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| **Department:** | **P/W Mechanic Shop** | **Area** | **Shop** |  |
| **Subject:** | **Plasma Cutter SWP** | | |

**Plasma Cutter**

**Warning:**

The use of this tool may be hazardous. The Plasma Cutter is an electrically powered, high intensity electric arc-cutting tool. Special safety precautions must be observed to reduce the risk of personal injury and fire. It is important to fully understand and observe the safety precautions and procedures below. If not familiar with the use of this equipment, obtain practical instruction from a competent operator. Do not operate without thorough training or unless under the direct supervision of an instructor. Do not operate if safety devices are not in place.

**Purpose:**

The Plasma Cutter is High powered machine that uses up to 400V electricity mixed with100lbs of constant air to cut Metal work pieces. The plasma cutter can cut steel, aluminum, brass and most other metallic substances at many different thicknesses up to ¾ thick. The plasma cutter can cut angles and gouge metals as well

**Hazards:**

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| * Toxic fumes | * Fire and sparks | * Noise | * Burns and heat |
| * Flying debris | * Electrocution | * Static electricity | * Eye injury-u/v rays |

**PPE Required:**

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| * ISO11 or better face shield | * Safety footwear | * Spark resistant clothing |
| * Approved hearing protection | * Leather gloves | * Respirator (if required) |
| * Welding screens (if required |

**Pre Set-Up:**

* Ensure lighting is adequate.
* Do not wear loose clothing.
* Make sure there are no flammables around your work area
* Make sure welding screens are in place depending on your surroundings while cutting metals, sparks are generated from torch tip cutting work piece.
* Make sure you are wearing a respirator or using an exhaust extractor depending on materials cut, products like stainless steel, galvanized steel, carbon steel, zinc and certain paints can give off cadmium, beryllium, chromium and many other toxic poisons.
* Make sure you are wearing appropriate face and eye protection, a high intensity light is generated by machine.
* Make sure you are wearing hearing protection as long term use can cause hearing problems.
* Make sure the work area is not around any liquids as electrocution can happen from completing a current of electricity through you.
* Make sure you are wearing gloves as the material cut can get quite hot.
* Place marked work piece on a welding table or metal surface.
* Use a saw horse roller if work piece is too long for table or surface.
* Attach ground cable to work table or metal surface under the work piece.
* Set the plasma cutter controls depending on thickness of material and cutting you are going to do.

**Procedure**

* With settings adjusted, turn power switch on in the back of the machine
* Take whip of torch in hand, lift the safety switch and pull trigger, air pressure and spark will start.
* Start the cut slowly, if you move the tip to fast, the spark spray will come back at you.
* Place torch tip 1/8” from work piece edge if possible, it will start to cut work piece.
* Keep arms and fingers away from torch tip while cutting.
* Avoid awkward operations and hand positions where a sudden slip could cause a hand to move into the stream of spark spray or path of spark from tip.
* Keep an eye on direction of spray while cutting to avoid damage to plastics, flammables, glass yourself or anyone else, and use a welding screen if it is unavoidable.
* Make sure molten slag, hot metal or sparks are not directed on the cables of plasma cutter.
* Once cut is completed, remove finger from trigger and spark will stop.
* With gloves on hands, you can move work piece.

**Post Procedure/take Down:**

* Turn off plasma cutter from the switch in the back.
* Wrap torch whip back onto machine.
* Remove ground from work table or surface, wrap back on machine.
* Dispose of scraps and keep the work area clean for other people to use it.

**Summary:**

* Always wear appropriate PPE.
* Be aware what type of material you are cutting.
* Ensure all cable look to be in good working order before you use it.
* Always make sure the Plasma cutter is turned off before changing the torch tip.
* Consult the supervisor if unsure of how to use.

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