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OPERATOR'S MANUAL



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SAFETY WARNINGS – READ BEFORE USING

⚠ WARNING

ARC Rays can injure eyes and burn skin



- Before welding, always inspect helmet and filter lens to be sure they are fitted properly, in good condition and not damaged.
- Check to see that the clear lens is clean and securely attached to the helmet.
- Always wear safety glasses or goggles under the welding helmet and protective clothing to protect your skin from radiation, burns and spatter.
- Ensure that optical radiation from other welder's arcs in the immediate area does not enter in from behind the helmet and auto-darkening filter.

Note: Auto-darkening filters in Lincoln helmets are designed to protect the user against harmful ultra-violet and infrared rays both in the dark and light states. The UV/IR protection is always present.



FUMES AND GASES can be dangerous to your health.

- Keep your head out of fumes.
- Use enough ventilation or exhaust at the arc or both to keep fumes and gases from your breathing zone and general area.
- **When welding with electrodes which require special ventilation such as stainless or hard facing (see instructions on container or MSDS) or on lead or cadmium plated steel and other metals or coatings which produce highly toxic fumes, keep exposure as low as possible and within applicable OSHA PEL and ACGIH TLV limits using local exhaust or mechanical ventilation. In confined spaces or in some circumstances, outdoors, a respirator may be required. Additional precautions are also required when welding on galvanized steel.**

Refer to <http://www.lincolnelectric.com/safety> for additional safety information.

HELMET INFORMATION

This Auto-Darkening Welding Helmet will automatically change from a light state (shade 3) to a dark state (Shade 11) when arc welding starts.

The filter automatically returns to a light state when the arc stops.

Match your welding application to the shade indicated on the shade chart. (See Page 4)

- Operating temperature: 23°F ~ 131°F (-5°C ~ 55°C).
- Do not use or open the auto-darkening filter if damaged by shock, vibration or pressure.
- Keep the sensors and solar cell clean. Clean the filter cartridge using a soapy water solution and soft cloth which should be damp but not saturated.

This Auto-Darkening Welding Helmet is designed for use with GMAW, GTAW, MMAW, SMAW, FCAW welding, or Plasma Arc and air carbon arc cutting.

The cartridge provides protection from harmful UV and IR radiation, in both dark and light states.

The cartridge contains two sensors to detect the light from the welding arc, resulting in the lens darkening to the welding shade.

- Do not use solvents or abrasive cleaning detergent.
- If cover lens is spattered or covered with dirt, it should be replaced immediately.
- Do not use the helmet without the outside cover lens properly installed.

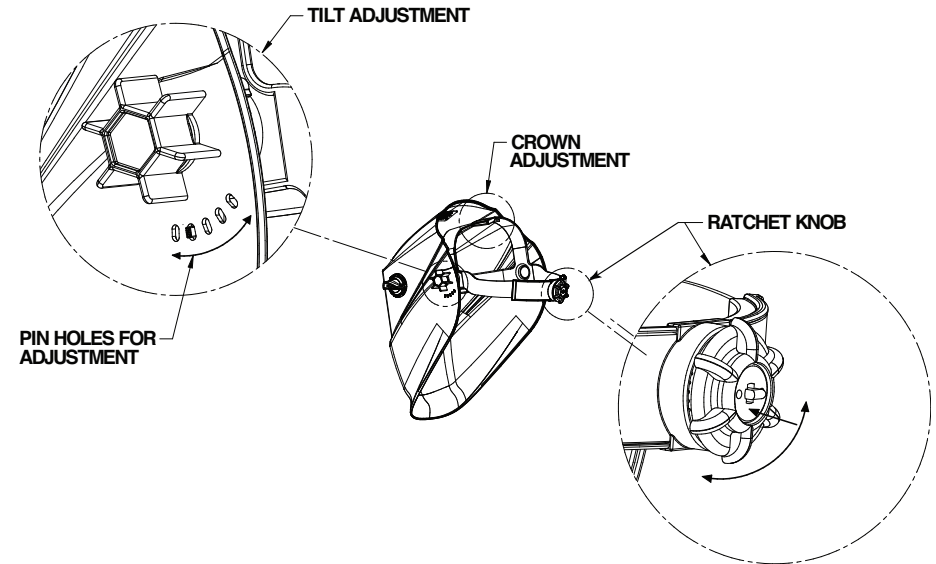
SPECIFICATIONS

LCD Viewing Area	97 x 35mm (3.82 x 1.38in)
Cartridge size	133 x 114mm (5.25 x 4.50in)
UV/IR Protection	Up to Shade DIN 16 at all times
Arc Sensors	2
Light State Shade	DIN 3
Fixed Welding Shade	DIN 11
Power Supply	Solar cells - no battery required
Power On/Off	Fully automatic
Light to Dark Switching Time	0.0008 sec (1/1,200 sec)
TIG Rating	> 35 amps
Operating Temperature	23°F ~ 131°F (-5°C ~ 55°C)
Storage Temperature	-4° ~ 158°F (-20°C ~ 70°C)
Total Weight	493g (17.4 Oz.)
Compliance ⁽¹⁾	ANSI Z87.1-2003, CSA Z94.3, CE EN379

⁽¹⁾ Headgear compliance with ANSI Z87.1 is without sweatband installed.

OPERATING INSTRUCTIONS

Headgear Adjustment



Head Size Adjustment: Headband tightness is adjusted by pushing in the ratchet knob and turning to adjust to desired comfort level. This knob is located at the back of the helmet. **HEAD GEAR CROWN ADJUSTMENT** is made by adjusting crown strap for vertical placement on the head and snapping the pin into the hole to lock securely in place.

Tilt: Tilt is adjusted on the left side of the helmet. TILT is adjusted by loosening outside tension knob and releasing the adjustment lever from its current location and moving it to another location. Retighten the outside tension knob when finished.

ALWAYS TEST TO BE SURE THE ADF CARTRIDGE IS CHARGED BEFORE WELDING. The helmet can be placed in sunlight to charge. Do not store the helmet in a dark cabinet or other storage area for long periods. While welding, the arc also charges the ADF cartridge.

SHADE GUIDE SETTINGS

GUIDE FOR SHADE NUMBERS				
OPERATION	ELECTRODE SIZE 1/32 in. (mm)	ARC CURRENT (A)	MINIMUM PROTECTIVE SHADE	SUGGESTED ⁽¹⁾ SHADE NO. (COMFORT)
Shielded metal arc welding	Less than 3 (2.5) 3-5 (2.5-4) 5-8 (4-6.4) More than 8 (6.4)	Less than 60 60-160 160-250 250-550	7	—
			8	—
			10	12
			11	14
Gas metal arc welding and flux cored arc welding		Less than 60 60-160 160-250 250-500	7	—
			10	11
			10	12
			10	14
Gas tungsten arc welding		Less than 50 50-150 150-500	8	10
			8	12
			10	14
			10	14
Air carbon Arc cutting	(Light) (Heavy)	Less than 500 500-1000	10	12
			11	14
Plasma arc welding		Less than 20 20-100 100-400 400-800	6	6 to 8
			8	10
			10	12
			11	14
Plasma arc cutting	(Light) ⁽²⁾ (Medium) ⁽²⁾ (Heavy) ⁽²⁾	Less than 300 300-400 400-800	8	9
			9	12
			10	14
			10	14
Torch brazing		—	—	3 or 4
Torch soldering		—	—	2
Carbon arc welding		—	—	14
PLATE THICKNESS				
	in.	mm		
Gas welding Light Medium Heavy	Under 1/8 1/8 to 1/2 Over 1/2	Under 3.2 3.2 to 12.7 Over 12.7		4 or 5
				5 or 6
				6 or 8
				6 or 8
Oxygen cutting Light Medium Heavy	Under 1 1 to 6 Over 6	Under 25 25 to 150 Over 150		3 or 4
				4 or 5
				5 or 6
				5 or 6

⁽¹⁾ As a rule of thumb, start with a shade that is too dark, then go to a lighter shade which gives sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line visible light of the (spectrum) operation.

⁽²⁾ These values apply where the actual arc is clearly seen. Experience has shown that lighter filters may be used when the arc is hidden by the workpiece.

Data from ANSI Z49.1-2005

If your helmet does not include any one of the shades referenced above, it is recommended you use the next darker shade.

HELMET CARE AND MAINTENANCE

Replacing Front Clear Cover Lens: Replace the front cover lens if it is damaged. Remove ADF holder assembly per Figure 1. Remove front cover lens from helmet assembly. Carefully remove gasket from cover lens. Install new cover lens into gasket and assemble to helmet shell. Make sure to assemble cover lens and gasket to helmet shell in the same way as it was removed.

Change the Shade Cartridge: Remove ADF holder assembly from helmet shell. See figure 1 for removal. Flex one end of the ADF holder to allow for Adapter and ADF cartridge to be removed from frame per figure 2. Install new ADF cartridge into frame per figure 3 below. Make sure that the ADF cartridge is inserted in ADF holder correctly as shown. Install Adapter into the ADF holder in the same way as it was removed. Install ADF holder into helmet shell.

Cleaning: Clean the helmet by wiping with a soft cloth. Clean cartridge surfaces regularly. Do not use strong cleaning solutions. Clean sensors and solar cells with soapy water solution and a clean cloth and wipe dry with a lint-free cloth. Do NOT submerge shade cartridge in water or other solution.

Storage: Store in a clean, dry location.

INSTALLING AN AFTERMARKET MAGNIFYING LENS:

Simply slide the magnifying lens into the short rail located on the sides of ADF holder per Figure 4.

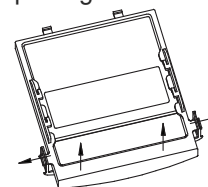


Figure 1

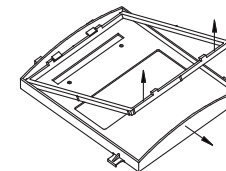


Figure 2

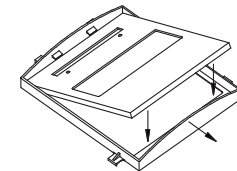


Figure 3

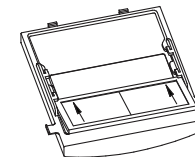


Figure 4


TROUBLE SHOOTING GUIDE

Test your shade cartridge prior to welding by directing the front of the cartridge toward a bright source of light, then using your fingers rapidly cover and uncover the sensors. The cartridge should darken momentarily as the sensor is exposed. A torch striker can also be used.

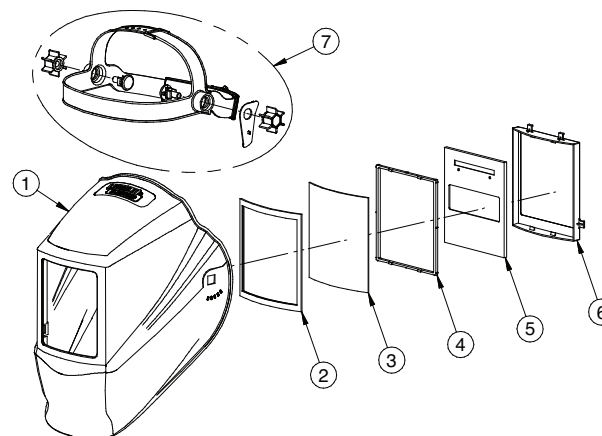
PROBLEM	POSSIBLE CAUSE	SOLUTION
Difficult to see through filter.	Front cover lens dirty.	Clean or replace front cover lens.
	Cartridge dirty.	Clean the Auto-Darkening cartridge with soapy water solution and soft cloth.
Filter does not darken when arc is struck.	Front cover lens dirty.	Clean or replace front cover lens.
	Front cover lens is damaged.	Check for cracked or pitted front cover lens and replace as required.
	Sensors are blocked or Solar panel is blocked.	Make sure you are not blocking the sensors or solar panels with your arm or other obstacle while welding. Adjust your position so that the sensors can see the weld arc.



WARNING

	ADF is cracked.	Cease (STOP) using this product if this problem exists. UV/IR protection may be compromised resulting in burns to the eyes and skin.	
	Weld spatter is damaging the filter.	Missing, damaged, broken, cracked or distorted front cover lens	Replace front cover lens as needed.

PARTS LIST



ITEM	DESCRIPTION	QTY
1	SHELL	1
2	OUTSIDE CLEAR COVER LENS SEAL	1
3	OUTSIDE CLEAR COVER LENS	1
4	ADAPTOR	1
5	ADF CARTRIDGE	1
6	ADF HOLDER	1
7	HEADGEAR ASSEMBLY	1

WARRANTY INFORMATION

WARRANTY INFORMATION: These helmets are warranted for a period of two years. Please contact us at 1 (800) 833-9353 for any service or warranty questions.

SPATTER DAMAGE IS NOT COVERED BY WARRANTY:

Do not use this product without the correct protective clear cover lens installed properly. The cover lenses supplied with this helmet are properly sized to work with this product and substitutions from other suppliers should be avoided.