



Anywhere. Anytime.



**OWNER'S MANUAL FOR MINN KOTA
ONBOARD DC ALTERNATOR
BATTERY CHARGERS
Models: MK-1-DC, MK-2-DC, MK-3-DC**

Service Information:

Please call our service department at 800-227-6433 if you have any problems with your battery charger. A technical support representative will be happy to assist you.

1. SAFETY INFORMATION

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS!

This manual contains important safety and operating instructions applicable to the safe and efficient use of your Minn Kota battery charger.

The Minn Kota battery charger is a powerful electrical device. If incorrectly installed, configured or operated, the battery charger can damage batteries and / or electrical equipment. Please read thoroughly the instructions and safety information contained in this manual before operating the battery charger.

WARNING: RISK OF EXPLOSIVE GASES

WORKING IN THE VICINITY OF A LEAD ACID BATTERY IS DANGEROUS. BATTERIES CONTAIN SULFURIC ACID AND PRODUCE EXPLOSIVE GASES. A BATTERY EXPLOSION COULD RESULT IN LOSS OF EYESIGHT OR SERIOUS BURNS. FOR THIS REASON, IT IS OF UTMOST IMPORTANCE THAT YOU FOLLOW THE INSTRUCTIONS EACH TIME YOU USE THE CHARGER.

TO REDUCE THE RISK OF BATTERY EXPLOSION, FOLLOW THESE INSTRUCTIONS AND THOSE PUBLISHED BY THE BATTERY MANUFACTURER FOR ANY EQUIPMENT YOU INTEND TO USE IN THE VICINITY OF THE BATTERY. REVIEW CAUTIONARY MARKINGS ON THESE PRODUCTS AND ON ENGINE, MOTOR OR OTHER EQUIPMENT REQUIRING BATTERY USAGE.

Use of an attachment not recommended or sold by Johnson Outdoors Inc. may result in risk of fire, electric shock, or injury to persons or property.

The charger is not intended for use by young children or infirm persons without supervision. Young children should be supervised to ensure that they do not play with the charger.

Do not operate the battery charger with a damaged cord.

Do not operate the battery charger if it has received a sharp blow, been dropped or otherwise damaged in any way.

Do not disassemble the charger. Incorrect reassembly may result in a risk of electric shock or fire.

To reduce the risk of shock or spark, never touch the ring terminals together while the charger is in operation.

External connections to the battery charger shall comply with the United States Coast Guard electrical regulations (33CFR183, Sub Part 1).

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.

2. PERSONAL PRECAUTIONS

Consider having someone close enough nearby to come to your aid when you work near a lead acid battery.

Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing or eyes.

Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.

If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with running cold water for at least 10 minutes and get medical attention immediately.

Never smoke or allow a spark or flame in vicinity of battery, engine, motor or other flammable or explosive equipment.

Be extra cautious to reduce risk of dropping a metal tool onto battery. It might spark or short circuit battery or other electrical part that may cause explosion.

Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead acid battery. A lead acid battery can produce a short circuit current high enough to weld such items, causing severe burns.

Use charger for charging 12 Volt/6 Cell Lead-acid Batteries (Flooded, Maintenance Free, or AGM) only. It is not intended to supply power to a low voltage electrical system other than in a starter-motor application. Do not use battery charger for charging dry-cell batteries that are commonly used with home appliances. These batteries may burst and cause injury to persons and damage to property.

NEVER charge a frozen battery.

3. PREPARING TO CHARGE

- 1) Be sure area around battery is well ventilated while battery is being charged or maintained.
- 2) Clean battery terminals. Be careful to keep corrosion from coming in contact with eyes.
- 3) Add distilled water in each cell until battery acid reaches level specified by battery manufacturer **ONLY AFTER** the battery has been charged. Adding water to a discharged battery may result in acid leaking out of the battery and causing injury to persons and damage to property. Do not overfill. Study all battery manufacturers' specific precautions; however, make sure to **REPLACE ALL CELL CAPS** after refilling so that water evaporation is avoided. Water will evaporate over time if cell caps are not replaced after refilling. For a battery without removable cell caps, such as valve regulated lead acid batteries, carefully follow manufacturer's recharging instructions.

NOTE: The battery fluid level should be checked every 30 days

- 4) Study all battery manufacturers' specific precautions while charging and recommended rates of charge.

4. DC CONNECTION PRECAUTIONS

- 1) The Minn Kota charger will only charge 12 volt 6 cell lead acid batteries. Do not connect the output of the charger to any other voltage or type of battery.
- 2) The charger's terminals are designed to be permanently mounted and connected to batteries.
- 3) The charger output leads must be connected with the correct polarity for the charger to function. The RED lead must be connected to the POSITIVE terminal of the battery and the BLACK lead must be connected to the NEGATIVE terminal of the battery. **See section 5 under "CONNECTING THE BATTERIES TO THE CHARGER" for proper connection procedure.**

5. INSTALLING THE BATTERY CHARGER

CHARGING REQUIREMENTS:

In order to achieve full output from the DC Alternator Charger, the minimum input from the engine alternator must be as follows:

- MK-1-DC: 12 amp minimum
- MK-2-DC: 25 amp minimum
- MK-3-DC: 35 amp minimum

CHOOSING THE MOUNTING LOCATION:

Do not mount the charger above batteries as lead-acid batteries give off corrosive gasses which will damage the charger over time. Never allow battery acid to drip on charger when reading electrolyte specific gravity or filling battery. Also, as with most electrical devices, do not mount the charger below the waterline of the boat or directly adjacent to fuel tanks.

Each DC input and output cord is 6 feet long. Make sure that all DC cords can reach the batteries.

If the DC battery leads are not long enough, they should be brought to a terminal block and extended from the terminal block with 12 AWG (minimum) wire. A fuse holder should always remain within 7 inches of the battery terminals. The maximum extension length is 15 feet. You may contact the Minn Kota Service Department with any questions.

Even though the Minn Kota charger is capable of operating in a high ambient temperature environment, a minimum of 6 inches of unobstructed area should be allowed on all sides of the unit for proper air circulation and cooling. Proper cooling and circulation will allow the charger to operate at peak efficiency.

MOUNTING THE CHARGER:

Due to the pounding that boats routinely endure, take the time to securely mount the charger to prevent damage. Mounting with bolts, nuts, and washers is preferable to mounting with screws. Use the largest diameter bolts possible, and use all four mounting holes.

CAUTION - Before making any connections to batteries in a confined space (such as a battery compartment of a boat), open the door or hatch of the compartment and allow it to air out for 15 minutes. This allows any gasses that have accumulated in the compartment to escape.

CONNECTING THE BATTERIES TO THE CHARGER:

1. Find the input cable labeled "STARTING" and connect POSITIVE (RED) wire to POSITIVE (+) or ungrounded terminal on the starting battery. Then connect the NEGATIVE (BLACK) to the NEGATIVE (-) or grounded battery terminal on that battery.
2. Find each output cable and connect POSITIVE (RED) wire to POSITIVE (+) or ungrounded terminal on the trolling battery. Then connect the NEGATIVE (BLACK) to the NEGATIVE (-) or grounded battery terminal on that battery.
3. Connect additional output cables to additional batteries as described in step 2.
4. For this DC Alternator Charger to function, find the **purple** ignition wire and connect it to the **Ignition Circuit**. This can be any +12v source that is only energized when the ignition key is turned on. Use the quick connect terminal provided. See diagram to the right. If the purple ignition wire is not long enough, it can be extended with 18 AWG wire.

Each output bank is independent and isolated from one another. The Minn Kota charger can charge independent batteries or combinations of batteries hooked in series or parallel without disconnecting the batteries from any switches or wires / straps joining the batteries. See diagram on page 6.

6. OPERATING INSTRUCTIONS

Make sure the charger is properly mounted and the cords are connected properly to the batteries. Double check the polarities of the cords and make sure the correct bank of the charger is connected to the correct battery

INDICATOR LIGHTS:

The following will be displayed on the charger:

- 1) A GREEN power light is lit to indicate the ignition is turned on.
- 2) A RED power light is lit to indicate the input cord to the starting battery is connected reverse polarity.
- 3) A YELLOW light is lit to indicate the trolling battery(s) is(are) charging. (The starting battery voltage must be above 13.6V and deep cycle battery(s) voltage must be above 4.0V, for the charger to operate.)
- 4) A RED light for each output is lit if any battery(s) is(are) connected reverse polarity

INLINE FUSE:

Each input and output cord has inline fuses on the leads located near the ring terminals. These fuses serve as protection from surges and short circuits caused by a damaged charger output cable. If a fuse blows, replace it with the exact type and rating of the original fuse. Improper battery connections will normally not cause a fuse to blow since this is handled by the chargers internal circuitry.

CAUTION – If a RED light is lit, disconnect the input cord from the charger immediately. Determine the reason based on the above information and take the necessary corrective action to remedy the situation. If you are unable to remedy the situation and need help, call the Minn Kota Service Department at 1-800-227-6433 and a technical support representative will be happy to assist you.

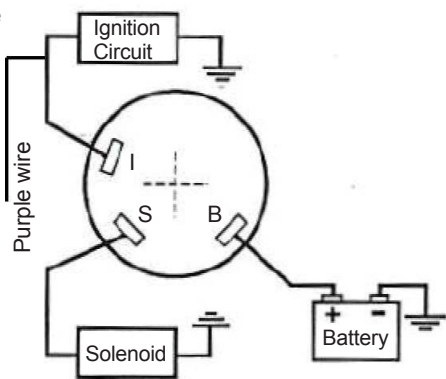
7. MAINTENANCE / CLEANING / STORAGE INSTRUCTIONS

Check battery charger for dirt, oil, battery corrosion, etc. Use a water and baking soda solution for cleaning corrosion. Wipe clean using a dry cloth.

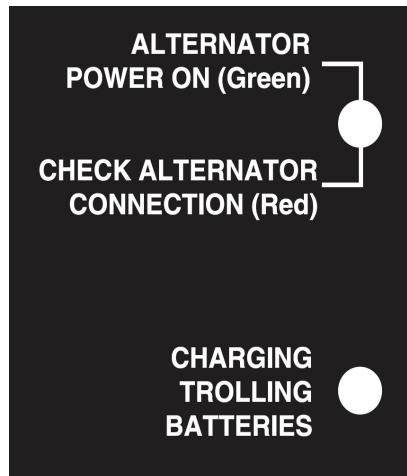
Check ring terminals for dirt, oil, and battery corrosion; then disconnect from battery posts and clean as necessary with water and baking soda solution and dry with a clean cloth.

NOTE – 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.
Consult the dealer or an experienced radio/TV technician for help.

CAUTION – Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



Specifications:							
Model	Part No.	System Volts	Banks	Input Cable	Output Cable	Size L x W x H	Weight (lbs)
MK-1-DC	1821031	12	1	14AWG - 6'	16AWG - 6'	7" x 7-1/4" x 3-1/2"	5
MK-2-DC	1821032	12 / 24	2	12AWG - 6'	16AWG - 6'	10-1/2" x 7-1/4" x 3-1/2"	6.5
MK-3-DC	1821033	12 / 24 / 36	3	12AWG - 6'	16AWG - 6'	14-1/4" x 7-1/4" x 3-1/2"	8.5



INDICATOR LIGHTS

8. TROUBLESHOOTING

PROBLEM:

Check Alternator Connection (Red) light comes on.

SOLUTION:

- Check polarity of leads to starting battery.
 - If still not working, call the Minn Kota Service Department at 1-800-227-6433.
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PROBLEM:

Check Connection light comes on for output cables.

SOLUTION:

- Check polarity of leads to trolling batteries.
 - If still not working, call the Minn Kota Service Department at 1-800-227-6433.
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PROBLEM:

Indicator lights are not illuminated when the engine is operating.

SOLUTION:

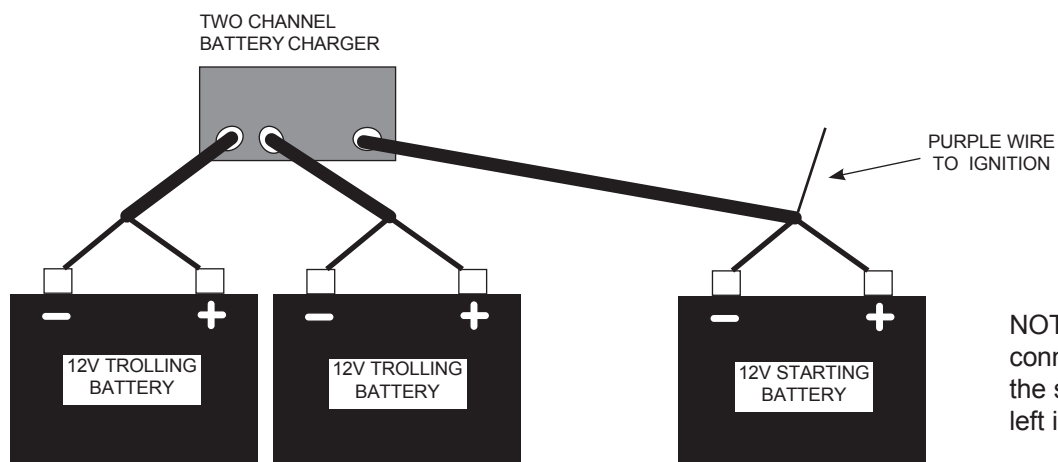
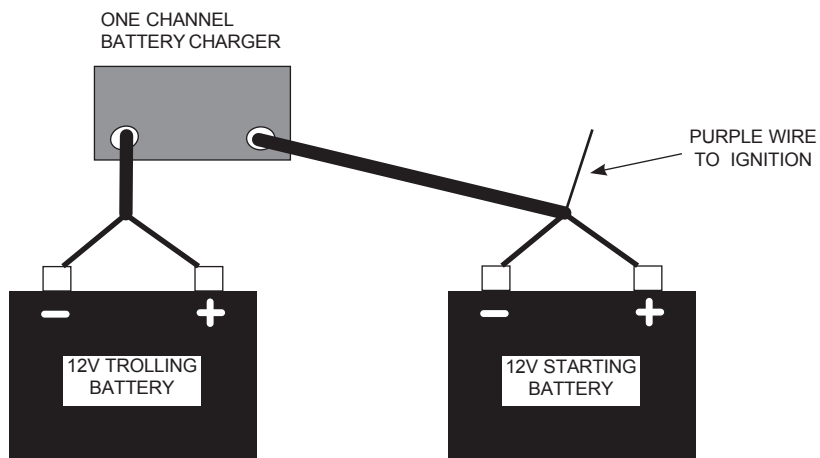
- Make sure all terminals are tight and have the correct polarity.
 - Make sure the purple wire is connected to a +12v ignition source. See page 4.
 - Check fuses in the fuse holders to the starting battery.
 - If still not working, call the Minn Kota Service Department at 1-800-227-6433.
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PROBLEM:

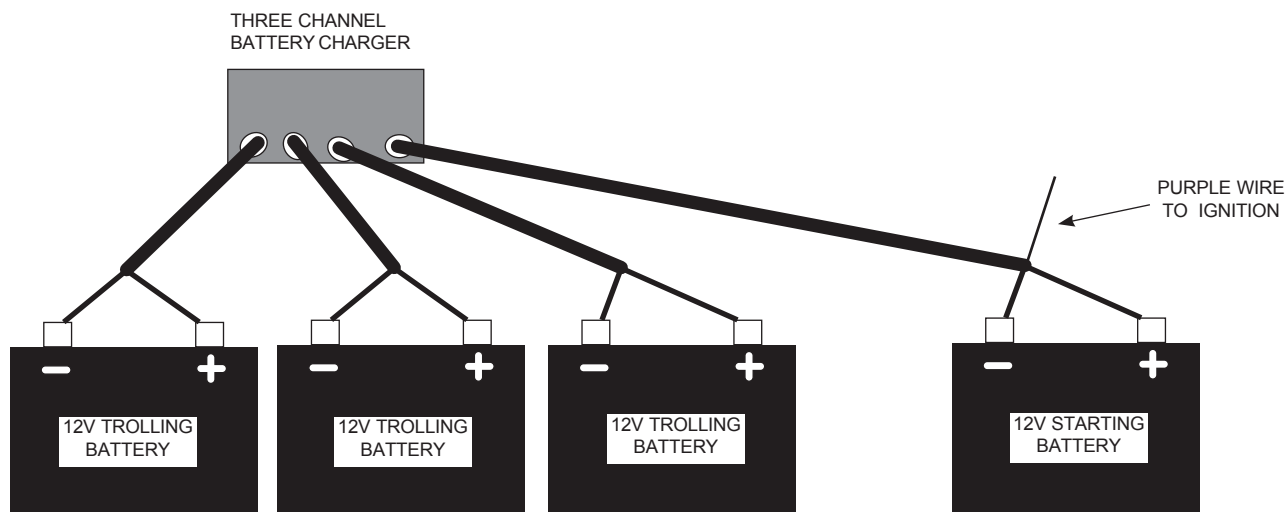
Charging Trolling Batteries light is not illuminated when the engine is operating.

SOLUTION:

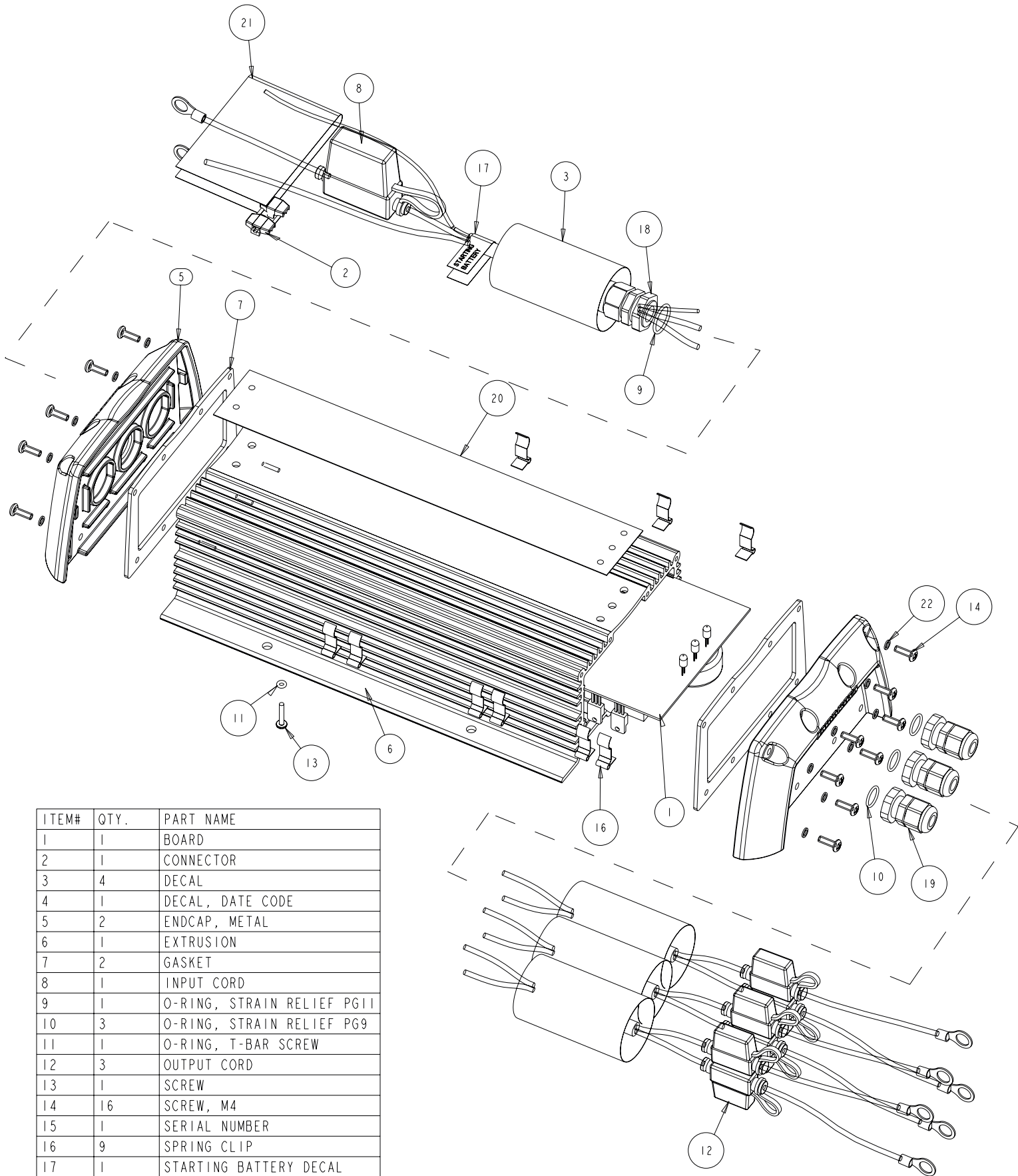
- Make sure the engine alternator size is adequate to allow the DC Alternator Charger to operate properly. See page 3.
- Make sure all terminals are tight and have the correct polarity.
- Make sure the purple wire is connected to a +12v ignition source. See page 4.
- Check fuses in all fuse holders to the starting and trolling batteries.
- Check starting battery voltage. (Starting battery voltage must be above 13.6V for the charger to operate)
- Check deep cycle battery(ies) voltage. (Deep cycle battery voltage must be above 4.0V for the charger to operate)
- If still not working, call the Minn Kota Service Department at 1-800-227-6433.



NOTE: If trolling batteries are connected in series for 12/24 - 24V, the series connection wire should be left in place during charging.



NOTE: If trolling batteries are connected in series for 12/24 - 24 - 24/36 - 36V, the series connection wire should be left in place during charging.



ITEM#	QTY.	PART NAME
1	1	BOARD
2	1	CONNECTOR
3	4	DECAL
4	1	DECAL, DATE CODE
5	2	ENDCAP, METAL
6	1	EXTRUSION
7	2	GASKET
8	1	INPUT CORD
9	1	O-RING, STRAIN RELIEF PG11
10	3	O-RING, STRAIN RELIEF PG9
11	1	O-RING, T-BAR SCREW
12	3	OUTPUT CORD
13	1	SCREW
14	16	SCREW, M4
15	1	SERIAL NUMBER
16	9	SPRING CLIP
17	1	STARTING BATTERY DECAL
18	1	STRAIN RELIEF, PG11
19	3	STRAIN RELIEF, PG9
20	1	TOP DECAL
21	1	WARNING LABEL
22	16	WASHER, 4MM

This page 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 screw driver, Phillips screw driver, Socket set, Pliers, wire Cutters..

ENVIRONMENTAL COMPLIANCE STATEMENT:

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

WEEE Directive:

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

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

This symbol (WEEE wheelee bin) on product indicates the product must not be disposed of with other household refuse. It must be disposed of and collected for recycling and recovery of waste EEE. Johnson Outdoors Inc. will mark all EEE products in accordance with the WEEE Directive. It is our goal to comply in the collection, treatment, recovery, and environmentally sound disposal of those products; however, these requirement 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.



LIMITED THREE YEAR WARRANTY:

Johnson Outdoors Marine Electronics, Inc. warrants to the original purchaser that the purchaser's entire Minn Kota® battery charger is free from defects in materials and workmanship appearing within three (3) years after the date of purchase. Johnson Outdoors Marine Electronics, Inc. will, at its option, either repair or replace, free of charge, any parts found to be defective during the term of this warranty. Such repair or replacement shall be the sole liability of Johnson Outdoors Marine Electronics, Inc. and the sole remedy of the purchaser for breach of this warranty.

This limited warranty does not apply to chargers used commercially, nor does it cover normal wear and tear, blemishes that do not affect the operation of the charger, or damage caused by accidents, abuse, alteration, modification, misuse or improper care or maintenance. The cost of normal maintenance or replacement of parts which are not defective are the responsibility of the purchaser.

To obtain warranty service in the U.S., the charger and proof of original purchase (including the date of purchase), must be sent to Minn Kota®'s factory service center at 121 Power Drive, Mankato, MN 56001. Any charges incurred for service calls, transportation or shipping/freight to/from the Minn Kota® Factory 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. Warranty service can be arranged by contacting the factory at: 1.800.227.6433, 1.507.345.4623 or fax 1.800.527.4464.

Chargers purchased outside of the U.S. must be returned prepaid with proof of purchase to Johnson Outdoors Canada, 4180 Harvester Road, Burlington, Ontario Canada L7L 6B6, Phone 1.905.634.0023.

Note: Do not return your Minn Kota® charger or parts to your retailer. Your retailer is not authorized to repair or replace them.

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 ONE YEAR FROM THE DATE OF PURCHASE. IN NO EVENT SHALL JOHNSON OUTDOORS MARINE ELECTRONICS, INC. BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES.

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.



Look for us on the web at <http://www.minnkotamotors.com>