



AB8100SC



***Auto Darkening
Welding Helmet***



Professional Quality Welding Helmet

SAFETY WARNINGS - READ BEFORE USING



WARNING

Read & 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 and it returns to the light state when welding stops.

The Auto-Darkening welding helmet comes assembled. But before it can be used, it must be adjusted to fit the user properly. Check battery surfaces and contacts and clean it if necessary. Verify if the battery is in good condition and installed properly. Set up for delay time, sensitivity and shade number for your application.

The helmet should be stored in dry, cool and dark area and remove the battery, when not using it for a long time.



WARNING



- This Auto-Darkening welding helmet is not suitable for laser welding and oxyacetylene welding / cutting processes.
- 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.
- This helmet will not protect against explosive devices or corrosive liquids.
- Do not make any modifications to either the filter or helmet, unless specified in this manual. Do not 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.
- Do not immerse the filter in water.
- Do not use any solvents on the filter screen or helmet components.
- Use only at temperatures: $-10\text{ }^{\circ}\text{C} \sim +55\text{ }^{\circ}\text{C}$ ($14\text{ }^{\circ}\text{F} \sim 131\text{ }^{\circ}\text{F}$).
- Storing temperature: $-20\text{ }^{\circ}\text{C} \sim +70\text{ }^{\circ}\text{C}$ ($-4\text{ }^{\circ}\text{F} \sim 158\text{ }^{\circ}\text{F}$). The helmet should be stored in dry cool and dark area, when not using it for a long time.
- Protect filter from contact with liquid and dirt.
- Clean the filter surface regularly; do not use strong cleaning solutions. Always keep the sensors and solar cells clean using a clean lint-free tissue.
- Regularly replace the cracked / scratched / pitted front cover lens.
- The materials which may come into contact with the wearer's skin can cause allergic reactions in some circumstances.



WARNING



Severe personal injury could occur if the user fails to follow the above mentioned warnings and/or fails to follow the operating instructions.

COMMON PROBLEMS AND REMEDIES

• Irregular Darkening Dimming

Headgear has been set unevenly and there is an uneven distance from the eyes to the filter lens (Reset the headgear to reduce the difference to the filter).

• Auto-Darkening filter does not darken or flickers

- ① Front cover lens is soiled or damaged (Change the cover lens).
- ② Sensors are soiled (Clean the sensors surface).
- ③ Welding current is too low (Reset the sensitivity level to higher).
- ④ Check battery and verify they are in good condition and installed properly. Also, check battery surfaces and contacts and clean if necessary. Please refer to the “POWER” on page 2.

• Slow response

Operating temperature is too low (Do not use at temperatures below -10 °C or 14 °F).

• Poor vision

- ① Front cover lens and / or the filter is soiled (Change lens).
- ② There is insufficient ambient light.
- ③ Shade number is incorrectly set (Reset the shade number).
- ④ Check if removing the film on the front cover lens.

• Welding helmet slips

Headgear is not properly adjusted (Readjust the headgear).



WARNING



The user must stop using the auto-darkening welding helmet immediately if the above-mentioned problems cannot be corrected. Contact the dealer.

INSTRUCTIONS FOR USE

WARNING! Before using the helmet for welding, ensure that you have read and understood the safety instructions.

• BATTERY INSTALLATION

Open the battery cover and install batteries according to positive and negative terminal marking on the battery cover(See fig.1).

• POWER

This ADF cartridge is powered by solar cell and 2 CR1025 lithium batteries. Replace batteries when LOW BATTERY light is lit (See fig.2).

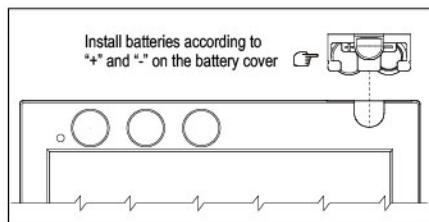


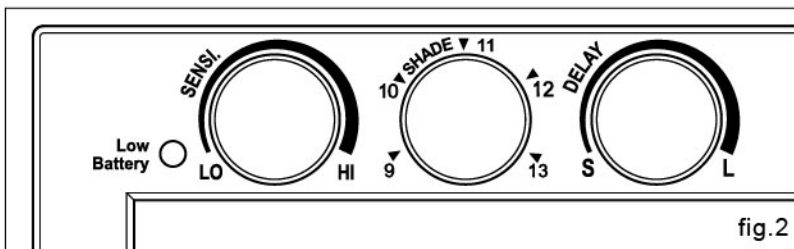
fig.1

• SELECTING 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.

• SENSITIVITY

The sensitivity can be set to “HI” (high) or “LO” (low) by using the infinitely dial knob on the back of the shade cartridge. The “Mid-High” setting is the normal setting for everyday use. The maximum sensitivity level is appropriate for low welding current work, TIG, or special applications. Where the operation of the helmet is disturbed by excess ambient light, or another welding machine close by, use the “LO” setting. (See fig.2). As a simple rule for optimum performance, it is recommended to set sensitivity to the maximum at the



beginning and then gradually reduce it, until the filter reacts only to the welding light flash and without annoying spurious triggering due to ambient light conditions (direct sun, intensive artificial light, neighbouring welder's arcs etc.).

• SELECTING DELAY TIME

When welding ceases, the viewing window automatically changes from dark back to light but with a pre-set delay to compensate for any bright afterglow on the workpiece. The delay time / response can be set to "S" (short: 0.1 sec.) or "L" (long: 1.0 sec.). As you require using the infinitely dial knob on the back of the shade cartridge. (See fig.2). It is recommended to use a shorter delay with spot welding applications and a longer delay with applications using higher currents. Longer delays can also be used for lower current TIG welding, and TIG / MIG / MAG pulse.

• ADJUSTING THE FIT OF THE HELMET

The overall circumference of the headgear can be made larger or smaller by rotating the knob on the back of the headgear. (See adjustment "Y" in fig.3). 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 headgear is riding too high or too low on your head, adjust the strap which passes over the top of your head. To do this release the end of the band by pushing the locking pin 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 pin through the nearest hole. (See adjustment "W" in fig.3).

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

• ADJUSTING THE DISTANCE BETWEEN THE HELMET AND THE FACE

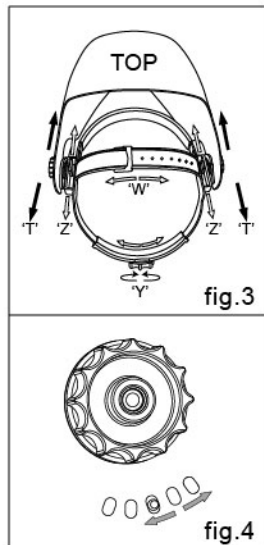
Step 1: Undo the block nut (See "T" in fig.3) to adjust the distance between the helmet and your face in the down position.

Step 2: Loosen the block nut on either side of the helmet and slide it nearer or further from your face. (See adjustment "Z" in fig.5). It is important that your eyes are each the same distance from the lens. Otherwise the darkening effect may appear uneven.

Step 3: Re-tighten the block nut when adjustment is complete.

• ADJUSTING VIEW ANGLE POSITION

Please see fig.4.



• You are now ready to use the helmet. The shading may be adjusted during use by re-setting the potentiometer control.

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

MIG (Heavy) – MIG on Heavy Metals

PAW – Plasma Arc Welding

SAW – Shielded Semi-Automatic Arc Welding

TIG, GTAW – Gas Tungsten Arc Welding

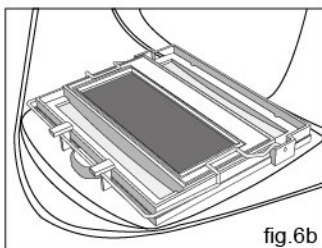
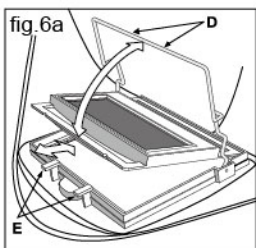
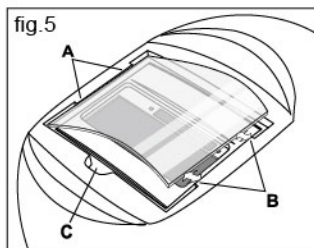
MIG (Light) – MIG on Light Alloys

PAC – Plasma Arc Cutting

MAG/CO2 - Metal Active Gas

MAINTENANCE

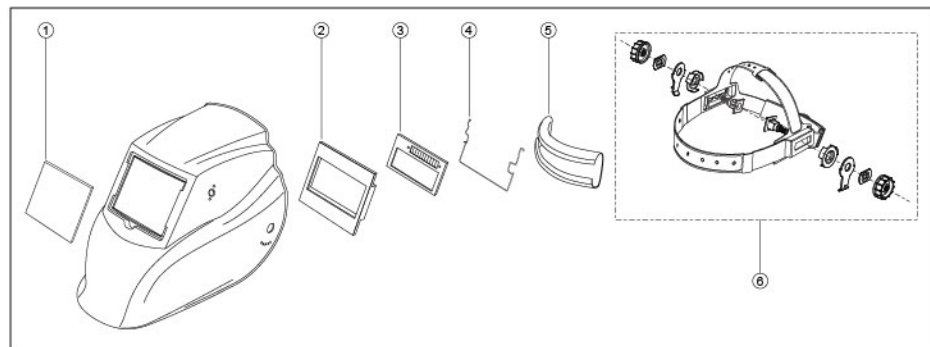
- **REPLACE THE FRONT COVER LENS.** Replace the front cover lens if it is damaged (cracked,scratched,dirty or pitted). Place your finger or thumb into the recess at the bottom edge of the window and flex the window upwards until it releases from one edge (See fig.6).
- **CHANGING THE SHADE CARTRIDGE** (See figs.6a & 6b).
- **INSTALLING NEW CARTRIDGE.** Take the new shade cartridge and drop the cartridge into its retaining frame inside the helmet. Hinge down the wire loop clip and ensure that the front edge of the loop is properly retained under the retaining lugs as shown in fig.6b.
- **CLEANING.** Clean helmet by wiping with a soft cloth. Clean cartridge surfaces regularly. Do not use strong cleaning solutions.Clean sensors and solar cells with methylated spirit and a clean cloth and wipe dry with a lint-free cloth.



TECHNICAL SPECIFICATIONS

Viewing Area:	92 x 34.6 mm (3.62" x 1.36")
Cartridge Size:	108 x 50.8 x 9 mm (4.25" x 2.00" x 0.35")
Arc Sensor:	2
Light State:	DIN 3.5
Dark State:	DIN 9 ~ 13
Shade Control:	Internal, Variable Shade
Power On/Off:	Fully Automatic
Sensitivity Control:	Low — High, by infinitely dial knob
UV/IR Protection:	Up to Shade DIN16 at all times
Power Supply:	Solar cell. Battery replaceable, 2 x CR1025 lithium battery
Switching Time:	1/25,000 s. from Light to Dark
Delay (Dark to Light):	0.1~1.0 s by infinitely dial knob
Low Amperage TIG Rated:	≥ 5 amps (DC); ≥ 5 amps (AC)
Operating Temp.:	-10 °C ~ +55 °C (14 °F ~ 131 °F)
Storing Temp.:	-20 °C ~ +70 °C (- 4 °F ~ 158 °F)
Helmet Material:	High Impact Resistance Nylon
Total Weight:	0.99 Lbs
Application Range:	Stick Welding (SMAW); TIG DC&AC; TIG Pulse DC; TIG Pulse AC; MIG/MAG/CO2; MIG/MAG Pulse; Plasma Arc Cutting (PAC); Plasma Arc Welding (PAW); Air Carbon Arc Cutting (CAC-A)
Approved:	ANSI Z87.1, CSA Z94.3

PARTS LIST & ASSEMBLY



Reference Number	Description	Part No.
1	Lens kit (5 Front Cover Lenses)	MLK85
2	Holder	
3	Replacement lens	MRL110
4	Retaining wire	MRW8
5	Sweat band	MSB8
6	Headgear	MHG8



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