Eastwood®

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Item #14099

VERSA-CUT 60 PLASMA CUTTER

SERVICE MANUAL

The **EASTWOOD-DESIGNED VERSA-CUT 60 PLASMA CUTTER** is your smartest choice for making clean, fast cuts through steel, stainless or aluminum as thin as 24-gauge, or as thick as 7/8". Compared to mechanical cutting, our Versa-Cut 60 Plasma Cutter works significantly faster, and makes curved and intricate cuts more easily and precisely. A built in pilot arc system allows for instant arc striking and ease of use when cutting rusty material and expanded metal. The internal moisture separator helps to ensure clean dry air gets to the torch to give you consistent results.

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 60 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 1-800-345-1178 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	Overall Dimensions	Electrical Input	Air Requirements
20-60 Amps	104 V	42 Lbs.	60% @ 60 A	17.7" (450mm) x 7.5" (190mm) x 13.6" (345mm)	50-60Hz 220-240 VAC	5-7 CFM @ 60 psi

DUTY CYCLE

The rated Duty Cycle refers to the amount of cutting that can be done within an amount of time. 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 60 Amps with a 60% Duty Cycle, within a 10 Minute block of time you can cut for 6 Minutes with 4 Minutes of cooling for the cutter. To increase the duty cycle you can turn down the Amperage Output control.

SAFETY INFORMATION

READ AND UNDERSTAND ALL INSTRUCTIONS AND PRECAUTIONS BEFORE PROCEEDING.
This unit emits powerful high current and extreme heat which can cause severe burns, dismemberment, electrical shock and death. Eastwood shall not be held liable for consequences due to deliberate or unintentional misuse of this product.

IMPORTANT NOTE
These instructions are intended only to provide the user with some familiarity of the Eastwood Cut 60 Plasma Cutter. Electric arc cutting is a highly complex procedure with many variables. If you have no experience with electric arc cutting, it is extremely important to seek the advice of someone experienced in electric arc cutting for instruction, enroll in a local technical school welding course or study a comprehensive how-to DVD and obtain a good quality reference book on welding plasma cutting and welding as there is a moderate learning curve necessary before achieving proficiency. Before attempting to use this unit on an actual project or object of value, practice on a similar material as there are many variables present and settings required when cutting or welding different metals such as steel and stainless steel. It is also strongly recommended that the user adhere to the American Welding Society guidelines, codes and applications prior to producing welds where safety is affected.

SAFETY INFORMATION
Plasma cutting can be dangerous to you and other persons in the work area. Read and understand this instruction manual before using your Eastwood Plasma Cutter. Injury or death can occur if safe welding practices are not followed. Safety information is set forth below and throughout this manual.

To learn more about welding safety, read OSHA Title 29 CFR 1910, available at **www.osha.gov**; ANSI Z49.1, "Safety in Welding, Cutting and Allied Processes," available at **www.aws.org**; and the consumable manufacturer's Safety Data Sheet.

The following explanations are displayed in this manual, on the labeling, and on 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 used with the safety alert symbol, 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.

⚠ DANGER ELECTRIC SHOCK CAN CAUSE INJURY OR DEATH!

- Improper use of a Plasma Cutter can cause electric shock, injury and death! Read all precautions described in the Plasma Cutter Manual to reduce the possibility of electric shock.
- Disconnect Plasma Cutter from power supply before assembly, disassembly or maintenance of the torch, contact tip, and when installing or removing nozzles.
- Always wear dry, protective clothing and leather welding gloves and insulated footwear. Use suitable clothing made from durable flame-resistant material to protect your skin.
- If other persons or pets are in the area of plasma cutting, use welding screens to protect bystanders from sparks.
- 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.
- The electrode and work (or ground) circuits are electrically "hot" when the Plasma Cutter is on. Do not allow these "hot" parts to come in contact with your bare skin or wet clothing.
- Separate yourself from the arcing circuit by using insulating mats to prevent contact from the work surface.
- Be sure that the work piece is properly supported and grounded prior to beginning a plasma cutting operation.
- Always attach the ground clamp to the piece to be cut and as close to the cutting area as possible. This will give the least resistance and best cut.

SAFETY INFORMATION


⚠ DANGER SPARKS CAN CAUSE FIRE OR EXPLOSION!

- Plasma cutting produces sparks which can be discharged considerable distances at high velocity igniting flammable or explosive vapors and materials.
  DO NOT operate electric arc Plasma Cutter in areas where flammable or explosive vapors are present.
  DO NOT use near combustible surfaces. Remove all flammable items from the work area where welding sparks can reach (minimum of 35 ft).
- Always keep a fire extinguisher nearby while plasma cutting.
- Use welding blankets to protect painted and or flammable surfaces; rubber weather-stripping, dash boards, engines, etc.
- Ensure power supply has properly rated wiring to handle power usage.

⚠ WARNING ELECTROMAGNETIC FIELDS CAN BE A HEALTH HAZARD!

- The electromagnetic field that is generated during plasma cutting may interfere with various electrical and electronic devices such as cardiac pacemakers. Anyone using such devices should consult with their physician prior to performing any electric plasma cutting.
- Exposure to electromagnetic fields while plasma cutting may have other health effects which are not known.

⚠ WARNING ARC RAYS CAN INJURE EYES AND BURN!

- Arc rays produce intense ultraviolet radiation which can burn exposed skin and cause eye damage. Use a shield with the proper filter [a minimum of #8 shade is recommended per OSHA 29CFR 1910.133(a)(5)] to protect your eyes from sparks and the rays of the arc when plasma cutting or when observing an open plasma arc (see ANSI Z49.1 and Z87.1 for safety standards).
- Use suitable clothing made from durable flame-resistant material to protect your skin.
- If other persons or pets are in the area of a plasma arc, use welding screens to protect bystanders from sparks and arc rays.


⚠ WARNING FUMES AND WELDING GASES CAN BE A HEALTH HAZARD!

- Fumes and gasses released during plasma cutting are hazardous. Do not breathe fumes that are produced by the plasma cutting operation.
- Prolonged inhalation of plasma cutting fumes above safety exposure limits can injure the lungs and other organs.
- Use enough ventilation and/or exhaust at the arc to keep fumes and gases from your breathing area.
- Use an OSHA approved respirator when plasma cutting in confined spaces or where there is inadequate ventilation.
- Use extreme caution when plasma cutting coated materials including but not limited to: cadmium plated, galvanized, lead based paints.

⚠ CAUTION HOT METAL AND TOOLS WILL BURN!

- Electric plasma cutting heats metal and tools to temperatures that will cause severe burns!
- Use protective, heat resistant gloves and clothing when using Eastwood or any other plasma cutting equipment. Never touch a cut work surface, torch tip or nozzle until they have completely cooled.

⚠ CAUTION FLYING METAL CHIPS CAN CAUSE INJURY!

- Grinding and sanding will eject metal chips, dust, debris and sparks at high velocity. To prevent eye injury wear approved safety glasses.
- Wear an OSHA-approved respirator when grinding or sanding.
- Read all manuals included with specific grinders, sanders or other power tools used before and after the plasma cutting process. Be aware of all power tool safety warnings.

⚠ CAUTION ELECTRICAL FIRE HAZARD!

- Be certain that all wiring and breakers of the electrical supply are rated to accommodate the maximum power demands of the Cut 60.

⚠ NOTICE FIRST AID

- If exposed to excessive fumes move to an area with fresh air.
- For burns or other injuries follow basic first aid techniques and call a physician or emergency medical personnel.

REQUIRED ITEMS

Before you begin using the Eastwood Versa-Cut 60 Plasma Cutter make sure you have the following:

- A clean, dry air supply source for the torch. An air compressor capable of delivering 5-7 CFM @ 60 PSI is required. You can even use a portable air tank with regulator. The air supply must be dry and the use of a moisture trap is strongly recommended.
- Eastwood recommends at a minimum a properly grounded 220-240 VAC 50/60Hz., 50 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)
- Plasma Cutting Glasses, Faceshield, or Welding Helmet to provide eye protection during cutting operations.

POWER REQUIREMENTS

The Eastwood Versa-Cut Plasma Cutter is supplied with the popular NEMA 6-50P plug, requiring a NEMA 6-50R receptacle.

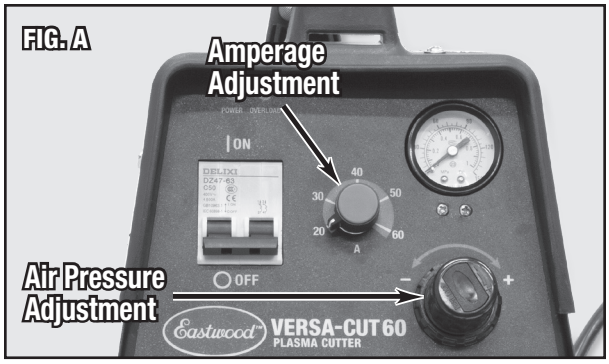
BEFORE YOU BEGIN

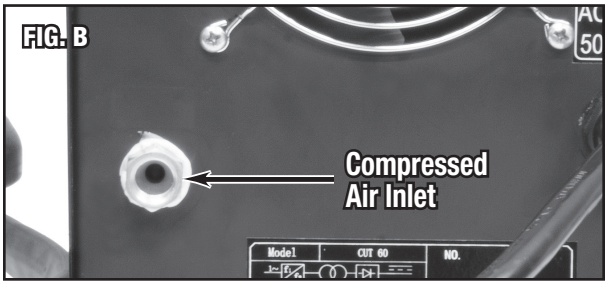
Remove all items from the box. Compare with list below to make sure unit is complete.

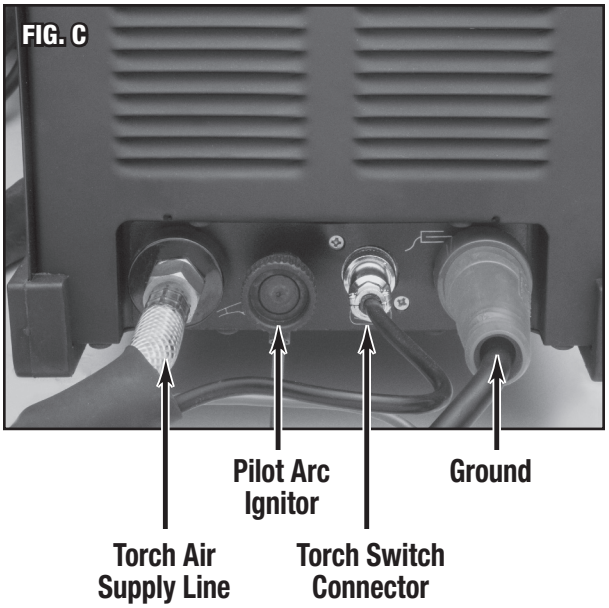
- Versa-Cut 60 Plasma Cutter
- Torch and 20' Supply Line
- 10' Ground Lead and clamp
- Instruction Booklet
- Face Shield
- Extra Electrode and Nozzle

SET-UP

- After the desired current source is determined, be sure the proper plug is used and the appropriate circuitry and breakers are in place.
- Do not plug unit in at this time and make sure the Power Switch on the left side of The Front Panel is in the OFF position **(Fig. A)**.
- Install an air fitting compatible with your air line into the 1/4" NPT fitting on the rear of the plasma cutter **(FIG. B)**.
- Attach the Torch Air Supply Line to the lower left of the front panel and tighten **(FIG. C)**.
- Attach the Torch Switch Connector Cable to the Multi-Pin Connector located on the third from left of the lower front panel **(FIG. C)**.
- Remove the black threaded knob (2nd from left) and place the terminal of the red lead over the post, then replace the knob and tighten **(FIG. C)**.
- Attach the Ground Lead Connector to the terminal located at the lower right of the front panel **(FIG. C)**.







OPERATION

⚠ WARNING ARC RAYS CAN INJURE EYES AND BURN!

- **Arc rays produce intense ultraviolet radiation which can burn exposed skin and cause eye damage. Use a shield with the proper filter [a minimum of #8 shade is recommended per OSHA 29CFR 1910.133(a)(5)] to protect your eyes from sparks and the rays of the arc when plasma cutting or when observing an open plasma arc (see ANSI Z49.1 and Z87.1 for safety standards).**
- **Use suitable clothing made from durable flame-resistant material to protect your skin.**
- **If other persons or pets are in the area of a plasma arc, use welding screens to protect bystanders from sparks & arc rays.**

⚠ WARNING FUMES AND WELDING GASES CAN BE A HEALTH HAZARD!

- **Fumes and gasses released during plasma cutting are hazardous. Do not breathe fumes that are produced by the plasma cutting operation.**
- **Prolonged inhalation of plasma cutting fumes above safety exposure limits can injure the lungs and other organs.**
- **Use enough ventilation and/or exhaust at the arc to keep fumes and gases from your breathing area.**
- **Use an OSHA approved respirator when plasma cutting in confined spaces or where there is inadequate ventilation.**
- **Use extreme caution when plasma cutting coated materials including but not limited to: cadmium plated, galvanized, lead based paints.**

⚠ CAUTION HOT METAL AND TOOLS WILL BURN!

- **Electric plasma cutting heats metal and tools to temperatures that will cause severe burns!**

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. 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.
3. Set the Air Pressure to the appropriate pressure with the Knob located at the upper right side of the front panel **(FIG. A)**. The Pressure Indicating Gauge is located directly above the Air Pressure Knob and is set at 60 PSI.
4. Set the Output Amperage Knob **(FIG. A)** located at the center of the upper panel to an appropriate setting again based on the thickness of the metal being cut; lower amperage for thinner metals, higher amperage for thicker metals. Keep in mind that "more is not always better" as too high of an amperage setting will result in overheating of the unit and excessive molten discharge from the cut.

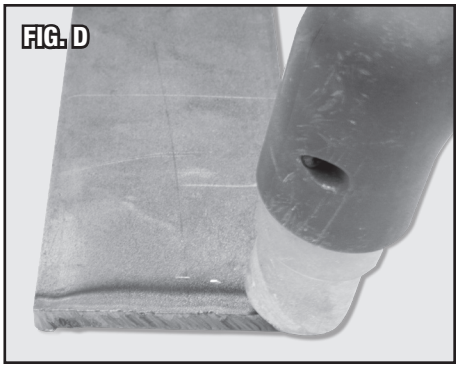


FIG. D

5. Make sure all your safety gear is in place (Eye Protection, Welding Gloves, non-flammable long sleeve apparel) and the area is completely free of flammable material.
6. The best results are achieved by holding the tip at a 90° angle to the cut line **(FIG. D)**.
7. To begin cutting, depress the Torch Trigger to ignite the pilot arc. 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 metal up to 7/8" 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 60 Plasma Cutter - Air Pressure and Amperage Settings*

Metal Thickness	1/32"	1/16"	3/32"	1/8"	5/32"	3/16"	7/32"
Amps	20	20	20	20	20	20	30
PSI	60	60	60	60	60	60	60

Metal Thickness	1/4"	9/32"	5/16"	11/32"	3/8"	13/32"	7/16"
Amps	30	30	40	40	40	50	50
PSI	60	60	60	60	60	60	60

Metal Thickness	15/32"	1/2"	17/32"	9/16"	19/32"	5/8"	21/32"
Amps	50	50	50	50	50	50	50
PSI	60	60	60	60	60	60	60

Metal Thickness	11/16"	23/32"	3/4"	25/32"	13/16"	27/32"	7/8"
Amps	50	50	50	60	60	60	60
PSI	60	60	60	60	60	60	60

*These settings are guidelines and may need to be adjusted based on your techniques.

CARE & MAINTENANCE

- It is extremely important that the air supply be clean and dry. A separate moisture trap, water/oil separator or desiccant system should be used. The Versa-Cut Plasma Cutter has a built-in "last-chance" moisture separator which drains automatically when the air source is removed.
- Draining the water/oil separator while the unit is pressurized is recommended so that all oil or water is discharged. To do this, raise the unit so that you are able to see the drain fitting on the bottom/rear of the unit **(FIG. E)**. Use a screwdriver to press the drain fitting into the unit, which will discharge any oil or water from the separator.
- Constantly inspect the torch nozzle for excessive erosion, molten metal accumulation or 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.

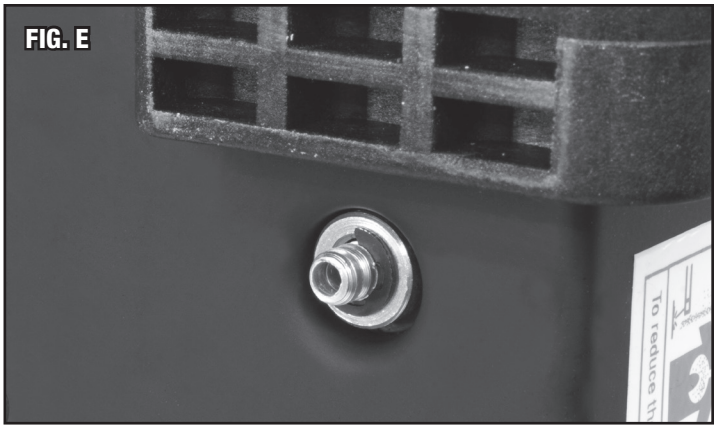
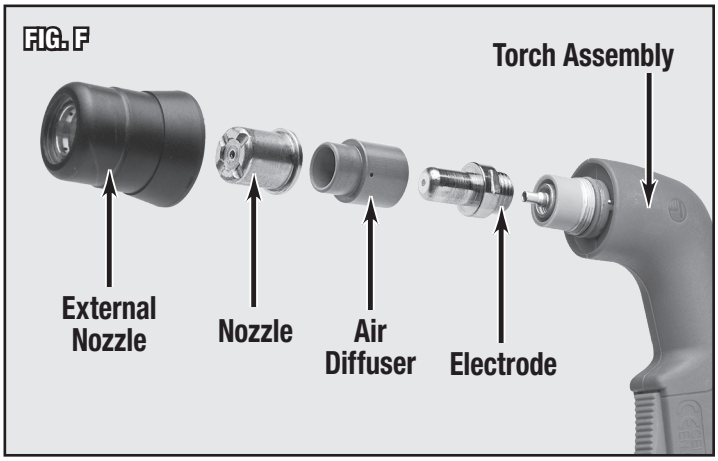


FIG. E

TORCH MAINTENANCE

The Eastwood Versa-Cut 60 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. F)** exploded view for a reference of all of the components and the assembly order.



⚠ WARNING ELECTRIC SHOCK CAN CAUSE INJURY OR DEATH!

- **Improper use of a Plasma Cutter can cause electric shock, injury and death! Read all precautions described in the Plasma Cutter Manual to reduce the possibility of electric shock.**
- **Disconnect Plasma Cutter from power supply before assembly, disassembly or maintenance of the torch, contact tip and when installing or removing nozzles.**
- **Always wear dry, protective clothing and leather welding gloves and insulated footwear. Use suitable clothing made from durable flame-resistant material to protect your skin.**
- **If other persons or pets are in the area of plasma cutting, use welding screens to protect bystanders from sparks.**
- **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.**
- **The electrode and work (or ground) circuits are electrically "hot" when the Plasma Cutter is on. Do not allow these "hot" parts to come in contact with your bare skin or wet clothing.**
- **Separate yourself from the arcing circuit by using insulating mats to prevent contact from the work surface.**
- **Be sure that the work piece is properly supported and grounded prior to beginning a plasma cutting operation.**
- **Always attach the ground clamp to the piece to be cut and as close to the cutting area as possible. This will give the least resistance and best cut.**

TROUBLESHOOTING TABLE

See page 13 for test points and values.
See page 14 for parts location.

SYMPTOM	POTENTIAL PROBLEM	DIAGNOSTIC TEST	SOLUTION
Nothing happens when power switched on	No or low A/C Voltage Source (240V AC)	Check A/C Voltage at Wall Outlet (0V AC)	Circuit breaker or wall circuit
	Loose or open connections at Power Switch	Visual and continuity test at switch connection	Repair loose/open connection
	Faulty Power Switch	Verify power switch function	Replace faulty power switch
Unit powers up but fan not running	Open or Loose Connection in Fan Circuit	Visual/Continuity Check of Fan Connections	Repair loose/open in Fan Circuit
	Faulty Fan	240V AC at Fan Connection	Replace Fan
Unit trips circuit breaker immediately when switched on	Internal Wiring Short Circuit	Inspect power circuit inside unit for short circuits	Repair Internal Wiring or Replace Board PZ01-024 if Connector Damaged
	Short Circuit on Board PZ01-024	Inspect Rectifier Sockets, X4 and X5 on Board PZ01-024 PZ01-024 for Short/Damage	Replace Board PZ01-024
	Short Circuit on Board PM01-02	Inspect Board PM01-02 for Signs of Damage	Replace Board PM01-02
	Short Circuit on Board PD01-04	Inspect Board PD01-04 for Signs of Damage	Replace Board PD01-04
Unit turns on but power light not on	Open or Loose Connection in Power Light Circuit	Inspect Power Light circuit for loose or open connection	Repair loose/open circuit
	Faulty Power Indicator Light	2V DC across Pins 3 and 4 at X1 on Board PKB-28	Replace Power Indicator Light
	Faulty Board PK02-004	0V DC across Pins 1 and 2 at X4 on Board PK02-004	Replace Board PK02-004
	Faulty Board PKB-28	24V DC across Pins 2 and 3 at X13 on Board PKB-28	Replace Board PKB-28

TROUBLESHOOTING TABLE

See page 13 for test points and values.
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SYMPTOM	POTENTIAL PROBLEM	DIAGNOSTIC TEST	SOLUTION
Overload light on, machine not operating	Duty Cycle Exceeded	Wait 5 Minutes for Unit to Cool	Restart Unit after Cooling Off
	Unit not cooling properly	Overload light comes on without exceeding duty cycle	Clean out unit with high pressure air
	Open or Loose connection between Board PZ01-024 and Board PM01-02	Check connection between X2 on Board PX01-024 and X4 on Board PM01-02	Repair loose/open circuit
	Faulty Board PZ01-024	Inspect Board PZ01-024 for signs of damage	Replace Board PZ01-024
	Faulty Board PM01-02	Inspect Board PM01-02 for signs of damage	Replace Board PM01-02
Overload light on, machine operating normally	Loose connection between Board PKB-28 and Board PD01-04	Check socket X8 on Board PKB-28 and Socket X2 on Board PD01-04 for Loose Connection	Repair Loose Connection
	Faulty Board PM01-02	Inspect MOSFETs on Board PM01-02 for Damage	Replace Board PM01-02
	Faulty Board PD01-04	Check Rectifier (Diodes D1-16) on Board PD01-04 for Damage (should they be tested)	Replace Board PD01-04
No air flow or pilot arc when trigger pulled	Faulty Torch Trigger	Measure resistance across trigger terminals when trigger pulled (should = 0 ohms)	Replace Torch if switch faulty
	Loose or Open Connection in Torch Trigger Circuit	Visual and continuity check of trigger wiring and connection	Repair loose/open connection
	Faulty Trigger isolation board	Short across pins 1 and 3 at X5 on Board PH01-017	If unit operates, replace Board PHB-10
	Loose connection between Board PKB-28 and Board PM01-02	Check connection from X2 on Board PKB-28 and X3 on Board PM01-02	Repair Loose Connection
	Faulty Board PZ01-024 or Connection Between Power Board and Board PM01-02	Check Voltage across pins 1 and 9 at X4 on Board PM01-02 (Should be 310V DC)	If Voltage = 0V DC, Check Connection between Board PZ01-024 (X2) and Board PM01-02 (X4). If connection OK, Replace Board PZ01-024
	Faulty Board PM01-02 or Board PH01-017	On Board PKB-28, measure voltage across Pin 3 (black wire) at X13 and metal top (drain) of MOSFET Q1,2,4, or 5. Voltage should drop from 27V DC to 15V DC when trigger is pulled.	If Voltage drops when trigger pulled, replace Board PM01-02. If Voltage doesn't drop replace Board PH01-017

TROUBLESHOOTING TABLE

See page 13 for test points and values.
See page 14 for parts location.

SYMPTOM	POTENTIAL PROBLEM	DIAGNOSTIC TEST	SOLUTION
Pilot arc but no air flow when trigger pulled	Air Supply Off or Blocked	Check air lines and connections for blockage for loose connections (including torch)	Re-attached, unblock, or replace air supply lines as needed
	Faulty Torch Switch	Inspect Torch for loose or open internal and external connections	Repair open or loose connection, replace torch if needed
	Faulty Air Solenoid or Loose Connection	When trigger pulled, listen for Gas Solenoid click and check for 24V DC at X3 on Board PH01-017	If 24V DC at X3 and no Click, check connection at X3 on Board PH01-017, If connection OK, Replace Gas Solenoid
	Faulty Board PH01-017	Check for 24V DC at X3 on Board PH01-017 with trigger pulled.	If 0V DC at X3 when trigger pulled, replace Board PH01-017
Air flow but no Pilot Arc when trigger pulled	Open or Loose Internal Connection Between Board PM01-02 and Board PH01-017	Check connection between X1 on the Board PM01-02 and X1 on the Board PH01-017 for Open or Loose Connection	Repair loose connection
	Faulty Reed Switch	Unplug reed switch (X2 on board PH01-017). Touch reed switch with a strong magnet. Switch should close when touched by magnet	If switch does not close, replace reed switch
	Incorrect Arc Gap	Arc Gap should be 1/16" and free of dirt and oxidation	Clean and adjust Arc Gap as necessary
	Faulty Board PH01-017 or Board PM01-02	Still no Pilot Arc after above actions.	First replace Board PH01-017 and Test Function. If still no Pilot Arc, Replace Board PM01-02.
Weak or unstable cutting arc	Low Supply Voltage (possible undersized wiring or extension cord)	Check input voltage 240V AC	If less than 210V AC address line voltage
	Loose internal connections	Check for loose connections in internal power circuit (cord, switch, connection to Board PZ01-024)	Repair loose connection
	Loose or Poor Ground Connection	Inspect ground circuit for poor or loose connections	Repair loose connections
	Faulty Current Potentiometer	Check function of Potentiometer, 0-1k Ohm	Replace Potentiometer if Faulty
	Faulty Board PZ01-024	Check Voltage across Pins 1 and 9 at X4 on Board PM01-02.	If <310V DC, Replace Board PZ01-024
	Faulty Board PM01-02		

TROUBLESHOOTING TABLE

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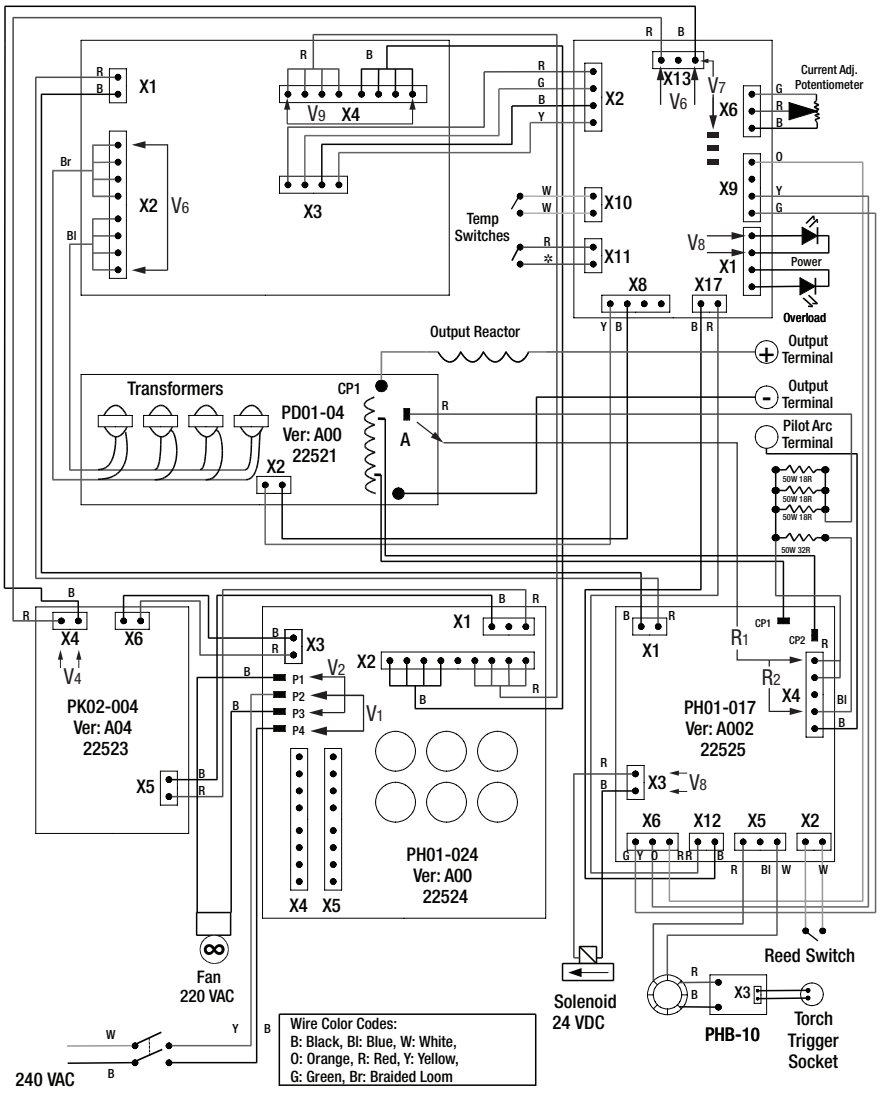
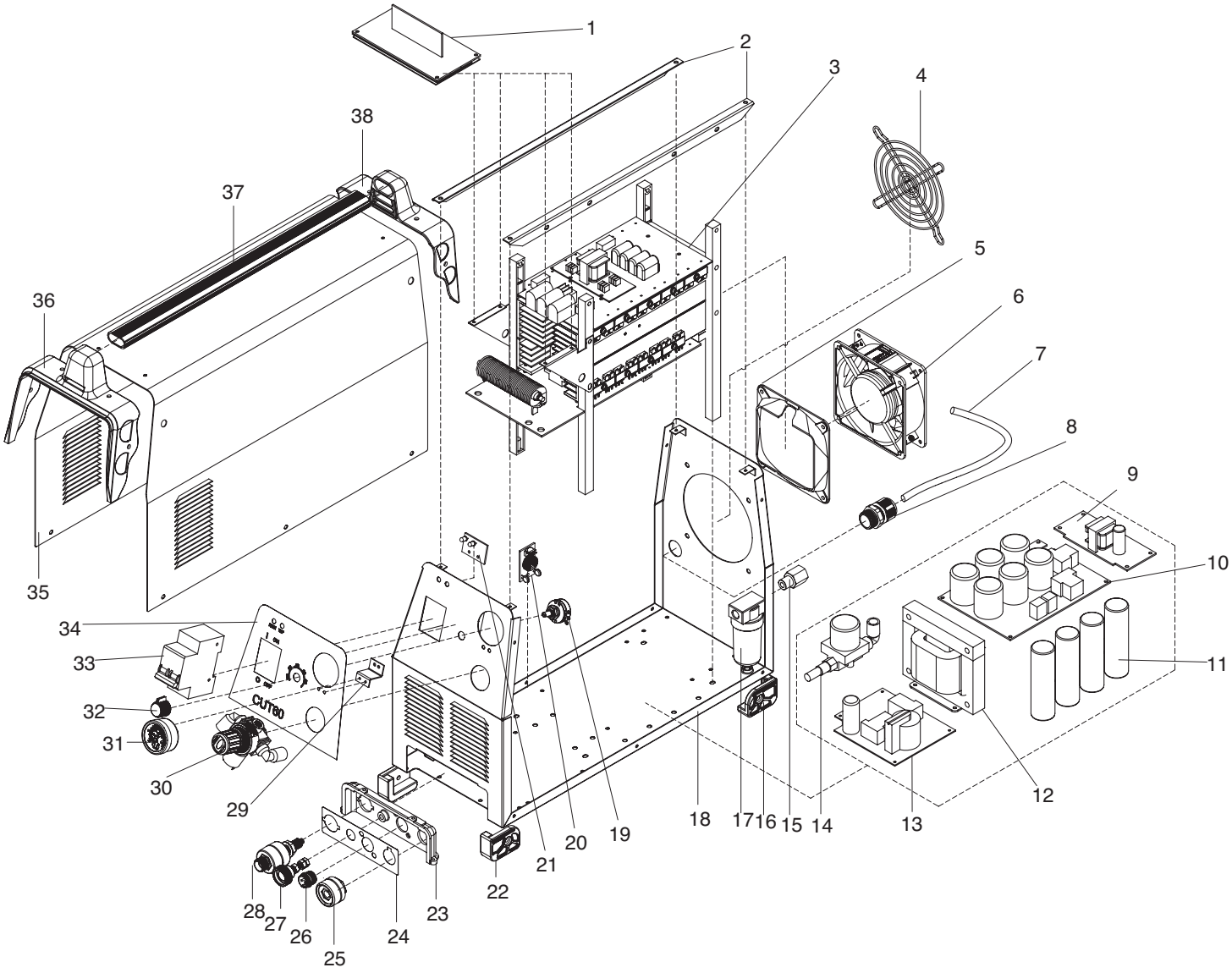
SYMPTOM	POTENTIAL PROBLEM	DIAGNOSTIC TEST	SOLUTION
No delay in air flow shut off when trigger released	Faulty Board PH01-017	Operate unit. Ensure normal operation noting delay time in solenoid closing after trigger released. Delay should be approximately 10 sec.	If no delay, Replace Board PH01-017
Pilot arc but no cutting arc	Loose or Damaged Torch Connections	Inspect Torch for damage or loose connections	Repair loose connections
	Loose or Poor Ground Connection	Inspect ground circuit for poor or loose connections	Repair loose connections
	Torch Nozzle or Electrode Damage	Inspect Torch nozzle and electrode for damage	Replace damaged components
	Damaged or loose connector on Board PH01-017	Check Connectors X4 and X1 on Board PH01-017 for damage or looseness	Reconnect or repair connector X4 or X1
	Faulty Resistor 50W18R	Unplug spade connecter A on board PD01-04 and Plug X4 on PH01-017. Measure resistance between spade connector and pin 1 (red wire) on X4	Resistance should measure 6 ohms. Replace resistors as necessary.
	Faulty Resistor 50W18R	Unplug X4 on PH01-017. Measure resistance between pin 1 (red wire) and pin 3 (blue wire) on X4	Resistance should measure 32 ohms. Replace resistors as necessary.
	Faulty Board PH01-017 or Board PD01-04	If the steps above fail to solve the problem	Replace either or both PH01-017 and PD01-04
Pilot arc continues while cutting	Faulty Reed Switch	Unplug reed switch (X2 on board PH01-017). Touch reed switch with a strong magnet. Switch should close when touched by magnet	If no change in continuity replace reed switch
	Faulty Arc Gap	Arc Gap should be 1/16” and free of dirt and oxidation.	Clean and adjust Arc Gap as necessary
	Faulty Board PH01-017	Steps above fail to resolve the problem.	Replace Board PH01-017

CIRCUIT DIAGRAMS WITH TEST VALUES



VOLTAGE READINGS	
V_1	Input Voltage – 240V AC
V_2	Fan Voltage – 24V DC with Power Switch ON
V_3	24V DC
V_4	24V DC
V_5	24V DC
V_6	310V DC
V_7	24V DC untriggered, 15V DC triggered
V_8	24V DC
V_9	310V DC
R_1	6 Ohms
R_2	32 Ohms

EXPLODED VIEW WITH PARTS LIST



REF #	ITEM #	DESCRIPTION
1	22522	Board PKB-28
2	Not Available	Frame Rail
3	22250	Board PM01-02
4	Not Available	Fan Grill
5	Not Available	Fan Shroud
6	22526	Fan
7	Not Available	Hose
8	Not Available	Pipe Fitting, Gas Hose
9	22523	Board PK02-004
10	22524	Board PZ01-024
11	Not Available	Resistor
12	Not Available	Transformer
13	22525	Board PH01-017
14	33105	Gas Solenoid
15	Not Available	Pipe Fitting, Moisture Separator
16	Not Available	Foot, Left
17	21265	Moisture Separator
18	Not Available	Enclosure
19	22528	Potentiometer
20	Not Available	Board PHB-10
21	Not Available	Indicator LEDs
22	Not Available	Foot, Right
23	Not Available	Connection Plate
24	Not Available	Backing Plate
25	Not Available	Ground Connector
26	Not Available	Aviation Connector
27	Not Available	High Frequency Output Terminal
28	Not Available	Torch Connector
29	Not Available	Brace
30	21262	Pressure Regulator
31	Not Available	Gauge
32	Not Available	Knob
33	33098	Power witch
34	Not Available	Faceplate
35	Not Available	Cover
36	Not Available	Front Bezel
37	Not Available	Handle
38	Not Available	Rear Bezel
Not Shown	14343	Torch Assembly, CB70, Plastic Connector
Not Shown	20174	Torch Assembly, CB70, Metal Connector
Not Shown	14344	Torch Electrode, 10 pk
Not Shown	12814	Torch Nozzle, 10 pk
Not Shown	14557	Torch External Nozzle, 2 pk
Not Shown	13788	Torch Air Diffuser, 2 pk
Not Shown	14555	Torch Nozzle Guide, 10 pk
Not Shown	21263	Ground Cable

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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
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800.343.9353 eastwood.com