



Item # 1644910



NORTHERN TOOL & EQUIPMENT CO.
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Professional Quality Welding Helmet



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 comes 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



- The Helmet is not suitable for laser welding / laser cutting processes.
- Never place this Helmet and Auto-darkening filter on a hot surface.
- Never open or tamper with the Auto-Darkening Filter.
- The helmet will not protect against severe impact hazards, including grinding disks. Never use for grinding.
- 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 filters' screen or helmet components.
- Use only at temperatures : - 10° C ~ + 55° C (14° F ~ 131° F).
- Storing temperature : - 20° C ~ + 70° C (- 4° F ~ 158° F).
- Protect filter from contacting with liquid and dirt.
- Clean filters' surfaces regularly; do not use strong cleaning solutions. Always keep sensors and solar cells clean using a clean lint-free tissue/cloth.
- Regularly replace the cracked/scratched/pitted front cover lens.
- Never try to open the filter cartridge.
- Never operate this Helmet without front cover lens properly installed.



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 SOLUTIONS

● Irregular Darkening Dimming

Headband has been set unevenly and there is an uneven distance from the eyes to the filter's lens (Reset headband to reduce the difference to filter).

● Auto-Darkening Filter Does Not Darken Or Flickers

- ① Front cover lens is soiled or damaged (change lens cover)
- ② Sensors are soiled (clean the sensors' surface)
- ③ Welding current is too low (properly raise the sensitivity to high position).

● 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 filter lens are soiled (change lens)
- ② There is insufficient ambient light
- ③ Shade number is incorrectly set (reset the shade number)

● Welding Helmet Slips

Headband is not adjusted properly (readjust headband)



WARNING



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 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 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

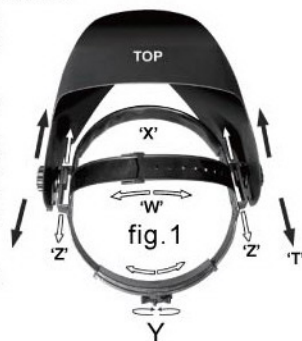
times while wearing it. If the headband moves while tilting re-adjust it until it is stable.

● **ADJUSTING DISTANCE BETWEEN HELMET & 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.



● **ADJUSTING VIEW ANGLE POSITION**

Please see fig.2



fig.2



fig.3

● **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 inside of the helmet (See fig.3) 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 work piece. The delay time/response can be set to long (0.1 secs) or short (1.0 secs) as you require using the infinitely delay control knob on the back of the shade cartridge. (See fig.3)

● **SENSITIVITY**

The sensitivity can be set to "high" or "low" using the infinitely sensitivity dial knob on the back of the shade cartridge. The "high" setting is the normal setting for everyday use. Where the operation of the mask is disturbed by excess ambient light, or another welding machine close by, use the "low" setting. (See fig. 3).

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

MAINTENANCE

- **REPLACING FRONT COVER LENS.** Replace the front cover lens if it is damaged (cracked, scratched, soiled or pitted).(See fig.4)
- **REPLACE THE INSIDE COVER LENS** if it is damaged (cracked,scratched, soiled or pitted).

● **CHANGING THE SHADE CARTRIDGE.**(See fig.5)

● **FITTING NEW CARTRIDGE.** (See fig.6)

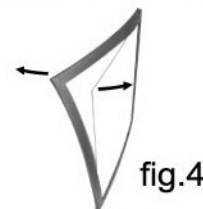


fig.4



fig.5



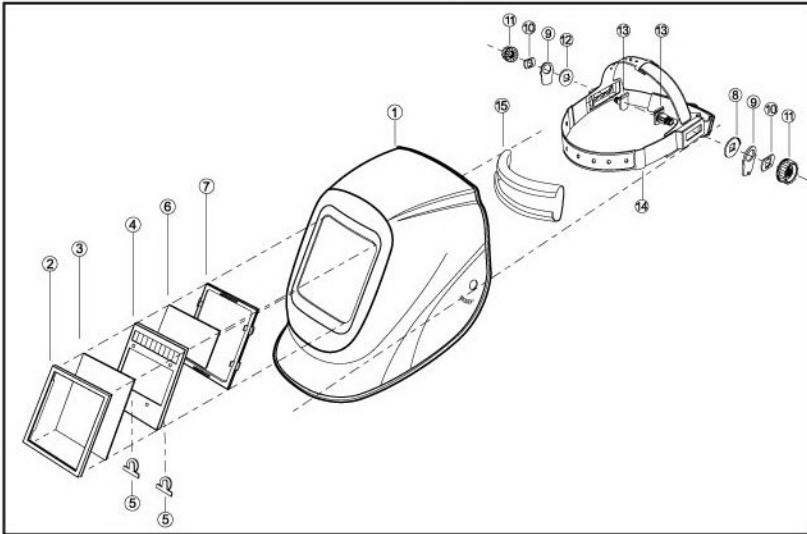
fig.6

● **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

Viewing Area :	97 * 62 mm
Size of Cartridge:	133.00 * 114.00 * 9.00 mm
UV/IR Protection :	Up to Shade DIN16 at all times.
Arc sensor:	4
Light State:	DIN 3.5
Variable Shade:	DIN 9 to 13
Power On/Off:	Fully Automatic
Sensitivity:	Adjustable.
Switching Time	1/25000 sec. from light to dark
Delay time:	0.1~ 1.0s
Power Supply:	Solar cells, battery change required(3V lithium).
Battery Lifetime:	Over 6000 hours before low battery alarming
Operating Temperature:	-10° C to +55° C (14° F to 131° F)
Storing Temperature:	- 20° C to +70° C (-4° F to 158° F)
Helmet Material:	High Impact Resistance Nylon
Total Weight:	1.18Lbs.
Application range:	MIG; MAG/CO2; SMAW; Air carbon cutting; TIG(Excellent low amperage TIG response, DC <3amp, AC <5amp, DC PULSE <5amp); PLASMA arc welding/cutting.

PARTS LIST & ASSEMBLY



- | | |
|---------------------------|--------------------------------|
| 1. Shell (Welding mask) | 9. 2 x Angle Adjustable Washer |
| 2. Rubber Holder | 10. 2 x Washer |
| 3. Front Cover Lens | 11. 2 x Block Nut |
| 4. ADF 800S Filter | 12. Right Limitation Washer |
| 5. 2 x Battery | 13. 2 x Screw |
| 6. Inside Cover Lens | 14. Headgear |
| 7. Lens Holder | 15. Sweatband |
| 8. Left Limitation Washer | |

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/CO ₂					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	MIG (Light) - MIG on Light Alloys
MIG (Heavy) - MIG on Heavy Metals	PAW - Plasma Arc Welding	PAC - Plasma Arc Cutting
SAW - Shielded Semi-Automatic Arc Welding		MAG/CO ₂ - Metal Active Gas