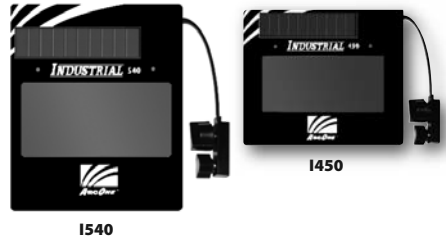
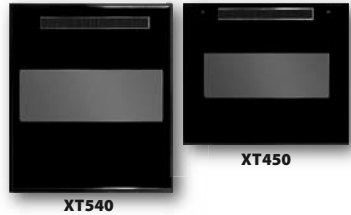




# USER INSTRUCTION MANUAL

## Auto-Darkening Filters

### Singles®



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## Operation and Comfort

As soon as you strike an arc, your new ArcOne® welding filter will automatically darken. Our advanced optical detection system monitors your welding process to ensure that your filter remains in the dark state in a wide range of arc-welding applications. Protection from harmful ultra-violet / infrared radiation is always present whether in the light or dark state.

Your new filter energizes automatically as soon as the arc is struck; all the models are solar powered so there are no on / off switches. There are no alkaline batteries to change and no corrosion caused by leaky batteries. All ArcOne® products have lithium battery backup that supports the solar panels to ensure delay free operation even in totally dark conditions.

Your new filter is capable of working in virtually all arc-welding applications. The arc detection system is designed to detect an electronic welding arc and filter out other sources of light. ArcOne® welding filters are not designed for oxy-acetylene, laser, or micro-amp welding applications. It is virtually impossible to be specific as to how low an amperage the sensors can detect. Every welding application is different and there are other factors that may affect operation such as distance from the arc, welding frequency, electrode type, shielding gasses, and lighting conditions (See Table 1).

We also know the importance of comfort. Our welding helmets are not only engineered for safety and functionality but also for comfort. We have fully adjustable headgear that is very comfortable and virtually indestructible. ArcOne® offers many different helmet designs with many different styles and features.

## Preparations for Use

Before you begin welding always inspect your helmet and filter to ensure they are not damaged. Check to see if the filter protection plates are clean, clear, 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 Table 6 for part numbers). Failure to protect your welding filter may cause damage and subsequently become a safety hazard should the UV/IR protection be compromised from spatter or cracked from impact. This type of damage is due to poor maintenance and/or abuse and will void warranty.***

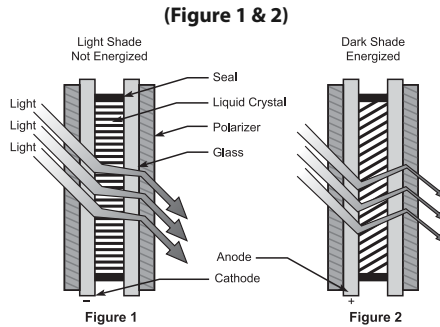
The ratchet headgear is fully adjustable at both the brow and crown. While placing the helmet on your head push in and turn the adjusting knob on the ratchet headgear to ensure a comfortable fit. The ratchet is designed to lock in place when released. The height of the helmet can be adjusted by increasing or decreasing the length of the crown strap. When making this adjustment remember to line your eyes up as centrally to viewing area as possible. Proper alignment enables the best view possible. Further sightline adjustment can be made by changing the pivot stop pin location. Comfa-Gear™ headgear has additional front to back adjustment. via the side rack system (See Figure 5).

To test your filter, prior to welding, direct the front of the filter to a bright source of light then, using your fingers, rapidly cover and uncover the sensors. The filter will darken momentarily. Utilizing a torch striker or TV or VCR remote these devices will also momentarily darken the filter. Once you are sure that the filter is working properly you are now ready to begin welding.

***WARNING, other safety precautions such as protective clothing, adequate ventilation, breathing protection (such as CleanAir Flow™ respiratory products), fire extinguisher, and protection for co-workers, should also be considered.***

## Technical Information

Passive welding filters have consistent shade darkness throughout the filter. The shading of a passive filter remains constant even when viewed at an angle to the filter's surface. Auto-Darkening filters utilize a shutter type of LCD to decrease light penetration when energized. All electronic welding filters exhibit a characteristic known as **angle dependency**. This characteristic may make the lens appear to be darker in the center and lighter toward the outer edges when the lens is viewed at an angle not perpendicular to the filter's surface or not perpendicular to the arc (See **Figure 1** and **2**).



**ArcOne®** Auto-Darkening filters protect the user against harmful ultra-violet and infrared 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. The user's eyes can be severely burned if he welds with a damaged lens (**cracked, pitted, etc.**) or optical radiation can possibly enter in from behind as a result of other welders in the immediate area. See (**Table 2**) for ANSI shade recommendation.

**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/m<sup>3</sup> 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.

### Single Shade Filters

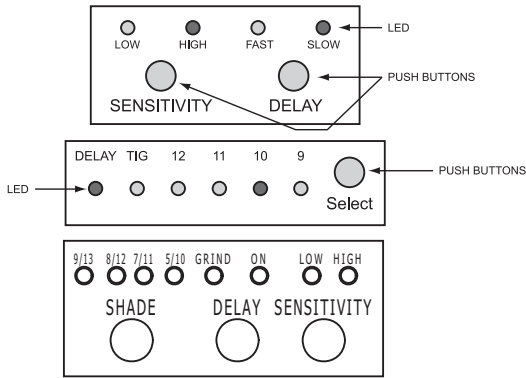
**Singles®**, **Super Singles 240™**, and **XT EVA®** models are single shade auto-darkening welding filters. This means that when the arc is struck the lens automatically darkens to a specific predetermined shade.

- The **XT EVA®** is available in a dark shade of 10 with a light shade of 3 (See **Table 4**).
- The **Singles®** is available in 4 different dark shades. Shades 9, 10, 11, and 12 are available with a light shade of 3. (See **Table 4**).
- The **X54Di** has selectable shades of 10 & 11 with a light shade of 3, a sensitivity and delay mode for TIG welding and a power off mode for grinding (See **Table 4**).

### Variable Shade Filters

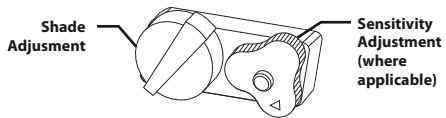
- **Industrial Xtreme™ IX540V** has two knobs located on the outside of the helmet, one to select the shade level 5-9 & 10-14 and one to adjust the sensitivity. The sensitivity knob also sets the filter into grind mode at the lowest setting (See **Table 5**).
- **The Industrial™ I450 & I540** has two knobs located on the outside of the helmet which can be rotated to decrease or increase the shade level 7 to 14 along with sensitivity and grind adjustment, without the need to remove the helmet or gloves.
- **Digitally Controlled Variable Filters:** Press (**Do Not Hold**) the Select button, an LED will indicate the current setting. **Press and hold** the button to change the setting (See **Figure 3**).
- **The Xtreme® (X450V)** filter has a button on the filter which allow you to easily change shades from 9 up to 12 with a light state of 3. There is a heads-up display located above the viewing area, which allows the welder to quickly see the current shade and an on/off mode specifically designed to maintain the light state when grinding (See **Table 5**).
- **The Xtreme® (X540V & X54Vi)** have two dark state shade ranges, 5, 7-9 and 10-13 with a light shade of 3. The heads up display located below the viewing area allows the welder to quickly set the shade, sensitivity mode (including grind mode), and dark to light delay.

**Figure 3: Digital Controls**



**Figure 4: Analog Controls**

**Analog Controlled Variable Filters:** manually control shade and sensitivity with the knobs located on the outside of the helmet (see figure 4).



## Sensitivity and Delay adjustments (Super Singles™ 240, Xtreme EVA®, Industrial Xtreme™, and Industrial™ 450 and 540, and Industrial Xtreme™ Filters Only)

In addition to adjusting the shade level, these filters have the ability to change the arc detection sensitivity from the general welding mode to a more sensitive TIG welding mode. A delay mode is also included and is typically used when performing most welding applications except spot welding. When the delay mode can be turned off, or on fast, the filter switches quickly from the dark to the light and slower when the delay mode is in the “on” or “slow” position. When spot welding, the delay mode is off, or on fast, allowing the user to quickly move from one weld to the next without having to wait for the filter to lighten in order to see his next target. The delay mode is utilized for longer duration welds where the slower switching time, from the dark shade to the light shade, allows the weld puddle to cool and darken further reducing the glare to the welder’s eye (See Table 1). Longer delay can be used at very low amps (<20A) to ensure filter stays dark.

**Welding Applications (Table 1)**

Welding Applications	Recommended Filter Settings
SMAW, MIG, TIG, 40 amps and above	Delay 9, 10, 11, or 12
SMAW, MIG, TIG, 30 amps and above	Delay TIG 9, 10, 11, or 12
SMAW, MIG, TIG, <30 amps	Delay TIG 7 (SWAW & MIG), 8 & Higher
Spot Welding, 40 amps and above	9, 10, 11, or 12
Spot welding, 30 amps and above	TIG 9, 10, 11, or 12

*Note: The settings are meant to illustrate which welding applications are suggested for each configurable mode. Applications vary greatly so please experiment with the many available setting combinations in order to find the best combination of shade level, sensitivity and delay for your personal comfort and performance efficiency.*

## Grinding Mode

**X54Di:** press sensitivity button until the Grind or TIG LED is selected. Press (**DO NOT HOLD**) again to turn off. A second LED indicates when the filter is in TIG mode.

**Xtreme® X540V, X540Xi & X450V:** Press and hold grinding button until the LCD flickers to indicate the change to grind mode. Press (**DO NOT HOLD**) again to turn off (**LCD will not flicker**).

**Industrial 540 & 450:** Turn the sensitivity knob located on the outside of the helmet clockwise to the lowest setting. This setting will work with most grinding applications. If this setting is not low enough, press and hold the delay/grind button until the LCD flickers. Press (**DO NOT HOLD**) again to turn off (**LCD will not flicker**).

**Industrial Xtreme®:** Turn the sensitivity knob located on the outside of the helmet clockwise to the lowest setting. This setting will work with most grinding applications. If this setting is not low enough, press and hold the delay/grind button until the LCD flickers. Press (**DO NOT HOLD**) again to turn off (**LCD will not flicker**).

**ANSI Shade Selection Guide (Table 2)**

Operation	Arc Current	Minimum Shade	Comfort Shade
<b>Stick (SMAW)</b>	<60	7	---
	60 to 160	8	10
	160 to 250	10	12
	250 to 550	11	14
<b>MIG (GMAW)</b>	<60	7	---
	60 to 160	10	11
	160 to 250	10	12
	250 to 500	10	14
<b>TIG (GTAW)</b>	<50	8	10
	50 to 150	8	12
	150 to 500	10	14
<b>Carbon Arc-light</b>	<500	10	12
<b>Carbon Arc-heavy</b>	500 to 1000	11	14
<b>Plasma Arc (PAW)</b>	<20	6	8
	20 to 100	8	10
	100 to 400	10	12
	400 to 800	11	14
<b>Plasma Cutting</b>	<300	8	9
	300 to 400	9	12
	400 to 800	10	14
<b>Carbon Arc (CAW)</b>	---	---	14

**Welding Helmets (Table 3)**

	<b>Eagle (0200)</b>	<b>Hawk (0300)</b>	<b>Vision (0500)</b>	<b>Viper (0900)</b>
<b>Material</b>	Nylon	Nylon	Nylon	Nylon
<b>Applicable Filters</b>	Singles® 450 XT® 450 Industrial™ 450 Xtreme® 450	Singles® 240 Super Singles™ 240™	Singles® 240 Singles® 540 Super Singles™ 240™ XT® 540 Industrial™ 540 Xtreme® 540 Optiva® 540	Xtreme® 540 Industrial™ 540 Industrial Xtreme® Optiva® 540
<b>Weight (ounces)</b>	16.25	14.75	17.6	17.95
<b>Usage</b>	All applications except overhead	All applications except overhead	All applications except overhead	All applications except overhead

## Care and Maintenance

Your new filter requires virtually no maintenance other than periodic cleaning when the lens becomes dirty or clouded from smoke. ArcOne® Auto-Darkening Filters are water-resistant and may be cleaned by using a soft cloth with soapy water solution, or standard window cleaner. By changing cover plates frequently you will extend the life of your filter and guarantee the best operation possible. Additional front and rear cover plates are available from your ArcOne® distributor (See **Table 6 for part numbers**). Do not submerge filter in water or solution.

**WARNING! Using the wrong cover plates may damage your product, compromise UV/IR protection, and VOID WARRANTY. Use genuine ArcOne® replacement parts to ensure quality and fit.**

### Special note for XT EVA® users:

The extended viewing area is made of highly polished optical material. It has been hard coated with a scratch resistant finish. IT IS NOT SCRATCH PROOF! The raised area, around the perimeter of the case suspends the cover plates above lens surface therefore protecting the polished areas from abrasion. Clean your XT® as directed. Please be careful to use a soft clean cloth or eyeglass wipes. **ABRASIVE PARTICLES IN A DIRTY CLOTH COULD SCRATCH THE POLISHED SURFACE.** Install ArcOne® cover plates on both sides of the filter to protect from spatter damage and further scratching.

# Spatter Protection

## SPATTER DAMAGE IS NOT COVERED BY WARRANTY

There are many reasons why spatter can damage the Auto-Darkening Filter. Missing, incorrect, damaged, or distorted cover plates and excessive spatter build-up in and around the areas where the cover plates are retained are just a few examples. Any one or combination of these will allow spatter to enter the filter area and pit the filter glass.

**All helmets take a special 0.040" thick cover plate. Using a nominal 0.060" cover plate will not work in the design.** The Hawk and Eagle Helmets are designed to accept polycarbonate cover plates from the outside of the helmet without removing other components. This design allows for quick and easy cleaning and cover plate replacement. The use of an incorrect cover will distort the helmet and result in spatter entering the filter area.

**Please use only ArcOne® 0.040" cover plates in these products.**

**NOTE: Change your cover plate when it loses its flexibility and/or becomes bowed or distorted. Clean any build-up from the area where the cover plate is retained.**

Flip front designs must use 0.060" thick inner cover plates for protection from particles produced when chipping or grinding.

### Single Shade Filter Specifications (Table 4)

	S 240	S450 & S540	SS 240	XT® 450 & XT® 540	X54Di
<b>Viewing Area</b>	1 3/8" by 3 3/4" 5.25 sq. in.	1 3/8" by 3 3/4" 5.25 sq. in.	1 3/8" by 3 3/4" 5.25 sq. in.	1 3/8" by 3 3/4" 5.25 sq. in.	3 7/8" x 1 7/8" 7.35 sq. in.
<b>Total Expanding Viewing Area</b>	N/A	N/A	N/A	Approximately 20 square Inches	N/A
<b>Grinding Mode</b>	No	No	Yes	No	Yes
<b>Filter Dimensions</b>	2" by 4 1/2" 0.2" thick	4 1/2" by 5 1/4" or 5 1/4" by 4 1/2" 0.2" thick	2" by 4 1/2" 0.2" thick	4 1/2" by 5 1/4" or 5 1/4" by 4 1/2" 0.2" thick	5 1/4" by 4 1/2" 0.246" thick
<b>ARC Sensing</b>	2 sensors	2 sensors	2 sensors	2 sensors	2 sensors
<b>Sensitivity and delay</b>	N/A	N/A	TIG and Production	N/A	TIG and Production
<b>Switching Time Seconds</b>	5/10,000	5/10,000	5/10,000	5/10,000	1/10,000
<b>Primary Power</b>	Solar Cells	Solar Cells	Solar Cells	Solar Cells	Solar Cells
<b>Primary Power</b>	Lithium Battery	Lithium Battery	Lithium Battery	Lithium Battery	Lithium Battery
<b>Operating / Storage Temperature</b>	14 to 131 Degrees F	14 to 131 Degrees F	14 to 131 Degrees F	14 to 131 Degrees F	14 to 131 Degrees F
<b>UV/IR Protection</b>	Up to Shade 16	Up to Shade 16	Up to Shade 16	Up to Shade 16	Up to Shade 16
<b>Dark to Light Delay</b>	0.1 sec	0.1 sec	0.1 and 2 secs	0.1 sec	0.1 and 2 secs
<b>Light Shade</b>	3	3	3	3	3
<b>Dark Shade</b>	9, 10, 11	12	10.5	10.5	10 & 11
<b>Certification</b>	ANSI Z87.1, CSA294.3	ANSI Z87.1, CSA294.3	ANSI Z87.1, CSA294.3	ANSI Z87.1	ANSI Z87.1, *CSAZ94.3

### Variable Shade Filter Specifications (Table 5)

	Xtreme® 450V & 540V	Industrial™ 450&540	Indus. Xtreme® 540V	Xtreme® Ind. X54Vi
<b>Viewing Area</b>	4" x 3 1/5" 12.5 sq. in.	3 7/8" x 1 7/8" 7.35 sq. in.	4" x 3 1/5" 12.5 sq. in.	3 7/8" x 1 7/8" 7.38 sq. in.
<b>Grinding Mode</b>	Yes	Yes	Yes	Yes
<b>Filter Dimensions</b>	4 1/2"x5 1/4" or 5 1/2" x 4 1/2" 0.246" thick	4 1/2"x5 1/4" or 5 1/4" x 4 1/2" 0.25" thick	5 1/2" x 4 1/2" 0.312" thick	5 1/4" x 4 1/2"
<b>ARC Sensing</b>	4 sensors	2 sensors	4 sensors	2 sensors
<b>Sensitivity and Delay</b>	Standard or TIG	Standard or TIG (variable)	Standard or TIG	Standard or TIG
<b>Switching Time Seconds</b>	1/10,000	1/10,000	1/10,000	1/10,000
<b>Primary Power</b>	Solar Cells	Solar Cells	Solar Cells	Solar Cells
<b>Back-up Power</b>	Lithium Battery	Lithium Battery	Lithium Battery	Lithium Battery
<b>Operating &amp; Storage Temp</b>	14 to 131 Degrees F	14 to 131 Degrees F	14 to 131 Degrees F	14 to 131 Degrees F
<b>UV/IR Protection</b>	Up to Shade 16	Up to Shade 16	Up to Shade 16	Up to Shade 16
<b>Dark to Light Delay</b>	0.1 and 2 secs.	0.1 and 2 secs.	0.1 and 2 secs.	0.1 and 2 secs.
<b>Light Shade</b>	3	3	4	4
<b>Dark Shade</b>	5, 7-13	7 to 14	5 to 9, 10 to 14	5 to 9, 10 to 14
<b>Standard Compliance Warranty</b>	ANSI Z87.1, CSAZ94.3	ANSI Z87.1	ANSI Z87.1	ANSI Z87.1

\*Pending

**PART SELECTION GUIDE – Major Components (Table 6)**

<b>Part Numbers and Descriptions Auto-Darkening Filters</b>	<b>Eagle® 0200™ 4x5 fixed front (fig. 6-B)</b>	<b>Hawk® 0300 2x4 fixed front (fig. 6-B)</b>	<b>Vision® 0500™ 2x4 fixed front (fig. 7-B)</b>	<b>Vision® L500™ 2x4 flip front (fig. 7-B)</b>	<b>Vision® 0500™ 5x4 fixed front (fig. 7-A)</b>	<b>Viper® 0900™ 5x4 fixed front (fig. 5)</b>
S 240 (shade 10*)		X	X	X		
S 450 (shade 10*)	X					
S 540 (shade 10*)					X	
SS 240		X	X			
XT EVA® 450	X					
XT EVA® 540					X	
X540D					X	X
X540Di					X	X
Xtreme® 450V	X					
X540V					X	X
X540Vi					X	X
Industrial 450	X					
Industrial 540					X	X
IX 540						X
<b>HELMET SHELLS</b>						
2-0200 black	X					
3-0200 black	X					
2-0300 black		X				
2-0500 black, 3-0500 black			X	X	X	
2-0900 black, 3-0900 black (Contact for other available decal / painted)						X
<b>COVER PLATES</b>						
02-OP, Outside (4"x5"x0.040")	X				X	X
03-OP, Outside (2"x4"x0.040")		X	X	X		
LF-IP, High impact for lift front models (2x4"x0.060")				X		
<b>SHADE UPGRADES #1 &amp; #2</b>						
SMIP-1 and SMIP-2	X				X	X
SSIP-1 and SSIP-2		X	X	X		
<b>HEADGEAR and COMPONENTS</b>						
02-HG, Complete headgear assembly	X	X	X	X	X	X
06-HG, Comfa-Gear headgear	X	X	X	X	X	X
03-HGS8 Fatboy® Sweat band	X	X	X	X	X	X
04-HGS8 Headgear Sweat Band	X	X	X	X	X	X
06 HGS8 Headgear Sweat band	X	X	X	X	X	X
<b>MISCELLANIOUS COMPONENTS</b>						
UML Magnifying Lens (1 to 3 power) (modified)		X				
VML Magnifying Lens (1 to 2.5 power) (standard)			X	X	X	X
45ML Magnifying Lens with 4x5 adapter (1 to 2.5 power)	X					
SPR-01 Spring Small		X				
SPR-02 Spring Large	X					X
SUHHA-02 Smooth Dome Hard Hat	R	R	X	X	X	R
SUHHA-03 Hard Hat	X	X	X	X	X	X
05-PRS-24 Vision® Retaining Springs			X	X		
05-PRS-54 Vision® Retaining Springs					X	

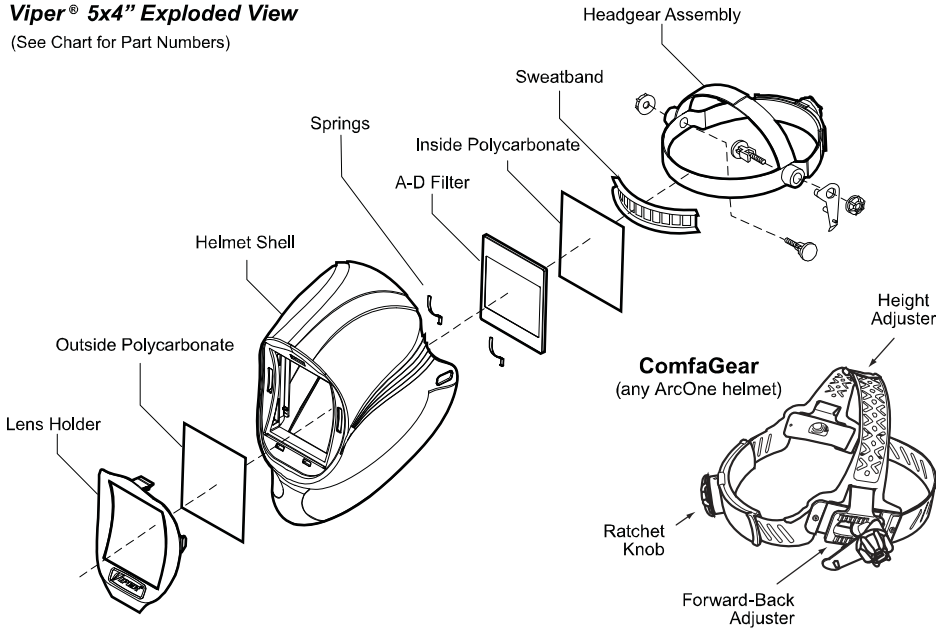
\*Shades 9, 11, and 12 available as retro only

\*\*R - Recommended

## Exploded View (Figure 5)

### Viper® 5x4" Exploded View

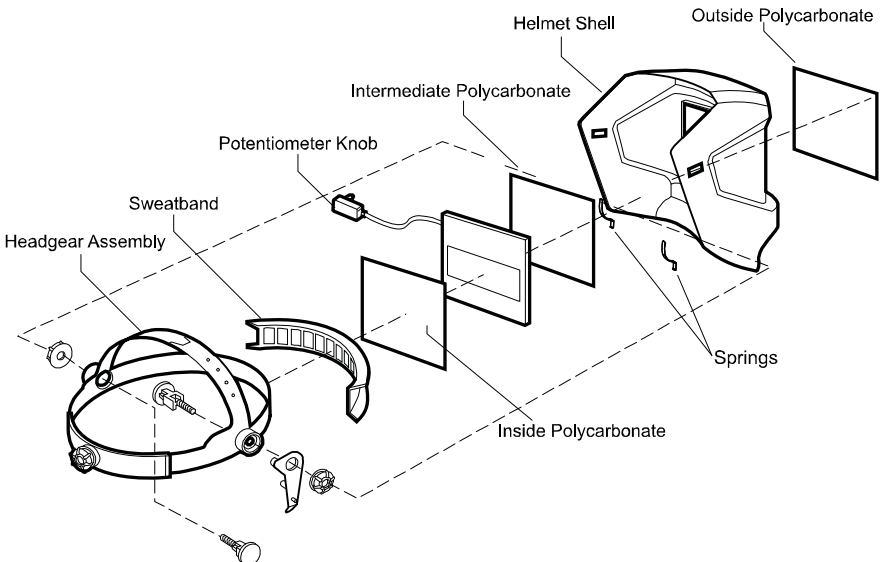
(See Chart for Part Numbers)



## Exploded View (Figure 6)

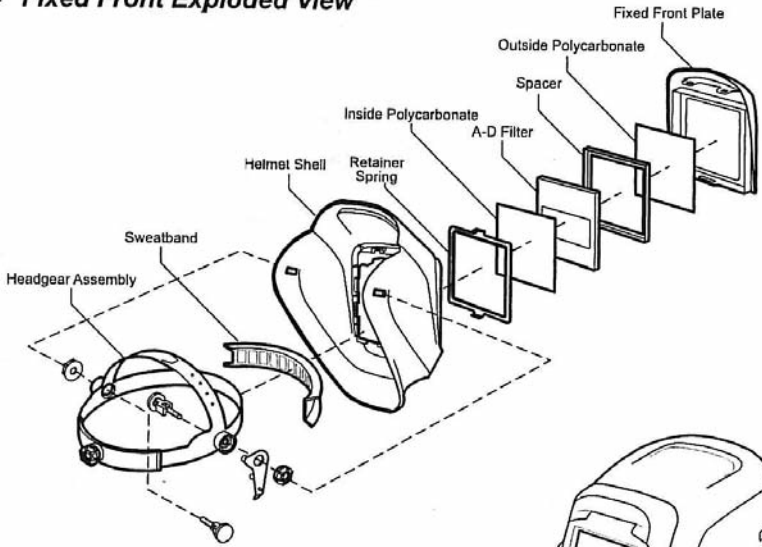
### Eagle 4" x 5" and Hawk 2" x 4" Exploded View

(See Chart for Part Numbers)

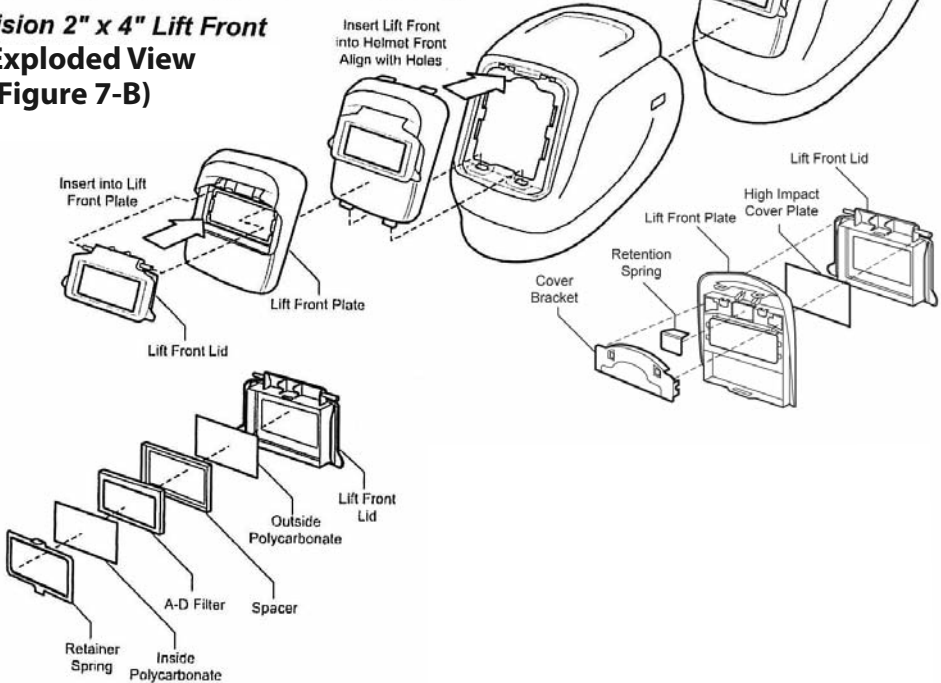


# Exploded View (Figure 7-A)

## Vision 5" x 4" Fixed Front Exploded View



## Vision 2" x 4" Lift Front Exploded View (Figure 7-B)



## Trouble Shooting Guide

### It has become difficult to see through the filter:

- Clean or replace cover plates when they become dirty or discolored.
- Clean the Auto-Darkening filter by using a cloth with soapy water solution or standard window cleaner

### The Auto-Darkening Filter will not darken after striking an arc:

- Make sure that the outer cover plate is clean, clear and unobstructed. Remove and inspect the Auto-Darkening filter making sure that the sensors and solar panels are unobstructed, clean, not broken, or discolored. Cease using this product if problem persists. Contact *ArcOne® Customer Service*.
- Test the auto-darkening filter to a TV or VCR remote (click any button while pointing at front of filter). The filter should darken momentarily then switch back to the light state. Avoid blocking the solar panels. Once you are sure that the equipment is functional you are now ready to being welding.
- Make sure filter is not in grind mode. Press Grind button once (**DO NOT HOLD BUTTON DOWN**) to grind mode off. For outside knob make sure sensitivity is on.
- Make sure filter settings match application (see table 1 for recommendations) or put into TIG / increase sensitivity setting. Alternately try rotating the filter 180 degrees so that the sensors and the solar panel are located at the bottom. In this configuration the sensor will have a completely different view of the application.

### The Auto-Darkening Filter is slow to darken:

- *ArcOne®* solar powered auto-darkening filters are designed to operate on very low voltage. If the filter has not been used for a period of time, such as a day or more, the circuitry will enter a sleep state. In the sleep state the battery can retain full voltage potential. It will awaken when you test it or begin welding. For instance if the product is a shade 10, the first time it darkens it will initially darken to perhaps shade 8 then transition to shade 10. Then after that it will darken to shade 10 each and every time. Note: As long as you are wearing your helmet with auto-darkening filter you are protected from UV/IR (**ultra-violet/infrared**) rays in the dark and light state and every shade in between.
- Colder temperatures will slow the switching speed of an Auto-Darkening filter. Once the heat from welding process warms up the components, switching speeds will increase. Auto-Darkening filters work best at room temperatures.

### The Auto-Darkening Filter goes light or flickers on/off while welding:

- Clean or replace outer clear polycarbonate lens if it becomes soiled or cloudy.
- Check to make sure that the sensors and solar panels are not damaged, dirty, or covered with a smoky film. Clean filter as directed. Your new filter requires virtually no maintenance other than periodic cleaning if the lens becomes dirty or clouded from the smoke. Both the Shades and the new **Industrial™ Auto-Darkening Filters** are water-resistant and may be cleaned by using a soft cloth with a soapy water solution, or standard window cleaner. Make sure that the cloth you use is clean. Abrasive particles in the cloth could scratch the highly polished lens surface.

### Flickers on and off sometimes while MIG and TIG welding.

- Possible cause of malfunction: Both MIG and TIG applications utilize “GUN” or “Torch” that has a nozzle with the electrode protruding only slight from it. Depending on the technique of the welder and the way that he positions the “Gun” or “Torch” the nozzle can block the welding arc from sensors. Even though the welder can see the arc perfectly the sensors may only be able to see the nozzle and not the arc.

## NO ARC – THE LENS WON’T WORK!

### The Auto-Darkening Filter stays dark after you stop welding:

- Exceeding the temperature limitations may also cause the LCD to stay dark. Let the filter cool down and try not to overheat it again by viewing the arc from the side and not directly above or by increasing the distance the filter is in relationship to the arc. Your filter may remain dark after welding if you are facing a bright light or the sun. If this is the case either look away or pass your hand between the source of the light and the sensors. By doing this the light source will be interrupted and the filter will clear.

### The Auto-Darkening Filter has a crack running through the front viewing area:

- UV/IR protection may be compromised resulting in burns caused by Ultraviolet or infrared radiation. Cease using this product if the problem exists. Contact *ArcOne® Customer Service*.

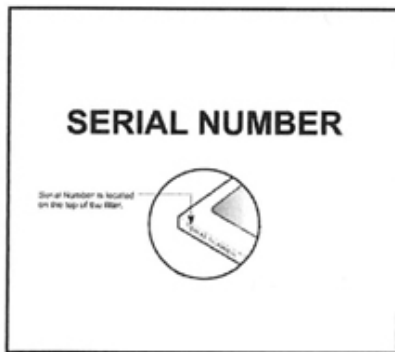
### The Auto-Darkening Filter appears dark in the center and lighter around the edges:

- You are most likely experiencing a common characteristic of an LCD known as angle dependency. See Technical Information on Angle Dependency (**Page 2**).

### Spatter is causing damage to the filter:

- There are many reasons why spatter can damage the **Auto-Darkening Filter**. Missing incorrect damaged, or distorted cover plates, and excessive spatter build-up in and around the area where the cover plates are retained are just a few examples. Any one or a combination of these will allow spatter to enter the filter area and pit the filter glass. Do not operate this product if this condition exists. The UV/IR protection may be compromised. Unfiltered welding light may penetrate through the filter and may result in severe eye damage and burns.

## Serial Number (Figure 8)



### LIMITED WARRANTY

ArcOne® warranties all auto-darkening filters against all manufacturing defects resulting from materials or workmanship. The X450V, X540V and X540D have a 3 year warranty from the date of purchase. All other filters have a 2 year warranty 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 top edge above the solar panel (See Figure 8) and also record the date of purchase from your sales receipt.
2. Contact **ArcOne® Customer Service (800-223-4685)** for a Return Tag Number.

Please return only the auto-darkening filter unless the customer service representative requests otherwise. Pack the filter in a box with adequate packing so no additional damage can occur. **Send only the auto-darkening filter, freight prepaid**, directly to the **ArcOne® Division, A.C.E. International, 85 Independence Drive, Taunton, MA, 02780**.

3. Reference your assigned Repair Tag Number on the outside of the package and on all accompanying paperwork.
4. Provide your complete return address and telephone numbers.
5. Provide an accurate description of the problem along with welding application details such as MIG, TIG, etc., and amperage range.
6. Should there be any charges for non-warranty repairs, Visa, MasterCard or checks are the only forms of payment accepted. In the case of credit cards purchases include credit card number expiration date, the full name as it appears on the card, and your signature as authorization for the total repair amount.
7. All returns, which follow the above procedures, will be processed within 2 business days.
8. All warranty repairs are covered for the balance of the original warranty period, which is established from your proof of purchase date.
9. All non-warranty repairs carry a 90-day, limited warranty. The period begins the date the product is returned to you.

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