

*Eastwood*

**DO THE JOB RIGHT.**

Part #20062

# **VERSA-CUT 20 PLASMA CUTTER**

## **ASSEMBLY & OPERATING INSTRUCTIONS**



The **Eastwood-designed Versa-Cut Plasma Cutter** is a compact, lightweight yet powerful Plasma Cutter capable of cutting a range of material from the thinnest steel and aluminum up to full 1/8" thick with ease and precision. A convenient Pilot Arc feature allows for instant plunge cutting.

## STATEMENT OF LIMITED WARRANTY

The Eastwood Company (hereinafter "Eastwood") warrants to the end user (purchaser) of all new welding and cutting equipment (collectively called the "products") that it will be free of defects in workmanship and material. This warranty is void if the equipment has been subjected to improper installation, improper care or abnormal operations.

### WARRANTY PERIOD:

All warranty periods begin on the date of purchase from Eastwood. Warranty Periods are listed below, along with the products covered during those warranty periods:

### 3 Year Warranty on Material, Workmanship, and Defects:

- Eastwood Versa-Cut Plasma Cutter

Items not covered under this warranty: Electrodes, nozzles, diffuser, and external nozzle.

All other components are covered by the warranty and will be repaired or replaced at the discretion of Eastwood.

### 2 Years:

- All Welding Helmets.

### CONDITIONS OF WARRANTY TO OBTAIN WARRANTY COVERAGE:

Purchaser must first contact Eastwood at 1-800-343-9353 for an RMA# before Eastwood will accept any welder returns.

Final determination of warranty on welding and cutting equipment will be made by Eastwood.

### WARRANTY REPAIR:

If Eastwood confirms the existence of a defect covered under this warranty plan, Eastwood will determine whether repair or replacement is the most suitable option to rectify the defect. At Eastwood's request, the purchaser must return, to Eastwood, any products claimed defective under Eastwood's warranty.

### FREIGHT COSTS:

The purchaser is responsible for shipment to and from Eastwood.

### WARRANTY LIMITATIONS:

EASTWOOD WILL NOT ACCEPT RESPONSIBILITY OR LIABILITY FOR REPAIRS UNLESS MADE BY EASTWOOD. EASTWOOD'S LIABILITY UNDER THIS WARRANTY SHALL NOT EXCEED THE COST OF CORRECTING THE DEFECT OF THE EASTWOOD PRODUCT. EASTWOOD WILL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (SUCH AS LOSS OF BUSINESS, ETC.) CAUSED BY THE DEFECT OR THE TIME INVOLVED TO CORRECT THE DEFECT. THIS WRITTEN WARRANTY IS THE ONLY EXPRESS WARRANTY PROVIDED BY EASTWOOD WITH RESPECT TO ITS PRODUCTS. WARRANTIES IMPLIED BY LAW SUCH AS THE WARRANTY OF MERCHANTABILITY ARE LIMITED TO THE DURATION OF THIS LIMITED WARRANTY FOR THE EQUIPMENT INVOLVED. THIS WARRANTY GIVES THE PURCHASER SPECIFIC LEGAL RIGHTS. THE PURCHASER MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

## SPECIFICATIONS

Amperage Output Range	Output Voltage	Weight	Duty Cycle	Post Flow	Pilot Arc Current	Pilot Arc Time	Torch Type	Overall Dimensions	Electrical Input	Air Requirements
15 ±1 Amps	85.9 V	14.75 Lbs	40% @ 15 A	20 sec. ±2 sec.	14±1 Amp	3 sec. ±.5 sec.	Trafimet S25K, Electrode Size = .65mm	19.5" (495mm) L 11.5" (292mm) W 13.5" (343mm) H	20 Amp, 120 VAC, 60 Hz	3 CFM @ 30 psi

## DUTY CYCLE

The rated Duty cycle refers to the amount of plasma cutting that can be done within a measured amount of time. The Eastwood Cut-20 Plasma Cutter has a duty cycle of 40% at 15 Amps.

It is easiest to look at your cutting time in blocks of 10 Minutes and the Duty Cycle being a percentage of that 10 Minutes. If cutting at 15 Amps with a 40% Duty Cycle, within a 10 Minute block of time you can cut for 4 Minutes with 6 Minutes of cooling time allowed for the cutter.

# SAFETY INFORMATION

In this manual, on the labeling, and all other information provided with this product:

## **DANGER**

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

## **WARNING**

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

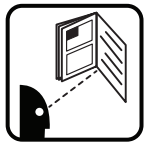
## **CAUTION**

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

## **NOTICE**

NOTICE is used to address practices not related to personal injury.

# SAFETY INFORMATION



## **READ INSTRUCTIONS!**

- Thoroughly read and understand this instruction manual before using the Plasma Cutter.
- Keep this instruction booklet.



## **WARNING** **ELECTRIC SHOCK CAN KILL!**

- Improper use of a Plasma Cutter can cause electric shock, injury and death! Read all precautions described in this manual to reduce the possibility of electric shock.
- Do not touch any electrical components that may be live.
- Separate yourself from the Plasma Cutter circuit by using insulating mats to prevent contact from the work surface.
- The Plasma Cutter power switch is to be in the OFF position and the power supply is to be disconnected when performing any maintenance or consumable changes.
- Always wear dry, protective clothing and leather welding gloves and insulated footwear.
- Always operate the Plasma Cutter in a clean, dry, well ventilated area. Do not operate the Plasma Cutter in humid, wet, rainy or poorly ventilated areas.
- Be sure that the work piece is properly supported and grounded prior to beginning an electric Plasma Cutter operation.
- The electrode and work (or ground) circuits are electrically “hot” when the welder is on. Do not touch these “hot” parts with your bare skin or wet clothing.
- Disconnect from power supply before assembly, disassembly or maintenance of the torch or contact tip.
- Always attach the ground clamp to the piece to be welded and as close to the weld area as possible. This will give the least resistance and best cut.



## **WARNING** **ELECTROMAGNETIC FIELDS MAY BE DANGEROUS!**

- Anyone with a cardiac pacemaker or other implanted medical device should stay away from any plasma cutting before consulting a doctor. Powerful electromagnetic fields emitted by Plasma Cutters can interfere with operation, causing malfunction and possible death.
- Exposure to electromagnetic fields while plasma cutting may have other health effects which are not known.

# SAFETY INFORMATION



## **⚠ CAUTION FUMES AND CUTTING GASES CAN BE DANGEROUS!**

- Do not breathe fumes that are produced by the cutting operation. These fumes are dangerous and can cause serious respiratory damage. Keep your head and face out of cutting fumes.
- Always work in a properly ventilated area. Wearing an OSHA-approved respirator when cutting is recommended!
- Never cut coated materials including but not limited to: cadmium plated, galvanized, lead based paints.



## **⚠ CAUTION CUTTING SPARKS CAN CAUSE FIRE OR EXPLOSION!**

- Do not operate Plasma Cutter in areas where flammable or explosive vapors are present.
- Always keep a fire extinguisher nearby while cutting.
- Use welding blankets to protect painted surfaces, dash boards, engines, etc.
- Ensure power supply has properly rated wiring to handle power usage.
- Do not use on or near combustible surfaces.
- Remove all flammable items within 35 feet of the cutting arc.



## **⚠ WARNING ARC RAYS CAN BURN EYES AND SKIN!**

- Use a shield with the proper filter (a minimum of #11) to protect your eyes from sparks and the rays of the arc when cutting or when observing open arc cutting (see ANSI Z49.1 and Z87.1 for safety standards).
- Use suitable clothing made from durable flame-resistant material to protect your skin. Protect nearby individuals with a non-flammable barrier.
- If other persons are in the area of cutting use welding screens to protect bystanders from sparks and arc rays.



## **⚠ CAUTION HOT METAL WILL BURN!**

- Electric cutting operations cause sparks and heat metal to temperatures that will cause severe burns!
- Use protective gloves and clothing when performing any Plasma Cutter operations. Always wear long pants, long-sleeved shirts and leather welding gloves.
- Make sure that all persons in the cutting area are protected from heat, sparks and ultraviolet rays.
- Use additional face shields and flame resistant barriers as needed.
- Never touch work piece until it has completely cooled.



## **⚠ CAUTION FLYING METAL CHIPS CAN CAUSE INJURY!**

Cutting, brushing, hammering, chipping, and grinding can cause flying metal chips and sparks. To prevent injury wear approved safety glasses.

# REQUIRED ITEMS

Before you begin using The Eastwood Versa-Cut 20 Plasma Cutter make sure you have the following:

- A dedicated 20 Amp 120V circuit.
- A clean, dry air supply source for the torch. An air compressor capable of delivering 3 CFM @ 30 psi is required. You can even use a portable compressed air tank with regulator.
- The air supply must be completely free of moisture. The use of a moisture trap such as Rockwood Two-Stage Air Filter/Dryer System (#31726) or equivalent is strongly recommended.
- Eastwood recommends at a minimum a properly grounded 110-120 VAC 60Hz, 20 Amp circuit. **NOTE:** Unit must be grounded to work properly and safely!
- A clean, safe, well-lit, dry, and well-ventilated work area.
- A non-flammable, long sleeve shirt or jacket.
- Heavy Duty Welding Gloves (#12590 or equivalent).
- Auto Darkening Welding Mask (#21483) or glasses (#13948) to provide eye protection during cutting operations.

# POWER REQUIREMENTS

- The Eastwood Versa-Cut 20 Plasma Cutter is designed to operate on 110-120 VAC, and requires a proper 20 Amp circuit.
- Use of an extension cord is not recommended. If an extension cord is required, do not exceed 25' [7.5m]. All extension cords must be UL approved, 3 conductor grounded, 14 AWG or greater.

# BEFORE YOU BEGIN

Remove all items from the box. Compare with list below to make sure unit is complete.

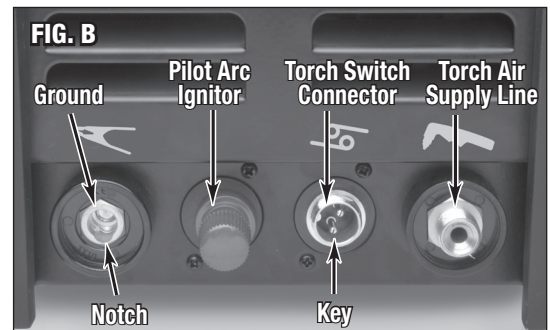
- |   |                         |
|---|-------------------------|
| (1) Eastwood Versa-Cut 20 Plasma Cutter                 | (1) Instruction Booklet |
| (1) Trafimet Style S25K Torch with 20' [6m] Supply Line | (1) Extra Electrode     |
| (1) 10' [3m], 120 VAC, 14 gauge grounded Power Cord     | (1) Extra Nozzle        |
| (1) 10' [3m], Ground Lead and Clamp                     |                         |

# SET-UP

## **⚠ WARNING** ELECTRIC SHOCK CAN KILL!

Disconnect from power supply before assembly or maintenance

- After a proper 20 Amp, 120 VAC, 60 Hz current source is determined, be sure the appropriate circuitry and breakers are in place.
- DO NOT plug unit in at this time and make sure the Power Switch located on the upper right corner of The Rear Panel is in the OFF position (**FIG. A**).
- Install a quick-disconnect air fitting compatible with your air line into the 1/4" NPT fitting located on the upper left corner of the Rear Panel (**FIG. A**).
- Attach the Torch Air Supply Line to the lower right corner of the Front Panel by threading in place. Note: "Finger-Tighten" securely but do not over tighten. (**FIG. B&C**).
- Attach the Torch Switch Connector Cable to the Multi-Pin Connector located second from right of the Lower Front Panel (**FIG. B&C**). Note that the semi-circular notch of the inner female plug must align with the semi-circular male key of the metal shell. Push plug securely in place then thread the metal locking ring in onto the metal shell. "Finger-Tighten" securely but do not over tighten.
- Remove the Red threaded knob (second from left of the Lower Front Panel) and place the terminal of the red lead over the post, then replace the knob and tighten. (**FIG. B&C**) "Finger-Tighten" securely but do not over tighten.
- Attach the Ground Lead located at the Lower Left Corner of the Front Panel (**FIG. B&C**). Note that the semi-circular notch of the inner female plug must align with the semi-circular male key of the metal shell. Push plug securely in place then rotate the plug 1/2 turn in a Clockwise direction until it locks.



## OPERATION

1. Before attempting to use this unit on an actual project or object of value, practice on a similar material as there is a moderate learning curve necessary before achieving proficiency in cutting.
2. Set the Air Pressure to the appropriate pressure with the Knob located at the upper right side of the front panel (**FIG. D**).  
To set: Pull the Knob Shell outward to unlock, rotate it Clockwise to raise pressure and Counter-Clockwise to lower pressure. Push Knob Shell inward to lock in place.
3. The Pressure Indicating Gauge is located at the upper left side of the front panel, next to the Air Pressure Knob and is set at 30 PSI depending on metal composition and thickness (**FIG. D**).

### **⚠ WARNING** ARC RAYS CAN BURN SKIN AND EYES!

- Use a shield with the proper filter (a minimum of #5) to protect your eyes from sparks and the rays of the arc when cutting or when observing open arc cutting (see ANSI Z49.1 and Z87.1 for safety standards).
- Use suitable clothing made from durable flame-resistant material to protect your skin. Protect nearby individuals with a non-flammable barrier.

### **⚠ WARNING** CUTTING SPARKS CAN CAUSE FIRE OR EXPLOSION!

- Do not operate Plasma Cutter in areas where flammable or explosive vapors are present.
  - Always keep a fire extinguisher nearby while cutting.
  - Use welding blankets to protect painted surfaces, dash boards, engines, etc.
  - Ensure power supply has properly rated wiring to handle power usage.
  - Do not use on or near combustible surfaces.
  - Remove all flammable items within 35 feet of the cutting arc.
4. Place the Ground Cable Clamp on a clean, bare area of your workpiece. Scrape, wire brush, file or grind a bare area if necessary to achieve a good ground.
  5. Make sure the Tip is not making contact with anything or anyone then set the "ON/OFF" switch to the "ON" position. The GREEN "Power" indicator lamp should illuminate.
  6. The best results are achieved by holding the Tip at a 90° angle to the desired cut line of your work piece (**FIG. E**).
  7. To begin cutting, depress the Torch Trigger to ignite the pilot arc. The RED "Work" indicator lamp should illuminate. The tip of the torch must be touching or within a short distance to the work piece to begin the cut. **DANGER:** Plasma Arc consists of superheated, electrified air which will quickly and violently vaporize almost anything in its path.
  8. With practice, you will be able to exercise precise control over this extremely powerful device, harnessing its energy to create clean, precise and intricate cuts in many forms of steel and iron up to 1/8" thick.
  9. While you practice, experiment with different speeds. You will find that thinner materials will allow a faster motion while thicker materials will require a slower motion to achieve a through cut.
  10. A good form of practice is to attempt a series of straight lines while creating the cleanest edge possible with a minimum of molten material remaining on the cut edge. This minimizes the cleanup of the edge with a grinder or file. Another excellent technique is to practice cutting your initials out of a piece of steel.



## Versa-Cut 20 Plasma Cutter - Air Pressure and Amperage Settings\*

Metal Thickness	1/32"	1/16"	3/32"	1/8"
Amps	15	15	15	15
PSI	30	30	30	30

\*NOTE: These settings are guidelines only and may need to be adjusted based on your techniques and type of metal being cut.

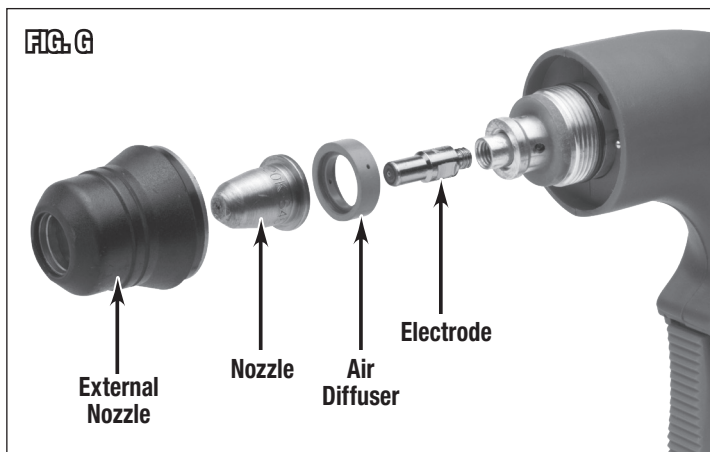
## POWER UNIT CARE & MAINTENANCE

- The Versa-Cut 20 Plasma Cutter has a built-in "last-chance" moisture separator which requires draining each time you have completed work with the unit. This feature is located on the underside rear corner and is drained by keeping the unit level and gently pushing in on the drain fitting while air is connected (**FIG. F**).
- Constantly inspect the torch tip for excessive erosion, molten metal accumulation burning. If damaged, it must be replaced.
- Before each use, inspect ALL electrical connections, cables, supply line, torch, air supply, housing and controls for damage. If any damage or wear is noted, DO NOT USE THE UNIT.
- Always store the unit in a safe, clean and dry environment.



## TORCH MAINTENANCE

The Eastwood Versa-Cut 20 Plasma Cutter has a number of consumable parts that will need to be replaced over time. If wear or slag build up is noticed on any of the torch components, replace them immediately to avoid damage to the torch. Worn components will also contribute to poor cutting and difficult arc starting. See the torch components (**FIG. G**) exploded view for a reference of all of the components and the assembly order.



# TROUBLESHOOTING

- **The entire unit shuts off during use, switch is in the “on” position, the AMBER “Protection” lamp is illuminated:**
  - The unit has overheated from exceeding the duty cycle and the internal thermal protection circuitry has been activated. Turn the main power switch off, wait several minutes to allow cooling then turn power switch back on. The unit is ready for service.
- **The power switch is on, the GREEN “Power” indicator light is illuminated, the fan is running however when the Torch activation button is depressed, there is no sound from the Pilot Arc Igniter and there is no air flow:**
  - Check all connections. A loose connection will prevent Torch activation.
  - Check for damaged lines, Torch or Torch Tip.
  - Make sure there is sufficient air flow & pressure (30 PSI).
- **The power switch is on, the GREEN “Power indicator light is illuminated, the fan is running however when the Torch activation button is depressed, there is air flow through the torch but no sound from the Pilot Arc Igniter:**
  - Check all connections. A loose connection will prevent Torch activation.
  - Check for damaged lines, Torch or Torch Tip.
  - Inspect the Torch Tip for damage, excessive molten material build-up or excessive burning. Replace if necessary.
- **The power switch is on, the GREEN “Power indicator light is illuminated, the fan is running and when the Torch activation button is depressed, there is airflow through the torch, the Pilot Arc Igniter is activating however a plasma arc cannot be started:**
  - Check all connections. A loose connection will prevent Torch activation.
  - Check for damaged lines, Torch or Torch Tip.
  - Inspect the Torch Tip for damage, excessive molten material build-up or excessive burning. Replace if necessary.
  - Input voltage is too low (below 110V).
  - Input voltage is too high (above 137V).
  - Air pressure is too low or too high. Adjust the PS to match metal thickness.
- **The Pilot Arc is spattering**
  - Lower air pressure to match metal thickness.
  - Replace the nozzle and electrode in the torch.

# REPLACEMENT ITEMS:

- #20614 Plasma Cutter Torch Assembly
- #21840 Electrode (5pk)
- #21841 Nozzle (10pk)
- #21842 External Nozzle (2pk)
- #21843 Air Diffuser (2pk)

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**If you have any questions about the use of this product, please contact**

The Eastwood Technical Assistance Service Department: 800.343.9353 >> email: tech@eastwood.com

PDF version of this manual is available at eastwood.com

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