

User Manual for 81545

Plasma Cutter

20-40 Amp



AMP OUTPUT	OUTPUT VOLTAGE	WEIGHT	DUTY CYCLE	ELECTRICAL INPUT	AIR REQUIREMENTS
20-40a	96V DC	12KGS	60%@30A 60%@40A	110V AC OR 220V AC	60-70PSI

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. Place the ground cable clamp on a clean, bare area of your work piece. Scrape, wire brush, file or grind a bare area if necessary to achieve a good ground connection.
3. Set air pressure to the appropriate amount with the knob located at the upper right side of the front panel. The pressure indicating gauge is located directly above the air pressure knob and is generally set at 60 to 70 psi. The actual amount required is dictated by the thickness of the metal being cut. Use lower pressure for thinner metals, and higher pressure for thicker or harder metals.
4. Set the output amperage knob located at the center of the upper panel to an appropriate setting based on the thickness of the metal being cut. Use lower amperage for thinner metals, and 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.
5. Make sure to wear safety gear and that the area is completely free of flammable materials.
6. The best results are achieved by holding the tip at a 90° angle to the cut line.
7. With practice, you will be able to precisely control this unit, harnessing its ability to create clean, precise, and intricate cuts in many forms of steel and iron up to 3/8" thick.
8. While practicing, experiment with different speeds. You will find that thinner materials will allow a faster motion while thicker materials will require a slower approach to achieve a through cut.
9. A good form of practice is to attempt a series of straight lines while creating the cleanest edge 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.

Care and 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 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 pulling down on the drain fitting.

Constantly inspect the torch tip 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 clean and dry environment.



1-800-345-4545 jeps.com

Problem Solving:

Care must be taken to not overtighten the air/gas fitting on the Cut 40. This gas receptacle is located on the back of the unit.

If overtightened, you risk the possibility of shifting the air/water separator inside the unit. If this happens it may cause the relief valve on the air/water separator to be depressed resulting in a failure to pressurize the unit. A good indication is the sound of leaking air when trying to use the unit. If the air/water separator has shifted and the system will not pressurize the problem is easily corrected by re-centering the air/water separator relief valve in relation to the vent hole located on the bottom of the unit. Loosen the gas receptacle on the back of the unit to its original location allowing the air/water separator to be centered in its relief hole on the bottom of the unit.



Problem:	Cause and Solution
Machine won't turn on.	Check cords and plug wiring. Occasionally a terminal screw will loosen after installation and use. Check for proper wiring at plug and receptacle. Check household circuit breaker. If no fault is found, contact us for support.
Machine runs, but doesn't cut.	Check for a good work clamp connection. Make sure work piece cable and plasma torch is securely fastened to lug. Check that the Track torch Auto/Standard switch is in the correct position for type of use desired. Check household circuit breaker.
Electrodes and tips are rapidly consumed.	Inadequate air flow. Water in air supply. Poor cutting technique. Return to stand off cutting of no more than 1/8", not less than 1/16". Check and tighten consumables.
Heavy slag on the underside of the cut with complete cut through.	Travel speed too slow. Either increase cutting speed or reduce cutting amperage to fit metal thickness. Too much standoff (more than 1/8"). Worn consumables. Low air pressure. (Do not exceed 70 psi)
Cut is beveled on one side.	Plasma cutters tend to leave a slightly beveled side (up to 5°). However, decreasing the standoff and increasing air pressure can help reduce or eliminate problems. Worn Consumables. Replace consumables.
Air is heard escaping inside unit.	Over pressurized supply line. Internal leakage around air fittings. Consult with support for repair instructions if needed. No air supply.
Cut quality is poor or irregular.	Check and adjust settings. Increase or decrease air pressure. Check for consumable wear and tightness.
Unstable Plasma Arc.	Poorly grounded unit or worn electrode.
Surrounding lights or electronic equipment malfunctions.	Use high frequency ground connected to an exterior ground rod to drain electromagnetic frequencies. Use a shielded wire to drain if necessary. Consult local electrician/codes.

JEGS is dedicated to providing you with the best possible equipment to meet your demanding jobs. In order to go beyond delivering a quality product we offer technical support to assist you with any questions that may arise. With proper use and care this plasma cutter should deliver years of trouble free service.



Safe operation and proper maintenance is your responsibility.

This instruction guide is intended to instruct you in basic safety, operation and maintenance of your plasma cutter to ensure you the best possible experience. Please carefully read this manual prior to use. Subjects covered in this manual include usage and how to improve performance.

The warranty does not cover improper use, maintenance or consumables. Do not attempt to alter any piece or part of your unit, particularly any safety device. Keep all shields and covers in place during unit operation should an unlikely failure of internal components result in the possible presence of sparks and explosions. If a failure occurs, discontinue further use until malfunctioning parts or accessories have been repaired or replaced.



Note on High Frequency electromagnetic disturbances:

- Certain cutting processes generate High Frequency (HF) waves.
- These waves may disturb sensitive electronic equipment such as televisions, radios, computers, cell phones, and related equipment. HF may also interfere with fluorescent lights. Consult an electrician if any of these disturbance is noted. Sometimes, improper wire routing or poor shielding may be the cause.



HF can interfere with pacemakers. Always consult your physician before using, or entering an area known to have cutting equipment, if you have a pacemaker.

WARNING! Persons with pacemakers should not cut or be in the cutting area until they consult with their physician. Some pacemakers are sensitive to EMF radiation and could be severely damaged while cutting or being in the vicinity of someone cutting. *Serious injury or death may occur!*

Plasma cutting processes generate electromagnetic fields and radiation. While the effects of (Electromagnetic Fields) EMF radiation are not known, it is suspected that there may be some harm from long term exposure. Therefore, limit exposure with the following precautions:

- Arrange leads and lines neatly away from the body.
- Never coil cables around the body.
- Keep all cables and leads on the same side the body.
- Never stand between cables or leads.
- Keep as far away from the power source (plasma cutter) as possible while cutting.
- Never stand between the ground clamp and the torch.
- Keep the ground clamp grounded as close to the cut as possible.



Cutting processes pose certain inhalation risks. Be sure to follow any guidelines from your chosen consumable and electrode suppliers regarding possible need for respiratory equipment while cutting. Always cut with adequate ventilation. Never cut in closed rooms or confined spaces. Fumes and gases re-released while cutting may be poisonous. Take precautions at all times.



Any burning of the eyes, nose or throat are signs that you need to increase ventilation. Stop immediately and relocate work if necessary until adequate ventilation is obtained. Stop work completely and seek medical help if irritation and discomfort persists.



WARNING! Do not cut on galvanized steel, stainless steel, beryllium, titanium, copper, cadmium, lead or zinc without proper respiratory equipment and or ventilation.



WARNING! Do not cut around Chlorinated solvents or degreasing areas. Release of Phosgene gas can be deadly. Consider all chemicals to have potential deadly results if cut on or near metal containing residual amounts of chemicals.



WARNING! Electrical shock can kill. Make sure all electrical equipment is properly grounded. Do not use frayed, cut or otherwise damaged cables and leads. Do not stand, lean or rest on ground clamp. Do not stand in water or damp areas while cutting. Keep your work surface dry. Do not use plasma cutter in the rain or extreme humid conditions. Wear dry rubber soled shoes and gloves when cutting to insulate against electrical shock. Turn machine on or off only with gloved hand. Keep all parts of the body insulated from work, and work tables. Prevent direct contact of skin against metal.



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All work cables, leads, and hoses pose trip hazards. Be aware of their location and make sure all personnel in area are advised of their location. Taping or securing cables with appropriate restraints can help reduce trips and falls.



WARNING! Fire and explosions are real risks while cutting. Always keep fire extinguishers close by and additionally a water hose or bucket of sand. It is a good idea to have someone help watch for possible fire while you are cutting. Sparks and hot metal may travel a long distance. They may go into cracks in walls and floors and start a fire that would not be immediately visible.



Metal is hot after cutting! Always wear gloves and or use pliers when handling hot pieces of metal. Remember to place hot metal on fireproof surfaces after handling. Serious burns and injury can result if material is improperly handled.



WARNING! Faulty or poorly maintained equipment can cause injury or death. Maintenance is your responsibility. Make sure all equipment is properly maintained and serviced by a qualified personnel. Equipment is designed to be used in the parameters it was designed for.



Keep all covers in place. A faulty machine may shoot sparks or have exploding parts. Removing covers increases the risk of shock. Always check the plasma cutter's condition before use.



Unplug unit before servicing and for long term storage or electrical storm.