

RACEAMERICA

T i m i n g S y s t e m s



Demo Tree Controller Owner's Manual



Models 3204D, 3204DW & 3204DX

Rev D

RACEAMERICA, Inc.
P.O. Box 3469
Santa Clara, CA 95055-3469
(408) 988-6188
<http://www.raceamerica.com>
info@raceamerica.com

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RACE AMERICA

T i m i n g S y s t e m s

LIMITED WARRANTY

To the original purchaser of this RaceAmerica product, RaceAmerica warrants it to be in good working order for a period of ninety (90) days from the date of purchase from RaceAmerica or an authorized RaceAmerica distributor. Should this product malfunction during the warranty period, RaceAmerica will, at its option, repair or replace it at no charge, provided the product has not been subjected to misuse, abuse, or alterations, modifications, and/or repairs not authorized by RaceAmerica.

Any product requiring Limited Warranty service during the warranty period should be returned to RaceAmerica with proof of purchase. If return of merchandise is by mail, the customer agrees to insure the product, prepay shipping charges, and ship the product to RaceAmerica Timing Systems., 280 Martin Avenue, Unit #1, Santa Clara, CA 95050.

ALL EXPRESSED AND IMPLIED WARRANTIES FOR THIS PRODUCT ARE LIMITED IN DURATION TO THE ABOVE NINETY DAY PERIOD.

UNDER NO CIRCUMSTANCES WILL RACEAMERICA BE LIABLE TO THE USER FOR DAMAGES, INCLUDING ANY LOST PROFITS, LOST SAVINGS, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF, OR INABILITY TO USE, SUCH PRODUCT.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

THEORY OF OPERATION

The 3204 Demo Tree Controller is a completely self contained system controller to simulate drag race starting light sequences. The lights can be controlled locally via a push-button or remotely by a PC and wireless network links. A random demo light sequence mode is available as well as controlled starts.

The controller is made with the latest technology CMOS circuit components to provide a highly accurate result. The system contains an internal quartz crystal clock to maintain time accuracy to one thousandth of a second.

Power is supplied to the controller by the Tree via the interconnect cable.

Once the system is properly set up, the Tree and Controller are powered up. The Controller will run through a power-up sequence during which time the manual operation mode and Tree starting sequence can be selected. If no selection is made, the power-up sequence will complete and the Tree will begin to display random starting light sequences.

PACKAGE COMPONENTS

This manual covers setup and operation of the Demo Tree Controller with one of the RaceAmerica drag trees. This manual covers operation of the following wired and wireless Demo Controllers:

- 3204D - Wired controller
- 3204DW - Wireless controller domestic US
- 3204DX - Wireless controller international

Demo Controllers operate with one of the following RaceAmerica trees**:

- 02-2503 - 12 VDC with staging
- 02-2502 - 110VAC stage/pre-stage/
rear facing lights (RFL)
- 02-2505 - 230VAC stage/pre-stage/
rear facing lights (RFL)

** Call RaceAmerica for compatibility with other Trees.

The following packages are offered with a Demo Controller and Tree:

Hard wired:

- 3204D2 - Controller/Tree (110VAC/Stage/RFL)
- 3204D3 - Controller/Tree (12VDC/Staging)
- 3204D5 - Controller/Tree (230VAC/Stage/P-Stage)

Wireless Domestic USA:

- 3204DW2 - Controller/Tree (110VAC/Stage/RFL)
- 3204DW3 - Controller/Tree (12VDC/Staging)
- 3204DW5 - Controller/Tree (230VAC/Stage/P-Stage)

Wireless International:

- 3204DX2 - Controller/Tree (110VAC/Stage/RFL)
- 3204DX3 - Controller/Tree (12VDC/Staging)
- 3204DX5 - Controller/Tree (230VAC/Stage/P-Stage)

Each hard wire package includes:

- 1 - Interconnect Cable Assembly to Tree - 25'
- 1 - Push-button cable - 25'
- 1 - Owners Manual

Additionally, each wireless package includes:

- 2 - Wireless Data Comm Links
- 1 - 6033A PC to wireless cable
- 1 - 07-5454 Controller to wireless cable
- 1 - 6512A AC Adapter (for PC wireless)
- 1 - CD with PC Control Software

LOCAL REQUIREMENTS

Additional items required to operate your 3204:

- 110VAC systems - 20A
- 230VAC systems - 10A
- 12VDC systems - 14A

PRODUCT SPECIFICATIONS

Time Accuracy	0.001 seconds
Tree height 110/230V	82"
Tree Width	20.25"
Base Dimensions	20" X 20"

TREE ASSEMBLY

STEP 1 - Familiarization

Familiarize yourself with the components pictured in this manual and how they interconnect.

The Tree contains a module referred to in this manual as the Tree Electronics. The enclosure containing the timing and control electronics is the console.

The system ships with two cables; the 25 ft cable with a round four conductor connector on one end is the Tree Interconnect Cable and the Push Button Cable.

Connectors are labeled and keyed for proper connections at the Tree and Controller. The serial data connection is used for wireless operation.

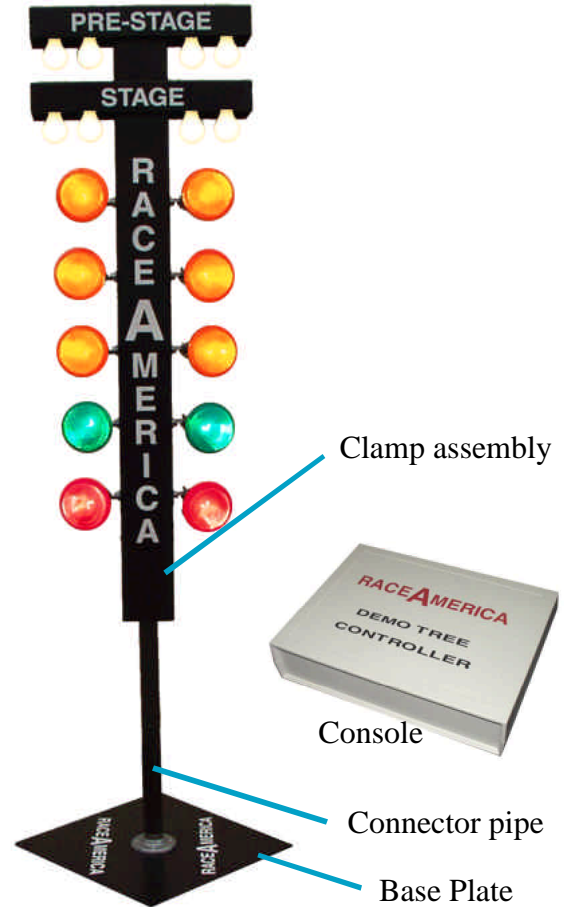
STEP 2 - Tree Assembly

The Tree is assembled as shown with the pipe clamp and then screwed into the threaded flange on the Base Plate. Bulbs can be screwed into the sockets once the Tree is assembled and standing upright.

The light pods can be adjusted for desired angular view using the thumbscrews on each pod.



The iron pipe is held in place by two clamps at the base of the tree. Assembly is easy if the pipe is inserted into the base of the tree with the tree sitting face up horizontally. Push up the clamp from the bottom to allow the pipe to go through each of the two clamps; a Stop bolt is in place to limit the pipe travel.



Assembled Tree and Controller

The assembled Tree - note the base orientation is at a 45 degree angle to the tree for increased stability.



The iron pipe clamps from the back side - the nuts should be tightened to a little more than finger tight to hold the tree adequately in the vertical orientation.

SYSTEM ASSEMBLY - 3204D

STEP 1 - Connect Tree Cable

Connect the Tree Interconnect Cable between the Tree and Controller. (See Fig.1)

STEP 2 - Connect Push-button

Connect the Starter's Push-button cable to the controller.

STEP 3 - Connection to Power

Connect the power cord to the correct power source. A switched surge suppression power strip (AC systems) is recommended to compensate for line voltage fluctuations. Use the On/Off switch on the surge strip to turn the system on.



Light Pod Adjustment

Loosen the thumbscrew on the light pod to adjust the angle of the pod for desired placement of the light. Tighten the thumbscrew when the desired position is attained.

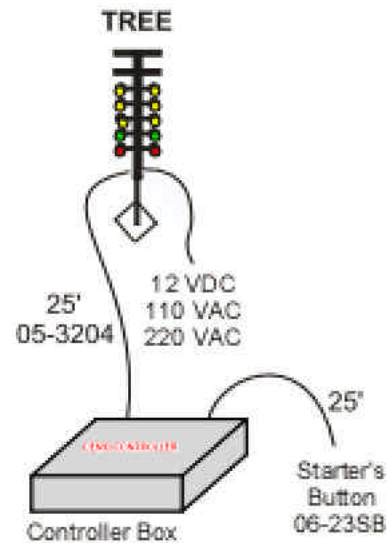


AC or DC
Power

Tree Interconnect Cable

The Tree as seen from the back; do not connect the power until all cables have been connected and the system is ready for power up.

Fig. 1 - Cable Connections - 3204D



SYSTEM ASSEMBLY 3204DW & 3204DX

STEP 1 - Connect Tree Cable

Connect the Tree Interconnect Cable between the Tree and Controller. (See Fig. 2)

STEP 2 - Connect Push-button

Connect the Starter's Push-button cable to the controller.

STEP 3 - Connect Wireless Links

Connect the wireless link units according to Fig. 2.

STEP 4 - Install the PC Control software

The CD contains two files:

dtree.exe
comport.dll

Copy these files to a separate directory on the PC hard drive.

STEP 5 - Connection to Power

Connect the AC power cord to the correct power source. A switched surge suppression power strip (AC systems) is recommended to compensate for line voltage fluctuations. Use the On/Off switch on the surge strip to turn the system on.

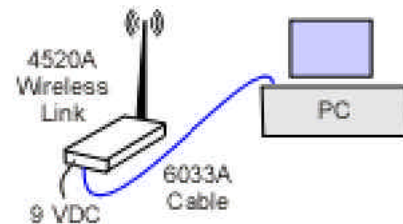
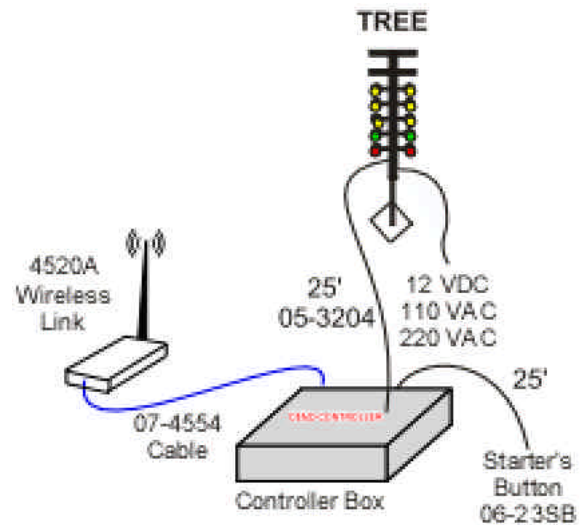
SYSTEM OPERATION - 3204D

STEP 1- Power On

The Demo Controller has two operational modes - **DEMO** and **MANUAL**. When the power is switched on, the Controller will automatically go into **DEMO** mode after the power up sequence. See Step 3 for starting up in Manual Mode.

Switch on the power to the Tree and the Demo Controller box, the Tree sequences through a lamp test and circuitry test by illuminating the left red lamp and stepping up through the green and yellows, Stage and Pre-stage (AC Tree only) on the left side, then on the right side to Stage and Pre-stage (AC Tree). The Tree then illuminates all top Stage (Pre-stage) lamps and steps down through each set of lamps for both lanes. The final

Fig. 2 - Cable Connections -
3204DW & 3204DX



power-on self test is the lamps are all sequenced on starting with the red up the left side, then the red up the right side. All lamps are then flashed once to conclude the self test. When the Tree has completed the self-test display, the system is fully functional and ready for final setup. If the lights do not follow this sequence or some lights were not illuminated, check for insufficient power or defective bulbs. Each time power is applied to the timing system, a self-test sequence is initiated by the microprocessor to insure proper operation of the display and electronics.

STEP 2 - DEMO MODE

The Demo Controller default power-up sequence puts the system into **DEMO** mode. Once powered up, Demo Mode pre-stages each lane, then stages both lanes, then Demo Mode selects a starting light sequence and dial-in for each lane before starting the tree. Redlights occur on some starts and green lights are illuminated for the winning lane. After displaying the race results on the tree, the tree clears and after a short pause, a new race start begins.

STEP 3 - MANUAL MODE

MANUAL mode allows the starter's button to be used to start the Tree in either **FULL** or **PRO** starting sequences.

To start in **MANUAL** mode, hold the Push-button in when power is switched on. This will put the Tree into a cycle where the **RED** lights are on and the **YELLOW/GREEN** lights cycle between the **FULL** Tree (Yellow, Yellow, Yellow, Green spaced by 0.5 sec) and the **PRO** Tree (All Yellows, Green spaced by 0.4 sec) starting sequences. Let up on the Push-button when the desired Tree starting sequence is displaying. The Tree will then complete the power on sequence. The selected starting sequence will begin when the Push-button is pressed. To change to another sequence, cycle the power and make the appropriate choice.

SYSTEM OPERATION - 3204DW & 3204DX

STEP 1- Power On Tree/Controller

The Demo Controller has two operational modes - **PC CONTROLLED** and **MANUAL**. When the power is switched on, the Controller will automatically go into **MANUAL** mode after the power up sequence.

Switch on the power to the Tree and the Demo Controller box, the Tree sequences through a lamp test and circuitry test by illuminating the left red lamp and stepping up through the green and yellows, Stage and Pre-stage (AC Tree only) on the left side, then on the right side to Stage and Pre-stage (AC Tree). The Tree then illuminates all top Stage (Pre-stage) lamps and steps down

through each set of lamps for both lanes. The final power-on self test is the lamps are all sequenced on starting with the red up the left side, then the red up the right side. All lamps are then flashed once to conclude the self test. When the Tree has completed the self-test display, the system is fully functional and ready for final setup. If the lights do not follow this sequence or some lights were not illuminated, check for insufficient power or defective bulbs. Each time power is applied to the timing system, a self-test sequence is initiated by the microprocessor to insure proper operation of the display and electronics.

STEP 2 - POWER ON PC/WIRELESS

Power on the PC and wireless link unit at the PC side of the wireless network.

STEP 3 - RUN SOFTWARE

Run the PC Control software file *dtree.exe*.

STEP 4 - SELECT COM PORT

Select the Com Port the wireless link is connected to (Fig.3). An error message will display (Fig. 4) if the selected port is not available.

Fig. 3 - Com Port Selection

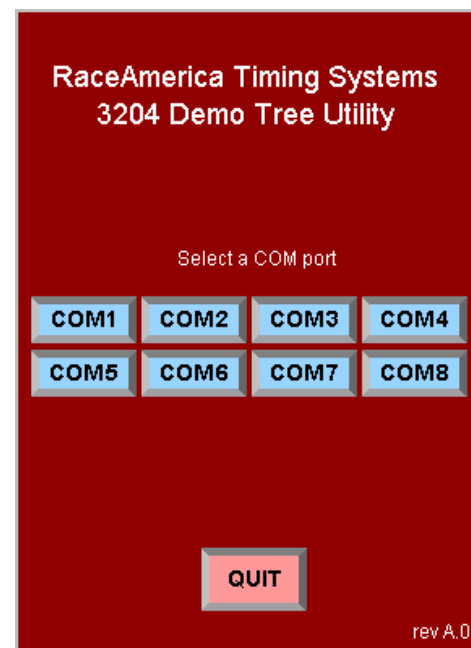
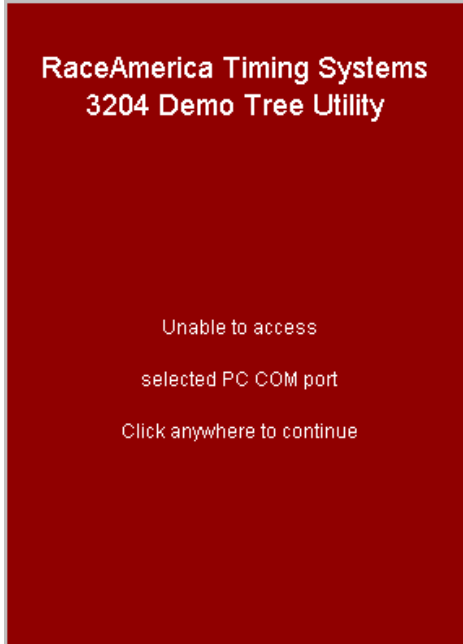


Fig. 4 - Com Port Error**Fig. 5 - Main Menu****STEP 5 - START TREE**

When an available port is selected, the Main Menu screen (Fig. 4) will appear showing six choices:

START - Starts Demo Mode. Demo Mode pre-stages each lane, then stages both lanes, then Demo Mode selects a starting light sequence and dial-in for each lane before starting the tree. Redlights occur on some starts and green lights are illuminated for the winning lane. After displaying the race results on the tree, the tree clears and after a short pause, a new race start begins.

STOP - Exits Demo Mode after the current cycle completes.

PRO - Initiates a single cycle PRO light start (all Yellow, Green spaced by 0.4 sec).

FULL - Initiates a single cycle FULL light start (Yellow, Yellow, Yellow, Green spaced by 0.5 sec).

TEST - Illuminates the red lights for both lanes as a test of the wireless link units.

QUIT - Exits the PC control program.

The controller will operate without a wireless PC as a 3204D; however, after the PC control has activated the controller, the push-button will only

activate PRO starts; cycle power to reset if required.

MAINTENANCE

The 3204 Demo Controller and trees require minimal maintenance. Keep them clean and dry and they will provide continuous service.

SPARE PARTS

If the Demo Controller is to be used as a starting device for a racing program, a spare push-button cable should be considered. Spare bulbs and floodlamps for the tree should also be available. Contact RaceAmerica for availability and pricing of spares items.

SUPPORT AGREEMENTS

Support agreements are available from RaceAmerica providing telephone assistance on technical issues and operational questions, repair and/or replacement of hardware failures, software and firmware updates and bug reporting. Contact RaceAmerica for more information and pricing of Support Agreements.