



# Infinity Pro Start System

## User Instructions



**Colorado  
TIME SYSTEMS**  
A **PLAYCORE** Company  
F1063 Rev 202409

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Information in this manual is subject to change without notice. Pictures and illustrations may not accurately depict your product version. Please check our website for the most current information; user manuals are available online in the customer service section of our website.

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## Introduction

Thank you for purchasing Colorado Time Systems' Infinity Pro start system. The portable Infinity Pro Start System contains many features including a loud (120dB) start tone, and ultra-bright adjustable LED strobe. The Infinity Pro also has the ability to be used as a limited public address system. This allows announcements to be made to swimmers during practice and to swimmers and spectators during a meet.

## Setup and Mounting

The Infinity Pro is designed for use in indoor or outdoor swimming pool environments. When operated in the United States, it must be used in accordance with the National Electric Code. When operated outside of the United States compliance with all applicable national and local codes and regulations is required.

The Infinity Pro power supply must be used indoors with a grounded outlet and is intended to be connected to a circuit protected by a ground-fault circuit interrupter (GFCI) when charged. The device cannot be used as a starter or PA system during charging.

Using the Infinity Pro Start System in a manner not specified by Colorado Time Systems may cause the protection provided by the equipment to be impaired. Other than maintenance items described in this manual, there are no user serviceable parts in the Infinity Pro Start System. When replacing serviceable parts, use only replacement parts specified and only perform service while the unit is powered off and disconnected from power.

## Location

Select an appropriate location for your start system. Use the optional TR-3 tripod or START-FPM-2 flagpole mount to place the Infinity Pro in the most convenient location for your event.

Important: When installing the start system in a pool area, always place the start system in a location where there is no chance that it could fall into the pool.

When using the built-in strobe light, the start system module should be positioned so that timer/officials can start their watches from the strobe rather than the start tone, improving the accuracy of watch starts. When using an external visual indicator as a strobe, position it in a similar fashion for officials.

## Mounting Options

Place the Infinity module on a tabletop or use the optional CTS tripod (TR-3) or flagpole mount (START-FPM-2) with its mounting bracket.

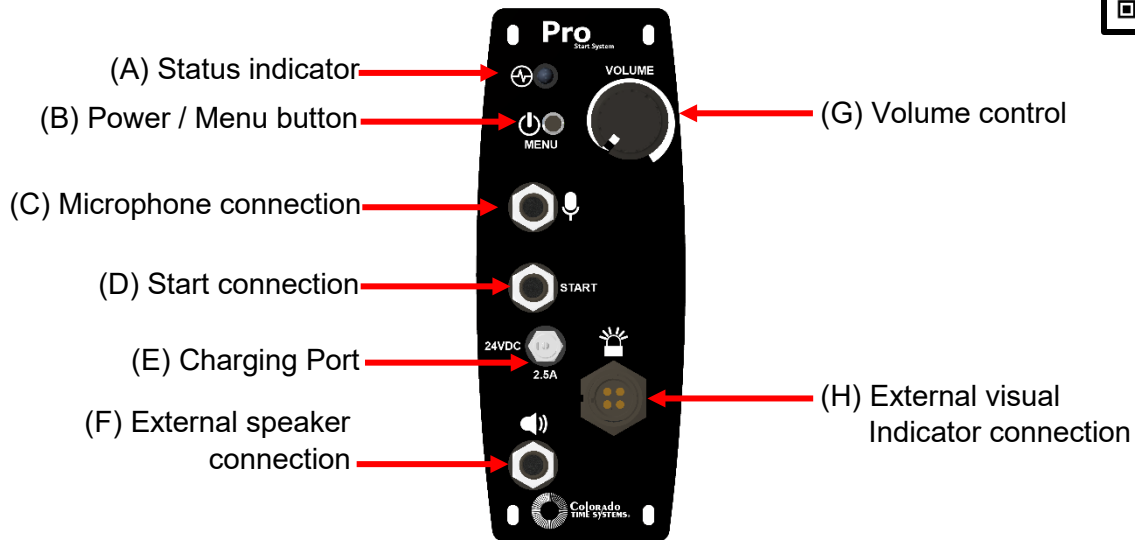
## Features

The Infinity Pro electronic start system contains many features which make it versatile and easy to customize for different applications.

- 0.25 second dual tone electronic blast on internal and external speakers with simultaneous flash on 360° internal strobe and external visual indicator for clear race starts and repeating dual tone false start recall.
- Can be used as a public address system to address swimmers and spectators.
- The start and recall tones can be set to either the classic CTS beep or an alternate beep.
- The intensity of the strobes and loudness of the tones can be individually set to outdoor or indoor levels.
- The polarity of the start signal can be set to normally open or normally closed.
- The Infinity Pro is set to automatically shut itself off when there has been no microphone or menu interaction for sixty (60) minutes.
- Internal 12V Gel-cell Battery.
- Intelligent charging system for fast recharge and long term battery maintenance.

Various sections of this manual contain QR codes linked to accompanying tutorial videos. Click or scan the QR codes to see the Infinity Pro Start System in action.

## Control Panel and Connections



### Status Indicator

(A) When powering on the Infinity Pro the status indicator LED lights up in a short red, green, blue, sequence. If the signal polarity has been set to normally closed (N.C.) the status indicator will blink red three times after the boot up sequence.

When the unit is in the ready to start state, the status indicator LED will display the battery's state of charge.

- Green = 100% - 50% charge
- Blinking Green = 50% - 30% charge
- Blinking yellow = 30% - 10% charge
- Blinking Red = 10% - 0% charge

When the battery indicator is blinking red the device will shut itself down without warning after 20 minutes to preserve the battery.

When the microphone is not connected the status indicator LED will blink yellow.

When a start is initiated the status indicator LED will flash white. During the 15 second recall period the status indicator LED will rapidly blink white. Pressing the start button during this time will activate the recall tone.

The status indicator LED patterns for the menu are detailed on page 9.

The status indicator LED will slowly ramp up in green when the unit is plugged in and charging and will turn to a long blink when the battery is fully charged. Once the battery is fully charged and the device is still plugged in, it will stay in maintenance mode to maintain the battery charging level over long periods of time.

If the battery is found to be deteriorated and sulfated, the charging system charges it slowly to regenerate the battery. During that time the status indicator LED charging pattern is yellow.

## Power/Menu button

**(B)** To power the unit on, press and hold the power button for approximately 3 seconds until the status indicator displays the battery state. Press and hold the power button for approximately 5 seconds to power the unit off. During the power down period the status indicator LED will blink yellow. Once the status indicator turns off, release the power button to completely turn the unit off.

To enter menu options, double press the power button within half a second. The status indicator LED will change to pink indicating the unit entered the first menu point. See page 9 for details about the menu function.

Regardless of start or PA operation, the Infinity Pro consumes power whenever it is turned on. Turn the unit off to conserve battery power while not in use.

The device features a self-shut down, if no microphone or device buttons are activated for one hour the unit will shut itself down to preserve battery charge.

## Microphone Connection

**(C)** Here is where the microphone is connected to the unit.

**Note:** The Infinity Pro is designed for use only with factory supplied microphones. For reliable operation, do not connect any devices other than CTS supplied microphones.

## Start Connection

**(D)** The start connection is where a start jumper cable (Model R-INF-SJxx) can be connected from the start connector on a deckplate, wall plate, cable harness, or directly to the start connector of a Gen7 timer to integrate the starter into the timing system. Timers currently supported include: Sys5/6 and Gen7, as well as some non-CTS timers that use either a normally open (N.O.) or normally closed (N.C.) start setting. Consult your timer's user manual for compatibility information.

## Charging Port

**(E)** The charging port accepts the external power supply to charge the internal battery. For safety reasons the device cannot be operated during charging. The provided power supply may only be used indoors.

**NOTE:** For safety reasons, your Infinity Pro Start System can only be operated from battery power, keeping AC power away from the pool deck and reducing the possibility of electric shock.

Only use approved 24 VDC @ 2.5A power adapter when charging the unit.

## External Speaker Connection

**(F)** Here is where a R-INF-SPxxx external speaker can be connected. The Infinity Pro contains a built in 40W speaker and supports one (1) external speaker (R-INF-SPXXX).

**Note:** Attach only the CTS approved Infinity external speaker to the starter. Attaching any other type of speaker(s) can cause the start system to fail.

## Volume Control

**(G)** The volume control sets the volume of the PA microphone. Turn the knob clockwise (right) to increase volume and counterclockwise (left) to decrease volume.

The volume control affects only the microphone volume, not the start tone volume. See menu instructions on page 9 for information on setting start and recall tone volume. See page 6 for microphone optimization.

## External Visual Indicator

**(H)** This is where an External Visual Indicator (EVI) can be connected to the start system. The Infinity Pro supports one (1) EVI that functions as a strobe.

To connect an EVI to the start system, make sure the start system is turned off, then connect the EVI. The EVI cable (Model R-015-747-xxx) has a blue and a black end, the black end connects to the starter, the blue end to the EVI. Lay the cabling out in a safe and reliable manner and avoid trip hazards.

Turn the device on. During the boot up process the internal strobe and EVI will flash a red, green, amber, white, white, white pattern to test all LEDs after which each strobe flashes white twice while it gets activated. During those few seconds of boot up starts cannot be issued.



# Operation



## Battery

The Infinity Pro start system operates on its built-in 12 VDC battery. When the battery is fully charged typical operation is 12 or more hours, depending on usage. Using the starter as a public address system substantially reduces battery life.

It is important that you make sure the battery is fully charged before each day's swimming. Pay attention to the battery life indicator and recharge your battery after each use.

To recharge the internal battery, power the unit off, remove the Infinity from the pool area and take it to an indoor location. Plug the battery charger into a grounded outlet and attach the cable from the battery charger to the charging port on the Infinity Pro control panel. The unit will automatically enter charging mode. Keep the charger plugged in until the next use.

The charging circuit in the Infinity Pro prevents overcharging, allowing it to stay plugged in for extended periods of time keeping the battery fresh and charged.

An optional spare battery is also available for facilities to ensure that their Infinity Pro always has a charged battery ready to be installed.

**Note:** Do not change the internal battery near water. Bring unit to a dry, indoor location before removing internal battery. (See page 18 for instructions on how to replace the battery.)

## Starter's Microphone

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

To start a race, hold down the push-to-talk switch and press one of the two start buttons on the top of the microphone. Either of the two start buttons can be used to activate the start signal. Use the button most convenient for using the microphone with the left or right hand.

To recall a false start, hold down the push-to-talk switch and press the start button again after a start. The recall must be made within fifteen (15) seconds of the start pulse while the status indicator LED blinks white.

A convenient microphone rest is built into the Infinity Pro to the left of the control panel. When the microphone is not in use, clip the microphone onto the rest.

## Optimize Microphone Operation

There are a few simple steps that can be taken to optimize the quality of the audio and prevent feedback when using the starter microphone.

- Hold the microphone very close to the mouth and make sure to speak normally or loud into the microphone.
- Stay away from the horn speaker in the front of the starter. The speaker is where the sound for feedback comes from.
- Start with the microphone volume knob set low and increase as needed to cut through the ambient noise.

## Strobe Light

The strobe light flashes automatically whenever the start system generates a start pulse and start tone.

### Strobe Light 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 (compared with the speed of light) generally results in late stopwatch starts for observers at any distance from the speakers.

Educate coaches, parents, and spectators to use the strobe flash to trigger their stopwatch starts. The strobe 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 starts. The strobe also ensures fair starts for athletes that are deaf or hard of hearing.

See page 5 for information on connecting an external visual indicator as a second strobe.

## Infinity Pro and Electronic Timer

If using Infinity Pro with an electronic sports timer, connect the timer start cable from the start connector of a deckplate, cable harness, or from the back of a Gen7 timer to the Start connector on your Infinity Pro control panel.

The Infinity Pro can generate Normally Open (N.O.) and Normally Closed (N.C) start pulses. N.O. works with all Colorado Time Systems' electronic timers. If your timer requires a Normally Closed start pulse, see Menu on page 9 for information on changing the start pulse type.


**CAUTION:** When the start signal polarity is set incorrectly for a specific timer, the race times of the athletes will be started incorrectly and will not be accurate by tenths of seconds.

When properly connected to an electronic timing system, the Infinity Pro automatically sends a start pulse to the timer whenever the microphone push-to-talk (PTT) is held down and either of start buttons are pressed. If the electronic timer does not start properly, check the start cable connections on both ends of the cable.



## Menu Options



The Infinity Pro offers four menu options: Start Tone volume, Strobe intensity, Start Tone Selection and Start Signal Polarity.


To enter the menu options, double press the  MENU button on the control panel. A double press is created by pressing the button twice within 0.5 seconds. The status indicator LED will turn pink for the first menu point. **Note:** menu options can only be accessed while the starter is in the ready to start state. Menu options are not accessible during the recall period or while the push-to-talk (PTT) switch is being pressed.

### Navigation

The  MENU button navigates forward through the menu options. The push-to-talk (PTT) switch on the microphone toggles between settings in each menu option. Double pressing the  MENU button will exit menu options.


### Start Tone Volume

Press the PTT button to toggle setting the start tone between either High (120dB at 1m) or Low (100dB at 1m). When the normal operation of High is selected the status indicator LED will be pink and blink with a long blink. When Low is selected the status indicator LED will be pink and blink with a short blink.

Double press  MENU to exit menu options or press it once to proceed to the Strobe intensity selection.


### Strobe Intensity

Press the PTT button to toggle between setting the brightness of the strobe(s) to either High or Low. When the normal operation of High is selected the status indicator LED will be white and blink with a long blink. When Low is selected the status indicator LED will be white and blink with a short blink.

Double press  MENU to exit menu options or press it once to proceed to the Start Tone selection.

### Start Tone Selection


Press the PTT button to set the start tone to either the Colorado Time Systems tone or an alternate tone. The status indicator LED will be yellow and blink with a short blink when the Colorado Time Systems tone is selected. When the alternate tone is selected the status indicator LED will be yellow and blink with a long blink.

Double press  MENU to exit programming options or press it once to proceed to Start Signal Polarity.


## Start Signal Polarity

Press the PTT button to toggle a normally open or a normally closed start signal. When the normally open signal is selected the status indicator LED will be red and blink with a short blink. When normally closed is selected, the status indicator LED will be red and blink with a long blink.

**CAUTION:** When the start signal polarity is set incorrectly for a specific timer, the race times of the athletes will be started incorrectly and will be not accurate by tenths of seconds. When normally closed is selected the status indicator will blink red for a short time when the device is turned on to remind the user that start signal polarity is set to normally closed.

Double press  MENU to exit menu options or press it once to cycle back to Start Tone Volume menu point.

## Exit the Menu

When finished setting the options the starter, double press  MENU to exit the menu. All settings will be saved, and the battery state indication will come on.

## Maintenance



Your Infinity Pro 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 Infinity Pro continues to function at its optimum level.

Scan or click the QR code to open the CTS Maintenance Checklist for information on standard maintenance for CTS equipment.

## Battery

The usable life of the internal battery can be extended by keeping it fully charged and never allowing it to discharge completely. Leave the Infinity Pro plugged in when not in use. The intelligent charging system will keep the batteries in a fresh and fully charged state. (If battery replacement is required, See page 18 for instructions.)

## Storage

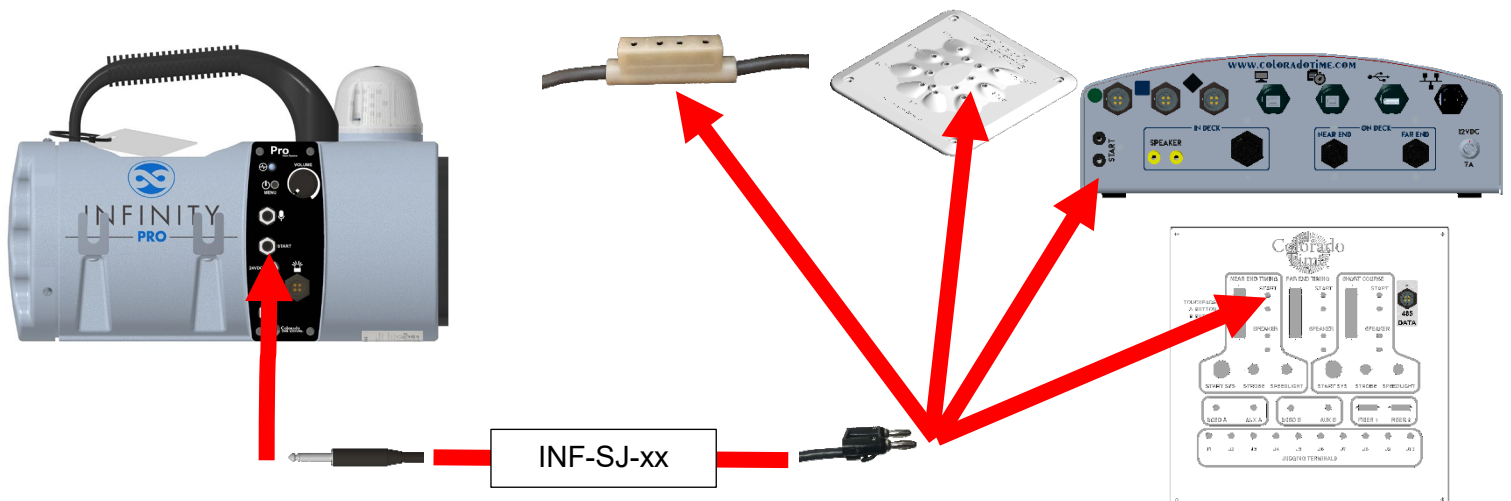
It is best to store the Infinity Pro in a cool, dry place after each use. Do not store the unit in an area that becomes overly humid, hot, or cold. Try to keep it in a dry location that remains around 70-80 degrees Fahrenheit throughout the year.

## Connection Diagrams

The following diagrams illustrate typical configurations for integrating your Infinity Pro start system with existing CTS equipment.

### Connection to Deckplate, Cable harness, Timer, or Legacy Wallplate:

Connect the banana jack end of an INF-SJ-xx cable to the start connection on the Deckplate, Cable harness, Timer, or Legacy Wallplate and connect the end with the 1/4in jack to the Start connection on the Infinity Pro Starter.



## Troubleshooting

Symptom	Action
Nothing Works	<ol style="list-style-type: none"> <li>1. Turn unit on by pressing the power button until it is on. If nothing happens, or the status indicator LED is red or the unit powers itself down immediately, the battery is discharged.</li> <li>2. Recharge battery</li> <li>3. Check all connections on Infinity Control Panel.</li> </ol>
Battery will not charge	<ol style="list-style-type: none"> <li>1. Check power AC outlet—use a working lamp to check for power at outlet</li> <li>2. Check charger connection on the Infinity Control Panel</li> <li>3. Replace battery</li> </ol>
Infinity Pro does not start electronic timer but start horn sounds properly.	<ol style="list-style-type: none"> <li>1. Check cable connections at timer, cable harness (or deck/wall plate) and Infinity Pro</li> <li>2. Make sure you are using a Colorado Time Systems timer (Normally Open circuit)</li> <li>3. Possible electronic timer or starter failure — attempt to start timer manually.</li> </ol>
No strobe flashes or start tone at speaker(s) when initiating start.	<ol style="list-style-type: none"> <li>1. Check wired microphone connector on the Infinity Pro Control Panel.</li> <li>2. The microphone switch may be damaged— substitute another microphone.</li> </ol>
No start or recall tones at external speaker.	Check speaker and speaker connector at external speaker and on Infinity Pro control panel
No public address output at speaker(s).	<ol style="list-style-type: none"> <li>1. Check volume control level on the Infinity Control Panel.</li> <li>2. Check speaker connector at external speaker and on Infinity Control Panel.</li> <li>3. Check microphone connection on the Infinity Control Panel.</li> </ol>
Internal strobe does not flash	If the strobe flashed during the boot up sequence, but not when a start is initiated, return Infinity Pro to CTS for repair
Experiencing audio feedback.	See page 6 for microphone optimization tips.
External strobe does not flash.	<ol style="list-style-type: none"> <li>1. If the strobe flashed during the boot up sequence, but not when a start is initiated, check all connections to the starter and reboot.</li> <li>2. Return Infinity Pro to CTS for repair</li> </ol>
External strobe (EVI) flashes green.	If the EVI is connected to the starter <b>after</b> the starter was powered on, it will only flash GREEN when a start is initiated. Turn unit off and back on to allow EVI to be activated as an external white strobe. See page 5 for EVI connection details.
After approximately 8 hours of Fast charging, the unit goes into Maintenance charging and the status indicator LED blinks yellow	The battery health is degraded. Most likely the batteries are able to provide power for some meets, but battery replacement is recommended.

If the problem you are experiencing is not mentioned in the Troubleshooting guide or the recommended steps do not solve the problem, contract Customer Support toll-free at 800-287-0653 (U.S. and Canada) or 970-667-1000 for assistance or email [support@coloradotime.com](mailto:support@coloradotime.com).

# Specifications

## General

Model INF-PRO: Loudspeaker Start System consisting of a start module with built-in white LED strobe, built-in 40-watt corrosion-resistant speaker, internal gel-cell battery, external battery charger, one plug-in microphone, and instruction guide.

## Physical

Height: 9.75 inches (24.8cm)

Length: 14.25 inches (36.2cm)

Width: 7.75 inches (19.7cm)

Weight: 11 lbs (5 kg)

## Environmental

Temperature: 0°C - 45°C Humidity: 90% (non-condensing) Altitude: 0 to 3000 m

## Electrical

DC Supply: 24 VDC @ 2.5A. The 24 V power adapter is used for recharging indoors only.

Attention: The Infinity Pro Start System can only be operated from battery power, keeping AC power away from the pool deck and reducing the possibility of electric shock.

## Battery

Type: One 12 V Gel Cell

Operating Time: 12 hours of normal use

Recharge Time: about 4.0 hours to reach 90% charge. Additional 2.5 hours to top up to 100%

## Fuses

Battery - 10A Time Lag, 5mm x 20mm, on printed circuit board

## Electrical Connections

Microphone Port: Input

External Charging Power: Input - 24 VDC @ 2.5A

Speaker Port: Output – max 40W.

Start Port: Polarity independent start signal and communication to Gen7, max. 7V

Strobe connection for one external visual indicator

Settable functions: High/low start tone volume for outdoor/indoor, high/low strobe intensity for outdoor/indoor, CTS start tone and alternate start tone, start normally open/normally closed polarity.

## Appendix A: Certifications

### Safety Certification

This device conforms to Std. UL 863 and UL 1492 and is listed in Colorado Time Systems' UL file E190097.



### FCC Information

#### FCC Compliance Statement

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.







## EUROPEAN DECLARATION OF CONFORMITY

We,  
Everlast Climbing Industries, Inc.  
DBA Colorado Time Systems  
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declare under our sole responsibility that the

Product: Start System  
Model numbers: INF-PRO

to which this declaration relates is in conformity with the following European Directives:

European Council Directive 2001/95/EC, 2014/35/EU, 2014/53/EU  
Safety of electronic equipment within the fields of Audio/Video, Information  
Technology and Communication Technology

CENELEC EN 62368-1:2020/A11:2020 Issued 2020/01/06

European Council Directive 2014/30/EU (26 February 2014) on Electromagnetic  
Compatibility.  
EN 61326-1:2013, EN 55011:2016

European Council Directive 2011/65/EU (July 21, 2011) and Commission Delegated Directive  
(EU) 2015/863. of 31 March 2015 on the Reduction of Hazardous Substances (RoHS).

The Technical Construction File is maintained at the corporate headquarters of Colorado  
Time Systems in Colorado, USA.

Date of issue: August 28, 2024  
Place of issue: Loveland, Colorado, USA

*Michael Medina-Brodsky*  
\_\_\_\_\_  
Michael Medina-Brodsky  
Director of Operations

## Appendix B: Factory Default Settings

<b>Start Settings</b>	
Start Tone Volume	High
Strobe Intensity	High
Start Tone	CTS Beep
Start Signal Polarity	Normally Open (N.O.)

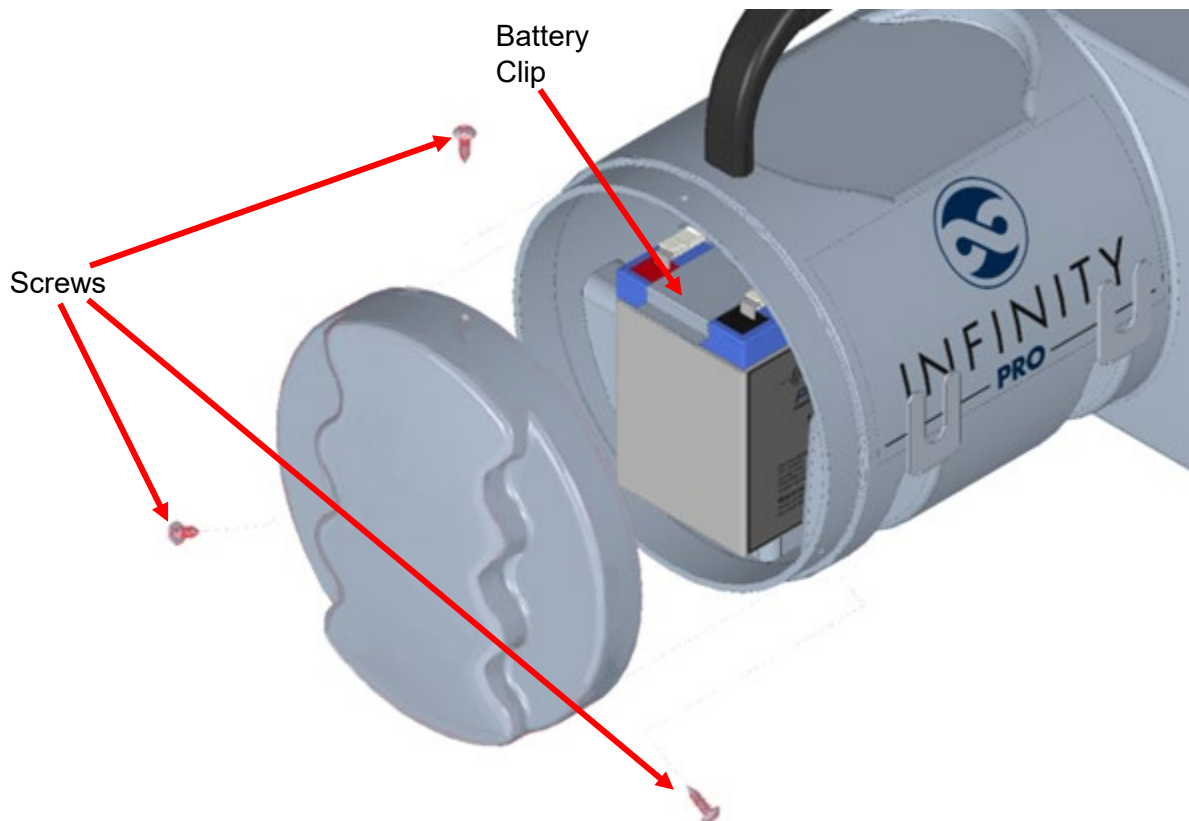
## Appendix C: Supporting & Auxiliary Equipment

<p><b>TR-3</b> CTS Tripod with tripod head</p> 	<p><b>EVI</b> External Visual Indicator</p> 
<p><b>START-FPM-2</b> Pole mount kit for CTS starters.</p> 	<p><b>R-015-747-xxx</b> EVI Connection cable available in lengths of 15ft, 125ft, 10m, or 50m.</p> 
<p><b>R-INF-SJxxx</b> Start Jumper Cable: INF-PRO to Timer/Deckplate</p> 	<p><b>EVI-FPM</b> Pole mount kit for EVIs</p> 
<p><b>R-420-003</b> Replacement Battery</p> 	<p><b>R-920-061</b> Replacement power supply Available power cords: R-015-367 type A US- 6ft R-015-369 type F EU- 6ft R-015-379 type G UK- 6ft R-015-380 type I AU/CHN- 6ft</p> 
<p><b>R-INF-SPxxx</b> External Speaker with 125ft or 200ft cable</p> 	

## Appendix D: 12V Gel-cell Battery Replacement

To replace the 12V battery (CTS p/n R-420-003), place the Infinity Pro unit on a table in a dry location, away from the pool deck.

1. Power the unit off and disconnect from external power.
2. With a Phillips-head screwdriver, unscrew the three screws on the back battery cover as shown below, then remove the back panel of the Infinity.
1. 2. Lift up the battery clip and slide the 12-volt gel-cell battery partway out so you have easier access to the connectors.
2. Disconnect the two connectors by wiggling them from side to side while pulling them off of the battery posts.
3. Remove the battery.
4. Lift up the battery clip and slide the new battery into the chamber with the battery connectors facing the opening. Let the battery clip snap down on to the battery to hold it in place.
5. Connect the colored wire connectors to the corresponding connectors on the battery (red to red, black to black). Do not pull excessively on the wires or you may dislodge them from the main circuit board.
6. 7. Replace the back panel and tighten the three screws to hold the panel in place.





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