

UNIVERSAL 



G SERIES ADF GOGGLE

Professional Quality Welding Goggle

SAFETY WARNINGS - READ BEFORE USING



WARNING

Read & Understand All Instructions Before Using



Auto-Darkening welding goggles are designed to protect the eye and face from sparks, spatter and harmful radiation under normal welding conditions. This auto darkening filter will automatically turn on when pick it up. The 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 goggle 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. Before welding, please make sure the Auto-Darkening filter was set to WELD / CUTTING mode instead of GRIND mode.

The welding goggle 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 goggle is not suitable for laser welding.
- Never place this goggle and Auto-Darkening filter on a hot surface.
- Never open or tamper with the Auto-Darkening filter.
- This Auto-Darkening welding goggle will not protect against severe impact hazards.
- This goggle will not protect against explosive devices or corrosive liquids.
- Do not make any modifications to either the filter or goggle, 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 goggle not darken upon striking an arc, stop welding immediately and contact your supervisor or your dealer.
- Do not immerse the Auto-Darkening filter in water.
- Do not use any solvents on the filter screen or goggle components.
- Use only at temperatures: -10°C ~ +55°C (14°F ~ 131°F).
- Storing temperature: -20°C ~ +70°C (- 4°F ~ 158°F). The goggle 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.



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 refer to the **"BATTERY INSTALLATION"** 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 goggle slips

Headband is not properly adjusted (Readjust the headband).



WARNING



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

INSTRUCTIONS FOR USE

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

• BATTERY INSTALLATION

Open the battery cover on the left hand side of the goggle, install the battery properly (See fig.1), remember to slide back the cover after battery installation.

• ON-OFF

Manual power on/off: Short Press "ON / MODE" button to power on, long press "ON / MODE" button to power off (See fig.2b).

Auto power on: The auto darkening filter will automatically turn on when pick it up (The digital screen will not be activated).

Auto power off: The auto darkening filter will automatically turn off after 5 minutes without any activity.

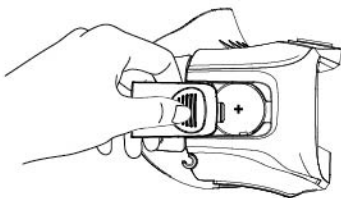


fig.1

• DIGITAL SCREEN ACTIVATION

This auto darkening filter will automatically turn on when pick it up. The 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. After 15 seconds, digital screen will automatically turn off and change to standby mode. Short press any button will active the screen and previous settings will remain.

• TEST

Before welding, press and hold "TEST" to preview shade selection (See fig.2a). When released then viewing window will automatically return to the light state. Press "TEST", if viewing window does not turn to dark state, replace battery and try again.

• MODE CONTROL

Short press "ON / MODE" button to select the mode appropriate for the work activity (See fig.2b):

Weld Mode – used for most welding applications. Push "FUNC" button to adjust shade number, sensitivity, and delay settings properly before welding. In this mode the lens turns to dark immediately when you start welding.

Cutting Mode – used for cutting applications. Push "FUNC" button to adjust shade number, sensitivity, and delay settings properly before cutting.

Grind Mode – used for grinding applications. In this mode the lens shade is fixed shade 4. Shade number, sensitivity, and delay settings cannot be adjusted when in grind mode. The green grind light indicator will flash every 3 seconds to indicate you are in grind mode (See fig.2c).

• BATTERY INDICATOR

The symbol "■ ■ ■ ■" shows the current state of the battery (See fig.2a). The volume of batteries has four level symbols (See fig.2d). The symbol "□" appears on the display screen before 1 to 2 days of battery life remains, the CR2450 lithium battery should be replaced at this time. The symbol of the battery Indicator is not real-time and is updated shortly after pushing the "ON / MODE" button.

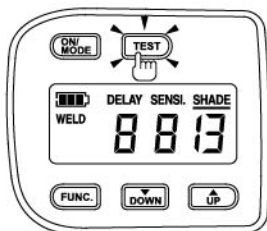


fig.2a

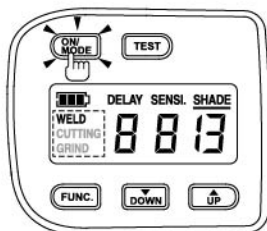


fig.2b

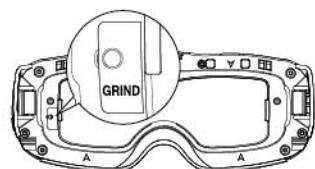


fig.2c



fig.2d

• SELECTING GRIND MODE

Option 1: Short press "ON / MODE" button to select the grind mode (See fig.3a).

Option 2: After welding / cutting work, long press "GRIND" button on the top and left side of the goggle for 2 seconds (See fig.3b), the auto darkening filter will switch to grind mode.

In grind mode, the lens shade is fixed shade 4 (See fig.3a), and the sensitivity and delay can not be adjusted. The green grind light indicator will flash every 3 seconds to indicate you are in grind mode (See fig.2c). Long press "GRIND" button for 2 seconds, it will return to previous mode. Before restarting welding / cutting work, ensure that the filter return to weld / cutting mode.

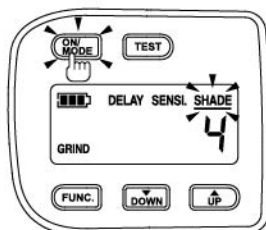


fig.3a

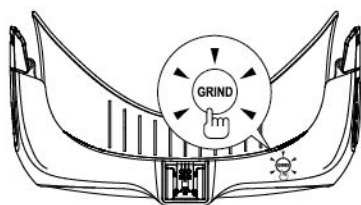


fig.3b

• VARIABLE SHADE CONTROL

Short press "FUNC" button to choose "SHADE" option and adjust the lens shade number. Use "▲" and "▼" buttons to select the lens shade in the dark state. The shade ranges for each mode are as follows:

Cutting Mode – Shade 5 ~ 8 (See fig.4a) **Weld Mode** – Shade 9 ~ 13 (See fig.4b)

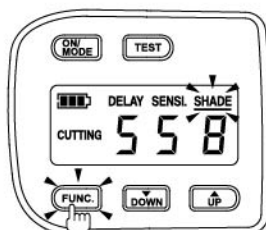


fig.4a

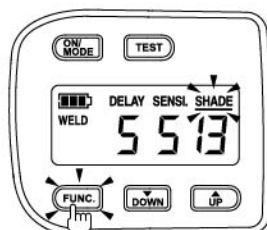


fig.4b

Grind Mode – Shade 4 (See fig.3a)

Select the proper shade number for your welding / cutting process by referring to the "Shade Guide Table" on page 10.

• SENSITIVITY CONTROL

Short press "FUNC" button to choose "SENSI" option. Use "▲" and "▼" buttons to make the lens more or less sensitive to arc light of different welding processes. Sensitivity settings 3-7 are the normal settings for everyday use. The sensitivity ranges for each mode are as follows:

Cutting Mode / Weld Mode – Sensitivity 0 ~ 9 (See fig.5a / 5b)

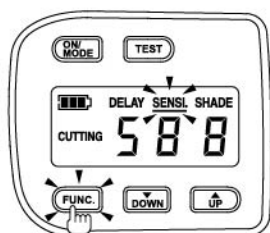


fig.5a

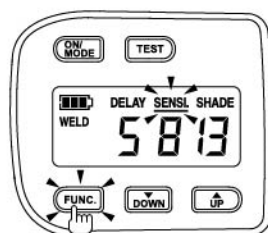


fig.5b

Grind Mode – No sensitivity adjustment

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.).

It may be necessary to adjust goggle sensitivity to accommodate different lighting conditions or if lens is flashing On and Off. Adjust the lens sensitivity in lighting conditions the goggle will be used in. Adjust goggle sensitivity as follows:

- Press "▼" button to lower setting to 0.
- Face the goggle in the direction of use, exposing it to the surrounding light conditions.
- Press "▲" button repeatedly until the lens darkens, then press "▼" button until lens clears. The goggle is ready for use. Slight readjustment may be necessary for certain applications or if lens is flashing on and off.

• DELAY CONTROL

Short press "FUNC" button to choose "DELAY" option, begin lens delay adjustments. Use "▲" and "▼" buttons to adjust the time for the lens to switch to the clear state after welding or cutting. The delay ranges for each mode are as follows:

Cutting Mode / Weld Mode – Delay 0 ~ 9 (See fig.6a / 6b)

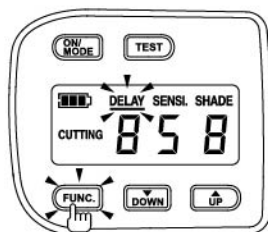


fig.6a

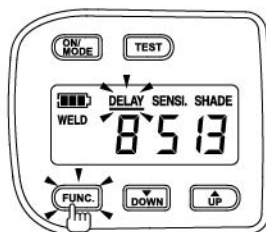


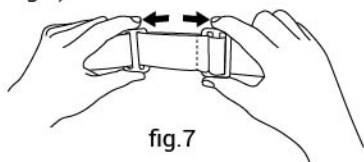
fig.6b

Grind Mode – No delay adjustment

The delay is particularly useful in eliminating bright after-rays present in higher amperage applications where the molten puddle remains bright momentarily after welding. Use buttons to adjust delay from 0 to 9 (0.05 to 1.0 second). 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 from 0 to 9. 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.

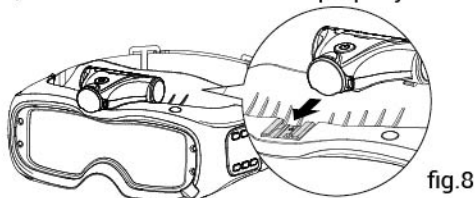
• HEADBAND ADJUSTMENT

Headband tightness is adjusted by loosening or tightening the elastic band about the two adjustment clips (See fig.7).



• LED LIGHT INSTALLATION

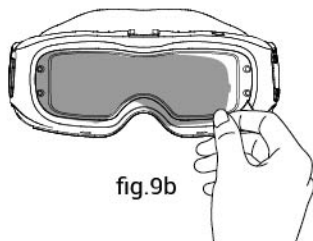
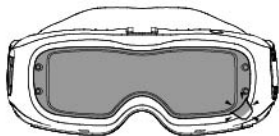
Remove LED cover, install the LED light on the Arc-mask by sliding the LED light bottom part into the metal slot, until it is fixed well (See fig.8). Press "TEST" button, the LED light will turn off, which means it is installed properly.



MAINTENANCE

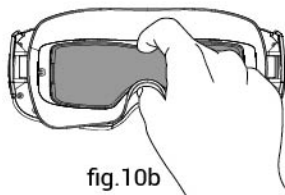
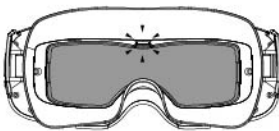
• REPLACING THE OUTSIDE COVER LENS

Replace the outside cover lens if it is damaged. Remove the outside cover lens from the goggle as shown below (See fig.9a / 9b). Install new outside cover lens into goggle. Make sure outside cover lens is installed the same way as it was removed.



• REPLACING THE INSIDE COVER LENS

Replace the inside cover lens if it is damaged. Place your fingernail in the recess above the lens view as shown below and flex the lens upwards until it releases from the edges of the lens view window (See fig.10a / 10b).



• REPLACING THE ARC-MASK FRAME

Replace the Arc-mask frame if it is damaged or worn. Push the frame down toward the center of the goggle lens as shown in fig.11a and pull to remove. Install new frame by pressing it into all five locking positions shown in fig.11b.

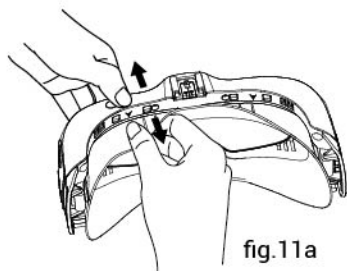


fig.11a

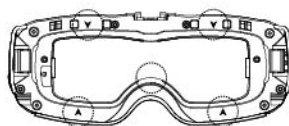


fig.11b

• REPLACING THE FACE SHIELD

To install a new face shield, first snap the piece into the two hinges on either side of the goggle shown in fig 12a. For fig 12b, rotate the face shield so that it is flush with the goggle. Lastly, fasten the two screws attached to the face shield into the goggle by turning them clockwise as shown in fig 12c. To remove the face shield, turn the screws counter-clockwise, rotate the shield away from the goggle, and unsnap the shield from the two hinges on the goggle.

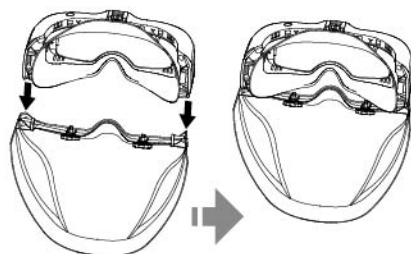


fig.12a

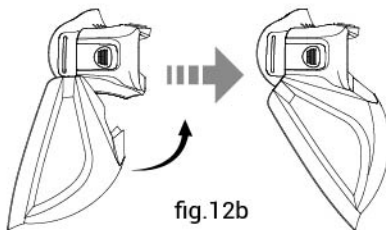


fig.12b



fig.12c

• REPLACING THE HEADBAND

Locate the hinges on the goggle and pull the hard plastic connection of the headband toward the opening in the hinge. To insert a new headband simply snap the connection back into the opening of the hinge. See fig.13a / 13b for a closer view of the connection.

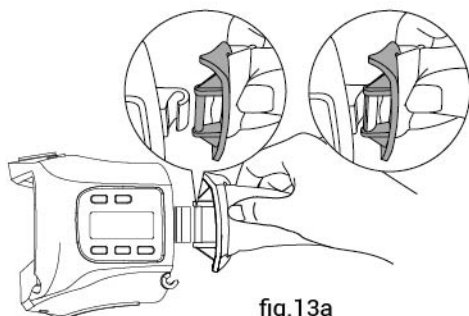


fig.13a

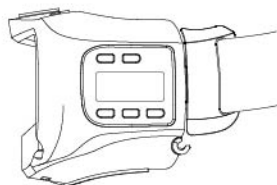


fig.13b

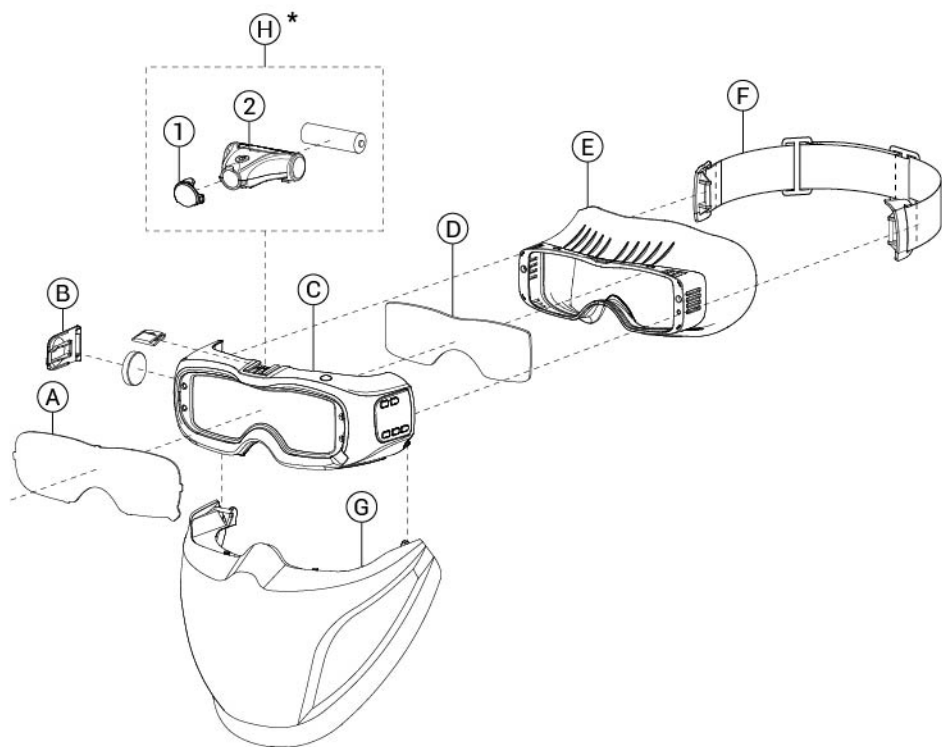
• CLEANING

Clean goggles by wiping with a soft cloth. Clean goggle surfaces regularly. Do not use strong cleaning solutions. Clean sensors with soapy water solution and a clean cloth and wipe dry with a lint-free cloth. Do not submerge goggles in water or other solution.

TECHNICAL SPECIFICATIONS

Optical Class:	1 / 1 / 1 / 1
LCD Viewing Area:	47.0 sq. cm. (7.29 sq. in.)
Goggle Size:	187 × 75 × 82 mm (7.4 × 2.9 × 3.2 in.)
Arc Sensor:	4
Light State:	DIN 3.5
Dark State:	Variable Shade 5 ~ 8 / 9 ~ 13
Shade Control:	Digital Display Control, Variable Shade
Power On/Off:	Fully Automatic
Sensitivity Control:	Variable 0 to 9, Digital Display Control
UV/IR Protection:	Up to Shade DIN16 at all times
Power Supply:	Solar cell. Battery replaceable, 1 × CR2450 lithium battery
Switching Time:	1/25,000 s. from Light to Dark
Dark to Light:	Variable 0 to 9 (0.05 to 1.0 sec.), Digital Display Control
Low Amperage TIG Rated:	≥ 2 amps (DC); ≥ 2 amps (AC)
Grinding:	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)
Application Range:	Stick Welding (SMAW); TIG DC&AC; TIG Pulse DC; TIG Pulse AC; MIG/MAG/CO ₂ ; MIG/MAG Pulse; Plasma Arc Cutting (PAC); Plasma Arc Welding (PAW); Air Carbon Arc Cutting (CAC-A); Oxyfuel Gas Welding (OFW); Oxygen Cutting (OC); Grinding
Approved:	CE, UKCA, UKNI, ANSI Z87.1, Z94.3

PARTS LIST & ASSEMBLY



Part List

ITEM	PART NO.	DESCRIPTION	QTY
A	EP320-0000-041-ONE	Front Cover Lens	1
B	AC558-0000-0005-ONE	ADF Battery Cover	1
C	EP322-0000-005-ONE	Auto-Darkening Filter (Including CR2450 Lithium Battery and LED Cover)	1
D	EP321-0000-041-ONE	Inside Cover Lens	1
E	AC559-0000-005-ONE	Goggle Frame	1
F	AC557-0000-005-ONE	Elastic Headband	1
G	AC555-0000-005-ONE	Face Shield	1
H-1*	AC560-0000-041-ONE	LED Cover Lens	1
H-2*	AC556-0000-005-ONE	LED Light (Including AA Battery)	1

The part with * means it is not included in the product, which need to be purchased seperately.

SHADE GUIDE TABLE

GUIDE FOR SHADE NUMBERS

OPERATION	ELECTRODE SIZE 1/32 in. (mm)	ARC CURRENT(A)	MINIMUM PROTECTIVW SHADE	SUGGERSTED ⁽¹⁾ SHADE NO. (COMFORT)
Shielded metal arc welding	Less than 3 (2.5)	Less than 60	7	—
	3-5 (2.5-4)	60-160	8	10
	5-8 (4-6.4)	160-250	10	12
	More than 8 (6.4)	250-550	11	14
Gas metal arc welding and flux cored arc welding		Less than 60	7	—
		60-160	10	11
		160-250	10	12
		250-500	10	14
Gas tungsten arc welding		Less than 50	8	10
		50-150	8	12
		150-500	10	14
Air carbon Arc cutting	(Light)	Less than 500	10	12
	(Heavy)	500-1000	11	14
Plasma arc welding		Less than 20	6	6 to 8
		20-100	8	10
		100-400	10	12
		400-800	11	14
Plasma arc cutting	(Light) ⁽²⁾	Less than 300	8	8
	(Medium) ⁽²⁾	300-400	9	12
	(Heavy) ⁽²⁾	400-800	10	14
Torch brazing		—	—	3 to 4
Torch soldering		—	—	2
Carbon arc welding		—	—	14

PLATE THICKNESS

	in.	mm		
Gas welding				
	Under 1/8	Under 3.2		4 or 5
	1/8 to 1/2	3.2 to 12.7		5 or 6
Heavy	Over 1/2	Over 12.7		6 or 8
Oxygen cutting				
	Under 1	Under 25		3 or 4
	1 to 6	25 to 150		4 or 5
Heavy	Over 6	Over 150		5 or 6

⁽¹⁾ As a rule of thumb, start with a shade that is too dark, then go to a lighter shade which gives sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line the visible light of the (spectrum) operation.

⁽²⁾ These values apply where the actual arc is clearly seen. Experience has shown that lighter filters may be used when the arc is hidden by the workpiece.

WARRANTY

Universal's only obligation shall be repair, replace or refund the purchase price of such parts or products material and fabrication defects free of charge within the warranty period. This warranty does not cover to cause by improper handling abuse or application other than recommended in the user instruction.

If you come across any problem during warranty period, contact your distributor, send the defective parts together with the completed defect problem if necessary.

For future reference, please complete the owner's record below:

Serial Number:

Purchase Date:



DIN EN175:1997

DIN EN379:2009-07

DIN EN166:2001

(EU) 2016/425

UKCA-B-210967

Approved body No: 0194

UNIVERSAL PPE & WELDING SUPPLIES LTD

Aqua House, Buttress Way, Smethwick, West Midlands,
England, B66 3DL

info@universalppe.co.uk

Tel: +44 (0) 121 817 7890