UNITOR®

UNITOR300

Auto Darkening Welding Helmet

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.

Auto-Darkening welding helmets come ready for use. The only thing you need to do before your 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.
• 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: -10º C ~ +55º C (14°F ~ 131°F).
• Storing temperature: -20º C ~ +70º C (- 4°F ~ 158°F). The helmet should be stored in dry cool and dark area, when not using it for a long time.
• Protect filter from contact 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 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 (Reset the sensitivity level to "higher" side).

• Slow response

Operating temperature is too low (Do not use at temperatures below -10º C or 14º 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.

• 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 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.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.

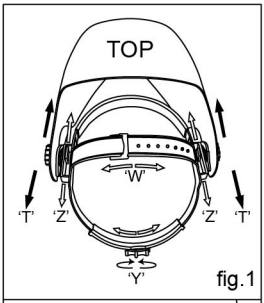


fig.1

• ADJUSTING VIEW ANGLE POSITION

Please see fig.2.

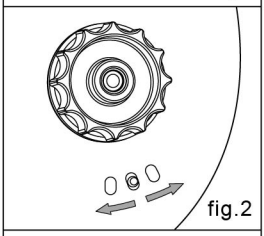


fig.2

• 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 workpiece. The delay time / response can be set to “ S ” (short: 0.1 sec.) or “ L ” (long: 1.0 sec.). As you require using the infinitely dial knob on the back of the shade cartridge (See fig.3). It is recommended to use a shorter delay with spot welding applications and a long delay with applications using higher currents. Longer delays can also be used for lower current TIG welding, and TIG / MIG / MAG pulse.

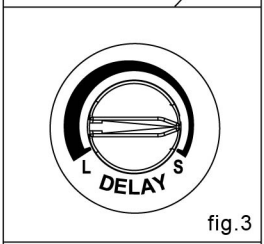


fig.3

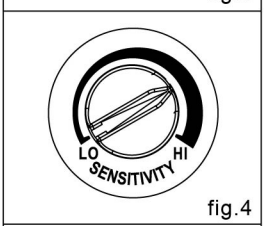


fig.4

• SENSITIVITY

The sensitivity can be set to “ H ”(high) or “ L ”(low) by using the infinitely dial knob on the back of the shade cartridge. 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. Higher sensitivity setting is necessary if lens flashing on and off. Where the operation of the helmet is disturbed by excess ambient light, or another welding machine close by, use the “low” setting (See fig.4). 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.).

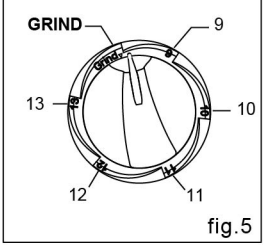


fig.5

• SELECTING THE GRIND OPTION

When the shade knob is turned to the “grind” position, the shade function is turned off allowing a clear view to grind a weld with the helmet providing face protection. Before restarting welding work, Ensure that the shade function is turned back on before welding again (See fig.5).

• You are now ready to use the helmet. The shading may be adjusted during use by re-setting potentiometer control.

SHADE GUIDE TABLE (NO.1)

Welding Process	ARC CURRENT (Amperes) 0.5 1 2.5 5 10 15 20 30 40 60 80 100 125 150 175 200 225 250 275 300 350 400 450 500
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
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

To replace the front cover lens remove lens cassette by unlocking the holder lock below the cartridge (fig.6), lift up the cartridge to remove / replace the front cover lens.

Replacing inside cover lens:

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

Change the shade cartridge:

Remove ADF holder assembly from helmet shell. See fig.5 for removal. Flex top end of the ADF holder to allow for ADF cartridge to be removed from frame. Install new ADF cartridge into frame per fig.7 below. Make sure that the ADF cartridge is inserted in ADF holder correctly as shown. Install ADF holder assembly into helmet shell.

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.

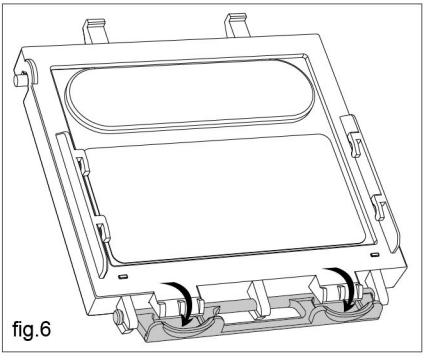


fig.6

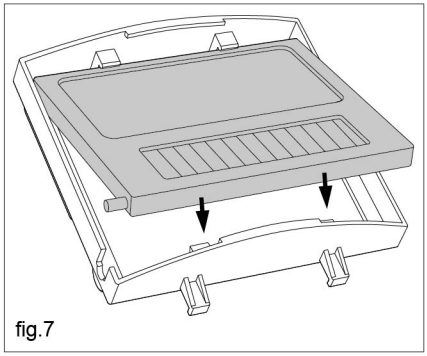
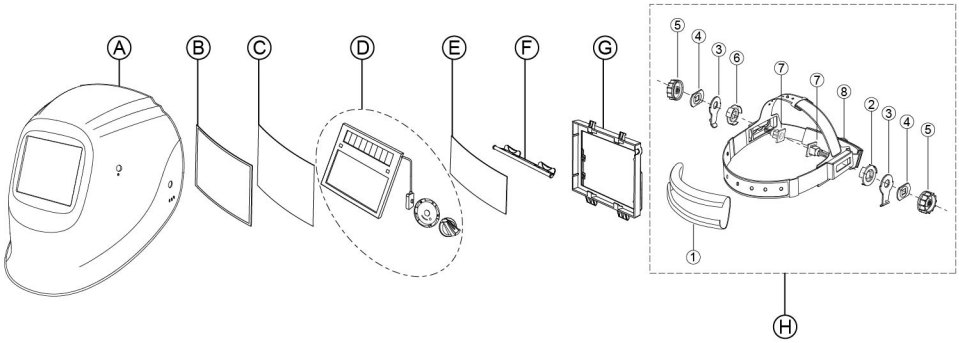


fig.7

TECHNICAL SPECIFICATIONS

Optical Class:	1 / 2 / 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:	DIN 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. No battery change required
Switching Time:	1/16,000 s. from Light to Dark
Delay (Dark to Light):	0.1~1.0 s by infinitely dial knob
Low Amperage TIG Rated:	≥ 10 amps (DC); ≥ 10 amps (AC)
Grinding:	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
Total Weight:	435g
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:	DIN-Geprüft, CE, ANSI Z87.1, CSA Z94.3, AS/NZS 1338.1

PARTS LIST & ASSEMBLY



Part List

ITEM	DESCRIPTION	QTY
A	Shell (Welding mask)	1
B	Rubber Frame	1
C	Front Cover Lens	1
D	Auto-Darkening Filter	1
E	Inside Cover Lens	1
F	Holder Lock	1
G	Lens Holder	1
H*	Headgear Assembly	1

Part List of H*

ITEM	DESCRIPTION	QTY
1	Sweatband	1
2	Left Limitation Washer	1
3	Angle Adjustable Washer	2
4	Washer	2
5	Block Nut	2
6	Right Limitation Washer	1
7	Screw	2
8	Adjustable Headband	1