



CORNWELL®
QUALITY TOOLS

MMW40F



Auto Darkening
Welding Helmet



CORNWELL[®]
QUALITY TOOLS

**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.

When storing the welding helmet for a long time without use, you should store it in somewhere, avoiding the solar panel exposing to the bright light.

⚠ BEFORE FIRST USE

The Auto-Darkening Welding Helmet needs to be charged prior to use and after extended storage. Leave the solar panel on the helmet facing the sun or bulb light for at least 1 hours before first use.



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 any 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: $-5^{\circ}\text{C} \sim +55^{\circ}\text{C}$ ($23^{\circ}\text{F} \sim 131^{\circ}\text{F}$)
- Storing temperature: $-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$ ($-4^{\circ}\text{F} \sim 158^{\circ}\text{F}$)
- 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.
- 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).

• Slow response

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

• Poor vision

- ① Front cover lens and / or the filter is soiled (Change lens).
- ② There is insufficient ambient light.

• 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.

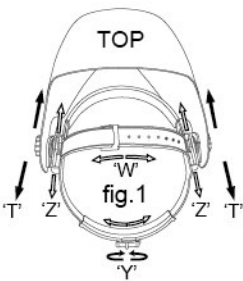
▲ BEFORE FIRST USE

- 1) The Auto-Darkening Welding Helmet needs to be charged prior to use and after extended storage. Leave the solar panel on the helmet facing the sun or bulb light for at least 1 hours before first use.
- 2) Remove the protective shipping film from both sides of the front lens (if not already done).
- 3) The helmet comes assembled, but before it can be used, the headgear must be adjusted for proper fit.

• 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).

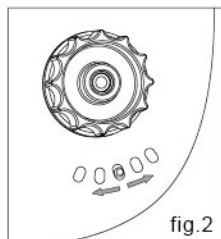


- Test the fit of the headband by lifting up and closing down the helmet a few times while wearing it. If the headband moves while tilting re-adjust it until it is stable.

• ADJUSTING THE DISTANCE BETWEEN THE EYES AND THE ADF LENS

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.

• ADJUSTING VIEW ANGLE POSITION

Please see fig.2

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
 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

MAINTENANCE

• REPLACING FRONT COVER LENS.

Replace the front cover lens if it is damaged (cracked, soiled 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.3).

• REPLACING THE INSIDE COVER LENS.

If it is damaged (cracked, soiled or pitted).

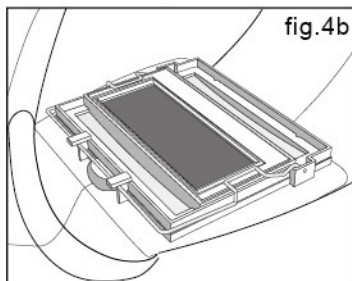
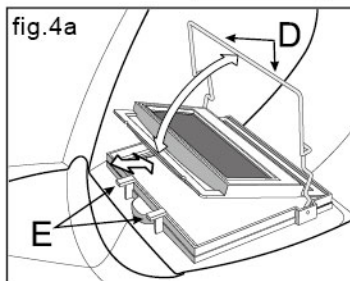
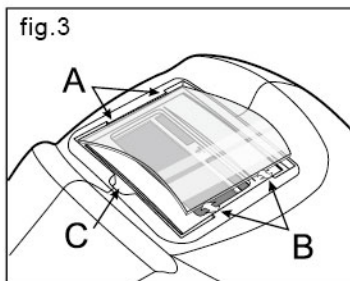
• CHANGING THE SHADE CARTRIDGE. (See figs 4a & 4b).

• FITTING NEW CARTRIDGE.

Take the new shade cartridge and set 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.4b.

• CLEANING.

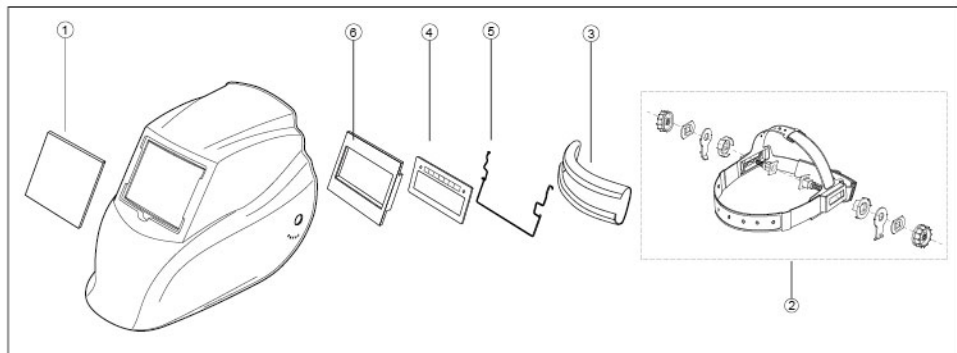
Clean helmet by wiping with a soft cloth. Clean cartridge surfaces regularly. Do not use strong cleaning solutions. Clean sensors and solar cells with methylated spirit and a clean cloth and wipe dry with a lint-free cloth.



TECHNICAL SPECIFICATIONS

Optical Class:	1 / 1 / 1 / 2
Viewing Area:	92 x 35mm (3.62"x1.38")
Cartridge Size:	108 x 50.8 x 5mm (4.25"x2.0"x0.20")
Arc Sensor:	2
Light State:	DIN 3
Dark State:	DIN 10
Power On/Off:	Fully Automatic
UV/IR Protection:	Up to Shade DIN16 at all times
Power Supply:	Solar cell. Re-chargeable battery No battery change required
Switching Time:	1/4,000 s. from Light to Dark
Delay (Dark to Light):	0.25 ~ 0.45s
Low Amperage TIG Rated:	≥ 35 amps (DC); ≥ 35 amps (AC)
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:	420g
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	Cover lens kit (set of 4)	MMWLK40
2	Headgear	MMWHG1
3	Sweatband	MMWSB1
4	Replacement lens	MMWRL40
5	Lens retainer	MMWLR40
6	Holder	MMWLH40



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