

**ULTREX™**  
**BOW-MOUNT TROLLING MOTOR**  
Installation Instructions

# INTRODUCTION

## THANK YOU

Thank you for choosing Minn Kota. We believe that you should spend more time fishing and less time positioning your boat. That's why we build the smartest, toughest, most intuitive trolling motors on the water. Every aspect of a Minn Kota trolling motor is thought out and rethought until it's good enough to bear our name. Countless hours of research and testing provide you the Minn Kota advantage that can truly take you "Anywhere. Anytime." We don't believe in shortcuts. We are Minn Kota. And we are never done helping you catch more fish.

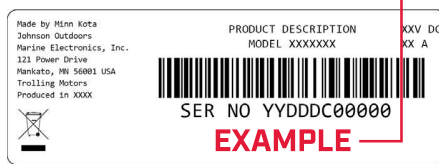
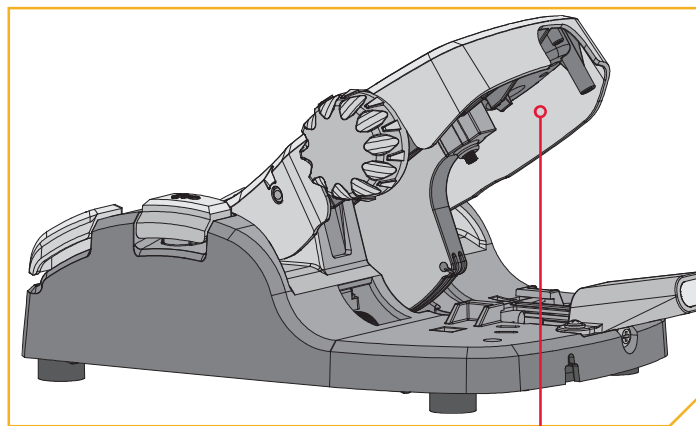
## REGISTRATION

Remember to keep your receipt and immediately register your trolling motor on our website at [minnkota.johnsonoutdoors.com/us/register](http://minnkota.johnsonoutdoors.com/us/register).

## SERIAL NUMBER

Your Minn Kota 11-character serial number is very important. It helps to determine the specific model and year of manufacture. When contacting Consumer Service or registering your product, you will need to know your product's serial number. A duplicate copy of your serial number label has been included, which can also be entered into the One-Boat Network App for future reference.

**NOTICE:** The serial number on your Ultrex is located under the foot pedal.



## MOTOR INFORMATION (For Consumer Reference Only)

Model: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Purchase Date: \_\_\_\_\_

Store Where Purchased: \_\_\_\_\_

**NOTICE:** Do not return your Minn Kota motor to your retailer. Your retailer is not authorized to repair or replace this unit. You may obtain service by: calling Minn Kota at (800) 227-6433; returning your motor to the Minn Kota Factory Service Center; sending or taking your motor to any Minn Kota authorized service center. A list of authorized service centers is available on our website, [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com). Please include proof of purchase, serial number and purchase date for warranty service with any of the above options.

Made for iPhone® 11 and iPhone X

For updated iOS, Humminbird® and Minn Kota® compatibility, visit [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com)



Use of the Made for Apple badge means that an accessory has been designed to connect specifically to the Apple product(s) identified in the badge, and has been certified by the developer to meet Apple performance standards. Apple is not responsible for the operation of this device or its compliance with safety and regulatory standards. iPhone is a trademark of Apple Inc., registered in the U.S. and other countries. The trademark "iPhone" is used in Japan with a license from Airphone K.K.

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# SAFETY CONSIDERATIONS

Please thoroughly read the user manual. Follow all instructions and heed all safety and cautionary notices. Use of this motor is only permitted for persons that have read and understood these user instructions. Minors may use this motor only under adult supervision.

## WARNING

You are responsible for the safe and prudent operation of your vessel. We have designed your Minn Kota product to be an accurate and reliable tool that will enhance boat operation and improve your ability to catch fish. This product does not relieve you from the responsibility for safe operation of your boat. You must avoid hazards to navigation and always maintain a permanent watch so you can respond to situations as they develop. You must always be prepared to regain manual control of your boat. Learn to operate your Minn Kota product in an area free from hazards and obstacles.

## WARNING

Never run the motor out of the water, as this may result in injuries from the rotating propeller. The motor should be disconnected from the power source when it is not in use or is off the water. When connecting the power-supply cables of the motor to the battery, ensure that they are not kinked or subject to chafe and route them in such a way that persons cannot trip over them. Before using the motor make sure that the insulation of the power cables is not damaged. Disregarding these safety precautions may result in electric shorts of battery(s) and/or motor. Always disconnect motor from battery(s) before cleaning or checking the propeller. Avoid submerging the complete motor as water may enter the lower unit through control head and shaft. If the motor is used while water is present in the lower unit considerable damage to the motor can occur. This damage will not be covered by warranty.

## WARNING

Take care that neither you nor other persons approach the turning propeller too closely, neither with body parts nor with objects. The motor is powerful and may endanger or injure you or others. While the motor is running watch out for persons swimming and for floating objects. Persons who lack the ability to run the motor or whose reactions are impaired by alcohol, drugs, medication, or other substances are not permitted to use this motor. This motor is not suitable for use in strong currents. The constant noise pressure level of the motor during use is less than 70dB(A). The overall vibration level does not exceed 2,5 m/sec<sup>2</sup>.

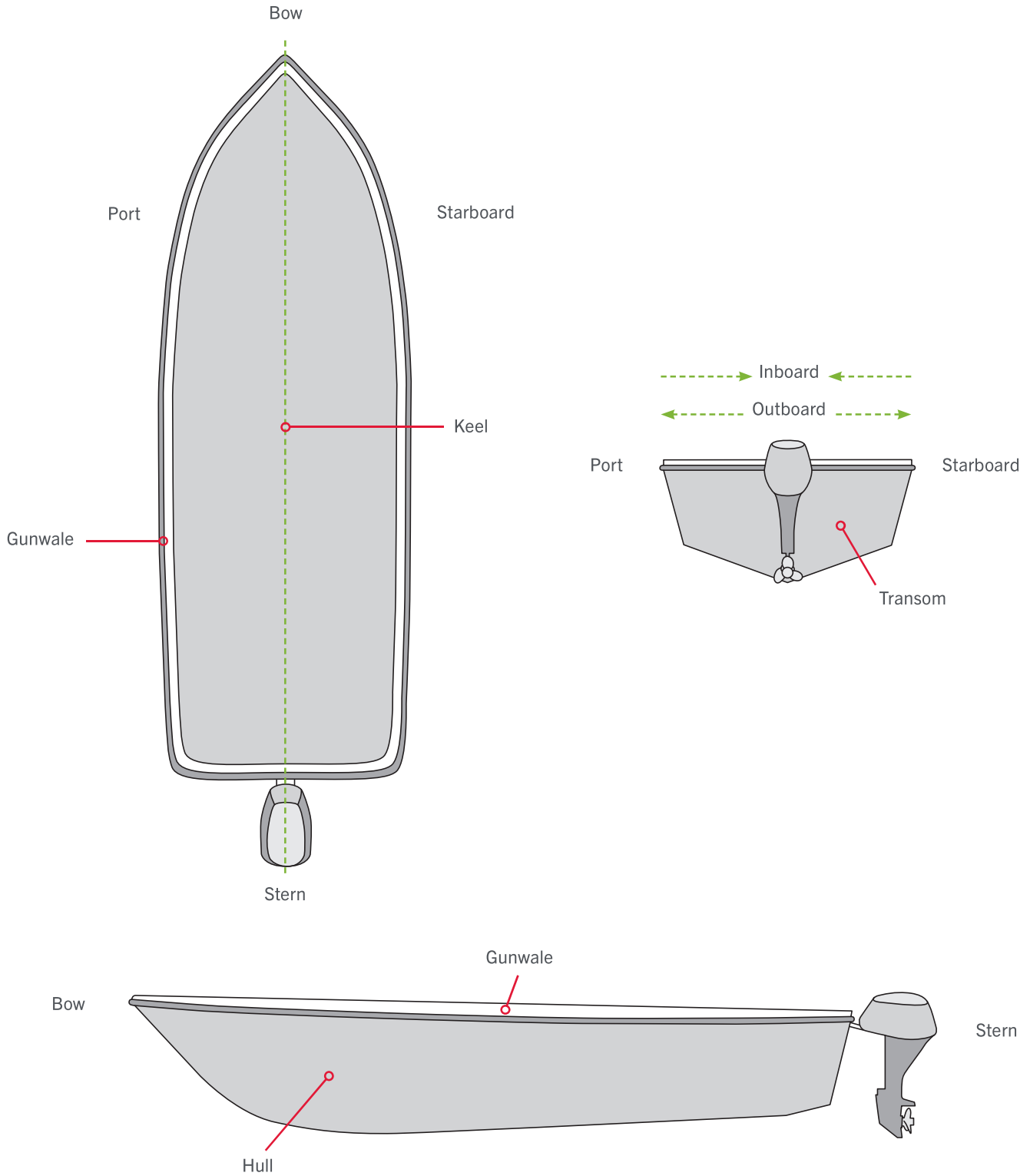
## WARNING

When stowing or deploying the motor, keep fingers clear of all hinge and pivot points and all moving parts. In the event of unexpected operation, remove power leads from the battery.

## WARNING

It is recommended to only use Johnson Outdoors approved accessories with your Minn Kota motor. Using non-approved accessories including to mount or control your motor may cause damage, unexpected motor operation and injury. Be sure to use the product and approved accessories, including remotes, safely and in the manner directed to avoid accidental or unexpected motor operation. Keep all factory installed parts in place including motor and accessory covers, enclosures and guards.

# KNOW YOUR BOAT



# INSTALLATION

## INSTALLING THE ULTREX

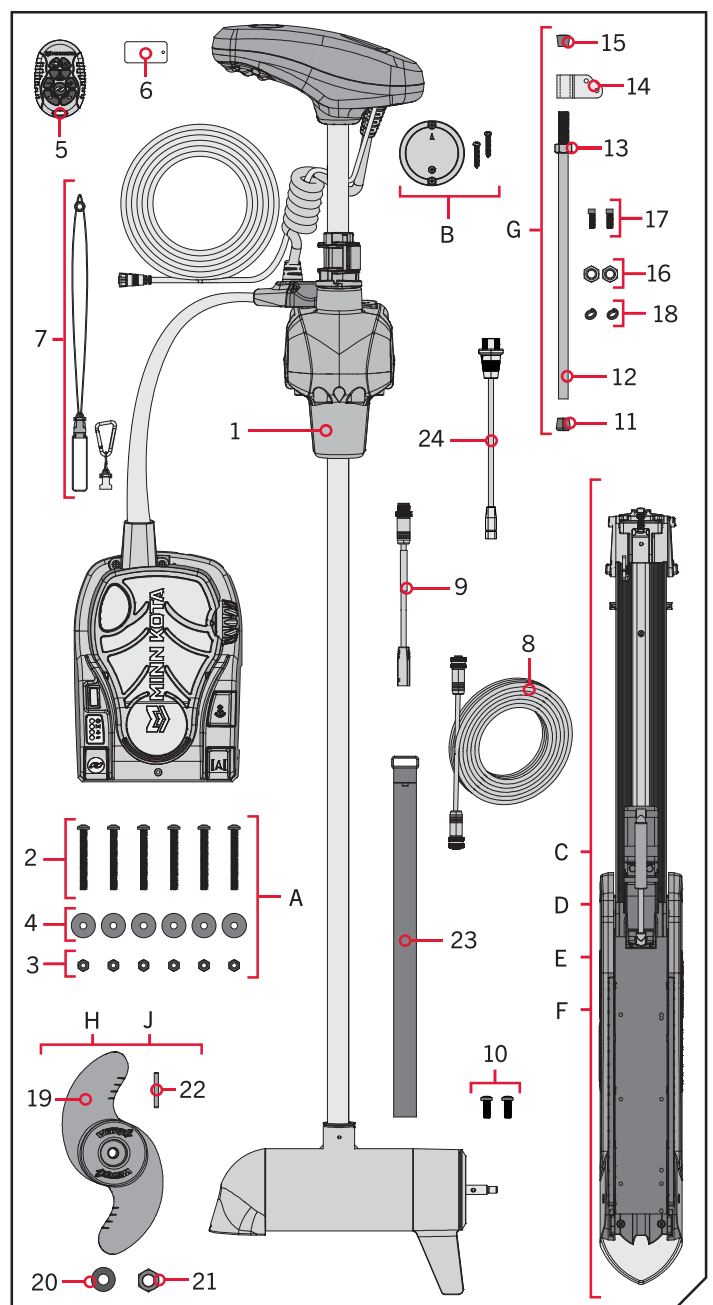
Your new Ultrex comes with everything you'll need to directly install it to the boat. This motor can be directly mounted to the boat or coupled with a Minn Kota quick release bracket for ease of mounting and removal. For installation with a quick release bracket, refer to the installation instructions provided with the bracket. For compatible quick release mounting bracket, please visit [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com). To install the motor directly to the boat, please follow the instructions provided in this manual. Please review the parts list, mounting considerations and tools needed for installation prior to getting started. For additional product support and to locate your nearest dealer, please visit [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com).

### INSTALLATION PARTS LIST

Item / Assembly	Part #	Description	Notes	Qty.
1	✳	MOTOR ASSEMBLY		1
A (Includes 2-4)	2994887	INSTALL HARDWARE BAG ASSY		1
2	2263468	1/4 - 20 X 2.5" SS PPH SCREW		6
3	2263103	1/4 - 20 SS NYLOCK NUT		6
4	2261713	1/4 FLAT 18-8 SS WASHER		6
5	2994175	REMOTE ASM, MICRO REMOTE		1
6	2394110	TAG, MICRO REMOTE		1
7	2390802	LANYARD w/CARABINR, IP RMT		1
8	490384-4	CABLE, ETHERNET (M12-M12) 30'		1
9	490380-1	CABLE, ETHERNET PIGTAIL-700 HD		1
10	2373434	SCREW-1/4-20 X 3/4 SS PPMS		2
B	2996400	HEADING SENSOR ASSEMBLY		1
C	2991670	MOUNT ASM, ULTREX 80#, 45"	*80LB 45**	1
D	2991671	MOUNT ASM, ULTREX 80#, 52"	*80LB 52**	1
E	2991672	MOUNT ASM, ULTREX 112#, 45"	*112LB 45**	1
F	2991673	MOUNT ASM, ULTREX 112#, 52"	*112LB 52/60**	1
G (Includes 11-18)	2991925	BRACKET STABLZR ARM ASY		1
11	2265100	BUMPER STABILIZER		1
12	2263624	STABILIZER ROD		1
13	2263107	NYLON HEX NUT 3/4 - 10 UNC		1
14	2281829	BRACKET		1
15	2260221	VINYL CAP		1
16	2223100	NUT 5/16-18 NYLOCS SS		2
17	2263422	BOLT 5/16-18 X 1" SS CAP SCREW		2
18	2281700	5/16" ID X .457 OD HIGH COLLAR LOCK WASHER		2
H (Includes 19-22)	1378132	PROP IND 2331160 WDL5 WDG II	*80LB*	1
J (Includes 19-22)	1378160	PROP KIT 2341160 112# WW2	*112LB*	1
19	2341161	PROP-WW2 (4.5)W/ADP.RING	*112LB*	1
	2331161	PROP-WDL5 WDG II	*80LB*	1
20	2091701	WASHER-PROP (LARGE)		1
21	2093101	NUT-PROP NYLOC,LG, MX101 3/8 SS		1
22	2262658	PIN-DRIVE 1" 3/16" S/S		1
23	2773806	STRAP, HOLD DOWN		1
24	2994961	BAG ASM, CABLE,ADPTR, 490537-2	*MKR-MI-1*	1
▲	2297162	MANUAL ULTREX		1
▲	2997163	QUICK REF/ INSTALL GUIDE, UTX		1
▲	2297165	MANUAL-DISCLAIMER,DWNLOAD INFO		1
▲	2394912	QCK REF.GUIDE, IP MICRO RMT BT		1
▲	2394910	INSTRUC. SHEET, MICRO REMO		1
▲	2294950	INSTRC-OBN & REMOTE PAIR		1
▲	2207131	STANDARD QS SETUP GUIDE		1

▲ Not shown on Parts Diagram.

✳ This part is included in an assembly and cannot be ordered individually.



# ASSEMBLY OF STEERING MODULE TO MOUNT

## MOUNTING CONSIDERATIONS

It is recommended that the motor be mounted as close to the keel or centerline of the boat as possible. Make sure the area under the mounting location is clear to drill holes and install nuts and washers. Make sure the motor rest is positioned far enough beyond the edge of the boat. The motor must not encounter any obstructions as it is lowered into the water or raised into the boat when stowed and deployed. Consider a quick release or adapter bracket with the installation of your motor. To view a list of accessories, please visit [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com).



View accessories available for your trolling motor at [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com).

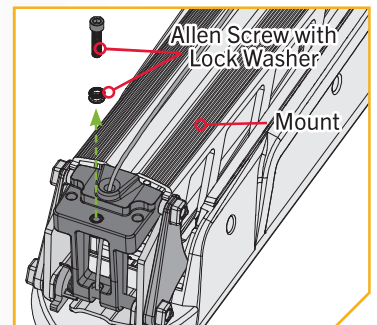
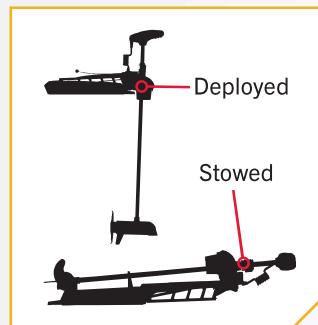
## TOOLS AND RESOURCES REQUIRED

- #2 Phillips Screwdriver
- #3 Phillips Screwdriver
- 1/4" Allen Wrench
- Drill
- 9/32" Drill Bit
- 7/16" Box End Wrench
- 9/16" Box End Wrench
- Torque Wrench
- File or Sandpaper
- Hack Saw
- Marker or Pencil
- 1/8" Flat Screwdriver
- Pliers or Vice Grip
- A second person to help with installation

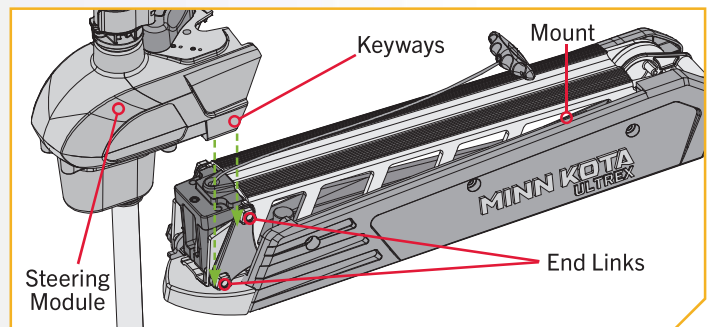
## INSTALLATION

### Assembly of Steering Module to Mount

- Place the Mount on an elevated, level surface such as a workbench or the tailgate of a pickup. The Mount, as removed from the box, should be in the deployed position.
  - Remove the 5/16" Allen Screw and Lock Washer from the Mount using a 1/4" Allen Wrench. The 5/16" Allen Screw is located on the opposite end of the mount from the hinge that opens and closes when the mount is stowed and deployed.



- Align the Keyways on the inside of the Steering Module with the End Links on the Mount. Do this by positioning the Steering Module above the End Links on the Mount.
  - Lower the Motor Assembly straight down until the Steering Module is seated.



## WARNING

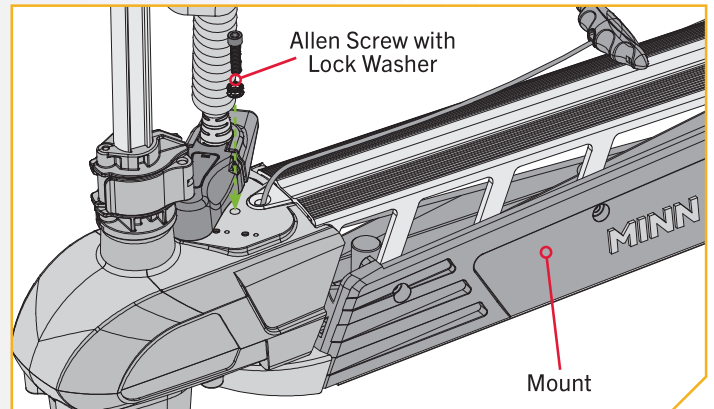
Carefully lower the Steering Module into place to avoid creating a pinch point between the Steering Module and Mount.

## INSTALLING THE MOUNT

3

- e. Reinstall the 5/16" Allen Screw and Lock Washer and tighten to 18 to 20 ft-lbs with a Torque Wrench.

**NOTICE:** The 5/16" Allen Screw must be tightened when installed and periodically re-tightened to 18 to 20 ft-lbs. This will allow the motor to stow properly. Tighten the Allen Screw when the Mount is in the deployed position.



### › Installing the Mount

During installation, it is recommended to mount the motor to the boat before installing the Gas Spring. The Gas Spring is installed in the Gas Spring Cylinder. The Gas Spring Cylinder is located on the inside of the Outer Arm, which is a part of the Mount. At this point in the installation, the Gas Spring Cylinder is not fully installed and may move around inside the Mount when stowing and deploying the motor. The Gas Spring Cylinder can become damaged while deploying the motor, and the damage will prevent the Lift-Assist feature from operating correctly once fully assembled. Make sure that the Gas Spring Cylinder does not get damaged in the Mount.

1

#### ITEM(S) NEEDED

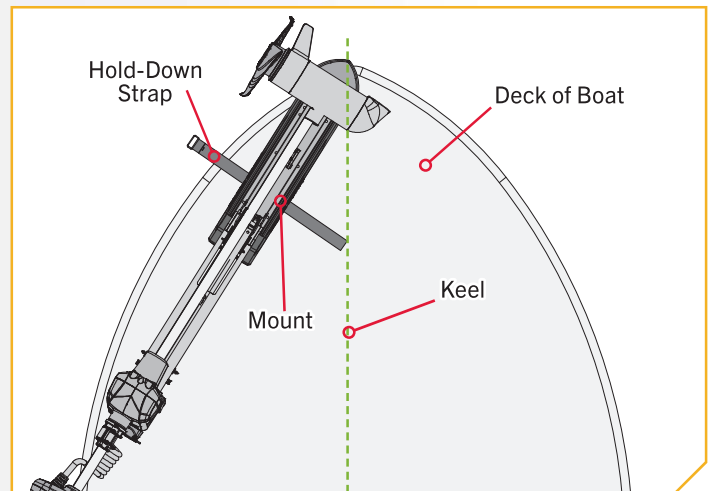


- a. Review the mounting considerations at the beginning of the Installation section for proper placement. With the motor in the stowed position, place the Mount on the deck of the boat, as close to the centerline or keel as possible. Check placement with the motor in both the stowed and deployed positions.

#### **⚠ CAUTION**

The Gas Spring Cylinder can become damaged in the Mount while stowing or deploying the motor because it is not yet fully installed. Damage will prevent the Lift-Assist feature from operating correctly once fully assembled. Make sure that the Gas Spring Cylinder does not get damaged by keeping it inside the Outer Arm of the Mount.

- b. Place the Hold-Down Strap (Item #23) under the base of the Mount Plate so that it is below the Mount when placed.



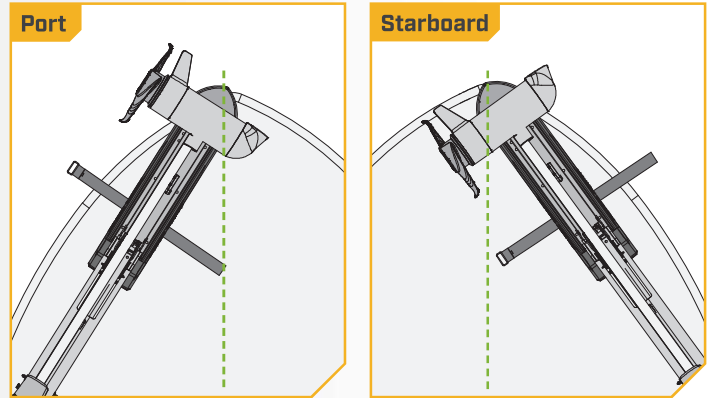
**NOTICE:** This motor weighs approximately 55 lbs. We recommend having a second person help with the installation.

## INSTALLING THE MOUNT

2

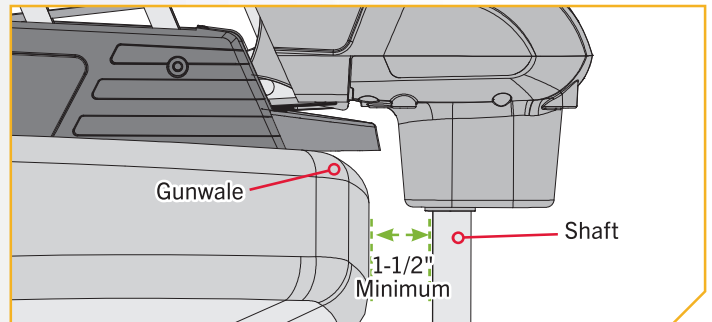
- c. The Mount can be installed on either the Port or Starboard side of the boat based on personal preference. Test the placement of the Hold-Down Strap to be sure it can hold the Mount as placed. The placement of the buckle on the Hold-Down Strap either inboard or outboard is based on personal preference. The hook and loop on the fastener should be face down for the Hold-Down Strap to function.

**NOTICE:** Check that the Motor can properly stow and deploy at the intended mounting location. The Mount should latch closed when deployed. A proper deployment requires engaging the Pull Grip and Cable when the Motor is stowed to unlatch the Mount. If the latch on the Mount does not engage when deployed, it could indicate that the Mount is not flat on the Boat Deck. Use rubber washers to level the Mount on the Boat Deck if the Mount is not latching when deployed.



3

- d. Check the placement with the motor in the deployed position. With the motor in the deployed position, make sure that the Shaft is 1-1/2" out past the Gunwale of the boat. The lower unit must not encounter any obstructions when stowed or deployed.
- e. Check the placement of the Hold-Down Strap when the motor is in the stowed and deployed positions and adjust if necessary.



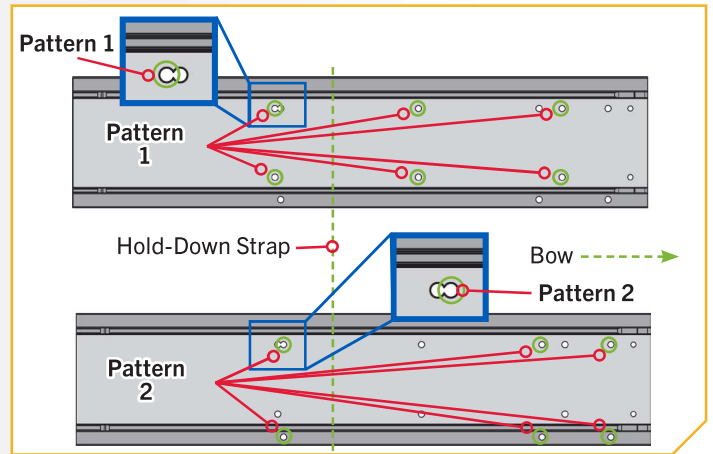


## INSTALLING THE MOUNT

4

- f. Once the Mount is in position, determine which bolt pattern to use. The bolt pattern selected will depend on the deck space available on your boat. Minn Kota requires the use of all six mounting bolts.
- g. Mark six mounting holes. Drill through the deck of the boat using a 9/32" Drill Bit on the marked locations.
- h. Be sure the Hold-Down Strap under the base of the Mount Plate sits between the second and third set of bolts according to the mounting pattern selected. Double check that it can close around the Mount when stowed.

**NOTICE:** If Pattern 2 is used, the right sideplate must be removed to access the mounting holes in the base of the Mount.



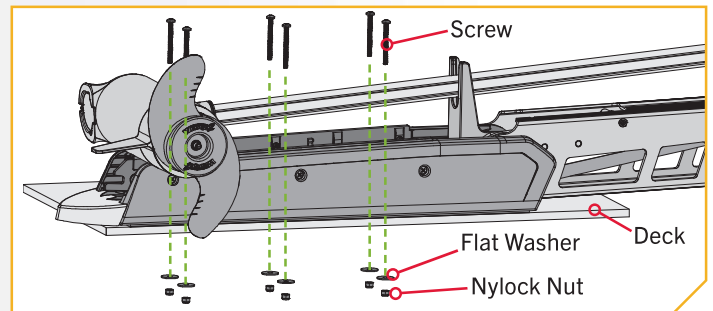
5

### ITEM(S) NEEDED

• #3 x 6    • #4 x 6    | #2 x 6

- i. Put a 1/4-20 x 2 1/2" Screw (Item #2) in each of the drilled locations. The Screw should pass through the Mount Plate and the boat deck.
- j. Place a Flat Washer (Item #4) and then a Nylock Nut (Item #3) at the end of each screw as shown and secure. Make sure all hardware is secure using a #3 Phillips Screwdriver and a 7/16" Box End Wrench.

**NOTICE:** To prevent seizing of the stainless steel hardware, do not use high-speed installation tools. Wetting the screws or applying an anti-seize may help prevent seizing.





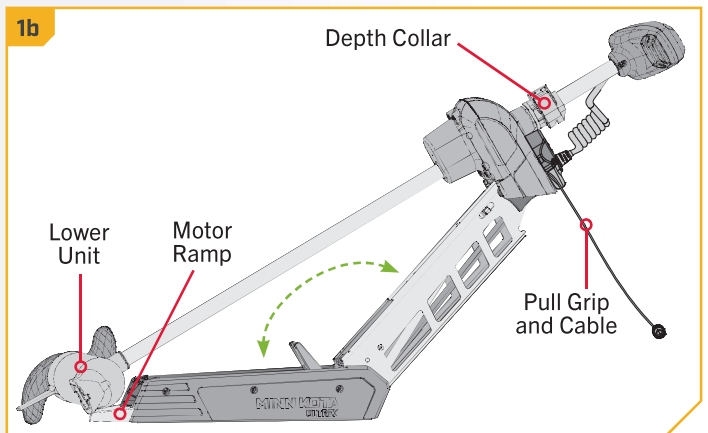
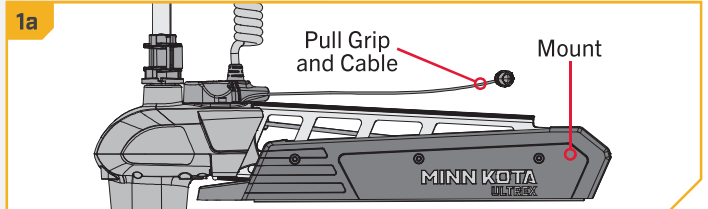
# INSTALLING THE GAS SPRING

## Installing the Gas Spring

1

- Use the Pull Grip and Cable to disengage the Latch Bar on the Mount.
- With the help of a second person, loosen the Depth Collar and position the motor halfway between the stowed and deployed position so that the Lower Unit rests on the Motor Ramp.

**NOTICE:** If mounting both a Humminbird MEGA 360 Imaging® and MEGA Live TargetLock™ to your motor, a different lift-assist gas spring is needed to accommodate the additional weight. The cylinder provided from the factory with your mount is not enough to lift both accessories together. Visit [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com) to view gas spring and motor compatibility.

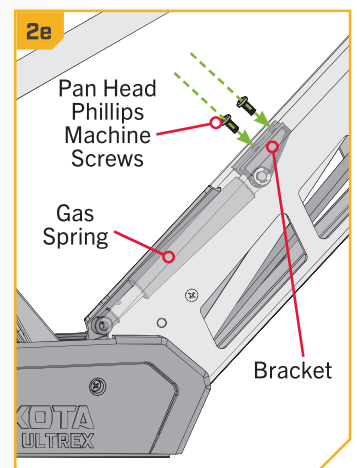
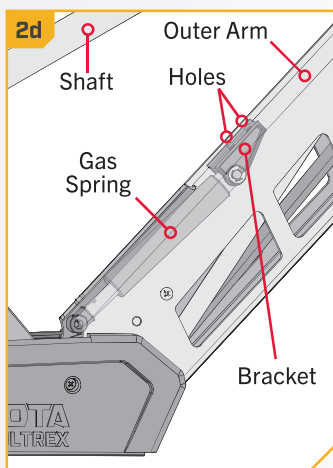


2

### ITEM(S) NEEDED



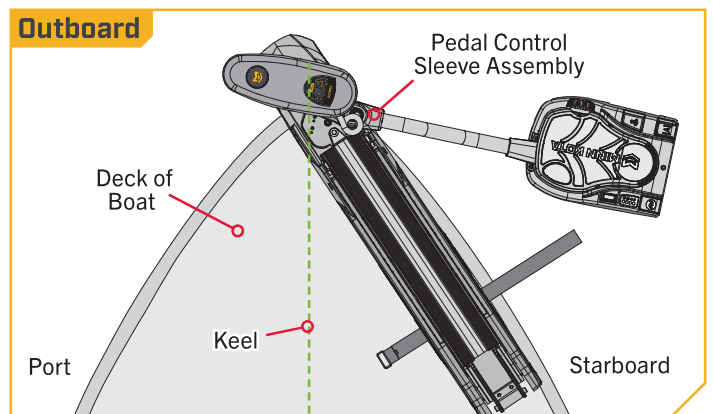
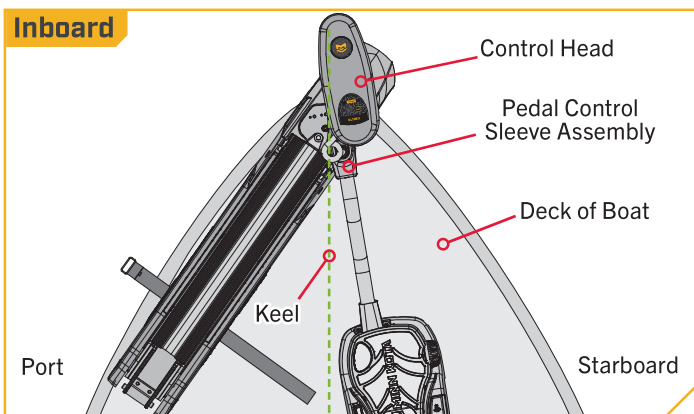
- The Gas Spring is located inside the Outer Arm. Once the motor is correctly positioned, the Gas Spring can be secured in place.
- There is a loose Bracket on the end of the Gas Spring with holes and recessed Nylock Nuts. Align the Bracket with the holes in the Outer Arm, which should be below the Shaft. Adjust the motor as needed to align the Bracket with the holes in the Outer Arm.
- Take two Pan Head Phillips Machine Screws (Item #10) and install them through the holes in the Outer Arm and into the Bracket at the end of the Gas Spring using a #3 Screwdriver. Tighten to 35 in-lbs.



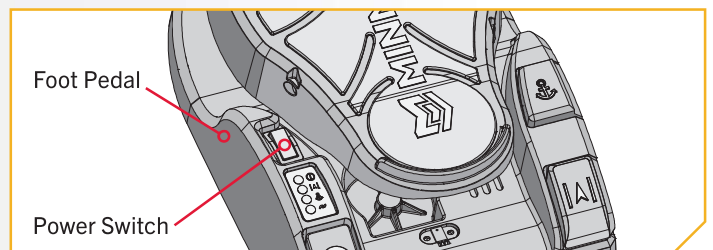
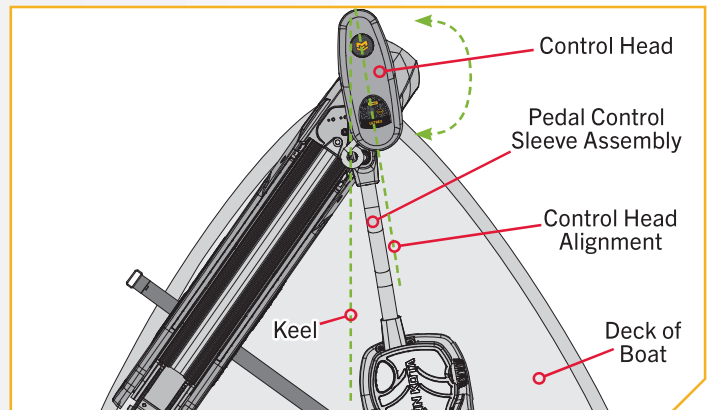
## › Indexing the Motor

It is recommended to have the Pedal Control Sleeve Assembly pointing inboard. Your Ultrex motor comes from the factory designed to be installed on the port side of the bow. If the Pedal Control Sleeve Assembly points outboard, please see the section "Rotate the Pedal Control Sleeve Assembly for a Starboard Mount." Use the following instructions to index the motor if the Pedal Control Sleeve Assembly is already mounted inboard.

Once installed, the system is properly indexed when the motor is deployed and the head of the motor and lower unit align with the centerline or keel of the boat at the same time the top of the Foot Pedal is parallel to the deck of the boat.



- 1
  - a. Turn the Power Switch "on" and steer the motor so that the Control Head is in line with the keel of the boat. This can be done by steering the motor with the Foot Pedal, turning the motor with the remote, or manually turning the 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.



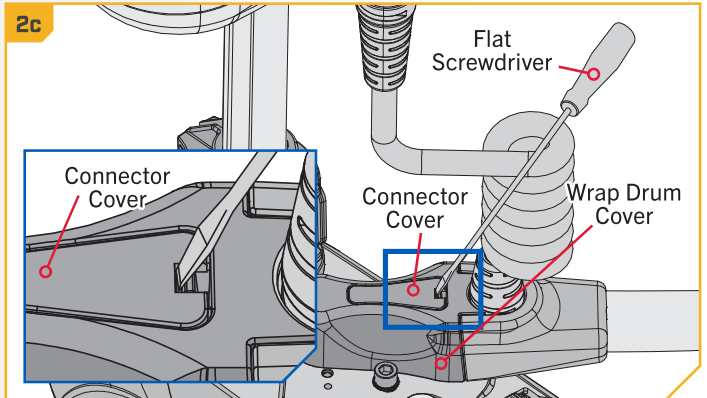
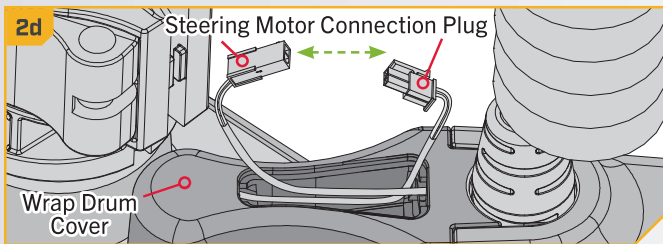
### **WARNING**

To avoid electric shock, make sure the motor is not connected to a power source.

## INDEXING THE MOTOR

2

- c. Remove the Connector Cover from the Wrap Drum Cover using a 1/8" Flat Screwdriver to release it. Release it by pressing the flat part of the screwdriver in the slot closest to the center of the Connector Cover and prying upwards.
- d. Once the Connector Cover is removed, very carefully disconnect the Steering Motor Connection Plug that is visible.



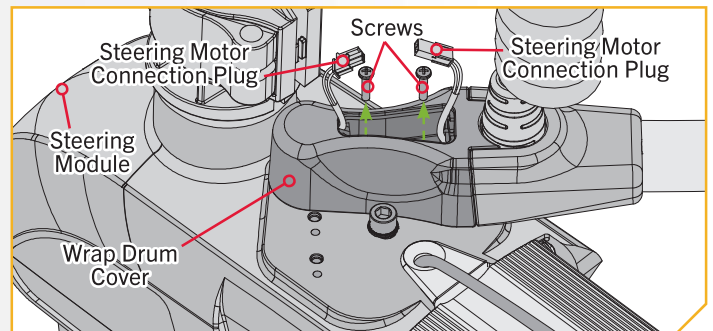
**NOTICE:** Please note the orientation and routing of the plug and wires for re-installation.

3

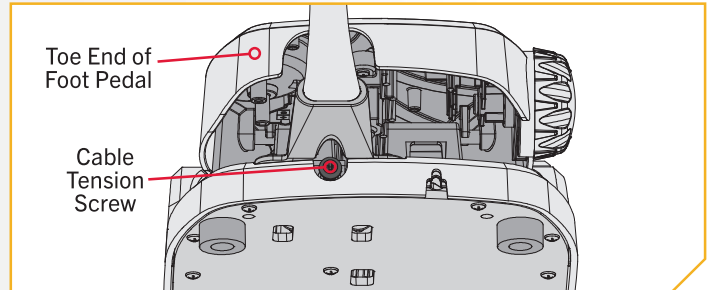
- e. Remove the two screws that hold the Wrap Drum Cover in place with a #2 Phillips Screwdriver. Once removed, lift the Wrap Drum Cover away from the Steering Module.

### CAUTION

Be careful not to damage the Steering Motor Connection Plug ends.



- 4** f. The Cable Tension Screw that holds tension on the Steering Cables is located under the base of the Toe End of the Foot Pedal. This screw can be loosened just enough so that the Steering Cables can be pinched together between the Cable Anchor and Wrap Drum. Use a #3 Phillips Screwdriver to loosen this screw. Turning the screw approximately 8 turns counterclockwise should provide enough slack in the cables to adjust. Keep track of the number of turns the screw is unscrewed so it can be re-tightened accordingly later.



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

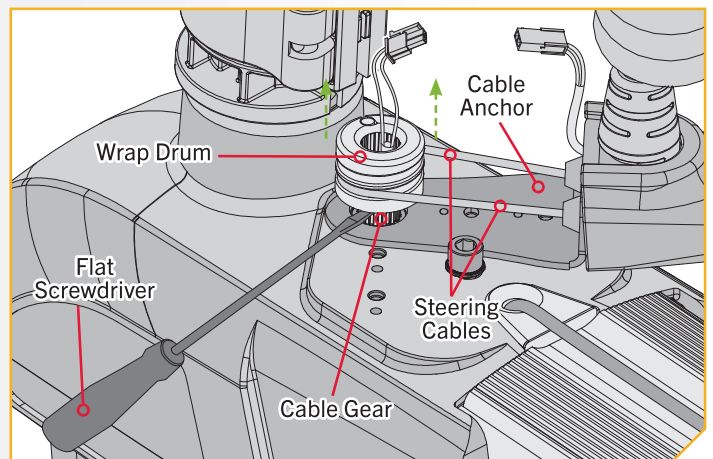
## ⚠ CAUTION

The Cable Tension Screw maintains proper mechanical tension on the Steering Cables within the assembly. Tightening this screw does not affect the resistance of the Foot Pedal when in use. Foot Pedal resistance is set from the factory. Over-loosening the Cable Tension Screw may cause the cables to disengage from the Wrap Drum.

- 5** g. Once the Cable Tension Screw is loosened, pry the Wrap Drum straight up off of the Cable Gear using a Flat Screwdriver, until the Wrap Drum is free of the Cable Gear.

## ⚠ CAUTION

Care must be taken so that the Steering Cables remain on the Wrap Drum when it is disengaged from the Cable Gear. It is important that the Steering Cables follow the grooves on the Wrap Drum so that they do not become intertwined or pop off. Be sure that the electric wire is not damaged as the Wrap Drum is lifted.



## INDEXING THE MOTOR

6

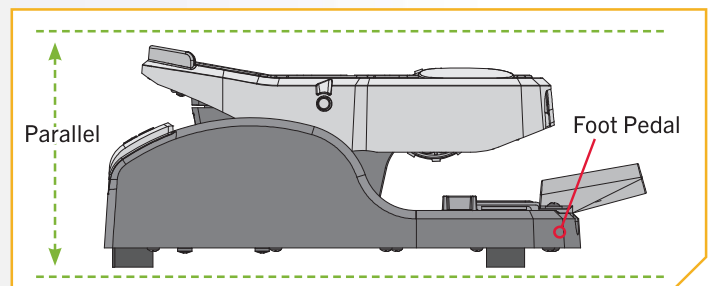
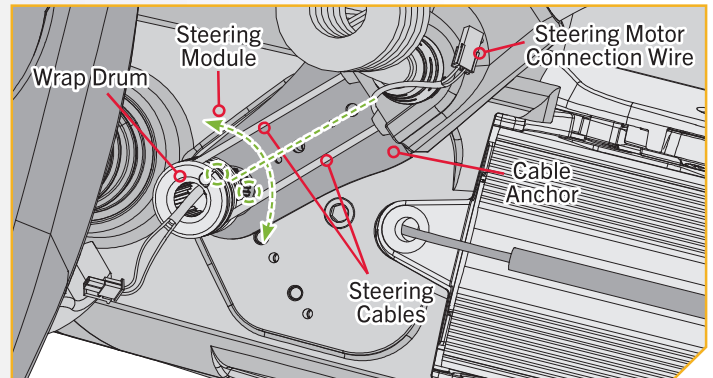
- h. While holding the Wrap Drum just above the Cable Gear, and maintaining tension on the Steering Cables, carefully rotate the Wrap Drum right or left until the top of the Foot Pedal is parallel with the deck of the boat. The proper position of the Wrap Drum will locate the anchors for each of the Steering Cables 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.

- i. Once the Foot Pedal is at the desired position, align the Wrap Drum with the nearest tooth on the splined shaft of the Cable Gear. Press the Wrap Drum securely down so that it is seated on top of the Cable Gear. At this point, the head of the motor should be parallel with the keel of the boat and the top of the foot pedal should be parallel with the deck of the boat.

**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 Gear are visible in the center.



### CAUTION

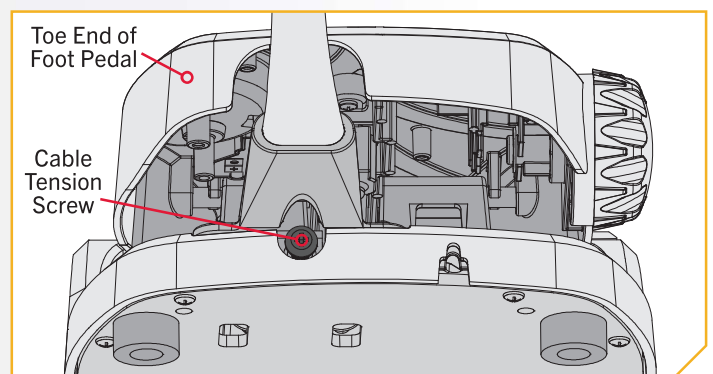
If the Wrap Drum becomes unintentionally disengaged from the Cable Gear, the Steering Cables can become unwound and will need to be reassembled correctly for proper operation.

7

- j. 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 same number of turns as was used in step 4f.

### CAUTION

Do not over-tighten the Cable Tension Screw, as excessive tension will cause damage to the unit. The Cable Tension Screw maintains proper mechanical tension on the Steering Cables within the assembly. Tightening this screw does not affect the resistance of the Foot Pedal when in use. Foot Pedal resistance is set from the factory.



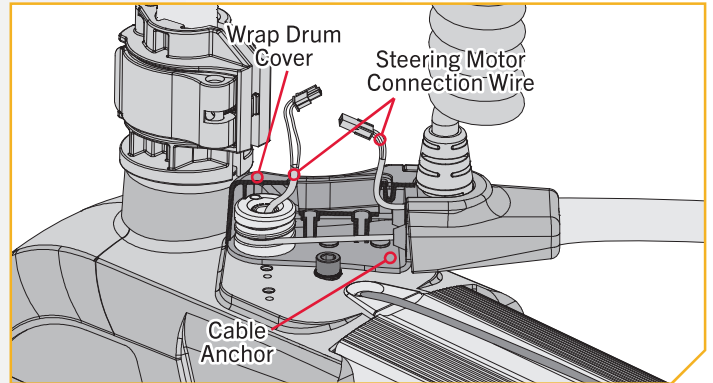


### 8

- k. Reconfirm that the Steering Cables are tight and then carefully thread the Steering Motor Connection Wire through the top of the Wrap Drum Cover. The male plug comes from the Cable Anchor through the opening at the bottom of the Wrap Drum Cover. The wire with the female plug that runs out the top of the Cable Gear should also be pulled through the opening at the bottom of the Wrap Drum Cover.

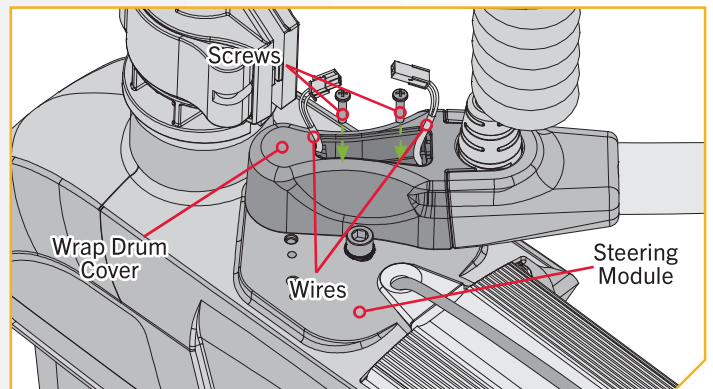
### CAUTION

Take care not to pinch the Steering Motor Connection Wire while the Wrap Drum is set into place.



### 9

- l. Place the Wrap Drum Cover down on top of the Cable Anchor and align the screw holes on it with the screw holes on the Cable Anchor. Make sure the Wrap Drum Cover is nested securely on top of the Steering Module and that the wires pass out the top of the Wrap Drum Housing. Secure the Wrap Drum Housing in place with the two screws that were originally removed using a #2 Phillips Screwdriver. Tighten to 6 in-lbs.



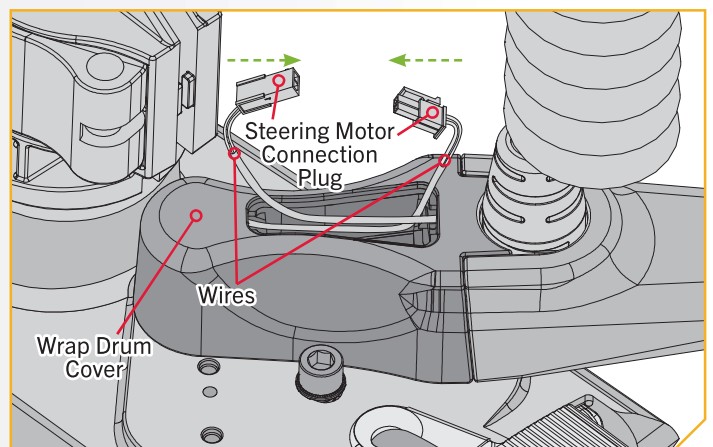
### 10

- m. Reconnect the Steering Motor Connection Plug and push it into the Wrap Drum Cover.

### CAUTION

Wires and plug must not touch moving parts. Wires may be damaged if caught in moving parts.

- n. Orientate the wires connecting the Steering Motor Connection Plug as noted so that the wires do not touch moving parts.
- o. Replace the Connector Cover.



## 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 is installed on the port side of your boat, the Pedal Control Sleeve Assembly points inboard. Should you choose to install your Ultrex on the Starboard side of your boat, it is recommended that the default position of the Pedal Control Sleeve Assembly be rotated to point inboard.

Once the Mount is installed, the system is properly calibrated when the motor is deployed and the head of the motor and lower unit align with the centerline or keel of the boat, at the same time the top of the Foot Pedal is parallel to the deck of the boat.

Use the following instructions to rotate the Pedal Control Sleeve Assembly on the Steering Housing and then properly align the 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" section of this manual.

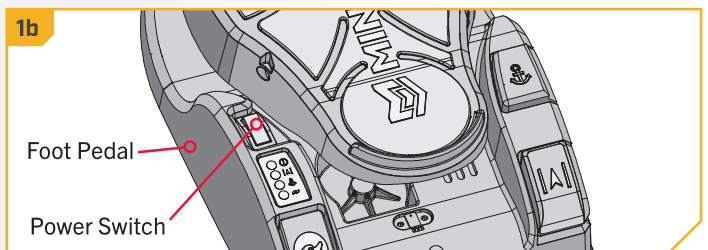
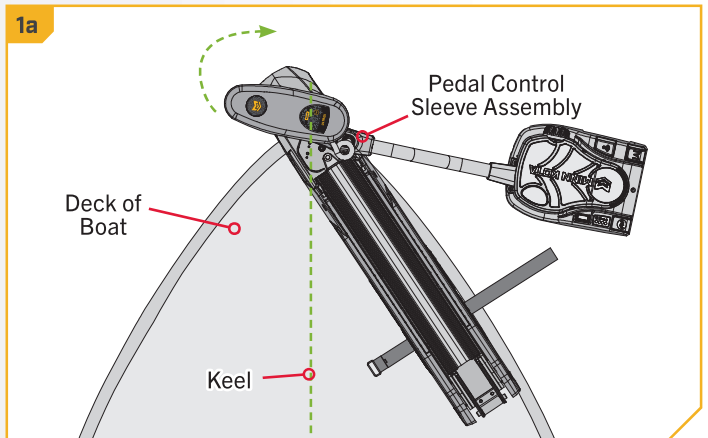
1

- a. Aligning the head of the motor before correcting the placement of the Pedal Control Sleeve Assembly will help calibrate alignment once the assembly is in the recommended position. Turn the Power Switch "on" and steer the motor so that the Control Head is in line with the keel of the boat. This can be done by steering the motor with the Foot Pedal, turning the motor with the remote, or manually turning the head of the motor.
- b. Leave the motor 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

To avoid electric shock, make sure the motor is not connected to a power source.

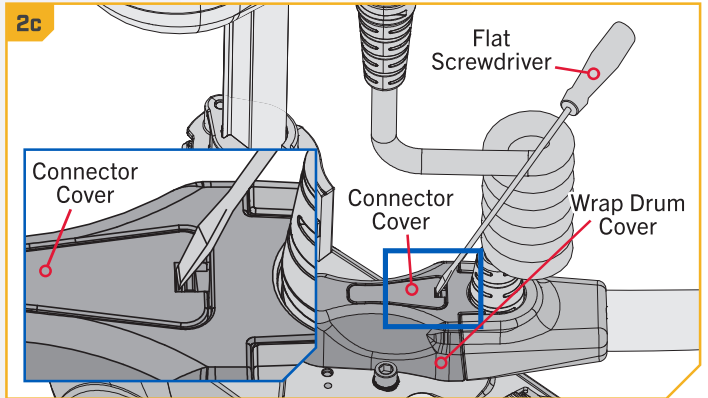
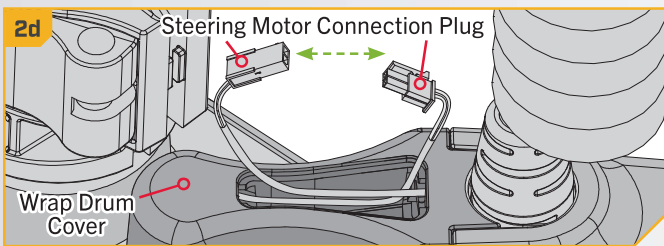




## ROTATE THE PEDAL CONTROL SLEEVE ASSEMBLY FOR A STARBOARD MOUNT

2

- c. Remove the Connector Cover from the Wrap Drum Cover using a 1/8" Flat Screwdriver to release it. Release it by pressing the flat part of the Screwdriver in the slot closest to the center of the Connector Cover and prying upwards.
- d. Once the Connector Cover is removed, disconnect the Steering Motor Connection Plug that is visible.



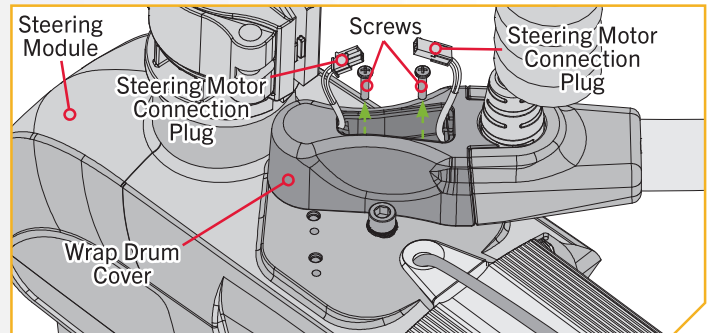
**NOTICE:** Please note the orientation and routing of the plug and wires for re-installation.

3

- e. Remove the two screws that hold the Wrap Drum Cover in place with a #2 Phillips Screwdriver. Once removed, lift the Wrap Drum Cover away from the Steering Module.

### ⚠ CAUTION

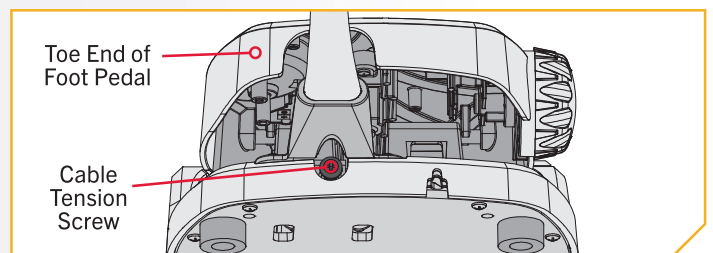
Be careful not to damage the Steering Motor Connection Plug ends and wires.



4

- f. The Cable Tension Screw that holds tension on the Steering Cables is located under the base of the Toe End of the Foot Pedal. This screw can be loosened just enough so that the Steering Cables can be pinched together between the Cable Anchor and Wrap Drum. Use a #3 Phillips Screwdriver to loosen this screw. Turning the screw approximately 8 turns counterclockwise should provide enough slack in the cables to adjust. Keep track of the number of turns the screw is unscrewed so it can be re-tightened accordingly later.

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



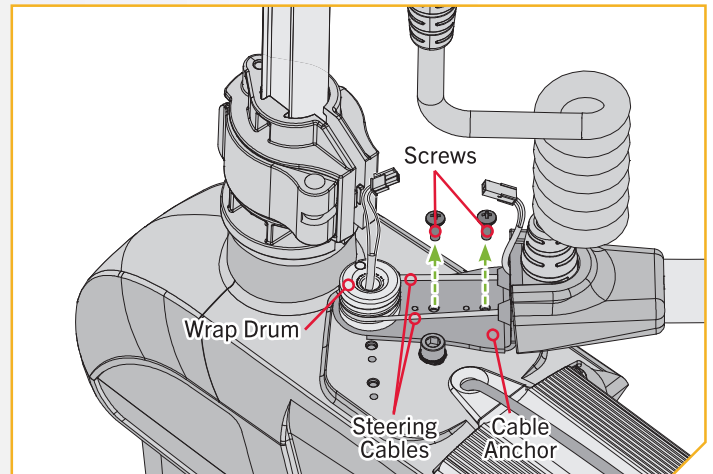
### ⚠ CAUTION

The Cable Tension Screw maintains proper mechanical tension on the Steering Cables within the assembly. Tightening this screw does not affect the resistance of the Foot Pedal when in use. Foot Pedal resistance is set from the factory. Over-loosening the Cable Tension Screw may cause the cables to disengage from the Wrap Drum.

## ROTATE THE PEDAL CONTROL SLEEVE ASSEMBLY FOR A STARBOARD MOUNT

5

- g. The Cable Anchor functions to hold the Steering Cables in place. The cables run from the Cable Anchor and wrap around the Wrap Drum. The Cable Anchor is secured to the Steering Module with two Screws. Remove these two #10-32 x 1/2" Screws that hold the Cable Anchor in place using a #2 Phillips Screwdriver.
- h. The Wrap Drum is set on the shaft of the Cable Gear that extends above the Steering Module. The female end of the electric wire passes out the top of the Cable Gear. The shaft of the gear that the Wrap Drum sits on is splined. To rotate the Pedal Control Sleeve Assembly, the Wrap Drum needs to be lifted off of the Cable Gear. Before the Wrap Drum can be lifted or aligned, the Steering Cables should be loosened.



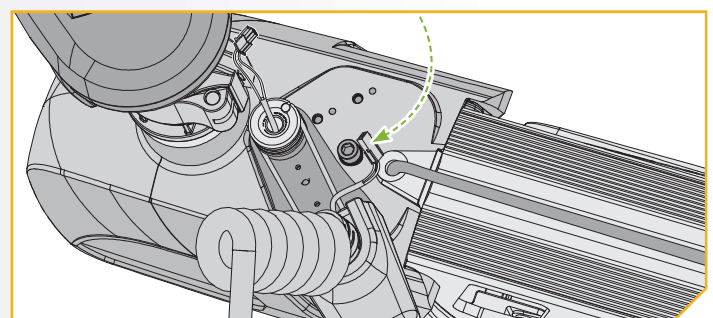
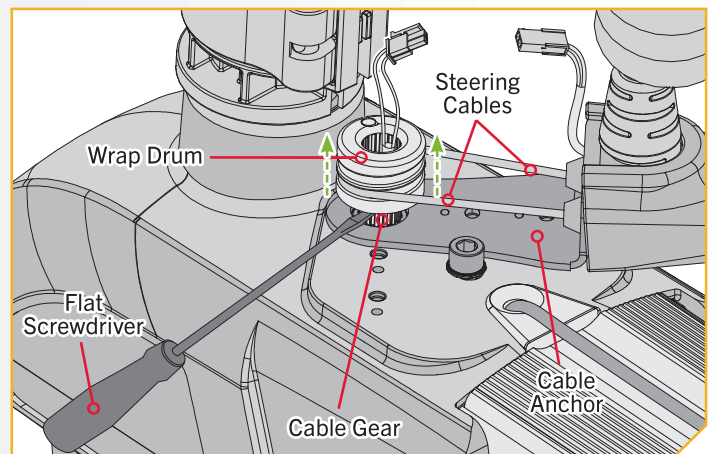
6

- i. Once the Cable Tension Screw is loosened, and the screws are removed, carefully pry the Wrap Drum partially off by prying straight up, using a Flat Screwdriver. The Wrap Drum should only be lifted far enough up on the Cable Gear to rotate the Pedal Control Sleeve Assembly to the inboard or desired position. The Cable Anchor is in the correct position on the mount when it is mounted towards the inboard side of the mount.

### CAUTION

Only pry the Wrap Drum high enough on the Cable Gear to rotate the Cable Anchor and Pedal Control Sleeve Assembly to the correct position. If the Wrap Drum becomes unintentionally disengaged from the Cable Gear, the Steering Cables can become unwound and will need to be reassembled correctly for proper operation.

**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 Gear are visible in the center.



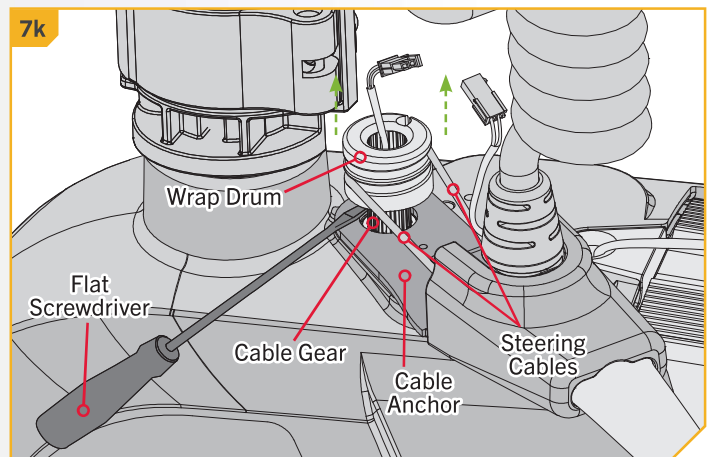
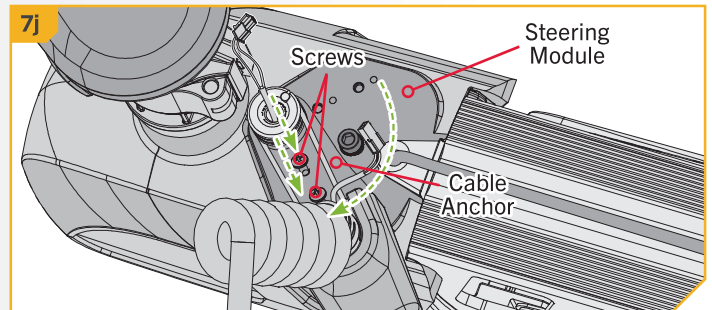
## ROTATE THE PEDAL CONTROL SLEEVE ASSEMBLY FOR A STARBOARD MOUNT

7

- j. Secure the Cable Anchor to the inboard side of the Steering Module by loosely securing the screws in place using a #2 Phillips Screwdriver.
- k. Once the Cable Anchor is secured, finish prying the Wrap Drum straight up, off of the Cable Gear until the Wrap Drum is free of the Cable Gear.

### **CAUTION**

Care must be taken so that the Steering Cables remain on the Wrap Drum when it is disengaged from the Cable Gear. It is important that the Steering Cables follow the grooves on the Wrap Drum so that they do not become intertwined or pop off. Be sure that the electric wire is not damaged as the Wrap Drum is lifted.



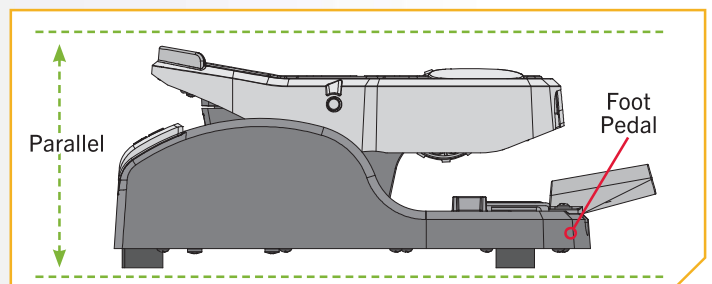
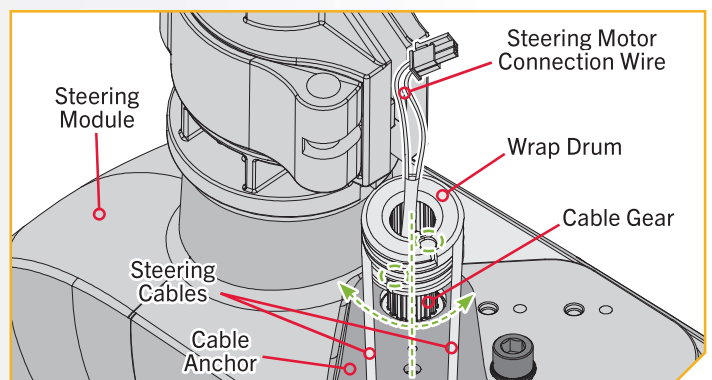
8

- i. While holding the Wrap Drum just above the Cable 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 anchors for each of the Steering Cables 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.

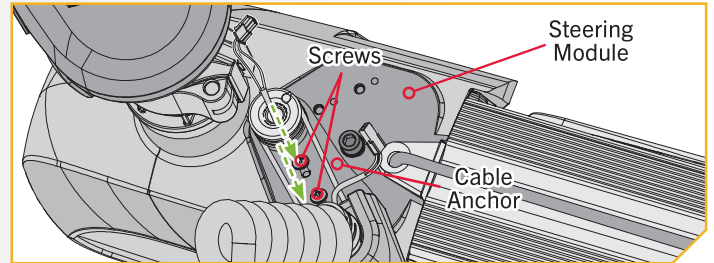
- m. Once the Foot Pedal is at the desired position, align the Wrap Drum with the nearest tooth on the splined shaft of the Cable Gear. Press the Wrap Drum securely down so that it is seated on top of the Cable Gear.



## ROTATE THE PEDAL CONTROL SLEEVE ASSEMBLY FOR A STARBOARD MOUNT

9

- n. Re-tighten the two screws that fasten the Cable Anchor to the top of the Steering Module using a #2 Phillips Screwdriver. Tighten to 25 in-lbs.



10

- o. 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 same number of turns as was used in step 4f.

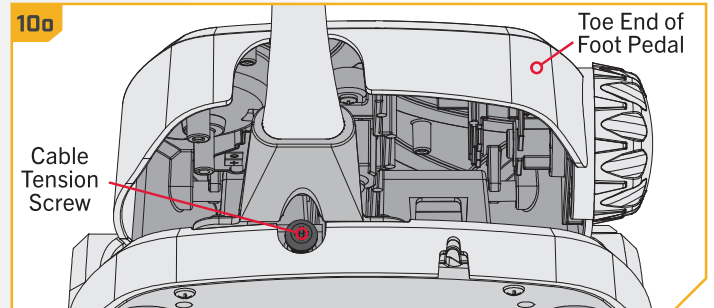
### CAUTION

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

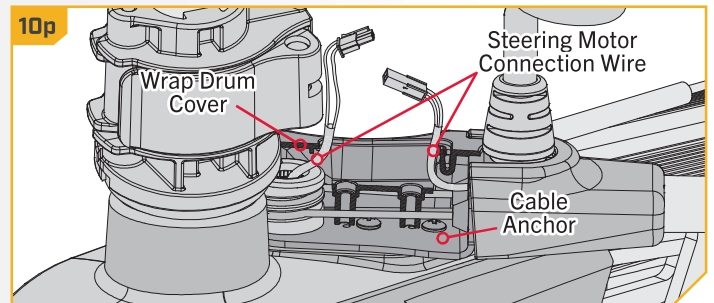
- p. Reconfirm that the Steering Cables are tight and then carefully thread the Steering Motor Connection Wire through the top of the Wrap Drum Cover. The male plug comes from the Cable Anchor through the opening at the bottom of the Wrap Drum Cover. The wire with the female plug that runs out the top of the Cable Gear should also be pulled through the opening at the bottom of the Wrap Drum Cover.

### CAUTION

Take care not to pinch the Steering Motor Connection Wire while the Wrap Drum is set into place.

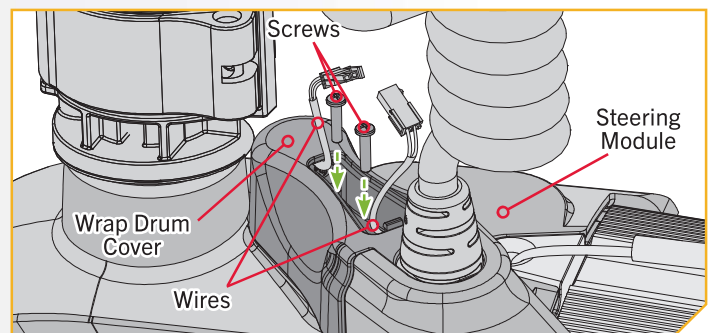


**NOTICE:** The Cable Tension Screw does not adjust pedal tension. Excessive tension on the Cable Tension Screw will not increase the operating tension of the Foot Pedal.



11

- q. Place the Wrap Drum Cover down on top of the Cable Anchor and align the screw holes on it with the screw holes on the Cable Anchor. Make sure the Wrap Drum Cover is nested securely on top of the Steering Module and that the wires pass out the top of the Wrap Drum Housing. Secure the Wrap Drum Housing in place with the two screws that were originally removed using a #2 Phillips Screwdriver. Tighten to 6 in-lbs.





## PLACING THE BOW-MOUNT STABILIZER

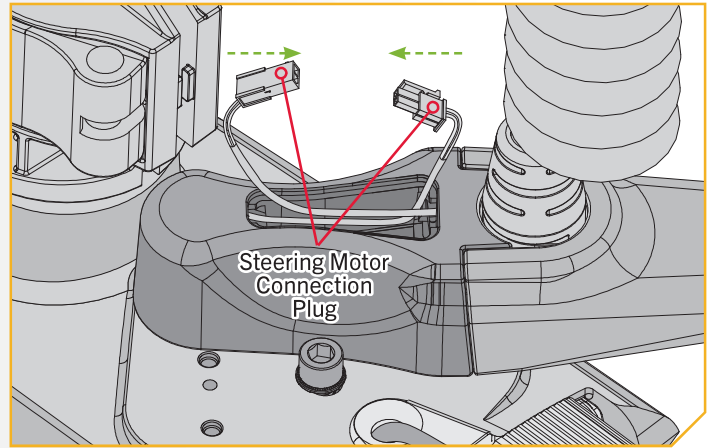
12

- r. Reconnect the Steering Motor Connection Plug and push it into the Wrap Drum Cover.

### CAUTION

Wires and plugs must not touch moving parts. Wires may be damaged if caught in moving parts.

- s. Orientate the wires connecting the Steering Motor Connection Plug as noted so that the wires do not touch moving parts.
- t. Replace the Connector Cover.



## Placing the Bow-Mount Stabilizer

The Bow-Mount Stabilizer Bracket is used to stabilize the Steering Module and reduce bouncing when the motor is stowed and transported. Attention to detail is needed for successful installation of the stabilizer. It is recommended to have the stabilizer bracket installed by a qualified marine installer.

### CAUTION

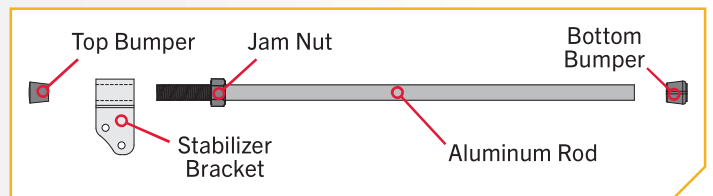
Adjusting the Aluminum Rod too tightly removes the end play needed for proper latch pin engagement, and doing so could prevent the mount from fully latching in the stowed position. Improper latching may cause damage. If installed correctly, the tip of the Aluminum Rod should lift off of the boat deck about 1/4" without the mount unlatching. Cutting the Aluminum Rod too short will cause inadequate support of the mount. Lack of mount support may cause damage.

1

#### ITEM(S) NEEDED

- #11 x 1
-  #14 x 1
-  #12 x 1
-  #13 x 1
- #15 x 1
- ◎ #16 x 2

- a. Place the motor in the stowed position.
- b. Un-thread the Aluminum Rod (Item #12) from the Stabilizer Bracket (Item #14) by removing the Top Bumper (Item #15) and unscrewing the bracket. Also remove the Bottom Bumper (Item #11). Keep the Jam Nut (Item #13) in place.



**NOTICE:** The Bow-Mount Stabilizer Bracket can be installed on the left or right side of the Steering Module. When mounting the bracket onto the Ultrex, the two Nylock Nuts (Item #16) are discarded because the bolts are secured directly into the Steering Module.

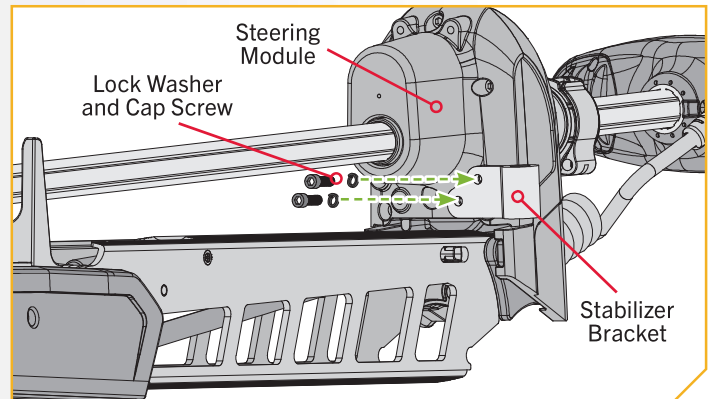
## PLACING THE BOW-MOUNT STABILIZER

2

### ITEM(S) NEEDED

1 #17 x 2    2 #18 x 2

- c. Determine the desired orientation of the Stabilizer Bracket and attach it to the bottom of the Steering Module. Place a Lock Washer (Item #18) on each of the two 5/16" Cap Screws (Item #17).
- d. Use the 5/16" Cap Screws to secure the Stabilizer Bracket to the Steering Module and tighten with a 1/4" Allen wrench. Tighten to 10 ft-lbs.



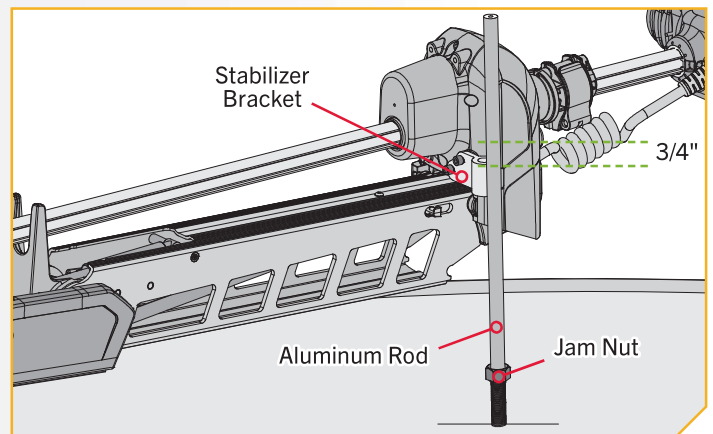
3

- e. Measure the proper length of the Aluminum Rod by standing it, with the threaded end down, onto the deck surface so that it sits vertically right next to the Stabilizer Bracket.
- f. Mark the Aluminum Rod with a pencil or marker 3/4" past the top of the Stabilizer Bracket.

### CAUTION

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

- g. 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.



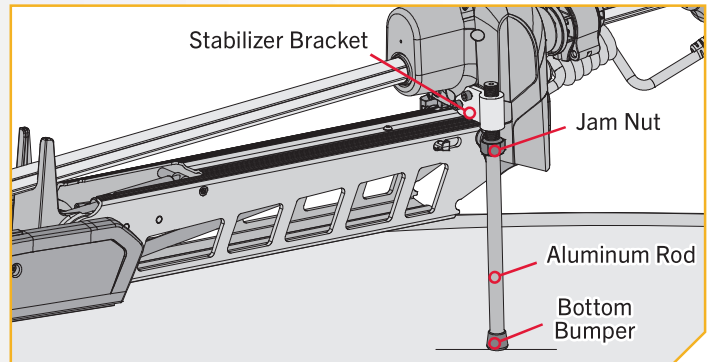
## MOUNTING THE FOOT PEDAL

4

- h. Replace the Bottom Bumper on the Aluminum Rod, opposite from the threads.
- i. Thread the Aluminum Rod into the Stabilizer Bracket with the Bottom Bumper towards the boat deck.
- j. Adjust the Aluminum Rod up or down in the Stabilizer Bracket so that the Bottom Bumper just touches the support surface.

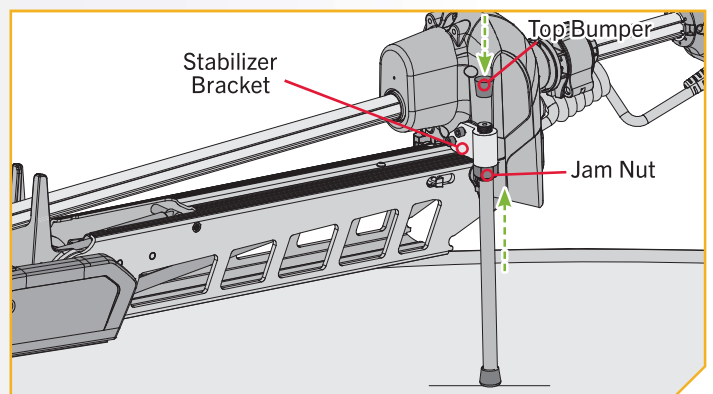
### CAUTION

Adjusting the Aluminum Rod too tightly removes the end play needed for proper latch pin engagement 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.



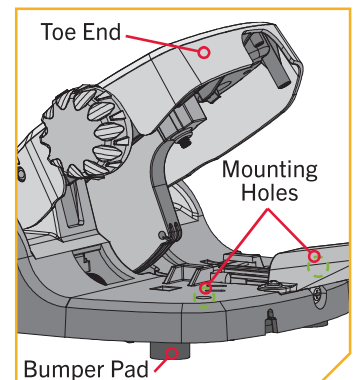
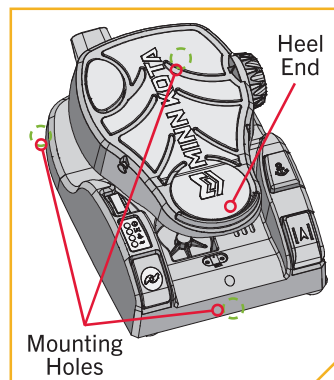
5

- k. Once in the correct position, tighten the Jam Nut upwards against the Stabilizer Bracket. This will prevent the Aluminum Rod from turning.
- l. Install the Top Bumper if there are threads exposed on the Aluminum Rod above the Stabilizer Bracket.



## Mounting the Foot Pedal

We recommend securing the Foot Pedal to the boat deck to prevent it from being damaged during transport and to make motor operation more efficient. It is recommended to use the Mounting Holes on the Foot Pedal for a secure mount. The Foot Pedal has three Mounting Holes. One Mounting Hole is located under the Heel End of the Foot Pedal. The other two are located under the Toe End of the Foot Pedal. We recommend using a 1/8" or 3/16" diameter screw and only tighten enough to slightly compress the Bumper Pads underneath the Foot Pedal.



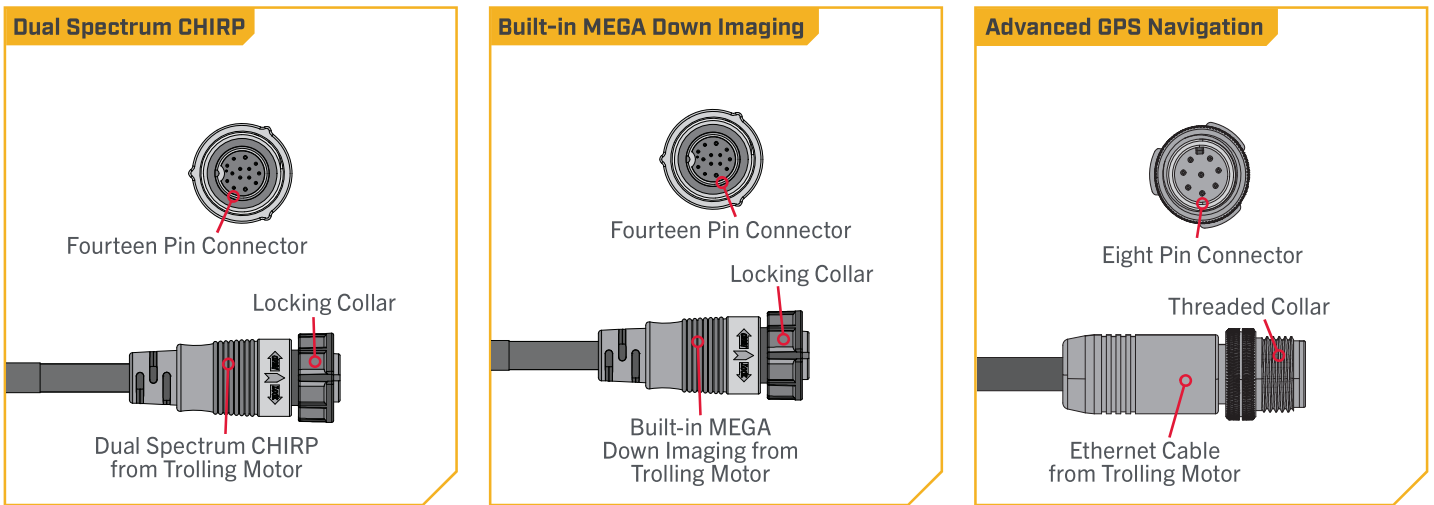


# IDENTIFYING TROLLING MOTOR FEATURES AND THEIR ASSOCIATED CABLES

## IDENTIFYING TROLLING MOTOR FEATURES AND THEIR ASSOCIATED CABLES

### › Feature & Cable Identification

The Ultrex is pre-installed with Advanced GPS Navigation - including the ability to connect via Ethernet to a Humminbird unit. It is also installed with sonar, either Dual Spectrum CHIRP or Built-in MEGA Down Imaging. Dual Spectrum CHIRP and Built-in MEGA Down 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 Down Imaging and Advanced GPS Navigation connectors look like.



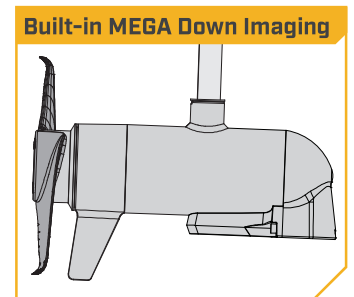
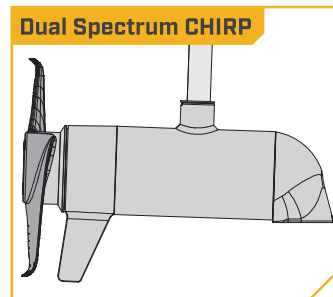
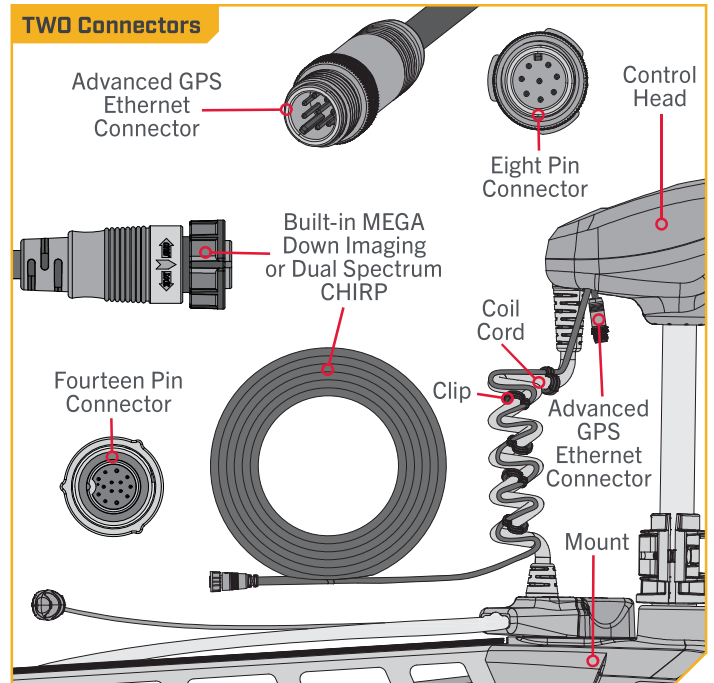
# IDENTIFYING CONNECTORS

## Identifying Connectors

Every Ultrex 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 Down 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 Down 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 Down Imaging will also have a transducer in the Lower Unit. The appearance of the transducer will vary depending on sonar type.



# FEATURE & CABLE MANAGEMENT

## › 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.

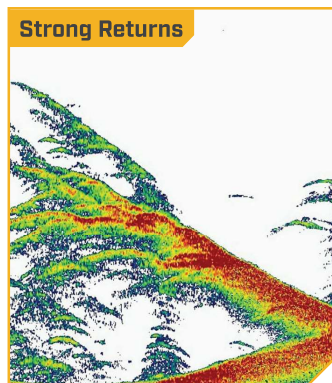
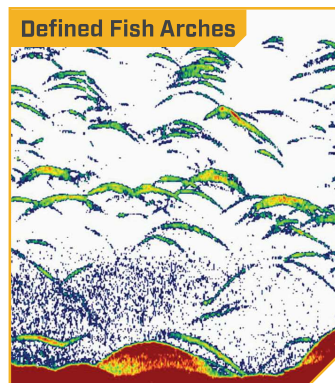
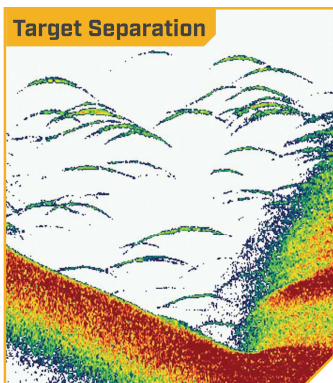
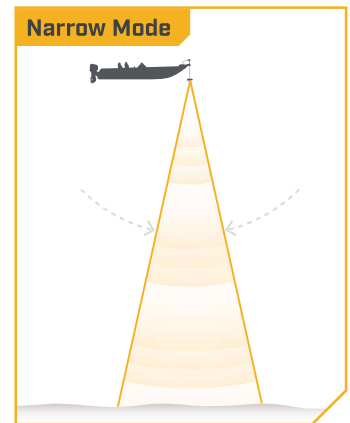
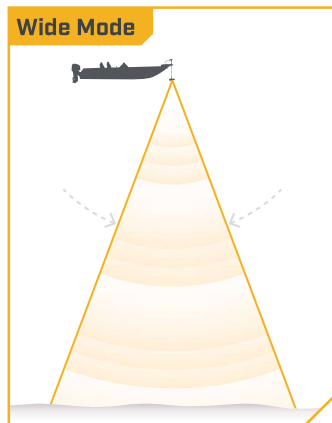
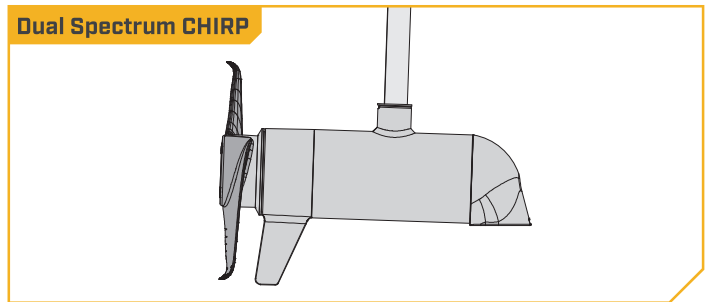
Humminbird's Dual Spectrum CHIRP gives you full spectrum capability, plus the power to select your own start and end frequencies by operating in two different modes. Wide Mode for maximum coverage and Narrow Mode for maximum detail. Wide mode allows you to search deep and wide. Is it used for watching 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.



## DUAL SPECTRUM CHIRP

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.

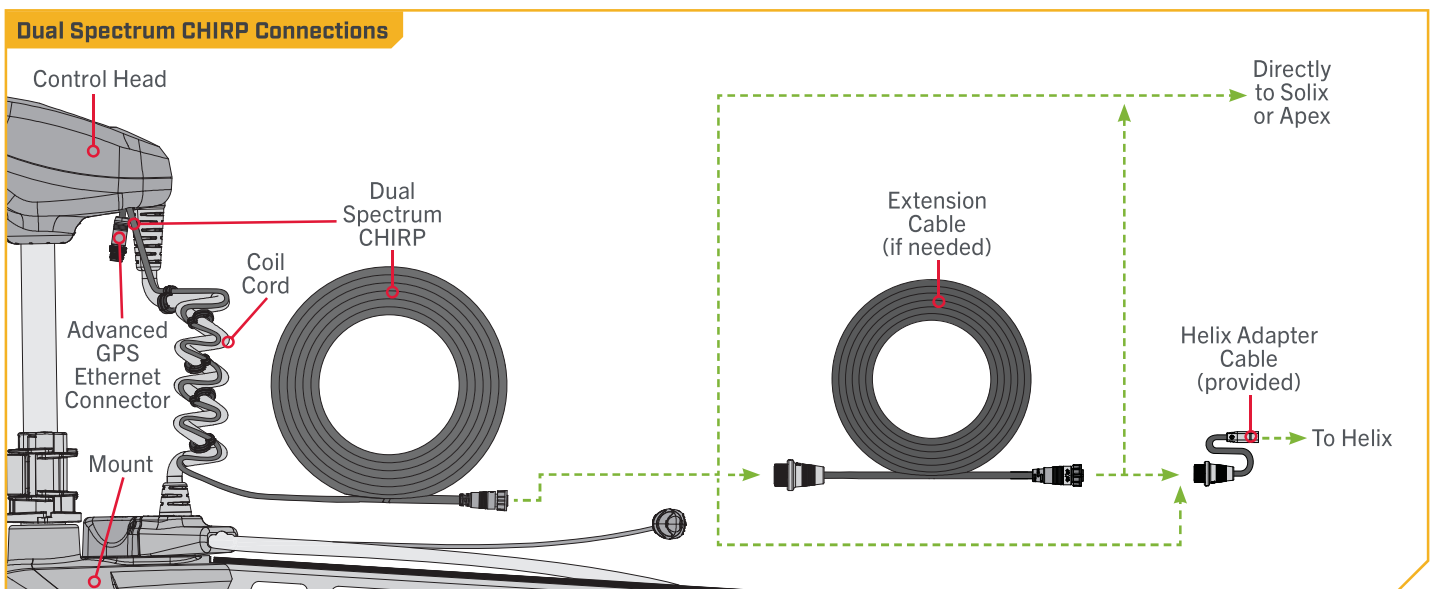
### › Considerations for Connecting and Routing Dual Spectrum CHIRP

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

All Dual Spectrum CHIRP Ultrex motors are equipped with an internal bonding wire. 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" section 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.

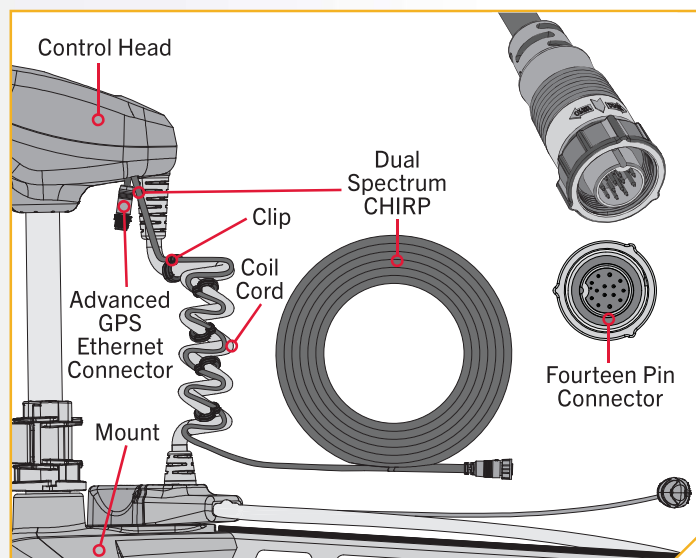
### CAUTION

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 as it may damage the wires.

1

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

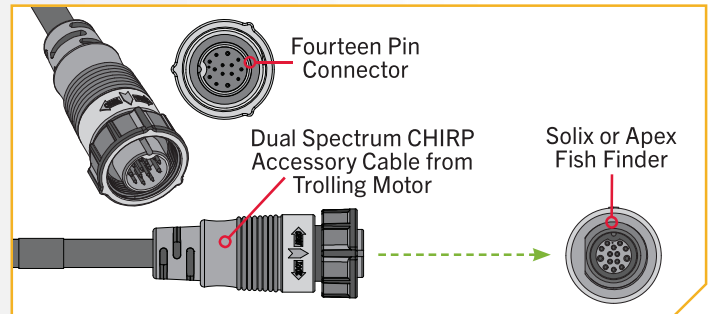
- a. Place the motor in the deployed position.
- b. Locate the Fourteen Pin Connector on the end of the Dual Spectrum CHIRP accessory cable. The cable will come installed from the factory secured to the Coil Cord with Clips.
- c. Determine if the Plug on the end of the Dual Spectrum CHIRP accessory cable 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.



## DUAL SPECTRUM CHIRP

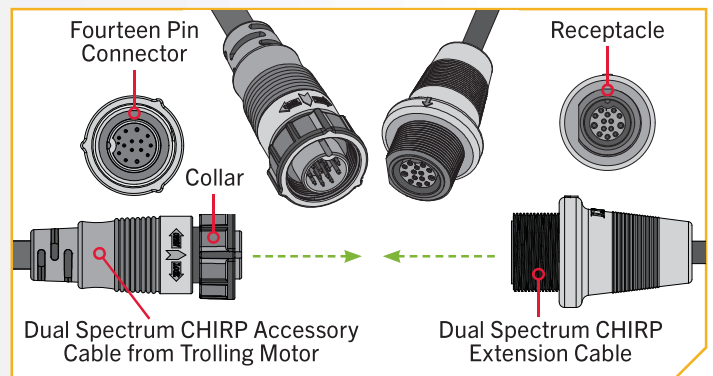
2

- 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) NEEDED

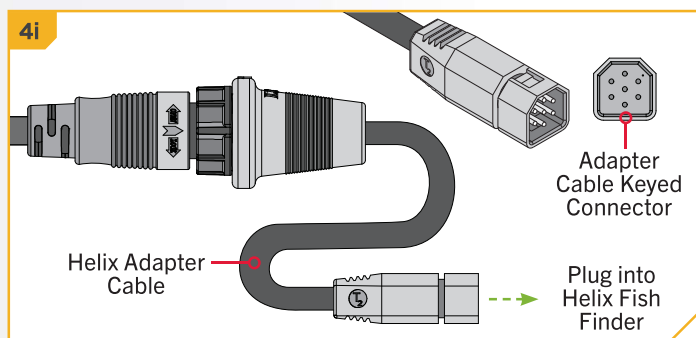
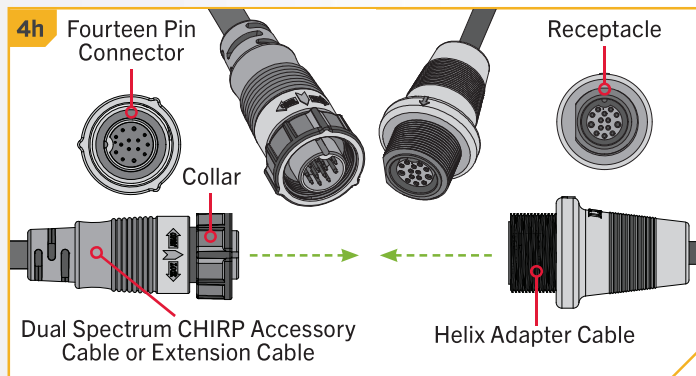


- h. If installing directly to a Helix Adapter Cable, align the pins on the accessory cable or extension cable with the receptacle on the Helix Adapter Cable (Item #24). Notice the keyed connectors. Tighten the Collar from the accessory cable or extension cable to secure the connection.
- i. If the Helix 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 DOWN IMAGING

## BUILT-IN MEGA DOWN IMAGING >

Built-in MEGA Down Imaging delivers nearly 3X the output of standard Side Imaging®, and takes fishfinding into the megahertz frequency for the very first time. It uses a razor-thin, high-frequency beam to create picture-like images of structure, vegetation and fish. With Humminbird MEGA imaging sonar built right into the trolling motor, you now have a crystal clear view of what's directly beneath the boat, without having to manage all of the cables that come with external transducers. 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 Down Imaging

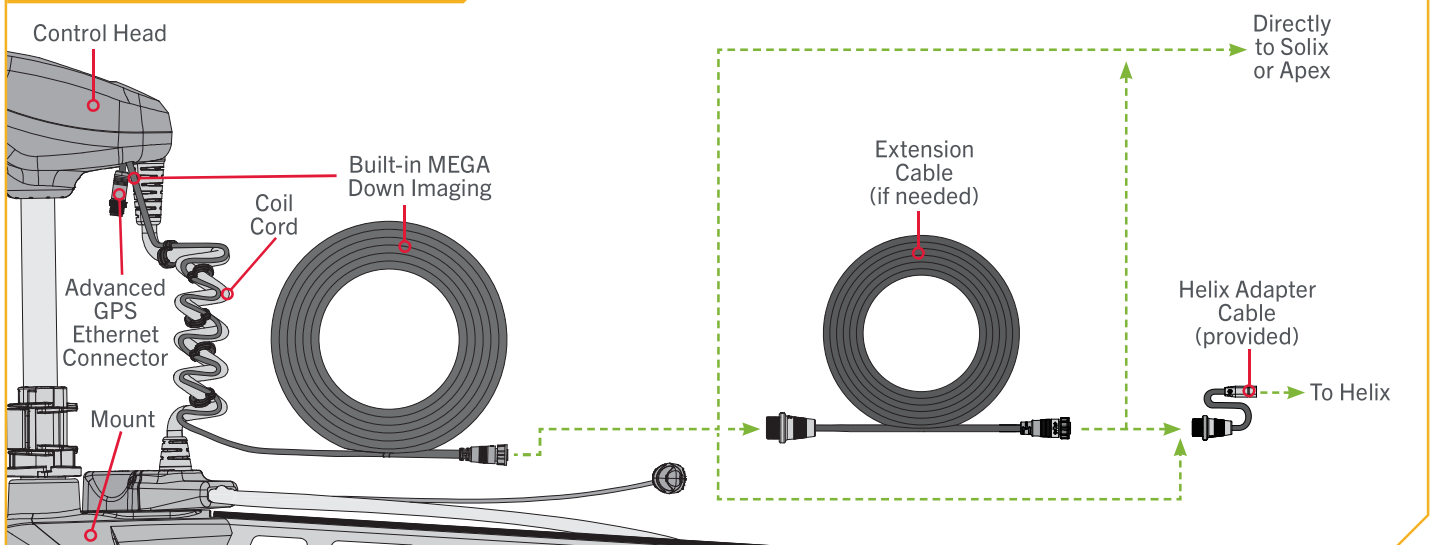
If Built-in MEGA Down Imaging is pre-installed on your trolling motor, one Built-in MEGA Down Imaging accessory cable will exit the base of the Control Head and run parallel to the Coil Cord. The cable will come installed from the factory secured to the Coil Cord. Built-in MEGA Down Imaging requires cables to be connected to an output device such as a Humminbird® fish finder. The Built-in MEGA Down 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 Down 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 Down Imaging, please visit [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com) to check compatibility. The Built-in MEGA Down 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 Down 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 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 Down Imaging Connections



## BUILT-IN MEGA DOWN IMAGING

### CAUTION

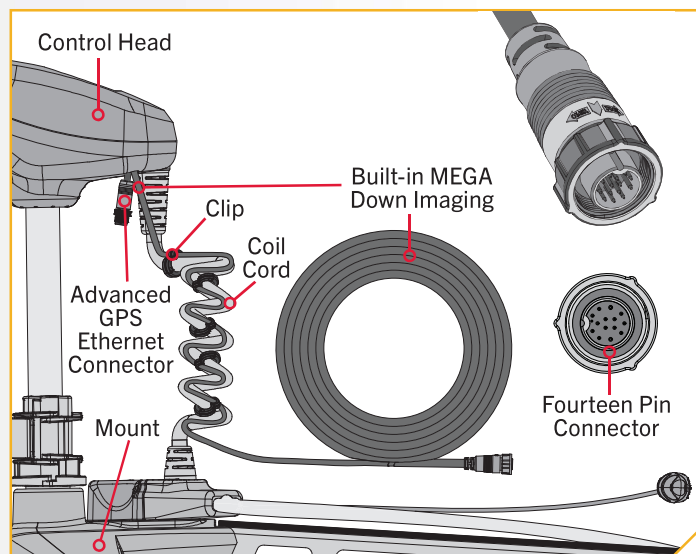
Failure to follow the recommended wire routing for installed features, if equipped, may cause damage to the product and void your product warranty. Route cables away from pinch points or other areas that may cause them to bend in sharp angles. Routing the cables in any way other than directed may cause 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 Down 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.

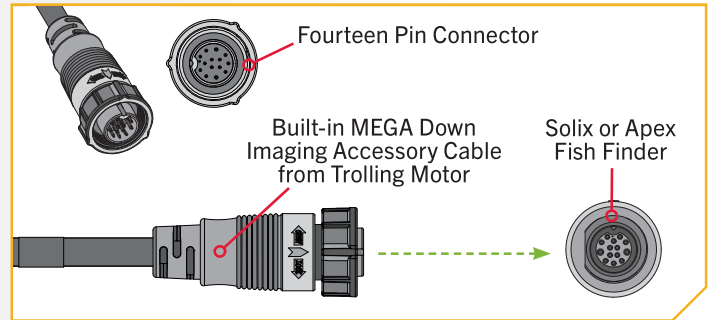
- a. Place the motor in the deployed position.
- b. Locate the Fourteen Pin Connector on the end of the Built-in MEGA Down Imaging accessory cable. The cable will come installed from the factory secured to the Coil Cord with Clips.
- c. Determine if the Plug on the end of the Built-in MEGA Down Imaging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



## BUILT-IN MEGA DOWN IMAGING

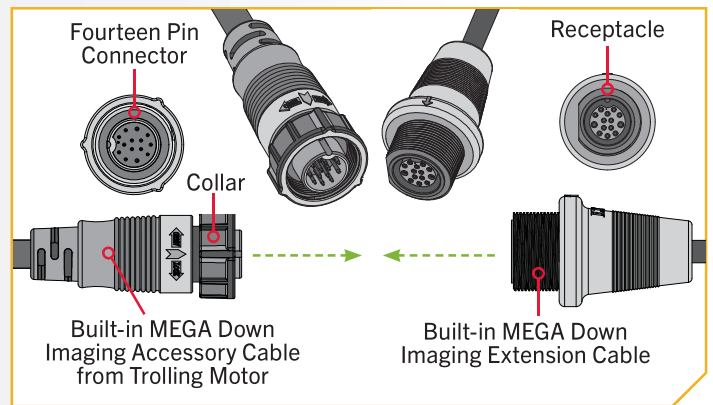
2

- 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 Down 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 Down 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 DOWN IMAGING

### 4

#### ITEM(S) NEEDED

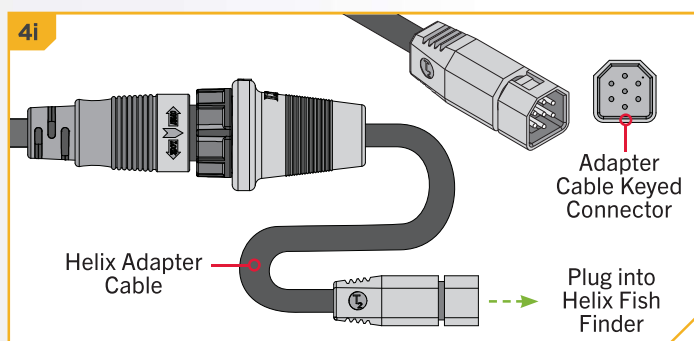
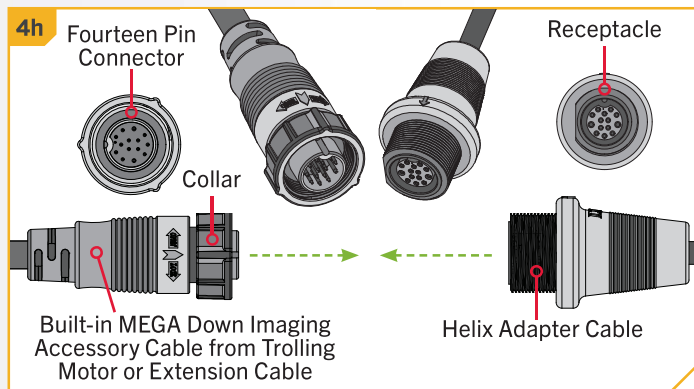


- h. If installing directly to a Helix Adapter Cable, align the pins on the accessory cable or extension cable with the receptacle on the Helix Adapter Cable (Item #24). Notice the keyed connectors. Tighten the Collar from the accessory cable or extension cable to secure the connection.
- i. If the Helix 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.



## 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 micro 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.

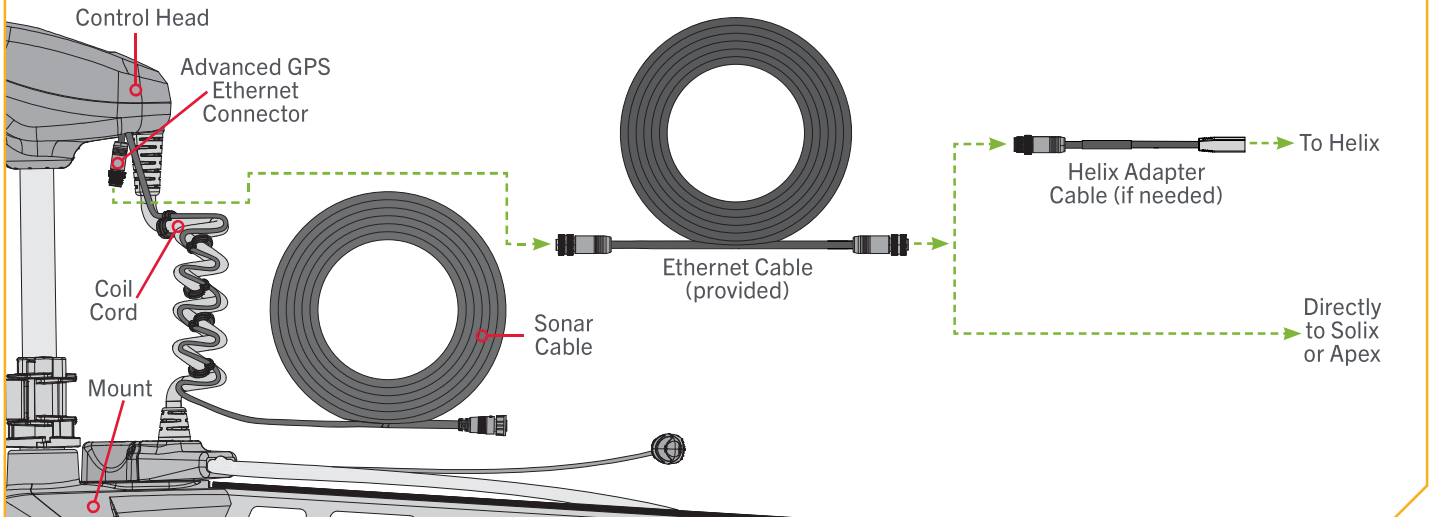
**HUMMINBIRD HELIX ADAPTER CABLES** - Minn Kota provides one Helix Adapter Cable ([AS EC QDE - Ethernet Adapter Cable - 720074-1](#)) with every trolling motor equipped with Advanced GPS Navigation. If the Ethernet connection is being made between the trolling motor and any Humminbird® Helix fish finder,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

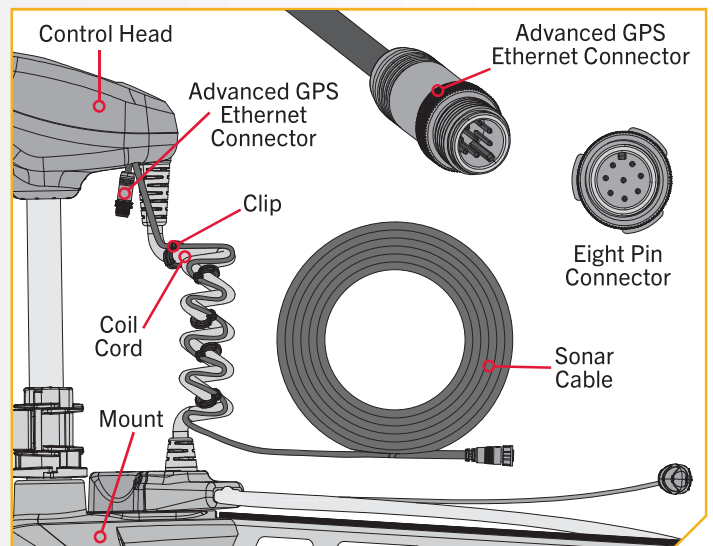
Failure to follow the recommended wire routing for installed features, if equipped, may cause damage to the product and void your product warranty. Route cables away from pinch points or other areas that may cause them to bend in sharp angles. Routing the cables in any way other than directed may cause 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 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 Down 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



#8 x 1

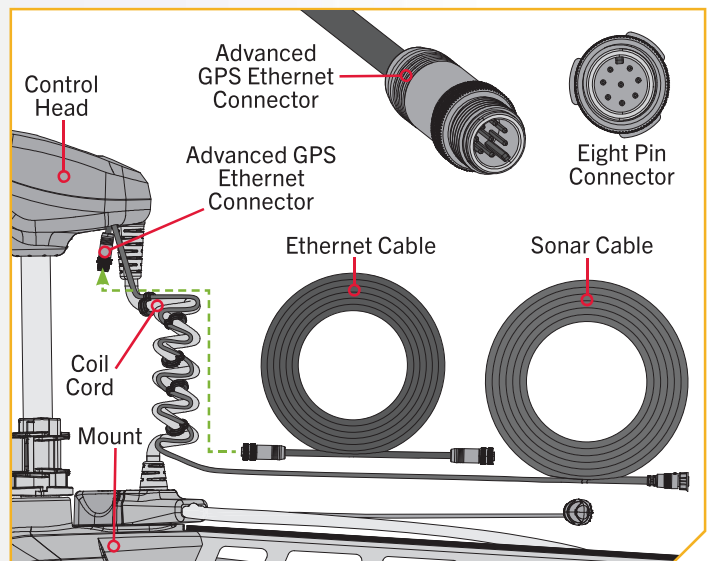
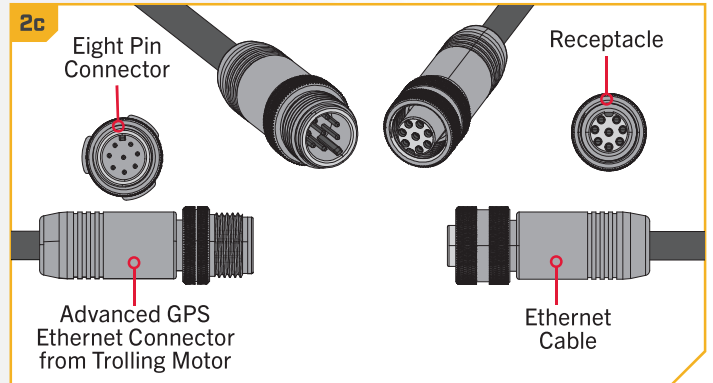
- c. Take the Ethernet Cable (Item #8) and identify the Receptacle on either end. It will be keyed to fit with the Eight Pin Advanced GPS Ethernet Connector below the Control Head.

**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.

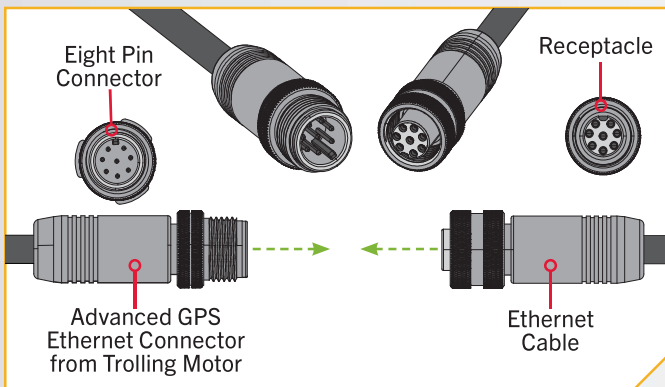
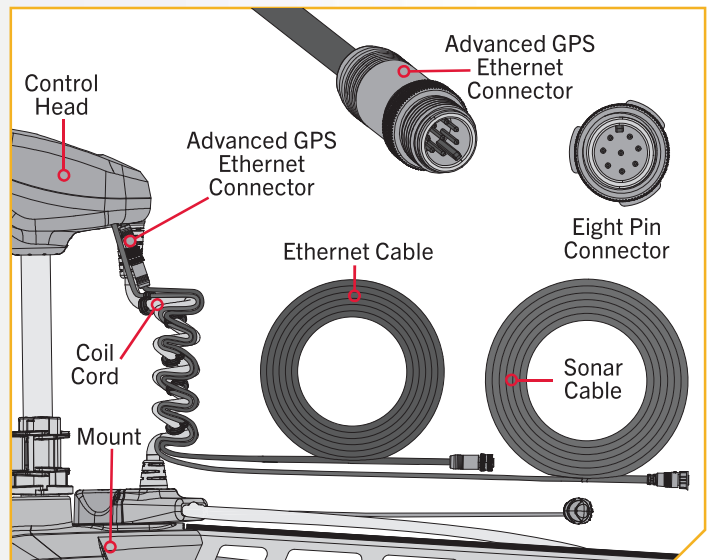
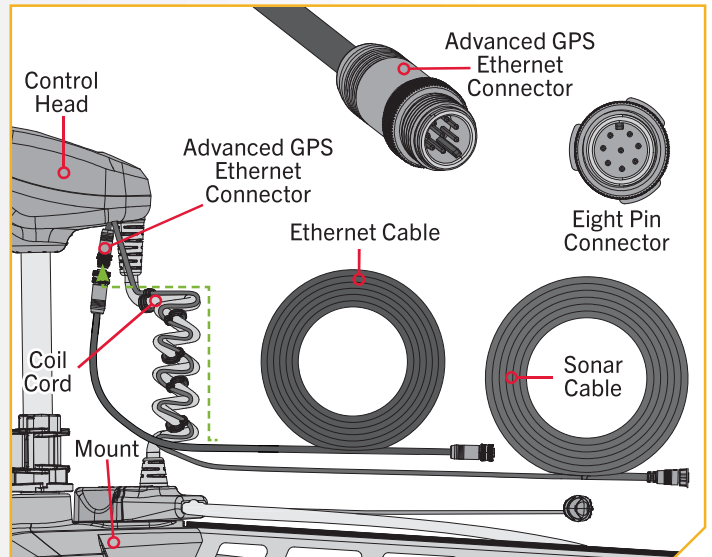


# ADVANCED GPS NAVIGATION

3

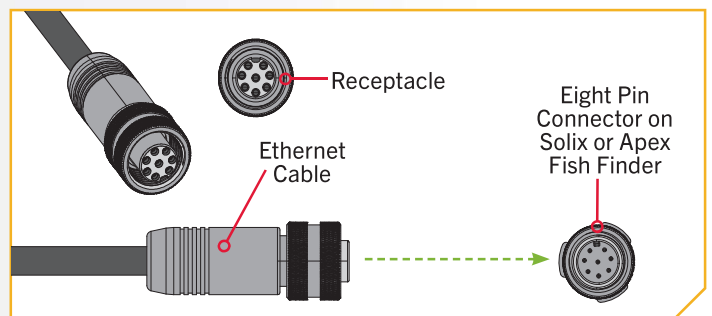
**NOTICE:** Minn Kota recommends routing the Ethernet Cable parallel to the Coil Cord when making the Ethernet connection. The cable will be installed from the Mount to the Control Head parallel to the Coil Cord with Clips. Bypassing the Coil Cord when routing the Ethernet Cable is not recommended. After 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.

- 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

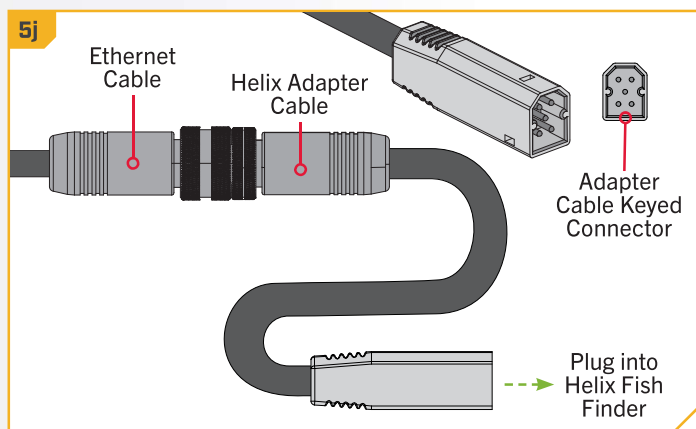
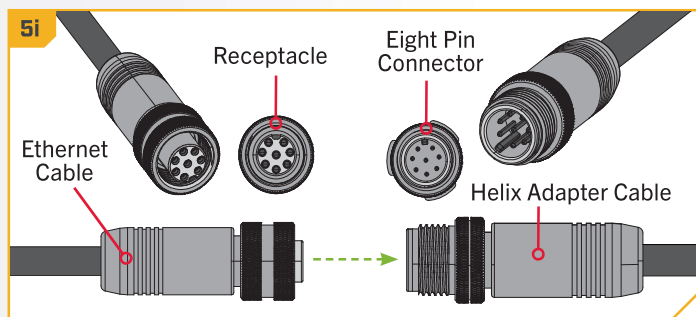


- i. If installing directly to a Helix Adapter Cable (Item #9), align the Receptacle on the Ethernet Cable with the Eight Pin Connector on the Helix Adapter Cable provided. Notice the keyed connectors. Tighten the Collar from the Ethernet Cable to secure the connection.

**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.

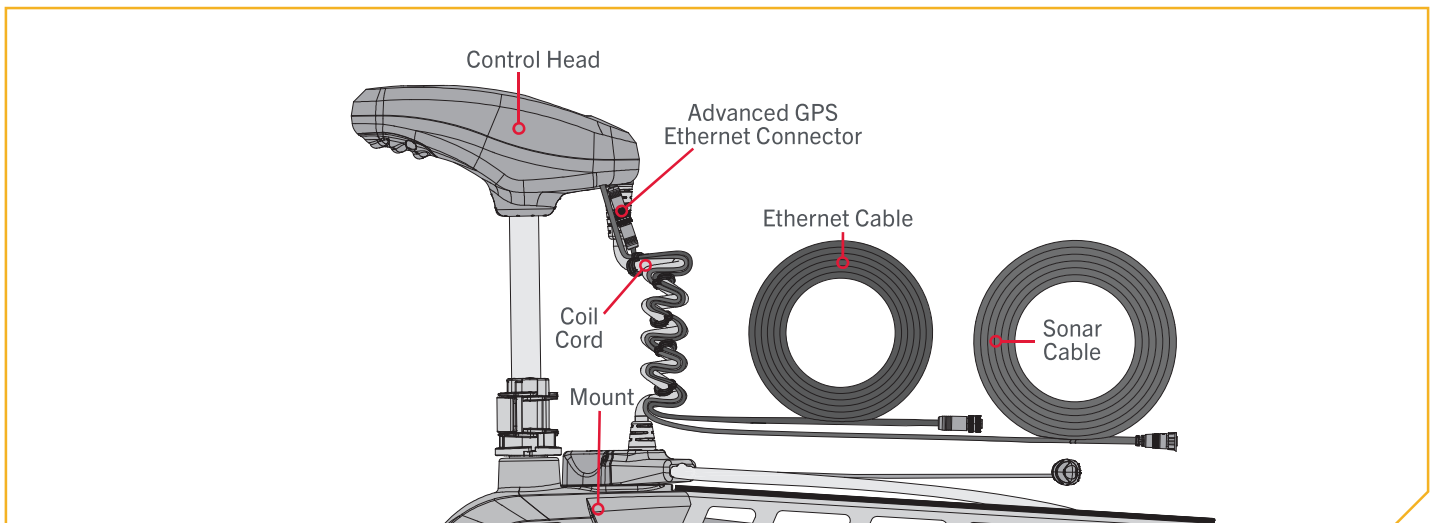


## SECURING ACCESSORY CABLES

### › 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 motor 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 Down 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

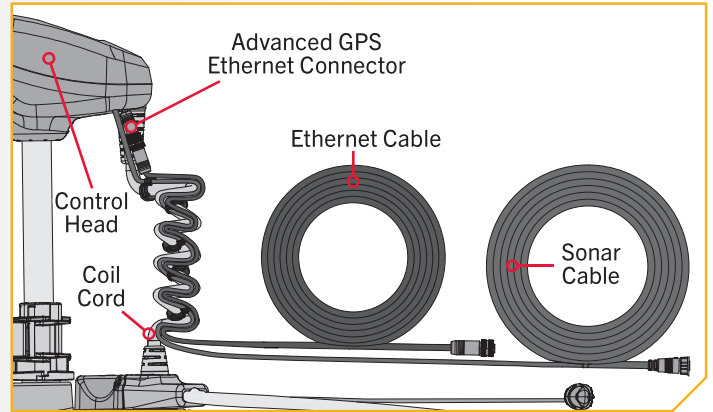
Failure to follow the recommended wire routing for installed features, if equipped, may cause damage to the product and void your product warranty. Route cables away from pinch points or other areas that may cause them to bend in sharp angles. Routing the cables in any way other than directed may cause 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

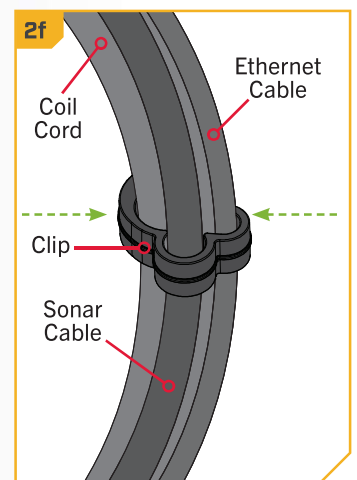
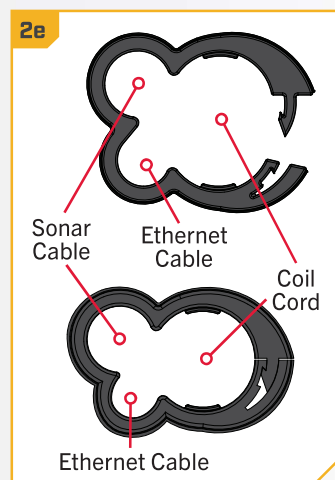
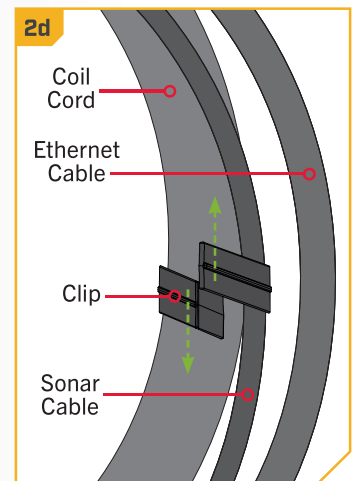
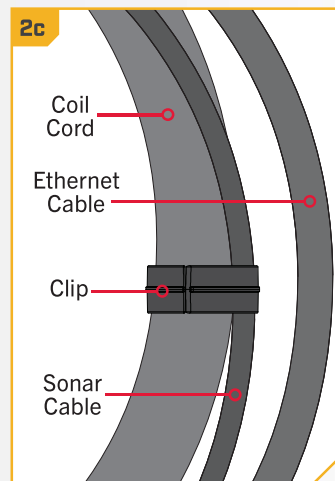
1

- a. The Ultrex 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 5 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.

# INSTALLING THE PROP

## Installing the Prop

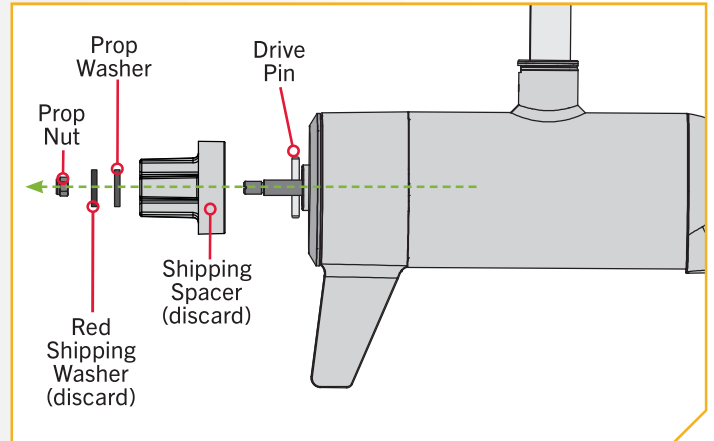
1

### CAUTION

Disconnect the motor from the battery before beginning any prop work or maintenance.

- While holding the Shipping Spacer with a pliers or vise grip, remove the Prop Nut, Red Shipping Washer, Prop Washer and Spacer, being careful not to lose the Drive Pin. Reuse the Prop Nut, Prop Washer and Drive Pin to attach the Propeller.

**NOTICE:** The Shipping Spacer and Red Shipping Washer are for shipping purposes only and must be discarded. The Red Shipping Washer will rust if used to attach the Propeller.

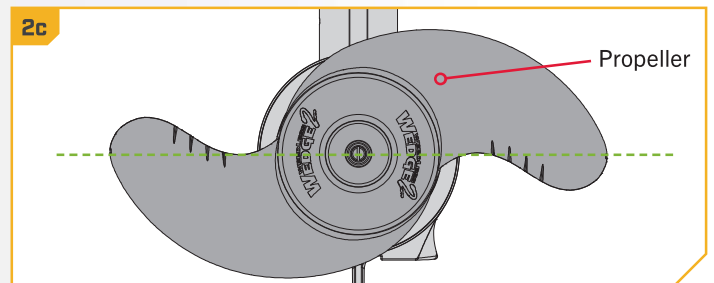
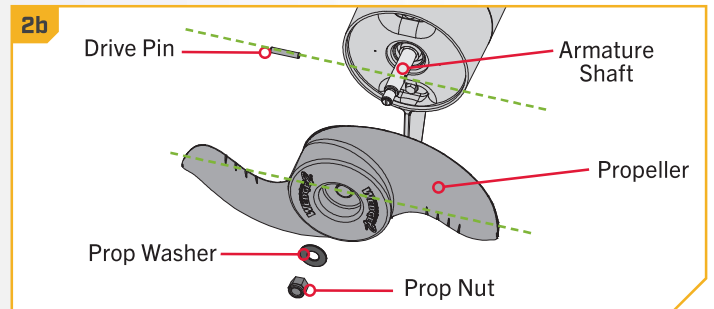


2

### ITEM(S) NEEDED



- Take the Drive Pin (Item #22) and slide it through the Hole in the Armature Shaft. Position the Drive Pin horizontally by grasping the Armature Shaft and rotating it with the Drive Pin in place.
- Align the Propeller (Item #19) so it is also horizontal and parallel with the Drive Pin. Slide the Propeller onto the Armature Shaft and Drive Pin until it is seated against the lower unit.
- Install the Prop Washer (Item #20) and the Prop Nut (Item #21) onto the end of the Armature Shaft.





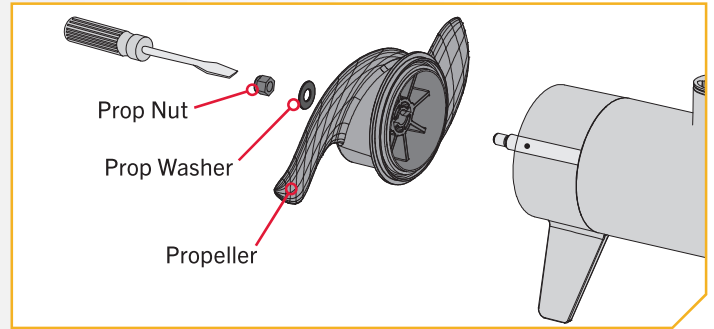
## INSTALLING THE PROP

3

- e. Holding the end of the Armature Shaft with a Flat Blade Screwdriver, tighten the Prop Nut with a 9/16" Box End or Open End Wrench.
- f. Tighten the Prop Nut 1/4 turn past snug to 25-35 in-lbs.

### CAUTION

Do not over-tighten as this can damage the prop.



# BATTERY & WIRING INSTALLATION

## BOAT RIGGING & PRODUCT INSTALLATION

For safety and compliance reasons, we recommend that you follow American Boat and Yacht Council (ABYC) standards when rigging your boat. Altering boat wiring should be completed by a qualified marine technician. The following specifications are for general guidelines only:

### CAUTION

These guidelines apply to general rigging to support your Minn Kota motor. Powering multiple motors or additional electrical devices from the same power circuit may impact the recommended conductor gauge and circuit breaker size. If you are using wire longer than that provided with your unit, follow the conductor gauge and circuit breaker sizing table below. If your wire extension length is more than 25 feet, we recommend that you contact a qualified marine technician.

### CAUTION

**An over-current protection device (circuit breaker or fuse) must be used.** Coast Guard requirements dictate that each ungrounded current-carrying conductor must be protected by a manually reset, trip-free circuit breaker or fuse. The type (voltage and current rating) of the fuse or circuit breaker must be sized accordingly to the trolling motor used. The table below gives recommended guidelines for circuit breaker sizing.

## CONDUCTOR GAUGE AND CIRCUIT BREAKER SIZING TABLE

This conductor and circuit breaker sizing table is only valid for the following assumptions:

1. No more than 2 conductors are bundled together inside of a sheath or conduit outside of engine spaces.
2. Each conductor has 105° C temp rated insulation.
3. No more than 3% voltage drop allowed at full motor power based on published product power requirements.

Motor Thrust / Model	Max Amp Draw	Circuit Breaker		Wire Extension Length				
		Amp	Minimum	5 feet	10 feet	15 feet	20 feet	25 feet
80 lb.	56	60 Amp	24 VDC	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG
112 lb.	52	60 Amp	36 VDC	8 AWG	8 AWG	8 AWG	6 AWG	4 AWG

**NOTICE:** Wire Extension Length refers to the distance from the batteries to the trolling motor leads. Consult website for available thrust options. Maximum Amp Draw values only occur intermittently during select conditions and should not be used as continuous amp load ratings.

Reference

United States Code of Federal Regulations: 33 CFR 183 – Boats and Associated Equipment ABYC E-11: AC and DC Electrical Systems on Boats

## SELECTING THE CORRECT BATTERIES

### SELECTING THE CORRECT BATTERIES

The motor will operate with any lead-acid, deep-cycle marine 12-volt battery/batteries. For best results, use a deep-cycle marine battery with at least a 105 amp-hour rating. Maintain battery at full charge. Proper care will ensure having battery power when you need it, and will significantly improve the battery life. Failure to recharge lead-acid batteries (within 12-24 hours) is the leading cause of premature battery failure. Use a multi-stage charger to avoid overcharging. We offer a wide selection of chargers to fit your charging needs. If you are using a crank battery to start a gasoline outboard, we recommend that you use a separate deep cycle marine battery/batteries for your Minn Kota trolling motor. For more information on battery selection and rigging, please visit [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com). Minn Kota trolling motors can run on Lithium-Ion batteries. However, they are specifically designed to run on traditional lead-acid batteries (flooded, AGM or GEL). Lithium-Ion batteries maintain higher voltages for longer periods of time than lead acid. Therefore, running a Minn Kota trolling motor at speeds higher than 85% for a prolonged period could cause permanent damage to the motor.

#### **WARNING**

Never connect the (+) and the (-) terminals of the same battery together. Take care that no metal object can fall onto the battery and short the terminals. This would immediately lead to a short and extreme fire danger.

#### **CAUTION**

Refer to “Conductor Gauge and Circuit Breaker Sizing Table” in the previous section to find the appropriate circuit breaker or fuse for your motor. For motors requiring a 60-amp breaker, the Minn Kota MKR-19 60-amp circuit breaker is recommended.

#### **CAUTION**

Please read the following information before connecting your motor to your batteries in order to avoid damaging your motor and/or voiding your warranty.

### ADDITIONAL CONSIDERATIONS

#### › Using Alternator Chargers

Your Minn Kota trolling motor may be designed with an internal bonding wire to reduce sonar interference. Most alternator charging systems do not account for this bonding wire, and connect the negative posts of the trolling motor batteries to the negative posts of the crank/starting battery. These external connections can damage connected electronics and the electrical system of your trolling motor, voiding your warranty. Review your charger’s manual carefully or consult the manufacturer prior to use to ensure your charger is compatible.

Minn Kota recommends using Minn Kota brand chargers to recharge the batteries connected to your Minn Kota trolling motor, as they have been engineered to work with motors that include a bonding wire.

#### › Additional Accessories Connected to Trolling Motor Batteries

Significant damage to your Minn Kota motor, your boat electronics, and your boat can occur if incorrect connections are made between your trolling motor batteries and other battery systems. Minn Kota recommends using an exclusive battery system for your trolling motor. Where possible, accessories should be connected to a separate battery system. Radios and sonar units should not be connected to any trolling motor battery systems as interference from the trolling motor is unavoidable. If connecting any additional accessories to any trolling motor battery system, or making connections between the trolling motor batteries and other battery systems on the boat, be sure to carefully observe the information below.

## CONNECTING THE BATTERIES IN SERIES

The negative (-) connection must be connected to the negative terminal of the same battery that the trolling motor negative lead connects to. In the diagrams below this battery is labeled “Low Side” Battery. Connecting to any other trolling motor battery will input positive voltage into the “ground” of that accessory, which can cause excess corrosion. Any damage caused by incorrect connections between battery systems will not be covered under warranty.

### Automatic Jump Start Systems and Selector Switches

Automatic jump start systems and selector switches tie the negatives of the connected batteries together. Connecting these systems to the “High Side” Battery or “Middle” Battery in the diagrams below and will cause significant damage to your trolling motor and electronics. The only trolling motor battery that is safe to connect to one of these systems is the “Low Side” Battery.

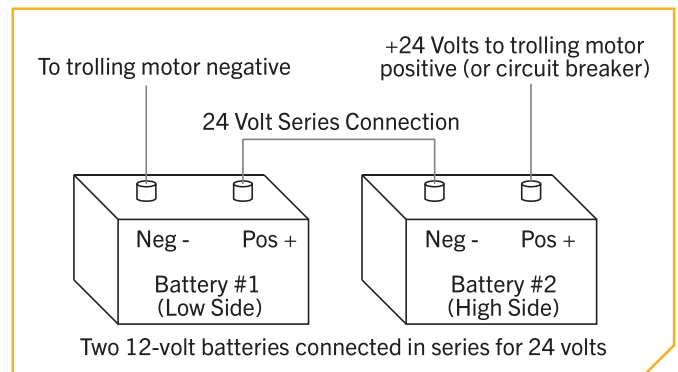
**NOTICE:** The internal bonding wire is equipped with a 3-amp fuse. Improper connections described above carrying in excess of 3 amps will blow this fuse and no further damage will be exhibited. If this occurs, RF interference from the trolling motor affecting sonar units and other electronics will be more significant. If the fuse is blown the wiring error should be found and addressed prior to replacing the fuse. The replacement fuse should be 3 amps or less. An intact fuse does not imply correct rigging; significant damage can be done by incorrect wiring without approaching 3 amps of current.

## CONNECTING THE BATTERIES IN SERIES (IF REQUIRED FOR YOUR MOTOR)

### 24-Volt Systems

Two 12-volt batteries are required. The batteries must be wired in series, only as directed in the wiring diagram, to provide 24 volts.

1. Make sure that the motor is switched off (speed selector on “0”).
2. Connect a connector cable to the positive (+) terminal of battery 1 and to the negative (-) terminal of battery 2.
3. Connect positive (+) red motor lead to positive (+) terminal on battery 2.
4. Connect negative (-) black motor lead to negative (-) terminal of battery 1.



## WARNING

For safety reasons do not switch the motor on until the propeller is in the water. If installing a leadwire plug, observe proper polarity and follow instructions in your boat owner’s manual.

## WARNING

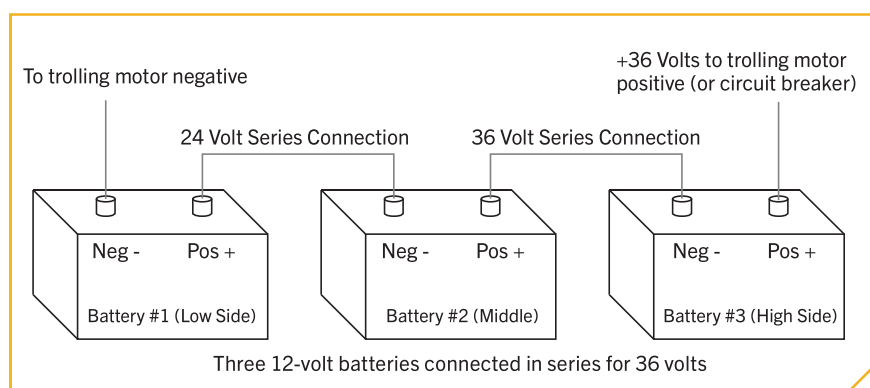
- For safety reasons, disconnect the motor from the battery or batteries when the motor is not in use or while the battery/batteries are being charged.
- Improper wiring of 24/36 volt systems could cause battery explosion.
- Keep leadwire wing nut connections tight and solid to battery terminals.
- Locate battery in a ventilated compartment.

## CONNECTING THE BATTERIES IN SERIES

### 36-Volt Systems

Three 12-volt batteries are required. The batteries must be wired in series, only as directed in the wiring diagram, to provide 36 volts.

1. Make sure that the motor is switched off (speed selector on "0").
2. Connect a connector cable to the positive (+) terminal of battery 1 and to the negative (-) terminal of battery 2 and another connector cable from the positive (+) terminal of battery 2 to the negative (-) terminal of battery 3.
3. Connect positive (+) red motor lead to positive (+) terminal on battery 3.
4. Connect negative (-) black motor lead to negative (-) terminal of battery 1.



### WARNING

For safety reasons, do not switch the motor on until the propeller is in the water. If installing a leadwire plug, observe proper polarity and follow instructions in your boat owner's manual.

### WARNING

- For safety reasons, disconnect the motor from the battery or batteries when the motor is not in use or while the battery/batteries are being charged.
- Improper wiring of 24/36 volt systems could cause battery explosion.
- Keep leadwire wing nut connections tight and solid to battery terminals.
- Locate battery in a ventilated compartment.

This completes the installation of your Ultrex. A complete Owner's Manual can be downloaded at [minnkota.johnsonoutdoors.com](http://minnkota.johnsonoutdoors.com).



# RECOMMENDED ACCESSORIES

## ON-BOARD & PORTABLE BATTERY CHARGERS

Stop buying new batteries and start taking care of the ones you've got. Many chargers can actually damage your battery over time – creating shorter run times and shorter overall life. Digitally controlled Minn Kota chargers are designed to provide the fastest charge that protect and extend battery life.



MK212PCL



MK210D



MK110PD

## TALON SHALLOW WATER ANCHOR

Talon is the only shallow water anchor with up to 15' of anchoring depth, multiple anchoring modes, and control from the bow, transom, console, remote or mobile device.



### BUILT-IN WORK LIGHT

Lets you tie lines and work from the transom any time of day — or night. Includes both white and blue LED lights with three brightness settings.



### BLUETOOTH® CONNECTIVITY

Lets you control Talon from your mobile device and easily update it. Also opens up communication to other control options.



### UP TO 15' DEEP

Control more water and catch more fish with the first 15' shallow water anchor.



### MORE CONTROL OPTIONS

- Control Panel
- Wireless Remote
- Mobile App
- Wireless Foot Switch
- Humminbird® Connectivity
- Advanced GPS Navigation System Remote



## MINN KOTA ACCESSORIES

We offer a wide variety of trolling motor accessories, including:

- 60-Amp Circuit Breaker
- Mounting Brackets
- Stabilizer Kits
- Extension Handles
- Battery Connectors
- Battery Boxes
- Quick Connect Plugs



minnkota.johnsonoutdoors.com    

Part #2297163

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