

# **Installation Instructions for 81544**

## **Adjustable Welding Helmet**

### **Auto-Darkening**

#### **WARNING: Read and understand all instructions before using**

- Auto-Darkening Welding Helmets are designed to protect the eye and face from sparks, spatter, and harmful radiation under normal welding conditions auto-darkening filter automatically changes from a light state to a dark state when an arc is struck. It returns to the light state when welding stops.
- Auto-Darkening Welding Helmets come ready for use. The only thing you need to do before welding is to adjust the position of the headband and select the correct shade number for your application.

#### **BEFORE WELDING**

- Check the front cover lens to make sure that they are clean, and that no dirt is covering the two sensors on the front of filter cartridge. Also check the front/inside cover lens and the front lens retaining frame to make sure that they are secure.
- Inspect all operating parts before use for signs of wear or damage. Any scratched, cracked, or pitted parts should be replaced immediately before using again to avoid severe personal injury.
- Check for light tightness before each use.
- Select the shade number you require at the turn of a shade knob (See the Shade Guide Table No. 1). Be sure that the shade number is the correct setting for your application.
- Adjust headband so that the helmet is seated as low as possible on the head and close to your face. Adjust helmet's angle when in the lowered position by turning the adjustable limitation washer.

#### **DARK SHADE NUMBER SELECTION**

The shade number can be set manually between 9~13. Check the Shade Guide Table to determine the proper shade number for your application. Select a shade number by turning the shade knob until the arrow points to the required setting (See Shade Guide Table No. 1).

#### **PRODUCT FEATURES**

- Auto-Darkening Welding Helmet is designed & equipped with a special headband mechanism. When welder turns up the helmet, the headband mechanism makes the helmet's center of gravity lower, and coincides it with the center of the welder's head. The design of the welding helmet greatly lowers the fatigue of the welder's head & neck, and will make the welder feel more comfortable.
- When you begin the helmet automatically changes filter screen from clear to dark in only 1/25,000 sec.
- Dark to clear delay adjustment: Operator can vary the time for the filter to return to clear state.
- Sensitivity can be adjustable by turning the sensitivity-setting switch high/low position.
- When done welding, the filter screen automatically changes from dark to light state according to your set pre-delay time. (Turning the time-setting switch to the "Short" position, then, it can vary at 0.1s—0.3s; Turning the time, setting switch to the "long" position, then, it can vary at 0.6s—0.8s.)
- The helmet utilizes high performance solar cells as the power supply and has two built-in 3V lithium batteries as power back-up. No changing of battery required. Under normal welding conditions, users can expect a battery with a lifetime of more than 2 years.
- Variable shade (DIN) from DIN9 to DIN13 is adjusted at the turn of a shade knob (shade variable).
- The product is in full conformity with related DIN, EN safety standards and ANSI Z87.1 -1989 standards.
- The ultra-high performance of UV/IR Auto-Darkening filters provide full protection for the user's eye & face against UV/IR radiation during the entire welding process, even in the light state. The UV/IR protection level is up to Shade 16 (DIN) at all times. Making welders feel comfortable.



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## WARNING

- This Auto-Darkening Welding Helmet is not suitable for laser welding & oxyacetylene welding.
- Never place this Helmet and Auto-darkening filter on a hot surface.
- Never open or tamper with the Auto-Darkening Filter.
- This Auto-darkening welding helmet will not protect against severe impact hazards, including grinding disks. Never use for grinding.
- This helmet will not protect against explosive devices or corrosive liquids.
- Don't make any modifications to either the filter or helmet, unless specified in this manual. Don't use replacement parts other than those specified in this manual. Unauthorized modifications and replacement parts will void the warranty and expose the operator to the risk of personal injury.
- Should this helmet not darken upon striking an arc, stop welding immediately and contact your supervisor or your dealer
- Don't immerse the filter in water.
- Don't use any solvents on filter's screen or helmet components.
- Use only at temperatures: -5° C~+55° C (23° F~131° F).
- Storing temperature: (-20° C~+70° C (-4° F~158° F).
- Protect filter from contact with liquid and dirt.
- Clean filters surfaces regularly, do not use strong cleaning solutions. Always keep sensors and solar cells clean using a clean lint-free tissue/cloth.
- Regularly replace the cracked/scratched/pitted front cover lens.

**Severe personal injury could occur if the user fails to follow the aforementioned warnings, and/or fails to follow the operating instructions.**

## COMMON PROBLEMS AND REMEDIES

- \* **Irregular Darkening Dimming**
  - Headband has been set unevenly and there is an uneven distance from the eyes to the filter's lens (reset headband to reduce the difference to filter).
- \* **Auto-Darkening Filter Does Not Darken Or Flickers**
  - Front cover lens is soiled or damaged (change lens cover)
  - Sensors are soiled (clean the sensors surface)
  - Welding current is too low (turn the switch to the "Long" position)
- \* **Slow Response**
  - Operating temperature is too low (do not use at temperatures below -5° C or 23° F)
- \* **Poor Vision**
  - Front/inside cover lens and / or filter lens are soiled (change lens)
  - There is insufficient ambient light
  - Shade number is incorrectly set (reset the shade number)
- \* **Welding Helmet Slips**
  - Headband is not adjusted properly (readjust headband)

**WARNING!** Operator must stop using auto-darkening welding helmet immediately if the above-mentioned problems cannot be corrected. Contact the dealer.

## LENS & HELMET MAINTENANCE

- Replacing the front cover lens if it is damaged, cracked, scratched, soiled or pitted.

**Step 1:** Remove the front cover lens by pulling up the central part of the lens. Place the new cover lens into the correct position.

**Step 2:** Check and make sure that the frame is securely installed.

- Replacing the inside cover lens if it is damaged, cracked, scratched, soiled or pitted.
- Cleaning the filter's lens with a clean lint-free tissue or cotton cloth.
- Don't immerse the lens in water or any other liquid. Never use abrasives, solvents or oil based cleaners.
- Don't remove the auto darkening filter from the helmet. Never try to open the filter.



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**TECHNICAL SPECIFICATIONS**

- Viewing Area: 3.62" x 1.65" (92mm x 42mm)
- Size of Cartridge: 3.54" x 0.3937" (90mm x 10mm)
- UV/IR Protection: Up to Shade DIN 16 at all times
- Light State: Shade DIN 4
- Variable Shade: From DIN 9 to DIN 13
- Power Supply: Solar cells & Lithium batteries
- Power On/Off: Fully Automatic
- Sensitivity: Can be adjustable
- Grinding/Welding can be selected
- Switching Time: 1/25,000 s
- Delay Time: 0.2-0.8s continue adjustable
- Operating Temperature: 23° F to 131° F (-5° C to +55° C)
- Storing Temperature: -4° F to 158° F (-20° C to +70° C)
- Helmet Material: Polypropylene
- Total Weight: 1.1464 lbs. (520g)

**SHADE GUIDE TABLE (No. 1)**

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

**Notes:**

- SMAW – Shielded Metal Arc Welding
- MIG (heavy) – MIG on heavy metals
- MIG (light) – MIG on light alloys
- TIG, GTAW – Gas Tungsten Arc Welding (GTAW) (TIG)
- SAW – Shielded Semi – Automatic Arc Welding
- PAC – Plasma Arc Cutting
- PAW – Plasma Arc Welding



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