



Digital Power Inverter

Owner's Manual



WARNING: Read carefully and understand all ASSEMBLY AND OPERATION INSTRUCTIONS before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

Items #53072, #53073, #53071, #53074, #53067

READ & SAVE THESE INSTRUCTIONS

Thank you very much for choosing a Strongway™ product!

For future reference, please complete the owner's record below:

Serial Number/Lot Date Code: _____

Purchase Date: _____

Save the receipt, warranty, and this manual. It is important that you read the entire manual to become familiar with this product before you begin using it.

This inverter is designed for certain applications only. Northern Tool and Equipment is not responsible for issues arising from modification or improper use of this product such as an application for which it was not designed. We strongly recommend that this product not be modified and/or used for any application other than that for which it was designed.

For technical questions, please call **1-800-222-5381**.

Table of Contents

Intended Use.....	4
Technical Specifications	4
Important Safety Information	6
Specific Operation Warnings	7
Main Parts	9
Assembly Instructions.....	11
Before Each Use.....	12
Operating Instructions.....	12
After Each Use.....	13
Maintenance	13
Troubleshooting	13
Parts List.....	14
Replacement Parts	14
Limited Warranty	15

Intended Use

The Strongway Digital Power Inverter is a high-performance solution for using household power while on the road. Connected to the 12 volt output power source, the inverter efficiently and reliably supplies 115V/60Hz AC power for a wide variety of loads like laptops, microwaves, and cellular phones with power consumption under the rated watts. With proper care and appropriate use, the inverter will give you years of dependable service in your car, truck, RV, or boat.

The inverter has the protective functions of over-input voltage shut off, low-input voltage shut off, under-voltage turn-off resume, over heating self-lock, overload self-lock, and short circuit protection. The LED indicator will directly display input power and errors. The unit is not designed to be waterproof. It's appropriate for ambient temperatures 32° F ~ 104° F (0° C ~ 40° C).

Technical Specifications

#53072 Property	#53072 Specification
AC Power Output	
AC Power Voltage	115V
Maximum AC Output Power	1000W
Maximum AC Output Surge Power	2000W
AC Output Frequency	58Hz - 62Hz
AC Output waveform	Modified Sine Wave
USB Power Output	
DC Output Voltage	5V DC, 2100mA
DC Power Specifications	
DC Input Voltage Range	11V to 15V DC
Battery drain with no AC load	≤ 0.6A (at a 12V input)
Low Battery Shut-Down point (Nominal)	10.5 ± 0.3V DC
High Battery Shut-Down point (Nominal)	15.5 ± 0.5V DC
Efficiency (Maximum)	85%
Physical Specifications	
Ambient operating Temperature Range	32°F to 104°F

#53073 Property	#53073 Specification
AC Power Output	
AC Power Voltage	115V
Maximum AC Output Power	1500W
Maximum AC Output Surge Power	3000W
AC Output Frequency	58Hz - 62Hz
AC Output Waveform	Modified Sine Wave
USB Power Output	
DC Output Voltage	5V DC, 2100mA
DC Power Specifications	
DC Input Voltage Range	11V to 15V DC
Battery drain with no AC load	≤ 0.8A (at a 12V input)
Low Battery Shut-Down Point (Nominal)	10.5 ± 0.3V DC
High Battery Shut-Down Point (Nominal)	15.5 ± 0.5V DC
Efficiency (Maximum)	85%
Physical Specifications	
Ambient Operating Temperature Range	32°F to 104°F

#53071 Property	#53071 Specification
AC Power Output	
AC Power Voltage	115V
Maximum AC Output Power	2000W
Maximum AC Output Surge Power	4000W
AC Output Frequency	58Hz - 62Hz
AC Output Waveform	Modified Sine Wave
USB Power Output	
DC Output Voltage	5V DC, 2100mA
DC Power	
DC Input Voltage Range	11V to 15V DC
Battery Drain Without AC Load	≤ 0.65A (at a 12V input)
Low Battery Shut-Down Point (Nominal)	10.5 ± 0.3V DC
High Battery Shut-Down Point (Nominal)	15.5 ± 0.5V DC
Fuse	35A*8
Efficiency (Maximum)	85%
Physical	
Ambient Operating Temperature Range	32°F to 104°F

#53074 Property	#53074 Specification
AC Power Output	
AC Power Voltage	115V
Maximum AC Output Power	3000W
Maximum AC Output Surge Power	6000W
AC Output Frequency	58Hz - 62Hz
AC Output Waveform	Modified Sine Wave
USB Power Output	
DC Output Voltage	5V DC, 2100mA
DC Power	
DC Input Voltage Range	11V to 15V DC
Battery Drain Without AC load	≤ 1A (at a 12V input)
Low Battery Shut-Down Point (Nominal)	10.5 ± 0.3V DC
High Battery Shut-Down Point (Nominal)	15.5 ± 0.5V DC
Efficiency (Maximum)	85%
Physical	
Ambient Operating Temperature Range	32°F to 104°F

#53067 Property	#53067 Specification
AC Power Output	
AC Power Voltage	115V
Maximum AC Output Power	5000W
Maximum AC Output Surge Power	10000W
AC Output Frequency	58Hz - 62Hz
AC Output Waveform	Modified Sine Wave
USB Power Output	
DC Output Voltage	5V DC, 500mA

#53067 Property	#53067 Specification
DC Power	
DC Input Voltage Range	11V to 15V DC
Battery Drain Without AC Load	≤ 0.5A (at a 12V input)
Low Battery Shut-Down Point (Nominal)	10.5 ± 0.3V DC
High Battery Shut-Down Point (Nominal)	15.5 ± 0.5V DC
Efficiency (Maximum)	85%
Physical	
Ambient Operating Temperature Range	32°F to 104°F

Important Safety Information

⚠️ WARNING

- Read and understand all instructions. Failure to follow all instructions may result in serious injury or property damage.
- The warnings, cautions, and instructions in this manual cannot cover all possible conditions or situations that could occur. Exercise common sense and caution when using this inverter. Always be aware of the environment and ensure that the tool is used in a safe and responsible manner.
- Do not allow persons to operate or assemble the product until they have read this manual and have developed a thorough understanding of how it works.
- Do not modify this inverter in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the product. There are specific applications for which the product was designed.
- Use the right tool for the job. DO NOT attempt to force small equipment to do the work of larger industrial equipment. There are certain applications for which this equipment was designed. This product will be safer and do a better job at the capacity for which it was intended. DO NOT use this equipment for a purpose for which it was not intended.
- Industrial or commercial applications must follow OSHA requirements.

⚠️ WARNING

- This product may contain chemicals known to the state of California to cause cancer, birth defects, or reproductive harm.

⚠️ WARNING

WORK AREA SAFETY

- Inspect the work area before each use. Keep work area clean, dry, free of clutter, and well-lit. Cluttered, wet, or dark work areas can result in injury. Using the product in confined work areas may put you dangerously close to other cutting tools and rotating parts.
- Do not use the inverter where there is a risk of causing a fire or an explosion; e.g., in the presence of flammable liquids, gases, or dust. The product can create sparks, which may ignite the flammable liquids, gases, or dust.
- Keep children and bystanders away from the work area while operating the inverter. Do not allow

children to handle it.

⚠️WARNING

PERSONAL SAFETY

- Stay alert, watch what you are doing, and use common sense when operating the tool. Do not use the inverter while you are tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating the tool may result in serious personal injury.
- Dress properly. Do not wear loose clothing, dangling objects, or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts. Air vents on the tool often cover moving parts and should be avoided.
- Wear the proper personal protective equipment when necessary. Use ANSI Z87.1 compliant safety goggles (not safety glasses) with side shields, or when needed, a face shield. Use a dust mask in dusty work conditions. Also use non-skid safety shoes, hardhat, gloves, dust collection systems, and hearing protection when appropriate. This applies to all persons in the work area.

⚠️CAUTION

INVERTER USE AND CARE

- Do not force the inverter. Products are safer and do a better job when used in the manner for which they are designed. Plan your work, and use the correct product for the job.
- Check for damaged parts before each use. Carefully check that the inverter will operate properly and perform its intended function. Replace damaged or worn parts immediately. Never operate the product with a damaged part.
- Do not use a product with a malfunctioning switch. Any power tool that cannot be controlled with the power switch is dangerous and must be repaired by an authorized service representative before using.
- Disconnect the power/air supply from the product and place the switch in the locked or off position before making any adjustments, changing accessories, or storing the tool. Such preventive safety measures reduce the risk of starting the tool accidentally.
- Store the product when it is not in use. Store it in a dry, secure place out of the reach of children. Inspect the tool for good working condition prior to storage and before re-use.
- Use only accessories that are recommended by the manufacturer for use with your product. Accessories that may be suitable for one product may create a risk of injury when used with another tool. Never use an accessory that has a lower operating speed or operating pressure than the tool itself.
- Keep guards in place and in working order. Never operate the product without the guards in place.
- Do not leave the tool running unattended.

Specific Operation Warnings

⚠️WARNING

SHOCK HAZARD

- DO NOT expose the inverter to rain, snow, spray, or bilge water.
- Make sure the inverter wiring is of proper size and rating and in good condition. Operating the inverter with damaged wiring may void the warranty.
- DO NOT use the inverter if it has been dropped, hit, worn, broken, or damaged.
- DO NOT attempt to service or disassemble the inverter, it does not have serviceable parts.
- Disconnect the DC power source from the inverter before attempting to service, clean, or operate on any circuits connected to inverter. Turning off the controls will not reduce the risk of electric shock.
- NEVER connect the inverter to any power distribution systems or branch circuits.

FIRE HAZARD

- DO NOT cover or obstruct the ventilation of the inverter, as doing so may cause overheating.
- For continued protection against risk of fire, or electric shock replace only with same type and ratings of fuse.
- Make sure there is minimum of 3" of unblocked air space around the entire surface of the inverter at all times. The inverter may become warm reaching a temperature of 140° F (60° C) under high power operation.
- DO NOT place any materials near the inverter that could be easily damaged by heat.
- Never install the inverter in a zero-clearance environment, as doing so may cause the inverter to overheat.

EQUIPMENT DAMAGE

- DO NOT connect the inverter to live AC power circuits or any AC device with a neutral conductor connected to ground (to avoid damage to the inverter) even if the inverter is turned off.

SAFETY PRECAUTIONS WHEN WORKING WITH BATTERIES

Follow all instructions mentioned by the manufacturer to avoid explosion of the battery.

EXPLOSION AND FIRE HAZARD

- DO NOT work near lead-acid batteries, as the batteries generate explosive gases during normal operation.
- DO NOT drop a metal tool on the battery, as doing so can create sparks or a short circuit in the battery or other electrical parts, resulting in a battery explosion.
- While removing the battery, make sure to remove the grounded terminal from the battery and disconnect other electrical connections.
- NEVER operate the inverter near flammable items or explosives, such as in cabin of a gasoline powerboat, or near propane/fuel tanks, in compartments containing batteries of flammable materials, locations that require ignition-protected equipment, joints, fittings or any connections between fuel system components. This inverter contains components which tend to produce arcs or sparks.
- Make sure the area around the battery and engine is well ventilated and free from sparks or flames.
- NEVER smoke while handling the inverter.
- DO NOT operate the inverter in an enclosed area containing automotive type lead-acid batteries. These types of batteries emit explosive hydrogen gases that can be ignited by sparks.
- DO NOT remove the battery with any of the accessories attached, to prevent the risk of sparks.

CHEMICAL HAZARD

- Remove all metal items such as rings, bracelets, and watches when working with the lead-acid

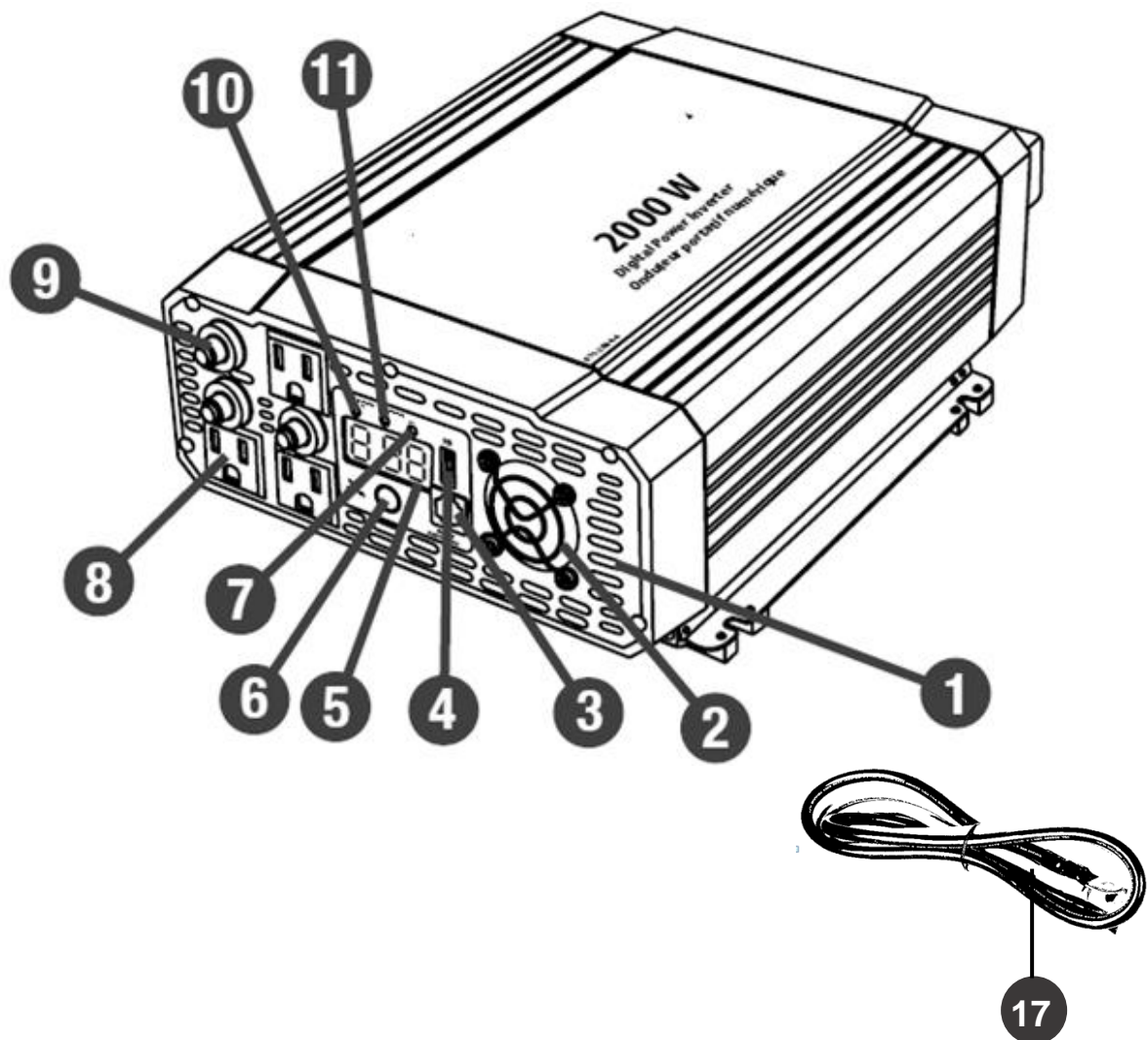
batteries. The batteries may produce a short circuit current that can weld metals, thereby causing severe burns on skin.

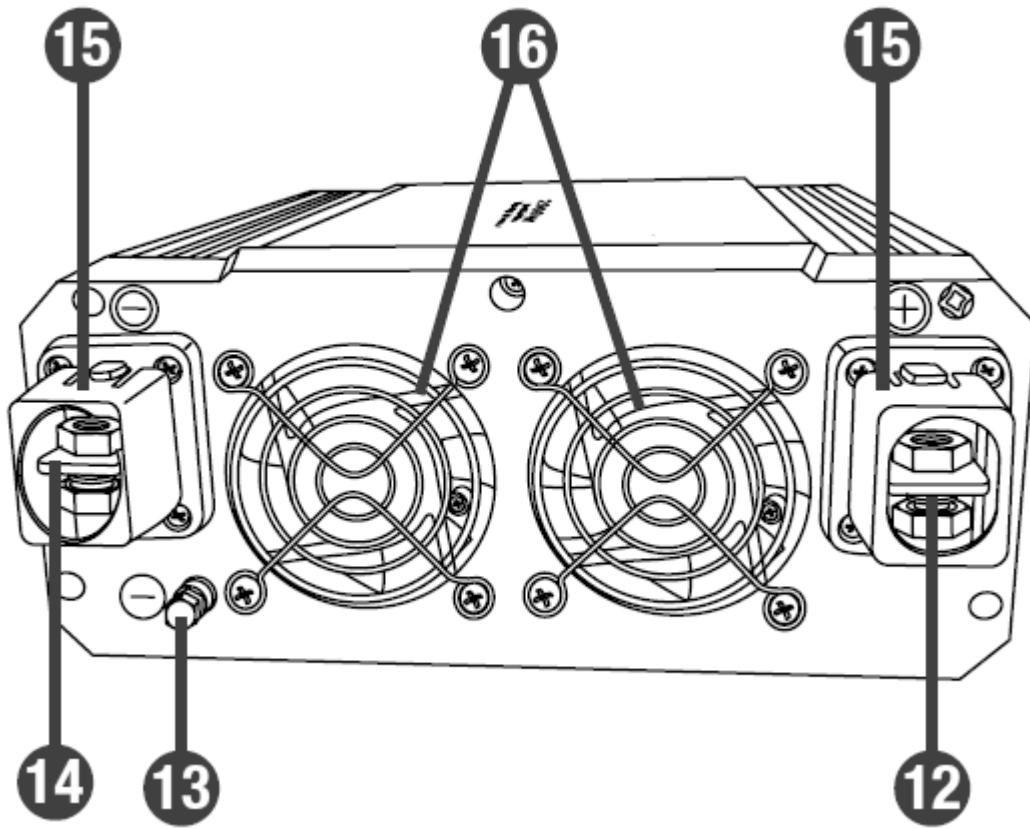
- Make sure there is plenty of fresh water, soap, and baking soda near the work area. If a person's skin or clothing accidentally comes into contact with battery acid, wash immediately with baking soda, soap, and water. If the acid enters the eye, wash immediately with cold, running water for a minimum of twenty minutes and get medical attention immediately.
- Always wear complete eye and clothing protection. Avoid touching your eyes while working with the batteries.

EQUIPMENT DAMAGE

- Connect the inverter to batteries with a normal output of 12 V DC only. The inverter will not operate if connected to a 6 V battery and will be damaged if connected to a 24 V battery.
- DO NOT insert any foreign objects into the outlets, vents, or fan openings of the inverter.
- DO NOT use the inverter in temperatures over 104° F (40° C) or under 14° F (-10° C).

Main Parts





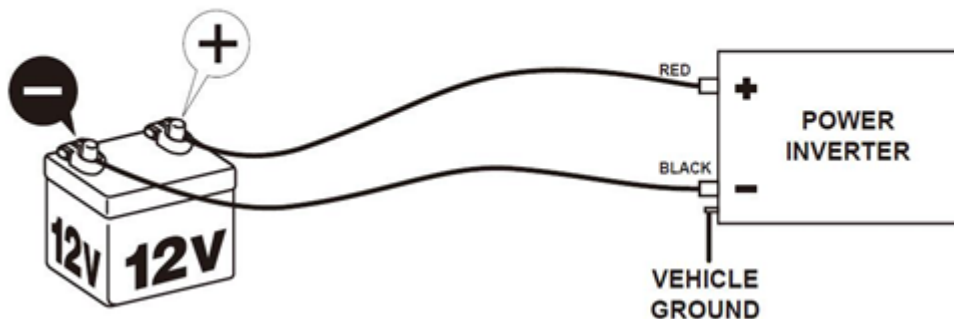
Reference	Subassembly
1	Ventilation Opening
2	Cooling Fan
3	Remote Switch Port
4	USB Port
5	Digital Display
6	Power Switch Button
7	Output Power Indicator (W)
8	AC Outlet
9	AC Outlet Overload Reset Circuit
10	Input Indicator (V)
11	Output Power Indicator (kW)
12	Positive DC Terminal
13	Ground Terminal
14	Negative DC Terminal
15	Terminal Covers
16	Cooling Fans
17	DC Cable

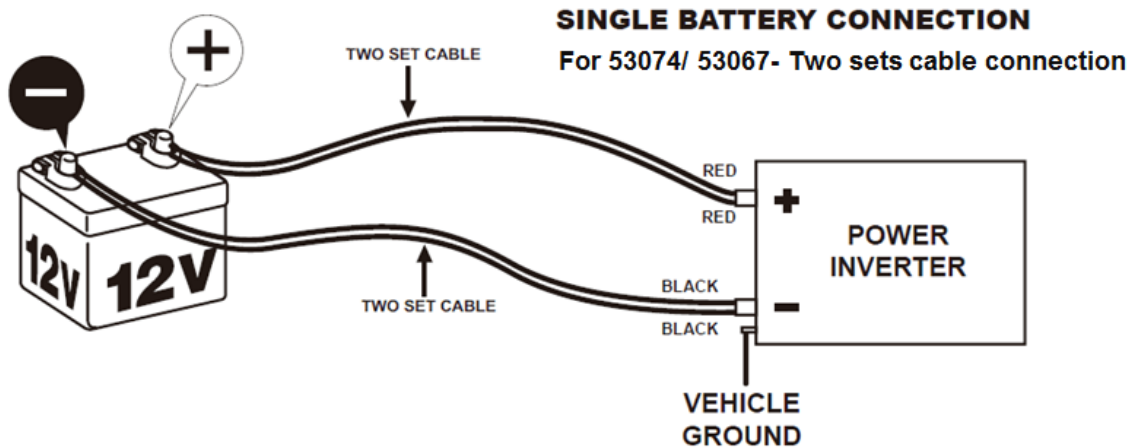
Assembly Instructions

1. Make sure the power switch on the inverter is OFF.
2. Connect the red positive (+) end of the ring terminal to the positive (+) terminal of the battery.
3. Connect the other end of the ring terminal to the positive (+) terminal of the inverter.
4. Connect the black negative (-) end of the ring terminal to the negative terminal of the inverter.
5. Connect the other end of the ring terminal to the negative (-) terminal of the battery.
6. Connect a 14AWG stranded insulated wire to the inverter ground terminal and connect the other end to the ground.

SINGLE BATTERY CONNECTION

For 53072/ 53073/ 53071 One set cable connection





Before Each Use

Before installing the inverter, make sure the location meets the following conditions. This inverter has a mounting bracket. To secure and fasten your inverter, please mount the inverter.

Dry	Don't drop or pour any liquid on the inverter.
Cool	Keep the inverter away from direct lighting.
Ventilate	Leave at least 2" of clearance around the inverter for air flow. Make sure the ventilation openings are not obstructed.
Safe	Do not operate in the same compartment as stored flammable liquids and gasoline.
Protect from battery gases	Do not operate the inverter where it will be exposed to battery gases. Prolonged exposure can damage the inverter.

The inverter should be connected to 12 V power supply with the DC cables. We recommend that the equipment or appliance switch be in the "OFF" position prior to plugging into the AC receptacle of the inverter.

Operating Instructions

⚠WARNING

Before connecting, make sure the cables will be connected correctly. If the poles of the battery are reversely connected, the inverter will be damaged and the warranty does not cover such damage.

1. Turn on the inverter.
2. Plug in AC appliances one at a time with the highest load first.
3. Before disconnecting the inverter from the battery, make sure the inverter is turned OFF.

Note: If connected to a vehicle battery, constant use of the inverter will greatly affect the life of the battery. Most vehicle batteries are not designed for constant, deep discharge. If you plan to use the inverter for frequent extended periods of time, consider using a separate battery for the inverter.

Note: Most devices require an initial surge of power to start. Most devices can be started up with two times their power rating. Be aware of the start-up power of the device(s) you intend to use for the inverter. This inverter has the start-up capacity two times of rated power. The combined loads must not exceed the rated power. The less combined wattage used, the longer the inverter will operate before the battery needs to be recharged.

After Each Use

When the inverter is not in use, disconnect the DC cable clips from the battery to prevent a slight discharge of battery.

Maintenance

The inverter will operate efficiently when maintained properly. Follow these steps:




- Clean the exterior surface of the inverter with a damp cloth to prevent accumulation of dust and dirt.
- Tighten the screws on the DC input terminals.
- Recharge the battery before it is discharged to 50%. This will extend the durability and efficiency of the battery.

Troubleshooting

Use the table below to troubleshoot problems before contacting service personnel or your local dealer. If the problem continues after troubleshooting, call your local dealer for assistance.

Failure	Possible Cause	Corrective Action
The digital display shows "LUP".	Low battery voltage shut-down feature turns the inverter OFF.	Recharge the battery. Check if cables and connections are secure.
	DC wiring is incorrect.	Use proper cable length and gauge. Create secure cable connections.
	Battery condition is poor.	Charge or replace the battery if needed.
The digital display shows "OUP".	High battery voltage shutdown feature turns the inverter OFF.	Make sure the inverter is connected to a 12 V battery.
The digital display shows "OLP".	AC output overload shutdown feature turns OFF the inverter.	Make sure the load attached to the inverter is within the operating limit.
The digital display shows "OCP".	The digital display shows "OCP".	Make sure the inverter is placed in a well-ventilated area and ventilation openings are not obstructed. Reduce the ambient temperature if possible.
The digital display shows "OPP".	Occurrence of short circuit.	Check the AC wiring.
No output voltage and voltage indication.	The inverter is in the OFF position.	Turn ON the inverter.
	There is no power supply to the inverter.	Check the wiring to the inverter.
	The DC polarity is reversed.	Reverse DC polarity will damage the inverter and voiding the warranty. Have a qualified service technician repair it.

Parts List

Reference	Part Description	Quantity	Image
1	Inverter	1	
2	DC Cable (red + black)	2	
3	Owner's Manual	1	

Replacement Parts

- For replacement parts and technical questions, please call Customer Service at **1-800-222-5381**.
- Not all product components are available for replacement. The illustrations provided are a convenient reference to the location and position of parts in the assembly sequence.
- When ordering parts, the following information will be required: item description, item model number, item serial number/item lot date code, and the replacement part reference number.
- The distributor reserves the rights to make design changes and improvements to product lines and manuals without notice.

Limited Warranty

Northern Tool and Equipment Company, Inc. ("We" or "Us") warrants to the original purchaser only ("You" or "Your") that the Strongway product purchased will be free from material defects in both materials and workmanship, normal wear and tear excepted, for a period of **one year** from date of purchase. The foregoing warranty is valid only if the installation and use of the product is strictly in accordance with product instructions. There are no other warranties, express or implied, including the warranty of merchantability or fitness for a particular purpose. If the product does not comply with this limited warranty, Your sole and exclusive remedy is that We will, at our sole option and within a commercially reasonable time, either replace the product or product component without charge to You or refund the purchase price (less shipping). This limited warranty is not transferable.

Limitations on the Warranty

This limited warranty does not cover: (a) normal wear and tear; (b) damage through abuse, neglect, misuse, or as a result of any accident or in any other manner; (c) damage from misapplication, overloading, or improper installation; (d) improper maintenance and repair; and (e) product alteration in any manner by anyone other than Us, with the sole exception of alterations made pursuant to product instructions and in a workmanlike manner.

Obligations of Purchaser

You must retain Your product purchase receipt to verify date of purchase and that You are the original purchaser. To make a warranty claim, contact Us at 1-800-222-5381, identify the product by make and model number, and follow the claim instructions that will be provided. The product and the purchase receipt must be provided to Us in order to process Your warranty claim. Any returned product that is replaced or refunded by Us becomes our property. You will be responsible for return shipping costs or costs related to Your return visit to a retail store.

Remedy Limits

Product replacement or a refund of the purchase price is Your sole remedy under this limited warranty or any other warranty related to the product. We shall not be liable for: service or labor charges or damage to Your property incurred in removing or replacing the product; any damages, including, without limitation, damages to tangible personal property or personal injury, related to Your improper use, installation, or maintenance of the product or product component; or any indirect, incidental or consequential damages of any kind for any reason.

Assumption of Risk

You acknowledge and agree that any use of the product for any purpose other than the specified use(s) stated in the product instructions is at Your own risk.

Governing Law

This limited warranty gives You specific legal rights, and You also may have other rights which vary from state to state. Some states do not allow limitations or exclusions on implied warranties or incidental or consequential damages, so the above limitations may not apply to You. This limited warranty is governed by the laws of the State of Minnesota, without regard to rules pertaining to conflicts of law. The state courts located in Dakota County, Minnesota shall have exclusive jurisdiction for any disputes relating to this warranty.



Distributed by:

Northern Tool & Equipment Company, Inc.

Burnsville, Minnesota 55306

www.northerntool.com

Made in China