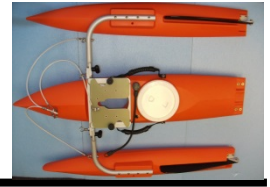


RiverRay Tethered Trimaran Assembly Instructions

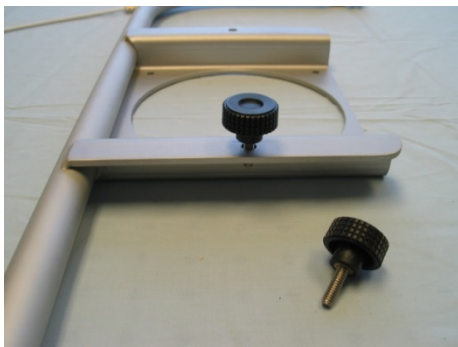


This Instruction Sheet shows how to assemble the RiverRay tethered trimaran. This platform is designed for typical measurement water velocity 0.6-3m/s (2-10 fps); maximum water velocity 4.6m/s (15 fps).

Outriggers and Crossbar



Begin by attaching the wire rope bridle to the crossbar. Insert the Eye Bolt thru each crossbar side as shown. Tighten the nut to 26 IN-LB, 4.0 Nm.



Install the two thumb screws a few turns in the crossbar.



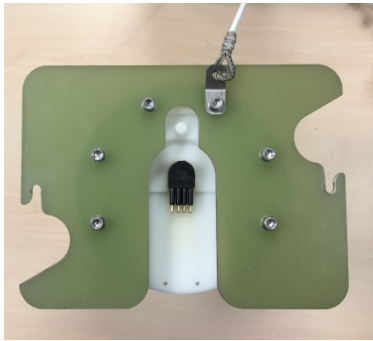
Next, attach the outriggers to the crossbar using the M6 x 35mm oval head screws provided. Tighten the screws to 10.6 IN-LB, 1.2 Nm.

Main Hull and Instrument Attachment



Attach the main hull to the crossbar using the M6 x 16mm pan head screws with lock washer and flat washer as shown.

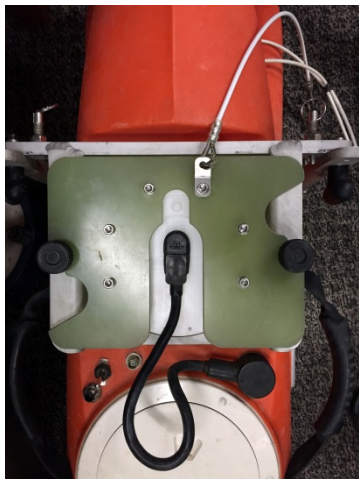
Tighten the screws to 10.6 IN-LB, 1.2 Nm.



Attach the instrument mounting plate to the ADCP using the M6 socket head cap screws and flat washers as shown.

Tighten the screws to 10.6 IN-LB, 1.2 Nm.

Attach the Instrument Safety Cable to one of the forward instrument mounting screws.



Install the instrument by laying the mounting plate over the thumb turns and turning it snugly into place. Tighten the thumb screws to secure.

Connect the data cable to the instrument.

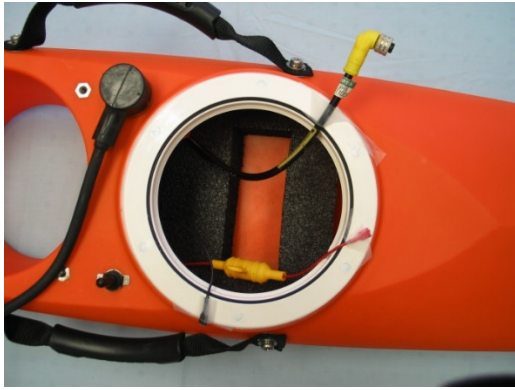


Note the Instrument Safety Cable is attached to one of the forward instrument mounting screw positions.




Be sure that the transducer head is protected during this process.


Electronics



There are three internal connectors.

- Red spade lug with fuse holder – battery Positive terminal
- Black spade lug – battery Negative terminal
- Yellow data connector – Radio

 The yellow data connector is used only with higher-range radios (optional).

 Always check the 4 amp Slo-Blow fuse (size 3AG) is installed in the fuse holder.




Charge the battery using the 12V 3A charger.

Connect the charger to the battery:

- Red clip – battery Positive terminal
- Black clip – battery Negative terminal

Once the clips are connected, plug in the charger's AC cord. The LED will be solid red while charging, solid green when done.

 It will take approximately 2 ½ to 3 hours to charge a fully discharged 7AH battery.



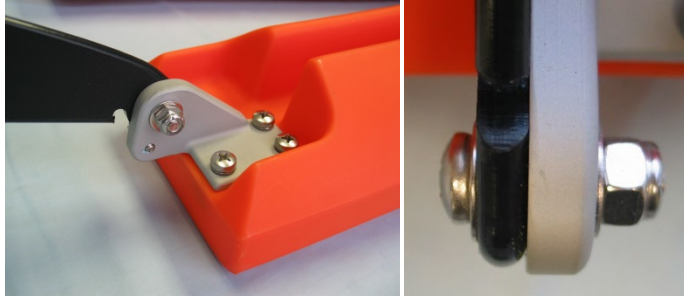
 Check the deck plate O-ring each time it is opened.

The 12v 7.2 ah SLA battery (provided) powers the instrument and data transmission system, and power to both systems is controlled by the on/off toggle on the deck.

To connect the battery:

1. Be sure that the power switch is off.
2. Open the circular deck plate by turning it counter-clockwise.
3. Place the battery in the compartment. Use the provided foam blocks to secure the battery inside the compartment.
4. Connect the black spade lug connector to the battery Negative terminal.
5. Connect the red spade lug connector to the battery Positive terminal.
6. Check the 4 amp Slo-Blow fuse (size 3AG) is installed in the fuse holder.
7. Check the deck plate O-ring is installed and no dirt is present on the O-ring, O-ring groove, or deck plate.
8. Close the circular deck plate by turning it clockwise until fully tightened.

Pre-Installed Components



The fin gudgeon attaches using three M6 x 16mm screws with lock washers.

The fin attaches to the gudgeon in this order: screw, flat washer, fin, gudgeon, flat washer, lock nut.

Tighten the screws to 10.6 IN-LB, 1.2 Nm.



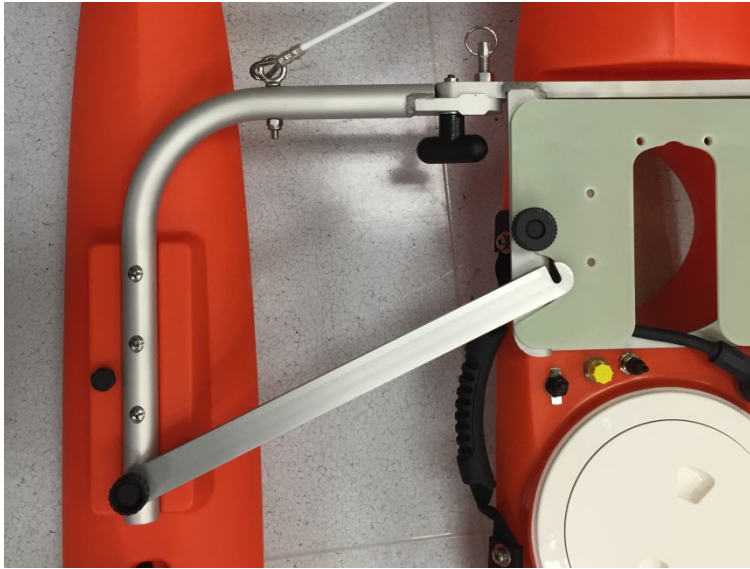
Note that the notch in the fin seats onto the slotted-head shoulder bolt. This prevents the fin from lowering too far into the water. The shoulder bolt is installed with Loctite.



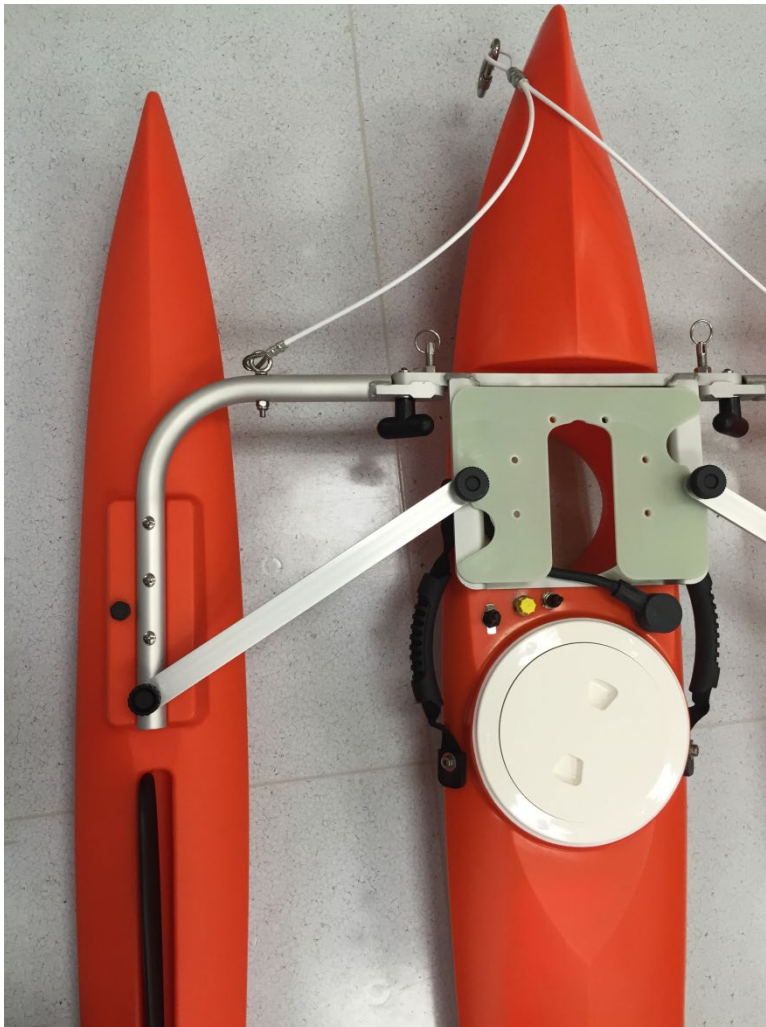
Strap handles attach in this order: hull, fender washer, strap handle, flat washer, lock washer, screw.

Tighten the screws to 10.6 IN-LB, 1.2 Nm.

Support Brace



Attach the support brace using the provided thumb screws.



Rotate the brace under the thumb screw on the instrument mounting plate.

Tighten both thumb screws.

RiverRay Platform Maintenance



The deck plate O-ring should be cleaned whenever the deck plate is opened and replaced **BEFORE** it is showing any signs of wear and tear.

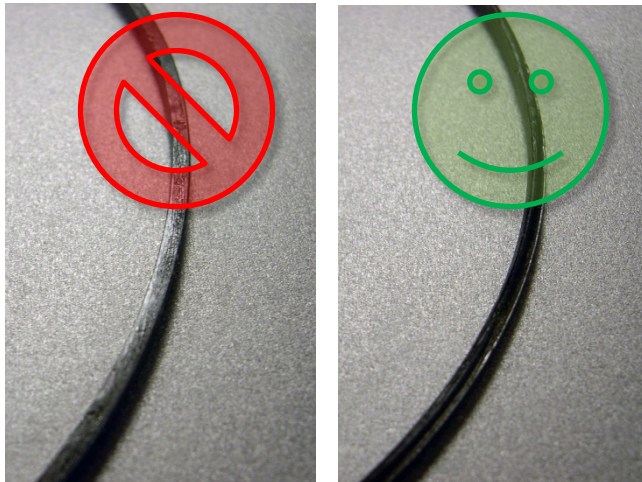
 **The O-ring should be replaced every one to two years maximum.**

Be sure that the power switch is off.


Open the circular deck plate by turning it counter-clockwise.


Gently pry the rubber O-ring from the groove. Use a wood or plastic wedge to help lift the O-ring from the groove.

Clean the O-ring groove using a lint free cloth. Be sure the groove is free of foreign matter, dirt, and scratches.



Lubricate the O-ring with a thin coat of silicone lubricant. Use as little lubricant as possible; use just a sufficient amount to change the color of the O-ring.

 Apply the lubricant using latex gloves. Do not let loose fibers or lint stick to the O-ring.

 Fibers can provide a leakage path.

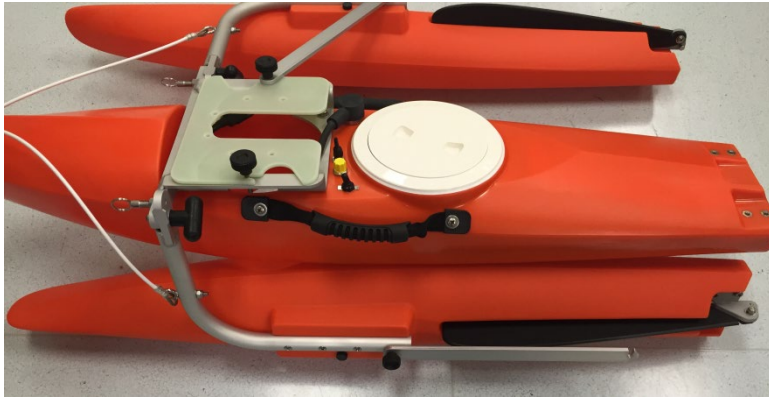
Lay the O-ring into the groove with the **RAISED EDGE UP**.



Check the deck plate lid for damage and clean the O-ring mating surface and threads using a lint free cloth.

Close the circular deck plate by turning it clockwise until fully tightened.

Storing the Platform



When storing the platform, loosen the thumb screws and rotate the support brace alongside the outrigger.



Loosen the folding crossbar two arm knobs before engaging / disengaging the spring plunger assemblies. Fold the Crossbar with outriggers under the Main Hull.



Use the nut provided with the Instrument Safety Cable to attach it to the instrument mounting plate when the ADCP is removed.

Replacement Parts

Part Number	Description
71KK6020-00	Replacement Folding Crossbar for RiverRay boat. Includes wire rope bridle & installation hardware
71KK6015-00	Set of two replacement RiverRay fins with attachment hardware. Does not include gudgeons
9002123	SCAS, Soft case, 50" padded ballistic nylon zip-closure case with handles and wheels.
71K-6003-00	Replacement RiverRay Outrigger (includes gudgeon)
71KK6011-00	Replacement wiring harness for RiverRay boat
9001776	Replacement O-Ring for 6" Deck Lid
71BK6035-00	Support Brace kit. Includes two cross braces and mounting hardware.



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Addendums

The following parts are optional.

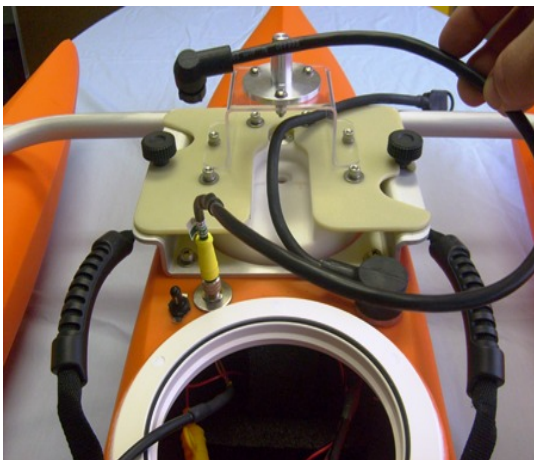
GPS-Ready Kit

This shows how to install the GPS-Ready additions for deploying a RiverRay with a Hemisphere A-100 GPS.



Attach the stainless steel GPS antenna mount to the clear acrylic antenna mounting bracket using the 10-24 x 3/4 inch pan head Philips screws, #10 flat washers and 10-24 nylock nuts as shown.

Then attach the bracket assembly to the instrument mounting plate using the M6 x 20mm socket head cap screws, M6 lock washers, and flat washers as shown.



The external GPS data cable connects the GPS receiver/antenna to the data-cable bulkhead next to the on/off toggle switch.



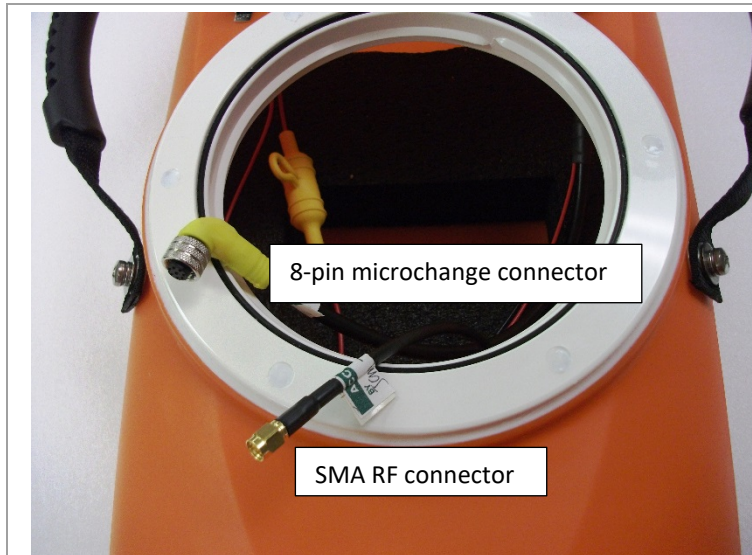
Connect the two internal data cables together to stream GPS data to the RiverRay ADCP.

Using the Hydrolink SL Modems with the Teledyne RiverRay Boat

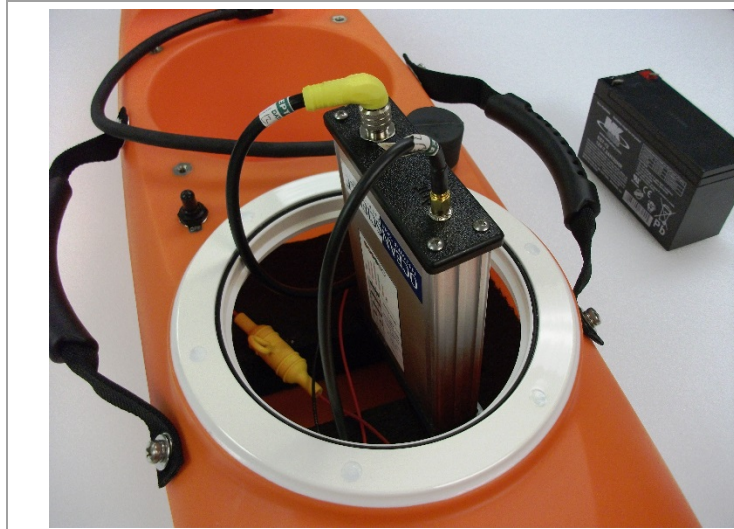


This shows the boat, battery and modem. The MaxRad antenna shown is not standard on a RiverRay boat, unless it is purchased with modems. If your boat does not have a MaxRad antenna, contact Teledyne RD Instruments for instructions on installation.

For these instructions, it will be assumed that the antenna and RF cable are present.



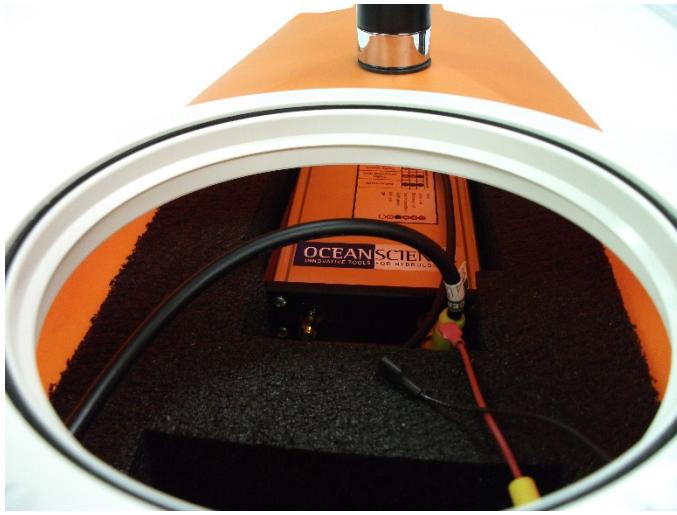
Power is provided to both the RiverRay instrument and modem via the integrated wiring harness. Shown are the 8-pin microchange connector and SMA RF connector that will connect to the modem.



Simply stand the radio on end as shown.

Connect the 8-pin microchange to the modem, make note the connector is keyed and must be inserted in the correct orientation.

Connect the SMA RF connector to the antenna port.



Rotate the modem and slide it horizontally towards the stern (rear) of the boat. The foam liner is cut specifically to fit these modems securely. Make note that the wiring harness or antenna cables are not kinked or stretched. The figure on the left shows the modem in its intended position.



The 12v 7.2 ah SLA battery (provided) powers the instrument and data transmission system, and power to both systems is controlled by the on/off toggle on the deck.

To connect the battery:

1. Be sure that the power switch is off.
2. Open the circular deck plate by turning it counter-clockwise.
3. Place the battery in the compartment. Use the provided foam blocks to secure the battery inside the compartment.
4. Connect the black spade lug connector to the battery Negative terminal.
5. Connect the red spade lug connector to the battery Positive terminal.
6. Check the 4 amp Slo-Blow fuse (size 3AG) is installed in the fuse holder.
7. Check the deck plate O-ring is installed and no dirt is present on the O-ring, O-ring groove, or deck plate.
8. Close the circular deck plate by turning it clockwise until fully tightened.



The RiverRay is ready for use with the SL modems.