



MINN KOTA
ULTREX

ULTREX™

BOW-MOUNT TROLLING MOTOR

Owner's Manual

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.

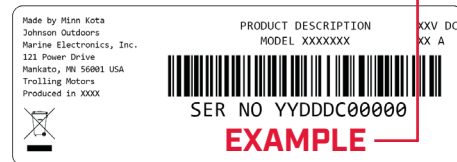
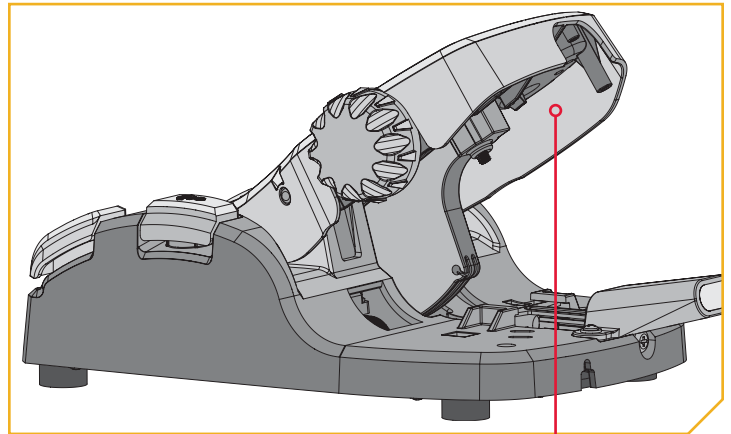
REGISTRATION

Remember to keep your receipt and immediately register your trolling motor on our website at minnkota.johnsonoutdoors.com/us/register.

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.

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. 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



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/sec².

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.



WARNING

- **INGESTION HAZARD:** This product contains a button cell or coin battery.
- **DEATH** or serious injury can occur if ingested.
- A swallowed button cell or coin battery can cause **Internal Chemical Burns** in as little as **2 hours**.
- **KEEP** new and used batteries **OUT OF REACH** of **CHILDREN**
- **Seek immediate medical attention** if a battery is suspected to be swallowed or inserted inside any part of the body.



1. This product contains a button/coin cell battery. Heed all safety considerations:
 - a) Remove and immediately recycle or dispose of used batteries according to local regulations and keep away from children. Do NOT dispose of batteries in household trash or incinerate.
 - b) Even used batteries may cause severe injury or death.
 - c) Call a local poison control center for treatment information.
 - d) The compatible battery type is CR2450.
 - e) The nominal battery voltage is 3.0 VDC.
 - f) Non-rechargeable batteries are not to be recharged.
 - g) Do not force discharge, recharge, disassemble, heat above (manufacturer's specified temperature rating) or incinerate. Doing so may result in injury due to venting, leakage or explosion resulting in chemical burns.
2. This product contains a replaceable button/coin cell battery. Heed all safety considerations:
 - a) Ensure the batteries are installed correctly according to polarity (+ and -).
 - b) Do not mix old and new batteries, different brands or types of batteries, such as alkaline, carbon-zinc, or rechargeable batteries.
 - c) Remove and immediately recycle or dispose of batteries from equipment not used for an extended period of time according to local regulations.
 - d) Always completely secure the battery compartment. If the battery compartment does not close securely, stop using the product, remove the batteries, and keep them away from children.



WARRANTY

WARRANTY ON MINN KOTA ULTREX FRESHWATER TROLLING MOTORS

Johnson Outdoors Marine Electronics, Inc. ("JOME") extends the following limited warranty to the original retail purchaser only. Warranty coverage is not transferable.

Minn Kota Limited Two-Year Warranty on the Entire Product

JOME warrants to the original retail purchaser only that the purchaser's new Minn Kota freshwater trolling motor will be materially free from defects in materials and workmanship appearing within two (2) years after the date of purchase. JOME will (at its option) either repair or replace, free of charge, any parts found by JOME to be defective during the term of this warranty. Such repair, or replacement shall be the sole and exclusive liability of JOME and the sole and exclusive remedy of the purchaser for breach of this warranty.

Minn Kota Limited Lifetime Warranty on Composite Shaft and Foot Pedal Cables

JOME warrants to the original retail purchaser only that the composite shaft and foot pedal cables of the purchaser's Minn Kota trolling motor will be materially free from defects in materials and workmanship appearing within the original purchaser's lifetime. JOME will provide a new composite shaft and/or foot pedal cable, free of charge, to replace any composite shaft and/or foot pedal cable found by JOME to be defective during the term of this warranty. Providing new components shall be the sole and exclusive liability of JOME and the sole and exclusive remedy of the purchaser for breach of this warranty; and the purchaser shall be responsible for installing, or for the cost of labor to install, any new composite shaft and/or foot pedal cable provided by JOME.

Exclusions & Limitations

This limited warranty does not apply to products that have been used in saltwater or brackish water, commercially or for rental purposes. This limited warranty does not cover normal wear and tear, blemishes that do not affect the operation of the product, or damage caused by accidents, abuse, alteration, modification, shipping damages, negligence of the user or misuse, improper or insufficient care or maintenance. **DAMAGE CAUSED BY THE USE OF OTHER REPLACEMENT PARTS NOT MEETING THE DESIGN SPECIFICATIONS OF THE ORIGINAL PARTS WILL NOT BE COVERED BY THIS LIMITED WARRANTY.** The cost of normal maintenance or replacement parts which are not in breach of the limited warranty are the responsibility of the purchaser. Prior to using products, the purchaser shall determine the suitability of the products for the intended use and assumes all related risk and liability. Any assistance JOME provides to or procures for the purchaser outside the terms, limitations or exclusions of this limited warranty will not constitute a waiver of the terms, limitations or exclusions, nor will such assistance extend or revive the warranty. JOME will not reimburse the purchaser for any expenses incurred by the purchaser in repairing, correcting or replacing any defective products or parts, except those incurred with JOME's prior written permission. **JOME'S AGGREGATE LIABILITY WITH RESPECT TO COVERED PRODUCTS IS LIMITED TO AN AMOUNT EQUAL TO THE PURCHASER'S ORIGINAL PURCHASE PRICE PAID FOR SUCH PRODUCT.**

Minn Kota Service Information

To obtain warranty service in the U.S., the product believed to be defective, and proof of original purchase (including the date of purchase), must be presented to a Minn Kota Authorized Service Center. Go to minnkota.johnsonoutdoors.com/us/support/service-providers/locate to find a Minn Kota Authorized Service Center. Any charges incurred for service calls, transportation or shipping/freight to/from the Minn Kota Authorized Service Center, labor to haul out, remove, re-install or re-rig products removed for warranty service, or any other similar items are the sole and exclusive responsibility of the purchaser. Products purchased outside of the U.S. must be returned prepaid with proof of purchase (including the date of purchase and serial number) to any Authorized Minn Kota Service Center in the country of purchase. To contact Minn Kota Customer Service go to minnkota-help.johnsonoutdoors.com/hc/en-us. Products repaired or replaced will be warranted for the remainder of the original warranty period, or for 90 days from the date of repair or replacement, whichever is longer. For any product that is returned for warranty service that JOME finds to be not covered by or not in breach of this limited warranty, there will be a billing for services rendered at the prevailing labor rate of the applicable Minn Kota Authorized Service Center and for a minimum of at least one hour.

Service Provider
Locator



Contact Customer
Service

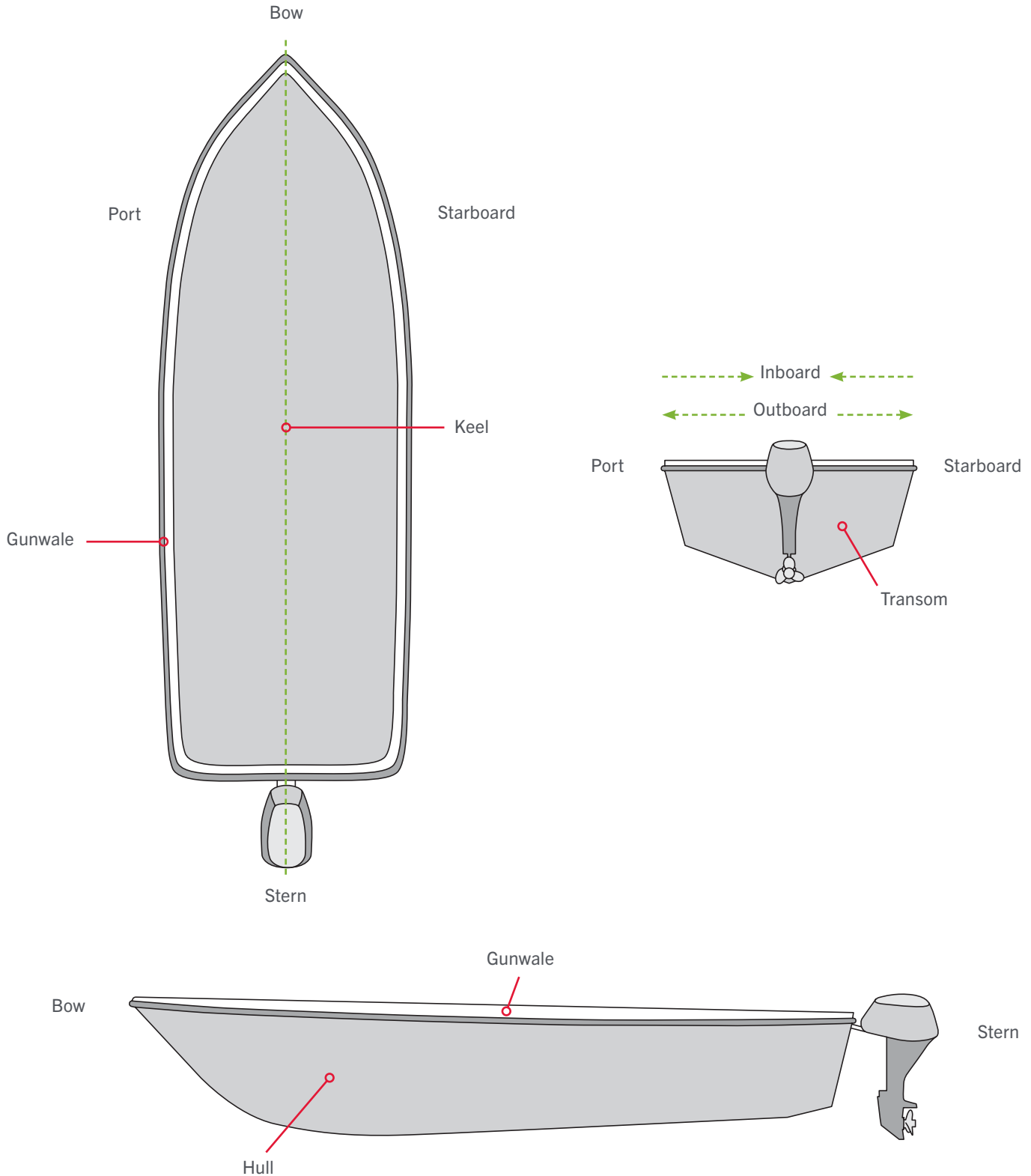


NOTICE: Do not return your Minn Kota product to your retailer. Your retailer is not authorized to repair or replace products.

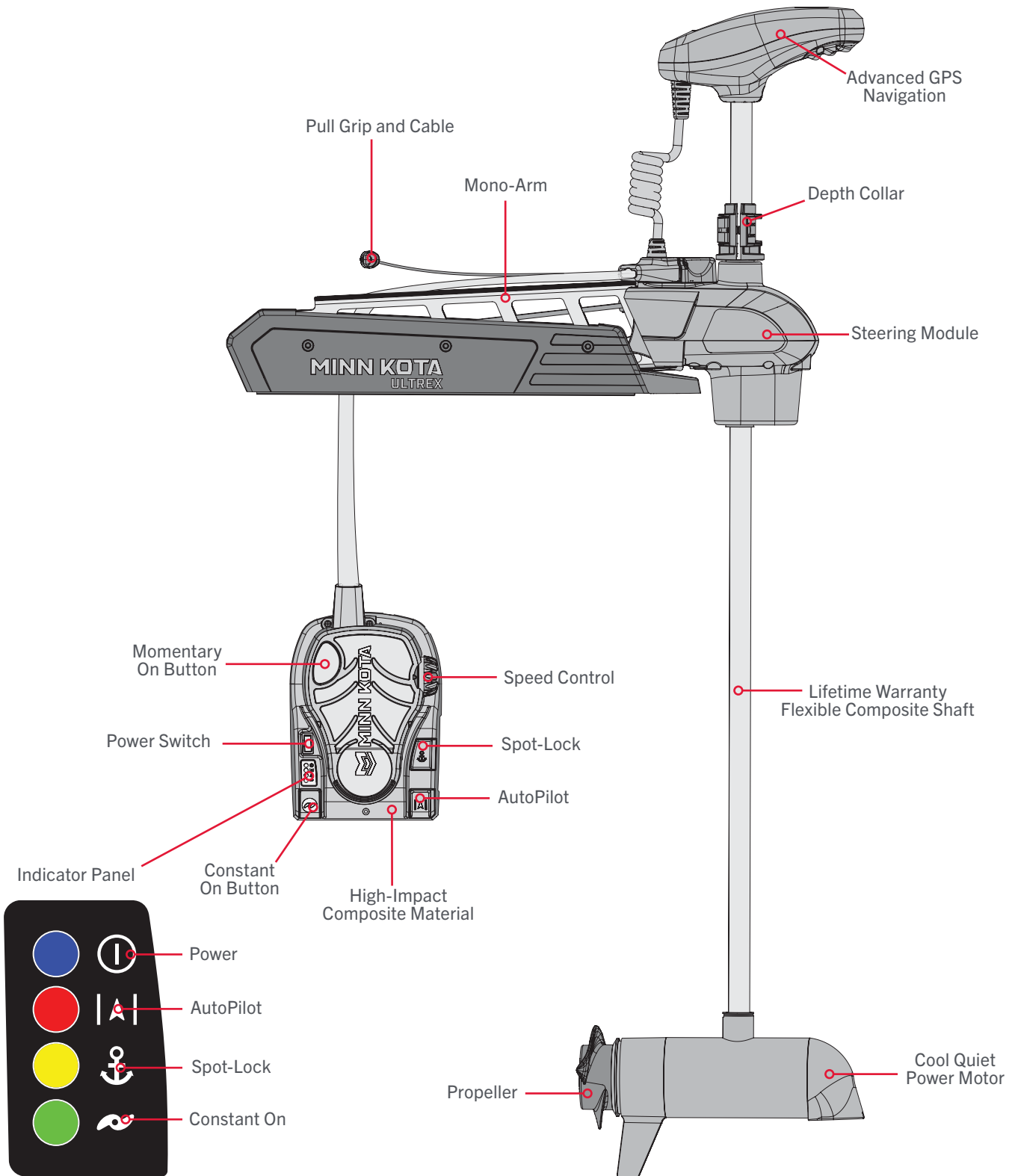
NOTICE: THERE ARE NO EXPRESS WARRANTIES OTHER THAN THESE LIMITED WARRANTIES. IN NO EVENT SHALL ANY IMPLIED WARRANTIES INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, EXTEND BEYOND THE DURATION OF THE RELEVANT EXPRESS LIMITED WARRANTY. IN NO EVENT SHALL JOME BE LIABLE FOR PUNITIVE, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES. Without limiting the foregoing, JOME assumes no responsibility for loss of use of product, loss of time, inconvenience or other damage.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and/or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other legal rights which vary from state to state.

KNOW YOUR BOAT



FEATURES



NOTICE: Specifications subject to change without notice. This diagram is for reference only and may differ from your actual motor.

INSTALLATION

INSTALLING THE ULTREX

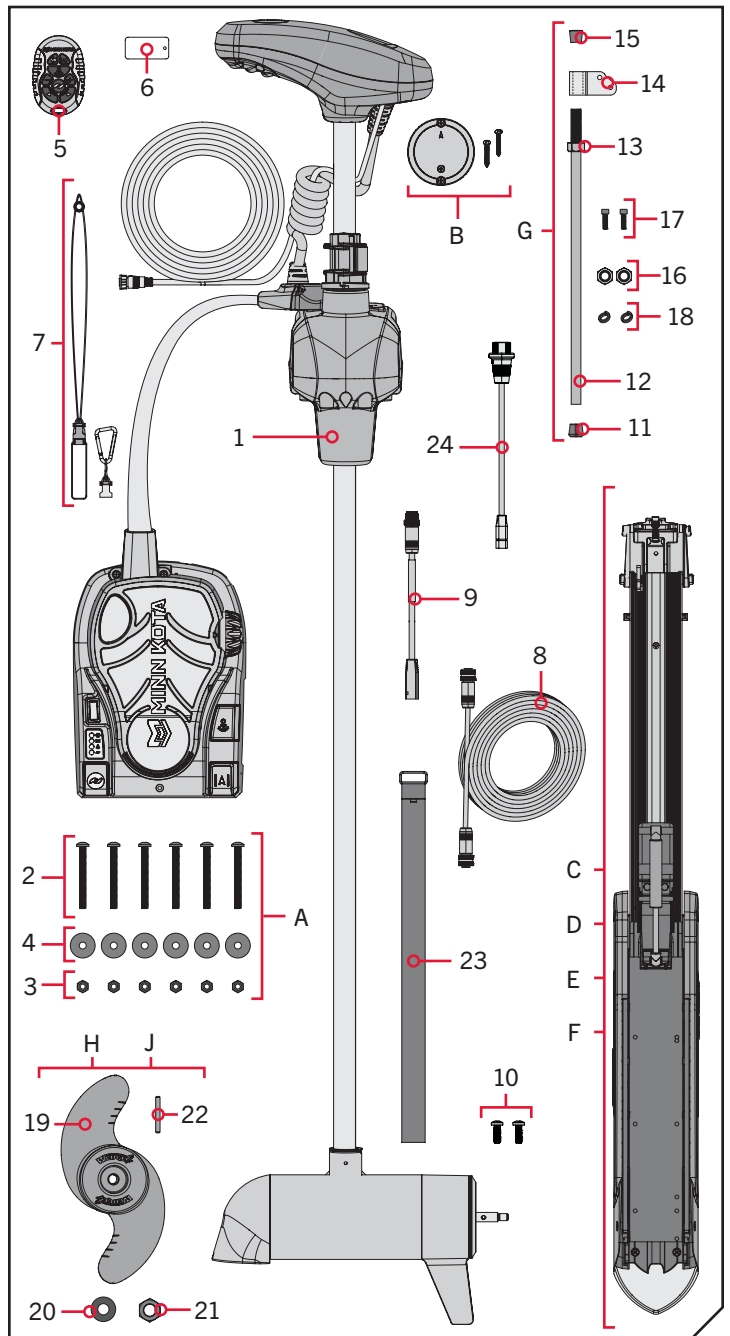
Your new Ultrex comes with everything you'll need to directly install it to the boat. This motor can be directly mounted to the boat or coupled with a Minn Kota quick release bracket for ease of mounting and removal. For installation with a quick release bracket, refer to the installation instructions provided with the bracket. For compatible quick release mounting bracket, please visit minnkota.johnsonoutdoors.com. 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.

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 STABILZR 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 WDLS 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-WDLS 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.



View accessories available for your trolling motor at minnkota.johnsonoutdoors.com.

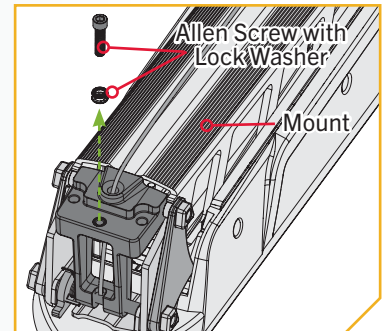
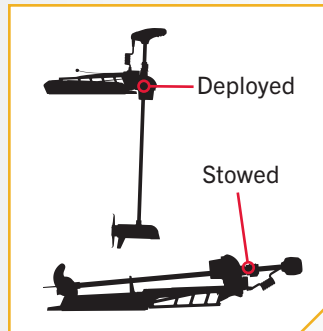
TOOLS AND RESOURCES REQUIRED

- #2 Phillips Screwdriver
- #3 Phillips Screwdriver
- 1/4" Allen Wrench
- 5/64" Allen Wrench
- Drill
- 9/32" Drill Bit
- 7/16" Box End Wrench
- Torque Wrench
- File or Sandpaper
- Hack Saw
- Marker or Pencil
- 1/8" Flat Screwdriver
- A second person to help with installation

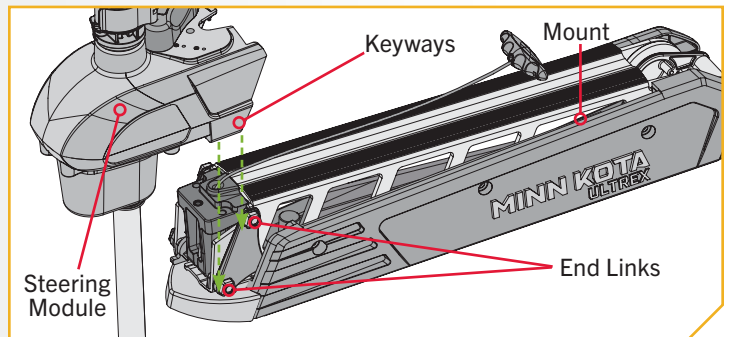
INSTALLATION

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.



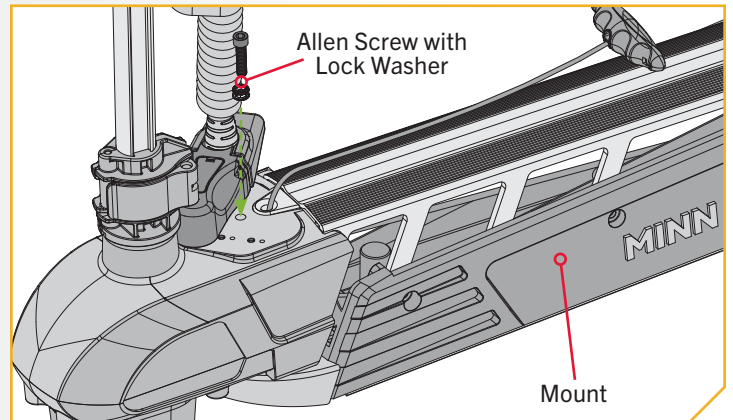
WARNING

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

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

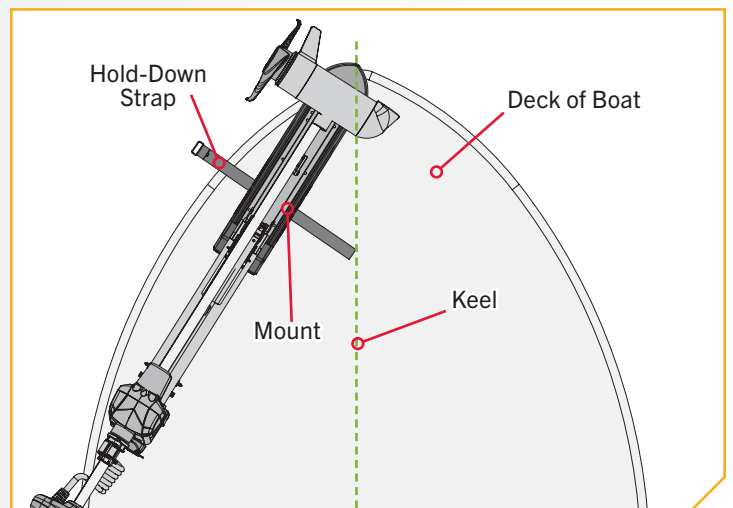
 #23 x 1

- 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.



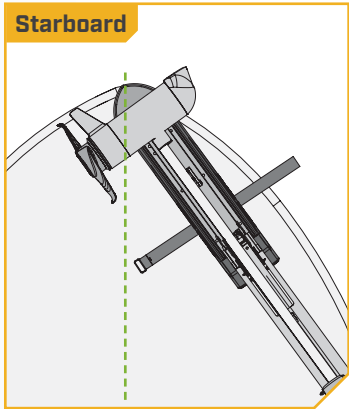
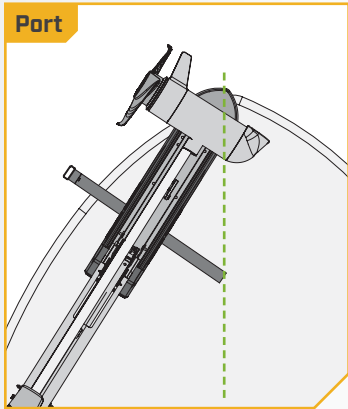
NOTICE: This motor weighs approximately 55 lbs. We recommend having a second person help with the installation.

INSTALLING THE MOUNT

2

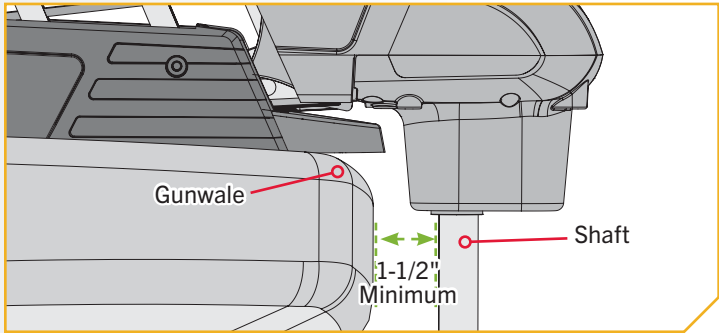
- c. The Mount can be installed on either the Port or Starboard side of the boat based on personal preference. Test the placement of the Hold-Down Strap to be sure it can hold the Mount as placed. The placement of the buckle on the Hold-Down Strap either inboard or outboard is based on personal preference. 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.

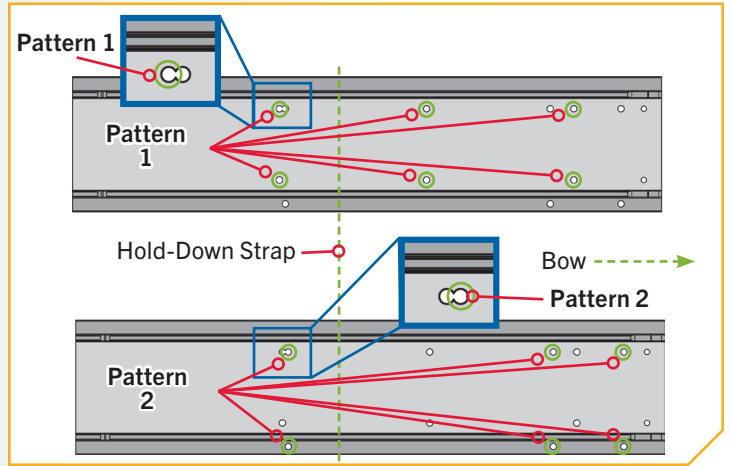


INSTALLING THE MOUNT

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.



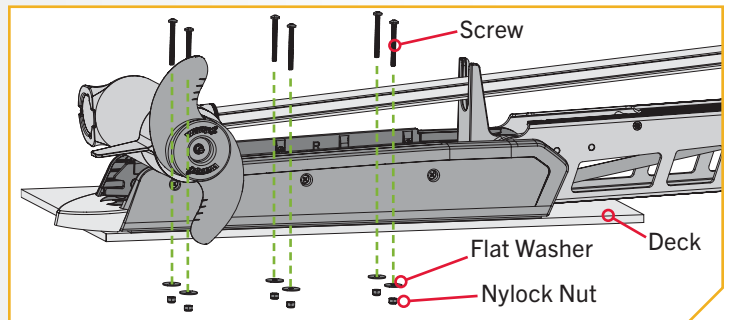
5

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.



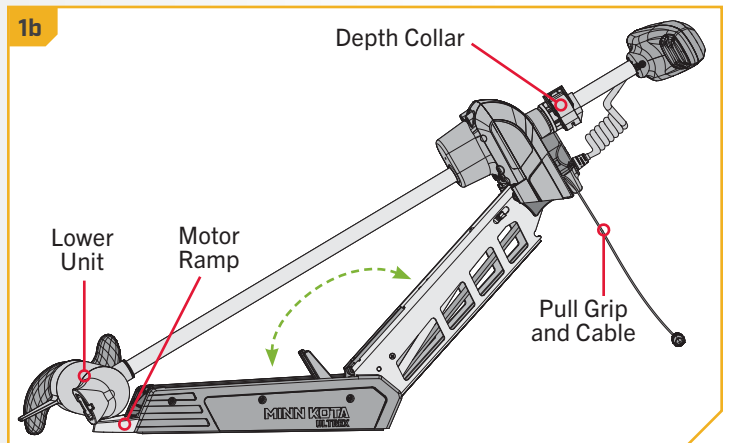
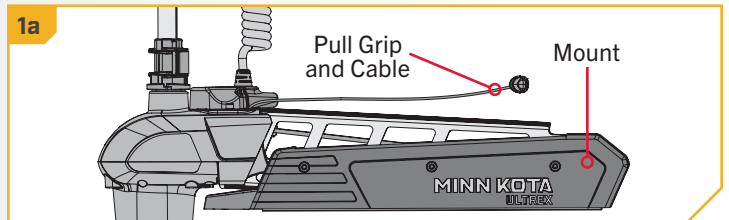
INSTALLING THE GAS SPRING

› 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 to view gas spring and motor compatibility.

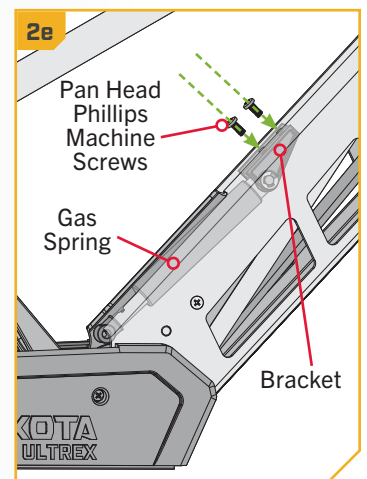
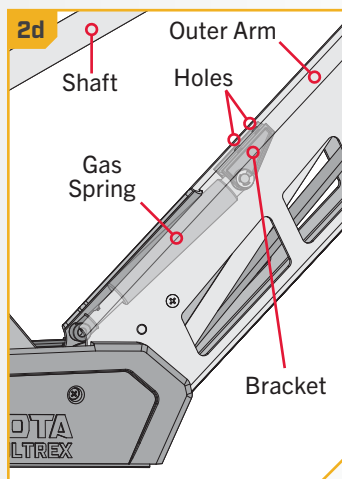


2

ITEM(S) NEEDED



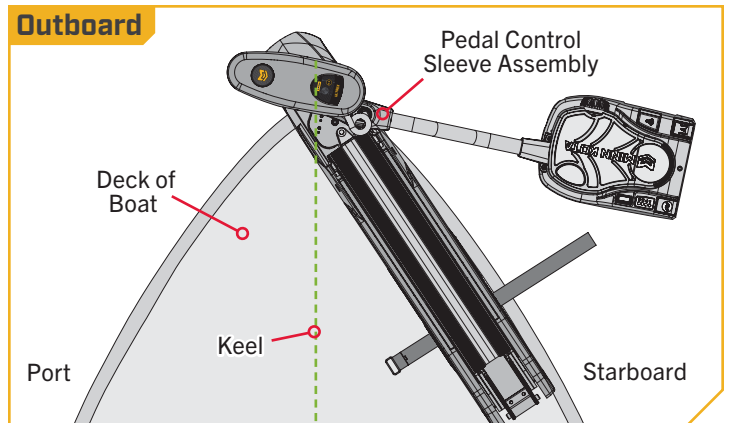
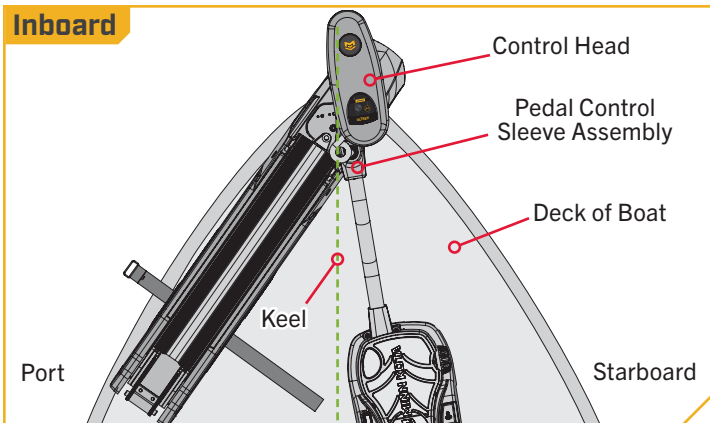
- The Gas Spring is located inside the Outer Arm. Once the motor is correctly positioned, the Gas Spring can be secured in place.
- There is a loose Bracket on the end of the Gas Spring with holes and recessed Nylock Nuts. Align the Bracket with the holes in the Outer Arm, which should be below the Shaft. 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.



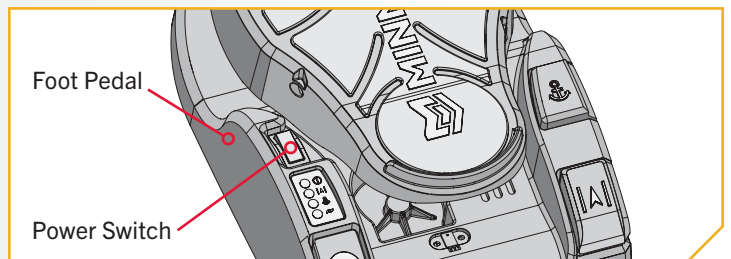
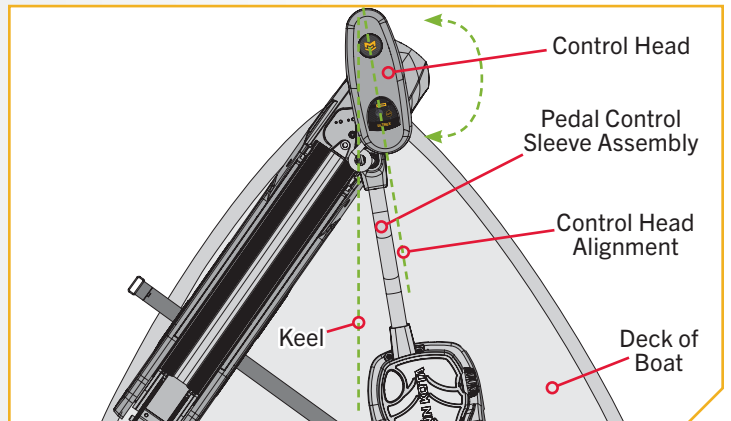
› Indexing the Motor

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.



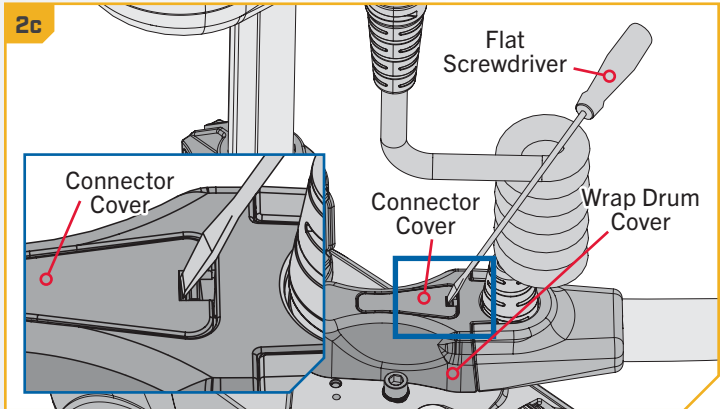
WARNING

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

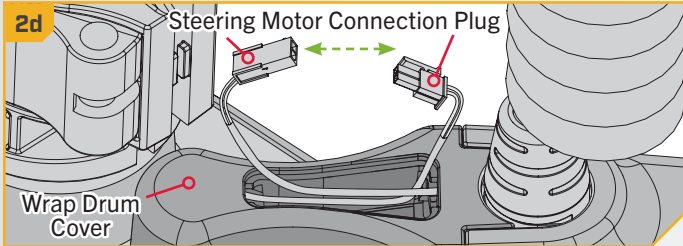
INDEXING THE MOTOR

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.



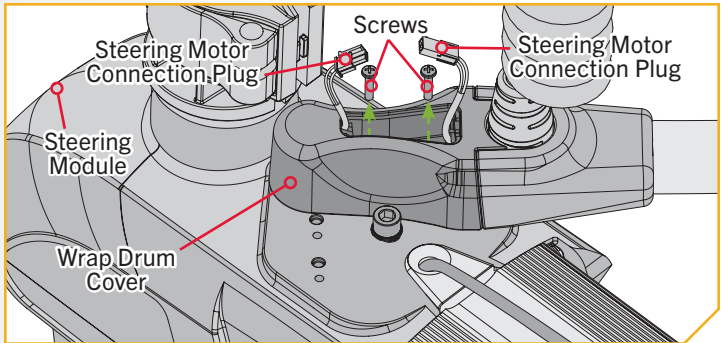
NOTICE: Please note the orientation and routing of the plug and wires for re-installation.



3

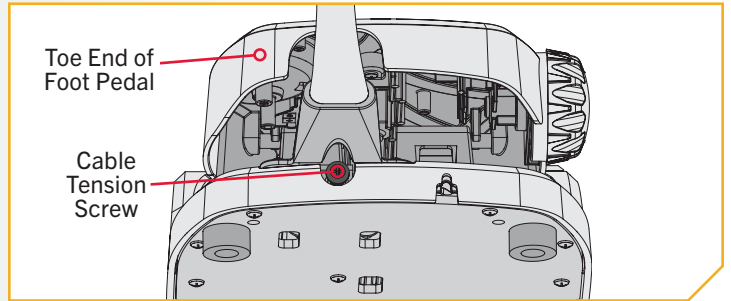
- e. Remove the two screws that hold the Wrap Drum Cover in place with a #2 Phillips Screwdriver. Once removed, lift the Wrap Drum Cover away from the Steering Module.

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

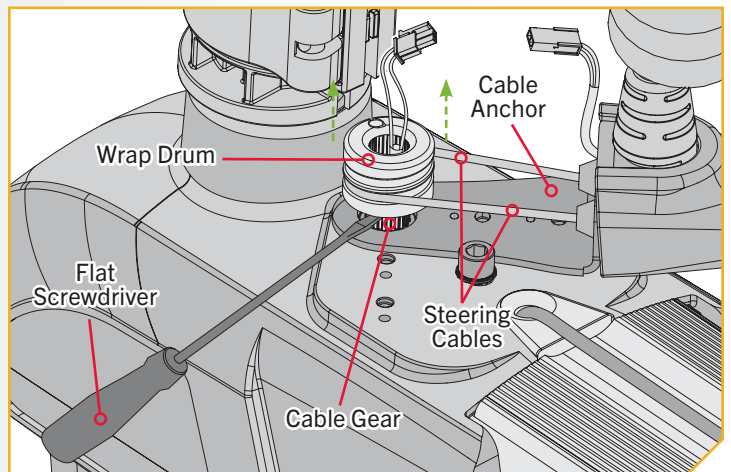
The Cable Tension Screw maintains proper mechanical tension on the Steering Cables within the assembly. Tightening this screw does not affect the resistance of the Foot Pedal when in use. Foot Pedal resistance is set from the factory. Over-loosening the Cable Tension Screw may cause the cables to disengage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

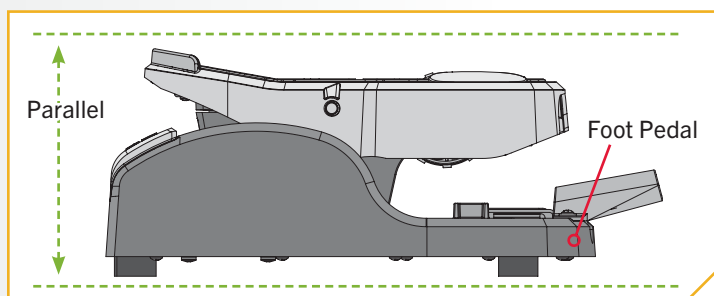
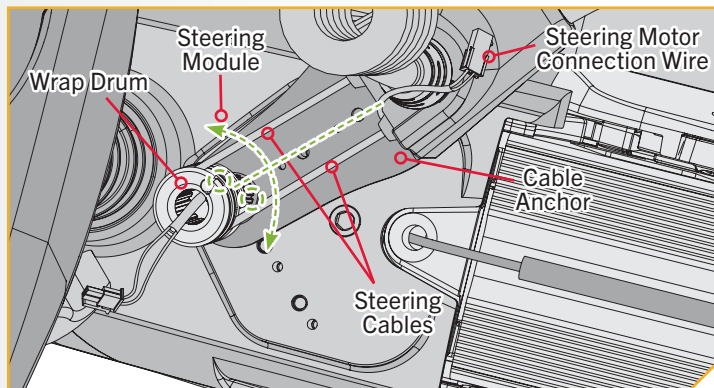
- h. While holding the Wrap Drum just above the Cable Gear, and maintaining tension on the Steering Cables, carefully rotate the Wrap Drum right or left until the top of the Foot Pedal is parallel with the deck of the boat. The proper position of the Wrap Drum will locate the anchors for each of the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

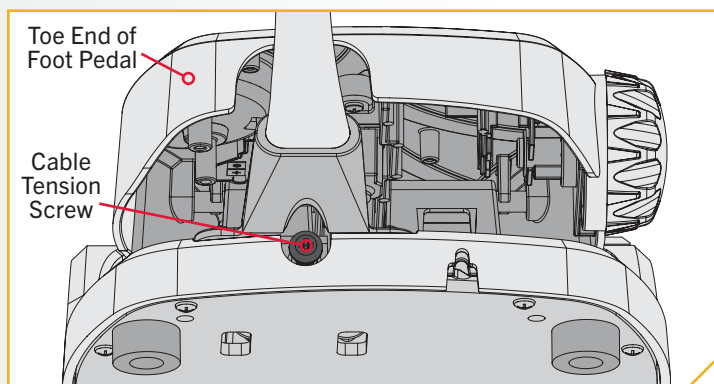
If the Wrap Drum becomes unintentionally disengaged from the Cable Gear, the Steering Cables can become unwound and will need to be reassembled correctly for proper operation.

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.

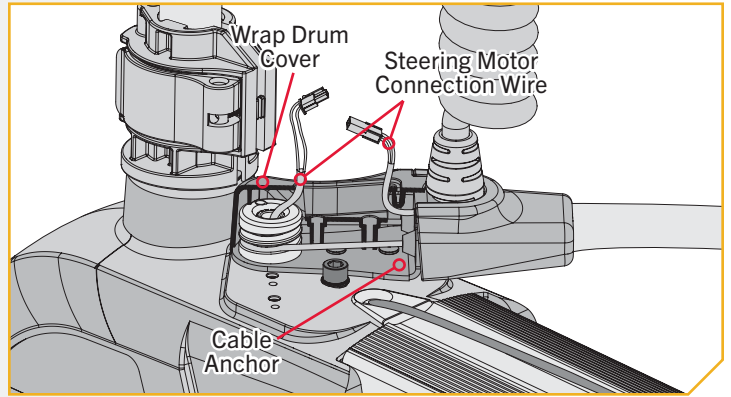


8

- 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.

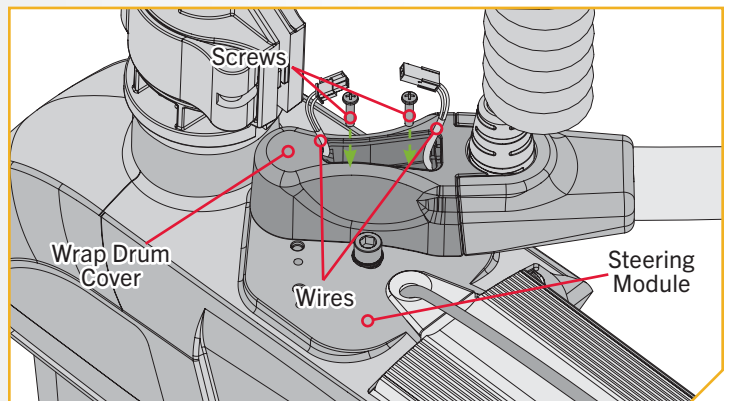
CAUTION

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.



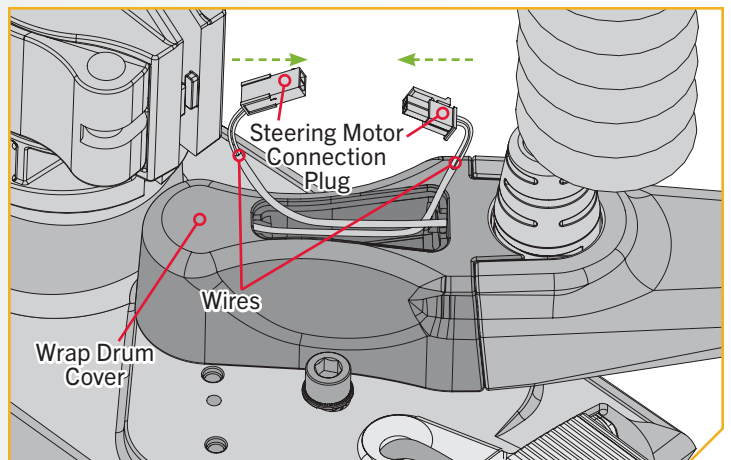
10

- 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

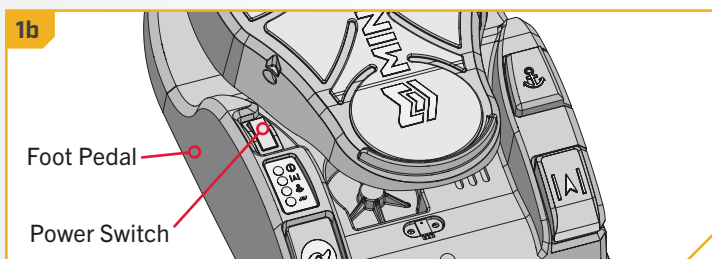
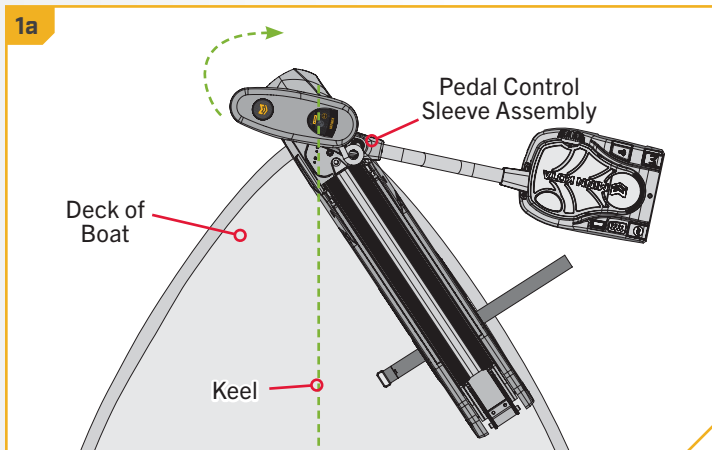
› Rotate the Pedal Control Sleeve Assembly for a Starboard Mount

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.



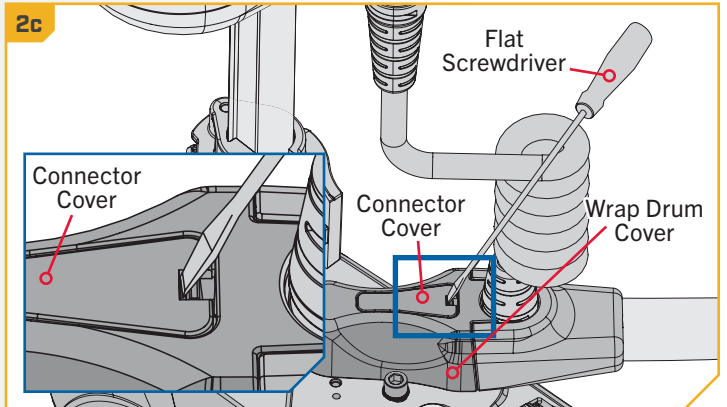
WARNING

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

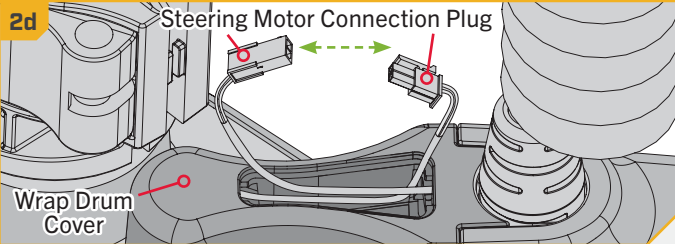
ROTATE THE PEDAL CONTROL SLEEVE ASSEMBLY FOR A STARBOARD MOUNT

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.

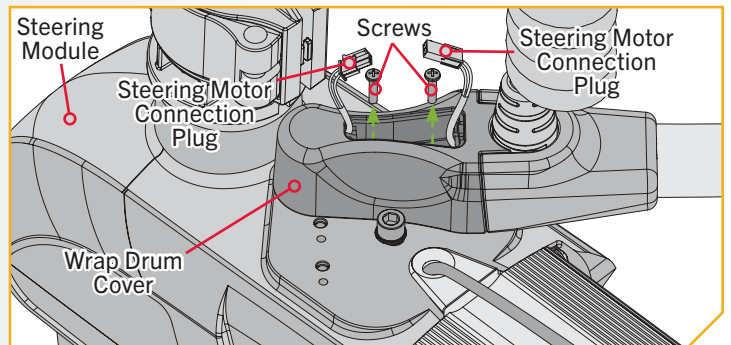


3

- 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.

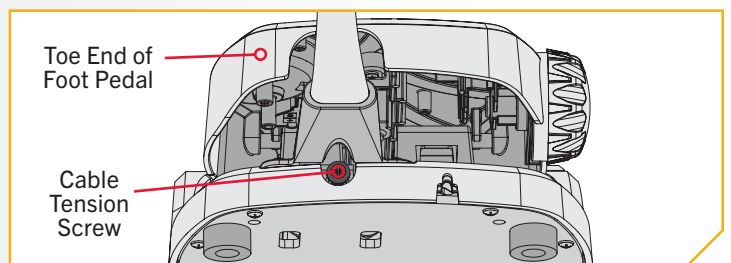
CAUTION

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.



CAUTION

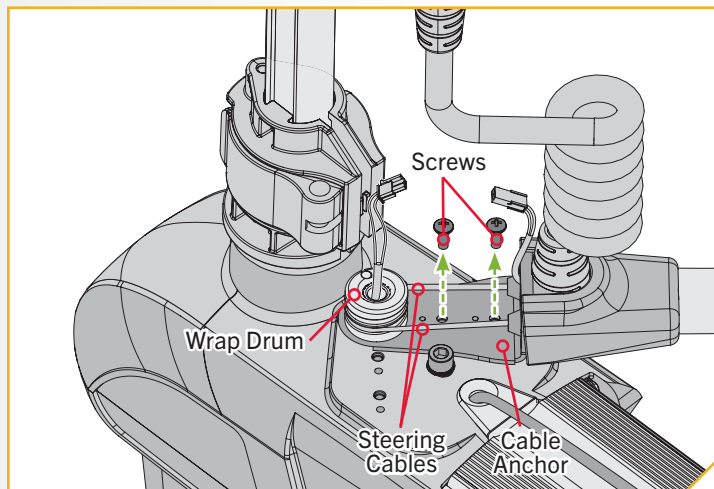
The Cable Tension Screw maintains proper mechanical tension on the Steering Cables within the assembly. Tightening this screw does not affect the resistance of the Foot Pedal when in use. Foot Pedal resistance is set from the factory. Over-loosening the Cable Tension Screw may cause the cables to disengage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

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.

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

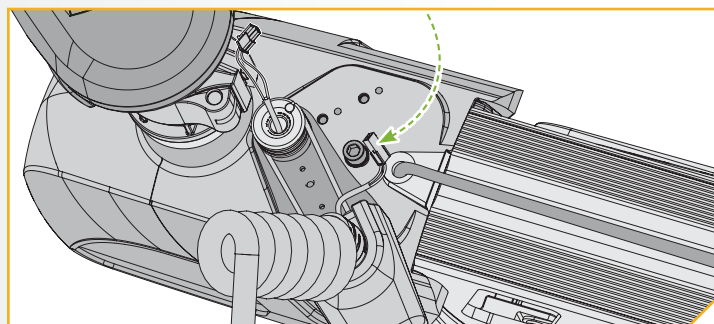
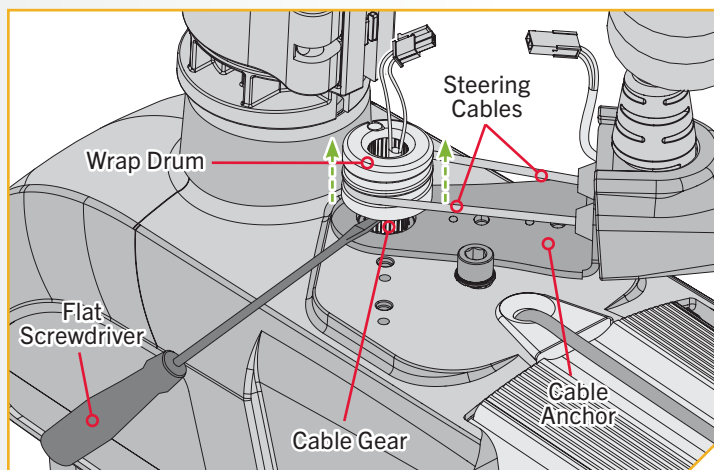
- i. Once the Cable Tension Screw is loosened, and the screws are removed, carefully pry the Wrap Drum partially off by prying straight up, using a Flat Screwdriver. The Wrap Drum should only be lifted far enough up on the Cable Gear to rotate the Pedal Control Sleeve Assembly to the inboard or desired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



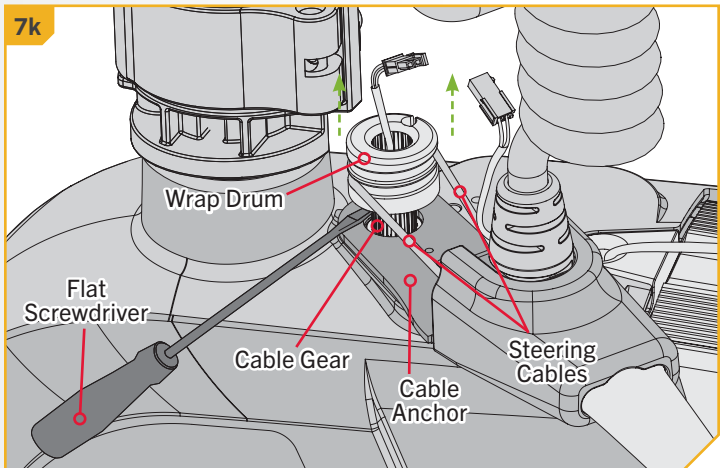
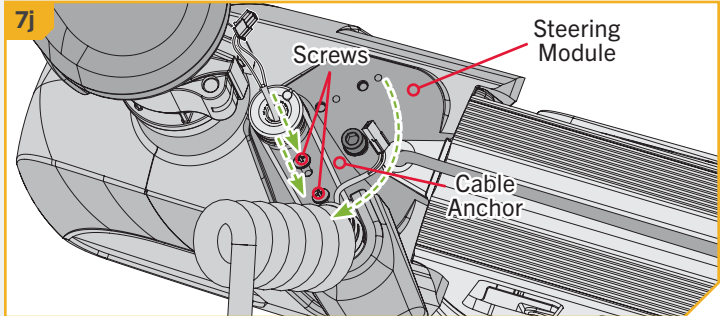
ROTATE THE PEDAL CONTROL SLEEVE ASSEMBLY FOR A STARBOARD MOUNT

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.



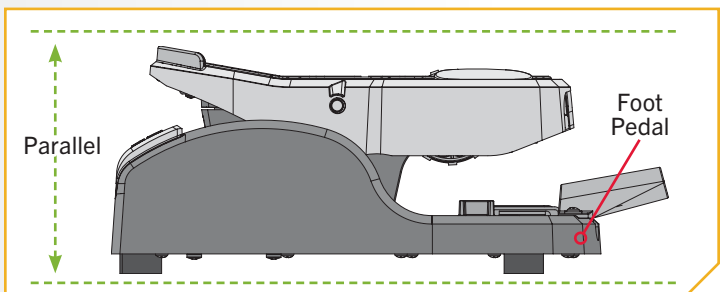
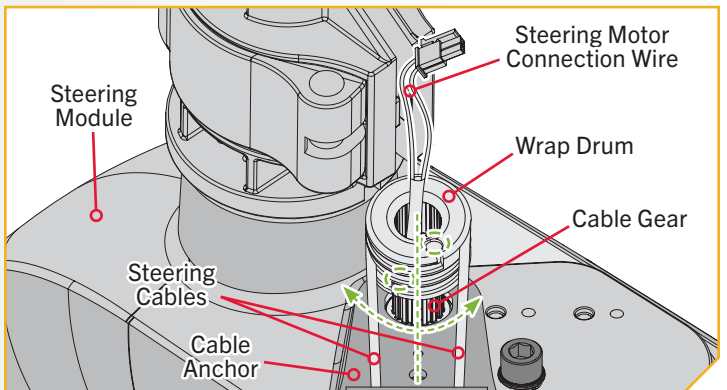
8

- 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.

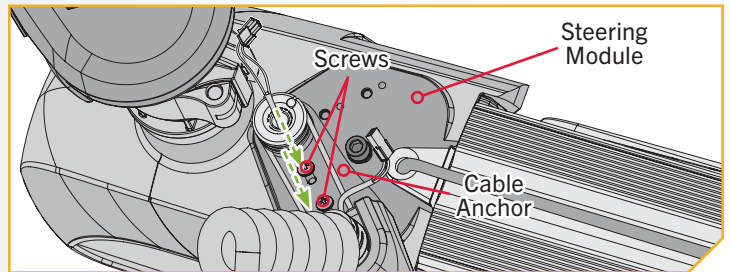
- m. Once the Foot Pedal is at the desired position, align the Wrap Drum with the nearest tooth on the splined shaft of the Cable Gear. Press the Wrap Drum securely down so that it is seated on top of the Cable Gear.



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

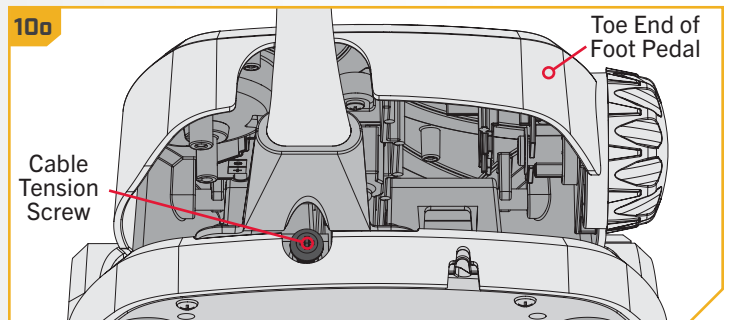
Do not over-tighten the Cable Tension Screw, as excessive tension will cause damage to the unit.

- 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

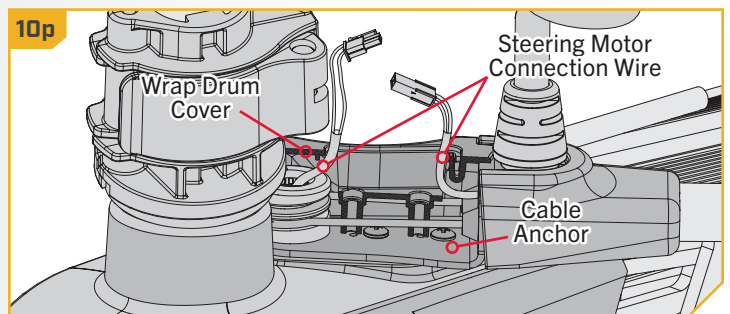
Take care not to pinch the Steering Motor Connection Wire while the Wrap Drum is set into place.

10o



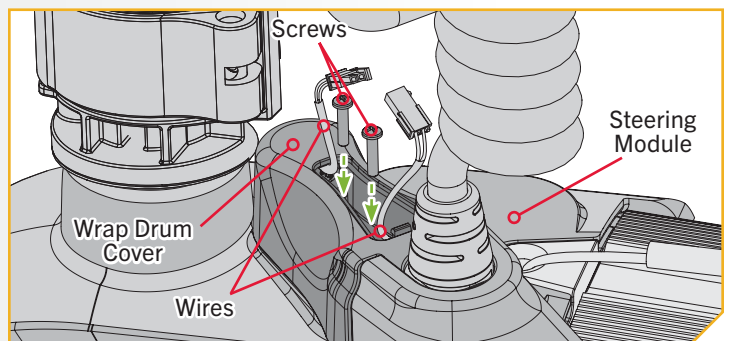
NOTICE: The Cable Tension Screw does not adjust pedal tension. Excessive tension on the Cable Tension Screw will not increase the operating tension of the Foot Pedal.

10p



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

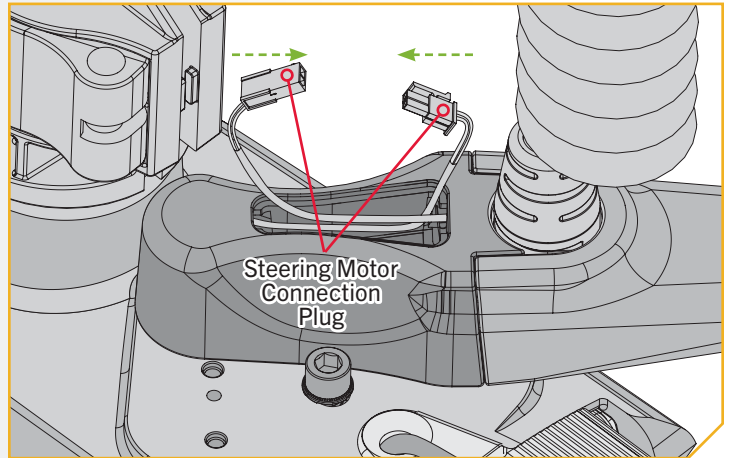
12

- 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

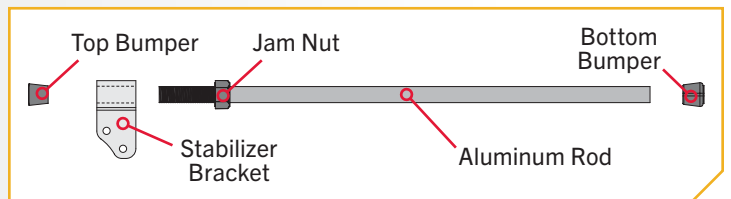
Adjusting the Aluminum Rod too tightly removes the end play needed for proper latch pin engagement, and doing so could prevent the mount from fully latching in the stowed position. Improper latching may cause damage. If installed correctly, the tip of the Aluminum Rod should lift off of the boat deck 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.

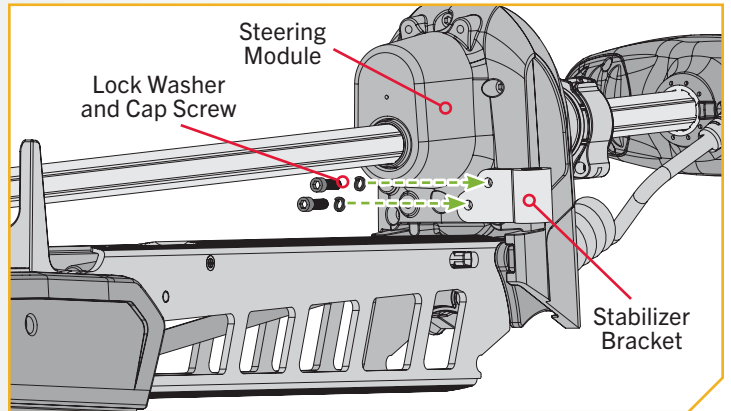
PLACING THE BOW-MOUNT STABILIZER

2

ITEM(S) NEEDED

▮ #17 x 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.



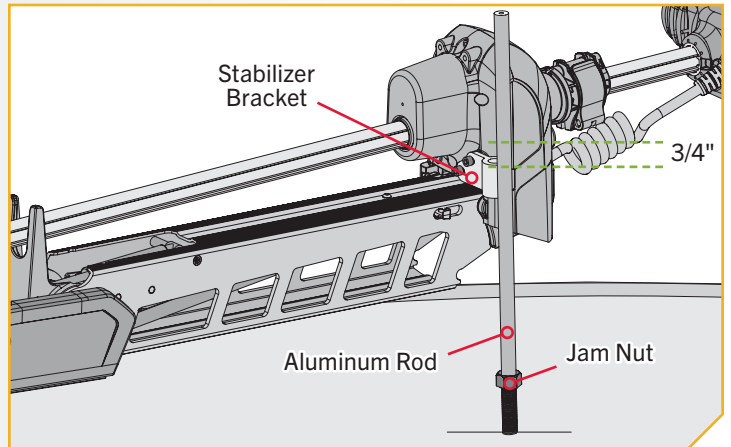
3

- 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.



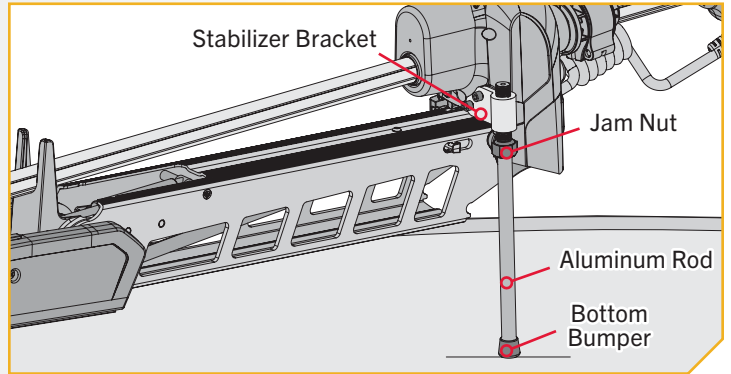
MOUNTING THE FOOT PEDAL

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.

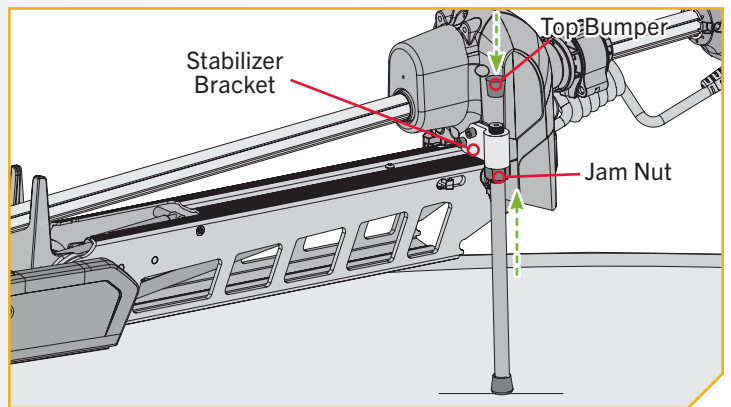
CAUTION

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.



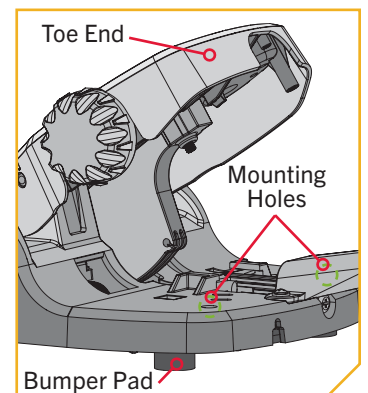
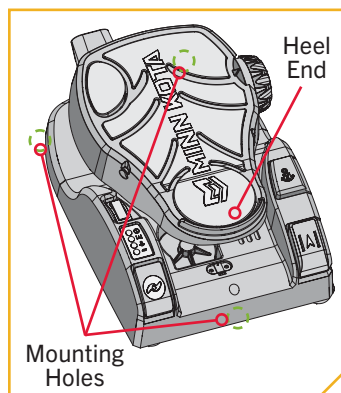
5

- 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.



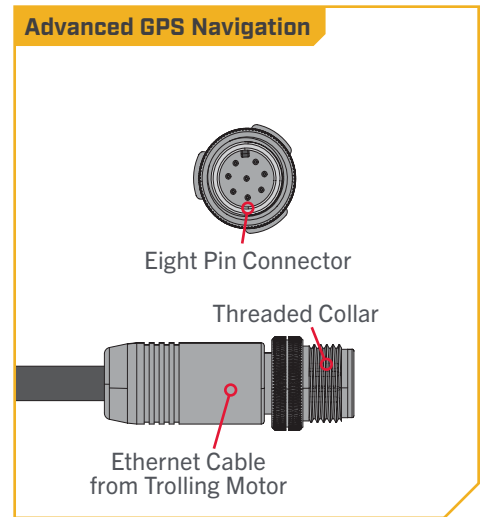
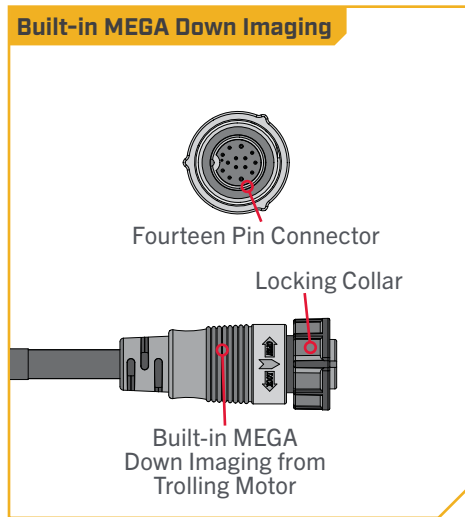
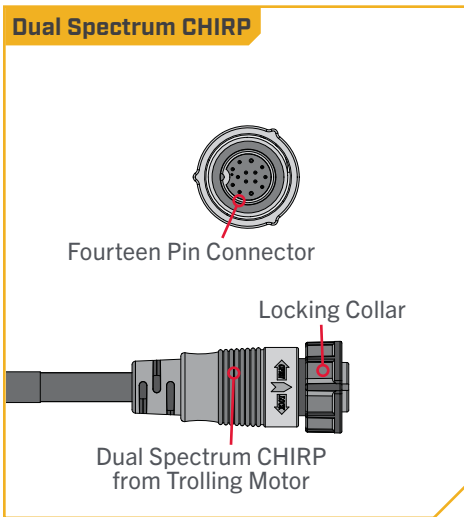
IDENTIFYING TROLLING MOTOR FEATURES AND THEIR ASSOCIATED CABLES



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.

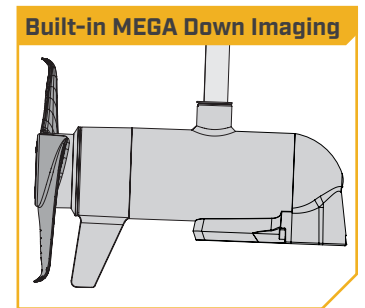
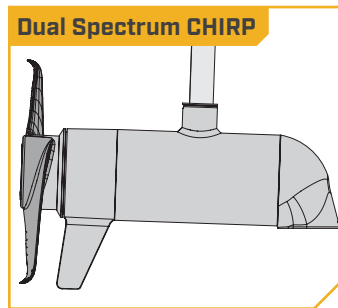
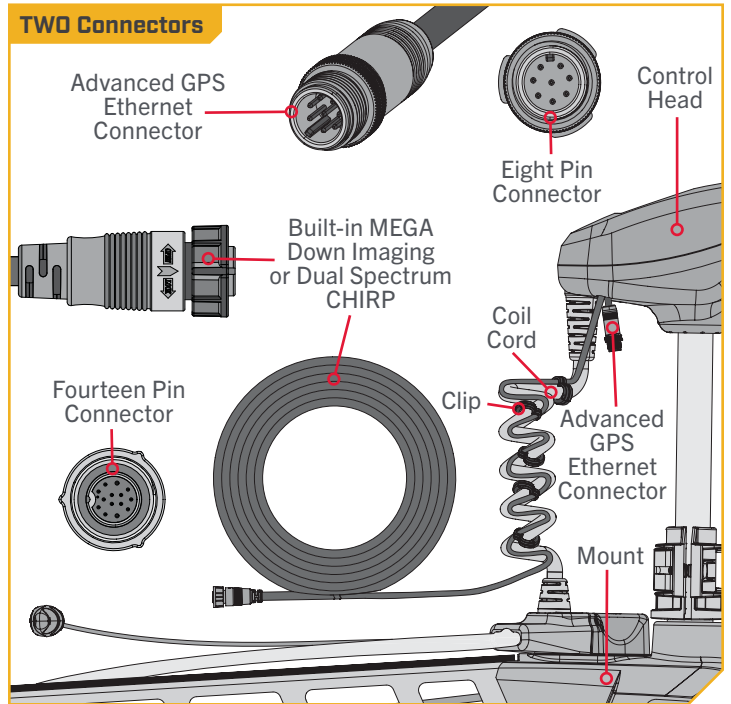


Identifying Connectors

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.

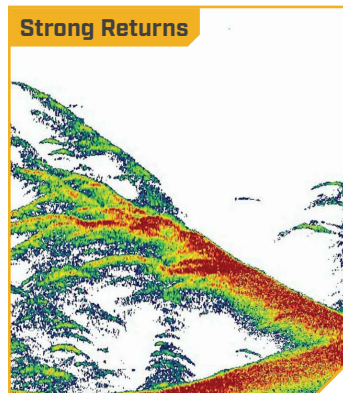
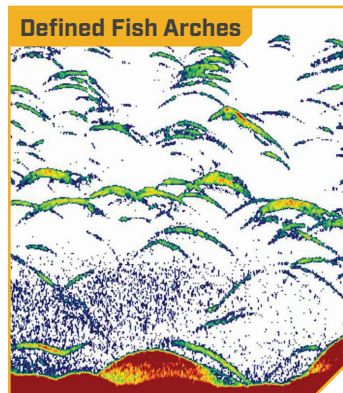
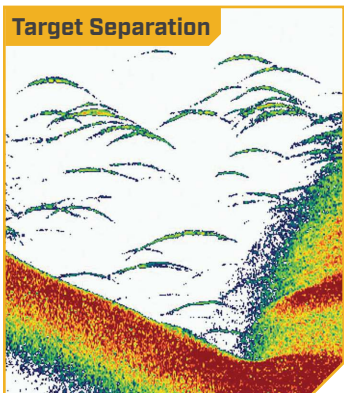
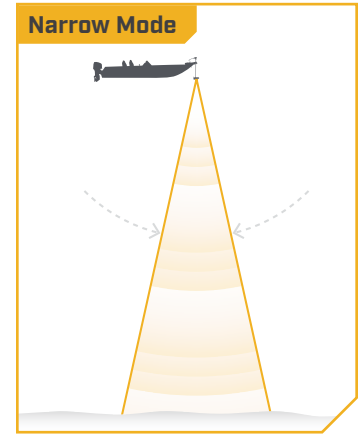
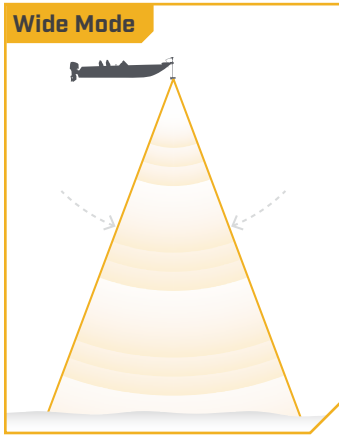
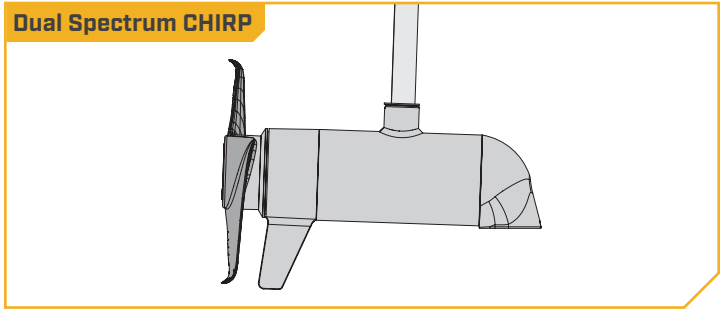
Humminbird's Dual Spectrum CHIRP gives you full spectrum capability, plus the power to select your own start and end frequencies by operating in two different modes. Wide Mode for maximum coverage and Narrow Mode for maximum detail. Wide mode allows you to search deep and wide. Is it used for watching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



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.

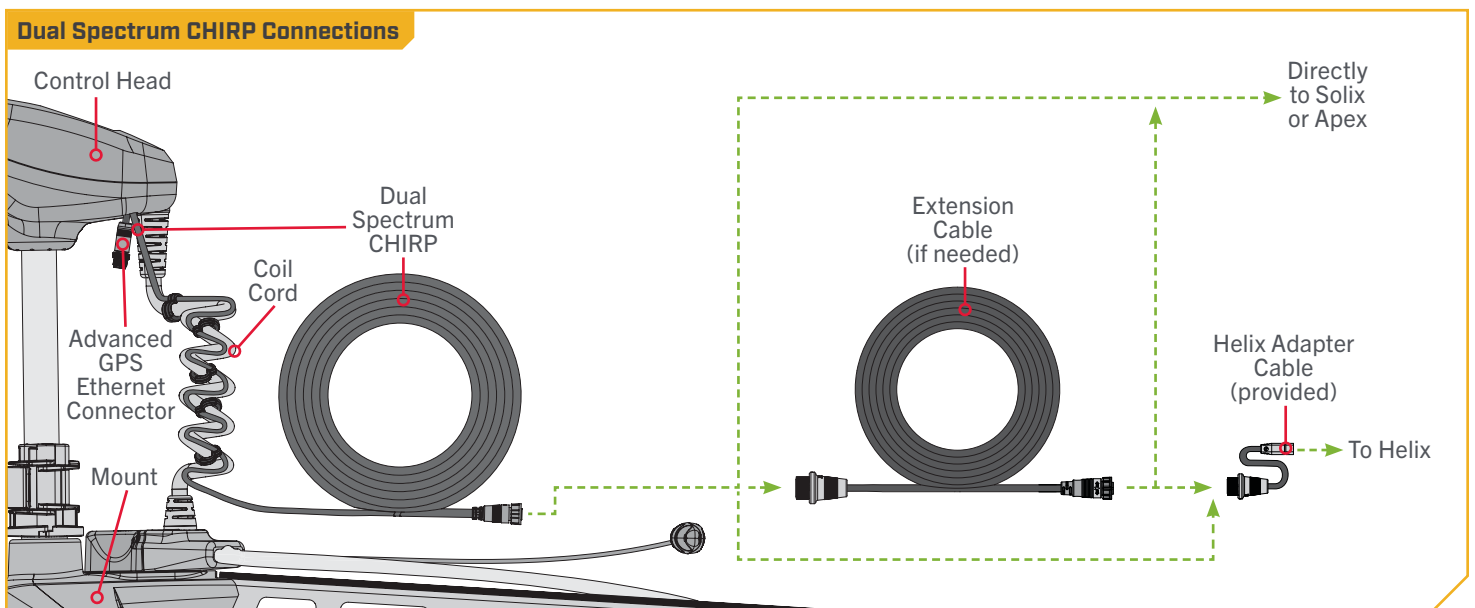
› Considerations for Connecting and Routing Dual Spectrum CHIRP

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 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. 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.



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" and "Motor Wiring Diagram" sections of this manual for correct rigging instructions.

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

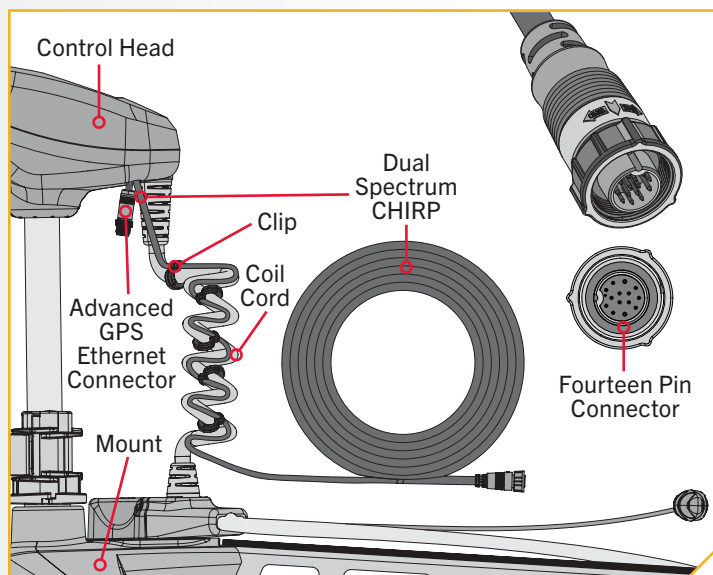
CAUTION

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

1

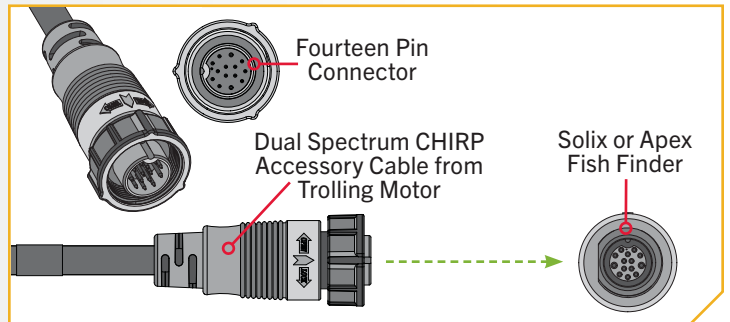
NOTICE: Your fish finder should be turned off until this procedure is complete.

- 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.



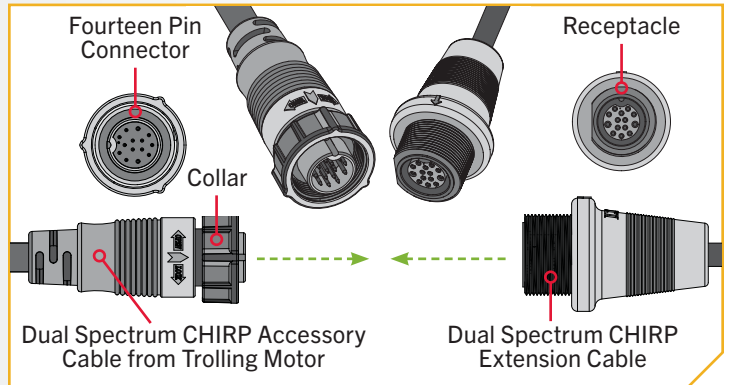
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- d. If installing directly to a Solix or Apex, the connection will be flat on the back of the fish finder display.
- e. Align the pins on the Accessory Cable with the receptacle on the fish finder. Notice the keyed connectors. Tighten the Collar from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

DUAL SPECTRUM CHIRP

4

ITEM(S) NEEDED

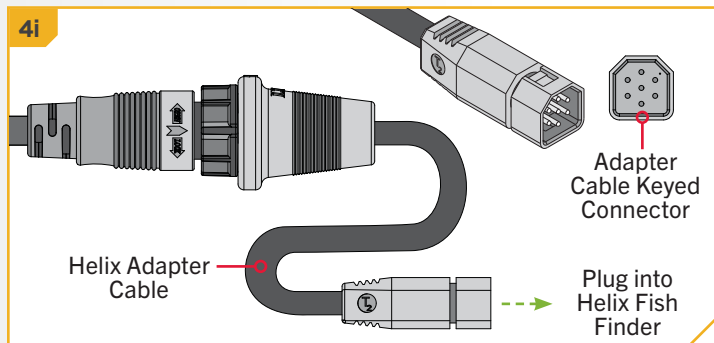
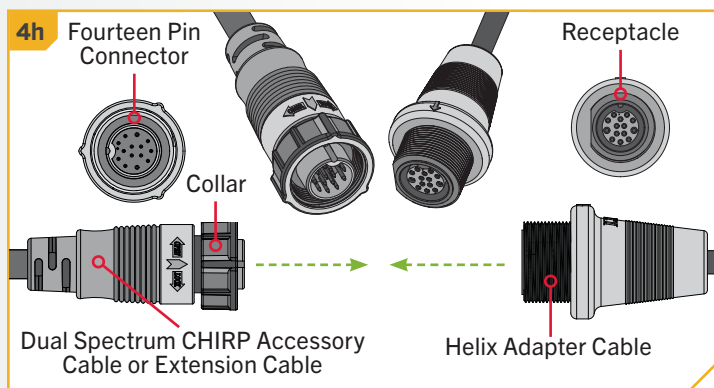


- h. If installing directly to a Helix Adapter Cable, align the pins on the accessory cable or extension cable with the receptacle on the Helix Adapter Cable (Item #24). Notice the keyed connectors. Tighten the Collar from the accessory cable or extension cable to secure the connection.
- i. If the Helix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

- 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 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

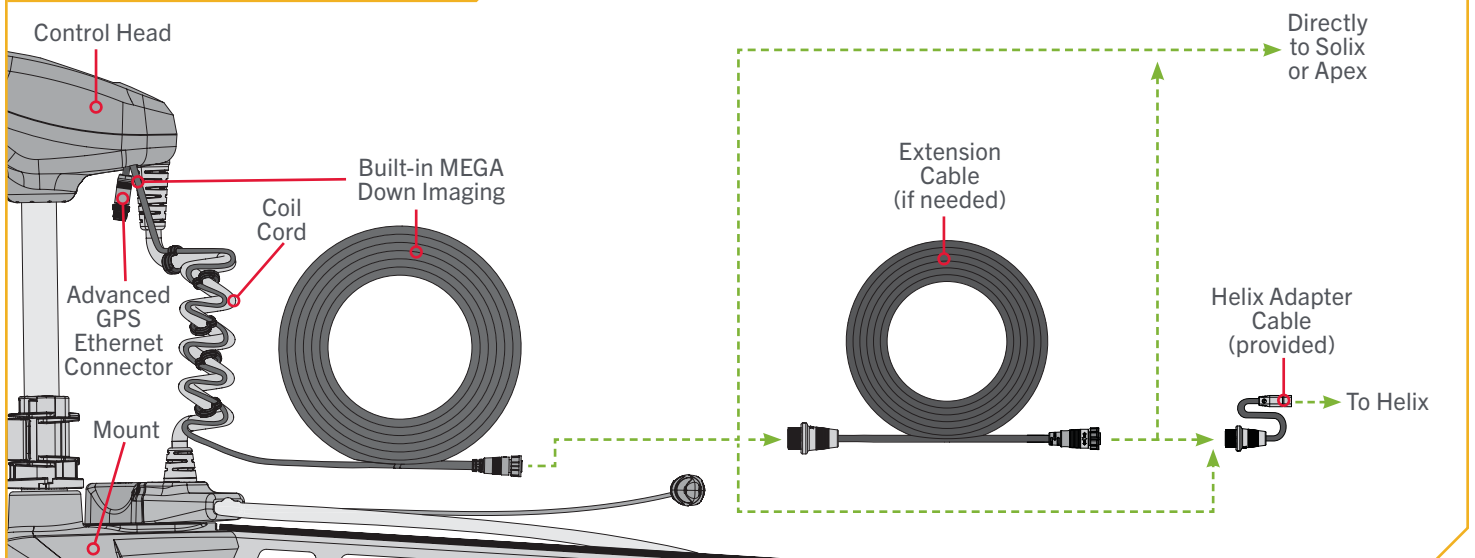
If Built-in MEGA Down Imaging is pre-installed on your trolling motor, one Built-in MEGA Down Imaging accessory cable will exit the base of the Control Head and run parallel to the Coil Cord. The cable will come installed from the factory secured to the Coil Cord. Built-in MEGA Down Imaging requires 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 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. 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.

Built-in MEGA Down Imaging Connections



BUILT-IN MEGA DOWN IMAGING

CAUTION

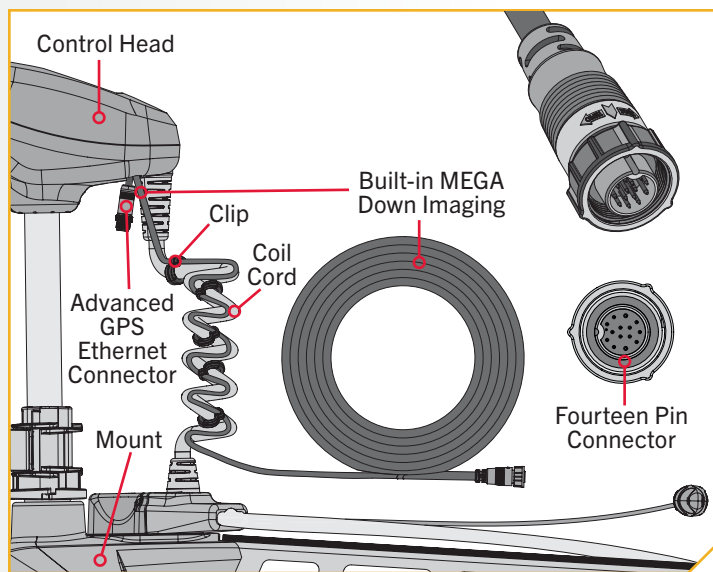
Failure to follow the recommended wire routing for installed features, if equipped, may cause damage to the product and void your product warranty. Route cables away from pinch points or other areas that may cause them to bend in sharp angles. Routing the cables in any way other than directed may cause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

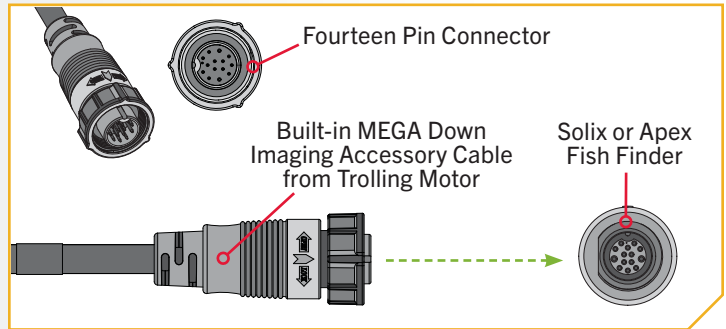


BUILT-IN MEGA DOWN IMAGING



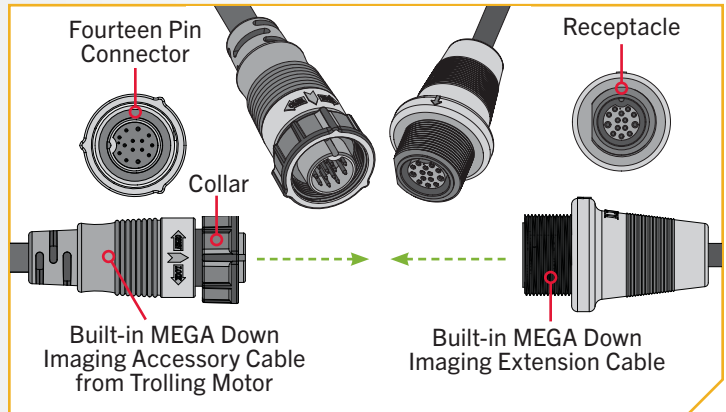
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- d. If installing directly to a Solix or Apex, the connection will be flat on the back of the fish finder display.
- e. Align the pins on the Accessory Cable with the receptacle on the fish finder. Notice the keyed connections. Tighten the Collar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



BUILT-IN MEGA DOWN IMAGING

4

ITEM(S) NEEDED

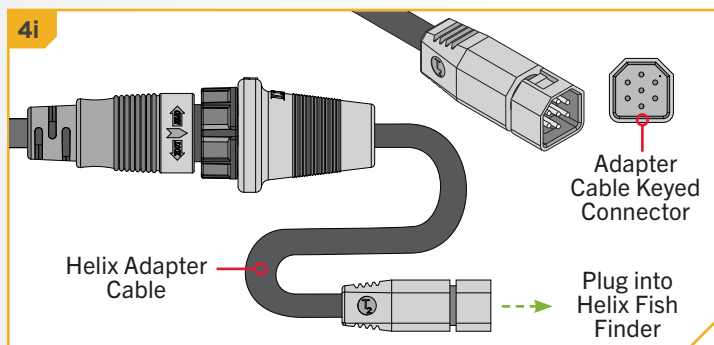
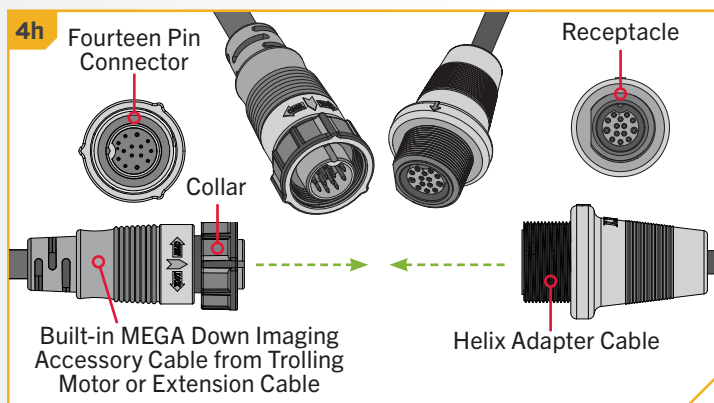


- h. If installing directly to a Helix Adapter Cable, align the pins on the accessory cable or extension cable with the receptacle on the Helix Adapter Cable (Item #24). Notice the keyed connectors. Tighten the Collar from the accessory cable or extension cable to secure the connection.
- i. If the Helix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

- 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.

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. 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.

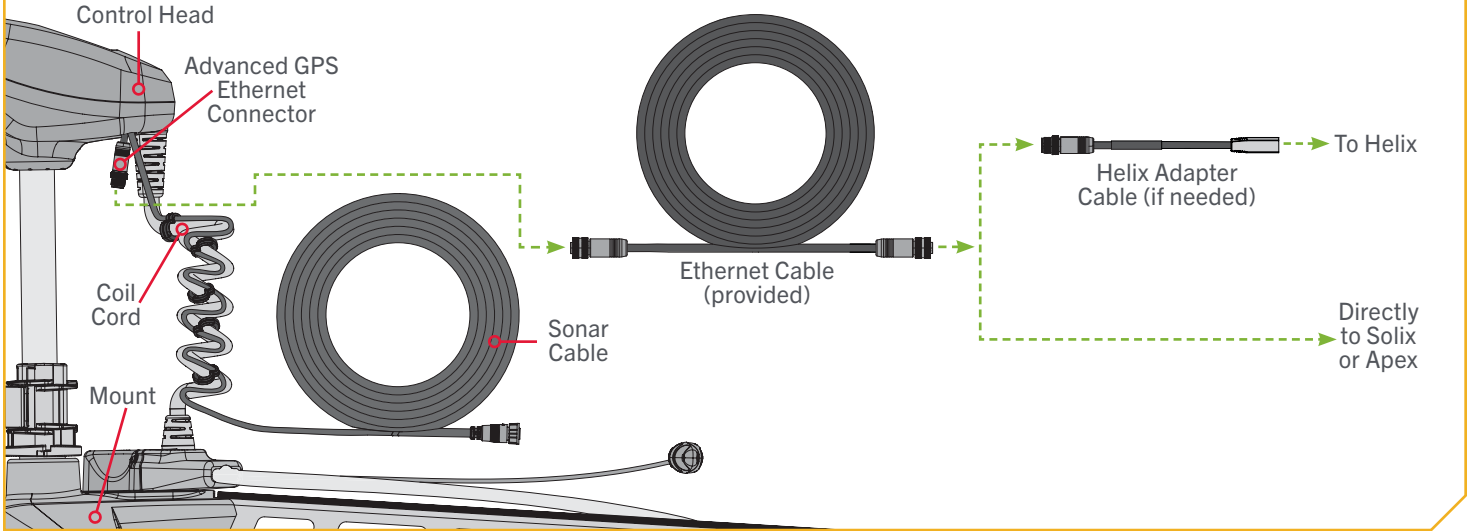
ETHERNET EXTENSION CABLES - If the 30 ft Ethernet cable provided with your trolling motor with Advanced GPS Navigation is not long enough to reach the fish finder, an Ethernet Extension cable should be used. The Ethernet Extension cable is available from humminbird.johnsonoutdoors.com and is available 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

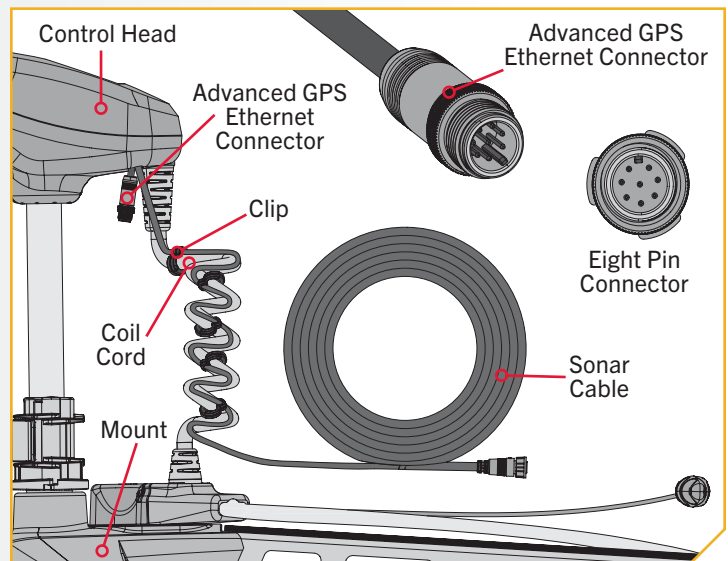
Failure to follow the recommended wire routing for installed features, if equipped, may cause damage to the product and void your product warranty. Route cables away from pinch points or other areas that may cause them to bend in sharp angles. Routing the cables in any way other than directed may cause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

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

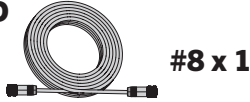
- Place the motor in the deployed position.
- Locate the Eight Pin Advanced GPS Ethernet Connector below the Control Head. The Advanced GPS Ethernet Connector will exit the base of the Control Head and will rest just below the Control Head next to the Coil Cord.

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



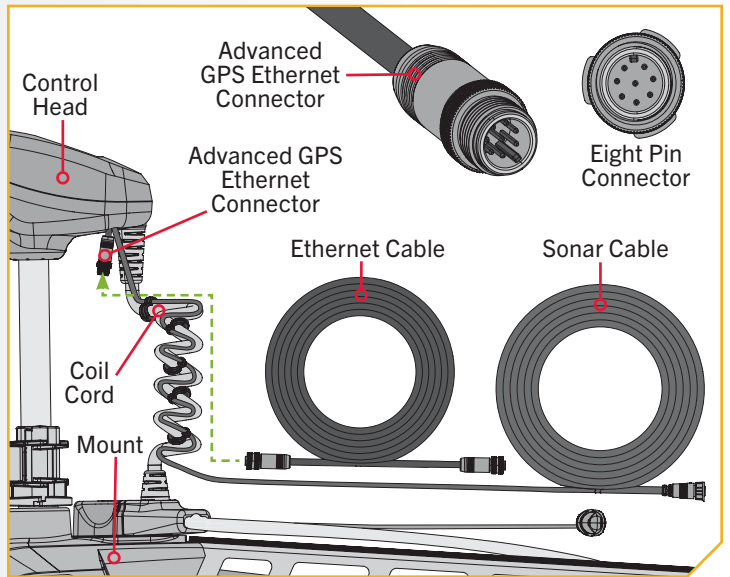
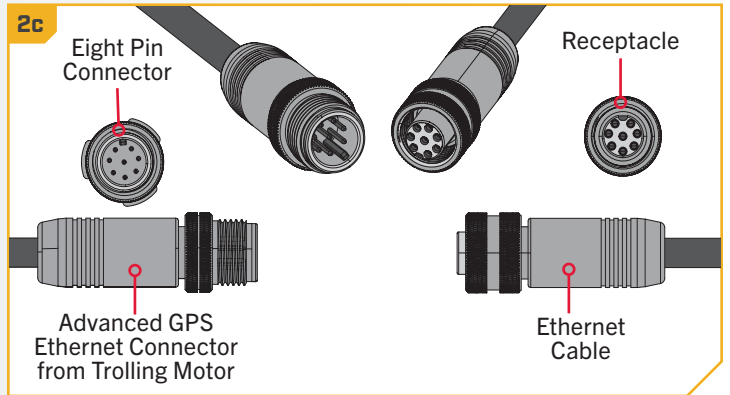
- c. Take the Ethernet Cable (Item #8) and identify the Receptacle on either end. It will be keyed to fit with the Eight Pin Advanced GPS Ethernet Connector below the Control Head.

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.

NOTICE: The 30' Ethernet Extension Cable (AS ECX 30E - 30' Ethernet Extension Cable - 760025-1) is available from 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.

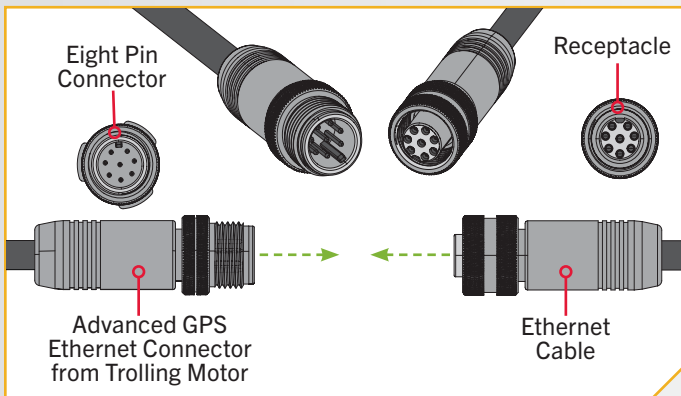
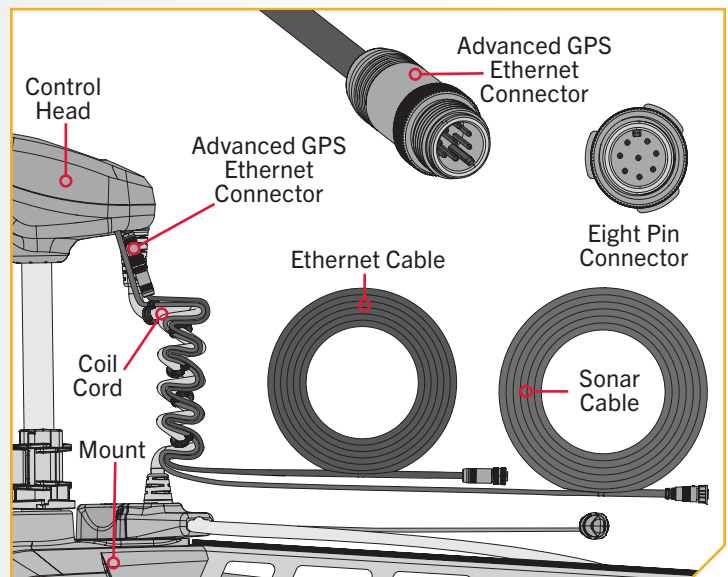
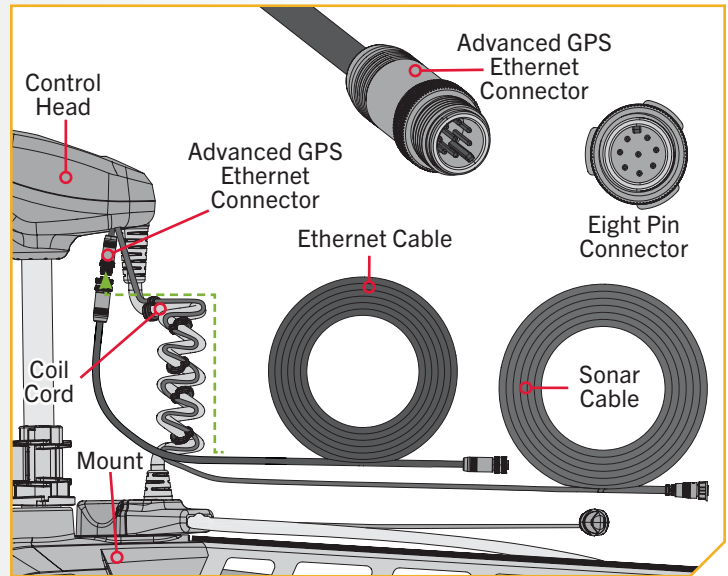


ADVANCED GPS NAVIGATION

3

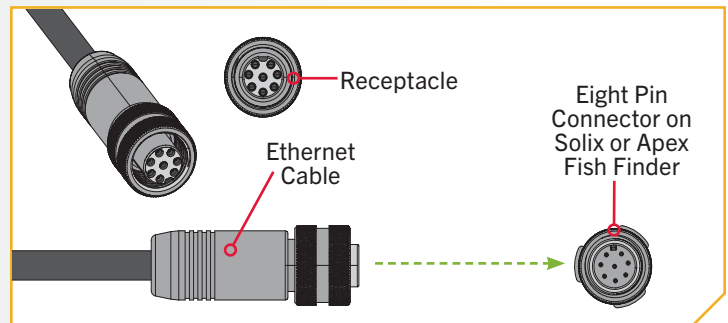
NOTICE: Minn Kota recommends routing the Ethernet Cable parallel to the Coil Cord when making the Ethernet connection. The cable will be installed from the Mount to the Control Head parallel to the Coil Cord with Clips. Bypassing the Coil Cord when routing the Ethernet Cable is not recommended. After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

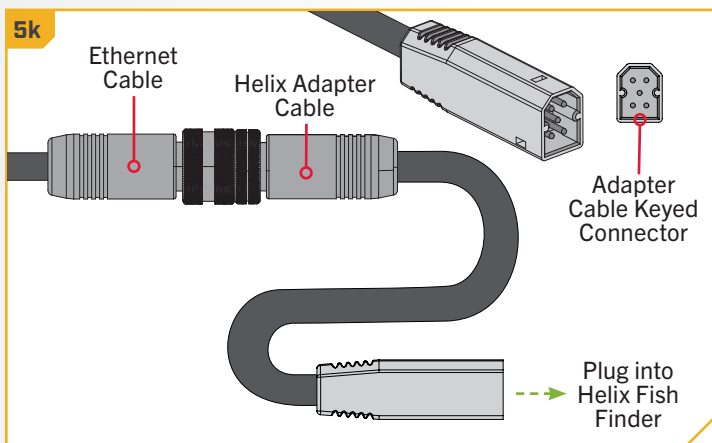
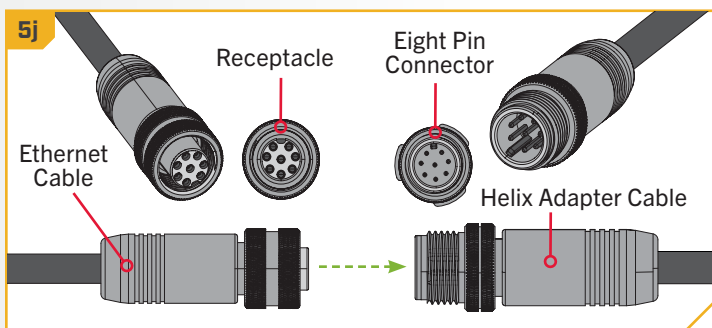


- i. If installing directly to a Helix Adapter Cable (Item #9), align the Receptacle on the Ethernet Cable with the Eight Pin Connector on the Helix Adapter Cable provided. Notice the keyed connectors. Tighten the Collar from the Ethernet Cable to secure the connection.

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.

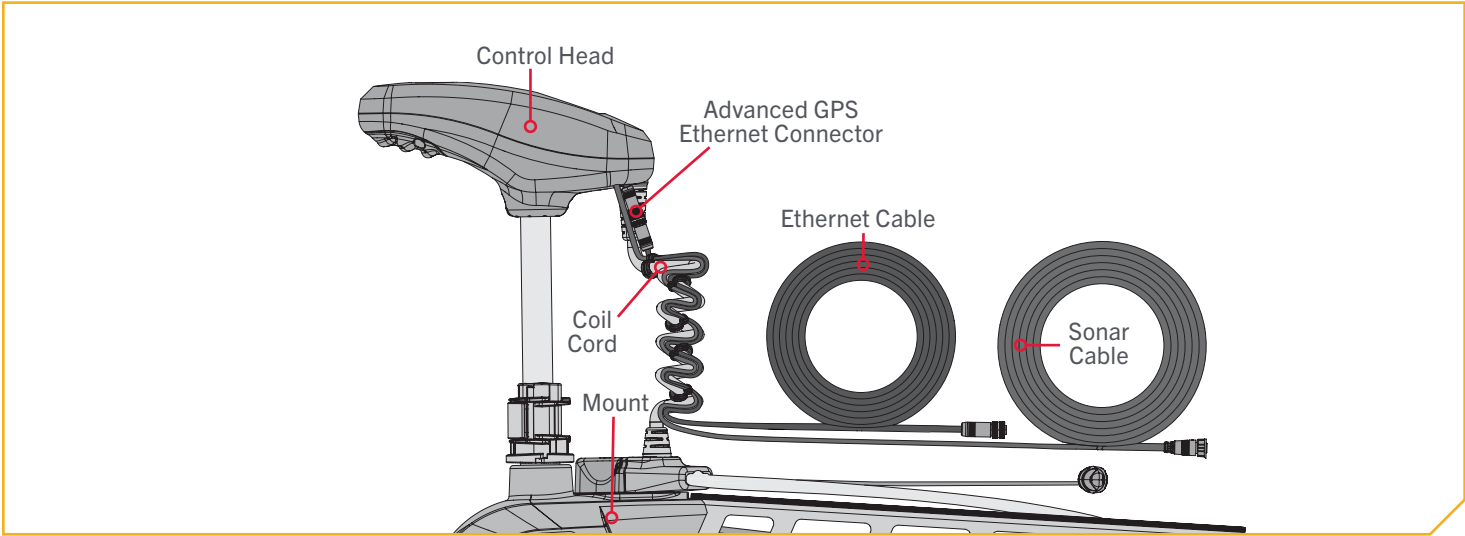


SECURING ACCESSORY CABLES

› 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

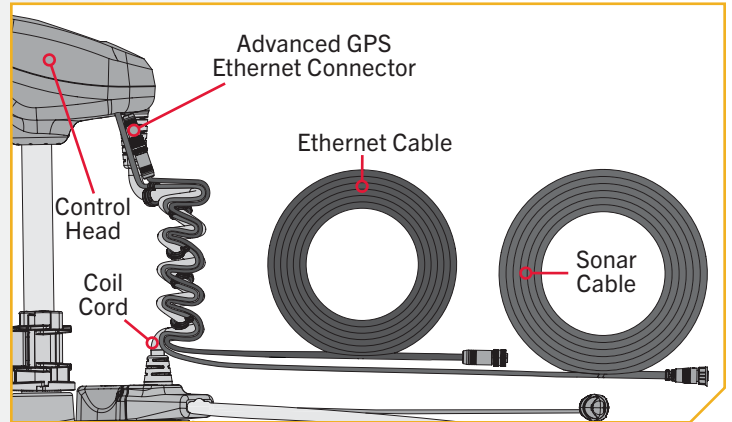
Failure to follow the recommended wire routing for installed features, if equipped, may cause damage to the product and void your product warranty. Route cables away from pinch points or other areas that may cause them to bend in sharp angles. Routing the cables in any way other than directed may cause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

SECURING ACCESSORY CABLES

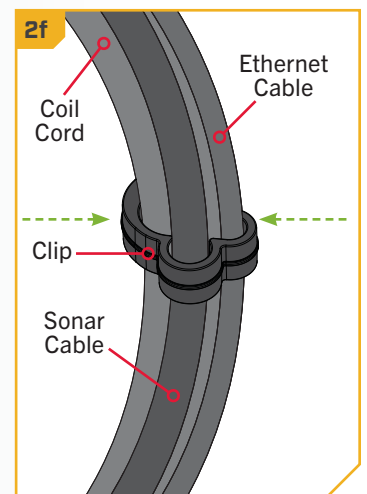
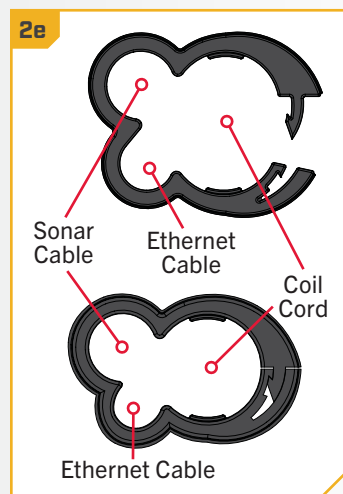
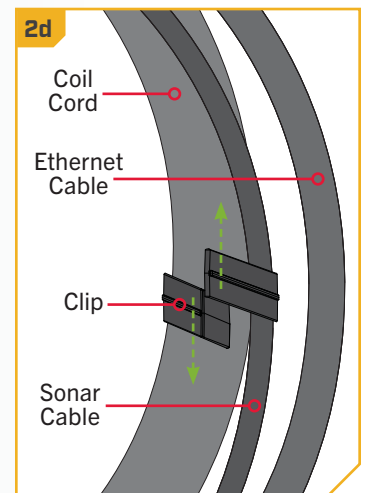
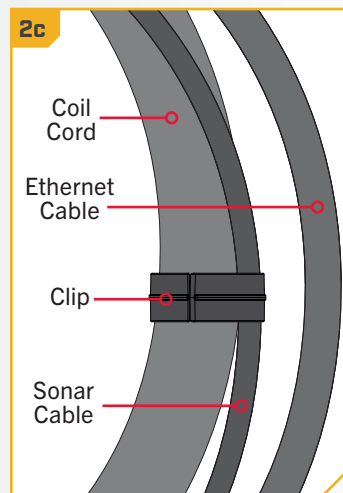
1

- 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

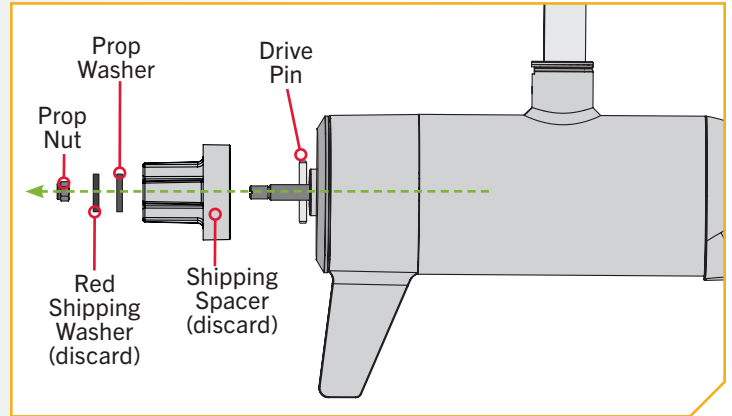
1

CAUTION

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

- a. 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.

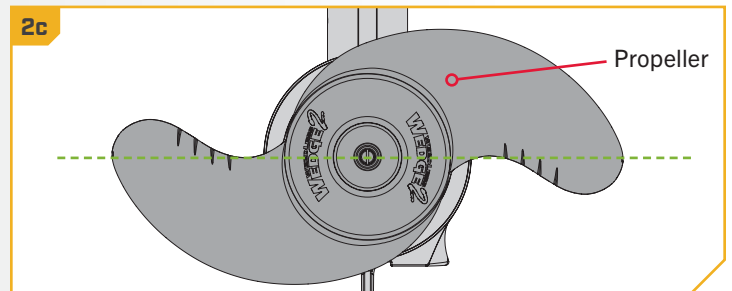
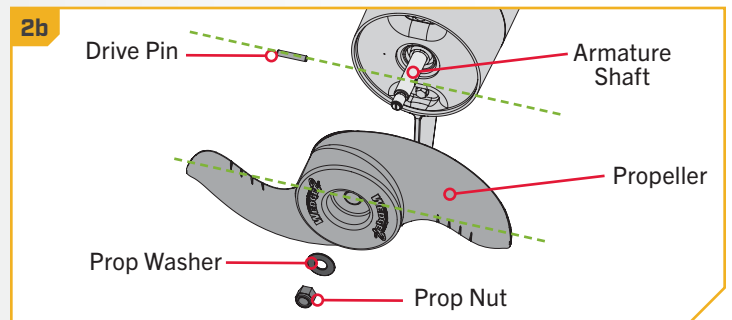


2

ITEM(S) NEEDED



- b. 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.
- c. 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.
- d. Install the Prop Washer (Item #20) and the Prop Nut (Item #21) onto the end of the Armature Shaft.



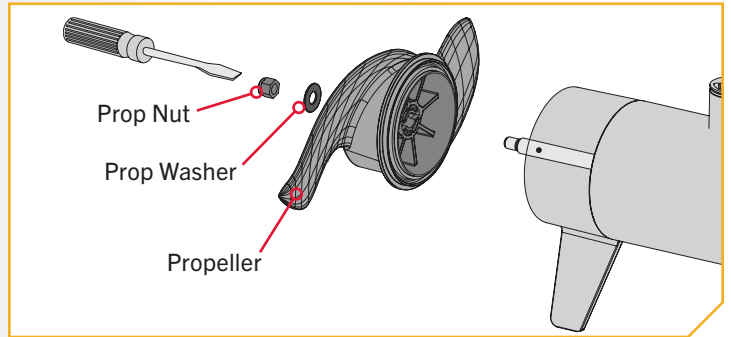
3

- 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

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. 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.

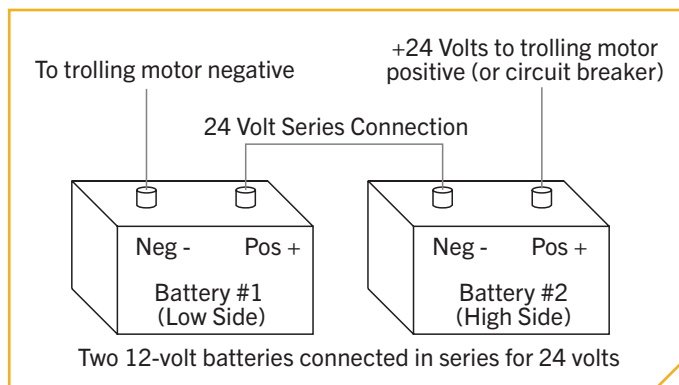
NOTICE: The internal bonding wire is equipped with a 3-amp fuse. Improper connections described above carrying in excess of 3 amps will blow this fuse and no further damage will be exhibited. If this occurs, RF interference from the trolling motor affecting sonar units and other electronics will be more 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

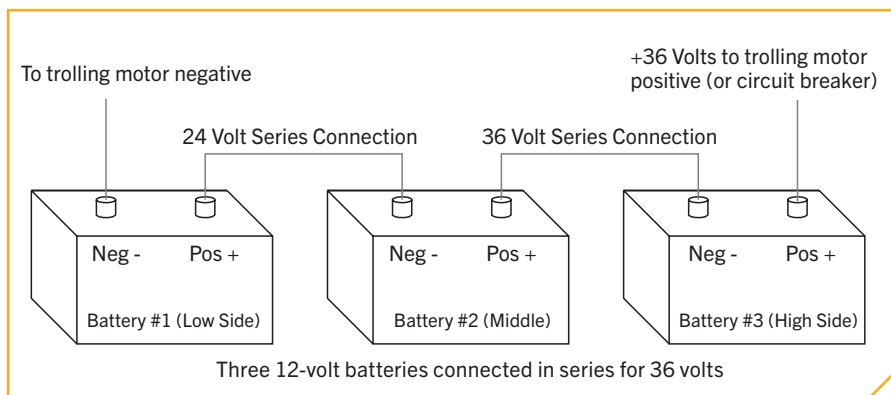
- For safety reasons, disconnect the motor from the battery or batteries when the motor is not in use or while the battery/batteries are being charged.
- Improper wiring of 24/36 volt systems could cause battery explosion.
- Keep leadwire wing nut connections tight and solid to battery terminals.
- Locate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



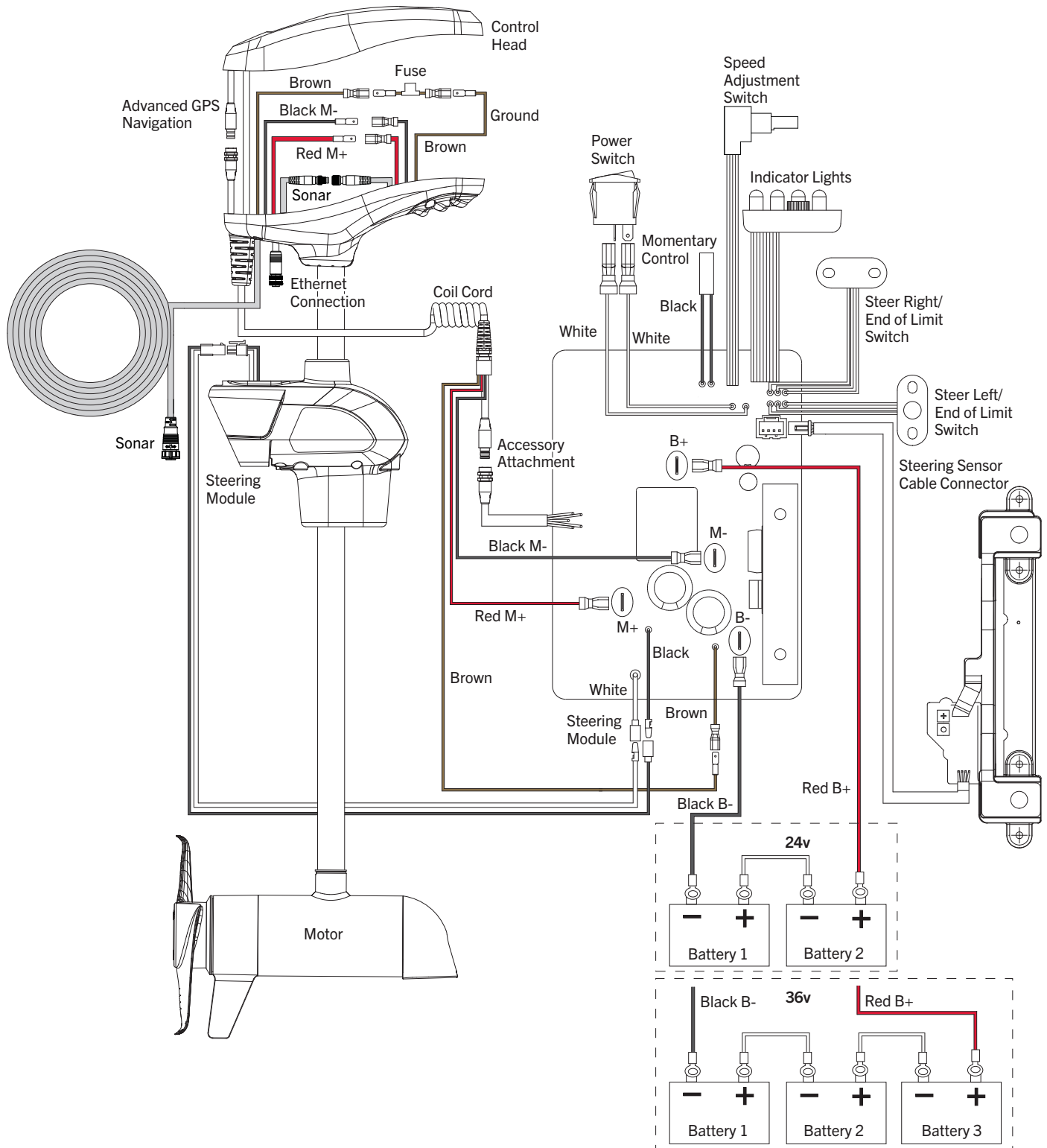
WARNING

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.

MOTOR WIRING DIAGRAM

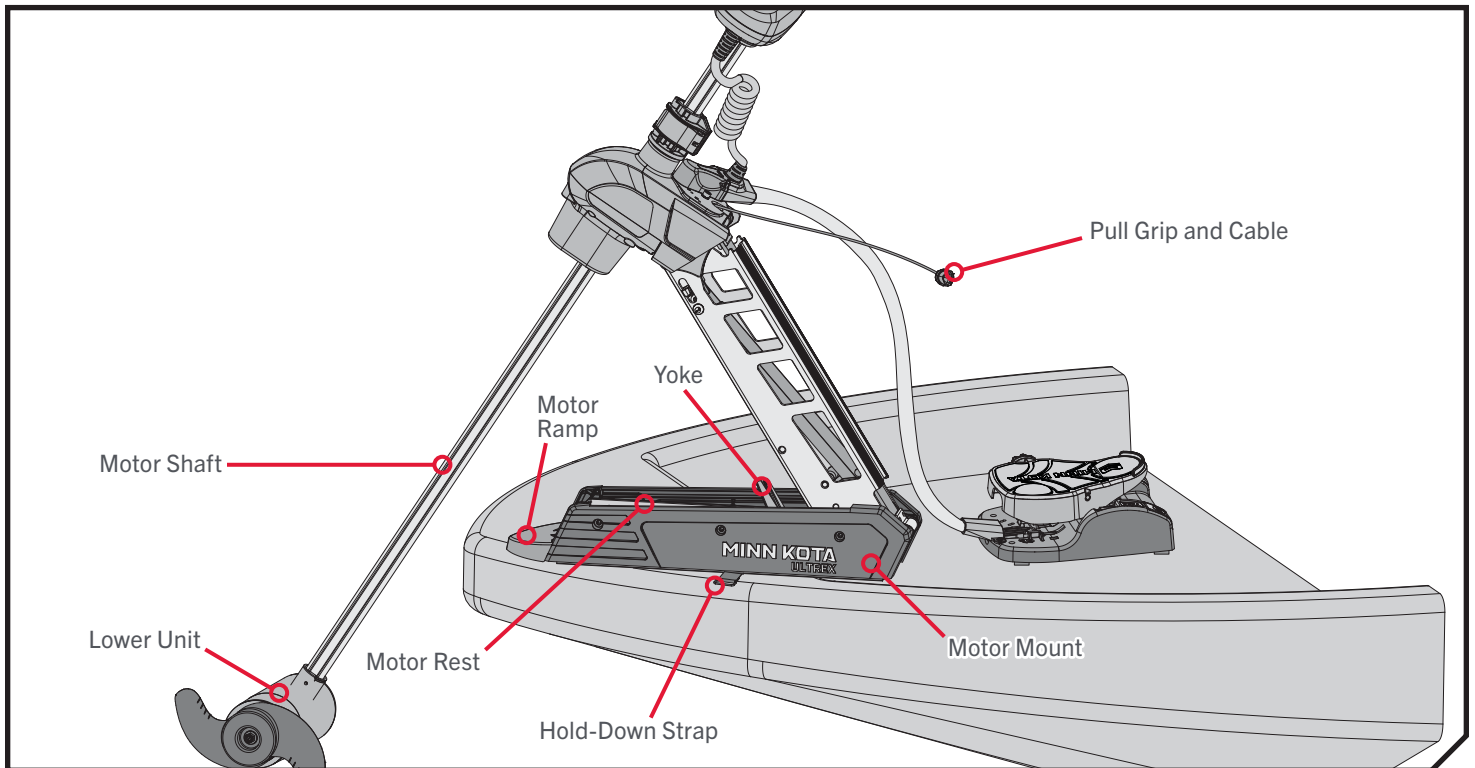


NOTICE: This is a multi-voltage diagram. Double-check your motor's voltage for proper connections. Over-Current Protection Devices are not shown in this illustration.

USING & ADJUSTING THE MOTOR

MOUNT FEATURES

Become familiar with the features of the motor to maximize the capabilities this product offers.




› Motor Mount

The Motor Mount is designed to securely hold the motor in place on the deck of the boat. It functions to stow and lock the motor flat on the deck when not in use by providing secure stowage for transport. The Motor Mount also positions the motor when it is in the deployed position.

› Pull Grip and Cable

The Pull Grip and Cable releases the lock bar on the Motor Mount, which automatically engages when the unit is stowed or deployed into position. The Pull Grip and Cable should be used to assist when both stowing and deploying the unit. Inspect the Pull Grip and Cable during each use and replace when it shows signs of wear.

 **WARNING**

When stowing or deploying the motor, keep fingers clear of all hinges, pivot points and moving parts. Always use the Pull Grip and Cable to stow and deploy the motor to prevent injury.

› Motor Rest and Yoke

The Motor Rest positions the lower unit as it comes into contact with the nose of the mount and guides it onto the Motor Mount. The Yoke sits in the middle of the Motor Rest and captures the motor shaft. The Yoke keeps the lower unit centered on the Motor Rest when in the stowed position.

› Hold-Down Strap

The Hold-Down Strap must be used to place pressure on the motor shaft to hold the lower unit tightly against the Motor Rest when stowed. The Hold-Down Strap runs under the Mount and is properly secured when the motor shaft is secured on the Motor Rest and the strap is secured to itself. The Hold-Down Strap should be secured every time the motor is stowed to prevent damage from high wind, rough water or vibrations, including while the boat is trailered.

STOWING AND DEPLOYING THE MOTOR

STOWING AND DEPLOYING THE MOTOR

› To Deploy the Motor

Make sure that the Hold-Down Strap is not secured and then simply pull back and lift the motor off of the mount with the Pull Grip and Cable. Lower the motor into the water using the Pull Grip and Cable. The motor will lock into the deployed position. Once the motor is deployed, make sure it is seated and locked into position.

WARNING

When stowing or deploying the motor, keep fingers clear of all hinges, pivot points and moving parts.

› To Stow the Motor

Pull back and lift the motor out of the water with the Pull Grip and Cable. Guided by the Pull Grip and Cable, the lower unit will drop down onto the Motor Rest. The motor will lock into the stowed position. Once the motor is stowed, make sure it is seated and locked into position. Wrap the Hold-Down Strap over top of the motor shaft to secure the motor. When stowing the motor, it automatically disables the operational function of the foot pedal or paired remote. "Motor stowed" will be displayed on the screen of any applicable remote.

MOTOR ADJUSTMENTS ›

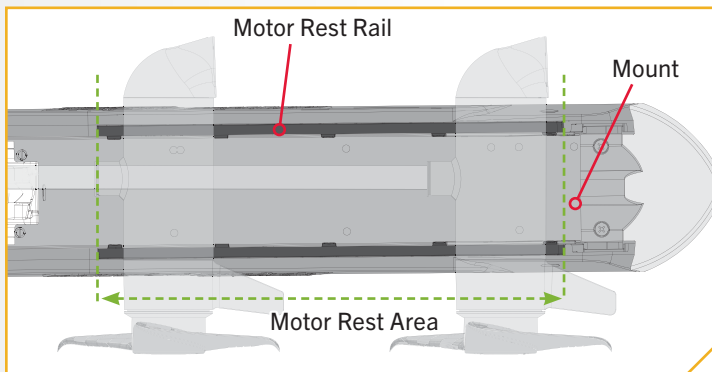
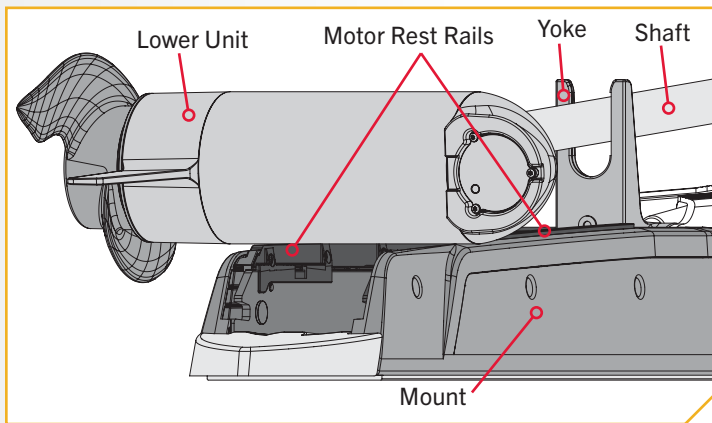
› Adjusting the Lower Unit for a Secure Stow

When the Motor is stowed, the Lower Unit should lie on the Motor Rest Rails just inside the sideplates of the Motor Mount. It is recommended to secure the motor using the following instructions to avoid damage to the motor and shaft from vibrations during transport.

- 1 a. Before transporting the boat over water or land, stow the motor to determine where the Lower Unit rests on the Mount.

NOTICE: The correct positioning of the Lower Unit will place it directly on the Motor Rest located on the Motor Mount.

- b. If the Lower Unit does not sit on the Motor Rest, deploy the motor so the Depth Collar can be unlatched and the motor can be adjusted to allow it to lie on the Motor Rest.



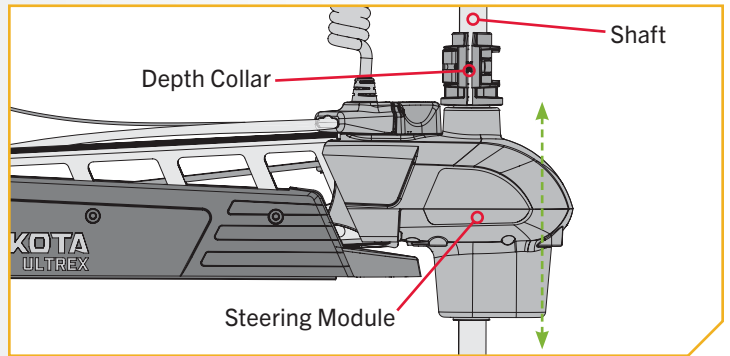
CAUTION

The Lower Unit should be placed on the Motor Rest Rails within the Motor Rest Area every time the motor is transported. If the Lower Unit is improperly placed, either above or below the Motor Rest Area, the Shaft will be incorrectly captured in the Yoke and damage to the Lower Unit or Shaft will occur. Failure to follow the recommended placement for the Lower Unit will cause damage to the product and void your product warranty.

ADJUSTING THE DEPTH OF THE MOTOR

2

- c. With the motor in the deployed position, firmly grasp the motor Shaft above the Steering Module.
- d. Locate the Depth Collar on the Shaft. While holding the Shaft in place, unlatch the Depth Collar so that the Shaft can slide freely.
- e. Raise or lower the motor to the desired depth.
- f. Relatch the Depth Collar to secure the motor in place.
- g. Stow the motor again and confirm that the Lower Unit is resting on the Motor Rest Rails within the Motor Rest Area. If it is not resting in the recommended location, re-deploy the motor and re-adjust until it sits where recommended when stowed.



NOTICE: Once the Lower Unit is sitting in the proper position on the Motor Rest, always secure it in place with the Hold-Down Strap.

Adjusting the Depth of the Motor

Once the boat is on the water, it may be necessary to adjust the lower unit up or down to achieve an optimum depth for motor performance. When setting the depth of the motor, be sure that the top of the motor is submerged at least 12" below the surface of the water to avoid churning or agitation of surface water.

1

- a. With the motor in the deployed position, firmly grasp the motor Shaft above the Steering Module.
- b. Locate the Depth Collar on the Shaft. While holding the Shaft in place, unlatch the Depth Collar so that the Shaft can slide freely.

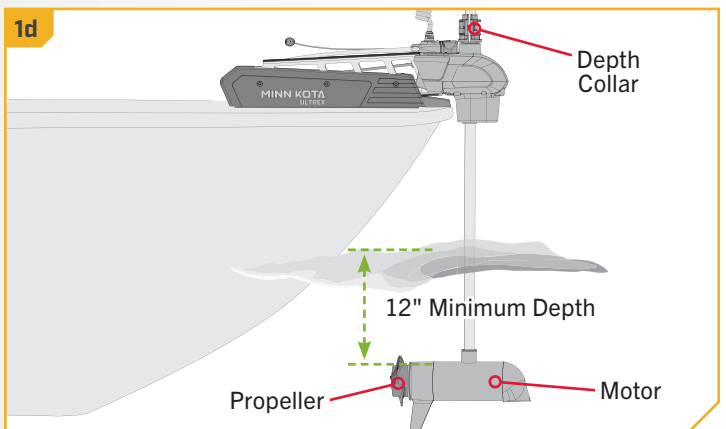
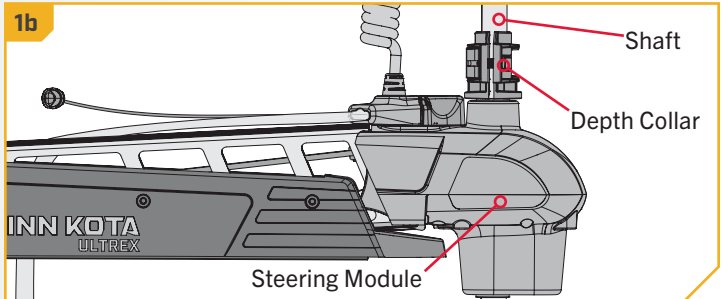


WARNING

The Control Head will create a pinch point if the Depth Collar is unlatched and the Control Head slides to the top of the Depth Collar. Grasp the Shaft and prevent it from sliding all the way down to prevent the pinch point.

- c. Raise or lower the motor to the desired depth.
- d. Relatch the Depth Collar to secure the motor in place.

NOTICE: Please be sure that the top of the motor is submerged at least 12" below the surface of the water to avoid churning or agitating the water surface.



ADJUSTING THE PULL GRIP AND CABLE

Adjusting the Pull Grip and Cable

The length of the Cable on the Pull Grip and Cable can be adjusted based on personal preference. Before beginning the adjustment, the Gas Spring must be disengaged and the Steering Module must be removed. Please refer to the Removal of the Steering Module section and follow the procedure to Disconnect the Gas and Remove Motor from Mount. It is important to remove the Gas Spring and the Steering Module in order to access the Cable and associated hardware to make any adjustments.

1

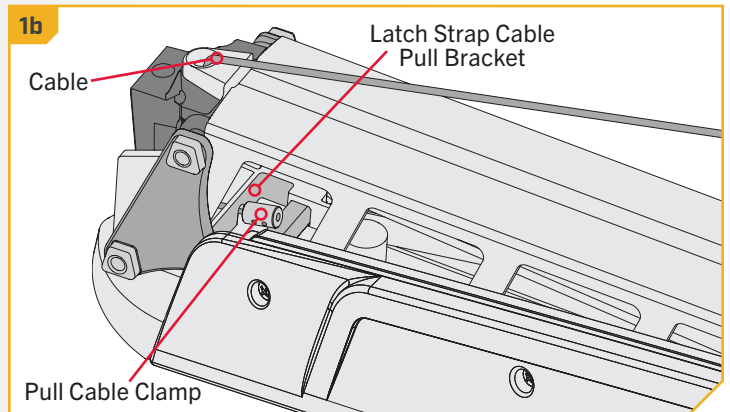
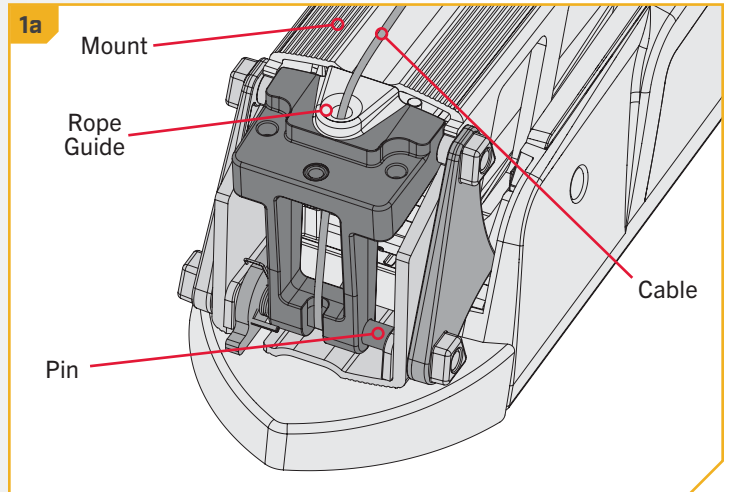
WARNING

Please refer to the Removal of the Steering Module section of this manual and follow the procedure to Disconnect the Gas Spring and Remove Motor from Mount. It is important to remove the Steering Module and Remove the Gas Spring in order to access the Cable and associated hardware to make the adjustment. Failure to complete these necessary steps will prevent the adjustment from being possible and will result in risk of injury.

- a. With the Gas Spring disconnected and the Steering Module removed, ensure that the mount is in the deployed position.

NOTICE: Observe how the Cable is routed through the Cable Guide, around the Pin, and into the Latch/Strap Cable Pull Bracket.

- b. Locate the end of the Cable and the Pull Cable Clamp inside the Aluminum Arm of the Mount.



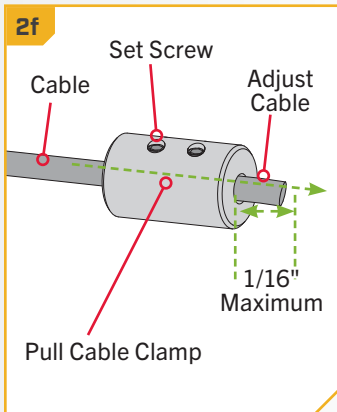
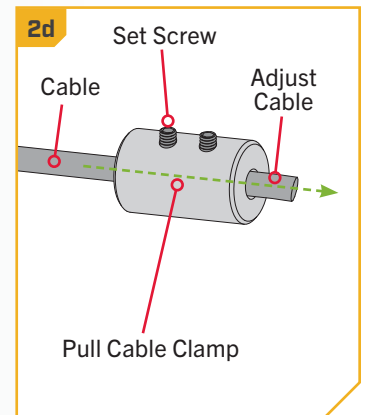
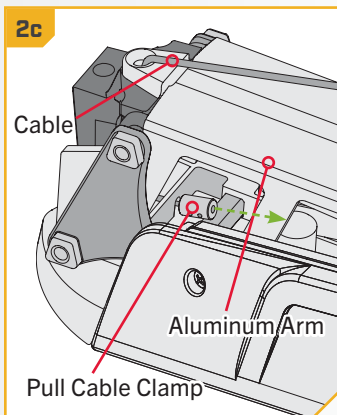
ADJUSTING THE PULL GRIP AND CABLE

2

- c. Grasp the Pull Cable Clamp and Cable and pull it out of the Aluminum Arm.
- d. The Pull Cable Clamp contains two Set Screws. Loosen- but do not remove- these two screws with a 5/64 Allen Wrench until the Cable can slide in the Pull Cable Clamp.
- e. Adjust the Cable to the desired length.
- f. Retighten the two Set Screws using the 5/64 Allen Wrench. Tighten the Set Screws to 16-19 in-lbs. Be sure that the Set Screws are properly seated on the Cable in the Pull Cable Clamp. The Set Screws must provide adequate tension on the Cable to keep it retained in the Pull Cable Clamp during normal operation. When the two Set Screws are properly tightened, they must be recessed slightly below the surface of the Pull Cable Clamp.

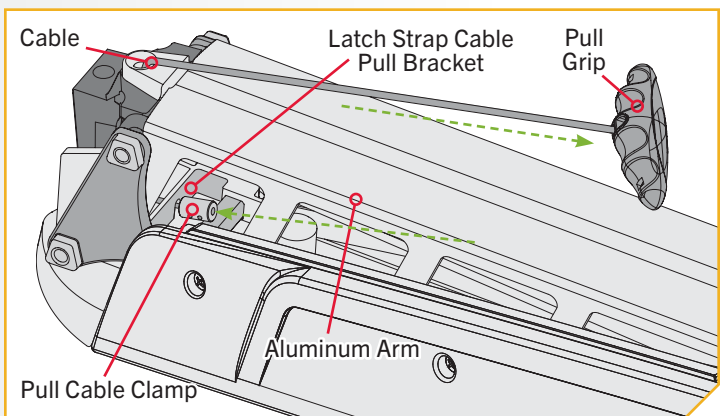
NOTICE: Be sure the two Set Screws are tightened adequately. When properly tightened, the two Set Screws must at least be recessed below the Pull Cable Clamp to maintain tension on the Cable in the Pull Cable Clamp during normal operation.

- g. Using a Hack Saw, trim the Cable so there is no more that 1/16" excess beyond the Pull Cable Clamp.



3

- h. Once the Cable has been cut to length, take the Pull Grip and pull the Cable back into place until it is seated against the Latch Strap Cable Pull Bracket.
- i. After the Cable is in place, refer to the "Removal of the Steering Module" section of these instructions and follow the procedure to "Reassemble the Steering Module."



INSTALLING AN EXTERNAL TRANSDUCER

INSTALLING AN EXTERNAL TRANSDUCER

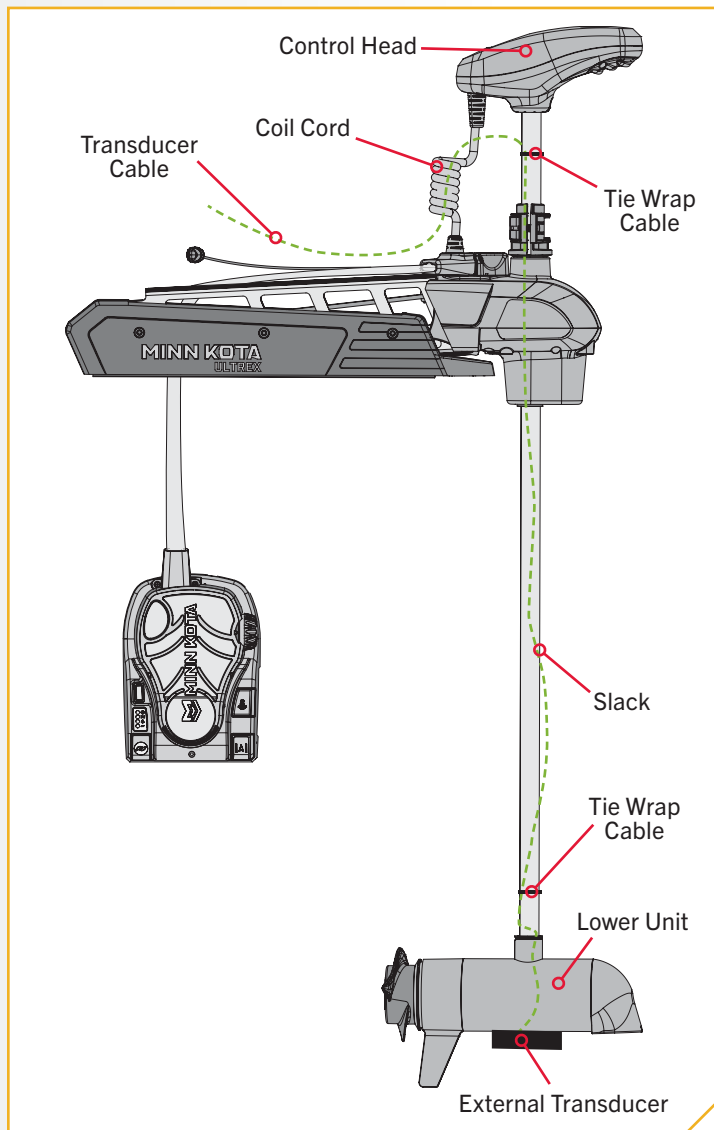
An external transducer is not included with your trolling motor. An external transducer can be installed onto motors that have Advanced GPS Navigation. Installing an external transducer is not recommended for motors with Built-in MEGA Down Imaging.

- 1
 - a. Mount the External Transducer according to directions provided with the transducer.
 - b. Leave enough slack in the Transducer Cable between the Lower Unit and Control Head to allow the motor to properly stow and deploy.
 - c. Use two tie wrap cables to secure the Transducer Cable to the Shaft just above the Lower Unit and just below the Control Head.
 - d. Run the Transducer Cable through the Coil Cord to the power supply.

CAUTION

Failure to follow the recommended wire routing for Sonar and External Transducer Cables may cause damage to the product and void your product warranty. Take care to test the length and placement of all cables to ensure that there is enough slack where needed and that cables are free of entanglement by moving parts. Routing the cables in any way other than as directed may cause damage to the cables via pinching or severing.

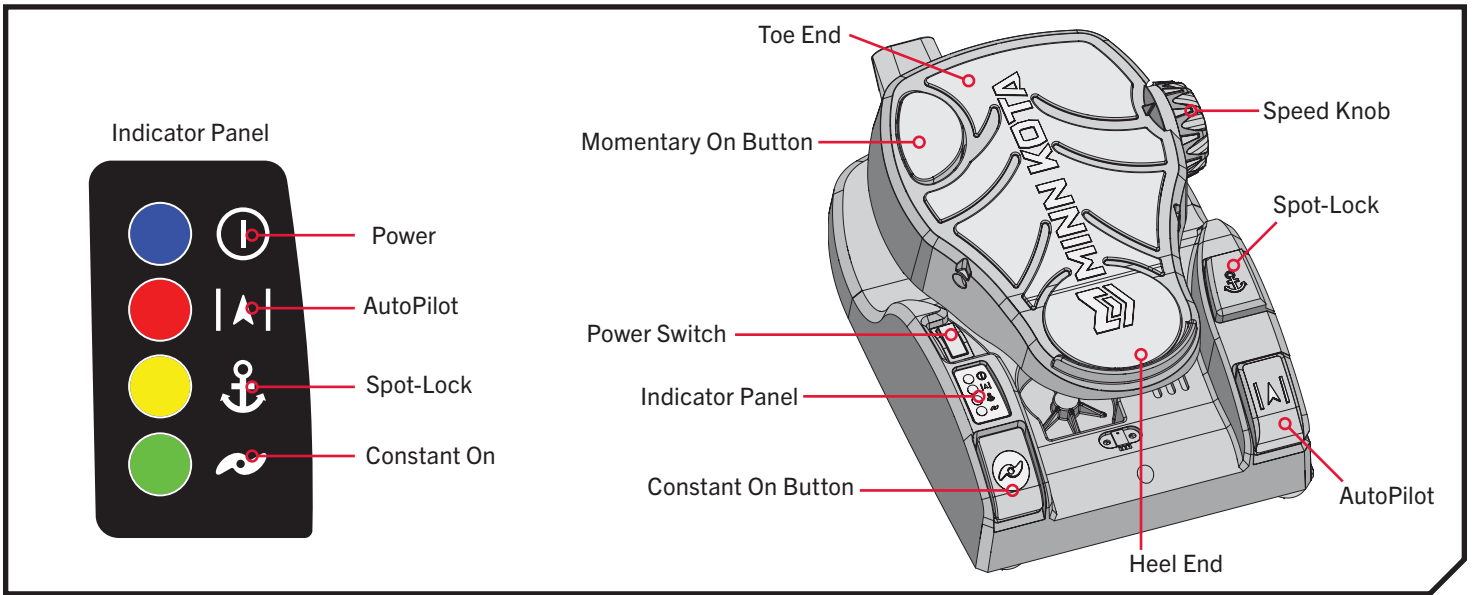
NOTICE: For additional details on cable routing, see the "Securing Accessory Cables" section of this manual.



USING THE FOOT PEDAL

CONTROLLING SPEED & STEERING WITH THE FOOT PEDAL

The foot pedal is used to operate the motor. The controls on the foot pedal are easy to operate by either foot or hand. The motor can also be controlled by the Minn Kota micro remote, as well as any compatible Minn Kota remote. Please refer to the associated remote manual for respective instructions. To learn more about accessories that are compatible with the Ultrex, please visit minnkota.johnsonoutdoors.com.



› Power

The Power Switch is located on the left-hand side of the foot pedal and is used to turn the power on and off. The blue light next to the Power icon (⏻) on the Indicator Panel is illuminated when the power is on. Do not try to steer this motor with the foot pedal when it has lost power.

NOTICE: Remember to turn the power off when the motor is not in use to prevent the motor from draining the battery.

› Motor Speed

The Speed Knob is located on the top-right side of the Toe End of the foot pedal. Turn the Speed Knob clockwise to increase speed and counter-clockwise to decrease speed. Speed can also be adjusted using a Minn Kota-compatible remote.

› Momentary Motor Operation

In Momentary Motor Operation, the propeller will only run while downward force is applied to the Momentary On Button. The Momentary On Button is located on the top-left Toe End of the foot pedal. Applying downward pressure to the Momentary On Button will turn the propeller on. The motor will then run at the speed set by the Speed Knob. Removing downward force to the Momentary On Button will turn the propeller off. No indicator light is associated with the Momentary On Button.

› Constant Motor Operation

To switch to Constant Motor Operation, press the Constant On Button. The Constant On Button is located on the bottom-left Heel End of the foot pedal and is labeled on the foot pedal with a propeller symbol. In Constant mode, the propeller will continually run, regardless of whether or not force is being applied to the Momentary On Button. While in Constant Motor Operation, the propeller will run continuously at the speed set by the Speed Knob, or by a Minn Kota wireless remote. The green light next to the Constant On icon (🌀) on the Indicator Panel will be lit when the motor is in Constant Motor Operation.


CONTROLLING SPEED & STEERING WITH THE FOOT PEDAL



If the propeller is running and encounters an obstruction while in Momentary or Constant Mode, the increased electrical current generated by the obstruction will signal the motor to decrease power to the propeller to prevent damage. If the current overload is detected for more than 20 seconds, the prop will be disabled to prevent damage to the motor. In this event, the operator can turn the prop back on after ensuring that the obstruction has been cleared.

› Turn Left or Right


Push the Toe End of the foot pedal down to turn right and push the Heel End of the foot pedal down to turn left. The position and direction of the Steering Head directly corresponds to the position of the motor. When turning left or right, the steering motion will end when the cables controlling the direction of the Steering Head and Motor have come to the end of their range of motion. You must use your foot on the pedal to control the steering direction during manual operation. The foot pedal is pressure sensitive. Applying gradual pressure to either the Toe or Heel End of the foot pedal will cause the direction to turn gradually. A higher amount of pressure will turn the unit more quickly in the engaged direction. The direction of the motor can also be controlled with a remote. Since the direction of the motor is controlled by pressure applied to the foot pedal and the reaction of the cables to that pressure, the motor will not turn straight without manually applying pressure to the foot pedal (or by using a remote) to align the cables to engage the motor to steer it straight. Due to the Steering Lock feature, the Steering Head and Motor will remain at the last steered position. Turning left or right can also be controlled by the Minn Kota micro remote. Refer to your remote manual to learn more.


 CAUTION
Make sure that the Power switch is turned off when the motor is not in use. If the motor control is left on and the propeller rotation is blocked, severe motor damage can result.
For safety reasons, disconnect the motor from the battery/ batteries when the motor is not in use or while the battery/ batteries are being charged.
Moving parts can cut or crush. Avoid pinch points when operating the Foot Pedal.

› Steering in Reverse

The Control Head always indicates the direction of travel. To reverse the direction of travel, turn the Control Head in the complete opposite direction of its current location. Keep in mind that the steering motion will end when the cables controlling the direction of the Control Head have come to the end of their range of motion.

› Spot-Lock

The Spot-Lock button is located on the right side of the foot pedal and is labeled with an anchor symbol. When the Spot-Lock button is pressed, the location of the motor is recorded to memory. The yellow light next to the Spot-Lock icon  on the Indicator Panel is illuminated when Spot-Lock is engaged. To engage Spot-Lock, press the Spot-Lock button. To disengage, press the Spot-Lock button again. When engaging Spot-Lock, a tone will be emitted. When disengaging Spot-Lock with the Spot-Lock button, no tone will be emitted. Steering the motor with the Foot Pedal or adjusting the speed using the Speed Knob will cancel Spot-Lock and a High-Low, High-Low, High-Low tone will be emitted. Spot-Lock can also be controlled with the remote. For more specific directions on how to use Spot-Lock, please refer to your remote manual.

 WARNING
You are responsible for the safe and prudent operation of your vessel. We have designed Ultrex 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 Ultrex in an area free from hazards and obstacles.



ADJUSTING THE STEERING CABLE

› AutoPilot

The AutoPilot button is located on the bottom-right corner of the Foot Pedal and is indicated by the directional symbol. Pressing the AutoPilot button toggles the feature on and off. The red light next to the AutoPilot icon **IAI** on the Indicator Panel is illuminated when this feature is engaged. When AutoPilot is engaged, a single tone is emitted. There is no tone emitted when AutoPilot is disengaged. AutoPilot can also be controlled using a compatible remote. For more specific directions on how to use AutoPilot, please refer to your remote manual.

› Steering Lock

When steering the Ultrex with either the foot pedal or a compatible Minn Kota remote, the Steering Lock feature will automatically lock the motor in the last position that was specified, allowing the operator to remove their foot from the pedal or hand from the remote and remain traveling in their chosen direction. The operator can set a new direction at any time by using the foot pedal or remote to rotate the motor. In the event that the motor encounters a solid obstruction, Steering Lock will rotate and lock the motor into a new position to prevent damage.

NOTICE: The motor will not auto correct to drive straight when it encounters an obstruction.

FOOT PEDAL ADJUSTMENTS ›

› Adjusting the Steering Cable

The steering cable tension is pre-set at the factory. With regular use, it may need occasional adjustment.

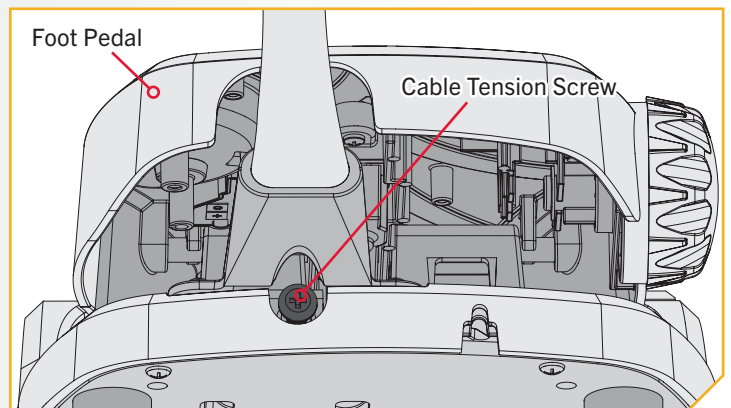
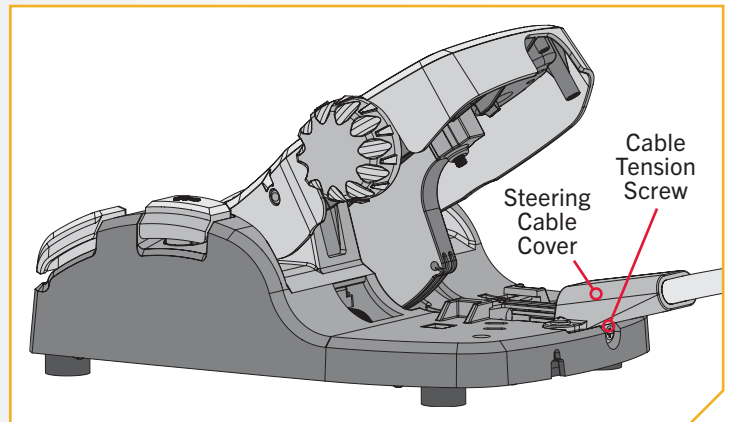
1. a. The Cable Tension Adjustment screw is located at the base of the Foot Pedal on the Toe End. The screw is below the Steering Cable Cover. The tension of the screw can be adjusted using a #3 Phillips Screwdriver.
b. Turn the screw clockwise to increase tension and counterclockwise to decrease tension.

CAUTION

If the cable becomes too loose, it may disengage from the Wrap Drum that sits on the Steering Housing or the Cable Pulley in the foot pedal.

CAUTION

Do not over-tighten the Cable Tension Screw past 10 - 12 in-lbs. Over-tightening the screw will cause damage from excessive tension.



SERVICE & MAINTENANCE

PROPELLER REPLACEMENT

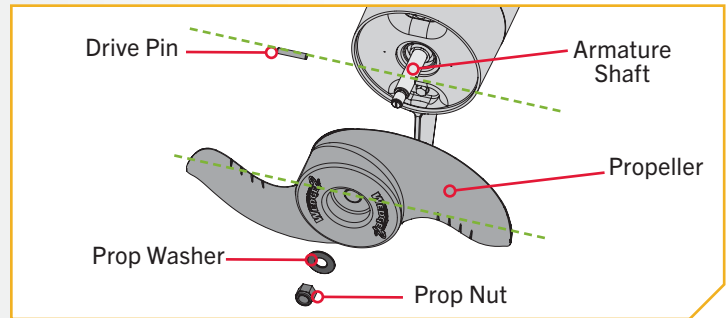
TOOLS AND RESOURCES REQUIRED >

- 9/16" Open End Wrench
- Flat Blade Screwdriver

INSTALLATION >

- Disconnect the motor from all sources of power prior to changing the propeller.
 - Hold the propeller and loosen the Prop Nut with pliers or a wrench.
 - Remove the Prop Nut and Prop Washer.

NOTICE: If the Drive Pin is sheared or broken, you will need to hold the shaft stationary with a flat blade screwdriver pressed into the slot on the end of the shaft while you loosen the Prop Nut.



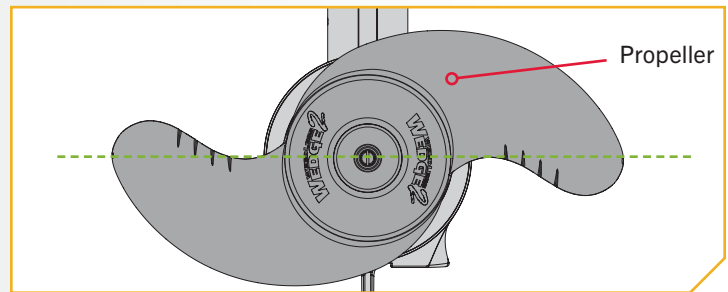
CAUTION

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

- Turn the old prop to horizontal and pull it straight off. If drive pin falls out, push it back in.

CAUTION

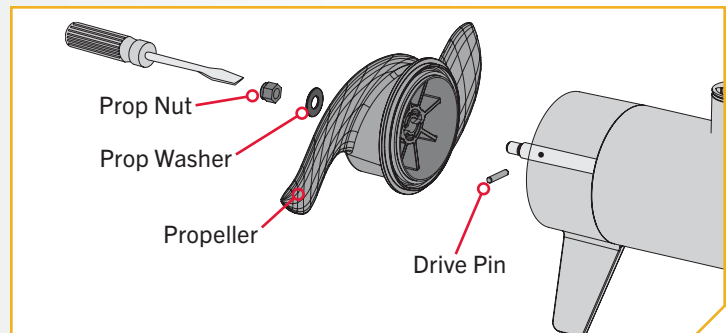
If the prop does not readily slide off, take care not to bend the Armature Shaft while removing the prop by pulling the prop evenly off the Armature Shaft.



- Align the new Propeller with the Drive Pin.
 - Install the Prop Washer and Prop Nut.
 - Tighten the Prop Nut 1/4 turn past snug at 25-35 inch-lbs.

CAUTION

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



REMOVAL OF THE STEERING MODULE

› Disconnect the Gas Spring

1



WARNING

Moving parts can cut or crush. The gas-assist lift mechanism is under pressure. Disconnect the Gas Spring before removing the motor from the mount. Do not engage the Pull Grip and Cable when the motor is removed from the mount until the Gas Spring is disconnected.

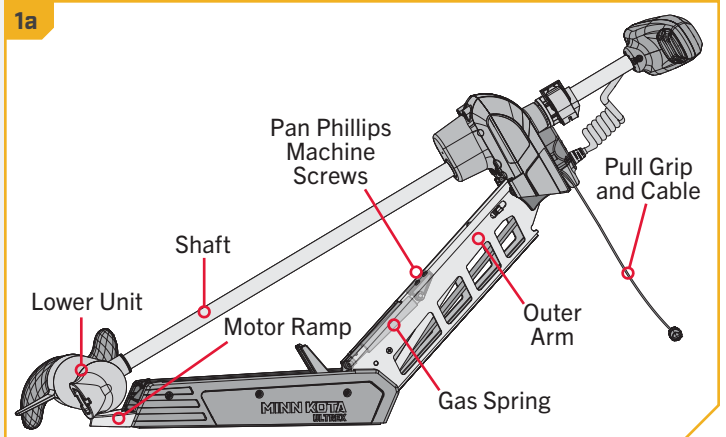
- a. In order to remove the Steering Module, the Gas Spring needs to be disconnected. Position the motor so that it is halfway between the stowed and deployed position. Allow the motor to be positioned so that the Lower Unit rests on the Motor Ramp.
- b. To disconnect the Gas Spring, locate the Bracket on the Upper Cylinder inside the Outer Arm. Two Pan Phillips Machine Screws hold the Bracket for the Gas Spring in place. Using a #3 Phillips Screwdriver, loosen and then remove both screws.
- c. Now it is safe to move the motor into the deployed position to remove the Steering Module.



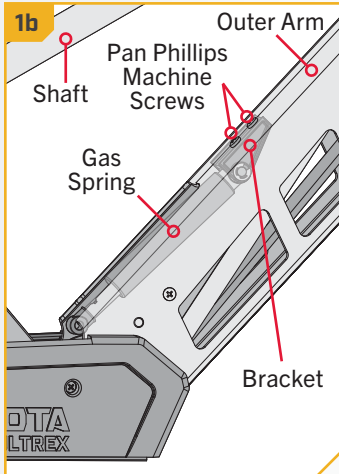
WARNING

The gas-assist lift mechanism in this unit is under high spring pressure when the motor is in the deployed position. Do not remove the Steering Module assembly from the mount without disconnecting one end of the Gas Spring. Failure to do this can create a condition where accidental pulling of the Pull Grip and Cable may cause the mount to spring open rapidly, striking anyone or anything in the direct path.

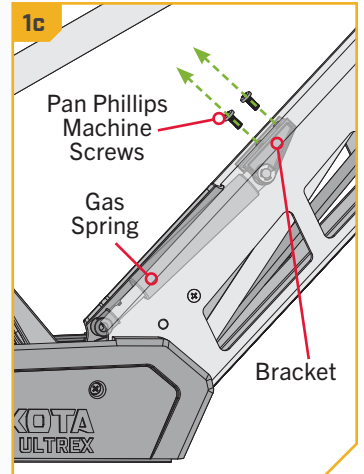
1a



1b



1c



NOTICE: Use a #3 Philips Screwdriver to remove the screws. They have a pre-applied thread locker. Failure to use the recommended tool can cause damage and prevent the screws from being removed.

REMOVE STEERING MODULE FROM MOUNT

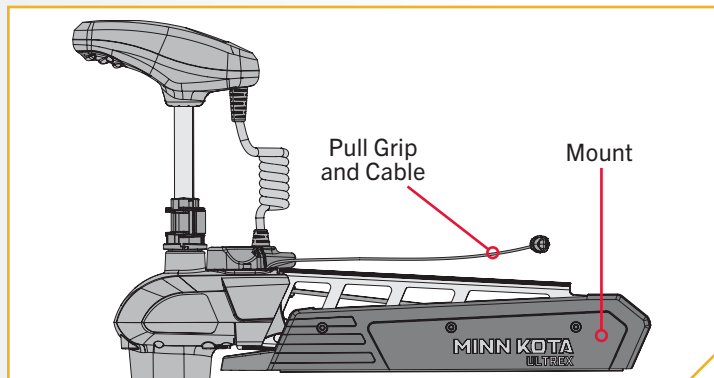
Remove Steering Module from Mount

1

- a. With the Gas Spring disconnected, place the motor in the deployed position.

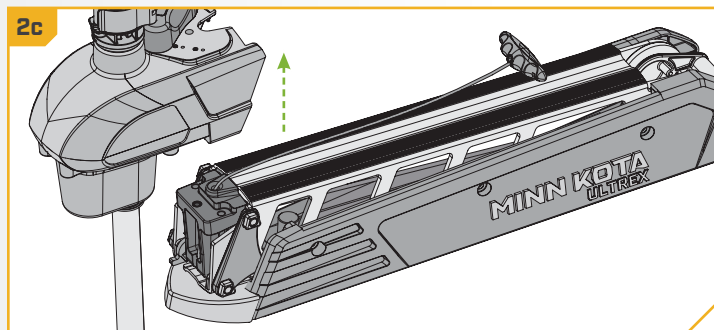
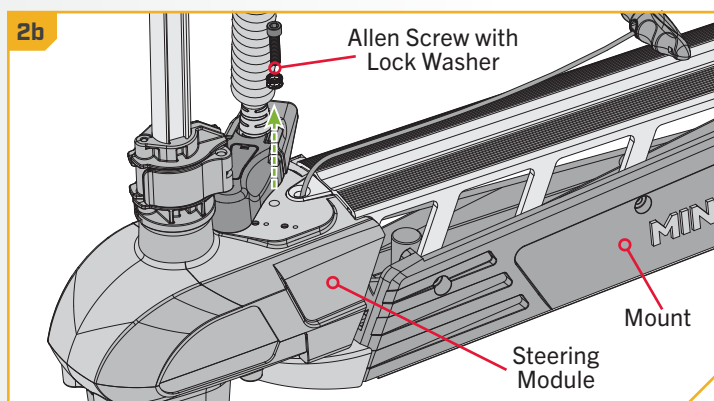
WARNING

Moving parts can cut or crush. The gas-assist lift mechanism is under pressure. Disconnect the Gas Spring before removing the motor from the mount. Do not engage the Pull Grip and Cable until the Gas Spring is disconnected.



2

- b. Remove the 5/16" Allen Screw with 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.
- c. Once the Allen Screw and Lock Washer are removed, lift the Steering Module straight up until it is free from the mount.

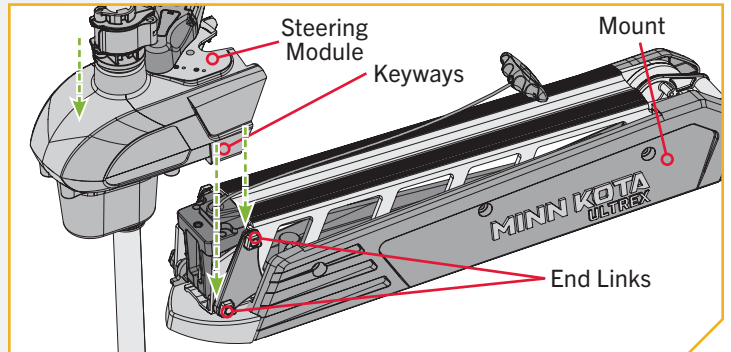


REASSEMBLE THE STEERING MODULE

REASSEMBLE THE STEERING MODULE

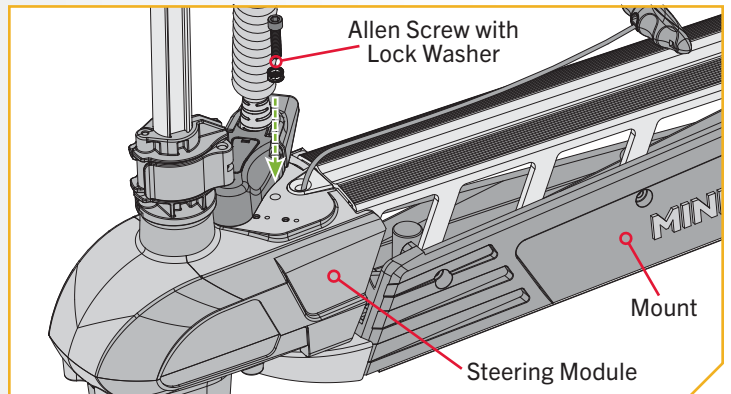
1

- a. To reassemble the Steering Module, start with the Mount in the deployed position.
- b. 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.
- c. Lower the Steering Module straight down until seated.



2

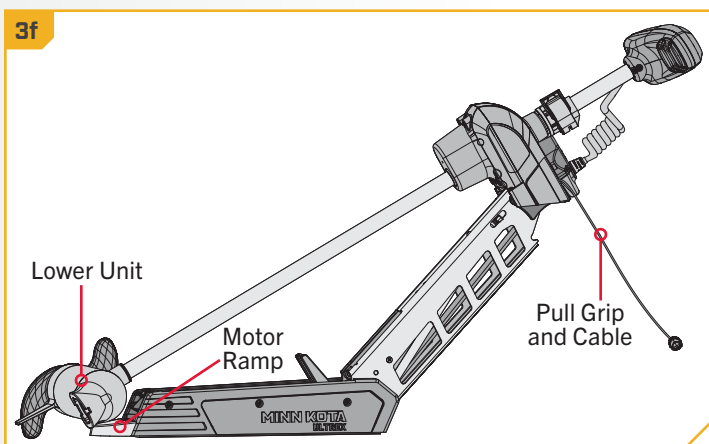
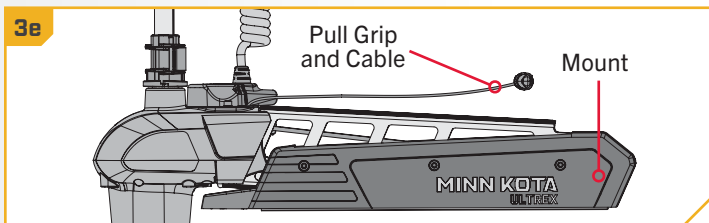
- d. Reinstall the 5/16" Allen Screw and Lock Washer and tighten to 18 to 20 ft-lbs with a Torque Wrench.



REASSEMBLE THE STEERING MODULE

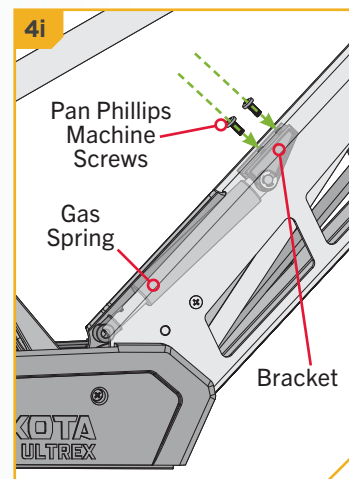
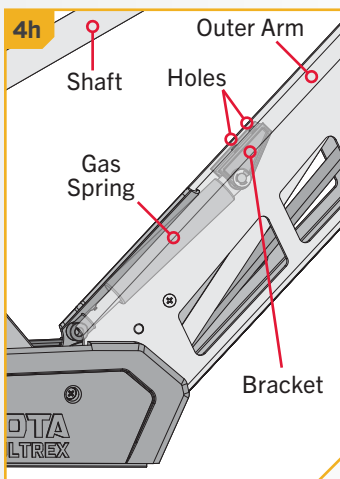
3

- e. Use the Pull Grip and Cable to disengage the Latch Bar on the Mount.
- f. Position the motor so that it is halfway between the stowed and deployed position. Allow the motor to be positioned so that the Lower Unit rests on the Motor Ramp.



4

- g. The Gas Spring is located inside the Outer Arm. Once the motor is correctly positioned, the Gas Spring can be secured in place.
- h. There is a Bracket on the end of the Gas Spring with holes and recessed Nylock Nuts to install the Gas Spring. Align the Bracket at the end of the Gas Spring with the holes in the Outer Arm. The holes in the Outer Arm should be below the Shaft on the Outer Arm.
- i. Take the two Pan Phillips Machine Screws 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.



GENERAL MAINTENANCE

- After use, the entire motor should be rinsed with freshwater. This series of motor is not equipped for saltwater exposure.
- The composite shaft requires periodic cleaning and lubrication for proper retraction and deployment. A coating of an aqueous-based silicone spray will improve operation.
- The propeller must be inspected and cleaned of weeds and fishing line after every use. Fishing line and weeds can get behind the prop, damage the seals and allow water to enter the motor.
- Verify that the prop nut is secure each time the motor is used.
- To prevent accidental damage during transportation or storage, disconnect the battery whenever the motor is off of the water. For prolonged storage, lightly coat all metal parts with an aqueous-based silicone spray.
- For maximum battery life, recharge the battery(s) as soon as possible after use. For maximum motor performance, restore battery to full charge prior to use.
- Keep battery terminals clean with fine sandpaper or emery cloth.
- The propeller is designed to provide weed-free operation with very high efficiency. To maintain this top performance, the leading edge of the blades must be kept smooth. If they are rough or nicked from use, restore to smoothness by sanding with fine sandpaper.
- The rail covers on the motor rest are intended to be a wear item and may need to be replaced periodically.

TROUBLESHOOTING

1. Motor fails to run or lacks power:
 - Check battery connections for proper polarity.
 - Make sure terminals are clean and corrosion-free. Use fine sandpaper or emery cloth to clean terminals.
 - Check battery water level. Add water if needed.
2. Motor loses power after a short running time:
 - Check battery charge. If low, restore to full charge.
3. Motor is difficult to steer:
 - Loosen the steering tension knob on the bracket
 - Lubricate the composite shaft.
4. You experience prop vibration during normal operation:
 - Remove and rotate the prop 180°. See removal instructions in the Propeller Replacement section.
5. Experiencing interference with your fishfinder:
 - You may, in some applications, experience interference in your depth finder display. We recommend that you use a separate deep-cycle marine battery for your trolling motor and that you power the depth finder from the starting/cranking battery. If problems still persist, call our service department at 1-800-227-6433.

NOTICE: For all other malfunctions, visit an Authorized Service Center. You can search for an Authorized Service Center in your area by visiting minnkota.johnsonoutdoors.com, or by calling our customer service number at 800-227-6433.

FOR FURTHER TROUBLESHOOTING AND REPAIR



FOR FURTHER TROUBLESHOOTING AND REPAIR

We offer several options to help you troubleshoot and/or repair your product. Please read through the options listed below.



Buy Parts Online

You can buy parts online directly from our website at minnkota.johnsonoutdoors.com. From screws to sideplates, you can order replacement parts for your Minn Kota products.



Frequently Asked Questions

Find answers to general inquiries, battery and rigging installation, and networking scenarios. We have FAQs available on our website at minnkota.johnsonoutdoors.com to help answer all of your Minn Kota questions.



Call Us (for U.S. and Canada)

Our consumer service representatives are available Monday – Friday between 7:00 a.m. – 4:30 p.m. CST at 800-227-6433. If you are calling to order parts, please have the 11-character serial number from your product, specific part numbers, and credit card information available. This will help expedite your call and allow us to provide you with the best consumer service possible. You can reference the parts list located in your manual to identify the specific part numbers.



Contact Us

You can contact our consumer service department with questions regarding your Minn Kota products. To inquire, visit minnkota.johnsonoutdoors.com.



Authorized Service Centers

Minn Kota has over 800 authorized service centers in the United States and Canada where you can purchase parts or get your products repaired. Please visit our website to locate a service center in your area.



Scan to visit
Minn Kota
service online.



COMPLIANCE STATEMENTS

ENVIRONMENTAL COMPLIANCE STATEMENT

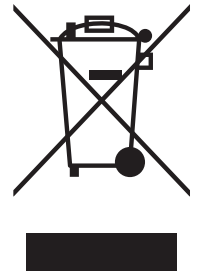
It is the intention of JOME to be a responsible corporate citizen, operating in compliance with known and applicable environmental regulations, and a good neighbor in the communities where we make or sell our products.

WEEE DIRECTIVE

EU Directive 2002/96/EC “Waste of Electrical and Electronic Equipment Directive (WEEE)” impacts most distributors, sellers, and manufacturers of consumer electronics in the European Union. The WEEE Directive requires the producer of consumer electronics to take responsibility for the management of waste from their products to achieve environmentally responsible disposal during the product life cycle.

WEEE compliance may not be required in your location for electrical & electronic equipment (EEE), nor may it be required for EEE designed and intended as fixed or temporary installation in transportation vehicles such as automobiles, aircraft, and boats. In some European Union member states, these vehicles are considered outside of the scope of the Directive, and EEE for those applications can be considered excluded from the WEEE Directive requirement.

This symbol (WEEE wheelee bin) on product indicates the product must not be disposed of with other household refuse. It must be disposed of and collected for recycling and recovery of waste EEE. Johnson Outdoors Inc. will mark all EEE products in accordance with the WEEE Directive. It is our goal to comply in the collection, treatment, recovery, and environmentally sound disposal of those products; however, these requirements do vary within European Union member states. For more information about where you should dispose of your waste equipment for recycling and recovery and/or your European Union member state requirements, please contact your dealer or distributor from which your product was purchased.



DISPOSAL

Minn Kota motors are not subject to the disposal regulations EAG-VO (electric devices directive) that implements the WEEE directive. Nevertheless never dispose of your Minn Kota motor in a garbage bin but at the proper place of collection of your local town council.

Never dispose of battery in a garbage bin. Comply with the disposal directions of the manufacturer or his representative and dispose of them at the proper place of collection of your local town council.

REGULATORY COMPLIANCE INFORMATION

› Motors with Advanced GPS Navigation

For regulatory information on motors with Advanced GPS Navigation, please refer to the Advanced GPS Navigation Manual online at minnkota.johnsonoutdoors.com.

FCC COMPLIANCE



FCC COMPLIANCE

This device complies with Part 15 of the FCC rules. **Operation is subject to the following two conditions:**

1. This device may not cause harmful interference.
2. This device must accept any interference that may be received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Johnson Outdoors Marine Electronics, Inc. could void the user's authority to operate this equipment.

NOTICE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. **If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:**

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

INDUSTRY CANADA COMPLIANCE

This product meets the applicable Industry Canada technical specifications. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Changes or modifications not expressly approved by Johnson Outdoors Marine Electronics, Inc. could void the user's authority to operate this equipment.

ENVIRONMENTAL RATINGS

Ambient operating temperature range: -10C to 50C

Ambient operating humidity range: 5% to 95%

Maximum operating altitude: 10,000 feet



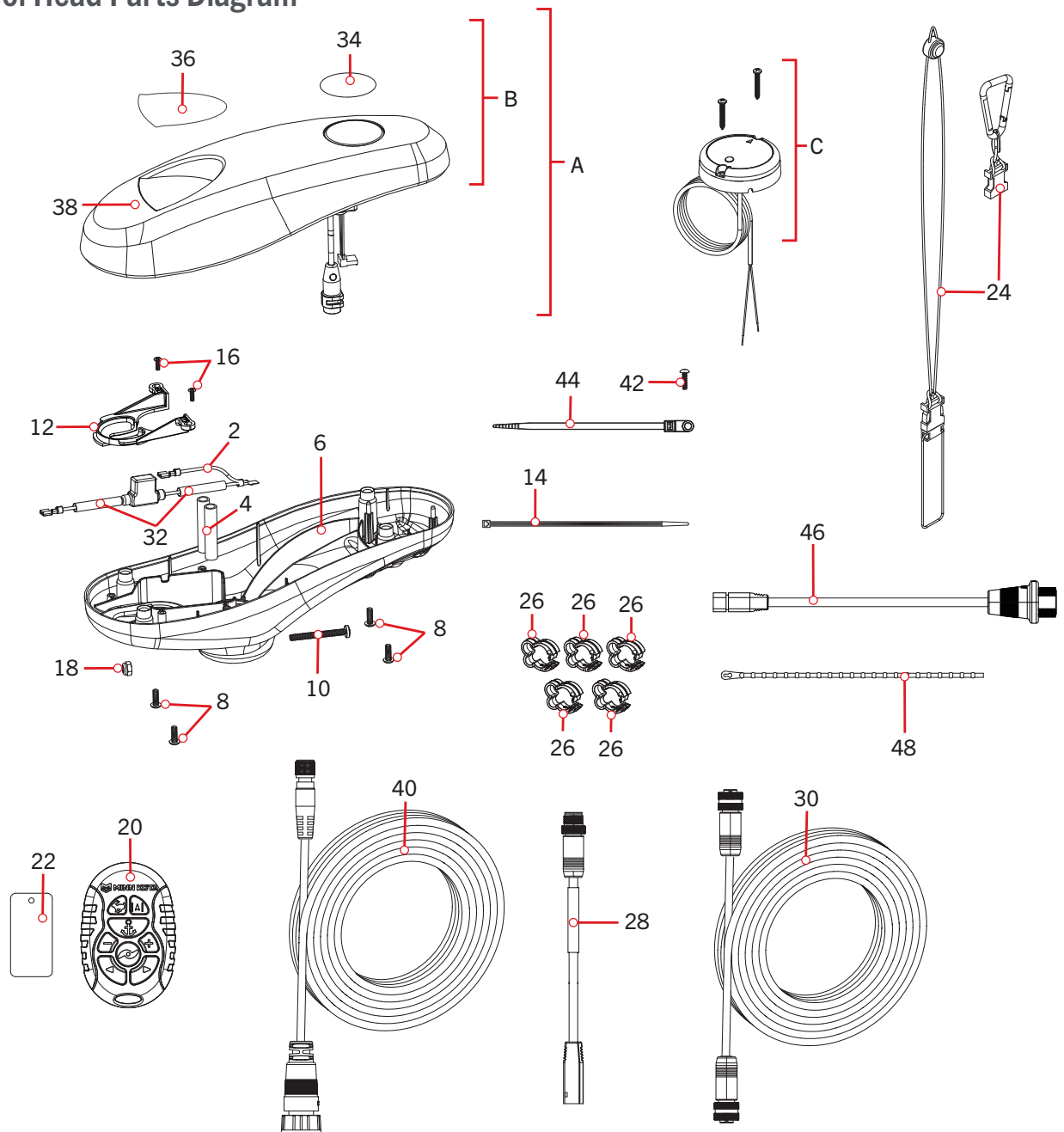
PARTS DIAGRAM & PARTS LIST

ULTREX - 80/112 LBS THRUST - 24/36 VOLT - 45"/52"/60" SHAFT

The parts diagram and parts list provides Minn Kota® WEEE compliance disassembly instructions. For more information about where you should dispose of your waste equipment for recycling and recovery and/or your European Union member state requirements, please contact your dealer or distributor from which your product was purchased. Tools required, but not limited to: flat head screwdriver, Phillips screwdriver, socket set, pliers, wire cutters.

ULTREX CONTROL HEAD >

> Control Head Parts Diagram



PARTS DIAGRAM & PARTS LIST

Control Head Parts List

Assembly	Part #	Description	Notes	Quantity
A	2774103	CONTROLLER,ADV GPS NAV,TRV/UTX		1
B	2770242	CVR KIT, ADV GPS NAV, TRV/UTX	*COVER & DECALS ONLY*	1
C	2996400	HEADING SENSOR ASSEMBLY		1
Item	Part #	Description	Notes	Quantity
▲	✘	SEAL, BUNG LOWER		1
▲	✘	SEAL, BUNG UPPER		1
2	2218201	FUSE HOLDER ASSEMBLY		1
4	2065400	WIRE INSULATOR-LGE 1-3/4,BLUE		2
6	2292500	CONTROL BOX, ULTREX, T2		1
8	2372100	SCREW-#8-18 X 5/8 THD* (SS)		4
10	2263406	SCREW-#10-24 X 2" S/S PPH		1
12	2224706	PLUG, SCREW-DOWN, BLK		1
14	9953310	TIE WRAP-8.5"		1
16	2203441	SCREW-#6 X 1/2" THRD FORM,SSTL		2
18	2333101	NUT-HEX #10-24 UNC-2B NYL SS		1
20	2994175	REMOTE ASM, MICRO REMOTE		1
22	2394110	TAG, MICRO REMOTE		1
24	2390802	LANYARD w/CARABINR,IP RMT		1
26	2290844	CLIP, CABLE ROUTING		5
28	490380-1	CABLE, ETHERNET PIGTAIL-700 HD		1
30	490384-4	CABLE, ETHERNET (M12-M12), 30'		1
32	2375400	SHRINK TUBE-1/4OD X 1-3/4		2
34	2395524	DECAL, DOMED FW		1
36	2395573	DECAL,PUSH BTN TOP 80 LB	*80LB*	1
	2395574	DECAL,PUSH BTN TOP 112 LB	*112LB*	1
38	✘	COVER,CTRL BOX iP, PD PRINTED		1
40	490575-2	CABLE, ADPTR, 14 PIN, 175"-DSC	*DUAL SPECTRUM CHIRP*	1
	490507-2	CABLE, ADP-INT MDI 14 M12-174"	*BUILT-IN MEGA DOWN IMAGING*	1
42	2203441	SCREW-#6 X 1/2" THRD FORM, SSTL		1
44	2206302	TIE WRAP, SCREW MOUNT 6.3"		1
46	2994961	BAG ASM, CABLE,ADPTR, 490537-2	*490537-2* *MKR-MI-1*	1
48	2206304	TIE WRAP, REUSABLE RED, 6"		1
▲	2205412	SHRINK TUBE-.75 ID X 2"		1
▲	2297165	MANUAL DISCLAIMER DOWNLOAD INFO		1
▲	2297162	MANUAL, ULTREX		1
▲	2297163	QCK REF/INSTALL GUIDE,UTX		1

▲ Not shown on Parts Diagram.

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

PARTS DIAGRAM & PARTS LIST



Item	Part #	Description	Notes	Quantity
▲	2394900	INSTRUCTIONS, HEADING SENSOR		1
▲	2207131	STANDARD QS SETUP GUIDE		1
▲	2205810	DECAL-MINN KOTA 12" PROMO		1
▲	2394910	INSTRC. SHEET, MICRO REMO		1
▲	2394912	QCK. REF. GUIDE, MICRO REMOTE		1
▲	2294950	INSTRC-OBN & REMOTE PAIR		1

▲ Not shown on Parts Diagram.

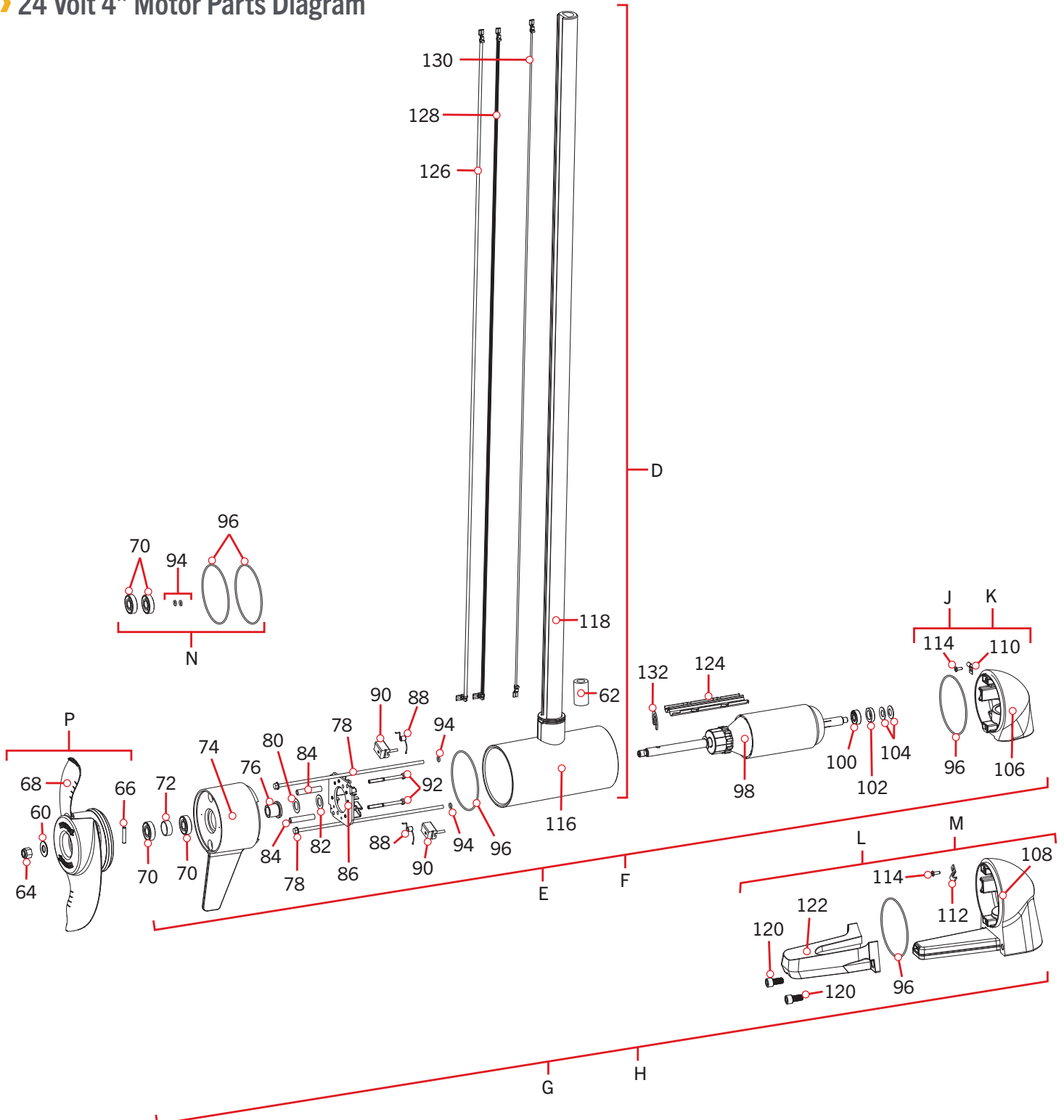
✘ This part is included in an assembly and cannot be ordered individually.



PARTS DIAGRAM & PARTS LIST

ULTREX 24 VOLT 4" MOTOR

24 Volt 4" Motor Parts Diagram



PARTS DIAGRAM & PARTS LIST

▶ 24 Volt 4" Motor Parts List

Assembly	Part #	Description	Notes	Quantity
D	2777196	CTR HSG,CB,80#,FW, UP TO 60"	*CENTER SECTION & TUBE* *CUT TO LENGTH* *BUILT-IN MEGA DOWN IMAGING*	1
E	2437025	MTR ASY 24V 4" 80# DSC CB	*DUAL SPECTRUM CHIRP* *45"*	1
F	2437026	MTR ASY 24V 4" 80# DSC CB	*DUAL SPECTRUM CHIRP* *52"*	1
G	2777135	MTR/TUBE ASM 80# 45"UTX/MDI BT	*BUILT-IN MEGA DOWN IMAGING* *45"* *MOTOR & TUBE*	1
H	2777131	MTR/TUBE ASM 80# 52"UTX/MDI BT	*BUILT-IN MEGA DOWN IMAGING* *52"* *MOTOR & TUBE*	1
J	2993020	PLN END HSG/TRDCR 4.0 DSC	*DUAL SPECTRUM CHIRP* *45"*	1
K	2993021	PLN END HSG/TRDCR 4.0 DSC	*DUAL SPECTRUM CHIRP* *52"*	1
L	2993001	PLN END HSG/TRNDCR 4.0 MDI ASM	*BUILT-IN MEGA DOWN IMAGING* *45"*	1
M	2993003	PLN END HSG/TRNDCR 4.0 MDI ASM	*BUILT-IN MEGA DOWN IMAGING* *52"*	1
N	2889460	80# THRUST SEAL KIT		1
P	1378132	80# THRUST PROP KIT		1
Item	Part #	Description	Notes	Quantity
60	2091701	WASHER-PROP (LARGE)		1
62	✘	BEAD-FERRITE		1
64	2093101	NUT-PROP,NYLOC,LG,MX101 3/8 SS		1
66	2262658	PIN-DRIVE 1" X 3/16" S/S		1
68	2331161	PROP-WW2 4" WELDED		1
70	880-025	SEAL		2
72	725-095	PAPER TUBE - SEAL BORE		1
74	92-300-170	BRUSH END HSG ASY 4.0 FW		1
76	144-017	BEARING - FLANGE		1
78	830-095	THRU BOLT 12-24 x 9.79		2
80	990-052	WASHER - NYLATRON		1
82	990-051	WASHER - STEEL THRUST		1
84	973-025	SPACER - BRUSHPLATE		2
86	9-738-015	BRUSH PLATE-4" terminal		1
88	975-041	SPRING - TORSION		2
90	188-094	BRUSH W/TERMINAL		2
92	830-027	SCREW - SELF-THREAD 10-32X2.25		2
94	701-009	O-RING	*THRU-BOLT*	2
96	701-043	O-RING		2
98	2-100-214	ARM ASSY 24V 4" 80# (WW2)		1
100	140-010	BEARING - BALL		1
102	990-045	SPACER - THRUST		1
104	992-010	WASHER - BELLEVILLE		2
106	✘	PLN END 4.0"US2.5/DSC PNT	*DUAL SPECTRUM CHIRP*	1

▲ Not shown on Parts Diagram.

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

PARTS DIAGRAM & PARTS LIST



Item	Part #	Description	Notes	Quantity
108	✘	PLAIN END HOUSING, PNT 4.0 DI	*BUILT-IN MEGA DOWN IMAGING*	1
110	230-038	CABLE CLAMP	*DUAL SPECTRUM CHIRP*	1
112	230-040	CABLE CLAMP, 1/4" STEEL	*BUILT-IN MEGA DOWN IMAGING*	1
114	2302104	SCREW-#6-20 X 3/8 THD CUTS,RIE		1
116	✘	CTR HSG ASY 4.0 FW -MGNTZ		1
118	✘	TUBE-COMP,BLK,48",1/4" WALL	*45"*	1
	✘	TUBE-CMP,BLK,54",1/4" WALL	*52"*	1
120	830-110	SCREW 5-16 - 18 X 5/8 SHCS SS	*BUILT-IN MEGA DOWN IMAGING*	2
122	792-001	GUARD TRANSDUCER, PNT 4.0 DI	*BUILT-IN MEGA DOWN IMAGING*	1
124	582-013	CLIP, RETAINING SHORT		1
126	640-118	LEADWIRE RED 10 AWG 56 XLP	*45"*	1
	640-132	LEADWIRE RED 10AWG 60-1/4 XLP	*52"*	1
128	640-016	LEADWIRE BLK 10 AWG 56 1/2 XLP	*45"*	1
	640-017	LEADWIRE BLK 10 AWG 61 XLP	*52"*	1
130	640-315	LEADWIRE BROWN 18 AWG 62" GPT	*45"*	1
	640-316	LEADWIRE BROWN 18 AWG 71" GPT	*52"*	1
132	788-040	RETAINING RING		1
▲	✘	DSC XDUCER ASSY 62" HW T	*DUAL SPECTRUM CHIRP* *45"*	1
	✘	DSC XDUCER ASSY 73" HW T	*DUAL SPECTRUM CHIRP* *52"*	1
▲	✘	SCREW-#6-32X1/2"TORX PH SS	*DUAL SPECTRUM CHIRP*	3
▲	✘	BUILT- IN MDI 63"	*BUILT-IN MEGA DOWN IMAGING* *45"*	1
	✘	BUILT- IN MDI 74"	*BUILT-IN MEGA DOWN IMAGING* *52"*	1
▲	✘	SCREW-#6-20 X 3/4"THR D CUT,RIE	*BUILT-IN MEGA DOWN IMAGING*	3
▲	810-001	RIVET-.25"		6
▲	2260730	CONNECTOR 1/4 MALE TAB QD		2

▲ Not shown on Parts Diagram.

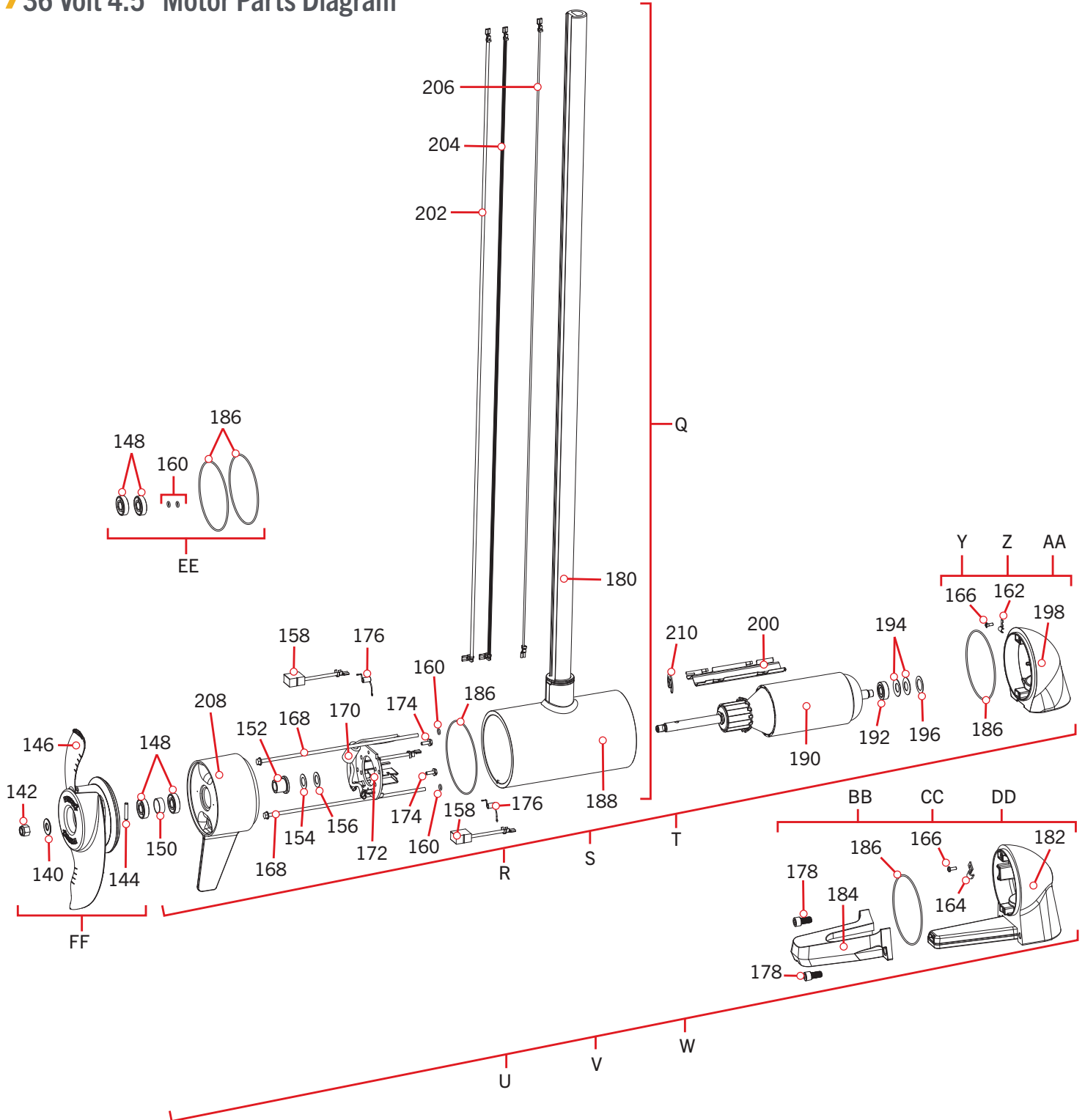
✘ This part is included in an assembly and cannot be ordered individually.



PARTS DIAGRAM & PARTS LIST

ULTREX 36 VOLT 4.5" MOTOR

36 Volt 4.5" Motor Parts Diagram



PARTS DIAGRAM & PARTS LIST

36 Volt 4.5" Motor Parts List

Assembly	Part #	Description	Notes	Quantity
Q	2777241	CTR HSG,CB,112#,FW, UP TO 60"	*CENTER SECTION & TUBE* *CUT TO LENGTH* *BUILT-IN MEGA DOWN IMAGING*	1
R	2437065	MTR ASY 36V 4.5" 112# DSC	*DUAL SPECTRUM CHIRP* *45"* *MOTOR & TUBE*	1
S	2437066	MTR ASY 36V 4.5" 112# DSC	*DUAL SPECTRUM CHIRP* *52"* *MOTOR & TUBE*	1
T	2437067	MTR ASY 36V 4.5" 112# DSC	*DUAL SPECTRUM CHIRP* *60"* *MOTOR & TUBE*	1
U	2777150	MTR/TUBE ASM 112#45"UTX/MDI BT	*BUILT-IN MEGA DOWN IMAGING* *45"* *MOTOR & TUBE*	1
V	2777151	MTR/TUBE ASM 112#52"UTX/MDI BT	*BUILT-IN MEGA DOWN IMAGING* *52"* *MOTOR & TUBE*	1
W	2777153	MTR/TUBE ASM 112#60"UTX/MDI BT	*BUILT-IN MEGA DOWN IMAGING* *60"* *MOTOR & TUBE*	1
Y	2993022	PLN END HSG/TRDCR 4.5 DSC	*DUAL SPECTRUM CHIRP* *45"*	1
Z	2993023	PLN END HSG/TRDCR 4.5 DSC	*DUAL SPECTRUM CHIRP* *52"*	1
AA	2993024	PLN END HSG/TRDCR 4.5 DSC	*DUAL SPECTRUM CHIRP* *60"*	1
BB	2993052	PLN END HSG/TRNDCR 4.5 MDI	*BUILT-IN MEGA DOWN IMAGING* *45"*	1
CC	2993059	PLN END HSG/TRNDCR 4.5 MDI	*BUILT-IN MEGA DOWN IMAGING* *52"*	1
DD	2993056	PLN END HSG/TRNDCR 4.5 MDI	*BUILT-IN MEGA DOWN IMAGING* *60"*	1
EE	2881450	SEAL & O-RING KIT 112#		1
FF	1378160	PROP KIT 2341160 112# WW2		1
Item	Part #	Description	Notes	Quantity
140	2091701	WASHER-PROP (LARGE)		1
142	2093101	NUT-PROP,NYLOC,LG,MX101 3/8 SS		1
144	2262658	PIN-DRIVE 1" X 3/16" S/S		1
146	2341161	PROP-WW2(4.5)W/ADP.RING		1
148	880-025	SEAL		2
150	725-095	PAPER TUBE - SEAL BORE		1
152	144-017	BEARING - FLANGE		1
154	990-052	WASHER - NYLATRON		1
156	990-051	WASHER - STEEL THRUST		1
158	188-095	BRUSH		2
160	701-009	O-RING, THRU BOLTS	*THRU-BOLT*	2
162	230-038	CABLE CLAMP	*DUAL SPECTRUM CHIRP*	1
164	230-040	CABLE CLAMP, 1/4" STEEL	*BUILT-IN MEGA DOWN IMAGING*	1
166	2302104	SCREW-#6-20 X 3/8 THD CUTS,RIE		1
168	830-094	THRU BOLT 12-24 X10.31		2
170	2307312	BEAD-FERRITE		1
172	9-738-011	BRUSH PLATE ASSY, 4.5"		1
174	2053410	SCREW-BRUSH PLATE, 10-32		2
176	975-045	SPRING-TORSION		2
178	830-110	SCREW-5-16-18 X 5/8 SHCS SS	*BUILT-IN MEGA DOWN IMAGING*	2

▲ Not shown on Parts Diagram.

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

PARTS DIAGRAM & PARTS LIST

Item	Part #	Description	Notes	Quantity
180	✘	TUBE-COMP,BLK,48",1/4" WALL	*45"	1
	✘	TUBE-CMP,BLK,54",1/4" WALL	*52"	1
	✘	TUBE-COMP,BLK,60",w/1/4" WALL	*60"	1
182	✘	PLAIN END HSG, PNT 4.5 DI	*BUILT-IN MEGA DOWN IMAGING*	1
184	792-005	GUARD, TRANSDUCER, PNT 4.5 DI	*BUILT-IN MEGA DOWN IMAGING*	1
186	701-098	O-RING, 98MM X 2MM		2
188	✘	CTR HSG ASY 4.5" MAG FW CB TER		1
190	2-100-245	ARMATURE ASY 4.5"LWR UNIT		1
192	140-014	BEARING-BALL		1
194	992-011	WASHER-BELLEVILLE		2
196	990-011	WASHER-SHIM OD 1",ID.630"SS		1
198	✘	PLN END 4.5"US2.5/DSC PNT	*DUAL SPECTRUM CHIRP*	1
200	582-016	CLIP-RETAINING, SONAR		1
202	640-140	LEADWIRE RED 10AWG 61 1/2" GPT	*45"	1
	640-142	LEADWIRE RED 10AWG 65" GPT	*52"	
	640-145	LEADWIRE RED 10AWG 75 7/8" GPT	*60"	1
204	640-040	LEADWIRE BLK 10AWG 62 1/4" GPT	*45"	1
	640-042	LEADWIRE BLK 10AWG 66 1/4" GPT	*52"	1
	640-039	LEADWIRE BLK 10 AWG 74" GPT	*60"	1
206	640-315	LEADWIRE BROWN 18 AWG 62" GPT	*45" *52"	1
	640-316	LEADWIRE BROWN 18 AWG 71" GPT	*60"	1
208	92-300-175	BRUSH END HSG 4.5" FW		1
210	788-040	RETAINING RING		1
▲	✘	DSC XDUCER ASSY 67" HW T	*DUAL SPECTRUM CHIRP* *45"	1
	✘	DSC XDUCER ASSY 73" HW T	*DUAL SPECTRUM CHIRP* *52"	1
	✘	DSC XDUCER ASSY 79" HW T	*DUAL SPECTRUM CHIRP* *60"	1
▲	✘	SCREW-#6-32X1/2"TORX PH SS	*DUAL SPECTRUM CHIRP*	3
▲	✘	BUILT- IN MDI 68"	*BUILT-IN MEGA DOWN IMAGING* *45"	1
	✘	BUILT- IN MDI 74"	*BUILT-IN MEGA DOWN IMAGING* *52"	1
	✘	BUILT- IN MDI 80"	*BUILT-IN MEGA DOWN IMAGING* *60"	1
▲	✘	SCREW-#6-32X1/2"TORX PH SS	*BUILT-IN MEGA DOWN IMAGING*	3
▲	810-001	RIVET-.25"		8
▲	2260731	TERMINAL 1/4" MALE TAB-THREE		2

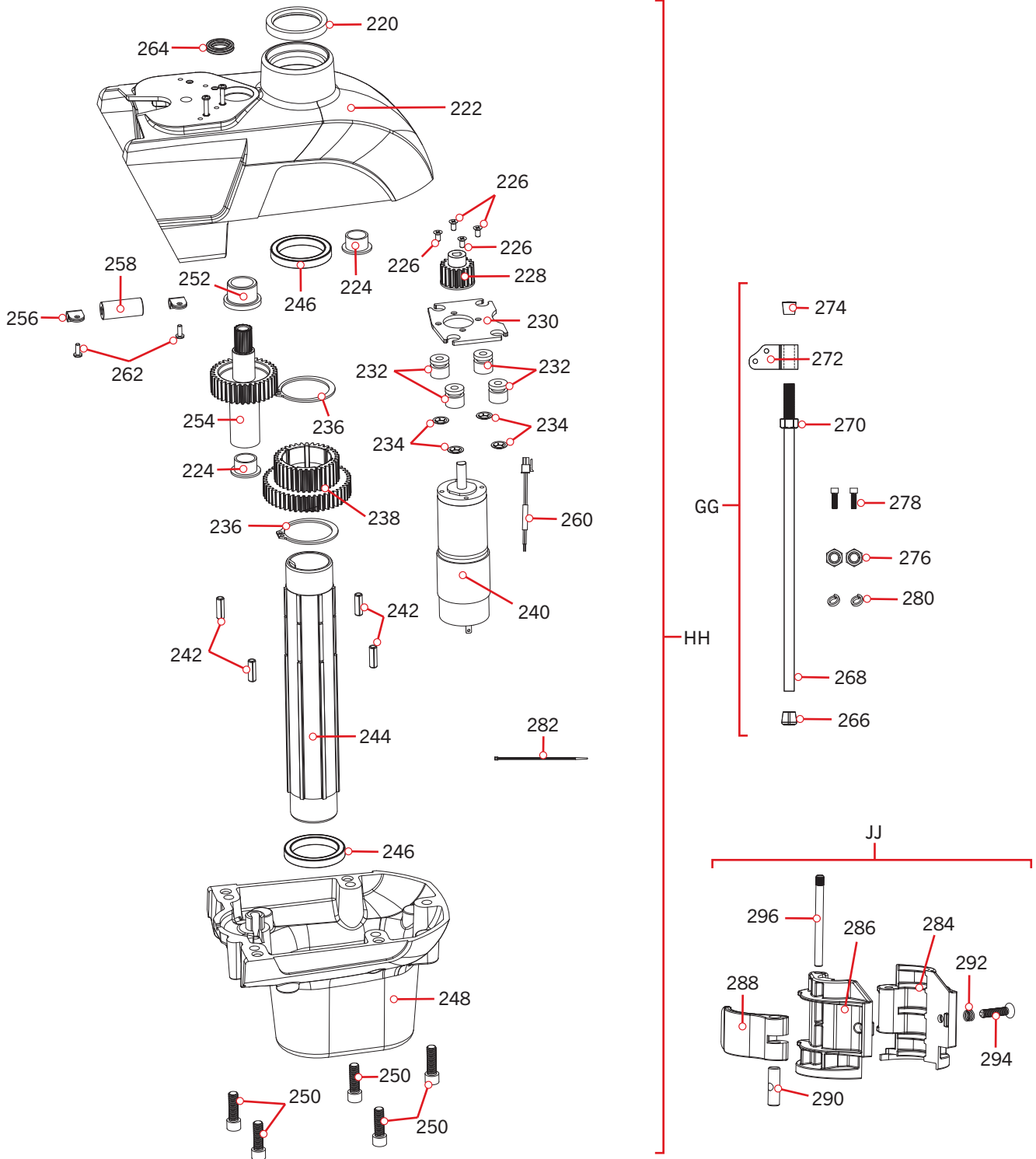
▲ Not shown on Parts Diagram.

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

PARTS DIAGRAM & PARTS LIST

ULTREX STEERING MODULE

Steering Module Parts Diagram



PARTS DIAGRAM & PARTS LIST

› Steering Module Parts List

Assembly	Part #	Description	Notes	Quantity
GG	2991925	BRACKET,STABILZR ARM ASY		1
HH	2991896	STEERING MODULE ASM FW		1
JJ	2991531	CLAMP COLLAR ASM 1.3" DIA		1
Item	Part #	Description	Notes	Quantity
220	✘	SEAL		1
222	✘	HOUSING, UPPER, PAINTED		1
224	✘	BUSHING-1012-08		2
226	✘	SCREW-M4 X 8MM, FHP, SS		4
228	✘	GEAR-MOTOR		1
230	✘	PLATE, MOTOR		1
232	✘	BUSHING, DAMPENING		4
234	✘	NUT-PUSH, 1/4" ZP		4
236	✘	RETAINING RING, 1 3/4" SHAFT		2
238	✘	GEAR-CLUSTER, 35-48T		1
240	✘	MOTOR-DRIVE		1
242	✘	PIN-SPRING, 1/4 X 3/4, ZP		4
244	✘	TUBE-STEER, MACHINED		1
246	✘	BEARING		2
248	✘	HOUSING, LOWER, PAINTED		1
250	✘	SCREW-5/16-18 X 1" SHCS ZP		5
252	✘	BUSHING-1216-12		1
254	✘	GEAR, CABLE		1
256	✘	CABLE CLAMP, 3/16", NYLON		2
258	✘	BEAD-FERRITE		1
260	✘	WIRE HARNESS, MOTOR,SHORT		1
262	✘	SCREW-#6-20 X 3/8 THD*(SS)		2
264	✘	SEAL, QUAD RING, 3/4"		1
266	2265100	BUMPER (CRUTCH TIP)		1
268	2263624	ROD,3/4" ANDZD ALUM.,22"		1
270	2263107	NUT-HEX 3/4-10 UNC NYLON		1
272	2281929	BRACKET, STABILIZER ARM		1
274	2260221	CAP,VINYL, FRTRX / ULTX STBLZR		1
276	2223100	NUT-5/16-18 NYLOCK S/S		2
278	2263422	SCREW-5/16-18 X 1" SHCS SS		2
280	2281700	5/16 "ID X .457 OD HIGH COLLAR LOCK WASHER		2
282	9953310	TIE WRAP-8.5"		1
284	✘	CLAMP COLLAR, BOLT SIDE 1.3"		1

▲ Not shown on Parts Diagram.

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

PARTS DIAGRAM & PARTS LIST



Item	Part #	Description	Notes	Quantity
286	✘	CLAMP COLLAR, CAM SIDE 1.3"		1
288	✘	LEVER, CAM LOCK		1
290	✘	PIN 3/8" DIA., CAM LOCK		1
292	✘	SPRING,DEPTH COLLAR,TRAXX		1
294	✘	SCREW-1/4-28X1 1/4 PFH 316SS		1
296	✘	PIN, HINGE		1
▲	✘	PAD, FRICTION		1

▲ Not shown on Parts Diagram.

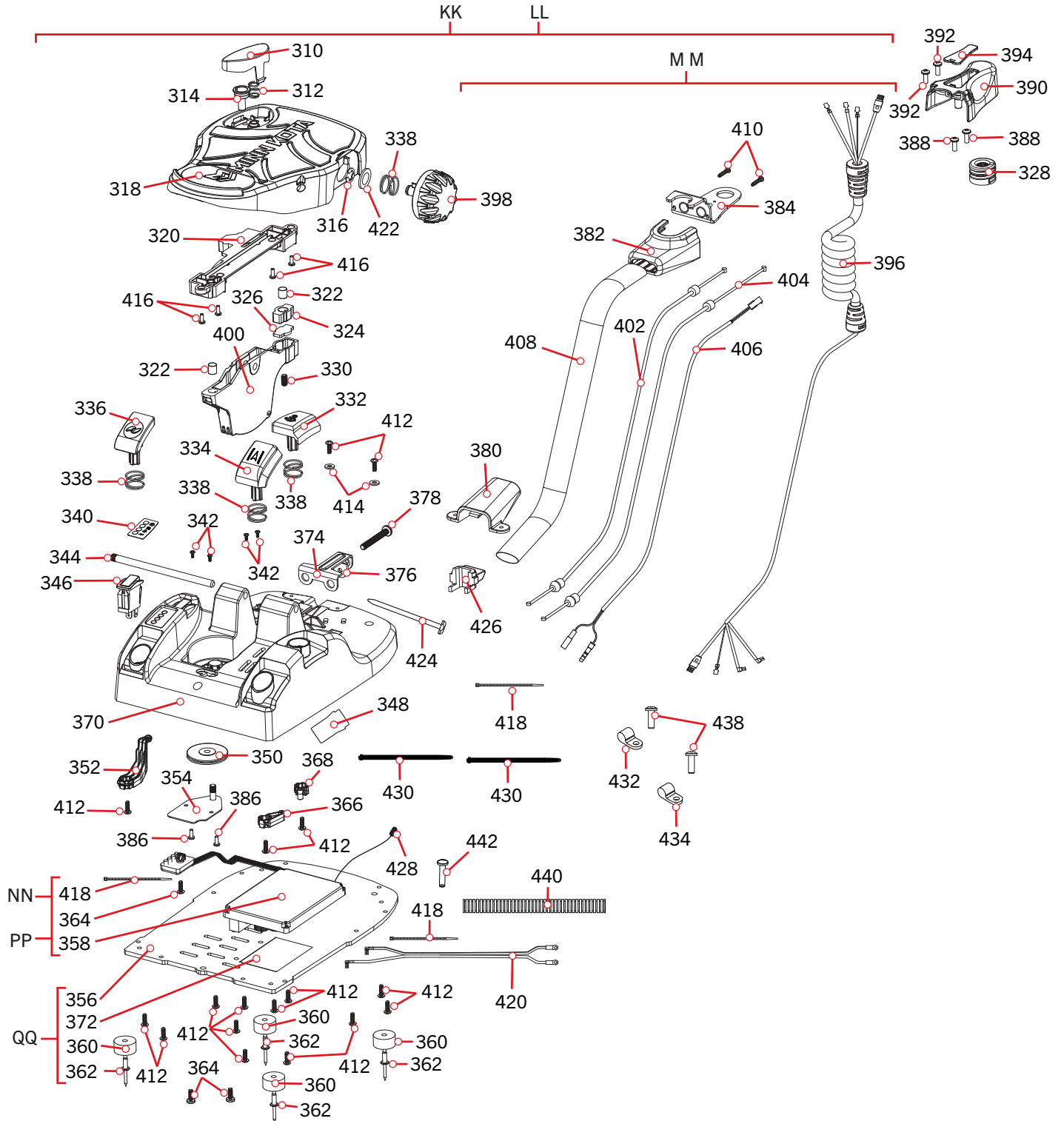
✘ This part is included in an assembly and cannot be ordered individually.



PARTS DIAGRAM & PARTS LIST

ULTREX FOOT PEDAL

Foot Pedal Parts Diagram



PARTS DIAGRAM & PARTS LIST

Foot Pedal Parts List

Assembly	Part #	Description	Notes	Quantity
KK	2992158	FT PED w/BASE ASM 24V UTX	*80LB*	1
LL	2992159	FT PED w/BASE ASM 36V UTX	*112LB*	1
MM	2771201	CORD-CABLE ASM, ULTREX		1
NN	2774060	CONTROL BOARD KIT, 24V ULTREX	*80LB*	1
PP	2774061	CONTROL BOARD KIT, 36V ULTREX	*112LB*	1
QQ	2771923	ULTREX FOOT PEDAL PLATE ASM		1
Item	Part #	Description	Notes	Quantity
310	2993705	PUSH BTTN/MAGNET ASSY		1
312	2302732	SPRING-LOWER PEDAL S/S		1
314	2260810	CLIP, REED SENSOR		1
316	2263000	E-RING TRU-ARC#5133-43		1
318	2994451	FOOT PEDAL w/MAGNET, ULTREX		1
320	2294027	CONTROL BRD,SENSOR BRD		1
322	2294410	ACTUATOR-SENSOR, DIA. .375 MAX		2
324	2294420	CARRIER, ACTUATOR		1
326	2294430	BACKER, CARRIER		1
328	2292300	PULLEY, CABLE DRUM		1
330	2293401	SCREW-1/4-20 X 1/2 SET, 316 SS		1
332	2293720	BUTTON-SL, FOOT PEDAL		1
334	2293731	BUTTON, AP FOOT PEDAL		1
336	2293710	BUTTON-PROP, FOOT PEDAL		1
338	2292700	SPRING, BUTTON, FOOT PEDAL		4
340	2295628	DECAL, INDICATOR LIGHTS		1
342	2373440	SCREW-#4-24 X 1/4 PHCR SS TY B		4
344	2260511	PIN-PIVOT A/T FT PDL		1
346	2294011	SWITCH-POWER w/WIRES, UTX FP		1
348	2266413	TENSION SCREW PLATE FTPEDAL		1
350	2262301	PULLEY (FOOT PEDAL)		1
352	2993715	ARM-SENSOR, PROP W/MAGNET		1
354	2266401	COVER-PULLEY (STAMPING)		1
356	2291920	PLATE-BOTTOM		1
358	2294060	CONTROL BOARD,24V,ULTREX	*80LB*	1
	2294061	CONTROL BOARD,36V,ULTREX	*112LB*	1
360	2265126	BUMPER PAD, FOOT PEDAL		4
362	2378600	RIVET-POP,3/16 X 3/4 ALUM.SHNK		4
364	2223455	SCREW-#10-32 X 1/2" ZP MACHINE		2
366	2993735	ARM-SENSOR, AP w/MAGNET		1
368	2993725	ARM-SENSOR, SL w/MAGNET		1

▲ Not shown on Parts Diagram.

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

PARTS DIAGRAM & PARTS LIST



Item	Part #	Description	Notes	Quantity
370	2994505	BASE w/PIN, FOOT PEDAL, BL		1
372	2365107	INSULATING PAD(2.3 X 3.2)		1
374	2263210	BRACKET-CONDUIT ADJUSTMEN		1
376	2263140	KEEPER-NYLOCK		1
378	2263466	SCREW-1/4-20 X 2" PPH SS/REI		1
380	2265115	BOOT-FOOT PEDAL BASE		1
382	2296410	COVER, COIL CORD		1
384	2291910	BRACKET, CABLE ANCHOR		1
386	2373450	SCREW-#8-18 X 3/8" THRD.CUT SS		2
388	2323406	SCREW-#10-24 X .50 PPH SS		2
390	2296400	COVER, WRAP DRUM		1
392	2293403	SCREW-#6-32 X .625 PPH SS		2
394	2296405	COVER, MOTOR CONNECTION		1
396	2291200	COIL CORD ASSEMBLY		1
398	2290100	KNOB-SPEED CONTROL		1
400	2294400	LOWER-ROCKER, FOOT PEDAL		1
402	2297505	CABLE ASM, RIGHT (5')		1
404	2297515	CABLE ASM, LEFT (5')		1
406	2297411	WIRE HARNESS, MOTOR, LONG		1
408	2265430	CABLE JACKET 1.00" OD x 62.50		1
410	3393450	SCREW-#6-19 X .75 PPH HI-LO		2
412	2372100	SCREW-#8-18 X 5/8 THD* (SS		17
414	2261714	WASHER-MAXXUM FT PDL 18/8 SS		2
416	2332103	SCREW-#6-20 X 3/8 THD*(SS)		4
418	2256300	TIE WRAP-6.0" BLACK		3
420	2290605	LEAD WIRE, FOOT PEDAL		1
422	3391722	WASHER, FLAT 7/16		1
424	2296300	TIE WRAP, PANEL MOUNT		1
426	2292915	STRAIN RELIEF, BASE, BL		1
428	2294010	SWITCH-REED		1
430	9953310	TIE WRAP-8.5"		2
432	2290840	P-CLIP, ULTREX FOOT PEDAL		1
434	2052510	CABLE CLAMP, 3/16", NYLON		1
438	2301310	SCREW-#8-18 X 1/2 (SS)*		2
440	2298800	LOOM-WIRE, 1/4 X 4"		1
442	2223430	SCREW-#8X3/4 PPH, TYPE 25,SS		1
▲	2040340	CONNECTOR, SCOTCHLOK, UY2		2
▲	✘	DECAL, COMPLIANCE, KIT 1.6, 3.0		1
▲	✘	DECAL, FCC STATEMENT		1

▲ Not shown on Parts Diagram.

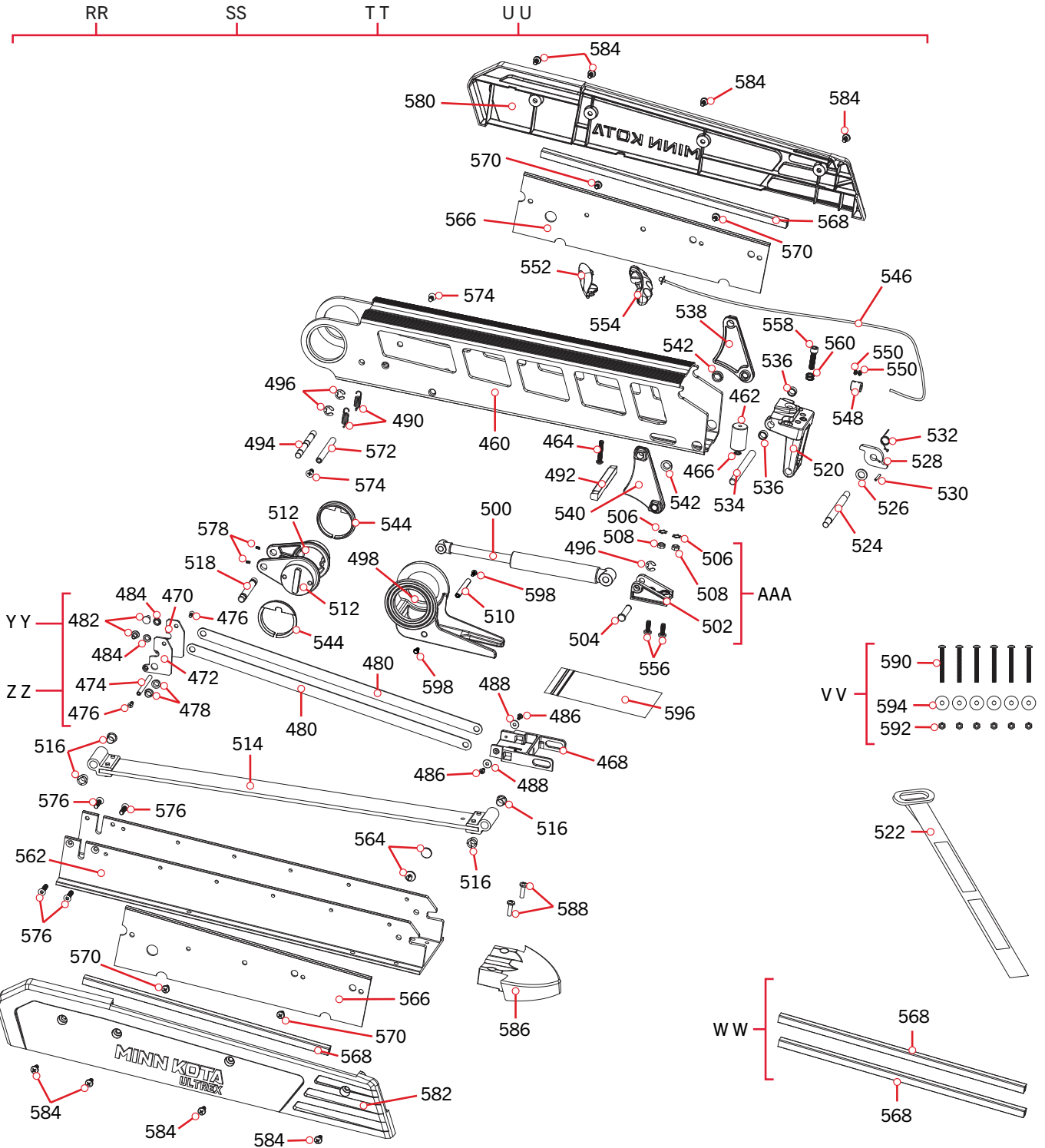
✘ This part is included in an assembly and cannot be ordered individually.



PARTS DIAGRAM & PARTS LIST

ULTREX MOUNT

Mount Parts Diagram



PARTS DIAGRAM & PARTS LIST

Mount Parts List

Assembly	Part #	Description	Notes	Quantity
RR	2771670	MOUNT KIT ASM, ULTREX 80#, 45"	*80LB* *45**	1
SS	2771671	MOUNT KIT ASM, ULTREX 80#, 52"	*80LB* *52**	1
TT	2771672	MOUNT KIT ASM, ULTREX 112#,45"	*112LB* *45**	1
UU	2771673	MOUNT KIT ASM,UTX 112#,52"/60"	*112LB 52"/60**	1
VV	2994887	INSTALLATION HARDWARE BAG ASSEMBLY		1
WW	2886400	RAIL COVER KIT, MOTOR REST		1
YY	2773601	LATCH STRAP ASSY, LONG	*112LB 52"/60** *80LB 52**	1
ZZ	2773600	LATCH STRAP ASSY, SHORT	*112LB 45** *80LB 45**	1
AAA	2991662	MNT ASM, GAS SPRNG, OTR ARM		1
Item	Part #	Description	Notes	Quantity
460	2294226	ARM-OUTER, LONG, ANODIZED	*52** *60**	1
	2294216	ARM-OUTER, SHORT, ANODIZED	*45**	1
462	2281516	SPACER, INNER ARM		1
464	2293417	SCREW-1/4-20 X 1.50" BHCS SS		1
466	2281702	WASHER-LOCK, 1/4" EXT. SS		1
468	2283610	BRKT-LATCH/STRAP, ROPE PULL		1
470	✘	BRACKET, REAR LATCH, RIGHT		1
472	✘	BRACKET, REAR LATCH, LEFT		1
474	2292625	PIN, REAR LATCH		1
476	2223468	SCREW-#8-32 X 7/16 FH, MCH		2
478	✘	BEARING-I GLIDE 3/8 SHAFT		2
480	✘	LATCH STRAP, LONG MNT SS	*52** *60**	2
	✘	LATCH STRAP, SS	*45**	2
482	✘	RIVET, SHLDR 5/16" X .159" SS		2
484	✘	BEARING, NYLINER 5/16" (5L1-FF)		2
486	2373450	SCREW-#8-18 X 3/8" THRD. CUT SS		2
488	2261732	WASHER-#8, NYLON BLACK		2
490	2292725	SPRING, LATCH		2
492	2283616	LATCH BAR, STAINLESS STEEL	*112LB 52/60**	1
	2283615	LATCH BAR	*112LB 45** *80LB 52** *80LB 45**	1
494	2282602	PIN 3/8" X 3 3/4" SS		1
496	2263011	E-RING 3/8 DIA. SHAFT		3
498	2281501	YOKE, FORTREX		1
500	2298412	GAS SPRING, U1.5	*112LB 52/60**	1
	2298411	GAS SPRING, U1.5	*112LB 45** *80LB 52**	1
	2298410	GAS SPRING, U1.5	*80LB 45**	1
502	2291960	MOUNT, GAS SPRING, OUTER ARM		1

▲ Not shown on Parts Diagram.

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

PARTS DIAGRAM & PARTS LIST



Item	Part #	Description	Notes	Quantity
504	2292630	PIN-CLEVIS, 3/8, ZP		1
506	3394722	INSERT, PUSH ON		2
508	2073100	NUT-HEX 1/4-20 NYLOC-JAM SS		2
510	2292618	PIN, UPPER SHOCK		1
512	2281932	BRACKET-REAR PIVOT FW		2
514	2993821	ASSY,INNER ARM,LNG,FW	*52"* *60"*	1
	2993819	ASSY,INNER ARM,SHORT,FW	*45"*	1
516	2280005	BEARING,NYLINER 7/16" (7L7-F)		4
518	2282606	PIN-PIVOT, 7/16" X 3 1/8" SS		1
520	2992333	ROPE GUIDE ASSEMBLY		1
522	2773806	STRAP, HOLD DOWN		1
524	2282613	PIN, BOW GUARD, LOWER	*112LB 52/60"*	1
	2282608	PIN 7/16" X 5.15" SS	*112LB 45"* *80LB 52"* *80LB 45"*	1
526	2281704	WASHER-7/16 NYLON		1
528	2283620	LATCH, SAFETY		1
530	2282611	PIN-SPRING 3/32"		1
532	2042711	SPRING-TORSION, SS		1
534	2282600	PIN 7/16" X 4.80" SS		1
536	2287303	BUSHING, UPPER PIN		2
538	2280810	END LINK, LEFT, MACHINED	*112LB 52/60"*	1
	2280800	LINK,BOWGUARD MOUNT,LEFT	*112LB 45"* *80LB 52"* *80LB 45"*	1
540	2280815	END LINK, RIGHT, MACHINED	*112LB 52/60"*	1
	2280805	LINK,BOWGUARD MOUNT,RIGHT	*112LB 45"* *80LB 52"* *80LB 45"*	1
542	2287305	BUSHING, END LINK	*112LB 52/60"*	2
544	2287300	BUSHING-REAR PIVOT		2
546	2291400	CABLE, PULL HANDLE, SS		1
548	2290800	CLAMP, PULL CABLE		1
550	2293404	SCREW-SET-#8X 5/16,POINTED,SS		2
552	2280401	PULL GRIP,SFT,TOP,FTX,UTX		1
554	2280405	PULL GRIP, SOFT, BOTTOM		1
556	2373434	SCREW-1/4-20 X 3/4 SS PPMS		2
558	2293402	SCREW-5/16-18, SHCS, RIE,STEEL		1
560	2291700	WASHER-5/16, M8 WEDGE LCK		1
562	2281903	BASE-EXTRUSION, SHORT, MACH	*45"*	1
	2281913	BASE-EXTRUSION, LONG, MACH	*52"* *60"*	1
564	2286700	PLUG-SPACER,BASE EXTRUSION		2
566	2283631	RAIL, MACH., MOTOR REST		2
568	2286400	COVER-RAIL, MOTOR REST		2

▲ Not shown on Parts Diagram.

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



PARTS DIAGRAM & PARTS LIST



Item	Part #	Description	Notes	Quantity
570	2323403	SCREW-1/4-20 X.375 MCH SS CRPH		4
572	2282610	PIN, UPPER SHOCK		1
574	2283410	SCREW-1/4-20 X .500" PFH		2
576	2283411	SCREW-1/4-20X1.00 FHS RIE TORX		4
578	2283402	SCREW-SET 6-32 X .25" SS		2
580	2283949	SIDEPLATE, LEFT LONG FW UTX	*112LB 52"/60"* *80LB 52"*	1
	2283939	SIDEPLATE, LEFT SHORT FW UTX	*112LB 45"* *80LB 45"*	1
582	2283944	SIDEPLATE, RIGHT LONG FW UTX	*112LB 52"/60"* *80LB 52"*	1
	2283934	SIDEPLATE, RIGHT SHORT FW UTX	*112LB 45"* *80LB 45"*	1
584	2323405	SCREW-1/4-20 X 1/2" MCH SS	*112LB 45"* *80LB 45"*	6
	2323405	SCREW-1/4-20 X 1/2" MCH SS	*112LB 52"/60"* *80LB 52"*	8
586	2283900	RAMP-MOTOR		1
588	2073408	SCREW-1/4-20 X 7/8 PPH S/S		2
590	2263468	SCREW-1/4-20X2.5" S/S PPH		6
592	2263103	NUT-1/4-20 NYLOCK SS		6
594	2261713	WASHER-1/4 FLAT 18-8 SS		6
596	2295800	HANG TAG, ULTREX 1.5		1
598	2293408	SCREW-#8-32X.375 FLNG HH		2
▲	2015800	HANG TAG "CAUTION..TILT HINGE"		1
▲	2285801	HANG TAG, HOOK AND LOOP STRAP		1

▲ Not shown on Parts Diagram.

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



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