**HITBOX HBC65**

# HITBOX 65A Plasma Cutter HBC65

INSTRUCTION MANUAL

## 1. Safety Information

Before operating the HITBOX HBC65 Plasma Cutter, read and understand all safety warnings and operating instructions in this manual. Failure to follow these instructions may result in electric shock, fire, serious injury, or death.

- **Electric Shock:** This equipment uses high voltage. Always ensure proper grounding. Do not operate in wet conditions. Wear dry gloves and protective clothing.
- **Fumes and Gases:** Plasma cutting produces fumes and gases that can be hazardous to your health. Operate in a well-ventilated area. Use a fume extractor if necessary.
- **Fire and Explosions:** Sparks and hot metal can cause fires. Keep flammable materials away from the cutting area. Have a fire extinguisher readily available.
- **Arc Rays:** Arc rays can burn eyes and skin. Wear a welding helmet with appropriate shade, safety glasses, and protective clothing.
- **Noise:** Excessive noise can damage hearing. Wear ear protection.
- **Hot Parts:** Torch and workpiece can become extremely hot. Allow parts to cool before handling or wear heat-resistant gloves.

Always disconnect power before performing any maintenance or changing consumables.

## 2. Product Overview

### 2.1 Key Features

- **65A Plasma Cutter:** Capable of cutting up to 1 inch (25 mm) on 220V, and up to 5/16 inch (8 mm) clean cut on 110V.
- **Dual Voltage (110V/220V):** Automatic voltage adaptation for versatile use.
- **Non-Touch Pilot Arc:** Allows cutting rusty, painted, or dirty metal without direct torch contact, extending consumable life.
- **Non-HF Start:** Reduces electromagnetic interference, making it suitable for use with CNC systems.
- **60% Duty Cycle:** Provides reliable performance for extended cutting applications.
- **Smart Protection & Cooling:** Includes overvoltage, overcurrent, overheating, and overload protection. Features a smart fan that activates only when needed.
- **CNC Ready:** Designed for integration with CNC cutting tables.

- **2T/4T Modes:** Offers flexible control for short and long cuts.
- **Adjustable Post-Flow:** Cools the torch and extends consumable life.
- **Large Digital Display:** Provides clear and precise operation data.


Figure 1: Internal Protection Systems and Smart Fan Operation.

### 2.2 Package Contents

The following items are included with your HITBOX HBC65 Plasma Cutter:

- HITBOX HBC65 Plasma Cutter Unit

- Cutting Torch (13 ft)
- Earth Clamp (4.9 ft)
- Air Hose (6.5 ft)
- Hose Clamps (x2)
- Tip Nozzles (x2)
- Electrodes (x2)
- Plug Adaptor
- GX16-02 Plug
- GX16-04 Plug
- Air Regulator & Filter
- User Manual (this document)


Figure 2: Included Components in the Package.

### 2.3 Panel Introduction

Familiarize yourself with the controls and indicators on the plasma cutter's front and rear panels:

1. **Current (A)/Time (S) Display:** Shows the set cutting current or time.
2. **Air Pressure Display:** Indicates the current air pressure in BAR or PSI.
3. **Mode (Air Check/Cutting):** Selects between air check mode and cutting mode.
4. **Set Time (Pilot Air/Post Air):** Adjusts the duration for pilot arc air or post-flow air.

5. **Cutting Mode (2T/4T/Grid):** Selects the desired cutting trigger mode or grid cutting function.
6. **Status (Cutting Torch/Cutting):** Indicates the operational status of the torch or cutting process.
7. **Parameter Adjustment Button:** Used to modify current, time, and other settings.
8. **Control Signal:** Connection point for external control signals, such as from a CNC system.
9. **Arc Voltage Output:** Output for arc voltage monitoring, typically for CNC integration.
10. **Air Filter:** Component for filtering incoming air supply.

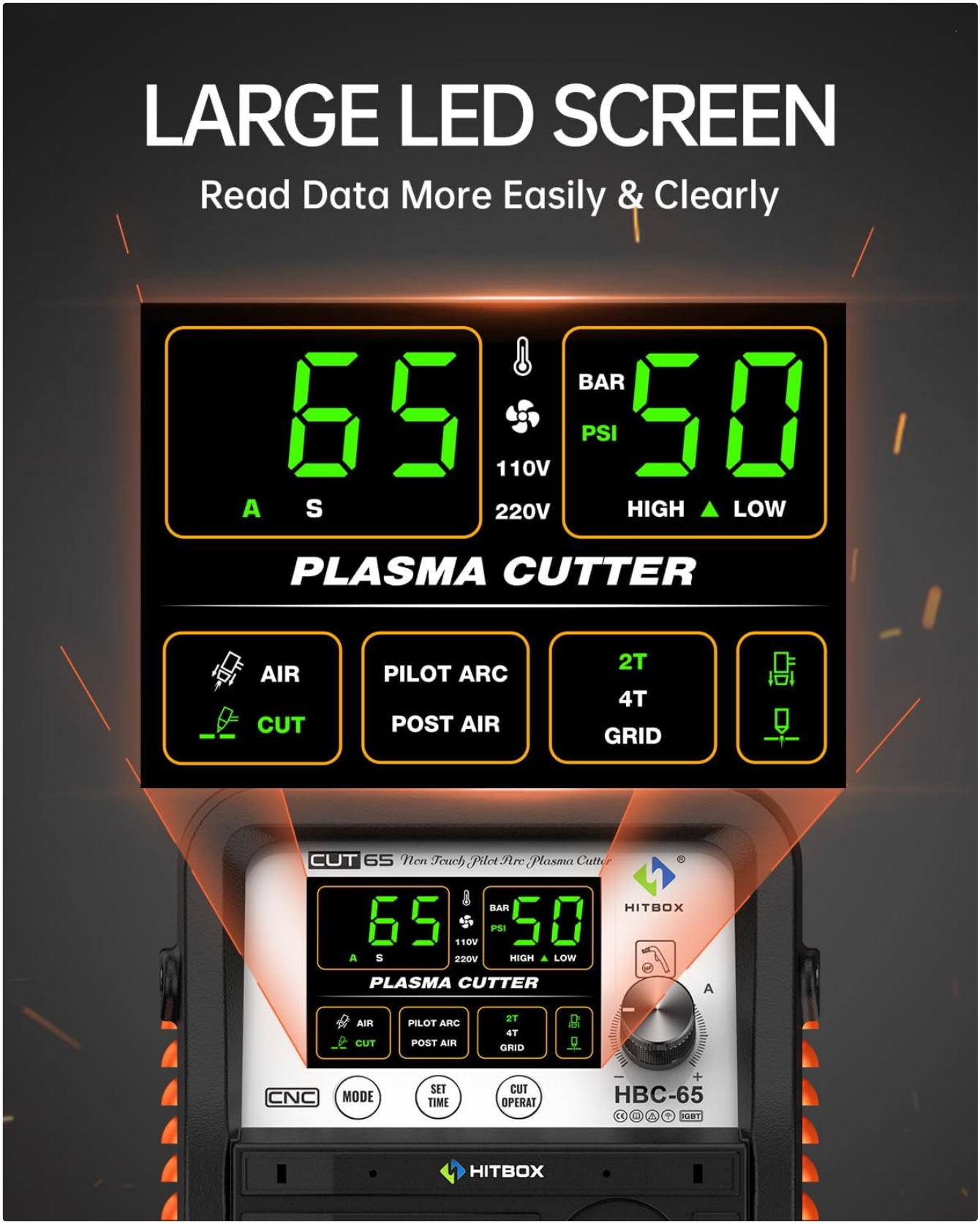


Figure 3: Large Digital Display for Easy Data Reading.


Figure 4: Panel Introduction with Labeled Components.

## 3. Technical Specifications

| Specification | Value |
|---|---|
| Model Number | HBC65 |
| Manufacturer | HITBOX |
| Input Voltage | 110V/220V Dual Voltage |
| Rated Output Current | 65A |
| Duty Cycle | 60% |
| 110V Clean Cut Thickness | 1/32" ~ 5/16" (1 ~ 8 mm) |
| 110V Maximum Cut Thickness | 19/32" ~ 5/16" (8 ~ 15 mm) |
| 220V Clean Cut Thickness | 1/32" ~ 3/8" (1 ~ 10 mm) |
| 220V Maximum Cut Thickness | 3/8" ~ 1" (10 ~ 25 mm) |
| Recommended Air Pressure | 50-60 PSI (Minimum ≥80 PSI supply) |
| Recommended Air Flow | ≥6.36 CFM |
| Item Weight | 13.96 lbs (Unit only) / 21.4 lbs (Package) |
| Package Dimensions | 19.6 x 14 x 8.8 inches |
| Power Source | AC |

## 4. Setup

### 4.1 Unpacking and Inspection

Carefully remove the plasma cutter and all accessories from the packaging. Inspect for any shipping damage. Report any damage to your supplier immediately.

### 4.2 Electrical Connection

The HBC65 is a dual-voltage machine. It automatically detects the input voltage (110V or 220V). Ensure the power outlet matches the machine's requirements and is properly grounded. Use the provided plug adaptor if necessary.

- Connect the power cord to a suitable power supply.
- Ensure the power switch on the machine is in the OFF position before connecting to power.

### 4.3 Air Compressor Connection

An external air compressor is required for operation. The compressor must be capable of supplying stable air pressure of at least 80 PSI and an air flow of at least 6.36 CFM. The recommended working pressure is 50-60 PSI.

1. Install the included air regulator and filter unit to the air inlet port on the rear of the plasma cutter.
2. Connect the air hose from your air compressor to the air regulator's inlet.
3. Secure all connections with the provided hose clamps to prevent air leaks.


Figure 5: Air Regulator and Filter Installation.

### 4.4 Torch and Ground Clamp Connection

1. Connect the plasma cutting torch to the designated port on the front panel. Ensure it is securely tightened.
2. Connect the earth clamp cable to the ground terminal on the front panel.
3. Attach the earth clamp securely to the workpiece or cutting table, ensuring good electrical contact.

## 5. Operating Instructions

### 5.1 Power On and Initial Checks

1. Turn on the main power switch on the plasma cutter.
2. The digital display will illuminate.
3. Set the air regulator to the recommended working pressure (50-60 PSI).
4. Press the 'Mode' button to select 'Air Check' to verify air flow through the torch.

### 5.2 Setting Cutting Parameters

Use the 'Parameter Adjustment Button' to set the desired cutting current (Amps) and other parameters based on the material thickness and type.

- **Current (A):** Adjust according to material thickness. Higher current for thicker materials.
- **Pilot Arc Duration:** Recommended 5-10 seconds for manual cutting, 3-5 seconds for CNC.

- **Post-Flow Time:** Recommended 2-15 seconds to cool the torch after cutting.

### 5.3 Cutting Modes (2T/4T)

- **2T (Two-Touch) Mode:** Press and hold the torch trigger to start the arc and cut. Release the trigger to stop. Suitable for short cuts.
- **4T (Four-Touch) Mode:** Press and release the trigger to start the arc and cut. Press and release again to stop. Reduces hand fatigue during long cuts.

### 5.4 Non-Touch Pilot Arc Operation

The HBC65 features a non-touch pilot arc, allowing you to start cutting without direct contact between the torch tip and the workpiece. This is particularly useful for cutting rusty, painted, or uneven surfaces.


Figure 6: Pilot Arc Cutting in Action with Sample Cuts.

### 5.5 Grid Cutting

The HBC65 supports grid cutting. Select the 'Grid' cutting mode on the panel. This feature allows for stable cutting on expanded metal or grates where continuous contact is not possible.


Figure 7: Demonstrating Grid Cutting.

### 5.6 CNC Integration

The HBC65 is CNC-ready. Connect your CNC cutting table's control signals to the designated ports on the plasma cutter (Control Signal and Arc Voltage Output). Refer to your CNC system's manual for specific connection and operation details.


Figure 8: Plasma Cutter Working with a CNC System.

## 6. Maintenance

Regular maintenance ensures optimal performance and extends the lifespan of your plasma cutter. Always disconnect the power supply before performing any maintenance.

### 6.1 Consumable Replacement

The torch consumables (tips, electrodes) wear out over time. Inspect them regularly and replace when worn to maintain cut quality and prevent damage to the torch.

- Unscrew the torch head to access the tip and electrode.
- Replace worn parts with new ones, ensuring they are correctly seated.
- Tighten the torch head securely.

### 6.2 Air Filter Maintenance

The air filter on the regulator unit should be checked periodically for moisture and debris. Drain any accumulated water and clean or replace the filter element as needed to ensure a clean, dry air supply.

### 6.3 General Cleaning

Keep the plasma cutter clean. Wipe down the exterior with a dry cloth. Ensure cooling vents are free from dust and obstructions. Do not use solvents or abrasive cleaners.

### 6.4 Storage

When not in use, store the plasma cutter in a clean, dry environment, away from direct sunlight and extreme temperatures.

## 7. Troubleshooting

This section provides solutions to common issues you might encounter. For problems not listed here, contact customer support.

| Problem | Possible Cause | Solution |
|---|---|---|
| No arc initiation | No power, insufficient air pressure, worn consumables, poor ground connection. | Check power supply. Ensure air pressure is 50-60 PSI. Replace tip/electrode. Secure ground clamp. |

| Problem | Possible Cause | Solution |
|---|---|---|
| Poor cut quality (rough, dross) | Incorrect cutting speed, wrong current setting, worn consumables, insufficient air pressure. | Adjust cutting speed. Verify current setting for material. Replace consumables. Check air pressure. |
| Air pressure warning on display | Air pressure too high or too low (below 30 PSI). | Adjust air regulator to recommended 50-60 PSI. Check air compressor output and hose connections. |
| Machine shuts off during operation | Overheating, overcurrent, overvoltage, or overload protection activated. | Allow machine to cool down. Check for proper ventilation. Reduce cutting current or duty cycle. Verify input voltage stability. |
| Pilot arc not stable | Worn electrode or tip, incorrect pilot arc duration setting. | Replace consumables. Adjust pilot arc duration (3-15s). |

## 8. Warranty and Support

The HITBOX HBC65 Plasma Cutter comes with a **2-Year Quality Service** warranty. This warranty covers defects in materials and workmanship under normal use.

For technical support, warranty claims, or service inquiries, please contact HITBOX customer service through the retailer where you purchased the product or visit the official HITBOX website for contact information.

When contacting support, please have your product model number (HBC65) and purchase date available.