

Electronic Start System Championship Start



Instruction Guide



F875 Rev. 0704

Colorado Time Systems

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FCC Compliance Statement for Wireless Microphone

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Unauthorized modifications or changes made to this device not expressly approved by the party responsible for compliance voids the user's authority to operate the equipment.

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Introduction

Thank you for purchasing Colorado Time Systems Championship Start electronic start system. Its multi-purpose design makes the Championship Start perfect for use as an electronic start system or a limited public address system. Instructions for both of these applications are included in this instruction guide.

Receiving Your Equipment

When you receive your Colorado Time Systems equipment, follow these steps:

1) Open all shipping boxes.

x Note: We recommend that you save all shipping boxes and packing material. You are responsible for damage to your equipment if an item is returned improperly packed.

2) Check for concealed damage immediately upon receipt of equipment. Report any damage directly to the freight carrier.

3) Use the Packing List included with the shipment to take an inventory of all items. If you believe one or more parts to be missing, contact our Customer Service Department immediately at 1-800-CTS-0653, x256 in the U.S. and Canada, or at (970) 667-1000 or email: customerservice@coloradotime.com

Scope of this Instruction Guide

This instruction guide addresses all issues related to the installation and normal operation of your new Championship Start electronic start system. A complete maintenance and troubleshooting section covers the most common problems that are user correctable. For any repairs or problems not found in this instruction guide, call Colorado Time Systems Customer Service Department, extension 256, toll-free at 1-800-CTS-0653 (U.S. and Canada) or (970) 667-1000 or email: customerservice@coloradotime.com

Championship Start Features

Your new Championship Start electronic start system contains a number of advanced features which make it versatile and easy to use. Each Championship Start has two built-in 12VDC rechargeable batteries.

- x Note** Your Championship Start System can be operated only from battery power, keeping AC power away from the pool deck and reducing the possibility of electric shock.

With its optional multiple speaker configurations and accessories, the Championship Start is a powerful start system.

- Drives speakers mounted under the starting blocks for an extremely consistent start tone across all lanes.
- Drives Speedlights across the front of relay judging platforms mounted on starting blocks. Speedlights level the playing field for hearing impaired athletes. They offer all athletes a visual cue, and experience practicing with the type of start system used at championship competitions.
- Supports a wireless microphone as well as two wired microphones.
- Supports an underwater speaker for underwater recall and training options.

There are two speaker circuits associated with the Championship Start System. The main speaker circuit includes the speakers mounted under the starting blocks. There is no volume adjustment for the start tone from these speakers.

The auxiliary speaker circuit includes any additional speakers associated with the Championship Start System. For ex-

ample, a speaker you have mounted on the backstroke pole would be on this circuit. The volume control knob (labeled AUX SPKR) for this circuit adjusts the volume of the start tone from any auxiliary speaker(s).

For both speaker circuits, the individual volume controls for each microphone are used to adjust the volume of that microphone's output at all speakers.

The Championship Start can serve as a limited public address system, allowing you to make announcements to your swimmers at practice and to the swimmers and spectators at a meet.

Add to these features the peace of mind you get from knowing that Colorado Time Systems stands behind you with more than thirty years of expertise in designing and building accurate, reliable and innovative products. Ease of operation, low maintenance and superior customer service make Championship Start the obvious choice.

Mounting Options Place the Championship Start module on a tabletop, mount it on the wall with the wall mount kit, or use the tripod Model TR-2. ***Do not use a standard camera tripod.***

Functions

- Start system: 0.25 second dual tone electronic blast with simultaneous strobe flash. Simultaneous speedlight flash for relay judging platforms with speedlights.
- False start recall: repeating dual tone from all connected speakers, including underwater.
- Training tool: train with start tone used in competition, and communicate with swimmers through an optional underwater speaker.
- PA used to address swimmers and spectators.

Wired/Wireless Microphone

Used to address swimmers, start the race and recall in the event of a false start.

Speakers

6-watt/45-ohm moisture and corrosion resistant reflex speaker used as lane speaker. Championship Start can drive up to 12 lane speakers.

10-watt/8-ohm moisture and corrosion resistant compression speaker used as AUX speaker. Maximum of two speak-

ers can be connected to the AUX speaker output on the Championship Start front panel

Underwater speaker for underwater recall and training.

- Speedlights** LEDs across the front of a Colorado Time Systems relay judging platform that flash simultaneously with the Championship Start speaker tone and strobe light, giving swimmers the fastest possible start. Championship Start can drive Speedlights in up to 12 lanes.
- Strobe Light** Bright 360° strobe light flashes with start tone. Gives timers/officials a reliable start reference, and provides a visual cue to hearing impaired athletes.
- Battery Power** Safe, reliable internal gel-cell batteries (2) with external charger. Championship Start will operate while charging.
- Expandable** You can add an extra speaker for the far lane or mount one to the backstroke pole. Add an additional microphone for referee or far side of pool, or officials at the timing table.
- Practicality** Interfaces to all Colorado Time Systems electronic timers using optional start jumper cable, models SJ-50 through SJ-200.

Championship Start Specifications

- Physical**
 - Height: 13.25" (33.7 cm)
 - Width: 13" (33 cm)
 - Depth: 5.75" (14.6 cm)
 - Weight: 17.4 lbs (7.9 kg)

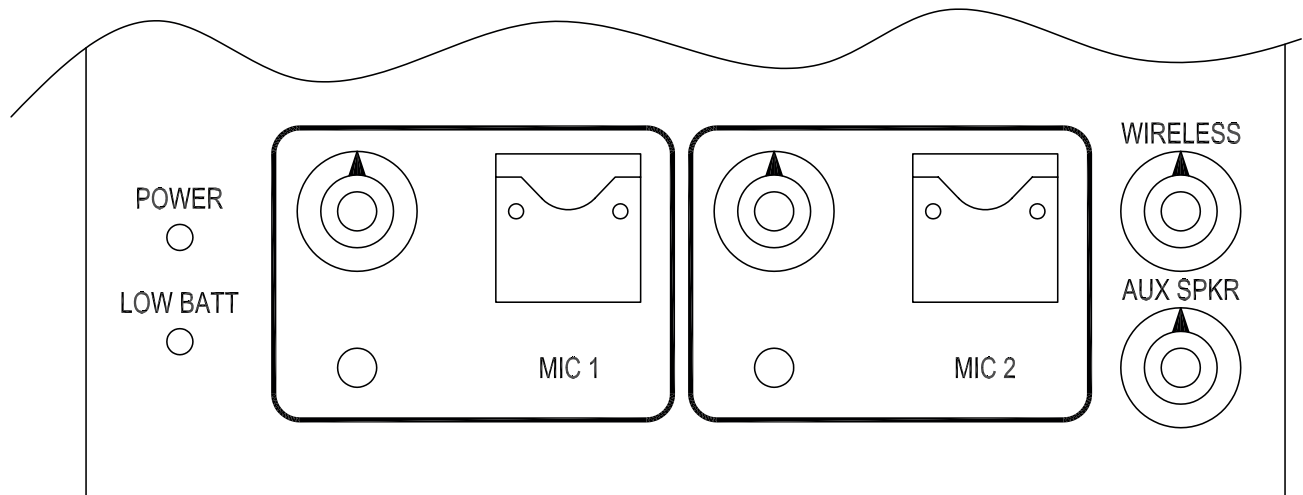


Figure A: Front Panel

Front Panel

The Championship Start electronic start system front panel contains the following controls and connectors:

- Two standard microphone inputs
- Independent volume control for each microphone input (two standard and one wireless). Microphone volume is independent of Start Tone volume.
- Power On indicator (green LED)
- Low Battery indicator (red LED) provides an early indication that the battery level is getting low. Performance may decrease with continued operation. Recharge batteries or connect AC power converter as soon as possible.
- AUX Speaker volume control that affects the auxiliary speaker start tone levels

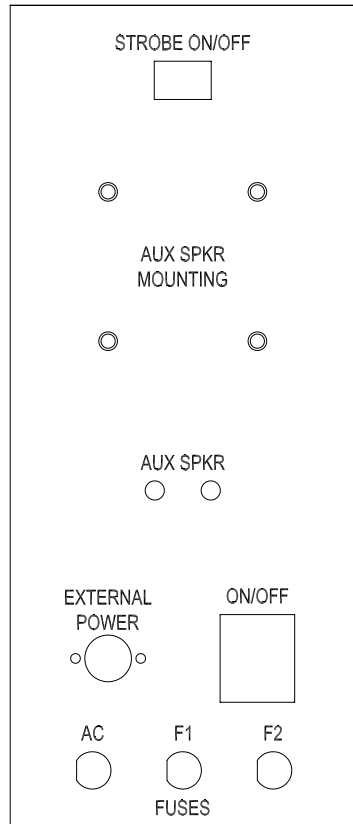


Figure B: Left Panel

Left Panel

The Championship Start electronic start system left panel contains the following controls and connectors:

- On/Off switch for attached strobe
- Mounting holes for mounting auxiliary speaker
- Auxiliary speaker connector
- External Power connector for AC power converter, which charges the internal batteries and provides operational power
- Fuses: an AC power converter circuit fuse and one fuse for each battery; all fuses are 5x20mm, 5A, slow-blow
- Unit On/Off Switch

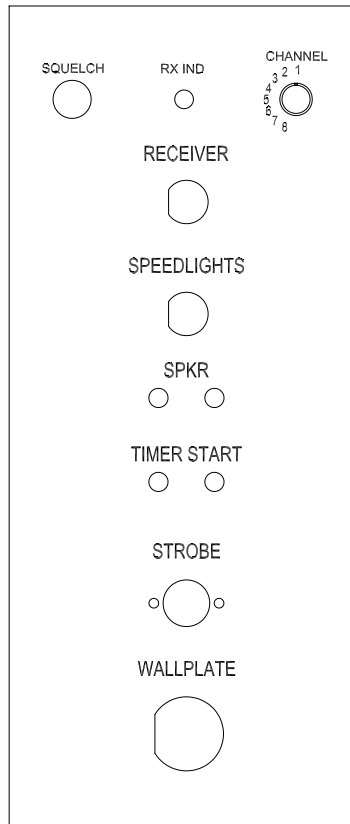


Figure C: Right Panel

Right Panel

The Championship Start system right panel contains the following controls and connectors:

- On units that are designed for use with a wireless microphone, the wireless microphone receiver settings.
- Connector for additional wireless microphone receiver
- Speedlight connector
- SPKR: Audio/Start Tone output for lane speakers
- Start signal for Timer (Normally Open). Normally Closed option is available but must be set at the factory
- External Strobe
- Wallplate Connector: A 10-pin military-style locking connector that reduces the number and complexity of connections and cables needed for facilities with in-deck wiring. Includes signal lines for Speedlights, Speaker, Timer Start, and External Strobe.

Setup

This chapter contains instructions for setting up your Championship Start electronic start system and its accessories to meet your competition and practice requirements. The instructions in this chapter cover standard Championship Start configurations; your set up may vary depending on specific requirements and optional equipment.

Installation

Connect the Championship Start to the wall plate, a cable harness, or to a deck plate at one side of the starting end, either at lane 1 or at the last lane (6, 8, 10 or 12). If you have purchased a system which includes multiple speakers, the locations for the Championship Start available to you may be limited by the location of the speaker cable harness or wall plate.

- ✘ **Note:** Use only the speakers provided by Colorado Time Systems. Attaching any other type of speakers to the Championship Start can cause your start system to fail.

The start system module should be positioned so that the strobe is easily visible. This allows officials and spectators can start their watches from the strobe, improving the accuracy of watch starts.

- ✘ **Important:** **Your Championship Start System can be operated only from battery power, keeping AC power away from the pool deck and reducing the possibility of electric shock.**

Wired Microphones

Two jacks for wired microphones are provided on the Championship Start front panel (shown in Figure A on page 5). These microphone inputs are identical and can be used inter-

changeably. Each microphone input has an independent volume control for optimum voice quality.

- x Note:** Your Championship Start electronic start system is designed for use only with factory-supplied microphones. For reliable operation, do not connect any other devices to the microphone inputs.

Wireless Microphones

The Championship Start System can be ordered wireless-ready or upgraded to use a wireless microphone. For wireless Championship Start systems, the primary wireless microphone receiver is built into the unit. The settings and adjustments for the wireless receiver are on the right panel of the Championship Start System (see Figure C on page 7).

Receiver(s)

Place the Championship Start System, which contains the wireless receiver, in a location that allows for the fewest visual obstructions between it and the wireless microphone transmitter. A wireless microphone will function up to 350 feet (107 meters) from its receiver. When using the wireless microphone, point the antenna on the Championship Start System straight up.

An additional wireless microphone can be added to a wireless Championship Start System with an external receiver. For secondary wireless units, place the external wireless receiver where there will be the fewest visual obstructions between it and its wireless microphone transmitter, and point the antenna on the external receiver straight up. There are no user servicable parts on the receiver.

Squelch

To adjust squelch, rotate the squelch knob counter-clockwise until a loud rushing sound is heard at the speakers, then slowly turn the knob clockwise until the rushing sound is no longer heard.

Channel Select

Channel select allows you to select one of eight available channels.

- x Note:** The receiver and the transmitter **MUST** be set to the same channel for the wireless microphone to work properly.

If you are using two wireless microphones at the same location, the second receiver/transmitter pair needs to be a minimum of two channels away from the first. For example, if the first receiver and transmitter are set to Channel 4, the

second receiver and transmitter can be set to any channel except channels 3 and 5.

RX IND

When the LED labeled RX IND is lit, the receiver and its transmitter are set to the same channel and the receiver is receiving a signal from the transmitter.

Transmitter

The person using a wireless microphone will have both the transmitter and the wireless microphone. The transmitter has a clip so that it can be attached to a belt for convenience. The transmitter sends a signal from its microphone to the receiver in the Championship Start System (or to the external receiver, which transfers the signal to the Championship Start System) for distribution to the speakers.

Low Batt

To check the battery, press the PTT button on the microphone and release it. If the LED labeled LOW BATT blinks, the battery is OK. If the LED stays lit, replace the battery as soon as reasonably possible.

The transmitter uses one 9 Volt battery. The battery compartment opens from the back of the transmitter. To change the battery, depress the textured area on the battery compartment cover and slide the cover away from the transmitter. Replace the battery, making sure the positive and negative terminals on the battery are aligned according to the diagram on the battery compartment, and slide the cover back into place.

Other than replacing the battery, there are no user-serviceable parts on the transmitter.

On/Off Switch

To turn on your Championship Start system, press the power switch until it clicks over to the **On** position. The power switch is on the lower left side of the unit, as shown in Figure B on page 6. Always remember to turn off your Championship Start when it is not in use, so that you don't discharge the battery.

Battery Charging

If the Low Battery indicator (red LED) on the Championship Start front panel is lit or the start tone drops in volume or becomes longer, the batteries are getting low and need to be recharged. The external AC power converter provided with your Championship Start is safety designed both to power the start system and for use as a battery charger.

Take care not to let the battery fully discharge as this will damage the battery and greatly limit the ability of the battery to properly operate the equipment. You can extend the life of the battery by recharging the battery from 12 to 24 hours immediately after each use and insuring that the on/off switch of the unit has been placed in the off position when not in active use. To recharge your battery simply place the power switch in the off position and plug in the equipment to a 110 VAC 60 HZ outlet for 12 to 24 hours.

Setting the Volume Controls

With your Championship Start turned on, rotate the volume control for the desired microphone or auxiliary speaker(s) on the front panel clockwise to increase the volume. Rotate the volume control counter-clockwise to decrease the volume.

Microphones

Test the volume level by using the desired microphone. The microphone volume controls on the front of the Championship Start affect only the PA volume. If you are using multiple microphones, you can adjust the volume for each one separately.

x Note:

To avoid feedback noise, do not hold the microphone close to the speakers when testing the output volume.

Auxiliary Speaker(s)

The volume knob for the auxiliary speaker(s) adjusts the volume of the start and recall tones at any auxiliary speakers.

Main Speakers

The start and recall tones always function at maximum volume at the main speakers under the starting blocks; they are not adjustable.

Configuration Diagrams

The following block diagrams illustrate typical configurations for your Championship Start with in-deck wiring or on-deck. For more specific configuration information, contact your Colorado Time Systems representative.

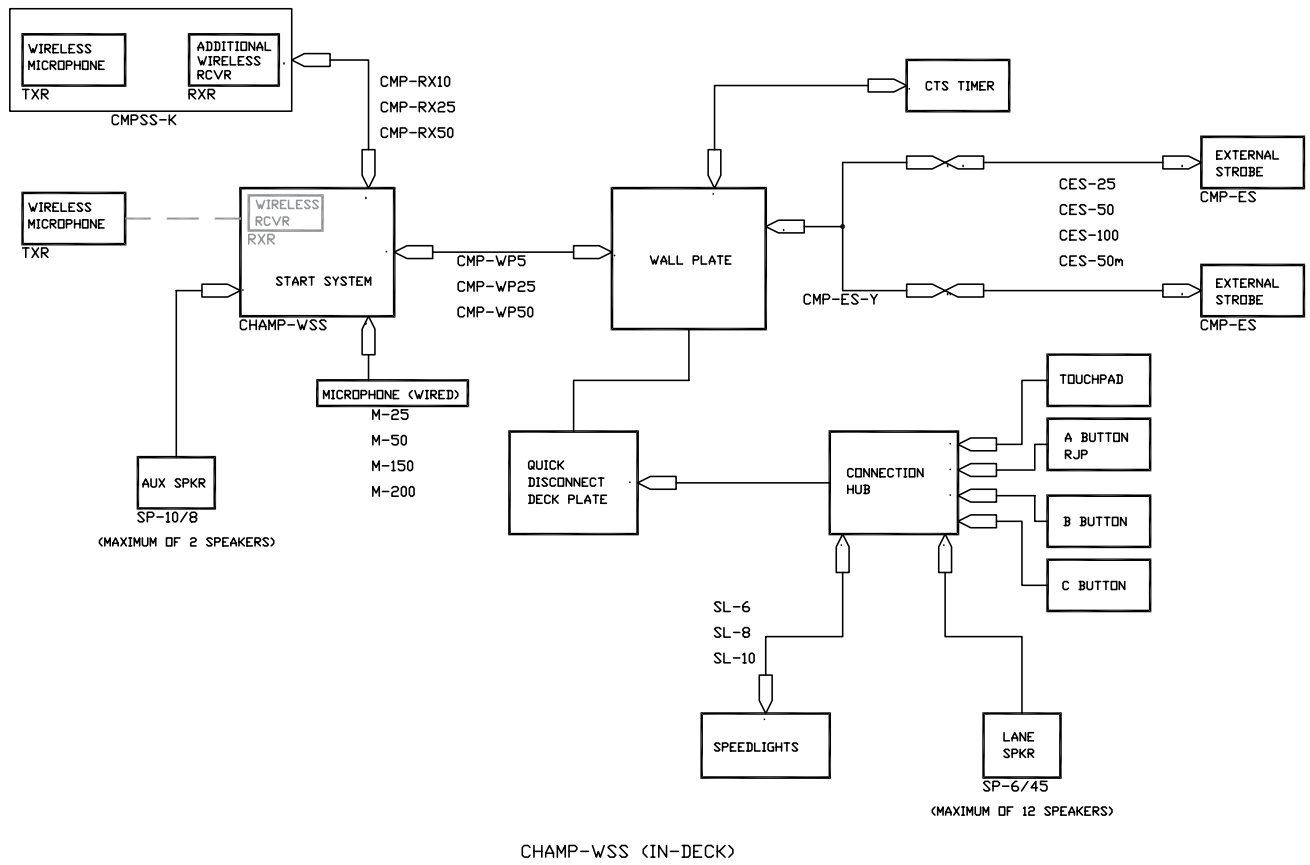


Figure D: Championship Start In-Deck configuration

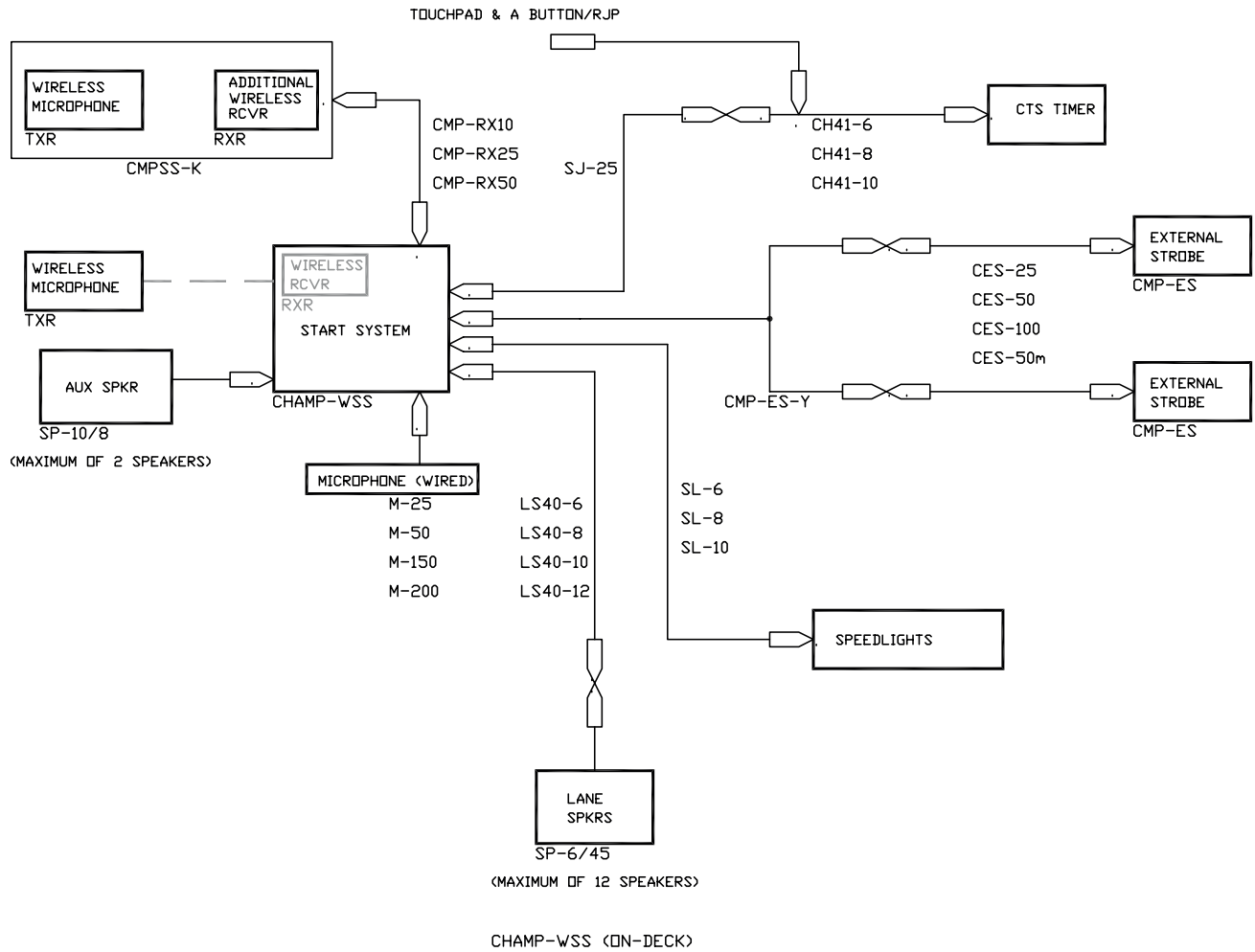


Figure E: Championship Start On-Deck configuration

Using Your Electronic Start System

This chapter explains how to use the many features your Championship Start electronic start system offers.

Starter's Microphone

Wired and wireless microphones are operated in the same way.

Starting a Race

To start a race, hold down the push-to-talk switch and press the start button on the top of the microphone.

Public Address

To use the starter's microphone for public address, press the push-to-talk switch on the side of the microphone and speak into the grille on the front of the microphone.

Recalling a False Start

To recall a false start, release the start button on the microphone and then press it again. If you are using multiple microphones, the Championship Start sees all of the start buttons as a single button. As a result, all microphone start buttons must be released before any one of them is pressed again to recall a false start. Make sure all starters are aware that they must immediately release the start button after each start.

Strobe Light

The strobe light flashes automatically whenever the start system receives a start pulse. Allow 30 seconds between strobe flashes for the strobe circuit to recharge. If the strobe circuit has not had time to recharge fully when your Championship Start receives another start pulse, the strobe light will not flash.

Timer Output

When properly connected to a CTS electronic timing system, such as the System 5, System 6 or Dolphin, the Championship Start automatically sends a start pulse to the timer whenever the microphone start button is pressed. If your electronic timer does not start properly, check the start cable connections both at the timer wall plate or cable harness and at your Championship Start. Many electronic timers, including all Colorado Time Systems timers, require a Normally Open (N.O.) start pulse. Others require a Normally Closed (N.C.) start pulse.

- x Note** The Championship Start works only with Normally Open start pulses. If your timer requires a Normally Closed start pulse, contact your Colorado Time Systems representative for factory modifications.

Operating Notes

Using your Championship Start electronic start system during training sessions is one of its useful features. Swimmers quickly become accustomed to electronic starting and thereby improve their start reflexes.

The volume controls on the Championship Start front panel affect only the PA volume. The start and recall tones always operate at full volume (except for the AUX speaker). If the start tone drops in volume or becomes longer, the battery is getting low and needs to be recharged.

Strobe Light/Speedlight Usage

If coaches, parents and spectators attempt to start their stopwatches from the start tone, they will not get accurate starts. The relatively slow speed of sound, especially in the pool environment, results in late stopwatch starts for observers at any distance from the speakers. Educate your coaches, parents and spectators to use the strobe and/or starting block Speedlights to trigger their stopwatch starts. The strobe and Speedlight flash is unaffected by poor acoustics and the fast speed of light ensures that all observers see the flash at the same time, resulting in more accurate stopwatch times. The strobe and Speedlights also ensure fair starts for hearing-impaired athletes.

Maintenance and Troubleshooting

This chapter contains maintenance and troubleshooting information which helps you keep your Championship Start in good working order and helps you solve common problems quickly and easily.

Maintenance

Your new Championship Start electronic start system has been carefully designed to provide years of trouble-free service. No routine maintenance is necessary, but following a few simple steps will ensure that your Championship Start delivers the trouble-free service for which it was designed.

Battery

You can extend the usable life of the internal batteries by **always keeping them fully charged**—never allow the batteries to discharge completely. Leave the AC power converter connected for 12 to 24 hours, and always make sure the power switch is in the **Off** position after every use. If the red Low Battery LED on the front panel is illuminated or the start tone volume drops or becomes longer, the batteries are getting low and need to be recharged. The AC power converter charges the batteries whether the Championship Start is on or off.

Cable Harness

Do not allow your speakers, speaker connectors, cable harness terminals and timer start cable connectors to remain wet constantly. Colorado Time Systems uses the finest quality materials available for these items, but the pool environment is very harsh. The corrosive action of chemically-treated pool water will eventually corrode any connector exposed to it for long periods. Proper care and handling of cables can prevent damage.

At the beginning and end of each season, clean all female connectors with a cotton swab and silicone grease: use Compound 111® by Dow Corning® for best results. If connectors are badly corroded, clean them with Lime-A-Way®, which is available at most supermarkets, before applying a small amount of silicone grease to the connector.

Compound III and Dow Corning are registered trademarks of Dow Chemical Corp.; Lime-A-Way is a registered trademark of Benckiser Consumer Products, Inc.

Storage

Store your Championship Start in a dry place after each use. The ideal storage temperature is room temperature. Be sure to recharge the internal batteries overnight before storing to ensure that your start system is ready the next time you need it. **Make sure the power switch is in the OFF position before storing your Championship Start.**

In Case of Difficulty

Colorado Time Systems has taken great care to ensure that your Championship Start electronic start system provides years of trouble-free service. If, however, you should experience difficulties with your Championship Start, first attempt to locate and solve the problem using the Troubleshooting guide. Locate the problem you are experiencing and follow the remedies one at a time in the order presented, checking your Championship Start for proper operation between each recommended remedy.

Solving simple problems yourself will save you time and money. If the problem you are experiencing is not mentioned in the Troubleshooting guide or the recommended steps do not solve the problem, call Customer Service, at extension 256, toll-free at 1-800-CTS-0653 (U.S. and Canada) or (970) 667-1000, visit www.coloradotime.com or email customerservice@coloradotime.com for assistance.

Troubleshooting

This section helps you solve common start system problems quickly. Locate the difficulty you are experiencing in the **Symptom** column and then follow the recommendations in the **Action** column one at a time, in the order they appear. If the problem you are experiencing is not listed or the recommended remedies do not have the desired effect, write a summary of the problem and all steps you have taken to correct it and call Colorado Time Systems Customer Service Department, x256, toll-free at 1-800-CTS-0653 (U.S. and Canada) or (970) 667-1000, visit www.coloradotime.com or email: customerservice@coloradotime.com

| Symptom | Action | Notes |
|---|---|---|
| Nothing Works (green Power LED off) | <ol style="list-style-type: none"> 1. Check power On/Off switch 2. Recharge battery 3. Check fuses on Championship Start rear panel—replace only with same type and rating | <p>If power switch is on, battery is discharged</p> <p>See Instructions on page 17</p> <p>Fuses are on the left panel (see Figure B on page 6). All fuses are 5x20mm, 5A, slow-blow</p> |
| Nothing Works (green Power LED on) | <ol style="list-style-type: none"> 1. Check microphone and speaker connections on the Championship Start System | <p>See figures A, B and C on pages 5, 6 and 7 for locations of these items</p> |
| Battery will not charge | <ol style="list-style-type: none"> 1. Check power at AC outlet—use a working lamp to check for power at outlet 2. Check fuses on Championship Start rear panel—replace only with same type and rating | <p>Fuses are on the left panel (see Figure B on page 6). All fuses are 5x20mm, 5A, slow-blow</p> |
| Championship Start does not start electronic timer but start tone sounds properly | <ol style="list-style-type: none"> 1. Check cable connections at timer, cable harness and Championship Start 2. Confirm that your timer accepts Normally Open start pulses. | <p>See Figure C on page 7 for locations of these items</p> <p>See page 16 for a discussion of this issue. For information about your timer, see its documentation</p> |

| Symptom | Action | Notes |
|--|--|--|
| No start or recall tones at speaker(s) | <ol style="list-style-type: none"> 1. Make sure starter is holding down the push-to-talk switch when pressing the start button on the microphone 2. Check microphone connector on Championship Start front panel 3. Check speaker connector(s) on cable harness or deck plate; check speaker cable harness connector at wall plate or I/O box 4. Microphone switch may be bad—substitute another microphone 5. Electronic timer failure—attempt to start timer manually | See Figure A on page 5 for location of this item |
| No public address output at speaker(s) | <ol style="list-style-type: none"> 1. Check volume control level on Championship Start front panel 2. Check speaker connector(s) on cable harness or deck plate; check speaker cable harness connector at wall plate or I/O box 3. Check microphone connection on Championship Start front panel 4. Microphone may be bad—substitute a different microphone | See Figure A on page 5 for location of this item |
| Some speakers work, others do not | <ol style="list-style-type: none"> 1. Check speaker connector(s) on cable harness or deck plate | |
| Strobe does not flash | <ol style="list-style-type: none"> 1. Allow 30 seconds between starts for strobe to recharge 2. Check strobe connector at wall plate or I/O box | |

Returning Your Championship Start for Service

If you are experiencing a problem not found in the Troubleshooting guide or not corrected by the troubleshooting instructions, it may be necessary to send your Championship Start to the factory for service. Depending on the problem, it may not be necessary to return the entire start system. The following list contains the components which can be returned to the factory individually after removal from the Championship Start module.

x Warning Before attempting to remove any components, make sure the Championship Start power switch is in the **Off** position and the AC power converter is unplugged.

Speakers Detach the individual speaker cable from the cable harness if you are using a multiple speaker configuration. If you are using a single speaker configuration, detach the speaker connector from the Championship Start. Return the defective speaker(s).

Cables For any of the cables used, detach all connections and return the cable.

External Strobe Detach the strobe light cable from the Championship Start.

Replacement Parts

Additional items which can be ordered as replacement parts:

- Replacement speakers
- Cable harnesses
- Replacement wired microphone
- Replacement wireless microphone
- Replacement AC power converter

Appendix A: FCC Information

Wireless Microphone

FCC Compliance Statement

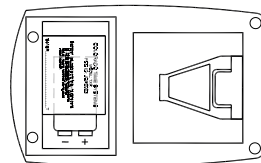
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- 1) This device may not cause harmful interference.
- 2) This device must accept any interference received, including interference that may cause undesired operation.

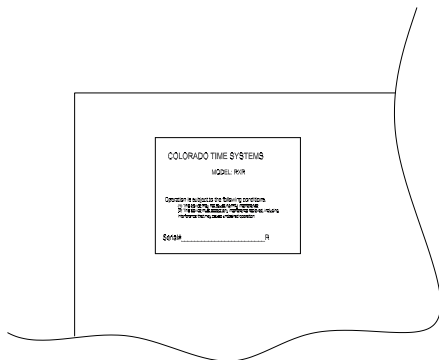
Unauthorized modifications or changes made to this device not expressly approved by the party responsible for compliance voids the user's authority to operate the equipment.

FCC Label Locations

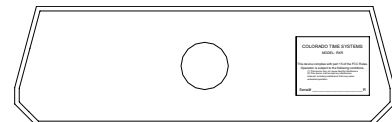
The FCC labels for the Championship Start System using wireless microphone(s) are in the following locations:



Transmitter: under the battery in the battery compartment



Championship Start unit: back panel



External receiver: right hand side of back panel



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