

NOTE: All specifications and technical data are subject to change without prior notification.

Attached Table 1

Recommended Shade Number According to BS679 and EN169

Welding Process	Arc Current (Amperes)																							
	0.5	1	2.5	5	10	15	20	30	40	60	80	100	125	150	175	200	225	250	275	300	350	400	450	500
SMAW	9						10		11				12				13				14			
MIG (heavy)	10						11		12				13				14				15			
MIG (light)	10						11		12				13				14				15			
MIG, GTAW	9						10		11				12				13				14			
MAG/CO ₂	10						11		12				13				14				15			
SAW	10						11		12				13				14				15			
PAC	11						12		13				14				15				16			
PAW	2.5	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

Adopt greater or smaller shade number pursuant to the field condition.



ANSI
Z87.1

AS/NZS



RoHS



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MMW 500 VGX
Owners Manual



READ AND UNDERSTAND ALL INSTRUCTIONS BEFORE USE

The Cornwell MMW 500 VGX Welding Helmet is designed to protect your eyes and face from sparks, spatter, and harmful radiation under normal welding conditions. However, they do not provide protection against severe impact hazards, such as fragmenting grinding discs.

This helmet is not designed to protect against explosive devices or corrosive liquids. When working with these hazards, appropriate machine guards or eye splash protection must be used.

Impact-resistant primary eye protection—such as safety spectacles or goggles that meet relevant safety standards—must be worn at all times while using this welding helmet.

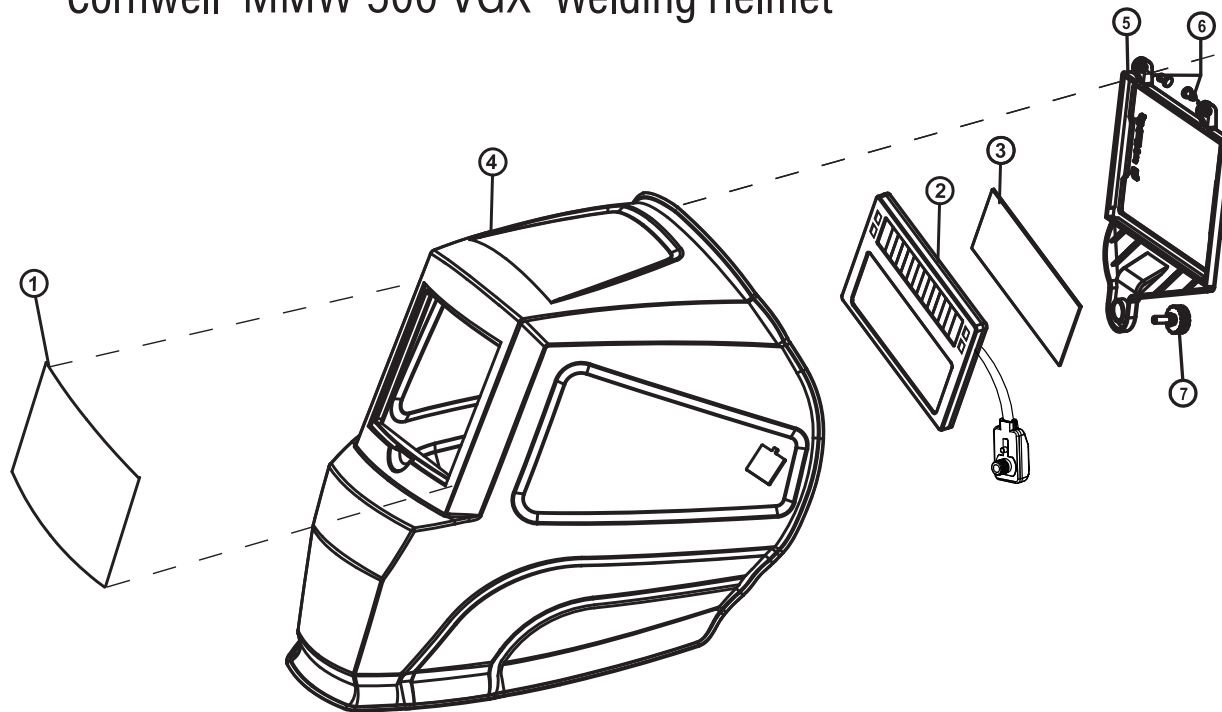
Avoid working in positions that could expose unprotected areas of your body to sparks, spatter, or direct/reflective radiation. If such exposure cannot be avoided, use additional protective gear.

BEFORE WELDING

- 1. Check the Front Cover Lens:** Ensure the lens is clean and free of dirt. Verify that the sensors on the front of the filter cartridge are not obstructed.
- 2. Inspect the Front, Inside Cover Lens and Retaining Frame:** Make sure they are securely in place.
- 3. Inspect All Operating Parts:** Before each use, check for signs of wear or damage. Replace any scratched, cracked, or pitted parts immediately to avoid the risk of serious injury.
- 4. Check for Light Tightness:** Verify that the helmet is properly sealed and light-tight before use.
- 5. Select the Correct Shade:** Adjust the shade number using the shade knob (specific to your lens). Confirm that the selected shade is appropriate for your welding application.
- 6. Adjust the Headband:** Ensure the helmet is positioned as low as possible on your head and close to your face. Adjust the helmet's angle in the lowered position by turning the adjustable angle limitation washer.
- 7. No Unauthorized Modifications:** Do not modify the welding lens or helmet in any way, other than as specified in the manual. Only use replacement parts specified in the manual. Unauthorized modifications or non-approved parts will void the warranty and increase the risk of personal injury.

Failure to follow these warnings and operating instructions can result in severe personal injury.

Cornwell MMW 500 VGX Welding Helmet



PARTS BREAKDOWN

1. Front protection plate
2. Auto-darkening lens assembly
3. Rear protection plate
4. Helmet shell
5. Press frame
6. Nuts
7. Dial



REPLACEMENT PARTS:

- AGHEADGEAR2.0 - Replacement Headgear
- AGSPARTAN2.OOL - Replacement Outer Lens
- AGSPARTAN2.OIL - Replacement Inner Lens
- AGAPOLLOFILTER - Replacement Filter

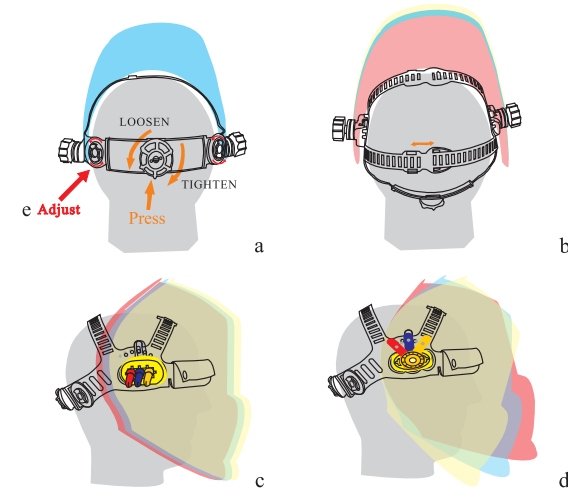
PRODUCT FEATURES

- **Enhanced Visibility:** Provides clear vision of the workpiece both before and during welding, improving the quality of work and increasing efficiency.
- **Comprehensive Protection:** Offers full protection against ultraviolet (UV) and infrared (IR) radiation.
- **Extended Battery Life:** Equipped with a lithium battery and solar cells for extended battery life.
- **Compliance:** Meets relevant ANSI, CE, CSA, and AS/NZS safety standards.

OPERATING INSTRUCTIONS

- 1. Peel off the Protective Film:** Remove the protective film from both the inside and outside surfaces of the lens.
- 2. Automatic Darkening:** Before welding, the filter screen is clear, providing excellent visibility of the workpiece. Upon starting welding, the filter screen automatically darkens. Once welding stops, the filter screen automatically returns to its clear state.
- 3. Select Operating Mode:** Adjust the mode to either Welding or Grinding (lens specific). In Grinding mode, the filter remains clear and does not react to the welding arc.
- 4. Adjust Shade:** Use the Shade number knob (lens specific) to adjust the filter shade based on welding current and process. Refer to Table 1 for the recommended shade settings.
- 5. Adjust Sensitivity:** Set the sensitivity level (lens specific). After stopping welding, increase the sensitivity until the filter flashes, then lower it slightly to the desired level.
- 6. Adjust the Headgear:**
 - a. Fit the Helmet: Put the helmet on your head and press the adjustable knob (at the rear head position). Rotate the knob counterclockwise to increase the circumference of the headband or clockwise to decrease it (see Figure 2.a).
 - b. Adjust Helmet Depth: Position the helmet for optimal depth and fit (see Figure 2.b).
 - c. Adjust the Helmet-to-Face Distance: Fine-tune the distance between the helmet and your face (see Figure 2.c).
 - d. Adjust Angle Limitation: Adjust the angle limitation of the helmet for the best fit (see Figure 2.d).

FIGURE 2



- e. Adjust Angle Behind Your Head: Customize the angle behind your head to match your head shape and improve comfort.

Following these steps will enhance comfort, allowing you to work with greater proficiency and ease.

⚠ WARNING!

- The Cornwell MMW 500 VGX Welding Helmet is suitable for all types of welding operations.
- Protection is only guaranteed when all lens and retention components are installed according to the manufacturer's instructions.
- The Auto-Darkening filter must be fitted with an external protection plate to prevent potential hazards that may be irreparable.
- Replace any scratched, cracked, or broken lens or frame immediately, as these reduce visibility and protection.
- When replacing the protection plate, handle the lens carefully to avoid damaging it.
- Before welding, always select the correct shade number based on the welding process.
- The helmet's operating temperature range is -5°C (23°F) - $+55^{\circ}\text{C}$ (131°F). Below the lower temperature limit, the response speed of the liquid crystal materials in the lens may slow slightly, though this will not affect its protective capabilities.

- Do not store the lens frame near heat sources or in high-moisture environments.
- Avoid cleaning the lens frame with alcohol, gasoline, or any solvent-based products, and do not immerse it in water.
- Frequently replace the sweatband for optimal comfort and hygiene.
- Only use replacement parts provided by an authorized supplier.
- If the helmet does not darken upon striking an arc, stop welding immediately and contact your supervisor or dealer.

TECH SPECS

- Material: Nylon
- Color: Eagle and USA Flag Design
- Lens Size: 4.3" x 3.54"
- Lens View: 3.62" x 1.65"
- Shade: DIN 9-13
- Sensors: 2
- UV/IR Protection: Up to Shade DIN 16
- Switching time: < 0.01 ms
- 1/1/1/2 High optical class
- Power Supply: Replaceable Li-Mn Battery and Solar Power
- Grind Mode: Yes Inside
- Operating Temperature: -5°C (23°F- +55°C (131°F)
- Delay Control (dark to light) Inside and step less 0.20-0.70s
- Materials of Plate: PC

COMMON PROBLEMS AND REMEDIES

Irregular Darkening or Dimming

Cause: Headband is set unevenly, causing an uneven distance between the eyes and the filter lens.

Remedy: Reposition the headband to reduce the gap and ensure even alignment with the filter.

Auto-Darkening Filter Does Not Darken or Flickers

Cause:

- Front cover lens is soiled or damaged.
- Sensors are dirty.
- Welding current is too low.

Remedy:

- Clean or replace the front cover lens.
- Clean the sensor surface.
- Increase the welding current or adjust sensitivity to a higher setting.

Slow Response

Cause: Operating temperature is too low.

Remedy: Do not use the helmet at temperatures below 23°F (–5°C).

Poor Vision

Cause:

- Front cover lens, inside cover lens, or filter lens is soiled.
- Insufficient ambient light.
- Incorrect shade number setting.

Remedy:

- Clean or replace the lenses.
- Ensure adequate ambient light.
- Adjust the shade number to the correct setting for your application.

Welding Helmet Slips

Cause: Headband is not properly adjusted.

Remedy: Re-adjust the headband to secure the helmet properly.

⚠ WARNING! If the above problems cannot be resolved, stop using the auto-darkening welding helmet immediately and contact your dealer.