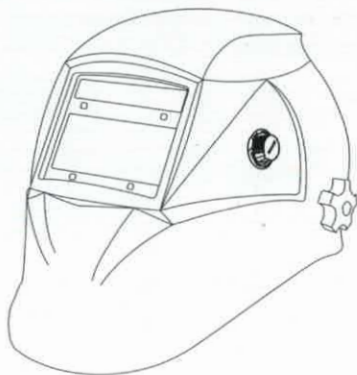


Auto-Darkening Welding Helmet

User's Manual



**Welding protection partner
you can trust !**

1. BEFORE WELDING

Auto-Darkening welding helmet is designed to protect the welders' eyes from harmful radiation including visible light, ultraviolet radiation (UV) and infra-red radiation (IR) resulting from certain arc and gas welding processes when used in accordance with these User Instructions.

This welding helmet is suitable for all types of electro-weldings: covered electrodes, MIG/MAG, TIG/WIG, plasma welding, cutting and laser welding (only selected models with two shade ranges i.e. 5-8 and 9-13), except for gas welding.



WARNING!!!

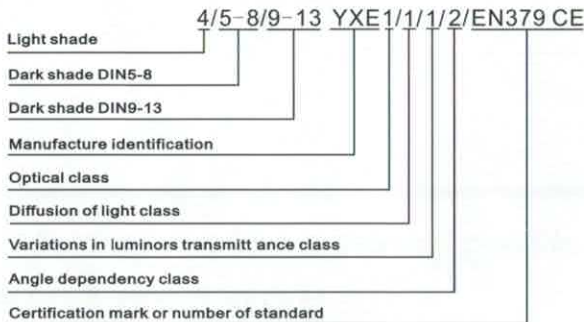


Make sure to remove any additional protection foil from both sides of Protection Lens.

- Never place the helmet or the filter on hot surface.
- Use only within the temperature range of -10°C to +60°C.
- Do not immerse the filter (auto-darkening filter) in water.
- Do not expose the filter to liquids and protect it from dirt.
- Regularly replace the cracked/scratched protection cover lens. If this helmet doesn't darken upon striking an arc, stop welding immediately and contact your supervisor or your dealer.

2. MARKINGS

The filter is marked with the shade range and optical classification. The following is an example (EN379) :



3.STORAGE AND MAINTENANCE

When not in use, the filter should be stored in a dry place within the temperature range of -20°C to $+70^{\circ}\text{C}$. Prolonged exposure at temperature above 45°C may decrease the battery lifetime of the filter. It is recommended to keep the solar cells of the filter in the dark or not exposed to light during storage in order to maintain power down mode. This can be achieved by simply placing the filter face down on the storage shelf.

Protection cover Lens, both internal and external (Polycarbonate), must be used in conjunction with the autodarkening filter in order to protect it against permanent damage.

It is always necessary to keep the solar cells and the light sensors of the filter free of dust and spatters: cleaning can be done with a soft tissue or a cloth soaked in mild detergent (or alcohol). Never use aggressive solvents such as acetone.

If protection screens are in any way damaged, they must be immediately replaced.

Replacing External Cover Lens: Remove filter holder by moving locks toward center (Fig. 1) and lift up the filter holder to remove/replace the external cover lens.

Replacing Internal Cover Lens: Place your fingernail in recess below the cartridge of view window and flex lens upwards until it releases from edges of the cartridge of view window.

Change the Shade Cartridge: Remove filter holder assembly from helmet shell (See Fig. 1). Then flex top end of the filter holder to allow filter cartridge to be removed from the frame. Install new filter cartridge into frame (See Fig. 2). Make sure that the filter cartridge is inserted in filter holder correctly as shown and install filter holder assembly into helmet shell.

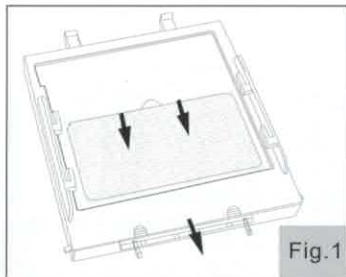


Fig.1

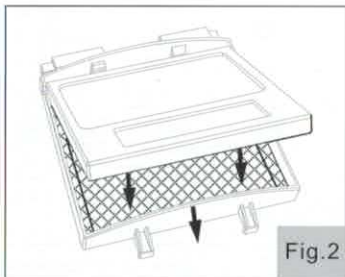


Fig.2

4. ADJUSTING HEADGEAR (FOUR PARTS)

4-1. Headgear Top (See adjustment "W" in Fig. 4)

Adjusting headgear for proper depth on the head to ensure correct balance and stability.

4-2. Headgear Tightness (See adjustment "Y" in Fig. 4)

Pressing the adjusting knob located on the back of the headgear and turn left or right to a desired tightness.

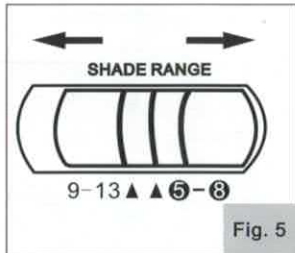
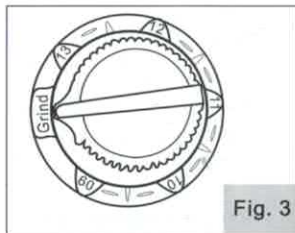
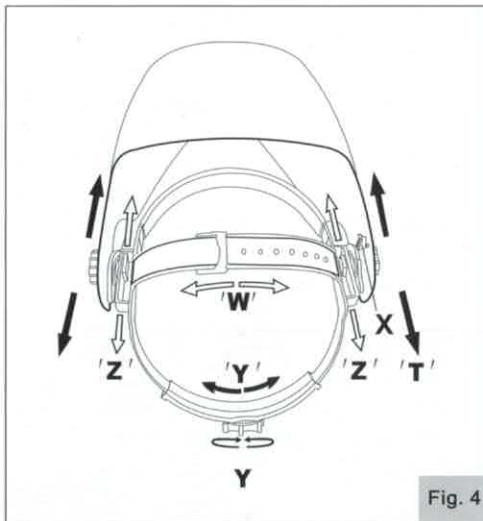
4-3. Distance Adjustment (See adjustment "Z" and "T" in Fig. 4)

Adjusting the distance between the face and the lens by loosening both outside tension knobs and press inward to free from adjustment slots.

Move forward or back to desired position and retighten. (Both sides must be equally positioned for proper vision.)

4-4. Angle Adjustment (See adjustment "X" in Fig. 4)

Four pins on the right side of the headgear top provide adjustment for the forward tilt of the helmet. To adjust, loosen the right outside tension adjustment knob then lift on the control arm tab and move it to the desired position and retighten tension adjustment knob.



5. AUTO-DARKENING FILTER FUNCTIONS

5-1. Selecting the Operating Mode

For some filters, two modes of operation can be selected: welding or grinding. (See Fig. 3)

Grind Mode-Used for metal grinding applications. In this mode the shade function is turned off. The shade is fixed in the light state that allowing a clear view to grind a weld with the helmet providing face protection.

Grind mode is intended for Grinding not for welding. Before restarting welding, the knob should be set back to the "Weld" position.

Weld Mode-Used for most welding applications. In this mode, the shade function is turned on. When it optically senses a welding arc, please select a suitable shade level, delay time and sensitivity as required.

5-2. Selecting Shade Level

Most of models enable shade adjustment range from DIN9-13. Some selected models have two shade ranges, i.e. DIN5-8 and DIN9-13. The adjustment of the "5-8/9-13 range knob" defines the range which is being used (See Fig. 5).

Select the prescribed shade level you required according to the welding process you will use (see "shade selection chart" below).

5-3. Selecting Delay Time

The Delay Time knob will vary from **dark to light time**, it can be set at "MAX" (1.0 second) or "MIN" (0.1 second) by using the infinitely dial knob. (See Fig. 6)

"MAX" (1.0 second)-Longer delay is for most welding applications, specially for high amperage (current) applications;

"MIN" (0.1 second)-Shorter delay is for Spot welding applications

Longer delay can also be used for TIG Welding in order to prevent the filter opening when the light path to the sensors is temporarily obstructed by a hand, torch, etc.



Fig. 6



Fig. 7

5-4. Selecting Sensitivity

The sensitivity can be set at "HI" (High) or "LO" (Low) by using the infinitely dial knob. (See Fig. 7)

As a simple rule for optimum performance, it is recommended to set sensitivity at the High at the beginning and then gradually reduce it, until the filter reacts only to the welding light flashes and without annoying spurious triggering due to ambient light conditions (direct sun, intensive artificial light, neighboring welder's arcs etc.).

"HI" (High) – Most for welding applications but specially for low welding current work.

"LO" (Low) – Only in some specific surrounding lighting conditions in order to avoid unwanted triggering.

5-5. Power

All the welding helmets are powered by solar energy. Some of models are without replaceable batteries. Some selected models need to replace Li-Batteries when LOW BATTERY Light starts blinking.

6. TECHNICAL SPECIFICATION

Filter Model	YXE-9181	YXE-718G	YXE-616G	YXE-616I	YXE-610G	YXE-510G	YXE-500G	YXE-400S	YXE-200F
Cartridge Size	114*133*9mm (4.49*5.24*0.35in)	110*90*9mm (4.33*3.54*0.35in)	110*90*9mm (4.33*3.54*0.35in)	110*90*9mm (4.33*3.54*0.35in)	110*90*9mm (4.33*3.54*0.35in)	110*90*9mm (4.33*3.54*0.35in)	110*90*9mm (4.33*3.54*0.35in)	110*90*9mm (4.33*3.54*0.35in)	110*90*9mm (4.33*3.54*0.35in)
Viewing Area	98*87mm (3.86*3.43in)	100*53mm (3.94*2.08in)	100*45mm (3.94*1.77in)	100*45mm (3.94*1.77in)	100*45mm (3.94*1.77in)	96*39mm (3.78*1.54in)	96*39mm (3.78*1.54in)	89*39mm (3.5*1.54in)	91*39mm (3.58*1.54in)
CE Classification	1/1/1/2	1/1/1/2	1/1/1/2	1/1/1/2	1/1/1/2	1/1/1/2	1/1/1/2	1/1/1/2	1/1/1/2
Arc Sensor	4 Independent	4 Independent	4 Independent	4 Independent	2 Independent	2 Independent	2 Independent	2 Independent	2 Independent
Shade Variable	DIN4S-69-13 (Internal Variable)	DIN4S-69-13 (External Variable)	DIN4S-13 (External Variable)	DIN4S-13 (External Variable)	DIN4S-13 (External Variable)	DIN4S-13 (External Variable)	DIN4S-13 (External Variable)	DIN4S-13 (External Variable)	DN3/11
Grinding Mode	Yes, DIN4 (Internal)	Yes, DIN4 (External)	Yes, DIN4 (External)	Yes, DIN4 (Internal)	Yes, DIN4 (External)	Yes, DIN4 (External)	Yes, DIN4 (External)	NO	NO
Sensitivity	Internal Variable	Internal Variable	Internal Variable	Internal Variable	Internal Variable	Internal Variable	Internal Variable	Internal Variable	Internal Variable
Delay Time	0.1-1.0s (Internal Variable)	0.1-1.0s (Internal Variable)	0.1-1.0s (Internal Variable)	0.1-1.0s (Internal Variable)	0.1-1.0s (Internal Variable)	0.1-1.0s (Internal Variable)	0.1-1.0s (Internal Variable)	0.1-1.0s (Internal Variable)	0.1-0.8s (Internal Variable)
UV/IR Protection	DIN 16	DIN 16	DIN 16	DIN 16	DIN 16	DIN 16	DIN 16	DIN 16	DIN 16
Power Supply	Solar cell & Lithium Battery								
Low-Batt Indicator	YES	YES	YES	YES	YES	YES	NO	NO	NO
Batt Replaceable	1*CR2450Li-Batt change required	1*CR2032Li-Batt change required	1*CR2032 Li-Batt change required	1*CR2032 Li-Batt change required	1*CR2032 Li-Batt change required	1*CR2032 Li-Batt change required	No Battery change required	No Battery change required	No Battery change required
Operating Temp.	-10°C ~+ 60°C								
Warranty	2 years								

7.COMMON PROBLEMS AND REMEDIES

● Irregular Darkening Dimming

Headgear 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).

● The Filter Does Not Darken Or Flickers

1. Front cover lens is soiled or damaged (please change the cover lens);
2. Sensors are soiled/blocked or solar panel is blocked (Clean the sensors surface to make sure you are not blocking the sensors or solar panel with your arm or other obstacle while welding);
3. Sensitivity is set too low or delay time is set too short (Adjust to required level) ;
4. Make sure proper shade is selected (not Grind mode).

● The Filter Darkening Without Arc Being Struck

Sensitivity set too high (Adjust Sensitivity to a required level).

● The Filter Remains Dark After Completing A Weld

Delay time set too long (Adjust Delay time to a required level).

● Slow Response

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

● Welding Helmet Slips

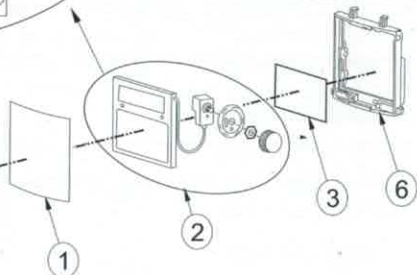
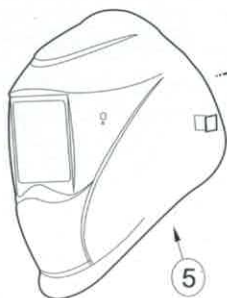
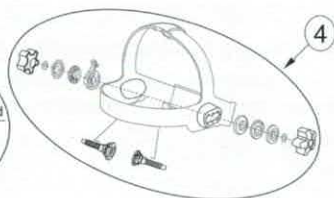
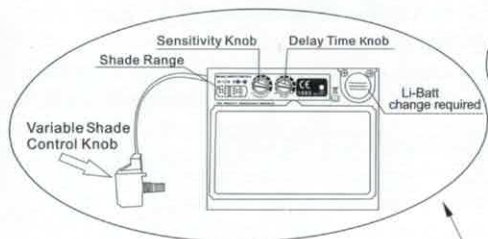
Headgear is not properly adjusted .(Readjust the headband).

8.SHADE SELECTION CHART

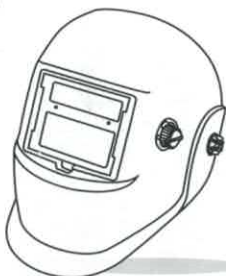
Scales recommended for different arc weldings.

Process	Current A																							
	1.5	6	10	15	30	40	60	70	100	125	150	175	200	225	250	300	350	400	450	500	600			
Covered electrodes					8			9			10			11			12			13			14	
MAG					8			9			10			11			12			13			14	
TIG					8			9			10			11			12			13				
MIG with heavy metals								9			10			11			12			13			14	
MIG with light alloys											10			11			12			13			14	
Air-arc gouging											10			11			12			13			14	
Plasma jet cutting								9			10			11			12			13				
Microplasma arc welding	4		5		6		7		8		9		10		11		12							
	1.5	6	10	15	30	40	60	70	100	125	150	175	200	225	250	300	350	400	450	500	600			

NOTE: The term "heavy metals" applies to steels, alloy steels, copper and its alloys, etc.



ITEM	DESCRIPTION
1	FRONT COVER LENS
2	ADF CARTRIDGE
3	INSIDE COVER LENS
4	HEADGEAR ASSEMBLY
5	REPLACEABLE SHELL
6	ADF HOLDER



EN 166
EN 175
EN 379

CSA Z94.3
ANSI Z87.1