

FLARING FC650D

FLARING Plasma Cutter Instruction Manual

Model: FC650D | Brand: FLARING

1. SAFETY INFORMATION

Always prioritize safety when operating the FLARING Plasma Cutter. Failure to follow safety guidelines can result in serious injury or property damage.

- **Personal Protective Equipment (PPE):** Always wear appropriate PPE, including a welding helmet with a suitable shade, flame-resistant clothing, heavy-duty gloves, and safety shoes.
- **Ventilation:** Ensure adequate ventilation in the work area to disperse fumes and gases produced during cutting. Avoid working in confined spaces.
- **Fire Hazards:** Keep flammable materials away from the cutting area. Have a fire extinguisher readily available. Sparks and molten metal can travel significant distances.
- **Electrical Safety:** Connect the machine to a properly grounded power supply. Do not operate in wet conditions. Inspect cables and connections for damage before each use.
- **Compressed Air:** Use clean, dry, oil-free compressed air. Ensure air pressure is within the recommended range.
- **Hot Surfaces:** The torch and workpiece will become extremely hot during operation. Allow them to cool before handling.

2. PRODUCT OVERVIEW

The FLARING FC650D is a versatile and portable 65 Amp plasma cutter designed for efficient and clean cutting of various metal types. It features advanced IGBT inverter technology and dual voltage capability for flexible power options.



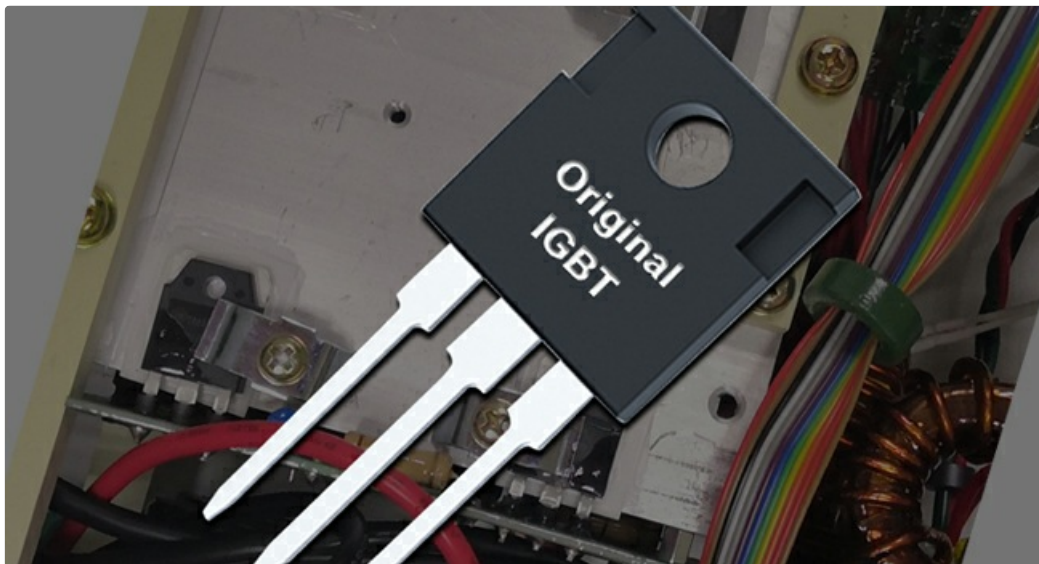
The FLARING FC650D Plasma Cutter and its included accessories.



Illustration of key features including large capacitance, dual voltage, strong heat dissipation, fast cutting, and ease of use.

Key Features:

- **High Efficiency Cutting:** Max severance cut up to 4/5" (20 mm), ideal clean cut 1/2" (12.7mm) with 60% duty cycle.
- **Dual Voltage:** Operates on both 120V and 240V (50/60 Hz) power sources without manual relinking.
- **Wide Application:** Suitable for cutting aluminum, magnesium alloys, brass, stainless steel, cast iron, steel, copper, titanium, and other metal materials.
- **Portable and Lightweight:** Weighs only 8.4 pounds, making it easy to transport.
- **Stable and Durable:** Features automatic arc control for consistent cutting, reducing user fatigue.



The plasma cutter utilizes an Original IGBT chip for reliable performance.



An efficient cooling fan ensures strong heat dissipation during operation.

3. COMPONENTS AND PANEL INTRODUCTION

Your FLARING FC650D Plasma Cutter comes with the following components:

- FC650D Plasma Cutter Unit
- PT31 Torch (9.9ft)
- Heavy-duty ground clamp with cable
- Air regulator and hose
- 7 Electrodes
- 7 Tips
- Gas Hose
- Conversion line 120V to 240V

UPGRADE FC650D ACCESSORIES

1 Extra 14pcs Consumables

2 Air Compressor Filter

3 Ground Clamp & Cable

4 Gas Hose

5 Conversion line 120v to 240v

6 Upgraded PT31 Torch Gun (9.9ft)



A visual representation of the upgraded FC650D accessories included with your plasma cutter.

Panel Introduction:

PANEL INTRODUCTION

1 LED Digital Display

2 Current Adjustable Knob

3 Torch Connector

4 Torch Switch

5 Earth Clamp Connector

6 Power Switch

7 Power Cable

8 Pressure Control Knob

9 Cooling Fan

10 Pressure Gauge



Detailed view of the plasma cutter's control panel and connections.

1. LED Digital Display

2. Current Adjustable Knob

3. Torch Connector

4. Torch Switch

5. Earth Clamp Connector

6. Power Switch

7. Power Cable

8. Pressure Control Knob

9. Cooling Fan

10. Pressure Gauge

4. SETUP

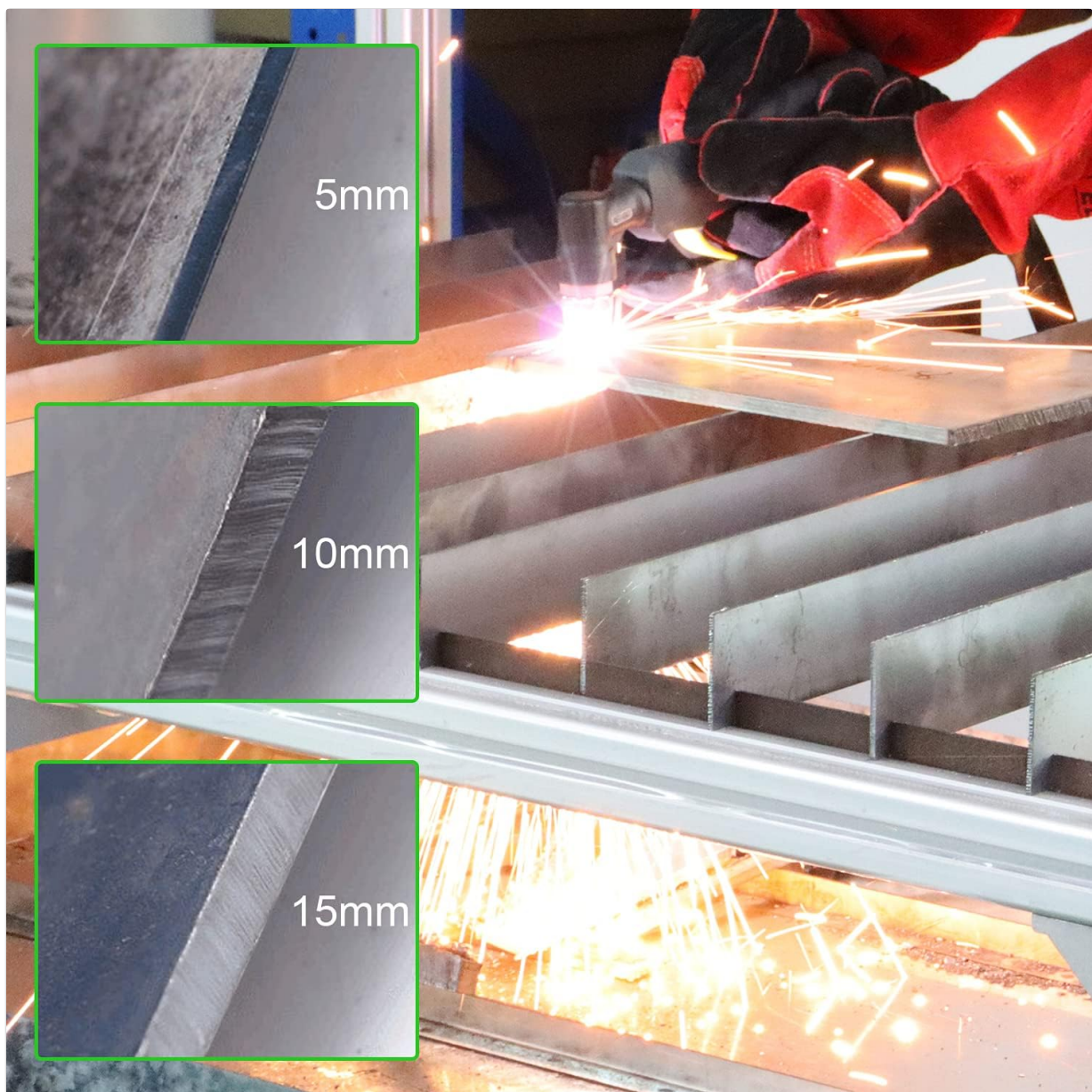
1. **Power Connection:** Connect the power cable to a suitable 120V or 240V (50/60 Hz) power outlet. The machine automatically detects the voltage. Use the provided conversion line if necessary.

2. **Air Supply Connection:** Connect your compressed air source to the air regulator. Attach the air hose from the regulator to the plasma cutter's air inlet. Ensure the air supply is clean, dry, and oil-free. Set the air pressure using the Pressure Control Knob and monitor with the Pressure Gauge.
3. **Torch Connection:** Connect the PT31 Torch to the Torch Connector on the front panel. Ensure it is securely fastened.
4. **Ground Clamp Connection:** Attach the heavy-duty ground clamp to the Earth Clamp Connector. Securely clamp the ground clamp to the workpiece or a clean, bare metal part of the work table, ensuring good electrical contact.
5. **Consumables Check:** Verify that the torch tip and electrode are correctly installed and in good condition. Replace if worn.

5. OPERATING INSTRUCTIONS

Follow these steps for effective and safe plasma cutting:

1. **Power On:** Flip the Power Switch to the 'ON' position. The LED Digital Display will illuminate.
2. **Adjust Current:** Use the Current Adjustable Knob to set the desired cutting current (Amps) based on the material type and thickness. Refer to the specifications table for recommended settings.
3. **Adjust Air Pressure:** Ensure the air pressure is set correctly for optimal cutting performance. The recommended range is typically indicated on the machine or in the specifications.
4. **Prepare Workpiece:** Ensure the workpiece is clean and free of rust, paint, or other contaminants that could interfere with the arc.
5. **Initiate Arc:** Position the torch nozzle close to the edge of the workpiece. Press the Torch Switch to initiate the pilot arc.
6. **Begin Cutting:** Once the pilot arc is established, move the torch steadily across the material. Maintain a consistent travel speed and standoff distance for a clean cut. The machine's automatic arc control helps maintain the arc, even over expanded metal.
7. **Cutting Various Materials:** The FC650D is capable of cutting a wide range of metals, including steel, stainless steel, aluminum, copper, brass, and cast iron. Adjust current and speed accordingly.



Examples of plasma cutting on different metal thicknesses (5mm, 10mm, 15mm).



WIDE APPLICATION

- | | |
|------------------|---------------|
| 1.Metal | 5.stainless |
| 2.Steels | 6.alloy steel |
| 3.Aluminum plate | 7.mild steel |
| 4.iron | 8.copper |

The plasma cutter is suitable for a wide range of applications, including various metals and alloys.

Demonstration Video:

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This video demonstrates the FLARING Touch Arc Plasma Cutter in action, specifically cutting aluminum sheet metal. It showcases the machine's capability and the cutting process.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your plasma cutter.

- **Consumable Replacement:** Regularly inspect and replace worn torch tips and electrodes. Worn consumables can lead to poor cut quality and damage to the torch.
- **Air Filter/Regulator:** Periodically check and drain any moisture from the air filter/regulator. Ensure the filter element is clean to prevent contaminants from entering the torch.
- **Cleaning:** Keep the machine clean and free of dust and metal particles. Use compressed air to blow out internal components if necessary, ensuring the machine is unplugged.
- **Cable Inspection:** Inspect all cables (power, torch, ground) for cuts, abrasions, or loose connections.

Repair or replace damaged cables immediately.

7. TROUBLESHOOTING

If you encounter issues with your plasma cutter, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No Arc / Arc Fails to Start	No power, poor ground connection, worn consumables, insufficient air pressure.	Check power supply, ensure ground clamp is secure on bare metal, replace tip/electrode, verify air pressure.
Poor Cut Quality / Rough Cut	Worn consumables, incorrect cutting speed, incorrect current setting, improper standoff distance, contaminated air.	Replace consumables, adjust travel speed, adjust current, maintain correct torch distance, check air filter/dryer.
Machine Overheats	Exceeding duty cycle, blocked cooling vents, high ambient temperature.	Allow machine to cool down, ensure proper ventilation around the unit, operate within duty cycle limits.
Air Leaks	Loose air hose connections, damaged O-rings.	Tighten connections, inspect and replace O-rings if damaged.

If problems persist after attempting these solutions, please contact FLARING customer support.

8. SPECIFICATIONS

Detailed technical specifications for the FLARING FC650D Plasma Cutter:

SPECIFICATION

FC650D									
		EN 60974-1							
		U ₁ =120V 15A/86V-35A/94V U ₁ =240V 15A/86V-65A/106V							
		U ₀ =288V	X(%)	U ₁ =120V~			U ₁ =240V~		
				30	60	100	20	60	100
		I ₂ (A)	35	25	19.2	65	37.4	29	
		U ₂ (V)	94	90	87.7	106	94.8	91.6	
	U ₁ =120V~	I ₁ max=35A		I ₁ eff=19A					
	U ₁ =240V~	I ₁ max=36.3A		I ₁ eff=16.3A					
IP21S		F							







Official specification chart for the FC650D model.

Attribute	Value
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Attribute	Value
Manufacturer	FLARING
Part Number	FC650D
Item Weight	15.17 pounds
Package Dimensions	16 x 12.75 x 10.75 inches
Item Model Number	FC650D
Pattern	FC650D-65A-Touch ARC
Power Source	AC
Voltage	120/240 Volts
Item Package Quantity	1
Included Components	7 electrodes, 7 tips, Air regulator and hose, FC650D PLASMA CUTTER, Heavy-duty ground clamp with cable, PT31 Torch
Batteries Included?	No
Batteries Required?	No
Date First Available	April 25, 2024

9. WARRANTY AND SUPPORT

For information regarding product warranty, technical support, or service, please refer to the documentation provided with your purchase or contact FLARING customer service directly. You can often find contact details on the manufacturer's official website or through your point of purchase.

 <p>Instructions</p> <p>LASER Flaring Tool Kit</p> <p>Introduction The Laser Flaring Tool Kit is a comprehensive yet simple to use kit suitable for cutting and flaring copper, brass and pre-welded aluminum tubing. You can use it to cut tube from down to 1/8" diameter up to 3/8" (10-15.88 mm) and to produce high quality 45° single or double, cone or bevel, flares on pipe from 1/8" to 3/8" (10-15.88 mm) diameter.</p> <p>We cannot consider a warranty claim for tool failure if you have used the kit in any way other than that described in these instructions, or if you have used it for any other purpose than that for which it is intended. No one can be held responsible in any way for personal injury caused while using the kit.</p> <p>IMPORTANT: Always wear eye and hand protection when using the Laser Flaring Tool Kit.</p>	<p>Laser Flaring Tool Kit 2943: Instructions and Usage Guide</p> <p>Comprehensive guide to using the Laser Flaring Tool Kit (Model 2943) for creating single and double flares on copper, brass, and aluminum tubing. Includes kit contents, preparation, and step-by-step instructions.</p>
 <p>ATD ATD-5478 Master Flaring and Tubing Tool Set Owner's Manual</p> <p>Introduction The ATD-5478 Master Flaring and Tubing Tool Set is a comprehensive yet simple to use kit suitable for cutting and flaring copper, brass and pre-welded aluminum tubing. You can use it to cut tube from down to 1/8" diameter up to 3/8" (10-15.88 mm) and to produce high quality 45° single or double, cone or bevel, flares on pipe from 1/8" to 3/8" (10-15.88 mm) diameter.</p> <p>We cannot consider a warranty claim for tool failure if you have used the kit in any way other than that described in these instructions, or if you have used it for any other purpose than that for which it is intended. No one can be held responsible in any way for personal injury caused while using the kit.</p> <p>IMPORTANT: Always wear eye and hand protection when using the ATD-5478 Master Flaring and Tubing Tool Set.</p>	<p>ATD-5478 Master Flaring and Tubing Tool Set - Owner's Manual & Instructions</p> <p>Comprehensive owner's manual and instructions for the ATD-5478 Master Flaring and Tubing Tool Set, detailing features, included components, and procedures for double and ISO bubble flares, tubing bending, and warranty information.</p>
 <p>PARKSIDE Tube Flaring Tool</p> <p>Introduction The PARKSIDE Tube Flaring Tool is a comprehensive yet simple to use kit suitable for cutting and flaring copper, brass and pre-welded aluminum tubing. You can use it to cut tube from down to 1/8" diameter up to 3/8" (10-15.88 mm) and to produce high quality 45° single or double, cone or bevel, flares on pipe from 1/8" to 3/8" (10-15.88 mm) diameter.</p> <p>We cannot consider a warranty claim for tool failure if you have used the kit in any way other than that described in these instructions, or if you have used it for any other purpose than that for which it is intended. No one can be held responsible in any way for personal injury caused while using the kit.</p> <p>IMPORTANT: Always wear eye and hand protection when using the PARKSIDE Tube Flaring Tool.</p>	<p>PARKSIDE Tube Flaring Tool: Instructions and Warranty</p> <p>A comprehensive guide to using the PARKSIDE tube flaring tool for creating single and double flares. This document provides step-by-step instructions, details on preparation, operation, and warranty information, ensuring proper use and maintenance of the tool.</p>
 <p>NAVAC NEF6LM BreakFree Power Flaring Tool User Manual</p> <p>Introduction The NAVAC NEF6LM BreakFree Power Flaring Tool is a comprehensive yet simple to use kit suitable for cutting and flaring copper, brass and pre-welded aluminum tubing. You can use it to cut tube from down to 1/8" diameter up to 3/8" (10-15.88 mm) and to produce high quality 45° single or double, cone or bevel, flares on pipe from 1/8" to 3/8" (10-15.88 mm) diameter.</p> <p>We cannot consider a warranty claim for tool failure if you have used the kit in any way other than that described in these instructions, or if you have used it for any other purpose than that for which it is intended. No one can be held responsible in any way for personal injury caused while using the kit.</p> <p>IMPORTANT: Always wear eye and hand protection when using the NAVAC NEF6LM BreakFree Power Flaring Tool.</p>	<p>NAVAC NEF6LM BreakFree® Power Flaring Tool User Manual</p> <p>User manual for the NAVAC NEF6LM BreakFree® Power Flaring Tool, providing instructions, technical specifications, troubleshooting, and safety guidelines for HVACR and soft copper tubing.</p>
 <p>SEALEY AK5063 Pipe Flaring Kit User Manual</p> <p>Introduction The Sealey AK5063 Pipe Flaring Kit is a comprehensive yet simple to use kit suitable for cutting and flaring copper, brass and pre-welded aluminum tubing. You can use it to cut tube from down to 1/8" diameter up to 3/8" (10-15.88 mm) and to produce high quality 45° single or double, cone or bevel, flares on pipe from 1/8" to 3/8" (10-15.88 mm) diameter.</p> <p>We cannot consider a warranty claim for tool failure if you have used the kit in any way other than that described in these instructions, or if you have used it for any other purpose than that for which it is intended. No one can be held responsible in any way for personal injury caused while using the kit.</p> <p>IMPORTANT: Always wear eye and hand protection when using the Sealey AK5063 Pipe Flaring Kit.</p>	<p>Sealey AK5063 Pipe Flaring Kit User Manual and Instructions</p> <p>Comprehensive instructions for using the Sealey AK5063 Pipe Flaring Kit, detailing safety precautions, specifications, and operation for creating single and double flares on copper, brass, and aluminum tubing.</p>
 <p>NAVAC NEF6LM BreakFree Power Flaring Tool User Manual</p> <p>Introduction The NAVAC NEF6LM BreakFree Power Flaring Tool is a comprehensive yet simple to use kit suitable for cutting and flaring copper, brass and pre-welded aluminum tubing. You can use it to cut tube from down to 1/8" diameter up to 3/8" (10-15.88 mm) and to produce high quality 45° single or double, cone or bevel, flares on pipe from 1/8" to 3/8" (10-15.88 mm) diameter.</p> <p>We cannot consider a warranty claim for tool failure if you have used the kit in any way other than that described in these instructions, or if you have used it for any other purpose than that for which it is intended. No one can be held responsible in any way for personal injury caused while using the kit.</p> <p>IMPORTANT: Always wear eye and hand protection when using the NAVAC NEF6LM BreakFree Power Flaring Tool.</p>	<p>NAVAC NEF6LM BreakFree Power Flaring Tool User Manual</p> <p>User manual for the NAVAC NEF6LM BreakFree Power Flaring Tool, detailing its structure, technical parameters, operation instructions, troubleshooting, and parts list.</p>