



# USER INSTRUCTION MANUAL

## Auto-Darkening Filters



***INDUSTRIAL***



X54Vi



X54Di



X540V



**INTELLIGENT  
DARKENING  
FILTER™**



iDF81

85 Independence Drive, Taunton, MA 02780  
TEL: (508) 884-9600 • TOLL FREE: (800) 223-4685 • FAX: (508) 884-9666

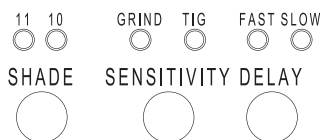
**ArcOne®** Auto-Darkening filters protect the user against harmful ultra-violet and infrared rays, both in the dark and light state. No matter what shade the filter is set to, the UV/IR protection is always there. You can never burn your eyes due to optical radiation passing through the filter. User's eyes can be severely burned if welding with a damaged lens (cracked, pitted, etc.).

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.

## Shade

**X54Di:** Press (Do Not Hold) the Select button, an LED (See Figure 1), will indicate the current setting. Press and hold the button to change the Shade setting.



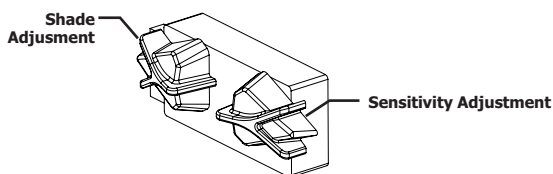
**Figure 1: Digital Controls with LED**

**X35V, X540V and X54Vi:** Press the "M" Mode button until "Shade" flashes then use the + & - buttons to adjust the shade number. (See Figure 2)



**Fig. 2: LCD Readout  
(X54Vi & X540V)**

**iDF81:** Adjust the shade using the shade adjustment knob (See Figure 3) on the helmet, the LCD readout will indicate the shade number.



**Figure 3: External Controls**

## Sensitivity and Delay

These filters have arc detection sensitivity and delay. Delay mode normally used in most welding applications except spot welding. Longer delay can be used at very low amps (<20A) to ensure filter stays dark.

**X54Di:** Press Sensitivity button to select the Sensitivity. LED below "TIG" indicates when the filter is in TIG mode. Press Delay button to change Delay LEDs from Fast to Slow Delay and vice versa.

**X35V, X540V and X54Vi:** Press "M" button till "Sensitivity" flashes. Use +/- buttons to change. More bars equals higher sensitivity. Press "M" button till "Delay" flashes. Use +/- to change delay from 0.1 to 3.5 seconds.

**iDF81:** Change sensitivity with external analog control (See Figure 3). Sensitivity Level is not displayed on iDF81 LCD readout. Press Delay button to change delay bars from 0.1 to 3.5 seconds.

# Grind Mode

X54Di: Press and hold Sensitivity button until the Grind LED flashes. Press again (no hold) to turn off.  
X35V, X540V, X54Vj: Press the "M" Mode button until "Sensitivity" flashes and decrease it using the - button until the LCD readout indicates Grind.  
iDF81: Turn sensitivity knob counter-clockwise until it clicks and the LCD readout displays Grind.  
(\*\*NOTE: Other modes will not work when in Grind Mode).

# Intelligent Darkening Filter (iDF) Modes

There are three modes: Normal, Auto-Variable, & iTig. 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.

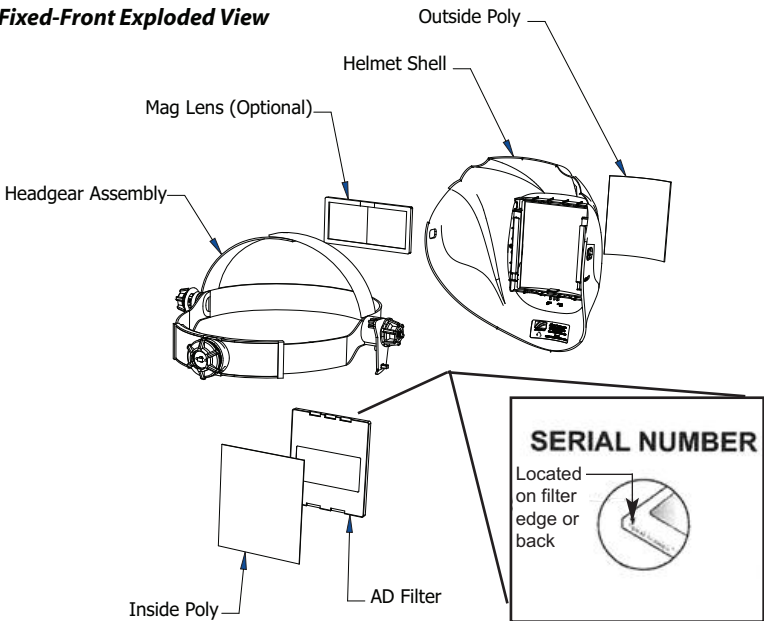
**Auto-Variable Mode:** LCD displays "AUTO" (Fig. 4). Filter automatically responds to the intensity of the welding arc and sets the filter to the appropriate dark shade. The user can further adjust the dark shade up or down for comfort while the "(•)" flashes. The setting will be saved in a memory slot. This mode has 8 memory slots, one for each shade number 7 thru 14; i.e. shade 7 = memory 1, shade 8 = memory 2, etc. The user can reset all memory slots by Pressing and holding both Mode and Delay buttons for two seconds.



Fig. 4: LCD Readout (iDF81)

**iTIG Mode:** Upon entering iTIG mode, where LCD displays "TIG" icon and flashing "(•)" (Fig. 4) user first sets the 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 user can reset memory by Pressing and holding both Mode and Delay buttons for two seconds.

## Vision® 5x4" Fixed-Front Exploded View



## 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. Welding helmet may be cleaned with soft cloth and soapy water, also. 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. Do not submerge filter or welding helmet in water or solution. Store in original or similar packaging and store in a safe dry place away from direct heat.

Storage Temperature 14 - 100°F (-10 - 38°C).

**IDF81:** battery, located in the external control center will last 3-6 months depending on usage. Replace with AAA battery of same voltage (1.5 V).

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.

### **SPATTER DAMAGE IS NOT COVERED BY WARRANTY**

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.

## 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.



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

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