



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.

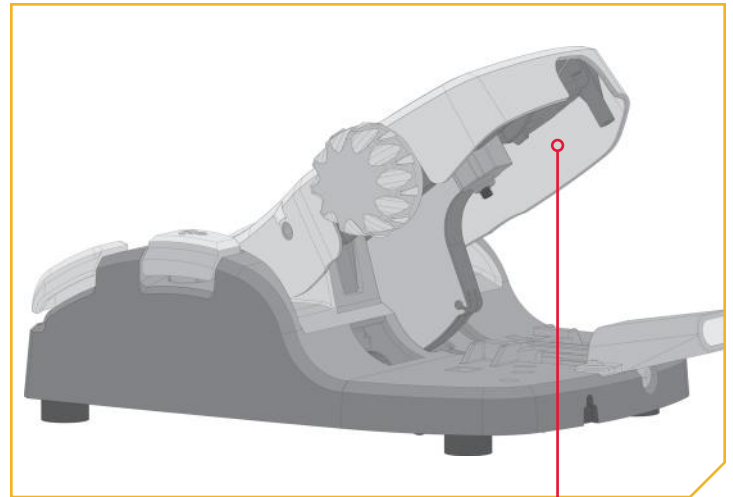
REGISTRATION

Remember to keep your receipt and immediately register your trolling motor. A registration card is included with your motor or you can complete registration on our website at minnkotamotors.com.

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. We recommend that you write the serial number down so that you have it available for future reference.

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



MOTOR INFORMATION (For Consumer Reference Only)

Model: _____

Serial Number: _____

Purchase Date: _____

Store Where Purchased: _____

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

TABLE OF CONTENTS

SAFETY CONSIDERATIONS	4
WARRANTY	5
KNOW YOUR BOAT	6
FEATURES	7
INSTALLATION	8
Assembly of Motor to Mount	9
Installing the Bow-Mount	10
Installing the Gas Spring Pin	12
Indexing the Motor.....	13
Orientate the Pedal Control Sleeve Assembly for a Starboard Mount	18
Placing the Bow-Mount Stabilizer.....	23
Mounting the Foot Pedal	25
Identifying Trolling Motor Features by their Associated Cables.....	26
Routing Connection Cables.....	27
Feature Overview and Connecting the Cables.....	29
Built-in MEGA Side Imaging.....	29
Built-in MEGA Down Imaging.....	31
Universal Sonar	32
i-Pilot Link.....	34
Removal of the Steering Module.....	36
Disconnect the Gas Spring.....	36
Remove Motor from Mount	37
Reassemble the Steering Module	37
BATTERY & WIRING INSTALLATION	39
Boat Rigging & Product Installation.....	39
Conductor Gauge and Circuit Breaker Sizing Table	39
Selecting the Correct Batteries.....	40
Additional Considerations.....	40
Connecting the Batteries in Series.....	41
MOTOR WIRING DIAGRAM	43
USING & ADJUSTING THE MOTOR	44
Mount Features	44
Stowing and Deploying the Motor	45
Adjusting the Lower Unit for a Secure Stow.....	45
Adjusting the Depth of the Motor	46
Adjusting the Pull Grip and Cable.....	47
Installing an External Transducer.....	49
USING THE FOOT PEDAL	50
Controlling Speed & Steering with the Foot Pedal	50
Adjusting the Steering Cable.....	52
SERVICE & MAINTENANCE	53
Propeller Replacement	53
General Maintenance	54
Troubleshooting	54
For Further Troubleshooting and Repair.....	55
COMPLIANCE STATEMENTS	56
PARTS DIAGRAM & PARTS LIST	58
NOTES	77

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.

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 Three-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 three (3) 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

JOME warrants to the original retail purchaser only that the composite shaft 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, free of charge, to replace any composite shaft found by JOME to be defective during the term of this warranty. Providing a new composite shaft shall be the sole and exclusive liability of JOME and the sole and exclusive remedy of the purchaser for breach of this warranty; **and purchaser shall be responsible for installing, or for the cost of labor to install, any new composite shaft 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

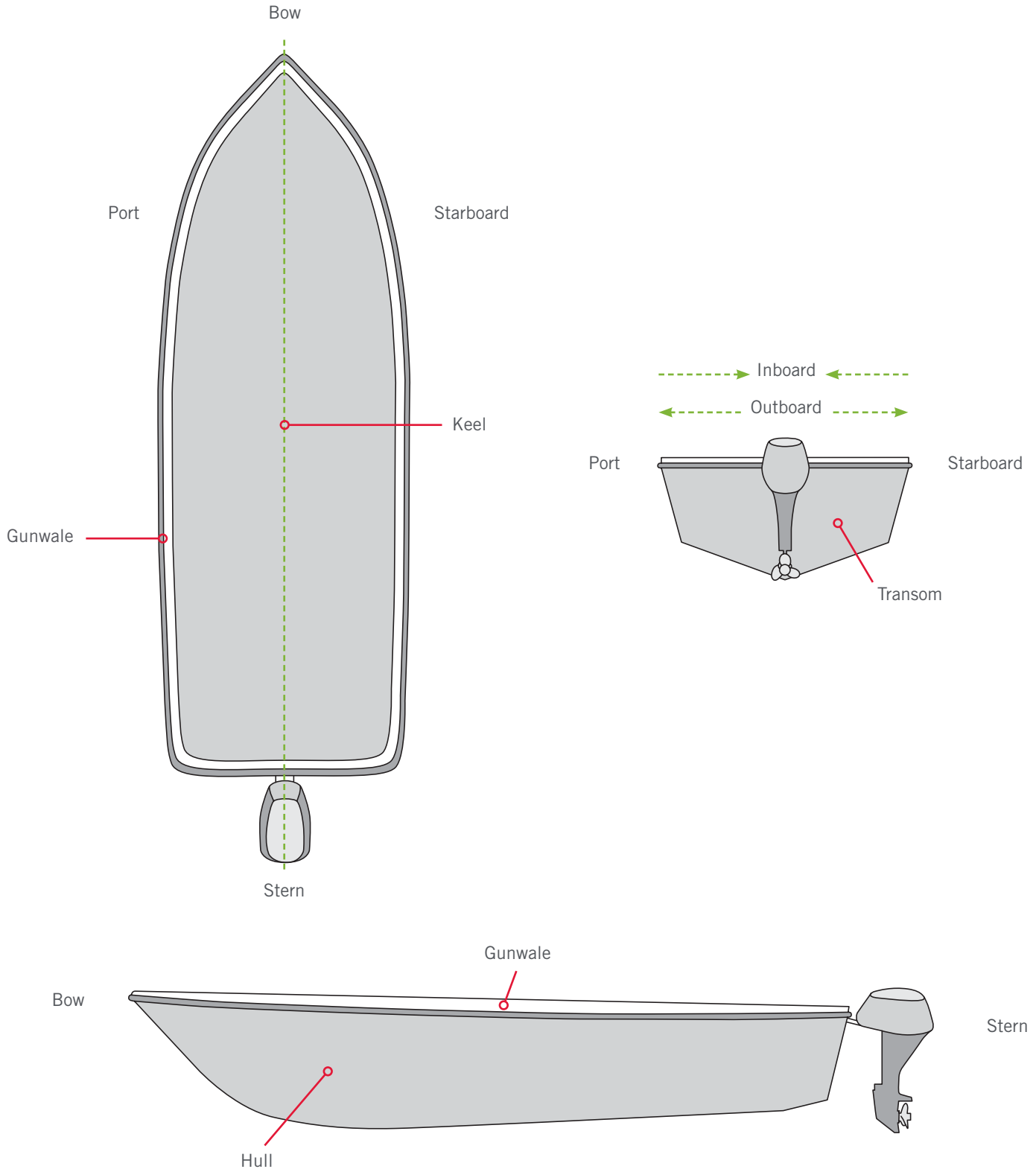
To obtain warranty service in the U.S., the product believed to be defective, and proof of original purchase (including the date of purchase), must be presented to a Minn Kota Authorized Service Center. Go to www.minnkotamotors.com/support/service-providers/locate to find a Minn Kota Authorized Service 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 www.minnkotamotors.com/contact. **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.**

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

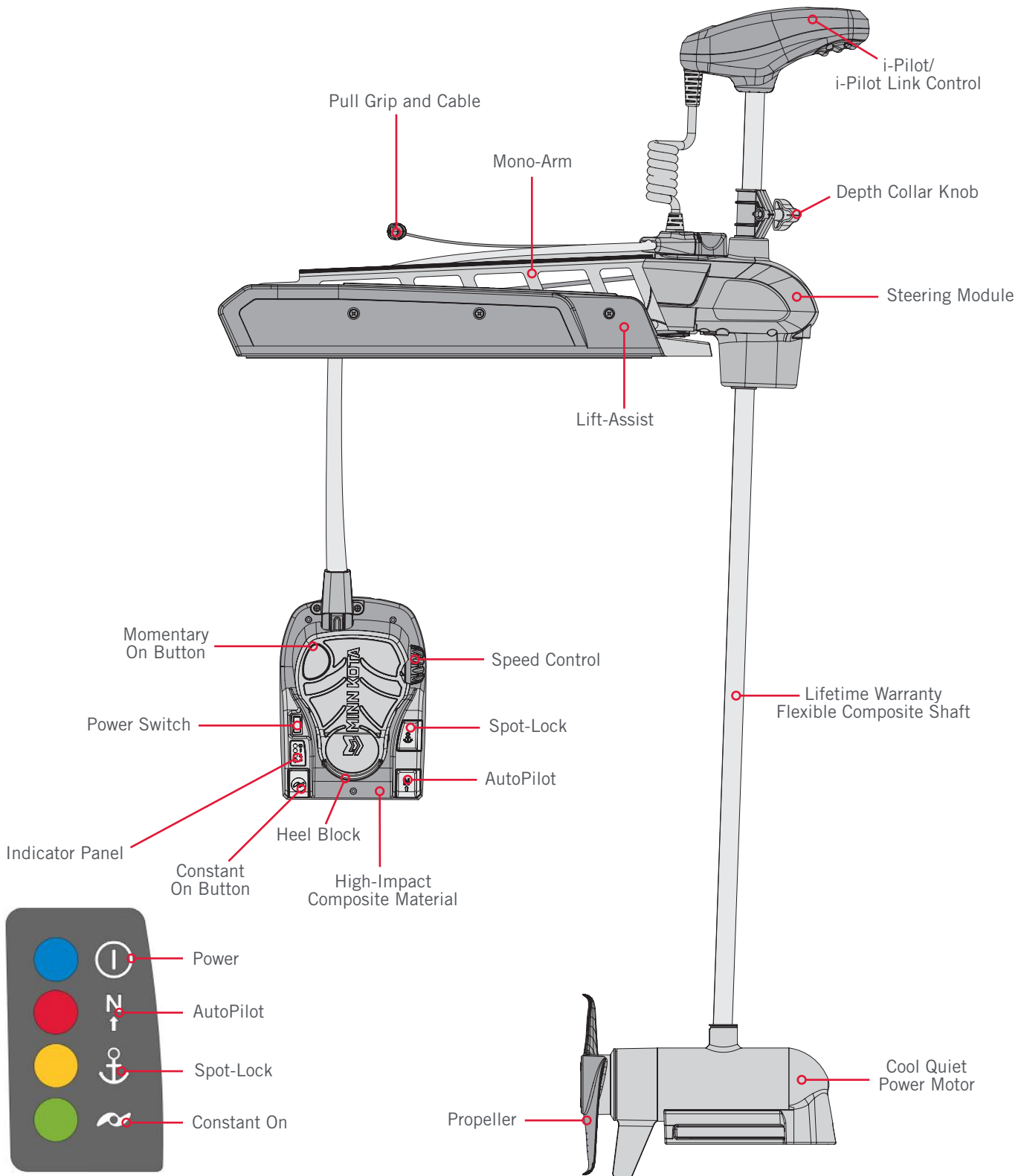
NOTICE: THERE ARE NO EXPRESS WARRANTIES OTHER THAN THESE LIMITED WARRANTIES. IN NO EVENT SHALL ANY IMPLIED WARRANTIES INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, EXTEND BEYOND THE DURATION OF THE RELEVANT EXPRESS LIMITED WARRANTY. IN NO EVENT SHALL JOME BE LIABLE 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 minnkotamotors.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 minnkotamotors.com.

INSTALLATION PARTS LIST

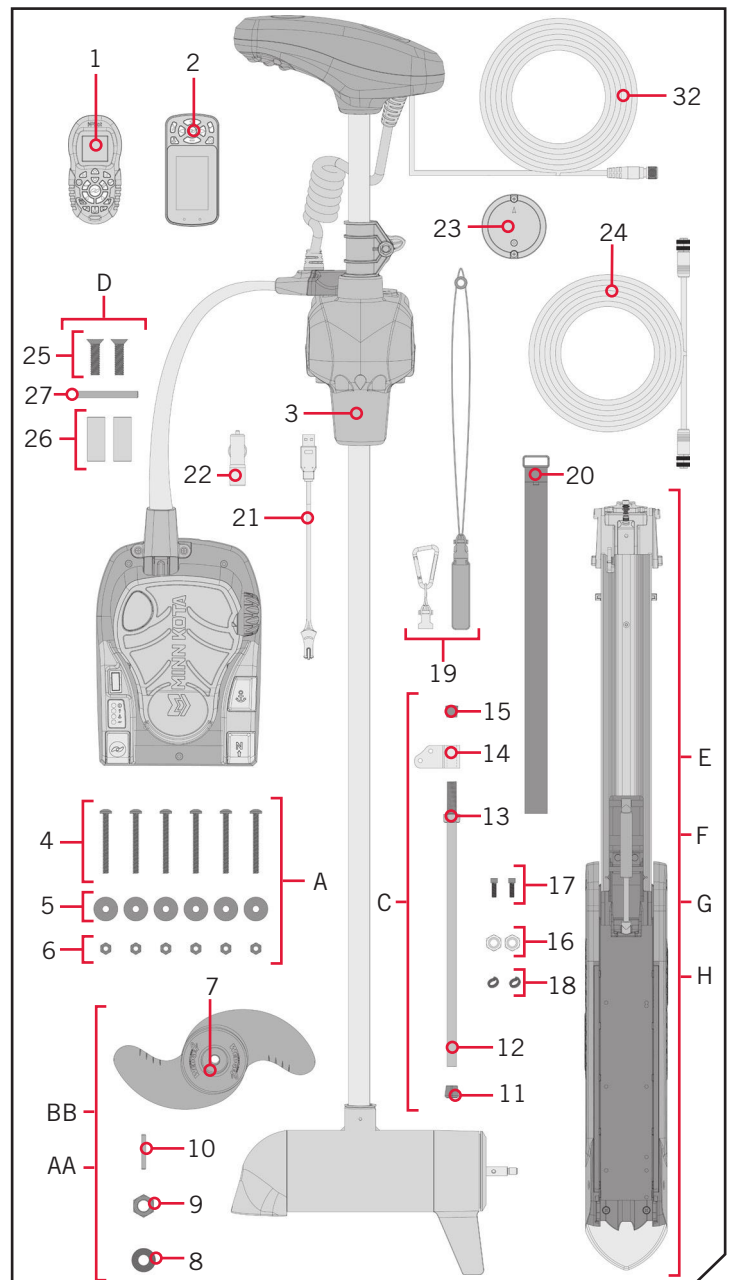
Item / Assembly	Part #	Description	Qty.
1	2994075 ♦	REMOTE ASSEMBLY, IPILOT	1
2	2994076 ●	REMOTE ASSEMBLY LINK TOUCHSCREEN	1
3	✘	MOTOR ASSEMBLY	1
A	2994887	INSTALLATION HARDWARE BAG ASSEMBLY	1
4	2263468	1/4 - 20 X 2.5" SS PPH SCREW	6
5	2263103	1/4 - 20 SS NYLOCK NUT	6
6	2261713	1/4 FLAT 18-8 SS WASHER	6
AA	1378132	80# THRUST PROP KIT	1
BB	1378160	112# THRUST PROP KIT	1
7	2341161	PROP-WW2 (4.5)W/ADP.RING *112LB MOTOR*	1
	2331161	PROP-WDLS WDG II*80LB MOTOR*	1
8	2091701	WASHER-PROP (LARGE)	1
9	2093101	NUT-PROP NYLOC,LG, MX101 3/8 SS	1
10	2262658	PIN-DRIVE 1" 3/16" S/S	1
C	2991925	BRACKET STABLZR ARM ASY (SUB)	1
11	22655100	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
19	2390800 ♦●	LANYARD, REMOTE W/ CARABEENER	1
20	2773806	STRAP, HOLD DOWN	1
21	2373241 ●	CABLE, USB REMOTE CHARGER LINK	1
22	2375901 ●	ADAPTER, USB DC POWER LINK	1
23	2996400 ♦●	HEADING SENSOR ASSEMBLY	1
24	490389-1 ●	CABLE, ETH (M12-M-M12-F, 30')	1
D	2994912	BAG ASSY, FORTREX MOUNT HDW	1
25	2283410	SCREW-1/4-20 X .500" PFH	2
26	2281710	SPACER, GAS SPRING, FORTREX	2
27	2282610	PIN, UPPER SHOCK	1
▲	2397106 ♦	MANUAL, QUICK REF., IPILOT 1.6	1
▲	2397107 ●	MANUAL-QUICK REF., IPILOT 3.0	1
▲	2997161	INSTALLATION GUIDE, ULTREX	1
E	2991642	MOUNT ASM ULTREX FW 112# 45"	1
F	2991640	MOUNT ASM ULTREX FW 80# 45"	1
G	2991641	MOUNT ASM ULTREX FW 80# 52/60"	1
H	2991643	MOUNT ASM ULTREX FW 112# 52/60"	1
32	2211410 +	CABLE-EXT, US2 MAX 175" *PRE-INSTALLED*	1
	490507-2 ➔	CABLE, ADP-INT MDI 14 M12-174" *PRE-INSTALLED*	1
	490516-3 *	CABLE, ADP-INT MSI 14 M12-156" *PRE-INSTALLED*	1

▲ Not shown on Parts Diagram.

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

♦ Only available with models factory installed with i-Pilot.

● Only available with models factory installed with i-Pilot Link.



+ Only available with models factory installed with Universal Sonar.

➔ Only available with models factory installed with Built-in MEGA Down Imaging.

* Only available with models factory installed with Built-in MEGA Side Imaging.

ASSEMBLY OF MOTOR 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 minnkotamotors.com.



View accessories available for your trolling motor at minnkotamotors.com.

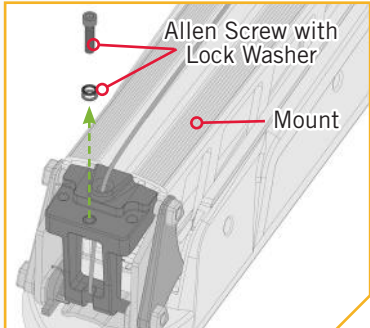
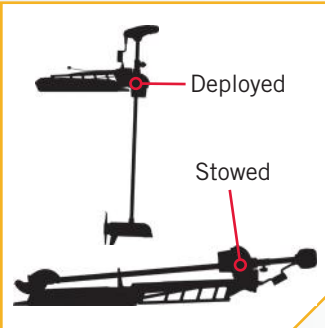
TOOLS AND RESOURCES REQUIRED

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

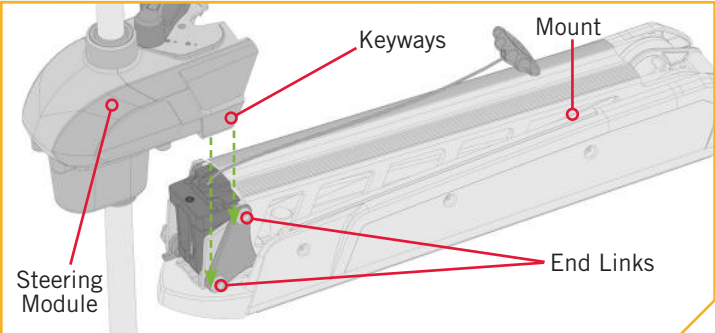
INSTALLATION

Assembly of Motor to Mount

- 1**
- a. 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.
 - b. Remove the 5/16" Allen Screw and Lock Washer from the Mount using the 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.



- 2**
- c. 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.
 - d. Lower the Motor Assembly straight down until the Steering Module is seated.



WARNING

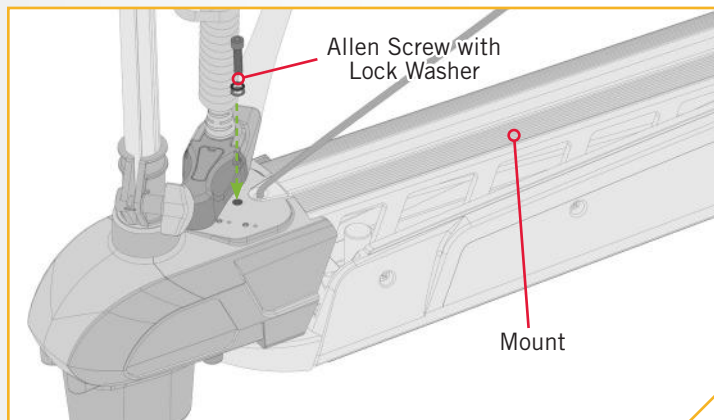
Carefully lower the Steering Module into place to avoid creating a pinch point between the Steering Module and Mount.

INSTALLING THE BOW-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 tightened to 18 to 20 ft-lbs. This will allow the motor to be stowed properly. Tighten the Allen Screw when the Mount is in the deployed position.



Installing the Bow-Mount

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

1

ITEM(S) NEEDED

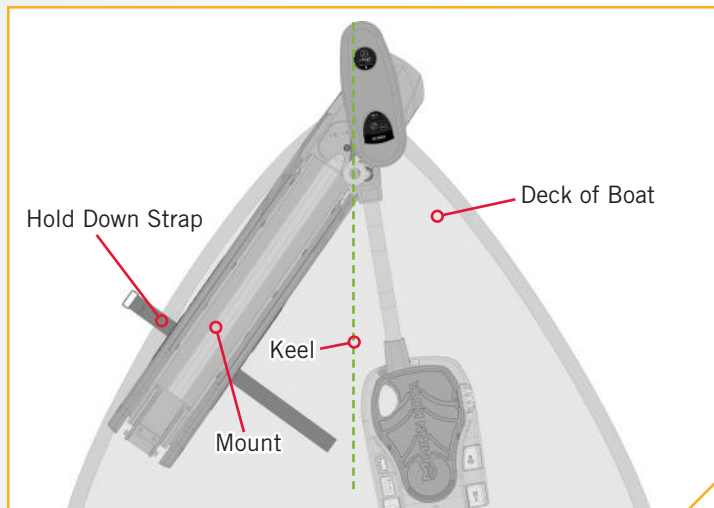


- a. Review the mounting considerations at the beginning of the Installation section for proper placement. Place the Mount as close to the centerline or keel of the boat as possible, with the motor in the stowed position, on the deck of the boat. Check placement with the motor in the stowed and deployed 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 #20) under the base of the Mount Plate so that it is below the Mount when placed.

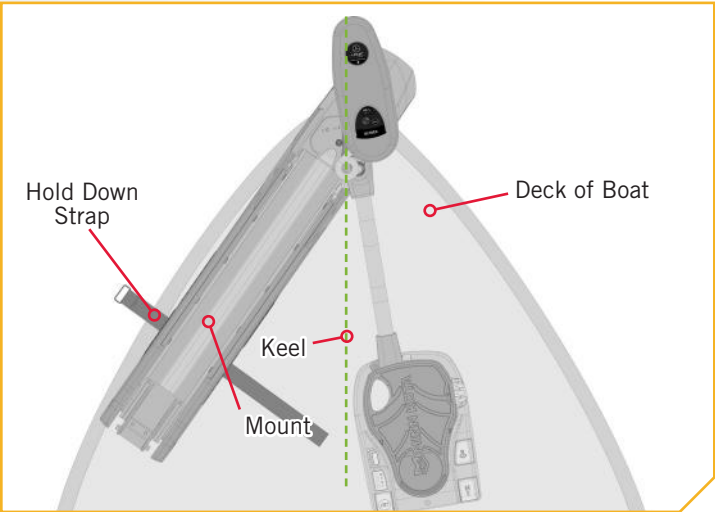


NOTICE: This motor weighs approximately 55 lbs. We recommend having a second person help with the installation.

INSTALLING THE BOW-MOUNT

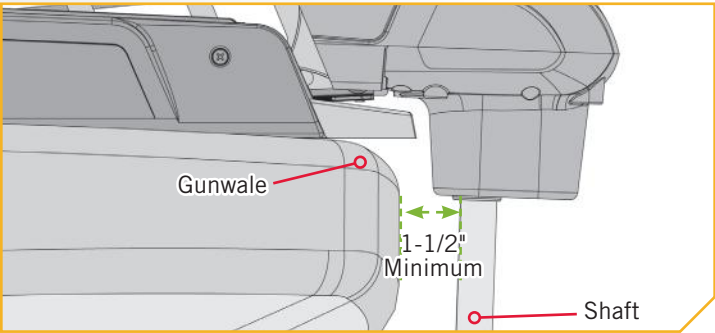
2

- 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.



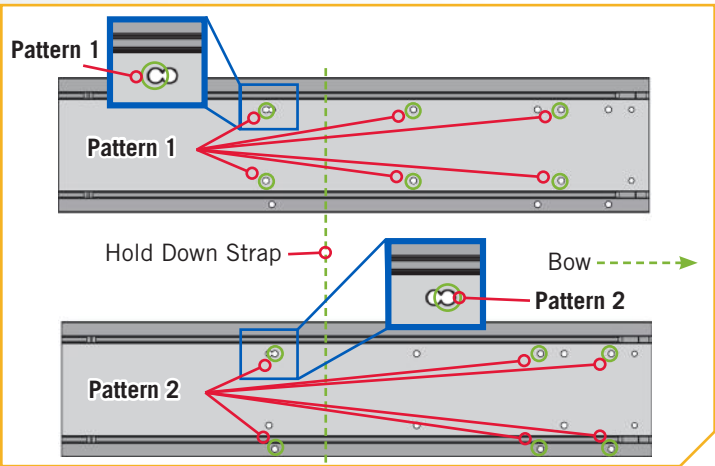
3

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



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.
- g. It is recommended to mark at least 4 of the 8 holes in the base of the Mount and to have two bolts on each side that are located the farthest apart on the Mount Plate. Ideal installation would allow for 6 bolts to be used, with a minimum of 4.
- h. Drill through the deck of the boat using a 9/32" Drill Bit on the marked locations.
- i. 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 side plate must be removed to access the mounting holes in the base of the Mount.

INSTALLING THE GAS SPRING PIN

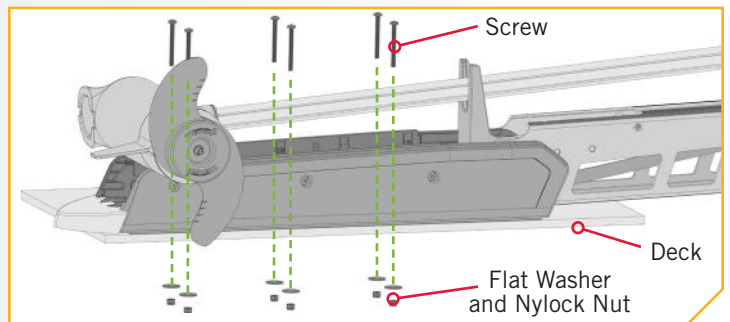
5

ITEM(S) NEEDED

- #6 x 6
- #5 x 6
- | #4 x 6

- j. Put a 1/4-20 x 2 1/2" Screw (Item #4) in each of the drilled locations. The Screw should pass through the Mount Plate and the boat deck.
- k. Place a Flat Washer (Item #5) and then a Nylock Nut (Item #6) at the end of each screw as shown and secure. Make sure all hardware is secure.

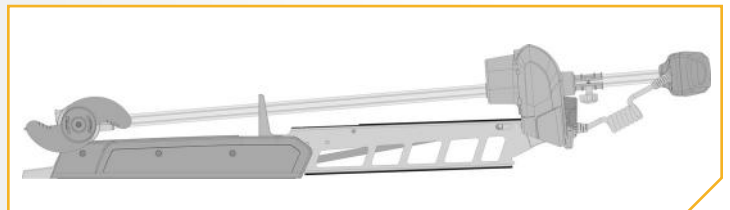
NOTICE: To prevent seizing of the stainless steel hardware, do not use high speed installation tools. Wetting the screws or applying an anti-seize may help prevent seizing.



Installing the Gas Spring Pin

1

- a. Position the motor to the stowed position with the Pull Grip and Cable to disengage the latch bar, allowing the motor to fold into a flat position.
- b. Once in the stowed or flat position, the Gas Spring Pin and Spacers can be installed.



2

ITEM(S) NEEDED

#25 x 2

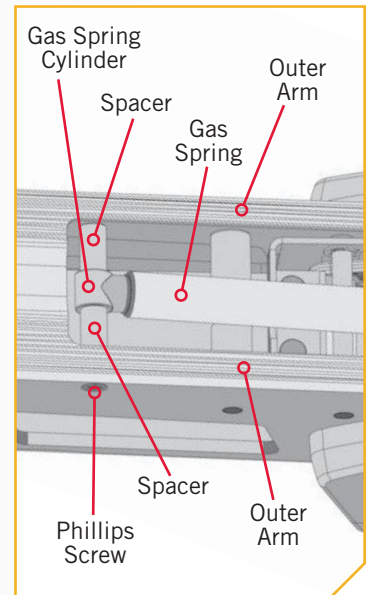
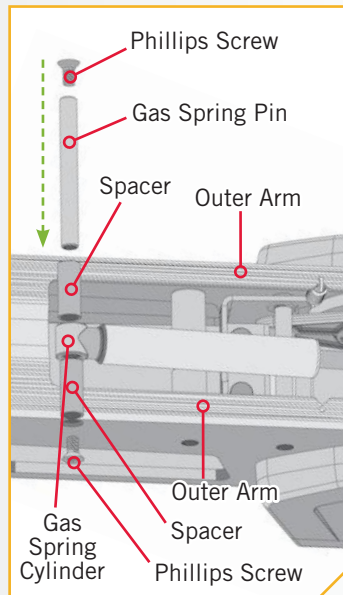
#26 x 2

#27 x 1

- c. Locate the upper Gas Spring Pin (Item #27) and Spacers (Item #26) in the bag assembly. Align the end of the Gas Spring with the holes in the Outer Arm.
- d. Install the Gas Spring Pin through the Outer Arm, then through a Spacer, the end of the Gas Spring Cylinder and another Spacer.

NOTICE: Spacers are placed on each side of the Gas Spring on the inside of the Outer Arm. Phillips Screws have a pre-applied thread locker. Do not apply additional thread-locker to them as it may prevent future removal.

- e. Install one Phillips Screw (Item #25) on each end of the Gas Spring Pin and secure with two #3 Phillips screwdrivers.
- f. Tighten Phillips Screws until the heads are flush with the Outer Arm.

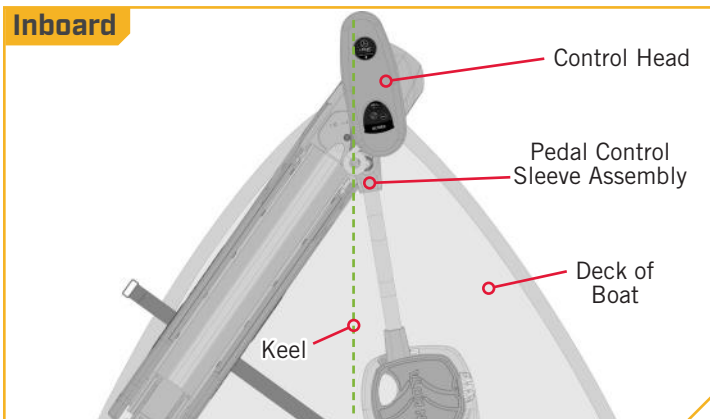


Indexing the Motor

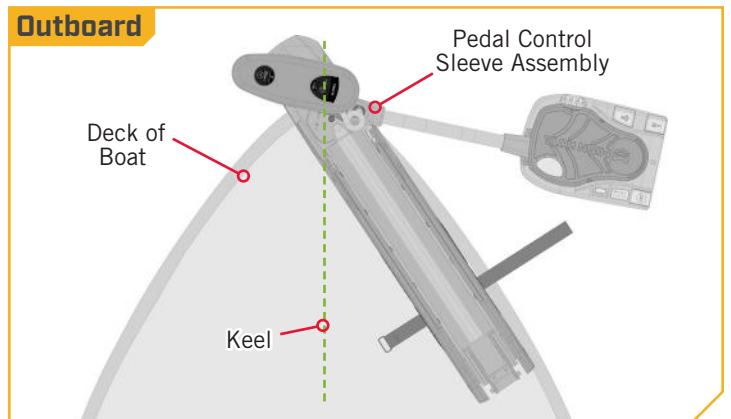
It is recommended to have the Pedal Control Sleeve Assembly pointing inboard. If the Pedal Control Sleeve Assembly points outboard, please see Orientate the Pedal Control Sleeve Assembly for a Starboard Mount. Use the following instructions to index the motor if the Pedal Control Sleeve Assembly is already 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.

Inboard



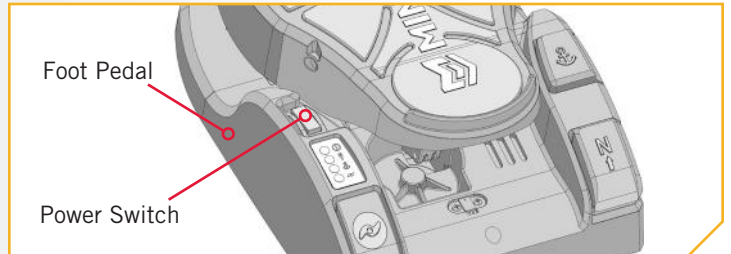
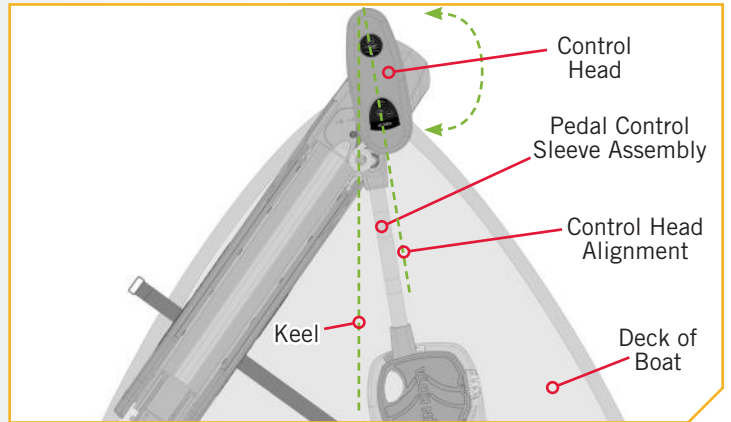
Outboard



INDEXING THE MOTOR

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.

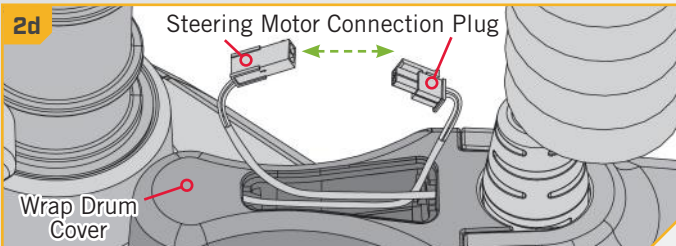
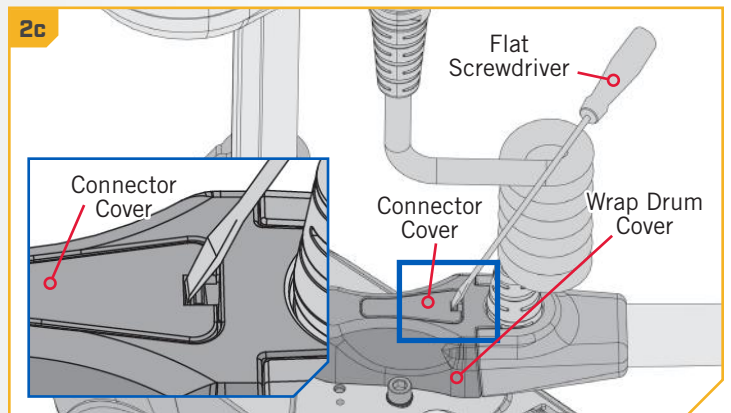


WARNING

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

2

- c. Remove the Connector Cover from the Wrap Drum Cover using a 1/8" wide 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.

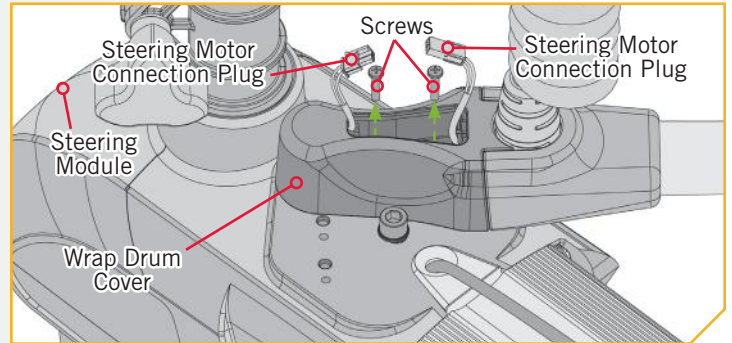


NOTICE: Please note the orientation and routing of the plug and wires for re-installation.

- 3** e. Remove the two screws that hold the Wrap Drum Cover in place with a #1 Phillips Screwdriver. Once removed, lift the Wrap Drum Cover away from the Steering Module.

⚠ CAUTION

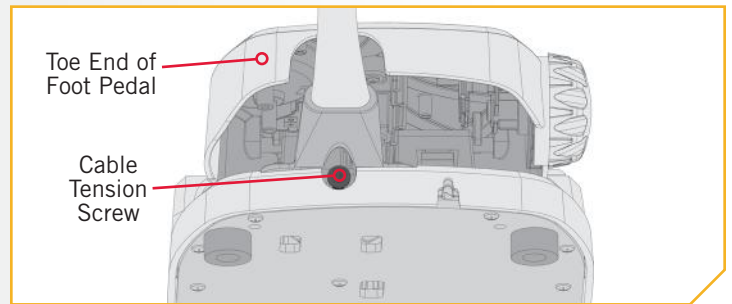
Be careful to not damage the Steering Motor Connection Plug ends.



- 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.

⚠ CAUTION

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

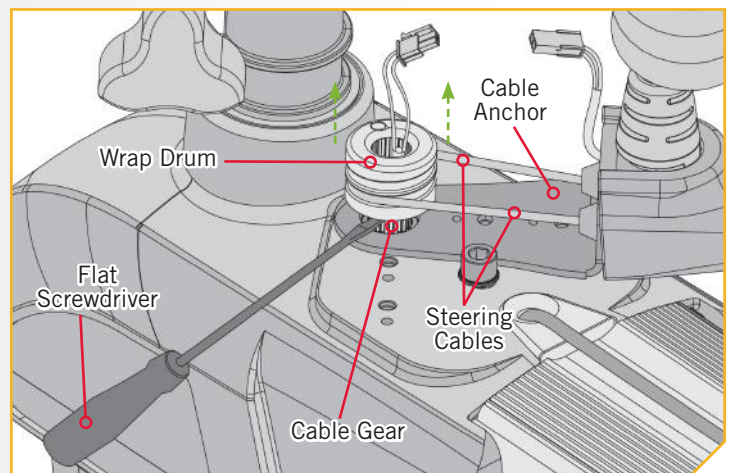


NOTICE: The cables are fed through the Cable Anchor and wound around the Wrap Drum. The right cable is the shorter cable and begins winding on the Wrap drum from the top down. The left cable is the longer cable and begins winding on the Wrap drum from the bottom up.

- 5** g. Once the Cable Tension Screw is loosened, prying the Wrap Drum straight up off of the Cable Gear using a heavy flat-blade 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

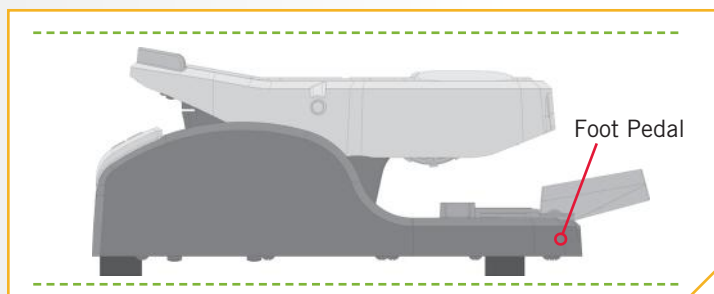
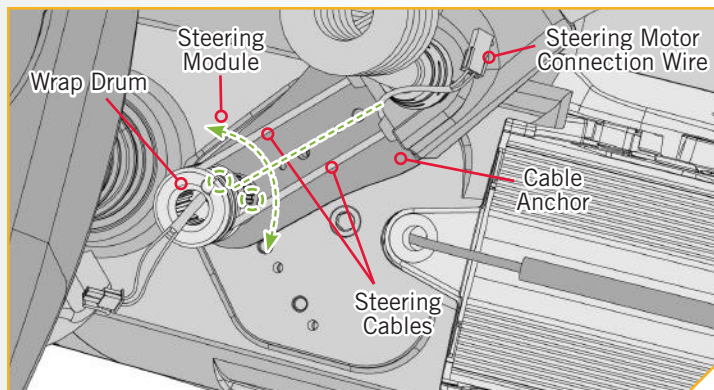
- h. While holding the Wrap Drum just above the Cable Gear, and maintaining tension on the Steering Cables, carefully rotate the Wrap Drum right or left until the top of the Foot Pedal is parallel with the deck of the boat. The proper position of the Wrap Drum will locate the anchors for each of the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

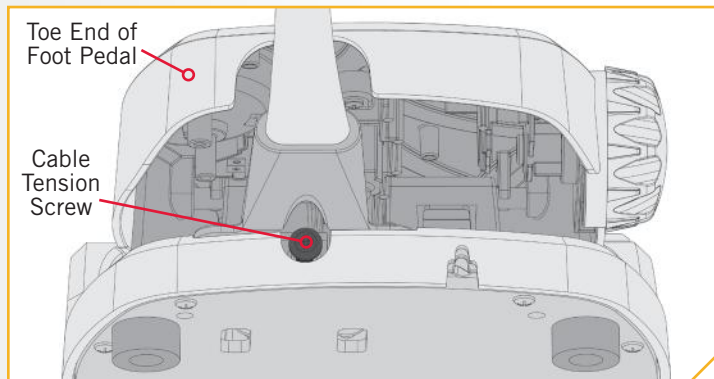
If the Wrap Drum becomes unintentionally disengaged from the Cable Gear, the Steering Cables can become unwound and will need to be reassembled correctly for proper operation.

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.

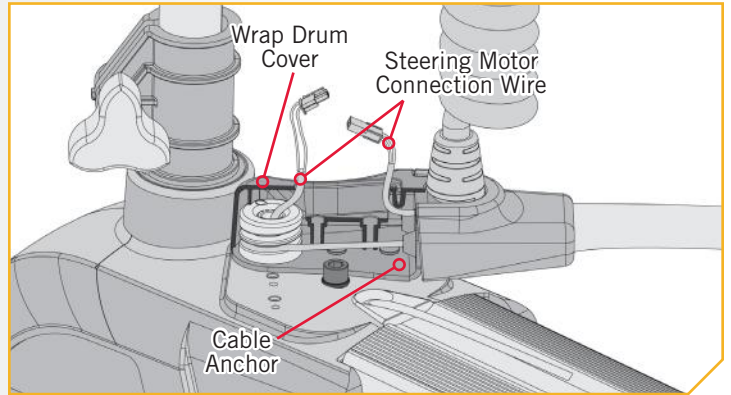
⚠ CAUTION

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



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.

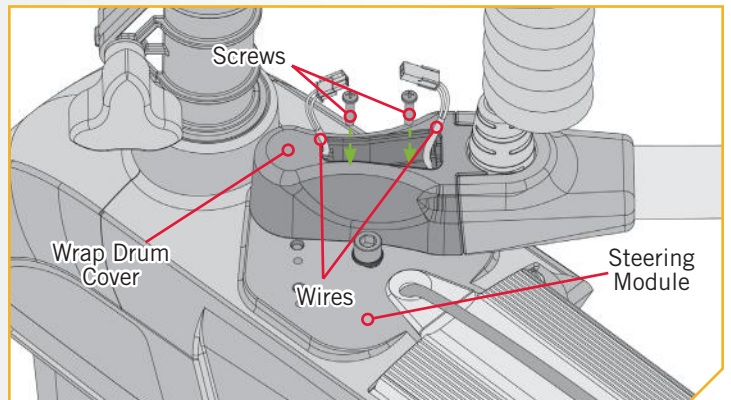


⚠ CAUTION

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 #1 Phillips screwdriver. Tighten to 6 in-lbs.



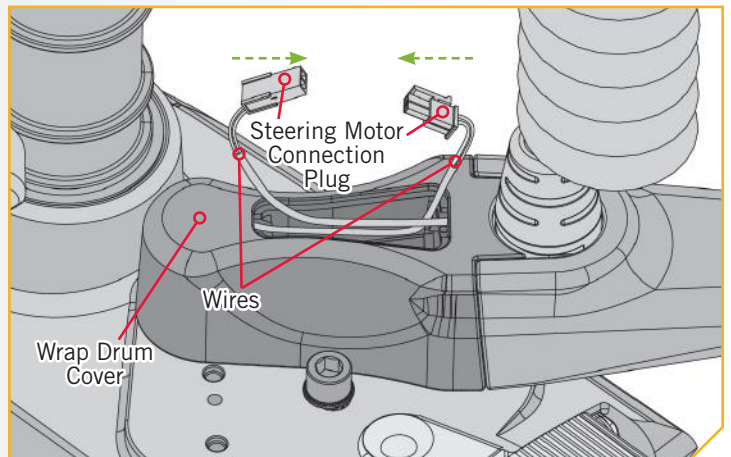
10

- 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.



ORIENTATE THE PEDAL CONTROL SLEEVE ASSEMBLY FOR A STARBOARD MOUNT

› Orientate 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 mounting location be changed so that the Pedal Control Sleeve Assembly points 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.

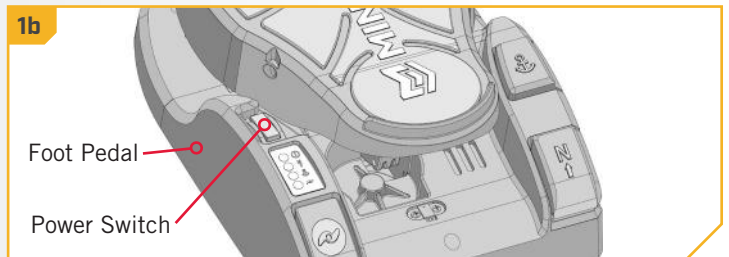
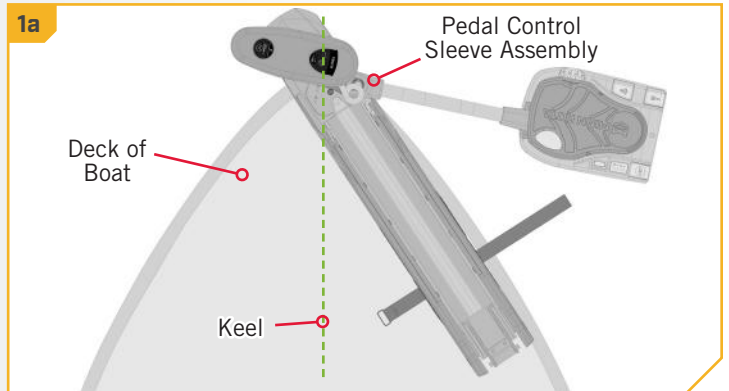
Use the following instructions to change the mounting location of the Pedal Control Sleeve Assembly on the Steering Housing and then properly align the head of the motor. If your motor was installed on the Port side of the boat, please disregard these instructions and see the Indexing the Motor section 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

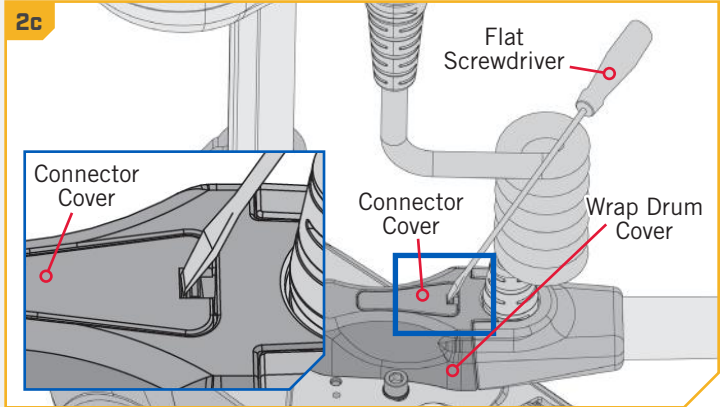
To avoid electric shock, make sure the motor is not connected to a power source.



ORIENTATE THE PEDAL CONTROL SLEEVE ASSEMBLY FOR A STARBOARD MOUNT

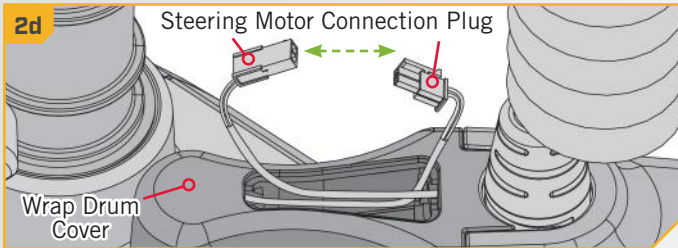
2

- c. Remove the Connector Cover from the Wrap Drum Cover using a 1/8" wide 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.

2d

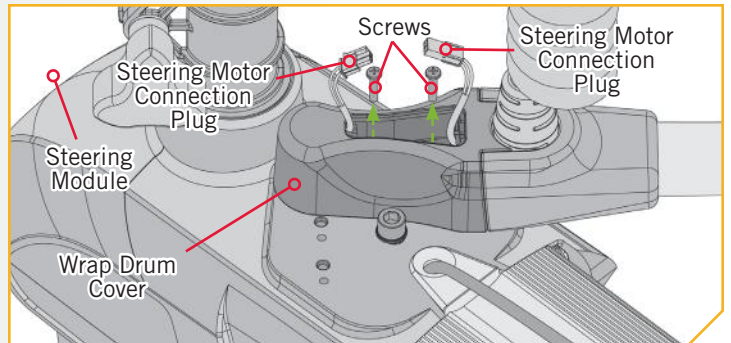


3

- e. Remove the two screws that hold the Wrap Drum Cover in place with a #1 Phillips Screwdriver. Once removed, lift the Wrap Drum Cover away from the Steering Module.

CAUTION

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

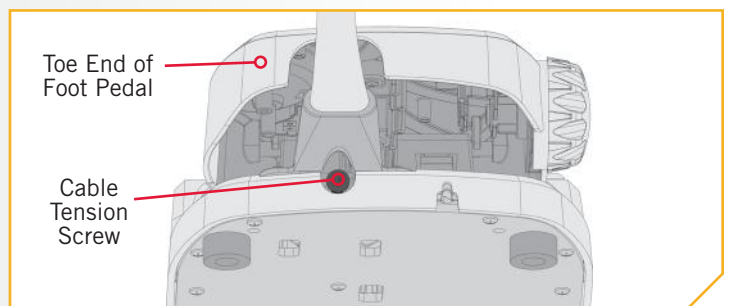


4

- 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

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



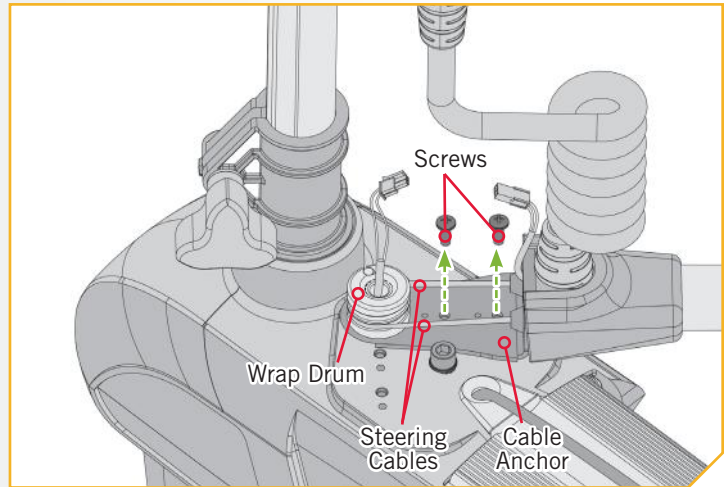
NOTICE: The cables are fed through the Cable Anchor and wound around the Wrap Drum. The right cable begins winding on the Wrap drum from the top down. The left cable begins winding on the Wrap drum from the bottom up.

ORIENTATE THE PEDAL CONTROL SLEEVE ASSEMBLY FOR A STARBOARD MOUNT



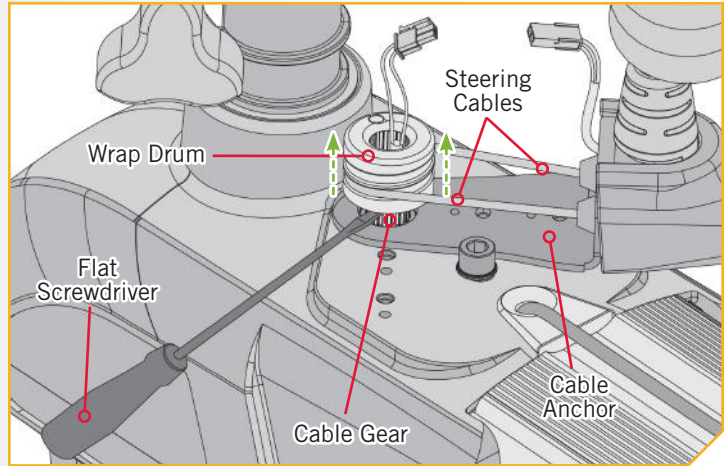
5

- 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 the 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

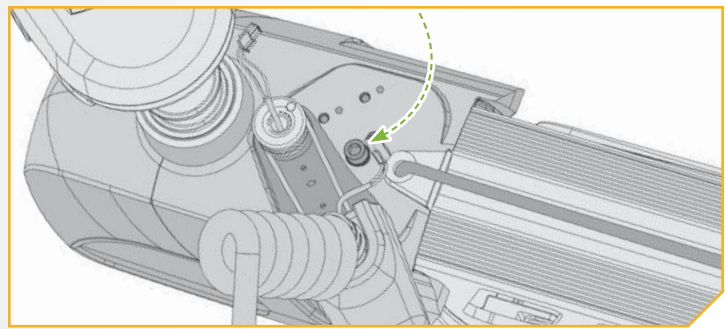
- i. Once the Cable Tension Screw is loosened, and the screws are removed, carefully pry the Wrap Drum partially off by prying straight up, using a heavy flat-blade screwdriver. The Wrap Drum should only be lifted far enough up on the Cable Gear to rotate the Pedal Control Sleeve Assembly to the inboard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



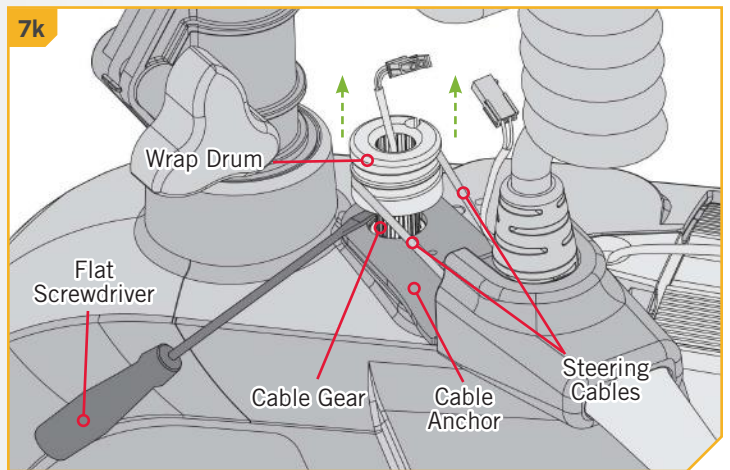
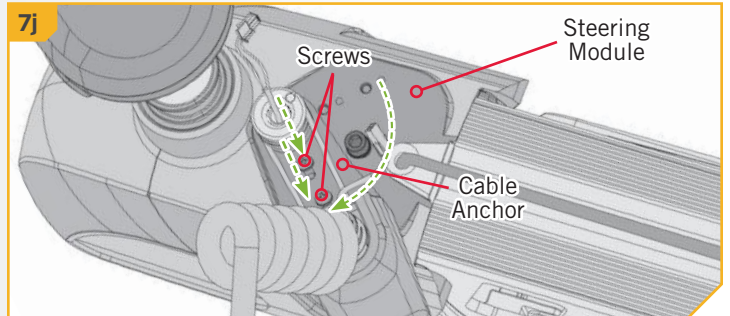
ORIENTATE THE PEDAL CONTROL SLEEVE ASSEMBLY FOR A STARBOARD MOUNT

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.



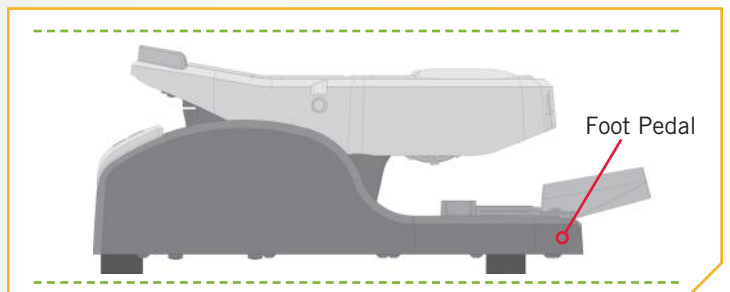
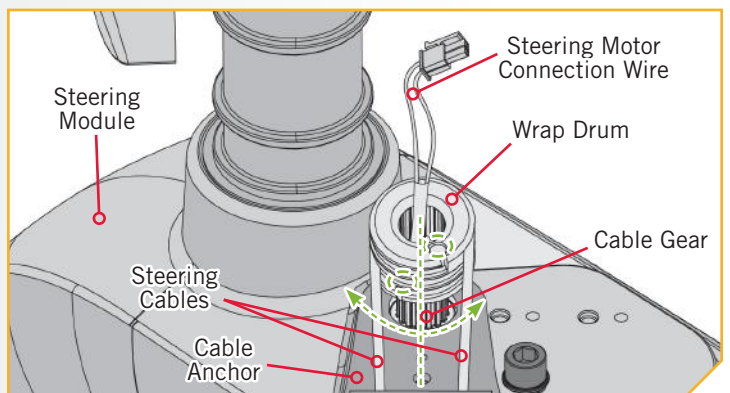
8

- l. 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.

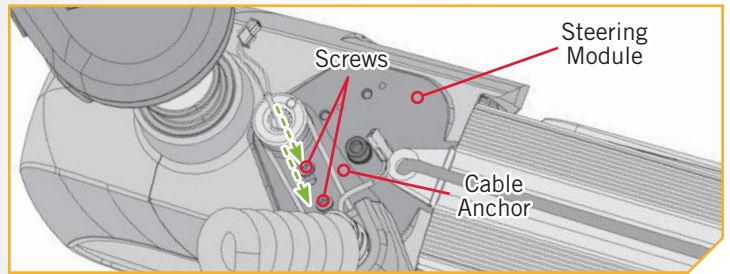
- m. Once the Foot Pedal is at the desired position, align the Wrap Drum with the nearest tooth on the splined shaft of the Cable Gear. Press the Wrap Drum securely down so that it is seated on top of the Cable Gear.



ORIENTATE THE PEDAL CONTROL SLEEVE ASSEMBLY FOR A STARBOARD MOUNT

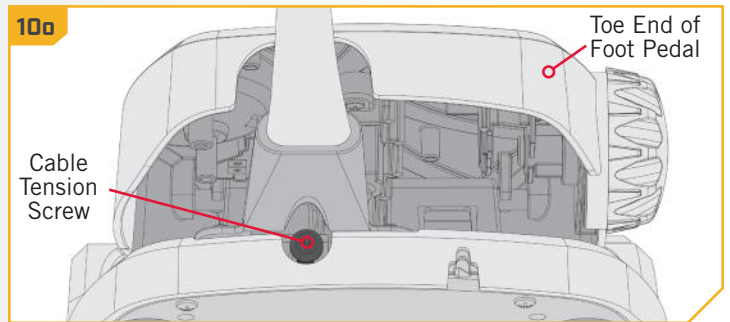
9

- 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

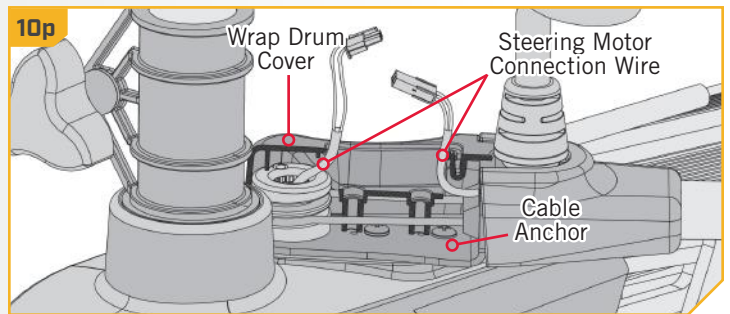
- o. Using a #3 Phillips screwdriver, tighten the Cable Tension Screw located at the base of the Toe End of the Foot Pedal to 10 - 12 in-lbs until the Steering Cables are under tension or re-tighten the same number of turns as was used in step 4f.



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

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.

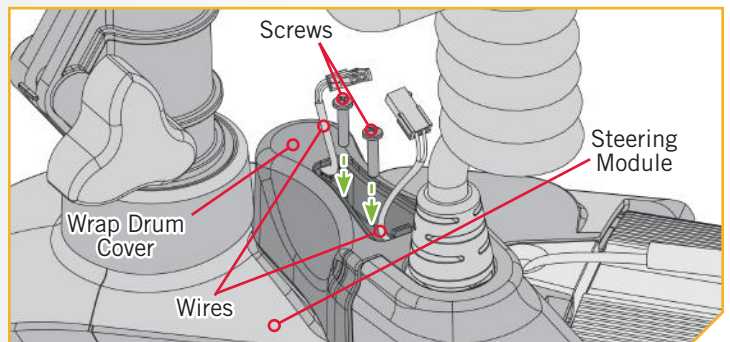
- p. Reconfirm that the Steering Cables are tight and then carefully thread the Steering Motor Connection Wire through the top of the Wrap Drum Cover. The male plug comes from the Cable Anchor through the opening at the bottom of the Wrap Drum Cover. The wire with the female plug that runs out the top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

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 #1 Phillips screwdriver. Tighten to 6 in-lbs.



PLACING THE BOW-MOUNT STABILIZER

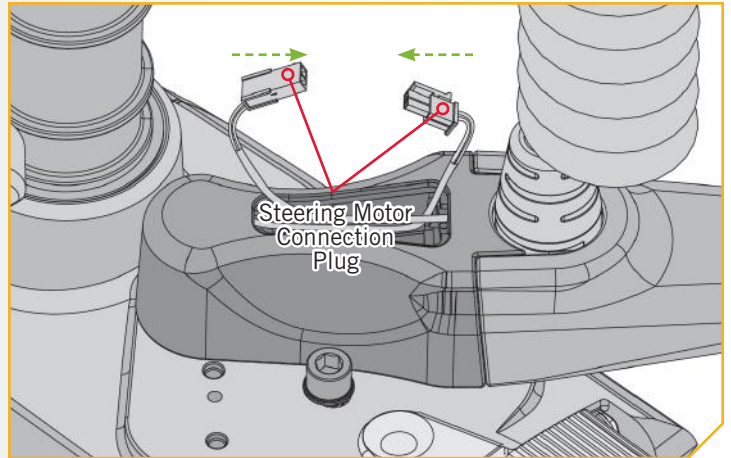
12

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

CAUTION

Wires and plug 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. We recommend to have the stabilizer bracket installed by a qualified marine installer.

CAUTION

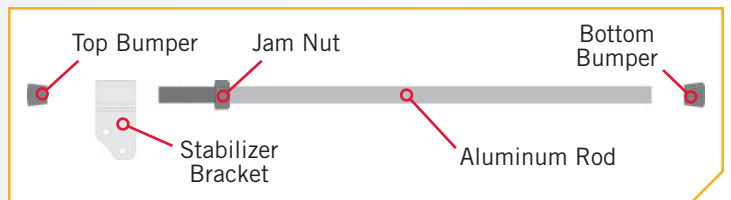
Adjusting the Aluminum Rod too tightly removes the end play needed for proper latch pin engagement and doing so could prevent the mount from fully latching in the stowed position. Improper latching may cause damage. If installed correctly, the tip of the Aluminum Rod should lift off of the boat deck 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  #12 x 1  #13 x 1  #14 x 1 ■ #15 x 1  #16 x 2

- a. Place the motor in the stowed position.
- b. Un-thread the Aluminum Rod (Item #13) from the Stabilizer Bracket (Item #12) by removing the Top Bumper (Item #11) and unscrewing the bracket. Also remove the Bottom Bumper (Item #15). Keep the Jam Nut (Item #14) 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 Nylon Lock Nuts (Item #16) are discarded because the bolts are secured directly into the Steering Module.

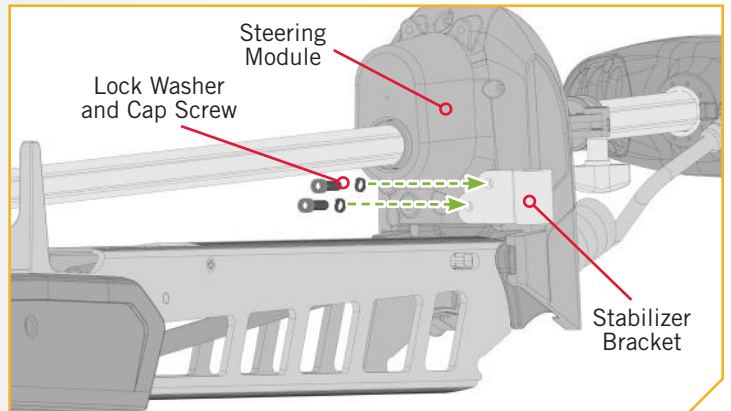
PLACING THE BOW-MOUNT STABILIZER

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.



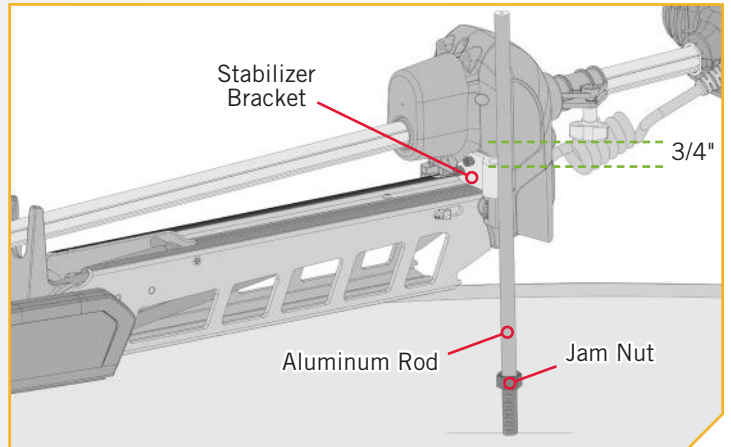
3

- 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.



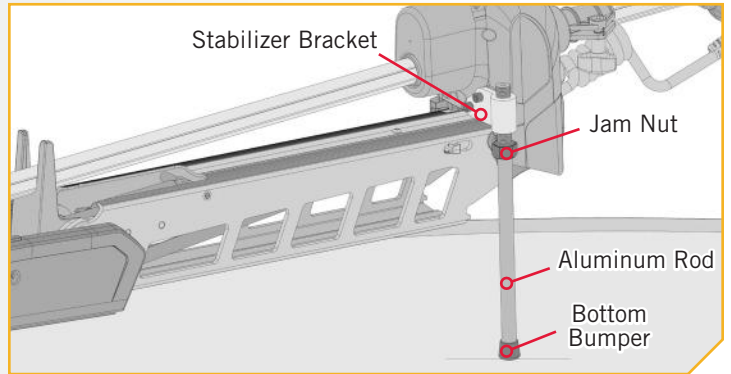
MOUNTING THE FOOT PEDAL

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.

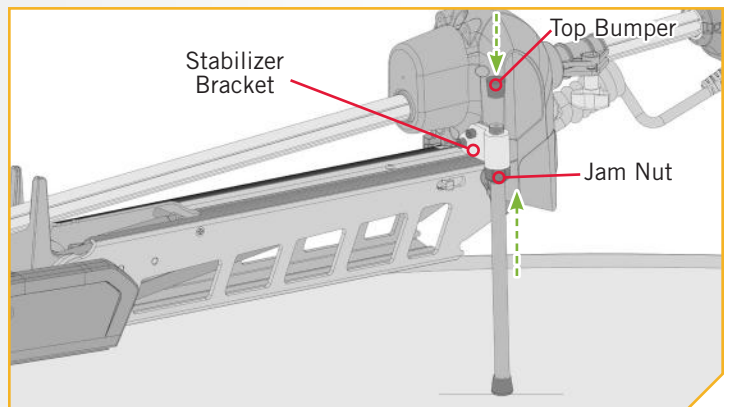
CAUTION

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.



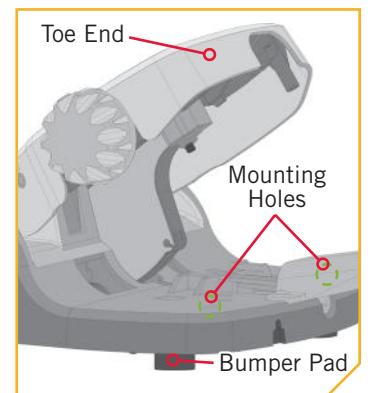
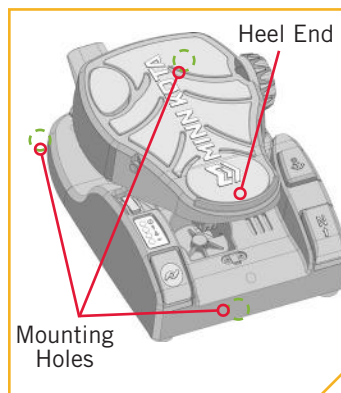
5

- 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

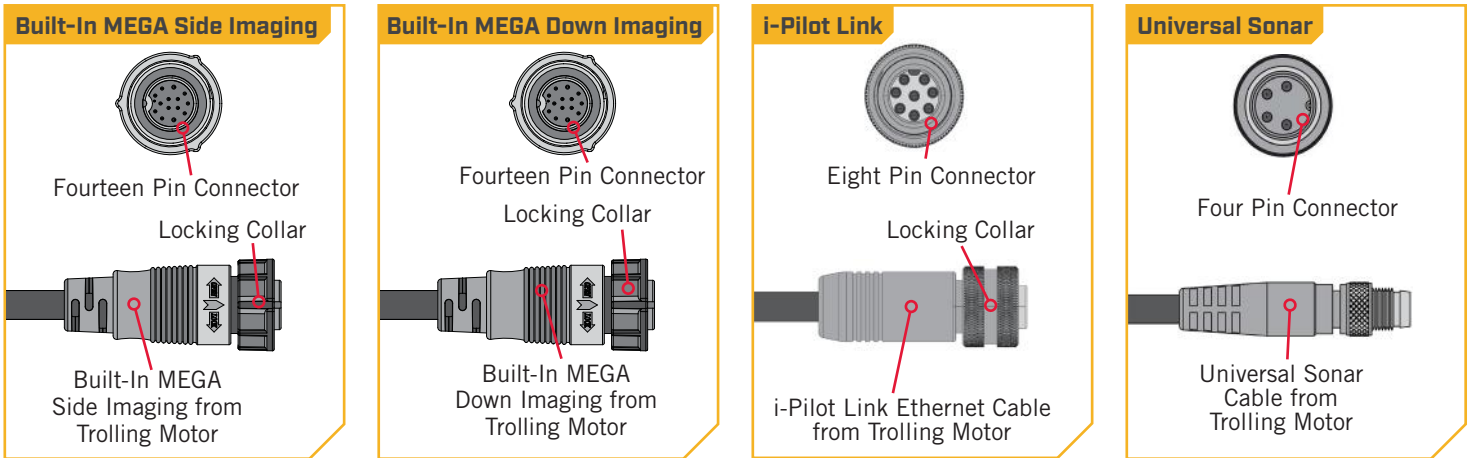
We recommend securing the Foot Pedal to the boat deck to prevent it from being damaged during transport and to make motor operation more efficient. It is recommended to use the Mounting Holes on the Foot Pedal for a secure mount. The Foot Pedal has three Mounting Holes. One Mounting Hole is located under 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 Pad underneath the Foot Pedal.



IDENTIFYING TROLLING MOTOR FEATURES BY THEIR ASSOCIATED CABLES

IDENTIFYING TROLLING MOTOR FEATURES AND THEIR ASSOCIATED CABLES

Your trolling motor may be pre-installed with Built-In MEGA Side Imaging, Built-In MEGA Down Imaging OR Universal Sonar, and may include i-Pilot Link. All of these features require cables to be connected to an output device. These connections are present on the trolling motor and have cables that exit below the Control Head. To better identify cables present, refer to the diagrams below that detail what the Built-In MEGA Side Imaging, Built-In MEGA Down Imaging, Universal Sonar and i-Pilot Link cable connectors look like.



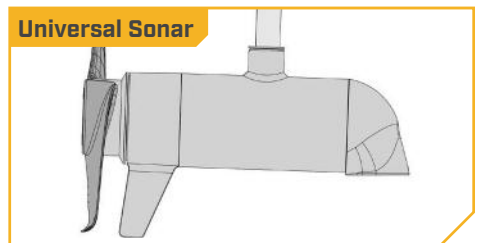
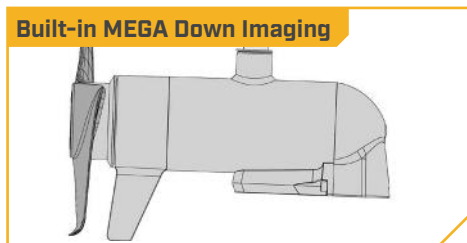
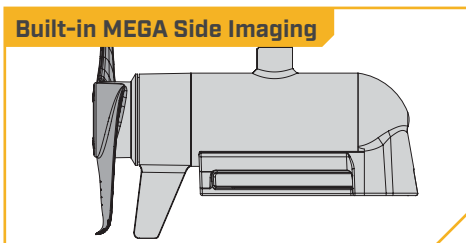
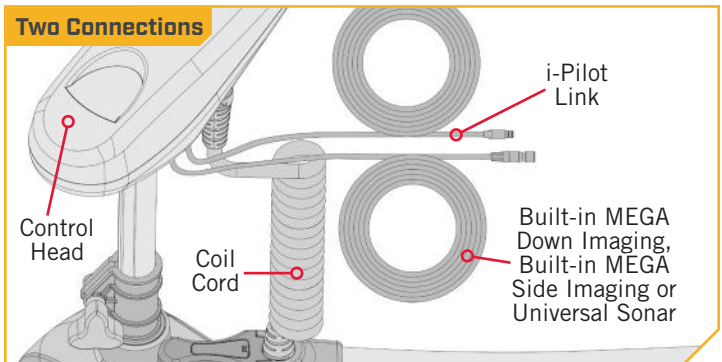
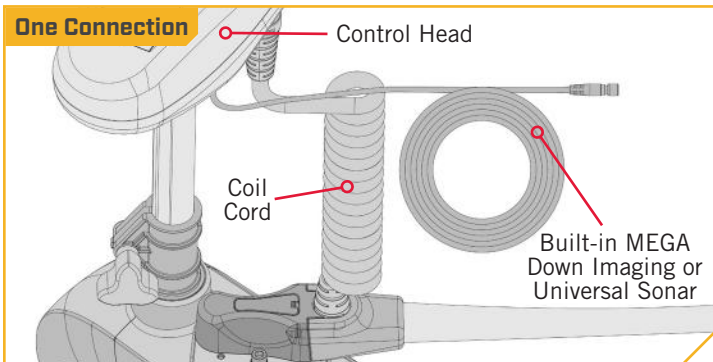
If **one** connection below the Control Head is present, the motor may be equipped with:

1. i-Pilot and Universal Sonar or
2. i-Pilot and Built-in MEGA Down Imaging

If **two** connections below the Control Head are present, the motor may be equipped with either:

1. i-Pilot Link and Universal Sonar,
2. i-Pilot Link and Built-in MEGA Down Imaging or
3. i-Pilot Link and Built-in MEGA Side Imaging

NOTICE: The i-Pilot system does not have an external wired connection. On current models, Built-in MEGA Side Imaging is installed with i-Pilot Link. If you need further help determining your motor type, motors with Built-in MEGA Down Imaging and Built-in MEGA Side Imaging will have different geometry in the lower unit.



ROUTING CONNECTION CABLES

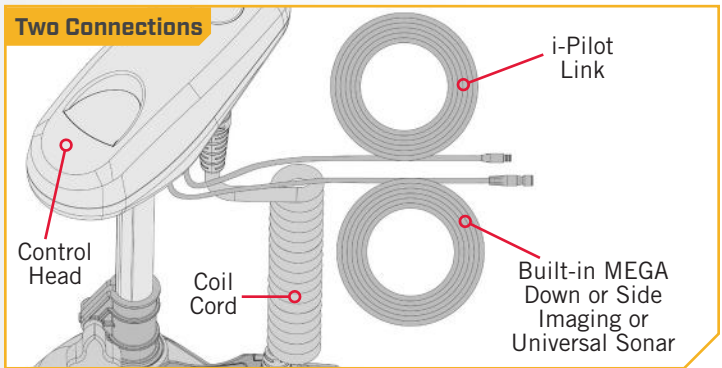
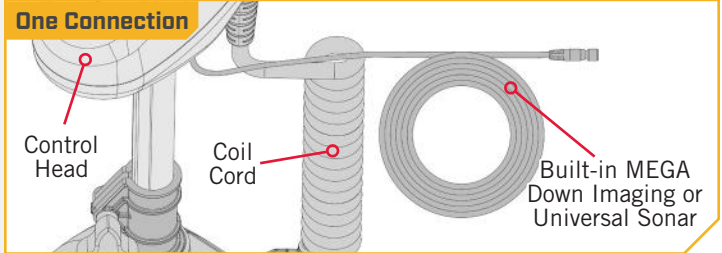
Please follow these instructions for routing any and all of the cables present for any of the pre-installed features that may come with your trolling motor. This routing should be followed whether there are one or two connection cables present. If you are unsure of the cables present, please review the “Identifying Trolling Motor Features By Their Associated Cables” section of these Installation Instructions.

- 1**
 - a. Place the motor in the deployed position.
 - b. Locate the Built-in MEGA Side Imaging, Built-in MEGA Down Imaging, i-Pilot Link and/or Universal Sonar cable(s), at the base of the Control Head.

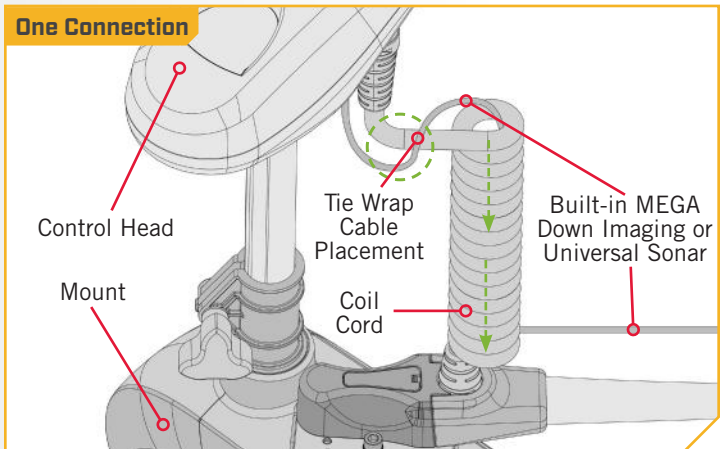
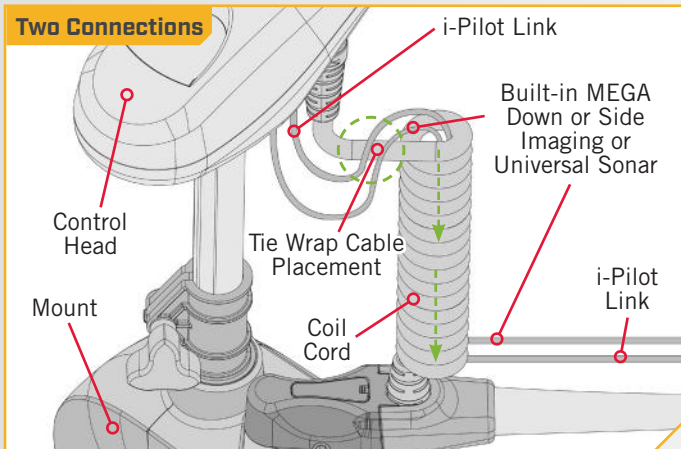
CAUTION

Not following the recommended wire routing for the Built-in MEGA Down or Side Imaging, i-Pilot Link and/or Universal Sonar cable(s), 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.

NOTICE: Universal Sonar connector shown for illustration purposes.



- 2**
 - c. The cable(s) should be fed all the way through the Coil Cord. It/they should exit the Coil Cord at the bottom of the Coil Cord, where it connects to the Mount.



CAUTION

Do not over tighten the cable ties as it may damage the wires.

- d. Use a tie wrap cable to secure the cables to the top of the Coil Cord, leaving only enough slack to let the cables hang comfortably.

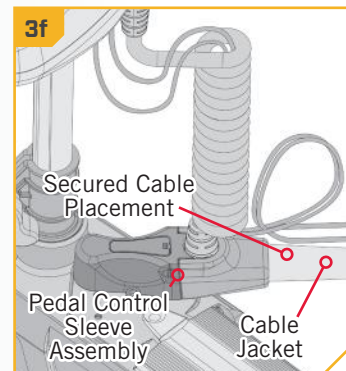
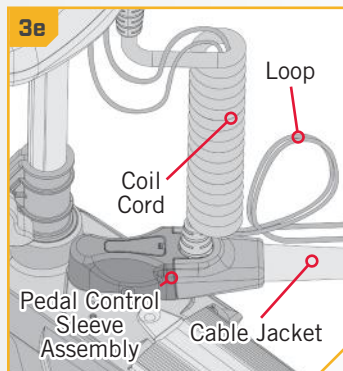
ROUTING CONNECTION CABLES

3

- e. Below the Coil Cord, measure the extension cable(s) 8 to 10 inches in length and make a loop with them.
- f. Loosely secure the end of the loop to the Cable Jacket that runs from the Pedal Control Sleeve Assembly to the Foot Pedal.

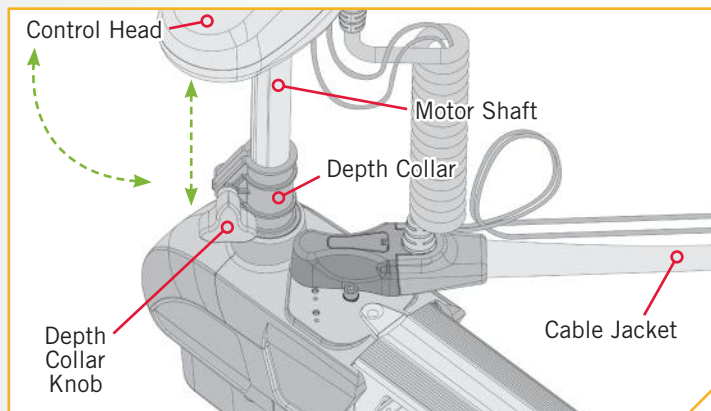
CAUTION

Do not secure the Extension Cables to the bottom of the Coil Cord. Improperly securing the Extension Cables may cause damage to the product and void your product warranty.



4

- g. Locate the Depth Collar, and while grasping the Shaft, loosen the Depth Collar Knob.
- h. Continue to grasp the Motor Shaft and raise the Control Head to test if the loop in the extension cables provides adequate slack for full functionality of the motor.
- i. Rotate the motor shaft to be sure the wire routing does not interfere with moving parts at different depth collar settings.
- j. Carefully stow and deploy the motor to test for adequate slack.
- k. Adjust slack if needed and if adequate, secure the tie wrap cable that was placed around the Cable Jacket.



NOTICE: After the cable(s) exit(s) the Coil Cord, it/they should be routed through an established routing system on the boat, in an area with minimal interference. Power cables or other elements that may produce interference for the sonar signals. Inspect the selected route carefully to ensure that there are no sharp edges, obstacles, or obstructions that may damage the cables.

FEATURE OVERVIEW AND CONNECTING THE CABLES

FEATURE OVERVIEW AND CONNECTING THE CABLES

The cables from the Control Head, for each feature installed on the trolling motor, are separately connected to an output device. Once the features that may be installed are identified, follow the instructions below to ensure the cables are connected correctly.

› Built-In MEGA Side Imaging

MEGA Imaging technology took fish finding into the megahertz frequency for the very first time. Now built-In MEGA Side Imaging+ delivers up to 3X the output of standard Side Imaging®. Humminbird improved this technology even further by extending the depth range and expanding the side coverage areas, all while improving the crystal clear imagery. Built-In MEGA Side Imaging+ comes available in the Minn Kota flagship families of trolling motors, including Ultrex and Ulterra, with 200 feet of coverage on either side of your boat. With Humminbird MEGA imaging sonar built right into the trolling motor, you now have a crystal clear view of what's directly to the left and right of your boat, without having to manage all of the cables that come with external transducers. The Built-In MEGA SI transducer is only available on new models equipped from the factory and cannot be added to an existing trolling motor.

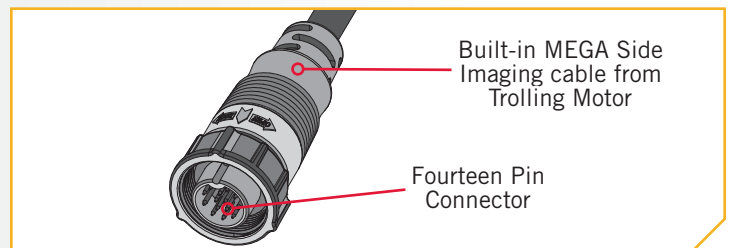
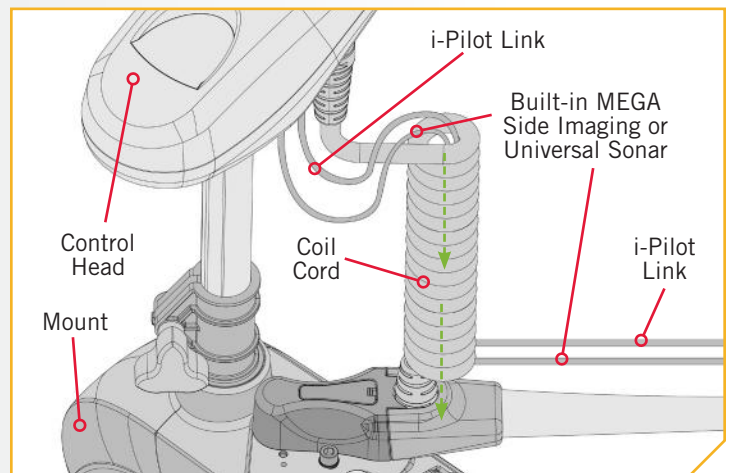
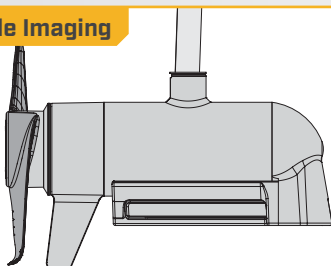
The Built-in MEGA SI transducer will provide MEGA Side Imaging to select Humminbird models. All Built-In MEGA SI trolling motors, will come "Apex and Solix Ready" out of the box. An adapter cable accessory ([MKR-MI-1 1852088](#)) is available for purchase that will allow the connection of any compatible Humminbird Helix fish finder. The MKR-MI-1 is used on Helix 8, 9, 10, 12 and 15 models. See the [Built-In MEGA Side Imaging Compatibility](#) chart online.

NOTICE: You can only view Side Imaging with a MEGA DI or MEGA SI HELIX G2N, G3N or G4N Series model and a required adapter, or with any SOLIX or APEX Series model. The built-in transducer cannot supply MEGA Imaging to Humminbird models that do not already have the capability. If you have a G2/G2N, G3/G3N HELIX that is not a MEGA SI or MEGA DI model, you will still get 2D CHIRP Digital 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.com. Built-In MEGA Imaging is not supported by HELIX G1 models or other brands of fish finders.

- 1
 - a. Place the motor in the deployed position.
 - b. The Built-In MEGA Side Imaging connector from the Control Head is a 14 pin connector. Built-In MEGA Side Imaging is only installed with motors installed with the i-Pilot Link system. Locate and identify the correct connection for Built-in MEGA Side Imaging cable(s), at the base of the Control Head.

NOTICE: Built-in MEGA Side Imaging is only paired with i-Pilot Link on either an Ultrex or Ulterra motor.

Built-in MEGA Side Imaging



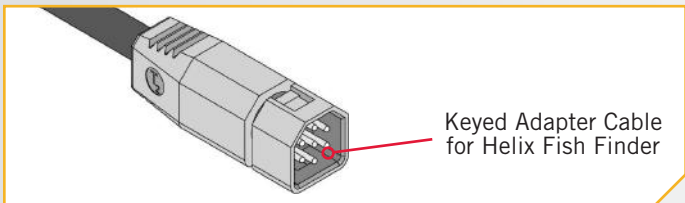
FEATURE OVERVIEW AND CONNECTING THE CABLES

2

- c. **When installing with a Solix or Apex**, the Built-In MEGA Side Imaging cable can be plugged directly into the Solix/Apex fish finder. Plug the Built-in MEGA Side Imaging cable into the corresponding connection on the Solix/Apex fish finder.
- d. **When installing with a Helix**, first attach the Adapter Cable and then plug the Adapter Cable into the Helix fish finder. The Adapter Cable will only have one connection that is keyed on the back of the Helix fish finder. Plug the Adapter Cable into the only matching keyed connection on the Helix fish finder.

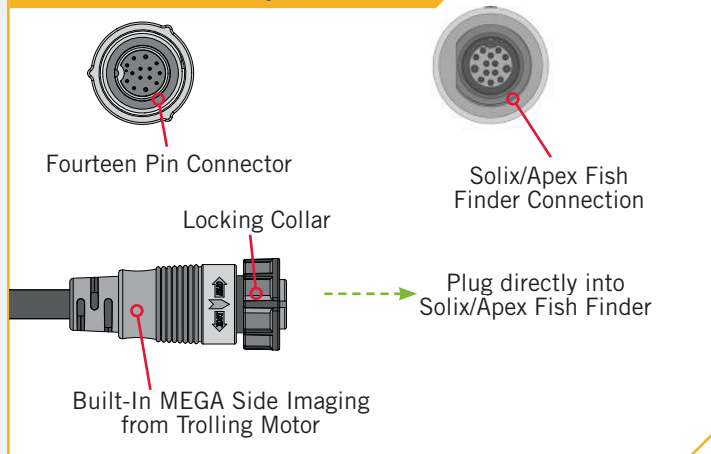
NOTICE: Check for compatibility or any required adapter cables online at minnkotamotors.com. The cable from the trolling motor can be extended with a 10' Extension Cable #720081-1 found at humminbird.com.

NOTICE: If any cables need to be routed, please follow the guidelines in the Routing Connection Cables section of these installation instructions.

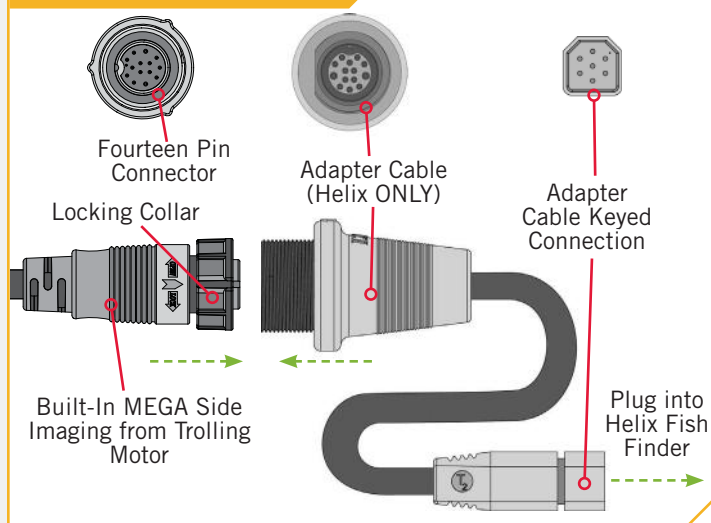


NOTICE: The connectors are keyed to prevent reversed installation.

Humminbird Solix or Apex Fish Finder



Humminbird Helix Fish Finder



NOTICE: The MKR-MI-1 (1852088) is used on Helix 8, 9, 10, 12 and 15 models.

FEATURE OVERVIEW AND CONNECTING THE CABLES

› 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. The Minn Kota flagship families of trolling motors, including Ultrex, Ulterra, Terrova, and Fortrex, now include Built-In MEGA Down Imaging sonar, the clearest imaging available only from Humminbird. 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.

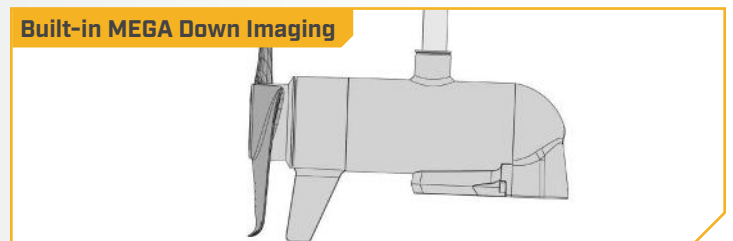
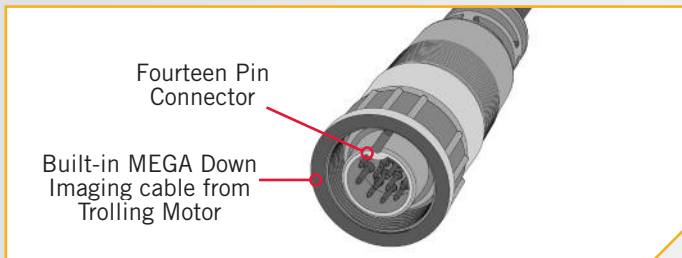
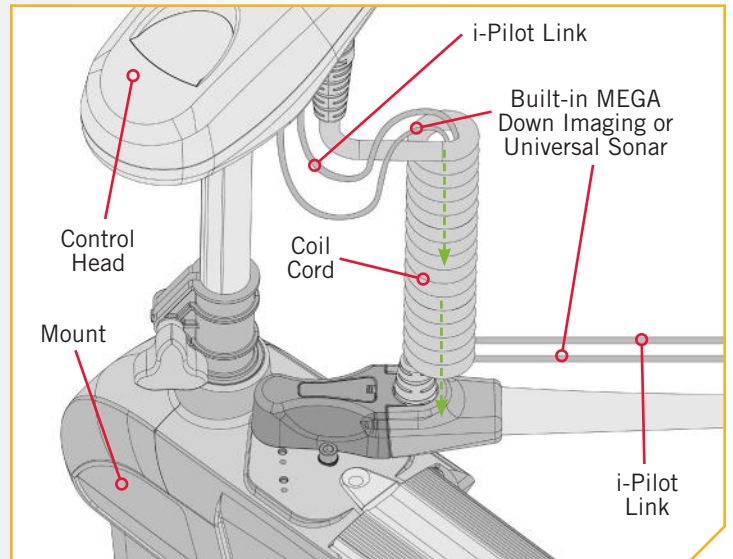
The Built-in MEGA DI transducer will provide both MEGA Down Imaging and 2D CHIRP Digital Sonar to select Humminbird models. All Built-In MEGA DI trolling motors, will come “Apex and Solix Ready” out of the box. An adapter cable accessory ([MKR-MI-1 1852088](#) or [MKR-MDI-2 1852086](#)) is available for purchase that will allow the connection of any compatible Humminbird Helix fish finder. The MKR-MI-1 is used on Helix 8, 9, 10, 12 and 15 models. The MKR-MDI-2 is used for Humminbird Helix 7 models only. See the [Built-In MEGA Down Imaging Compatibility](#) chart online.

NOTICE: You can only view MEGA Down 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 HELIX that is not a MEGA SI or MEGA DI model, you will still get 2D CHIRP Digital 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.com. Built-In MEGA Imaging is not supported by HELIX G1 models or other brands of fish finders.

1

- a. Place the motor in the deployed position.
- b. The Built-In MEGA Down Imaging connector from the Control Head is a 14 pin connector. Built-In MEGA Down Imaging may be installed on its own, or in conjunction with an i-Pilot or i-Pilot Link system. It will never be installed with Universal Sonar. Locate and identify the correct connection for Built-in MEGA Down Imaging cable(s), at the base of the Control Head.

NOTICE: On current models, Built-in MEGA Down Imaging is installed with either i-Pilot or i-Pilot Link on Terrova, Ulterra and Ultrex motors.



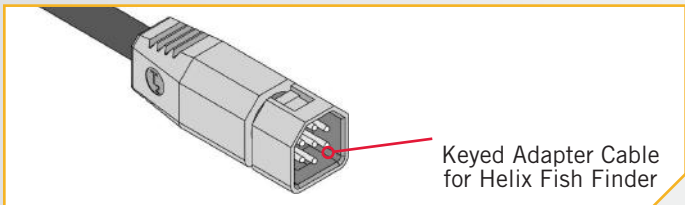
FEATURE OVERVIEW AND CONNECTING THE CABLES

2

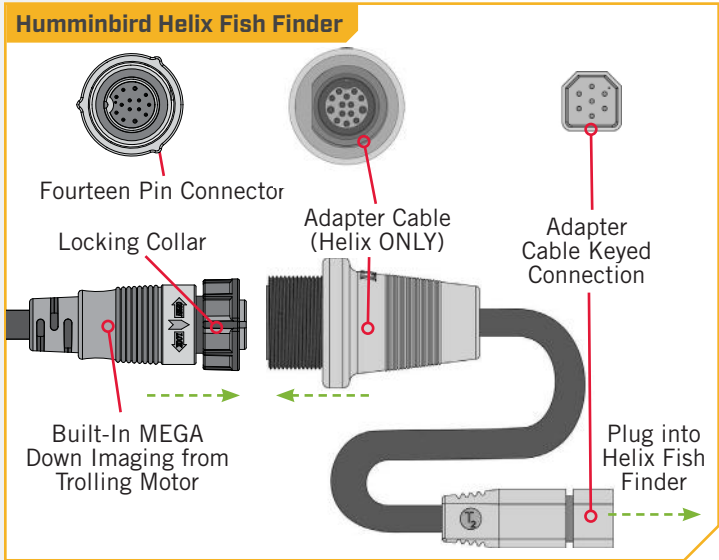
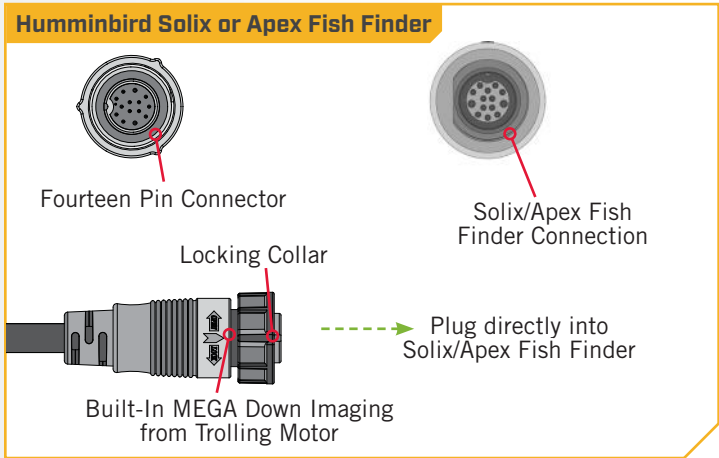
- c. **When installing with a Solix or Apex**, the Built-In MEGA Down Imaging cable can be plugged directly into the Solix/Apex fish finder. Plug the Built-in MEGA Down Imaging cable into the corresponding connection on the Solix/Apex fish finder.
- d. **When installing with a Helix**, first attach the Adapter Cable and then plug the Adapter Cable into the Helix fish finder. The Adapter Cable will only have one connection that is keyed on the back of the Helix fish finder. Plug the Adapter Cable into the only matching keyed connection on the Helix fish finder.

NOTICE: Check for compatibility or any required adapter cables online at minnkotamotors.com. The cable from the trolling motor can be extended with a 10' Extension Cable #720081-1 found at humminbird.com.

NOTICE: If any cables need to be routed, please follow the guidelines in the Routing Connection Cables section of these installation instructions.



NOTICE: The connectors are keyed to prevent reversed installation.



NOTICE: The MKR-MI-1 is used on Helix 8, 9, 10, 12 and 15 models. The MKR-MDI-2 is used for Humminbird Helix 7 models only.

FEATURE OVERVIEW AND CONNECTING THE CABLES

› Universal Sonar

Your trolling motor may be pre-installed with a Universal Sonar transducer system. Universal Sonar is a 2D sonar transducer with a temperature sensor that is integrated into the lower unit of the trolling motor. It has an operating frequency of 83/200 kHz. Connecting this transducer to a compatible fish finder gives you a 2D sonar view of what is happening directly below your trolling motor. The integrated design protects the transducer from underwater hazards, and prevents tangles and damage to the transducer cables.

All Universal Sonar 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 Universal Sonar 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. In certain situations, air bubbles may adhere to the surface of the Universal Sonar transducer, and effect the performance. If this happens simply wipe the surface of the transducer with your finger.

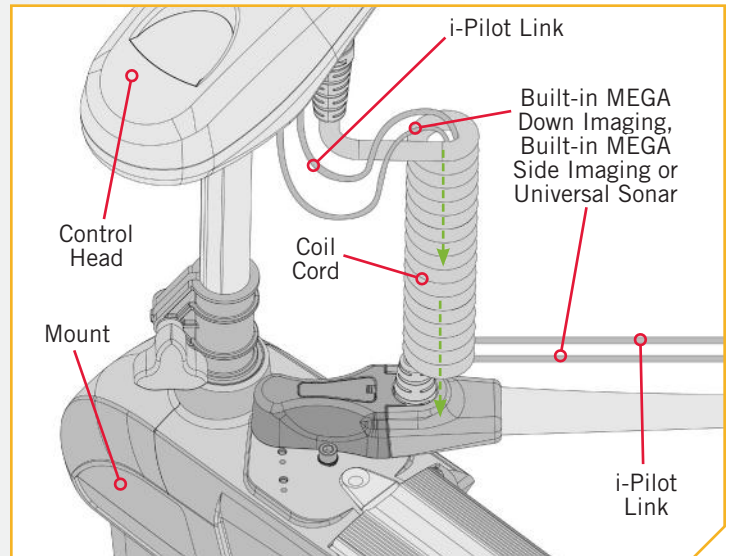
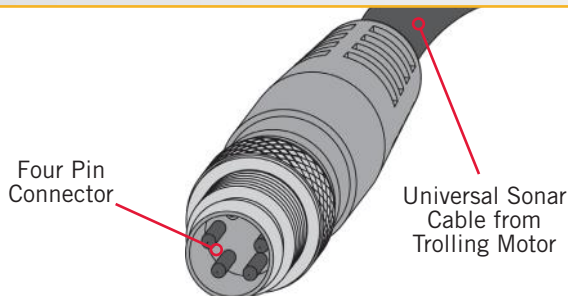
NOTICE: Universal Sonar does not support imaging screens that require higher frequencies such as 455 kHz, 800 kHz or 1.2MHz (Down Imaging, Side Imaging, etc.). Down Imaging (DI) specific units are not compatible with Universal Sonar. See compatibility chart for a list of compatible fish finders at minnkotamotors.com.

The connector for Universal Sonar exits the trolling motor below the Control Head and consists of a 4-pin plug. An adapter cable (sold separately) will convert the 4-pin plug to the correct transducer connector for your fish finder, and is required for all installations. For a current list of compatible fish finders and the correct adapter cable, or more information on Universal Sonar, please visit minnkotamotors.com.

1

- a. Place the motor in the deployed position.
- b. Locate the Universal Sonar, if equipped, at the base of the Mount.
- c. Locate the Universal Sonar four pin connector at the end of Universal Sonar Extension Cable. The connector is black with a stainless steel threaded locking collar.

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



NOTICE: If the cable length does not reach the desired fish finder installation location, a 14.5' extension cable is available (MKR-US2-11) (sold separately).

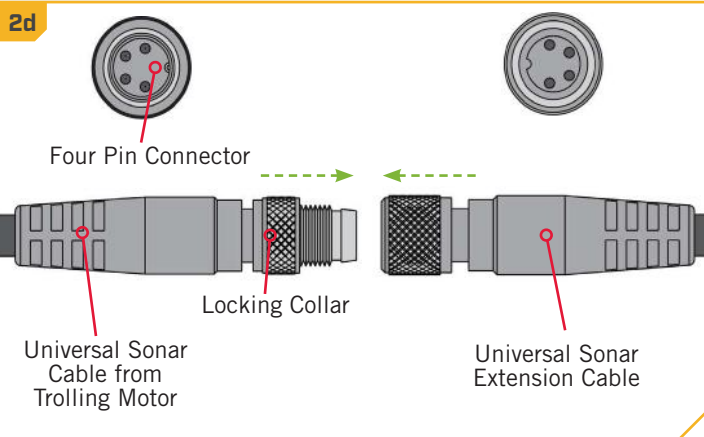
FEATURE OVERVIEW AND CONNECTING THE CABLES

2

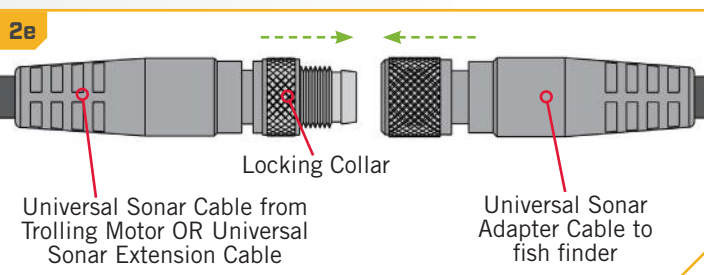
NOTICE: The Universal Sonar Cable may not be long enough to reach the fish finder. If the cable length does not reach the desired fish finder installation location, a 14.5' extension cable is available to purchase. Minn Kota recommends using the MKR-US2-11.

- d. Take the Universal Sonar Extension Cable, if needed, and attach it to the Universal Sonar Cable exiting the Control Head. Firmly push the plug together and twist the locking collar until it is snug.
- e. Install the Universal Sonar Cable that exists the Control Head or the Universal Sonar Extension Cable (if used) to the appropriate Universal Sonar Adapter Cable. Install the Adapter Cable to your fish finder. Refer to your fish finder manual for complete installation instructions.

NOTICE: If any cables need to be routed, please follow the guidelines in the Routing Connection Cables section of these installation instructions.



NOTICE: The connectors are keyed to prevent reversed installation.



i-Pilot Link

i-Pilot Link allows your Minn Kota trolling motor and Humminbird to communicate with each other to change the way you fish. i-Pilot Link delivers a large array of GPS capabilities including controlling speed, steering, Spot-Lock, and the ability to record and retrace paths on the water, all at your fingertips. To learn more about the GPS capabilities available with your i-Pilot Link navigation system, please refer to the Owner's Manual by visiting minnkotamotors.com.

The i-Pilot Link remote and controller make up the i-Pilot Link navigation system. The i-Pilot Link remote comes paired to the controller from the factory. The i-Pilot Link controller contains a very sensitive compass and is where all GPS satellite and i-Pilot Link remote signals are received. The i-Pilot Link controller is contained in the trolling motor Control Head and is connected to a fish finder from a connection cable that exits the Control Head.

The Ethernet cable for the i-Pilot Link system has an 8 pin connector. The i-Pilot Link system can be connected directly to the Humminbird or to the Humminbird Ethernet Switch (optional). If you purchase an Ethernet Switch, install it using the instructions included in the Ethernet Installation Guide. A 30' Ethernet Extension Cable has been included with every motor equipped with i-Pilot Link. It may or may not be needed for every installation. To purchase Ethernet switches, Ethernet cables, and extension cables, visit the web site humminbird.com or call Humminbird Customer Service at 1-800-633-1468. Depending on the shape of the Ethernet port on your Humminbird fish finder, an additional ethernet adapter cable (**Ethernet Adapter Cable AS EC QDE #720074-1 for Helix fish finders**) may be required for the installation. Refer to your fish finder operations manual or see the **i-Pilot Link Compatibility Chart** on our web site with a list of all compatible Humminbird Units and SD Cards.

NOTICE: The i-Pilot Link system needs an external wired connection. The i-Pilot system does not need an external wired connection.

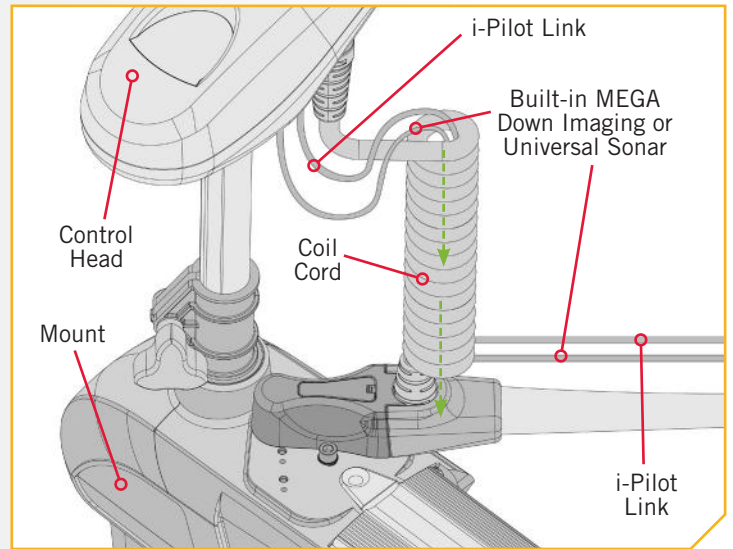
FEATURE OVERVIEW AND CONNECTING THE CABLES

1

- a. Place the motor in the deployed position.
- b. The i-Pilot Link connector from the Control Head is an 8 pin connector. Locate and identify the correct connection for i-Pilot Link, at the base of the Control Head.

NOTICE: i-Pilot Link will be paired with either Built-in MEGA Down Imaging or Universal Sonar on Ultrex, Ultrera or Terrova. i-Pilot Link is not a feature offered on Fortrex motors.

NOTICE: Paired with a Universal Sonar connector for illustration purposes. A Built-in MEGA Down Imaging connector may be present instead.



2

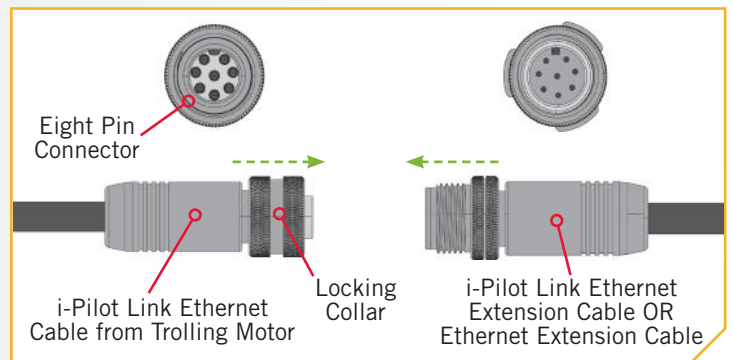
ITEM(S) NEEDED



- c. If necessary, to reach the installed fish finder, take the i-Pilot Link Ethernet Cable (Item #24) and attach it to the i-Pilot Link cable exiting the Control Head.

NOTICE: If any cables need to be routed, please follow the guidelines in the Routing Connection Cables section of these installation instructions.

- d. Install the i-Pilot Link Ethernet Cable directly into the Humminbird fish finder, or refer to your fish finder installation manual for complete installation instructions. If an Adapter Cable is needed (Ethernet Adapter Cable AS EC QDE for Helix fish finders), install it on the end of the i-Pilot Link Ethernet Cable and refer to your fish finder installation manual for complete installation instructions.



NOTICE: The connectors are keyed to prevent reversed installation.

REMOVAL OF THE STEERING MODULE

REMOVAL OF THE STEERING MODULE

› Disconnect the Gas Spring

1



WARNING

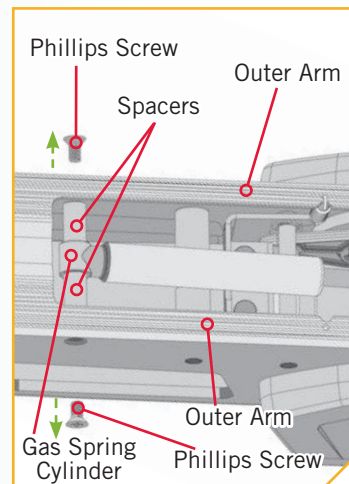
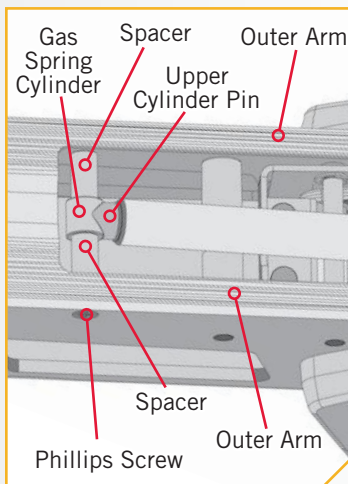
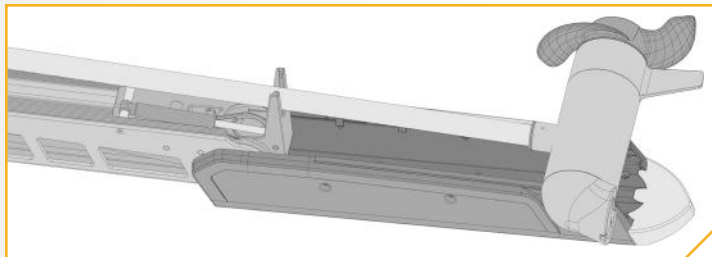
Moving parts can cut or crush. The gas assist lift mechanism is under pressure. Disconnect gas spring before removing motor from mount. Do not engage the Pull Grip and Cable until gas spring is disconnected.

- a. In order to remove the Steering Module, the Gas Spring needs to be disconnected. Place the motor in the stowed position.
- b. To disconnect the Gas Spring, locate the Upper Cylinder Pin. Two Phillips Screws hold the Upper Cylinder for the Gas Spring in place. Using two #3 Phillips screwdrivers, hold the screw at one end of the Upper Cylinder Pin in place.
- c. Remove the screw at the opposite end of the pin with the other #3 Phillips screwdriver.



WARNING

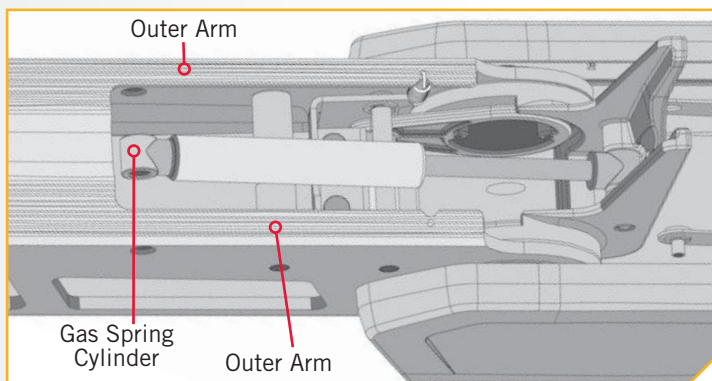
The gas assist lift mechanism in this unit is under high spring pressure when the motor is in the deployed position. Do not remove the Steering Module assembly from the mount without disconnecting one end of the gas spring. Failure to do this can create a condition where accidental pulling of the Pull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



NOTICE: Use a #3 Philips screwdriver to remove the screws. They have a pre-applied thread locker. Not using the recommended tool can cause damage and prevent them from being removed.

2

- d. Once the screws are removed, the pin and spacers can be removed from the Upper Cylinder.
- e. Now it is safe to move the motor into the deployed position.

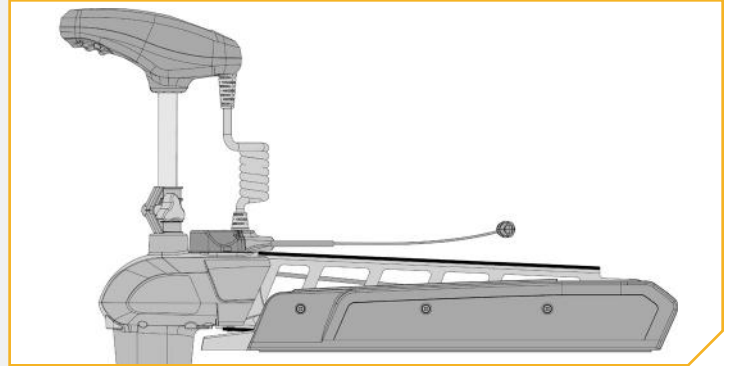


Remove Motor From Mount

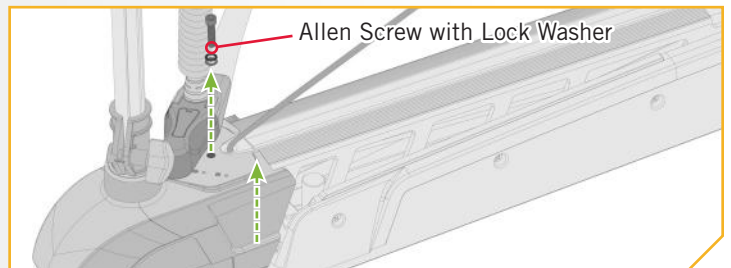
- 1 a. With the gas spring disconnected, place the motor in the deployed position.

WARNING

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

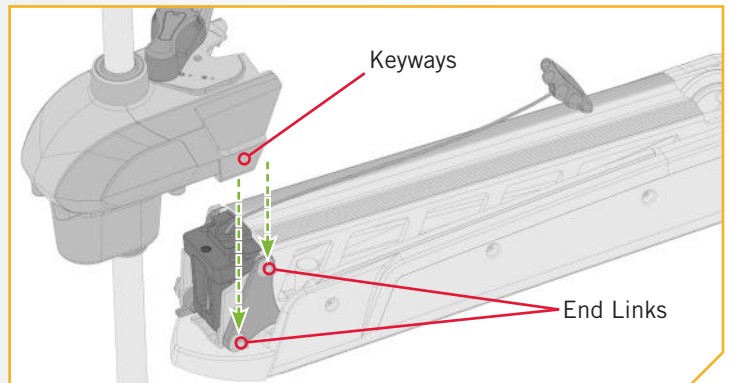


- 2 b. Remove the 5/16" Allen Screw with a 1/4" Allen Wrench. The 5/16" Allen Screw is located on the opposite end of the mount from the hinge that opens and closes when the mount is stowed and deployed.
- c. Once the Allen Screw and Lock Washer are removed, lift the Steering Module straight up until it is free from the mount.



Reassemble the Steering Module

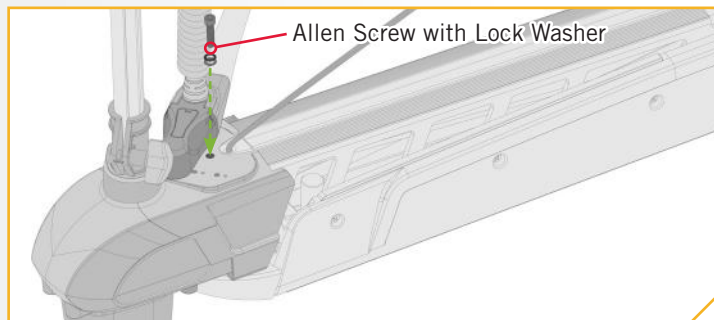
- 1 a. To reassemble the Steering Module, start with the mount in the deployed position.
- b. Align the Keyways on the inside of the Steering Module with the End Links on the mount. Do this by positioning the Steering Module above the End Links on the mount.
- c. Lower the Steering Module straight down until seated.



REMOVAL OF THE STEERING MODULE

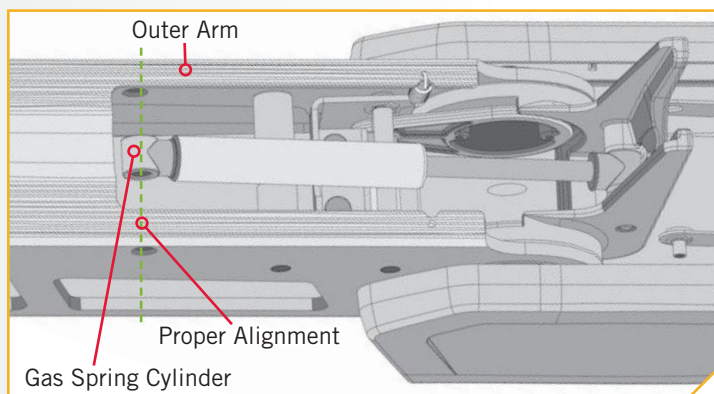
2

- d. Reinstall the 5/16" Allen Screw and Lock Washer and tighten to 18 to 20 ft-lbs with a Torque Wrench.
- e. Position the motor to the stowed position using the Pull Grip and Cable to disengage the latch bar, allowing the motor to fold into a flat position.



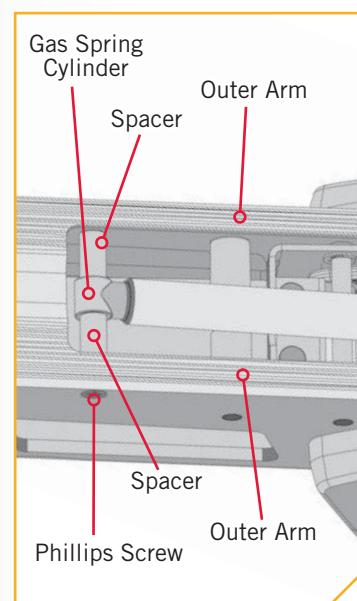
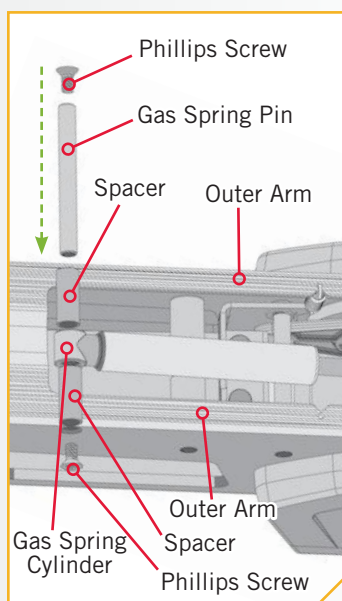
3

- f. Once in the stowed or flat position, the gas spring and spacers can be installed.
- g. Locate the upper gas spring pin and spacers.
- h. Align the end of the Gas Spring with the holes in the outer arm of the base.



4

- i. Align the Pin with one spacer on each side of the Cylinder for the Gas Spring, so that it passes through one side of the outer arm, a spacer, the Cylinder of the Gas Spring, then an additional spacer and finally through the outer arm at the other side of the base.
- j. The Pin should be secured on each end with a screw. Hold one screw in place with a #3 Phillips screwdriver and secure the other screw with an additional #3 Phillips screwdriver.
- k. Tighten screws until the heads are flush with the outer arm.



NOTICE: Screws have a pre-applied thread locker. DO NOT apply additional thread-locker to the screws as it may prevent future removal.

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 5% voltage drop allowed at full motor power based on published product power requirements.

Motor Thrust / Model	Max Amp Draw	Circuit Breaker	Wire Extension Length				
			5 feet	10 feet	15 feet	20 feet	25 feet
30 lb.	30	50 Amp @ 12 VDC	10 AWG	10 AWG	8 AWG	6 AWG	4 AWG
40 lb., 45 lb.	42		10 AWG	8 AWG	6 AWG	4 AWG	4 AWG
50 lb., 55 lb.	50	60 Amp @ 12 VDC	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG
70 lb.	42	50 Amp @ 24 VDC	10 AWG	10 AWG	8 AWG	8 AWG	6 AWG
80 lb.	56	60 Amp @ 24 VDC	8 AWG	8 AWG	8 AWG	6 AWG	6 AWG
101 lb.	46	50 Amp @ 36 VDC	8 AWG	8 AWG	8 AWG	8 AWG	8 AWG
Engine Mount 101	50	60 Amp @ 36 VDC	8 AWG	8 AWG	8 AWG	8 AWG	8 AWG
112 lb.	52	60 Amp @ 36 VDC	8 AWG	8 AWG	8 AWG	8 AWG	8 AWG
Engine Mount 160	116	(2) x 60 Amp @ 24 VDC	6 AWG	6 AWG	4 AWG	2 AWG	2 AWG
E-Drive	40	50 Amp @ 48 VDC	10 AWG	10 AWG	10 AWG	10 AWG	10 AWG

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

Reference

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

SELECTING THE CORRECT BATTERIES



SELECTING THE CORRECT BATTERIES

The motor will operate with any lead acid, deep cycle marine 12 volt battery/batteries. For best results, use a deep cycle, marine battery with at least a 105 amp-hour rating. Maintain battery at full charge. Proper care will ensure having battery power when you need it, and will significantly improve the battery life. Failure to recharge lead-acid batteries (within 12-24 hours) is the leading cause of premature battery failure. Use a multi-stage charger to avoid overcharging. We offer a wide selection of chargers to fit your charging needs. If you are using a crank battery to start a gasoline outboard, we recommend that you use a separate deep cycle marine battery/batteries for your Minn Kota trolling motor. For more information on battery selection and rigging, please visit minnkotamotors.com. Minn Kota trolling motors can run on Lithium Ion batteries. However, they are specifically designed to run on traditional lead acid batteries (flooded, AMG 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.

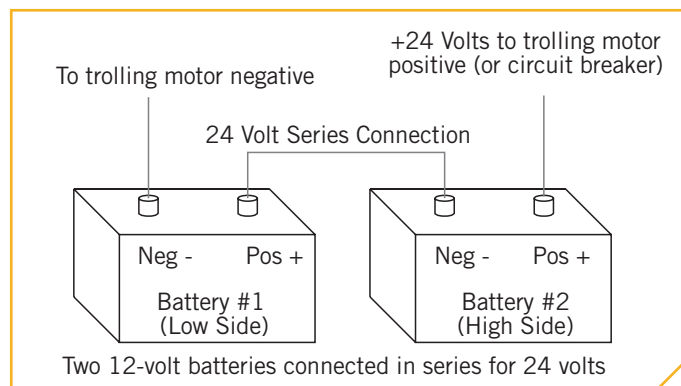
NOTICE: The internal bonding wire is equipped with a 3-amp fuse. Improper connections described above carrying in excess of 3 amps will blow this fuse and no further damage will be exhibited. If this occurs, RF interference from the trolling motor affecting sonar units and other electronics will be more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

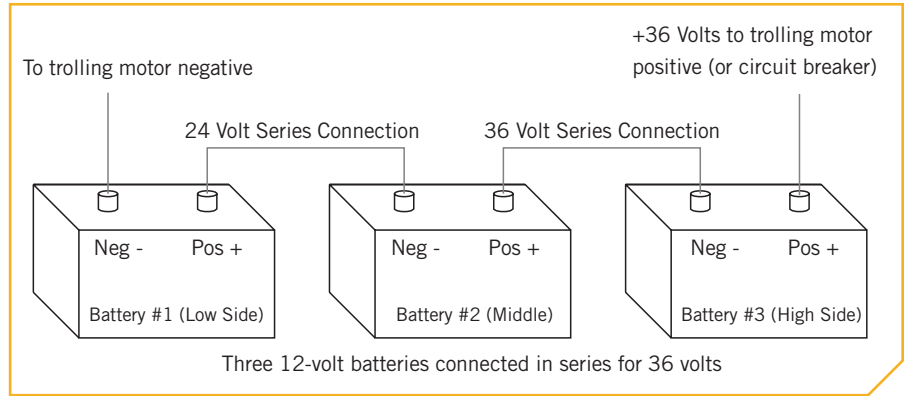
- For safety reasons, disconnect the motor from the battery or batteries when the motor is not in use or while the battery/batteries are being charged.
- Improper wiring of 24/36 volt systems could cause battery explosion.
- Keep leadwire wing nut connections tight and solid to battery terminals.
- Locate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



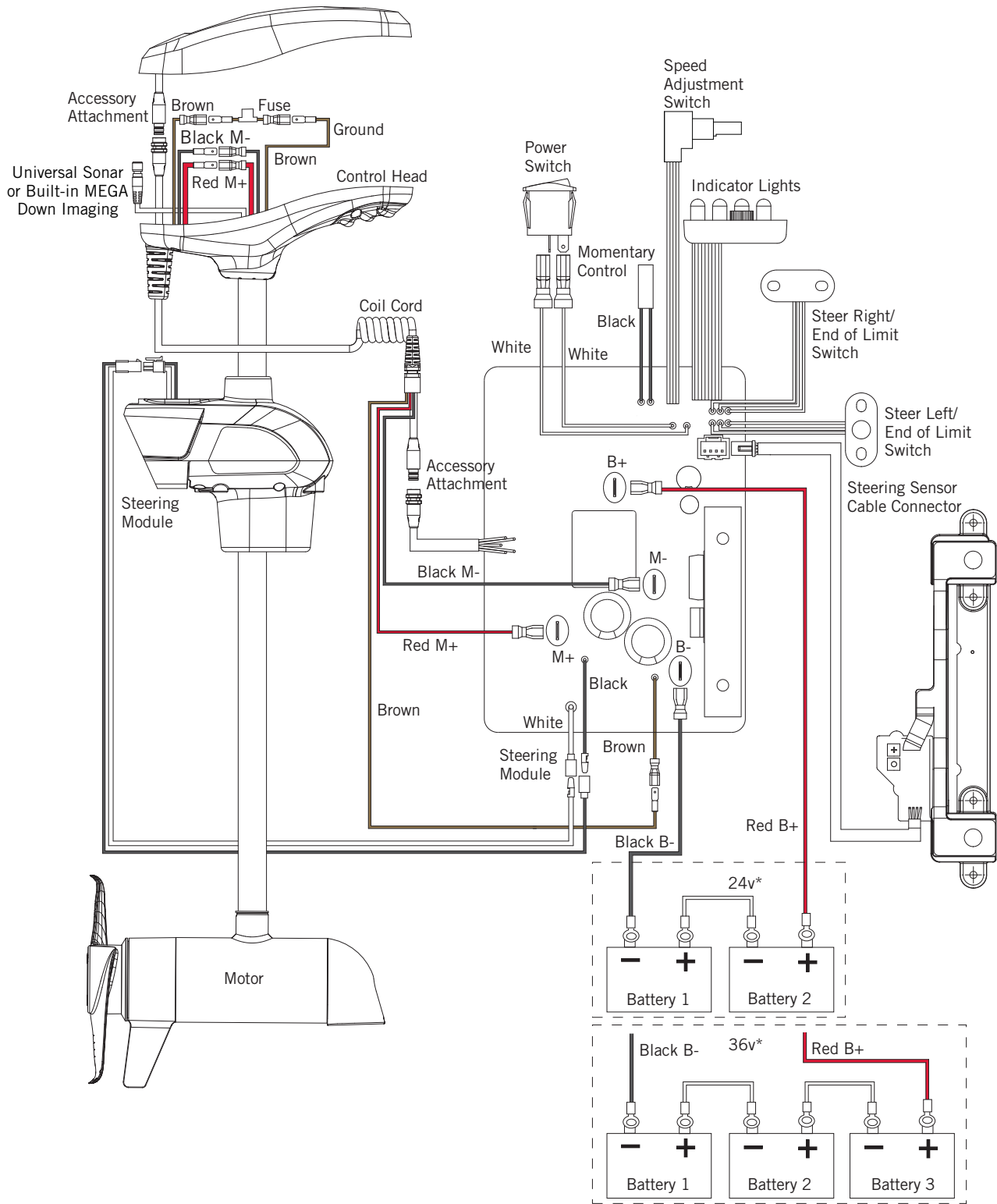
WARNING

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

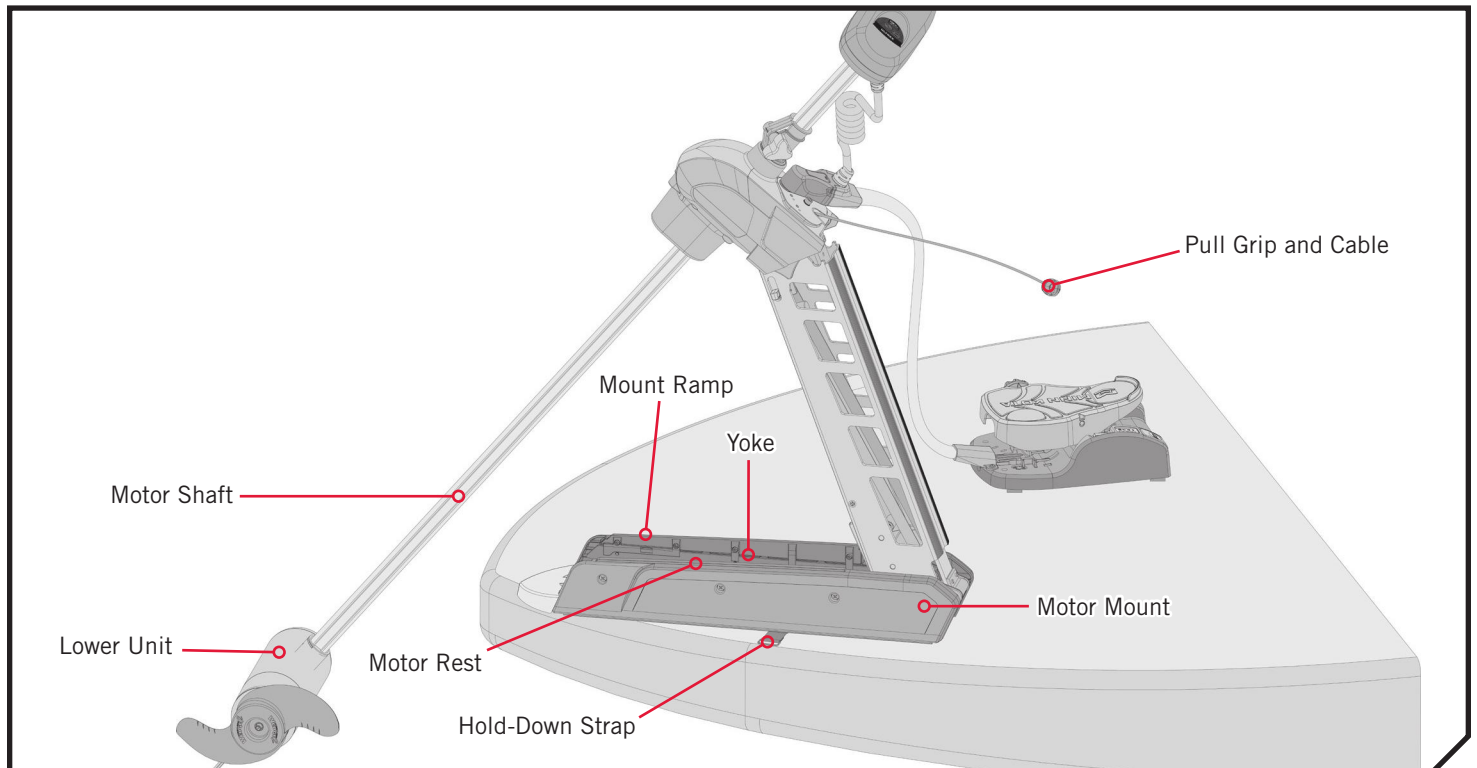


NOTICE: This is a multi-voltage diagram. Double-check your motor's voltage for proper connections. Over-Current Protection Devices are not shown in this illustration.

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 all 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 Mount 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.

ADJUSTING THE LOWER UNIT FOR A SECURE STOW

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.

› 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 in 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.



WARNING

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

MOTOR ADJUSTMENTS ›

› Adjusting the Lower Unit for a Secure Stow

When the Motor is stowed, the Lower Unit should rest on the Mount Ramps just inside the Motor Rest on 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.

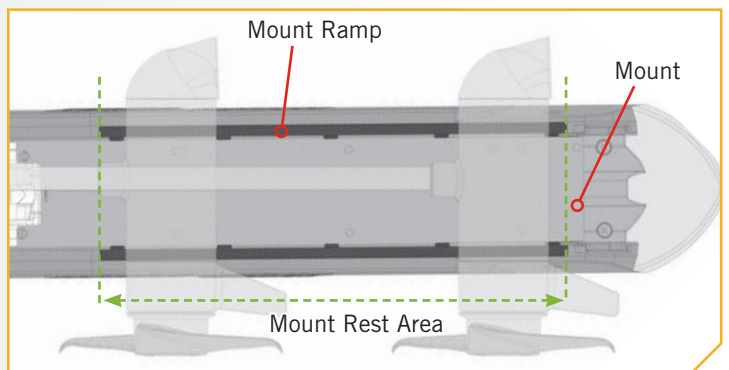
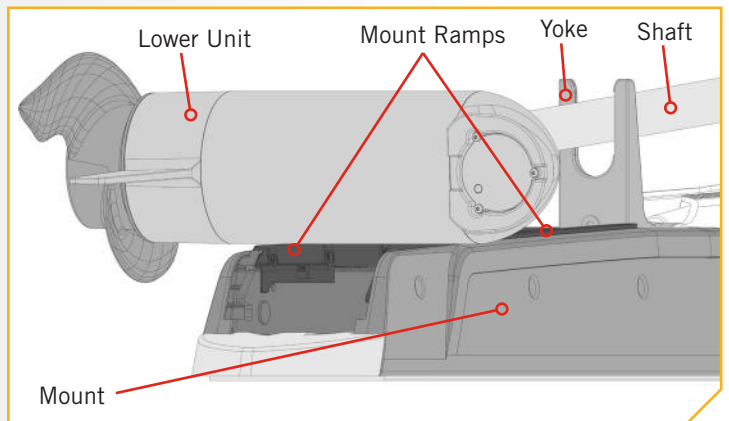
NOTICE: The correct positioning of the Lower Unit will place it directly on the Mount Ramps located on the Mount Rest.

- b. If the Lower Unit does not sit on the Mount Ramps, deploy the motor so the Depth Collar can be loosened and the motor can be adjusted to allow it to rest on the Motor Ramps.



CAUTION

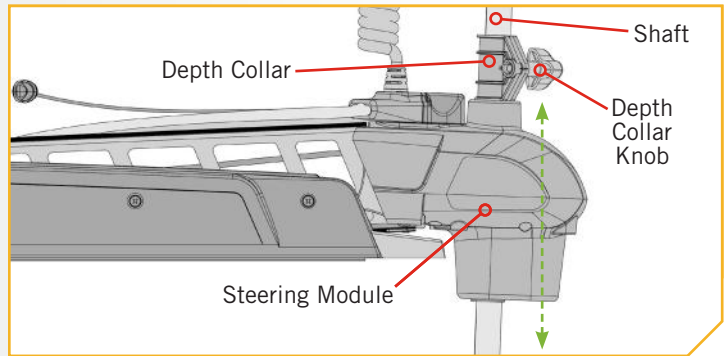
The Lower Unit should be placed on the Mount Ramps within the Motor Rest Area every time the motor is transported. If the Lower Unit is improperly placed, either above or below the Motor Rest Area, damage to the Lower Unit or Shaft will occur and the Shaft will be incorrectly captured in the Yoke. Not following 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. Loosen the Depth Collar Knob, while holding the Shaft in place, until the Shaft slides freely.
- e. Raise or lower the motor to the desired depth.
- f. Tighten the Depth Collar Knob on the Depth Collar to secure the motor in place.
- g. Stow the motor again and confirm that the Lower Unit is resting on the Mount Ramps in 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.



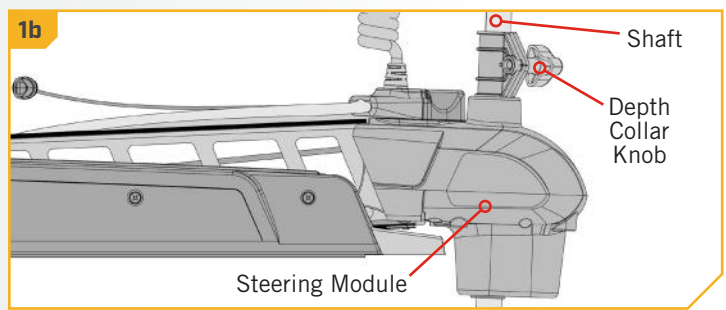
NOTICE: Once the Lower Unit is resting in the proper position on the Mount Ramps, always secure it in place with the Hold-Down Strap.

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 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

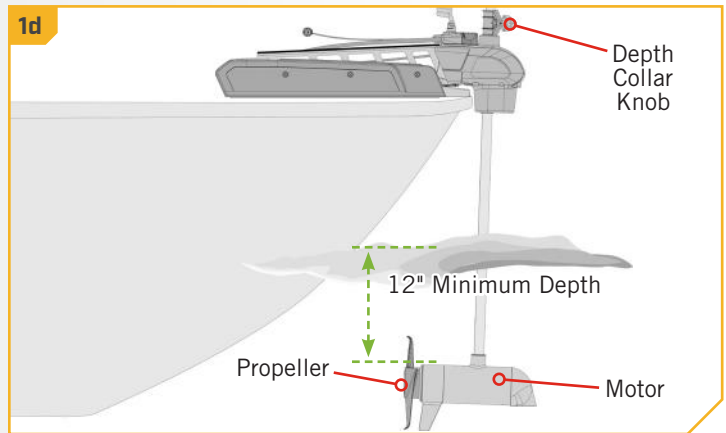
- a. With the motor in the deployed position, firmly grasp the motor Shaft above the Steering Module.
- b. Locate the Depth Collar on the Shaft. Loosen the Depth Collar Knob, while holding the Shaft in place, until the Shaft slides freely.



WARNING

The Control Head will create a pinch point if the Depth Collar Knob is loosened 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. Tighten the Depth Collar Knob on the Depth Collar to secure the motor in place.



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

› 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 Pin 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 Spring Pin and Remove Motor from Mount. It is important to remove the Gas Spring Pin and the Steering Module in order to access the Cable and associated hardware to make any adjustments.

1

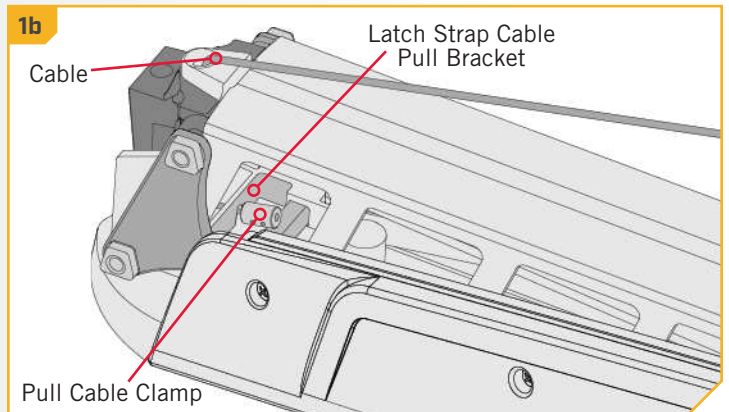
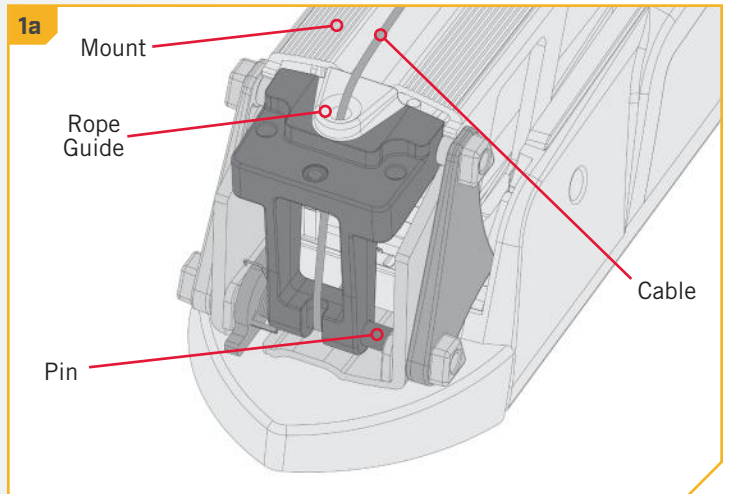
WARNING

Please refer to the Removal of the Steering Module section of this manual and follow the procedure to Disconnect the Gas Spring Pin and Remove Motor from Mount. It is important to remove the Steering Module and Remove the Gas Spring Pin 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 Pin disconnected, and the Steering Module removed, make sure 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.



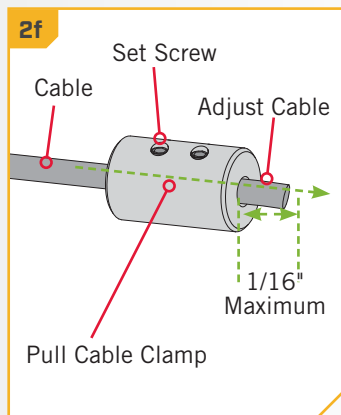
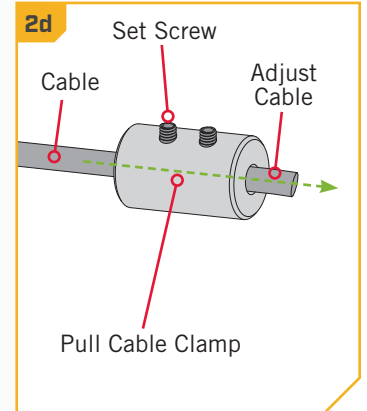
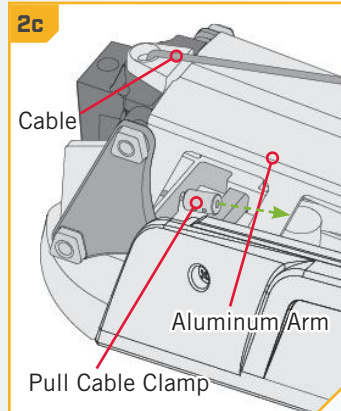
ADJUSTING THE PULL GRIP AND CABLE

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.

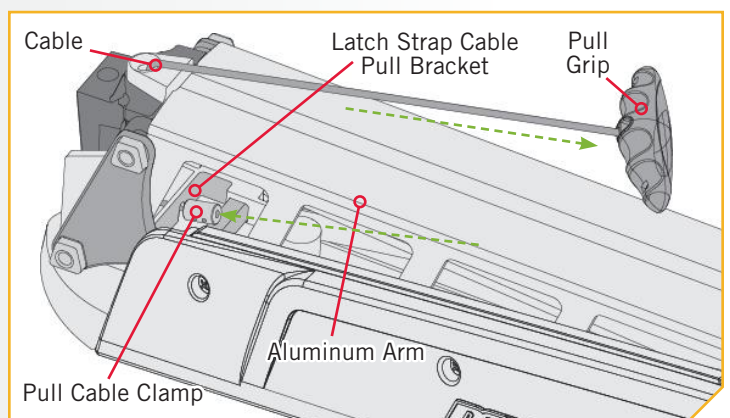
NOTICE: Be sure the two Set Screws are tightened adequately. When properly tightened, the two Set Screws must at least be recessed below the Pull Cable Clamp to maintain tension on the Cable in the Pull Cable Clamp during normal operation.

- g. Using a Hack Saw, trim the Cable so there is no more than 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 and follow the procedure to Reassemble the Steering Module.



INSTALLING AN EXTERNAL TRANSDUCER

INSTALLING AN EXTERNAL TRANSDUCER

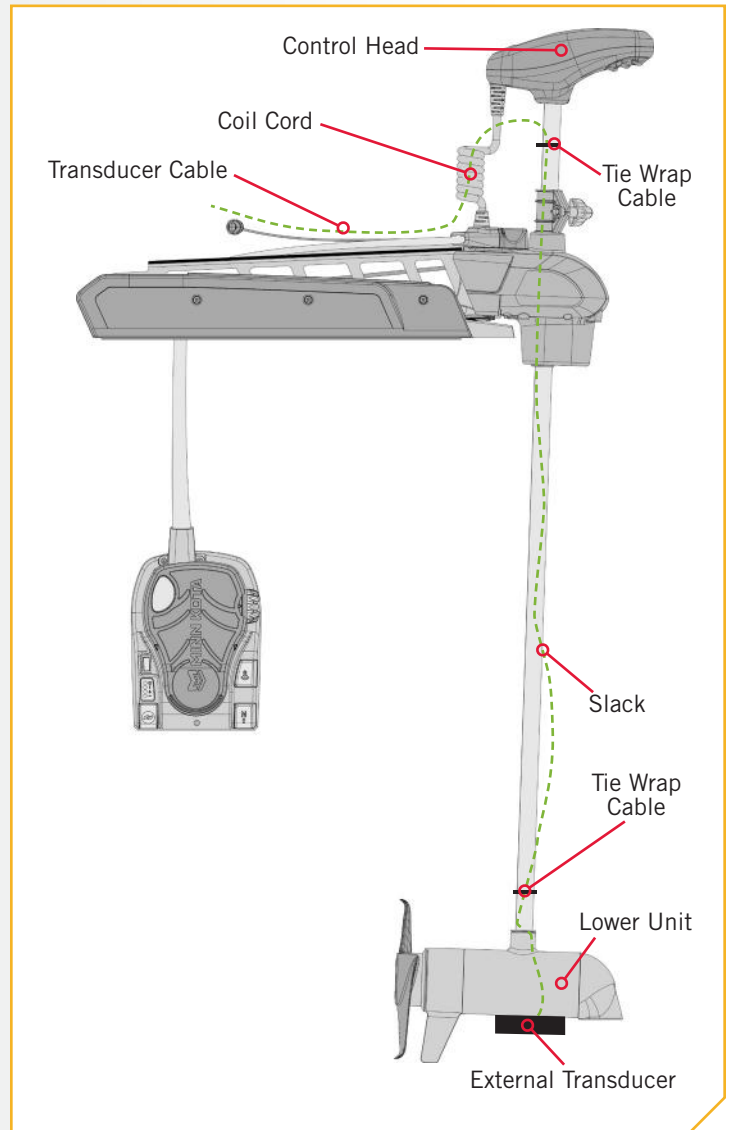
An external transducer is not included with your trolling motor. An external transducer can be installed onto motors that have Universal Sonar or motors that do not have a built in transducer. For more information on Universal Sonar, please visit minnkotamotors.com. Installing an external transducer 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

Not following the recommended wire routing for External Transducer Cables may cause damage to the product and void your product warranty. Take care to test the length and placement of cable to be sure that there is enough slack where needed and that cables are free of being entangled in moving parts. Routing the cables in any way other than directed may cause damage to the cables by being pinched or severed.

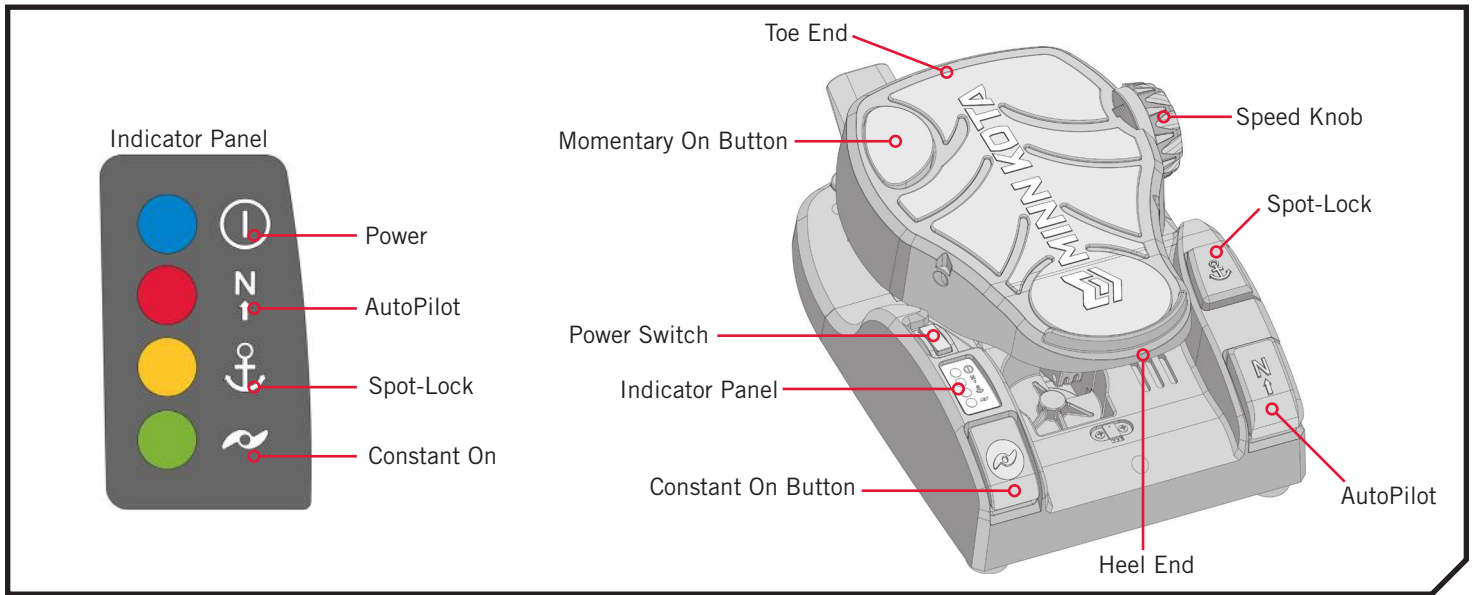
NOTICE: For additional details on cable routing see the "Routing Connection Cables" section of this manual.



USING THE FOOT PEDAL

CONTROLLING SPEED & STEERING WITH THE FOOT PEDAL

The foot pedal is used to operate the motor, and controls on the foot pedal are easy to operate by either foot or hand. The motor can also be controlled by an i-Pilot or i-Pilot Link remote, as well as any compatible Minn Kota remote. Please refer to the i-Pilot, i-Pilot Link or compatible remote manual on how the remote controls the motor.



› Power

The Power Switch is located on the left hand side of the foot pedal and 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 the 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 the i-Pilot or i-Pilot Link 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 a propeller encounters an obstruction while either in Momentary or Constant Mode, while the propeller is running, the increased electrical current being generated by the obstruction will signal the motor to decrease the 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 being sure 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 the remote. Since


the direction of the motor is controlled by pressure applied to the foot pedal and the reaction of the cables to the pressure, the motor will not turn straight without applying pressure to the foot pedal either manually or with the 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 i-Pilot or i-Pilot Link. Refer to the corresponding Owner's Manuals 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 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 either the [i-Pilot](#) or [i-Pilot Link](#) 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.

› AutoPilot

The AutoPilot button is located on the bottom right corner of the Foot Pedal and is indicated by the directional symbol. Pressing the

ADJUSTING THE STEERING CABLE

AutoPilot button toggles the feature on and off. The red light next to the AutoPilot icon **N** 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 the remote. For more specific directions on how to use AutoPilot, please refer to either the [i-Pilot](#) or [i-Pilot Link](#) Manual.

› Steering Lock

When steering the Ultrex with either the foot pedal or 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.

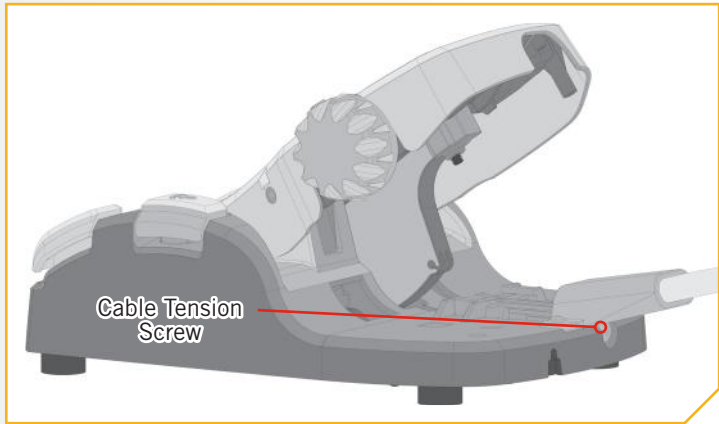
NOTICE: The motor will not auto correct to drive straight when it encounters an obstruction.

FOOT PEDAL ADJUSTMENTS ›

› Adjusting the Steering Cable

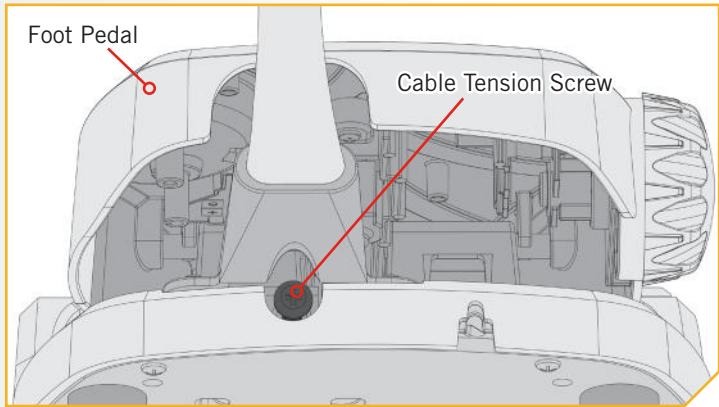
The steering cable tension is pre-set at the factory but, through normal use, may need occasional adjustment.

- 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 Pan head screwdriver.
 - Turn the screw clockwise to increase tension and counter-clockwise 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

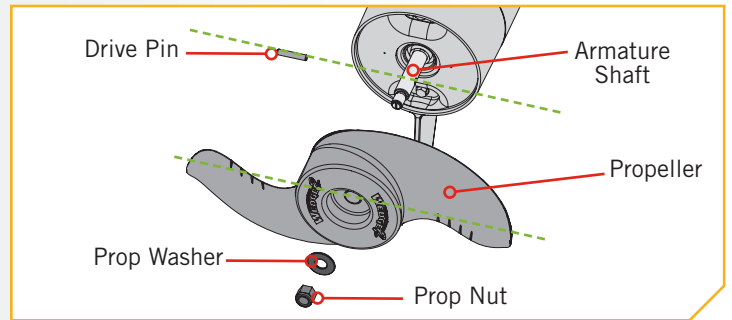
TOOLS AND RESOURCES REQUIRED >

- 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 a 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.



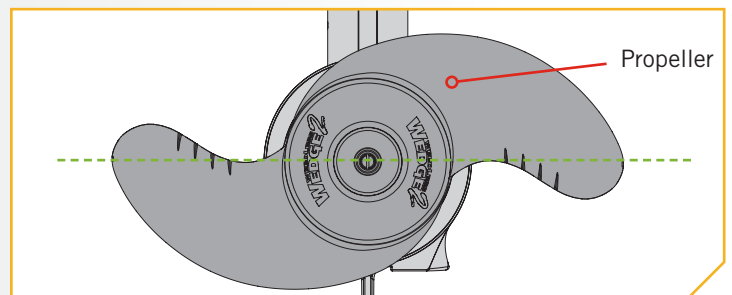
CAUTION

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

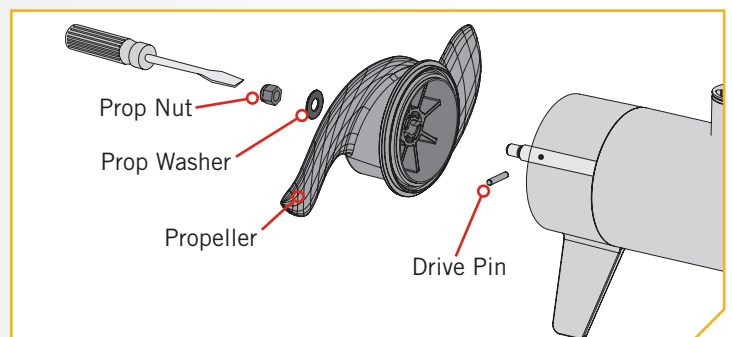
If the prop does not readily slide off, take care to not bend the Armature Shaft while removing the prop by pulling the prop evenly off the Armature Shaft.



- 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.



SERVICE & MAINTAINANCE

GENERAL MAINTENANCE

After use, the entire motor should be rinsed with freshwater. This series of motors 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 from 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 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 smooth by sanding with fine sandpaper.

The rail covers on the motor rest are intended to be a wear item and may need to be a 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 our Authorized Service page, found on-line at minnkotamotors.com, or by calling our customer service number at 800-227-6433.



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 on-line directly from our website at minnkotamotors.com. Orders confirmed by 12 Noon Central Time, with Overnight Shipping selected, should ship the same business day if the parts are in stock. All other orders should ship within the next 3 business days, depending on the shipment method chosen, and if the parts are in stock.



Frequently Asked Questions

We have FAQs available on our website to help answer all of your Minn Kota questions. Visit minnkotamotors.com and click on "Frequently Asked Questions" to find an answer to your question.



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.



Email Us

You can email our consumer service department with questions regarding your Minn Kota products. To email your question, visit minnkotamotors.com and click on "Support".



Authorized Service Centers

Minn Kota has over 800 authorized service providers in the United States and Canada where you can purchase parts or get your products repaired. Please visit our Authorized Service Center page on our website to locate a service provider in your area.



Scan to visit Minn Kota service online.



COMPLIANCE STATEMENTS

ENVIRONMENTAL COMPLIANCE STATEMENT

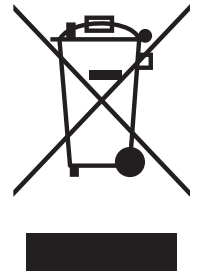
It is the intention of JOME to be a responsible corporate citizen, operating in compliance with known and applicable environmental regulations, and a good neighbor in the communities where we make or sell our products.

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 wheelie 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

› i-Pilot Equipped Motors

For regulatory information on motors that come factory installed with i-Pilot, please refer to the i-Pilot Owner's Manual online at minnkotamotors.com.

› i-Pilot Link Equipped Motors

For regulatory information on motors that come factory installed with i-Pilot Link, please refer to the i-Pilot Link Owner's Manual online at minnkotamotors.com.



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



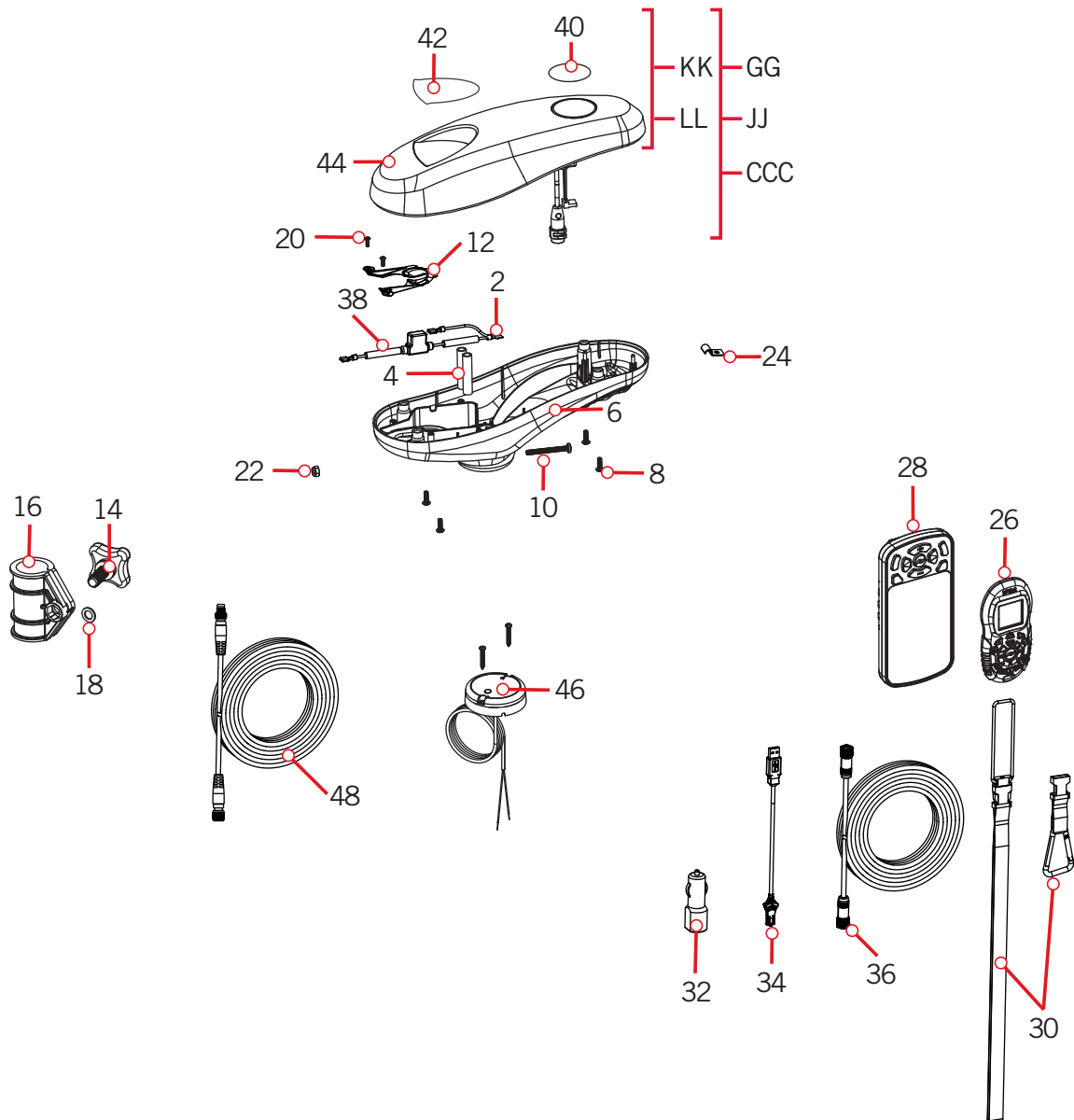
PARTS DIAGRAM & PARTS LIST

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
GG	2774176	I-PILOT CONTROLLER 1.6 TRV, UTX	◆ *i-PILOT* *COMPLETE ASSEMBLY*	1
JJ	2774177	I-LINK CONTROLLER 3.0 TRV, ULTX	● *i-PILOT LINK* *COMPLETE ASSEMBLY*	1
CCC	2774184	IPLINK CONTROLLER 3.0 UTX/MSI	● * *i-PILOT LINK* *MSI*	1
KK	2770233	COVER KIT, IPLT 1.6 TRV, ULTREX	◆ *i-PILOT* *COVER & DECALS ONLY*	1
LL	2770234	COVER KIT, IPLT 3.0 TRV, ULTREX	◆ *i-PILOT LINK* *COVER & DECALS ONLY*	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		22
10	2263406	SCREW-#10-24 x 1-7/8 PPH SS		1
12	2224706	INSERT-PLUG		1
14	2290900	KNOB SOFT GRIP 4LOBE		1
16	2291500	DEPTH COLLAR 1.3 X 3.0		1
18	2321702	WASHER-FLAT, .375 NYLON		1
20	2372103	SCREW #6 X 3/8 PLASTITE		2
22	2333101	NUT-HEX #10-24 UNC-2B NYL SS		1
24	2052510	CLAMP CABLE 3-16 IN		1
	2052511	CLAMP CABLE 1/4 IN	*MDI*	1
26	2994075	REMOTE ASSY, IPILOT 1.6	◆	1
28	2994076	REMOTE ASSY, IPILOT LINK	◆ *LINK ONLY*	1
30	2390800	LANYARD, w/ CARABEENER, IP REMOTE		1
32	2395900	ADAPTER, USB DC POWER	◆ *LINK ONLY*	1
34	2373241	CABLE, USB REMOTE CHARGER	◆ *LINK ONLY*	1
36	490389-1	CABLE, ETHERNET, 30'	◆ *LINK ONLY*	1
38	2375400	SHRINK TUBE-1/4 OD X 1-3/4		2
40	2395545	DECAL, DOMED iPILOT FW		1
	2395547	DECAL, DOMED iPILOT LINK FW		1
42	2295502	DECAL, PUSH BTN TOP, UTX 80# FW		1
	2295503	DECAL, PUSH BTN TOP, UTX 112# FW		1
44	✘	CVR, CTRL BX IP, UTX	*SEE KK OR LL*	1
46	2996400	HEADING SENSOR ASSEMBLY		1

▲ Not shown on Parts Diagram.

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

◆ Only available with models factory installed with i-Pilot.

● Only available with models factory installed with i-Pilot Link.

✚ Only available with models factory installed with Universal Sonar.

➔ Only available with models factory installed with Built-in MEGA Down Imaging.

* Only available with models factory installed with Built-in MEGA Side Imaging.

PARTS DIAGRAM & PARTS LIST



Item	Part #	Description	Notes	Quantity
48	2211410	CABLE-EXT, US2 MAX 175"	+ *US2*	1
	490507-2	CABLE, ADP-INT MDI 14 M12-174"	➔ *MDI*	1
	490516-3	CABLE, ADP-INT MSI 14 M12-156"	* *MSI*	1
▲	2297165	MANUAL DISCLAIMER DOWNLOAD INFO		1
▲	2297161	QUICK REF, INSTALL GUIDE ULTREX		1
▲	2297160	MANUAL, ULTREX		1
▲	2397100	MANUAL iPILOT 1.6	◆	1
▲	2397106	GUIDE, QUICK REF iPILOT 1.6	◆	1
▲	2397102	MANUAL iPILOT LINK 3.0	●	1
▲	2397107	GUIDE, QUICK REFERENCE LINK 3.0	●	1
▲	2394900	INSTRUCTIONS, HEADING SENSOR		1
▲	2205810	DECAL, MINNKOTA 12" PROMO		1

▲ Not shown on Parts Diagram.

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

◆ Only available with models factory installed with i-Pilot.

● Only available with models factory installed with i-Pilot Link.

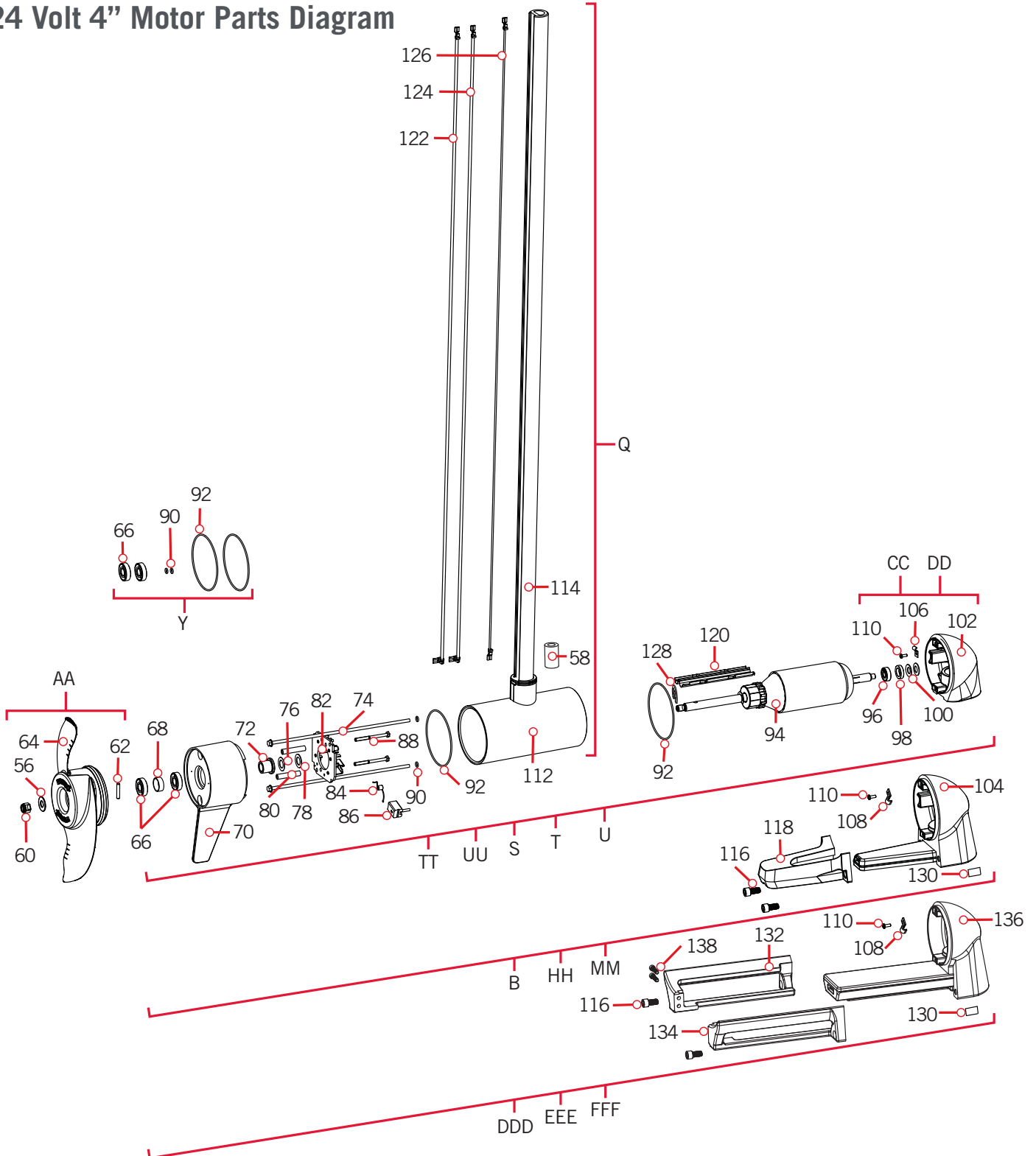
+ Only available with models factory installed with Universal Sonar.

➔ Only available with models factory installed with Built-in MEGA Down Imaging.

* Only available with models factory installed with Built-in MEGA Side Imaging.

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
Q	2777095	CTR HSG ASY, CB 80#, FW 60" TUBE	*CENTER SECTION & TUBE* *CUT TO LENGTH* *NOT FOR M SKU*	1
S	2777005	80#/45" 24V MOTOR US2	*MOTOR & TUBE*	1
T	2777003	80#/52" 24V MOTOR US2	*MOTOR & TUBE*	1
U	2777017	MTR/TUBE ASSY 80# 60" UTX/US2	*MOTOR & TUBE*	1
TT	2777011	MTR/TUBE ASM 80# 52" UTX/US2-M	*MOTOR & TUBE* *M SKU*	1
UU	2777010	MTR/TUBE ASM 80# 60" UTX/US2-M	*MOTOR & TUBE* *M SKU*	1
Y	2889460	80# THRUST SEAL KIT		1
AA	1378132	80# THRUST PROP KIT		1
CC	9421-287	PLN END HSG/TRANSDUCER ASY 4.0 45"	*80LB* *NOT FOR M SKU*	1
DD	9421-290	PLN END HSG/TRANSDUCER ASY 4.0 52"/60"	*80LB* *NOT FOR M SKU*	1
B	2777133	MTR/TUBE ASM 80# 60" UTX/MDI BT	➔ *60"* *MDI*	1
HH	2777131	MTR/TUBE ASM 80# 52" UTX/MDI BT	➔ *52"* *MDI*	1
MM	2777135	MTR/TUBE ASM 80# 45" UTX/MDI BT	➔ *45"* *MDI*	1
DDD	2777138	MRT/TUBE ASM 80# 45" UTX/MSI BT	* *45"* *MSI*	1
EEE	2777139	MRT/TUBE ASM 80# 52" UTX/MSI BT	* *52"* *MSI*	1
FFF	2777140	MRT/TUBE ASM 80# 60" UTX/MSI BT	* *60"* *MSI*	1
Item	Part #	Description	Notes	Quantity
56	2091701	WASHER-PROP (LARGE)		1
58	✘	BEAD-FERRITE		1
60	2093101	NUT-PROP,NYLOC,LG,MX101 3/8 SS		1
62	2262658	PIN-DRIVE 1" X 3/16" S/S		1
64	2331161	PROP-WW2 (4") w/ADP.RING (SUB)	*80LB*	1
66	880-025	SEAL	*80 LB*	2
68	725-095	PAPER TUBE, SEAL		1
70	92-300-170	BRUSH END HSG, 80#		1
72	144-017	BEARING, FLANGE		1
74	830-095	THRU BOLT 12-24		2
76	990-052	WASHER, NYLATRON		1
78	990-051	WASHER-STEEL THRUST		1
80	973-025	SPACER, BRUSHPLATE		2
82	9-738-015	BRUSH PLATE ASSY, 4"		1
84	975-041	SPRING-TORSION	*80LB*	2
86	186-094	BRUSH 4"		2
88	830-027	SCREW-BRUSH PLATE 10-32		2
	830-110	SCREW-5/16-18 X 5/8 SHCS SS		2

▲ Not shown on Parts Diagram.

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

◆ Only available with models factory installed with i-Pilot.

● Only available with models factory installed with i-Pilot Link.

✚ Only available with models factory installed with Universal Sonar.

➔ Only available with models factory installed with Built-in MEGA Down Imaging.

* Only available with models factory installed with Built-in MEGA Side Imaging.

PARTS DIAGRAM & PARTS LIST

Item	Part #	Description	Notes	Quantity
90	701-009	O-RING, THRU BOLTS		2
92	701-043	O-RING, END HOUSINGS		2
94	2-100-214	ARMATURE ASSY	*80LB* *24V*	1
96	140-010	BEARING - BALL		1
98	990-045	SPACER, THRUST	*80LB*	1
100	992-010	WASHER, SPRING BELLEVILLE		2
102	✘	PLN END HSG-PNTD-4" US2.5 CB	*SEE CC or DD*	1
104	✘	PLAIN END HOUSING PAINTED 4.0 MDI	➔ *SEE B, HH or MM*	1
106	230-038	CABLE CLAMP, STEEL	*US2*	1
108	230-039	CABLE CLAMP	➔ * *MDI* *MSI*	1
110	2302104	SCREW-#6 X 3/8		1
112	✘	CTR HSG ASY 4.0" FW MGNTZ(SUB)	*SEE Q* *NA FOR MDI AND M SKU*	1
114	✘	TUBE-COMP, BLK, 45", w 1/4" WALL 80#	*SEE Q* *NA FOR MDI AND M SKU*	1
	✘	TUBE-CMP, BLK 60" 1/4" WALL 80#	*SEE Q* *NA FOR MDI AND M SKU*	1
	✘	TUBE-CMP, BLK 54" 1/4" WALL 80#	*M SKU* *NA FOR MDI AND M SKU*	1
	✘	TUBE-CMP, BLK 60" 1/4" WALL 80#	*M SKU* *NA FOR MDI AND M SKU*	1
	✘	TUBE-CMP, BLK, 60", 1/4, SI		1
	✘	TUBE-CMP, BLK, 52", 1/4, SI		1
	✘	TUBE-CMP, BLK, 45", 1/4, SI		1
116	830-110	SCREW 5-16 - 18 X 5/8 SHCS SS	➔ *	2
118	792-001	GUARD TRANSDUCER, PNT 4.0 DI	➔	1
120	582-013	CLIP, RETAINING SHORT		1
122	640-118	MOTOR WIRE, RED, 80#, 45"		1
	640-132	MOTOR WIRE, RED, 80#, 52"		1
	640-138	MOTOR WIRE, RED, 80#, 60"		1
124	640-016	MOTOR WIRE, BLACK, 80#, 45"		1
	640-017	MOTOR WIRE, BLACK, 80#, 52"		1
	640-021	MOTOR WIRE, BLACK, 80#, 60"		1
126	640-315	BONDING WIRE, BROWN, US2.0, 45"		1
	640-316	BONDING WIRE, BROWN, US2.0, 60" 52"		1
128	788-040	RETAINING RING		1
130	2006621	DECAL-LOWER-UNIT, MDI	➔ * *MDI* *MSI*	1
132	792-015	GUARD, TRNDCR, PNT SI R	* *MSI*	1
134	792-016	GUARD, TRNDCR, PNT SI L	* *MSI*	1
136	✘	PLN END HSG/TRNDCR 4.0 MSI ASM	* *MSI* *SEE DDD, EEE or FFF*	1
138	2063410	SCREW-# 10-32 X 3/4" CAP SS	* *MSI*	2

▲ Not shown on Parts Diagram.

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

◆ Only available with models factory installed with i-Pilot.

● Only available with models factory installed with i-Pilot Link.

✚ Only available with models factory installed with Universal Sonar.

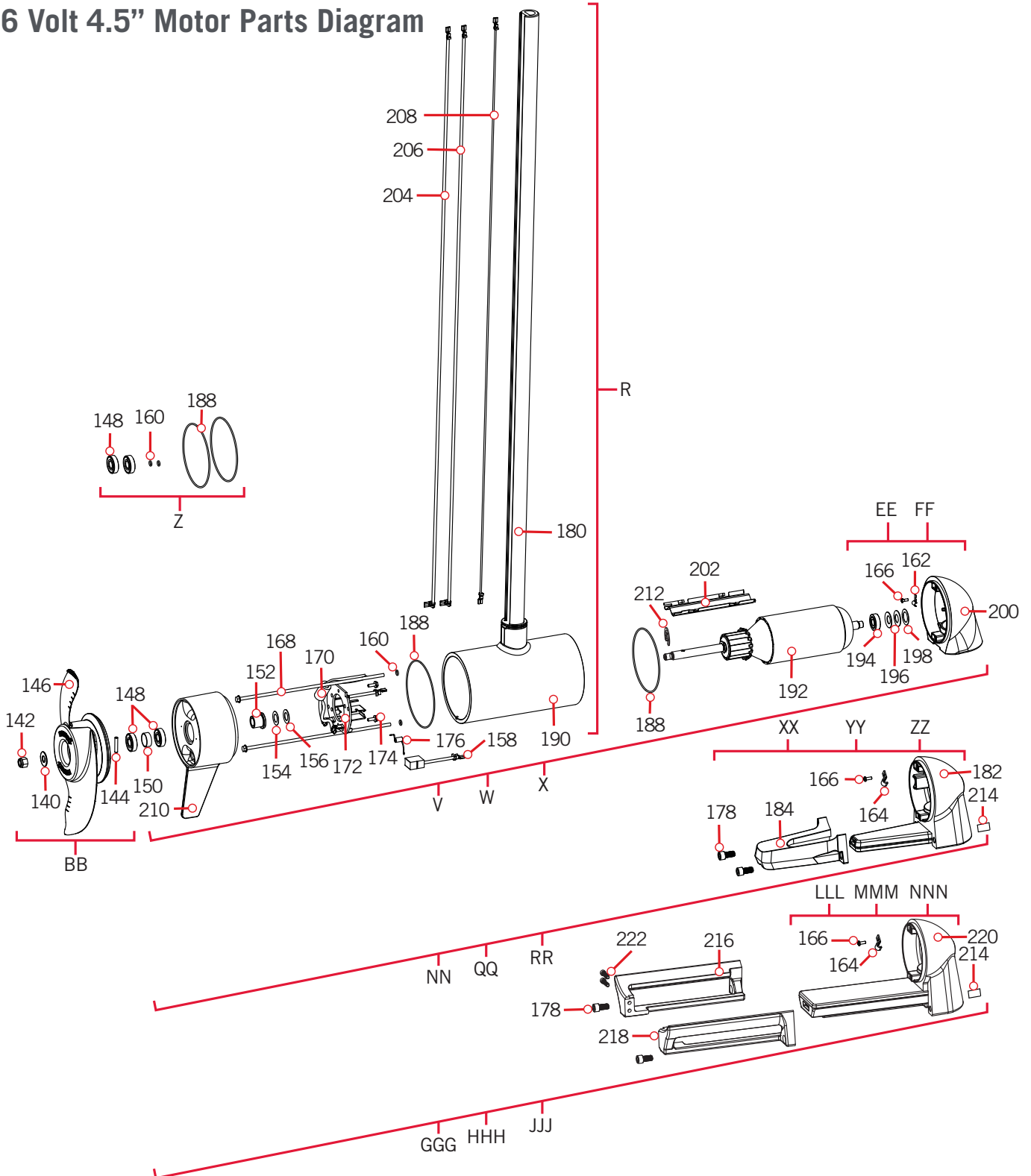
➔ Only available with models factory installed with Built-in MEGA Down Imaging.

* Only available with models factory installed with Built-in MEGA Side Imaging.

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
R	2777243	CTR HSG ASY, CB 112#, FW, 60" TUBE	*CENTER SECTION & TUBE* *CUT TO LENGTH*	1
Z	2881450	112# THRUST SEAL KIT		1
BB	1378160	112# THRUST PROP KIT		1
V	2777089	MTR/TUBE ASSY 112# 45" UTX/US2	*MOTOR & TUBE*	1
W	2777080	MTR/TUBE ASY 112# 52" TRRV/US2	*MOTOR & TUBE*	1
X	2777088	MTR/TUBE ASY 112# 60" UTX/US2	*MOTOR & TUBE*	1
NN	2777153	MTR/TUBE ASM 112# 60" UTX/MDI BT	➔ *MDI* *60"*	1
QQ	2777151	MTR/TUBE ASM 112# 52" UTX/MDI BT	➔ *MDI* *52"*	1
RR	2777150	MTR/TUBE ASM 112# 45" UTX/MDI BT	➔ *MDI* *45"*	1
GGG	2777065	MTR/TUBE ASM 112# 45" UTX/MSI BT	* *MSI* *45"*	1
HHH	2777066	MTR/TUBE ASM 112# 52" UTX/MSI BT	* *MSI* *52"*	1
JJJ	2777067	MTR/TUBE ASM 112# 60" UTX/MSI BT	* *MSI* *60"*	1
EE	9421-244	PLN END HSG/TRANSDUCER ASY 4.5 45"	*112LB* *US2*	1
FF	9421-246	PLN END HSG/TRANSDUCER ASY 4.5 52"/60"	*112LB* *US2*	1
XX	2773002	PLN END HSG/TRANSDUCER ASY 4.5 45"	➔ *112LB* *45"* *MDI*	1
YY	2773009	PLN END HSG/TRANSDUCER ASY 4.5 52"	➔ *112LB* *52"* *MDI*	1
ZZ	2773006	PLN END HSG/TRANSDUCER ASY 4.5 60"	➔ *112LB* *60"* *MDI*	1
LLL	2993012	PLN END HGS/TRNDRCR 4.5 ASM ASM	* *45"* *112LB* *MSI*	1
MMM	2993015	PLN END HGS/TRNDRCR 4.5 ASM ASM	* *52"* *112LB* *MSI*	1
NNN	2993016	PLN END HGS/TRNDRCR 4.5 ASM ASM	* *60"* *112LB* *MSI*	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	*112LB*	1
148	880-025	SEAL	*112LB*	2
150	725-095	PAPER TUBE, SEAL		1
152	144-017	BEARING, FLANGE		1
154	990-052	WASHER, NYLATRON		1
156	990-051	WASHER-STEEL THRUST		1
158	188-095	BRUSH, 4.5"		2
160	701-009	O-RING, THRU BOLTS		2
162	230-038	CABLE CLAMP, STEEL	*US2*	1
164	230-039	CABLE CLAMP	➔ * *MDI* *MSI*	1
166	2302104	SCREW-#6 X 3/8		1

▲ Not shown on Parts Diagram.

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

◆ Only available with models factory installed with i-Pilot.

● Only available with models factory installed with i-Pilot Link.

✚ Only available with models factory installed with Universal Sonar.

➔ Only available with models factory installed with Built-in MEGA Down Imaging.

* Only available with models factory installed with Built-in MEGA Side Imaging.

PARTS DIAGRAM & PARTS LIST



Item	Part #	Description	Notes	Quantity
168	830-094	THRU BOLT 12-24		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	➔ *	2
180	✘	TUBE-COMP, BLK, 45", w 1/4" WALL 112#	*SEE R*	1
	✘	TUBE-CMP, BLK 60" 1/4" WALL 112#	*SEE R*	1
182	✘	PLAIN END HOUSING, PNT 4.5 DI	➔ *SEE XX,YY AND ZZ*	1
184	792-005	GUARD TRANSDUCER, PNT 4.5 DI		1
188	701-098	O-RING, 98MM X 2MM		2
190	✘	CTR HSG ASY 4.5" MAG FW CB TER	*SEE R*	1
192	2-100-245	ARMATURE ASSY	*112LB* *36V*	1
194	140-014	BEARING - BALL		1
196	992-011	WASHER, SPRING BELLEVILLE		2
198	990-011	WASHER, SHIM		1
200	✘	PLN END HSG 4.5" US2.5 PNT FW	*SEE EE OR FF*	1
202	582-016	CLIP, RETAINING LONG	*112LB*	1
204	640-145	MOTOR WIRE, RED, 112#, 60"		1
	640-140	LEADWIRE RED 10AWG 60 1/2" G	*112LB 45"*	
	640-142	MOTOR WIRE, RED, 112#, 52"		1
206	640-040	MOTOR WIRE, BLACK, 112#, 45"		1
	640-042	MOTOR WIRE, BLACK, 112#, 52"		1
	640-039	MOTOR WIRE, BLACK, 112#, 60"		1
208	640-315	BONDING WIRE, BROWN, US2.0, 45", 52"		1
	640-316	BONDING WIRE, BROWN, US2.0, 60"		1
210	92-300-155	BRUSH END HSG, 112#		1
212	788-040	RETAINING RING		1
214	2006621	DECAL-LOWER-UNIT, MDI	➔ * *MDI* *MSI*	1
216	792-015	GUARD, TRNDCR, PNT SI R	* *MSI*	1
218	792-016	GUARD, TRNDCR, PNT SI L	* *MSI*	1
220	✘	PLN END HSG/TRNDCR 4.5 MSI ASM	* *MSI* *SEE LLL, MMM OR NNN*	1
222	2063410	SCREW-# 10-32 X 3/4" CAP SS	* *MSI*	2

▲ Not shown on Parts Diagram.

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

◆ Only available with models factory installed with i-Pilot.

● Only available with models factory installed with i-Pilot Link.

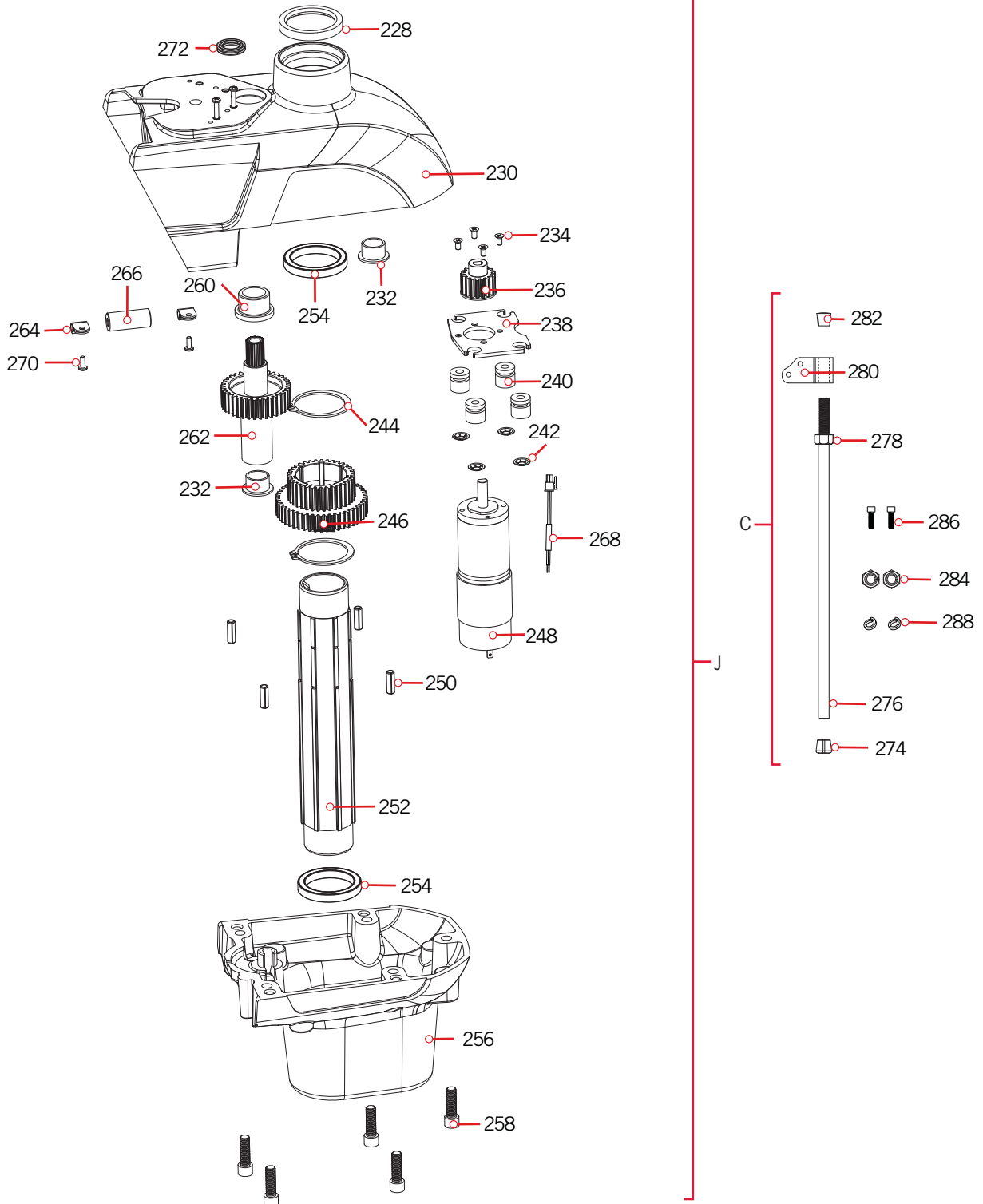
✚ Only available with models factory installed with Universal Sonar.

➔ Only available with models factory installed with Built-in MEGA Down Imaging.

* Only available with models factory installed with Built-in MEGA Side Imaging.

ULTREX STEERING MODULE >

> Steering Module Parts Diagram



PARTS DIAGRAM & PARTS LIST

› Steering Module Parts List

Assembly	Part #	Description	Notes	Quantity
C	2991925	BRACKET STABLZR ARM ASY		1
J	2991896	STEERING MODULE ASSEMBLY FW		1
Item	Part #	Description	Notes	Quantity
228	✘	SEAL	*SEE J*	1
230	✘	HOUSING, UPPER, PAINTED	*SEE J*	1
232	✘	BUSHING-1012-08	*SEE J*	2
234	✘	SCREW-M4 X 8MM, FHP, SS	*SEE J*	4
236	✘	GEAR-MOTOR	*SEE J*	1
238	✘	PLATE, MOTOR	*SEE J*	1
240	✘	BUSHING, DAMPENING	*SEE J*	4
242	✘	NUT-PUSH, 1/4" ZP	*SEE J*	4
244	✘	RETAINING RING, 1 3/4" SHAFT	*SEE J*	2
246	✘	GEAR-CLUSTER, 35-48T	*SEE J*	1
248	✘	MOTOR-DRIVE	*SEE J*	1
250	✘	PIN-SPRING, 1/4 X 3/4, ZP	*SEE J*	4
252	✘	TUBE-STEER, MACHINED	*SEE J*	1
254	✘	BEARING	*SEE J*	2
256	✘	HOUSING, LOWER, PAINTED	*SEE J*	1
258	✘	SCREW-5/16-18 X 1" SHCS ZP	*SEE J*	5
260	✘	BUSHING-1216-12	*SEE J*	1
262	✘	GEAR, CABLE	*SEE J*	1
264	✘	CABLE CLAMP, 3/16", NYLON	*SEE J*	2
266	✘	BEAD-FERRITE	*SEE J*	1
268	✘	WIRE HARNESS, MOTOR,SHORT	*SEE J*	1
270	✘	SCREW-#6-20 X 3/8 THD*(SS)	*SEE J*	2
272	✘	SEAL, QUAD RING, 3/4"	*SEE J*	1
274	2265100	BUMPER STABILIZER		1
276	2263624	STABILIZER ROD		1
278	2263107	NYLON HEX NUT 3/4 - 10 UNC		1
280	2281929	BRACKET		1
282	2260221	VINYL CAP		1
284	2223100	NUT 5/16-18 NYLOCS SS		2
286	2263422	BOLT 5/16-18 X 1" SS		2
288	2281700	5/16 "ID X .457 OD HIGH COLLAR LOCK WASHER		2

▲ Not shown on Parts Diagram.

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

◆ Only available with models factory installed with i-Pilot.

● Only available with models factory installed with i-Pilot Link.

✚ Only available with models factory installed with Universal Sonar.

➔ Only available with models factory installed with Built-in MEGA Down Imaging.

✳ Only available with models factory installed with Built-in MEGA Side Imaging.

PARTS DIAGRAM & PARTS LIST

Foot Pedal Parts List

Assembly	Part #	Description	Notes	Quantity
K	2992156	36V FOOT PEDAL ASSEMBLY		1
L	2992151	24V FOOT PEDAL ASSEMBLY		1
WW	2992151M	24V FOOT PEDAL ASSEMBLY	*M SKU*	1
PPP	2992152	FT.PDL W/BASE ASM 24V MSI	* MSI* *24V*	1
QQQ	2992157	FT.PDL W/BASE ASM 36V MSI	* MSI* *36V*	1
M	2771200	FT PED CABLE, WIRE HARNESS, ASM	*M SKU*	1
VV	2771201	FT PED CABLE, WIRE HARNESS, ASM	*M SKU*	1
RRR	2991207	CORD-CABLE ASM, UTX/80 MSI	* MSI* *24V*	1
SSS	2991206	CORD-CABLE ASM, UTX MSI	* MSI* *36V*	1
N	2774061	CONTROL BOARD KIT, 36V ULTREX		1
P	2774060	CONTROL BOARD KIT, 24V ULTREX		1
SS	2771923	ULTREX FOOT PEDAL PLATE ASM		1
Item	Part #	Description	Notes	Quantity
290	2993705	PUSH BTTN/MAGNET ASSY		1
292	2307312	BEAD-FERRITE	*M SKU* *112 LB* *80 LB*	1
	2307313	BEAD-FERRITE	* MSI* *112 LB*	1
294	2302732	SPRING-LOWER PEDAL S/S		1
296	2375400	SHRINK TUBE-1/40D X 1-3/4	*M SKU* *MSI*	2
298	2260810	CLIP, REED SENSOR		1
300	2290610	LEADWIRE, BLK, 10AWG, GPT 3.0"	*M SKU* *MSI*	1
302	2263000	E-RING TRU-ARC#5133-43		1
304	2994451	FOOT PEDAL W/MAGNET		1
306	2294027	CONTROL BOARD,SENSOR BOARD		1
308	2294410	ACTUATOR-SENSOR, DIA. .375 MAX		2
310	2294420	CARRIER, ACTUATOR		1
312	2294430	BACKER, CARRIER		1
314	2292300	PULLEY, CABLE DRUM		1
316	2293401	SCREW-1/4-20 X 1/2 SET, 316 SS		1
318	2293720	BUTTON-SL, FOOT PEDAL		1
320	2293730	BUTTON-AP, FOOT PEDAL		1
322	2293710	BUTTON-PROP, FOOT PEDAL		1
324	2292700	SPRING, BUTTON, FOOT PEDAL		4
326	2295625	DECAL, INDICATOR LIGHTS		1
328	2373440	SCREW-#4-24 X 1/4 PHCR SS TY B		4
330	2260511	PIN-PIVOT A/T FT PDL		1

▲ Not shown on Parts Diagram.

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

◆ Only available with models factory installed with i-Pilot.

● Only available with models factory installed with i-Pilot Link.

✚ Only available with models factory installed with Universal Sonar.

➔ Only available with models factory installed with Built-in MEGA Down Imaging.

✱ Only available with models factory installed with Built-in MEGA Side Imaging.

PARTS DIAGRAM & PARTS LIST



Item	Part #	Description	Notes	Quantity
332	2044022	SWITCH-POWER, ON/OFF		1
334	2266413	TENSION SCREW PLATE FTPEDAL		1
336	2262301	PULLEY (FOOT PEDAL)		1
338	2993715	ARM-SENSOR, PROP W/MAGNET		1
340	2266401	COVER-PULLEY (STAMPING)		1
342	2291920	PLATE-BOTTOM		1
344	2294061	CONTROL BRD, 36V, ULTREX		1
	2294060	CONTROL BRD, 24V, ULTREX		1
346	2265126	BUMPER PAD, FOOT PEDAL (N156)		4
348	2378600	RIVET-POP,3/16 X 3/4 ALUM.SHNK		4
350	2223455	SCREW-#10-32 X 1/2" ZP MACHINE		2
352	2993735	ARM-SENSOR, AP W/MAGNET		1
354	2993725	ARM-SENSOR, SL W/MAGNET		1
356	2994505	BASE W/PIN, FOOT PEDAL		1
358	2365107	INSULATING PAD(2.3 X 3.2)		1
360	2263210	BRACKET-CONDUIT ADJUSTMEN		1
362	2263140	KEEPER-NYLOCK		1
364	2263466	SCREW-1/4-20 X 2" PPH SS/REI		1
366	2265115	BOOT-FOOT PEDAL BASE		1
368	2296410	COVER, COIL CORD		1
370	2291910	BRACKET, CABLE ANCHOR		1
372	2373450	SCREW-#8-18 X 3/8" THRD.CUT SS		2
374	2323406	SCREW-#10-24 X .50 CRPH SS		2
376	2296400	COVER, WRAP DRUM		1
378	2293403	SCREW-#6-32 X .625 PPH SS		2
380	2296405	COVER, MOTOR CONNECTION		1
382	2291200	COIL CORD ASSEMBLY		1
	2291201	COIL CORD ASM, MSI	* *M SKU* *MSI*	1
384	2290100	KNOB-SPEED CONTROL		1
386	2294400	LOWER-ROCKER, FOOT PEDAL		1
388	2297505	CABLE ASSY-RIGHT (5')		1
390	2297515	CABLE ASSY-LEFT (5')		1
392	2297411	WIRE HARNESS, MOTOR, LONG		1
394	2265430	CABLE JACKET (5') AT MODEL		1
396	3393450	SCREW-#6-19 X .75 PPH HI-LO		2
398	2372100	SCREW-#8-18 X 5/8 THD* (SS)		18
400	2261714	WASHER-MAXXUM FT PDL 18/8 SS		2

▲ Not shown on Parts Diagram.

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

◆ Only available with models factory installed with i-Pilot.

● Only available with models factory installed with i-Pilot Link.

✚ Only available with models factory installed with Universal Sonar.

➔ Only available with models factory installed with Built-in MEGA Down Imaging.

✱ Only available with models factory installed with Built-in MEGA Side Imaging.

PARTS DIAGRAM & PARTS LIST



Item	Part #	Description	Notes	Quantity
402	2332103	SCREW-#6-20 X 3/8 THD (SS)		4
▲	2052510	CABLE CLAMP, 3/16", NYLON		1
▲	2290840	CABLE CLAMP 1/4", NYLON BLACK		1
▲	2301310	SCREW-#8-18 X 1/2 (SS)		2
▲	2298800	LOOM-WIRE, 1/4 X 4"		1
404	2256300	TIE WRAP-5.5" BLACK		3
406	2290605	LEAD WIRE, FOOT PEDAL		1
408	3391722	WASHER, FLAT 7/16		1
410	2296300	TIE WRAP, PANEL MOUNT		1
412	2292915	STRAIN RELIEF, BASE, BL		1
414	2290615	LEADWIRE, RED, 10AWG, GPT 3.5"	*M SKU* *MSI*	1
416	2884019	SWITCH-REED,MAGNETIC w/CONNECT		1

▲ Not shown on Parts Diagram.

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

◆ Only available with models factory installed with i-Pilot.

● Only available with models factory installed with i-Pilot Link.

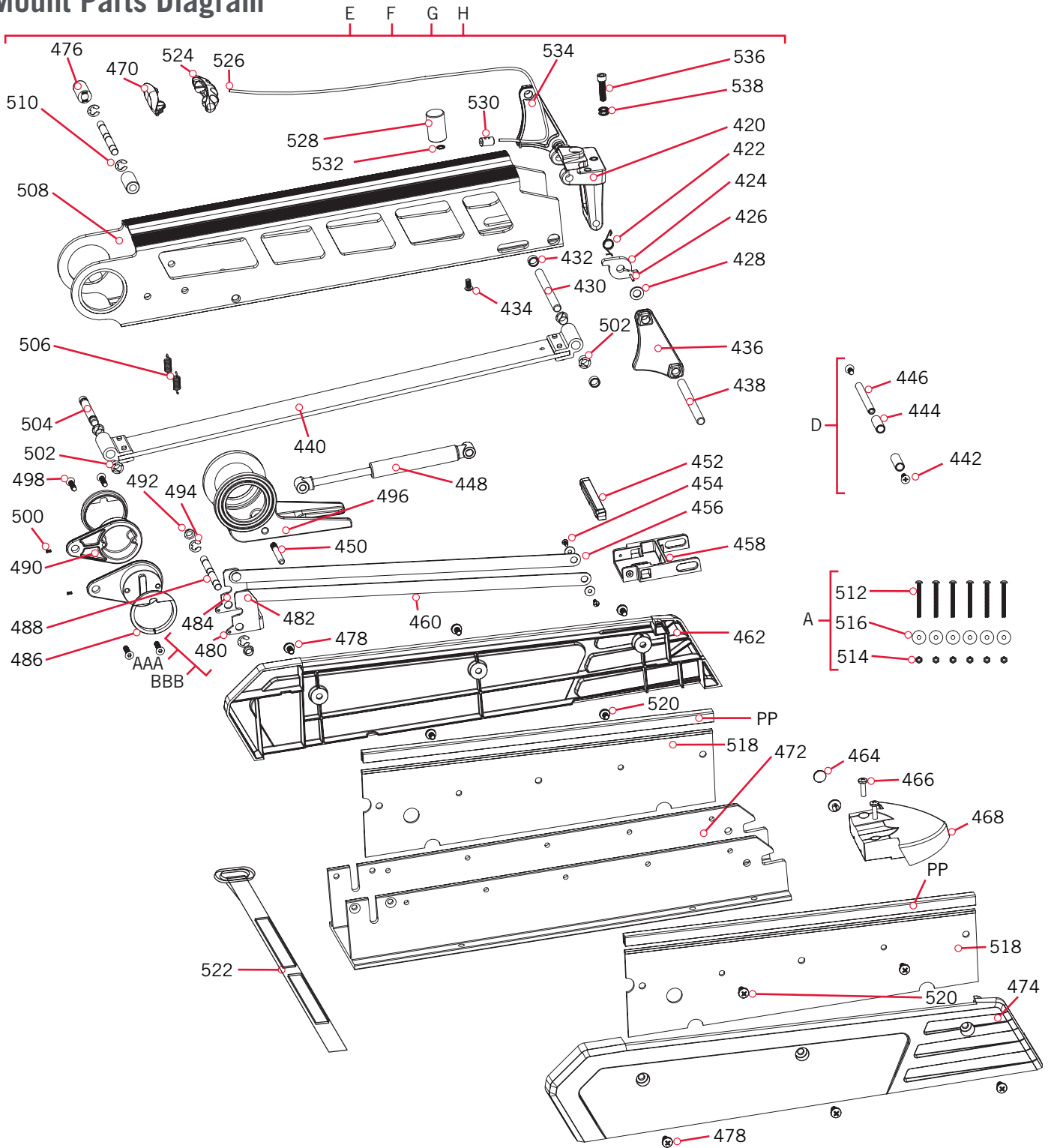
✚ Only available with models factory installed with Universal Sonar.

➔ Only available with models factory installed with Built-in MEGA Down Imaging.

* Only available with models factory installed with Built-in MEGA Side Imaging.

ULTREX MOUNT >

> Mount Parts Diagram



PARTS DIAGRAM & PARTS LIST

Mount Parts List

Assembly	Part #	Description	Notes	Quantity
E	2991642	MOUNT ASM ULTREX FW 112# 45"		1
F	2991640	MOUNT ASM ULTREX FW 80# 45"		1
G	2991641	MOUNT ASM ULTREX FW 80# 52/60"		1
H	2991643	MOUNT ASM ULTREX FW 112# 52/60"		1
D	2994912	BAG ASSY, FORTREX MOUNT HDW		1
A	2994887	INSTALLATION HARDWARE BAG ASSEMBLY		1
PP	2886400	RAIL COVER KIT, MOTOR REST		1
AAA	2773601	LATCH STRAP, ASSY LONG MNT 80/112# 52/60"		1
BBB	2773600	LATCH STRAP, ASSY SHORT MNT 80/112# 45"		1
Item	Part #	Description	Notes	Quantity
420	2992333	ROPE GUIDE ASSEMBLY		1
422	2042711	SPRING-TORSION, SS 112# 45"		1
424	2283620	LATCH, SAFETY (SUB)		1
426	2282611	PIN-SPRING, 3/32"		1
428	2281704	WASHER -7/16 NYLON		1
430	2282600	PIN 7/16" X 4.80" SS		1
432	2287303	BUSHING, UPPER PIN		2
434	2223418	SCREW-1/4-20X 1/2 SS BHCS		1
436	2280805	LINK, BOWGUARD MOUNT, RIGHT		1
	2990815	END LINK ASM, RIGHT	*112LB 52"/60" ONLY*	1
438	2282608	PIN 7/16" X 5.15" SS		1
	2282613	PIN, BOW GUARD, LOWER	*112LB 52"/60" ONLY*	1
440	2993821	ASSY,INNER ARM, LONG,FW 80/112# 52/60"		1
	2993819	ASSY,INNER ARM,SHORT,FW 80/112# 45"		1
442	2283410	SCREW-1/4-20 X .500" PFH		2
444	2281710	SPACER, GAS SPRING, FORTREX		2
446	2282610	PIN, UPPER SHOCK		1
448	2288403	GAS SPRING (CYLINDER) (SUB)		1
	2288404	GAS SPRING (CYLINDER) 80# 45" 52/60"		1
	2288405	GAS SPRING (CYLINDER) 112# 45"		1
450	2282604	PIN-KNURLED 5/16"X2 1/4"SS		1
452	2283615	LATCH BAR		1
	2283616	LATCH BAR	*112LB 52"/60"*	1
454	2373450	SCREW-#8-18 X 3/8" THRD.CUT SS		2
456	2261732	WASHER-#8, NYLON		3

▲ Not shown on Parts Diagram.

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

◆ Only available with models factory installed with i-Pilot.

● Only available with models factory installed with i-Pilot Link.

✚ Only available with models factory installed with Universal Sonar.

➔ Only available with models factory installed with Built-in MEGA Down Imaging.

✳ Only available with models factory installed with Built-in MEGA Side Imaging.

PARTS DIAGRAM & PARTS LIST



Item	Part #	Description	Notes	Quantity
458	2283610	BRACKET-LATCH/STRAP,ROPE PULL		1
460	✘	LATCH STRAP, LONG MNT SS 80/112# 52/60"		2
	✘	LATCH STRAP, SHORT MNT SS 80/112# 45"		2
462	2283949	SIDEPLATE, LEFT, LONG, FW	*52"/60**	1
	2283939	SIDEPLATE, LEFT, SHORT, FW	*45**	1
464	2286700	PLUG-SPACER,BASE EXTRUSION		2
466	2073408	SCREW-1/4-20 X 7/8 PPH S/S		2
468	2283900	RAMP-MOTOR FW		1
470	2280401	PULL GRIP,SOFT, TOP		1
472	2281903	BASE EXTRUSION-SHORT, MACH. 80/ 112# 45"		1
	2281913	BASE EXTRUSION-LONG, MACH. 80/112# 52/60"		1
474	2283944	SIDEPLATE, RIGHT, LONG, FW	*52"/60**	1
	2283934	SIDEPLATE, RIGHT, SHORT, FW	*45**	1
476	2261505	SPACER, MOTOR REST		2
478	2323405	SCREW-1/4-20 X 1/2" MCH SS		8
480	✘	BRACKET, LATCH		1
482	✘	RIVET,SHLDR 5/16"X.159"SS		2
484	✘	BEARING,NYLINER 5/16" (5L1-FF)		2
486	2287300	BUSHING-REAR PIVOT		2
488	2282602	PIN 3/8" X 3 3/4" SS		2
490	2281932	BRACKET-REAR PIVOT FW		2
492	2280008	BEARING-I GLIDE 3/8 SHAFT		2
494	2263011	E-RING 3/8 DIA. SHAFT*		4
496	2281501	YOKE, FORTREX		1
498	2283411	SCREW-1/4-20X1.00 FHS RIE TORX		4
500	2283402	SCREW-SET 6/32 X .25" SS		2
502	2280005	BEARING,NYLINER 7/16" (7L7-F)		4
504	2282606	PIN-PIVOT, 7/16" X 3 1/8" SS		1
506	2282720	SPRING-EXTENSION SS		2
508	2284202	ARM-OUTER,SHORT,FW 80/112# 45"		1
	2284212	ARM-OUTER,LONG,FW 80/112# 52/60"		1
510	2263011	E-RING 3/8 DIA. SHAFT*		2
▲	2014800	BAG-ZPLCK (4X6) 4ML CLEAR		1
▲	2285803	HANG TAG, WARNING, FORTREX		1
512	2263468	1/4 - 20 X 2.5" SS PPH SCREW		6
514	2263103	1/4 - 20 SS NYLOCK NUT		6
516	2261713	1/4 FLAT 18-8 SS WASHER		6
518	2283631	RAIL, MACH, MOTOR REST		2
520	2323403	SCREW - 1/4 - 20 X 1/2" T-L ZP		4

▲ Not shown on Parts Diagram.

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

◆ Only available with models factory installed with i-Pilot.

● Only available with models factory installed with i-Pilot Link.

✚ Only available with models factory installed with Universal Sonar.

➔ Only available with models factory installed with Built-in MEGA Down Imaging.

* Only available with models factory installed with Built-in MEGA Side Imaging.

PARTS DIAGRAM & PARTS LIST



Item	Part #	Description	Notes	Quantity
522	2773806	STRAP, HOLD DOWN		1
524	2280405	PULL GRIP, SOFT, BOTTOM		1
526	2291400	CABLE, PULL HANDLE, SS		1
528	2281516	SPACER, INNER ARM		1
530	2880800	PULL CABLE CLAMP & SCREW KIT		1
532	2281702	WASHER-LOCK, 1/4" EXTERNAL SS		1
534	2280800	LINK,BOWGUARD MOUNT,LEFT		1
	2990810	END LINK ASM, LEFT	*112LB 52"/60" ONLY*	1
536	2293402	SCREW-5/16-18, SHCS, RIE, STEEL		1
538	2291700	WASHER-5/16, M8 WEDGE LOCK		1

- ▲ Not shown on Parts Diagram.
- ✘ This part is included in an assembly and cannot be ordered individually.
- ◆ Only available with models factory installed with i-Pilot.
- Only available with models factory installed with i-Pilot Link.

- ✚ Only available with models factory installed with Universal Sonar.
- ➔ Only available with models factory installed with Built-in MEGA Down Imaging.
- * Only available with models factory installed with Built-in MEGA Side Imaging.



NOTES



A series of horizontal lines for writing notes, consisting of 25 evenly spaced lines.

RECOMMENDED ACCESSORIES

ON-BOARD & PORTABLE BATTERY CHARGERS

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



MK212PC



MK210D



MK110PD

TALON SHALLOW WATER ANCHOR

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



BUILT-IN WORK LIGHT

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



BLUETOOTH® CONNECTIVITY

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



UP TO 15' DEEP

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



MORE CONTROL OPTIONS

- Control Panel
- Wireless Remote
- Mobile App
- Wireless Foot Switch
- Humminbird® Connectivity
- i-Pilot® & i-Pilot Link™ Remote



MINN KOTA ACCESSORIES

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

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



Minn Kota Consumer & Technical Service
Johnson Outdoors Marine Electronics, Inc.
PO Box 8129
Mankato, MN 56001

121 Power Drive
Mankato, MN 56001
Phone (800) 227-6433
Fax (800) 527-4464



©2021 Johnson Outdoors Marine Electronics, Inc.
All rights reserved.