



**Overboard Recovery
Communications
Apparatus (ORCA[®])
Receiver Antenna/Cable
Installation Guide**



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1. Introduction

This document is provided as a guide when installing or replacing the ORCA[®] RX antenna and cable (FSJ1RN). The installation notes provided herein are intended to serve as a guide only. They do not serve as material required for the certification of technicians for the installation, repair or alteration of the ORCA[®] system.

2. Materials Supplied:

Line Item	Qty	Description
1	1	ANC-41SP; Andrew's VER 2 UHF Connector
2	1	Helical antenna (overmolded to bracket)
3	XX'	FSJ1RN Coaxial Cable (overmolded to bracket)
4	2	1" ¼ x 20 SWS Hex Bolt
5	4	¼" stainless steel flat washers
6	2	¼ x 20 stainless steel lock nuts
7	1.5"	Heat Shrink, Adhesive Lined, 0.5" dia. (for UHF connector)
8	6"	Heat Shrink, Heavy Duty; Adhesive Lined, 0.5" dia.
9	4"	Heat Shrink, Heavy Duty; Adhesive Lined, 0.75" dia.
10	6"	Heat Shrink, Heavy Duty; Adhesive Lined, 1.5" dia.

3. Existing Coax Cable Removal (if applicable)

- a. Trace cable run starting at the antenna.
- b. Cut the existing FSJ1RN cable at the stuffing tube.
 - i. The cable shield grounding adaptor (CSGA) fitting may be reused if still in good condition.
- c. Use a heat gun and apply heat to the heat shrink tubing over the stuffing tube until the adhesive softens.
- d. Remove and discard heat shrink
- e. If installed, remove the CSGA compression nut and internal fittings (grounding springs and ground spring separator) and set aside in a safe location.
- f. Remove and discard existing FSJ1RN from the stuffing tube to the antenna.

4. New Cable Installation

- a. Attach the antenna and overmolded bracket to the antenna foundation using fasteners provided. Feed cable through heavy duty 0.5", 0.75" and 1.5" heat shrink tubing, CSGA fitting (if applicable) and stuffing tube. Refer to Figure 1 for CSGA part identification and sequence.
- b. Pull cable through stuffing tube and into vessel's interior

- c. Measure cable to reach receiver display. Leave sufficient slack (6-12 in.).
 - d. Ensure there is sufficient cable length to connect the UHF connector to the RX102 receiver. Install Andrew's 41SP UHF Connector (**see Attachment 1**)
5. Assemble the CSGA Fitting (if applicable)
- a. Refer to figure 1 for CSGA fitting nomenclature

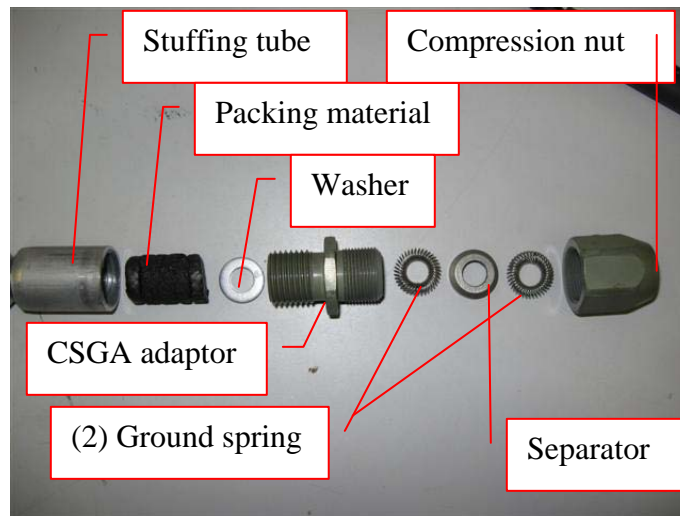


Figure 1

- b. Ensure that there is sufficient slack in the cable between the stuffing tube and the receiver antenna to conform to the previously installed cable run. Leave an excess of 6" – 8" of cable to allow for easy installation and removal of the receiver antenna.
- c. Position cable at its final install location and mark the position where the cable exits the CSGA adaptor.
- d. Insert packing material in stuffing tube.
- e. Slide washer on top of packing material.
- f. Insert CSGA adaptor into stuffing tube and tighten using crescent wrench.

- g. Strip 1" – 1 1/2" of the cable's jacket. See figure 2.



Figure 2

- i. Do not nick the cable's braided shield
 - ii. There may be thin cellophane over the braided shield. This must be removed.
- h. Slide ground springs and separator over exposed braided cable shield and position to the base of the CSGA adaptor. See figure 3.



Figure 3

- i. Apply anti-seize to the CSGA adaptor's threads and tighten compression nut to 300 in/lbs. See figure 4.



Figure 4

6. Apply heat shrink
 - a. Slide 0.5" diameter heat shrink tube to the base of the CSGA compression nut (see figure 5) or base of stuffing tube as applicable.



Figure 5

- b. Ensure there exists a sufficient bend in the cable. See figure 6.

- i. Apply heat evenly to entire tube using a 750-watt heat gun. Ensure adhesive seals around the perimeter of the tube and onto the cable.
- ii. Repeat process with 0.75" diameter heat shrink tubing
- iii. Slide 1.5" diameter heat shrink tubing such that it covers at least 2" of the stuffing tube, the CSGA assembly (if applicable) and 2" of the 0.75" diameter heat shrink tubing.
- iv. Apply heat evenly to entire tube using a 750-watt heat gun. Ensure adhesive seals around the perimeter of the tube and onto the stuffing tube and the smaller heat shrink tube. See figure 6.

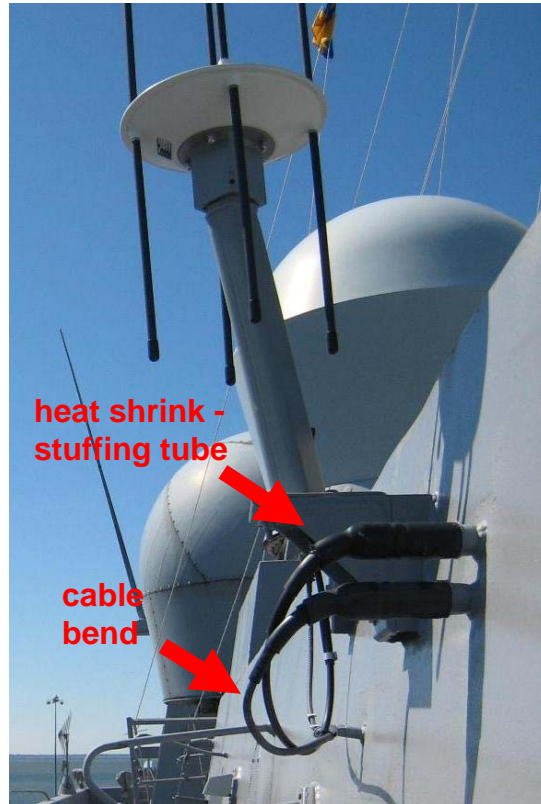


Figure 6

7. Connect UHF connector to receiver, energize circuit and turn on RX-102 receiver at power button.
8. Perform system operational verification test (SOVT).
 - a. Activate ORCA[®] transmitter from the stern of the vessel.
 - b. When signal is detected by the receiver, ensure the audible alarm activates and the LCD displays the vessel ID, transmitter ID (serial number), the transmitter battery strength (Good or Weak) and the RSSI (received signal strength indicator).
 - c. Deactivate transmitter.

9. For additional assistance, please contact BriarTek at 703-548-7892 or through our website at www.briartek.com.

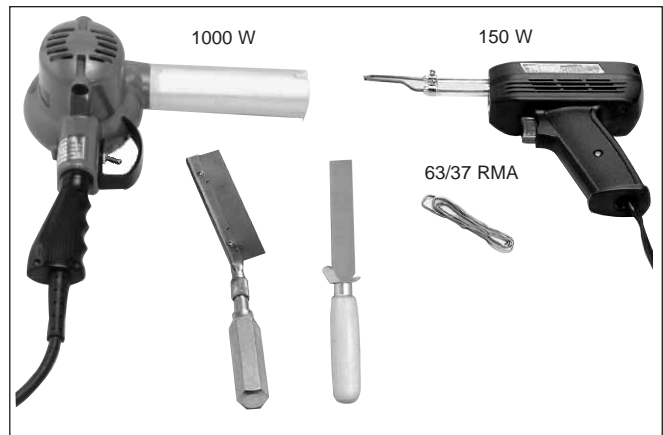
Attachment 1

Andrew's 41SP UHF Connector
Assembly Instructions

UHF Connector for HELIAX[®] FSJ1-50A Coaxial Cable



41SP



FAX-On-Demand: +1-708-873-3614 • North America: 1-800-861-1700

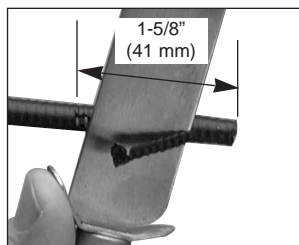
Tips and Techniques (SP50047) available by FAX-On-Demand.
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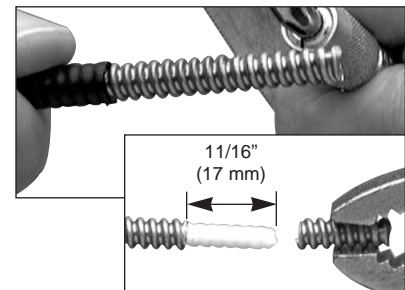
1

Trim cable jacket.
Recortar la envuelta del cable.
Coupez la gaine du câble.
Kabelmantel abziehen.
Retire a capa do cabo.
切整電纜外皮



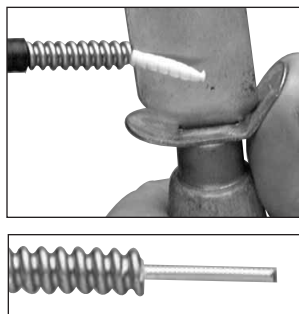
2

Cut outer conductor.
Cortar el conductor externo.
Coupez le conducteur extérieur.
Außenleiter zurückschneiden.
Corte o condutor externo.
切外導體



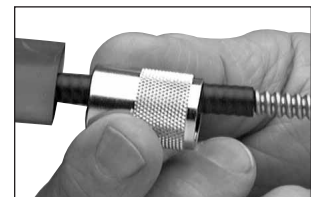
3

Remove foam and adhesive.
Retirar el material de espuma y el adhesivo.
Enlevez la mousse et l'adhésif.
Verschäumung und Klebeband entfernen.
Remova a espuma e o adesivo.
去除泡沫塑料和粘潔劑



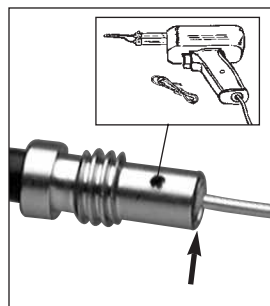
4

Add shrink tube and coupling nut
Añada el tubo corrugado y la tuerca de acoplamiento.
Mettez en place la gaine thermorétractable et l'écrou d'assemblage.
Schrumpfschlauch überziehen und Klemmutter montieren.
Adicione o tubo de redução e a porca de acoplamento.
加上縮緊套管和連接螺母。



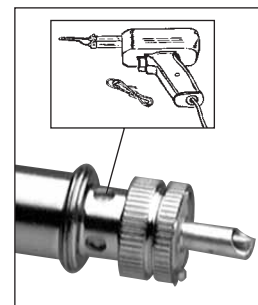
5

Place adaptor flush with outer conductor and solder them together
Coloque el adaptador al mismo nivel que el conductor exterior y suéldelos entre sí.
Alignez l'adaptateur sur le conducteur extérieur et soudez ces deux éléments.
Adapter bündig mit Außenleiter ausrichten und zusammenlöten.
Coloque o adaptador junto ao condutor externo e solde-os.
將適配器與外導體平齊，並將它們焊接在一起

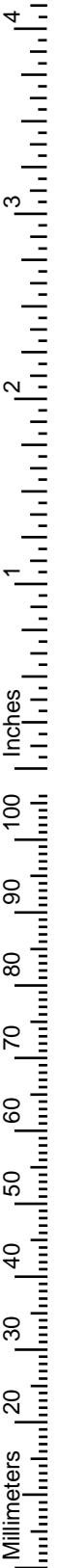


6

Screw inner connector onto adaptor to a torque value of from 32-40 lb-in (3.7-4.5 N-m) and solder together.
Atornille el conductor interno en el adaptador, a un par entre 32 y 40 lib-pul o (3.7 y 4.5 N-m) y suéldelos entre sí.
Vissez le conducteur intérieur sur l'adaptateur à un couple de 3,7-4,5 N.m et soudez ces deux éléments.
Innenleiter auf Adapter schrauben, mit 3,7-4,5 Nm anziehen und zusammenlöten.
Atarraxe o condutor interno no adaptador a um valor de torque de 32 a 40 lb-pol. (3.7-4.5 N.m) e solde-os.



以 32-40 lb-in (3.7-4.5 N.m) 的扭矩將內導體擰至適配器上，然後將它們焊接在一起。



7

Solder inner connector and outer conductor together

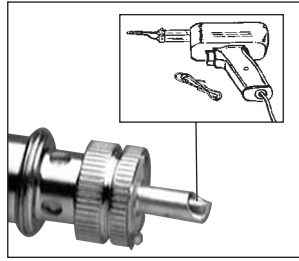
Suelde el conector interior y el conductor interior entre sí.

Soudez les connecteurs intérieur.

Innenleiter zusammenlöten

Solde o conector interno ao condutor interno.

將內接頭和外導體焊接在一起。



8

Screw coupling nut beyond threads of inner connector so nut spins freely

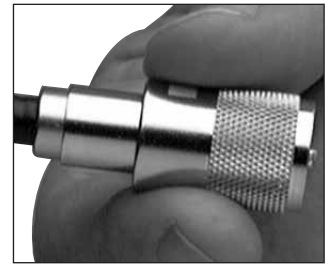
Atornille la tuerca de acoplamiento hasta pasar las roscas del conector interior, de modo que la tuerca gire libremente.

Vissez l'écrou d'assemblage au-delà des filets du connecteur intérieur, pour que l'écrou tourne librement.

Klemmutter über das Innenleitergewinde hinaus drehen, so daß sich die Mutter frei dreht.

Rosqueie a porca de acoplamento além da rosca do conector interno para permitir o giro livre da porca.

將連接螺母擰出內接頭螺紋，以使螺母自由轉動。



9

Apply heat shrink tube.

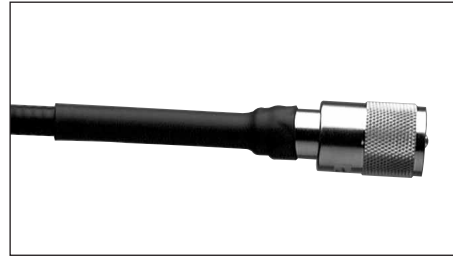
Aplicar el tubo de termoconglomeramiento.

Mettez en place la gaine thermorétractable.

Schrumpfschlauch überziehen.

Aqueça o tubo plástico.

加熱縮緊套管



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Andrew Corporation
10500 West 153rd Street
Orland Park, IL U.S.A. 60462

Telephone: 708-349-3300
FAX (U.S.A.): 1-800-349-5444
Internet: <http://www.andrew.com>

Customer Service, 24 hours: U.S.A. • Canada • Mexico: 1-800-255-1479
U.K.: 0800 250055 • Republic of Ireland: 1 800 535358
Other Europe: +44 1592 782612

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