

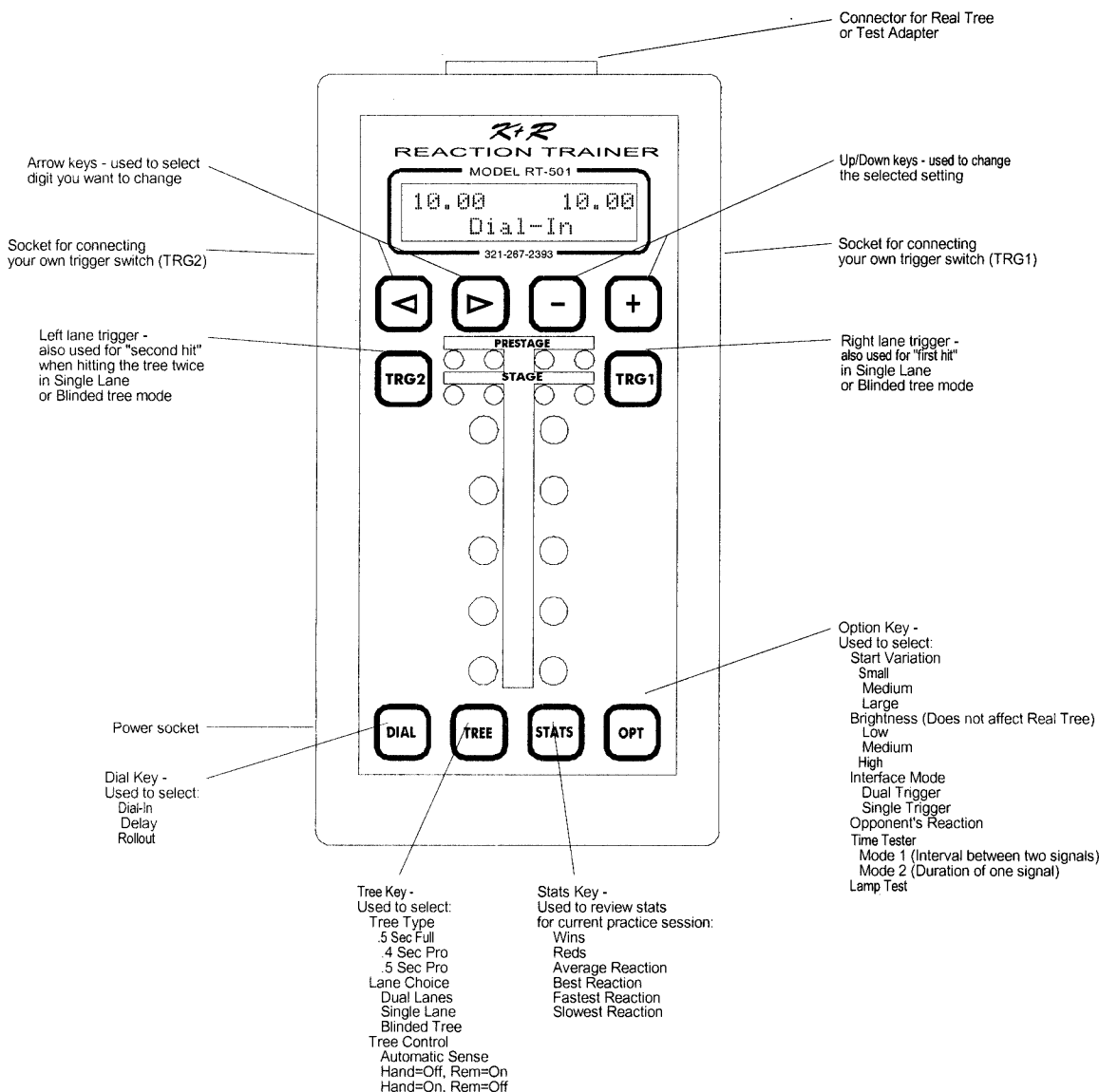
INSTRUCTIONS

REACTION TRAINER MODEL RT-501

Setting up and using your RT-501 is simple. Just plug the supplied wall transformer into the socket located on the bottom left side and into a wall outlet and you're ready to practice. You can use the trigger switches located on the top panel or hook up the remote switches supplied.

! Important

APPLYING 12V TO THE TRIGGER SWITCH INPUTS CAN DAMAGE THE RT-501. IF YOU WANT TO PRACTICE USING THE SWITCH ON YOUR VEHICLE, BE SURE TO DISCONNECT THE SWITCH FROM THE VEHICLE'S WIRING HARNESS BEFORE CONNECTING IT TO THE RT-501.



SETUP

The blue keys at the bottom are used to select the setting you would like to change, and the blue keys along the top are the edit keys used to change settings. To edit numbers such as dial-in or delay, use the left/right arrow keys to move the cursor (blinking character) to the digit you want to change, then use the +/- keys to increase/decrease the value. You can start practice at any time by pressing one of the trigger switches. At that time, all your settings will be saved so you won't have to repeat the setup each practice session.

First select the type of tree you want to use. Press the TREE key, then use the +/- edit keys to change the tree type. Pressing the +/- keys repeatedly will scroll forwards/backwards through the available choices: .5 Sec Full tree, 4 Sec Pro tree, or .5 Sec Pro tree. Note that the RT-501 automatically changes the delay and rollout settings when you change between Full and Pro trees.

Dual Lane Practice:

Dual Lane mode allows two people to practice against each other. Press the TREE key a second time to get the Lane Choice menu. Select Dual Lanes using the edit keys. Now use the DIAL and edit keys to set delay and rollout in each lane. You can also set different dial-in's for each lane but since you cannot cross-over in Dual Lane mode, you'll probably want to set the dial-in's the same to make it fair to both "drivers". TRG1 controls the right lane and TRG2 the left. Each "driver" gets one shot at the tree.

Single Lane Practice:

To practice against a built-in opponent select Single Lane in the Lane Choice menu. In Single Lane mode the right lane (your opponent) will always be staged and cannot redlight. You can only enter one delay and rollout for the left lane, but you can enter a dial-in for both lanes. This allows you to setup a cross-over situation. Some delay boxes, including our K&R line, allow the driver to hit both sides of tree and launch the car on the quickest of the two reactions. Our delay boxes even allow you to choose whether you want to double-hit the tree using one switch or two separate switches. The RT-501 also has this capability. The amount of cross-over time you have between the first and second hit will determine whether it's best to use one switch or two. To change between Single and Dual Trigger modes, press the OPTion key three times to get the Interface Mode menu and use the edit keys to change the setting. In Dual Trigger mode, TRG1 is always used for the first hit, and TRG2 for the second hit. In Single Trigger mode, TRG2 is not used at all.

If you hit the tree twice, your reaction to each side of the tree will be displayed. If you hit the tree once, your reaction will be displayed in the right lane for a cross-over, and in the left lane if you hit your side of the tree. In the case of hitting the tree once, a win or loss is determined by the opponent's reaction that you have programmed into the RT-501. The Opponent's Reaction can be adjusted with the OPTion and edit keys.

Blinded Tree:

Select Blinded Tree from the Lane Choice menu. Blinded Tree mode is just another form of Single Lane mode. As you would expect, the yellow bulbs on the right side of the tree (opponent's side) do not illuminate, but the green light does. If you setup a cross-over situation so that the right lane green light comes on before the left lane top yellow, the RT-501 automatically assumes you're going to cross-over on the opponent's GREEN bulb. (Delay boxes do not allow you to do this AUTOMATICALLY, but with a cross-over delay box you can adjust the opponent's dial-in to perform a green bulb cross-over. Who says you can't cross-over on a blinded tree?) This is really not recommended unless you're a fanatic about hitting the tree twice.

STATS

Use the STATS key to review statistical information about your current practice session. Press the STATS key repeatedly to circulate through all the data: Number of Wins, Number of Red lights, Average Reaction, Best Reaction, Fastest Reaction, and Slowest Reaction. Red lights are considered automatic losses and are not included in the calculation of Average Reaction. The stats are reset whenever you turn on the unit or change to a different tree type, ie. Full tree to Pro tree.

OTHER OPTIONS AND FEATURES

The first option, Start Variation, allows you to select the amount of random delay time between staging and starting the tree. The Large setting will simulate a very random starter with quick trees as well as long delays before starting the tree, while the Small setting simulates a very consistent, but still somewhat random starter.

Three levels of Brightness are also available under OPTions. The brightness adjustment applies only to the built-in LED tree and has no affect on a real tree, if connected. Select the brightness level appropriate to the ambient light conditions.

The Opponent's Reaction can be selected and adjusted using the OPTion and edit keys. In Single Lane and Blinded Tree modes, your reaction is compared against this built-in opponent to determine win or loss.

A lamp saver feature automatically turns off all lamps in two minutes if you're not using the unit. Press TRG1, TRG2, or any blue key to reactivate the lamps.

A lamp test option is provided as a convenient way of checking all lamps. To start the test, select Lamp Test under OPTions and press TRG1. Stop it by pressing TRG2. Note that in lamp test mode, the lamp saver feature is disabled.

CONNECTING A REAL TREE

The RT-501 is designed to control a K&R real tree equipped with 115v AC flood lamps for 100% realism. With a minor cable modification, it can also be used for trees built by other manufacturers. Call K&R tech support **BEFORE** connecting another manufacturer's tree.

If you're using a K&R real tree, the RT-501 will automatically sense the connection, activate the real tree, and deactivate the built-in LED tree (Automatic Sense mode selected under Tree Control). You can also manually control which tree is activated by using the TREE key and selecting the appropriate Tree Control option. The Hand=Off, Rem=On option turns off the handheld LED tree and turns on the remote real tree, while the Hand=On, Rem=Off option does just the opposite.

USING THE TESTER CAPABILITY

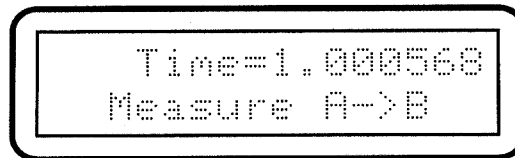
An adapter cable is available through K&R which allows the RT-501 to be used as a precision instrument for checking delay box or timer accuracy and repeatability. Measurements are made to six decimal places with a range of 0 to 9.999992 seconds. The adapter plugs into the same 25 pin connector used for the real tree.

The tester has two basic modes. Mode 1 is designed to measure the time interval between two different signals, typically the delay box trigger and transbrake signals. Mode 2 measures the amount of time between two transitions (duration) of one signal; the on-time of a throttle stop timer, for example. The minimum amount of time that can be measured for duration is 0.1 seconds.

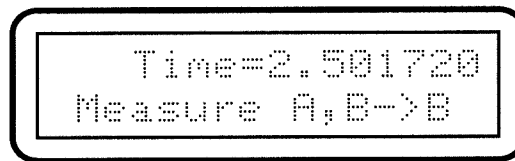
Additional instructions are supplied with the adapter cable, but you can experiment with the tester capability without the adapter by using the two trigger switches, TRG1 and TRG2, in lieu of actual signals (signals A and B respectively). Select Time Tester, Mode 1 using the OPTion key. Press and release TRG1, then TRG2. The time measured is from release of TRG1 to depression of TRG2.

Duration testing of a given signal can also be simulated using the trigger switches. Select Time Tester, Mode 2 with the OPTion and + keys. Press and release TRG1, then press and hold TRG2 for a duration less than 10 seconds. The time displayed in this case is the duration between depression and release of TRG2. Note that in Mode 2, TRG1 (signal A) acts as an arming input so that any transistions of TRG2 (signal B) are ignored prior to release of TRG1. This allows measurements to be made between any two transistions of multi-stage timers. You can test this feature by pressing and holding TRG1. While holding TRG1, press and release TRG2 multiple times. The tester ignores these TRG2 events because it has not yet been armed by TRG1. Now keep TRG2 depressed and release TRG1 to arm the tester. Releasing TRG2 will start the measurement. After a short duration, press TRG2 again. The time displayed is the interval between the last two TRG2 events (release/press). This simulates, for example, measurement of the time interval between cycles of a 4-stage throttle stop timer.

Sample Display, Test Mode 1



Sample Display, Test Mode 2



WARRANTY

We at K & R Performance Engineering are doing our part to restore quality and pride in American made products. It is with this goal in mind that we proudly offer a full one year parts and labor warranty against design defects, defective materials, and workmanship under normal service use conditions. Any defect affecting operation will be repaired free of charge and promptly returned.

K & R PERFORMANCE ENGINEERING SHALL NOT BE LIABLE FOR INJURY, CONSEQUENTIAL, OR ANY OTHER DAMAGE RESULTING FROM USE OR MISUSE OF THIS PRODUCT. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED.

TECHNICAL SUPPORT

We are always willing to help with any questions or problems you may have. Before calling, however, please have your unit plugged in and ready to use.

Contact: *K+R Performance Engineering, Inc.*
Telephone: 321-267-2393