

# CHICAGO <sup>®</sup> **welding** ELECTRIC **systems**

## WELDING HELMET AUTO-DARKENING

**Model 47996**

### ASSEMBLY AND OPERATING INSTRUCTIONS



**Important: Read and understand the entire manual before using the welding helmet.**



3491 Mission Oaks Blvd., Camarillo, CA 93011  
Visit our Web site at <http://www.harborfreight.com>

Copyright © 2002 by Harbor Freight Tools<sup>®</sup>. All rights reserved. No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools.

**For technical questions and replacement parts, please call 1-800-444-3353**

**REV 05/05**

## Specifications

ITEM	DESCRIPTION
Welding Protection Types	For MIG / MAG, Flux Cored, TIG, Plasma / Microplasma Arc
<b>Not Protected From</b>	Laser welding and oxyhydrogen welding
Filter Standard	ANSI Z87.1 -- 1989 (R1998) Standard
Switch	On / Off to use power from internal batteries; auto-off
Construction	High impact resistant plastic polyamide nylon; Full Face; Retainer and ratchet headband
Darkness Range	Shade Control: Clear state # 3; Dark: DIN 4, 9 ~ 13 adjustable
Lens Protection	Ultraviolet and infrared
Lens Viewing Size	3.5 (W) x 1.5 (H) inches
Lens Switching Speed	1/1000 second (to dark); 1/2 second (to light)
Lens Shade	Green
Filter Overall Size	4.75 (W) x 3-1/2 (H) x 5/8 (D) inches
Power Source	Solar powered with two AAA backup batteries
Operating Temperature	23° ~ 131° F; (- 5° ~ 55° C)
Weight	1.15 lbs.

## Save This Manual

You will need the manual for the safety warnings and precautions, assembly instructions, operating and maintenance procedures, parts list and diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep the manual and invoice in a safe and dry place for future reference.

## Safety Warnings and Precautions

**WARNING: When using tool, basic safety precautions should always be followed to reduce the risk of personal injury and damage to equipment.**

**Read all instructions before using this tool!**

1. **Do not attempt to use the Auto Darkening Welding Helmet if the Lens has been damaged in any way. Severe eye damage will occur.**
2. **Keep work area clean.** Cluttered areas invite injuries.
3. **Observe work area conditions.** Do not use machines or power tools in damp or wet locations. Don't expose to rain. Keep work area well lighted. Do not use electrically powered tools in the presence of flammable gases or liquids.
4. **Keep children away.** Children must never be allowed in the work area. Do not let them handle machines, tools, or extension cords.
5. **Store idle equipment.** When not in use, tools must be stored in a dry location to inhibit rust. Always lock up tools and keep out of reach of children.
6. **Use the right tool for the job.** Do not attempt to force a small tool or attachment to do the work of a larger industrial tool. There are certain applications for which this tool was

designed. Do not modify this tool and do not use this tool for a purpose for which it was not intended.

7. **Dress properly.** Do not wear loose clothing or jewelry as they can be caught in moving parts. Protective, electrically non-conductive clothes and non-skid footwear are recommended when working. Wear restrictive hair covering to contain long hair.
8. **Use eye and ear protection.** Always wear ANSI approved impact safety goggles. Wear a full face shield if you are producing metal filings or wood chips. Wear an ANSI approved dust mask or respirator when working around metal, wood, and chemical dusts and mists. When welding, use the Auto Darkening Welding Helmet.
9. **Do not overreach.** Keep proper footing and balance at all times. Do not reach over or across running machines.
10. **Stay alert.** Watch what you are doing, use common sense. Do not operate any tool when you are tired.
11. **Check for damaged parts.** Before using any tool, any part that appears damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment and binding of moving parts; any broken parts or mounting fixtures; and any other condition that may affect proper operation. Any part that is damaged should be properly repaired or replaced by a qualified technician.
12. **Replacement parts and accessories.** When servicing, use only identical replacement parts. Use of any other parts will void the warranty. Only use accessories intended for use with this tool. Approved accessories are available from Harbor Freight Tools.
13. **Do not operate tool if under the influence of alcohol or drugs.** Read warning labels on prescriptions to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, do not operate the tool.
14. **Maintenance.** For your safety, service and maintenance should be performed regularly by a qualified technician.

**Warning: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.**

### **Helmet Safety Warnings and Precautions**

Remove the protective film from both sides of the new cover lens.

1. Use this helmet for eye and face protection against harmful rays, sparks and splatter generated during welding and cutting operations.
2. Always have the clear plastic protection cover over the filter lens. Failure to do so could result in damage to the filter lens.
3. The protection cover and lens in this helmet are breakable. They will not protect against some impact hazards, such as fragmenting grinding wheel, abrasive discs fragments, or corrosive liquids. Machine guards or other devices must be used where these hazards exist.
4. Before each use, inspect the helmet and lens carefully. Cracked or scratched filter lenses or clear plates impair vision and seriously reduce light filtering and impact protection.

Repair or replace damaged components immediately. Replace the two AAA backup batteries often.

5. Be sure the welding filter shade setting is correct for your application.
6. Test the helmet auto-darkening filter lens before welding. While wearing the helmet, briefly strike an arc, keeping your face and eyes turned slightly away from the arc, and to one side. The lens should darken even when not directly facing the arc. If it does not darken after repeated tests, replace the lens filter.
7. Impact resistant eye protection such as safety glasses or goggles must be worn at all times when using this helmet. Wear ear protection.
8. Avoid exposing the Auto Darkening Lens unit to high temperature.

**WARNING: This product is used with welding or similar applications that produce chemicals known to the State of California to cause cancer and birth defects (or other reproductive harm).**

**(California Health & Safety Code 25249.5 et seq.)**

## Inhalation Hazard

### Welding Produces TOXIC FUMES and GASSES.



Exposure to welding gasses can increase the risk of developing certain cancers, such as cancer of the larynx and lung cancer. Also, some diseases that may be linked to exposure to welding gasses or fumes are:

- Early onset of Parkinson's Disease
- Damage to the reproductive organs
- Inflammation of the small intestine or stomach
- Respiratory diseases such as emphysema, bronchitis or pneumonia
- Heart Disease
- Ulcers
- Kidney damage



Safety precautions, such as using natural or forced air ventilation and wearing an ANSI approved respirator, are **ESSENTIAL** to reduce the risk of developing the above illnesses.

## Unpacking

When unpacking, check to make sure the following parts are included: *Welding Helmet with Filter Lens*. If any parts are missing or broken, please call Harbor Freight Tools at the number on the cover of this manual as soon as possible.

## Operation

**WARNING: Do not use the Auto Darkening Welding Helmet if the lens does not auto-darken. Severe eye damage or blindness can occur when welding. Always verify that the helmet is functioning before use. Remove the backup batteries and check monthly with a multimeter that each one is 1.5 volts. Replace batteries every three months whether they are good or not.**

**WARNING: This Helmet does not provide protection for LASER AND OXYHYDROGEN welding.**

1. Verify that the batteries are good.
2. Turn the helmet over and adjust the Shade Knob to the desired shade (9 ~ 13).
3. Push the Switch Button to turn the lens on and open the window.
4. Adjust the helmet Side Knobs for a proper fit. Tighten the Lens Clamp Screws.
5. Put on a pair of safety glasses first, then the helmet.
6. While looking to one side, strike an arc briefly (see # 6 above).

Check to see if the welding filter lens went dark. If it did, the auto-darkening function is working. Continue arc welding. When finished, the lens filter will turn off automatically.

## Maintenance

### Replacing Batteries

1. Turn the Helmet over to expose the inside.
2. Remove the Battery Cover. Lift the right side of the battery cover and pop it out.



3. Remove two batteries from the battery compartment.
4. Place both new batteries negative side (left) into the battery compartment. The batteries should be completely clean of grease and dirt.
5. Replace the Battery Compartment Cover, left side first, then push in the right side until it snaps into place.

### General

1. Use a clean, soft cloth to clean the Lens Filter. Do not use water or cleaning liquids.
2. Store the helmet in a cool and dry location.

## Replacing the Lens Cover

Lift the Lens Cover and remove the clear plastic. Replace it when it becomes scratched, cracked, or pitted, and cannot be cleaned.

## Removing the Lens

1. Turn the Helmet over to view the Lens from the inside.
2. Unscrew the two Lens Unit Screw Clamps (10). Pull it out from the inside.

## Troubleshooting

The following lists possible causes for non operation:

1. Batteries are not inserted correctly.
2. Battery Cover not completely secure.
3. Batteries are dead.
4. On / Off Button was not pressed on.
5. Solar Cells are damaged. Replace Lens Filter unit.
6. Lens Filter is cracked. Replace Lens Filter unit.

## Parts List

Item #	Description	Qty
1	Front Cover Protective Lens	1
2	Auto Darkening Lens Unit	1
3	Helmet Shell	1
4	Headband	1
5	Knob	1
6	Round Washer	1
7	Metal Washer	2
8	Limitation Washer	1
9	Hinge Screw	2
10	Lens Unit Screw Clamps	2

**NOTE:** Some parts are listed and shown for illustration purposes only and are not available individually as replacement parts.

### PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER NOR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

# Assembly Drawing

