



Series 500 Auto-Darkening Welding Helmet

Owner's Manual



⚠ WARNING: Read and understand all instructions, warnings, and cautions before using this product. Failure to follow the instructions, warnings, and cautions may result in serious personal injury and/or property damage.

Item # 48738

SAVE THESE INSTRUCTIONS

Thank you very much for choosing an Ironton 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.

This product is designed for certain applications only. The distributor cannot be responsible for issues arising from modification or use of this product in 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**.

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Intended Use

The Solar-Powered Auto-Darkening Welding Helmet is ideal for most welding applications and designed to meet the most demanding requirements. This helmet's 1/25,000-second switch time automatically darkens the lens the instant you start welding.

Technical Specifications

Viewing Area	3.86" x 1.73" (98 x 44mm)
Cartridge Size	4.33" x 3.54" x 0.35" (110 x 90 x 9mm)
Arc Sensor	2
Light State	DIN 3.5
Dark State	DIN 9 - 13
Shade Control	External, Variable Shade
Power On/Off	Fully Automatic
UV/IR Protection	Up to Shade DIN16 at all times
Power Supply	Solar cell. No battery change required
Switching Time	1/25,000 s. from Light to Dark
Low Amperage TIG Rated	≥ 10 amps DC; ≥ 10 amps AC
Operating Temperature	14°F - 131°F (-10°C - +55°C)
Storing Temperature	- 4°F -158°F (-20°C - +70°C)
Helmet Material	High Impact Resistance Nylon
Total Weight	15.3 oz. (435g)
Application Range	MIG; MAG/CO ₂ ; SMAW; Air carbon cutting; TIG; Plasma arc welding/cutting
Tested	ANSI Z87.1, CSA Z94.3

Important Safety Information

WARNING:

- 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 tool. Always be aware of the environment and ensure that the tool is used in a safe and responsible manner.
- DO NOT allow persons to adjust or use this product until they have read this manual and have developed a thorough understanding of how the product works.
- Industrial or commercial applications must follow OSHA requirements.

WORK AREA SAFETY

- Inspect the work area before each use. Keep the work area clean, dry, free of clutter, and well lit. Cluttered, wet, or dark work areas can result in injury.
- Do not weld where there is a risk of causing a fire or an explosion; e.g., in the presence of flammable liquids, gases, or dust. Welding can create sparks, which may ignite the flammable liquids, gases, or dust.
- Keep children and bystanders away from the work area while welding.

PERSONAL SAFETY

- Stay alert, watch what you are doing, and use common sense when welding. Do not weld while you are tired or under the influence of drugs, alcohol, or medication.
- 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. Wear proper welding apparel including flame resistant gloves, shirts, and caps.
- Use safety apparel and equipment. Use ANSI-approved safety goggles or safety glasses with side shields. 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.
- Do not overreach. Keep proper footing and balance at all times.

⚠ WARNING:

HELMET USE AND CARE

- DO NOT modify the helmet in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the helmet.
- DO NOT use the helmet if the filter does not darken immediately upon striking an arc.
- DO NOT use the helmet as a hand shield. Wear the helmet correctly.
- DO NOT open or tamper with the Auto-Darkening filter. Protect the filter from contact with liquid or dirt. Do not immerse the filter in water or any other liquid. Clean the surface of the filter regularly. Do not use solvents on the filter screen or helmet components.
- DO NOT place the helmet or filter on a hot surface.
- DO NOT allow children to handle or play with the helmet. Not for use by children.
- Use only at temperatures 14°F - 131°F (-10°C - +55°C). Store at temperatures - 4°F -158°F (-20°C - +70°C).
- Always check of damaged or worn out parts before using the helmet. Broken parts will affect the helmet's operation. Replace or repair damaged or worn parts immediately.
- Store the helmet when it is not in use. Store it in a secure place out of the reach of children. Inspect it for good working condition prior to storage and before re-use.
- This helmet is not suitable for laser welding and oxyacetylene welding/cutting processes.
- This welding helmet will not protect against severe impact hazards.
- This helmet will not protect against explosive devices or corrosive liquids.
- The front cover lens is breakable and does not provide significant protection against flying particles, splash, spray, and spatter. The helmet will only protect the eyes and face from radiation and sparks.
- Wear approved safety glasses with side shields under the helmet.
- The helmet materials which may come into contact with the wearer's skin may cause allergic reactions in some individuals.
- Use protective screens or barriers to protect others from flash and glare. Warn others not to look at the arc.

Safety Labels

⚠ WARNING

This Product uses non-replaceable Lithium batteries.

To help avoid fluid leaks or explosions please adhere to the following warning:

Do not attempt to replace the batteries • Ensure you properly dispose of this product. Disposal should be in accordance with national and local regulations • Dispose of batteries safely. Do not dispose of this product in a fire. The batteries inside may explode or leak • Do not expose to excessive heat

⚠ WARNING

1. Fully read and understand the manual before use.
2. Before welding or cutting, ensure the darkness range of this helmet is offers sufficient eye protection for your use.
3. Always wear ANSI approved safety glasses with the welding helmet when using this product. The front cover lens (front impact resistant plate) **CAN BREAK** and **DOES NOT** provide complete protection against flying particles, splash, spray and splatter.
4. Inspect lens before each use. Pitted or scratched lens plates reduce vision clarity, severely reduce impact protection and should be replaced immediately to prevent injury.
5. Not for use with Laser Welding Processes.
6. Inspect the helmet before each use. Do not use if damaged. Replace worn parts before using.
7. Not for use by children. Store helmet out of the reach of children.

DO NOT REMOVE THIS WARNING LABEL

Operating Instructions

Adjusting the Fit of the Helmet

See Figure.1.

The overall circumference of the headband can be made larger or smaller by rotating the knob (Y) on the back of the headband. This can be done while wearing the helmet and allows just the right tension to be set to keep the helmet firmly on the head without it being too tight.

If the headband is riding too high or too low on your head, adjust the strap which passes over the top of your head (W). To do this, release the end of the band by pushing the locking pip out of the hole in the band. Slide the two portions of the band to a greater or lesser width as required and push the locking pip through the nearest hole.

Test the fit of the headband by lifting up and closing down the helmet a few times while wearing it. If the headband moves while tilting, re-adjust it until it is stable.

Adjusting the Distance between the Helmet and the Face

See Figure.1.

Undo the block nut (T) to adjust the distance between the helmet (in the down position) and your face. Loosen the block nut on either side of the helmet and slide it nearer or further from your face (Z). It is important that your eyes are each the same distance from the lens. Otherwise the darkening effect may appear uneven. Re-tighten the block nut when adjustment is complete.

Adjusting the View Angle

See Figure.2.

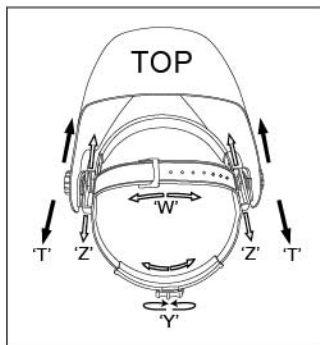


Figure.1

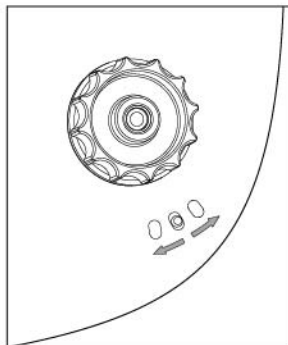


Figure.2

Setting the Shade Level

Select the shade level you require according to the welding process you will use by referring to the Shade Guide Table below for settings. Turn the shade control knob on the side of the helmet to the shade number required.

SHADE GUIDE TABLE

(NO.1)

Welding Process	ARC CURRENT (Amperes)															
	0.5	2.5	10	20	40	80	125	175	225	275	350	450				
	1	5	15	30	60	100	150	200	250	300	400	500				
SMAW				9	10		11		12		13	14				
MIG(heavy)							10	11	12		13	14				
MIG(light)							10	11	12	13	14	15				
TIG,GTAW			9	10	11	12	13					14				
MAG/CO2					10	11	12	13			14	15				
SAW							10	11	12	13	14	15				
PAC							11	12			13					
PAW			8	9	10	11	12	13		14		15				

NOTE:

SMAW – Shielded Metal Arc Welding

TIG, GTAW – Gas Tungsten Arc Welding

PAC – Plasma Arc Cutting

SAW – Shielded Semi-Automatic Arc Welding

MIG (Heavy) – MIG on Heavy Metals

PAW – Plasma Arc Welding

MAG/CO2 - Metal Active Gas

MIG (Light) – MIG on Light Alloys

Maintenance

Maintain your welding helmet by adopting a program of conscientious repair and maintenance in accordance with the following recommended procedures.

Cleaning the Helmet

Clean the helmet by wiping with a soft cloth. Clean cartridge surfaces regularly. Do not use strong cleaning solutions. Clean sensors and solar cells with a damp cloth with methylated spirit (denatured alcohol) and a clean, lint-free cloth and wipe dry with another lint-free cloth.

Replacing the Lens

Replace the front cover lens and the inner cover lens if they are cracked, scratched, dirty, or pitted. To do so, place your finger or thumb into the recess at the bottom edge of the window and flex the window upwards until it releases from one edge. (See Figure.3.)

Changing the Shade Cartridge

See Figure.4 and Figure.5.

Installing a New Cartridge

Take the new shade cartridge and pass the cable under the wire loop before dropping the cartridge into its retaining frame inside the helmet. Press down the wire loop clip and ensure that the front edge of the loop is properly retained under the retaining lugs as shown in Figure.5.

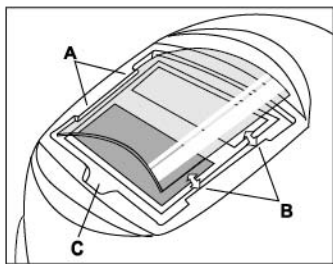


Figure.3

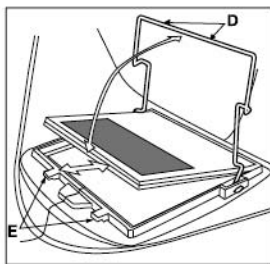


Figure.4

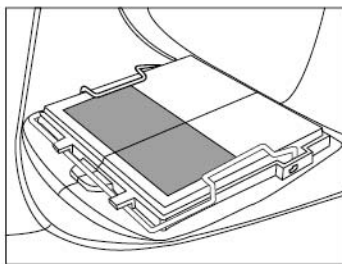
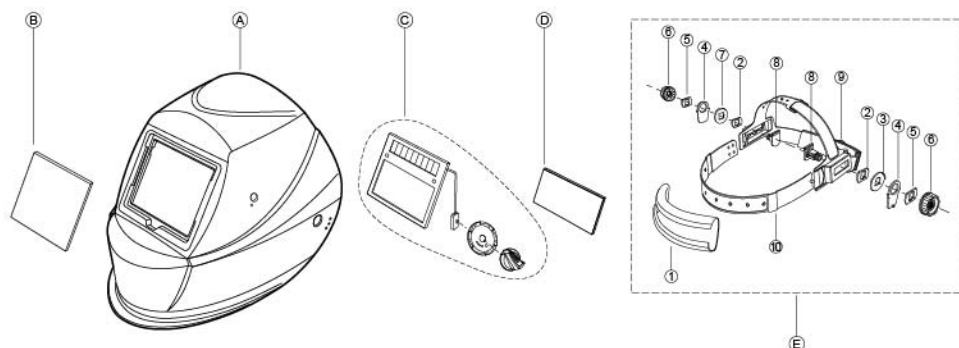


Figure.5

Parts Diagram



Part List

ITEM	DESCRIPTION	QTY
A	Shell (Welding mask)	1
B	Front Cover Lens	1
C	Auto-Darkening Filter	1
D	Inside Cover Lens	1
E*	Headgear Assembly (Including Sweatband)	1

Part List of E*

ITEM	DESCRIPTION	QTY
1	Sweatband	1
2	Washer	2
3	Left Limitation Washer	1
4	Limitation Washer	2
5	Washer	2
6	Block Nut	2
7	Right Limitation Washer	1
8	Screw	2
9	Adjustable Headband	1
10	Front Headgear	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 will be required: Model Number, Serial Number/Lot Date Code, and Description.
- The distributor reserves the rights to make design changes and/or 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 Ironton 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 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, or improper installation of product or components; (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 trailer 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 components; 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 and Equipment Company, Inc.

Burnsville, Minnesota 55306

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