

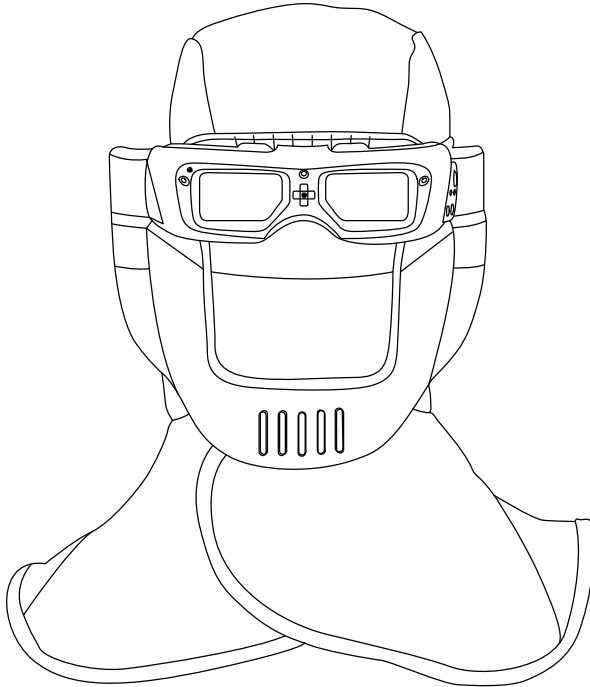


OM-267 425A

2014-10

Auto-Darkening Goggles

Model: Weld-Mask™




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SECTION 1 – WELDING HELMET AND WELDING GOGGLE SAFETY PRECAUTIONS – READ BEFORE USING

Weld Gog. 2014-02

-  **Protect yourself and others from injury — read, follow, and save these important safety precautions and operating instructions.**

1-1. Symbol Usage



DANGER! – Indicates a hazardous situation which, if not avoided, will result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.

 Indicates special instructions.



Indicates a hazardous situation which, if not avoided, could result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.

This group of symbols means Warning! Watch Out! ELECTRIC SHOCK, MOVING PARTS, and HOT PARTS hazards. Consult symbols and related instructions below for necessary actions to avoid the hazards.

NOTICE – Indicates statements not related to personal injury.

1-2. Arc Welding Hazards



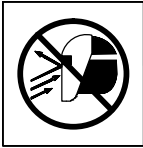
Only qualified persons should install, operate, maintain, and repair this unit.



ARC RAYS can burn eyes and skin.

Arc rays from the welding process produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin. Sparks fly off from the weld.

- Wear welding helmet or welding goggles fitted with a proper shade of filter to protect your face and eyes when welding or watching (see ANSI Z49.1 and Z87.1 listed in Safety Standards). Refer to Lens Shade Selection table in Section 1-4.
- Wear approved safety glasses with side shields under your helmet. Safety glasses are not required with auto-darkening welding goggles; the welding goggles meet the eye protection requirements of ANSI Z87.1.
- Use protective screens or barriers to protect others from flash, glare, and sparks; warn others not to watch the arc.
- Wear body protection made from durable, flame-resistant material (leather, heavy cotton, wool). Body protection includes oil-free clothing such as leather gloves, heavy shirt, cuffless trousers, high shoes, and a cap.
- Before welding, adjust the auto-darkening lens sensitivity setting to meet the application.
- Stop welding immediately if the auto-darkening lens does not darken when the arc is struck. See the Owner's Manual for more information.



WELDING HELMETS AND WELDING GOGGLES do not provide unlimited eye, ear, and face protection.

Arc rays from the welding process produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin. Sparks fly off from the weld.

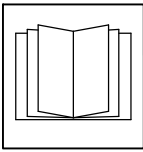
- Use impact resistant safety spectacles or goggles and ear protection at all times when using the welding helmet. Safety glasses are not required with auto-darkening welding goggles; the welding goggles meet the eye protection requirements of ANSI Z87.1.
- Do not use the welding helmet or welding goggles while working with or around explosives or corrosive liquids.
- Do not weld in the overhead position while using the welding helmet or welding goggles.
- Inspect the auto-lens frequently. Immediately replace any scratched, cracked, or pitted cover lenses or auto-lenses.



NOISE can damage hearing.

Noise from some processes or equipment can damage hearing.

- Wear approved ear protection if noise level is high.



READ INSTRUCTIONS.

- Read and follow all labels and the Owner's Manual carefully before installing, operating, or servicing unit. Read the safety information at the beginning of the manual and in each section.
- Use only genuine replacement parts from the manufacturer.
- Perform maintenance and service according to the Owner's Manuals, industry standards, and national, state, and local codes.





FUMES AND GASES can be hazardous.

Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

- Keep your head out of the fumes. Do not breathe the fumes.
- If inside, ventilate the area and/or use local forced ventilation at the arc to remove welding fumes and gases. The recommended way to determine adequate ventilation is to sample for the composition and quantity of fumes and gases to which personnel are exposed.
- If ventilation is poor, wear an approved air-supplied respirator.
- Read and understand the Safety Data Sheets (SDSs) and the manufacturer's instructions for adhesives, coatings, cleaners, consumables, coolants, degreasers, fluxes, and metals.
- Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Always have a trained watchperson nearby. Welding fumes and gases can displace air and lower the oxygen level causing injury or death. Be sure the breathing air is safe.
- Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.
- Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.

1-3. Proposition 65 Warnings

 Welding or cutting equipment produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)

 This product contains chemicals, including lead, known to the state of California to cause cancer, birth defects, or other reproductive harm. *Wash hands after use.*

1-4. Lens Shade Selection Table

Process	Electrode Size in. (mm)	Arc Current in Amperes	Minimum Protective Shade No.	Suggested Shade No. (Comfort)*
Shielded Metal Arc Welding (SMAW)	Less than 3/32 (2.4) 3/32–5/32 (2.4–4.0) 5/32–1/4 (4.0–6.4) More than 1/4 (6.4)	Less than 60	7	--
		60–160	8	10
		160–250	10	12
		250–550	11	14
Gas Metal Arc Welding (GMAW) Flux Cored Arc Welding (FCAW)		Less than 60	7	--
		60–160	10	11
		160–250	10	12
		250–500	10	14
Gas Tungsten Arc Welding (TIG)		Less than 50	8	10
		50–150	8	12
		150–500	10	14
Air Carbon Arc Cutting (CAC-A)	Light Heavy	Less than 500	10	12
		500–1000	11	14
Plasma Arc Cutting (PAC)		Less than 20	4	4
		20–40	5	5
		40–60	6	6
		60–80	8	8
		80–300	8	9
		300–400 400–800	9 10	12 14
Plasma Arc Welding (PAW)		Less than 20	6	6–8
		20–100	8	10
		100–400	10	12
		400–800	11	14

Reference: ANSI Z49.1:2005




* Start with a shade that is too dark to see the weld zone. Then, go to a lighter shade which gives a sufficient view of the weld zone without going below the minimum.

1-5. Principal Safety Standards

Safety in Welding, Cutting, and Allied Processes, ANSI Standard Z49.1, is available as a free download from the American Welding Society at <http://www.aws.org> or purchased from Global Engineering Documents (phone: 1-877-413-5184, website: www.global.ihc.com).

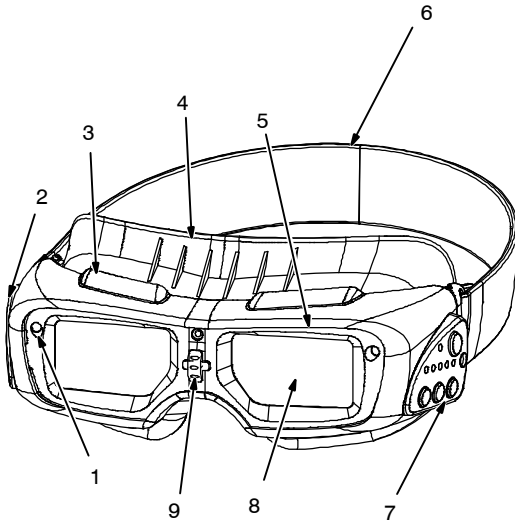
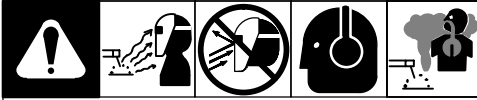
Safe Practice For Occupational And Educational Eye And Face Protection, ANSI Standard Z87.1, from American National Standards Institute, 25 West 43rd Street, New York, NY 10036 (phone: 212-642-4900, website: www.ansi.org).

SECTION 2 – SPECIFICATIONS

Applications	Arc Welding, Plasma Cutting, Oxy-Fuel Welding And Cutting
Viewing Field	44 x 26 mm (L, R)
Operating Modes	Two: Welding And Grinding
Reaction Time	0.0000666 sec (1/15,000)
Available Shades <i>All Shades Provide Continuous UV And IR Protection.</i>	Darkened State: Shade No. 5, 7, 9, 11, 13 Light State: No. 3 (Passive Mode)  Goggles Can Be Used For Grinding In Light State (Passive Mode) Only When Used With Customer-Supplied Face Shield.
Inside Lens	Meets Eye Protection Requirements Of ANSI Standard Z87.1
Sensitivity Control	Adjusts For Varying Ambient Light And Welding Arc Five Sensitivity Levels From Low To High
Automatic Power	None Shuts Lens Off 30 Minutes After Last Arc Is Struck.
Low Battery Light	Red LED Illuminates To Indicate Five Hours Of Battery Life Remains
Power Supply	Two CR2032 Lithium Batteries Approximate Run Time Of 1000 Hours
Sensors	Two
Operating Temperature	23°F to 131°F / - 5°C to +55°C  <i>When Stored In Extremely Cold Temperatures, Warm Helmet To Ambient Temperature Before Welding.</i>
Storage Temperature	-4°F to 158°F / -20°C to +70°C  <i>When Stored In Extremely Cold Temperatures, Warm Helmet To Ambient Temperature Before Welding.</i>
Total Weight	11.8 oz (337 g)
Standards	ANSI Z87.1 (2010) and CSA
Warranty	Two Years From Date Of Purchase (See Section 11)

SECTION 3 – OPERATING INSTRUCTIONS

3-1. Auto-Darkening Goggle Components



! The auto-darkening goggles provide eye protection only. Use additional personal protection equipment (arc shield, face shield, balaclava, hard hat, etc.) to shield exposed skin and protect head.

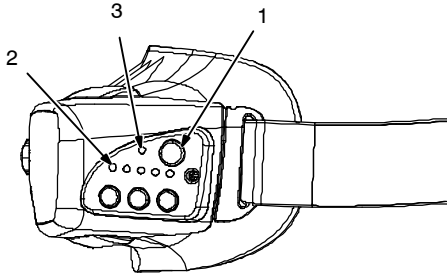
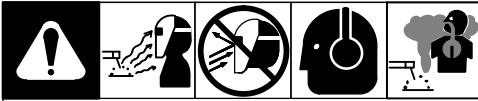
! Use auto-darkening goggles only for welding and cutting applications. Remove goggles when work is finished.

! Always wear a face shield (customer supplied) when grinding. The optional arc shield is suitable only for arc welding applications.

! Before using the auto-darkening goggles, remove the protective covers from the inside of the auto-darkening lenses.

- 1 Sensor(s)
- 2 Battery Housing (Section 5)
- 3 Air Vent(s)
- 4 Replaceable Silicone Skirt
- 5 Front Cover Lens
- 6 Adjustable Headband
- 7 Control Panel
- 8 Auto-Darkening Lens
- 9 Front Cover Retaining Clip (Turn To Lock/Release)
- 10 Arc Shield (Not Shown)

3-2. On-Off Control And Low Battery LED



1 On-Off Button

2 Shade Indicator LEDs

Use button to turn lens on and off. To turn on the lens, press On-Off button for two seconds until all five Shade Indicator LEDs blink. Shade and sensitivity adjustments must be made with the lens turned on.

To check if the lens is on, press the On-Off button. If lens is on, the screen will blink (darken) briefly.

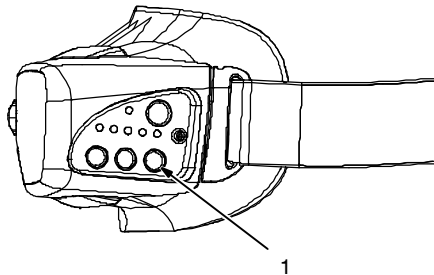
To turn off the lens, press the On-Off button for two seconds (Low Battery LED blinks.) Lens turns off automatically if not used for 30 minutes. Do not use the goggles if the

lens does not function as described. (See Section 9, Troubleshooting.)

3 Low Battery LED

The Low Battery LED lights when five hours of battery life remains. If battery power is low, replace with two CR2032 lithium batteries See Section 5.

3-3. Variable Shade Control



1 Variable Shade Control Button

Press the Shade Control button to adjust the lens shade in the darkened state. See Section 1-4 to select proper shade control setting based on your welding process. The shade ranges are as follows:

Weld – Shades 5, 7, 9, 11, 13
Cut – Shades 5, 7, 9, 11, 13

Grind – Shade 3 only

Start at the highest setting and adjust lighter to suit the application and your personal preference.

Shade Adjustment

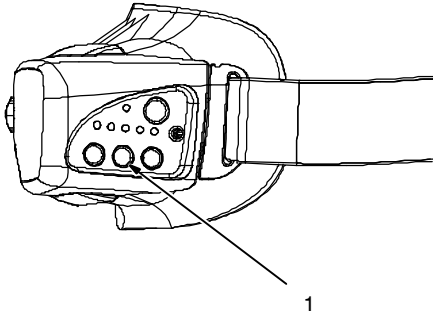
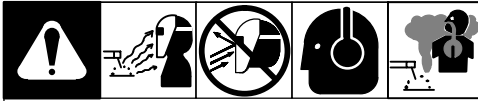
- Turn lens on.
- Press Shade Control button to select desired

shade. Shade selection is indicated by numbered LEDs on control panel.

- Begin welding or continue with other lens adjustments.

The lens assembly saves the shade and sensitivity settings.

3-4. Sensitivity Control




1 Sensitivity Control Button

Use Sensitivity control to make the lens more responsive to different light levels in various welding processes. **Use a mid-range or 30–50% sensitivity setting for most applications.** It may be necessary to adjust helmet sensitivity to accommodate different lighting conditions or if lens is flashing on and off.

Choose from five Sensitivity levels (low to high). Sensitivity level is indicated by numbered LEDs on control panel.

Sensitivity Adjustment

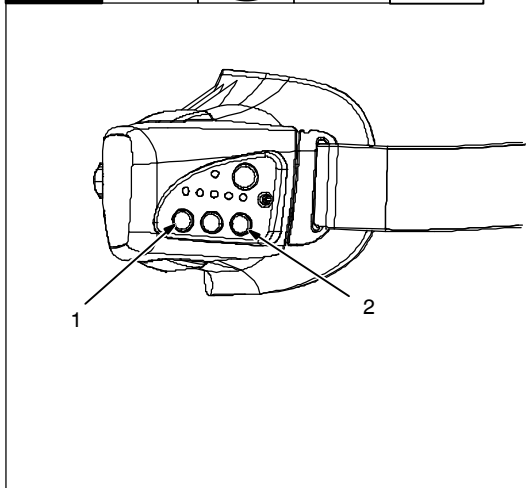
 Adjust helmet sensitivity in lighting conditions helmet will be used in.

- Turn lens on.
- Press Sensitivity Control button to adjust sensitivity control to highest setting.
- Helmet is ready for use. Slight readjustment may be necessary for certain applications or if lens is flashing on and off.

Recommended Sensitivity Settings

Stick Electrode	Mid-Range
Short Circuiting (MIG)	Low/Mid-Range
Pulsed & Spray (MIG)	Mid-Range
Gas Tungsten Arc (TIG)	Mid/High-Range
Plasma Arc Cutting/Welding	Low/Mid-Range

3-5. Hold Control



- 1 Hold Control Button
- 2 Shade Control Button

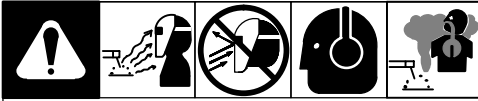
Press Hold Control button to toggle between Hold Mode (shades 5 and 7 for oxy-fuel welding/cutting) and standard mode (shades 5 – 13 for arc welding).

Using The Hold Control

- Turn lens on.
- Press Hold Control button to enter passive mode. In passive mode, press Shade button to select either shade 5 or shade 7.
- Press Hold Control button again to enter auto-darkening mode and select any shade or sensitivity setting.
- Helmet is ready for use.

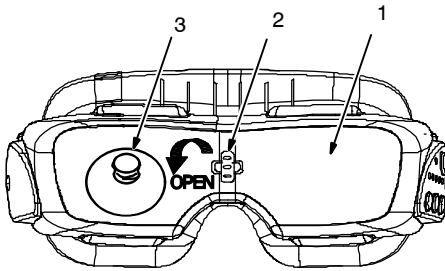
Notes

SECTION 4 – REPLACING THE LENS COVER



⚠ Never use the auto-darkening lens without the lens cover properly installed. Welding spatter will damage the auto-darkening lens and void the warranty.

- 1 Lens Cover
- 2 Retaining Clip
- 3 Suction Plate
- 4 Cover Tab
- 5 Frame Slot



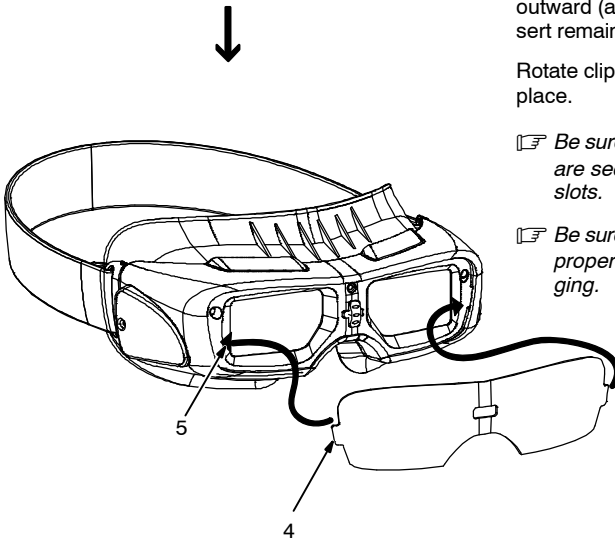
Rotate clip 90° to unlock lens cover. Attach suction plate to lens. Pull lens away from frame.

To install new lens cover, insert tab in frame slot. Slightly bend cover outward (away from frame) and insert remaining tab in frame slot.

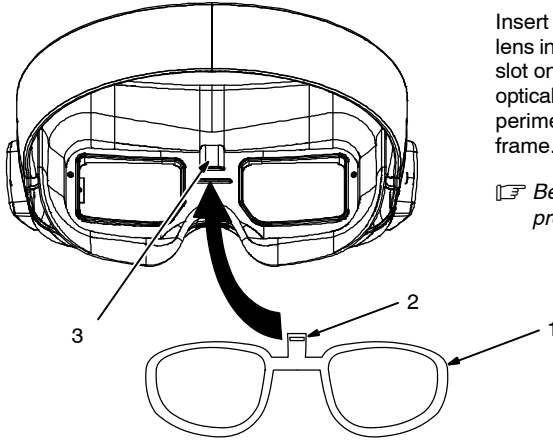
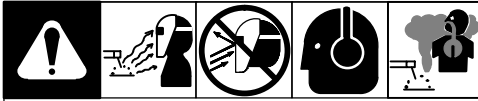
Rotate clip 90° to lock lens cover in place.

☞ Be sure both tabs on lens cover are securely fastened in frame slots.

☞ Be sure the cover lens is seated properly (flat) to prevent fogging.




4-1. Inserting Optical Lens Frame

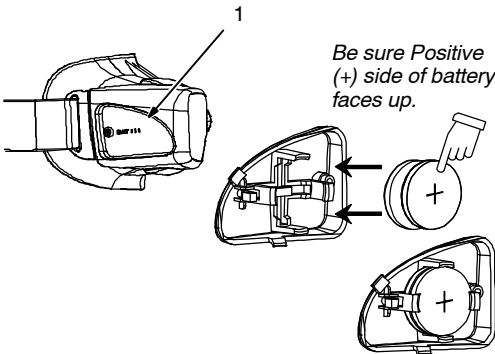


- 1 Optical Lens Frame
- 2 Tab
- 3 Slot

Insert customer supplied corrective lens in frame. Install lens frame tab in slot on silicone skirt as shown. Press optical lens frame into groove around perimeter of auto-darkening lens frame.

 *Be sure the cover lens is seated properly (flat) to prevent fogging.*


SECTION 5 – REPLACING THE BATTERY



- 1 Battery Cover

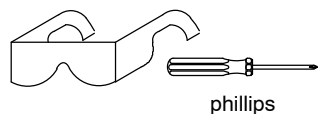
Loosen screws securing battery cover. Remove cover and batteries

Replace with CR2032 lithium batteries (2 required) or equivalent (Miller Part No. 270 055).

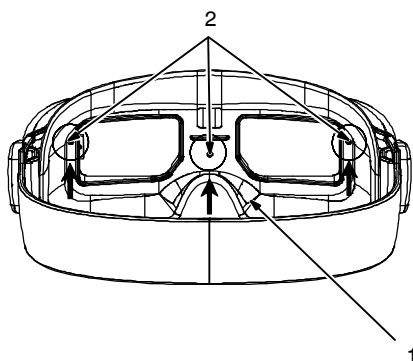
 *Be sure Positive (+) side of the batteries faces up (toward outside of goggles).*

Reinstall the battery cover. To test, press the On-Off button. The display screen should turn blink twice and then darken.

Tools Needed:



SECTION 6 – REPLACING THE SILICONE SKIRT

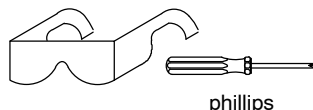


- 1 Silicone Skirt
- 2 Screws

Remove three screws securing silicone skirt. Replace skirt. Install all three screws before tightening.

NOTICE – Do not overtighten screws securing silicone skirt.

Tools Needed:

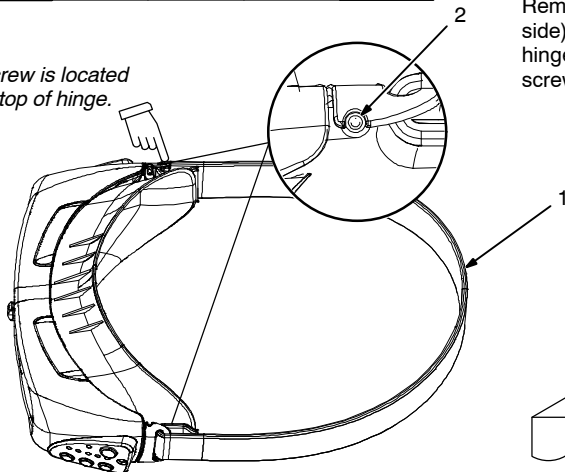


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SECTION 7 – REPLACING THE STRAP ASSEMBLY



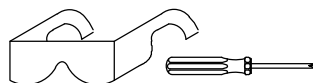
Screw is located at top of hinge.



- 1 Strap
- 2 Screws

Remove two screws (one on each side) securing strap assembly to hinges. Replace strap and reinstall screws.

Tools Needed:



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SECTION 8 – MAINTENANCE


NOTICE – Never use solvents or abrasive cleaning detergents.

NOTICE – Do not immerse the lens assembly in water.

The goggles require little maintenance. However, for best performance clean after each use. Using a soft cloth dampened with a mild soap and water solution, wipe the cover lenses clean. Allow to air dry. Occasionally, the filter lens and sensors should be cleaned by gently wiping with a soft, dry cloth.

SECTION 9 – TROUBLESHOOTING



Trouble	Remedy
Auto lens not On – LEDs do not flash momentarily when the On-Off button is pressed.	<p>Check batteries and verify they are in good condition and installed properly.</p> <p>Check battery surfaces and contacts, and clean if necessary.</p> <p>Check battery for proper contact and gently adjust contact points if necessary. This is particularly important if the goggles have been dropped. Verify tray is installed correctly.</p>
Not switching – auto-lens stays light and does not darken when welding or cutting.	<p>Stop welding or cutting immediately: Make sure the lens is turned On.</p> <p>If power is On, check the shade settings. Also review sensitivity recommendations and adjust sensitivity if possible.</p> <p>Clean lens cover and sensors of any obstructions. Make sure the sensors are facing the arc; angles of 45° or more may not allow the arc light to reach the sensors.</p>
Not Switching – auto-lens stays dark after the arc is extinguished, or the auto-lens stays dark when no arc is present.	<p>Reduce Sensitivity setting (see Section 3-4). In extreme light conditions, it may be necessary to reduce the surrounding light levels.</p> <p> <i>If the lens remains dark, press the Auto On/Off button to return lens to the clear state.</i></p> <p>Move goggles away from light source.</p>
Inconsistent or lighter auto-lens shading in the dark-state, noticeable on the outside edges and corners.	<p>Referred to as an angle of view effect, auto-darkening lenses have an optimum viewing angle.</p> <p>The optimum viewing angle is perpendicular or 90° to the surface of the auto-lens. When that angle of view varies in the dark-state, welders may notice slightly lighter areas at the outside edges and the corners of the lens. This is normal and does not represent any health or safety hazard.</p> <p>This effect may also be more noticeable in applications where magnifying lenses are used.</p>
Sections of the auto-lens are not going dark, distinct lines separate the light and dark areas.	<p>Stop welding or cutting immediately: The auto-lens may be cracked which can be caused by the impact of dropping the helmet.</p> <p>Weld spatter on the auto lens may also cause cracking. (The lens may need to be replaced; most cracked lenses are not covered by warranty).</p>
Switching or Flickering – the auto-lens darkens then lightens while the welding or cutting arc is present.	<p>Review the sensitivity setting recommendations and increase the sensitivity if possible. Be sure the arc sensors are not being blocked from direct access to the arc light.</p> <p>Check the lens cover for dirt and spatter that may be blocking the arc sensors.</p> <p>Move closer to arc.</p>

SECTION 10 – PARTS LIST

Item No.	Part No.	Description	Quantity
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Figure 10-1. Weld-Mask Auto-Darkening Goggles

1	267422	Guard, Face	1
2	267420	Cover, Lens	1
3	270053	Band, Head	1
4	267421	Cover, Head Fr	1
5	270055	Battery, Non-Rechargeable CR2032	2

◆ Optional

SECTION 11 – LIMITED WARRANTY

LIMITED WARRANTY – Subject to the terms and conditions below. Miller Electric Mfg. Co., Appleton, Wisconsin, warrants to its original retail purchaser that the new Miller equipment sold after the effective date of this limited warranty is free of defects in material and workmanship at the time it is shipped by Miller. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OR MERCHANTABILITY AND FITNESS.

Miller auto-darkening goggles are warranted for 2 years from the date of purchase. *Proof of purchase is required for warranty transactions so it is imperative that a copy of the original invoice or sales receipt be retained.*

For warranty transactions, contact your Miller Distributor.

Gog Warr 2014-10

Effective October, 2014



Visit our website at
www.MillerWelds.com



Miller Electric Mfg. Co.
An Illinois Tool Works Company
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