F.F.GROUP®

QUALITY TOOLS

Auto-Darkening Welding Helmet

User's Manual

WARNING: Read and understand all instruction 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. And it returns to the light state when welding stops.
•Auto-Darkening Welding Helmets comes ready for use. The only thing you need to do before your 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 (Seeing the Shade Guide Table No.1). Finally, 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 Helmets is designed & equipped with a special turnover (up & down) headband mechanism. When welder turns over the helmet to welder's head top, the headband mechanism makes helmet's gravity center to be more lower, and be coincided with the center of welder's head. The design of welding helmet greatly lowers the fatigue of welder's head (& neck) and make welder feel more comfortable than before while at working.
•At the moment of starting welding, it 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 to high (low) position.
•At the moment of stopping welding, the filter screen automatically changes from dark to light state according to your set per-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 power supply and has 2 built-in 3V lithium batteries as power back-up. No change of battery is required. And the battery life is raised to a new limit. Under normal welding conditions, users can expect a battery has 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 a 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. It makes welders feel comfortable in welding working.

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℃~+55℃(23°F~131°F).
•Storing temperature: -20℃~+70℃(-4°F~158°F).
•Protect filter from contacting 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.

COMMOM PROBLEMS AND REMlDlES

** 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(turns the switch to the "Long" position)
*** Slow Response
•Operating temperature is too low(do not use at temperatures below- 5℃ 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(figure). 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.

TECHNlCAL SPECIFICATIONS

•Viewing Area: 90×40 or 92×42 or 98×48mm
•Size of Cartridge: 110×90×10 mm
•UV/IR Protection: Up to Shade DIN l6 at all time
•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: 1/25000 s
•Delay Time: 0.2-0.8s continue adjustable
•Operating Temperature: -5℃ to + 55℃ (23°F to 131°F)
•Storing Temperature:-20℃ to + 70℃ (-4°F to 158°F)
•Helmet Material: PP
•Total Weight: 500g

SHADE GUIDE TABLE (No.1)

Welding Process	Arc Current (Amperes)																							
	0.5	1	2.5	5	10	15	20	30	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											

Note

• SMAW-Shielded metal arc welding
• MIG (heavy) - MIG on heavy metals
• MIG (light) - MIG on light alloys
• PAW- Plasma arc welding
• TIG - GTAW - Gas tungsten arc welding (GTAW) (TIG)
• SAW - Shielded semi - automatic arc welding
• PAC - Plasma arc cutting