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## HITBOX HT111

# HITBOX HT-111 Auto Darkening Welding Helmet User Manual

Model: HT-111

## 1. INTRODUCTION

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This manual provides essential instructions for the safe and effective use of your HITBOX HT-111 Auto Darkening Welding Helmet. This helmet is designed to offer superior eye and face protection during various welding and grinding operations. It features an auto-darkening lens, true color technology, and a comfortable, lightweight design.



*Figure 1: Front view of the HITBOX HT-111 Auto Darkening Welding Helmet.*

## 2. SAFETY INFORMATION

Always prioritize safety when performing welding or grinding tasks. This helmet provides protection against harmful ultraviolet (UV) and infrared (IR) radiation, sparks, and spatter. However, it is crucial to follow all general welding safety guidelines and wear appropriate personal protective equipment (PPE).

- Ensure the helmet is properly fitted and adjusted before each use.

- Inspect the helmet and lens for any damage before use. Replace damaged parts immediately.
- Do not use the helmet if the auto-darkening function is not working correctly.
- Avoid direct exposure to welding arc without proper eye protection.
- The helmet is not suitable for laser welding or overhead applications where falling objects may be a hazard.

### 3. PRODUCT OVERVIEW AND COMPONENTS

Familiarize yourself with the various parts of your welding helmet for optimal performance and safety.



Figure 2: Lens specifications and controls.

1. **TEST Button:** Used to check the auto-darkening function.
2. **Low Battery Light:** Indicates when the battery needs replacement.
3. **Sensitivity Knob:** Adjusts the sensitivity of the arc sensors.
4. **Delay Time Knob:** Controls the time the lens stays dark after the arc stops.
5. **Lithium Battery:** Provides power to the auto-darkening filter.

6. **Solar Cell:** Extends battery life by charging from welding light.
7. **Arc Sensors:** Detect the welding arc to trigger darkening.
8. **Shade Control Knob:** Adjusts the dark shade level (DIN 4/9-13).

### Included Accessories:



Figure 3: Included accessories.

- Welding Helmet x 1
- Outer Protection Board x 1
- CR2450 Battery x 3 (Note: Product specifications state 3 batteries, image shows 2 replaceable batteries plus one pre-installed)
- User Manual x 1

## 4. SETUP

### 4.1 Headband Adjustment

Proper adjustment of the headband is crucial for comfort and stability during use.



*Figure 4: Headband adjustment points.*

1. **Adjust Top Strap:** Loosen or tighten the top strap to adjust the helmet's height on your head.
2. **Width Knob:** Rotate the knob at the back of the headband to adjust the circumference for a snug fit.
3. **Angle Knob:** Adjust the angle of the helmet relative to your face for optimal viewing and comfort.

4. **Comfort Cushion:** Ensure the comfort cushion rests properly against your forehead to reduce pressure points.

## 4.2 Battery Installation/Check

The helmet is powered by a CR2450 lithium battery, supplemented by solar cells. Ensure the battery is correctly installed and functional.

1. Locate the battery compartment, typically on the auto-darkening filter cartridge.
2. Insert the CR2450 battery with the correct polarity.
3. Press the **TEST** button (1 in Figure 2) to verify the auto-darkening function. The lens should momentarily darken.
4. If the low battery light (2 in Figure 2) illuminates, replace the battery.

## 5. OPERATING INSTRUCTIONS

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The HT-111 helmet offers various adjustments to suit different welding and grinding tasks.



The external shade control knob (8 in Figure 2) allows adjustment from DIN 4 (light state) to DIN 9-13 (dark state). Rotate the knob to select the appropriate shade level for your welding process.

### 5.3 Sensitivity Adjustment

The sensitivity knob (3 in Figure 2) controls how easily the arc sensors detect the welding arc. Adjust it to prevent false darkening from ambient light or to ensure darkening in low-amp TIG welding.

### 5.4 Delay Time Adjustment

The delay time knob (4 in Figure 2) sets how long the lens remains dark after the welding arc ceases. A shorter delay is suitable for tack welding, while a longer delay is recommended for high-amperage welding to protect eyes from afterglow.

### 5.5 Welding and Grind Modes



*Figure 6: Multiple applications supported by the helmet.*

The HT-111 helmet supports various applications:

- **Weld Mode:** For MIG, TIG, ARC (Stick), and other welding processes. The lens automatically darkens to the

selected shade (DIN 9-13) upon arc ignition.

- **Grind Mode:** For grinding operations. The lens remains in its light state (DIN 4) to provide clear vision while protecting against sparks and debris. Ensure the helmet is set to Grind Mode before starting grinding to prevent accidental darkening.

## 5.6 Shade Number Selection Guide

Refer to the table below for recommended shade numbers based on welding process and current (Amperes).



Figure 7: Shade number selection table.

### Recommended Shade Numbers

Process	Current (A)																	
	5	10	15	30	40	70	100	125	150	175	200	225	250	300	350	400	500	600
MMA					9	10	11	12	13	14								
MAG				10	11	12	13	14										
TIG	9			10	11	12	13	14										
MIG						10	11	12	13	14								
PAC						11	12	13	14									
PAW	9			10	11	12	13	14										

## 6. MAINTENANCE

Regular maintenance ensures the longevity and proper functioning of your welding helmet.

### 6.1 Cleaning

- Clean the helmet shell with a mild soap and water solution. Avoid harsh solvents.
- Wipe the auto-darkening filter and protection lenses with a soft, clean cloth. Do not use abrasive materials or cleaners that could scratch the lens.
- Keep the arc sensors clean and free from obstructions.

### 6.2 Replacing Outer Protection Board

The outer protection board protects the auto-darkening filter from spatter and scratches. Replace it when it becomes scratched or damaged to maintain clear vision.

1. Carefully remove the old protection board from its frame.
2. Insert a new outer protection board (one is included as an accessory) into the frame, ensuring it sits securely.

### 6.3 Replacing CR2450 Battery

When the low battery indicator illuminates, replace the CR2450 battery.

1. Locate the battery compartment on the auto-darkening filter.
2. Open the compartment and remove the old battery.
3. Insert a new CR2450 battery, ensuring correct polarity (+ side up).
4. Close the compartment and press the TEST button to confirm functionality.

## 7. TROUBLESHOOTING

If you encounter issues with your welding helmet, refer to the following common problems and solutions.

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
Lens does not darken when arc is struck.	<ul style="list-style-type: none"> <li>• Low battery.</li> <li>• Arc sensors are dirty or obstructed.</li> <li>• Sensitivity setting is too low.</li> <li>• Helmet is in Grind Mode.</li> </ul>	<ul style="list-style-type: none"> <li>• Replace CR2450 battery.</li> <li>• Clean arc sensors.</li> <li>• Increase sensitivity setting.</li> <li>• Switch to Weld Mode.</li> </ul>
Lens darkens intermittently or flashes.	<ul style="list-style-type: none"> <li>• Arc sensors are partially obstructed.</li> <li>• Sensitivity setting is too high (reacting to ambient light).</li> <li>• Another welder's arc is triggering the helmet.</li> </ul>	<ul style="list-style-type: none"> <li>• Clean arc sensors.</li> <li>• Decrease sensitivity setting.</li> <li>• Adjust position or use a higher sensitivity setting if working near other arcs.</li> </ul>
Poor visibility through the lens.	<ul style="list-style-type: none"> <li>• Outer or inner protection lens is dirty or scratched.</li> <li>• Incorrect shade setting.</li> </ul>	<ul style="list-style-type: none"> <li>• Clean or replace protection lenses.</li> <li>• Adjust shade setting to appropriate level for the task.</li> </ul>
Helmet feels uncomfortable or unstable.	Headband not properly adjusted.	Adjust the top strap, width knob, and angle knob for a secure and comfortable fit.

## 8. SPECIFICATIONS

Detailed technical specifications for the HITBOX HT-111 Auto Darkening Welding Helmet.

Feature	Specification
Model	HT111
Viewing Area	3.66" x 1.69"
Arc Sensors	2 pcs
UV/IR Protection	DIN 16
Light State	DIN 4
Dark State	DIN 9-13
Switch Time	1/30000s (0.04ms)
Delay Control	0.1-1.0s
Power Supply	Li-battery & Solar
Battery Type	CR2450 (replaceable)
Battery Capacity	600mAh

Feature	Specification
Way to Shift Dark State	Outer Stepless Shift
Operating Temperature	-5°C to +55°C
Low Battery Tip	LED Indication
Grind Function	Yes
Welding Process Compatibility	MMA, MIG/MAG, TIG
Item Weight	13.8 ounces
Product Dimensions	11.02 x 9.84 x 11.02 inches

## 9. WARRANTY AND SUPPORT

HITBOX is committed to providing reliable welding products and customer satisfaction. If you encounter any quality problems with your HT-111 welding helmet, please contact our customer service team. We are dedicated to arranging an immediate replacement or a full refund as per our after-sale service policy. For support, please refer to the contact information provided with your product packaging or visit the official HITBOX website.

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This comprehensive test report details the performance and compliance of the HITBOX SYN MIG200 MIG/MAG inverter welder, tested by Dongguan NTEK Testing Service Co., Ltd. against CAN/CSA E60974-1-12 and ANSI/IEC 60974-1 standards.

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Comprehensive operation instruction manual for the HZXVOGEN MIG185II welding machine. Learn about features, applications, parameters, troubleshooting, and safety for this IGBT inverter welder.



### [HITBOX SYN MIG200 MIG/MAG Inverter Welder Test Report](#)

This comprehensive test report details the performance and compliance of the HITBOX SYN MIG200 MIG/MAG inverter welder, tested by Dongguan NTEK Testing Service Co., Ltd. against CAN/CSA E60974-1-12 and ANSI/IEC 60974-1 standards.