



ADEW173VG series



***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 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: $-10^{\circ}\text{C} \sim +55^{\circ}\text{C}$ ($14^{\circ}\text{F} \sim 131^{\circ}\text{F}$).
- Storing temperature: $-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$ ($-4^{\circ}\text{F} \sim 158^{\circ}\text{F}$). The helmet should be stored in dry cool and dark area and remove the battery, 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.
- Please install battery before using this product. Replace batteries immediately when LOW BATTERY indicator turns red.

**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 (Adjust 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 referring 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 / 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).
- ④ Check if removing the film on the front cover lens.

• 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.

• BATTERY INSTALLATION

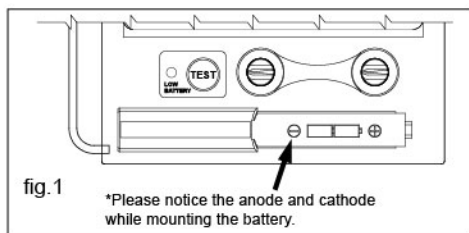
Install batteries into helmet properly, according to positive and negative terminal marking on battery jar (See fig.1).

• POWER

This auto darkening filter is powered by solar cell and 1PC CR2450 lithium battery. Replace batteries when LOW BATTERY light is lit (See fig.1).

• TEST

Press and hold “TEST” to preview shade selection before welding (See fig.1). When released then viewing window will automatically return to the light state (3.5 Shade).



• SELECTING SHADE LEVEL

Select the power shade number for your welding process by referring to the “Shade Guide Table” on page 4. Turn the shade control knob to the shade number required.

• SENSITIVITY

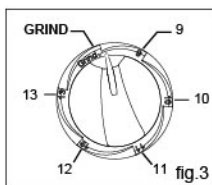
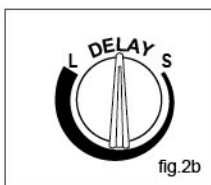
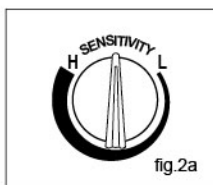
The sensitivity can be set to “high” or “low” by using the infinitely dial knob on the back of the auto darkening filter. The “Mid-High” setting is the normal setting for everyday use. The maximum sensitivity level is appropriate for low welding current work, TIG, or special applications. Where the operation of the helmet is disturbed by excess ambient light, or another welding machine close by, use the “low” setting. (See fig.2a). 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 stopped, 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 “fast” (0.1 sec.) or “slow” (1.0 sec.) as you require using the infinitely dial knob on the back of the auto darkening filter (See fig.3). 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 low current TIG welding, and TIG / MIG / MAG pulse.

• SELECTING THE GRIND OPTION

Turn the dial knob to the “grind” position, the auto darkening function is turned off allowing a clear view to grind. Before restarting welding work, ensure that the auto darkening filter turns back to weld mode. (See fig.3).

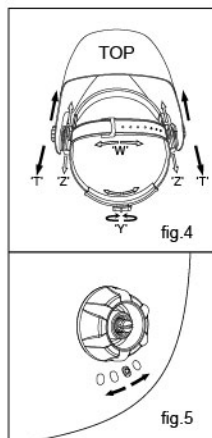


• ADJUSTING THE FIT OF THE HELMET

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.4). This can be done whilst 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 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.4).

• 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.4) 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.4). 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.5.

• 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			
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

REPLACING FRONT COVER LENS

Replace the front cover lens if it is damaged. Remove ADF holder assembly (See fig.6). Remove front cover lens from helmet assembly. Carefully remove gasket from cover lens. Install new cover lens into gasket and assemble to helmet shell. Make sure to assemble cover lens and gasket into helmet shell the same way as it was removed.

REPLACING INSIDE COVER LENS

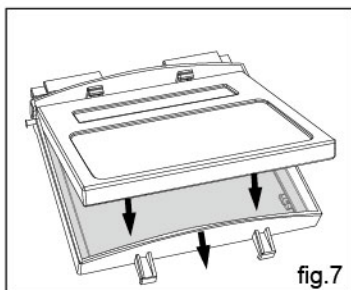
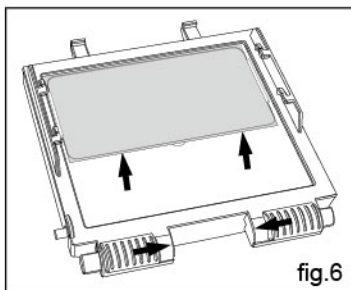
Replace the inside clear lens if it is damaged. Place your fingernail in recess below view window and flex lens upwards until it releases from edges of view window.

REPLACE THE AUTO DARKENING FILTER

Remove ADF holder assembly from helmet (See fig.7). Flex top end of the ADF holder to remove the auto darkening filter. Install new ADF into holder (See fig.7). Make sure that the ADF is installed in holder correctly as shown. Install ADF holder assembly into helmet shell.

CLEANING

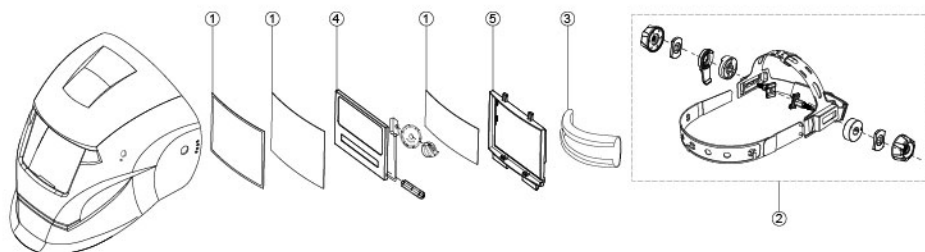
Clean helmet by wiping with a soft cloth. Clean auto darkening filter surfaces regularly. Do not use strong cleaning solutions. Clean sensors and solar cells with methylated spirit and a clean cloth and wipe dry with a lint-free cloth.



TECHNICAL SPECIFICATIONS

Optical Class	1 / 1 / 1 / 2
Viewing Area	98 x 44 mm (3.86" x 1.73")
Cartridge Size	110 x 90 x 9 mm (4.33" x 3.54" x 0.35")
Arc Sensor	2
Light State	DIN 3.5
Dark State	Variable Shade 9 ~ 13
Shade Control	External, 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 AAA Alkaline battery
Low Battery Indicator	Red Light
Switching Time	1/25,000 s. from Light to Dark
Dark to Light	0.1 ~ 1.0 s by infinitely dial knob
Low Amperage TIG Rated	≥ 5 amps (DC); ≥ 5 amps (AC)
Grind	Yes
Battery capacity test	Yes
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
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); Grinding
Approved	DINplus, CE, ANSI Z87.1, CSA Z94.3, AS/NZS 1338.1

PARTS LIST & ASSEMBLY



Reference Number	Description	Part No.
1	Front cover lens kit — 4 Front/2 lens covers and rubber seal	MAV173LK
2	Head Gear	MHG14
3	Sweatband	MJB14
4	Replacement AD Lens	ADRL173
5	Retaining frame	RF14

WARRANTY

Matco warrants these welding helmets for a period of 12 months from original purchase. **We will replace any lens assembly only, that is covered under this warranty**, which proves to be defective in material or workmanship during the warranty period. In order to have your lens assembly replaced, return the lens assembly only to the Matco Authorized Warranty Center listed below, freight prepaid. Please include your name, address, model number, and evidence of the purchase date, and description of the suspected defect. The lens assembly will be inspected and if found to be defective in material or workmanship, it will be replaced free of charge and returned to you freight prepaid. This warranty does not cover damage to the lens assembly; for example, cracked lenses or lenses covered with welding spatter or damage arising from alteration, abuse, or misuse and does not cover any repairs or replacement made by anyone other than Matco or its authorized service center. The foregoing obligation is Matco's sole liability under this or any implied warranty and under no circumstances shall we be liable for any incidental or consequential damages.

Note: Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Metal Man Work Gear Co
1760 prospect Ct #120
Appleton, WI 54914

Please see breakdown and parts list for helmet shell, headgear, lens plates and sweat bands available for purchase separately.

These items are consumable parts not covered under the 1 year warranty.