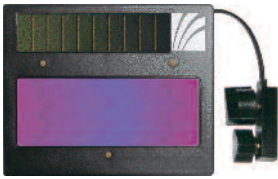


ARCONE®

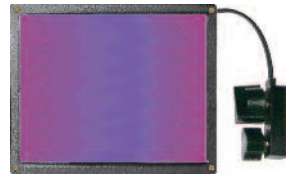
USER INSTRUCTION MANUAL Single Shade and Variable Shade Auto-Darkening Filters



4000V



5000V



6000VI4



iDF48



Products Which Improve
Quality, Productivity, Safety, &
Performance

85 Independence Drive, Taunton, MA 02780

TEL: (508) 884-9600

TOLL FREE: (800) 223-4685

FAX: (508) 884-9666

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Preparations for Use

WARNING, materials which may come in contact with the wearer’s skin may cause an allergic reaction to susceptible individuals.

Filters:

Before you begin welding always inspect your filter to ensure it is not damaged. Check to see if the filter protection plates (cover plates) are clean, clear, undamaged, and securely attached to the helmet and covering the auto-darkening filter both front and rear.

WARNING, never begin welding without first checking to see if the correct front and rear protection plates are in place (See Part Selection Guide section for part numbers). Failure to protect the welding filter may cause damage and become a safety hazard should the UV/IR protection be compromised from spatter or cracks from impact. DAMAGE CAUSED BY ABUSE SUCH AS EXCESSIVE TEMPERATURES, CRACKS FROM IMPACT, AND PITTING FROM SPATTER CAUSED BY POOR MAINTENANCE WILL VOID WARRANTY.

Warning, toughened mineral filter oculars shall only be used in conjunction with a suitable backing ocular.

Welding Helmets:

Before you begin welding make sure there is no damage to the helmet shell including, but not limited to cracks, holes, and melting. Ensure that the springs holding the filter are not broken or corroded. Do not use the helmet if any of these conditions exist and contact your distributor for replacement parts. Use only replacement components as specified for each weldinghelmet in accordance with this user manual.

WARNING, other safety precautions such as protective clothing, adequate ventilation, breathing protection, such as a Clean Air Flow® or equal, fire extinguisher, and protection for co-workers, should also be considered.

Technical Information / Use

Filters:

ArcOne® auto-darkening filters protect the user against harmful ultra-violet and infrared UV/IR rays, both in the dark and light state. No matter what shade the filter is set to the UV/IR protection is always there. You can never burn your eyes due to optical radiation passing through the filter.

Warning: Severe burns are possible with a damaged lens (cracks, pits, holes, etc.). Do not use damaged lens. Optical radiation can possibly enter in from behind the helmet from other welders welding in the immediate area.

Shade Adjustment (refer to Fig. 1 through 4)

See CE Shade Selection Guide (Table 3) for recommended shades for arc welding applications. See Filter Specification section for filter specifications.

Single Shade Filters: Shade is fixed; no adjustment.

Analog and Digital LCD Controlled Variable Filters (Fig. 2): manually control dark shade with the shade knob located on the outside of the helmet. Digital LCD users, number will change on the LCD (Fig. 3 & 4) as the user turns the knob up or down.

Sensitivity Adjustment

Analog Controlled Filters: Models with external control turn the knob to change the sensitivity, increasing or decreasing it. Some Digital LCD models will display the level of sensitivity (Fig. 3), where more bars equals increased sensitivity.

Digitally Controlled Filters: Briefly press the Select button (Fig. 1), an LED will indicate the current setting. Press and hold the button to change the setting.

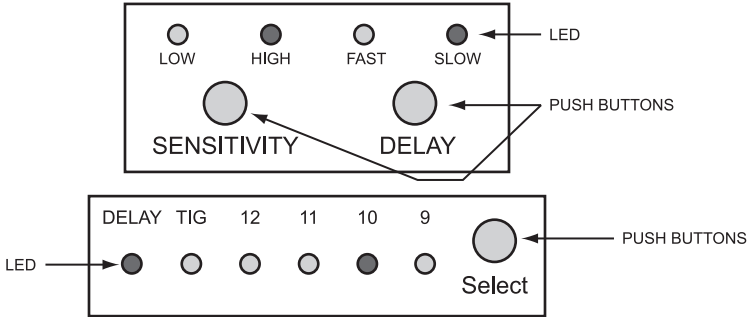


Figure 1: Digital Controls

Delay Adjustment and Grind Mode (not on all models)

Digital Controlled Filters: Change the Delay by pressing; do not hold down, the Delay/Grind button. Activate Grind mode by pressing and holding the Delay/Grind or Grind button (depends on model) down until the filter flashes. Deactivate Grind mode by pressing, do not hold down, the Delay/Grind or Grind button (**Note: the filter will not flash). Some models (Fig 3), will display GRIND to indicate the Grind mode is active.

Analog Controlled Filters: Applicable model(s) only, turn the Sensitivity switch until it clicks and the LCD displays GRIND (Fig. 4).

Intelligent Darkening Filter (IDF) Modes

To switch from one mode to another Press AND Hold down the Mode button for two seconds. To cycle through modes continue depressing the Mode button. (**NOTE: Modes will not switch when in Grind Mode)

Low Shade Mode: Dark Shades 5-8 available in this mode. Arc detection to 10 Amps.

Auto-Variable Mode: LCD displays "AUTO" (Fig. 4). Filter automatically responds to the intensity of the welding arc and sets the filter to the appropriate dark shade. The Auto-Variable mode

Figure 2: Analog Controls

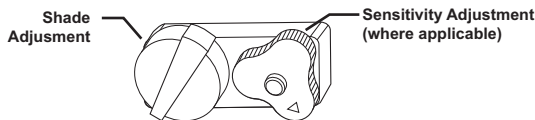




Fig. 3: LCD Readout (4000V & 5000V)



Fig. 4: LCD Readout (iDF48)

is dependent upon light intensity of the arc and distance from the filter to the arc. The user can further adjust the dark shade up or down one shade number for comfort while the “(•)” icon is flashing. This mode has one memory position for each shade in the dark state; i.e. 9, 10, 11, 12, and 13. (**NOTE:** Shade 13 cannot be set higher than 13. This mode only works on split range; i.e. 5-9/9-13 filters in the higher shade range.) To reset all memory slots press and hold both

iTIG Mode: Upon entering iTIG mode, where LCD displays “TIG” icon and flashing “(•)” (Fig. 4) user first sets lower desired shade while the “(•)” flashes. After approximately 5 seconds of not turning the shade knob the flashing stops and the user can then set the desired upper shade. The lowest possible shade is fixed according to the standard in which the filter is tested to (example: iDF48, iTIG in 9-13 range goes 9 lowest, 13 highest, in 5-9 range 7 lowest 9 highest).

Welding Helmets:

Welding helmets are designed to provide protection against UV/IR radiation around the user's face. ArcOne® welding helmets meet/exceed face coverage defined by CE standards. ArcOne® welding helmets are suitable for arc welding. Refer to any or all of the following standards for more specifications: ANSI Z87, CAN/CSA Z94.3, and CE EN 166 & 175.

Welding helmets made of a durable, modern material for use in a variety of environments.

Limitations of Use

Filters:

ArcOne® welding filters are not designed for oxy-acetylene, laser, or very low amperage welding applications. Arc detection may be impaired due to amperage, distance from the arc, welding current frequency, electrode type, shielding gasses, and lighting conditions.

Do not weld with filter in the light state. If the filter fails to turn dark immediately stop use and

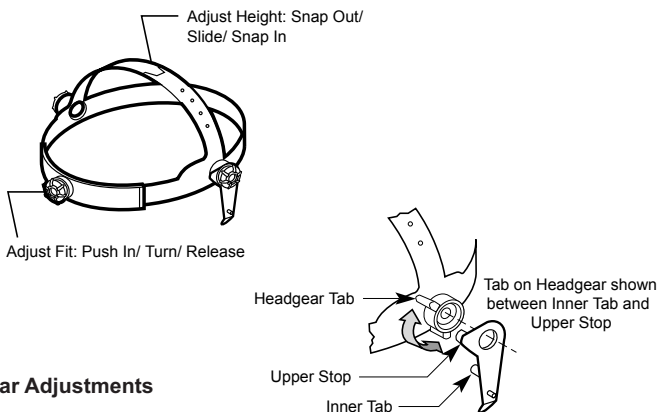


Fig 5: Headgear Adjustments

contact a service provider for help.

Welding Helmets:

Not meant to Protect against Severe Impact, explosives, fragments from grinding wheels, and abrasive discs, and hazardous fluids.

Do not use this helmet without proper training from a certified welder or welding instructor.

Do not use this helmet in an excessive heat environment where the operation of the filter becomes non-functional due to exceeding the temperature ratings of the electronic components.

ANSI defines all welding helmets as secondary eye protection from optical radiation and impact. For complete safety, primary protection, such as spectacles or goggles, should be used in conjunction with welding helmets. Protective clothing and accessories such as leather bibs attached to the welding helmet will protect the user from spatter and optical radiation indirectly entering from areas behind the helmet.

ACGIH (American Conference of Governmental Industrial Hygienists) has established a TLV-TWA of 5mg/m³ for welding fumes. Welding fumes cannot be classified simply. The composition and quantity of both are dependent on the alloy being welded and the process and electrodes used.

Care and Maintenance

NOTE: Replacement components must be used in accordance with these instructions.

Failure to use ArcOne replacement components in accordance with these instructions voids certification of this product.

Filters:

Filters require virtually no maintenance other than periodic cleaning when the lens, solar panel, and/or sensor(s) become dirty or clouded from smoke. Clean your filter by using window cleaner or a mild soapy solution and a soft cloth or paper towel (do not immerse in water or solution). Change the cover plates frequently. Storage Temperature -10 - 38°C (14 - 100°F)

Models with a replaceable battery will need the battery changed periodically when the Low Bat LED/LCD indicates.

Welding Helmets:

Welding helmets require virtually no maintenance other than periodic cleaning when dirty. Clean your helmet by using a mild soapy solution and a soft cloth or paper towel (do not immerse in water or solution).

Do not throw or abuse the helmet. Doing so may crack the helmet shell and compromise the protection.

Polycarbonate Protection (Cover) Plates:

Change cover plates when they lose flexibility and/or become bowed or distorted. Clean with mild soapy solution including any build-up from the area where the cover plate is retained. Discard if cleaning fails to improve visibility or cracks, scratches, etc. impair visibility.

Spatter Protection

SPATTER DAMAGE IS NOT COVERED BY WARRANTY

The Legend and Cobra welding helmets have been designed to accept an additional protective lens. This additional lens installs immediately in front of the auto-darkening filter or behind the outer cover plate, thus adding an even greater level of spatter protection.

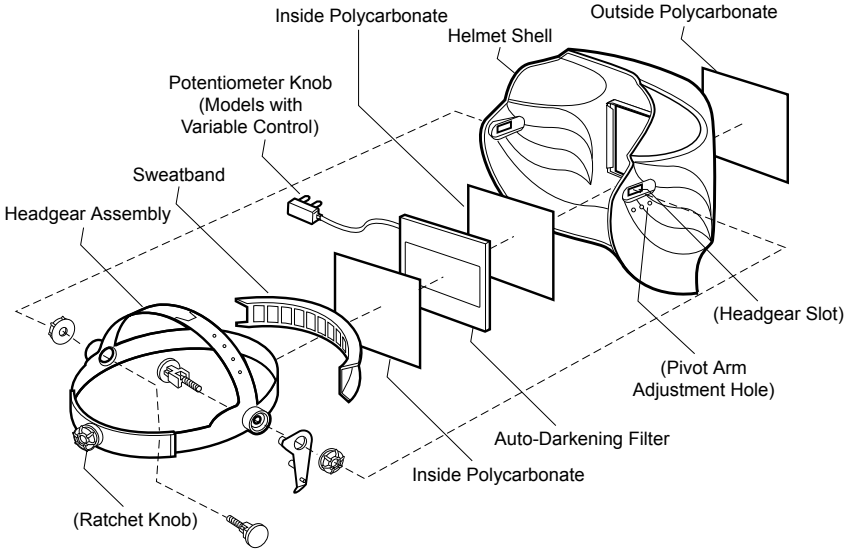
Users with excessive spatter applications can rely on the greater protection provided by this option.

All helmets use 1 mm thick cover plates.

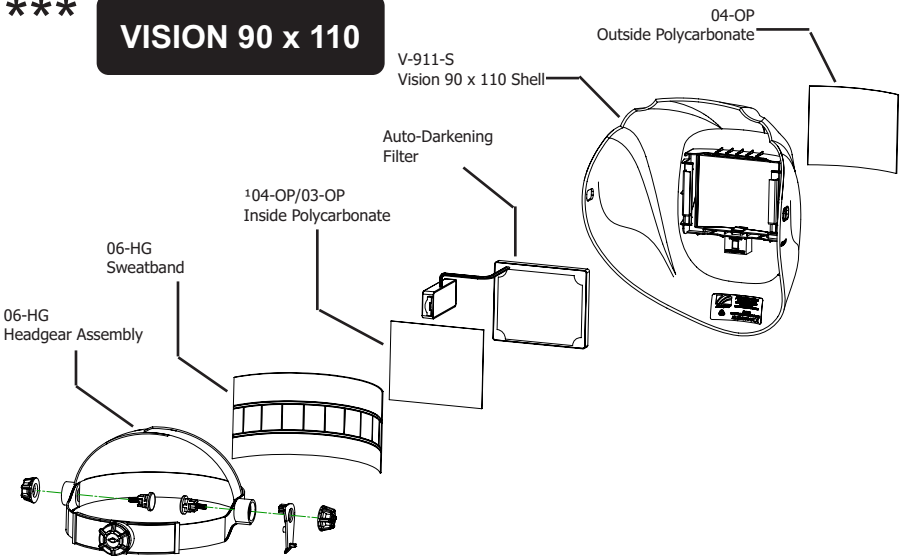
Parts Selection Guide

*

COBRA 90 x 110

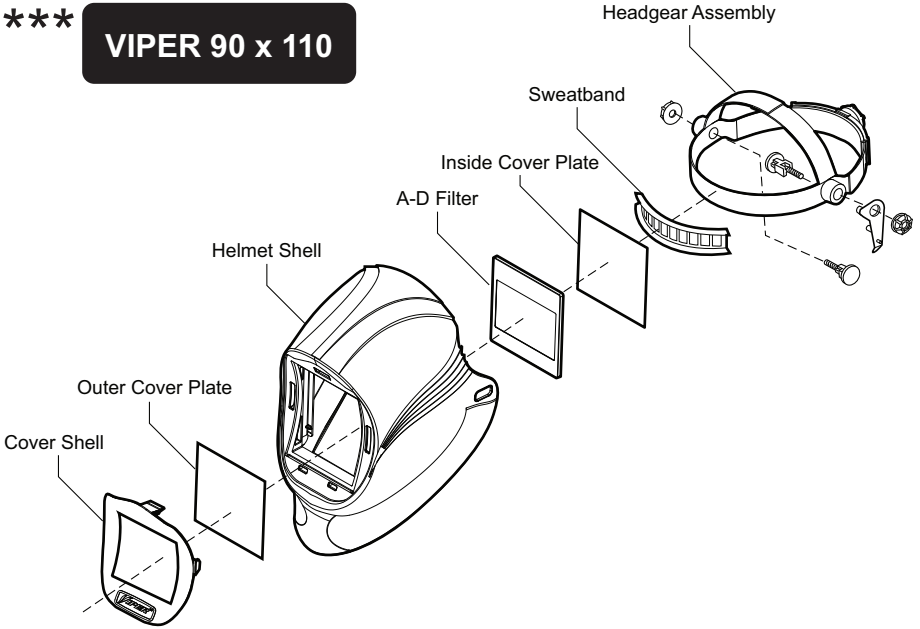


VISION 90 x 110

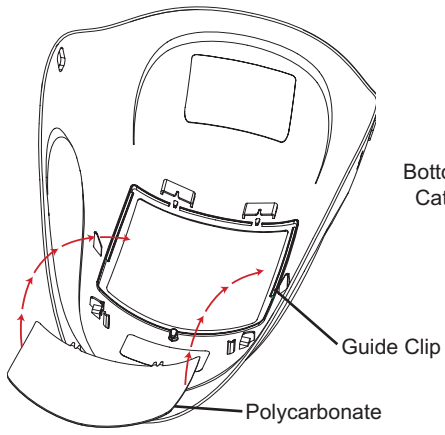
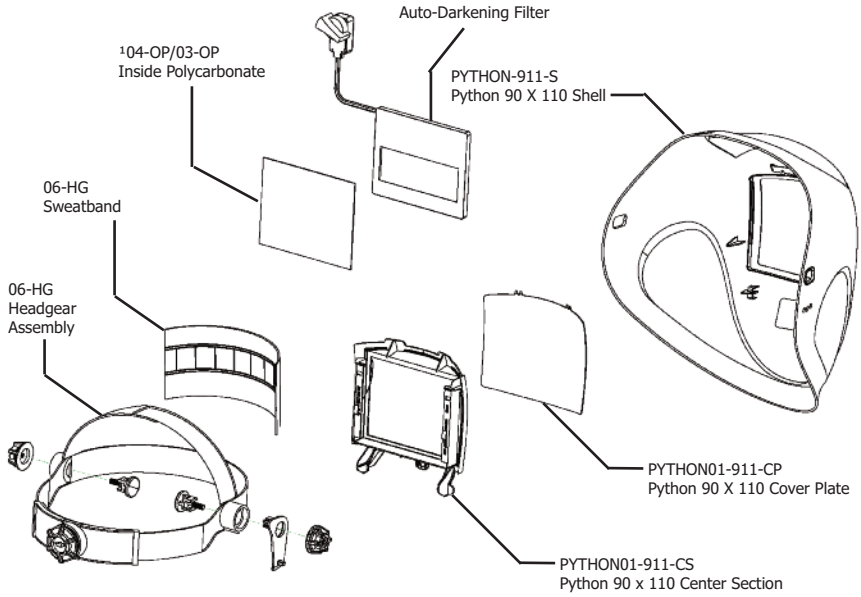


¹Depends on installed Auto-Darkening Filter

VIPER 90 x 110

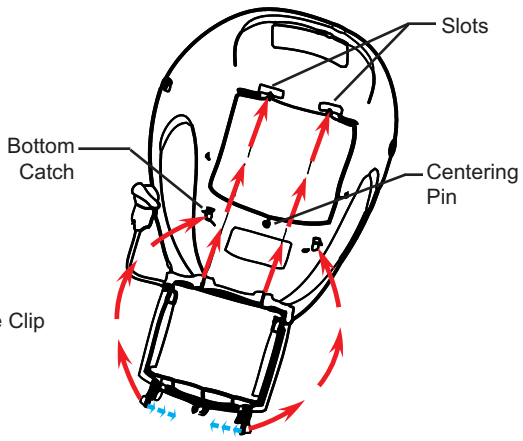


PYTHON 90 x 110



COVER PLATE INSTRUCTIONS:

With notches facing up, slide one side of polycarbonate into guide clip. Align notches and push other side of polycarbonate into guide clip. Polycarbonate will click into place.



CENTER SECTION INSTRUCTIONS:

Slide A-D filter and Inside Polycarbonate into Filter Holder. Slide notches on top of Filter Holder into slots on helmet. Line up Filter Holder with Centering Pin on helmet, squeeze tabs on Filter Holder and push into tab slots. Release tabs into bottom catches.

Filter Specifications (Table 1)

	2500V	4500V	5500V	4000V	5000V	iDF48	6000V14
Viewing Area	4608 mm ² (7.1 sq. in.)	3291 mm ² (5.2 sq. in.)	4608 mm ² (7.1 sq. in.)	3293 mm ² (5.2 sq. in.)	4608 mm ² (7.1 sq. in.)	4609 mm ² (7.1 sq. in.)	8100 mm ² (12.5 sq. in.)
Filter Size	90 x 110 mm	90 X 110 mm	90 X 110 mm	90 X 110 mm	90 X 110 mm	90 X 110 mm	90 X 110 mm
ARC Sensing	Two sensors	Two sensors	Two sensors	Two sensors	Two sensors	Two Sensors	Four Sensors
Sensitivity Control	Fixed	Fixed	Fixed	Digital: Variable	Digital: Variable	Digital: Variable	Analog: High-Low
Switching Time (seconds)	1/10,000 (0.5 milli-seconds)	1/10,000 (0.1 milli-seconds)	1/10,000 (0.1 milli-seconds)	1/10,000 (0.1 milli-seconds)	1/10,000 (0.1 milli-seconds)	1/10,000 (0.1 milli-seconds)	1/10,000 (0.1 milli-seconds)
Primary Power	Solar Cells	Solar Cells	Solar Cells	Solar Cells	Solar Cells	Replaceable AAA Battery, Solar Cells	Lithium Battery
Back-up Power	Lithium Battery	Lithium Battery	Lithium Battery	Lithium Battery	Lithium Battery	Lithium Battery	None
Operating Temp.	-10 – 55C (14 – 131F)	-10 – 55C (14 – 131F)	-10 – 55C (14 – 131F)	-10 – 55C (14 – 131F)	-10 – 55C (14 – 131F)	-10 – 55C (14 – 131F)	-10 – 55C (14 – 131F)
Storage Temp.	-10 – 38C (14 – 100F)	-10 – 38C (14 – 100F)	-10 – 38C (14 – 100F)	-10 – 38C (14 – 100F)	-10 – 38C (14 – 100F)	-10 – 38C (14 – 100F)	-10 – 38C (14 – 100F)
UV / IR Protection	Up to Shade 16	Up to Shade 16	Up to Shade 16	Up to Shade 16	Up to Shade 16	Up to Shade 16	Up to Shade 16
Dark to Light Delay	0.1-2 seconds	0.1 -3.5 seconds	0.1-3.5 seconds	0.1-3.5 seconds	0.1-3.5 seconds	0.1-3.5 seconds	0.1 or 2 seconds
Light Shade	4	3	4	4	4	4	4
Dark Shade	9-13	11	9 to 13	9-13	9-13	5-8/9-13	9 to 13
Grind Mode	No	No	No	Yes	Yes	Yes	Yes
Intelligent Auto-Shade Mode	No	No	No	No	No	Yes	No
Intelligent TIG Mode	No	No	No	No	No	Yes	No
Enclosure Integrity	Dust / Water Resistant	Dust / Water Resistant	Dust / Water Resistant	Dust / Water Resistant	Dust / Water Resistant	Dust / Water Resistant	Dust / Water Resistant
Standards	*CE EN379	*CE EN379	*CE EN379	**CE EN379	**CE EN379	**CE EN379	*CE EN379
Optical Class	1	1	1	1	1	1	1
Diffusion of Light Class	2	1	1	1	1	1	2
Variation in Luminous Transmittance Class	1	1	1	1	1	1	1
Angle Dependency Class	3	2	2	2	2	2	1

Significance of markings:

Welding Filters:

Example: 4 / 5-8/9<13 AR M 1/1/1/2 EN379

4 – Light Shade number

5-8 – Dark Shade range 1

9<13 – Dark Shade range 2 (Auto-Variable mode)

AR – Manufacturers mark

M - Auto Variable

1 – Optical Class

1 – Diffusion of Light Class

1 – Variation in Luminous Transmittance class

2 – Angle Dependency class (This is a new classification of EN379. This marking may not be indicated on older models)

Welding Helmets:

Significance of CE Markings:

Example: AR EN 175 –F CE

AR - Company Identification Mark,

EN 175 - CE Welding Helmet Standard,

-F – Impact Class (Low Energy),

CE – European Mark

Significance of Other Markings:

Example: AR Z87

AR - Company Identification Mark

Z87 - ANSI Standard for Eye and Face Protectors

Example: CAN/CSA Z94.3 **COLTS**[®] Labs

CAN/CSA Z94.3 – CSA Standard for Eye and Face Protectors

COLTS[®] Labs – CAN/CSA Certified Lab

Product Certification Bodies

*This model has been certified by:

Certottica SCARL

Zona Industriale Villanova

32013 Longarone (BL), Italy

Notified Body Number: 0530

**This model has been certified by:

ECS GmbH

Obere BahnstraBe 25

73431 Aelen - Germany

Notified Body Number: 1883

***This model has been certified by:

INSPEC International

56 Leslie Hough Way

Salford

Greater Manchester

M6 6AJ, England

Notified Body Number: 0194

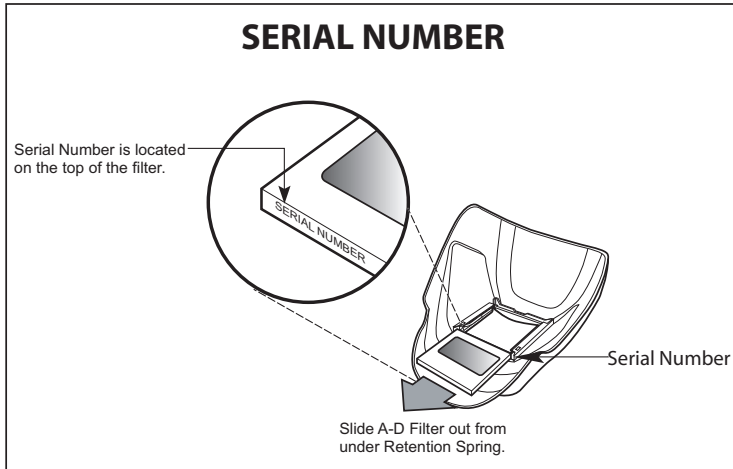
Shade Selection Guide

CE Shade selection Guide (Table 1)

Process	Current (Amps)																															
	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 metals									10				11				12				13				14							
Air-arc gouging					10								11				12				13				14				15			
Plasma jet cutting									9				10				11				12				13							
Micro-plasma 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.
 ***From CE EN 169:2002

Filter Removal Diagram



LIMITED WARRANTY

ArcOne® warrants all auto-darkening filters listed in this manual against all manufacturing defects resulting from materials or workmanship for a period of 2 years from the date of purchase. Proof of purchase establishing the date of sale and filter serial number must be provided, should a warranty claim be submitted. The purchaser's only remedy under this limited warranty shall be limited to **ArcOne**® sole operation to repair, replace or refund (not to exceed the purchase price). This limited warranty is not transferable from the original purchaser to a secondary owner. **ArcOne**® shall in no event be liable or responsible for any injury, damage or loss resulting either directly or indirectly from the use or misuse of this product. This limited warranty is exclusive and is in lieu of any other warranty implied either oral or written. Please read the instruction manual carefully to avoid certain situations which may void this limited warranty.

In the unlikely event that the auto-darkening filter malfunctions, the following procedures are to be used to receive efficient service and repair: Determine if the product is damaged from abuse or misuse. Any pitted marks on the filter possibly from spatter, chips, dents, or cracks, etc., are some indications of operator abuse. In the case of operator abuse the warranty is void.

If you need to return your filter, follow the Return procedure below.

RETURN PROCEDURE

Please do not contact the distributor or retailer from whom you purchased the filter

1. Remove the Auto-Darkening filter from the helmet. Record the model number and serial number which are located on the filter edge or back. Also record the date of purchase from your sales receipt.
2. Contact **ArcOne**® Customer Service (800-223-4685) for a Return Tag Number. Note.



ArcOne® is a Division of A.C.E. International Company

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WEB: www.arc1weldsafe.com