

# **Final Round III**

## **Introduction**

Congratulations, you are now the owner of the most sophisticated and accurate reaction time training device available. This is the third generation of the FINAL ROUND unit, which was introduced in 1991. A number of improvements and enhancements have been made to this new design while retaining the best features that made the FINAL ROUND so popular.

The FINAL ROUND III was designed and built by real racers who understand the importance of having features that both best simulate the tree you race with and is easy to use. Training properly with this system will lead to better and more consistent reactions times.

You can dial in your race vehicles reaction time (known as ROLL-OUT) to simulate the exact conditions as on the track. The built in delay box can further simulate your exact situation on the starting line.

The latest changes to the FINAL ROUND III are the addition of a Tap Up or Down feature. While training in CROSS OVER mode, the addition of Push-button modes allowing two hits at the tree using either one button twice or two separate buttons. Another change has been made to break the setup of the FINAL ROUND III into two modes, Driver and Tree. When the mode LED's are green all of the driver setting are displayed. When the mode LED's are red, all of the tree settings are displayed.

A delay box calibration mode allows you to check the accuracy of your vehicles on board delay box. You will now know exactly what you are really working with. It will reveal any errors in the delay box and let you know its consistency. The value of this information is worth the cost of the FINAL ROUND IV unit alone.

## **Specifications:**

Power Requirements-

12 VDC .800 Amp

Microprocessor Controlled

Tree Modes-

Full Tree and Pro Tree

0.500 sec and 0.400 sec

Single and Dual user

## **Features:**

- Tree Mode memory
- Roll Out memory
- Displays WIN record for each lane
- Statistics mode featuring:
  - Average reaction time
  - Quickest reaction time
  - Slowest reaction time
  - Best reaction time
  - Number of red lights
- Three starting speed levels
- Crossover mode with one or two hits using one or two buttons
- Tap up or down
- Realistic pre stage / stage sequence
- Dial in entry capability
- Random autostart
- Test mode for external Delay box (in or out of the car)
- Incandescent lamps on tree
- Four tree brightness settings
- High impact, rugged plastic housing
- Auto shut off

## **QUICK OVERVIEW TO HELP YOU GET STARTED**

(we highly recommended you read this first)

Below is an overview to help you understand the basics of the Final Round IV. The manual, which follows, will give you much more detailed information on how each individual feature works. While reading, we suggest you have the Final Round IV nearby.

### **CONTROLS & INDICATORS**

A mode button is used to select the mode of operation. Each time the mode button is pressed, the mode will advance to the next mode as indicated by the mode lights. The green text above the mode lights corresponds to when the mode light is green, while the red text below the mode lights corresponds to when the mode light is red. Take a minute to scroll through the modes to see how this works.

### **MODES**

There are twelve different modes shown directly above the “MODE” button on the Final Round III. The top six modes (shown in green) are what we refer to as your Driver Settings. By going to these modes you can view or make quick adjustments to any of the driver settings. The bottom six modes (shown in red) are what we refer to as your Tree Settings. To get to the tree settings you must go through the LED mode lights until the mode light(s) turn from green to red.

#### **THE SIX GREEN LED MODE LIGHTS (DRIVER MODES):**

- 1) DELAY- This is used to simulate an actual delay box in your race vehicle.
- 2) STAT (statistics)- displays the average RT for each lane as well as other important stats.
- 3) DIAL IN- allows you to enter the same or different dial ins in each lane.
- 4) ROLL OUT- Allows you to enter a rollout time that suits you and your vehicle.
- 5) FIXED- You can enter a fixed (or set) reaction time for you to train against.
- 6) SETUP- While SETUP is “on” you have access to setup the six tree modes, while SETUP is “off” you do not have access to setup the six tree modes (six tree modes listed below).

#### **THE SIX RED LED MODE LIGHTS (TREE MODES):**

- 1) TREE – This is where you select the tree type (full/ pro) and tree speed (.400 or .500). You also select single or dual users here.
- 2) SLD (starting line difficulty)- Also known at the racetrack as the autostart, this allows you to set different difficulty levels of the autostart.
- 3) CROSS (Crossover)- Allows you to turn the crossover mode on or off.
- 4) BRT (Brightness)- Allows you to set different levels of brightness of the bulbs. Dimming the bulbs can more simulate sunlight racing.
- 5) PB (Push-Button)- Here you can set the push-button mode (either 1 or 2) and the tap amount.
- 6) TEST- Is a precision delay box calibration tool to test your vehicles delay box.

All of the Driver and Tree modes are explained in much more detail throughout the manual.

+/- **BUTTONS** - Each lane has its own + / - buttons. These are used to increase and decrease the values for their corresponding scoreboards.

**RUN MODE** - In this mode all mode indicator lights are off, which tells you that the unit is ready to stage and race. You can enter directly into run mode by pressing the trigger switches in the lane you are set up to race in.

# START OF FINAL ROUND III MANUAL

## GETTING READY

### **The Stand**

The Final Round III comes with a stand which allows you to stabilize the unit and tilt the unit slightly for easy viewing. To install the stand, simply place the stand in the two bottom holes on the backside of the unit.

### **Turning on the Final Round III/ Trigger Switches**

Attach the power pack or the optional cigarette lighter adapter to the unit and insert the trigger plugs with a firm push.

You must push firmly until the plug snaps for proper operation.

### **SET UP**

Before using your unit for the first time you may want to enter the Set Up menus and configure the Tree modes. This is done by repeatedly pressing the mode button until the green mode LED is positioned under the text Set Up. The top right screen will display OFF, pressing the right + button will change the setting to ON. While Set Up mode is turned on, you will have access to the Tree modes. Repeatedly pressing the mode button will now move the mode LED through the driver modes and the tree modes. Once all of the tree settings are set you may want to take a moment and set up the drivers setting. Turn to page 12 to read more on turning Set up on or off.

## Start of Tree Modes

### 1) TREE

This is where you select the tree type (full/ pro) and tree speed (.400 or .500). You also select single or dual users here. Change to the Tree Mode by pressing the mode button until the red Tree indicator LED is on. In a moment you will see the tree flashing the currently selected mode (either full or pro tree). The tree speed is indicated in the right Score Board display (.400 or .500).

To change the tree type and speed, use the Right Lane +/- switch. Keep using the Right Lane +/- switch until the tree type you want is being displayed. The Score Board display will indicate the tree speed and the tree will flash to indicate the tree type. There are four possible tree types, they are:

Full Tree .500  
Full Tree .400  
Pro Tree .500  
Pro Tree .400

Now use the Left Lane +/- switch to select Single or Dual user modes. Keep using the Left Lane +/- switch until the tree type (shown below as #1, #2, and #3) you want is

being displayed. You can select which lane (and either single or dual user) you want to use. The lane with the lights coming down is the lane you will be using. If the tree is counting down in both lanes, it is set up for dual user. The following are the three Tree Modes. Throughout the instruction manual, the tree modes are referred to as follows.

- # 1. Computer right lane (single user)
- # 2. Computer left lane (single user)
- # 3. Dual user

\*\*\*Please note that the new tree type you have selected will be memorized in the units' microprocessor even when power is disconnected.

### **SINGLE USER MODE**

A special feature of the Final Round III reaction time training systems allows you to train alone, against yourself. See how to set the tree mode to single user in the above Tree Mode section. When you have selected the single user mode, the system will automatically stage up and run in the opposite lane. The unit will initially have a reaction time of .030 over (ie: .430 or .530 depending on tree speed) if the fixed mode setting is equal to zero. After the first run, the unit will run reaction times that equal your average reaction time. This allows you to constantly try to beat yourself. We feel this is this best type of training you can get. If you would rather train against a fixed number, you may do so as follows. Go to the Fixed Mode using the mode button. Then use the right +/- buttons to adjust the reaction time to the fixed time you wish to train against. More on how to set the reaction time you practice against is in the FIXED section on page ten.

#### **Setting Pushbutton modes when in single user mode**

While training in single user mode, you have the option of setting the Push Button Modes depending on how you would like to use the tap button feature. You can read more on the TAP feature on page 8.

#### **PB Mode 1** *(use one button for hit on the tree and other button for tap)*

When in push-button mode 1, the trigger switch for the lane you are in starts your reaction time, while the trigger switch for the lane the computer is in is your tap button.

#### **PB Mode 2** *(use same button for hit at the tree and tap)*

When in push-button mode 2, the trigger switch for the lane you are in starts your reaction time. Any additional hits (on the same button) will be counted as taps.

### **DUAL USER MODE**

Dual user allows you to train against another person. The Final Round III must be in tree mode 3 (dual user) and PB (push-button) mode must be set to 2 for two players to train against each other. To practice, each user will set their delay, which corresponds to the

lane they are running in. While in dual user mode, players can re-hit their pushbutton for a tap.

## **2) SLD (Starting Line Difficulty)**

Three levels of difficulty can be set in the Final Round III. The three levels adjust the speed of the starters reaction to both lanes being staged. This is commonly known as the autostart at the racetrack. Level 3 is the hardest and Level 1 the easiest. Level 2 offers a good mixture of easy and hard. In other words level 1 would be like having a very consistent starter/ or autostart system and level 3 would be like having a super quick and erratic starter/ or autostart system. The most realistic level in most of today's racing is 1.

Set the level you want by using the mode button to change to SLD mode (red LED light on SLD). Now use the right + switch to set the level. The level you set is memorized.

## **3) CROSS (Crossover Mode)**

A crossover-training mode is available allowing a single user in the right lane to leave off the other lanes tree. To turn on or off crossover mode, use the mode button to get to CROSS mode. The right scoreboard will show whether crossover is ON or OFF. To change the setting press and release the right + button, the scoreboard will now display the new setting, either "on" or "off".

While crossing over, you can either set the Final Round IV to select random dial-ins each run or you can set your own dial-ins to train with. Here is how it works:

A) If you set the your (right lane) dial, greater than or equal to the opponents (left lane) dial – the Final Round IV will automatically select and display random dial-ins in the opponents lane to crossover with each run.

B) If you set the opponents (left lane) dial greater than your (right lane) dial – this will allow you to set fixed dial-ins for crossover training. By this we mean it will allow you to go to the Dial-In mode and set your own dials for crossing over. You can set a different dial-ins each run.

While in crossover mode the tree mode automatically goes to tree mode 2- which is computer left lane driver right lane. In other words crossover mode is designed for one player- right lane only. If crossover mode is turned on, you cannot select a different tree mode. To remind you that crossover mode is on, there will be a "co" on the left screen in tree mode.

To practice crossing over, set your Roll Out in the right lane, set the left lane delay for a top bulb launch, and set PB mode to 1. Upon entering into Run mode, the unit will display your dial-in in the right lane and the fixed or randomly selected dial-in in the left lane. Pre stage and stage as normal and release your button on your opponent's top yellow.

## **HITTING THE TREE TWICE WHILE IN CROSSOVER MODE**

In crossover mode, you can also set up two delay boxes so you can hit the tree twice. Depending on the pushbutton mode the two hits at the tree can be done with either one button pressed twice or two separate buttons. While in crossover mode, the left delay becomes the delay for the first hit and the right delay becomes the delay for the second hit. You can set the delays for hitting both top bulbs, both bottom bulbs, or opponents top bulb and your bottom bulb. The roll out amount for both hits will be the amount set for the right lane rollout (which is the lane that you are in). Below explains how the pushbutton modes work when hitting the tree twice.

### **Setting the Pushbuttons while in Crossover Mode**

Setting the Pushbutton Mode to 1 will allow you to crossover with your pushbutton and use the pushbutton in the other lane as a tap button. Setting the unit to Push Button Mode 2 (while in crossover mode) will allow you to hit the tree twice with 2 separate pushbuttons, this is explained below.

#### **PB Mode 1** (*use one button twice for two hits at the tree*)

When in push-button mode 1, the right trigger switch is used for both hits at the tree, while the left trigger switch is your tap button. You can only “tap” the first hit when hitting the tree twice..

Example: Stage and release the right trigger on your opponents top bulb. Get back on the same trigger switch and release again on either your top or bottom yellow depending on how you set the second delay.

#### **PB Mode 2** (*use two separate buttons for two hits at the tree*)

When in push-button mode 2, each trigger switch will first start the reaction timer for its corresponding lane. Then, any additional hits will be counted as taps.

Example: Stage up with both buttons (using the corresponding delays and pushbuttons for each lane). The left lane pushbutton will be your first hit (re-hit left button for tap) and the right lane pushbutton will be your second hit (no tap on second hit).

\*\*\*Please Note when you turn crossover mode off, if the push-button mode is 2, the tree mode will default to 3 (dual user). If pushbutton mode is 1 the tree mode will be default to 1 (computer right lane).

## **4) BRT (Brightness)**

Allows you to set different levels of brightness of the bulbs. Dimming the bulbs can more closely simulate day/sunlight racing while brightening the bulbs can more closely simulate dusk and nighttime racing. This can give you a realistic way of simulating and testing yourself under different lighting conditions to see how you may be affected.

To set the brightness of the bulbs, use the mode button to change to BRT mode. Now use the right + button to select one of four brightness levels (1 = brightest) available. Please note that this feature does not control the brightness of a full size tree connected to the Final Round IV. When using a full size tree the brightness should be set to full. Also, the

brightness setting is not saved in memory when power is removed. The unit will always default to full brightness when power is applied.

### **5) PB (Push Button Control Mode) and Tap Up/ Down**

To set or view the Push-Button Mode, use the mode button to go to PB mode. The left score board displays the pushbutton mode, either 1 or 2 and is changed by using the left + button. The right score board displays the tap amount, -.095 to .095 seconds and is changed using the right +/- button. In dual user mode the tap amount is the same for both sides.

The tap amount will either be added (tap up) for positive numbers or subtracted (tap down) for negative numbers from your delay time each time the tap button is pressed and released. You can tap as many times as you want until the green light comes on. If you had at least one tap, the number of times you tapped will be displayed after your reaction time and before the win counter.

Though very similar in operation, turning the crossover mode on and off will cause slight changes to how the push-button modes work. Below describes the normal operation of how the pushbutton mode works. Turn to page 7 to see how the Push-Button Mode works while Crossover Mode is on.

#### ***PB Mode 1 (use one button for hit on the tree and other button for tap)***

When in push-button mode 1, the trigger switch for the lane you are in starts your reaction time while the trigger switch for the lane the computer is in is your tap button.

#### ***PB Mode 2 (use same button for hit at the tree and tap)***

When in push-button mode 2, the trigger switch for the lane you are in starts your reaction time. Any additional hits (on the same button) will be counted as taps.

\*\*\*Please note that when two people are training together, the pushbutton mode must be set to 2. Each racer has the option of tapping up or down their reaction time after he/ she hits the tree.

### **6) TEST MODE**

When properly connected, the Final Round III unit is a precision timing unit capable of testing the accuracy of your vehicles delay box. A Test Harness can be purchased from Biondo Racing Products which will provide you with the harness to go in between your delay box and the Final Round III as well as all necessary instructions. Before starting, always make sure to disconnect the transbrake solenoid from the delay box. This will avoid damage to either the solenoid or the Final Round III. Once the solenoid is disconnected and you have made the necessary connections, you can start testing the delay box while still in your vehicle using your vehicles transbrake button or one of the trigger buttons. If your delay box uses a grounded transbrake button, use the right trigger button. If your delay box uses a powered transbrake button, use the left trigger button.



**Note:** when properly connected the Final Round III will pull power from the vehicles battery, eliminating the need for the power pack or the optional cigarette lighter adapter.

The Final Round III can also be used a bench top delay box tester. Once you have made the necessary connections between the delay box and the Final Round III, turn on the power by plugging in the supplied power pack or the optional cigarette lighter adapter to the Final Round III. The delay box will receive its power from the Final Round III therefore no additional power sources are required. Next, use the mode button to select test mode. Once test mode is selected, you can start testing by pressing and releasing the right trigger button (if your delay box uses a grounded transbrake button), or the left trigger button (if your delay box uses a powered transbrake button).

## **Test Cycle**

First press and release the button. Now when the delay box times out, the amount of delay will be displayed on the right scoreboard for three seconds. After the display goes blank the Final Round III is ready to test again.

What the numbers mean:

The right lane Score Board will display the exact delay time measured. This time should be very close to the number you entered into your delay box. More importantly than absolute accuracy you should be concerned with the repeatability of your delay box. Try the test many times with the same delay time dialed in while looking for consistency.

Also note you can expect a minimum time of .002 to .007 of a second. This is the time it takes for the delay box to activate. Again, what you are really looking for is consistency.

If the test reveals consistent, but incorrect times, you can suspect dirty thumb wheel switches on your delay box. If you get varying times you may have a bad push-button or the problem may be with your delay box. To check for a bad button, switch out the button you are using for a different one and see if the problem goes away. Minor time variations of a few thousandths may be normal and are not cause for concern.

Appendix A of this manual has a wiring diagram on how to connect everything up to test. We recommend purchasing the cable harness listed in Appendix B for this purpose, as improper connection may damage your unit and void your warranty.

End of Tree Modes

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## **Start of Driver's Modes**

### **1) DELAY**

This is used to simulate an actual delay box in your race vehicle. Set the delay amount just like you would for your delay box when racing. While training, you should try to adjust the delay amount to improve your reaction time. Add delay if you are red lighting,

remove delay if you are having late reactions times. Set the delay to 0.000 if you do not want any delay.

To view your delay box time go to the delay mode by lighting the green LED light under DELAY. This is the first setting and it is also the setting that the unit goes to when you turn the unit on. After each practice round, the Final Round IV automatically goes back to your delay setting making it easy to view and adjust your delay for the next round.

To adjust your delay time simply use the +/- button in the lane you are running in.

## **2) STATS** (Statistics)

The Final Round IV calculates and records all important statistics while you are training. The following statistics are calculated and recorded:

### -Average Reaction Time-

This is your true average since power on. It does not, however, take into account any losing red light times.

### -Fastest Reaction Time-

This is the fastest reaction time recorded including red lights.

### -Slowest Reaction Time-

This is the slowest reaction time recorded.

### -Best Reaction Time-

Your best (green) reaction will be recorded here.

### -Number Of Red Lights-

The total number of red lights will be displayed here.

Your current average reaction time will be displayed as soon as you enter the Stat mode (the top yellow lights on the tree will be on). To view the other statistics available, each user must press and release their trigger button. Each time the trigger button is pressed, the next statistic will be displayed. To keep track of which statistic you are viewing, the tree will advance from the top yellow all the way to the red light as follows:

--	Top yellow	= Average reaction time	
--	2 <sup>nd</sup> Yellow	= Fastest reaction time	(the info to the left is written on the FR III to make it easy to view your stats)
--	3 <sup>rd</sup> yellow	= Slowest reaction time	
--	Green	= Best reaction time	
--	Red	= # of Red Lights	

Each user can continue to cycle through the statistics as he/she pleases by using the triggers. To return to the Run mode press the Mode button.

NOTE: If neither lane has viewed any statistics other than the average, pressing the Mode button will advance to dial mode. Once either user presses a trigger button and runs through the statistics, pressing the Mode button will return the unit to the Run mode and you will be ready to race.

Also, you can clear the stats for either lane by pressing the left + button to clear the left lane stats or the right + button to clear the right stats. Clearing either lane will also clear the win counter for both lanes.

### **3) DIAL**

If you prefer to train with a staggered tree, you can enter a dial-in for each lane by switching to the Dial mode and using the +/- switches. The dial-ins will be indicated in the scoreboard display for each lane. If you do not want to train against a staggered tree set the dial-ins for each lane to the same amount or both dial-ins to zero.

### **4) ROLL**

Your race vehicle has a specific roll out time depending on the type of vehicle, the mechanics of the vehicle, and the distance the track sets the starting line beams up at. This is the amount of time it takes your vehicle to leave the stage beam on the starting line after you tell it to go by releasing your transbrake or clutch. Any training system that does not allow you to enter in your vehicle's roll out would be worthless. Enter your roll out by going to the Roll mode and use the +/- switch for you lane. The roll out time will be indicated in the Score Board display. If you do not know what your roll is, you should start with a number of .32 when using a full tree or .22 when using a pro tree, and adjust as you become more familiar with the unit. (See the Q & A section for more information on setting and understanding roll out.)

### **5) FIXED**

When crossover mode is off and training against the computer you can use either your current average reaction time or a fixed reaction time to train against. To train against a set reaction time, use the mode button to position the green mode LED under the text "Fixed". The right score board will be showing the current fixed setting, use the right +/- buttons to change the value. If the value you enter is a value greater than zero, the Final Round III will automatically adjust the entered amount for either a .4 or .5 tree. Example if the tree is set to .500 and you set the fixed amount to 25, when you let go of the +/- button the right score board will now show 0.525. If you wish to train against your average instead of a fixed value enter all zeros for the fixed amount.

### **6) SETUP**

Setup is used to turn on or off access to the six tree modes- (Tree type, SLD, Crossover, BRT, PB mode, and Test). When setup is turned off only the driver mode settings can be

accessed. When setup is turned on both driver and tree mode settings can be accessed. After setting up all your tree mode settings, you can turn SETUP to off which will allow you to access the driver settings only. This can make it faster and easier to set up your driver settings.

## End of Driver's Settings

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### **RUN** (Finally we got here!)

After setting up the driver and tree settings as listed previously, you are finally ready to start training.

To enter into run mode, press and release a trigger switch. Remember, there are no indicator lights are on when in Run mode. When the mode LED's turn off the unit is ready for you to stage up.

Stage up by pressing and holding the trigger switch connected to your lane. (If you are in single user mode, the unit will automatically stage in the other lane.) After a random autostart, the tree will start. It's now up to you. Letting go of your trigger switch will record your reaction time.

### **Post Run Display Sequence**

After each run the following post run display sequence will take place:

1. The Score Board display will indicate the reaction time for each lane.
2. The Pre-Stage lights will flash indicating which lane has won. A win indicates the better reaction time. A Red Light is of course a losing time. In the case of Dual Red Lights, the lane that red lights by the least is considered the winner.
3. After a few seconds, if there was at least one tap the Score Board display will display the number of taps for each lane.
4. After a few seconds, the Score Board display will indicate the Win record for each lane.
5. Finally, the unit will return to delay mode to allow any delay adjustments to be made. Then just press and release a trigger switch to enter run mode again.

### **EXTERNAL FULL SIZE TREE CONNECTION**

A connector has been provided on the back of the Final Round III unit to connect a full size tree. An optional Full Size National Event Tree can be purchased from Biondo Racing Products Inc.

### **WARRANTY**

Your Final Round III is warranted against any defects for two years as follows.

Units returned within the first 30 days from purchase will be repaired or replaced (our option) at no charge.

Units returned within the first year will be repaired or replaced (our option) with payment of \$5.00 to cover return shipping costs. Units received without payment enclosed will be returned UPS COD for \$9.50.

Units returned within the second year will be repaired or replaced (our option) for a flat fee of \$25.00 plus \$5.00 for shipping. Units received without payment will be returned with UPS COD charges added.

Opening of the Final Round III unit will VOID your warranty (No Exceptions).

**You must enclose a copy of your original receipt for any warranty repair.**

Warranty is not transferable.

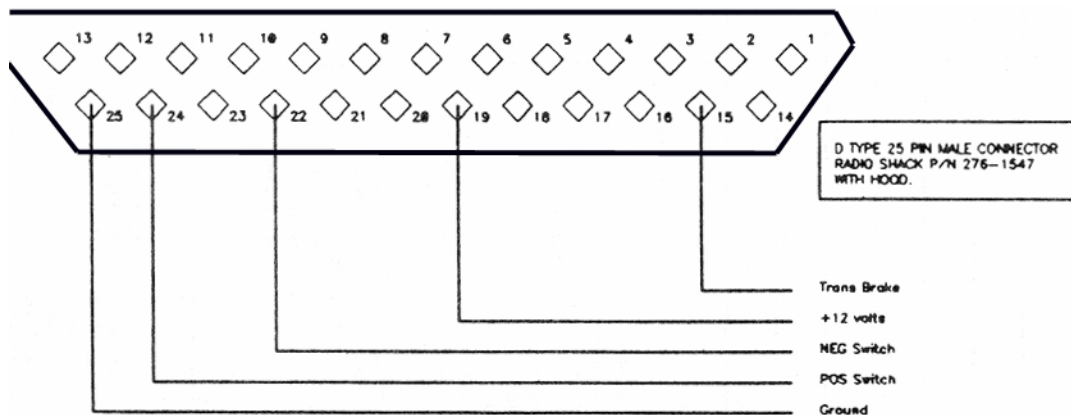
Turn around time for a repair is normally 24 hours in our shop.

**Return units to:** Digital Delay Electronics, Inc  
2036 Fillmore Street  
Davenport Iowa 52804

Always include the following:

- 1) Current return address.
- 2) Phone number (daytime)
- 3) Brief note on the reason for return.

## APPENDIX A



Check the instructions that came with your delay box to see whether you should use the POS SWITCH or the NEG SWITCH.

## APPENDIX B

### OPTIONAL EQUIPMENT

FRP	-----	FOOT/CLUTCH PEDAL
FRC	-----	CARRING CASE
FRTH	-----	DELAY BOX TEST HARNESS
FRL	-----	SPARE LENS KIT (10)
FRB	-----	SPARE BULB KIT (5)
FRA	-----	12V CIG. LIGHTER ADAPTER
FRWA	-----	110VAC WALL ADAPTER
FRT	-----	SPARE HAND TRIGGER
FTA	-----	6' NATIONAL EVENT TREE

**Call or visit our web site for current pricing.**

( [www.biondoracing.com](http://www.biondoracing.com) )  
(732)-683-0404

### MOST COMMONLY ASKED QUESTIONS

Q. The trigger switch plugs do not fit right. Do we need to send this back for repair?

A. No, in order for the plug to fit properly it needs to be pushed all the way in until it snaps to insure a snug fit.

Q. Why is it that I cannot access the bottom row of settings (the tree modes)?

A. This means that you have the Set-Up mode turned to “off”. Going to the Set-Up mode and turning it to “on” allows you to access the tree modes. While Set-Up mode is “off” you can only access the driver modes, which are more frequently changed.

Q. How come when I dim the bulbs on my Final Round III the full size tree bulbs do not dim properly?

A. The full size tree cannot be dimmed with this feature. The full size tree available as an option has it's own dim control.

Q. I'd like to set the roll out in the practice tree. How do I determine the proper roll out for my car?

A. This is the most popular question asked by our customers and the answer is easier than you think. (No measuring of front tires and no weight calculations). Let's first assume you are going to be racing a .500 Full tree and leaving off the bottom yellow. The roll out to begin with would be about .325. The way we arrived at this number was because almost everyone could react to the bottom yellow on the .500 full tree and have a decent reaction with this roll out. If you try to practice with no roll out you should come up with a reaction time between .160 and .190/ from that we can take an average of .175 so,

$$\begin{array}{r}
 .500 \text{ actual reaction time} \\
 - .175 \text{ human reaction time} \\
 \hline
 .325 \text{ roll out}
 \end{array}$$

The way to practice is to react as soon as you see the bottom yellow go on it must be reflex because if it isn't, you will never be consistent. If you use a number in the roll out based on the weight of your car you will be using a number which may demand that you Learn to leave just before or just after the last yellow is lit. Trying to learn that will be virtually impossible and very inconsistent. So, if you practice at .325 (or between .300 and .350) and get your reaction times in the consistent .000 to .030 range, you have reached your goal with the practice tree.

Now that you have trained your mind to react to the yellow, and not anticipate it or "sit" on it, the next step would be to get your car to work with you. The way you can do that is to make a couple of time trials and figure out an average reaction time. If you are certain you are only able to get a consistent .625 average you must make the car do the rest. For example, raise your launch RPM, or stage deeper to bring your reaction time to a competitive number (this is the reason you see many street cars deep staging). You see, once your mind is trained to be consistent, you can make the car do the rest. Also, if you are on the average of a red light you may have to work in the opposite direction. For example, decreasing the front tire pressure (a safe amount), or simplest of all, put some numbers in the delay box if they are legal in your division.

If you are using a delay box to react off the top yellow, it will require adding 1 second to the box. Since your roll out is established at .325, you will practice with 1.000 in the delay box and .325 in the roll out. The reason for assigning 1.000 is because each yellow takes .500 (5 tenths of a second) until proceeding to the next so we need to delay the reaction time for two yellows,  $.500 + .500 = 1.000$ .

For Pro tree, or .400 (4 tenths) racers it is also very simple. Practice with no roll out on the .400 tree and you will arrive at the same human reaction time of about .175 but now you will get your reaction time from:

$$\begin{array}{r}
 .400 \text{ actual reaction time} \\
 - .175 \text{ human reaction time} \\
 \hline
 .225 \text{ roll out}
 \end{array}$$

Q. How come the numbers in the delay box of the practice tree differ from the actual numbers I use in my race car?

A. Because the actual roll out of your car may be different than the roll out you are using on the practice tree. If you would rather have the numbers in the practice tree's delay box match the numbers in your cars delay box, you can do the following:  
Enter the numbers that you use in your cars delay box into the practice tree delay box (ex. If you run 1.065 in your cars delay box, then simply put 1.065 in the practice tree delay box. Then, adjust the rollout in the practice tree up or down until you get to your desired reaction times.

By doing this, you can make for a more realistic "feel" when practicing. Please remember that this is not a necessity. Your goal should be to train your mind. Once it is trained, you will be consistent in any car. And once you are consistent, you can have a competitive reaction time easily by rolling time in or out of the delay box or making adjustments with your car.

Q. Why can't I get the unit into dual user mode or set the Pro tree?

A. Remember to shut off crossover mode first. When Crossover mode is on the unit is forced into single user / full tree mode.



## **PRACTICING AND DRIVING TIPS**

From “the Racers” at Biondo Racing Products

- ◆ For the best training results we recommend you practice in small increments. By doing this your concentration level is much higher than when practicing in long increments. When practicing in long increments your mind tends to wander and your concentration level isn't where it should be. Try only a series of 10 hits and record your stats. Then take a break and try that same series of ten to see how you improve. Your time will be well spent when doing this and we'd expect you to receive results faster.
- ◆ After you feel as though you are ready to take on the world, try setting up a make-shift race for yourself. Take two or three time trials spaced apart a few hours for true realism (just like your runs would be spaced apart at the races). Then tell yourself that this is first round and set a goal for yourself to win the round (.030 for instance). If you win that round take a few hours break and do the same thing for the second round, third round etc. As each round passes make your goals tougher and tougher in the later rounds. If you lose a round, stop for the day and try again the next day. Take some time to think about what happened on the round you lost and if you did anything or thought of anything different to cause a “bad” reaction time. If you do win a seven round race on the practice tree, pat yourself on the back and think about the level of concentration that you had. You should take that win as a confidence boost and believe you can hit the same reaction times in a seven round race at the races. Do that, and eventually you will find yourself in the winners circle at the dragstrip. Confidence is an important factor when heading to the dragstrip. With proper training you will see your reaction times improve. This should give you confidence that you need.
- ◆ If you purchased a full size practice tree you should try and “exactly” simulate race conditions by sitting in your car while practicing. To even make it more real, we recommend putting on your firesuit, helmet, gloves, etc. We also recommend hooking up the button in your car to practice with it. You can purchase a wire with a blank end to hook up to the button in your car (part # FRNT from Biondo Racing Products).
- ◆ If you are a bottom bulb racer and need further tips, we have “tips for the struggling bottom bulb racer” on our website. Go to [Biondoracing.com](http://Biondoracing.com) and click on “tips”.