MINN KOTA®



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.

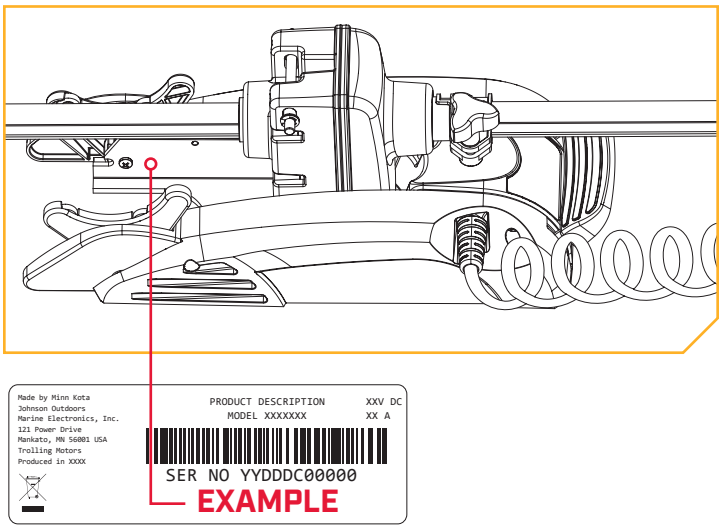
REGISTRATION

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

SERIAL NUMBER

Your Minn Kota 11-character serial number is very important. It helps to determine the specific model and year of manufacture. When contacting Consumer Service or registering your product, you will need to know your product's serial number.

NOTICE: The serial number on your 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 sending or taking your motor to any Minn Kota authorized service center. A list of authorized service centers is available on our website at minnkota.johnsonoutdoors.com. Please include proof of purchase, serial number and purchase date for warranty service.

Made for iPhone® 11 and iPhone X

For updated iOS, Humminbird® and Minn Kota® compatibility, visit minnkota.johnsonoutdoors.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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TABLE OF CONTENTS

SAFETY CONSIDERATIONS 4
WARRANTY 5
KNOW YOUR BOAT 6
FEATURES 7
INSTALLATION 8
- Installing the Terrova 9
- Installing the Foot Pedal 13
- Sonar and Ethernet Connection 15
  - Pair the Trolling Motor to a Fish Finder 16
  - Installing a Wired Ethernet Connection 18
  - Installing the Sonar Connection 22
- Installing the Prop 24

BATTERY & WIRING INSTALLATION 26
- Boat Rigging & Product Installation 26
- Conductor Gauge and Circuit Breaker Sizing Table 26
- Selecting the Correct Batteries 27
- Additional Considerations 27
- Connecting the Batteries 28
- Connecting the Batteries in Series 29

MINN KOTA SYSTEM 31
- Optimizing the Performance of the Terrova with the Wireless Remote or Minn Kota Fishing App 31
- Installing the Heading Sensor 32

MOTOR WIRING DIAGRAM 33
USING & ADJUSTING THE MOTOR 35
- Mount Features 35
- Stowing and Deploying the Motor 36
- Push-to-Test Battery Meter 36
- Advanced GPS Navigation 37
- Dual Spectrum CHIRP 37
- Down Imaging Sonar 38
- Motor Adjustments 39
  - Adjusting the Depth of the Motor 39
  - Adjusting the Lower Unit for a Secure Stow 40
  - Installing an External Transducer 41

USING THE FOOT PEDAL 42
- Controlling Speed & Steering with the Foot Pedal 42

AUTOPILOT 45
SPOT-LOCK 47
SERVICE & MAINTENANCE 49
- Prop Replacement 49
- General Maintenance 50
- Troubleshooting 50
- For Further Troubleshooting and Repair 51

COMPLIANCE STATEMENTS 52
PARTS DIAGRAM & PARTS LIST 54

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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.

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

Service Provider Locator

Contact Technical Support

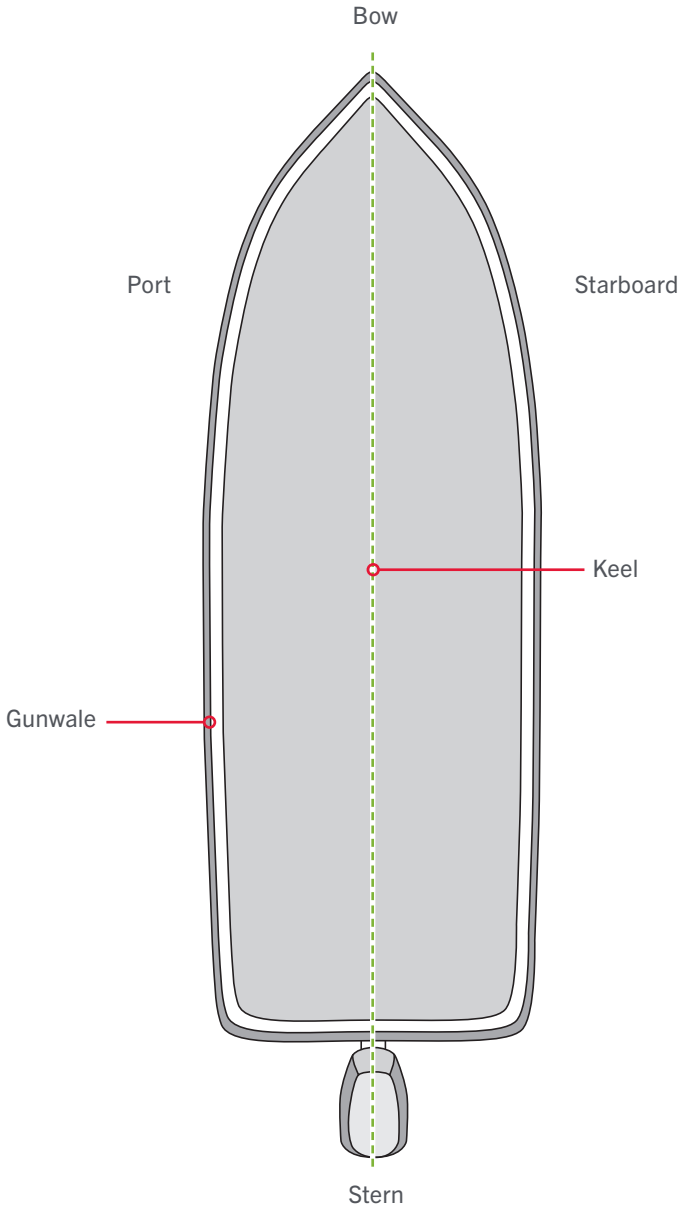
NOTICE: Do not return your Minn Kota product to your retailer. Your retailer is not authorized to repair or replace products.

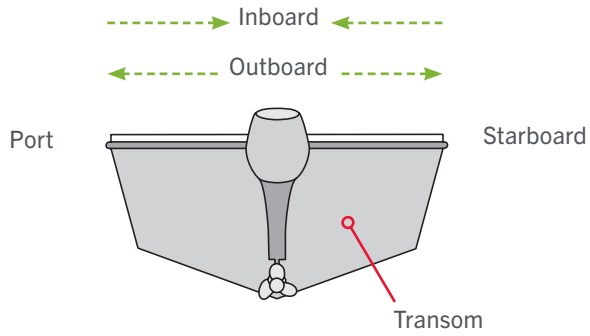
NOTICE: THERE ARE NO EXPRESS WARRANTIES OTHER THAN THESE LIMITED WARRANTIES. IN NO EVENT SHALL ANY IMPLIED WARRANTIES INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, EXTEND BEYOND THE DURATION OF THE RELEVANT EXPRESS LIMITED WARRANTY. IN NO EVENT SHALL JOME BE LIABLE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

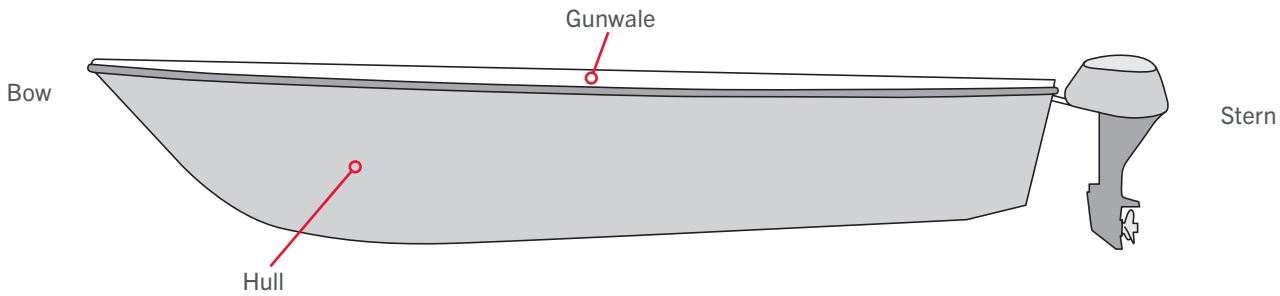
Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and/or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other legal rights which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

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KNOW YOUR BOAT

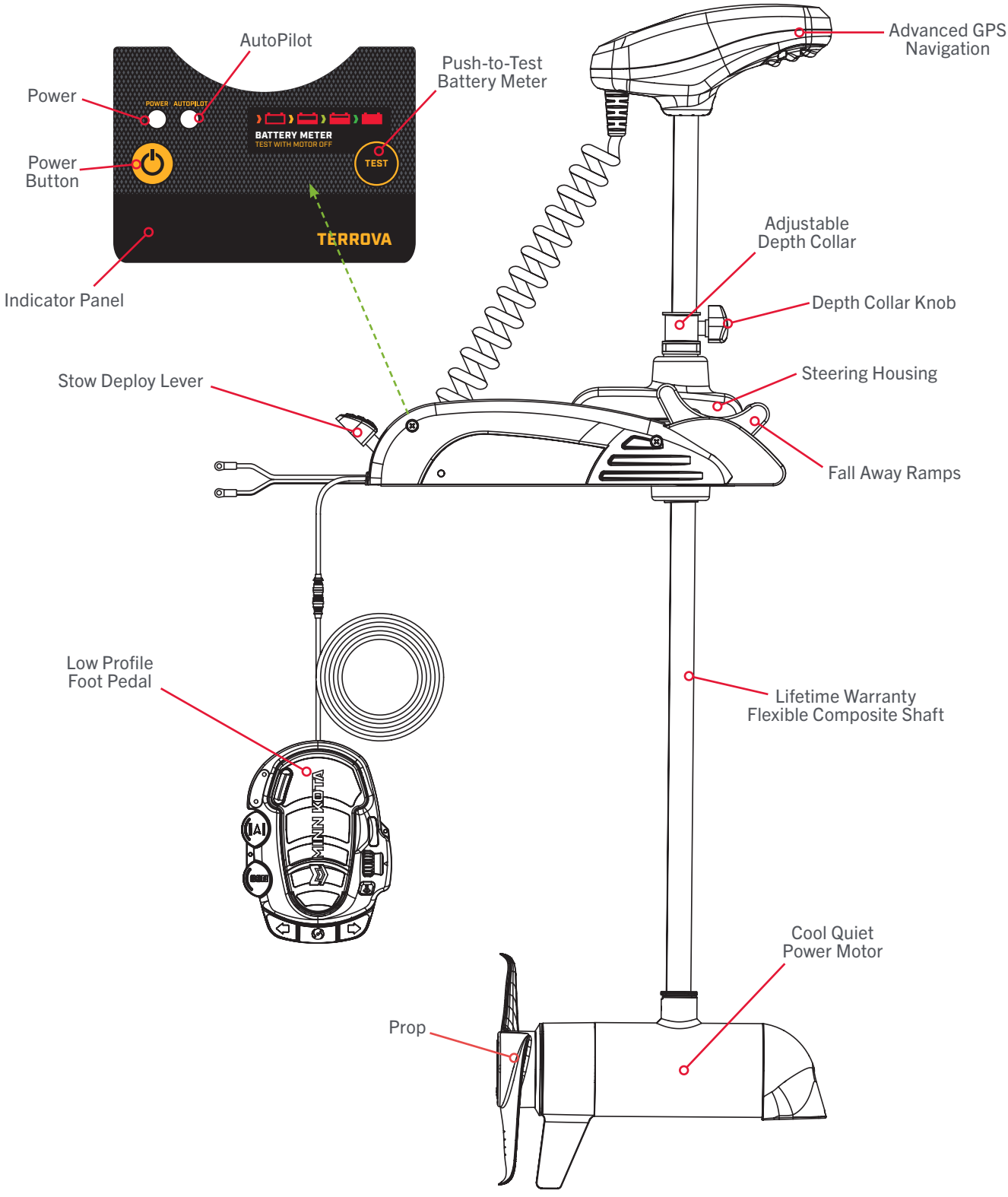






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FEATURES



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

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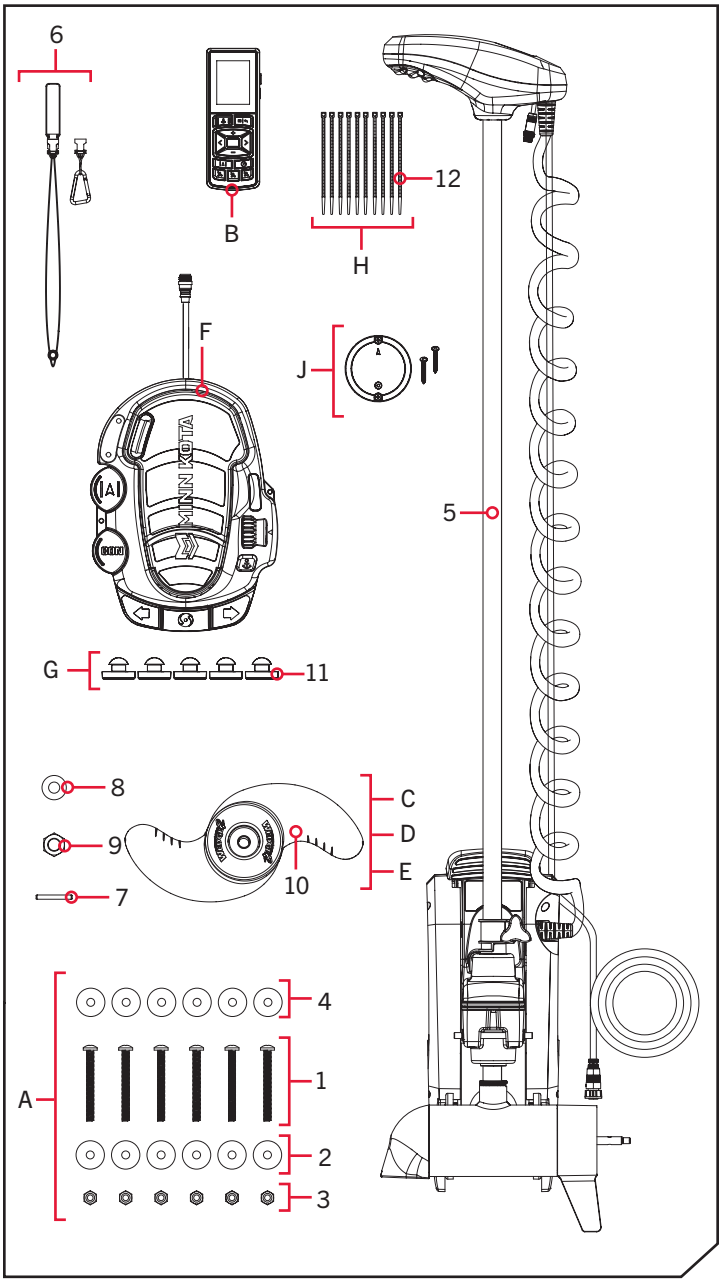
INSTALLATION

INSTALLING THE TERROVA

The Terrova comes with everything you'll need to directly install it to the boat. Mount the motor directly to the bow or pair it with a Minn Kota quick release bracket for easy mounting and removal. For compatible quick release brackets and to locate the nearest dealer, visit minnkota.johnsonoutdoors.com. To install the motor directly to the boat, follow the instructions provided in this document. Please review the parts list, mounting considerations and tools needed for installation before getting started. For additional product support, visit minnkota.johnsonoutdoors.com.

INSTALLATION PARTS LIST ❯

Item / Assembly	Part #	Description	Qty.
A (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
B	411690-1	TROLLING MOTOR REMOTE	1
C (Includes 7-10)	1378131	PROP IND 2091160 WDLS WDG II *55LB*	1
D (Includes 7-10)	1378132	PROP IND 2331160 WDLS WDG II *80LB*	1
E (Includes 7-10)	1378160	PROP KIT 2341160 112# WW2 *112LB*	1
7	2262658	PIN-DRIVE 1" X 3/16" S/S *55LB*	1
	2092600	PIN-DRIVE 1.06" LG (SS) *80LB* *112LB*	1
8	2151726	WASHER-5/16 STD (S/S) *55LB*	1
	2091701	WASHER-PROP (LARGE) *80LB* *112LB*	1
9	2053101	NUT-PROP,NYLOC (MED) 5/16 SS *55LB*	1
	2093101	NUT-PROP,NYLOC,LG, 3/8 SS *80LB* *112LB*	1
10	2091161	PROP-WW2 3 5/8" MACHINED *55LB*	1
	2331161	PROP-WW2 4" WELDED *80LB*	1
	2341161	PROP-WW2 4.5" WELDED *112LB*	1
F	2994733 ⭘	FT PEDAL ASM TRV 3 PM *DUAL SPECTRUM CHIRP* *DOWN IMAGING SONAR*	1
G (Includes 11)	2994859 ⭘	BAG, ASY-TERROVA/V2, RUB BUMPERS	1
11	2325110 ⭘	PAD, FOOT PEDAL	5
H (Includes 12)	2996300	BAG ASM, TIE WRAPS, LOW PRO 4"	1
12	2206300	TIE,WRAP, LOW PROFILE 4"	10
J	2996405	HEADING SENSOR ASSEMBLY	1
▲	2327163	INSTALL GUIDE, TERROVA	1
▲	2327164	CHECKLIST, TERROVA	1
▲	2397117	QRG, iP 4.0	1
▲	2394905	INSTRUCTIONS, HEADING SENSOR	1



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

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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 minnkota.johnsonoutdoors.com.

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

TOOLS AND RESOURCES REQUIRED

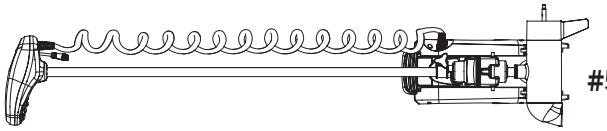
- #3 Phillips Screwdriver
- Drill
- 9/32” Drill Bit
- 7/16” Box/Open End Wrench
- 9/16” Box/Open End Wrench
- Pliers or Vice Grip
- A second person to help with the installation
- Flat-blade Screwdriver
- Awl or similar Marking Tool

INSTALLATION

INSTALLING THE TERROVA

1

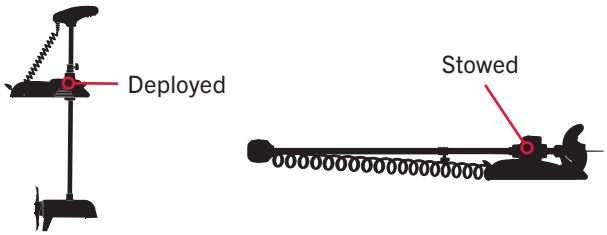
ITEM(S) NEEDED



#5 x 1

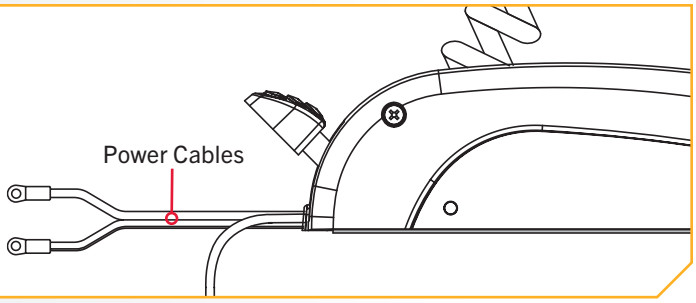
a. Place the trolling motor (Item #5) on an elevated, level surface, such as a workbench or the tailgate of a pickup. The motor, as removed from the box, should be in the stowed position.

b. Make sure the Power Cables are not connected to a power source or that the battery breaker, if equipped, is “off.”



⚠ WARNING

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



NOTICE: The trolling motor weighs approximately 65lb. Minn Kota recommends having a second person help with the installation.

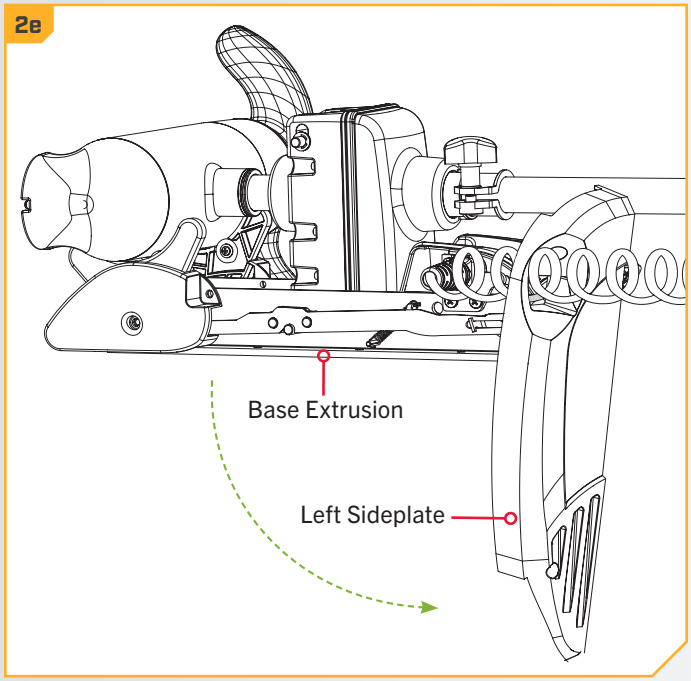
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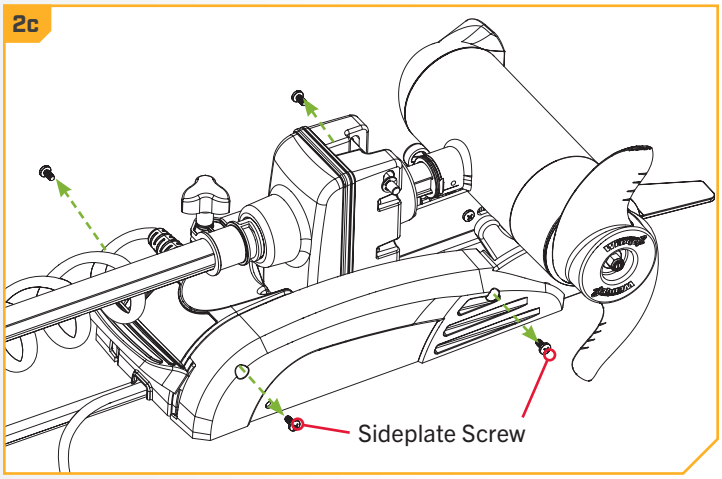
2

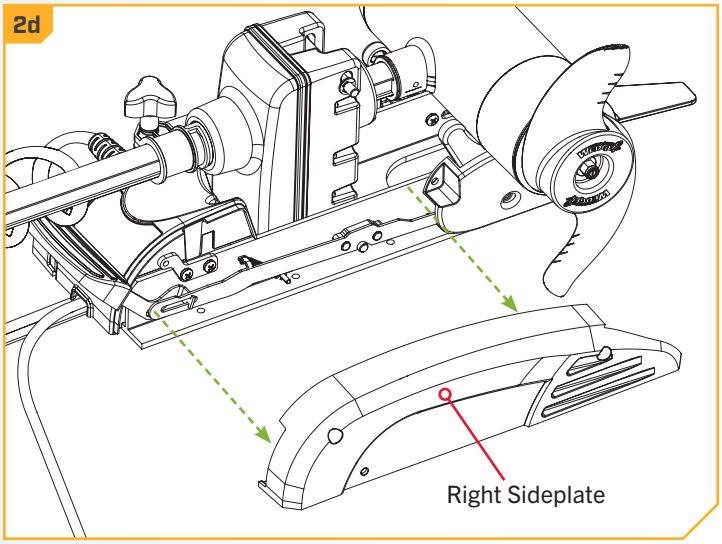
c. Remove the four sideplate screws using a #3 Phillips Screwdriver. Two of these screws will be located on each side of the mount.

d. Remove the Right Sideplate.

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

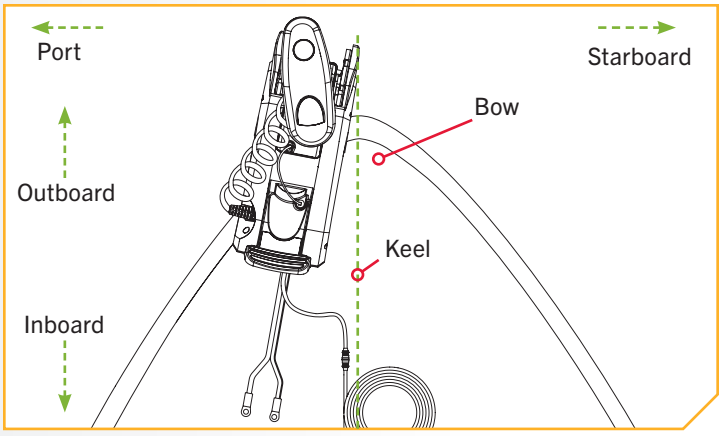






3

f. Review the mounting considerations at the beginning of the installation. Place the motor on the bow of the boat at the intended mounting location, as close to the centerline or keel 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.



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4

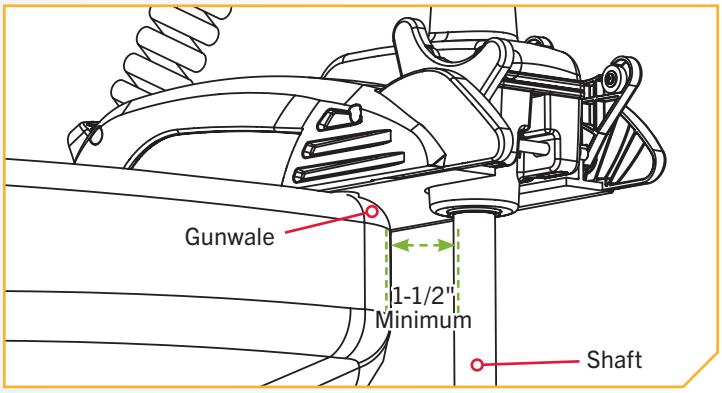
ITEM(S) NEEDED

◎ **#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.

NOTICE: The mounting surface for the Terrova must be flat. Rubber Washers may be used to shim the Base Extrusion flat before hardware is tightened.

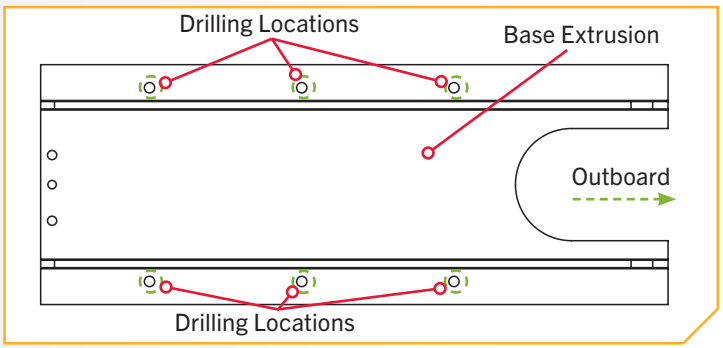


5

i. With the motor at the intended mounting location, take an Awl or similar tool and mark all six mounting holes in the Base Extrusion.

j. Make sure the area under the mounting location is clear to drill holes and install nuts and washers. Slide the motor aside to drill the mounting holes.

k. Drill through the boat deck using a Drill and a 9/32" Drill Bit on all six marked locations.



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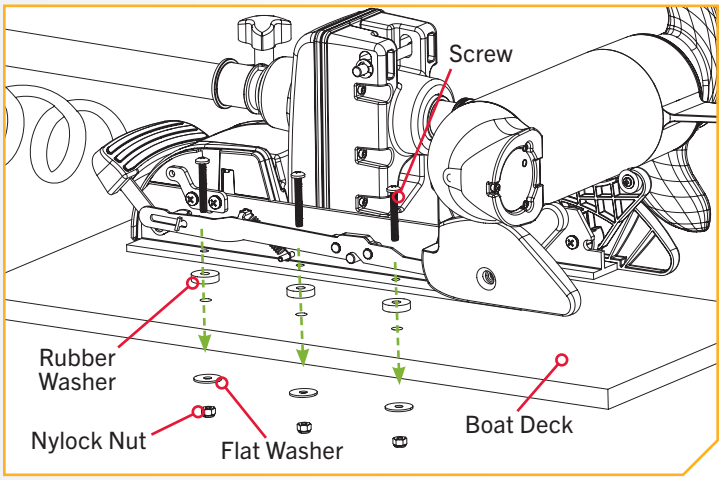
6

ITEM(S) NEEDED



l. 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.

m. 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.

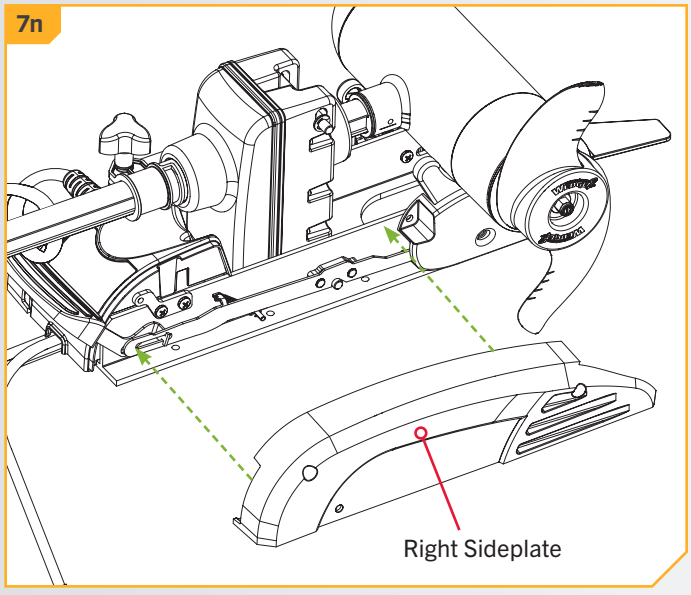


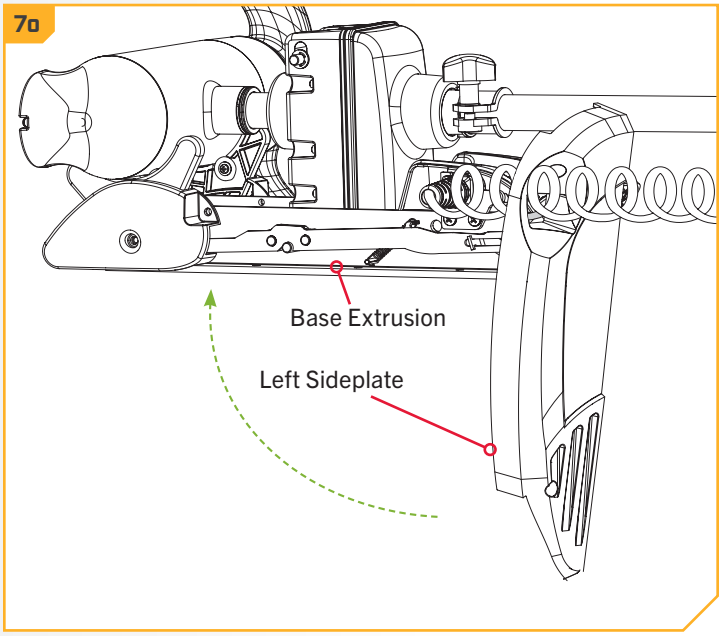
NOTICE: To prevent seizing of the stainless steel hardware, do not use high speed installation tools. Wetting the screws or applying an anti-seize may help prevent seizing.

7

n. Replace the Right Sideplate.

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

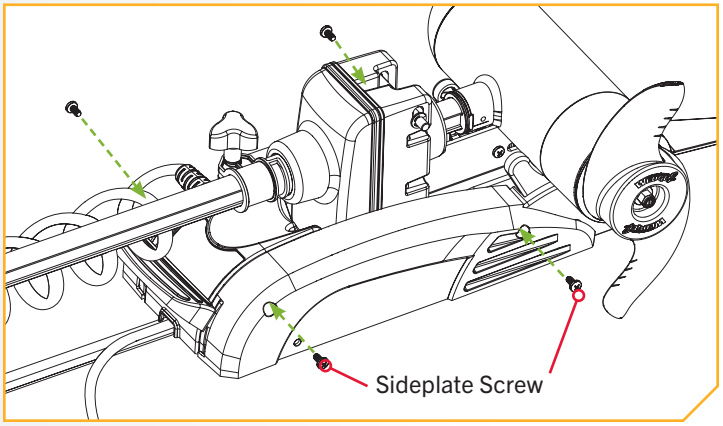




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8

p. 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

NOTICE: Not all Terrova trolling motors come with a Foot Pedal.

1

ITEM(S) NEEDED

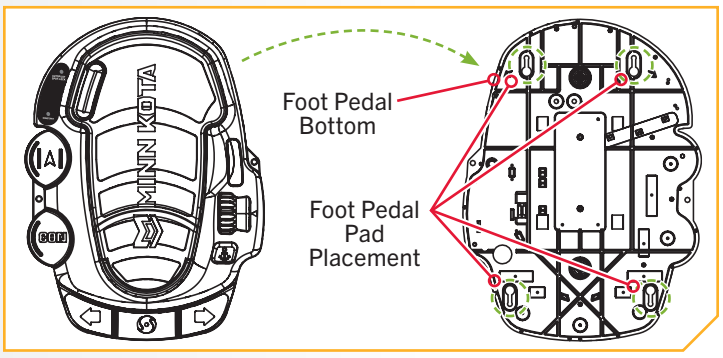
#11 x 4



#F x 1

a. Take the Foot Pedal (Item #F) and turn it over. Put a Foot Pedal Pad (Item #11) in each of the pad locations.

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



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INSTALLING THE FOOT PEDAL

2

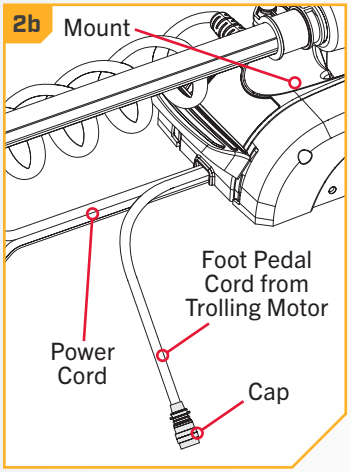
b. Locate the Foot Pedal Cord that exits the Mount of the trolling motor, next to the Power Cord. Unscrew the Cap on the Plug.

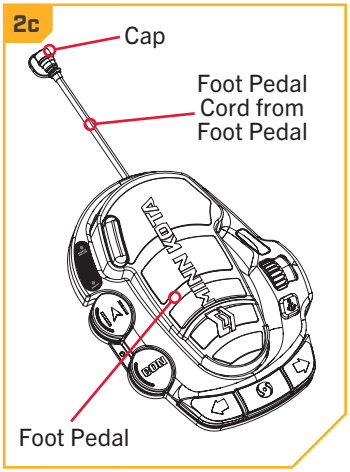
c. Locate the 4-pin Plug from the Foot Pedal and unscrew the Cap.

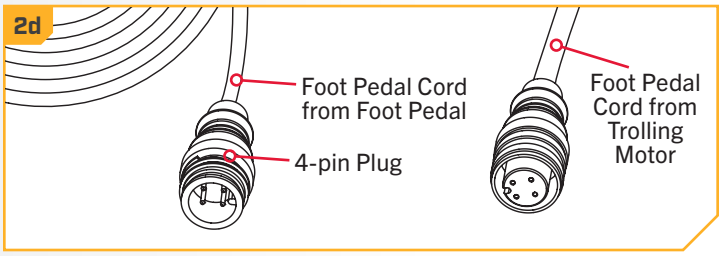
d. Align the 4-pin Plug from the Foot Pedal with the Plug on the trolling motor. Firmly push the Plugs together. Secure the connection by rotating the collar on the Foot Pedal Power Cord in a clockwise direction.

NOTICE: The connectors are keyed to prevent reversed installation.

NOTICE: When the Foot Pedal Cord is not in use, ensure that the Cap is on and firmly secured.







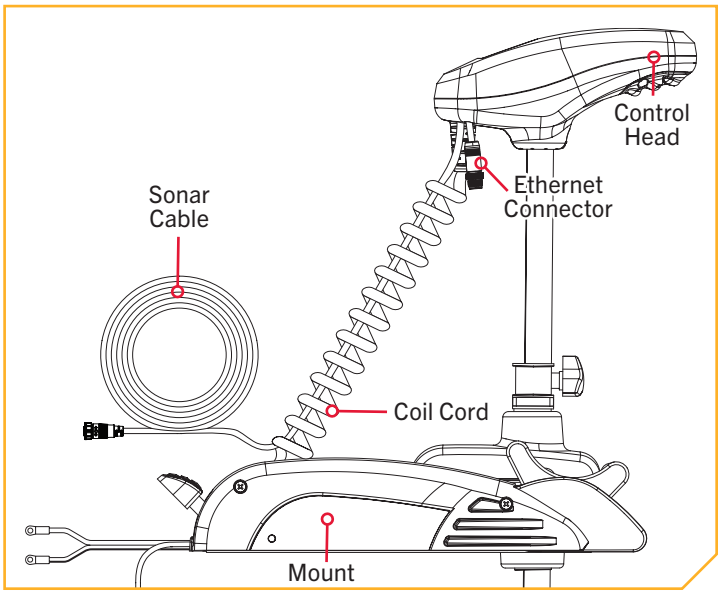
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SONAR AND ETHERNET CONNECTION

The trolling motor may have sonar, either Dual Spectrum CHIRP or Down Imaging. A Sonar Cable exits the base of the Control Head and runs down the center of the Coil Cord. A Fourteen-pin Connector on the end of the Sonar Cable attaches to a Minn Kota® fish finder with Humminbird® Imaging. Motors with Dual Spectrum CHIRP or Down Imaging also have a transducer in the Lower Unit. The appearance of the transducer varies based on the sonar type. Connect the Sonar Cable to a fish finder. If a Sonar cable is not present, the trolling motor does not have Sonar. See the Owner's Manual for more details about the sonar features and additional options for fish finder compatibility, adapter cables, and cable routing.

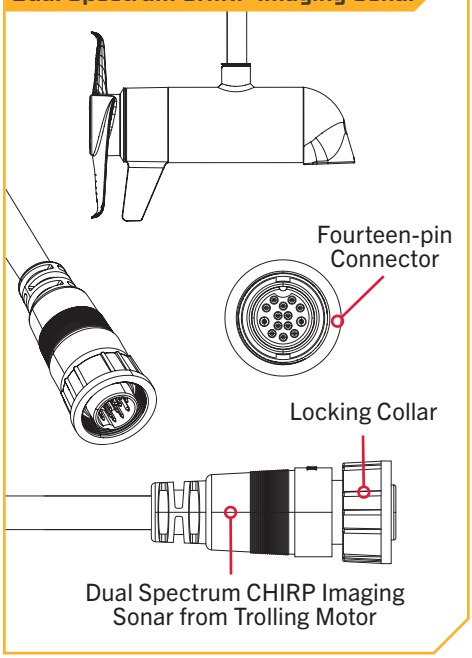
The trolling motor connects to a Minn Kota fish finder via a wireless connection. For more details on establishing a wireless connection, please see the "Pair the Trolling Motor to a Fish Finder" section of this document. If a wired connection is preferred, the Terrova uses the optional AS EC 30E - 30' Ethernet Cable (720073-4). The optional cable is available online at minnkota.johnsonoutdoors.com. View more details on optional Ethernet cables, adapter cables, and fish finder compatibility online at minnkota.johnsonoutdoors.com and in the Owner's Manual.

HUMMINBIRD® IMAGING

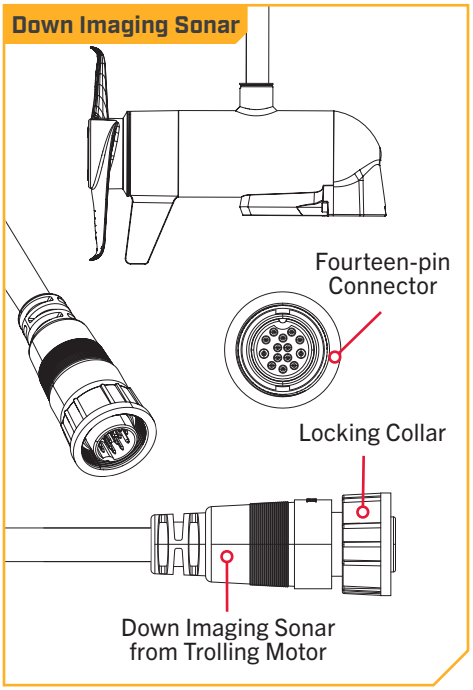


NOTICE: When pairing multiple devices wirelessly with the trolling motor, Minn Kota Fishing App, Raptor or Talon shallow water anchors, multiple Minn Kota Remotes, and Minn Kota or Humminbird fish finders, Minn Kota recommends a wired Ethernet Cable between the trolling motor and fish finder for optimal performance.

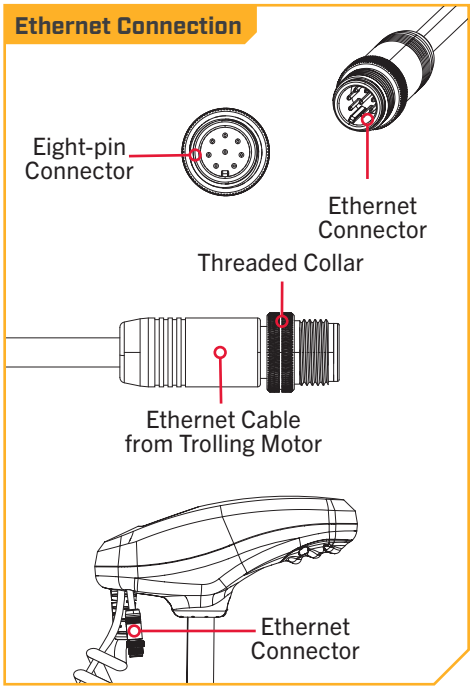
Dual Spectrum CHIRP Imaging Sonar



Down Imaging Sonar



Ethernet Connection

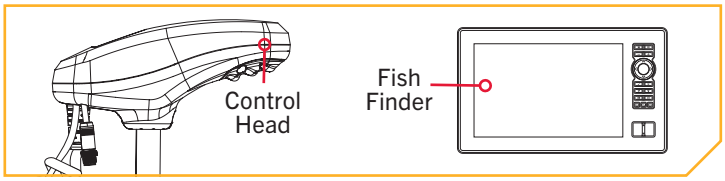


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Pair the Trolling Motor to a Fish Finder

The trolling motor connects to a Minn Kota® fish finder via a wireless connection. Complete the prop installation and the battery and cabling installation, then pair the trolling motor to the fish finder. The trolling motor and fish finder must be powered on to complete the pairing process. The following Minn Kota fish finder models are compatible with a wireless connection to the trolling motor:

- SOLIX® G3
- APEX™
- XPLORE™
- A Series™
- X Series™



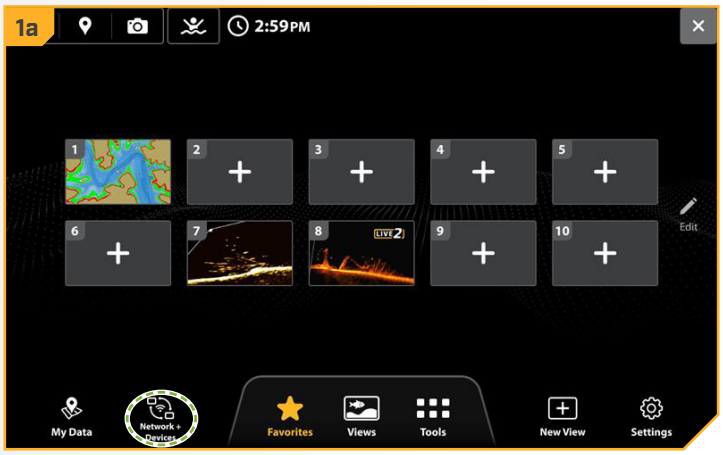
Additional fish finders are compatible with a wired connection using the AS EC 30E - 30' Ethernet Cable (720073-4). The optional cable is available online at minnkota.johnsonoutdoors.com. View more details on optional Ethernet cables, adapter cables, and fish finder compatibility online at minnkota.johnsonoutdoors.com and in the Owner's Manual. Fish finders with a wireless connection do not need an Ethernet cable. To pair the trolling motor with the fish finder, follow the instructions below.

NOTICE: Retain the Tie Wraps (Assembly #H) for use when installing a wired connection between the trolling motor and fish finder. Trolling motors using a wireless connection do not use the Tie Wraps. See the Owner's Manual for more details on using a wired Ethernet cable online at minnkota.johnsonoutdoors.com.

1

a. Power on the fish finder and the trolling motor. From the fish finder home screen, select "Network & Devices".

b. Select "Add Devices" and locate "Trolling Motor". In the Trolling Motor section, select "Connect".

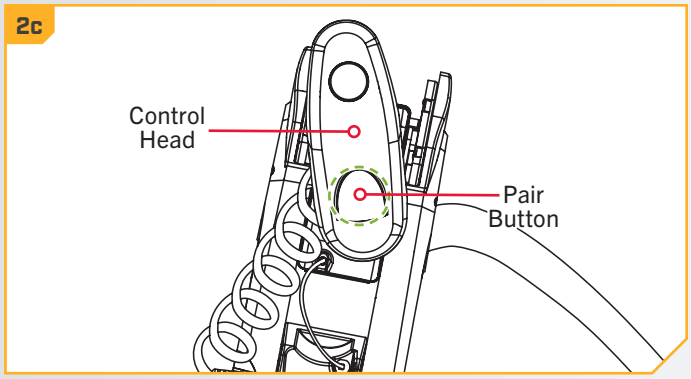




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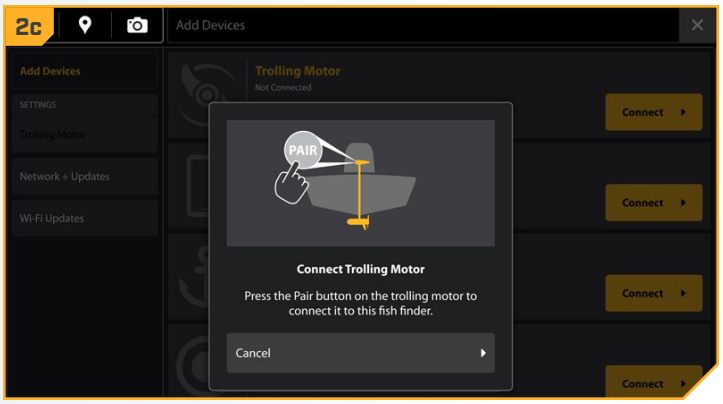
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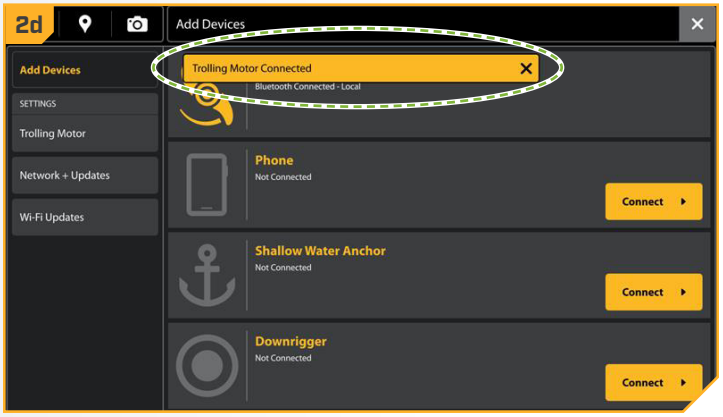
c. Press and hold the Pair button on the trolling motor Control Head.



NOTICE: For more details on the behavior of the Pair button, please see the Owner's Manual.

d. When successfully paired, the trolling motor will emit three beeps, and is paired to the fish finder. The fish finder will display "Trolling Motor Connected."





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Installing a Wired Ethernet Connection

A wired ethernet connection is not needed if the trolling motor is paired to the Minn Kota fish finder. If a wired connection is preferred, the Terrova requires the use of the AS EC 30E - 30' Ethernet Cable (720073-4) available online at minnkota.johnsonoutdoors.com. Follow the directions below to connect the Ethernet Cable to the Eight-pin Ethernet Connector below the Control Head.

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

⚠ CAUTION

Failure to follow the recommended wire routing for installed features, if equipped, may cause damage to the product and void the 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 tie as it may damage the wire.

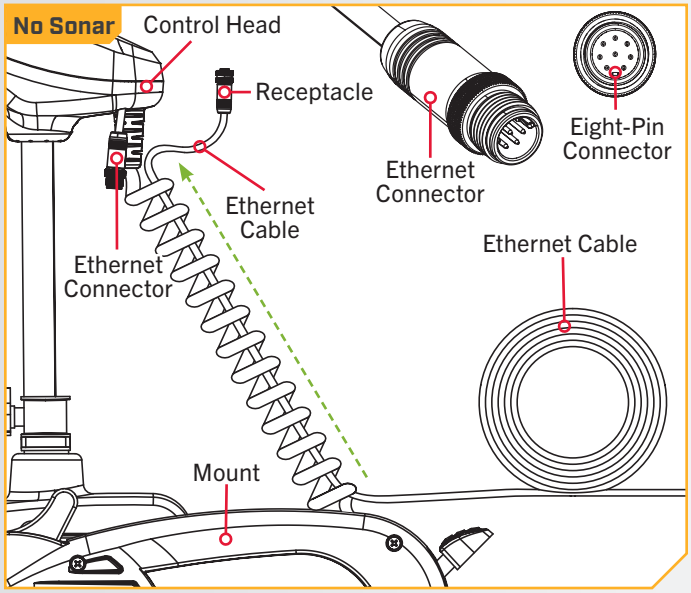
1

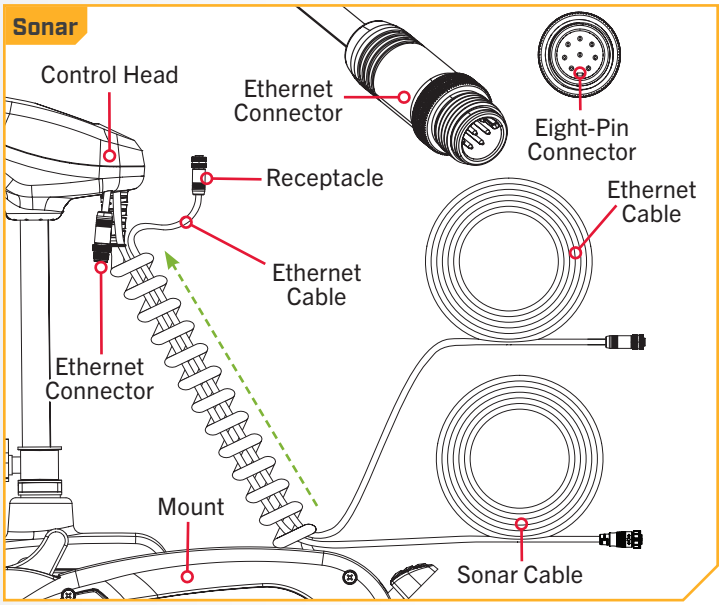
a. Place the motor in the deployed position.

b. Locate the Eight-pin Ethernet Connector below the Control Head. The Ethernet Connector exits the base of the Control Head and will rest just below the Control Head next to the Coil Cord.

c. The Ethernet Cable has a Receptacle on both ends. Starting at the Mount, route the Receptacle from one end of the cable through the center of the Coil Cord to the Ethernet Connector.

NOTICE: Not all Terrova models have sonar. If the motor does not have sonar, no Sonar Cable is present.





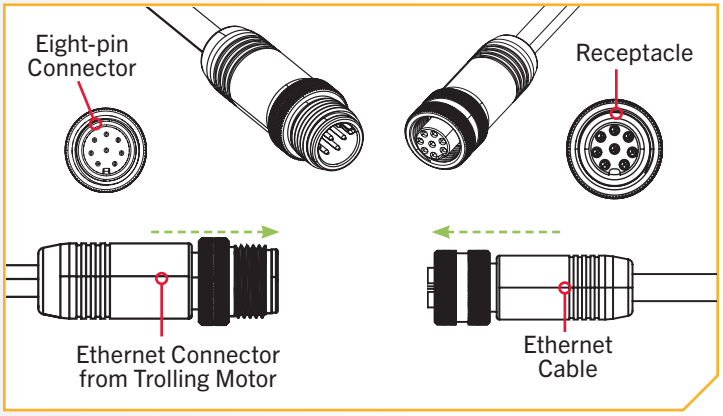
NOTICE: Minn Kota recommends routing the Ethernet Cable through the Coil Cord when making the Ethernet connection. The cables will be installed from the Mount to the Control Head through the Coil Cord and parallel to the Sonar Cable if present. Bypassing the Coil Cord when routing the Ethernet Cable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

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2

d. The Ethernet Cable should float freely inside the Coil Cord. Allow enough slack in the cable to attach the Receptacle to the Ethernet Connector.

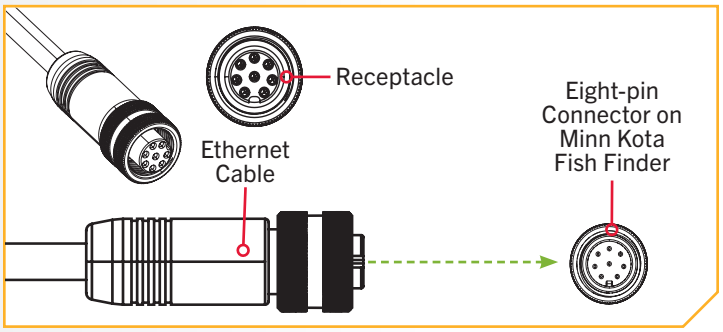
e. To install the Ethernet Cable, align the pins on the Ethernet Connector with the Receptacle on the Ethernet Cable. Notice the keyed connectors. Tighten the Collar from the Ethernet Cable to secure the connection.



3

f. The Receptacle on the end of the Ethernet Cable exits the Coil Cord and connects to the Fish Finder. Align the keyed connectors of the Receptacle on the Ethernet Cable with the Eight-pin Connector on the Minn Kota fish finder. Tighten the Collar from the Ethernet Cable to secure the connection.

NOTICE: If the Ethernet Cable is not long enough to reach the fish finder, use a 30' Ethernet Extension Cable (AS ECX 30E - 760025-1) from minnkota.johnsonoutdoors.com. The Ethernet Extension Cable plugs directly into any length of Ethernet Cable.



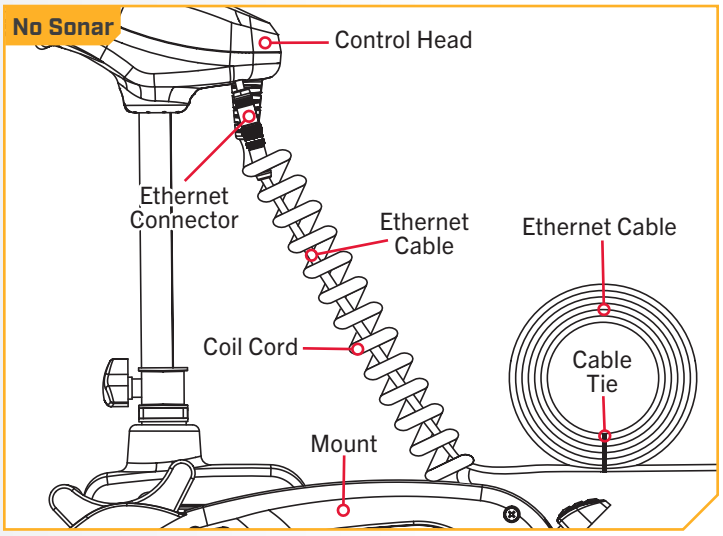
NOTICE: To make a wired ethernet connection between the trolling motor and a Humminbird® Helix fish finder, find the correct adapter cable by checking compatibility online at minnkota.johnsonoutdoors.com.

4

g. **For all Terrova motors without sonar,** use a Cable Tie to secure the Ethernet Cable. Confirm the Ethernet Cable is connected to the fish finder as desired. Leave 6" of slack where the Ethernet Cable exits the Coil Cord. Bundle any excess cable in a loose loop of no less than 4" in diameter. Secure loosely with a Cable Tie.

⚠ CAUTION

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



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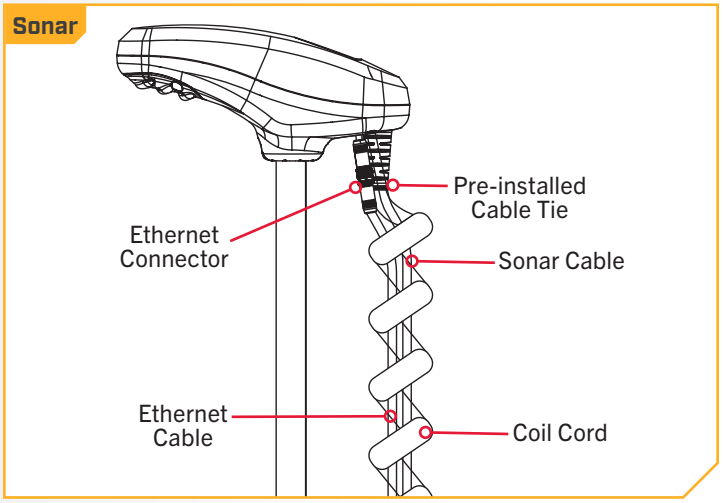
INSTALLING A WIRED ETHERNET CONNECTION

5

h. **For all Terrova motors with Sonar,** confirm all Cables are connected to an output device as desired. Place the motor in the stowed position.

i. To secure the Accessory Cables, the Sonar Cable and Ethernet Cable will be tied together inside the Coil Cord using Cable Ties. Ensure the Accessory Cables are parallel to each other inside the Coil Cord. Run the Accessory Cables from the Control Head to the Mount, keeping them straight and parallel the entire length.

NOTICE: The Sonar Cable comes from the factory secured to the Coil Cord with a pre-installed Cable Tie. Keep the pre-installed Cable Tie in place.



6

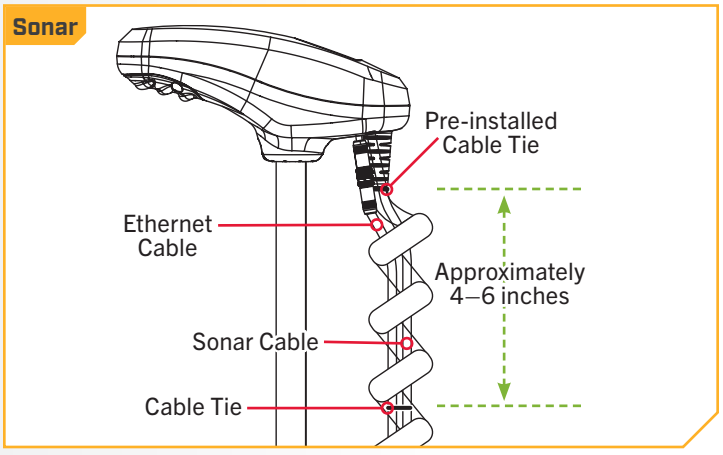
ITEM(S) NEEDED

#12 x 10

j. Starting approximately 4–6 inches below the pre-installed Cable Tie, take a Cable Tie (Item #12) and place it around the Sonar Cable and Ethernet Cable. **Do NOT capture the Coil Cord with the Cable Tie.** The Sonar Cable and Ethernet Cable should be secured together with a Cable Tie, but float freely on the inside of the Coil Cord. Keep the pre-installed Cable Tie in place.

NOTICE: Do NOT secure the Cables to the Coil Cord. ONLY secure the Sonar and Ethernet Cables to each other using Cable Ties.

k. Secure the Cable Tie around the Cables until it is fingertip tight. Do not over-tighten the Cable Tie as it may damage the Cables.



⚠ CAUTION

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

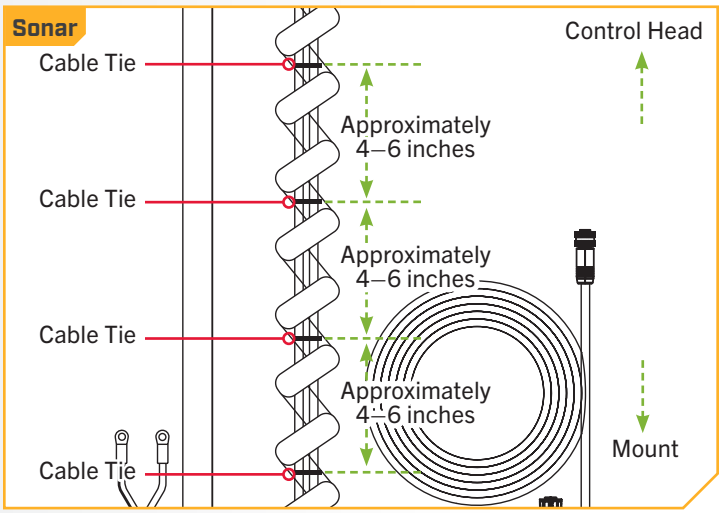
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7

l. Follow the Accessory Cables from the Control Head to the Mount and place additional Cable Ties every 4–6 inches. The number of Cable Ties needed will vary depending on the length of the trolling motor Shaft.

NOTICE: If additional Cable Ties are needed, a Cable Tie Bag Assembly (Part #2996300) is available from the Parts Ordering Portal at minnkota.johnsonoutdoors.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 Accessory Cables and hold the Cables together.

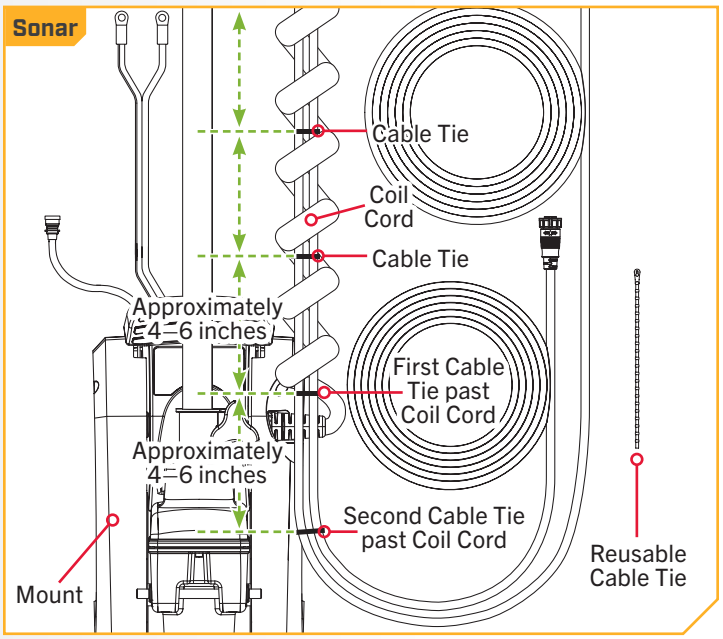


8

m. Continue placing Cable Ties every 4–6 inches along the Accessory Cables until there are two Cable Ties in place past the end of the Coil Cord where it enters the Mount.

n. Look at the placement of the Cable Ties and ensure that at least two Cable Ties are present on the Cables after they exit the Coil Cord. If no additional Cable Ties are needed, properly reconnect any Cables that may have been disconnected.

o. Confirm that the Ethernet Cable is connected to the fish finder as desired. Leave 6” of slack where the Ethernet Cable exits the Coil Cord. Bundle any excess cable in a loose loop of no less than 4” in diameter. Secure loosely with a Reuseable Cable Tie.



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Installing the Sonar Connection

When Dual Spectrum CHIRP or Down Imaging Sonar are pre-installed on your trolling motor, one Sonar Cable exits the base of the Control Head and runs down the center of the Coil Cord. Both types of sonar require the Sonar Cable to be connected to an output device such as a Minn Kota fish finder with Humminbird® Imaging. Connecting the trolling motor equipped with a transducer to a compatible fish finder provides a 2D sonar view of what is happening directly below the trolling motor. To learn more about Dual Spectrum CHIRP and Down Imaging Sonar, see the "Using & Adjusting the Motor" section of the Owner's Manual.

NOTICE: Not all Terrova models have sonar. If the motor does not have sonar, no Sonar Cable is present.

The following Minn Kota fish finder models allow for the connection of the Sonar Cable directly from the trolling motor:

- SOLIX® G3
- APEX™
- A Series™
- X Series™
- XPLORE™

The Sonar Cable from the trolling motor may be plugged directly into a fish finder, Extension Cable or Adapter Cable. Extension Cables and Adapter Cables are available online at minnkota.johnsonoutdoors.com. To determine if your fish finder is compatible with Dual Spectrum CHIRP or Down Imaging Sonar, please visit minnkota.johnsonoutdoors.com to check compatibility.

The Sonar Cables are shielded to minimize interference. To protect this shielding, the cables should not be pulled tight against sharp angles or hard objects. If using cable ties, do not over-tighten. Any excess cable should be bundled in a loose loop of no less than 4" in diameter. The connection cable should be routed to the fish finder following Minn Kota recommendations to optimize mobility and maximize functionality. All Terrova motors with sonar 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. Refer to the "Battery & Wiring Installation" section of this manual for correct rigging instructions.

⚠ CAUTION

Failure to follow the recommended wire routing for installed features, if equipped, may cause damage to the product and void the 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 tie as it may damage the wire.

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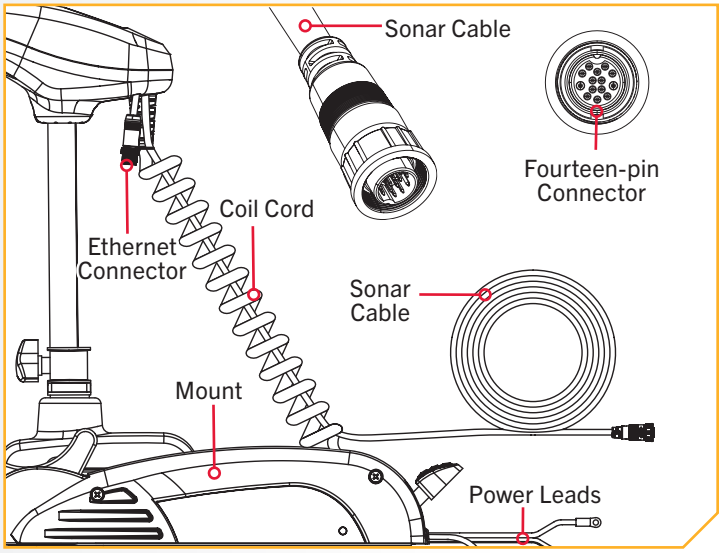
1

NOTICE: The 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 at the end of the Sonar Cable. The Sonar Cable exits the base of the Control Head and runs down the center of the Coil Cord.

NOTICE: The Sonar Cable comes from the factory secured to the Coil Cord with a Cable Tie. Do not remove or adjust the Cable Tie retaining the Sonar Cable.

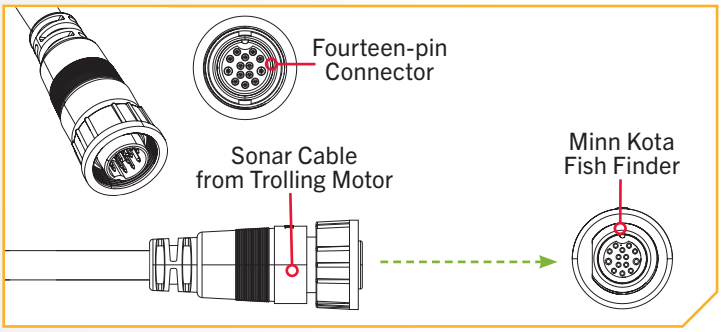


2

c. The Sonar Cable floats freely inside the Coil Cord. Allow enough slack in the cable to attach the Fourteen-pin Connector to the fish finder.

d. Align the Fourteen-pin Connector on the Sonar Cable with the Receptacle on the Minn Kota fish finder. Tighten the Collar from the Sonar Cable to secure the connection.

NOTICE: If the Sonar Cable is not long enough to reach the fish finder, use a 10-foot Sonar Extension Cable (EC M3 14W10 - 720106-1) or a 30-foot Sonar Extension Cable (EC M3 14W30 - 720106-2). Both Extension Cables are available from minnkota.johnsonoutdoors.com. The Sonar Cable plugs directly into a Sonar Extension Cable.



NOTICE: To complete the Sonar connection between the trolling motor and a Humminbird® Helix fish finder, find the correct adapter cable by checking compatability online at minnkota.johnsonoutdoors.com.

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

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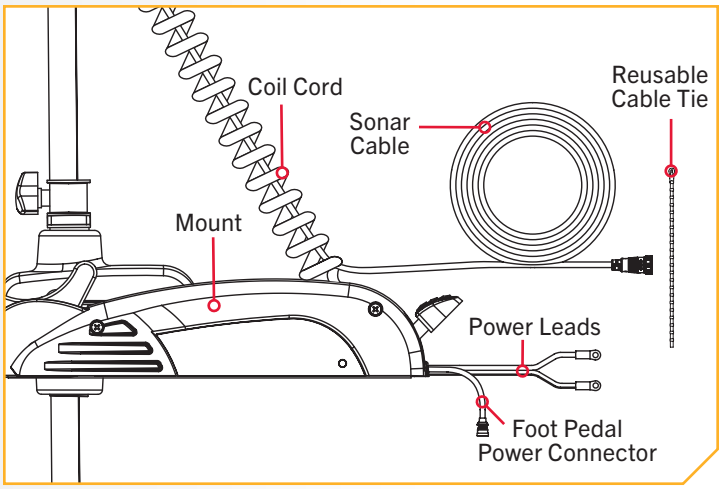
INSTALLING THE PROP

3

e. Confirm the Sonar Cable is connected to the fish finder as desired. Leave 6” of slack where the Sonar Cable exits the Coil Cord. Bundle any excess cable in a loose loop of no less than 4” in diameter. Secure loosely with a Cable Tie.

⚠ CAUTION

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



INSTALLING THE PROP

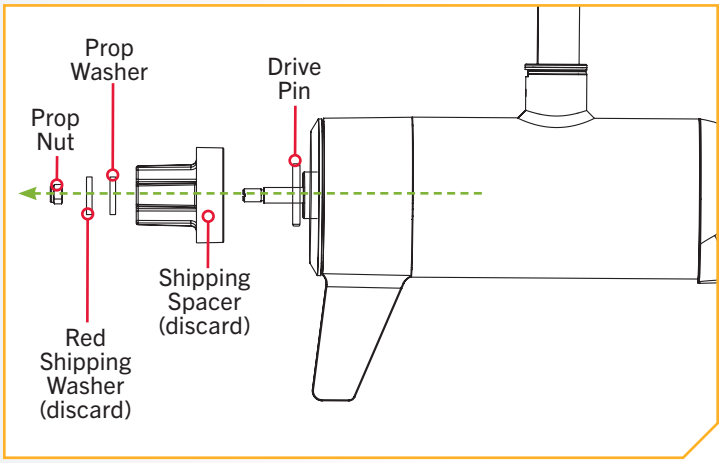
1

⚠ 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 Prop.

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 Prop.



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2

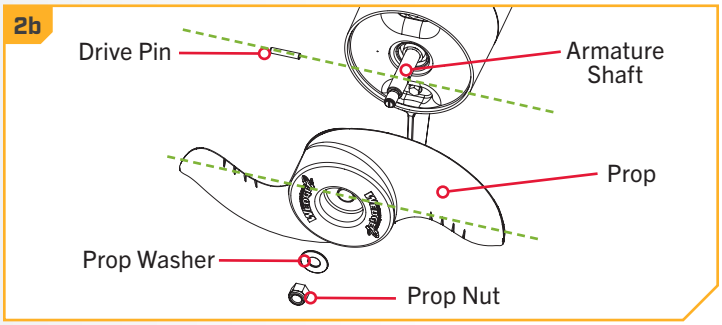
ITEM(S) NEEDED

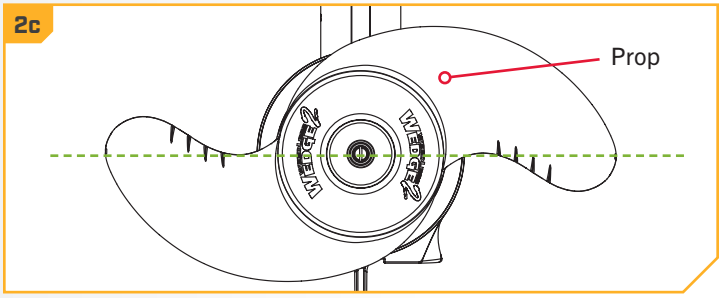


b. Take the Drive Pin (Item #7) and slide it through the Hole in the Armature Shaft. Position the Drive Pin horizontally by grasping the Armature Shaft and rotating it with the Drive Pin in place.

c. Align the Prop (Item #10) so it is also horizontal and parallel with the Drive Pin. Slide the Prop onto the Armature Shaft and Drive Pin until it is seated against the lower unit.

d. Install the Prop Washer (Item #8) and the Prop Nut (Item #9) onto the end of the Armature Shaft.





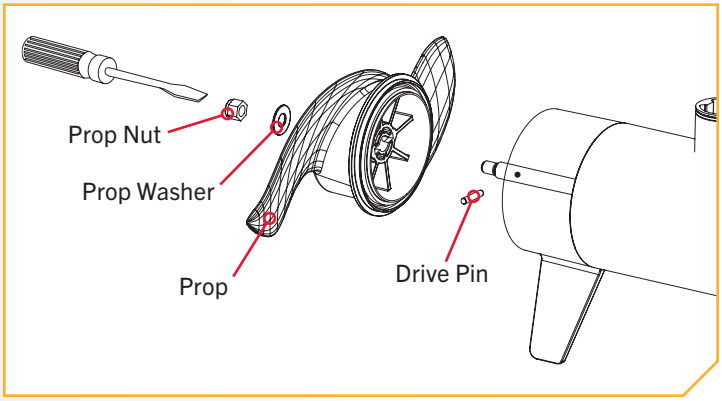
3

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.



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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

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SELECTING THE CORRECT BATTERIES

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

⚠ WARNING

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

⚠ CAUTION

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

⚠ CAUTION

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

ADDITIONAL CONSIDERATIONS

Using Alternator Chargers

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

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

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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

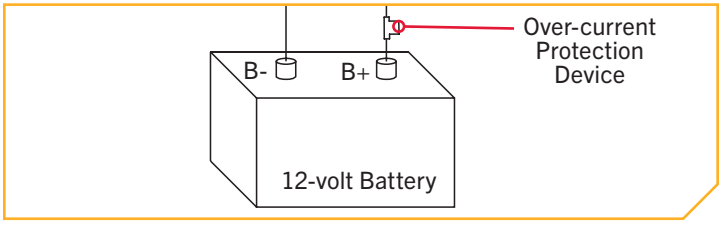
Automatic jump start systems and selector switches tie the negatives of the connected batteries together. Connecting these systems to the “High Side” Battery or “Middle” Battery in the diagrams below and will cause significant damage to your trolling motor and electronics. The only trolling motor battery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

⚠ 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.
- Keep leadwire wing nut connections tight and solid to battery terminals.
- Locate battery in a ventilated compartment.

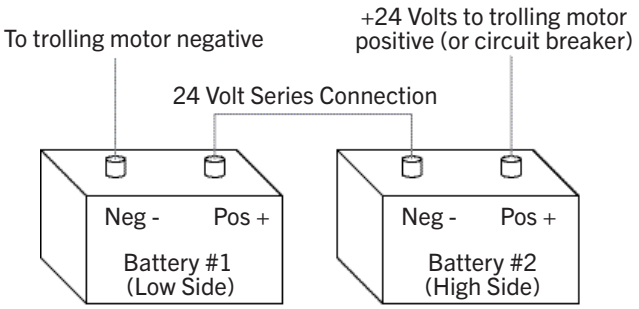
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CONNECTING THE BATTERIES IN SERIES (IF REQUIRED FOR YOUR MOTOR)

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.

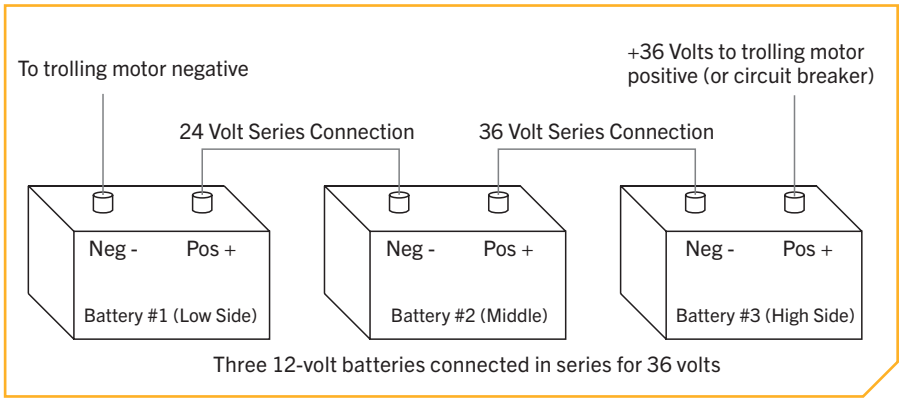
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CONNECTING THE BATTERIES IN SERIES

36-Volt Systems

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

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



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.

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MINN KOTA SYSTEM

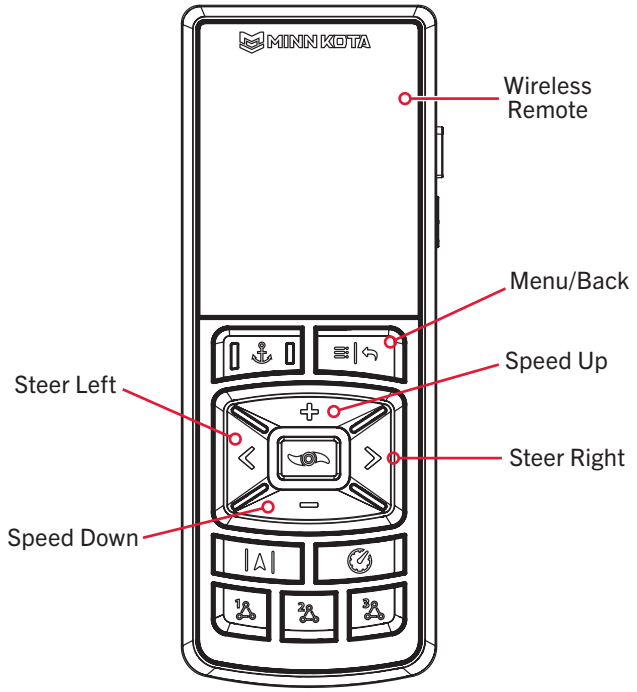
OPTIMIZING THE PERFORMANCE OF THE TERROVA WITH THE WIRELESS REMOTE OR MINN KOTA FISHING APP

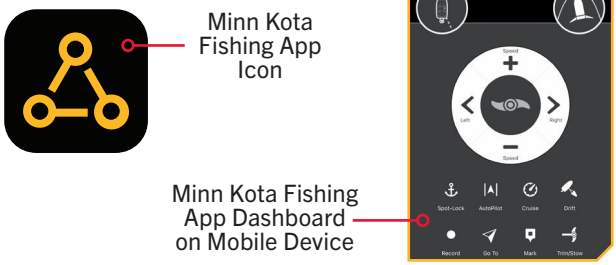
The Minn Kota System is an integrated fishing system that unites trolling motors, fish finders, sonar, mapping, shallow water anchors, and more into a single, seamless experience. Connecting the trolling motor to additional Minn Kota System products enhances the fishing experience and allows anglers to focus less on managing gear and more on fishing.

The Terrova trolling motor features Advanced GPS Navigation and comes from the factory paired with a Wireless Remote. The Wireless Remote offers one way to control the trolling motor and Advanced GPS Navigation features such as Spot-Lock and Drift Mode. To learn more about Wireless Remote features, refer to the Wireless Remote Owner's Manual online at minnkota.johnsonoutdoors.com.

Pair the trolling motor to the Minn Kota Fishing App to provide more control over the Minn Kota System. The Minn Kota Fishing App is a free iOS and Android application you can download to a mobile device, providing unparalleled control over all of your Minn Kota System products. Find instructions to pair the trolling motor with a mobile device in the app.

Use the Wireless Remote or the Minn Kota Fishing App to finalize trolling motor settings for features such as Calibration and Heading Offset for the Heading Sensor. Ensure the trolling motor is connected to a power source before adjusting settings. Minn Kota recommends completing all settings for the Heading Sensor to enhance trolling motor control.





⚠ 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. Stay clear of the Prop and watch out for accidental engagement.

NOTICE: If the Wireless Remote is lost or becomes non-functioning during navigation, and the Minn Kota Fishing App is unavailable, disconnect the motor from power to cancel all active navigation and turn off the Prop.

NOTICE: Ensure that the trolling motor is connected to a power source before adjusting Minn Kota Fishing App settings.

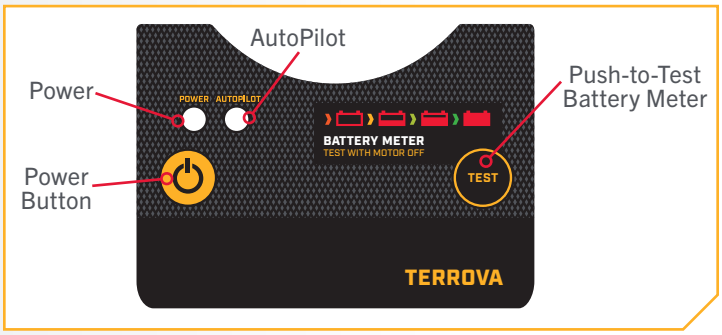
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Verifying Power

1

a. Locate the Indicator Panel at the front of the Mount. Power on the trolling motor by pressing the Power button on the Indicator Panel. When the trolling motor is on, the Power Indicator will be green.

b. To turn the motor "off", press and hold the Power button for approximately three seconds until the green light turns off. When the Motor is powered off, the Power Indicator will not be illuminated.



Powering on the Wireless Remote

1

ITEM(S) NEEDED



#B x 1



#6 x 1

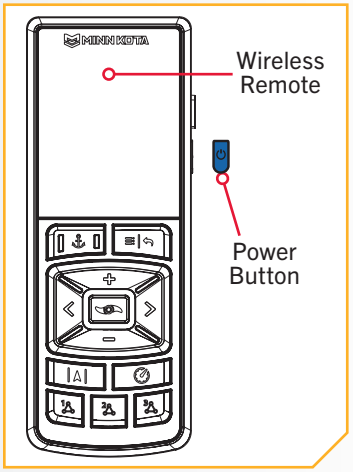
a. Power on the trolling motor.

b. To turn on the Wireless Remote (Item #B), press and hold the Power button on the side of the Remote.

c. A message will appear on the display screen. Read the disclaimer, then press the Steer Right button to select "I Agree."

d. The content on the display screen will populate. Remote functions to manually control the motor are now active, including Speed Up, Speed Down, Steer Left, Steer Right, and Prop On/Off.

e. When the Advanced GPS Navigation system has obtained a minimum GPS signal strength of one bar, all remaining functions will become available.





NOTICE: The Wireless Remote comes from the factory paired to the Terrova.

NOTICE: A Remote Cradle accessory (1866675) can be purchased for mounting the Wireless Remote or attaching the Remote to a belt clip. Attaching the Lanyard (Item #6) to the Wireless Remote is optional.

INSTALLING THE HEADING SENSOR

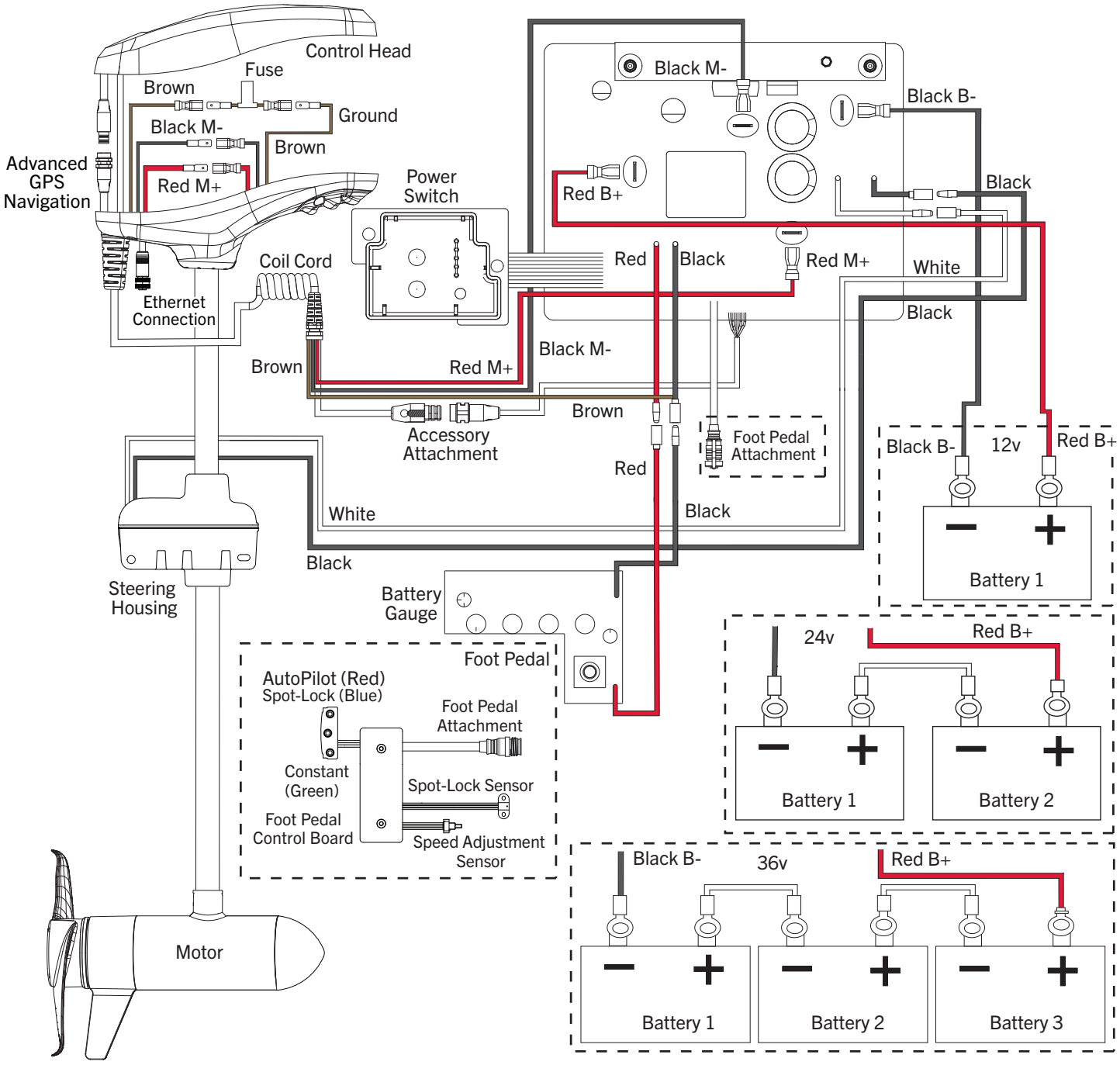
An external Heading Sensor (Accessory #J) is included with the Terrova. The Heading Sensor provides boat heading information to the trolling motor. The boat heading is used for navigation features such as Spot-Lock Jog. For instructions on installing and calibrating the Heading Sensor, refer to the document provided with the Heading Sensor.

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MOTOR WIRING DIAGRAM

TERROVA WITH ADVANCED GPS NAVIGATION

The following Motor Wiring Diagram applies to all Terrova models pre-installed with Advanced GPS Navigation.



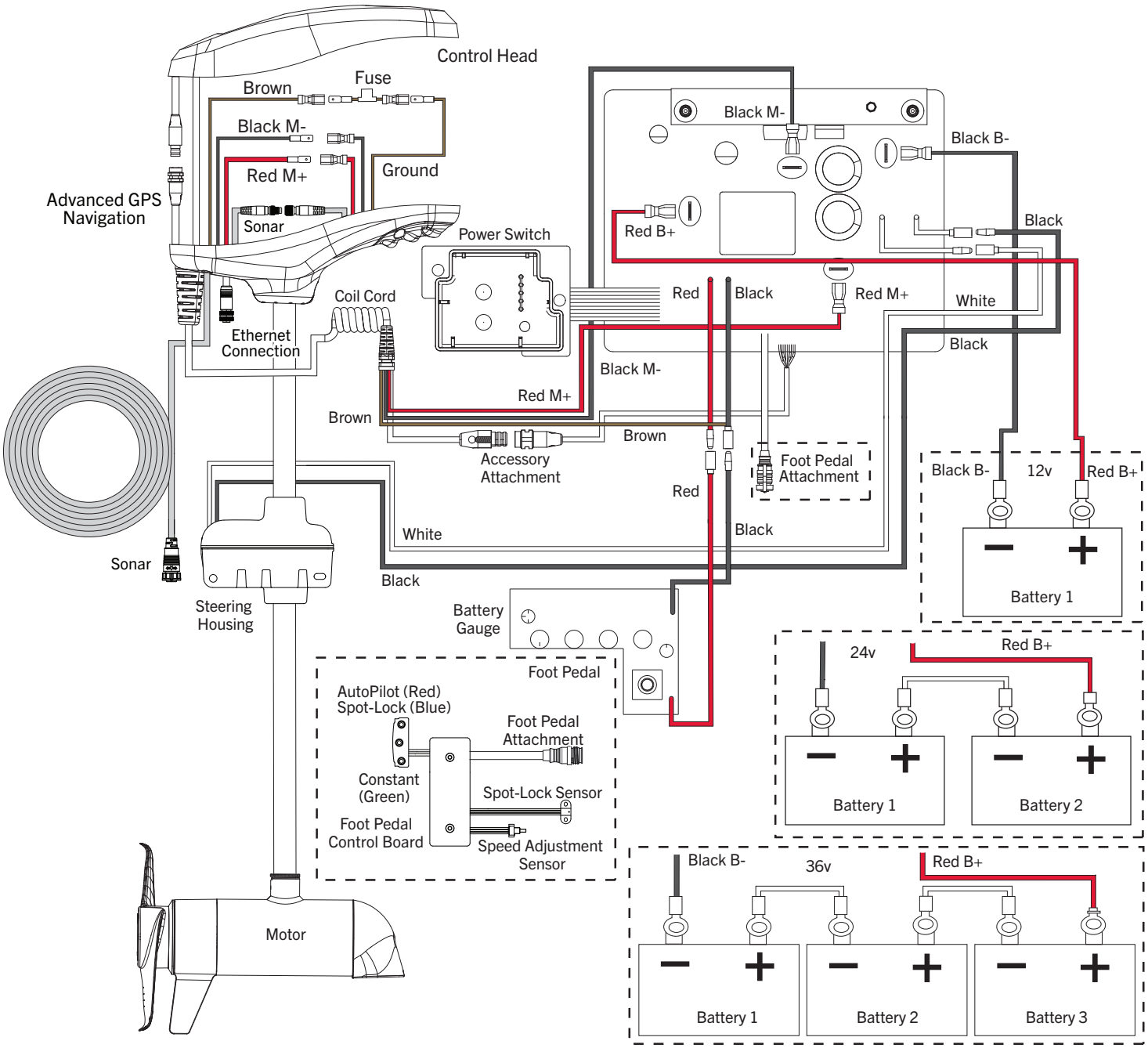
NOTICE: This is a multi-voltage diagram. Double-check your motor's voltage for proper connections. Over-Current Protection Devices are not shown in this illustration. This diagram is for reference only and is not to scale.

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MOTOR WIRING DIAGRAM

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 Down Imaging Sonar.



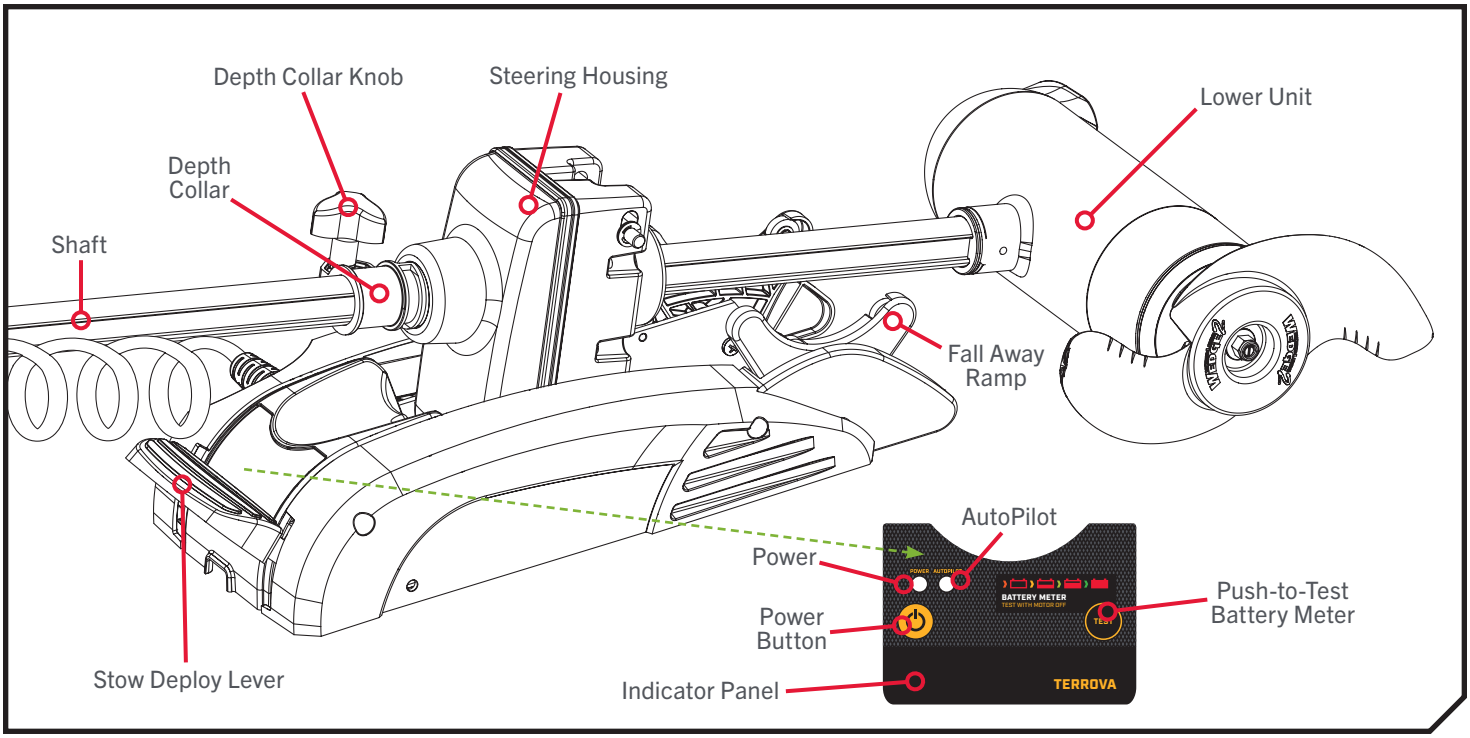
NOTICE: This is a multi-voltage diagram. Double-check your motor's voltage for proper connections. Over-Current Protection Devices are not shown in this illustration. This diagram is for reference only and is not to scale.

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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.

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⚠ 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

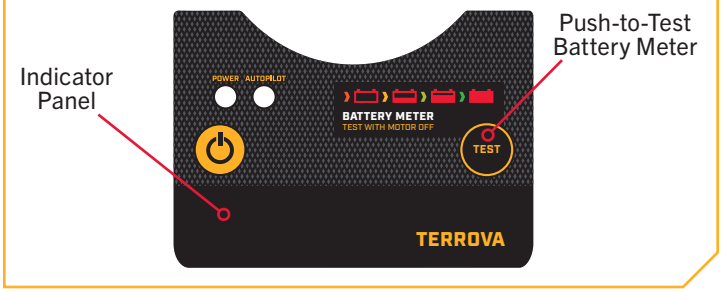
The Control Head will create a pinch point if the Depth Collar Knob is loosened and the Control Head slides to the top of the Depth Collar. Grasp the Shaft and prevent it from sliding all the way down to prevent the pinch point.

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.

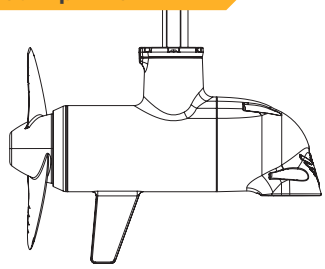
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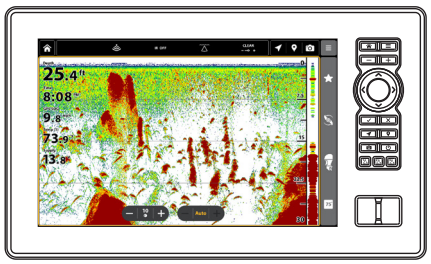
ADVANCED GPS NAVIGATION

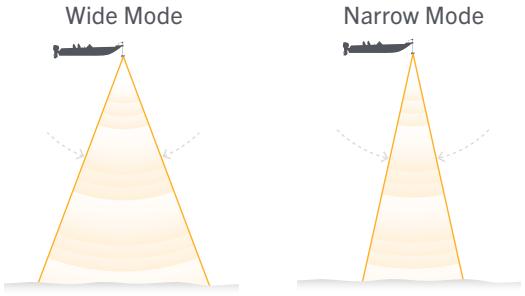
The Terrova comes with Advanced GPS Navigation. Advanced GPS Navigation offers popular trolling motor control features, including Spot-Lock, AutoPilot, Drift Mode, Dodge Mode, and Cruise Control. Trolling motors with Advanced GPS Navigation pair with Minn Kota fish finders to use the power of the Minn Kota System to enhance motor control, display detailed maps, and built-in sonar powered by Humminbird Imaging. The Minn Kota System seamlessly integrates what your fish finder sees with what your trolling motor does, turning sonar and mapping data into auto-navigation and precise boat positioning so you can stay focused on fishing. Advanced GPS Navigation features are controlled with either the Wireless Remote, Minn Kota Fishing App, or Minn Kota fish finder. To learn more about the GPS capabilities available with your new motor, please refer to the Advanced GPS Navigation Owner's Manual by visiting minnkota.johnsonoutdoors.com.

DUAL SPECTRUM CHIRP

Dual Spectrum CHIRP







The Terrova trolling motor may be pre-installed with a transducer system powered by Humminbird Imaging featuring Dual Spectrum CHIRP. A Dual Spectrum CHIRP transducer includes a temperature sensor that is integrated into the lower unit of the trolling motor. By covering a wide range of frequencies, Dual Spectrum CHIRP produces more accurate, more detailed returns of fish, structure, and the bottom. The integrated design of the Dual Spectrum CHIRP transducer protects it in the trolling motor lower unit from underwater hazards and prevents tangles and damage to the transducer cables. Dual Spectrum CHIRP has superior target separation, defining fish from their habitat. Large game fish will appear on the display as long, well-defined arches for quick identification and accurate lure presentation.

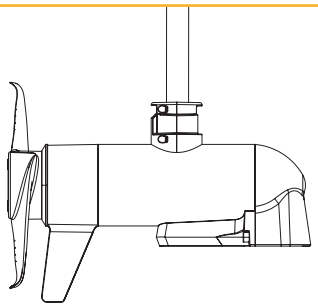
When connected to a Minn Kota fish finder with Humminbird Imaging, Dual Spectrum CHIRP provides full-spectrum capability and the ability to select start and end frequencies by operating in two different modes. Wide Mode for maximum coverage and Narrow Mode for maximum detail. Wide Mode allows you to search deep and wide. Wide Mode is used for watching a 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 target individual fish or identify fish hidden in structure and/or tight to the bottom.

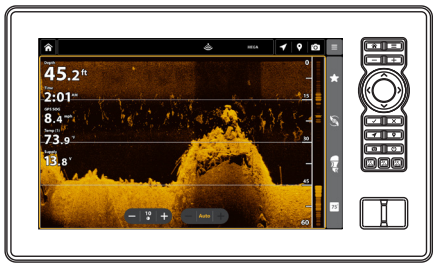
NOTICE: In certain situations, air bubbles may adhere to the surface of the Dual Spectrum CHIRP transducer and affect the performance. If this happens, wipe the transducer surface to clear the bubbles.

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DOWN IMAGING SONAR

Down Imaging Sonar





The Terrova trolling motor may be installed with Down Imaging® Sonar. Trolling motors with Down Imaging Sonar have a specialized transducer built into the lower unit that can provide Down Imagind and Dual Spectrum CHIRP Sonar when connected to a Minn Kota fish finder with Humminbird Imaging.

When the transducer provides Down Imaging Sonar, it uses the same razor-thin, high-frequency beam to create picture-like images of structure, vegetation, and fish. But unlike Side Imaging, Down Imaging returns are oriented the same way as traditional down-looking sonar returns, such as Dual Spectrum CHIRP, with the most recent information appearing on the right side of the screen.

When connected to a Minn Kota fish finder with Humminbird Imaging, the trolling motor collects images and combines them into a single image on the display. See the bottom, rocks, weed beds, and crevices to understand your bottom type by locating areas of interest. Easily distinguish fish from structure, see the direction fish are facing, and even target individual species. The fish finder can magnify image details with the zoom feature or mark the GPS location of promising cover or structure directly on the screen. See fish so defined that you can practically target each one individually. For more information about fine-tuning the images on the Minn Kota fish finder display, please see the fish finder Owner's Manual. For more information about connecting the trolling motor to a fish finder, please see the "Sonar and Ethernet Connection" section of this Owner's Manual.

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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.

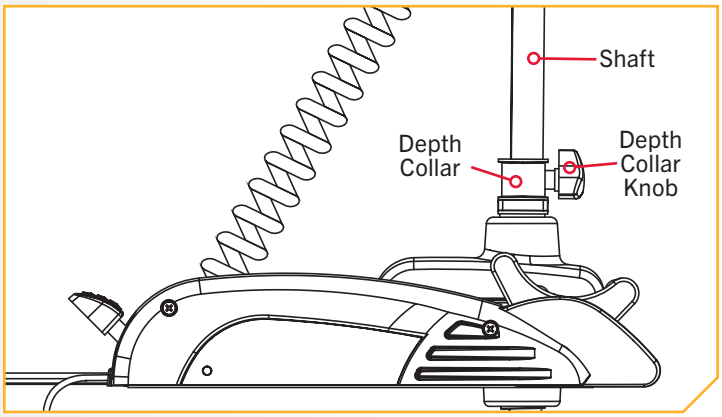
1

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.



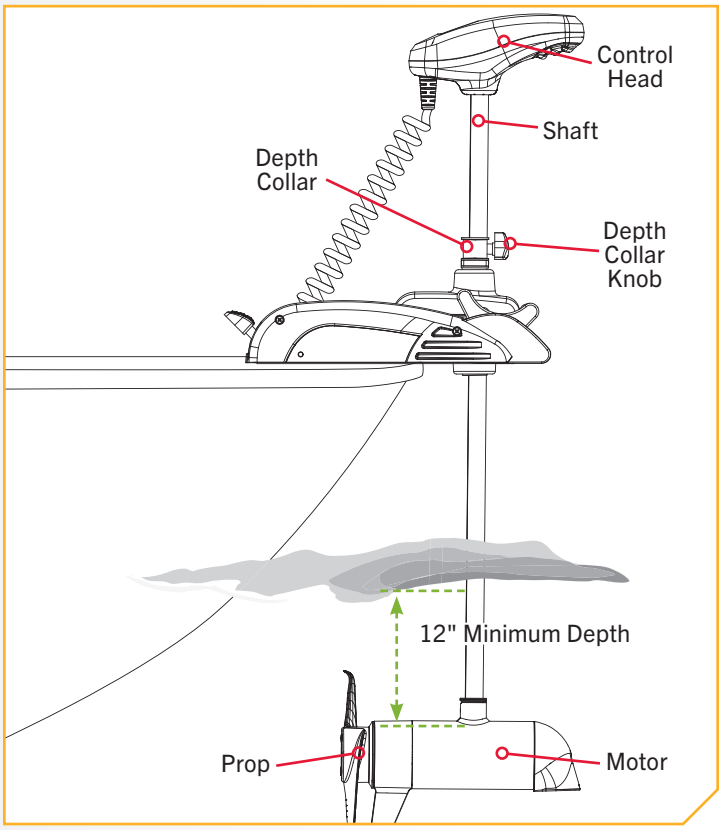
2

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.



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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.

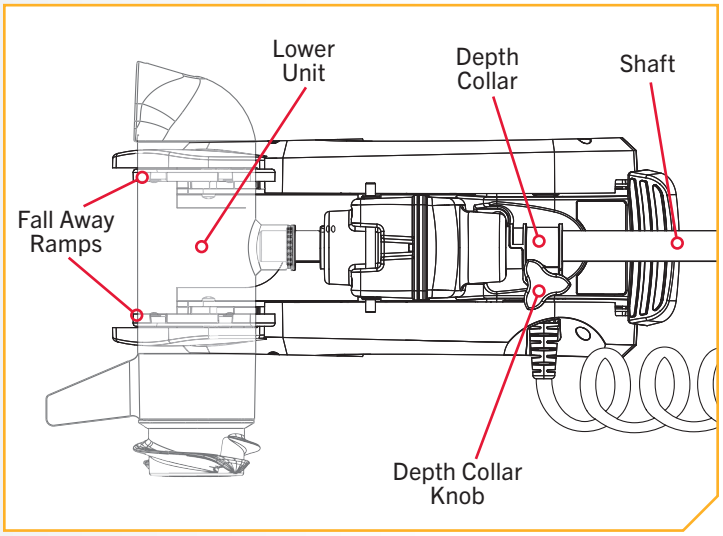
1

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.

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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 Down Imaging Sonar.

1

a. Mount the External Transducer according to directions provided with the transducer.

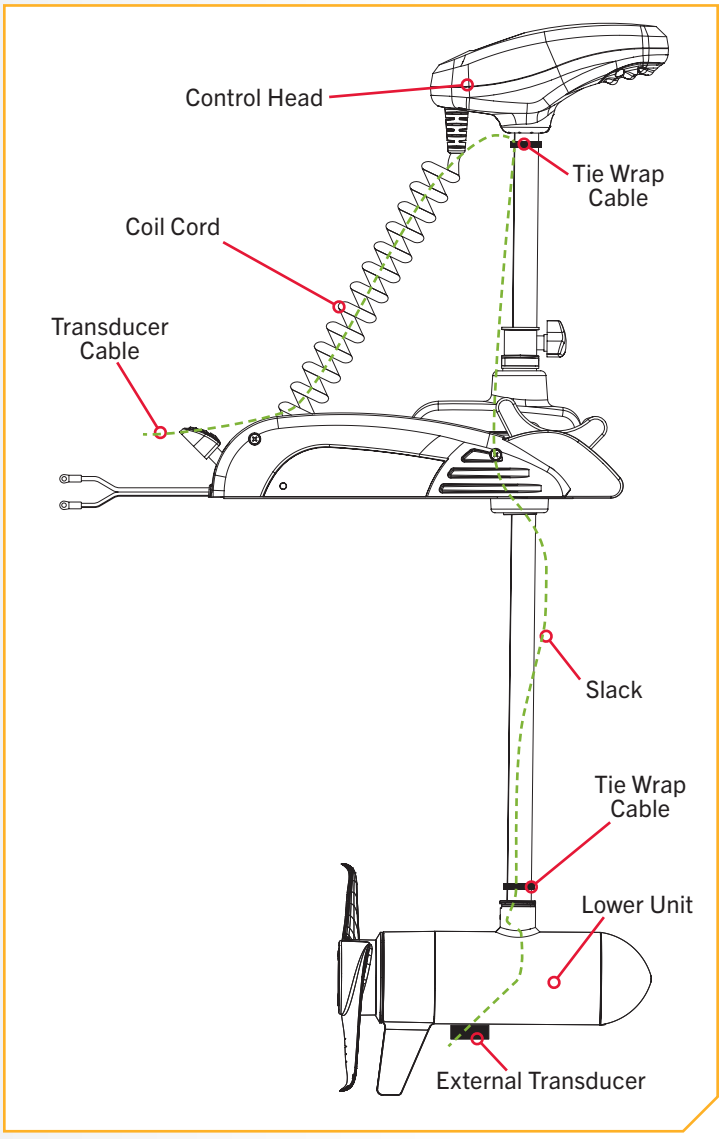
b. Leave enough slack in the Transducer Cable between the Lower Unit and Control Head to allow the motor to properly stow and deploy.

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.

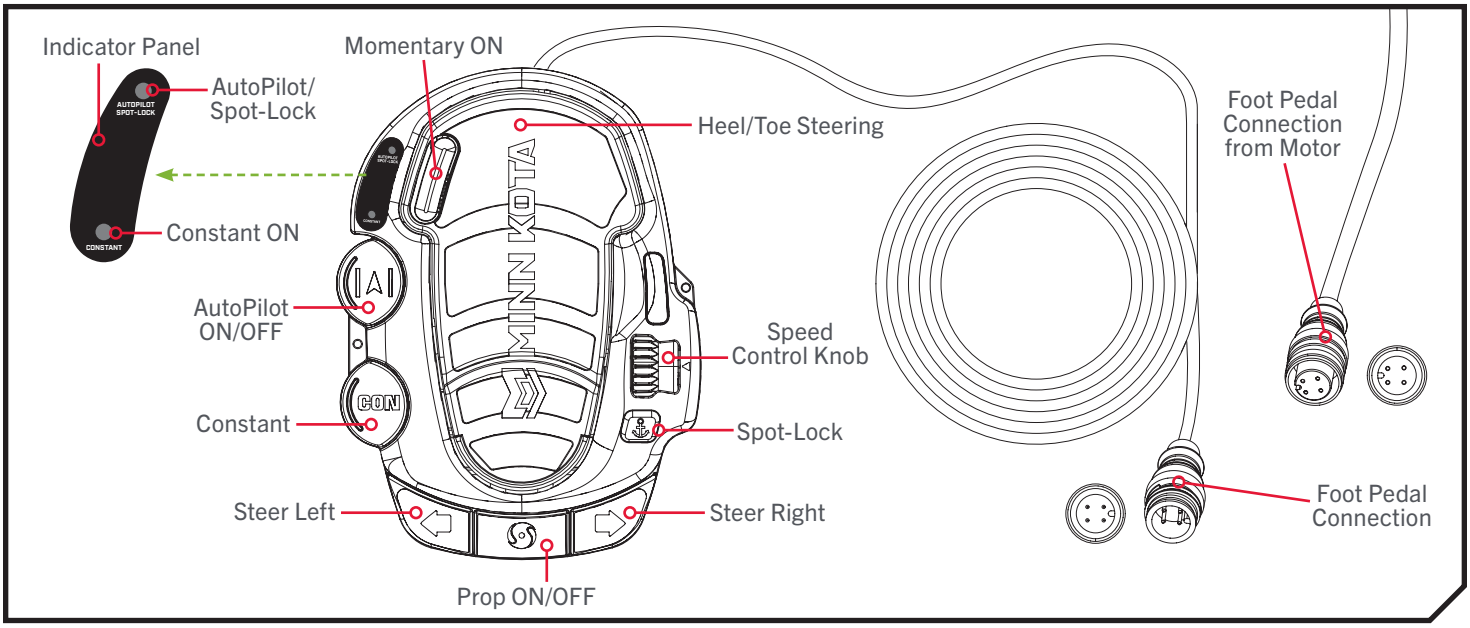


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USING THE FOOT PEDAL

CONTROLLING SPEED & STEERING WITH THE FOOT PEDAL

The Foot Pedal is used to operate the Terrova trolling motor. The controls on the Foot Pedal are easy to operate by either foot or hand. A light touch is all that is necessary. Not all Terrova trolling motors come with a foot pedal. The motor can also be controlled by a Minn Kota Wireless Remote or any compatible Minn Kota remote. Refer to the Wireless Remote Owner's Manual for instructions. To learn more about accessories that are compatible with the Terrova, visit minnkota.johnsonoutdoors.com.



Motor Speed

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

Heel/Toe Steering

Push the Toe End of the Foot Pedal down to turn right and push the Heel End down to turn left. The position and direction of the Control Head directly corresponds to the position of the motor. Use the Foot Pedal to control the steering direction during manual operation. The direction of the motor can also be controlled with the Wireless Remote.

⚠ WARNING

Practice proper ergonomics when operating the Foot Pedal to prevent injury.

⚠ CAUTION

The steering system is designed to turn the motor 360 degrees. Be careful to avoid over-wrapping the Coil Cord around the trolling motor Shaft. Over wrapping the Coil Cord will cause damage and prevent operation.

Steer Right/Steer Left

The Steer Right ⇨ and Steer Left ⇦ buttons are located at the bottom of the Foot Pedal. They function to steer the motor to the 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 Wireless Remote.

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⚠ WARNING

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

Prop ON/OFF

The Prop ON/OFF button is located at the bottom of the Foot Pedal. It functions to momentarily turn the Prop on and off. The Prop will turn "on" when pressure is applied to the button and turn "off" when pressure is removed. The Prop ON/OFF button does not change the behavior of the Prop when the Constant button is engaged.

Constant

The Constant CON button is located on the left side of the Foot Pedal, below the AutoPilot button. It functions to toggle the motor between Constant motor operation and Momentary motor operation. The green CONSTANT LED on the Indicator Panel will be illuminated when the motor is in Constant motor operation. In Constant motor operation, the Prop will continually run at the speed set by the Speed Control Knob or Wireless Remote, regardless of whether force is being applied to the Momentary button or Prop ON/OFF button.

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

Momentary

In Momentary motor operation, the Prop will only run while downward force is applied to the Momentary button. The Momentary button is on the Toe End of the Foot Pedal. Applying downward pressure to the Momentary button will turn the Prop "on." The motor will then run at the speed set by the Speed Control Knob or the Wireless Remote. Removing downward force from the Momentary button will turn the Prop "off." No indicator light is associated with the Momentary button. The Momentary button functions similarly to the Prop ON/OFF button.

⚠ CAUTION

If the Prop encounters an obstruction while in Constant or Momentary motor operation, while the Prop is running, the increased electrical current generated by the obstruction will signal the motor to decrease power to the Prop in order 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 clearing the obstruction.

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AutoPilot

The AutoPilot |▲| button is located on the left side of the Foot Pedal, below the Indicator Panel. Pressing the AutoPilot button toggles AutoPilot on and off. The AUTOPILOT SPOT-LOCK LED on the Indicator Panel illuminates red when AutoPilot is engaged. When AutoPilot is initiated from the Foot Pedal, the default AutoPilot mode is determined by the Wireless Remote. AutoPilot can also be engaged and disengaged using the remote. For more specific directions on how to use AutoPilot, refer to the Wireless Remote Owner's Manual. The AutoPilot Indicator on the Mount of the trolling motor will also be illuminated when AutoPilot is engaged.

Spot-Lock

The Spot-Lock ⚓ button is located on the lower-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 Spot-Lock location. The SPOT-LOCK AUTOPILOT SPOT-LOCK LED on the Indicator Panel illuminates blue when Spot-Lock is engaged. To engage Spot-Lock, press the Spot-Lock button. To disengage, press the Spot-Lock button again. Spot-Lock can also be controlled with the Wireless Remote.

When engaging Spot-Lock, a tone will be emitted from the Control Head. 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 Control Knob will cancel Spot-Lock, and a tone consisting of several short beeps will emit from the Control Head.

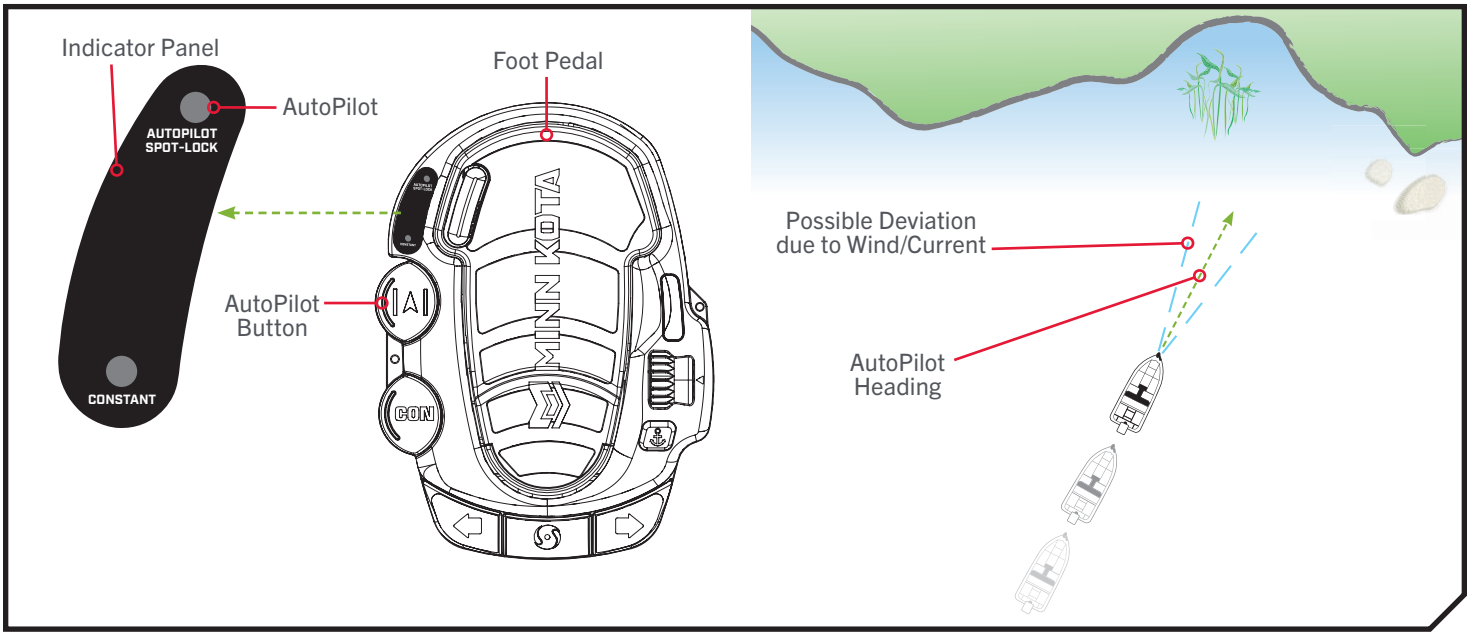
NOTICE: In the default Audio Mode, a tone is emitted from the Control Head when Spot-Lock or AutoPilot is engaged. If the Audio Mode is changed, a tone will not be emitted when engaging Spot-Lock or AutoPilot. To learn more about Audio Modes, refer to the Wireless Remote Owner's Manual online at minnkota.johnsonoutdoors.com.

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AUTOPILOT

AUTOPILOT™ CONTROLS

Minn Kota AutoPilot™ uses a magnetic compass and microprocessor chip to keep the trolling motor pointed in the intended direction. Each time the wind or water current moves the boat off course, AutoPilot senses the change and steers itself back to the original heading. The AutoPilot direction is set every time a steering change is made. To change direction, steer until the Control Head points to the desired course. AutoPilot will pull the bow of the boat around and correct automatically until the boat is moving in the chosen direction. AutoPilot may be controlled with the Foot Pedal or a compatible Minn Kota remote. For more information on AutoPilot, refer to the Wireless Remote Owner's Manual online at minnkota.johnsonoutdoors.com.



AutoPilot

AutoPilot uses an internal compass to provide heading lock. When AutoPilot is on, it keeps the motor pointed in the same compass direction. If a manual steering correction is made, AutoPilot locks onto the new compass heading to which the boat was steered. This method of heading tracking does not take into account external forces such as a side wind or currents, which can allow side drift.

⚠ CAUTION

This unit uses a magnetic compass to detect direction of travel. The compass can be adversely affected by magnets or large, ferrous metal objects near (within 12" of) the trolling motor control head.

Obstructions on the Prop may cause excessive vibration of the motor head. This vibration can cause the compass to wander and erratic steering to occur. Clear the obstruction to return the motor to normal operation.

The trolling motor has an automatic steering shutdown for safety. In conditions where an obstruction prevents the motor from turning, or in extremely windy conditions, the automatic steering may stop. Any steering input will reset the system to normal.

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CONTROLLING AUTOPILOT ›

› Toggle AutoPilot On/Off

When AutoPilot is on and the trolling motor is pulled out of the water to the stow position, the steering motor will continue to run. Turn AutoPilot off to stop the motor. If AutoPilot is left on, the steering motor will shut off automatically after 10 seconds. The motor should not be stored in this condition for long periods as power is still being applied to all electronics. Always turn AutoPilot off and disconnect the motor from the battery when storing the boat.

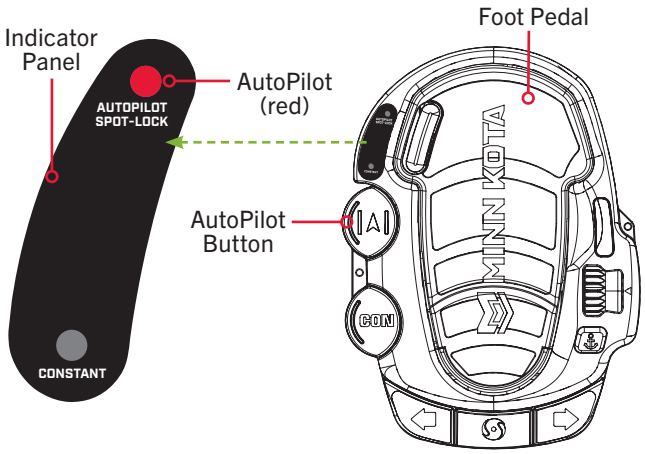
1

a. While the motor is running, AutoPilot can be turned on by pressing the AutoPilot | ⮝ | button located on the Foot Pedal or Wireless Remote.

b. The AUTOPILOT SPOT-LOCK LED on the Indicator Panel will illuminate red when AutoPilot is engaged. With AutoPilot turned on, steer the motor as desired.

NOTICE: After steering to a new direction, there is a short delay before the direction is locked in to allow the compass to stabilize. When broad speed changes are made, the AutoPilot heading may change slightly. This is normal.

c. To turn AutoPilot off, press the AutoPilot | ⮝ | button.



⚠ CAUTION

When AutoPilot is on and the trolling motor is pulled out of the water to the stow position, the steering motor will continue to run. Turn AutoPilot off to stop the motor. If AutoPilot is left on, the steering motor will shut off automatically after 10 seconds. The trolling motor should not be stored in this condition for long periods as power is still being applied to all electronics. Always turn Autopilot off and disconnect the motor from batteries when storing the boat.

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SPOT-LOCK

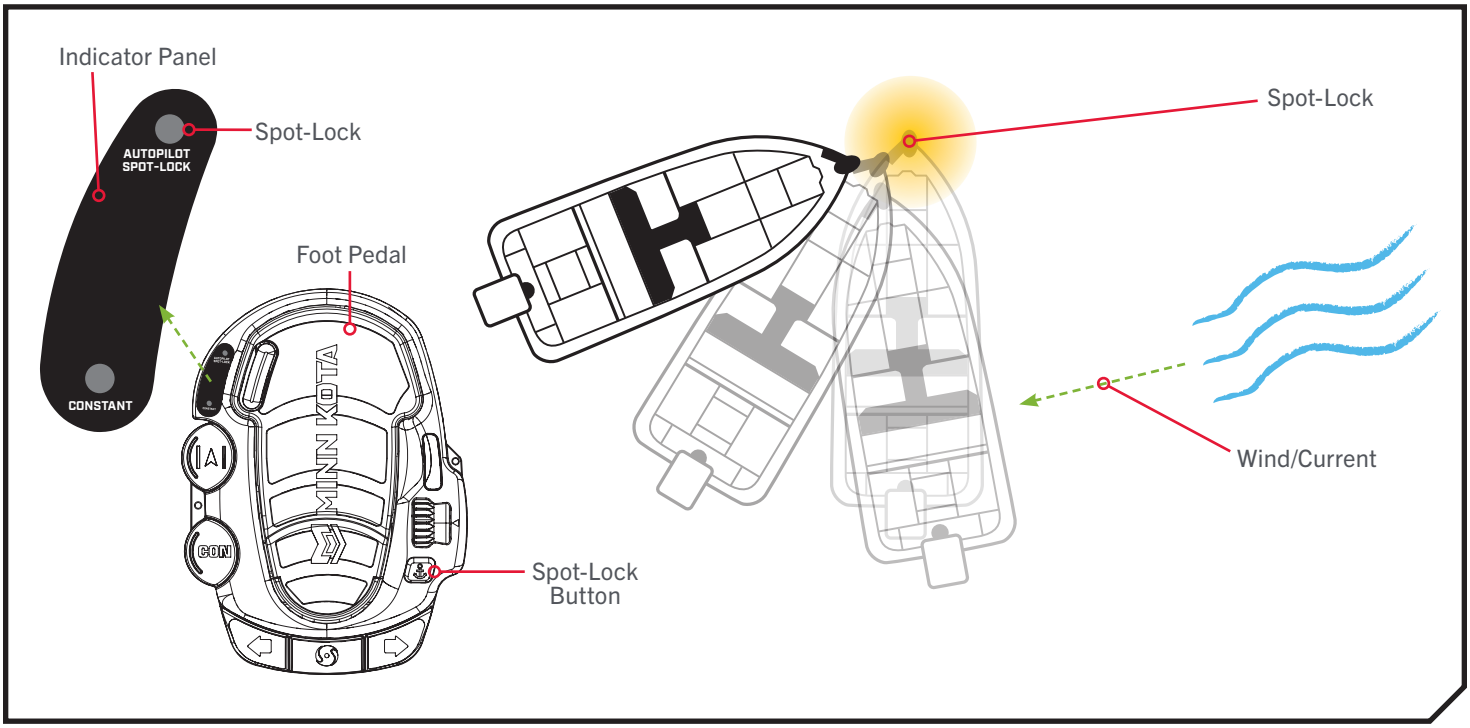
HOW SPOT-LOCK WORKS

Spot-Lock uses a single point of reference that is recorded when the Spot-Lock button is pressed. The reference point is a set of GPS coordinates captured at the location of the trolling motor at the moment the button is pressed. This point is recorded and can be saved into one of the Spot-Lock memory locations. Spot-Lock works by recognizing the GPS coordinates and will automatically navigate the boat to keep it at the Spot-Lock location. If the motor recognizes it is not positioned at the Spot-Lock location, it will control motor speed and direction in an attempt to keep the motor on the Spot-Lock. For more specific instructions on using Spot-Lock, refer to the Wireless Remote Owner's Manual online at minnkota.johnsonoutdoors.com.

NOTICE: Spot-Lock is based on the location of the trolling motor, not on the location or direction of the boat. Outside forces such as wind and current will cause the boat to move. Spot-Lock will navigate to maintain the motor on the Spot-Lock location, regardless of the position of the boat.

⚠ WARNING

Watch for a turning Prop when working with Spot-Lock. The Prop will automatically turn on when Spot-Lock is engaged, even if the engagement is accidental. A turning Prop can cause injury. The Prop will turn "on" for Spot-Lock, regardless of the Prop Auto On setting used on other control methods.



CONTROLLING SPOT-LOCK ›

› Toggle Spot-Lock On/Off

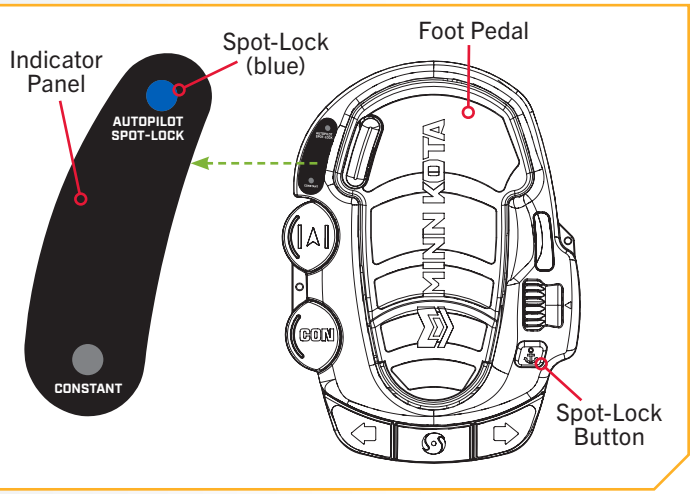
1

a. While the motor is running, Spot-Lock can be turned on by pressing the Spot-Lock button located on the Foot Pedal. The SPOT-LOCK LED on the Indicator Panel illuminates blue when Spot-Lock is engaged.

NOTICE: In the default Audio Mode, a tone is emitted from the Control Head when Spot-Lock is engaged. If the Audio Mode is changed, a tone will not be emitted when engaging Spot-Lock. To learn more about Audio Modes, refer to the Wireless Remote Owner's Manual online at minnkota.johnsonoutdoors.com.

b. To disengage Spot-Lock, press the Spot-Lock button or press any button on the Foot Pedal to manually steer the trolling motor.

NOTICE: If the Spot-Lock button is accidentally pressed, press the Spot-Lock button again to cancel Spot-Lock.



NOTICE: Pressing any button on the Foot Pedal, adjusting the speed using the Speed Control Knob, or manually steering the motor will disengage Spot-Lock, and a tone consisting of several short beeps will emit from the Control Head. Manually steering or adjusting the Prop speed with the Wireless Remote will also cancel Spot-Lock.

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SERVICE & MAINTENANCE

PROP REPLACEMENT

TOOLS AND RESOURCES REQUIRED

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

INSTALLATION

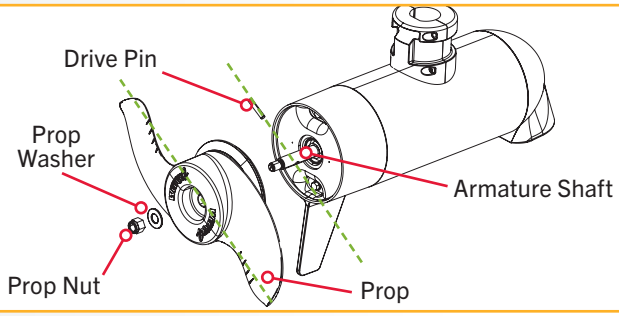
1

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

b. Hold the Prop 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, it is necessary to hold the shaft stationary with a flat-blade screwdriver, pressed into the slot on the end of the shaft, while the Prop Nut is loosened.



⚠ CAUTION

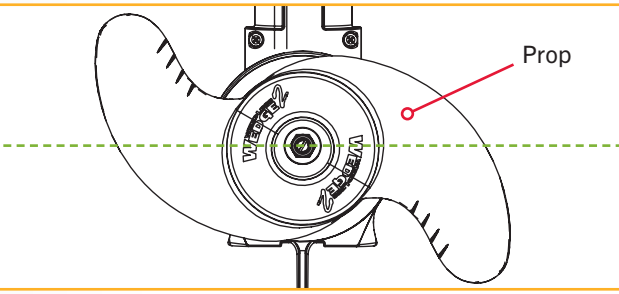
Disconnect the motor from the battery before beginning any Prop work or maintenance.

2

d. Turn the old Prop horizontal and pull it straight off. If the Drive Pin falls out, push it back in.

⚠ CAUTION

If the Prop does not readily slide off, take care not to bend the Armature Shaft while removing the Prop. Pull the Prop evenly off the Armature Shaft.



3

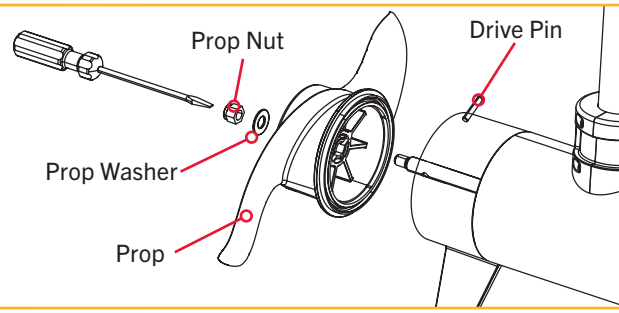
e. Align the new Prop with the Drive Pin.

f. Install the Prop Washer and Prop Nut.

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

⚠ CAUTION

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



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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 Prop 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 Prop 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 "Prop 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, contact Technical Support.

NOTICE: For all other malfunctions, visit an Authorized Service Center. You can search for an Authorized Service Center in your area by visiting minnkota.johnsonoutdoors.com.

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FOR FURTHER TROUBLESHOOTING AND REPAIR

Minn Kota offers several options to help you troubleshoot and/or repair your product. Please read through the options listed below.

Buy Parts Online

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

Frequently Asked Questions

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

Contact Us

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

Authorized Service Centers

Minn Kota has over 1,100 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 at minnkota.johnsonoutdoors.com/us/support/service-providers/locate.

Scan to visit Minn Kota service online.

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COMPLIANCE STATEMENTS

ENVIRONMENTAL COMPLIANCE STATEMENT

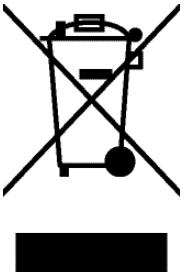
It is the intention of JOME to be a responsible corporate citizen, operating in compliance with known and applicable environmental regulations, and a good neighbor in the communities where we make or sell our products.

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 minnkota.johnsonoutdoors.com.

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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

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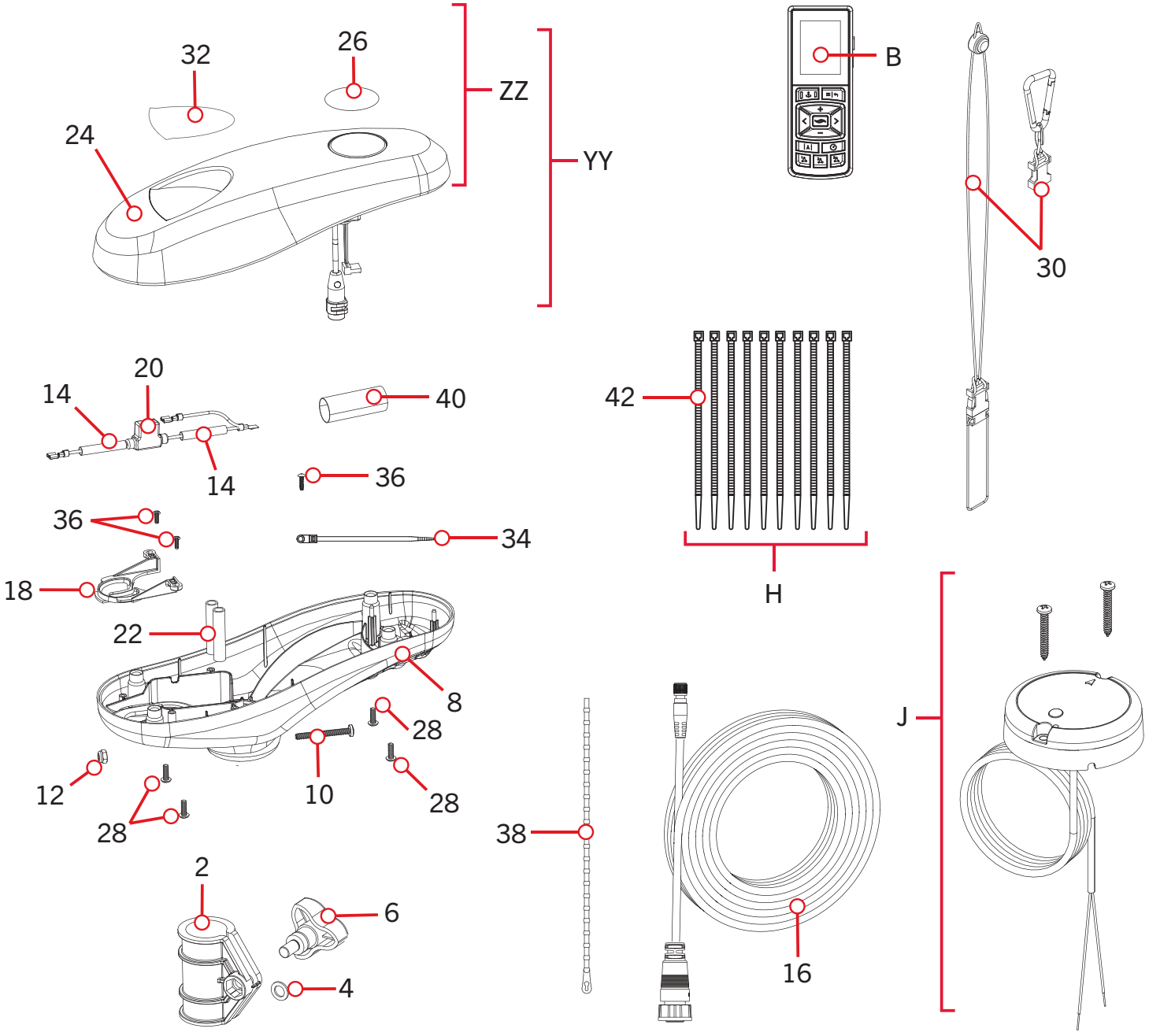
PARTS DIAGRAM & PARTS LIST

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



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Control Head Parts List

Assembly	Part #	Description	Notes	Quantity
YY	2774122	CTRL KIT 4.0, DB TRV/UTX	*DUAL SPECTRUM CHIRP* *DOWN IMAGING SONAR*	1
ZZ	2770242	CVR KIT, ADV GPS NAV, TRV/UTX	*COVER & DECALS*	1
H	2996300	BAG ASM, TIE WRAPS, LOW PRO 4"	*SONAR* *45"* *54"* *60"*	1
	2996300	BAG ASM, TIE WRAPS, LOW PRO 4"	*SONAR* *72"*	2
B	411690-1A	TROLLING MOTOR REMOTE		1
J	2996405	HEADING SENSOR ASSEMBLY		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"	*DOWN IMAGING SONAR*	1
	490575-3	CABLE, ADPTR, 14 PIN, 110"-DSC	*DUAL SPECTRUM CHIRP*	1
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	2395524	DECAL, DOMED FW		1
28	2372100	SCREW-#8-18 X 5/8 THD (SS)		4
30	2390802	LANYARD w/CARABINR,WIRELESS RMT		1
32	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
34	2206302	TIE WRAP, SCREW MOUNT 6.3”		1
36	2203441	SCREW-#6 X 1/2” THRD FORM,SSTL		3
38	2206305	TIE WRAP, REUSABLE RED, 8"		1
40	2205412	SHRINK TUBE-.75 ID X 2”		1
42	✖	TIE WRAP 4"	*SONAR* *SEE ASSEMBLY H*	1
▲	2327162	MANUAL, TERROVA B-27		1
▲	2206301	TIE WRAP, LOW PROFILE 8"		1
▲	2327164	CHECKLIST, TERROVA B-27		1
▲	2327163	INSTALL GUIDE, TERROVA B-27		1

▲ *Not shown on Parts Diagram.*

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

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PARTS DIAGRAM & PARTS LIST

Item	Part #	Description	Notes	Quantity
▲	2397110	MANUAL, iPILOT 4.0		1
▲	2397117	GUIDE-QUICK REFERENCE iP 4.0		1
▲	2394905	INSTRUCTIONS, HEADING SENSOR		1
▲	2015800	HANG TAG "CAUTION..TILT HINGE"		1
▲	2006819	LABEL-CARTON "CAUTION HEAVY"		1
▲	2395528	DECAL-WARNING, HEADING SENSOR		1
▲	2375535	DECAL, VENT PATCH		1

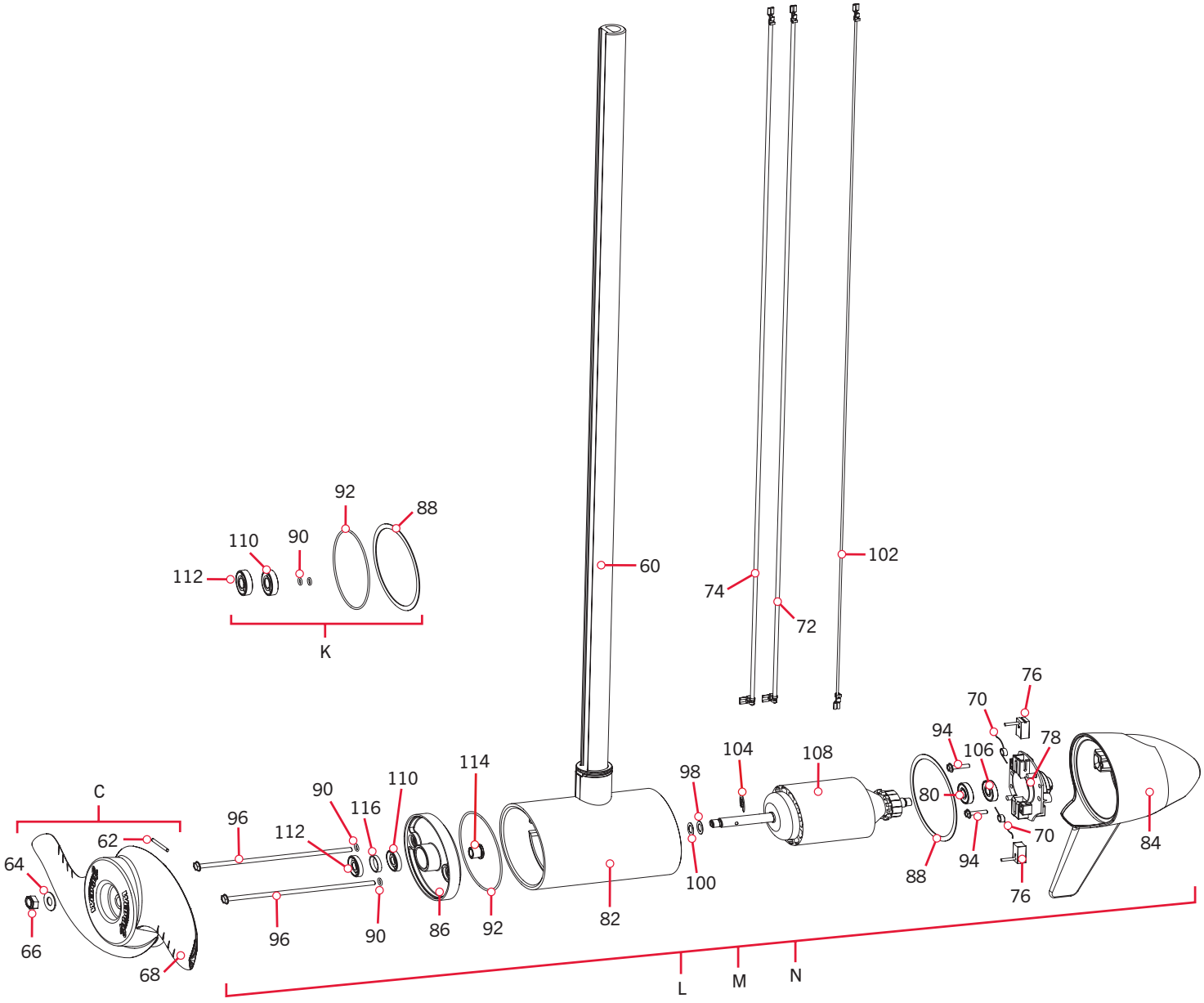
▲ *Not shown on Parts Diagram.*

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

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TERROVA MOTOR ›

› 12 Volt 3.625" Motor Parts Diagram



12 Volt 3.625" Motor Parts List

Assembly	Part #	Description	Notes	Quantity
L	2779024	MTR/TUBE ASM 55#54"TRV BT	*54"* *NON-SONAR*	1
M	2777191	MTR/TUBE ASM 12V DSC 45"	*45"* *DUAL SPECTRUM CHIRP*	1
N	2777192	MTR/TUBE ASM 12V DSC 54"	*54"* *DUAL SPECTRUM CHIRP*	1
C	1378131	PROP IND 2091160 WDLS WDG II		1
K	2888460	SEAL & O-RING KIT		1
Item	**Part #**	**Description**	**Notes**	**Quantity**
60	✖	PULT-MGB1.30-D25-45CH	*45"*	1
	✖	PULT-MGB1.30-D25-54CH	*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	2091161	PROP-WW2 3 5/8" MACHINED		1
70	975-040	SPRING - TORSION		2
72	640-028M	LEADWIRE BLK 10 AWG 58.5 XLP	*45"*	1
	640-009M	LEADWIRE BLK 10 AWG 65 GPT	*54"*	1
74	640-128M	LEADWIRE RED 10AWG 60.5" GPT	*45"*	1
	640-108M	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/TRDCR CR 3.6 DSC	*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
110	880-003	SEAL		1

▲ *Not shown on Parts Diagram.*

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

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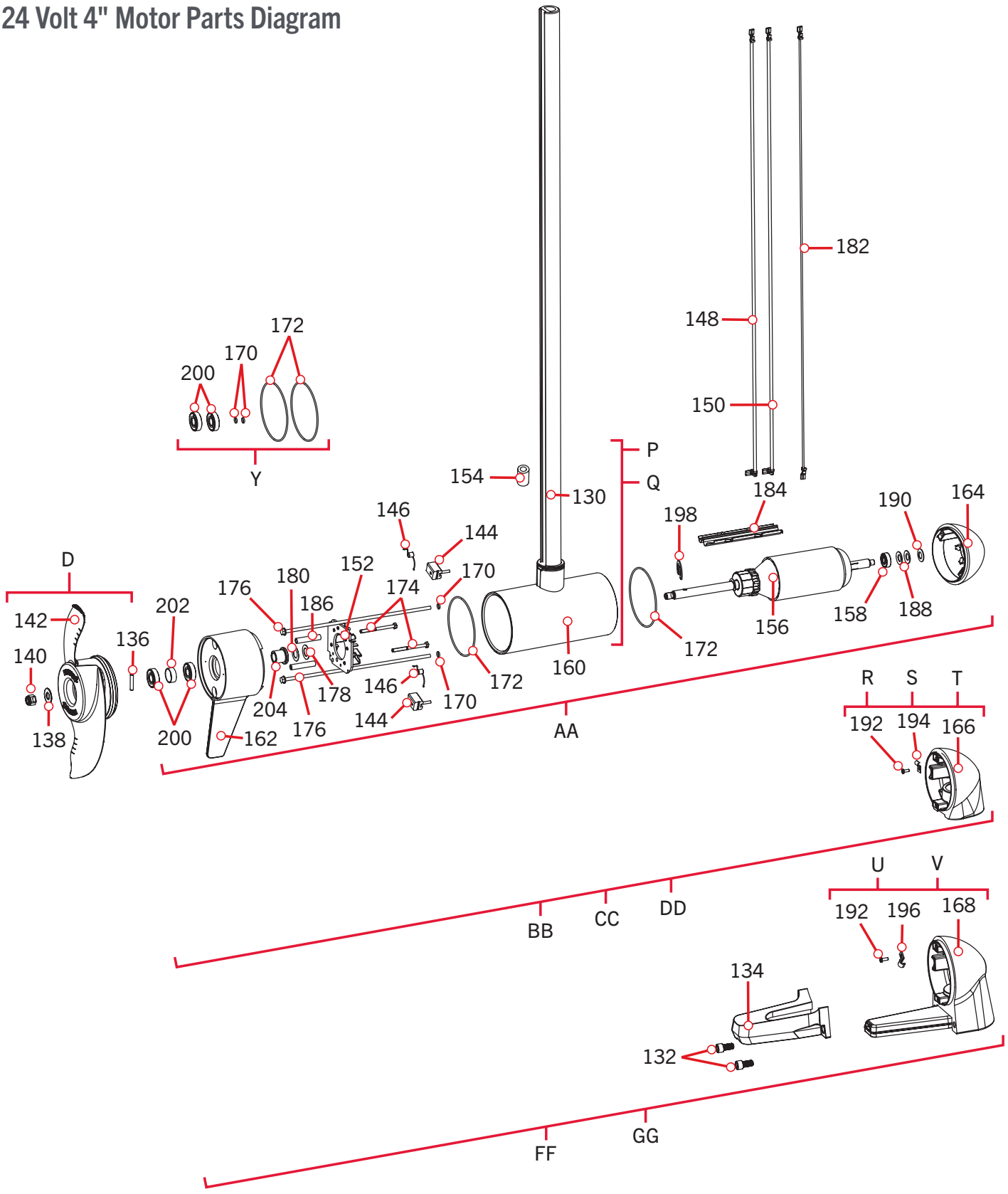
Item	Part #	Description	Notes	Quantity
112	880-006	SEAL WITH SHIELD		1
114	144-049	BEARING - FLANGE		1
116	725-035	PAPER TUBE - SEAL BORE		1
▲	✖	DSC XD UCER ASSY 67" HW T	*45"* *DUAL SPECTRUM CHIRP*	1
	✖	DSC XDUCER ASSY 73" HW T	*54"* *DUAL SPECTRUM CHIRP*	1
▲	✖	SCREW-#6-20 X 1/2 THD CUTS,RIE	*DUAL SPECTRUM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

▲ *Not shown on Parts Diagram.*

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

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24 Volt 4" Motor Parts Diagram



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24 Volt 4" Motor Parts List

Assembly	Part #	Description	Notes	Quantity
AA	2777002	MTR/TUBE ASSY 80# 60" TERROVA	*NON-SONAR*	1
BB	2777124	MTR/TUBE ASM 24V DSC 45"	*DUAL SPECTRUM CHIRP* *45"*	1
CC	2777128	MTR/TUBE ASM 24V DSC 60"	*DUAL SPECTRUM CHIRP* *60"*	1
DD	2777127	MTR/TUBE ASM 24V "M" DSC 60"	*DUAL SPECTRUM CHIRP* *60"* *EUROPE ONLY*	1
EE	2777129	MTR/TUBE ASM 24V DSC 72"	*DUAL SPECTRUM CHIRP* *72"*	1
FF	2777046	MTR/TUBE ASM 24V MDI 60"	*DOWN IMAGING SONAR* *60"*	1
GG	2777044	MTR/TUBE ASM 24V MDI 45"	*DOWN IMAGING SONAR* *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	*DOWN IMAGING SONAR* *45"*	1
V	2993053	PLN END HSG/TRNDCR 4.0 MDI	*DOWN IMAGING SONAR* *60"*	1
D	1378132	PROP IND 2331160 WDLS WDG II		1
Y	2889460	SEAL & O-RING KIT		1
Item	Part #	Description	Notes	Quantity
130	✖	PULT-MGB1.30-D25-45CHCBSE2	*45"* *DOWN IMAGING SONAR*	1
	✖	PULT-MGB1.30-45CH	*45"* *DUAL SPECTRUM CHIRP*	1
	✖	PULT-MGB1.30-D25-60CHCBSC1	*60"* *DUAL SPECTRUM CHIRP* *M SKU*	1
	✖	PULT-MGB1.30-D25-60CH	*60"* *DUAL SPECTRUM CHIRP* *NON-SONAR*	1
	✖	PULT-MGB1.30-D25-60CHCBSE2	*60"* *DOWN IMAGING SONAR*	1
	✖	PULT-MGB1.30-D25-72CH	*72"* *DUAL SPECTRUM CHIRP*	1
132	830-110	SCREW-5-16-18 X 5/8 SHCS SS	*DOWN IMAGING SONAR*	2
134	792-001	GUARD, TRANSDUCER, PNT 4.0 DI	*DOWN IMAGING SONAR*	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	640-013M	LEADWIRE BK 10A 51.75 XLP	*45"*	1
	640-025M	LEADWIRE BLK 10 AWG 66 3/4 XLP	*60"*	1
	640-024M	LEADWIRE BLK 10 AWG 79" XLP	*72"*	1
150	640-117M	LEADWIRE RD 10A 51.25 XLP	*45"*	1
	640-133M	LEADWIRE RED 10AWG 66-1/4 XLP	*60"*	1
	640-125M	LEADWIRE RED 10AWG 79-1/2 XLP	*72"*	1

▲ *Not shown on Parts Diagram.*

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

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PARTS DIAGRAM & PARTS LIST

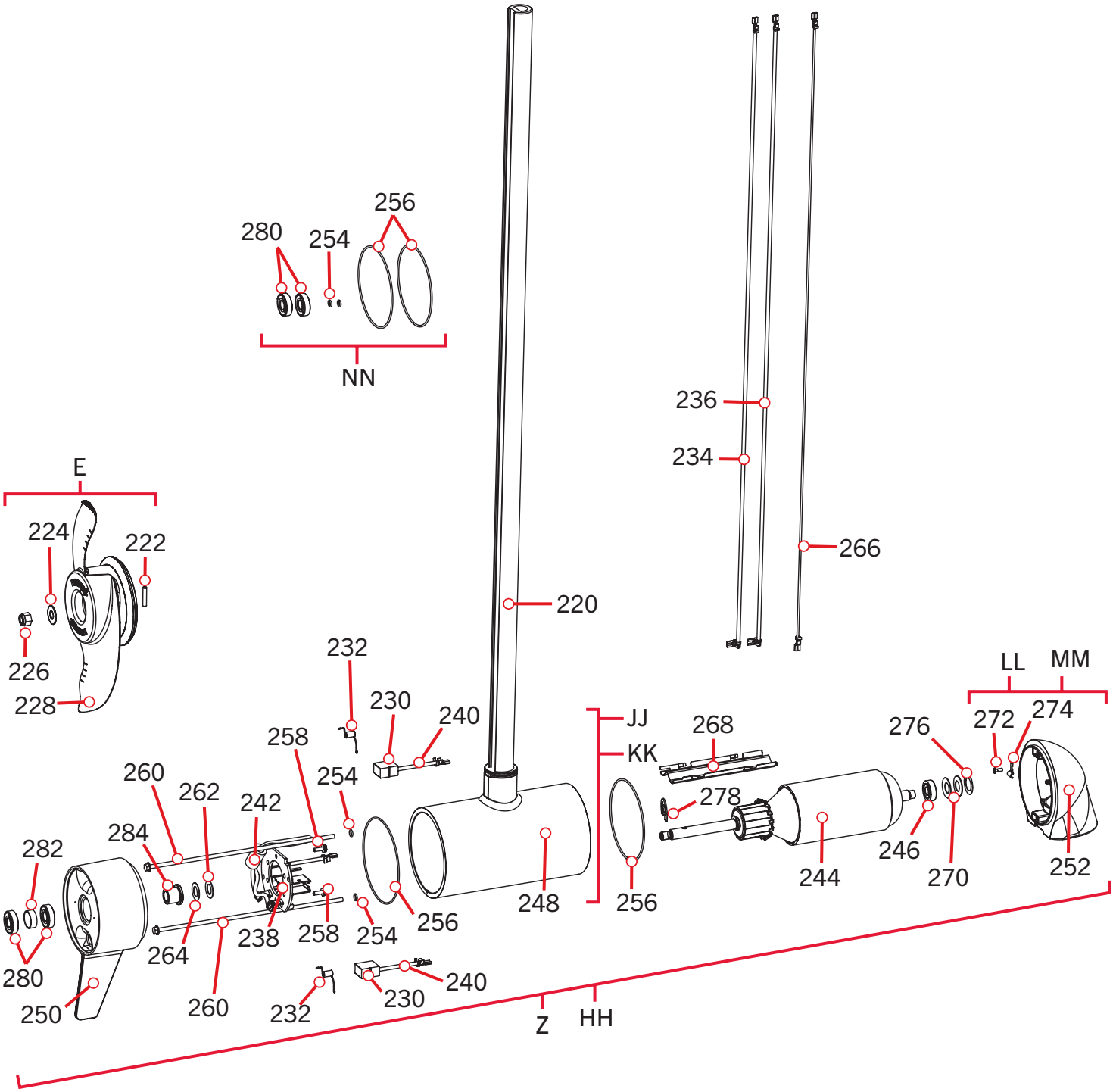
Item	Part #	Description	Notes	Quantity
▲	✖	BRUSH HOLDER		2
152	738-004	BRUSH PLATE-4"		1
▲	2260730	CONNECTOR 1/4 MALE TAB QD		2
154	✖	BEAD-FERRITE	*M SKU* *DOWN IMAGING SONAR*	1
156	2-100-214	ARM ASSY 24V 4" 80# (WW2)		1
158	140-010	BEARING - BALL		1
160	✖	CTR HSG ASY 4.0 FW MGNTZ		1
162	2-300-170	BRUSH 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	*DOWN IMAGING SONAR*	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
	830-094	THRU BOLT 12-14 X 10.31		2
178	990-051	WASHER - STEEL THRUST		1
180	990-052	WASHER - NYLATRON		1
182	640-315M	LEADWIRE BROWN 18 AWG 62" GPT	*45"*	1
	640-316M	LEADWIRE BROWN 18 AWG 71" GPT	*60"*	1
	640-317M	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* *DOWN IMAGING SONAR*	1
194	230-038	CABLE CLAMP	*DUAL SPECTRUM CHIRP*	1
196	230-040	CABLE CLAMP, 1/4" STEEL	*DOWN IMAGING SONAR*	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
▲	✖	BI MDI 63" - 440420-1	*45"* *DOWN IMAGING SONAR*	1
	✖	BI MDI 74" - 440420-3	*60"* *DOWN IMAGING SONAR*	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.*

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36 Volt 4.5" Motor Parts Diagram



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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
HH	2777069	MTR/TUBE ASM 36V DSC 72"	*72"* *DUAL SPECTRUM CHIRP*	1
JJ	2777241	CTR HSG, CB, 112#, FW, UP TO 60"	*60"*	1
KK	2777242	CTR HSG, CB, 112#, FW, 72" TUBE	*72"*	1
LL	2993024	PLN END HSG/TRDCR 4.5 DSC	*60"* *DUAL SPECTRUM CHIRP*	1
MM	2993028	PLN END HSG/TRDCR 4.5 DSC	*72"* *DUAL SPECTRUM CHIRP*	1
E	1378160	PROP KIT 2341160 112# WW2		1
NN	2881450	SEAL & O-RING KIT		1
Item	**Part #**	**Description**	**Notes**	**Quantity**
220	✖	PULT-MGB1.30-D25-60CH	*60"* *DUAL SPECTRUM CHIRP*	1
	✖	PULT-MGB1.30-D25-75CH	*72"* *DUAL SPECTRUM CHIRP*	1
222	2262658	PIN-DRIVE 1" X 3/16" S/S		1
224	2091701	WASHER-PROP (LARGE)		1
226	2093101	NUT-PROP,NYLOC,LG, 3/8 SS		1
228	2341161	PROP-WW2 4.5" WELDED		1
230	188-095	BRUSH		2
232	975-045	SPRING - TORSION		2
234	640-044M	LEADWIRE BLK 10AWG 72 1/4" GPT	*60"*	1
	640-048M	LEADWIRE BLK 10AWG 84 1/4" GPT	*72"*	1
236	640-144M	LEADWIRE RED 10AWG 71" GPT	*60"*	1
	640-148M	LEADWIRE RED 10AWG 83" GPT	*72"*	1
▲	✖	BRUSH HOLDER		2
238	738-011	BRUSH PLATE		1
240	2260731	TERMINAL 1/4" MALE TAB-THREE		2
242	2307312	BEAD-FERRITE		1
244	2-100-245	ARMATURE ASY 4.5"LWR UNIT		1
246	140-014	BEARING-BALL 6000		1
248	✖	CTR HSG ASY 4.5" MAG FW CB		1
250	2-300-175	BRUSH END HSG 4.5" FW		1
252	421-246	PLN END 4.5"US2.5/DSC PNT	*DUAL SPECTRUM CHIRP*	1
254	701-009	O-RING	*THRU-BOLT*	2
256	701-098	O-RING, 98MM X 2MM		2
258	2053410	SCREW-#8-32 X 1/2 TRI-LOBE HEX		2
260	830-094	THRU BOLT 12-24 X10.31		2
262	990-051	WASHER - STEEL THRUST		1
264	990-052	WASHER - NYLATRON		1

▲ *Not shown on Parts Diagram.*

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

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Item	Part #	Description	Notes	Quantity
266	640-316M	LEADWIRE BROWN 18 AWG 71" GPT	*60"*	1
	640-317M	LEADWIRE BROWN 18 AWG 86" GPT	*72"*	1
268	582-016	CLIP-RETAINING, SONAR		1
270	992-011	WASHER - BELLEVILLE		2
272	2302104	SCREW-#6-20 X 3/8 THD CUTS	*DUAL SPECTRUM CHIRP*	1
274	230-038	CABLE CLAMP	*DUAL SPECTRUM CHIRP*	1
276	990-011	WASHER-SHIM OD 1",ID.630"SS		1
278	788-040	RETAINING RING		1
280	880-025	SEAL		2
▲	✖	RIVET - .25"		8
282	725-095	PAPER TUBE - SEAL BORE		1
284	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
▲	✖	SCREW-#6-32 X 1/2" TORX PH SS ND		3

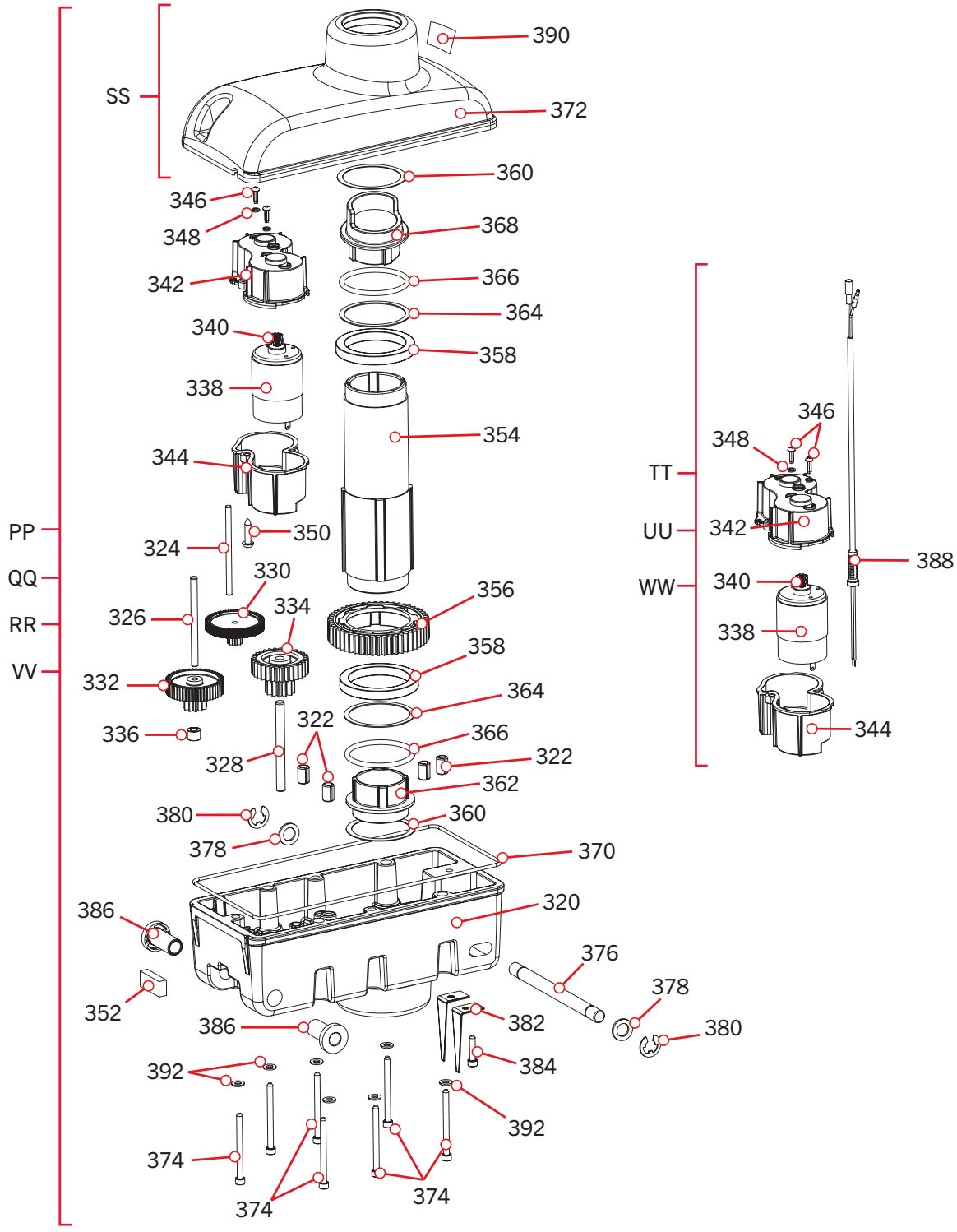
▲ *Not shown on Parts Diagram.*

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TERROVA STEERING HOUSING

Steering Housing Parts Diagram



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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	*60" 112LB*	1
VV	2997075	STR HSG ASM W/BSHG 36 V FW 72"	*72" 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.*

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PARTS DIAGRAM & PARTS LIST

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
	2202632	PIN-LATCH, 17-4 SS	*72"*	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

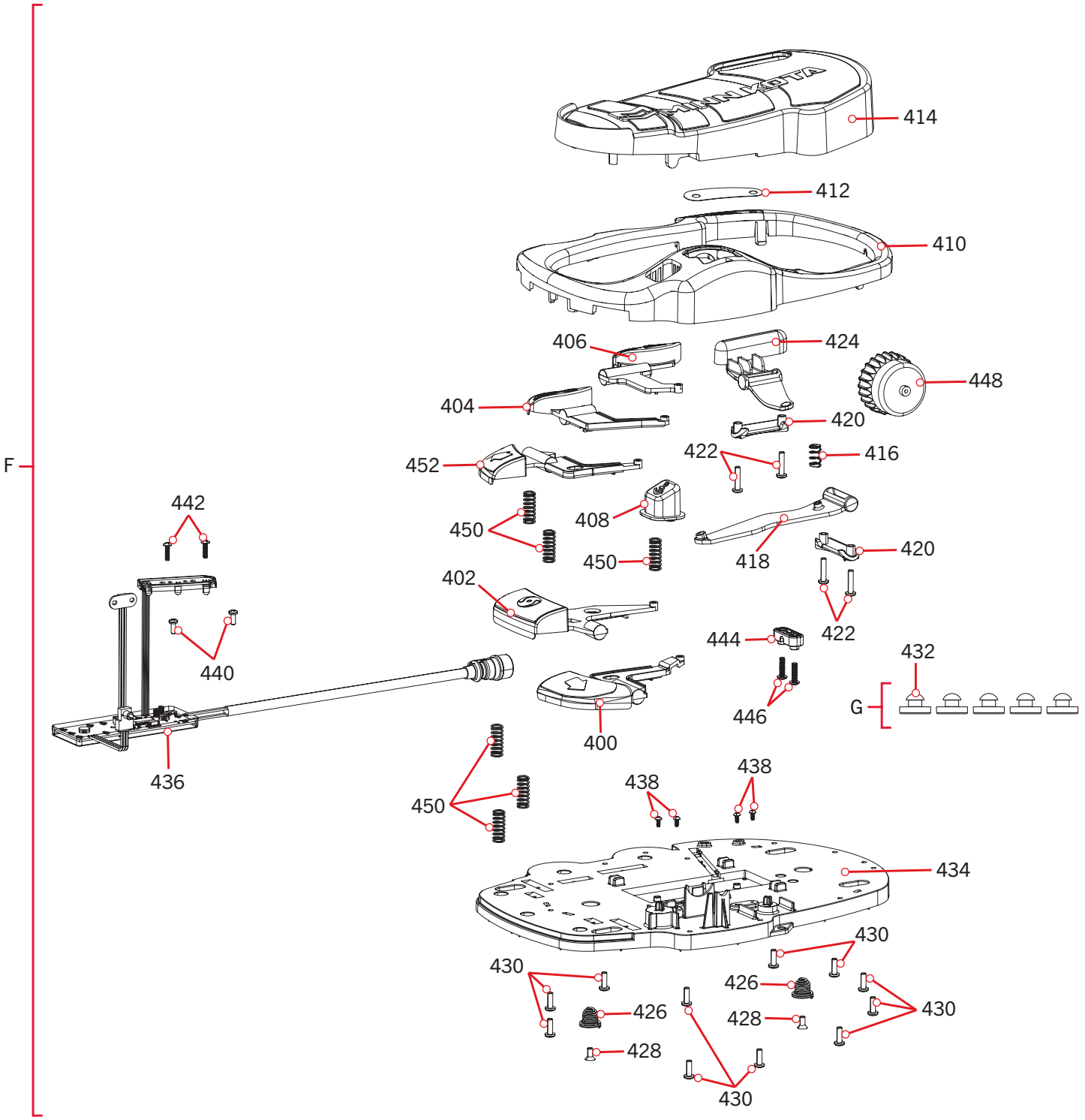
▲ *Not shown on Parts Diagram.*

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

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TERROVA FOOT PEDAL

Foot Pedal Parts Diagram



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Foot Pedal Parts List

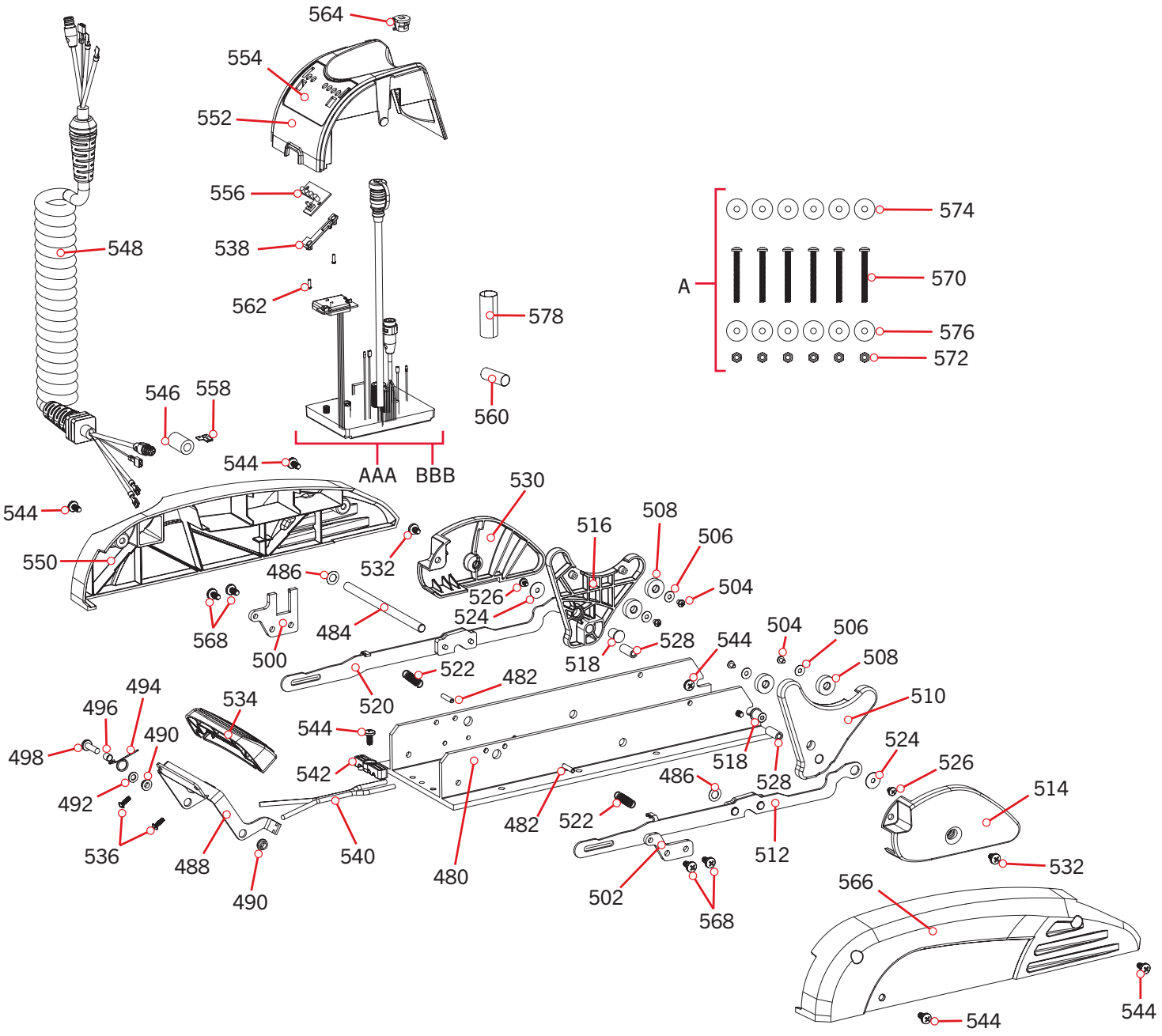
Assembly	Part #	Description	Notes	Quantity
F	2994733 ⭘	FT PEDAL ASM TRV 3 PM	*DUAL SPECTRUM CHIRP* *DOWN IMAGING SONAR*	1
G	2994859 ⭘	BAG ASY-TERROVA/V2,RUB.BUMPERS	*DUAL SPECTRUM CHIRP* *DOWN IMAGING SONAR*	1
Item	**Part #**	**Description**	**Notes**	**Quantity**
400	2323731	BUTTON, RIGHT STEER, TERROVA		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,TERROVA 3 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	2323421	SCREW-#8-18 X 1/2" 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-.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.*
⭘ *Available on select models only.*

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TERROVA MOUNT

Mount Parts Diagram



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Mount Parts List

Assembly	Part #	Description	Notes	Quantity
AAA	2324062	CONTROL BRD ASY, MAIN, 12V, IP	*55LB*	1
BBB	2324063	CTRL BRD,MAIN,24/36V,IP	*80LB* *112LB*	1
A	2994864	BAG ASSY-TERROVA/V2,MNTG HDW		1
Item	**Part #**	**Description**	**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
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

▲ *Not shown on Parts Diagram.*

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

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Item	Part #	Description	Notes	Quantity
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

▲ *Not shown on Parts Diagram.*

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

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PRECISION BATTERY CHARGERS

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



MK212PCL

SHALLOW WATER ANCHORS

When you find fish, we're down. From the relentless Raptor to the trusted power of Talon, when you're ready to lock down fish in shallow water, we have your weapon.



RAPTOR
SHALLOW WATER ANCHOR

TALON
SHALLOW WATER ANCHOR

How to Dominate in Shallow Water

A shallow water anchor revolutionizes the way you stay on fish. Both Raptor and Talon give fish nowhere to run and nowhere to hide. Zero in on your target by keeping your boat in the exact position and orientation you want, with a whisper-quiet anchor and no prop to disturb sediment or spook fish.

Anchor in Anything

Raptor and Talon can adjust their anchoring force based on what kind of bottom you're anchoring into, so you get the right amount of power you need for a secure hold in rocks, silt, mud or sand. Raptor can even sense the bottom automatically, dialing in the right amount of force for the job.

Control from Anywhere

Raise and lower your anchor from the unit, a dedicated remote control, wireless remote, Minn Kota Fishing App, or Minn Kota fish finder.

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

- 60-Amp Circuit Breaker
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