

# WELDCO™

## *AUTO DARKENING WELDING HELMET*

### USER MANUAL

TO SUIT: **GREY SPOTS** WDC0766



VERSION: 2025.1

THIS MANUAL CONTAINS IMPORTANT INFORMATION REGARDING SAFETY, OPERATION, MAINTENANCE AND STORAGE OF THIS PRODUCT. BEFORE USE, READ CAREFULLY AND UNDERSTAND ALL CAUTIONS, WARNINGS, INSTRUCTIONS AND PRODUCT LABELS. FAILURE TO DO SO COULD RESULT IN SERIOUS PERSONAL INJURY AND/OR PROPERTY DAMAGE.

## **SAFETY**



Please read and understand all instructions before use.

This Weldco Auto Darkening Welding helmet is designed to protect the welders' eyes from harmful radiation including visible light, ultraviolet radiation (UV) and infrared radiation (IR) resulting from certain arc and gas welding processes under normal welding conditions.

This Weldco Welding helmet is suitable for most types of electro-welding, covered electrodes, MIG, TIG, MMA/ARC & Plasma welding & cutting. This helmet is not suitable for laser welding or laser cutting applications.

- The welding helmet is designed to protect the face and eyes from sparks and splatter, the helmet will not protect against explosive devices or corrosive liquids.
- Inspect all operating parts before use to ensure the helmet is free from defects and the Auto Darkening Filter (ADF) is in the welding mode required for your application.
- Ensure that both protective filter covers are free from scratches, and dust and clean as this can affect the performance of the ADF.
- Do not immerse the filter in water, and do not use solvents on the ADF or helmet components.
- If the ADF does not darken when the arc is struck, stop welding immediately and check the helmet is set to WELD and not GRIND. If the issue continues, please check the manual for the correct setting and follow the steps in the troubleshooting section.
- Never place the helmet or filter on a hot surface.
- Never weld without the protective filter covers.
- Use only within the temperature range of -10°C to +60°C.
- **CONTAINS BUTTON BATTERY. Keep out of reach of children. If a button battery is swallowed or inserted, it can get stuck and start causing significant irreversible damage in as little as 2 hours. Seek medical attention immediately.**

## **FEATURES**

- **Digital Controls**  
New four Mode Filter – **Weld, Cut, Grind** and **Dark lock**.  
Clutter-free digital display.
- **1/1/1/1 Optical Clarity Classification**  
Advanced Digital Auto Darkening Filter (ADF) has the highest score across all four classifications, ensuring the most accurate, clearer, brighter view for every weld. Half-shade increments for the ultimate in performance
- **4 Independent Arc Sensors**  
Sense the change in light even at low amperage (5 Amps) switching the ADF to dark mode in 0.045ms, even when welding out of position or part of the filter is blocked.
- **Large viewing area 100 x 53mm.**  
Provides a large viewing area for maximum visibility
- **TRS (True Rated Shade) Function:** Maintains consistent shade levels for reliable protection.
- **TACK Function.** This optimization enhances the user experience by providing a more comfortable and natural transition, reducing eye fatigue caused by intense light, and facilitating a quicker and more intelligent response for the next arc. Ultimately, this leads to a smoother, more efficient arc start while minimising discomfort for the user.
- **External manual shade adjustment and grind mode.**  
Easily adjust shade adjustment without removing your helmet or switch to grind mode (Shade 3) effortlessly.
- **Battery Backup.**  
2 x CR2032 backup batteries (fitted) to ensure your helmet is ready when you need it.
- **5-Point Fully adjustable Headgear.**  
Our most comfortable harness provides the perfect fit and stability for all-day wear.

## SPECIFICATIONS

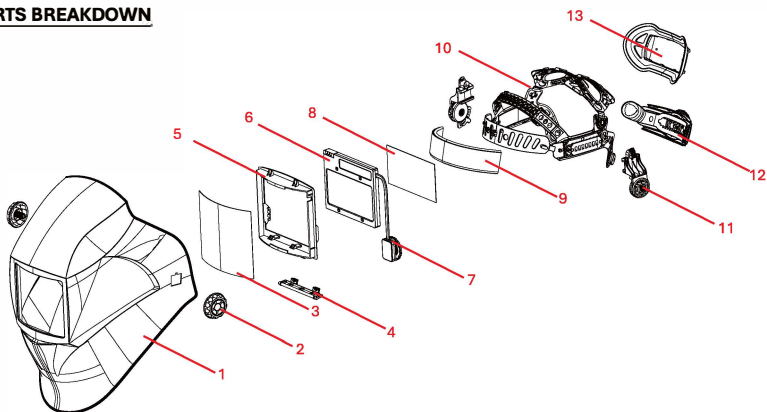
<b>Viewing Area</b>	100mm x 53mm
<b>Optical Class</b>	1/1/1
<b>Arc Sensors</b>	4
<b>Real Color Optics</b>	Real Color
<b>Operating Display</b>	LCD
<b>ON/OFF function</b>	YES
<b>A/M Function</b>	Manual Shade, Sensitivity, Delay
<b>Self-Check Test</b>	NO
<b>TIG Rating</b>	2A-350A
<b>Shade State</b>	Din 4/5 - 8/9 - 13
<b>Grind Function</b>	External Control
<b>Internal Shade Control</b>	Manual
<b>External Shade Control</b>	±0.5 increments

<b>Sensitivity Control</b>	Internal
<b>Switching Time</b>	0.05ms
<b>Delay Control (Time Off)</b>	0.05 - 2.0s, Internal
<b>Dark Lock</b>	YES
<b>TRS (True Rated Shade) &amp; TACK Functions</b>	YES
<b>Memory &amp; Recall</b>	NO
<b>UV/IR Protection</b>	Permanent
<b>Switching Time</b>	0.05ms
<b>Auto-Shade Deviation</b>	NO
<b>Power Supply</b>	Solar Cell & Replaceable Li-Battery 2x CR2032
<b>Low Battery</b>	Yes, + Battery Level LED
<b>Warranty</b>	3 years
<b>Standards</b>	AS/NZS, ANSI, CSA, CE

## SPARE PARTS & ACCESSORIES

Replacement Filter Covers	WDC0771
Neck Protector	WSNP
Head Protector	WSHP-X
Magnifying Lens 1.0	WSML1
Magnifying Lens 1.5	WDC0768
Magnifying Lens 2.0	WDC0769
Magnifying Lens 2.5	WSML2.5
Magnifying Lens 3.0	WSML3
Complete Head Gear	ZWSHGTP
Sweat Band	ZWSBAND
ADF Cartridge	ZWSADF-P

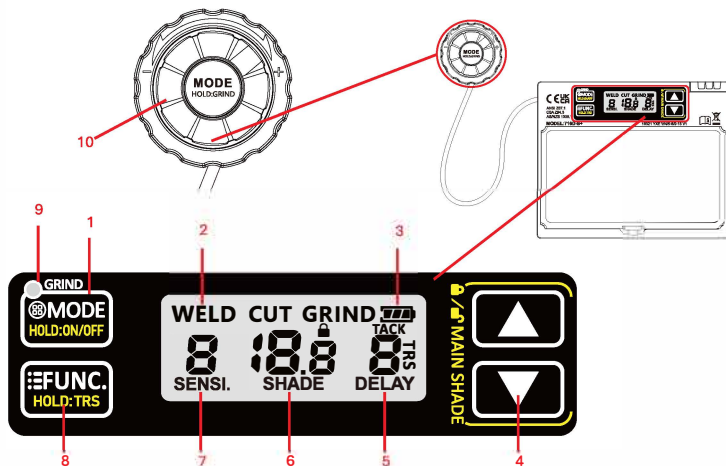
## PARTS BREAKDOWN



1	HELMET SHELL
2	ADJUSTMENT KNOB
3	FRONTSCREEN PROTECTOR
4	ADFCARTRIDGE FRAME RETAINER CLIP
5	ADFCARTRIDGE FRAME
6	ADFCARTRIDGE
7	EXTERNAL SHADE/ GRIND CONTROLLER

8	INSIDE SCREEN PROTECTOR
9	HEADGEAR SWEATBAND
10	5-POINT HEADGEAR
11	HEADGEAR BRACKET
12	NECKBAND WITH ADJUSTER KNOB
13	5-POINT HEADGEAR BACK PAD

## AUTOMATIC DARKENING HELMET OPERATING INSTRUCTIONS



1	MODE SELECTOR / ON-OFF	6	SHADE DISPLAY
2	WELD MODE DISPLAY	7	SENSITIVITY DISPLAY
3	BATTERY INDICATOR	8	FUNCTION / TRS
4	INTERNAL INCREASE DECREASE BUTTONS	9	GRIND MODE LED
5	DELAY DISPLAY	10	EXTERNAL MODE SELECTOR AND ADJUSTMENT DIAL

## ON / OFF

- Your ADF is fitted with an ON / OFF function to save the battery whilst your helmet is in storage. To turn ON or OFF the ADF hold the **MODE** selector until the screen turns ON or OFF.

## ADVANCED DIGITAL FILTER (ADF) SELF TEST PROCEDURE

- Turn on the ADF System: Ensure that the Auto Darkening Filter (ADF) system is powered on. Press and hold the **MODE** button (1). The helmet will begin a series of internal tests to verify that the ADF is functioning properly. Once the self-test is finished, the helmet is ready for use.

## MODE SELECT – WELD, CUT, DARK LOCK & GRIND

- Your ADF features 4 modes to cycle through. Press and release the **MODE** selector button (1) or the **EXTERNAL MODE** selector (10) until your desired mode is shown on the digital display.

### WELD MODE

- WELD** mode is designed for ARC, MIG and TIG welding from Shade 9-13 please refer to the chart for suggested ranges. As a rule it is always better to set your helmet to a darker shade and adjust down depending on the ARC brightness and your sensitivity to light.

### CUT MODE

- CUT** mode is designed for plasma cutting, gas cutting and brazing from shades 4-8 and should never be used for ARC, MIG or TIG welding.

### DARK LOCK

- DARK LOCK** mode is designed to work like a traditional welding helmet and the ADF will remain at the selected shade level. In this mode, the ADF will not lighten.
- There is an additional way to cycle into and out of DARKLOCK. Depress both the **UP and Down** buttons (12) at the same time.

### GRIND MODE

- The ADF will not darken in **GRIND** mode and remain in shade state of 4. To enter **GRIND** mode Press and hold the **EXTERNAL CONTROL GRIND** selector (10) or the internal **MODE** selector button (1) until GRIND appears on the Digital display. A secondary red LED light will slowly flash as an added precaution. Do not attempt to weld on Grind mode.



## SHADE CONTROL

To set the shade for different modes:

- For shades 4.0 to 8.0, press the **MODE** selector button (1) until "CUT" appears on the digital display. The current shade level will flash, and rotate the **EXTERNAL ADJUSTMENT DIAL** (10) to the desired setting.
- For shades 9.0 to 13.0, press the **MODE** selector button (1) until "WELD" appears on the digital display. The current shade level will flash, and rotate the **EXTERNAL ADJUSTMENT DIAL** (10) to the desired setting.

If preferred you can use the **INTERNAL INCREASE / DECREASE** buttons (4) to adjust the shade level.



If the ADF does not darken when the arc is struck, immediately stop welding. First, check that the helmet is set to "WELD" or "CUT" mode, not "GRIND." If the issue persists, refer to the manual for the correct settings and follow the troubleshooting steps. Page 8

## SENSITIVITY

- To adjust the sensitivity, press the **FUNC.** selector button (8) to cycle the functions until the number above the **SENSITIVITY DISPLAY** (7) flashes. To adjust it rotate the **EXTERNAL ADJUSTMENT DIAL** (10) or using the internal **INCREASE/DECREASE** buttons (4).

### High Sensitivity:

- Recommended for most applications.
- Ideal for TIG welding with a stable arc.
- Best for low amperage and poor light conditions.

### Low Sensitivity:

- Use for high amperage welding.
- Recommended when bright ambient light causes the ADF to trigger prematurely (e.g., direct sunlight, intense artificial light, neighbouring welder arcs).

For optimal performance, start with High sensitivity and gradually reduce it until the filter responds only to the welding arc, avoiding unwanted triggering from ambient light.

## DELAY

- To adjust the sensitivity, press the **FUNC** button (8) to cycle the functions until the number above the **DELAY DISPLAY** (5) flashes. To adjust it, rotate the **EXTERNAL ADJUSTMENT DIAL** (10) or using the internal **INCREASE/DECREASE** buttons (4).

**High Delay** (1.0 second) - Longer delay is for most welding applications, especially for high amperage applications.

**Low Delay** (0.1 seconds) - A shorter delay is for Spot welding applications.

## TRS (TRUE RATED SHADE) FUNCTION

- The ADF will turn from dark to light gradually after welding, instead of immediately giving you more protection.  
To turn **on** HOLD the **FUNC** button until the TRS is shown on the display panel.  
To turn **off** HOLD the **FUNC** button until the TRS disappears from the display panel.

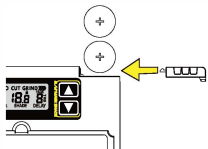
## TACK FUNCTION

When '0' delay setting is selected the ADF uses an intermediate light state 5 to help minimize eye strain during extended tack welding applications. If the ADF does not sense the arc within 2 seconds, the ADF will return to its normal light shade 3.

## BATTERY INDICATOR

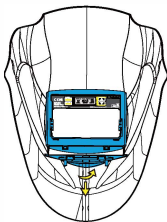
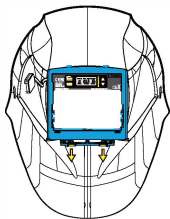
The battery symbol on your helmet shows the battery backup level. When the symbol starts flashing, it's time to change the battery, as the Auto Darkening Filter (ADF) will no longer function properly.

## CHANGING THE BATTERIES



The welding helmet is powered by solar cells **and** 2 x CR2032 lithium batteries. To replace the batteries, remove the ADF CARTRIDGE FRAME (5) from the helmet (see removing ADF below) Once you have removed the ADF from the ADF HOLDER slide out the battery cover, carefully remove and replace the batteries, replace the cover reinsert the ADF into the ADF HOLDER and reinstall into the helmet.

## REMOVING THE ADF FROM THE HELMET AND CLEANING



- Pull down the ADF CARTRIDGE FRAME RETAINER CLIP. Lift up on the ADF CARTRIDGE removing the cartridge from the helmet.
- With the ADF CARTRIDGE removed the front protective cover can be replaced.
- It is necessary to keep the solar cells and light sensors free of dust and splatter. Clean the filter with a soft tissue or cloth in mild detergent (or alcohol)

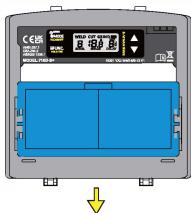
NEVER USE AGGRESSIVE SOLVENTS SUCH AS ACETONE

## REPLACING THE INSIDE SCREEN PROTECTOR



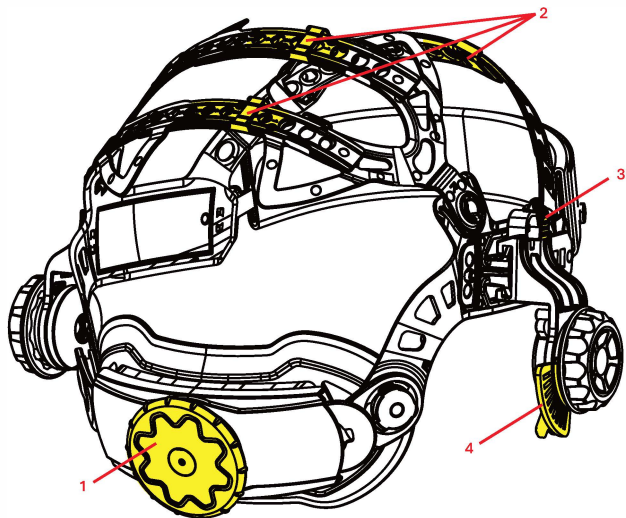
- Pry the inner screen protector up from the finger groove. Slide the old cover down and out.
- Replace with new one (remember to remove both the inner and outer protective green films before inserting).

## INSTALLING MAGNIFYING GLASS



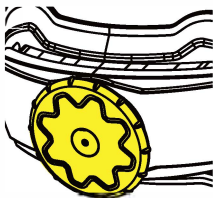
- Slide the optional magnification lens down into the magnification lens brackets, part of the ADF cartridge frame.

## HEADGEAR OPERATION



1	NECKBAND ADJUSTMENT DIAL
2	HEAD STRAP ADJUSTMENTS
3	DISTANT ADJUSTMENT BUTTON
4	ANGLE ADJUSTMENT

### NECKBAND ADJUSTMENT



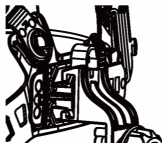
- To tighten the neckband, turn the **NECK BAND ADJUSTMENT DIAL** clockwise to a comfortable adjustment.
- To loosen the neck bank, turn the **NECK BAND ADJUSTMENT DIAL** counterclockwise to a comfortable adjustment.

### HEAD STRAP ADJUSTMENT



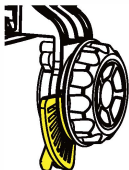
- Adjust the headgear straps by locating the lock-in pin. Push the pin away from the hold. Adjust the strap to a comfortable size lock pin back in place.
- Continue with the other straps to ensure correct balance and stability.

## DISTANCE ADJUSTMENT



- To adjust the distance between your face and the ADF push the **DISTANCE ADJUSTMENT BUTTON** in the headgear closer or away from the ADF inside the helmet.

## ANGLE ADJUSTMENT



- There are multiple pins on the right side of the headgear allowing for tilt adjustment to the helmet when the helmet is in the down position.
- To adjust loosen the tension adjustment knob, reposition it to the desired notch and retighten the tension adjustment knob.

## TROUBLESHOOTING

FAULT	POSSIBLE CAUSE	SOLUTION
Irregular Darkening Dimming	Headgear has been set unevenly, creating an uneven distance from your eyes to the filter.	Reset the headgear to reduce the distance in the filter.
The filter triggers when not welding or stays dark.	Bright ambient light or other welding close by	Lower sensitivity until the helmet no longer false triggers.
	Set to <b>DARKLOCK</b>	Check mode is set to <b>WELD</b> or <b>CUT</b> .
The Filter does not darken when welding	<b>GRIND</b> mode on	Check mode is set to <b>WELD</b> or <b>CUT</b>
	Battery Flat	Replace batteries
	Front cover lens dirty or damaged	clean or replace the front protective cover.
	Sensors are dirty / blocked, or the solar panel is blocked	Clean sensor surfaces to make sure they are free from dust and smoke residue.
	Sensitivity is set too low, or delay time is set too short	Adjust to the required level - a higher delay should stop flickering.

### Note:

If after checking above your helmet does not darken or is not functioning correctly, immediately stop welding and contact your place of purchase or WELDSAFE directly. Do not attempt to modify the welding helmet or Auto Darkening Filter (ADF) in any way.

Only use spare parts and accessories as stated in this manual. Use of unauthorised parts or modifications will void the warranty.

## WELDING HELMET WARRANTY

Your Weldco welding helmet is covered by a 36-month warranty, which protects against faulty materials and manufacturing defects. If your helmet fails during this period, please contact your authorised Weldco distributor for assistance.

### Warranty Coverage:

The warranty covers defects in materials or workmanship.

If a failure is identified, Weldco will inspect the helmet and, if repair is not feasible, the helmet will be replaced.

### Exclusions:

Freight costs are not covered under the warranty.

The warranty does not apply to products that have been serviced by unauthorized personnel.

For warranty claims, please ensure you contact an authorised Weldco distributor.

## SHADE SELECTION CHART

Process	Current A																							
	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 alloys	10						11			12			13			14								
Air-arc gouging	10						11			12			13			14			15					
Plasma jet cutting	9						10			11			12			13								
Microplasma 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.

# WELDCO™

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