

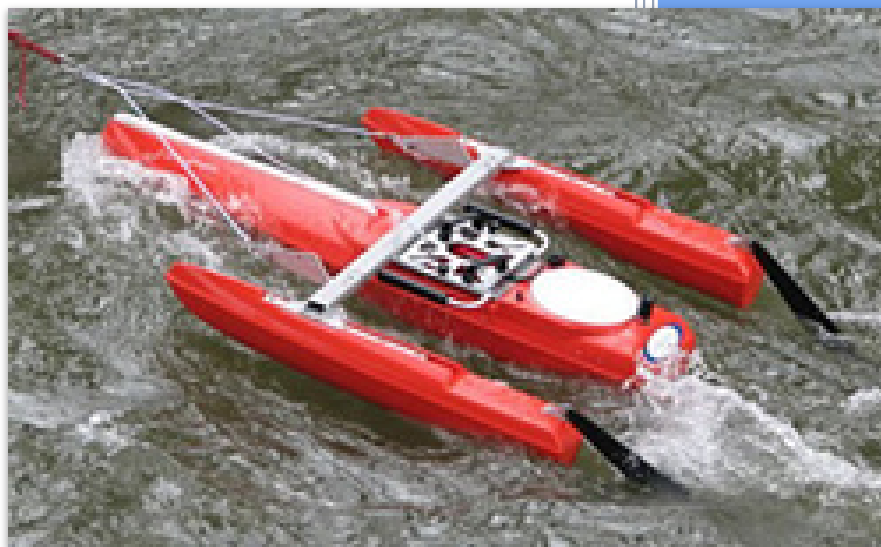
# High Speed

## Riverboat

### User Guide and Warranty



**TELEDYNE**  
**OCEANSCIENCE**  
Everywhereyoulook™



P/N 95K-6001-00 (July 2017)

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## REVISION HISTORY

July 2017

- Reformatted

August 2016

- Initial release.

Dear Valued Customer,

Thank you for purchasing your Oceanscience High-Speed Riverboat. Teledyne Oceanscience has a support team in place to assist you with understanding, operating, and deploying your riverboat system. Included with your system is documentation regarding the setup and deployment of the riverboat. We strongly encourage you to thoroughly read through this documentation to maximize your user experience.

### **TECHNICAL SUPPORT**

If you have technical issues or questions involving a specific application or deployment with your instrument, contact our Field Service group:

Phone: +1 (858) 842-2700

FAX: +1 (858) 842-2822

Email: [Oceanscience.Support@teledyne.com](mailto:Oceanscience.Support@teledyne.com)

### **SALES**

Our products are available from Oceanscience directly or from representatives throughout the world. Please contact us for more information:

E-mail: [Oceanscience.Sales@teledyne.com](mailto:Oceanscience.Sales@teledyne.com)

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# Introduction

Congratulations on your recent purchase of the Oceanscience High-Speed Riverboat.

The Oceanscience High-Speed Riverboat is the new benchmark for acoustic Doppler current profiling for discharge measurements that provides the best data quality in the most challenging measurement conditions. The advanced hull design allows the boat to slice through standing waves and still maintain instrument position and data collection. Fast flowing water, often problematic with conventional tethered boat designs, can be handled with relative ease with the High Speed Riverboat.

The Oceanscience High-Speed Riverboat has gathered data at water velocities over 20fps (6m/s). The state-of-the-art trimaran hull cuts through surface waves, strongly resists overturning, and maintains instrument orientation in high flows. Any instrument up to 9" in diameter may be accommodated, with mounting options for commonly used profilers available. For sites where tethered boat measurements have been impossible, or data were too poor to be of value, the High-Speed Riverboat is the solution.

Made of high impact UV resistant ABS, the High-Speed Riverboat is strong and robust to cope with the worst deployment conditions. All High-Speed Riverboats are configured for an instrument of choice and include all necessary cabling for easy plug-and-play operation.

# High-Speed Riverboat Specifications

HIGH-SPEED RIVERBOAT SPECIFICATIONS	
Typical Measurement Water Velocity	10-16 fps (3-5 m/s)
Maximum Water Velocity	20 fps (6.09 m/s)
Main Hull Length	60" (152.5 cm)
Overall Beam (Assembled)	48" (122 cm)
Crossbar Material	Anodized Aluminum
Hull Material	High Impact, UV Resistant ABS
Weight	30 lbs. (13.6 kg)
Hardware	Stainless Steel
Safety Lines	Stainless Steel
Fasteners	Stainless Steel
Fin Configuration	Large, Foldable Kick-up Fins
ADCP Size	2"-9" Diameter

## High-Speed Riverboat Order Codes

- HSRB – High-Speed Riverboat (color: orange)
- HSRB-Y – High-Speed Riverboat (color: yellow)
- LSCAS – Soft transportation case - large
- LHCAS – Aluminum ATA transportation case - large
- LDFK – Large Drag Fin Kit

# High-Speed Riverboat Assembly and Installation

## Boat Assembly

The following items are required to assemble the outriggers and center hull:

- Center Hull
- Outriggers
- Crossbar
- 6 1/4"-20 x 1 3/4" socket head screw
- 4 1/4"-20 x 1 1/4" socket head screw
- 10 1/4" lock washer
- 10 1/4" washer
- 1 5/32" hex driver



Attach the Outriggers to the crossbar using the 1/4-20 x 1 3/4" socket head screws with 1/4" lock and 1/4" flat washers.



Attach the Main Hull to the Crossbar using the 1/4-20 x 1" screws with 1/4" lock washers and 1/4" flat washers provided.

# Wire Rope Bridle Installation

The following items are required to install the wire rope bridle:

- 1 Wire rope bridle
- 1 Carabineer
- 1 600# 316ss ring



Attach the Wire Rope Bridle to the crossbar by turning the U-bolt connector screw counter-clockwise. Firmly tighten the connector screw onto the crossbar bridle by turning bolt in a clockwise direction. (See figure 4.1 and 4.2)

Attach 600# 316ss ring to Carabineer.

Attach Carabineer to Wire Rope Bridle at the center loop.

# Acoustic Doppler Profiler Installation

## Installation of a SonTek M9 or S5 and External PCM Box

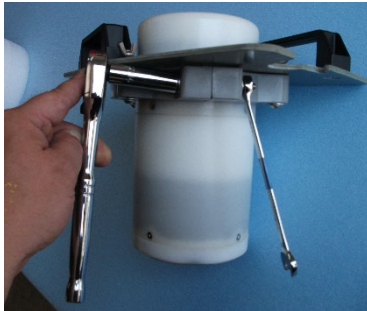
The following items are required to install a SonTek M9 or S5 (includes spare parts):

- 5 1/4"-20 x 1 3/4" button head socket screw
- 10 1/4" flat washer
- 5 1/4" split washer
- 2 10-32 x 1/2" Phillips pan head screw
- 2 #10 flat washer
- 2 #10 split washer
- 1 M9 safety cable – 43"

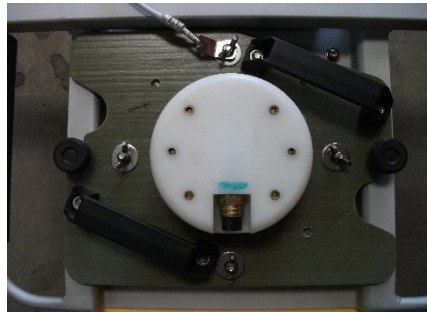




Begin by placing the foam seal ring around the instrument with only the sensors protruding, as shown.



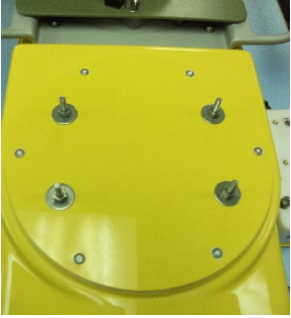
Slide the instrument plate, with clamp attached, over the top side of the M9. Tighten the clamp to lock the instrument in place.

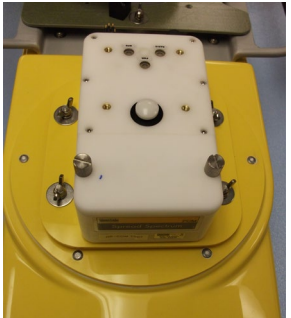


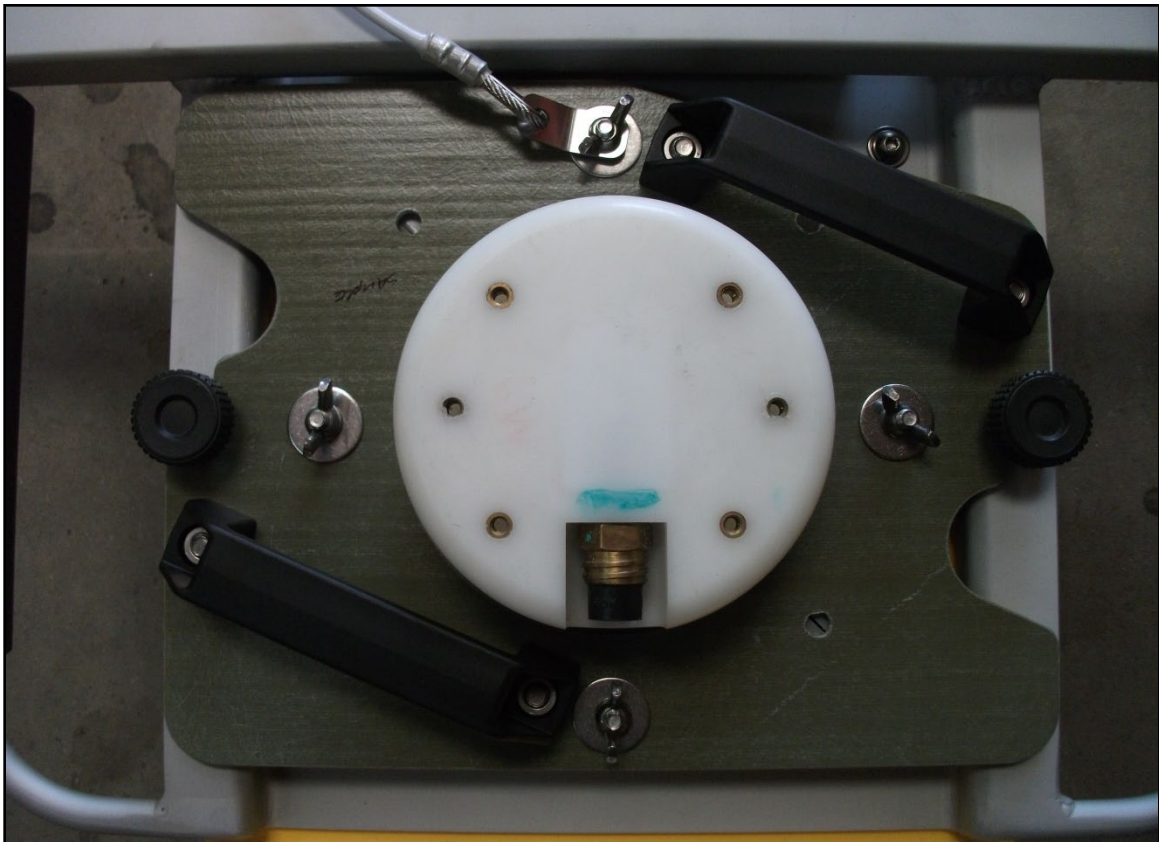
Slide the M9 Instrument Assembly into the hull with the impulse connector facing the rear right corner of the boat. Turn the M9 Instrument Assembly clockwise to engage the locking studs and then tighten the thumb-turns to secure the assembly.



Attach the electronics box to the base plate shown.

	<p>Slide the electronics box with base plate over the mounting studs.</p>
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	<p>Secure electronics box assembly with lock washers and wing nuts.</p>
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# Installation of a Teledyne RDI Rio Grande



If GPS is included with your High-Speed Riverboat, please see [GPS Mounting Bracket Installation](#) before completing this section.

The following items are required to install a Teledyne RDI Rio Grande ADCP (includes spare parts):

- 5 1/4"-20 x 3" stud
- 10 1/4"-20 hex nut
- 4 1/4"-20 wing nut
- 10 1/4" split washer
- 10 1/4" flat washer



With the ADCP looking downward, sitting on its cap, install the 1/4"-20 x 3" mounting studs. Insert the stud from above and install a lock washer and standard nut on the bottom, leaving no more thread than necessary protruding from the bottom of the nut.



Install a hex nut from the top, using wrenches provided to snug both nuts against the instrument flange. This will leave about 3/4" of thread protruding upwards to pass through the High-Speed Riverboat instrument plate.

Place the instrument plate over the ADCP so that the threaded rods extend through the instrument plate holes. Fasten in place with the wing nuts and lock washers.



Place the instrument assembly into the main hull. Rotate clockwise and tighten the thumb turns.

# Installation of a Teledyne RiverRay



If GPS is included with your High-Speed Riverboat, please see [GPS Mounting Bracket Installation](#) before completing this section.

The following items are required to install a Teledyne RDI RiverRay ADCP (includes spare parts):

- 1 ADCP Instrument Plate with handles
- 7 M6 x 20mm socket head cap screw
- 7 M6 large washer
- 7 M6 split washer
- 1 Instrument plug
- 2 Thumb turns
- 1 Wrench –M5 Allen

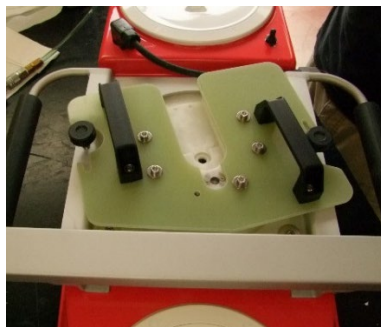


Place foam plug into center of Main Hull.



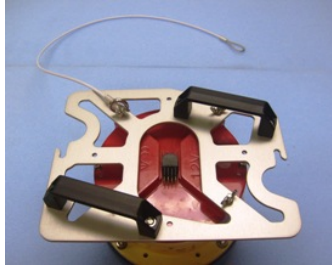
With the ADCP looking downward, sitting on its cap, align instrument plate holes to the holes on the RiverRay instrument.

Install a M6 large washer and split washer on each hole with M6 x 20mm socket head cap screw to provide a snug fit using supplied Allen wrench



Place the instrument assembly into the main hull. Rotate clockwise and tighten the thumb turns.

# Safety Cable Assembly and Installation



The safety cable provides a vital link from the ADCP to the tow line. Use the eye nut at one end of the safety cable to secure one of the forward ADCP mounting studs to the instrument plate.



Attach the other end of the safety cable to the carabineer on the Wire Rope Bridal as shown.

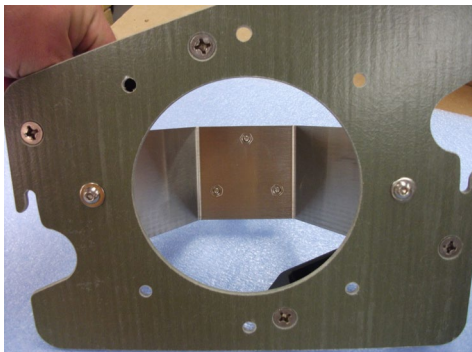
# Optional GPS Mounting Bracket Installation

The following items are required to install a GPS mounting bracket (includes spare parts):

- 4 10-32 x 5/16 Phillips screws
- 3 1/4"-20 x 5/8" Button head screws
- 3 1/4" flat washers – 316ss
- 3 1/4"-20 nylocks
- 1 Cable: GPS antenna to bulkhead
- 1 Aluminum antenna mount
- 1 Stainless steel antenna mount base



Attach the aluminum GPS antenna mast to the stainless steel mounting bracket using the 10-32 x 5/16" screws.



Install the stainless bracket to the instrument mounting plate using the 1/4-20 x 5/8" screws, flat washers, and lock nuts.

Install the instrument plate, thread the GPS antenna onto the mast and install the External GPS Antenna Cable.

# High-Speed Riverboat Warranty

The Oceanscience Group, Ltd makes every effort to assure that its products meet the highest quality, reliability and durability standards and warrants to the original purchaser or original purchasing agency that each High-Speed Riverboat be free from defects in materials or workmanship for a period of one year from date of shipment.

High Impact, UV Resistant ABS hulls on the High-Speed Riverboat are warranted free from manufacturing defects for one year from date of shipment.

Warranty does not apply to defects due directly or indirectly to misuse, negligence or accidents, repairs or alterations outside of our facilities, use of the High-Speed Riverboat for purposes other than river discharge measurements, or use with instruments weighing more than 25 lbs.

Oceanscience is not responsible for loss of boat, instruments, damage to property, injury or death associate with the use of any of its products or products that may be included or used with Oceanscience products.

Oceanscience does not warrant third party products sold by Oceanscience. These may include GPS, depth sounders and other ancillary equipment.

All warranty services are FOB Oceanscience's facility in Poway, CA.

To take advantage of this warranty, contact Oceanscience at 858 842-2600 or [info@oceanscience.com](mailto:info@oceanscience.com).

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