

# AUTOMATIC 3.5/9-13

## WELDING FILTER

97x47mm (3.82"x1.85")



**ANSI**  
Z87.1

**COLTS**<sup>®</sup>  
CSA Z94.3

 **KEMPPi**  
The Joy of Welding

## INSTRUCTIONS FOR USE



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

When fitted to a suitable face shield that meets the necessary and local safety standards, this Auto-Darkening filter is suitable for welding and grinding process. It is not suitable for laser welding and oxyacetylene welding/cutting processes.

- Never place the Auto-Darkening filter on a hot surface.
- Never open or tamper with the Auto-Darkening filter.
- This filter will not protect against explosive devices or corrosive liquids.
- Do not make any modifications to the filter, 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 may expose the operator to unnecessary risk of personal injury.
- Should this filter not darken at arc ignition, stop welding immediately and contact your supervisor or your dealer.
- Do not immerse the filter in water.
- Do not use any solvents on the filter screen.
- Use only at temperatures:  $-10^{\circ}\text{C} \sim +55^{\circ}\text{C}$  ( $14^{\circ}\text{F} \sim 131^{\circ}\text{F}$ ).

- Storage temperature:  $-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$  ( $-4^{\circ}\text{F} \sim 158^{\circ}\text{F}$ ). The filter should be stored in dry, cool and dark area. If the filter is not to be used for prolonged periods, remove the battery.
- Protect the filter from contact with liquids 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 worn/cracked/scratched/pitted front cover lenses.
- Materials which may come into contact with the wearer's skin can cause allergic reactions in some circumstances.

## COMMON PROBLEMS AND REMEDIES

### Auto-Darkening filter does not darken or flickers

- Front cover lens is soiled or damaged (Change the cover lens).
- Sensors are soiled (Clean the sensors surface).
- Welding current is too low (Adjust the sensitivity to a higher level).

### Slow response

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

### Poor vision

- Front/inside cover lens and/or the filter is soiled (Change cover lenses).
- There is insufficient ambient light.
- Welding shade number is incorrectly set (Reset the welding shade number).

## SELECTING SHADE LEVEL

Select the shade level you require according to the welding process you will use. Refer to the "Shade Guide Table" below for necessary settings. Turn the shade control knob on the filter to the shade number required.

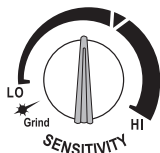


## SELECTING DELAY TIME

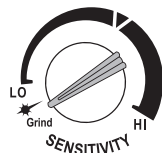
When welding ceases, the viewing window automatically changes from dark back to light but with a pre-set delay to compensate for any bright afterglow on the workplace. The delay time/response can be set to "S" (short: 0.1 sec.) or "L" (long: 1.0 sec.). Set as required using the variable dial knob on the back of the shade cartridge. 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 in order to avoid the filter opening when the light path to the sensors is temporarily obstructed by a hand, torch, etc.



## SENSITIVITY



The sensitivity can be set to “HI” (high) or “LO” (low) by using the variable dial knob on the back of the shade cartridge. The “medium/middle” setting is the normal setting for everyday use. The over medium/middle setting sensitivity level is appropriate for low welding current work, TIG or special applications. Where the operation of the helmet is disturbed by excess ambient light, or another welding machine close by, use the “low” setting. 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.).

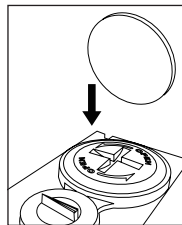


## SELECTING THE GRIND OPTION

When the sensitivity knob is turned to the “grind” position, the welding shade function is turned off, allowing a clear view to grind a weld. Ensure that the shade function is reset, before welding commences (See fig.1b).

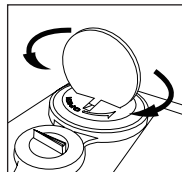
**NOTE: For grinding operations the face shield to which this lens cartridge is fitted MUST offer impact rating and meet local safety standards.**

## POWER



When the low battery LED located on the lens starts to glow red, it is warning that the battery requires replacement. Required battery type is 1 X CR2450

- Put a coin into the cross recess.
- Rotate counter-clockwise to open the battery cover.
- Remove the battery and replace with a new one.
- Rotate clockwise to close the battery cover.



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

## SHADE GUIDE TABLE

Welding Process	ARC CURRENT (Amperes)																					
	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		15	
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			

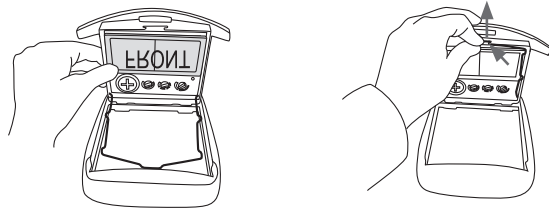
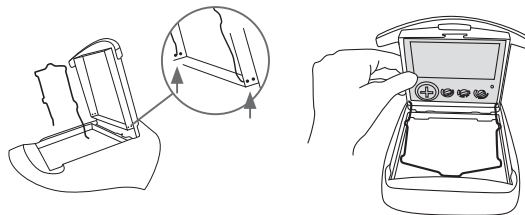
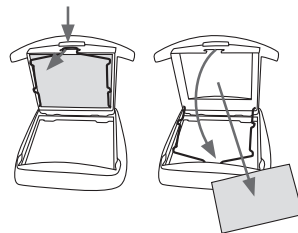
## NOTE:

SMAW	Shielded Metal Arc Welding
MIG (Heavy)	MIG on Heavy Metals
TIG, GTAW	Gas Tungsten Arc Welding
PAW	Plasma Arc Welding
PAC	Plasma Arc Cutting
MAG/CO <sub>2</sub>	Metal Active Gas
SAW	Shielded Semi-Automatic Arc Welding
MIG (Light)	MIG on Light Alloys

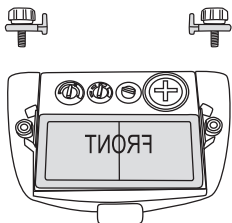
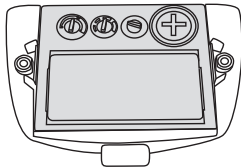
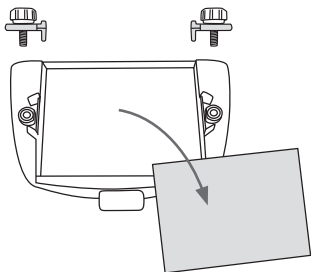
## COMPATIBLE WITH:

BETA,  
 BETA 90 A,  
 BETA 90 X,  
 Beta 90 FreshAir,  
 Delta 90 FreshAir

## BETA 90 FRESHAIR



## DELTA 90 FRESHAIR



### Specifications

Optical Class:	1 / 1 / 1 / 1
Viewing Area:	97x47mm (3.82"x1.85")
Cartridge Size:	110x90x9mm (4.33"x3.54"x0.35")
Arc Sensor:	2
Light State:	DIN 3.5
Shade:	DIN 9 ~ 13
Shade Control:	Internal, Variable Shade
Power On/Off:	Fully Automatic
Sensitivity Control:	Variable Control
UV/IR Protection:	Up to Shade DIN16 at all times
Power Supply:	Solar cell. Replaceable lithium battery 1 X CR2450
Switching Time:	1/25,000 s. from Light to Dark
Delay (Dark to Light):	0.1 to 1.0 s variable control
Low Amperage TIG Rated:	≥ 2 amps (DC); ≥ 2 amps (AC)
Grinding:	Yes
Operating Temp.:	-10°C ~ +55°C (14°F ~ 131°F)
Storing Temp.:	-20°C ~ +70°C (- 4°F ~ 158°F)
Total Weight:	107.6g
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:	DINplus, CE, ANSI Z87.1, CSA Z94.3

### Ordering code

Welding filter 9873058

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