

# ROTATE THE PEDAL CONTROL SLEEVE ASSEMBLY FOR A STARBOARD MOUNT

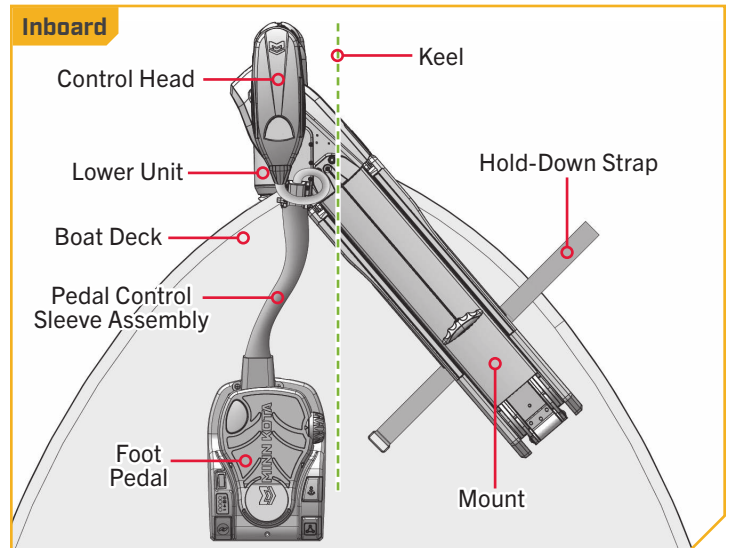
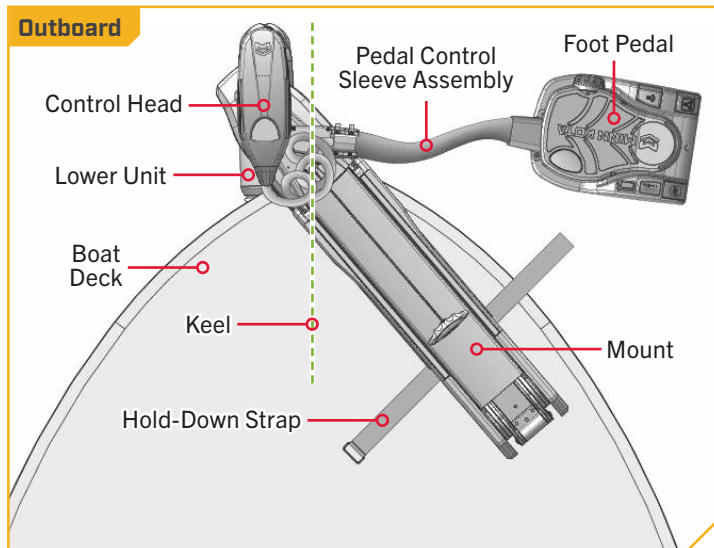
## › Rotate the Pedal Control Sleeve Assembly for a Starboard Mount

By default, the Pedal Control Sleeve Assembly is factory set so that when your Ultrex QUEST is installed on the port side of your boat, the Pedal Control Sleeve Assembly points inboard. Should you choose to install your Ultrex QUEST on the Starboard side of your boat, it is recommended that the default mounting location be changed so that the Pedal Control Sleeve Assembly points inboard.

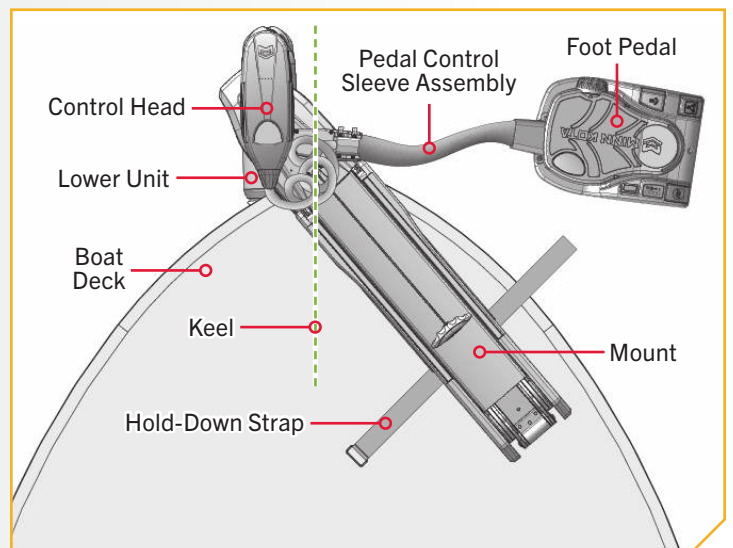
Once installed, the trolling motor is indexed correctly when:

1. The motor is deployed.
2. The trolling motor Control Head and Lower Unit align with the centerline or keel of the boat.
3. The top of the Foot Pedal is parallel to the deck of the boat.

Use the following instructions to change the mounting location of the Pedal Control Sleeve Assembly on the Steering Module to point inboard, and properly align the Control Head of the motor. If your motor was installed on the Port side of the boat, please disregard these instructions and see the Indexing the "Motor for a Port Installation" section of this manual.



- 1**
  - a. Turn the Power Switch on the Foot Pedal "on" and steer the motor so that the Control Head is in line with the keel of the boat. Do this by steering the motor with the Foot Pedal, turning the motor with the remote, or manually turning the Control Head of the motor.
  - b. Leave the Control Head in the desired alignment and turn the power to the Foot Pedal "off". Then disconnect the power by removing the power cables from the battery or turning "off" the breaker if equipped.



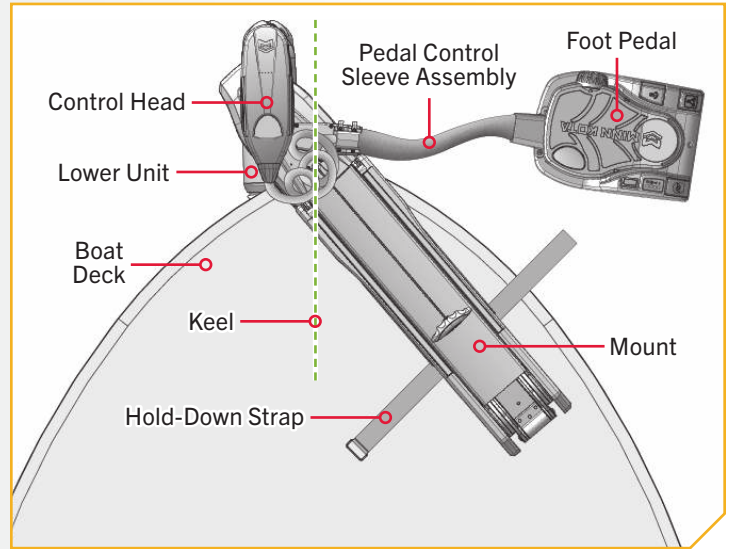
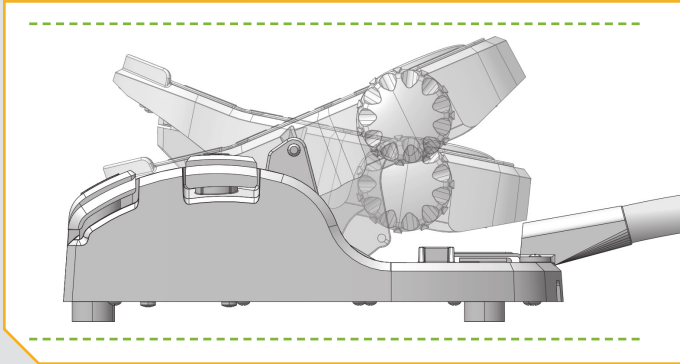
### **WARNING**

Ensure the motor is not connected to a power source to avoid electric shock.

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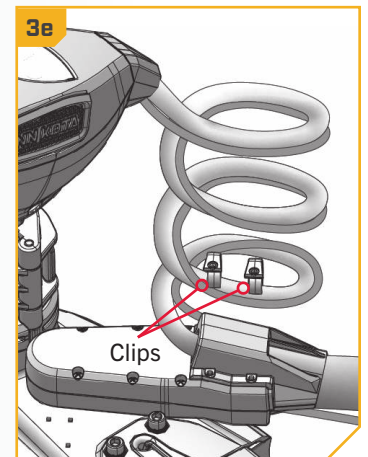
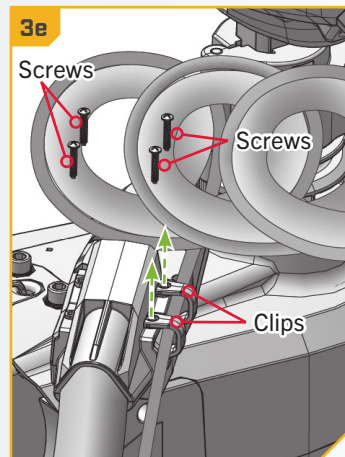
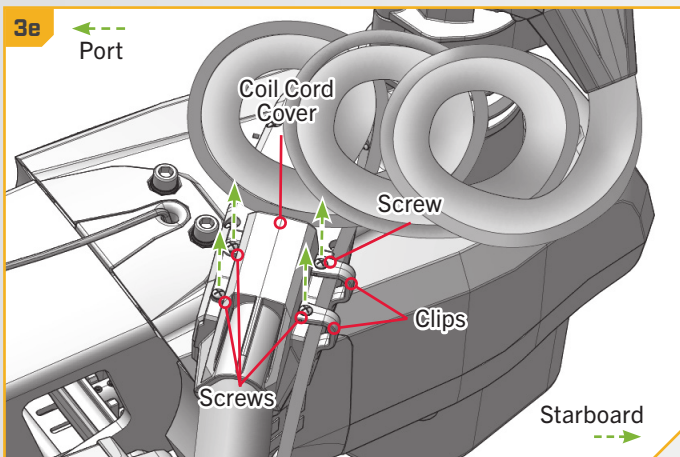
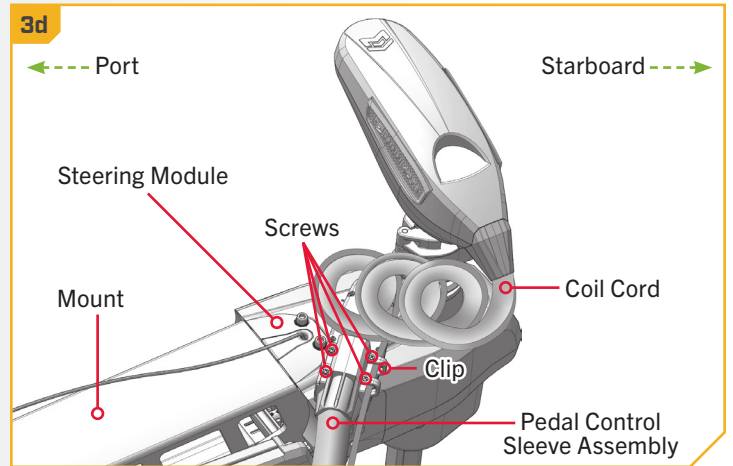
**2**

- c. With the Control Head positioned parallel with the keel or centerline of the boat, the top of the Foot Pedal will likely not be parallel with the Boat Deck. The following instructions will correct the top position of the Foot Pedal.



**3**

- d. The adjustment to the Foot Pedal and rotating the Pedal Control Sleeve Assembly is made by repositioning internal parts located where the Pedal Control Sleeve Assembly, Coil Cord, and Steering Module join. The Coil Cord Cover secures the Coil Cord in place with four screws at the end of the Pedal Control Sleeve Assembly and the top of the Steering Module.
- e. Two of the screws on the Starboard side of the Coil Cord Cover each hold a C-shaped Clip in place. The Clips retain any Ethernet or Sonar cables present. Locate the four screws holding the Coil Cord Cover in place. Using a #2 Phillips Screwdriver, remove the four Screws and the two Clips from the Coil Cord Cover and set them aside for reassembly later.

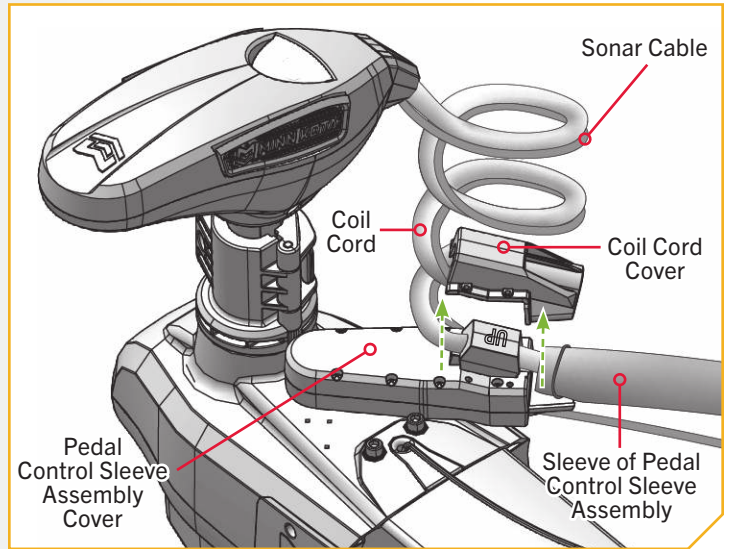


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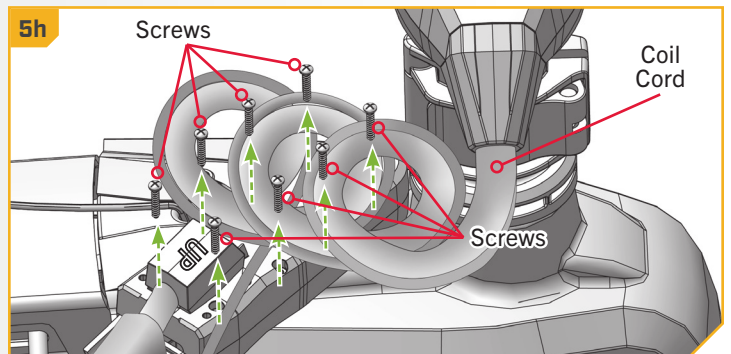
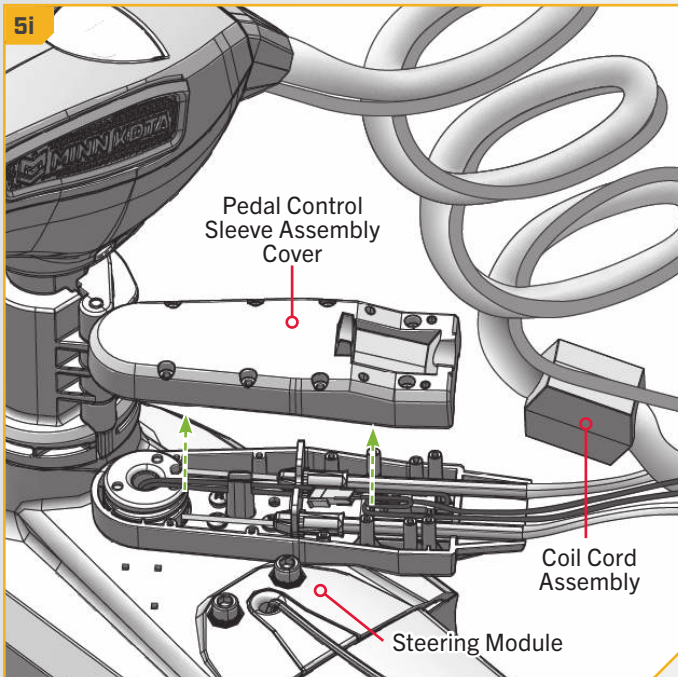
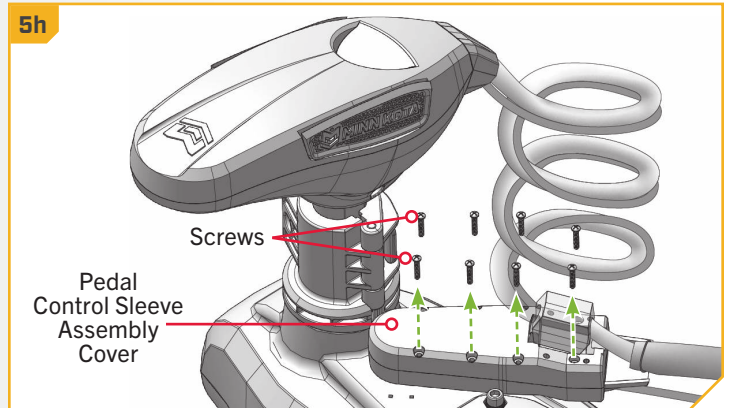
- f. Once two Clips and four screws are free, lift the Coil Cord Cover up and away from the Pedal Control Sleeve Assembly.
- g. Set the Coil Cord Cover aside for reassembly later.

**NOTICE:** Any Sonar or Ethernet Cables previously retained in the Clips can be pulled to the side to provide a clear working area around the Coil Cord Cover and Pedal Control Sleeve Assembly.



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- h. Locate the eight screws holding the Pedal Control Sleeve Assembly Cover. Remove the screws using a #2 Phillips Screwdriver. Set the screws aside.
- i. Remove the Pedal Control Sleeve Assembly Cover by lifting it straight up. Lift the Coil Cord Assembly to the side to remove the cover if necessary.



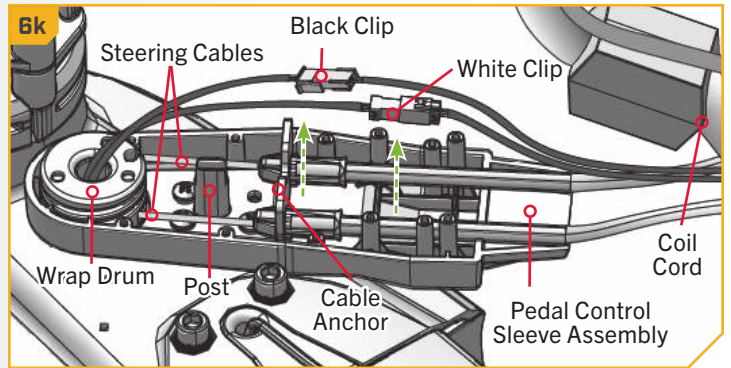
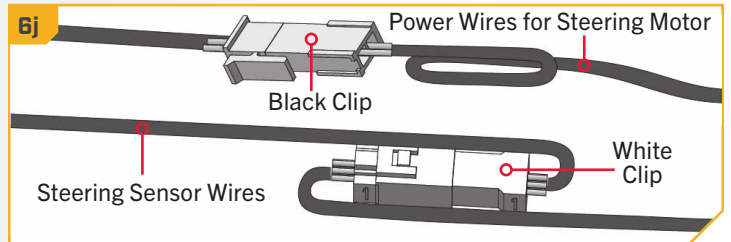
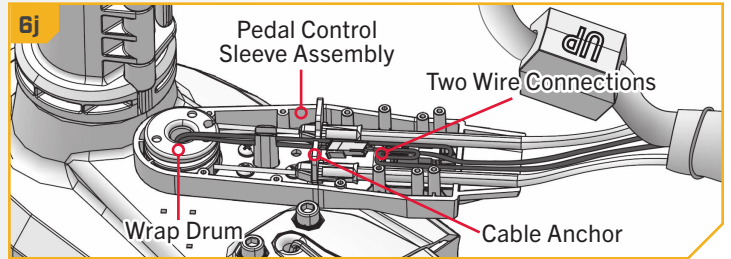
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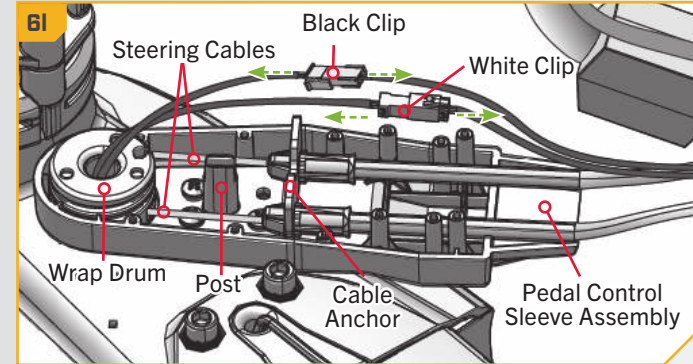
- j. Find the two wire connections inside the Pedal Control Sleeve Assembly. One has a white Clip and the other has a black Clip. The Clips for both connections are located between the Steering Cables and are contained behind the Cable Anchor. The folded wires fit in this space, and the stacked Clips sit on each other.
- k. The wires from the Wrap Drum will be resting on a Post in the middle of the Pedal Control Sleeve Assembly. Lift the wire so they are free from the Post and straighten them. The wires should be straight from the Wrap Drum to the Cable Sleeve that is cable tied in place on the Coil Cord.

**NOTICE:** The connection with the black Clip contains the power wires for the steering motor inside the Steering Module. The connection with the white Clip includes the wires for the steering sensor inside the Steering Module.

- l. Disconnect both Clips.

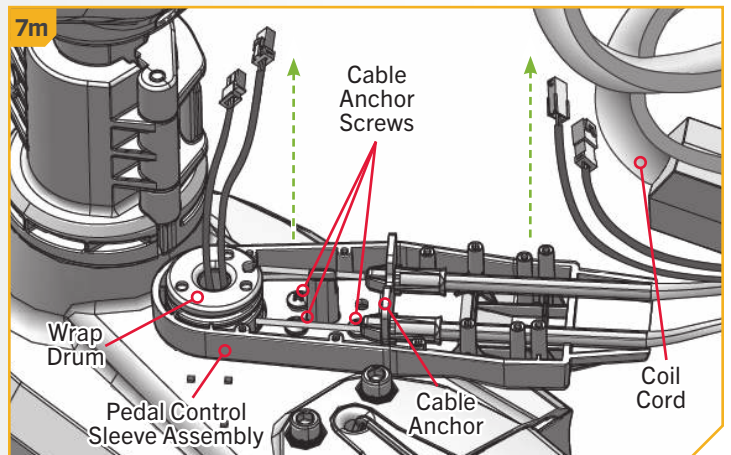


**NOTICE:** Use a Flat Blade Screwdriver to depress the tabs on the Clips to release them.



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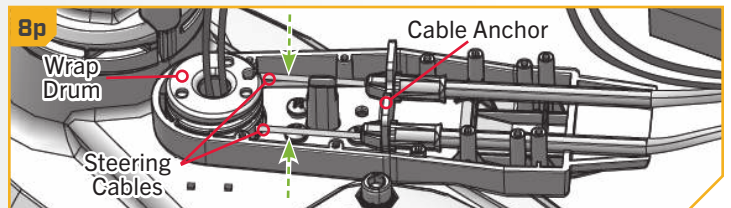
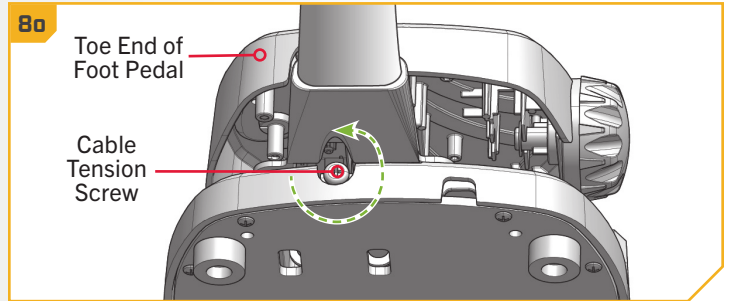
- m. The black and white Clip wires from the Cable Sleeve on the Coil Cord need to be free of the Cable Anchor and out of the way to access the three Cable Anchor Screws that hold the Cable Anchor to the Steering Module. The wires that come out of the Wrap Drum must be free of obstructions to facilitate lifting the Wrap Drum later in the installation.



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- n. On the Foot Pedal, locate the Cable Tension Screw under the base of the Toe End of the Foot Pedal.
- o. The Cable Tension Screw holds tension on the Steering Cables. Use a #3 Phillips Screwdriver to loosen this screw. Turning the screw approximately fifteen rotations counterclockwise should provide enough slack in the cables to adjust. Keep track of the number of screw rotations so it can be re-tightened accordingly later.
- p. Loosen the Cable Tension Screw just enough so that the Steering Cables can be pinched together between the Cable Anchor and Wrap Drum.



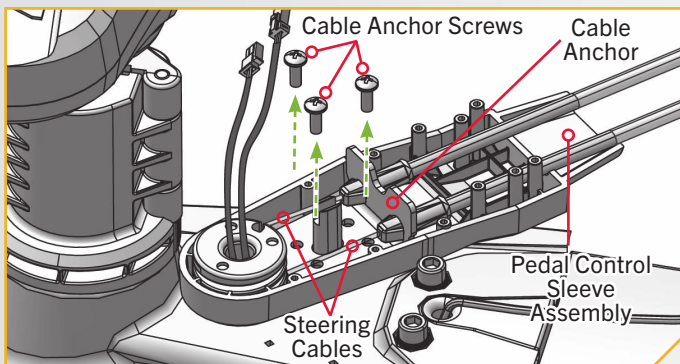
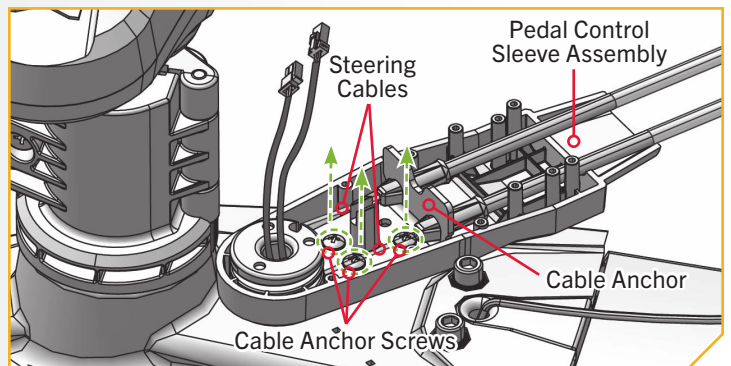
## ⚠ CAUTION

Over-loosening the Cable Tension Screw may cause the cables to disengage from the Wrap Drum.

**NOTICE:** The Steering Cables are fed through the Cable Anchor and wound around the Wrap Drum. The right-side Cable is the shorter cable and begins winding on the Wrap Drum from the top down. The left-side Cable is the longer cable and begins winding on the Wrap Drum from the bottom up.

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- q. Once the Steering Cables are loose, take a #2 Phillips Screwdriver and remove the three Cable Anchor Screws that hold the Cable Anchor in place on the Steering Module. Set the screws aside.
- r. With the three screws holding the Cable Anchor removed, the Cable Anchor and bottom of the Pedal Control Sleeve Assembly can move freely around the Cable Spline Gear. The Wrap Drum sits on the Cable Spline Gear.



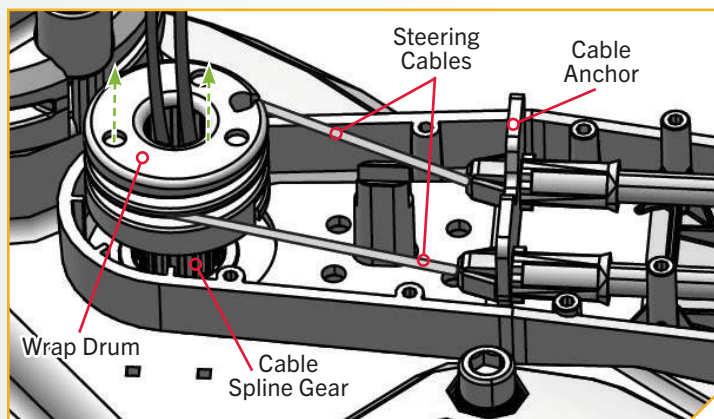
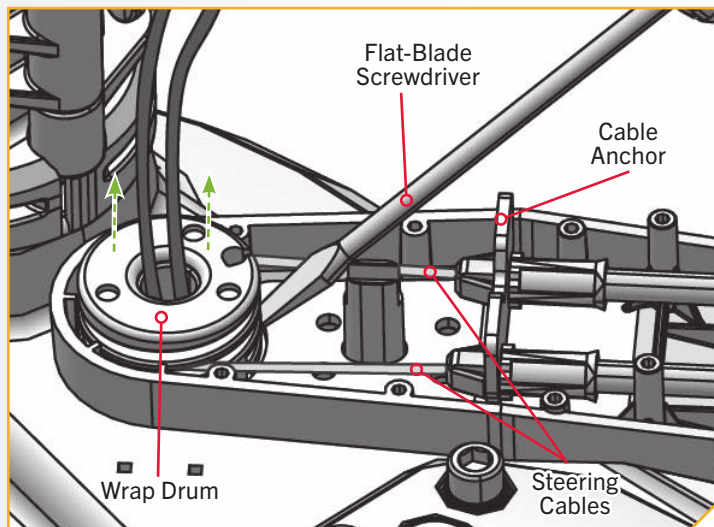
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- s. Once the Cable Tension Screw on the Foot Pedal is loosened, use a Flat-blade Screwdriver to pry the Wrap Drum straight off the Cable Gear. Lift until the Wrap Drum is free of the Cable Spline Gear.

### CAUTION

Ensure that the Steering Cables remain on the Wrap Drum while disengaged from the Cable Spline Gear. The Steering Cables must follow the grooves on the Wrap Drum so that they do not become intertwined or pop off. Ensure the electric wires are not damaged when lifting the Wrap Drum.

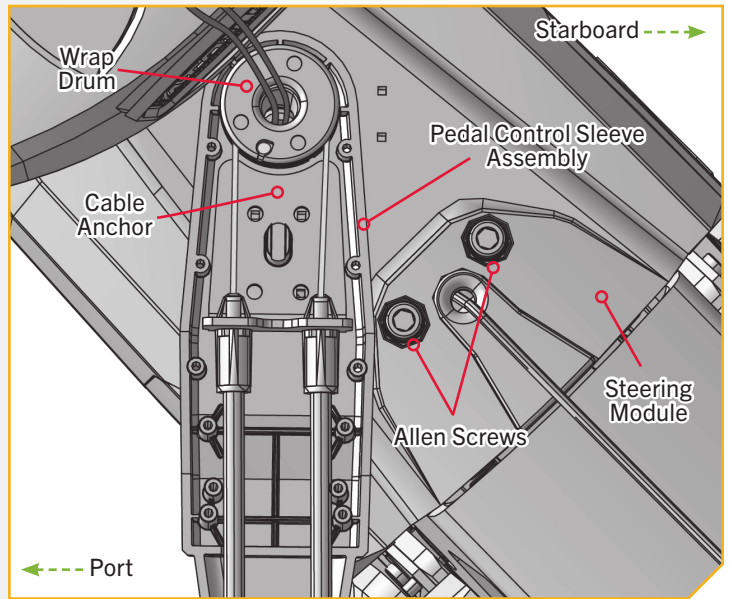
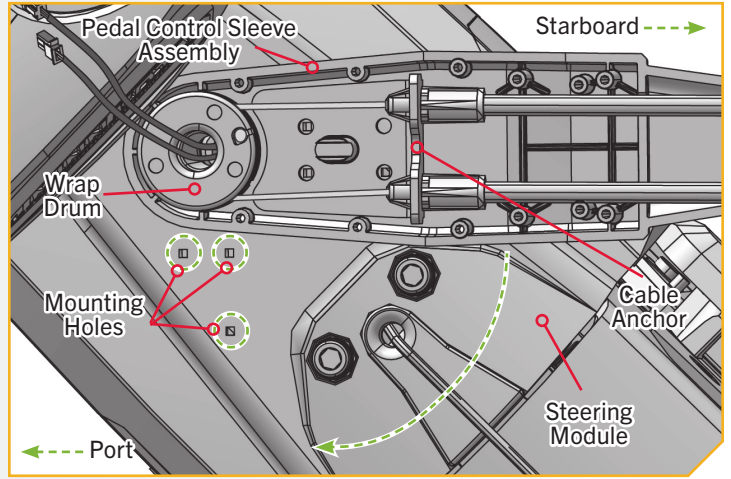


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- t. While holding the Wrap Drum just above the Cable Spline Gear, and maintaining tension on the Steering Cables, carefully rotate the Wrap Drum, Cable Anchor, and bottom of the Pedal Control Sleeve Assembly inboard towards the Port side of the boat. Rotate the pieces, keeping the Wrap Drum centered over the Cable Spline Gear. The Cable Anchor and bottom of the Pedal Control Sleeve Assembly contain holes that align to install the Cable Anchor Screws. The pieces are rotated to the correct position when the Mounting Holes in the Cable Anchor and Pedal Control Sleeve Assembly align with the threaded holes on the Port-facing side of the Steering Module.

**NOTICE:** When rotating the Pedal Control Sleeve Assembly, Cable Anchor, and Wrap Drum, ensure the pieces are lifted high enough off the Steering Module to avoid hitting the Allen Screws that secure the Steering Module to the Mount.



# ROTATE THE PEDAL CONTROL SLEEVE ASSEMBLY FOR A STARBOARD MOUNT

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- u. While holding only the Wrap Drum just above the Cable Spline Gear, and maintaining tension on the Steering Cables, carefully rotate the Wrap Drum right or left until the top of the Foot Pedal is parallel with the deck of the boat. The proper position of the Wrap Drum will locate the Drum Anchors for each Steering Cable equidistant from the mid-line of the Cable Anchor, where it is secured to the Steering Module.

**⚠ CAUTION**

Do not make this adjustment by applying pressure to the Foot Pedal. Rotate the Wrap Drum manually and use the Foot Pedal position as a guide to indicate the proper position of the Wrap Drum.

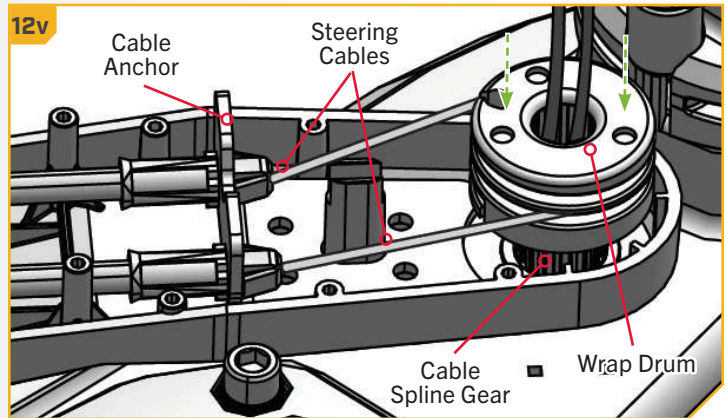
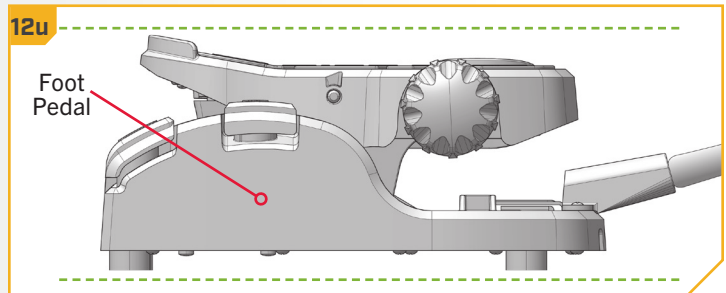
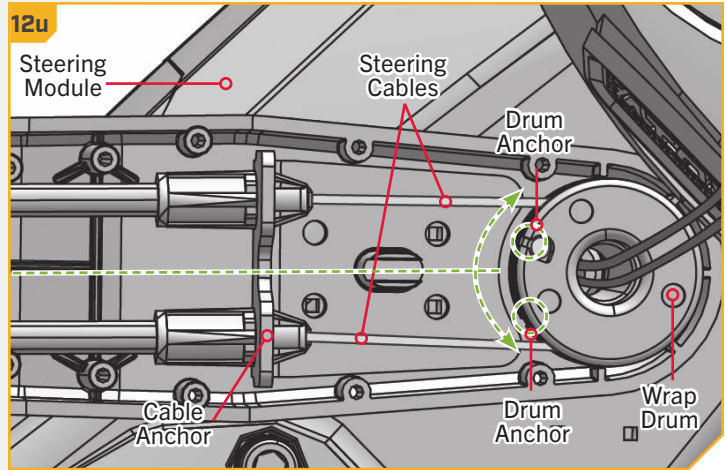
- v. Once the Foot Pedal is at the desired position, align the Wrap Drum with the nearest tooth on the Splined Shaft of the Cable Spline Gear. Press the Wrap Drum securely, so it is seated on top of the gear. At this point, the head of the motor should be parallel with the Boat Keel, and the top of the foot pedal should be parallel with the Boat Deck.

**NOTICE:** The top of the Wrap Drum has rounded and smooth edges. The bottom of the Wrap Drum is flat, and the teeth that engage the Cable Spline Gear are visible in the center.

**⚠ CAUTION**

If the Wrap Drum becomes unintentionally disengaged from the Cable Gear, the Steering Cables can become unwound and needs to be reassembled correctly for proper operation.

**NOTICE:** When seating the Wrap Drum, make sure not to pinch the motor power or steering sensor wires between the Wrap Drum and the Cable Spline Gear.



**NOTICE:** When adjusting the Wrap Drum, the Cable Anchor and the bottom of the Pedal Control Sleeve Assembly will be loose. The pieces are loose to help facilitate the rotation and the tension on the cables for the adjustment.



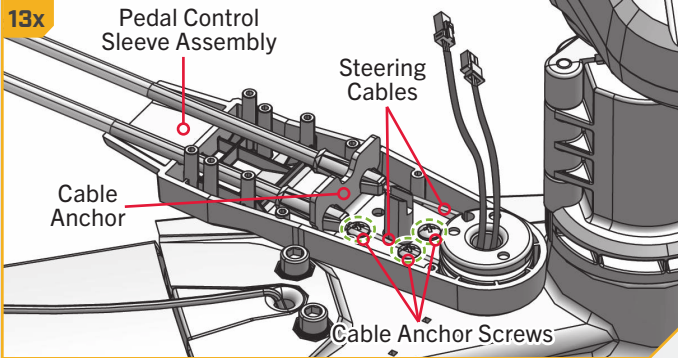
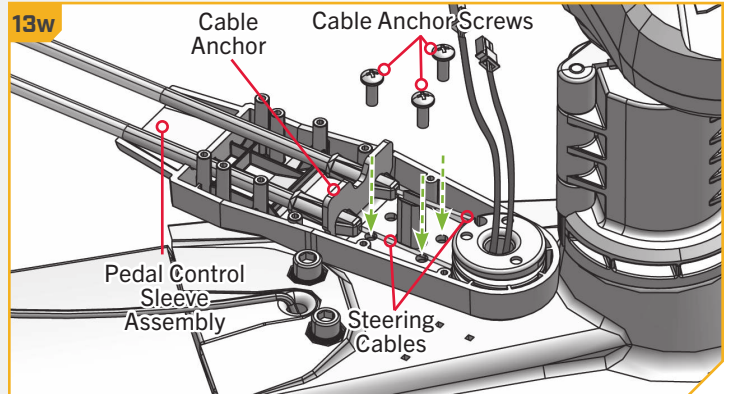
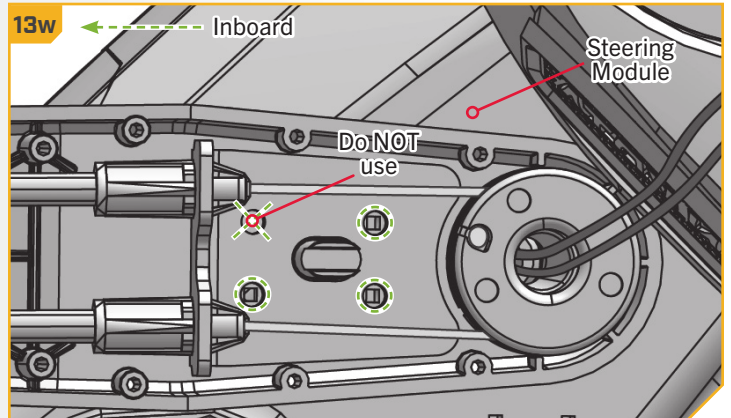
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- w. Take the three Cable Anchor Screws that hold the Cable Anchor to the Steering Module and replace them using a #2 Phillips Screwdriver. The screws should pass through the Cable Anchor and the bottom of the Pedal Control Sleeve Assembly and into the Steering Module. Tighten the Cable Anchor Screws to 30 in-lbs.

**NOTICE:** The Cable Anchor and the Pedal Control Sleeve Assembly contain four holes to secure the assembly to the Steering Module, but only three holes are used. Ensure the screws are placed in the correct holes to replace the Pedal Control Sleeve Assembly and Cable Anchor. The hole that should not be used will not have a threaded hole into the Steering Module to secure the Cable Anchor Screw. For trolling motors mounted on the Starboard side of the Boat Deck, this hole will be the furthest inboard toward the Keel and align inboard from the Steering Module.

- x. Once the screws are in place, return to the Foot Pedal.

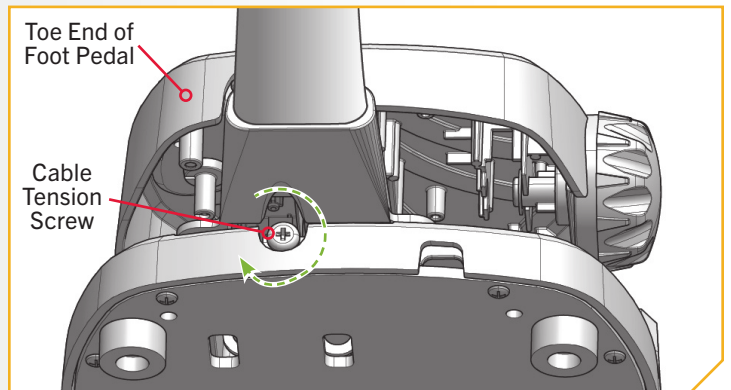


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- y. Using a #3 Phillips Screwdriver, tighten the Cable Tension Screw located at the base of the Toe End of the Foot Pedal to 10 - 12 in-lbs until the Steering Cables are under tension, or re-tighten the Cable Tension Screw the same number of turns it was loosened to at the beginning of the process.

## **CAUTION**

Do not over-tighten the Cable Tension Screw, as excessive tension will cause damage to the unit.

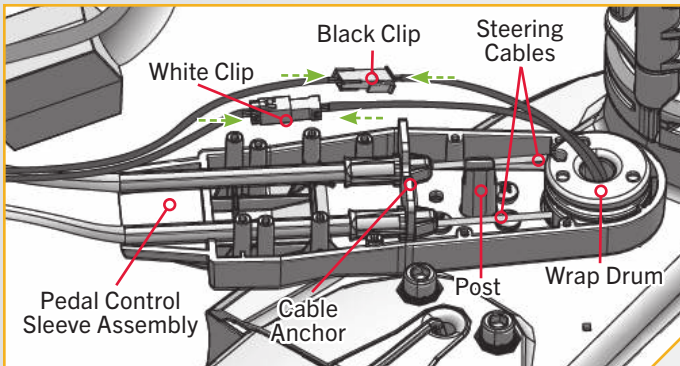
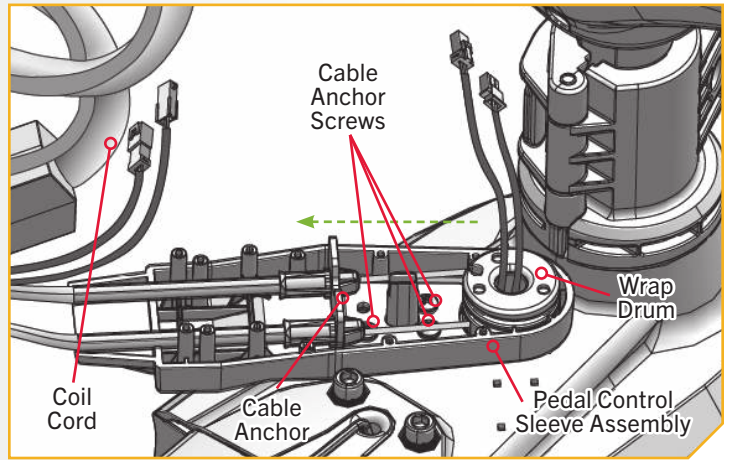


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z. The wires from the Steering Module go through the center of the Cable Spline Gear and the Wrap Drum. The mated connection to these wires enters the Pedal Control Sleeve Assembly from the Coil Cord. Match the wire with the white Clip with the corresponding wire with the white Clip and press the connection together.

aa. Do the same for the wires with the black Clip.



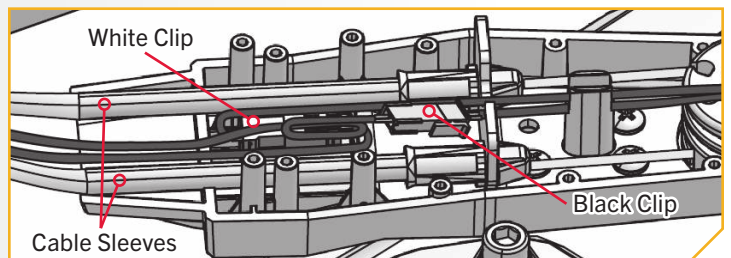
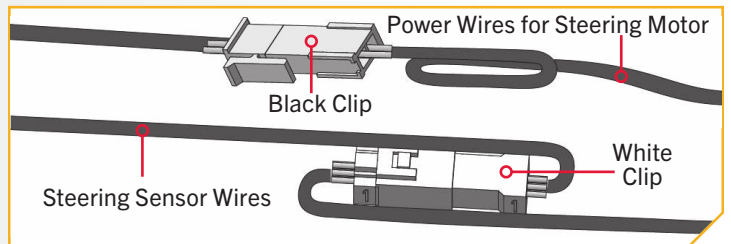
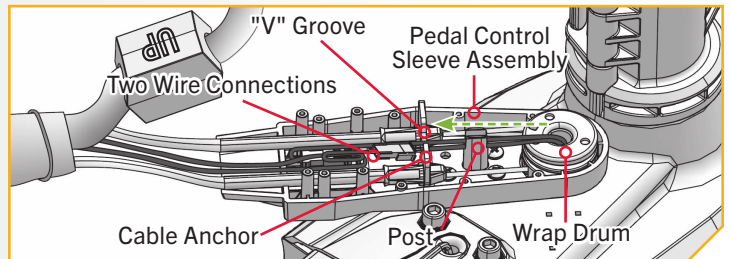
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ab. With the Clips secured, guide the wires from the Wrap Drum straight and position them towards the Coil Cord away from the Wrap Drum.

ac. To cleanly place the wires inside the Pedal Control Sleeve Assembly, start with the wire with the white Clip. Place the wire with the white Clip in the groove of the Post on the Cable Anchor. Then gently guide the wire past the "V" groove of the Cable Anchor.

ad. Take the white Clips and gently bend the wires so that the slack in the wires forms a loose "S" shape. Guide it to the side of the Cable Anchor where the Steering Cables are coated with a black sleeve away from the Wrap Drum. Place the white Clip and the "S" shaped wire between the black sleeve on the Cables.

ae. Repeat the process for the wire with the black Clip. Shape the wire with the black Clip into a small loop rather than an "S" shape.

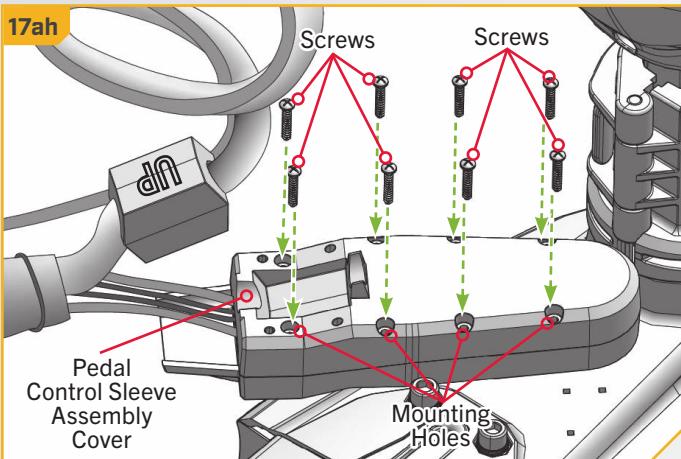
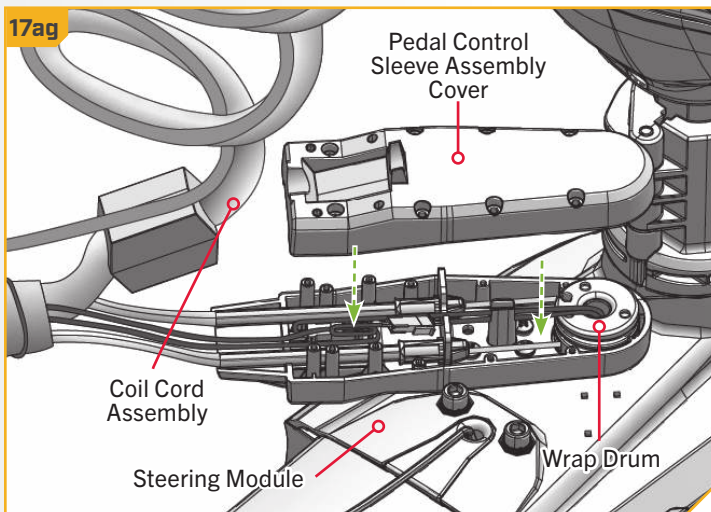


**NOTICE:** Ensure the wires remain in the Post when complete.

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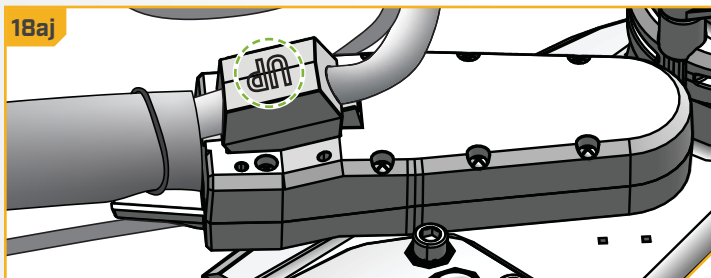
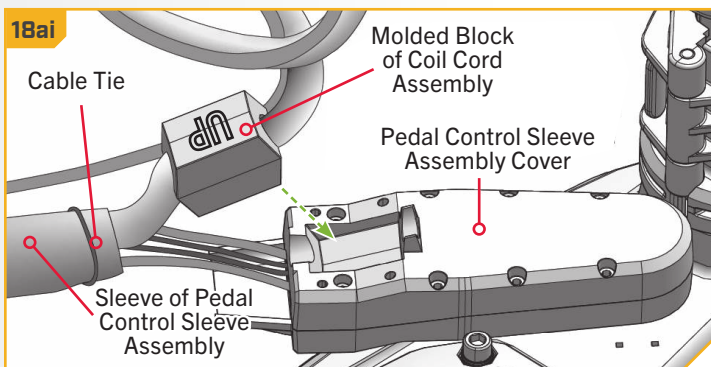
**17**

- af. Ensure the wires are seated and will not be pinched or kinked when the Pedal Control Sleeve Assembly Cover is replaced.
- ag. Take the Pedal Control Sleeve Assembly Cover and rotate it so that the rounded end is over the Wrap Drum. Place the cover on the Pedal Control Sleeve Assembly.
- ah. Take the screws and place one in each of the eight Mounting Holes with recessed embossing. Use a #2 Phillips Screwdriver and tighten to 13 in-lbs.



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- ai. The Coil Cord Assembly is covered by a Sleeve that joins the wires and cables that exit the Pedal Control Sleeve Assembly and extends to the Foot Pedal. The Sleeve is secured with a Cable Tie, which joins with the Coil Cord.
- aj. Adjust the Coil Cord so that the Sleeve with the Cable Tie sits into the bottom recess of the Pedal Control Sleeve Assembly. To do this, rotate the main part of the Coil Cord Assembly by the Molded Block. The Molded Block is rectangular in shape and should be rotated so that the word "UP" molded into the block is facing upward. Press the Molded Knob into the Pedal Control Sleeve Assembly Cover until seated.

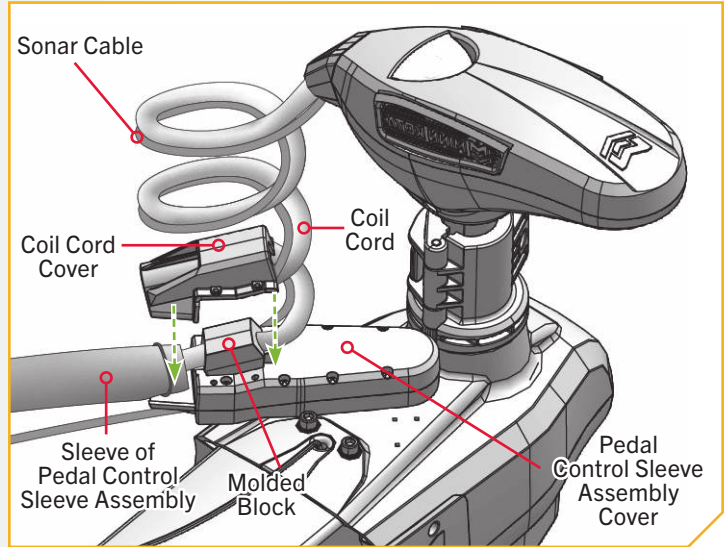


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ak. The Molded Block of the Coil Cord Assembly should be seated, and the Cable Tie and Sleeve should be secured in the recess at the bottom of the Pedal Control Sleeve Assembly. Take the Coil Cord Cover and replace it on the Pedal Control Sleeve Assembly and Molded Block. The stepped design of the Cover fits around the back of the Pedal Control Sleeve Assembly. Be sure that the Coil Cord exits the assembly and that the Sleeve and Cable tie below it are in place. The wires and Sleeve should be captured but not pinched between the Cover and Sleeve.

**NOTICE:** If present, do not capture the Sonar or Ethernet Cables in the Coil Cord Cover. Re-capture these cables that run along the side of the Coil Cord Cover during the re-installation of the Clips.

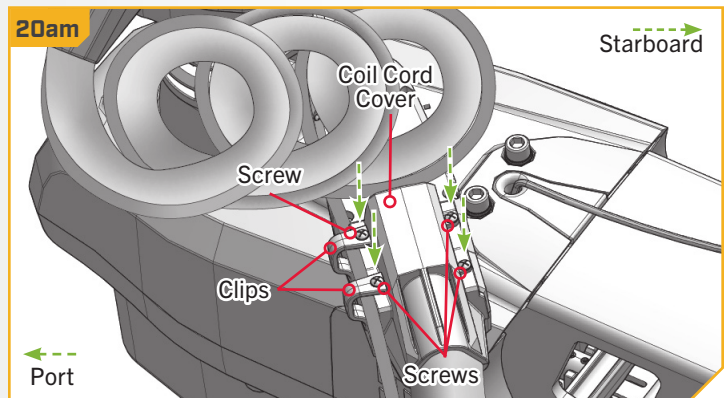
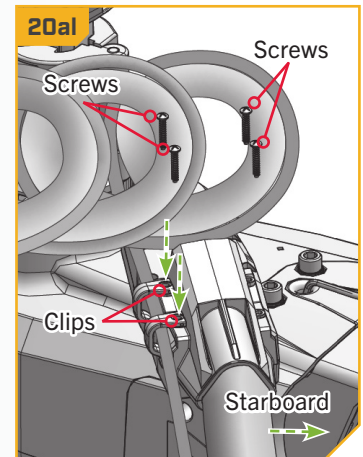
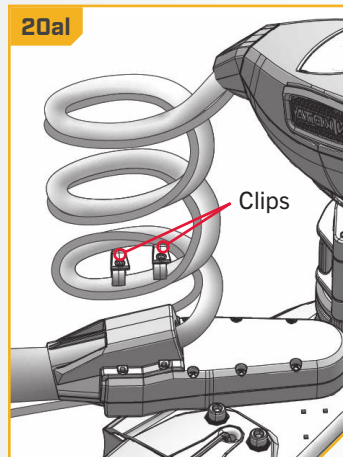


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al. Take the four screws and two Clips that were removed at the beginning of the installation and replace them. The Clips should be installed with the two screws on the starboard side of the motor for a standard installation. When installing the Clips, they should be rotated so that the opening is downward toward the Boat Deck. Replace the two screws that hold the Clips first so that they first go through the Coil Cord Cover and into the Pedal Control Sleeve Assembly. Use a #2 Phillips Screwdriver. If present, capture the Sonar or Ethernet Cables into the Clips when they are reinstalled.

**NOTICE:** Only some installations will be standard. Consider installing the Clips on the Port or Starboard side based on the best configuration for the installation. The placement of the Clips is to route cables away from the Steering Module and Mount, where they may cause an obstruction. Ensure the Sonar and Ethernet Cables are captured in the Clips when installed on either side.

am. The screws that do not hold Clips on the Starboard-side of the Mount can be installed directly into the Coil Cord Cover and Pedal Control Sleeve Assembly. Tighten all four screws to 13 in-lbs.



# PLACING THE BOW-MOUNT STABILIZER

## Placing the Bow-Mount Stabilizer

The Bow-Mount Stabilizer Bracket stabilizes the Steering Module and reduces bouncing when the Motor is stowed and transported. Attention to detail is needed for the successful installation of the stabilizer. Minn Kota recommends having the stabilizer bracket installed by a qualified marine installer.

### CAUTION

Adjusting the Aluminum Rod too tightly removes the end play needed for proper latch pin engagement in the Mount, and doing so could prevent the Mount from fully latching in the stowed position. Improper latching may cause damage. If installed correctly, the tip of the Aluminum Rod should lift off of the boat deck about 1/4" without the Mount unlatching. Cutting the Aluminum Rod too short will cause inadequate support for the Mount. Lack of Mount support may cause damage. Failure to install the Bow-Mount Stabilizer may result in damage to your motor and may adversely affect your warranty.

## 1

### ITEM(S) NEEDED

#30 x 1

#28 x 1

#24 x 1

#26 x 1

#22 x 1

#32 x 2

- Place the Motor in the stowed position.
- Remove the Top Bumper (Item #30) and the Bottom Bumper (Item #22) from the Aluminum Rod (Item #24) and set the bumpers aside. Unscrew the Stabilizer Bracket (Item #28) from the Aluminum Rod. Keep the Jam Nut (Item #26) on the Aluminum Rod. Set the Aluminum Rod with Jam Nut aside.

**NOTICE:** The Bottom Bumper is made of a rubber material. When reinstalling, ensure both bumpers are reinstalled in the correct position.

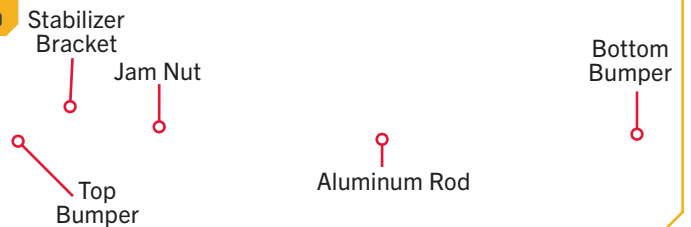
**NOTICE:** Install the Bow-Mount Stabilizer Bracket on the Port or Starboard side of the Steering Module. When mounting the Stabilizer Bracket onto the Ultrex QUEST, discard the two Nylock Nuts (Item #32). Only the bolts and Lock Washers are used for the Stabilizer Bracket when installed directly into the Steering Module.

- Determine the desired location for mounting the Stabilizer Bracket to the Steering Module, either Port or Starboard. Position the Stabilizer Bracket in line with the mounting holes on the bottom of the Steering Module.

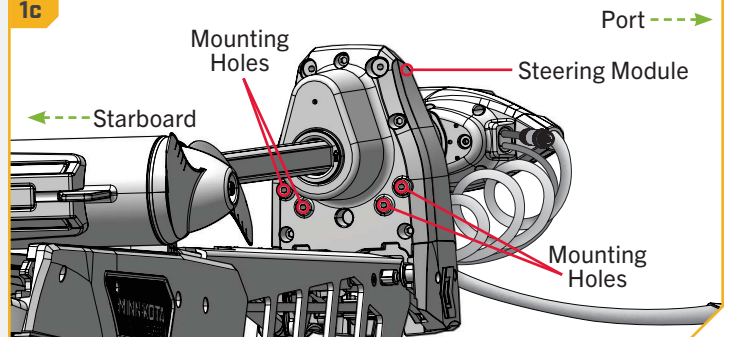
1a



1b



1c



# PLACING THE BOW-MOUNT STABILIZER

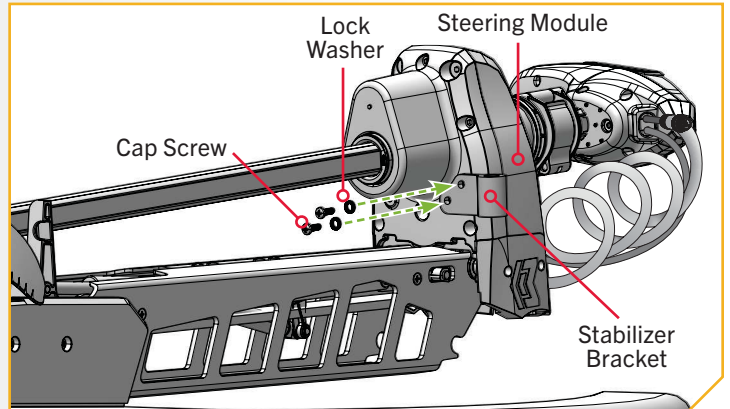
## 2

### ITEM(S) NEEDED

#34 x 2

#36 x 2

- d. Take two 5/16" Cap Screws (Item #34) and place one Lock Washer (Item #36) on each screw. Use the screws with the Lock Washers to secure the Stabilizer Bracket to the Steering Module. Tighten with a 1/4" Allen Wrench to 10 ft-lbs.



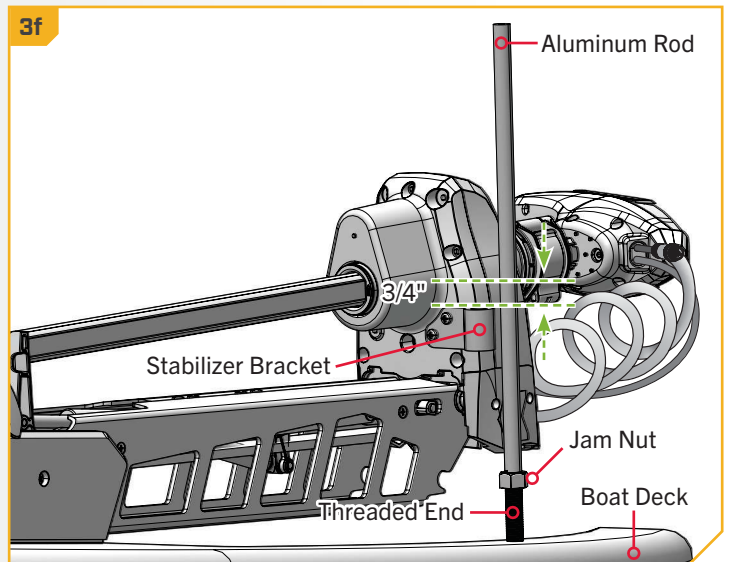
## 3

- e. Take the Aluminum Rod with Jam Nut in place.
- f. Stand the Aluminum Rod with the threaded end down. Set it on the Boat Deck so it sits vertically next to the Stabilizer Bracket. Use this position to measure the Aluminum Rod to cut it to the proper length.

**⚠ CAUTION**

Cutting the Aluminum Rod too short will cause inadequate support for the Mount. Lack of Mount support may cause damage.

- g. Mark the Aluminum Rod with a pencil or marker 3/4" past the top of the Stabilizer Bracket.
- h. Cut the Aluminum Rod with a Hack Saw at the mark. Round the cut edge of the rod with a file or sandpaper to remove any sharp edges.



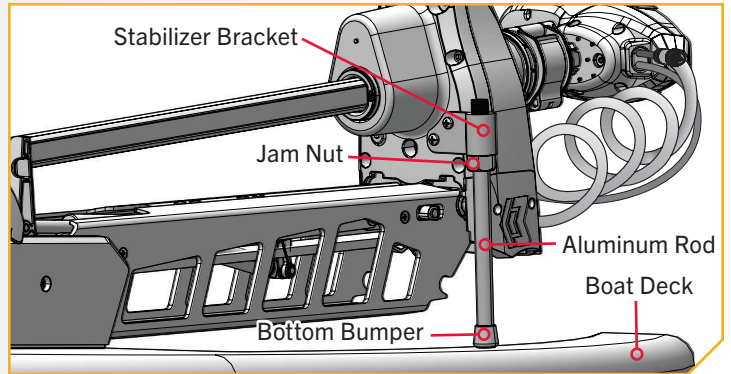
## PLACING THE BOW-MOUNT STABILIZER

4

- i. Replace the Bottom Bumper on the Aluminum Rod, opposite from the threads, over the cut end.
- j. Thread the Aluminum Rod into the Stabilizer Bracket with the Bottom Bumper towards the Boat Deck.
- k. Adjust the Aluminum Rod up or down in the Stabilizer Bracket. The Bottom Bumper should rest on the Boat Deck.

### CAUTION

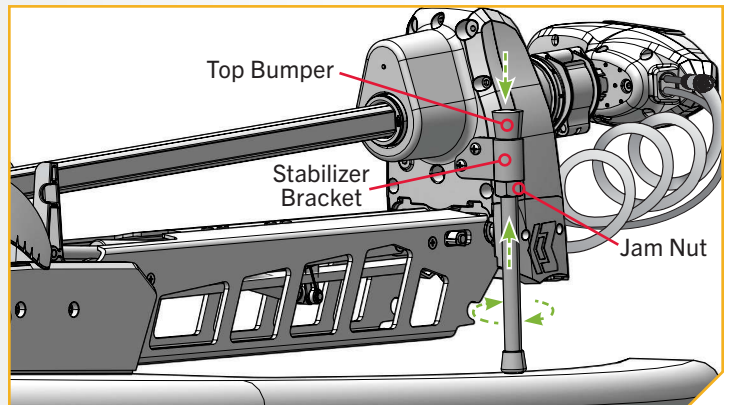
Adjusting the Aluminum Rod too tightly removes the end play needed for proper latch pin engagement in the Mount, and doing so could prevent the Mount from fully latching in the stowed position. Improper latching may cause damage. If installed correctly, the Aluminum Rod tip should lift off the Boat Deck about 1/4" without the Mount unlatching.



**NOTICE:** When placing the Aluminum Rod for final installation, the threaded end faces upward.

5

- l. Once in the correct position, tighten the Jam Nut upwards against the Stabilizer Bracket by turning it clockwise. A tight Jam Nut will prevent the Aluminum Rod from turning.
- m. Install the Top Bumper on any exposed threads on the Aluminum Rod above the Stabilizer Bracket.

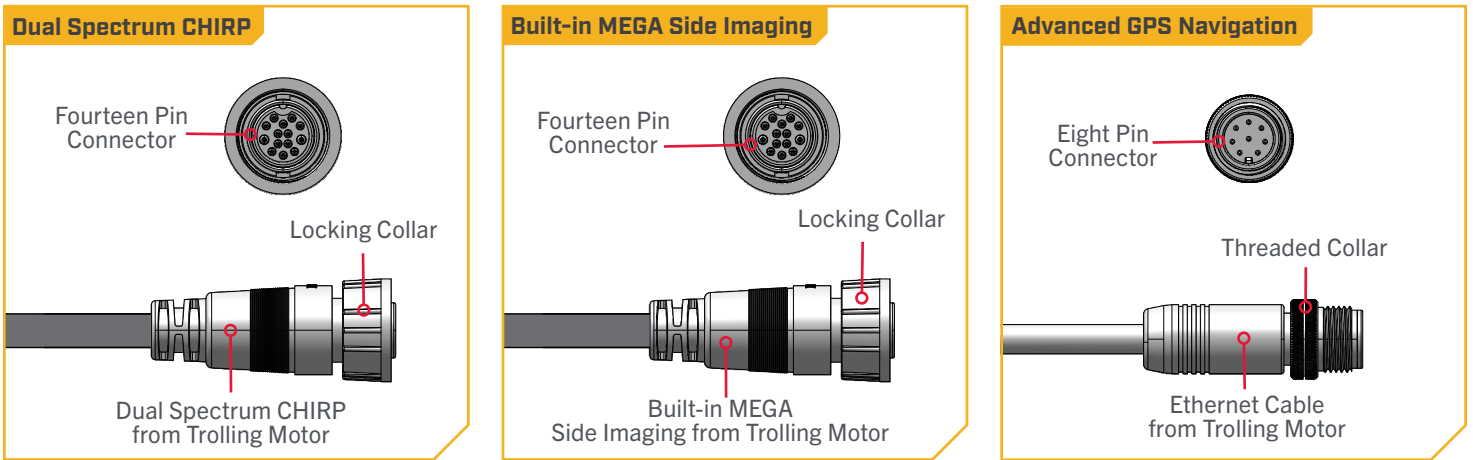


# IDENTIFYING TROLLING MOTOR FEATURES AND THEIR ASSOCIATED CABLES

## IDENTIFYING TROLLING MOTOR FEATURES AND THEIR ASSOCIATED CABLES

### Feature & Cable Identification

The Ultrex QUEST is pre-installed with Advanced GPS Navigation - including the ability to connect via Ethernet to a Humminbird unit. It may also be installed with sonar, either Dual Spectrum CHIRP or Built-in MEGA Side Imaging. Dual Spectrum CHIRP and Built-in MEGA Side Imaging will be installed in combination with Advanced GPS Navigation. All of these features require Accessory Cables to be connected to an output device. The connectors are present on the trolling motor and have cables that exit below the Control Head or run parallel to the Coil Cord and exit at the base of the Mount. To better identify Accessory Cables present, refer to the diagrams that detail what the Dual Spectrum CHIRP, Built-in MEGA Side Imaging and Advanced GPS Navigation connectors look like.





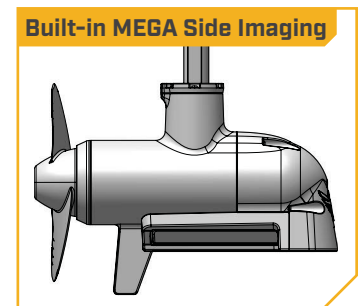
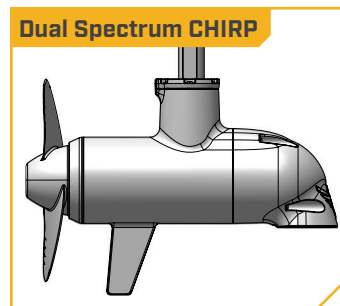
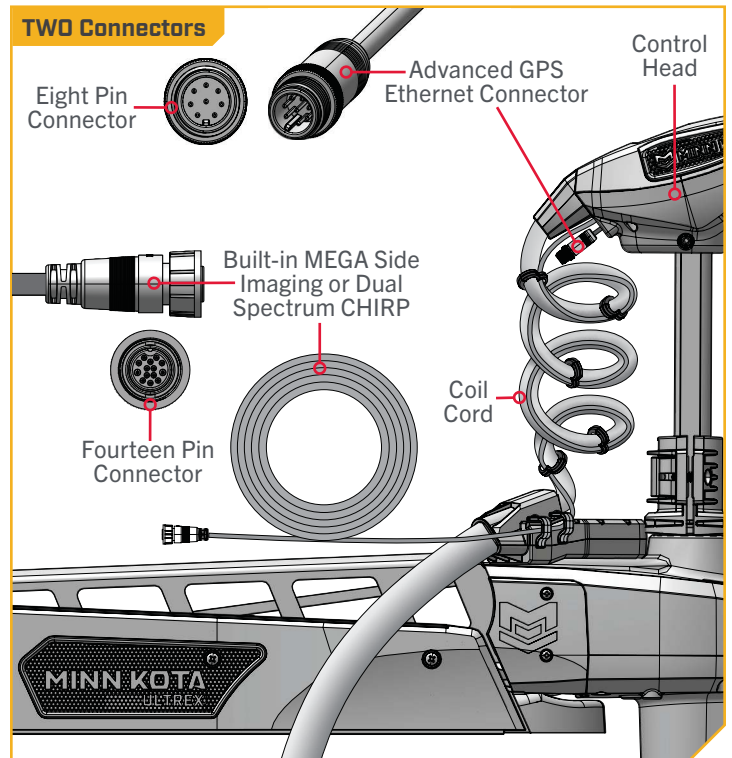
# IDENTIFYING TROLLING MOTOR FEATURES AND THEIR ASSOCIATED CABLES

## Identifying Connectors

Every Ultrex QUEST will have **TWO** connectors present below the Control Head. The trolling motor will be equipped with:

**Advanced GPS Navigation & Dual Spectrum CHIRP or Built-in MEGA Side Imaging** - Advanced GPS Navigation is pre-installed on your trolling motor. One Eight Pin Advanced GPS Ethernet Connector will exit the base of the Control Head and rest just below the Control Head next to the Coil Cord. If the Advanced GPS Navigation on the trolling motor will be used with a fish finder, an Ethernet Cable may be attached to the Advanced GPS Ethernet Connector below the Control Head. See the “Advanced GPS Navigation” section of this document for details on how to install the Advanced GPS Ethernet Connector to a Humminbird.

Dual Spectrum CHIRP or Built-in MEGA Side Imaging is pre-installed on your trolling motor. One Sonar Accessory Cable will exit the base of the Control Head and run parallel to the Coil Cord. The Cable will come installed from the factory secured to the Coil Cord. The end of the Cable will have a Fourteen Pin Connector. Motors with Dual Spectrum CHIRP or Built-in MEGA Side Imaging will also have a transducer in the Lower Unit. The appearance of the transducer will vary depending on sonar type.



# DUAL SPECTRUM CHIRP

## › Feature & Cable Management

### DUAL SPECTRUM CHIRP ›

Your trolling motor may be pre-installed with a transducer system featuring Humminbird's Dual Spectrum CHIRP. CHIRP stands for "Compressed High Intensity Radar Pulse". Dual Spectrum CHIRP is a 2D sonar transducer with a temperature sensor that is integrated into the lower unit of the trolling motor. Humminbird also utilizes a proprietary, best-in-class transducer designed and built to maximize fish detail, as well as coverage area. Dual Spectrum CHIRP scans the water for fish similar to the way the seek function on your truck's radio scans the airwaves for FM stations. By covering a wide range of frequencies, CHIRP produces more accurate, more detailed returns of fish, structure, and the bottom.

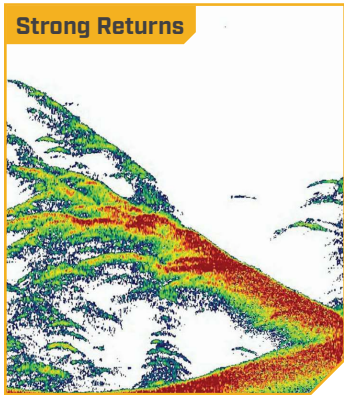
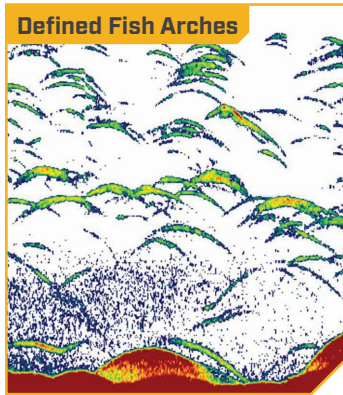
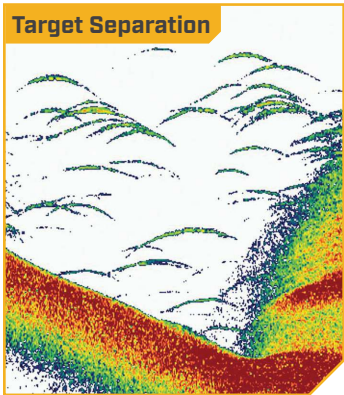
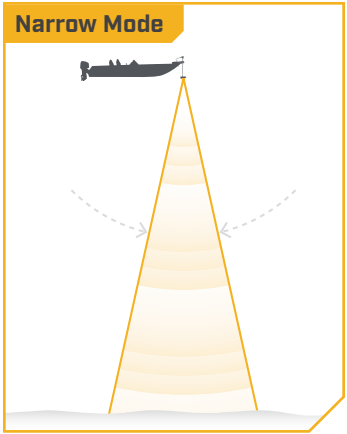
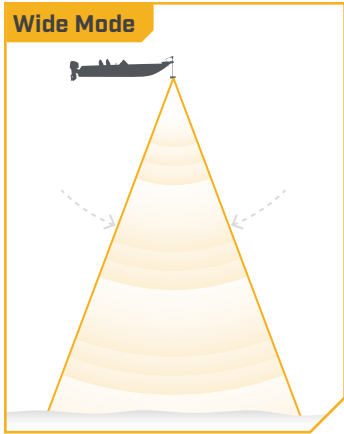
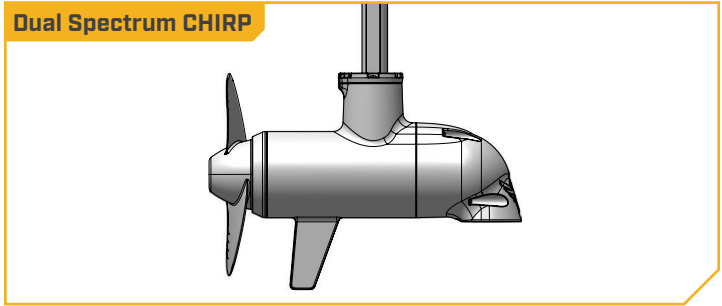
Humminbird's Dual Spectrum CHIRP gives you full spectrum capability, plus the power to select your own start and end frequencies by operating in two different modes. Wide Mode for maximum coverage and Narrow Mode for maximum detail. Wide mode allows you to search deep and wide. Is it used for watching your lure while vertical jigging, or gaining a more expansive view in shallow water. Narrow Mode is used to hone in on the small stuff that makes a big difference. Narrow Mode provides a precise perspective of the water below, helping you target individual fish, or identify fish hidden in structure and/or tight to the bottom.

Dual Spectrum CHIRP features:

**SUPERIOR TARGET SEPARATION** - Separating fish from their habitat is the name of the game. And now, you'll be able to tell the difference more easily between bait and game fish, and nearby structure and vegetation.

**CLEARLY DEFINED FISH ARCHES** - We've got bad news for your arch nemesis. Large game fish will show up on your screen as long, well-defined arches, for quick identification and accurate lure presentation.

**STRONG RETURNS WITHOUT NOISE** - Stop seeing things that aren't there. A high signal-to-noise ratio translates to better defined targets, less clutter and greater certainty that what you're looking at on-screen is legit.



The integrated design of the Dual Spectrum CHIRP transducer protects it in the lower unit of the trolling motor from underwater hazards and prevents tangles and damage to the transducer cables. In certain situations, air bubbles may adhere to the surface of the Dual Spectrum CHIRP transducer and affect the performance. If this happens, simply wipe the surface of the transducer with your finger.

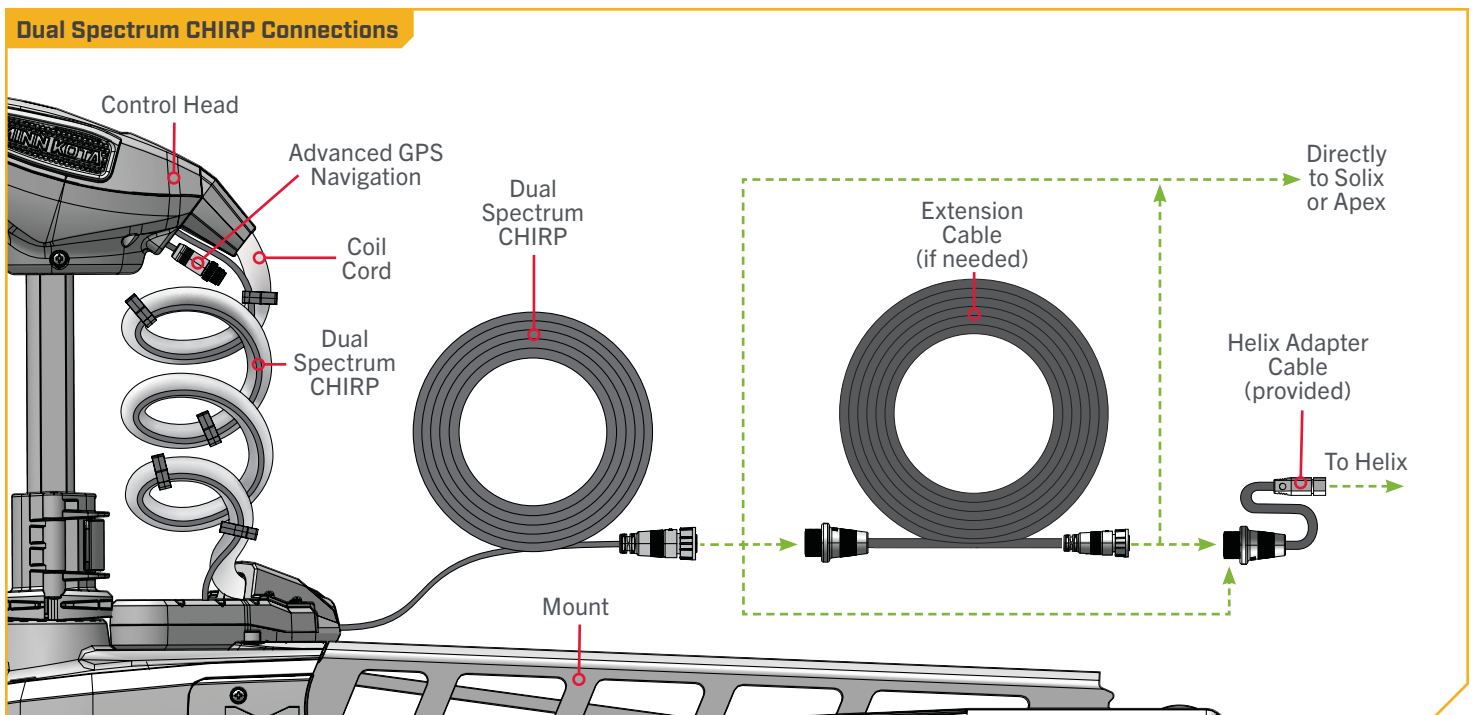
## › Considerations for Connecting and Routing Dual Spectrum CHIRP

If Dual Spectrum CHIRP is pre-installed on your trolling motor, one Dual Spectrum CHIRP accessory cable will exit the base of the Control Head and run parallel to the Coil Cord. The cable will come installed from the factory secured to the Coil Cord. Dual Spectrum CHIRP requires cables to be connected to an output device such as a Humminbird® fish finder. The Dual Spectrum CHIRP cable that is secured to the Coil Cord is "Apex and Solix Ready". Connecting the trolling motor equipped with a Dual Spectrum CHIRP transducer to a compatible fish finder gives you a 2D sonar view of what is happening directly below your trolling motor. To determine if your fish finder is compatible with Dual Spectrum CHIRP, please visit [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com) to check compatibility. The Dual Spectrum CHIRP cable from the trolling motor may be plugged directly into a Solix or Apex, directly into an Extension Cable or directly into a Humminbird® Helix Adapter Cable.

**EXTENSION CABLES** - The Dual Spectrum CHIRP cable from the trolling motor may not be long enough to reach your fish finder. If the cable length does not reach the desired fish finder installation location, extension cables are available. A 10-foot extension cable ([EC M3 14W10 - 10' transducer extension cable - 720106-1](#)) and a 30-foot extension cable ([EC M3 14W30 - 30' transducer extension cable - 720106-2](#)) are available from [humminbird.johnsonoutdoors.com](http://humminbird.johnsonoutdoors.com). Both the 10-foot and 30-foot extension cables also come "Apex and Solix Ready". The Extension Cables may plug directly into a Solix or Apex or directly into a Helix Adapter Cable.

**HUMMINBIRD HELIX ADAPTER CABLES** - If connecting to a Humminbird® Helix fish finder, an adapter cable accessory is included that will allow the connection of any compatible Humminbird® Helix fish finder. The Helix adapter cable will plug directly into the Helix fish finder.

**OTHER FISH FINDER ADAPTER CABLES** - If connecting to other fish finders on the market, check for compatibility or any required adapter cables online at [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com).



# DUAL SPECTRUM CHIRP

Incorrect rigging will cause sonar interference and can damage your trolling motor, electronics, and other boat accessories. To minimize trolling motor interference, ensure that the fish finder and trolling motor are powered by separate batteries. Please refer to the "Battery & Wiring Installation" and "Motor Wiring Diagram" sections of this manual for correct rigging instructions.

The Dual Spectrum CHIRP cables are shielded to minimize interference. To protect this shielding, the cables should not be pulled tight against sharp angles or hard objects. If using cable ties, do not over-tighten. Any excess cable should be bundled in a loose loop of no less than 4" in diameter. The connection cable should be routed to the fish finder following Minn Kota recommendations on routing the cables to optimize mobility and maximize functionality. Follow the instructions below for completing all connections and then follow the instructions for "Securing Connection Cables" to complete the output cable installation.

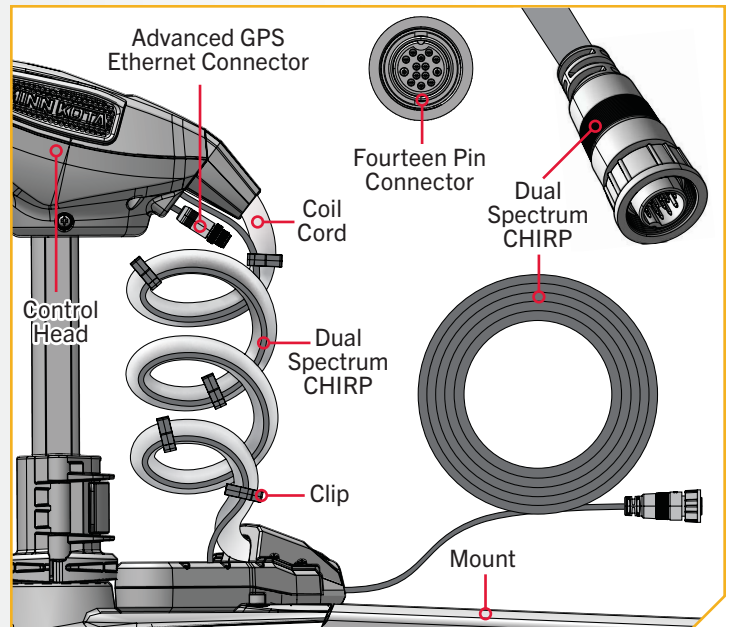
## CAUTION

Failure to follow the recommended wire routing for installed features, if equipped, may cause damage to the product and void your product warranty. Route cables away from pinch points or other areas that may cause them to bend in sharp angles. Routing the cables in any way other than directed may cause damage to the cables by being pinched or severed. Do not over-tighten cable ties or clips as it may damage the wires.

1

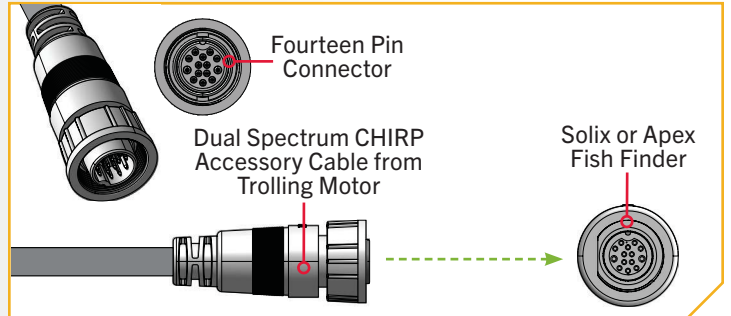
**NOTICE:** Your fish finder should be turned off until this procedure is complete.

- a. Place the motor in the deployed position.
- b. Locate the Fourteen Pin Connector on the end of the Dual Spectrum CHIRP accessory cable. The cable will come installed from the factory secured to the Coil Cord with Clips.
- c. Determine if the Plug on the end of the Dual Spectrum CHIRP accessory cable will be attached directly to:
  - 1) a Humminbird® Solix or Apex fish finder,
  - 2) a Dual Spectrum CHIRP Extension Cable,
  - 3) a Helix Adapter Cable or a compatible fish finder adapter cable.



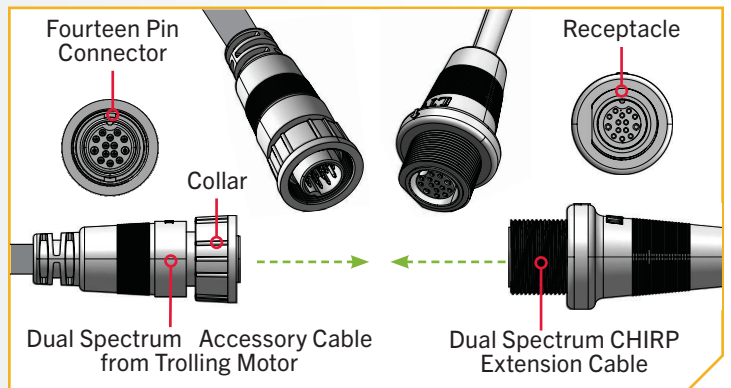
**2**

- d. If installing directly to a Solix or Apex, the connection will be flat on the back of the fish finder display.
- e. Align the pins on the Accessory Cable with the receptacle on the fish finder. Notice the keyed connectors. Tighten the Collar from the accessory cable to secure the connection. Once directly installed to the Solix or Apex, the connection is complete.



**3**

- f. If installing directly to a Dual Spectrum CHIRP Extension Cable, align the pins on the accessory cable with the receptacle on the extension cable. Notice the keyed connectors. Tighten the Collar from the accessory cable to secure the connection.
- g. If the Dual Spectrum CHIRP extension cable will be attached directly to a Humminbird® Solix or Apex, the connection will look exactly like the installation directly into a Humminbird Solix or Apex fish finder.



**NOTICE:** A 10-foot extension cable (EC M3 14W10 - 10' transducer extension cable - 720106-1) and a 30-foot extension cable (EC M3 14W30 - 30' transducer extension cable - 720106-2) are available from [humminbird.johnsonoutdoors.com](http://humminbird.johnsonoutdoors.com).

# DUAL SPECTRUM CHIRP

## 4

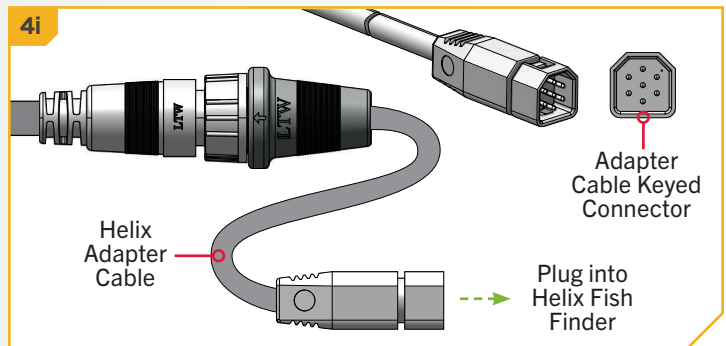
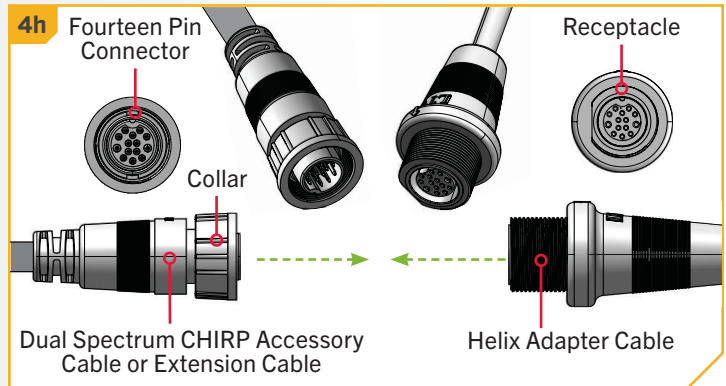
### ITEM(S) REQUIRED

#46 or 48 x 1

- h. If installing directly to a Helix Adapter Cable, align the pins on the accessory cable or extension cable with the receptacle on the Helix Adapter Cable (Item #46 or 48). Notice the keyed connectors. Tighten the Collar from the accessory cable or extension cable to secure the connection.
- i. If the Helix Adapter Cable will be attached directly to a Humminbird® Helix, plug it in the Helix Adapter Cable Keyed Connection on the back of the fish finder.

**NOTICE:** If connecting to other fish finders on the market, check for compatibility or any required adapter cables online at [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com).

- j. If your trolling motor has more than one external connector for an output device, complete the connection for that specific output and then follow the instructions for "Securing Accessory Cables" to complete the output cable installation.



**NOTICE:** If unsure of what features your trolling motor may be installed with that require connection to an output device, please review the "Identifying Trolling Motor Features And Their Associated Cables" section in this document.

## BUILT-IN MEGA SIDE IMAGING >

With Built-in MEGA Side Imaging it's all in the details. Gain a 180 degrees side-to-side perspective on the world below the surface with remarkable Humminbird® Side Imaging®. In an instant, the ultra-thin beam scans the area up to 400 feet to the left and right of your boat location - for total coverage of up to 800 feet. The return image for each slice is then added to the images taken immediately before and after to build an incredible view of the lake bottom. You can then magnify the detail of the image with the zoom feature or mark the GPS location of promising cover or structure directly on the screen. The Built-In MEGA DI transducer is only available on new models equipped from the factory and cannot be added to an existing trolling motor.

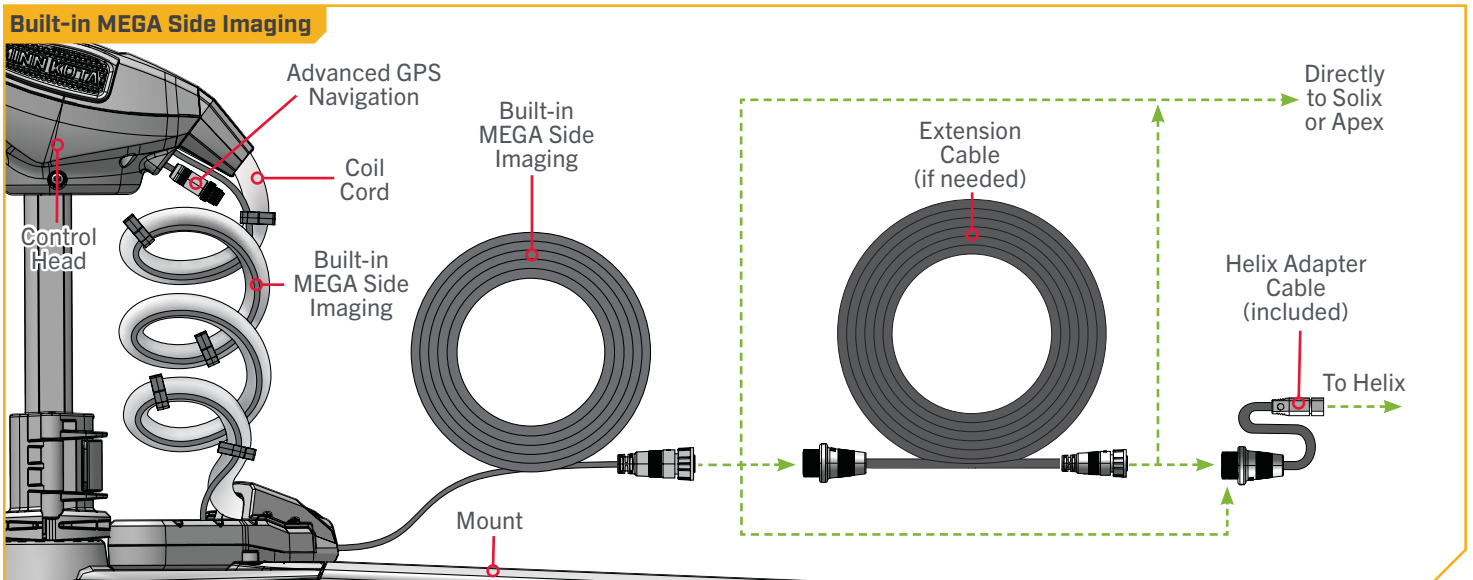
## > Considerations for Connecting and Routing Built-in MEGA Side Imaging

If Built-in MEGA Side Imaging is pre-installed on your trolling motor, one Built-in MEGA Side Imaging accessory cable will exit the base of the Control Head and run parallel to the Coil Cord. The cable will come installed from the factory secured to the Coil Cord. Built-in MEGA Side Imaging requires cables to be connected to an output device such as a Humminbird® fish finder. The Built-in MEGA Side Imaging cable that comes from the factory secured to the Coil Cord is "Apex and Solix Ready". Connecting the trolling motor equipped with a Built-in MEGA Side Imaging transducer to a compatible fish finder gives you a 2D sonar view of what is happening directly below your trolling motor. To determine if your fish finder is compatible with Built-in MEGA Side Imaging, please visit [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com) to check compatibility. The Built-in MEGA Side Imaging cable from the trolling motor may be plugged directly into a Solix or Apex, directly into an Extension Cable or directly into a Humminbird® Helix Adapter Cable.

**EXTENSION CABLES** - The Built-in MEGA Side Imaging cable from the trolling motor may not be long enough to reach your fish finder. If the cable length does not reach the desired fish finder installation location, extension cables are available. A 10-foot extension cable (**EC M3 14W10 - 10' transducer extension cable - 720106-1**) and a 30-foot extension cable (**EC M3 14W30 - 30' transducer extension cable - 720106-2**) are available from [humminbird.johnsonoutdoors.com](http://humminbird.johnsonoutdoors.com). Both the 10-foot and 30-foot extension cables also come "Apex and Solix Ready". The Extension Cables may plug directly into a Solix or Apex or directly into a Helix Adapter Cable.

**HUMMINBIRD HELIX ADAPTER CABLES** - If connecting to a Humminbird® Helix fish finder, an adapter cable accessory is included that will allow the connection of any compatible Humminbird® Helix fish finder. The 490537-2 MKR-MI-1 is used on Helix 8, 9, 10, 12 and 15 G2N models and newer. The Helix adapter cable will plug directly into the Helix fish finder.

**OTHER FISH FINDER ADAPTER CABLES** - If connecting to other fish finders on the market, check for compatibility or any required adapter cables online at [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com).



# BUILT-IN MEGA SIDE IMAGING

## CAUTION

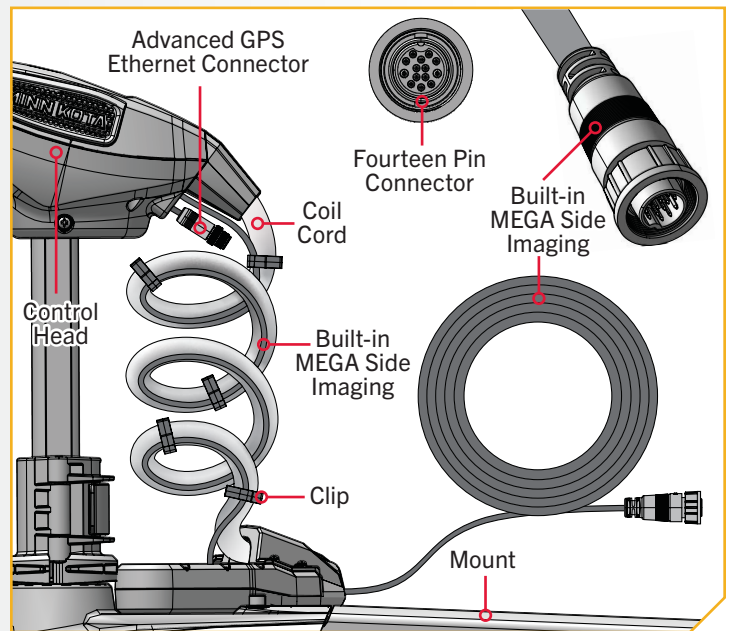
Failure to follow the recommended wire routing for installed features, if equipped, may cause damage to the product and void your product warranty. Route cables away from pinch points or other areas that may cause them to bend in sharp angles. Routing the cables in any way other than directed may cause damage to the cables by being pinched or severed. Do not over-tighten cable ties as it may damage the wires.

**NOTICE:** You can only view Side Imaging with a MEGA DI or MEGA SI HELIX G2N, G3N or G4N Series model and a required adapter, or with any SOLIX or APEX Series model. The built-in transducer cannot supply MEGA Imaging to Humminbird models that do not already have the capability. If you have a G2/G2N, G3/G3N or G4/G4N HELIX that is not a MEGA SI or MEGA DI model, you will still get 2D Dual Spectrum CHIRP Sonar from the transducer. SOLIX G1 and HELIX G2 and G2N units need to be running the latest software update to view sonar from motors with Built-In MEGA Imaging. You can get the latest version of software for your fish finder on [humminbird.johnsonoutdoors.com](http://humminbird.johnsonoutdoors.com). Built-In MEGA Imaging is not supported by HELIX G1 models or other brands of fish finders.

## 1

**NOTICE:** Your fish finder should be turned off until this procedure is complete.

- a. Place the motor in the deployed position.
- b. Locate the Fourteen Pin Connector on the end of the Built-in MEGA Side Imaging accessory cable. The cable will come installed from the factory secured to the Coil Cord with Clips.
- c. Determine if the Plug on the end of the Built-in MEGA Side Imaging Cable accessory cable will be attached directly to:
  - 1) a Humminbird® Solix or Apex fish finder,
  - 2) a Built-in MEGA Side Imaging Extension Cable,
  - 3) a Helix Adapter Cable or a compatible fish finder adapter cable.

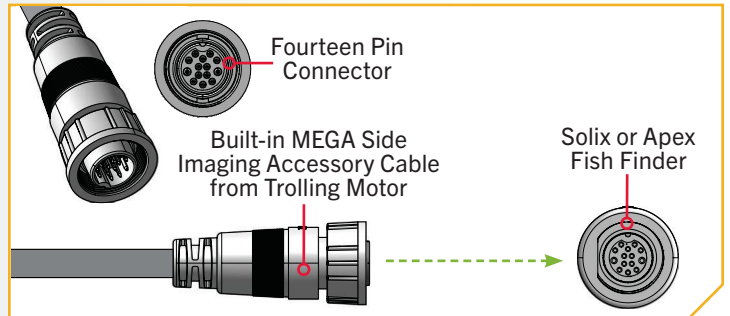




## BUILT-IN MEGA SIDE IMAGING

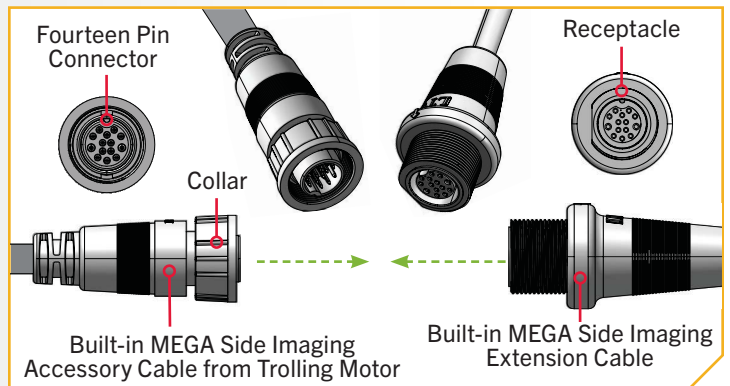
2

- d. If installing directly to a Solix or Apex, the connection will be flat on the back of the fish finder display.
- e. Align the pins on the Accessory Cable with the receptacle on the fish finder. Notice the keyed connections. Tighten the Collar from the accessory cable to secure the connection. Once directly installed to the Solix or Apex, the connection is complete.



3

- f. If installing directly to a Built-in MEGA Side Imaging Extension Cable, align the pins on the accessory cable with the receptacle on the extension cable. Notice the keyed connectors. Tighten the Collar from the accessory cable to secure the connection.
- g. If the Built-in MEGA Side Imaging Cable extension cable will be attached directly to a Humminbird® Solix or Apex, the connection will look exactly like the installation directly into a Humminbird Solix or Apex fish finder.



**NOTICE:** A 10-foot extension cable (EC M3 14W10 - 10' transducer extension cable - 720106-1) and a 30-foot extension cable (EC M3 14W30 - 30' transducer extension cable - 720106-2) are available from [humminbird.johnsonoutdoors.com](http://humminbird.johnsonoutdoors.com).

# BUILT-IN MEGA SIDE IMAGING

## 4

### ITEM(S) NEEDED

#48 x 1

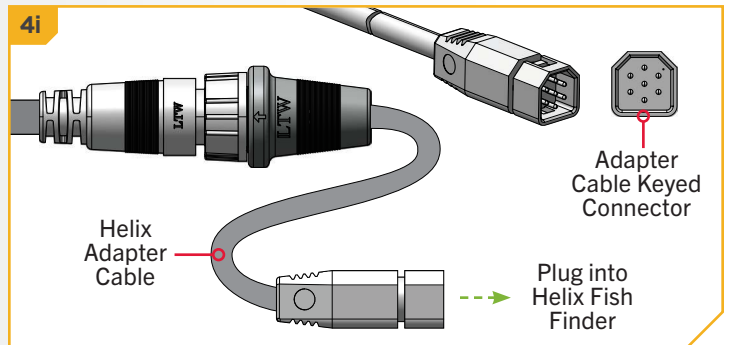
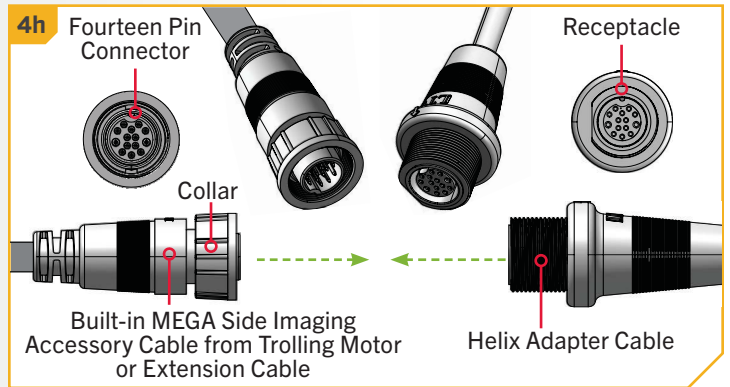
- h. If installing directly to a Helix Adapter Cable, align the pins on the accessory cable or extension cable with the receptacle on the Helix Adapter Cable (Item #48). Notice the keyed connectors. Tighten the Collar from the accessory cable or extension cable to secure the connection.

**NOTICE:** The 490537-2 MKR-MI-1 (Item #48) is a Helix Adapter Cable used on Helix 8, 9, 10, 12 and 15 G2N models and newer.

- i. If the Helix Adapter Cable will be attached directly to a Humminbird® Helix, plug it in the Helix Adapter Cable Keyed Connection on the back of the fish finder.

**NOTICE:** If connecting to other fish finders on the market, check for compatibility or any required adapter cables online at [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com).

- j. If your trolling motor has more than one external connector for an output device, complete the connection for that specific output and then follow the instructions for "Securing Accessory Cables" to complete the output cable installation.



**NOTICE:** If unsure of what features your trolling motor may be installed with that require connection to an output device, please review the "Identifying Trolling Motor Features and Their Associated Cables" section in this document.

## ADVANCED GPS NAVIGATION >

Your Minn Kota trolling motor and Humminbird fish finder communicate with each other to change the way you fish. Advanced GPS Navigation offers a large array of features including controlling speed, steering, Spot-Lock, and the ability to record and retrace tracks on the water, all at your fingertips. To learn more about the GPS capabilities available with your new motor, please refer to the Advanced GPS Navigation Owner's Manual by visiting [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com).

The remote and GPS controller make up the Advanced GPS Navigation system. A micro remote comes paired to the controller from the factory. The GPS controller contains a very sensitive compass and is where all GPS satellite and remote signals are received. The GPS controller is located in the trolling motor Control Head and may be connected to a fish finder from an Accessory Cable that exits the Control Head. If the Advanced GPS Navigation system will be used with a fish finder, the Ethernet link between the trolling motor and the fish finder must be connected.

## > Considerations for Connecting and Routing Advanced GPS Navigation

Advanced GPS Navigation is pre-installed on your trolling motor. One eight pin Advanced GPS Ethernet Connector exits the base of the Control Head and rest just below the Control Head next to the Coil Cord. If the Advanced GPS Navigation on the trolling motor will be used with a fish finder, an Ethernet Cable will need to be attached to the Advanced GPS Ethernet Connector below the Control Head. Consider the distance between the trolling motor and the fish finder to determine how to complete the Ethernet connection.

**ETHERNET CABLES** - Minn Kota provides one 30 ft Ethernet cable ([AS EC 30E - 30' Ethernet Cable - 720073-4](#)) with every trolling motor equipped with Advanced GPS Navigation. The 30 ft Ethernet cable will accommodate a standard Ethernet connection for most installations to a Humminbird fish finder and is "Apex and Solix Ready". If the distance between the trolling motor and Humminbird fish finder is relatively small and a shorter cable is preferred, alternate cable lengths are available from [humminbird.johnsonoutdoors.com](http://humminbird.johnsonoutdoors.com). These options include:

- 10 ft - ([AS EC 10E - 10' Ethernet Cable - 720073-2](#))
- 15 ft - ([AS EC 15E - 15' Ethernet Cable - 720073-5](#))
- 20 ft - ([AS EC 20E - 20' Ethernet Cable - 720073-3](#))

Every length of Ethernet cable plugs directly into a Solix or Apex or directly into a Helix Adapter Cable.

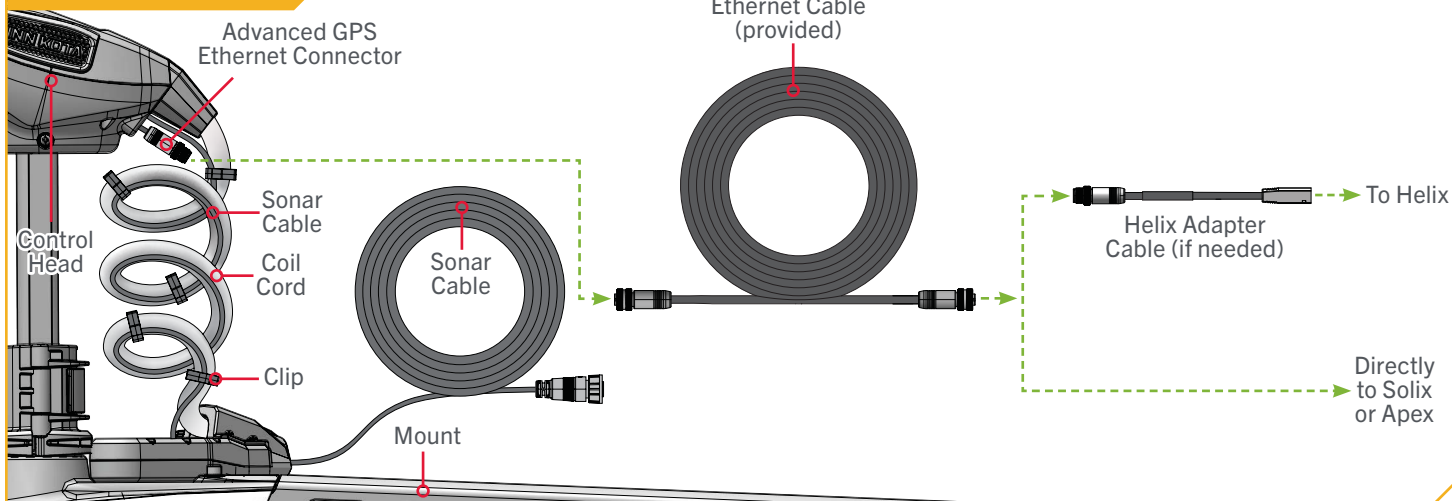
**HUMMINBIRD HELIX ADAPTER CABLES** - Minn Kota provides one Helix Adapter Cable ([AS EC QDE - Ethernet Adapter Cable - 720074-1](#)) with every trolling motor equipped with Advanced GPS Navigation. If the Ethernet connection is being made between the trolling motor and any Humminbird® Helix fish finder, the Helix Adapter Cable should be used. The Helix Adapter Cable directly connects the Ethernet Cable to a Helix fish finder.

**ETHERNET EXTENSION CABLES** - If the 30 ft Ethernet cable provided with your trolling motor with Advanced GPS Navigation is not long enough to reach the fish finder, an Ethernet Extension cable should be used. The Ethernet Extension cable is available from [humminbird.johnsonoutdoors.com](http://humminbird.johnsonoutdoors.com) and is available in a 30 ft length ([AS ECX 30E - 30' Ethernet Extension Cable - 760025-1](#)). The Ethernet Extension Cable will plug directly into any length of Ethernet cable.

**NOTICE:** Minn Kota recommends routing the Ethernet Cable or Ethernet Extension Cable parallel with and secured to the Coil Cord when making the Ethernet connection. The cables will be installed from the Mount to the Control Head secured to and parallel with the Coil Cord. Bypassing the Coil Cord when routing the Ethernet Cable or Ethernet Extension Cable is not recommended. Follow the instructions in the "Securing Accessory Cable" section of this document for instructions on how to route the Ethernet Cable through the Clips once connected.

# ADVANCED GPS NAVIGATION

## GPS Ethernet Connection



## ⚠ CAUTION

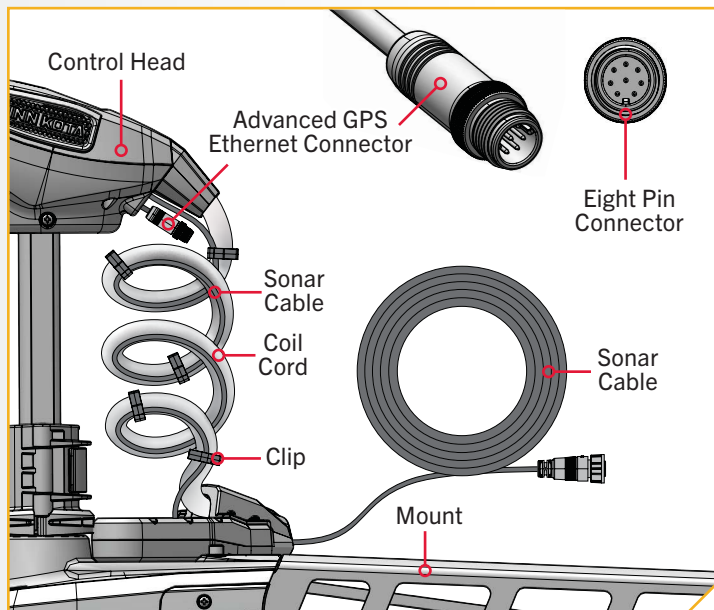
Failure to follow the recommended wire routing for installed features, if equipped, may cause damage to the product and void your product warranty. Route cables away from pinch points or other areas that may cause them to bend in sharp angles. Routing the cables in any way other than directed may cause damage to the cables by being pinched or severed. Do not over-tighten cable ties or clips as it may damage the wires.

1

**NOTICE:** Your fish finder should be turned off until this procedure is complete.

- a. Place the motor in the deployed position.
- b. Locate the Eight Pin Advanced GPS Ethernet Connector below the Control Head. The Advanced GPS Ethernet Connector will exit the base of the Control Head and will rest just below the Control Head next to the Coil Cord.

**NOTICE:** Ultrex QUEST trolling motors with Advanced GPS Navigation will also be equipped with Sonar. Sonar is pre-installed from the factory and may be either Dual Spectrum CHIRP or Built-in MEGA Side Imaging. With motors equipped with Sonar, a Sonar Cable will be present below the Control Head and be secured to the Coil Cord with Clips. Review the “Identifying Trolling Motor Features and Their Associated Cables” of this document to identify and learn more about Sonar.



2

ITEM(S) NEEDED



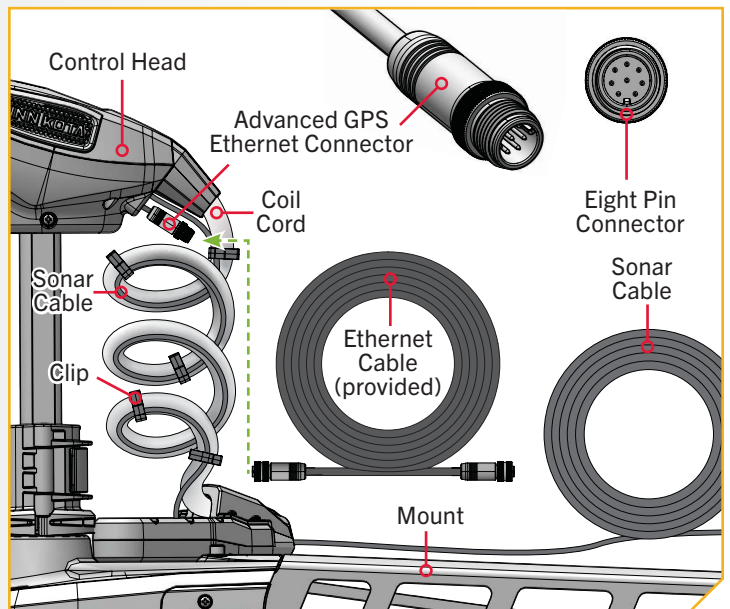
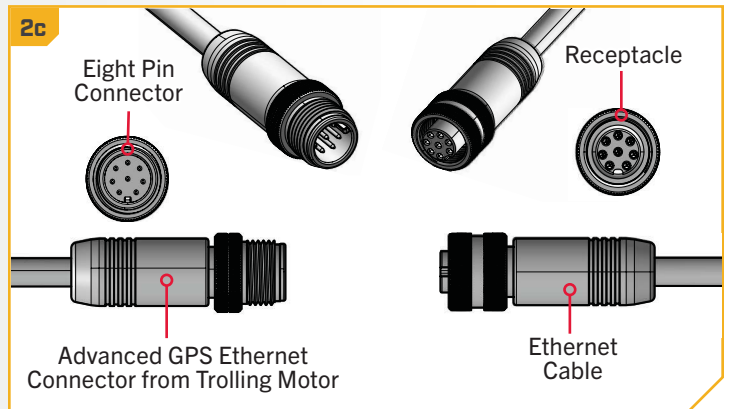
- c. Take the Ethernet Cable (Item #16) and identify the Receptacle on either end. It will be keyed to fit with the Eight Pin Advanced GPS Ethernet Connector below the Control Head.

**NOTICE:** The Ethernet Cable has a Receptacle for the Advanced GPS Ethernet Connector on both ends and either end may be connected.

- d. Leading with either Receptacle, take the cable and run it parallel to the Coil Cord starting at the end of the Coil Cord attached to the Mount and working up towards the Control Head. The cable will run parallel to the Sonar Cable secured to the Coil Cord with Clips. Allow enough slack in the cable to attach the Receptacle to the Advanced GPS Ethernet Connector.

**NOTICE:** The 30' Ethernet Cable (AS EC 30E - 30' Ethernet Cable - 720073-4) is provided. If an alternate length is preferred, alternate cable lengths are available from [humminbird.johnsonoutdoors.com](http://humminbird.johnsonoutdoors.com).

**NOTICE:** The 30' Ethernet Extension Cable (AS ECX 30E - 30' Ethernet Extension Cable - 760025-1) is available from [humminbird.johnsonoutdoors.com](http://humminbird.johnsonoutdoors.com) and should be used if the standard 30' Ethernet Cable provided with your trolling motor is not long enough to reach the fish finder.

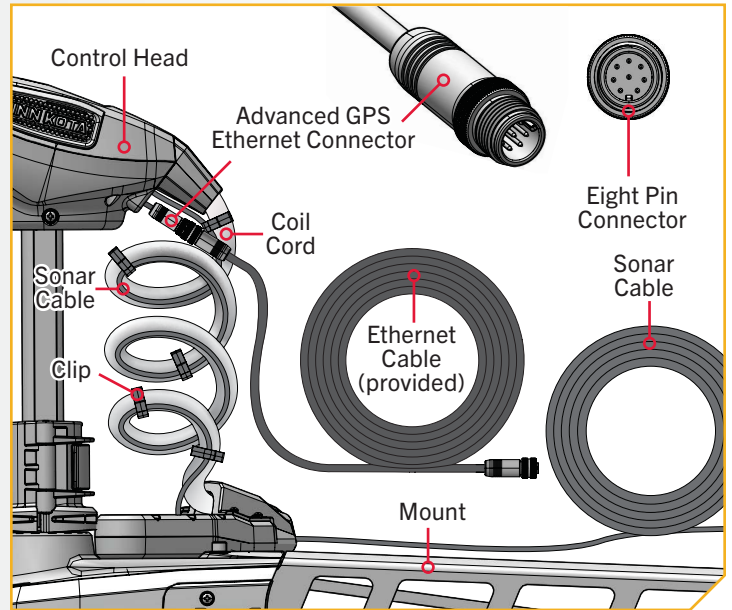


# ADVANCED GPS NAVIGATION

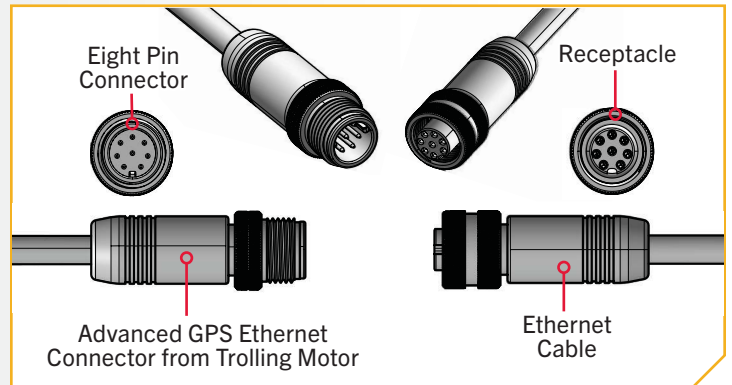
3

**NOTICE:** Minn Kota recommends routing the Ethernet Cable parallel to the Coil Cord when making the Ethernet connection. The cable will be installed from the Mount to the Control Head parallel to the Coil Cord with Clips. Bypassing the Coil Cord when routing the Ethernet Cable is not recommended. After connections are made, the Ethernet Cable must be installed in the Clips. For details on securing the Ethernet Cable please follow the "Securing Connection Cables" section of this document.

**NOTICE:** The Advanced GPS Ethernet Connector that exits the base of the Control Head has a cap that should be removed before connecting the Ethernet Cable.

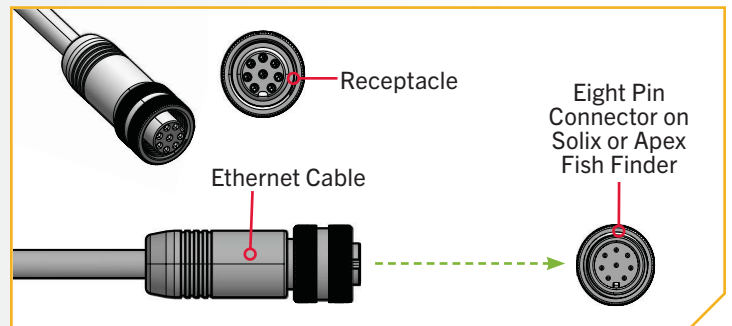


- e. **To install the Ethernet Cable**, align the pins on the Advanced GPS Ethernet Connector with the Receptacle on the Ethernet Cable. Notice the keyed connectors. Press the ends together and tighten the Collar from the Ethernet Cable to secure the connection.
- f. The Ethernet Cable will plug directly into a Solix or Apex Fish Finder or directly into a Helix Adapter Cable.



4

- g. **If installing directly to a Solix or Apex**, the connector will be flat on the back of the fish finder display.
- h. Align the Receptacle on the Ethernet Cable with the Eight Pin Connector on the Apex or Solix fish finder. Notice the keyed connectors. Tighten the Collar from the Ethernet Cable to secure the connection. Once directly installed to the Solix or Apex, the connection is complete.



5

ITEM(S) NEEDED

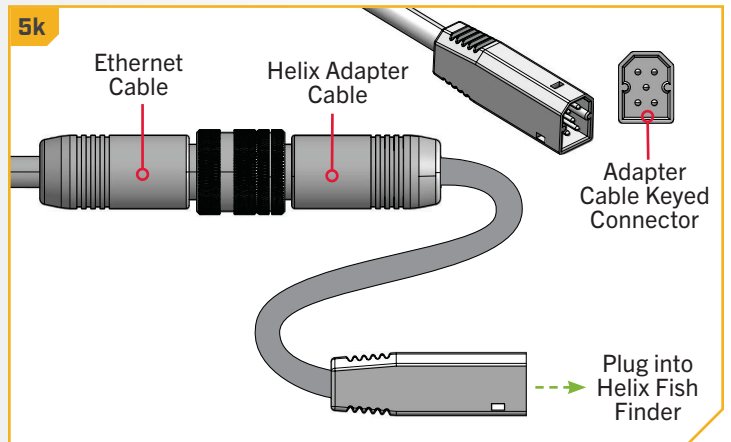
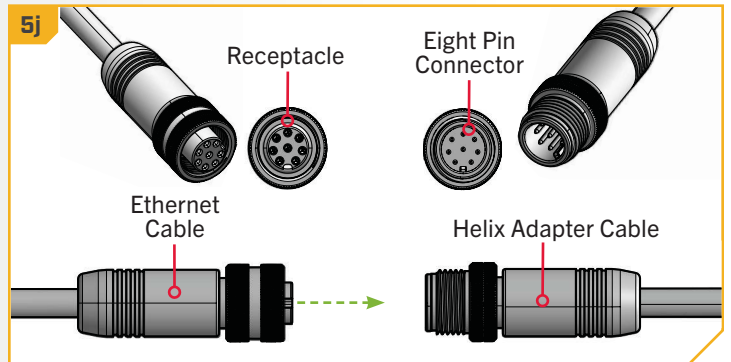


- i. If installing directly to a Helix Adapter Cable (Item #18), align the Receptacle on the Ethernet Cable with the Eight Pin Connector on the Helix Adapter Cable provided. Notice the keyed connectors. Tighten the Collar from the Ethernet Cable to secure the connection.

**NOTICE:** Minn Kota provides one Helix Adapter Cable (AS EC QDE - Ethernet Adapter Cable - 720074-1) with every trolling motor equipped with Advanced GPS Navigation.

- j. The Helix Adapter Cable directly connects the Ethernet Cable to a Helix fish finder. Locate the Helix Adapter Cable Keyed Connector on the back of the fish finder. Plug the Helix Adapter Cable into the back of the Helix fish finder to complete the connection.
- k. If your trolling motor has more than one feature that requires connection to an output device, complete the connection for that specific output and then follow the instructions for "Securing Accessory Cables" to complete the Accessory Cable installation.

**NOTICE:** If unsure of what features your trolling motor may be installed with that require connection to an output device, please review the "Identifying Trolling Motor Features and Their Associated Cables" section of this manual.

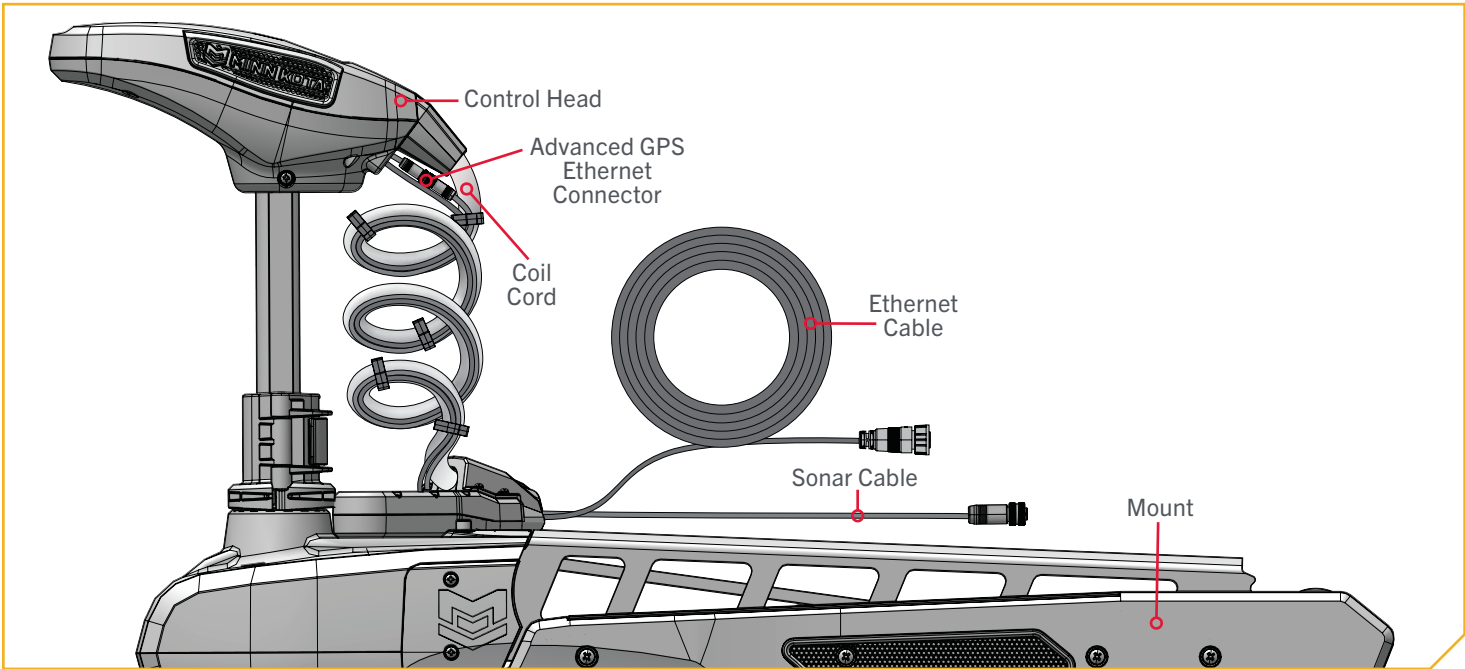


# SECURING ACCESSORY CABLES

## › Securing Accessory Cables

Before securing the Accessory Cables, please review the "Identifying Trolling Motor Features and Their Associated Cables" section of this document. When identifying features, it is very important to secure the cables if two or more connections are present below the Control Head. If only one cable is present below the Control Head, this installation was already completed on the trolling motors from the factory. All Accessory Cables that will be used on the trolling motor must be routed and all connections secured before completing the installation in this section. To review how Accessory Cables should be routed and connected, please review the "Dual Spectrum CHIRP", "Built-in MEGA Side Imaging" and "Advanced GPS Navigation" sections of this document.

**NOTICE:** If only one cable is present below the Control Head, this installation is not applicable.



### CAUTION

Failure to follow the recommended wire routing for installed features, if equipped, may cause damage to the product and void your product warranty. Route cables away from pinch points or other areas that may cause them to bend in sharp angles. Routing the cables in any way other than directed may cause damage to the cables by being pinched or severed. Do not over-tighten the clips as it may damage the wires.

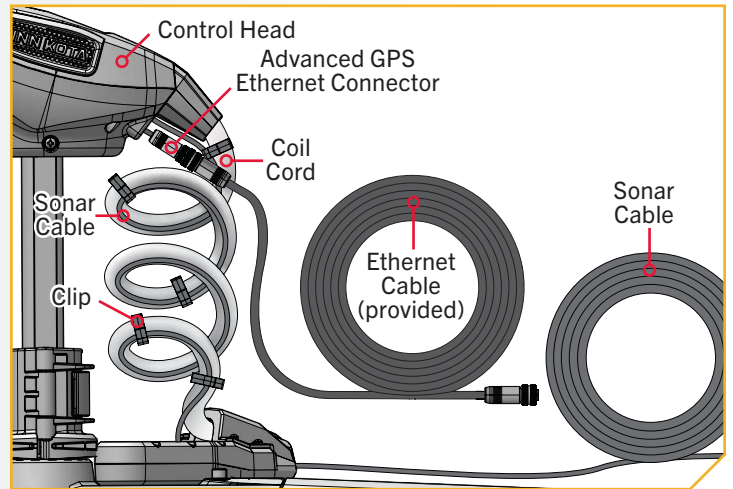
**NOTICE:** If replacement Clips (Part No. 2290844) are needed, they can be ordered online at the Minn Kota Parts Ordering Portal at [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com).



# SECURING ACCESSORY CABLES

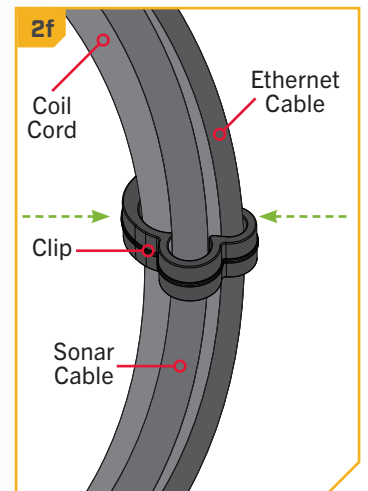
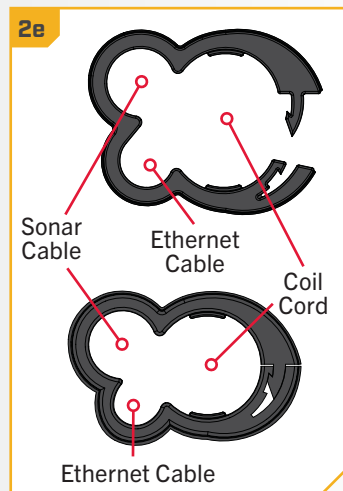
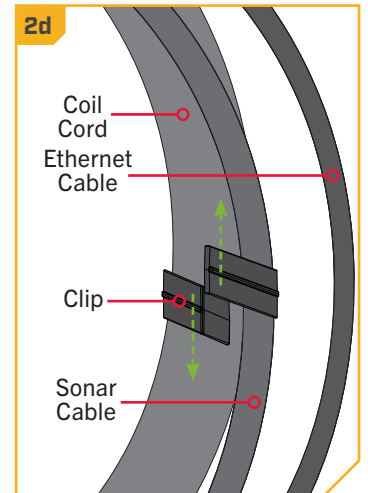
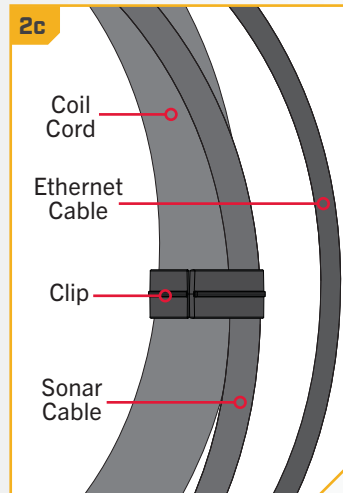
1

- a. The Ultrex QUEST comes from the factory with the Sonar Cable secured to the Coil Cord with five Clips. The Clips are evenly spaced down the Coil Cord from the Control Head to the Mount. To properly install the Ethernet Cable, the Clips need to be opened and the Ethernet Cable secured.
- b. Begin with the Trolling Motor in the deployed position. Locate all five Clips along the Coil Cord. Make sure that the Ethernet Cable is connected. Review the "Advanced GPS Navigation" section of this document if unsure that the Ethernet Cable is properly routed and connected. The Ethernet Cable should run parallel to the Sonar Cable down the Coil Cord.



2

- c. Locate the first Clip below the Control Head. It should be securing together the Coil Cord and the Sonar Cable.
- d. To open the Clip, push each side of the Clip in opposite directions so that the hook holding the Clip together unlatches.
- e. Look at the geometry of the Clip and notice that the lobes are molded for a specific wire size. With the Ethernet Cable running parallel to the Sonar Cable and Coil Cord, place the Ethernet Cable in the Clip with the Coil Cord and Sonar Cable. Make sure that the Ethernet Cable sits in the appropriate Lobe of the Clip.
- f. Make sure the cables are running parallel and are not twisted or kinked. With all of the Cables captured, press the Clip securely closed.
- g. Repeat the installation of the Ethernet Cable for all five Clips. Make sure the cables are running smoothly between all five Clips. At the end of the installation, the Clips should be evenly spaced down the Coil Cord and the cord should contain about one Clip per coil on the Coil Cord.



## CAUTION

Do not over-tighten the Clips as it may damage the wires.