

METAL MAN[®]
WORK GEAR

AB1300S



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Auto Darkening Welding Helmet

SAFETY WARNINGS - READ BEFORE USING



WARNING
Read & Understand All Instructions Before Using



Auto-Darkening welding helmets are designed to protect the eyes 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 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.



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, including grinding discs.
- 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 the filter 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 contacting with liquid and dirt.
- Clean the filter surface regularly; don't 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.
- Never try to open the filter cartridge.
- The materials which may come into contact with the wearers 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

Headband has been set unevenly and there is an uneven distance from the eyes to the filter lens. (Reset the headband 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" side).

• Slow response

Operating temperature is too low. (Do not use at temperatures below -5° C or 23° F)

• Poor vision

- ① Front/inside 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).

• Welding helmet slips

Headband is not properly adjusted. (Readjust the headband).



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.

- The helmet comes ready assembled, but before it can be used it must be adjusted to fit the user properly and set up for delay time, sensitivity and shade level.

• ADJUSTING THE FIT OF THE HELMET

The overall circumference of the headband can be made larger or smaller by rotating the knob on the back of the headband. (See adjustment "Y" in fig.1). 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. 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. (See adjustment "W" in fig. 1).

- 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

Step 1: Undo the block nut (See "T" in fig. 1) 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.1). 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.

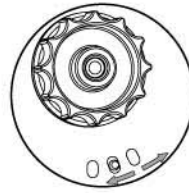
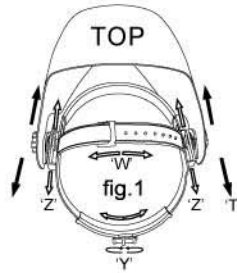


fig.2

• ADJUSTING VIEW ANGLE POSITION

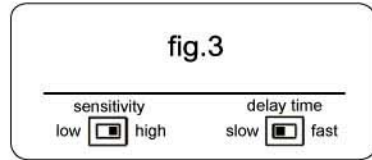
Please see fig.2

• 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.

• 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 workplace. The delay time/response can be set to "fast" (0.25secs to 0.45) or "slow" (0.65secs to 0.8) as you require using the switch on the back of the shade cartridge. (See fig. 3).



• SENSITIVITY

The sensitivity can be set to "high" or "low" using the switch on the back of the shade cartridge. The "High" setting is the normal setting for everyday use. Where the operation of the mask is disturbed by excess ambient light, or another welding machine close by, use the "low" setting. (See fig. 3).

• You are now ready to use the helmet. The shading may be adjusted during use by resetting the shade control knob.

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.4)

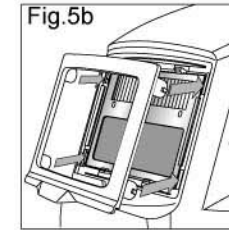
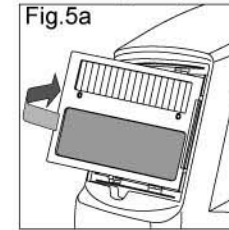
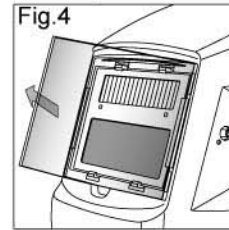
• **REPLACE THE INNER COVER LENS.** If it is damaged (cracked,scratched,dirty or pitted).

• **CHANGING THE SHADE CARTRIDGE.**(See figs.5a & 5b)

• **INSTALLING NEW CARTRIDGE.** Take the new shade cartridge and pass the potentiometer 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 fig.5b.

• Fasten the potentiometer to the inside of the helmet with the shaft protruding through the hole. Push the shade control knob onto the shaft.

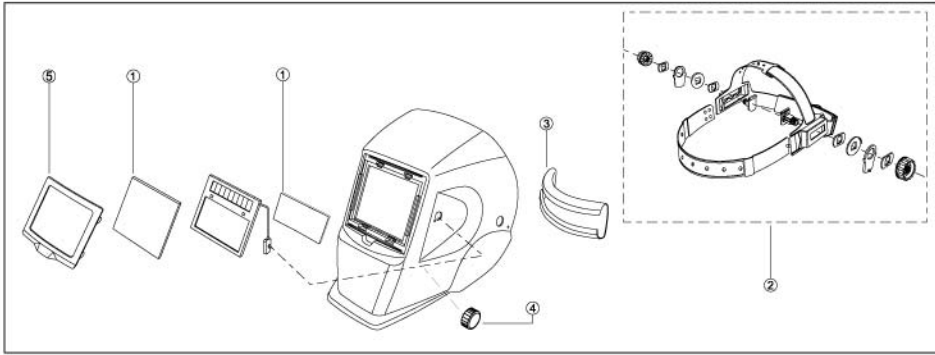
• **CLEANING.**Clean the helmet by wiping it with a soft cloth. Clean cartridge surfaces regularly. Do not use strong cleaning solutions.Clean sensors and solar cells with methylated spirit and a clean cloth and wipe dry with a lint-free cloth.



TECHNICAL SPECIFICATIONS

Viewing Area:	98x44mm (3.86"x1.73")
Cartridge Size:	110x90x9mm (4.33"x3.54"x0.35")
Arc Sensor:	2
Light State:	DIN 4
Dark State:	DIN 9 ~ 13
Shade Control:	External, Variable Shade
Power On/Off:	Fully Automatic
Sensitivity Control:	Adjustable (Low — High)
UV/IR Protection:	Up to Shade DIN16 at all times
Power Supply:	Solar cell. No battery change required
Switching Time:	1/10,000 s. from Light to Dark
Delay (Dark to Light):	0.25~ 0.45s at <fast> position 0.65~ 0.80s at <slow> position
Low Amperage TIG Rated:	≥ 10 amps
Operating Temp.:	-5°C ~ +55°C(23°F ~ 131°F)
Storing Temp.:	-20°C ~ +70°C(- 4°F ~ 158°F)
Helmet Material:	High Impact Resistance Nylon
Total Weight:	435g
Application range:	MIG; MAG/CO2; SMAW; Air carbon cutting; TIG ; PLASMA arc welding/cutting
Approved:	CE, ANSI Z87.1-2003, AS/NZS

PARTS LIST & ASSEMBLY



Reference Number	Description	Part No.
1	Lens kit (4 front/2 inner lense covers)	MLK8183
2	Headgear	MHG1
3	Sweat Band	MSB1
4	Shade control knob	MSC1
5	Front Lens Retaining Frame	MRF1

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/CO ₂																			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