Relay Judging Platforms with Speedlights

RJPLD User Guide

Colorado Time Systems
A PLAYCORE Company

F968 Rev. 201909

Colorado Time Systems

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Part Number F968, Rev. 201909

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Introduction

Relay Judging
Thank you for purchasing RJPLDs (relay judging platforms with speedlights and dual connectors) from Colorado Time Systems. Colorado Time Systems' RJPLD technology is an extremely accurate way to judge relay exchanges. The RJPLD allows your CTS timer to automatically compare the incoming swimmer's finish on the touch pad with the departure of the swimmer leaving the starting platform. The RJPLD will collect the necessary information to judge a relay exchange to 1/100th of a second.

A CTS timer will display and print relay exchange results, splits, and other relay data. This information is then stored with the other race data.

Start reaction time
On every start, the RJPLD senses when the swimmer leaves the block and supplies that information to the timer, which compares it to the start impulse from the starting system with 1/100th of a second accuracy.

In training, coaches and swimmers can use RJPLDs to provide this vital information to improve start reaction times.

In competition, the start reaction times can be displayed on the scoreboard (through CTS System 6 or later) at the beginning of a race, adding excitement to the event for the audience.

Speedlights
RJPLDs are equipped with LEDs across the front edge of the RJPLD. These speedlights flash simultaneously with the start tone and start strobe light from a CTS Championship Start system. All athletes benefit from the visual signal, which they can easily see without altering their race-ready posture. Speedlights ensure the fairest of starts for athletes that are deaf or hard of hearing.

Deck side start indicator
An LED on the deck side of the RJPLD also flashes with the start tone and strobe, providing a convenient visual cue to backup timers

RJPLDs as a training tool
RJPLDs provide the training tool to perfect both start reaction times and relay exchanges.

Elegantly engineered
Both the top and leading edge of the RJPLD are sensitive to the swimmer's departure. See the white paper on our website for more information about how RJPLDs work.

Features

- Easy installation and removal
- Easy cable connection on either side of the starting block
- Lightweight and sturdy aluminum construction
- Speedlights across the front edge of the RJPLD which flash simultaneously with the start tone and start strobe light from a CTS Championship Start system. All athletes benefit from the visual signal, which they can easily see without altering their race-ready posture. Speedlights ensure the fairest of starts for athletes that are deaf or hard of hearing.
- Deck side start indicator also flashes with the start tone and strobe, providing a convenient visual cue to backup timers
- Non-skid surface
- Durable switch mechanism
- Timing accuracy to 1/100th of a second
- Can be ordered with custom logo on top of RJPLD

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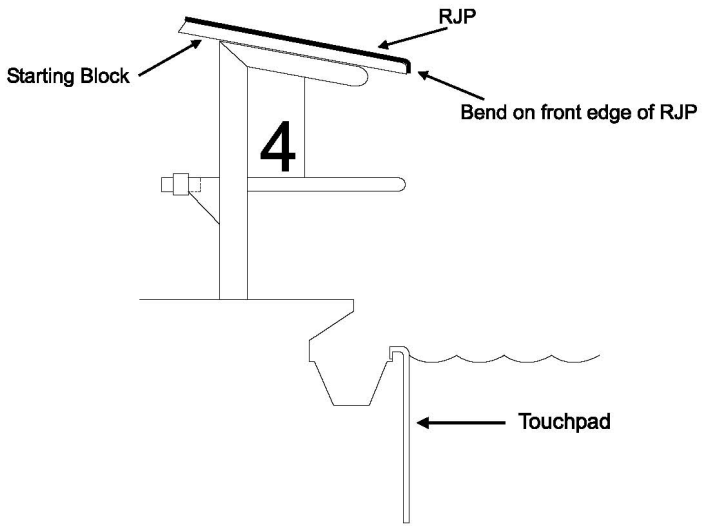
Set Up

This section describes hardware, cabling and software set up.

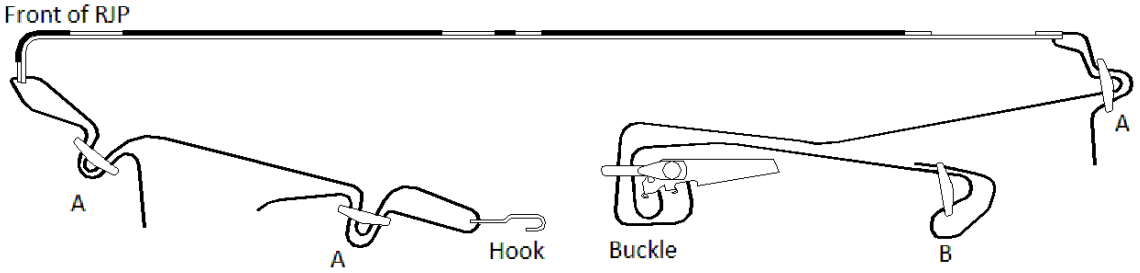
Hardware Installation

Generally, RJPLDs attach to the starting blocks either with straps or bolts. In a few cases, there are custom mounting instructions which are shipped separately with RJPLDs that need them.



Straps

Most RJPLDs come with straps to attach securely to the starting block. RJPLDs are shipped with the straps fully assembled, but the straps may come apart during shipping. See below for the proper way to feed the straps through the metal fasteners.



The first time you install a new RJPLD on a starting platform, you must adjust the straps to fit the starting platform:

1. Detach the hook from the buckle.
2. Place the RJPLD on the starting platform with the bend hanging over the front end of the block. Slide the RJPLD back so it touches the front edge of the starting platform.
3. Adjust the fasteners at the positions marked A in the illustration above to allow the straps to go around the block and the hook to re-attach to the buckle.
4. Attach the hook to the buckle.
5. Pull on the strap at the position marked B to tighten the strap assembly. Apply tension until the straps are just snug, then flip the buckle to secure the RJPLD in place.

After the initial setup to fit the RJPLD to the starting platform, there is no need to re-adjust the straps. Simply place the RJPLD on the starting platform, attach the hook to the buckle, and flip the buckle.

Bolts

RJPLDs for some starting blocks have stainless steel bolts welded to the bottom. Position the RJPLD over the starting block with the bend in the RJP hanging over the front end of the block. Slide the bolts into the pre-drilled holes in your starting blocks. Secure the RJPLD to the block by screwing the supplied nuts onto the bolts which are now protruding underneath the block.

Cabling

Note: To flash with the start signal, Speedlights must be connected to a CTS Championship Start system through an under-block connection hub, deck plate or cable harness. If they are not, the RJPLD will still function but the Speedlights won't flash.

1. Connect the large, 4-pin end of the RJPLD cable into the connector on either side of the RJPLD. There are two identical connectors; plug into only one of them. Choose whichever poses the least trip hazard on deck.
2. The other end of the cable depends upon what you are connecting to:
   - R-015-027 cable for DP-series deck plates or cable harness: This cable has two parts on the end away from the RJPLD. Connect the stackable banana plug into the Button A/RJP connector on the deck plate, connection hub or cable harness. Insert the Button A backup button cable into the female side of this stackable banana plug, as shown.

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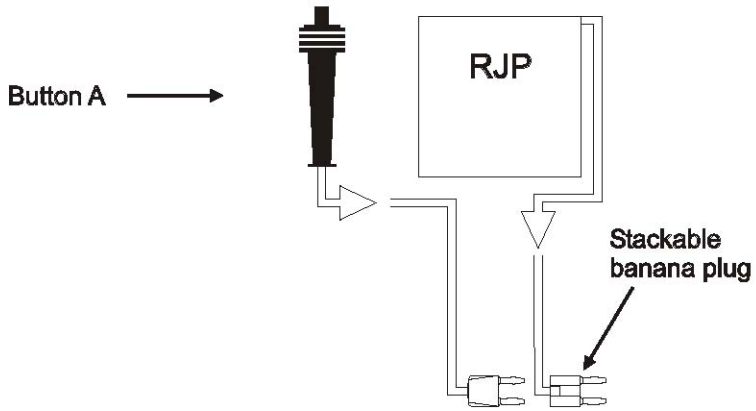

If you are not using three buttons for backup timing, plug the button(s) that you are using into Button B and/or C, and plug the RJP by itself into the ButtonA/RJP connector

If you are using a CTS Championship Start system, connect the small round connector into the speedlight connector on the deck plate, connection hub or cable harness.

- R-015-046 for TDP series deck plates: Connect the triple banana plug into the RJP connector on the deck plate.

Software Set Up

Set your timer for RJP input. This process varies among timers. Consult your timer documentation for details of doing this for your system.
Generally, there are two areas to set:

1. Set the timer to accept RJP input in hardware setups (platforms rather than buttons)
2. Set the timer to print relay judging exchange results according to your preferences. You may wish to turn this off for non-relay events.

The Relay Judging Platform measures the force exerted by the swimmer as they push off the starting block. Based on sensor data and high speed camera analysis, we have determined that a swimmer may still be in contact with the starting block while the force exerted is below the minimum threshold detectable by Relay Judging Platform. The duration of this “forceless” contact was never shown to be longer than 0.01 seconds. As such, an adjustment of 0.01 seconds, in favor of a safe takeoff, is added to all relay exchange times calculated by the Swimming software on all CTS Timers. This adjustment cannot be modified.

Hardware and software from other companies handle this in various ways; it is therefore most reliable to use CTS relay judging platforms with CTS timers.

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Storage and Maintenance

Storage

Store your RJPLDs in a safe place. Colorado Time Systems has caddies available, which provide safe storage and a convenient way to transport our RJPLDs to the pool deck. For more information, contact your CTS sales representative.

Maintenance

The key to making your Colorado Time Systems equipment last and run trouble-free is regular cleaning and maintenance. The steps are quite easy; the secret is to do them consistently so that corrosion does not have a chance to begin to form.

Materials needed:

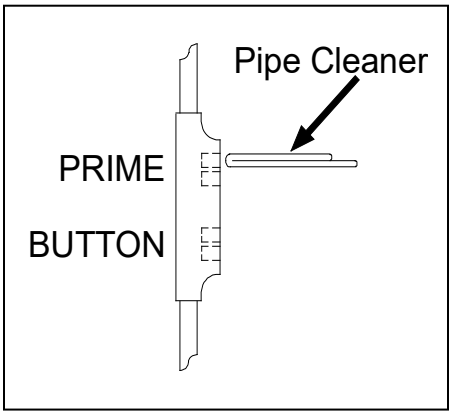
100% cotton pipe cleaners (available at most drug stores)
Isopropyl alcohol
Dielectric grease (Dow Corning #111 or equivalent – available at most hardware stores)
Clean FRESH water (not pool water)
Soft cloth
Soft toothbrush

Before each use:

1. Make sure that you have a small amount of dielectric grease in each banana jack of the RJPLD, so that when you push in the banana plug a small amount of grease pushes out of the hole.

After each use:

1. Use isopropyl alcohol and a pipe cleaner to clean out each banana jack of the cable harness pods or the deck plate. Once you have cleaned them, flush with clean fresh water (NOT pool water). Next, dab a small amount of dielectric grease into each hole and then work a banana plug in and out to get the grease into each banana jack.



Last Resort-

If for some reason your banana plug connections, or the banana jacks of the cable harness pods or deck plates acquire any kind of lime scale or calcium build up, use a diluted (50-50) solution of Lime Away or CLR (calcium-lime-rust) cleaner and a pipe cleaner to remove the buildup:

1. Dip pipe cleaner folded in half in diluted solution of Lime Away or CLR cleaner and twist into socket.
2. Clean thoroughly by rotating the pipe cleaner in the socket.
3. Flush with plenty of clean, fresh water (not pool water).

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4. Use a clean, dry pipe cleaner to soak up excess water in the socket.
5. Finally, dab a small amount of dielectric grease into each hole and then work a banana plug in and out to get the grease into each banana jack.
6. Wipe the excess grease from the banana plug with a clean soft cloth.

WARNING: DO NOT use Lime Away or any CLR cleaner as a standard cleaning solution for banana jacks. NEVER use these chemicals for speedlight connectors.

Failure to clean as directed will dramatically shorten the life of your equipment.

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