stream sent from our timer to your computer or remote time display – ie- Lane ABC becomes CBA on your computer.
- RE** **Reset Eliminator mode**  
If the timer is in the Eliminator mode, it will reset back to the standard mode of racing.
- RF** **Return Features in binary**  
This command will return 8 binary bits like 0011 0111. A 1 means the option is enabled (see next page for definition):  
1111 1111 all feature bits set. 0000 0000 all feature bits clear
- RS** **Return Serial Number**
- RA** **Reset Lane – Force Results**  
Force the timer to end the race and send the results of all lanes that have finished. This is great feature for when a car crashes, burns and falls off the track.
- LR** **Reset Laser gate**  
When the race is over, the computer can reset the laser gate. This can work like the RA command, but does nothing if the customer does not have a Laser Gate.
- LE** **Set timer for Eliminator mode**  
Eliminator will score only a first and second place, for lane pairs. Makes 3 races on a 6 lane tracks or 2 races on a 4 lane track.
- LF** **Load Feature**  
This feature is enabled only with a password – guessing a serial number will give you an error and may disable features in your timer.
- LX (A-O)** **Change Time or Disable Automatic Reset**  
In the command line, each of the letters of the alphabet A through O will add 2 seconds to the reset time. So to change the automatic reset time to 6 seconds enter: LXC, and to change the automatic reset time to 25 seconds enter: LXO  
To disable the automatic reset enter: LXP
- N0** **Old Format**  
Converts the race time data to the old timer format:  
A=3.001! B=3.002 C=3.003 D=3.004 E=3.005 F=3.006 <LF> <CR>
- N1** **New Format**  
Converts the race time data to the new timer format:  
A=3.001! B=3.002" C=3.003# D=3.004\$ E=3.005% F=3.006& <CR> <LF>
- RM** **Read Mode**  
Shows the current modes set for the timer:  
6 000011 0 0 0  
Number of lanes used in reverse order mode - 6  
Lanes E and F are masked - 000011  
Lanes are not reversed - 0  
Not in eliminator mode - 0  
Old data format - 0
- PCXX** **Count Down Timer** XX=00-99  
Enter the minutes you want the timer to count down from

### Race Data Finish Order Punctuation:

21h	-	!	-	First Place
22h	-	"	-	Second Place
23h	-	#	-	3rd
24h	-	\$	-	4th
25h	-	%	-	5th
26h	-	&	-	6th

## Micro Wizard Instructions

### To change Options or view times from your race in Hyperterminal:

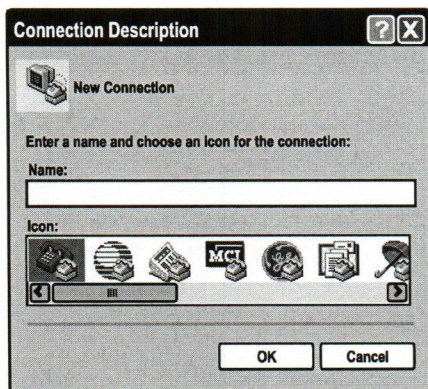
- Plug your timer into a power source
- Using the computer serial cable, plug your timer into the com port on your computer

On your Computer desktop – go to **Programs**

- choose **accessories**
- choose **communications**
- choose **hyperterminal** (the one with the phone icon)

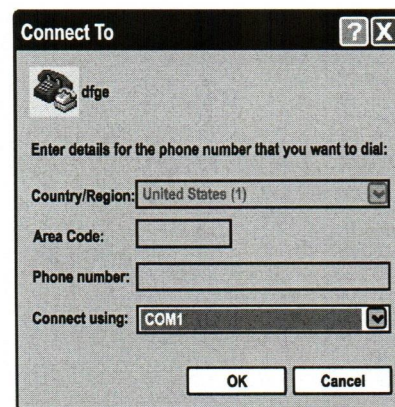
1. This window will come up:

- put a name on it
- click **OK**



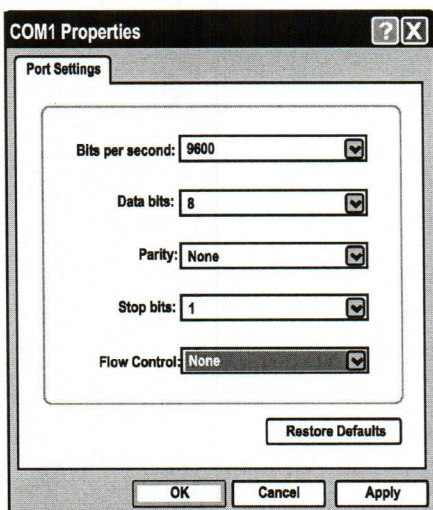
2. A New Window will come up:

- Click the down arrow on the "Connect using" box and choose the comport that is connected to your timer
- click okay



3. Another New Window will come up:

- Choose the options below
- click okay



4. You should now be able to type commands to the timer through the computer, or, once all the cars have raced and the lanes have finished, the times should automatically display.

To enter commands - type RV and hit enter. The version number of the timer should display on your computer screen. If it does, you are ready to enter the option commands of your choice. See the "Commands using Hyperterminal" sheet.

If you don't see the version number, you probably have a comport conflict. See "Frequently Asked Questions" on our web site for a list of ways to trouble shoot the problem.