TERROVA

BOW-MOUNT TROLLING MOTOR

Owner's Manual

INTRODUCTION

THANK YOU

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

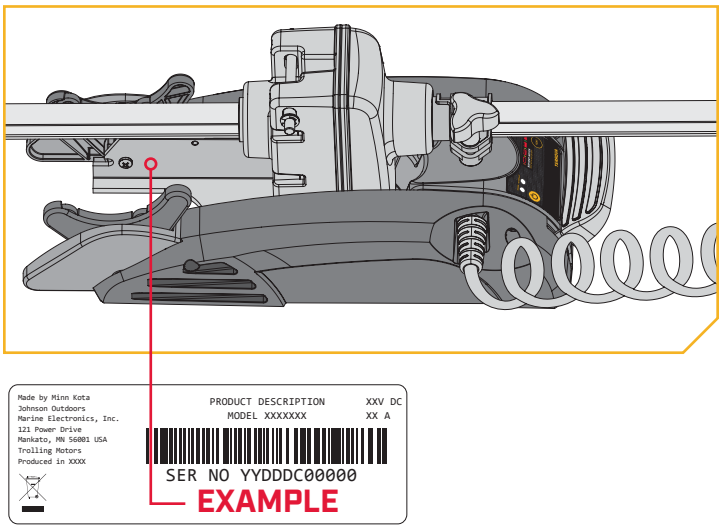
REGISTRATION

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

SERIAL NUMBER

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

NOTICE: The serial number on your Terrova is located inside the mount below the motor rests.



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.

Made for iPhone® 11 and iPhone X

For updated iOS, Humminbird® and Minn Kota® compatibility, visit minnkotamotors.com

Made for iPhone

Made for Android™

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

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SAFETY CONSIDERATIONS

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

⚠ WARNING

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

⚠ WARNING

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

⚠ WARNING

Take care that neither you nor other persons approach the turning propeller too closely, neither with body parts nor with objects. The motor is powerful and may endanger or injure you or others. While the motor is running watch out for persons swimming and for floating objects. Persons who lack the ability to run the motor or whose reactions are impaired by alcohol, drugs, medication, or other substances are not permitted to use this motor. This motor is not suitable for use in strong currents. The constant noise pressure level of the motor during use is less than 70dB(A). The overall vibration level does not exceed 2,5 m/sec2.

⚠ WARNING

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

⚠ WARNING

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

WARRANTY

WARRANTY ON MINN KOTA FRESHWATER TROLLING MOTORS

Minn Kota Freshwater Trolling Motors - Limited Lifetime Warranty On Composite Shaft And Limited Two-Year Warranty On The Entire Product

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

Minn Kota Limited Two-Year Warranty on the Entire Product

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

Minn Kota Limited Lifetime Warranty on the 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 and 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, acts of God, 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.**

Service Provider Locator

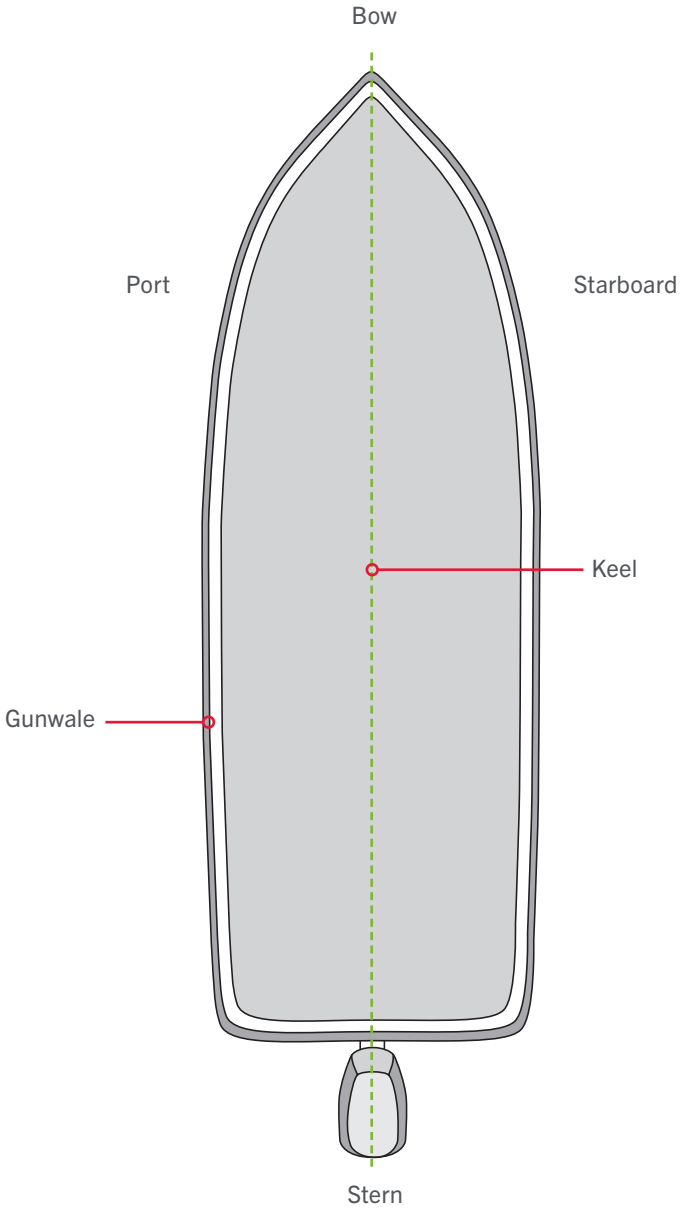
Contact Customer Service

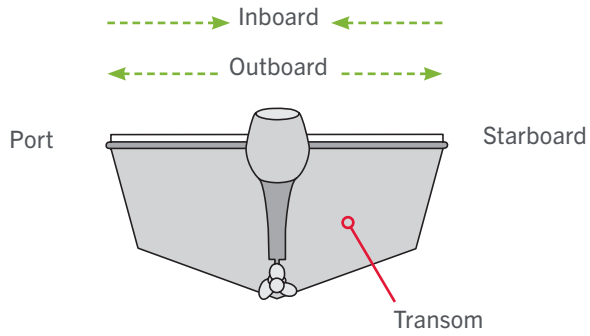
NOTICE: Do not return your Minn Kota product to your retailer. Your retailer is not authorized to repair or replace products.

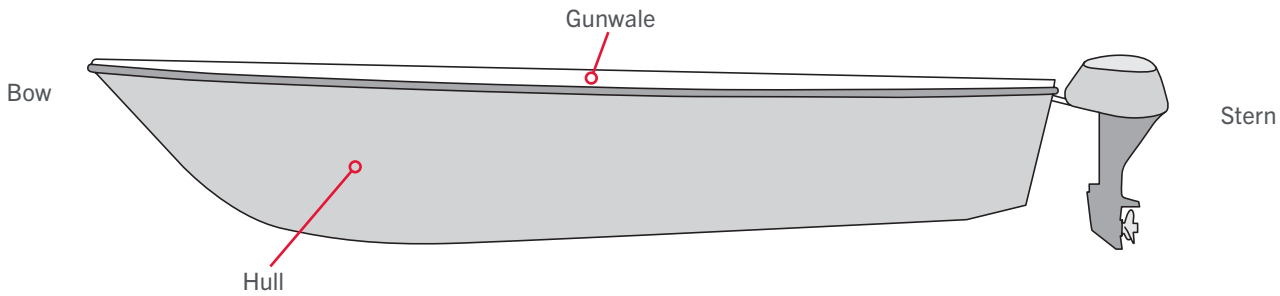
NOTICE: THERE ARE NO EXPRESS WARRANTIES OTHER THAN THESE LIMITED WARRANTIES. IN NO EVENT SHALL ANY IMPLIED WARRANTIES INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, EXTEND BEYOND THE DURATION OF THE RELEVANT EXPRESS LIMITED WARRANTY. IN NO EVENT SHALL JOME BE LIABLE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

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

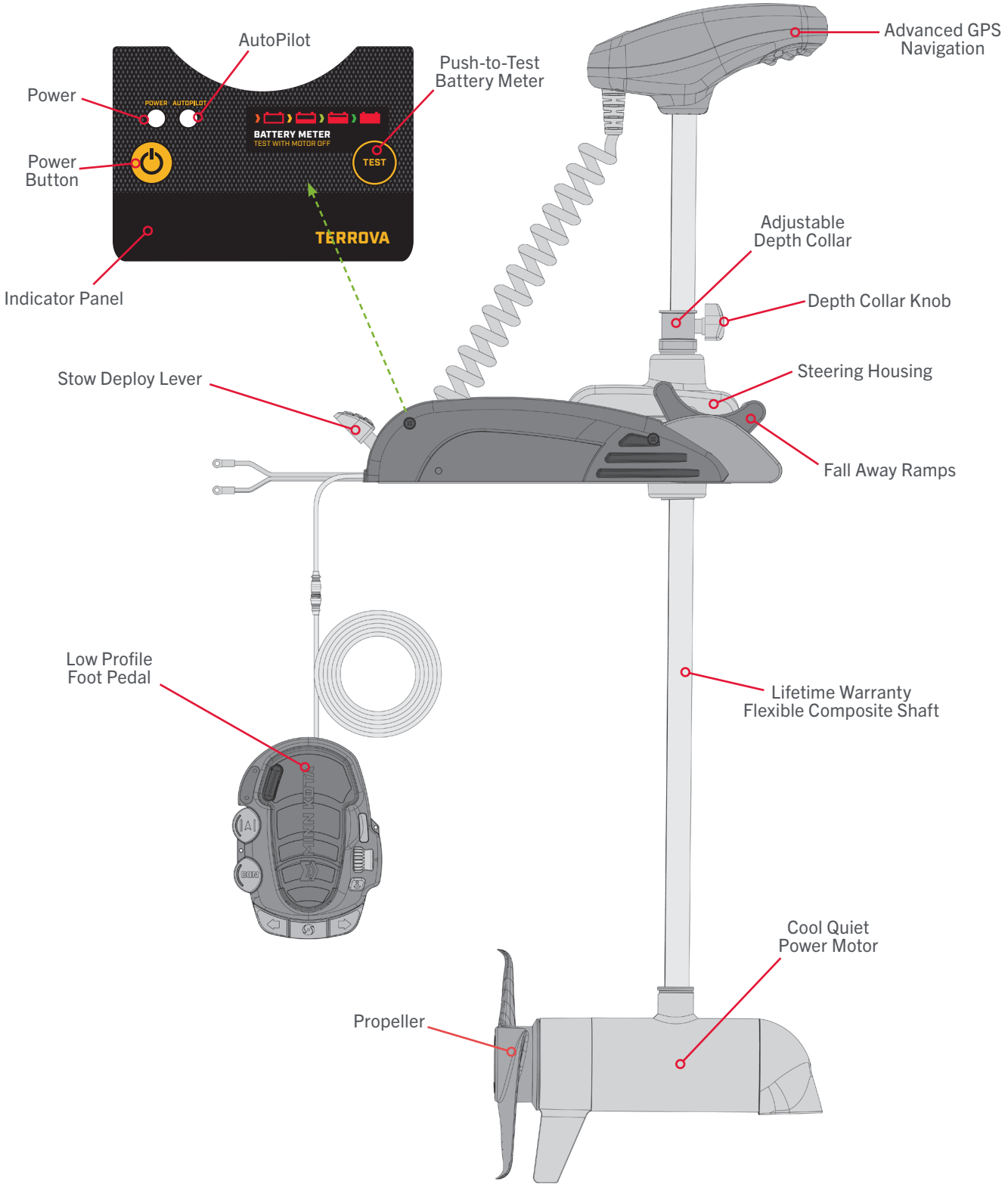
KNOW YOUR BOAT







FEATURES



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

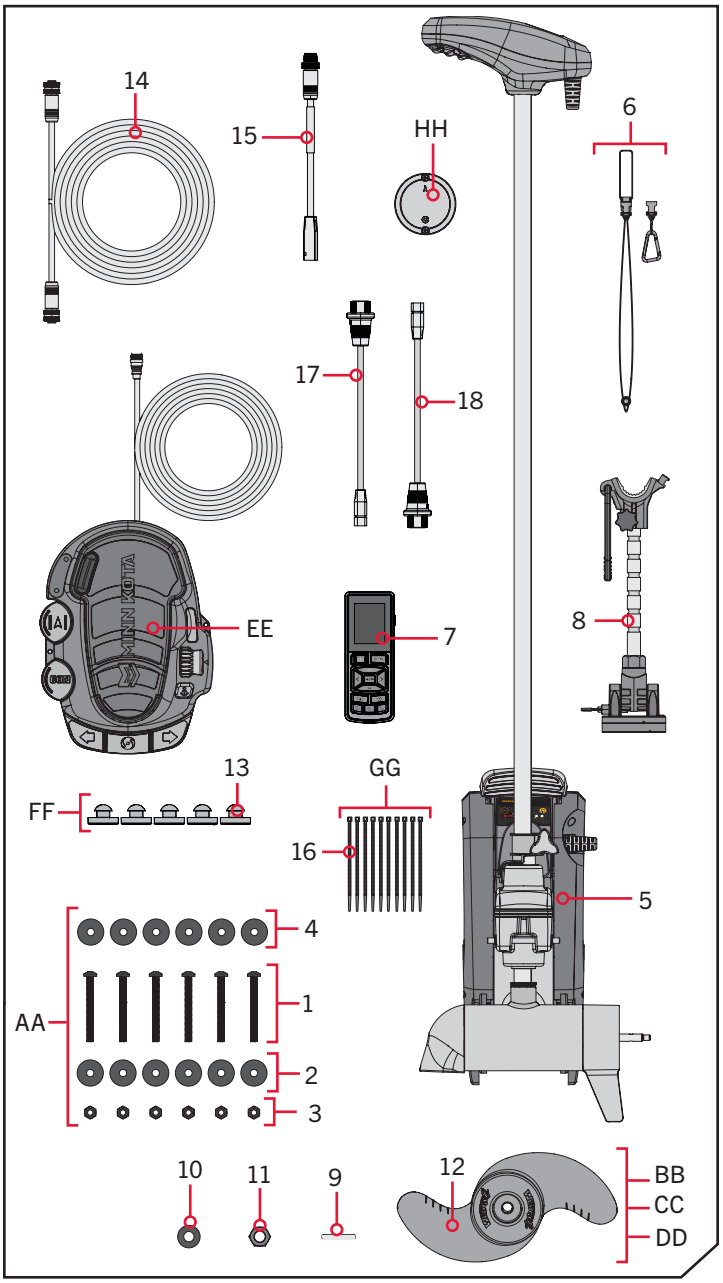
INSTALLATION

INSTALLING THE TERROVA

Your new Terrova 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 brackets and to locate your nearest dealer, 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, please visit minnkotamotors.com.

INSTALLATION PARTS LIST ❯

Item / Assembly	Part #	Description	Qty.
AA (Includes 1-4)	2994864	BAG ASSEMBLY - (BOLT, NUT, WASHERS)	1
1	2263462	SCREW-1/4-20 X 2" S/S PPH ADJT	6
2	2261713	WASHER-1/4 FLAT 18-8 SS	6
3	2263103	NUT-1/4-20 NYLOCK SS	6
4	2301720	WASHER-MOUNTING - RUBBER	6
5	✖	MOTOR ASSEMBLY	1
6	2390802	LANYARD w/CARARBINER IP RMT U2	1
7	411690-1	TROLLING MOTOR REMOTE	1
8	2992371	STABILIZER, BWMT ES TM ASM *72"*	1
BB (Includes 9-12)	1378170	PROP KIT 2091170 PWR PRP GENII *55LB*	1
CC (Includes 9-12)	1378132	PROP IND 2331160 WDLS WDG II *80LB*	1
DD (Includes 9-12)	1378160	PROP KIT 2341160 112# WW2 *112LB*	1
9	2262658	PIN-DRIVE 1" X 3/16" S/S *55LB*	1
	2092600	PIN-DRIVE 1.06" LG (SS) *80LB* *112LB*	1
10	2151726	WASHER-5/16 STD (S/S) *55LB*	1
	2091701	WASHER-PROP (LARGE) *80LB* *112LB*	1
11	2053101	NUT-PROP,NYLOC (MED) 5/16 SS *55LB*	1
	2093101	NUT-PROP,NYLOC,LG, 3/8 SS *80LB* *112LB*	1
12	2091170	PROP-PWR (3 5/8") REAMED *55LB*	1
	2331161	PROP-WW2 4" WELDED *80LB*	1
	2341161	PROP-WW2 4.5" WELDED *112LB*	1
EE	2994733	FT PEDAL ASM TRV 3 PM	1
FF (Includes 13)	2994859	BAG, ASY-TERROVA/V2, RUB BUMPERS	1
13	2325110	PAD, FOOT PEDAL	5
14	490384-4	CABLE, ETHERNET (M12-M12), 30'	1
15	490380-1	CABLE, ETHERNET PIGTAIL-700 HD	1
GG (Includes 16)	2996300	TIE WRAP ASM, 60"	1
16	2206300	TIE,WRAP, LOW PROFILE 4"	10
HH	2996400	HEADING SENSOR ASSEMBLY	1
17	2994961	BAG ASM, CABLE,ADPTR, 490537-2 *MKR-MI-1*	1
18	2994960	BAG ASM, CABLE,ADPTR, 490518-1 *MKR-MDI-2*	1
▲	2327134	MANUAL, TERROVA 3 PM	1
▲	2327136	MANUAL-INSTLL GUIDE T3 PM	1
▲	2297165	MANUAL-DISCLAIMER,DWNLOAD INFO	1
▲	2294950	INSTRUCTIONS,OBN & REMOTE PAIR	1
▲	2207131	STANDARD QS SETUP GUIDE	1
▲	2377179	INSTR.SHEET, MKA-60 STBLZR *72"*	1
▲	2397110	MANUAL, iPILOT 4.0	1
▲	2397115	GUIDE-QCK REFERENCE iP 4.0	1



▲ *Not shown on Parts Diagram.*
✖ *This part is included in an assembly and cannot be ordered individually.*

MOUNTING CONSIDERATIONS

It is recommended that the motor be mounted as close to the 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

- #3 Phillips Screwdriver
- Drill
- 9/32” Drill Bit
- 7/16” Box/Open End Wrench
- 9/16” Box/Open End Wrench
- Pliers or Vice Grip
- A second person to help with the installation
- Flat-blade Screwdriver
- Awl or similar Marking Tool

INSTALLATION

INSTALLING THE TERROVA

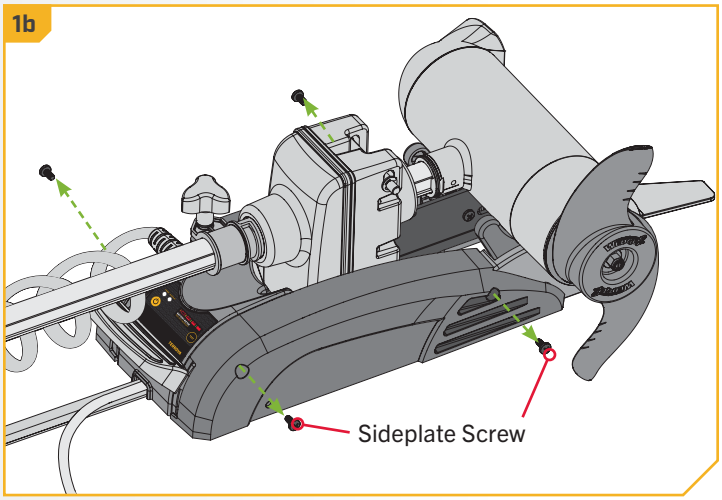
1

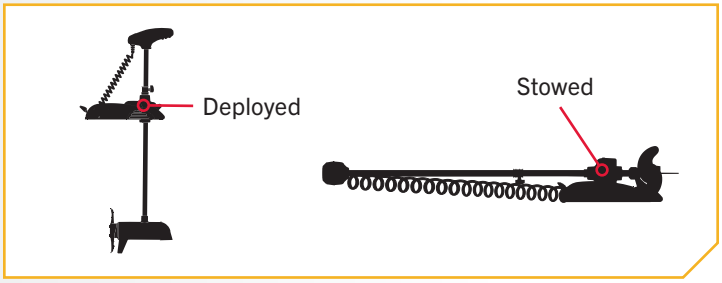
a. Place the mount on an elevated, level surface such as a workbench or the tailgate of a pickup. The motor, as removed from the box, should be in the stowed position.

b. Remove the four sideplate screws using a #3 Phillips Screwdriver. Two of these screws will be located on each side of the mount.

NOTICE: This motor weighs approximately 65lbs. We recommend having a second person help with the installation.

1b

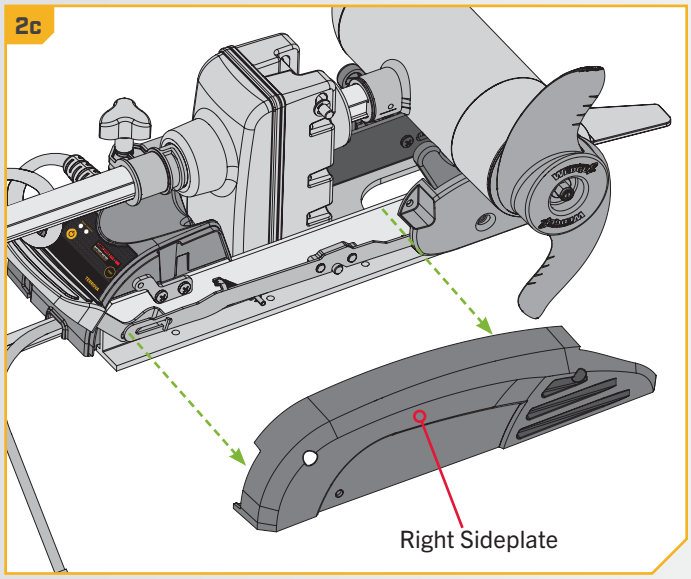


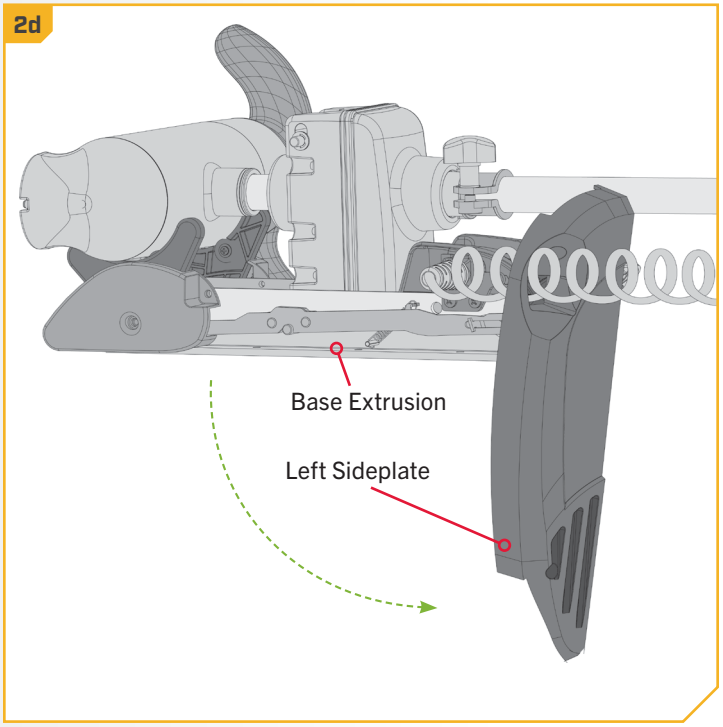


2

c. Remove the Right Sideplate.

d. Swing the Left Sideplate out and away from the Base Extrusion.



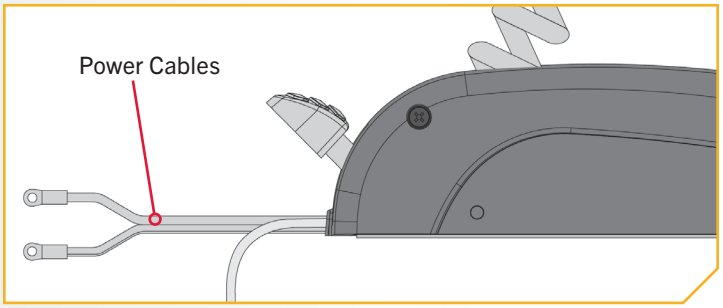


3

e. Make sure that the Power Cables from the battery are disconnected or that the breaker, if equipped, is "off."

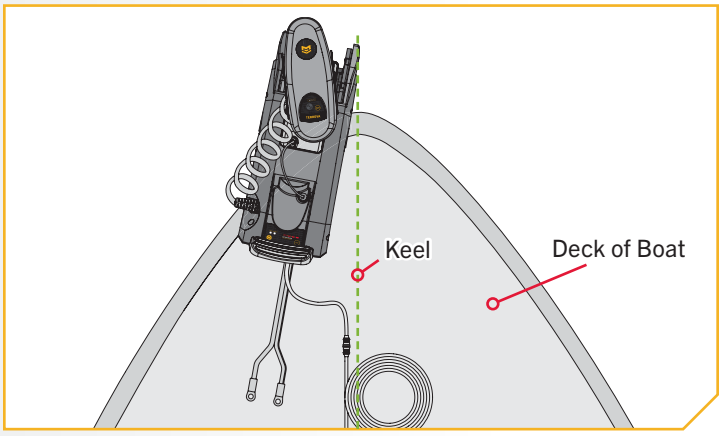
⚠ WARNING

Make sure the motor is mounted on a level surface and is not connected to a power source.



4

f. Place the mount as close to the centerline or keel of the boat as possible. The motor can be installed on either the Port or Starboard side of the boat based on personal preference. Check placement with the motor in the stowed and deployed positions. Review the mounting considerations at the beginning of the installation.



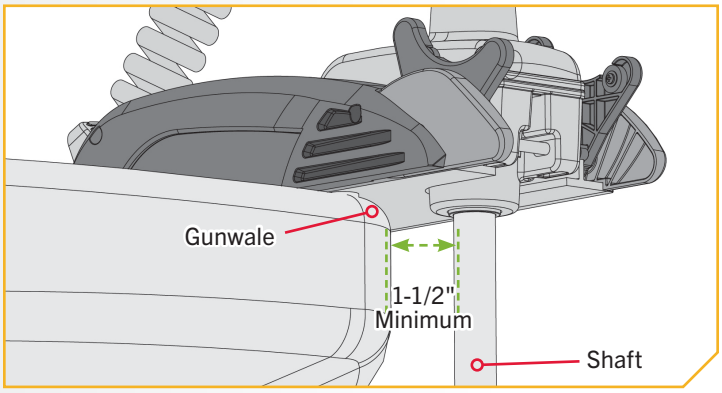
5

ITEM(S) NEEDED

- #4 x 6

g. 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.

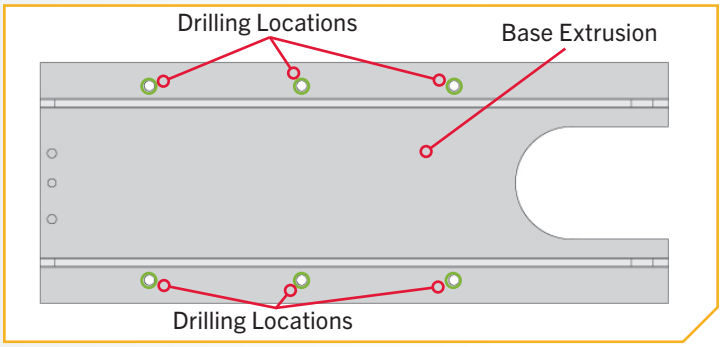
h. Check to be sure that the mount is level. Use the Rubber Washers (Item #4) provided to create a level surface if necessary.



6

i. With an Awl or similar tool, mark all six mounting holes in the Base Extrusion.

j. Drill through the deck of the boat using a 9/32" Drill Bit on the marked locations.



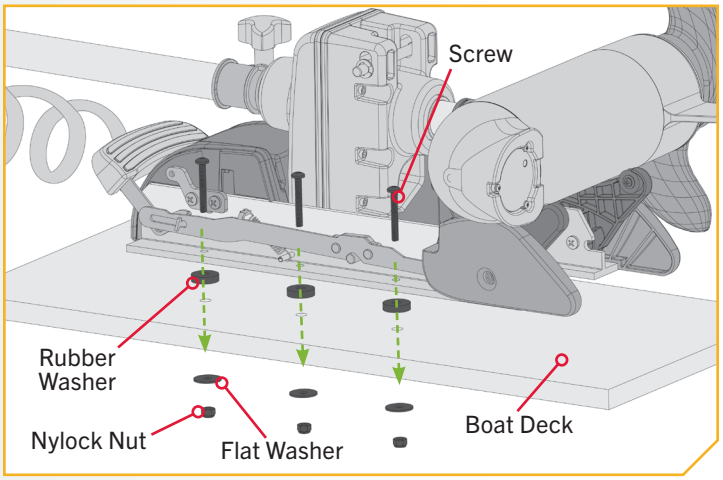
7

ITEM(S) NEEDED

#2 x 6 | **#1 x 6** | **#3 x 6** | **#4 x 6**

k. Put a 1/4-20 x 2" (Item #1) Screw into each of the drilled locations. The Screw should pass through the Base Extrusion and the boat deck. If the Rubber Washers (Item #4) are used, they should sit between the Base Extrusion and boat deck. Make sure to secure the motor with screws on each side of the Base Extrusion.

l. Place a Flat Washer (Item #2) and then a Nylock Nut (Item #3) at the end of each screw and secure with a 7/16" Box End Wrench. Make sure all hardware is secure.

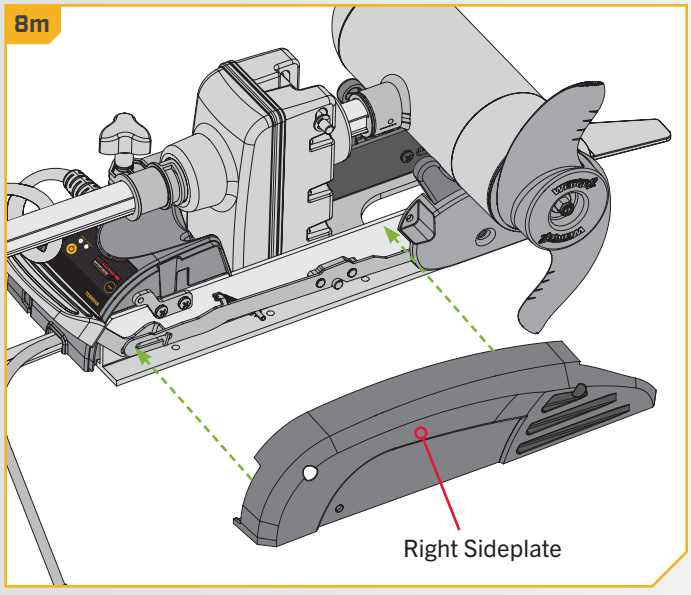


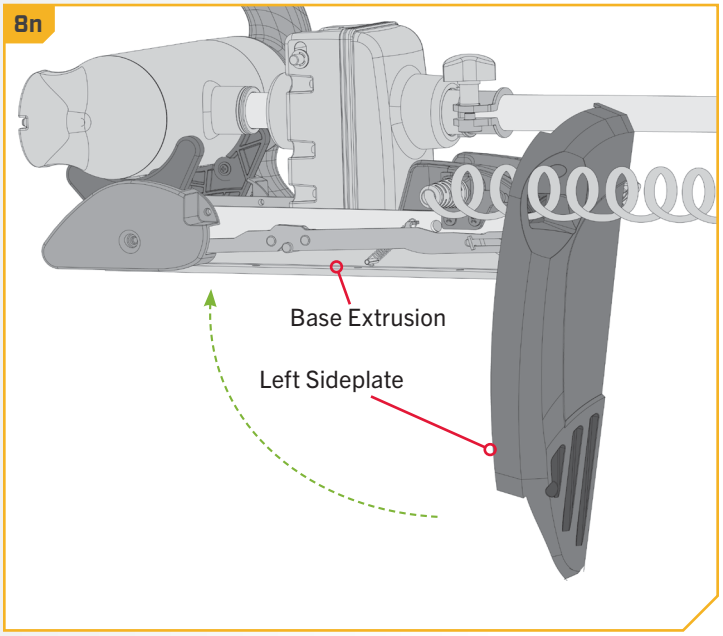
NOTICE: To prevent seizing of the stainless steel hardware, do not use high speed installation tools. Wetting the screws or applying an anti-seize may help prevent seizing.

8

m. Replace the Right Sideplate.

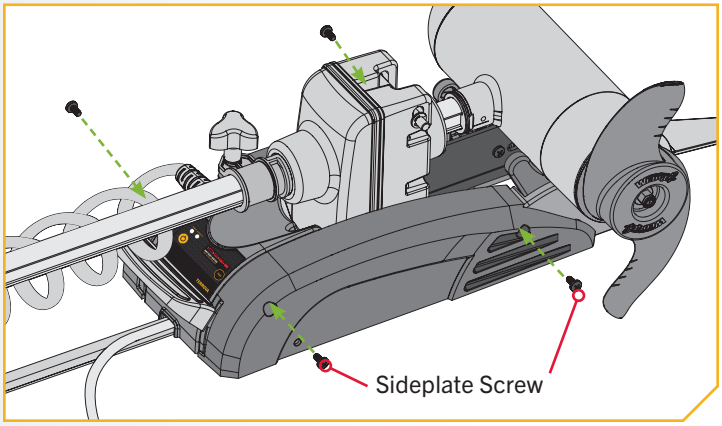
n. Swing the Left Sideplate back into its correct position on the Base Extrusion.





9

o. Replace the four sideplate screws using a #3 Phillips Screwdriver. Two of these screws will be located on each side of the mount.



Installing the Foot Pedal

1

ITEM(S) NEEDED

#13 x 5

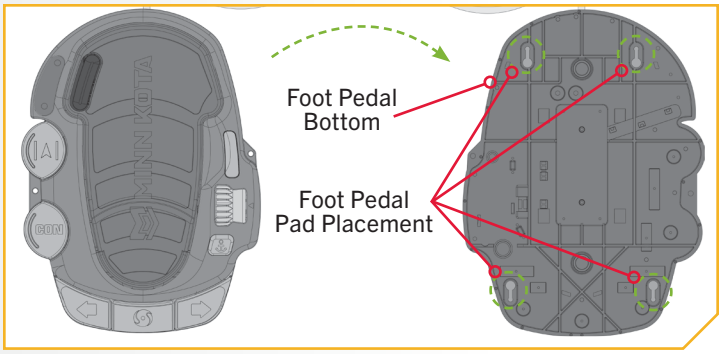
#EE x 1

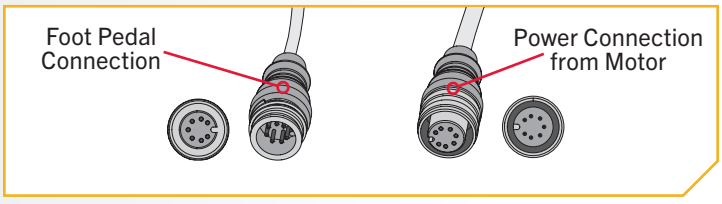
a. Take the Foot Pedal (Item #EE) and turn it over. Put a Foot Pedal Pad (Item #13) in each of the pad locations.

NOTICE: The pads are recommended when using the Foot Pedal on non-carpeted surfaces.

b. Locate the 7-pin Foot Pedal Connection on the Foot Pedal and the Power Connection on the Motor. Align the pins of the Foot Pedal Connection to the matching socket end of the Power Connection. Firmly push the Plug together.

NOTICE: The connectors are keyed to prevent reversed installation.



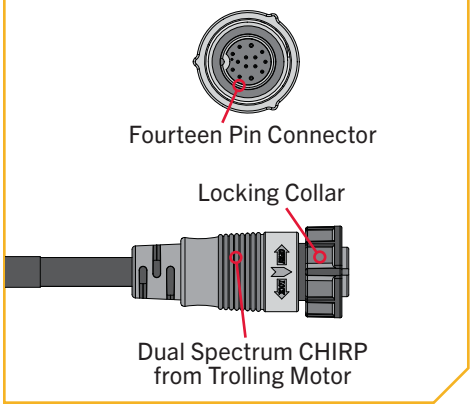


IDENTIFYING TROLLING MOTOR FEATURES AND THEIR ASSOCIATED CABLES

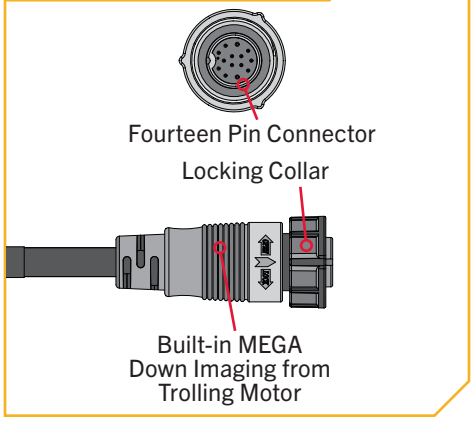
Feature & Cable Identification

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

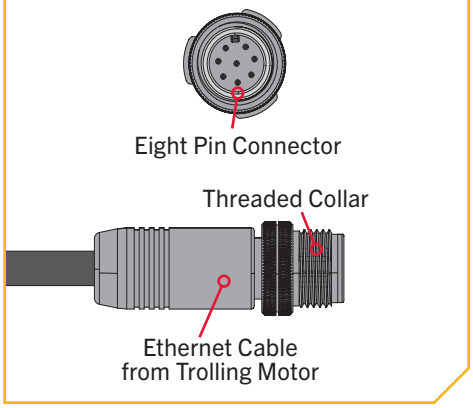
Dual Spectrum CHIRP



Built-in MEGA Down Imaging



Advanced GPS Navigation

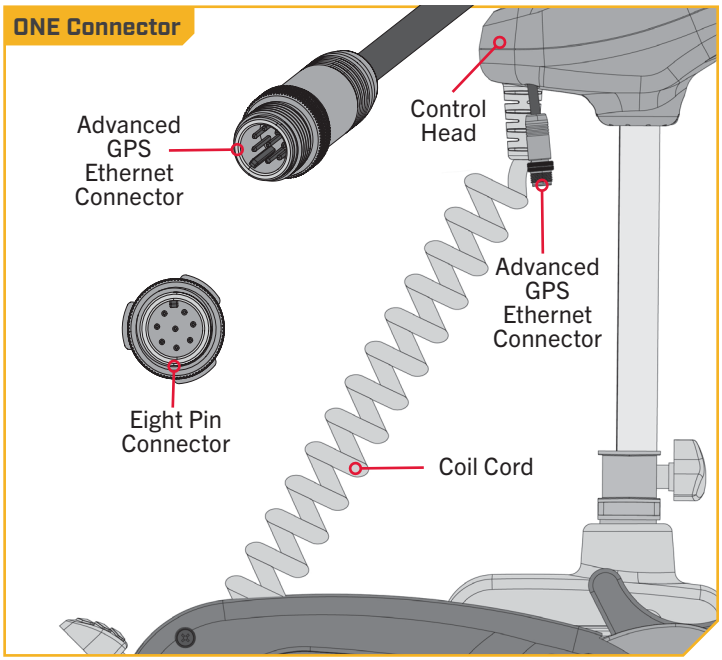


Identifying Connectors

If **ONE** connector is present below the Control Head, the trolling motor will be equipped with:

Advanced GPS Navigation - If Advanced GPS Navigation is pre-installed on your trolling motor, one Eight Pin Advanced GPS Ethernet Connector will exit the base of the Control Head and rest just below the Control Head next to the Coil Cord. If the Advanced GPS Navigation on the trolling motor will be used with a fish finder, an Ethernet Cable may be attached to the Advanced GPS Ethernet Connector below the Control Head. See the "Advanced GPS Navigation" section of this document for details on how to install the Advanced GPS Ethernet Connector to a Humminbird. If only one connector is present below the control Head, the motor is not equipped with sonar.

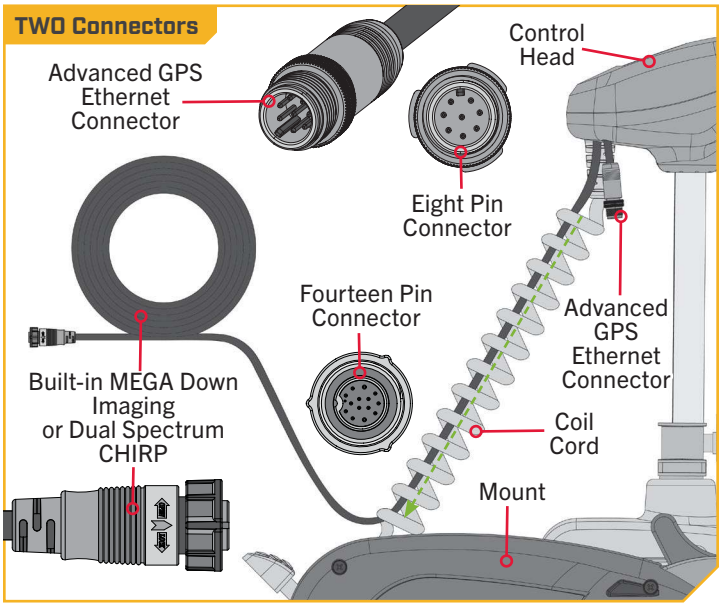
ONE Connector

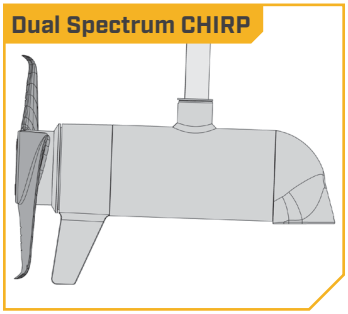


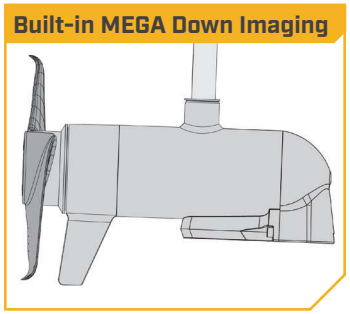
If **TWO** connectors are present below the Control Head, the trolling motor will be equipped with:

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

If Dual Spectrum CHIRP or Built-in MEGA Down Imaging is pre-installed on your trolling motor, one Sonar Accessory Cable will exit the base of the Control Head and run down the center of the Coil Cord. The end of the Cable will have a Fourteen Pin Connector. Motors with Dual Spectrum CHIRP or Built-in MEGA Down Imaging will also have a transducer in the Lower Unit. The appearance of the transducer will vary depending on sonar type.

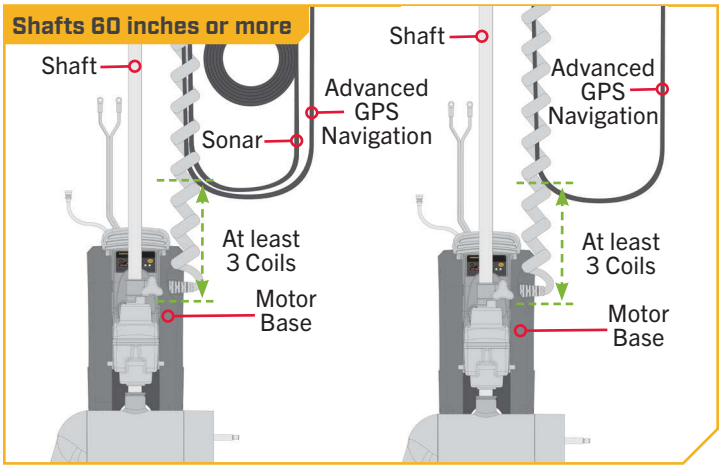


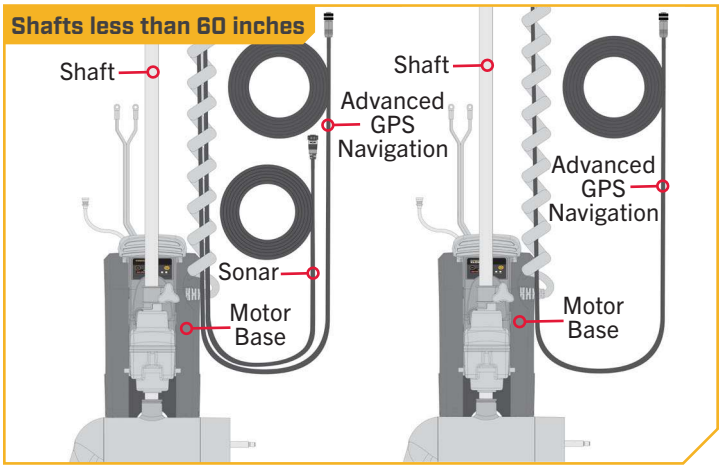




Critical Cable Routing

On motors with a shaft 60" or more, Accessory Cables (including Dual Spectrum CHIRP, Built-in MEGA Down Imaging and Advanced GPS Navigation) must exit the Coil Cord leaving **three or more** open coils between where the cables exit and the motor base, as assembled by the factory. Routing the Accessory Cables in any other manner will not allow the motor to stow properly. When identifying features and establishing connections, make sure to follow the critical cable routing.

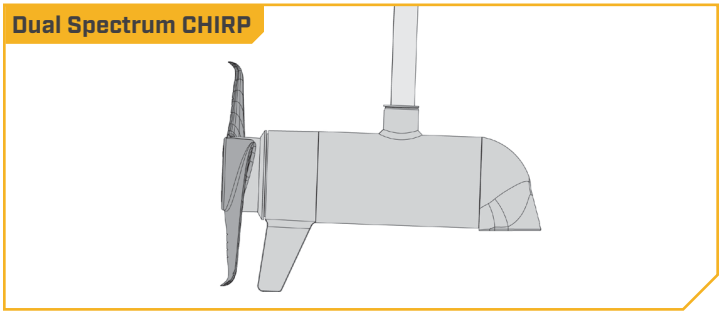




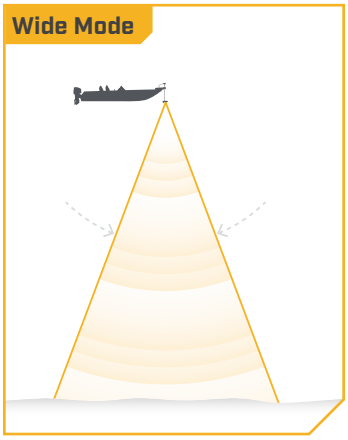
Feature & Cable Management

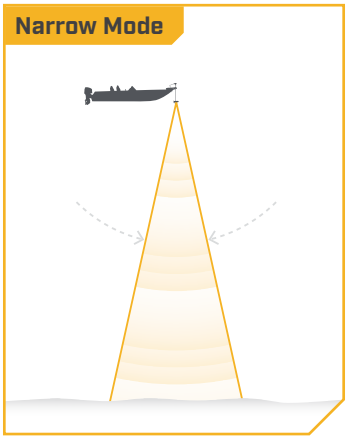
DUAL SPECTRUM CHIRP

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



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



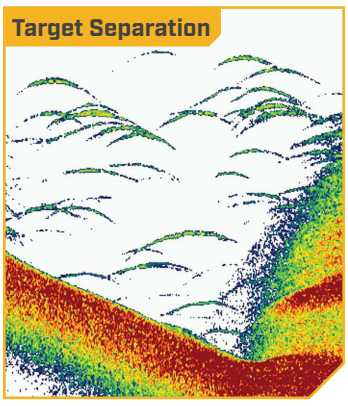


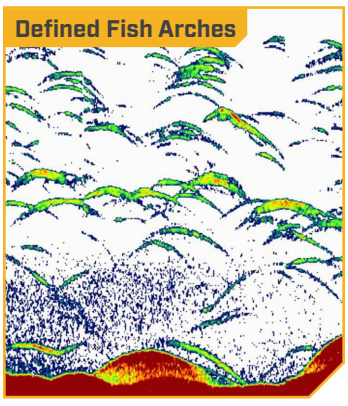
Dual Spectrum CHIRP features:

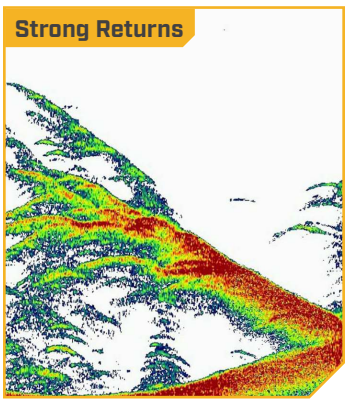
SUPERIOR TARGET SEPARATION - Separating fish from their habitat is the name of the game. And now, you'll be able to tell the difference more easily between bait and game fish, and nearby structure and vegetation.

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

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







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

Considerations for Connecting and Routing Dual Spectrum CHIRP

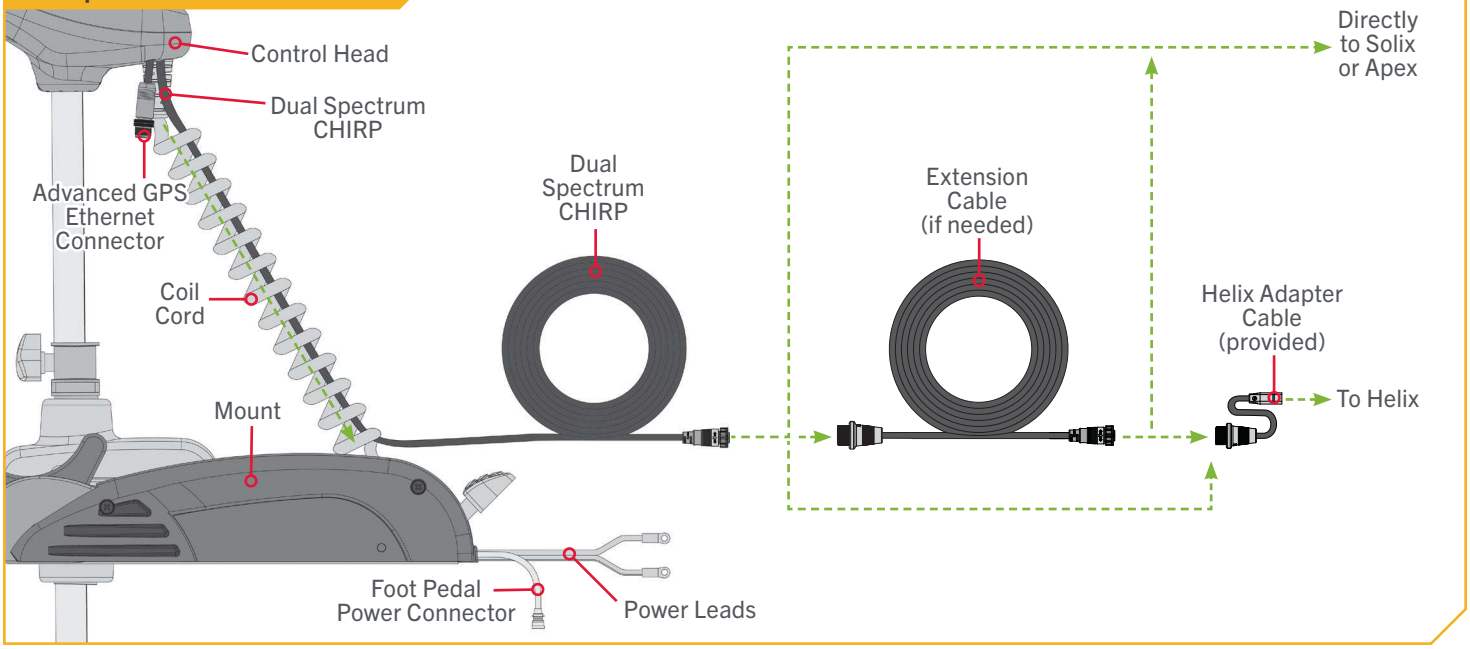
If Dual Spectrum CHIRP is pre-installed on your trolling motor, one Dual Spectrum CHIRP accessory cable will exit the base of the Control Head and run down the center of the Coil Cord. Dual Spectrum CHIRP requires cables to be connected to an output device such as a Humminbird® fish finder. The Dual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

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

HUMMINBIRD HELIX ADAPTER CABLES - If connecting to a Humminbird® Helix fish finder, an adapter cable accessory is included that will allow the connection of any compatible Humminbird® Helix fish finder. The 490537-2 MKR-MI-1 is used on Helix 8, 9, 10, 12 and 15 G2N models and newer. The 490518-1 MKR-MDI-2 is used for Helix 7 G3, G4, G3N and G4N models. The Helix adapter cables will plug directly into the Helix fish finder.

OTHER FISH FINDER ADAPTER CABLES - If connecting to other fish finders on the market, check for compatibility or any required adapter cables online at minnkotamotors.com.

Dual Spectrum CHIRP Connections



DUAL SPECTRUM CHIRP

All Dual Spectrum CHIRP Terrova motors are equipped with an internal bonding wire. Incorrect rigging will cause sonar interference and can damage your trolling motor, electronics, and other boat accessories. To minimize trolling motor interference, ensure that the fish finder and trolling motor are powered by separate batteries. Please refer to the "Battery & Wiring Installation" and "Motor Wiring Diagram" sections of this manual for correct rigging instructions.

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

⚠ CAUTION

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

1

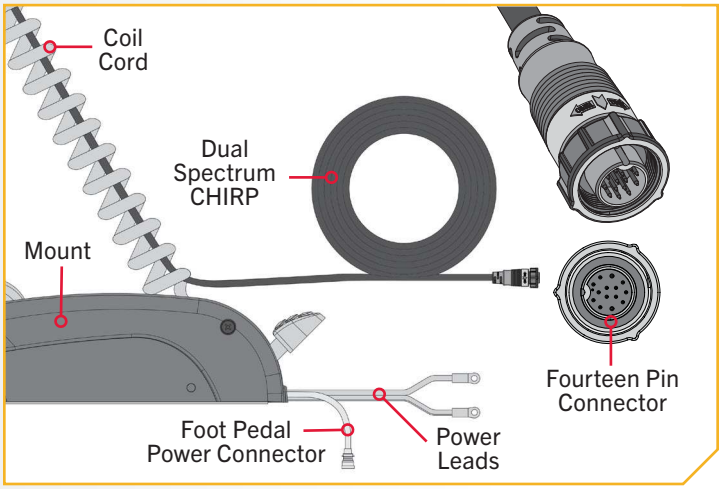
NOTICE: Your fish finder should be turned off until this procedure is complete.

a. Place the motor in the deployed position.

b. Locate the Fourteen Pin Connector on the end of the Dual Spectrum CHIRP accessory cable. The cable will exit the base of the Control Head and run down the center of the Coil Cord.

c. Determine if the Plug on the end of the Dual Spectrum CHIRP accessory cable will be attached directly to:

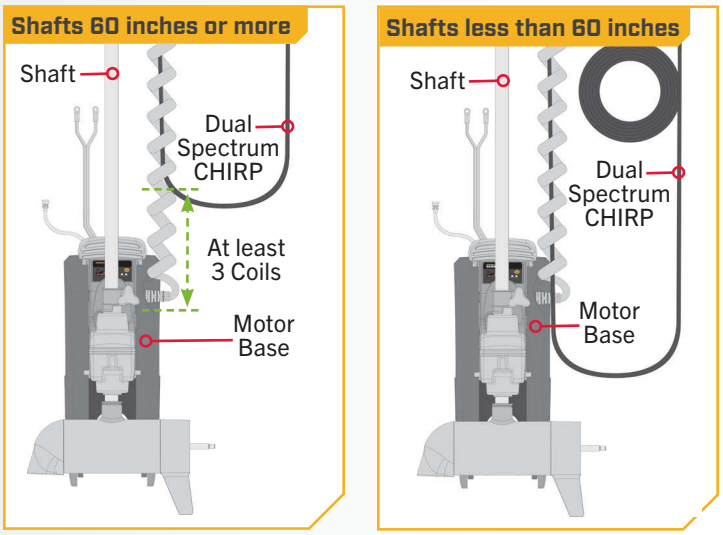
1) a Humminbird® Solix or Apex fish finder,
2) a Dual Spectrum CHIRP Extension Cable,
3) a Helix Adapter Cable or a compatible fish finder adapter cable.



2

d. Verify the length of your motor shaft to determine if Critical Cable Routing applies to your trolling motor. If the trolling motor shaft is 60 inches or more, adjust the Dual Spectrum CHIRP Cable to exit the Coil Cord three coils before the Motor Base. Review the "Critical Cable Routing" section of this document for more details.

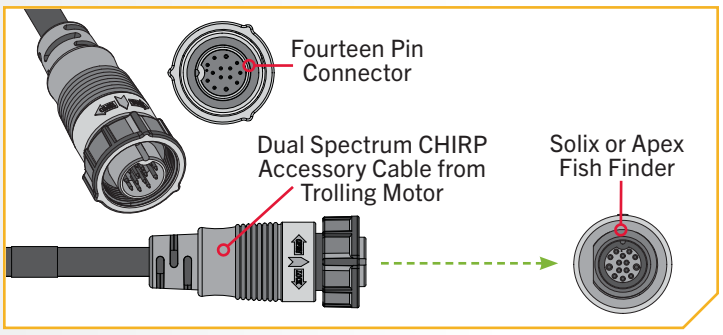
NOTICE: CRITICAL CABLE ROUTING. On motors with a shaft 60" or more, accessory cables must exit the Coil Cord leaving three or more open coils between where the cables exit and the Motor Base, as assembled by the factory. Routing the cables in any other manner will not allow the motor to stow properly. Please see the "Critical Cable Routing" and "Securing Accessory Cables" sections of this document for details.



3

e. **If installing directly to a Solix or Apex**, the connection will be flat on the back of the fish finder display.

f. Align the pins on the Accessory Cable with the receptacle on the fish finder. Notice the keyed connectors. Tighten the Collar from the accessory cable to secure the connection. Once directly installed to the Solix or Apex, the connection is complete.

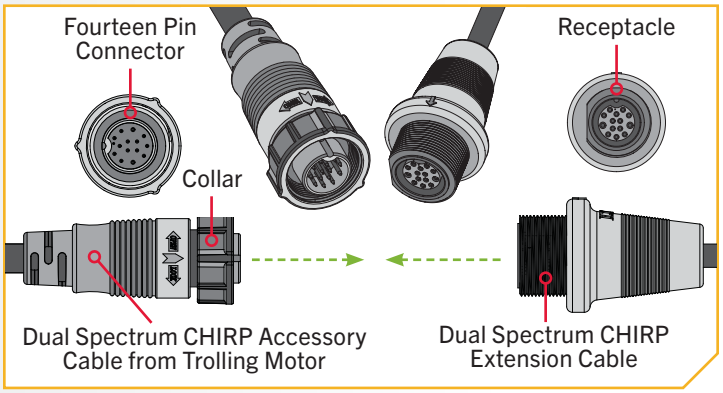


4

g. **If installing directly to a Dual Spectrum CHIRP Extension Cable**, align the pins on the accessory cable with the receptacle on the extension cable. Notice the keyed connectors. Tighten the Collar from the accessory cable to secure the connection.

h. If the Dual Spectrum CHIRP extension cable will be attached directly to a Humminbird® Solix or Apex, the connection will look exactly like the installation directly into a Humminbird Solix or Apex fish finder.

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



5

ITEM(S) NEEDED

#17 or 18 x 1

i. **If installing directly to a Helix Adapter Cable**, align the pins on the accessory cable or extension cable with the receptacle on the Helix Adapter Cable (Item #17 or 18). Notice the keyed connectors. Tighten the Collar from the accessory cable or extension cable to secure the connection.

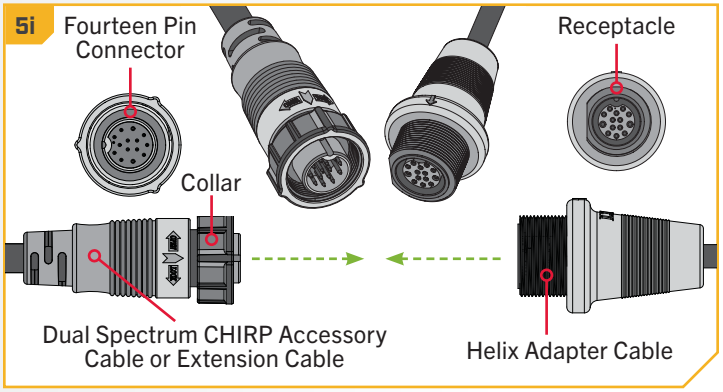
NOTICE: The 490537-2 MKR-MI-1 (Item #17) is a Helix Adapter Cable used on Helix 8, 9, 10, 12 and 15 G2N models and newer. The 490518-1 MKR-MDI-2 (Item #18) is a Helix Adapter Cable used for Helix 7 G3, G4, G3N and G4N models. Both cables are included.

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

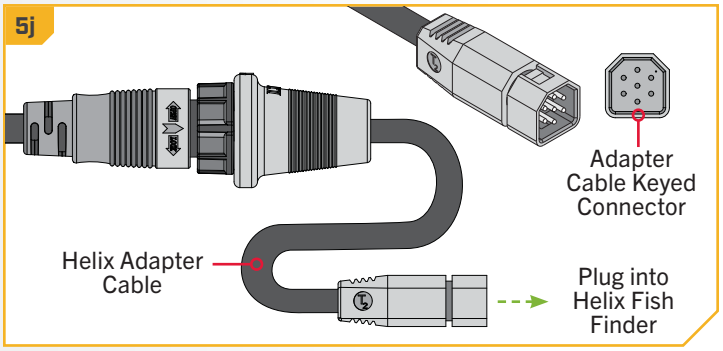
NOTICE: If connecting to other fish finders on the market, check for compatibility or any required adapter cables online at minnkotamotors.com.

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

5i



5j



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

BUILT-IN MEGA DOWN IMAGING ❯

Built-in MEGA Down Imaging delivers nearly 3X the output of standard Side Imaging®, and takes fishfinding into the megahertz frequency for the very first time. It uses a razor-thin, high-frequency beam to create picture-like images of structure, vegetation and fish. With Humminbird MEGA imaging sonar built right into the trolling motor, you now have a crystal clear view of what's directly beneath the boat, without having to manage all of the cables that come with external transducers. The Built-in MEGA DI transducer is only available on new models equipped from the factory and cannot be added to an existing trolling motor.

Considerations for Connecting and Routing Built-in MEGA Down Imaging

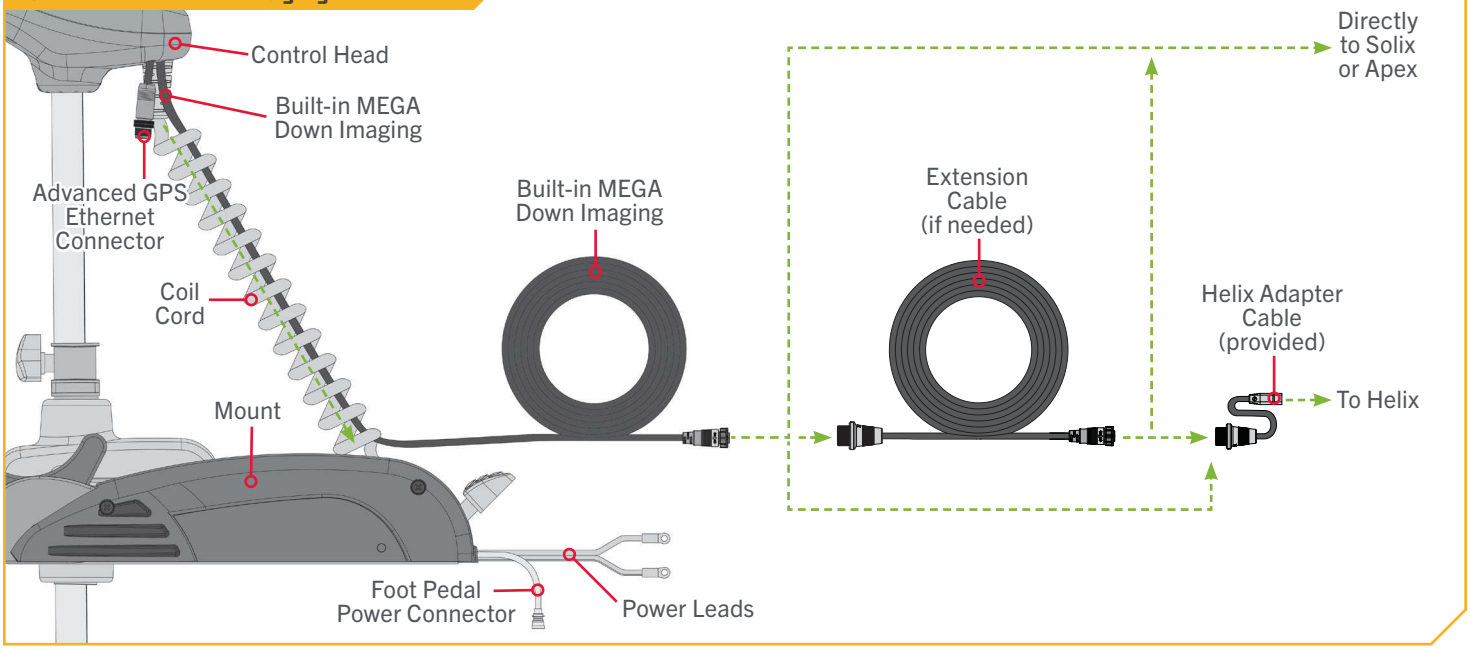
If Built-in MEGA Down Imaging is pre-installed on your trolling motor, one Built-in MEGA Down Imaging accessory cable will exit the base of the Control Head and run down the center of the Coil Cord. Built-in MEGA Down Imaging requires cables to be connected to an output device such as a Humminbird® fish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

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

HUMMINBIRD HELIX ADAPTER CABLES - If connecting to a Humminbird® Helix fish finder, an adapter cable accessory is included that will allow the connection of any compatible Humminbird® Helix fish finder. The 490537-2 MKR-MI-1 is used on Helix 8, 9, 10, 12 and 15 G2N models and newer. The 490518-1 MKR-MDI-2 is used for Helix 7 G3, G4, G3N and G4N models. The Helix adapter cables will plug directly into the Helix fish finder.

OTHER FISH FINDER ADAPTER CABLES - If connecting to other fish finders on the market, check for compatibility or any required adapter cables online at minnkotamotors.com.

Built-in MEGA Down Imaging Connections



BUILT-IN MEGA DOWN IMAGING

⚠ CAUTION

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

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

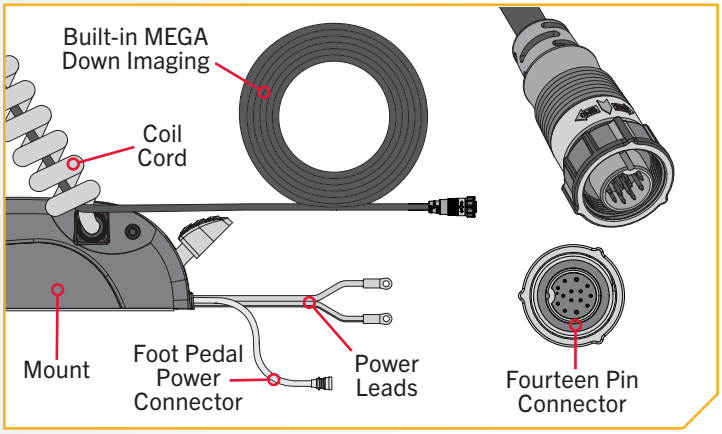
1

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

a. Place the motor in the deployed position.

b. Locate the Fourteen Pin Connector on the end of the Built-in MEGA Down Imaging accessory cable. The cable will exit the base of the Control Head and run down the center of the Coil Cord.

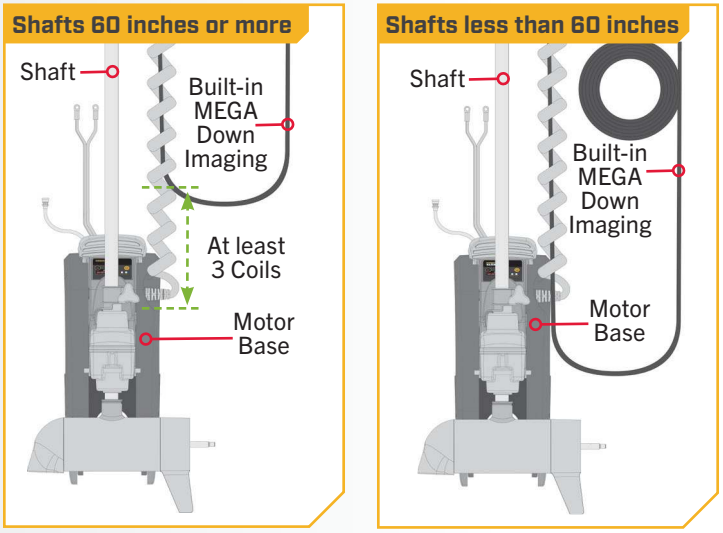
c. Determine if the Plug on the end of the Built-in MEGA Down Imaging Cable accessory cable will be attached directly to:
1) a Humminbird® Solix or Apex fish finder,
2) a Built-in MEGA Down Imaging Extension Cable,
3) a Helix Adapter Cable or a compatible fish finder adapter cable.



2

d. Verify the length of your motor shaft to determine if Critical Cable Routing applies to your trolling motor. If the trolling motor shaft is 60 inches or more, adjust the Built-in MEGA Down Imaging Cable to exit the Coil Cord three coils before the Motor Base. Review the “Critical Cable Routing” section of this document for more details.

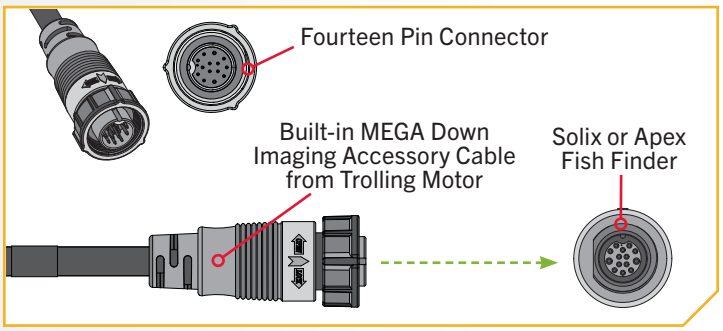
NOTICE: CRITICAL CABLE ROUTING. On motors with a shaft 60" or more, accessory cables must exit the Coil Cord leaving three or more open coils between where the cables exit and the motor base, as assembled by the factory. Routing the cables in any other manner will not allow the motor to stow properly. Please see the “Critical Cable Routing” and “Securing Accessory Cables” sections of this document for details.



3

e. **If installing directly to a Solix or Apex**, the connection will be flat on the back of the fish finder display.

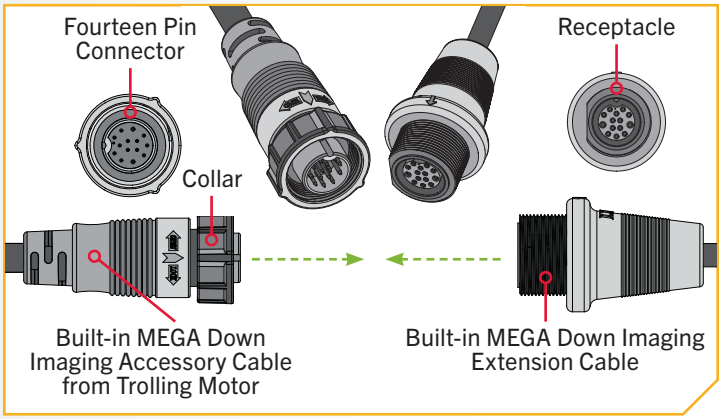
f. Align the pins on the Accessory Cable with the receptacle on the fish finder. Notice the keyed connections. Tighten the Collar from the accessory cable to secure the connection. Once directly installed to the Solix or Apex, the connection is complete.



4

g. **If installing directly to a Built-in MEGA Down Imaging Extension Cable**, align the pins on the accessory cable with the receptacle on the extension cable. Notice the keyed connectors. Tighten the Collar from the accessory cable to secure the connection.

h. If the Built-in MEGA Down Imaging Extension Cable will be attached directly to a Humminbird® Solix or Apex, the connection will look exactly like the installation directly into a Humminbird Solix or Apex fish finder.



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

5

ITEM(S) NEEDED

#17 or 18 x 1

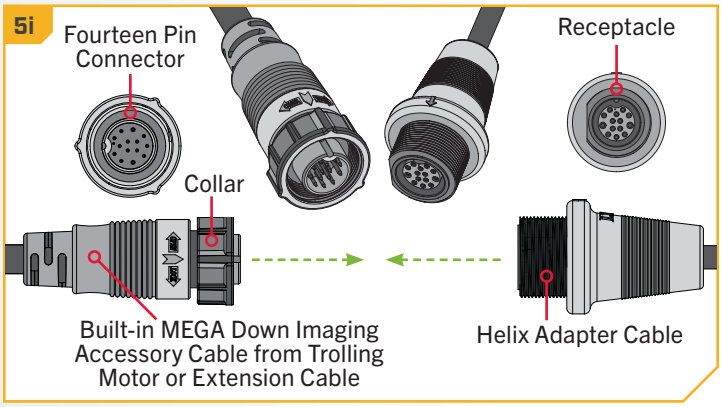
i. **If installing directly to a Helix Adapter Cable**, align the pins on the accessory cable or extension cable with the receptacle on the Helix Adapter Cable (Item #17 or 18). Notice the keyed connectors. Tighten the Collar from the accessory cable or extension cable to secure the connection.

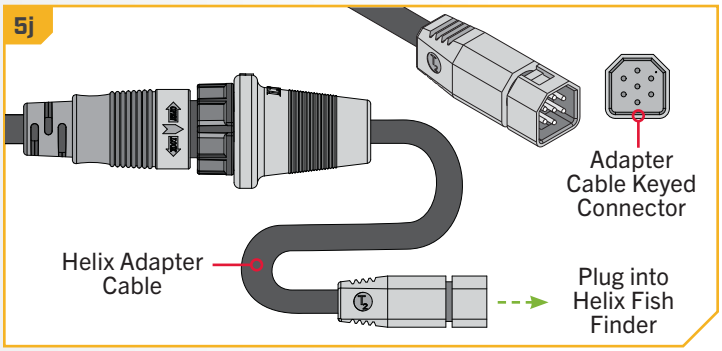
NOTICE: The 490537-2 MKR-MI-1 (Item #17) is a Helix Adapter Cable used on Helix 8, 9, 10, 12 and 15 G2N models and newer. The 490518-1 MKR-MDI-2 (Item #18) is a Helix Adapter Cable used for Helix 7 G3, G4, G3N and G4N models. Both cables are included.

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

NOTICE: If connecting to other fish finders on the market, check for compatibility or any required adapter cables online at minnkotamotors.com.

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





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

ADVANCED GPS NAVIGATION

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

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

Considerations for Connecting and Routing Advanced GPS Navigation

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

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

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

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

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

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

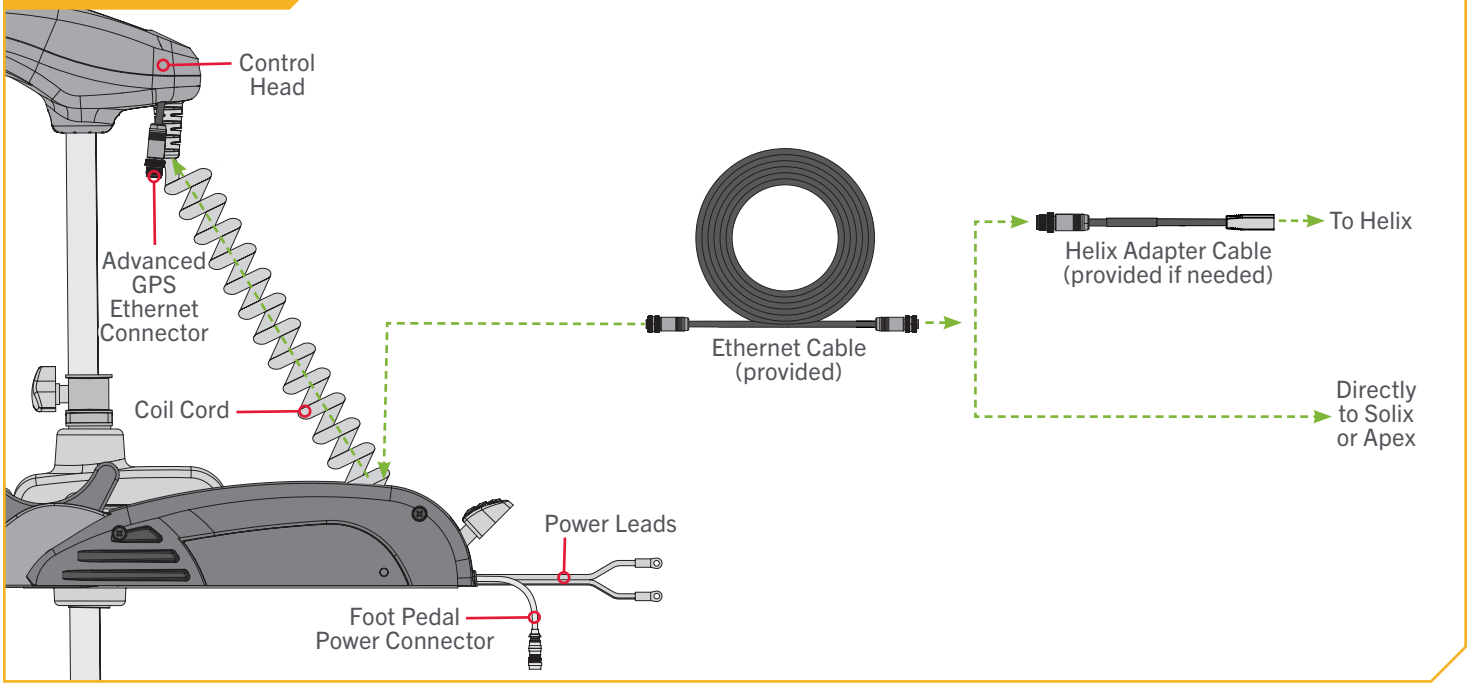
NOTICE: Minn Kota recommends routing the Ethernet Cable or Ethernet Extension Cable through the Coil Cord when making the Ethernet connection. The cables will be installed from the Mount to the Control Head through the Coil Cord and parallel to any Dual Spectrum CHIRP or Built-in MEGA Down Imaging Cable. Bypassing the Coil Cord when routing the Ethernet Cable or Ethernet Extension Cable is not recommended.

⚠ CAUTION

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

ADVANCED GPS NAVIGATION

GPS Ethernet Connection



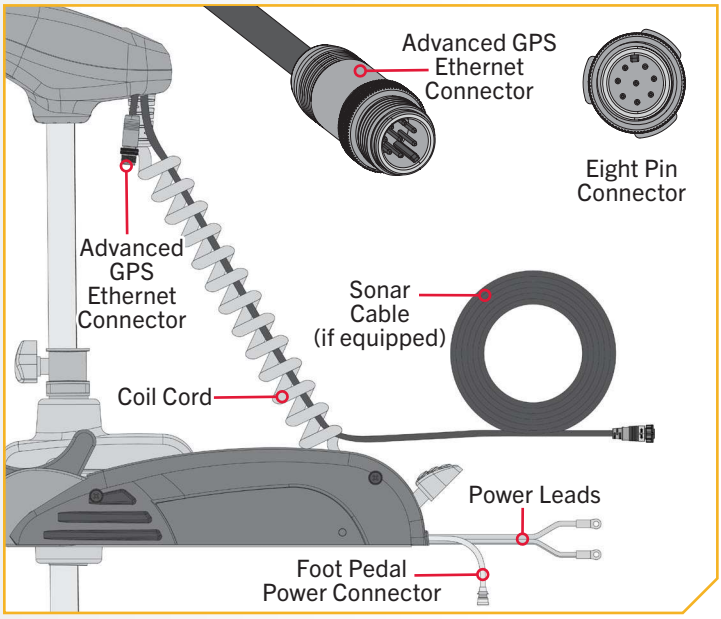
1

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

a. Place the motor in the deployed position.

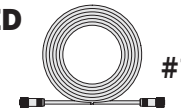
b. Locate the Eight Pin Advanced GPS Ethernet Connector below the Control Head. The Advanced GPS Ethernet Connector will exit the base of the Control Head and will rest just below the Control Head next to the Coil Cord.

NOTICE: Terrova trolling motors with Advanced GPS Navigation may also be equipped with Sonar. Sonar is pre-installed from the factory and may be either Dual Spectrum CHIRP or Built-in MEGA Down Imaging. If equipped with Sonar, a Sonar Cable will be present below the control head and run through the middle of the Coil Cord. Review the "Identifying Trolling Motor Features and Their Associated Cables" section of this document to identify and learn more about Sonar.



2

ITEM(S) NEEDED



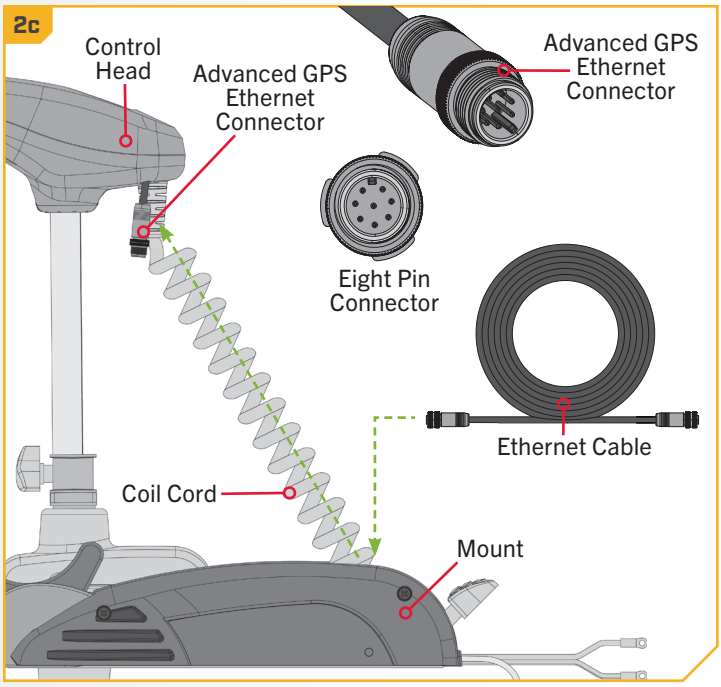
#14 x 1

c. Identify the keyed Receptacle on the Ethernet Cable (Item #14). It will be keyed to fit with the Eight Pin Advanced GPS Ethernet Connector below the Control Head.

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

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

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



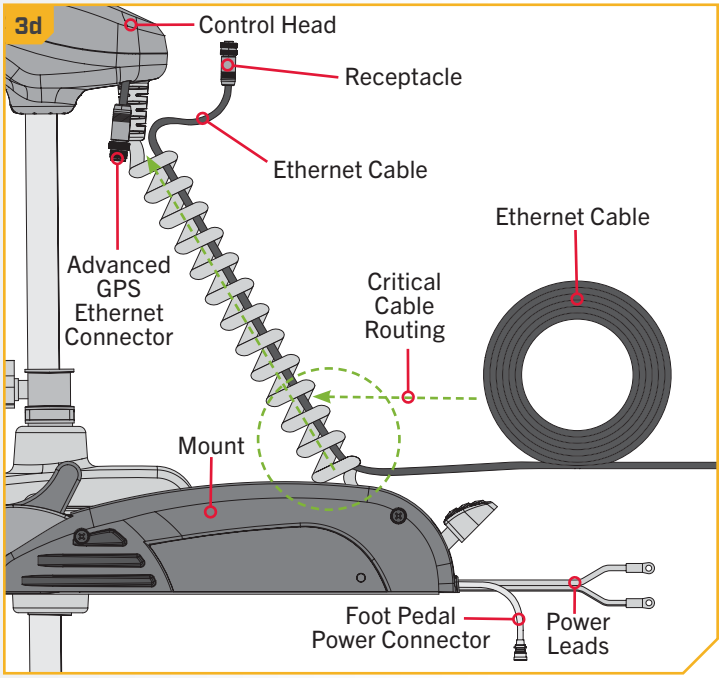
3

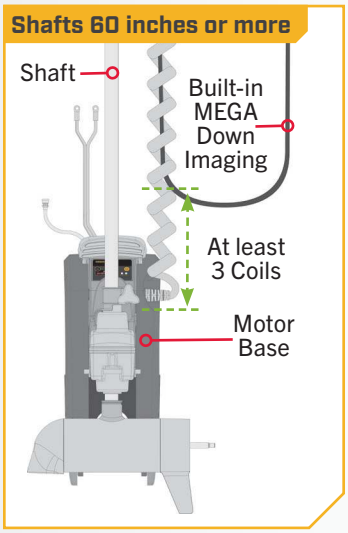
d. **If NO Sonar is present**, take the cable, leading with the Receptacle, and fish it through the center of the Coil Cord starting at the end of the Coil Cord attached to the Mount and working up towards the Control Head. Allow enough slack in the cable to attach the Receptacle to the Advanced GPS Ethernet Connector.

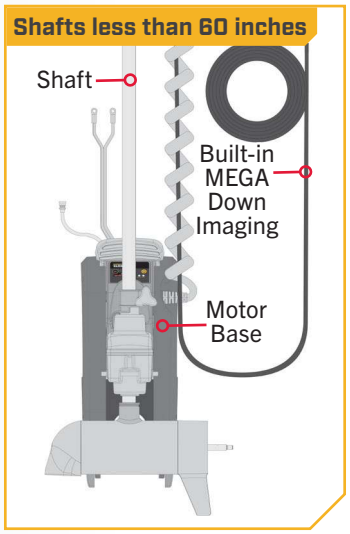
NOTICE: Minn Kota recommends routing the Ethernet Cable through the Coil Cord when making the Ethernet connection. The cable will be installed from the Mount to the Control Head through the Coil Cord and parallel to the Advanced GPS Cable. Bypassing the Coil Cord when routing the Ethernet Cable is not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

e. Verify the length of your motor shaft to determine if Critical Cable Routing applies to your trolling motor. If the trolling motor shaft is 60 inches or more, adjust the Ethernet Cable to exit the Coil Cord three coils before the Motor Base. Review the "Critical Cable Routing" section of this document for more details.

NOTICE: CRITICAL CABLE ROUTING. On motors with a shaft 60" or more, accessory cables must exit the Coil Cord leaving three or more open coils between where the cables exit and the motor base, as assembled by the factory. Routing the cables in any other manner will not allow the motor to stow properly. Please see the "Critical Cable Routing" and "Securing Accessory Cables" sections of this document for details.



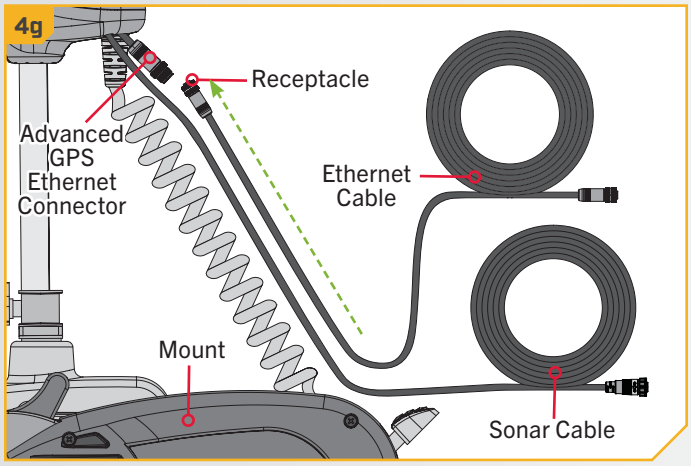


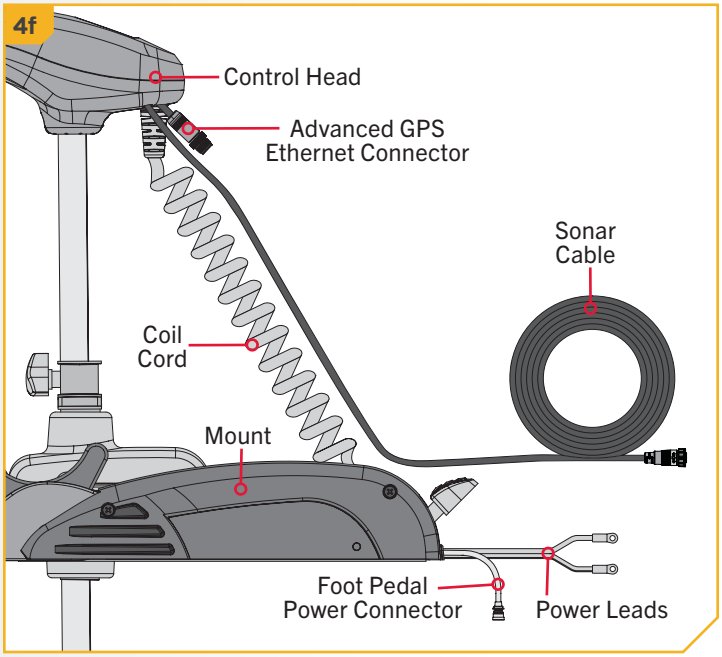


4

f. **If Sonar is present**, take the Sonar Cable and unwind it from the inside of the Coil Cord, working from the Mount towards the Control Head. Once loose, the Sonar Cable will run parallel to the Coil Cord, but hang freely. Once all cables are connected, the final installation will require for any cables present to be wound back inside the Coil Cord. The final installation will vary based on motor features and shaft length. Please see the "Securing Accessory Cables" section of this document for details once all connections are complete.

g. Take the Receptacle on the Ethernet Cable and run it parallel to the Sonar Cable. Allow enough slack in the cable to attach the Receptacle to the Advanced GPS Ethernet Connector.





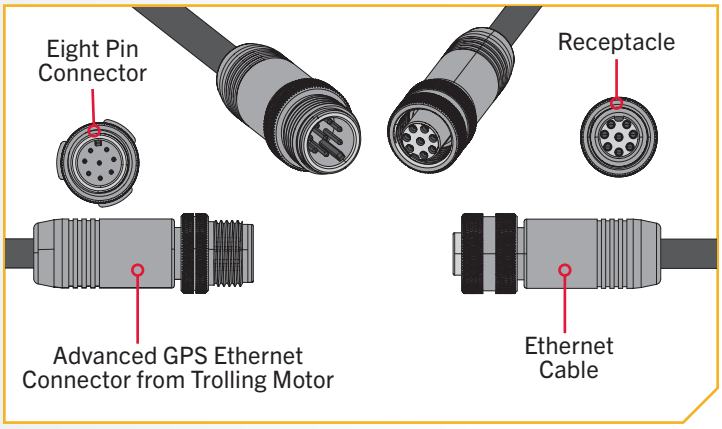
NOTICE: CRITICAL CABLE ROUTING. On motors with a shaft 60" or more, accessory cables must exit the Coil Cord leaving three or more open coils between where the cables exit and the motor base, as assembled by the factory. Routing the cables in any other manner will not allow the motor to stow properly. Please see the "Securing Accessory Cables" section of this document for details.

5

h. **To install the Ethernet Cable**, align the pins on the Advanced GPS Ethernet Connector with the Receptacle on the Ethernet Cable. Notice the keyed connectors. Tighten the Collar from the Ethernet Cable to secure the connection.

i. The Ethernet Cable will plug directly into a Solix or Helix Fish Finder or directly into a Helix Adapter Cable.

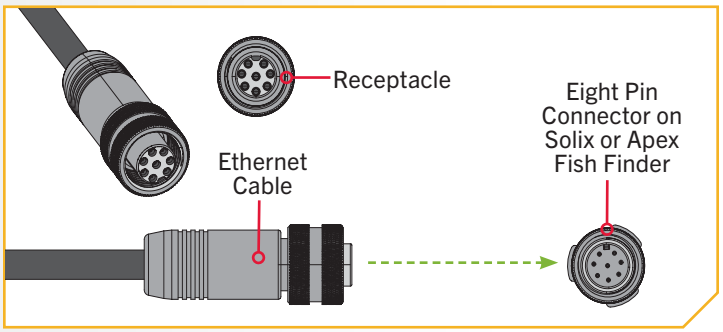
NOTICE: The 30' Ethernet Cable (AS EC 30E - 30' Ethernet Cable - 720073-4) is provided. If an alternate length is preferred, alternate cable lengths are available from humminbird.com.



6

j. **If installing directly to a Solix or Apex**, the connector will be flat on the back of the fish finder display.

k. Align the Receptacle on the Ethernet Cable with the Eight Pin Connector on the Apex or Solix fish finder. Notice the keyed connectors. Tighten the Collar from the Ethernet Cable to secure the connection. Once directly installed to the Solix or Apex, the connection is complete.



7

ITEM(S) NEEDED

#15 x 1

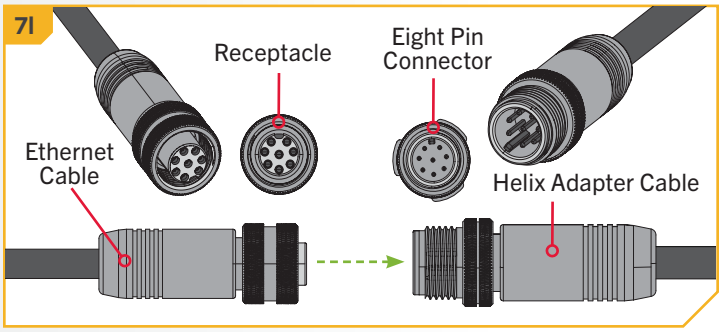
l. **If installing directly to a Helix Adapter Cable (Item #15)**, align the Receptacle on the Ethernet Cable with the Eight Pin Connector on the Helix Adapter Cable provided. Notice the keyed connectors. Tighten the Collar from the Ethernet Cable to secure the connection.

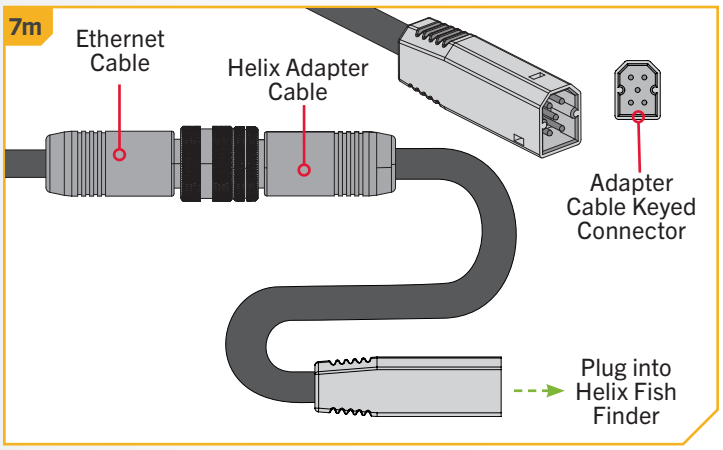
NOTICE: Minn Kota provides one Helix Adapter Cable (AS EC QDE - Ethernet Adapter Cable - 720074-1) with every trolling motor equipped with Advanced GPS Navigation.

m. The Helix Adapter Cable directly connects the Ethernet Cable to a Helix fish finder. Locate the Helix Adapter Cable Keyed Connector on the back of the fish finder. Plug the Helix Adapter Cable into the back of the Helix fish finder to complete the connection.

n. If your trolling motor has more than one feature that requires connection to an output device, complete the connection for that specific output and then follow the instructions for "Securing Accessory Cables" to complete the Accessory Cable installation.

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

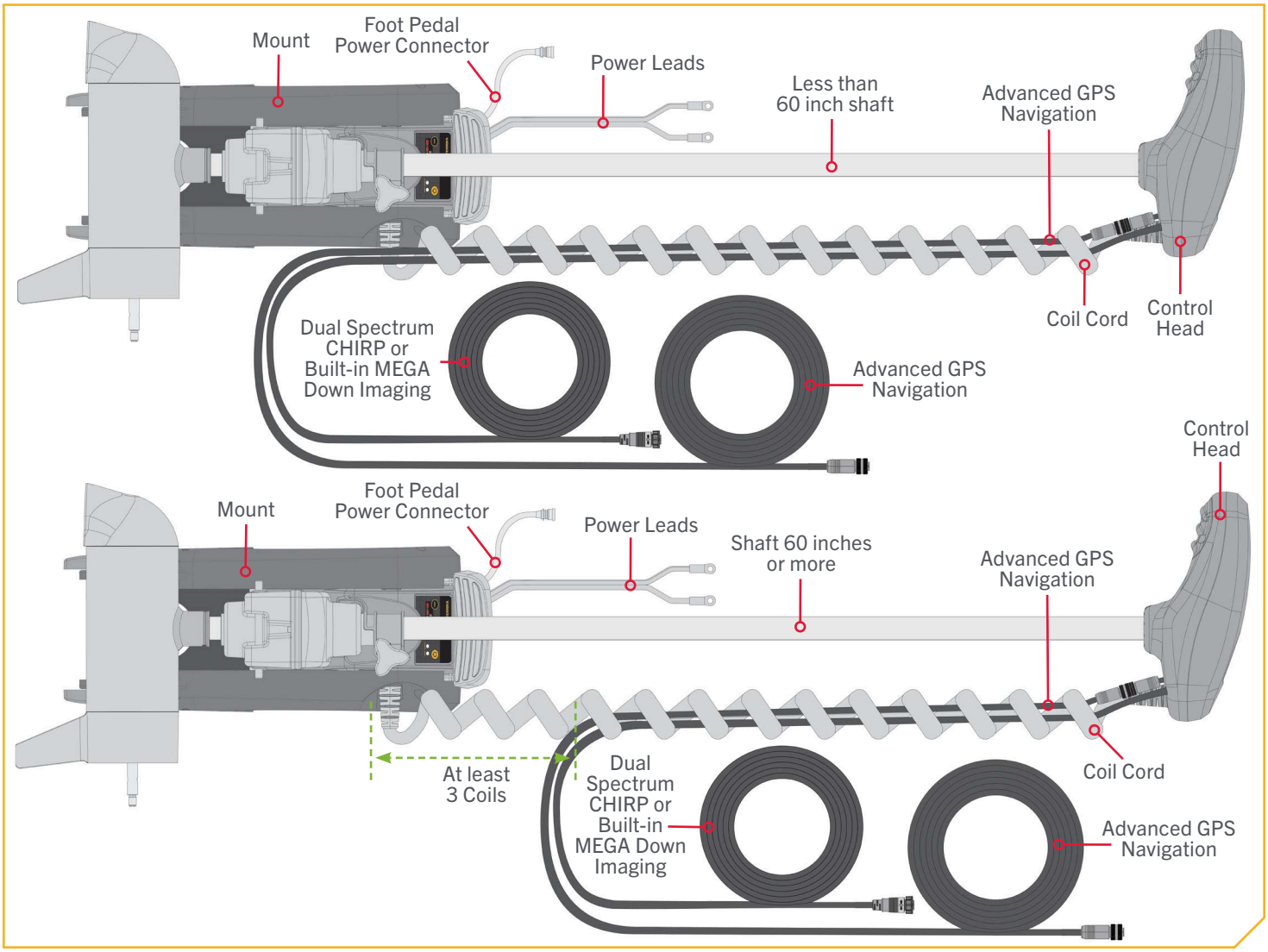




Securing Accessory Cables

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

Before securing the cables, please review the "Identifying Trolling Motor Features and Their Associated Cables" section of this document. When identifying features, it is very important to secure the cables if **two** connections are present below the Control Head. If only **one** cable is present below the Control Head, securing the Accessory Cables is not necessary. **All cables, regardless of if they need to be secured, need to follow the Critical Cable Routing.** To review, please see the “Critical Cable Routing” section of this document. All Accessory Cables that will be used on the trolling motor must be routed and all connections secured before completing the installation in this section. To review how feature cables should be routed and connected, please review the "Advanced GPS Navigation" and "Dual Spectrum CHIRP" or "Built-in MEGA Down Imaging" sections of this document.



⚠ CAUTION

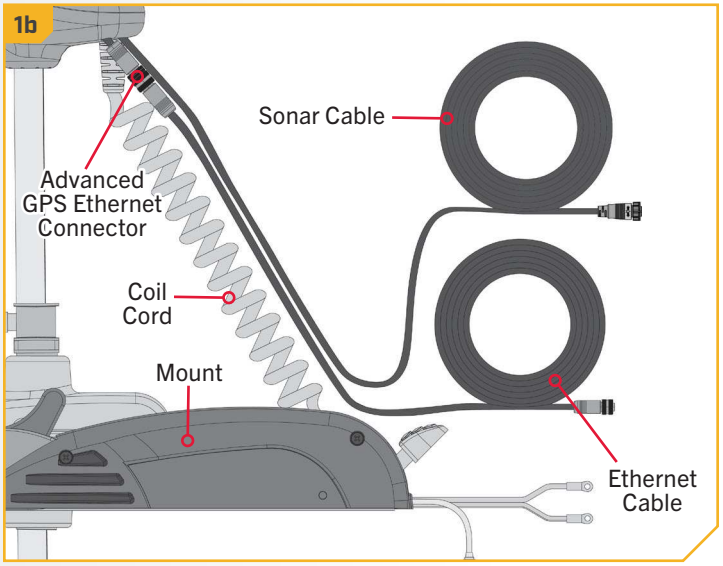
Failure to follow the recommended wire routing for installed features, if equipped, may cause damage to the product and void your product warranty. Route cables away from pinch points or other areas that may cause them to bend in sharp angles. Routing the cables in any way other than directed may cause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

SECURING ACESSORY CABLES

1

a. Confirm all Accessory Cables are connected to an output device as desired. With the motor in the deployed position, locate the Advanced GPS Ethernet Connector below the Control Head.

b. Starting just below the Control Head, take both the Accessory Cables and make sure they are free from the Coil Cord and parallel to each other. Run them from the Control Head to the Mount keeping them straight and parallel the entire length.



2

ITEM(S) NEEDED

#16 x 10

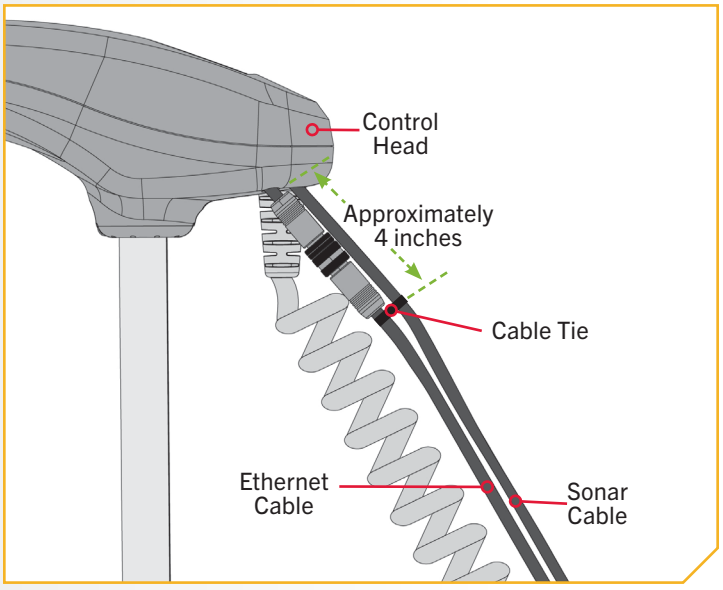
c. Starting approximately 4 inches below the Control Head, take a Cable Tie (Item #16) and place it around the Accessory Cables. The Cable Tie should be around the Ethernet Cable and Sonar Cable but not the Coil Cord.

NOTICE: Do NOT secure the Cables to the Coil Cord. ONLY secure the Cables with the Cable Ties to each other.

d. Secure the Cable Tie around the Cables until it is fingertip tight. Do not over-tighten the Cable Tie as it will cause damage to the Cables.

⚠ CAUTION

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

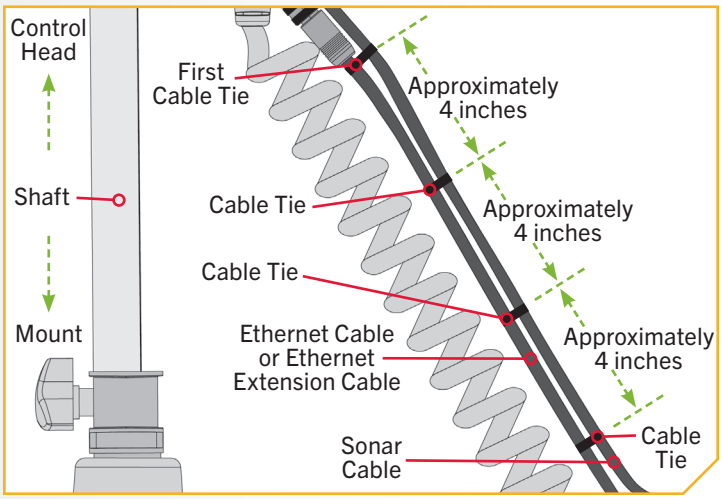


3

e. Follow the Cables from the Control Head to the Mount and place additional Cable Ties every 4 inches around the Cables after the first Cable Tie. The number of Cable Ties needed will vary depending on the length of your trolling motor Shaft.

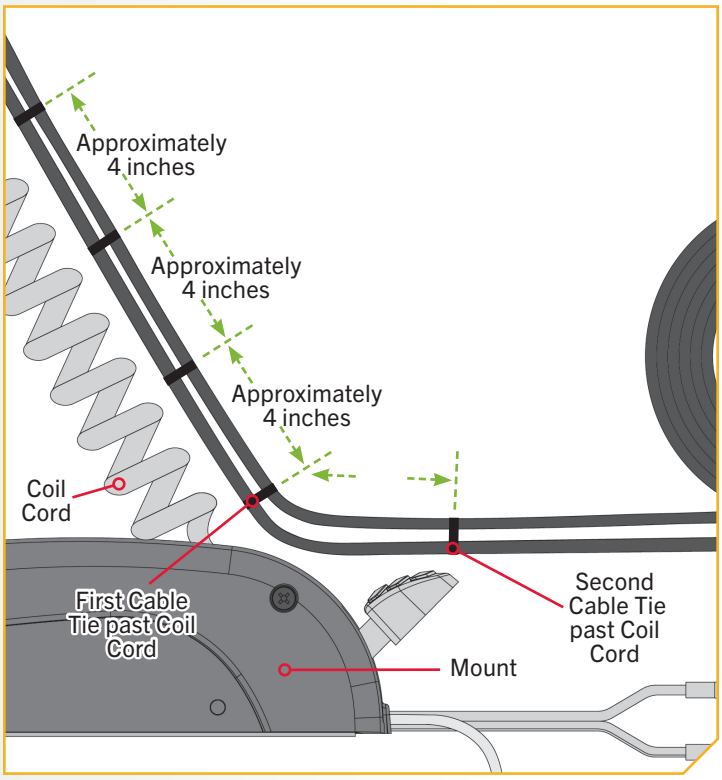
NOTICE: If additional Cable Ties are needed, a Service Assembly (#2996300 TIE WRAP ASM, 60") is available from the Parts Ordering Portal at minnkotamotors.com.

NOTICE: Secure the Cable Ties fingertip tight. It is recommended to have them **ONLY** tight enough so that they do not slide around on the Connection Cables and hold the cables together.



4

f. Continue placing Cable Ties around the Accessory Cables until there are two Cable Ties in place past the end of where the Coil Cord enters the Mount.

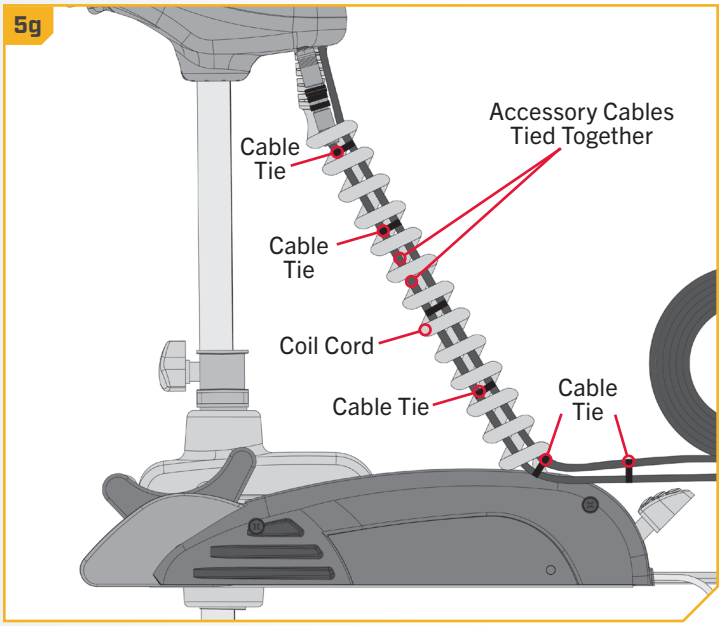


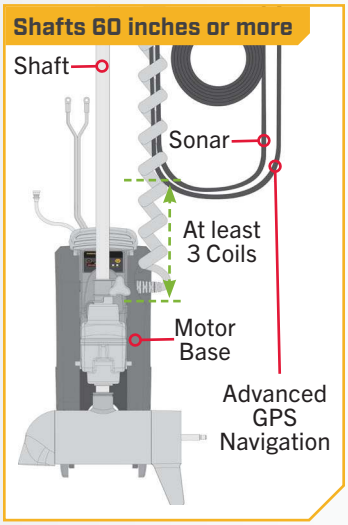
5

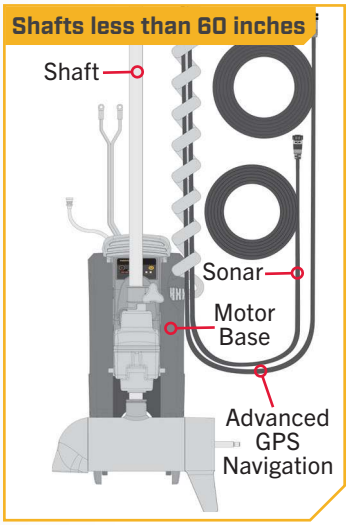
g. With the Cable Ties in place, take the Accessory Cables that are tied together and wind them back into the Coil Cord. When successfully placed inside the Coil Cord, they should float freely on the inside of the Coil Cord. To successfully place the Accessory Cables inside the Coil Cord, it may be necessary to temporarily disconnect Accessory Cables that are attached to Extension or Adapter Cables or output devices such as a fish finder.

h. Place the Motor into the stowed position. Verify the length of your motor shaft to determine if Critical Cable Routing applies to your trolling motor. If the trolling motor shaft is 60 inches or more, adjust the Accessory Cables to exit the Coil Cord three coils before the Motor Base. Review the “Critical Cable Routing” section of this document for more details.

NOTICE: Minn Kota recommends routing the Accessory Cables through the Coil Cord. Bypassing the Coil Cord when routing Accessory Cables is not recommended.



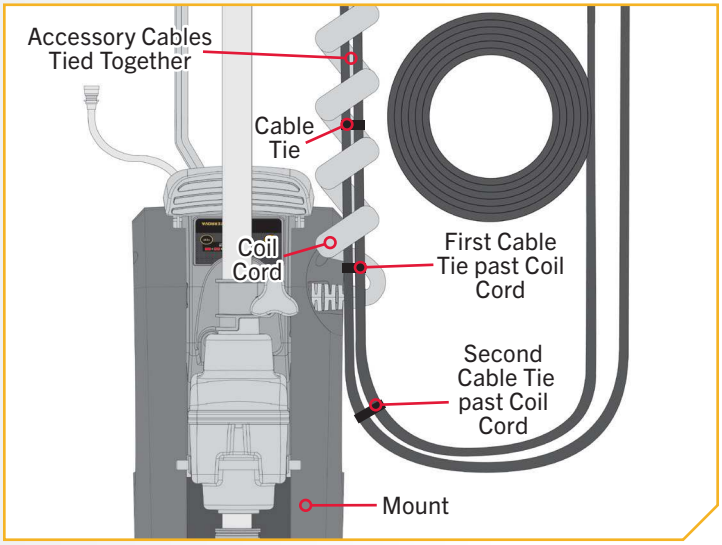




6

i. Look at the placement of the Cable Ties and make sure that at least 2 Cable Ties are present on the Accessory Cables after they exit the Coil Cord. If additional Cable Ties are needed, is may be necessary to place the motor back into the deployed position to add additional Cable Ties at an increment of approximately 4 inches past the last Cable Tie.

j. If no additional Cable Ties are needed, make sure to properly reconnect any Accessory Cables that may have been disconnected while winding the Accessory Cables into the Coil Cord.



Installing the Prop

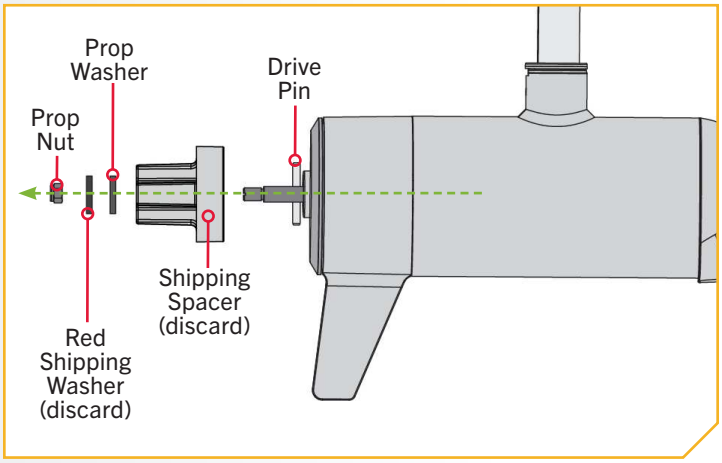
1

⚠ CAUTION

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

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

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



INSTALLING THE PROP

2

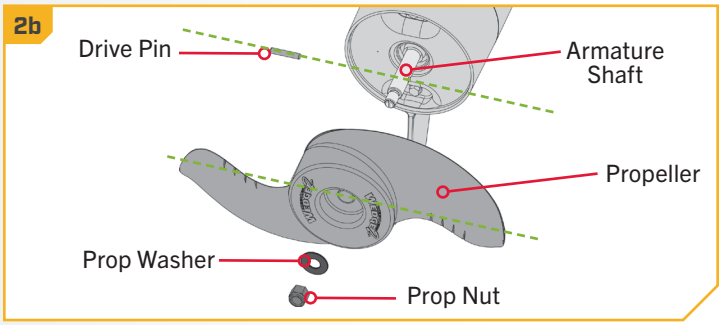
ITEM(S) NEEDED

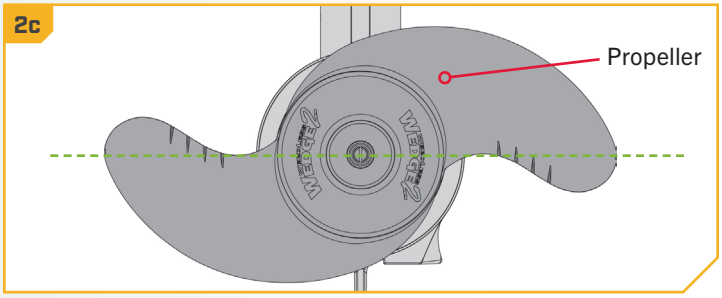
 #12 x 1 #10 x 1 #11 x 1 #9 x 1

b. Take the Drive Pin (Item #9) and slide it through the Hole in the Armature Shaft. Position the Drive Pin horizontally by grasping the Armature Shaft and rotating it with the Drive Pin in place.

c. Align the Propeller (Item #12) so it is also horizontal and parallel with the Drive Pin. Slide the Propeller onto the Armature Shaft and Drive Pin until it is seated against the lower unit.

d. Install the Prop Washer (Item #10) and the Prop Nut (Item #11) onto the end of the Armature Shaft.





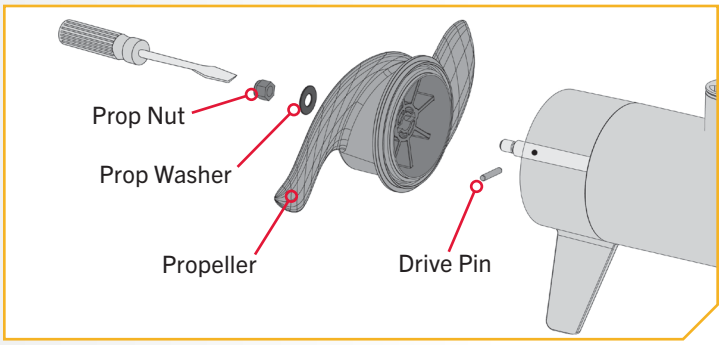
3

e. Holding the end of the Armature Shaft with a Flat Blade Screwdriver, tighten the Prop Nut with a 9/16" Box End or Open End Wrench.

f. Tighten the Prop Nut 1/4 turn past snug to 25-35 in-lbs.

⚠ CAUTION

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



BATTERY & WIRING INSTALLATION

BOAT RIGGING & PRODUCT INSTALLATION

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

⚠ CAUTION

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

⚠ CAUTION

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

CONDUCTOR GAUGE AND CIRCUIT BREAKER SIZING TABLE

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

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

Motor Thrust / Model	Max Amp Draw	Circuit Breaker		Wire Extension Length				
		Amp	Minimum	5 feet	10 feet	15 feet	20 feet	25 feet
55 lb.	50	50 Amp	12 VDC	8 AWG	4 AWG	2 AWG	2 AWG	1 AWG
80 lb.	56	60 Amp	24 VDC	8 AWG	6 AWG	6 AWG	4 AWG	2 AWG
112 lb.	52	60 Amp	36 VDC	8 AWG	8 AWG	8 AWG	6 AWG	4 AWG

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

Reference

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

SELECTING THE CORRECT BATTERIES

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

⚠ WARNING

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

⚠ CAUTION

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

⚠ CAUTION

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

ADDITIONAL CONSIDERATIONS

Using Alternator Chargers

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

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

Additional Accessories Connected to Trolling Motor Batteries

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

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

12-Volt Systems

1. Make sure that the motor is switched off (speed selector on “OFF” or “0”).
2. Connect positive (+) red lead to positive (+) battery terminal.
3. Connect negative (–) black lead to negative (–) battery terminal.

⚠ WARNING

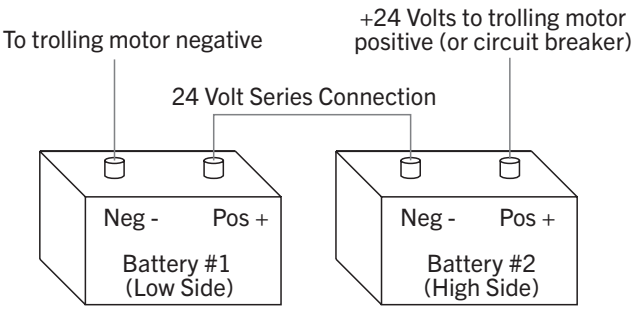
For safety reasons do not switch the motor on until the propeller is in the water. If installing a leadwire plug, observe proper polarity and follow instructions in your boat owner’s manual.

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.



Two 12-volt batteries connected in series for 24 volts

⚠ 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.

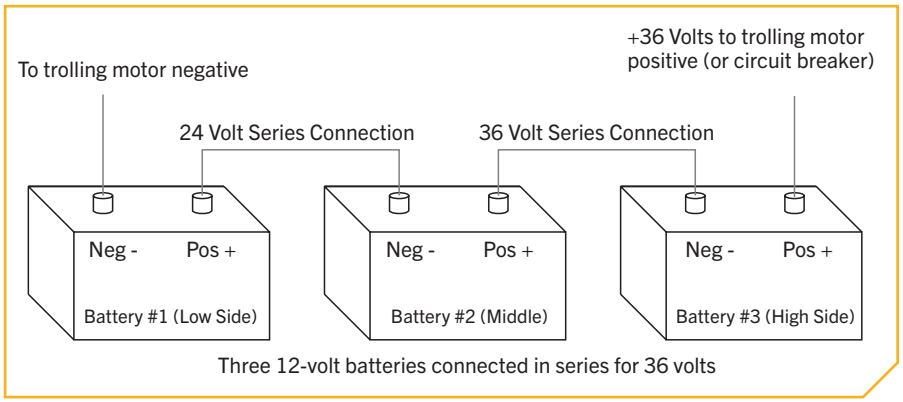
⚠ WARNING

- 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.

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.



Three 12-volt batteries connected in series for 36 volts

⚠ 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.

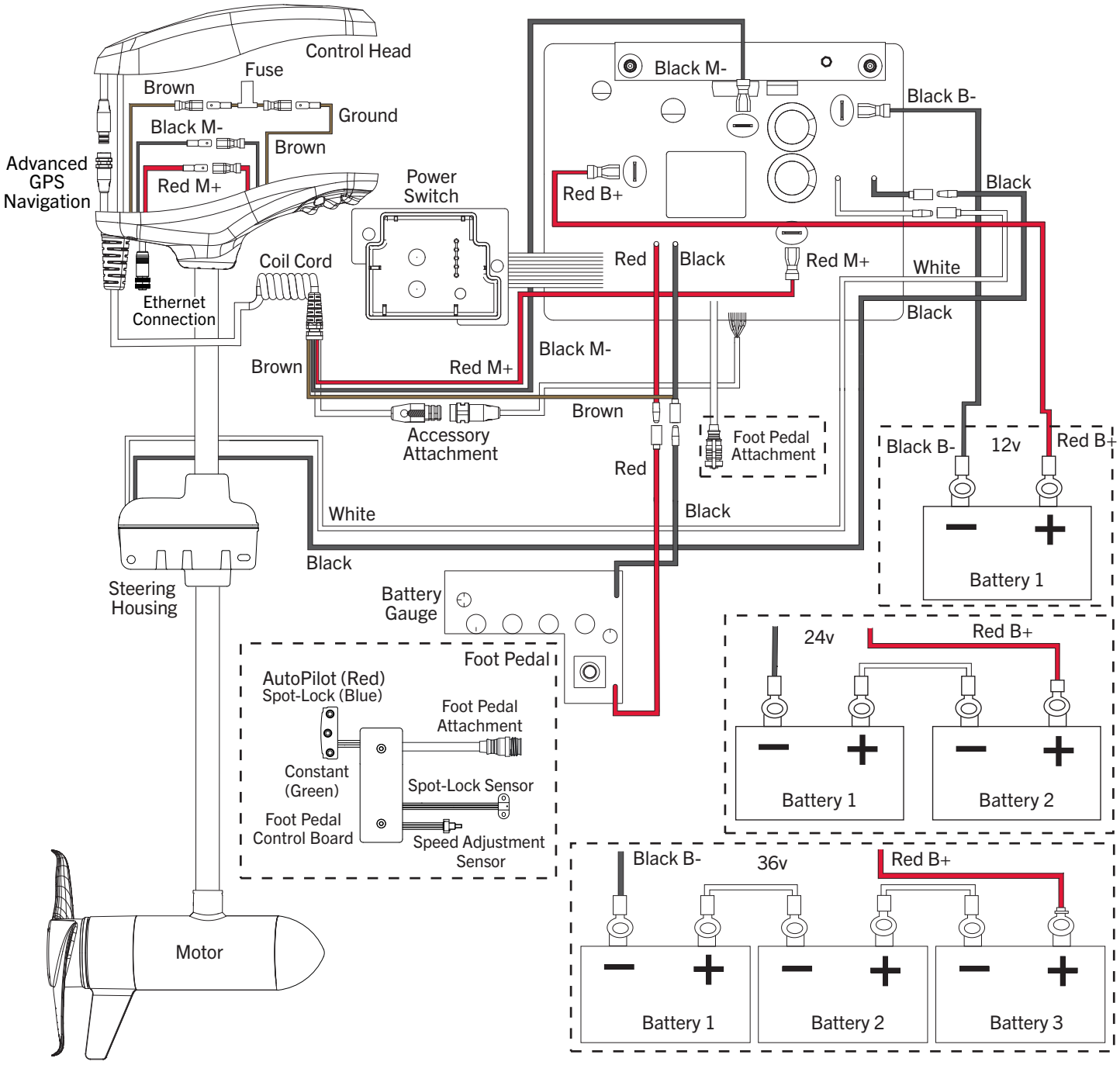
⚠ WARNING

- 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

TERROVA

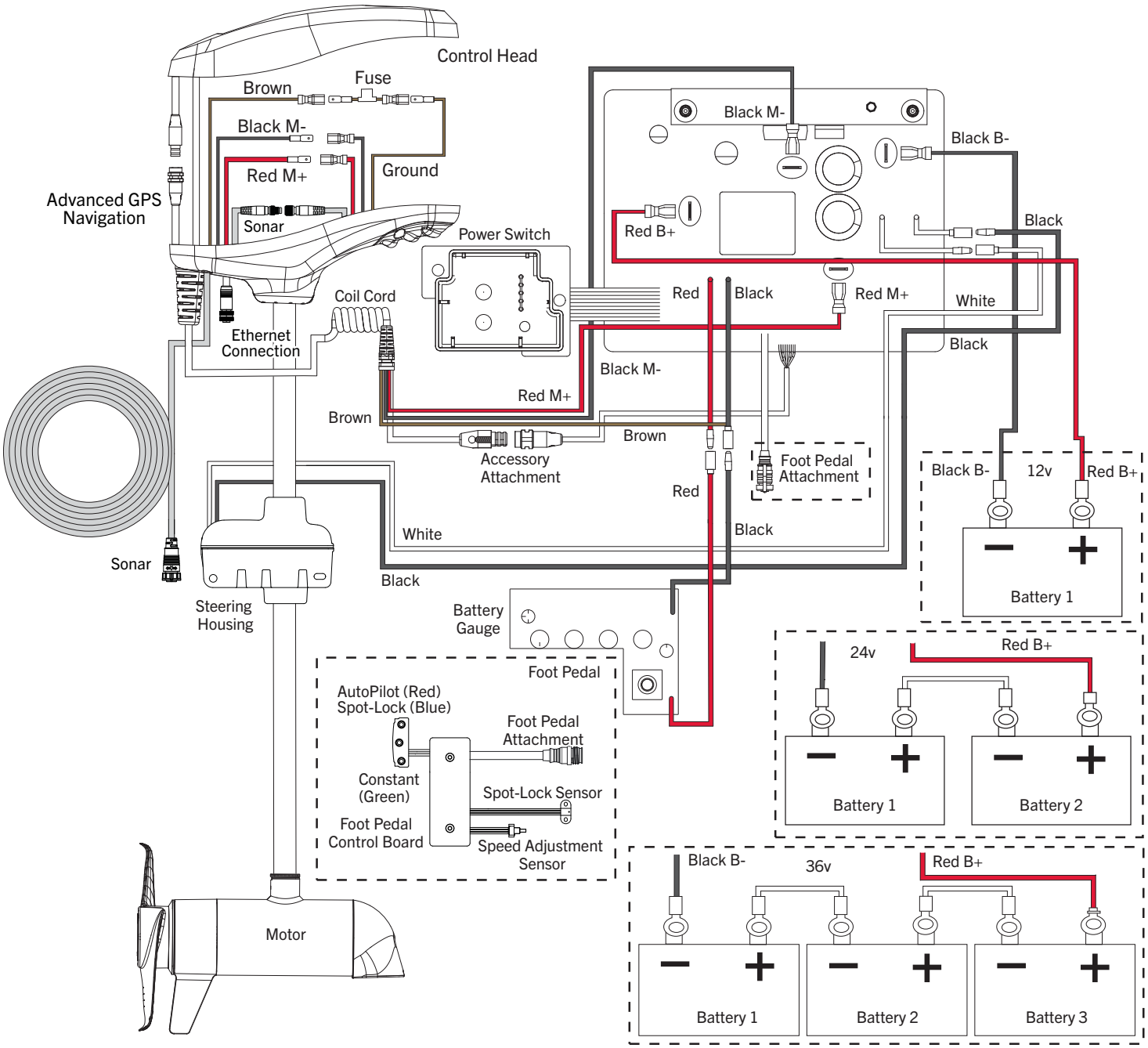
The following Motor Wiring Diagram applies to all Terrova models preinstalled with Advanced GPS Navigation.



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.

TERROVA WITH ADVANCED GPS NAVIGATION AND SONAR

The following Motor Wiring Diagram applies to all Terrova models that come factory installed with Advanced GPS Navigation and either Dual Spectrum CHIRP or Built-in MEGA Down Imaging.

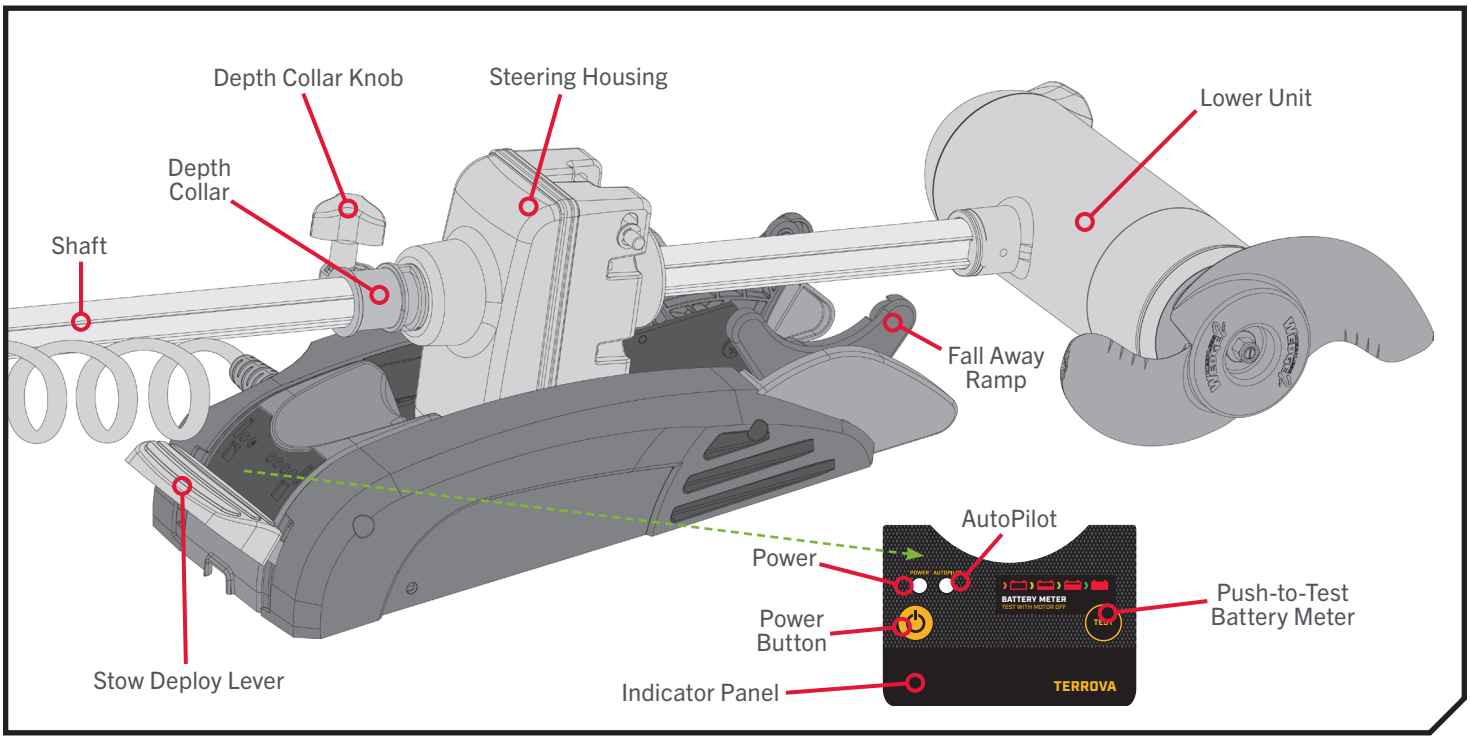


NOTICE: This is a multi-voltage diagram. Double-check your motor's voltage for proper connections. Over-Current Protection Devices are not shown in this illustration. This diagram is for reference only and is not to scale.

USING & ADJUSTING THE MOTOR

MOUNT FEATURES

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



Depth Collar & Depth Collar Knob

The Depth Collar is located on the Shaft above the Steering Housing. It functions to hold the motor at the proper depth while deployed. It also functions to hold the Lower Unit in place when stowed while not in use and during transport. The Depth Collar Knob is used to loosen and tighten the Depth Collar so that it can slide up and down the motor shaft.

Fall Away Ramps

The Fall Away Ramps hold the Lower Unit when the Motor is stowed and rotate to release the Lower Unit as the unit is being deployed. When the Stow Deploy Lever is pressed it unlocks the position of the Fall Away Ramps and the Ramps rotate to guide the Lower Unit back onto the mount when the motor is stowed.

Power Button

The Power button POWER is located on the Indicator Panel on the Mount. The Terrova must be manually powered "on" and "off." When the Motor is powered "on," the Power Indicator will be illuminated green POWER. When the Motor is powered "off," the Power Indicator will not be illuminated POWER.

⚠ WARNING

When the motor is being transported, it is important to place the Depth Collar snug against the Steering Housing and tighten. This provides a secure stow and holds the motor in place during transportation when it is subject to high levels of shock and vibration. Failure to secure the motor may result in injury or damage to the unit.

⚠ WARNING

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

NOTICE: Do not completely remove the Depth Collar Knob from the Depth Collar Assembly. Doing so allows a washer-shaped spacer to fall out of the Depth Collar. This spacer plays a key role in creating tension for the Depth Collar to clamp and function properly.

⚠ CAUTION

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. If the motor control is left on and the propeller rotation is blocked, severe motor damage can result.

AutoPilot

The AutoPilot Indicator is located on the Indicator Panel on the Mount. It is illuminated green when AutoPilot is engaged and it is not illuminated when AutoPilot is not engaged.

Stow Deploy Lever

The Stow Deploy Lever is located at the top of the mount. The Stow Deploy Lever functions to unlatch the Fall Away Ramps which rotate to guide the Lower Unit. The Stow Deploy Lever is actuated by pressing it down.

STOWING AND DEPLOYING THE MOTOR

To Deploy the Motor

Loosen the Depth Collar then push firmly down on the Stow Deploy Lever. Slide the motor forward, out from the Fall Away Ramp. Lower the motor to the desired depth. Make sure it clicks into a secure, vertical position. Once at the desired depth, slide the Depth Collar against the Steering Housing and tighten.

To Stow the Motor

Loosen the Depth Collar and depress the Stow Deploy Lever. Raise the motor by pulling up on the Shaft or Control Head. Pull the motor toward the stern until it rests securely on the Fall Away Ramp and the Fall Away Ramps captures the Lower Unit. Slide the Depth Collar down and secure it against the top of the Steering Housing to secure the motor in place and prevent accidental deployment.

⚠ WARNING

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

⚠ WARNING

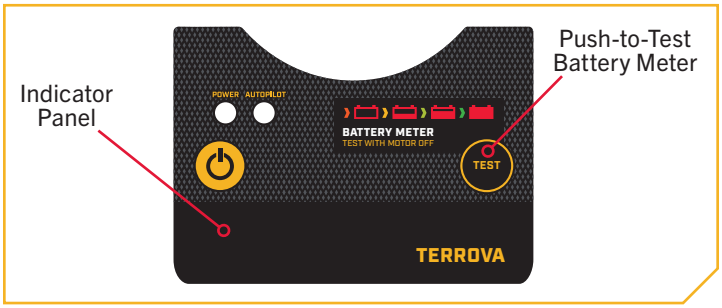
The Control Head will create a pinch point if the Depth Collar Knob is loosened and the Control Head slides to the top of the Depth Collar. Grasp the Shaft and prevent it from sliding all the way down to prevent the pinch point.

Practice proper ergonomics when stowing and deploying the motor to prevent injury.

PUSH-TO-TEST BATTERY METER

This motor is equipped with a Push-to-Test Battery Meter. The LED located on the Indicator Panel on the Mount of the motor. The Battery Meter provides an accurate display of the remaining charge in the battery. It is only accurate when the motor is off. The meter reads as follows:

- One light indicates recharge.
- Two lights indicate low charge.
- Three lights indicate good charge.
- Four lights indicate full charge.



⚠ WARNING

Moving parts can cut or crush. Keep fingers clear of all moving parts.

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.

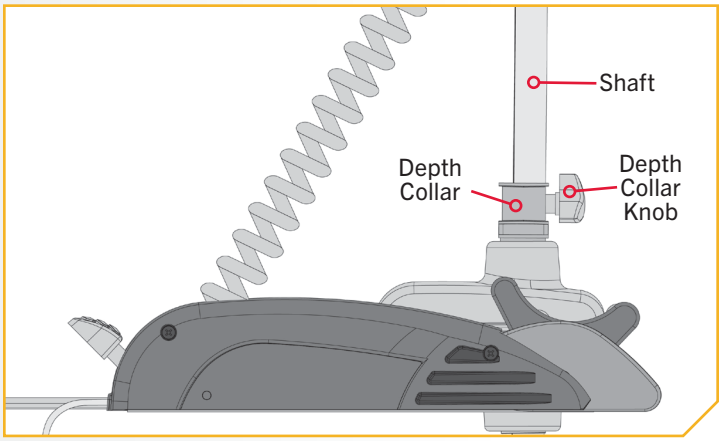
1

a. With the motor in the deployed position, locate the Depth Collar on the Shaft above the Steering Housing.

b. While holding the Shaft, loosen the Depth Collar Knob until the Shaft can slide up and down 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.



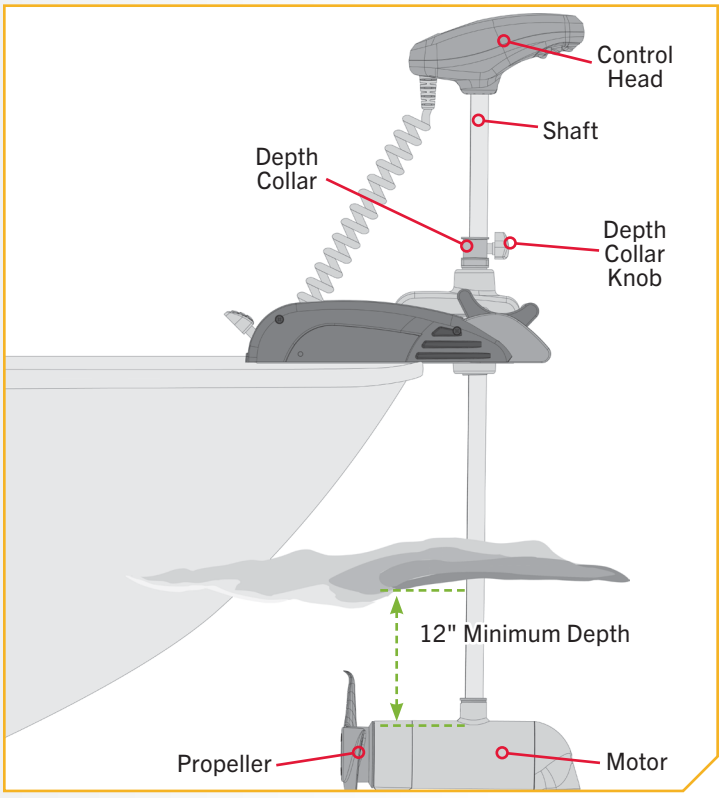
2

c. Raise or lower the motor to the desired depth.

d. Turn the motor Control Head to the desired position.

e. Slide the Depth Collar against the Steering Housing and tighten the Depth Collar Knob to secure the motor in place.

NOTICE: 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 LOWER UNIT FOR A SECURE STOW

When the Motor is stowed, the Lower Unit should rest on the Fall Away Ramps, a part of the Motor Mount. It is recommended to secure the motor using the following instructions to avoid damage to the motor and shaft from vibrations during transport.

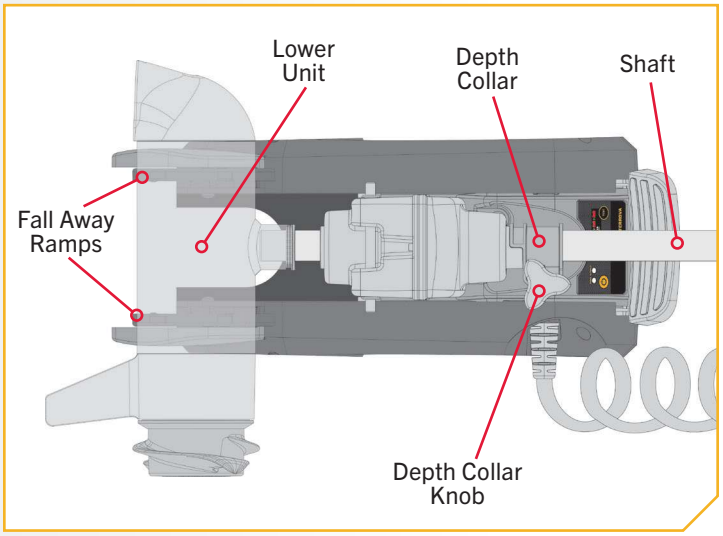
1

a. Before transporting the boat over water or land, stow the motor to determine where the Lower Unit rests on the Fall Away Ramps.

NOTICE: The correct positioning of the Lower Unit will place it directly on the Fall Away Ramps.

b. If the Lower Unit does not sit on the Fall Away Ramps, deploy the motor, and stow it again.

c. Be sure to press the Stow Deploy Lever and adjust the Motor to allow it to rest on the Fall Away Ramps.



NOTICE: Slide the Depth Collar down and secure it against the top of the Steering Housing when stowed to secure the motor in place and prevent accidental deployment.

⚠ CAUTION

The Lower Unit should be placed on the Fall Away Ramps every time the motor is transported. If the Lower Unit is improperly placed, damage to the Lower Unit or Shaft will occur. Failure to follow the recommended placement for the Lower Unit will cause damage to the product and void your product warranty.

⚠ WARNING

When the motor is stowed, the depth collar must be positioned against the steering housing and tightened in place with the knob to prevent accidental deployment, which may result in injury, or damage to the trolling motor, accessories, or boat.

⚠ WARNING

When the motor is being transported, it is important to place the Depth Collar snug against the Steering Housing and tighten. This provides a secure stow and holds the motor in place during transportation when it is subject to high levels of shock and vibration. Failure to secure the motor may result in injury or damage to the unit.

INSTALLING AN EXTERNAL TRANSDUCER

An external transducer is not included with your trolling motor. An external transducer can be installed onto motors that have Advanced GPS Navigation or motors that do not have a built-in transducer. 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.

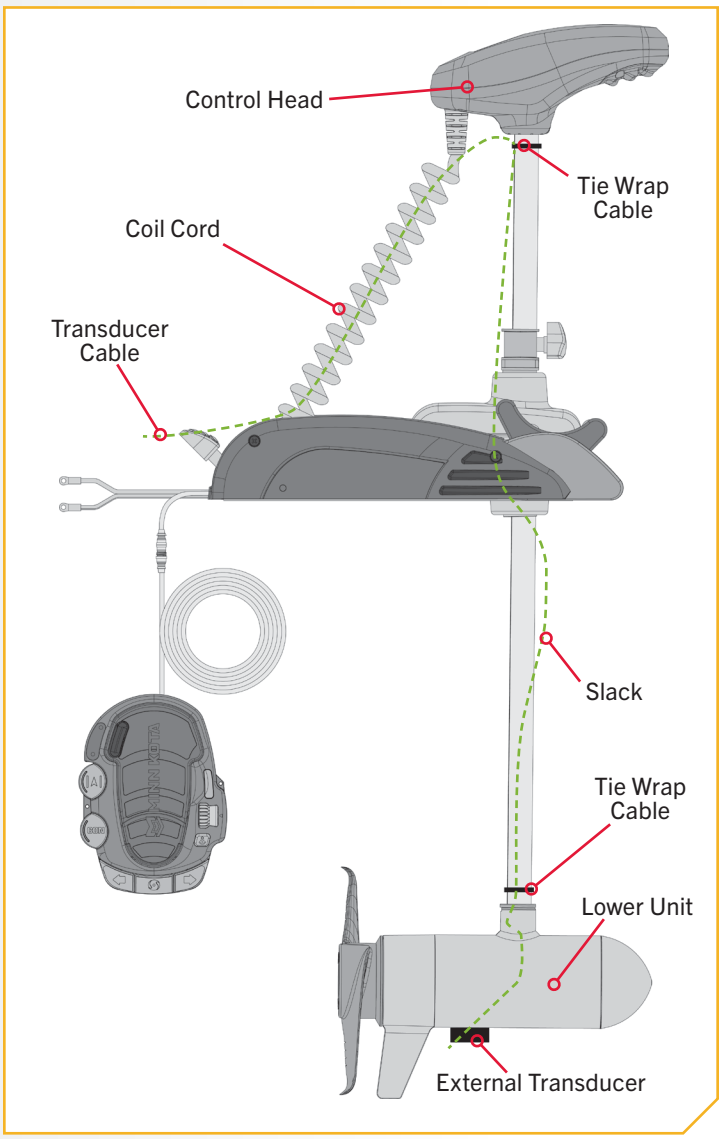
b. Leave enough slack in the Transducer Cable between the Lower Unit and Control Head to allow the motor to properly stow and deploy.

c. Use two tie wrap cables to secure the Transducer Cable to the Shaft just below the Control Head.

d. Run the Transducer Cable through the Coil Cord to the power supply.

⚠ CAUTION

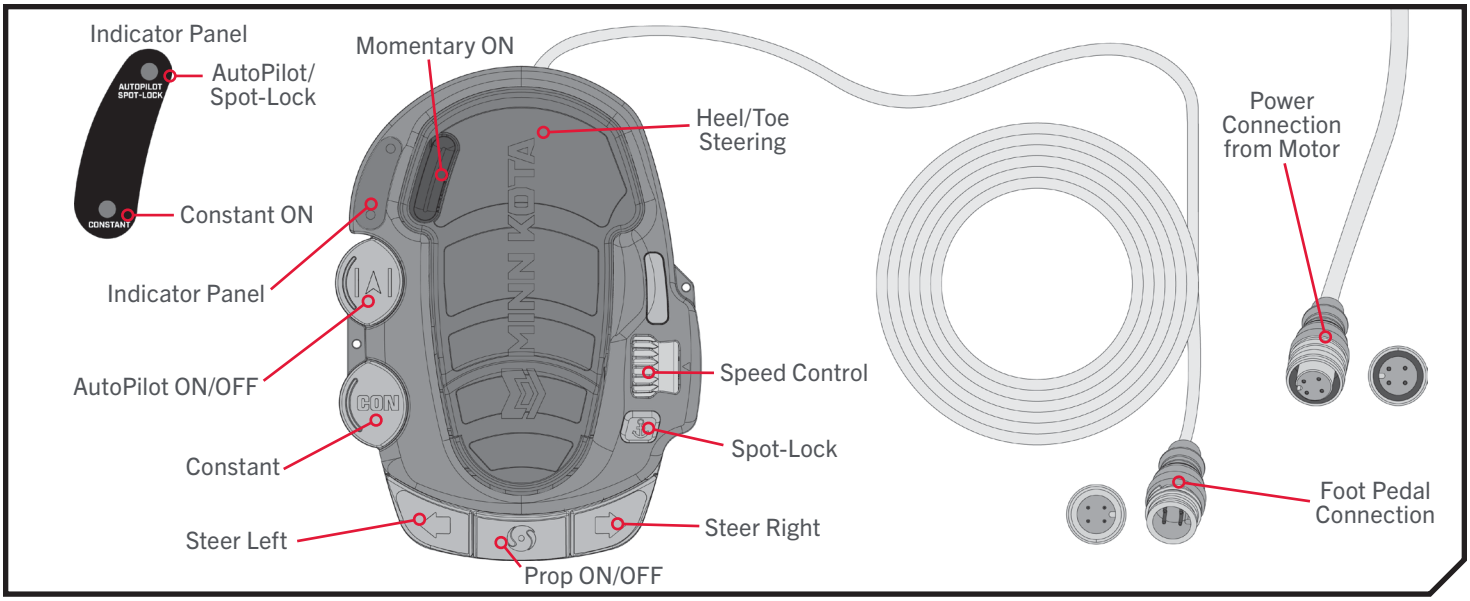
Failure to follow the recommended wire routing for the Advanced GPS Navigation and External Transducer Cables may cause damage to the product and void your product warranty. Take care to test the length and placement of cable to be sure that there is enough slack where needed and that cables are free 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.



USING THE FOOT PEDAL

CONTROLLING SPEED & STEERING WITH THE FOOT PEDAL

The foot pedal is used to operate the motor. The controls on the foot pedal are easy to operate by either foot or hand. A light touch is all that is necessary. The motor can also be controlled by the Minn Kota wireless remote, as well as any compatible Minn Kota remote. Please refer to the associated remote manual for respective instructions. To learn more about accessories that are compatible with the Terrova, please visit minnkotamotors.com.



Motor Speed

The Speed Control knob is located on the right side of the Foot Pedal above the and Spot-Lock button. Turn the Speed Knob forward to increase speed and backwards to decrease speed. The Speed Control knob can be set in a range from 0 to 10. Speed can also be adjusted using the remote.

Spot-Lock

The Spot-Lock button ⚓ is located on the bottom, 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 a temporary memory location. The blue light (AUTOPILOT SPOT-LOCK) next to the Spot-Lock label 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 a Minn Kota remote. For more specific directions on how to use Spot-Lock, please refer to your remote manual.

⚠ WARNING

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

Practice proper ergonomics when operating the foot pedal to prevent injury.

Steer Right/Steer Left

The Steer Right and Steer Left buttons are located at the bottom of the Foot Pedal. They function to steer right and left. Holding the Steer Right or Steer Left buttons down will continue to steer the motor to the left or right. Small steering changes of less than one degree can be made by quickly tapping the Steer Right and Steer Left buttons. The position and direction of the Steering Head directly corresponds to the position of the motor. The direction of the motor can also be controlled with the remote.

⚠ CAUTION

The steering system is designed to turn your motor 360 degrees. Be careful to avoid overwrapping the Coil Cord around the trolling motor Shaft. Overwrapping the coil cord will cause damage and prevent operation.

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

Prop ON/OFF

The Prop ON/OFF button is located in the bottom, middle of the Foot Pedal. It functions to turn the Prop on and off. The Prop will turn on when pressure is applied and turn off when pressure to the button is removed.

Constant

The Constant button CON is located on the left side of the Foot Pedal, towards the bottom, right below the AutoPilot button. It functions to toggle the motor between Constant Motor Operation and Momentary Motor Operation. The green light CONSTANT on the Indicator Panel will be illuminated when the motor is in Constant Motor Operation. In Constant Mode, the propeller will continually run, regardless of whether or not force is being applied to the Momentary button or Prop ON/OFF button. While in Constant Motor Operation, the propeller will run continuously at the speed set by the Speed Control knob, or by the Advanced GPS Navigation remote.

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.

AutoPilot

The AutoPilot button is located in the middle, on the left side of the Foot Pedal. Pressing the AutoPilot button toggles the feature on and off for motor that are installed with this feature. The red light AUTOPILOT SPOT-LOCK on the Indicator Panel is illuminated when this feature is engaged. When AutoPilot is initiated from the Foot Pedal, the default AutoPilot mode is determined by the remote. AutoPilot can also be engaged and disengaged using the remote. For more specific directions on how to use AutoPilot, please refer to the Advanced GPS Navigation Manual. The AutoPilot Indicator on the Mount will also be illuminated when AutoPilot is engaged.

Momentary

In Momentary Motor Operation, the propeller will only run while downward force is applied to the Momentary button. The Momentary button is on the Toe End of the Heel/Toe Steering pedal. Applying downward pressure to the Momentary button will turn the propeller on. The motor will then run at the speed set by the Speed Knob or remote. Removing downward force to the Momentary button will turn the propeller off. No indicator light is associated with the Momentary button. The Momentary button functions very similar to the Prop ON/OFF button.

Heel/Toe Steering

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 Control Head directly corresponds to the position of the motor. You must use your foot on the pedal to control the steering direction during manual operation. The direction of the motor can also be controlled with the remote.

Steering in Reverse

The propeller always turns in the forward direction. You can reverse the direction of thrust by turning the motor 180°.

SERVICE & MAINTENANCE

PROPELLER REPLACEMENT

TOOLS AND RESOURCES REQUIRED

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

INSTALLATION

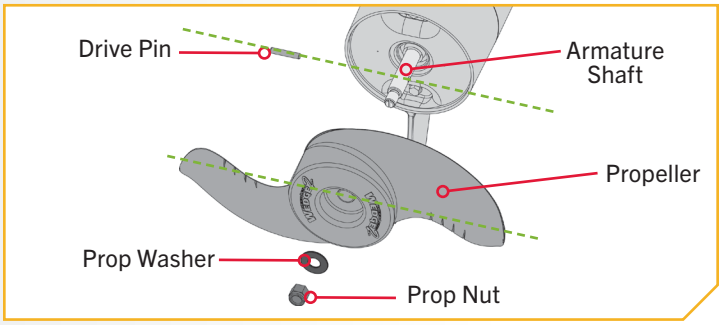
1

a. Disconnect the motor from all sources of power prior to changing the propeller.

b. Hold the propeller and loosen the Prop Nut with a pliers or a wrench.

c. 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

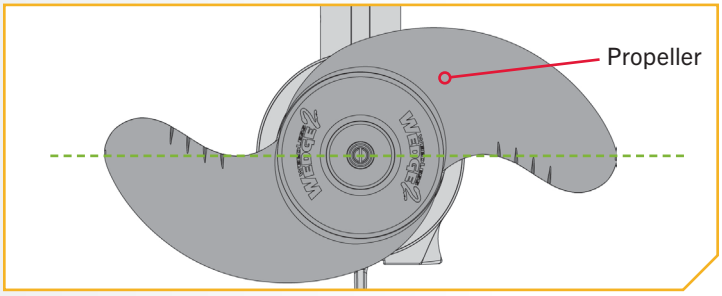
Disconnect the motor from the battery before beginning any prop work or maintenance.

2

d. 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.



3

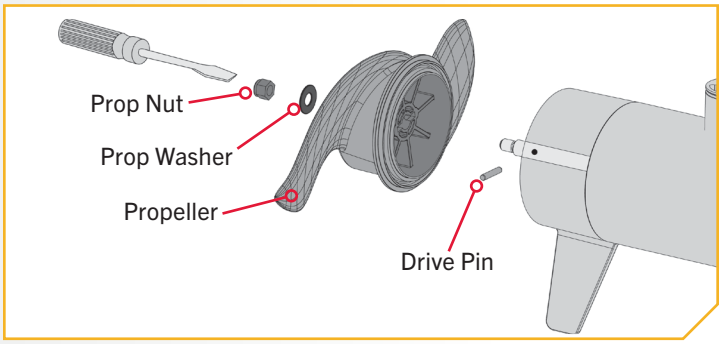
e. Align the new Propeller with the Drive Pin.

f. Install the Prop Washer and Prop Nut.

g. 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.



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 of weeds and fishing line after every use. Fishing line and weeds can get behind the prop, damage the seals and allow water to enter the motor.
- Verify that the prop nut is secure each time the motor is used.
- To prevent accidental damage during transportation or storage, disconnect the battery whenever the motor is off of the water. For prolonged storage, lightly coat all metal parts with an aqueous-based silicone spray.
- For maximum battery life, recharge the battery(s) as soon as possible after use. For maximum motor performance, restore the battery to full charge prior to use.
- Keep battery terminals clean with fine sandpaper or emery cloth.
- The propeller is designed to provide weed-free operation with very high efficiency. To maintain this top performance, the leading edge of the blades must be kept smooth. If they are rough or nicked from use, restore to smoothness by sanding with fine sandpaper.

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 minnkotamotors.com, or by calling our customer service number at 1-800-227-6433.

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

Frequently Asked Questions

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

Call Us (for U.S. and Canada)

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

Contact Us

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

Authorized Service Centers

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

Scan to visit Minn Kota service online.

COMPLIANCE STATEMENTS

ENVIRONMENTAL COMPLIANCE STATEMENT

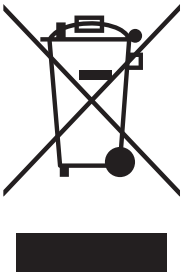
It is the intention of JOME to be a responsible corporate citizen, operating in compliance with known and applicable environmental regulations, and a good neighbor in the communities where we make or sell our products.

WEEE DIRECTIVE

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

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

This symbol (WEEE 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

Motors with Advanced GPS Navigation

For regulatory information on motors with Advanced GPS Navigation, please refer to the Advanced GPS Navigation 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

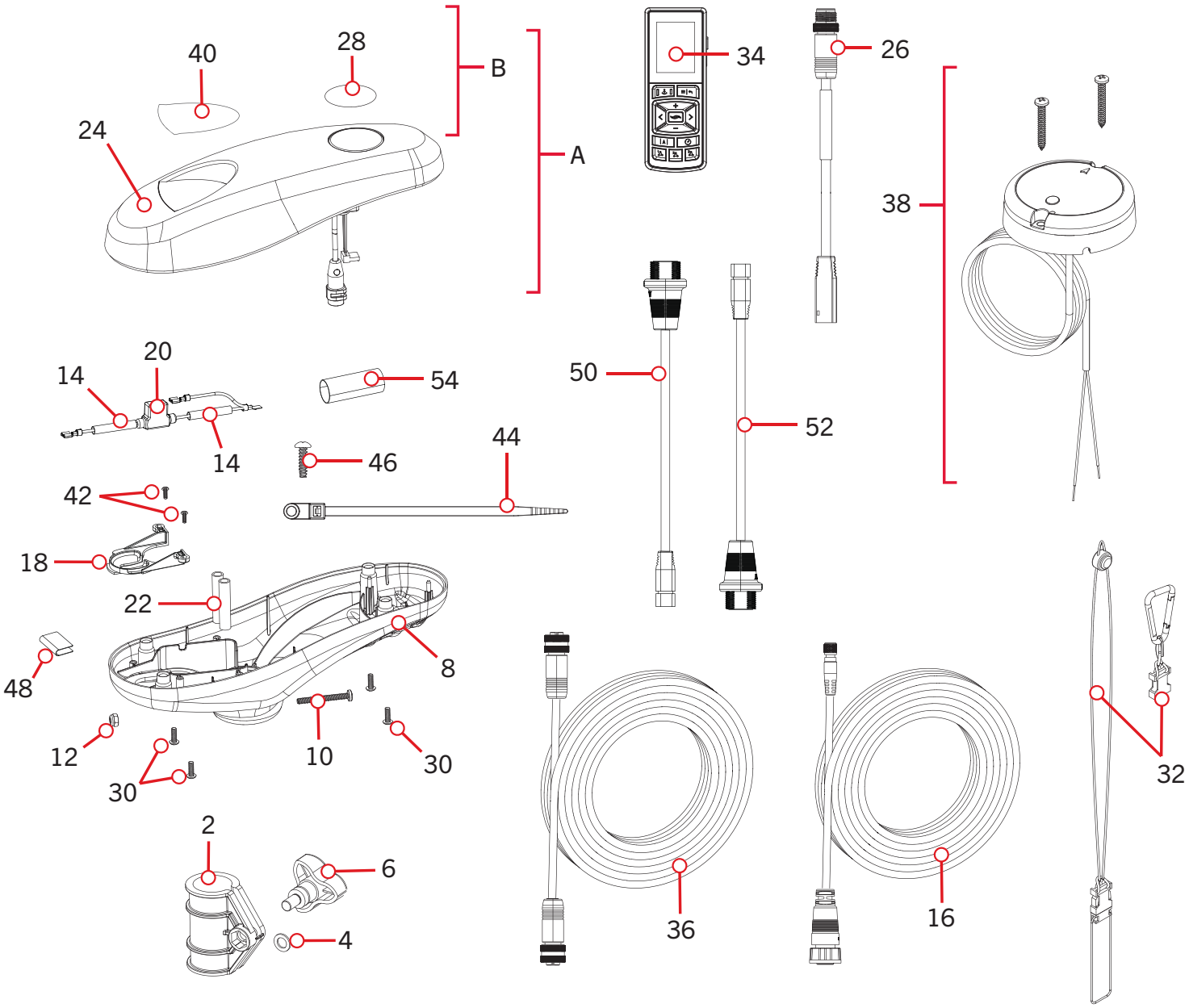
PARTS DIAGRAM & PARTS LIST

TERROVA - 55/80/112 LBS THRUST - 12/24/36 VOLT - 45”/54”/60”/72” 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.

TERROVA CONTROL HEAD

Control Head Parts Diagram



Control Head Parts List

Assembly	Part #	Description	Notes	Quantity
A	2774103	CONTROLLER,ADV GPS NAV,TRV/UTX	*DUAL SPECTRUM CHIRP* *BUILT-IN MEGA DOWN IMAGING*	1
B	2770242	CVR KIT, ADV GPS NAV, TRV/UTX		1
Item	**Part #**	**Description**	**Notes**	**Quantity**
▲	✖	SEAL,BUNG LOWER		1
▲	✖	SEAL,BUNG UPPER,FW		1
2	2321500	DEPTH COLLAR 1.30		1
4	2321702	WASHER-FLAT .375 NYLON		1
6	2260905	KNOB-SOFT GRIP,HG/DR,ZNC		1
8	2292500	CONTROL BOX, ULTREX, T2		1
10	2263406	SCREW-#10-24 X 2" S/S PPH		1
12	2333101	NUT-HEX #10-24 UNC-2B NYL SS		1
14	2065400	WIRE INSULATOR-LGE 1-3/4,BLUE		2
16	490507-1	CABLE, ADP-INT MDI 14 M12-120"	*BUILT-IN MEGA DOWN IMAGING*	1
	490575-3	CABLE, ADPTR, 14 PIN, 110"-DSC	*DUAL SPECTRUM CHIRP*	1
▲	2256300	TIE WRAP-6.0" BLACK		2
	2256300	TIE WRAP-6.0" BLACK	*BUILT-IN MEGA DOWN IMAGING 60" 80LB/112LB* *BUILT-IN MEGA DOWN IMAGING 72" 112LB*	4
18	2224706	PLUG, SCREW-DOWN, BLK		1
20	2218201	FUSE HOLDER ASSEMBLY		1
22	2375400	SHRINK TUBE-1/4OD X 1-3/4		2
24	2290212	COVER,CTRL BOX iP, PD PRINTED		1
26	490380-1	CABLE, ETHERNET PIGTAIL-700 HD		1
28	2395524	DECAL, DOMED FW		1
30	2372100	SCREW-#8-18 X 5/8 THD (SS)		4
32	2390802	LANYARD w/CARABINR,WIRELESS RMT		1
34	411690-1	TROLLING MOTOR REMOTE	*DUAL SPECTRUM CHIRP* *BUILT-IN MEGA DOWN IMAGING*	1
36	490384-4	CABLE, ETHERNET (M12-M12), 30'		1
38	2996400	HEADING SENSOR ASSEMBLY		1
40	2395564	DECAL,PUSH BTN TOP 55# FW	*55LB*	1
	2395565	DECAL,PUSH BTN TOP 80# FW	*80LB*	1
	2395566	DECAL,PSH BTN TOP 112# FW	*112LB*	1
42	2372103	SCREW. #6 x 3/8 PLASTITE		2
44	2206302	TIE WRAP, SCREW MOUNT 6.3”		1
46	2203441	SCREW-#6 X 1/2” THRD FORM,SSTL		1
48	2215700	LABEL, DI CABLE EXIT LOCATION	*BUILT-IN MEGA DOWN IMAGING 60" 80LB/112LB* *BUILT-IN MEGA DOWN IMAGING 72" 112LB*	1

▲ *Not shown on Parts Diagram.*
✖ *This part is included in an assembly and cannot be ordered individually.*

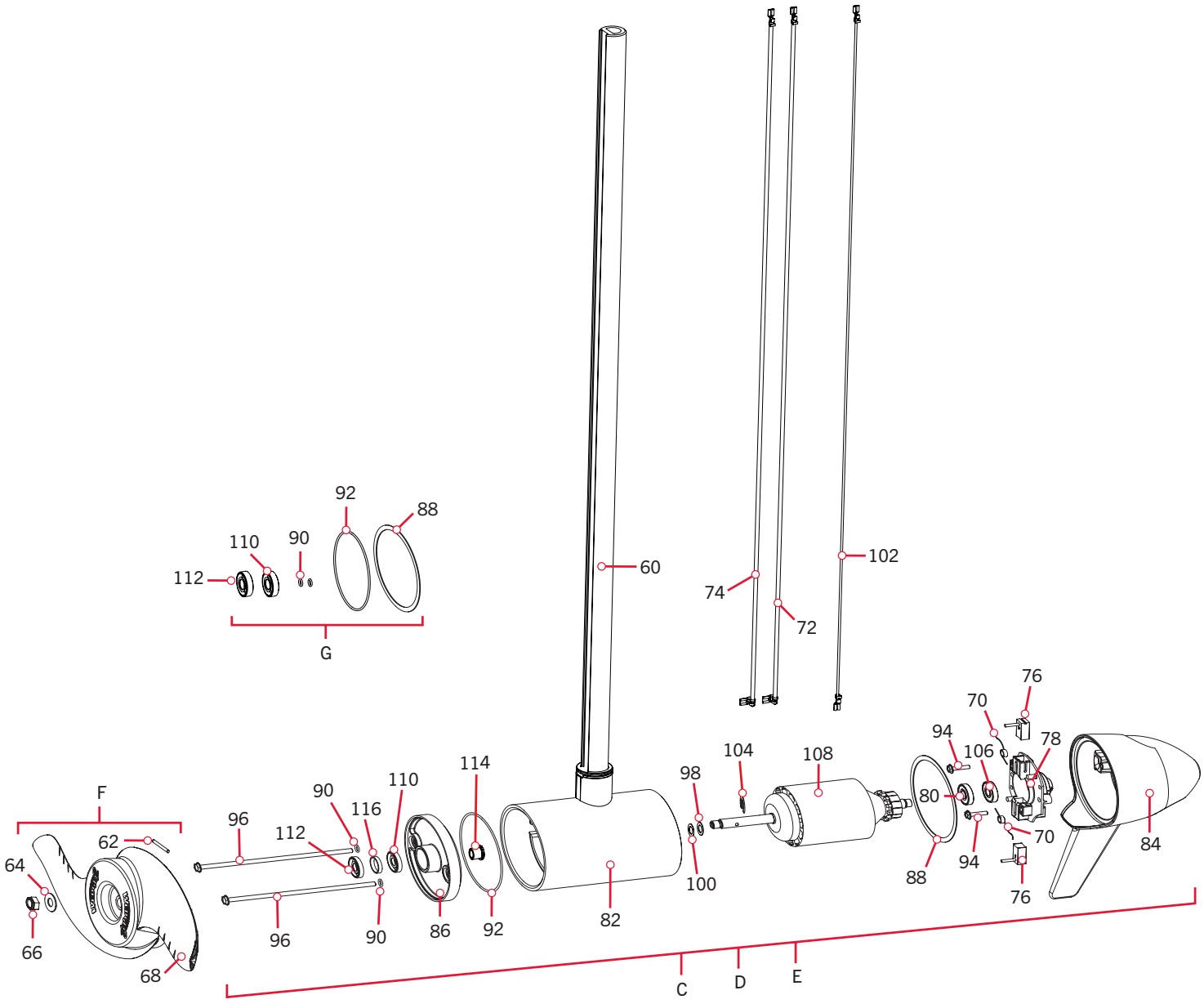
PARTS DIAGRAM & PARTS LIST

Item	Part #	Description	Notes	Quantity
50	2994961	BAG ASM, CABLE,ADPTR, 490537-2	*490537-2* *MKR-MI-1* *DUAL SPECTRUM CHIRP* *BUILT-IN MEGA DOWN IMAGING*	1
52	2994960	BAG ASM, CABLE,ADPTR, 490518-1	*490518-1* *MKR-MDI-2* *DUAL SPECTRUM CHIRP* *BUILT-IN MEGA DOWN IMAGING*	1
54	2205412	SHRINK TUBE-.75 ID X 2”		1
▲	2206301	TIE WRAP, LOW PROFILE 8"		1
▲	2996300	TIE WRAP ASM, 60"	*DUAL SPECTRUM CHIRP* *BUILT-IN MEGA DOWN IMAGING* *45"* *54"* *60"*	1
	2996300	TIE WRAP ASM, 60"	*DUAL SPECTRUM CHIRP* *BUILT-IN MEGA DOWN IMAGING* *72"*	2
▲	2327134	MANUAL, TERROVA 3 PM		1
▲	2327136	MANUAL-INSTLL GUIDE T3 PM		1
▲	2397110	MANUAL, iPILOT 4.0		1
▲	2397115	GUIDE-QUICK REFERENCE iP 4.0		1
▲	2394900	INSTRUCTIONS, HEADING SENSOR		1
▲	2297165	MANUAL - DISCLAIMER, DOWNLOAD INFO		1
▲	2015800	HANG TAG "CAUTION..TILT HINGE"		1
▲	2294950	INSTRUCTIONS,OBN & REMOTE PAIR		1
▲	2207131	STANDARD QS SETUP GUIDE		1

▲ *Not shown on Parts Diagram.*
✖ *This part is included in an assembly and cannot be ordered individually.*

TERROVA MOTOR

12 Volt 3.625" Motor Parts Diagram



12 Volt 3.625" Motor Parts List

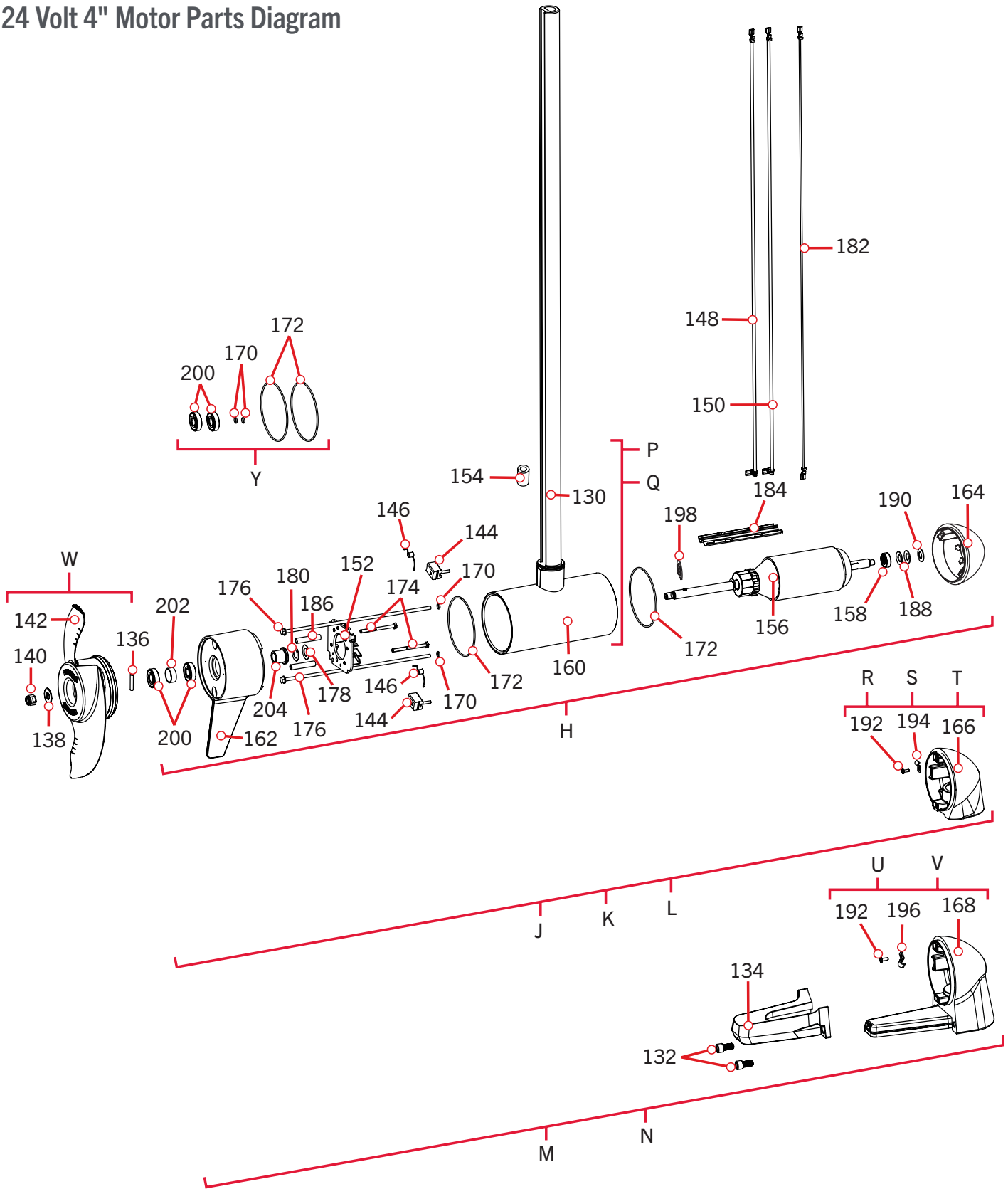
Assembly	Part #	Description	Notes	Quantity
C	2119021	MTR ASY 12V 3.62 VARS 55# CB	*54"* *NON-SONAR*	1
D	2777191	MTR/TUBE ASM 12V DSC 45"	*45"* *DUAL SPECTRUM CHIRP*	1
E	2777192	MTR/TUBE ASM 12V DSC 54"	*54"* *DUAL SPECTRUM CHIRP*	1
F	1378170	PROP KIT 2091170 PWR PRP GENII		1
G	2888460	SEAL & O-RING KIT		1
Item	**Part #**	**Description**	**Notes**	**Quantity**
60	✖	TUBE-COMP,BLK,45",1/4" WALL	*45"*	1
	✖	TUBE-CMP,BLK,54",1/4" WALL	*54"*	1
62	2092600	PIN-DRIVE 1.06" LG (SS)		1
64	2151726	WASHER-5/16 STD (S/S)		1
66	2053101	NUT-PROP,NYLOC (MED) 5/16 SS		1
68	2091170	PROP-PWR (3 5/8") REAMED		1
70	975-040	SPRING - TORSION		2
72	640-028	LEADWIRE BLK 10 AWG 58.5 XLP	*45"*	1
	640-009	LEADWIRE BLK 10 AWG 65 GPT	*54"*	1
74	640-128	LEADWIRE RED 10AWG 60.5" GPT	*45"*	1
	640-108	LEADWIRE RED 10 AWG 67 GPT	*54"*	1
76	188-036	BRUSH ASSEMBLY 3.625		2
78	738-036	BRUSH PLATE WITH HOLDER 3.625		1
80	725-050	PAPER TUBE - BRUSH RETENTION		1
82	✖	CTR HSG ASY 3.62 FW-MAGNET CB		1
84	✖	BRUSH END HSG 3.625, PTD	*DUAL SPECTRUM CHIRP*	1
	✖	HSG BRSH END 3.62 FW	*NON-SONAR*	1
86	2-400-101A	PLAIN END HSG ASY 3.625		1
88	337-036	GASKET		1
90	701-008	O-RING	*THRU-BOLT*	2
92	701-081	O-RING		1
94	830-007	SCREW, # 8-32		2
96	830-008	THRU BOLT 10-32 x 9.205		2
98	990-067	WASHER - STEEL THRUST		1
100	990-070	WASHER - NYLATRON		1
102	640-315	LEADWIRE BROWN 18 AWG 62" GPT	*45"* *DUAL SPECTRUM CHIRP*	1
	640-316	LEADWIRE BROWN 18 AWG 71" GPT	*54"* *DUAL SPECTRUM CHIRP*	1
104	788-015	RETAINING RING		1
106	140-010	BEARING - BALL		1
108	2-100-146	ARM ASY 12V 3.62 55#CB/LS		1

▲ *Not shown on Parts Diagram.*
✖ *This part is included in an assembly and cannot be ordered individually.*

Item	Part #	Description	Notes	Quantity
110	880-003	SEAL		1
112	880-006	SEAL WITH SHIELD		1
114	144-049	BEARING - FLANGE		1
116	725-035	PAPER TUBE - SEAL BORE		1
▲	✖	DSC XD UCER ASSY 67" HW T	*45"* *DUAL SPECTRUM CHIRP*	1
	✖	DSC XDUCER ASSY 73" HW T	*54"* *DUAL SPECTRUM CHIRP*	1
▲	✖	SCREW-#6-20 X 1/2 THD CUTS,RIE	*DUAL SPECTRUM CHIRP*	3

▲ *Not shown on Parts Diagram.*
✖ *This part is included in an assembly and cannot be ordered individually.*

24 Volt 4" Motor Parts Diagram



24 Volt 4" Motor Parts List

Assembly	Part #	Description	Notes	Quantity
H	2777002	MTR/TUBE ASSY 80# 60" TERROVA	*NON-SONAR*	1
J	2777124	MTR/TUBE ASM 24V DSC 45"	*DUAL SPECTRUM CHIRP* *45"*	1
K	2777128	MTR/TUBE ASM 24V DSC 60"	*DUAL SPECTRUM CHIRP* *60"*	1
K	2777127	MTR/TUBE ASM 24V "M" DSC 60"	*DUAL SPECTRUM CHIRP* *60"* *EUROPE ONLY*	1
L	2777129	MTR/TUBE ASM 24V DSC 72"	*DUAL SPECTRUM CHIRP* *72"*	1
M	2777046	MTR/TUBE ASM 24V MDI 60"	*BUILT-IN MEGA DOWN IMAGING* *60"*	1
N	2777044	MTR/TUBE ASM 24V MDI 45"	*BUILT-IN MEGA DOWN IMAGING* *45"*	1
P	2777196	CTR HSG, CB, 80#, FW, UP TO 60"		1
Q	2777197	CTR HSG, CB, 80#, FW, 72" TUBE		1
R	2993020	PLN END HSG/TRDCR 4.0 DSC	*DUAL SPECTRUM CHIRP* *45"*	1
S	2993025	PLN END HSG/TRDCR 4.0 DSC	*DUAL SPECTRUM CHIRP* *60"*	1
T	2993027	PLN END HSG/TRDCR 4.0 DSC	*DUAL SPECTRUM CHIRP* *72"*	1
U	2993051	PLN END HSG/TRNDCR 4.0 MDI	*BUILT-IN MEGA DOWN IMAGING* *45"*	1
V	2993053	PLN END HSG/TRNDCR 4.0 MDI	*BUILT-IN MEGA DOWN IMAGING* *60"*	1
W	1378132	PROP IND 2331160 WDLS WDG II		1
Y	2889460	SEAL & O-RING KIT		1
Item	**Part #**	**Description**	**Notes**	**Quantity**
130	✖	TUBE-COMP,BLK,45",1/4" WALL	*45"*	1
	✖	TUBE-CMP,BLK,45",1/4",DI,	*45"* *BUILT-IN MEGA DOWN IMAGING*	1
	✖	TUBE-COMP,BLK,60",1/4" WALL	*60"* *M SKU*	1
	✖	TUBE-COMP,BLK,60",1/4" WALL	*60"* *DUAL SPECTRUM CHIRP* *NON-SONAR*	1
	✖	TUBE-CMP,BLK,72",1/4"WALL	*72"*	1
	✖	TUBE-CMP,BLK,60",1/4",DI	*60"* *BUILT-IN MEGA DOWN IMAGING*	1
132	830-110	SCREW-5-16-18 X 5/8 SHCS SS	*BUILT-IN MEGA DOWN IMAGING*	2
134	792-001	GUARD, TRANSDUCER, PNT 4.0 DI	*BUILT-IN MEGA DOWN IMAGING*	1
136	2262658	PIN-DRIVE 1" X 3/16" S/S		1
138	2091701	WASHER-PROP (LARGE)		1
140	2093101	NUT-PROP,NYLOC,LG, 3/8 SS		1
142	2331161	PROP-WW2 4" WELDED		1
144	188-094	BRUSH W/TERMINAL		2
146	975-041	SPRING - TORSION		2
148	640-013	LEADWIRE BK 10A 51.75 XLP	*45"*	1
	640-025	LEADWIRE BLK 10 AWG 66 3/4 XLP	*60"*	1
	640-024	LEADWIRE BLK 10 AWG 79" XLP	*72"*	1

▲ *Not shown on Parts Diagram.*
✖ *This part is included in an assembly and cannot be ordered individually.*

PARTS DIAGRAM & PARTS LIST

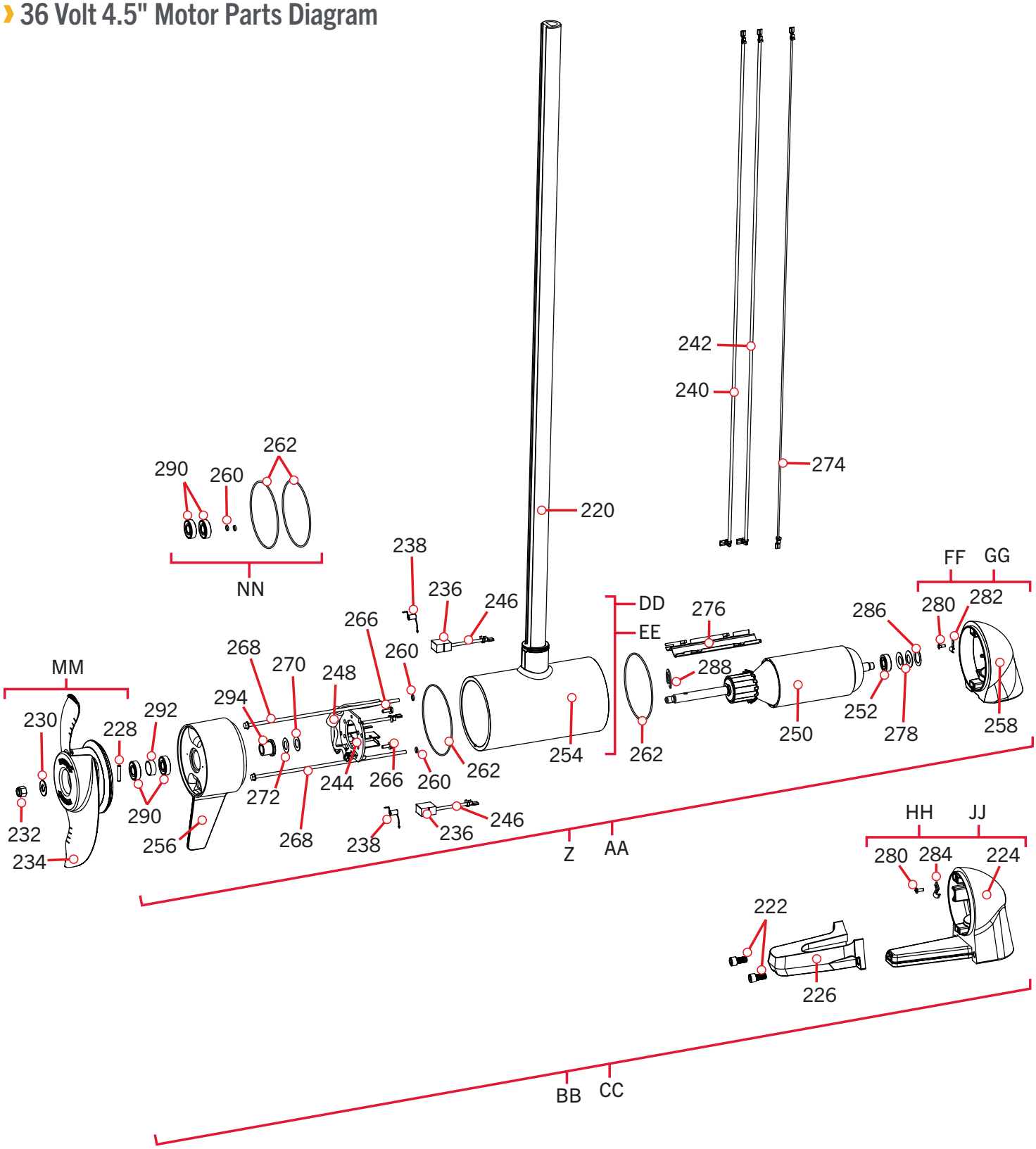
Item	Part #	Description	Notes	Quantity
150	640-117	LEADWIRE RD 10A 51.25 XLP	*45"*	1
	640-133	LEADWIRE RED 10AWG 66-1/4 XLP	*60"*	1
	640-125	LEADWIRE RED 10AWG 79-1/2 XLP	*72"*	1
▲	✖	BRUSH HOLDER		2
152	738-004	BRUSH PLATE-4"		1
▲	2260730	CONNECTOR 1/4 MALE TAB QD		2
154	✖	BEAD-FERRITE	*M SKU* *BUILT-IN MEGA DOWN IMAGING*	1
156	2-100-214	ARM ASSY 24V 4" 80# (WW2)		1
158	140-010	BEARING - BALL		1
160	✖	CTR HSG ASY 4.0 FW MGNTZ		1
162	2-300-170	BRUSH END HSG ASY 4.0 FW		1
164	421-276	HSG PLN END 4" PAINTED FW BS	*NON-SONAR*	1
166	421-286	PLN END 4.0"US2.5/DSC PNT	*DUAL SPECTRUM CHIRP*	1
168	421-107	PLAIN END HSG, PNT 4.0 DI	*BUILT-IN MEGA DOWN IMAGING*	1
170	701-009	O-RING	*THRU-BOLT*	2
172	701-043	O-RING		2
174	830-027	SCREW - SELF-THREAD 10-32X2.25		2
176	830-095	THRU BOLT 12-24 x 9.79		2
178	990-051	WASHER - STEEL THRUST		1
180	990-052	WASHER - NYLATRON		1
182	640-315	LEADWIRE BROWN 18 AWG 62" GPT	*45"*	1
	640-316	LEADWIRE BROWN 18 AWG 71" GPT	*60"*	1
	640-317	LEADWIRE BROWN 18 AWG 86" GPT	*72"*	1
184	582-013	CLIP, RETAINING SHORT		1
186	973-025	SPACER - BRUSHPLATE		2
188	992-010	WASHER - BELLEVILLE		2
190	990-045	SPACER - THRUST		1
192	2302104	SCREW-#6-20 X 3/8 THD CUTS	*DUAL SPECTRUM CHIRP* *BUILT-IN MEGA DOWN IMAGING*	1
194	230-038	CABLE CLAMP	*DUAL SPECTRUM CHIRP*	1
196	230-040	CABLE CLAMP, 1/4" STEEL	*BUILT-IN MEGA DOWN IMAGING*	1
198	788-040	RETAINING RING		1
200	880-025	SEAL		2
202	725-095	PAPER TUBE, SEAL		1
204	144-017	BEARING, FLANGE		1
▲	✖	RIVET - .25"		6
▲	✖	DSC XDUCER ASSY 62" HW T	*45"* *DUAL SPECTRUM CHIRP*	1
	✖	DSC XDUCER ASSY 79" HW T	*60"* *DUAL SPECTRUM CHIRP*	1
	✖	DSC XDUCER ASSY 91" HW T	*72"* *DUAL SPECTRUM CHIRP*	1

▲ *Not shown on Parts Diagram.*
✖ *This part is included in an assembly and cannot be ordered individually.*

Item	Part #	Description	Notes	Quantity
▲	✖	BUILT- IN MDI 63", SW	*45"* *BUILT-IN MEGA DOWN IMAGING*	1
	✖	BUILT- IN MDI 74", SW	*60"* *BUILT-IN MEGA DOWN IMAGING*	1
▲	✖	SCREW-#6-32X1/2"TORX PH SS		3

▲ *Not shown on Parts Diagram.*
✖ *This part is included in an assembly and cannot be ordered individually.*

36 Volt 4.5" Motor Parts Diagram



36 Volt 4.5" Motor Parts List

Assembly	Part #	Description	Notes	Quantity
Z	2777068	MTR/TUBE ASM 36V DSC 60"	*60"* *DUAL SPECTRUM CHIRP*	1
AA	2777069	MTR/TUBE ASM 36V DSC 72"	*72"* *DUAL SPECTRUM CHIRP*	1
BB	2777071	MTR/TUBE ASM 36V MDI 60"	*60"* *BUILT-IN MEGA DOWN IMAGING*	1
CC	2777072	MTR/TUBE ASM 36V MDI 72"	*72"* *BUILT-IN MEGA DOWN IMAGING*	1
DD	2777241	CTR HSG, CB, 112#, FW, UP TO 60"	*45"* *60"*	1
EE	2777242	CTR HSG, CB, 112#, FW, 72" TUBE	*72"*	1
FF	2993024	PLN END HSG/TRDCR 4.5 DSC	*60"* *DUAL SPECTRUM CHIRP*	1
GG	2993028	PLN END HSG/TRDCR 4.5 DSC	*72"* *DUAL SPECTRUM CHIRP*	1
HH	2993056	PLN END HSG/TRNDCR 4.5 MDI	*60"* *BUILT-IN MEGA DOWN IMAGING*	1
JJ	2993055	PLN END HSG/TRNDCR 4.5 MDI	*72"* *BUILT-IN MEGA DOWN IMAGING*	1
MM	1378160	PROP KIT 2341160 112# WW2		1
NN	2881450	SEAL & O-RING KIT		1
Item	**Part #**	**Description**	**Notes**	**Quantity**
220	✖	TUBE-COMP,BLK,45",1/4" WALL	*45"*	1
	✖	TUBE-COMP,BLK,60",1/4" WALL	*60"* *DUAL SPECTRUM CHIRP* *BUILT-IN MEGA DOWN IMAGING*	1
	✖	TUBE-COMP,BLK,60",1/4" WALL	*60"* *M SKU*	1
	✖	TUBE-CMP,BLK,72",1/4"WALL	*72"* *DUAL SPECTRUM CHIRP*	1
	✖	TUBE-CMP,BLK,45",1/4",DI,	*45"* *BUILT-IN MEGA DOWN IMAGING*	1
	✖	TUBE-CMP,BLK,60",1/4",DI	*60"* *BUILT-IN MEGA DOWN IMAGING*	1
222	830-110	SCREW-5-16-18 X 5/8 SHCS SS	*BUILT-IN MEGA DOWN IMAGING*	2
224	421-112	PLAIN END HSG, PNT 4.5 DI	*BUILT-IN MEGA DOWN IMAGING*	1
226	792-005	GUARD, TRANSDUCER, PNT 4.5 DI	*BUILT-IN MEGA DOWN IMAGING*	1
228	2262658	PIN-DRIVE 1" X 3/16" S/S		1
230	2091701	WASHER-PROP (LARGE)		1
232	2093101	NUT-PROP,NYLOC,LG, 3/8 SS		1
234	2341161	PROP-WW2 4.5" WELDED		1
236	188-095	BRUSH		2
238	975-045	SPRING - TORSION		2
240	640-044	LEADWIRE BLK 10AWG 72 1/4" GPT	*60"*	1
	640-048	LEADWIRE BLK 10AWG 84 1/4" GPT	*72"*	1
242	640-144	LEADWIRE RED 10AWG 71" GPT	*60"*	1
	640-148	LEADWIRE RED 10AWG 83" GPT	*72"*	1
▲	✖	BRUSH HOLDER		2
244	738-011	BRUSH PLATE		1

▲ *Not shown on Parts Diagram.*
✖ *This part is included in an assembly and cannot be ordered individually.*

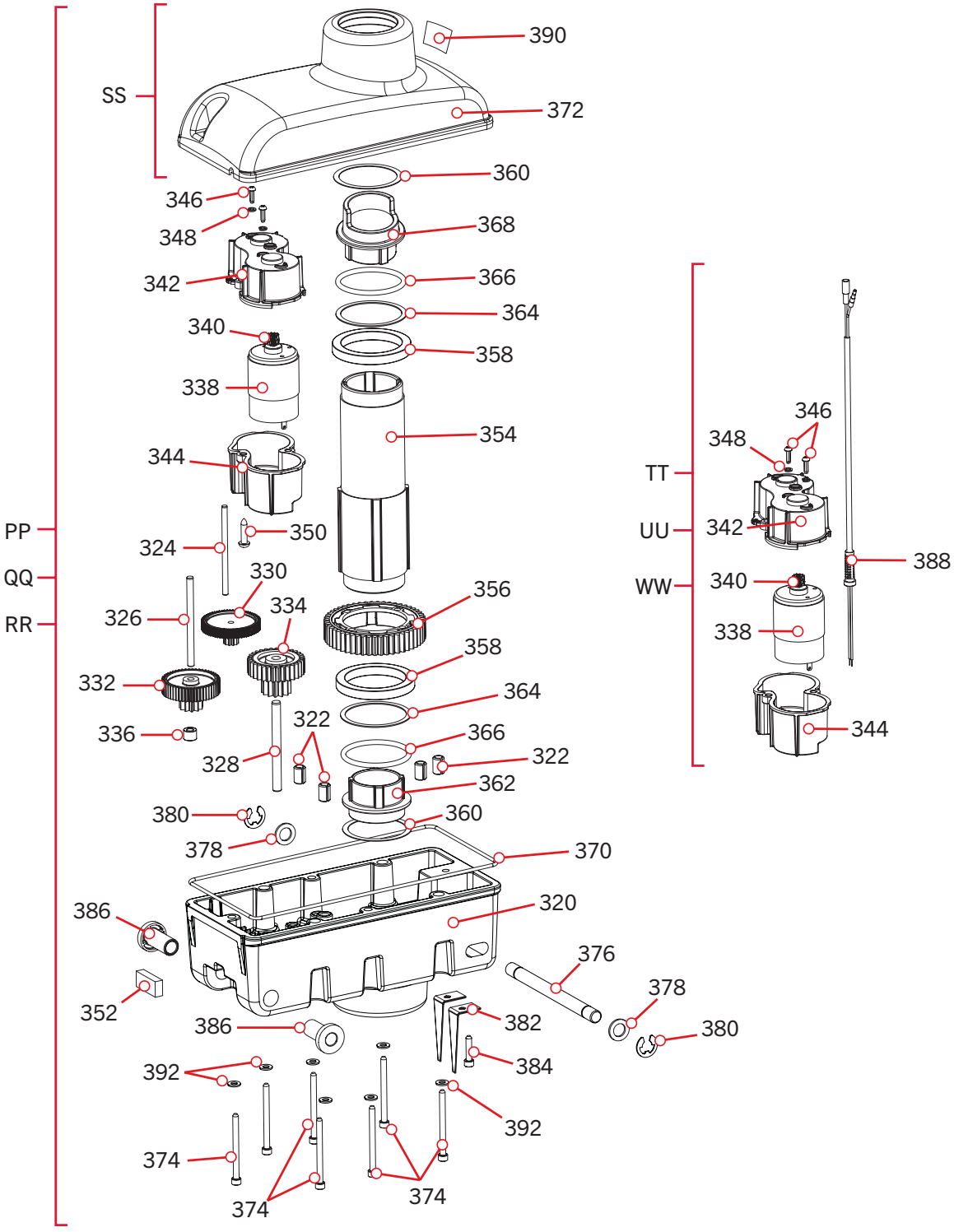
PARTS DIAGRAM & PARTS LIST

Item	Part #	Description	Notes	Quantity
246	2260731	TERMINAL 1/4" MALE TAB-THREE		2
248	2307312	BEAD-FERRITE		1
250	2-100-245	ARMATURE ASY 4.5"LWR UNIT		1
252	140-014	BEARING-BALL 6000		1
254	✖	CTR HSG ASY 4.5" MAG FW CB		1
256	2-300-175	BRUSH END HSG 4.5" FW		1
258	421-246	PLN END 4.5"US2.5/DSC PNT	*DUAL SPECTRUM CHIRP*	1
260	701-009	O-RING	*THRU-BOLT*	2
262	701-098	O-RING, 98MM X 2MM		2
266	2053410	SCREW-#8-32 X 1/2 TRI-LOBE HEX		2
268	830-094	THRU BOLT 12-24 X10.31		2
270	990-051	WASHER - STEEL THRUST		1
272	990-052	WASHER - NYLATRON		1
274	640-316	LEADWIRE BROWN 18 AWG 71" GPT	*60"*	1
	640-317	LEADWIRE BROWN 18 AWG 86" GPT	*72"*	1
276	582-016	CLIP-RETAINING, SONAR		1
278	992-011	WASHER - BELLEVILLE		2
280	2302104	SCREW-#6-20 X 3/8 THD CUTS	*DUAL SPECTRUM CHIRP* *BUILT-IN MEGA DOWN IMAGING*	1
282	230-038	CABLE CLAMP	*DUAL SPECTRUM CHIRP*	1
284	230-040	CABLE CLAMP, 1/4" STEEL	*BUILT-IN MEGA DOWN IMAGING*	1
286	990-011	WASHER-SHIM OD 1",ID.630"SS		1
288	788-040	RETAINING RING		1
290	880-025	SEAL		2
▲	✖	RIVET - .25"		6
292	725-095	PAPER TUBE - SEAL BORE		1
294	144-017	BEARING, FLANGE		1
▲	✖	DSC XDUCER ASSY 79" HW T	*DUAL SPECTRUM CHIRP* *60"*	1
	✖	DSC XDUCER ASSY 91" HW T	*DUAL SPECTRUM CHIRP* *72"*	1
▲	✖	BUILT- IN MDI 80", SW	*BUILT-IN MEGA DOWN IMAGING* *60"*	1
	✖	BUILT- IN MDI 92", SW	*BUILT-IN MEGA DOWN IMAGING* *72"*	1
▲	✖	SCREW-#6-32 X 1/2" TORX PH SS		3

▲ *Not shown on Parts Diagram.*
✖ *This part is included in an assembly and cannot be ordered individually.*

TERROVA STEERING HOUSING

Steering Housing Parts Diagram



Steering Housing Parts List

Assembly	Part #	Description	Notes	Quantity
PP	2997053	STR HSG ASM w/BSHG 12V FW	*55LB*	1
QQ	2997054	STR HSG ASM w/BSHG 24V FW	*80LB*	1
RR	2997055	STR HSG ASM w/BSHG 36V FW	*112LB*	1
SS	2776561	STEERING HSG TOP FW/GEAR KIT		1
TT	2777060	STEERING MOTOR KIT, 12V T2	*55LB*	1
UU	2777061	STEERING MOTOR KIT, 24V T2	*80LB*	1
WW	2777062	STEERING MOTOR KIT, 36V FW T2	*112LB*	1
Item	**Part #**	**Description**	**Notes**	**Quantity**
320	2326566	HOUSING-STEERING, BTM, FW		1
322	2302605	PIN-ROLL 5/16" X 1/2"		4
324	✖	SHAFT-GEAR, FIRST CLUSTER		1
326	✖	SHAFT-GEAR,INTERMED.CLUSTER		1
328	✖	SHAFT-GEAR, THIRD CLUSTER		1
330	2322210	GEAR & PINION, DR.HSG, STAGE 2		1
332	2302250	GEAR & PINION,DR. HSG, STAGE 3		1
334	2302255	GEAR & PINION,DR. HSG, STAGE 4		1
336	2321730	SPACER,GEAR CLUSTER		1
338	2327060	MOTOR, STEERING 12V T2	*55LB*	1
	2327061	MOTOR, STEERING 24V T2	*80LB*	1
	2327062	MOTOR,STEERING 36V FW T2	*112LB*	1
340	2322215	GEAR-PINION, DR.HSG, STAGE 1		1
342	2322520	CASE-MOTOR, STEERING HSG, TOP		1
344	2322525	CASE-MOTOR,STEERING HSG,BTM,T2		1
346	2053422	SCREW-M3-.5 X 10 PPH, ZPS		2
348	2051710	LOCKWASHER-SPLIT, 3MM, ZP		2
350	2043412	SCREW-#8-18 X 3/4 TY AB SS PPH		1
352	2308601	BREATHER FILTER, DR.HOUSING		1
354	2322030	TUBE-OUTPUT, MACHINED		1
356	2322200	GEAR-OUTPUT		1
358	2327308	BEARING-BALL,SEALED		2
360	2321704	WASHER-THRUST, STEERING		2
362	2321510	COLLAR-DRIVE,BOTTOM		1
364	2321720	SHIM,O-RING		2
366	2324608	O-RING,224,PD PRO STR HSG		2
368	2321515	LINER OUTPUT TUBE		1
370	2324604	O-RING, CASE SEAL		1

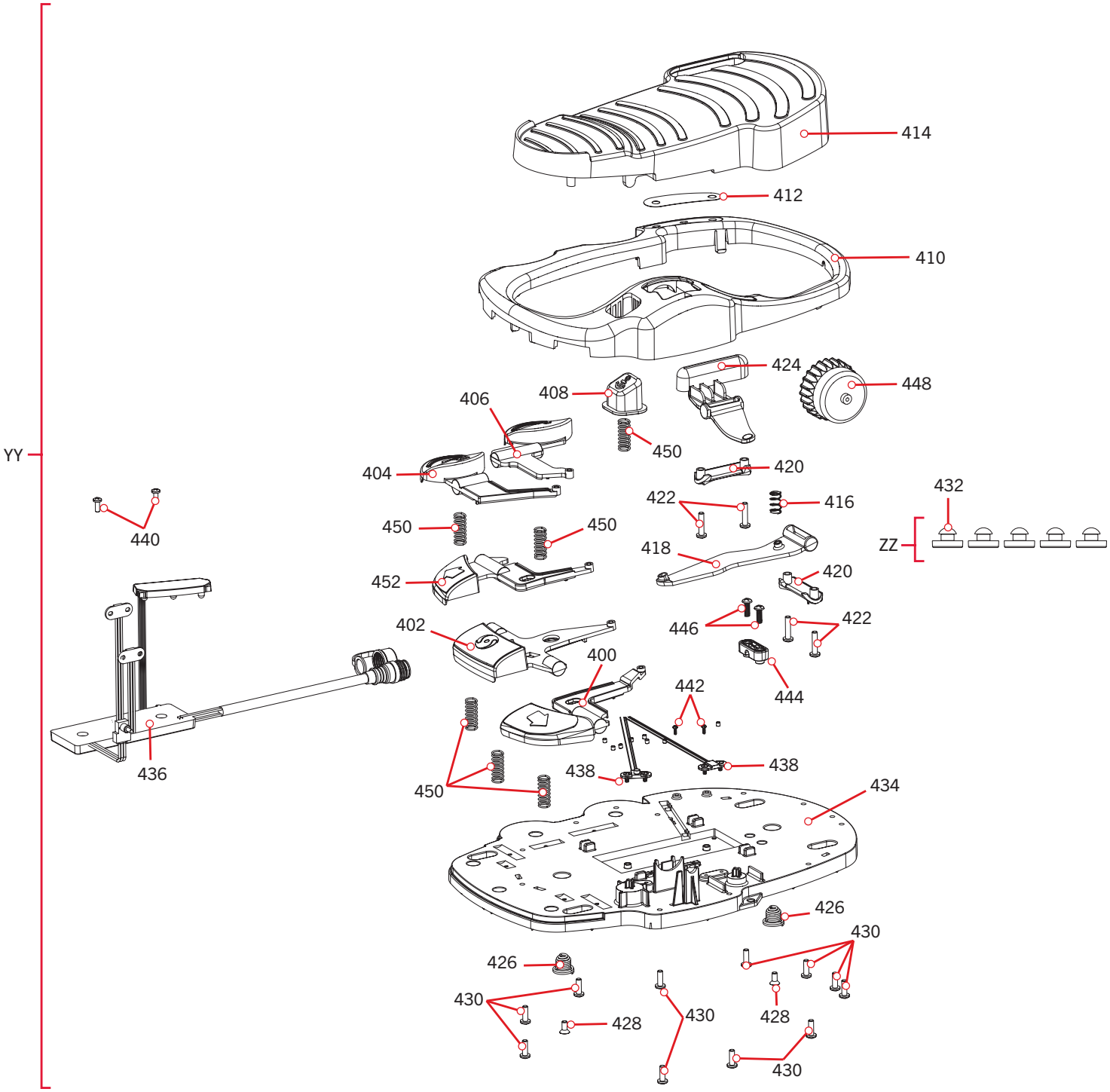
▲ *Not shown on Parts Diagram.*
✖ *This part is included in an assembly and cannot be ordered individually.*

Item	Part #	Description	Notes	Quantity
372	✖	HOUSING-STEERING, TOP, FW		1
374	2323408	SCREW-#8-32 X 2.0 SHCS SS		7
376	2322600	PIN-LATCH, ZP		1
378	2321702	WASHER-FLAT .375 NYLON		2
380	2263011	E-RING 3/8 DIA. SHAFT*		2
382	2322702	SPRING, LATCH PIN SS		2
384	2323410	SCREW-#8-32 X .75 SHCS SS		1
386	2327310	BUSHING,STEERING HSG PIVOT,FW		2
388	✖	LEADWIRE, STEERING MOTOR		1
390	2325503	DECAL,STOW/DEPLOY,TRV3 PM		1
392	3394602	WASHER-FLAT #8 SS		7

▲ *Not shown on Parts Diagram.*
✖ *This part is included in an assembly and cannot be ordered individually.*

TERROVA FOOT PEDAL

Foot Pedal Parts Diagram



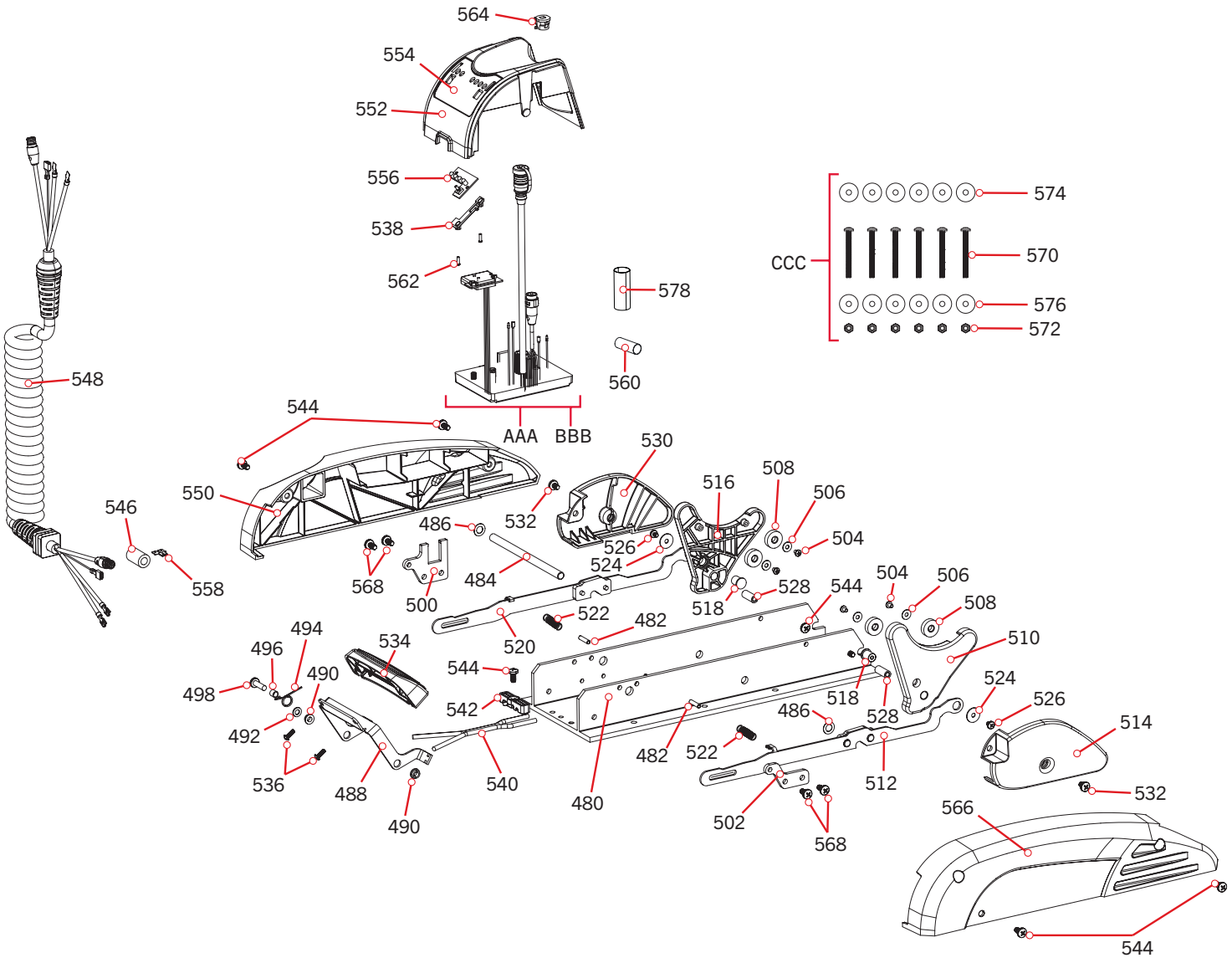
Foot Pedal Parts List

Assembly	Part #	Desctiption	Notes	Quantity
YY	2994733	FT PEDAL ASM TRV 3 PM		1
ZZ	2994859	BAG ASY-TERROVA/V2,RUB.BUMPERS		1
Item	**Part #**	**Desctiption**	**Notes**	**Quantity**
400	2323731	BUTTON, RIGHT STEER, TERROVA		1
402	2323735	BUTTON, MOMENTARY, TERROVA		1
404	2323715	BUTTON,MOM/CON,FT PEDAL		1
406	2323726	BUTTON, AP FOOT PEDAL		1
408	2203720	BUTTON, SPOT LOCK,ULTERRA/TRRV		1
410	2320240	COVER,FT PEDAL,TRV3 BL		1
412	2325655	DECAL, 3 INDICATORS, TERROVA		1
414	2324401	PEDAL,HEEL/TOE FOOT PEDAL		1
416	2322714	SPRING (LEE #LC-029E-4-S) SS		1
418	2328600	FLEX FINGER, FOOT PEDAL		1
420	2321300	CLAMP-LEFT, FT PEDAL		2
422	2223430	SCREW-#8x3/4 PPH,TYPE 25,SS		4
424	2323710	BUTTON,MOM LEFT,FT PEDAL		1
426	2322706	SPRING-BARREL SS		2
428	2323420	SCREW-#8-18 X 3/8" PFH SS TY B		2
430	2301310	SCREW-#8-18 X 1/2 (SS)*		11
432	2325110	PAD, FOOT PEDAL		5
434	2204501	BASE PLATE, FOOT PEDAL		1
436	✖	MAIN ASSY, FOOT PEDAL, TERROVA		1
438	2373440	SCREW-#4-24 X 1/4 PHCR SS TY B		4
440	2372103	SCREW-#6 X .375 PLASTITE SS		2
442	2302100	SCREW-#6-20 X 1/2 THD CUTS		2
444	2322900	STRAIN RELIEF, FOOT PEDAL		1
446	2372100	SCREW-#8-18 X 5/8 THD* (SS		2
448	2320100	KNOB-SPEED, FOOT PEDAL		1
450	2322704	SPRING, LARGE SHORT SS		6
452	2323730	BUTTON, LEFT STEER, TERROVA		1

▲ *Not shown on Parts Diagram.*
✖ *This part is included in an assembly and cannot be ordered individually.*

TERROVA MOUNT

Mount Parts Diagram



Mount Parts List

Assembly	Part #	Desctiption	Notes	Quantity
AAA	2324062	CONTROL BRD ASY, MAIN, 12V, IP	*55LB*	1
BBB	2324063	CTRL BRD,MAIN,24/36V,IP	*80LB* *112LB*	1
CCC	2994864	BAG ASSY-TERROVA/V2,MNTG HDW		1
Item	**Part #**	**Desctiption**	**Notes**	**Quantity**
480	2321907	BASE, EXTRUSION, MACHINED		1
482	2322912	PIN-ROLL .1875 X 1.000 SS		2
484	2322602	PIN-PIVOT, ZP		1
486	2013100	NUT-SPEED		2
488	2320405	HANDLE, RELEASE, FW		1
490	2322604	BUSHING,HANDLE		2
492	2071716	WASHER-FLAT SS .253 x .470		1
494	2322701	SPRING, TORSION		1
496	2301700	SPACER-RELEASE LEVER-BRASS		1
498	2073408	SCREW-1/4-20 X 7/8 PPH S/S		1
500	2321940	BRACKET, STRAIN RELIEF FW		1
502	2321950	BRACKET, SIDEPLATE FW		1
504	2323412	SCREW-#8-18 X .25 PPH SS TY B		4
506	2321706	WASHER-FLAT #8 .50 OD/.188 SS		4
508	2325115	PAD, RUBBER REST, BLACK		4
510	2323910	RAMP-MOTOR, RIGHT 3-5/8"	*55LB*	1
	2323930	RAMP-MOTOR, RIGHT 4"	*80LB*	1
	2323931	RAMP-MOTOR, RIGHT 4.5"	*112LB*	1
512	2994204	ARM/SUPPORT BLOCK ASSY,R,FW		1
514	2321920	PLATE-SKID, RIGHT FW	*55LB* * 80LB*	1
	2321922	PLATE-SKID, RIGHT FW	*112LB*	1
516	2323915	RAMP-MOTOR, LEFT 3 5/8"	*55LB*	1
	2323935	RAMP-MOTOR, LEFT 4"	*80LB*	1
	2323936	RAMP-MOTOR, LEFT 4.5"	*112LB*	1
518	2324705	INSERT-MOTOR RAMP,METAL,ZP		2
520	2994202	ARM/SUPPORT BLOCK ASSY,L,FW		1
522	2322716	SPRING, EXTENSION, T2		2
524	2321700	WASHER #10 SS		2
526	2323422	SCREW-#10-24 X .25" PPH SS MCH		2
528	2322920	STAND-OFF, ALUMINUM PLAIN		2

▲ *Not shown on Parts Diagram.*
✖ *This part is included in an assembly and cannot be ordered individually.*

PARTS DIAGRAM & PARTS LIST

Item	Part #	Desctiption	Notes	Quantity
530	2321925	PLATE-SKID, LEFT FW	*55LB* * 80LB*	1
	2321927	PLATE-SKID, LEFT	*112LB*	1
532	2323403	SCREW-1/4-20 X.375 MCH SS CRPH		2
534	2320217	COVER, HANDLE COSMETIC FW		1
536	2383446	SCREW-#8-16 X .50" PLASTITE SS		2
538	2320830	LOCKING TAB,PWR/BAT.METER		1
▲	2323406	SCREW-#10-24 X .50 CRPH SS		2
540	2090651	LEADWIRE,10 GA		1
542	2321310	STRAIN RELIEF		1
544	2323405	SCREW-1/4-20 X 1/2" MCH SS		7
546	2307313	BEAD-FERRITE	*80LB* *112LB*	1
548	2991272	COIL CORD ASY 54"/60" U.SONAR	*54"* *60"*	1
	2991276	COIL CORD ASSY 72" U.SONAR	*72"*	1
	2991274	COIL CORD ASSY 45"/48" U.SONAR	*45"*	1
	2991271	COIL CORD ASY 54"/60" NON-US2	*54"* *NON-SONAR*	1
550	2323927	SIDEPLATE-LEFT, TERROVA		1
552	2326530	HOUSING-CENTER, TERROVA		1
554	2325636	DECAL-PWR SWTCH,T3PM,FW		1
556	2074070	BATTERY METER, 12V, FW	*55LB*	1
	2074071	BATTERY METER, 24V, FW	*80LB*	1
	2074072	BATTERY METER, 36V, FW	*112LB*	1
558	2320710	TERMINAL-AMP (T-TAB)		1
560	2325401	SHRINK TUBE-3/4 ID X 2" W/ADHS		1
562	2383428	SCREW-#4-24 X 3/8 HI-LO SS		2
564	2322901	STRAIN RELIEF, HEYCO P/N 1852		1
566	2323922	SIDEPLATE-RIGHT, TERROVA		1
568	2323404	SCREW-1/4-20 X 1/2" T-L ZP		4
570	2263462	SCREW-1/4-20 X 2" S/S PPH ADJT		6
572	2263103	NUT-1/4-20 NYLOCK SS		6
574	2301720	WASHER-MOUNTING - RUBBER		6
576	2261713	WASHER-1/4 FLAT 18-8 SS		6
578	2205412	SHRINK TUBE-.75 ID X 2”		1
▲	2377179	INSTR.SHEET, MKA-60 STABILIZER	*72"*	1

▲ *Not shown on Parts Diagram.*
✖ *This part is included in an assembly and cannot be ordered individually.*

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