

# User's Manual

Sun5



## Auto-Darkening Filter Welding Helmet

**WARNING** :Read and understand all instruction before using !  
Severe personal injury could occur if the user fails to follow the aforementioned warnings,  
and / or fails to follow the operating instructions.

## 1. BEFORE WELDING

- Auto-Darkening filter Welding Helmet 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.
- Check the front cover lens to make sure that they are clean, and that no dirt is covering the four sensors on the front of filter cartridge. Also check the front/inside cover lens and the front lens retaining frame to make sure that they are secure.
- Inspect all operating parts before use for signs of wear or damage. Any scratched cracked, or pitted parts should be replaced immediately before using again to avoid severe personal injury.
- Check for light tightness before each use.
- Select the shade number you require at the turn of a shade knob ( Seeing the Shade Guide Table No.1 ). Finally, be sure that the shade number is the correct setting for your application.
- Adjust headband so that the helmet is seated as low as possible on the head and close to your face. Adjust helmet's angle when in the lowered position by turning the adjustable limitation washer.

## 2. DARK SHADE NUMBER SELECTION

The shade number can be set manually between 9 -13 . Check the Shade Guide Table to determine the proper shade number for your application. Select a shade number by turning the shade knob until the arrow points to the required setting (See 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 <sub>2</sub>					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					

### 3. SPECIFICATIONS

Viewing Field:	98 ×43 mm / 3.86" ×1.69"
UV/IR Protection:	Up To Shade DIN16 all time
Light State:	DIN 4
Variable Shade:	From DIN 9 to DIN13
Reaction Time:	0.00005 sec ( 1/20,000 s)
Delay Time:	Long - Middle -Short (it can vary at 0.3s ~ 0.9s )
Sensitivity:	Outside Can be continued adjustable.
Sensors:	Four infrared detector
Power Supply:	Solar cells + lithium battery (the lifetime of lithium battery is 3 - 5 years).
Power On/Off:	Fully Automatic
Function:	"WELDING"/ "GRINDING" can be Out side selective.
Operating Temperature:	- 5°C to + 55°C ( 23°F to 131°F )
Storing Temperature:	- 20°C ~ + 70°C (-4 ° F to 158° F)
Helmet Material:	High-impact resistant Polyamide (Nylon) DIN EN 175 B CE
Total Weight:	470 g

- The product is in full conformity with related DIN EN 379 ,DIN EN 175 safety standards and ANSI / ISEA Z87.1-2010 safety standards.
- Before welding, please keep clean on filter, front cover lens, inside cover lens and four optical sensors. If front cover lens and inside cover lens are blurry and can not be clean, please replace them immediately.



#### 4. Variable Shade Control / Sensitivity Control / Grinding Control

1) **Welding/Grinding Handle:** when grinding, the helmet shell can not bear the welding spatter which is more than 43grams and exceeding 120m/sec. The helmet meet standard DIN EN 175:1997 (B impact Level). For other body parts helmet can not protect, please wear other safety products for protection.

2) **Sensitivity Knob:** Before welding, please adjust the sensitivity to high position, if encountering the interference of Lighting lamp(the filter is darkening while not welding),please adjust the sensitivity towards low position slightly until the filter returns to light state (please don't make the helmet towards to light lamp source during this process, should towards to welding workpiece). During welding, the sensitivity knob should be adjusted as high as possible, or it will affect the darkening speed of filter.

**Attention:** Operator must stop using the helmet immediately and contact with the dealer in time if the filter can not be darkening or the darkening speed is slow or the filter is flash.

3) **Shade Knob- before welding,** please adjust the Shade Knob to proper shade no. based on welding process and welding amperage. to make primary welding for test ( Seeing the Shade Guide Table No. 1 ). If the shade of filter is too darkening or too light, please adjust the Shade Knob slightly to correct position till the eyes can see the welding spot which is not glaring and can see welding molten pool. Please kindly note that it will damage the eyes if using welding helmet under incorrect shade no.(too darkening or too light) for a long time.

**Attention:** If the filter can not be darkening or the darkening shade is not enough or the darkening speed is slow or the filter is flash, for such abnormal work, please find the reason immediately. If operator can not solve the problem, please must stop using the helmet immediately and contact with the dealer in time.

Delay Time Handle



### 5. Delay time

There are three position (Long, Middle, Short), it can adjust the switching time of filter from dark state to light state, avoid the damage to eyes from the residual arc of welding molten pool due to too fast switching time to light state when welding is end (Break arc). The delay time is 0.3s-0.5s (at short position); 0.4s-0.6s (at middle position); 0.6s-0.9s (at long position). The switching time may vary due to different welding types and different sensitivity setting even delay time handle is at the same position.

If the filter is flash under low current welding, please adjust the delay time handle to long position, this can help to solve this problem.



### 6. Magnifying lens

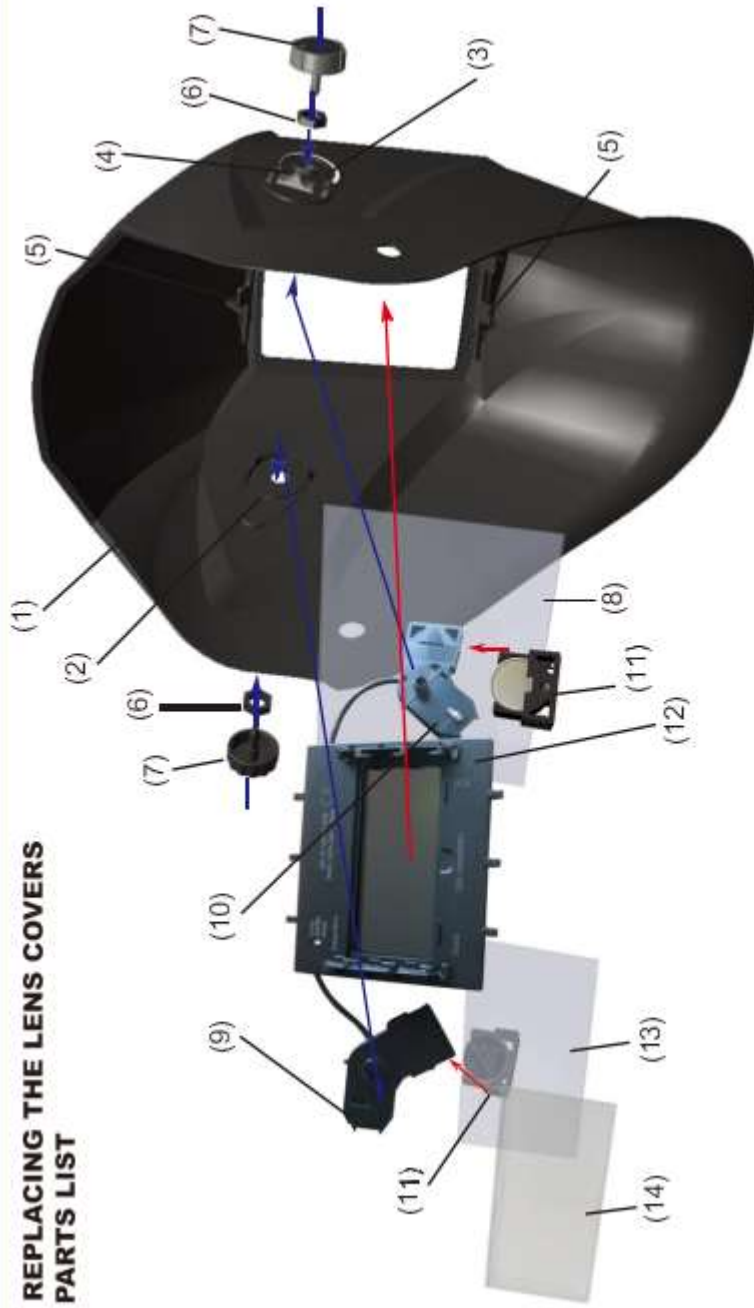
The filter can be assembled with magnifying lens conveniently, please purchase magnifying lens if need it.



## 7. ADJUSTING HEADGEAR

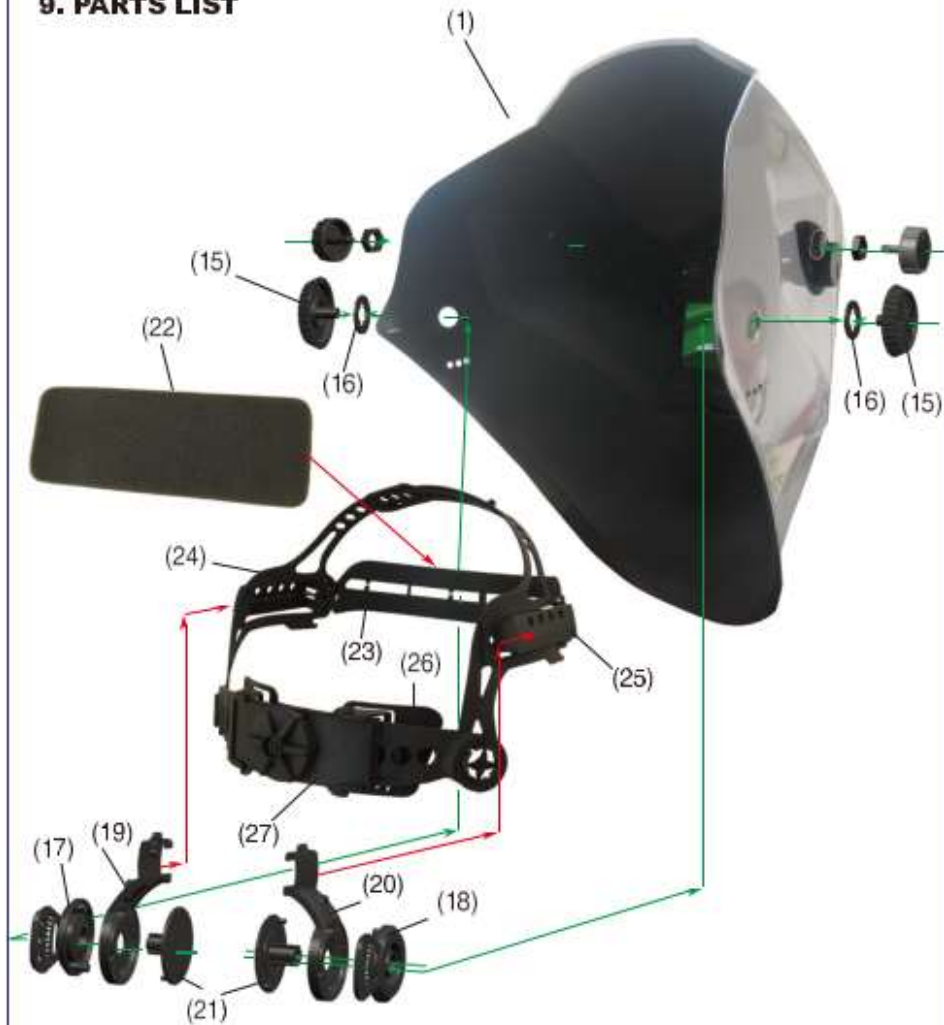
- 1) **Top head band** To move the Head Band in the direction of arrow (as picture) to adjust the depth of headband. According to user's head shape adjust to a suitable position.
- 2) **Distance of Harness from filter lens** To adjust the distance from the welder's eyes to filter lens (left-right Symmetrical adjustment).
- 3) **Back of headband** To adjust the size of headband (loose or tighten) .
- 4) **Incline angle adjustment** To adjust the incline angle of helmet relative to the welder's face, and adjust the height of welder's eyes relative to filter lens.
  - This model is designed & equipped with a special turnover (up & down) headband mechanism. When welder turns over the helmet to welder's head top, the headband mechanism makes helmet's gravity center to be more lower, and be coincided with the center of welder's head. The design of welding helmet greatly lowers the fatigue of welder's head ( & neck ) and make welder feel more comfortable than before while at working.
  - 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).

**8. REPLACING THE LENS COVERS  
& PARTS LIST**



- ( 1 ) Shell (welding mask ) ( 2 ) Shade scale plate ( 3 ) Sensitivity scale plate ( 4 ) Welding/grinding Handle ( 5 ) Filter setting frame ( 6 ) 2x shade nut ( 7 ) Shade knob/sensitivity knob ( 8 ) Front cover lens ( 9 ) Shade-box ( 10 ) Sensitivity-box ( 11 ) Lithium battery house ( 12 ) Auto darkening filter cartridge ( 13 ) Inside cover lens ( 14 ) Magnifying lens (Can select if need it or not)

## 9. PARTS LIST



- 1) Shell (welding mask) 15) 2x block nut 16) 2x check washer  
17) Angle adjusting shim (left) 18) Angle adjusting shim (right)  
19) Headband rack (left) 20) Headband rack (right) 21) Headband fixing screw rack  
22) Sweatband (cloth) 23) Front band  
24) Left band 25) Right band 26) back elastic pad 27) Headband regulator assembly (release -tighten)