

User Manual and Quick Start Guide



WWW.Bosstables.com 563-380-1535 www.info@bosstables.com



Boss Tables Warranty Program

Boss Tables strives to build quality equipment and is including with the purchase of a NEW plasma table a 2 year “bumper to bumper” warranty. Warranty replacement parts will need to be cleared with a factory authorized representative. Upon conformation you will be issued a new part or service rendered to alleviate the issue. Upon speaking with a representative from the “factory” (Resellers are not permitted) the part will be released as soon as possible and overnighted (if requested) at the expensive of Boss tables. The RETURN shipping will be the responsibility of the customer. The customer will need to return damaged good in 5 to 7 business days.

“Bumper to bumper” includes-

All components on the machine directly sold to the consumer from Boss tables or an authorized reseller.

Computer and controller components are included for the 24 month program.

Frame and structural problems that are attributed to “nominal use”-see below.

Hypertherm PowerMax plasma power supply units are warranted by the manufacturer for 36 months from purchase date from our distributor. Hypertherm plasma torches are warranted for 12 months from purchase date from our distributor.

Electronics including limit switches, E-stop switches, wire, and sensors are warranted for 24 months.

Accessory package electronic and mechanical components are warranted for 24 months.

Porter-Cable or Milwaukee Routers are warranted by the manufacturer.

The warranties are only valid to the to the original purchaser.

Damage from nominal use that is not “negligent”-See Below.

“Bumper to Bumper” Does not include-

Damage to the machine or components from mishandling while in the customers possession.

*Including- “Negligence”

- When machine arrives, the customer drops the machine or damages while installing.
- Improper installation of electrical components. Example- supplying the wrong voltage or single vs 3 phase where applicable.
- The customer loads an excessive amount of material. (Center legs or engineering/ up fit is required for the cutting of anything greater than 2-inch-thick mild steel. With the approximate weight being 4000 lbs. (anything greater than 4,000 lbs material weight please call and confirm.
- Lightning and or power issues related to the customers location either caused by nature (Act of God) or power provider.

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- Fire and or flood related incidents are not covered.
- “Kicking” of sheet clamps from material or dropping the material onto the bed of the cutting machine.
- The slats or the sacrificial cutting surface is not covered under the warranty.
- Any form of damage due to corrosion or galvanic or electrostatic corrosion is not covered by this warranty. It is the customer responsibility to treat the water to ensure that no corrosion is taking place in tank.
- The warranties are only valid to the to the original purchaser.

By purchasing a Boss Tables cnc plasma or other machine you are committing to the warranty agreement and will have all the benefits of the warranty agreement. The starting date of the warranty program is when the machine leaves the possession of Boss Tables. The time will expire after a period of 2 years or 24 months.



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SAFETY

Users

Read and understand this manual thoroughly before operating the machine.

Supervisors

It is very important that a safe and appropriate working environment is provided for this Boss equipment and in compliance with applicable federal and local industry standards.

It is imperative that programmers, machine operators and maintenance personnel be trained adequately in the use and care of the equipment. These employees should receive the proper instruction in order to have a complete understanding of the operation of this machine before beginning to program, operate or service it.

Careful programming and debugging of new programs is essential for successful operation of this machine. Use program Stop Codes to stop machine motion for operator removal of parts or scrap.

Never allow operators to place any part of their body into the machine while the machine is active. Ensure that all personnel understand the function and use of EMERGENCY STOP and CYCLE STOP button.

Maintenance Personnel

Only qualified personnel should make repairs on this equipment. Use caution and follow Boss Tables procedures when working on the machine. Be sure to observe the following guidelines:

1. Before performing maintenance or repair, turn the power OFF and follow lock out/tag out (zero energy shutdown) procedures. Also, follow any lock out/tag out procedures applicable to your specific plant requirements.
2. Wear safety glasses and other personal protective equipment as required by

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applicable federal, local industry, and plant safety program standards.

3. Wear proper clothing. Do not wear watches, rings, jewelry, or loose-fitting clothes.
4. Read and review the manual carefully.
5. Be familiar with the operation of the machine.
6. Practice preventative maintenance. Inspect the equipment regularly and repair or replace worn components and tooling.
7. Always replace safety guards and other safety devices removed for service and make sure that they are fully functional before operating the equipment.
8. Never remove, jumper out or bypass a safety device to permit machine production.
9. Never place yourself in a hazardous situation to observe a problem and ask someone else to operate the machine. This could be a very dangerous and life threatening situation.

Operator

This equipment has been designed with operator safety in mind (when used under normal operating conditions). The user must always be alert to the possibility of dangerous situations. Always exercise care and caution. Report any minor problems immediately, so that they can be corrected before becoming major difficulties. Only qualified personnel should make repairs on the machine.

1. Be familiar with the machine.
2. Be alert to the significance of the various warning indicators and be conscious of the functions of pushbuttons and other controls. Use the controls properly.

Review and understand the operation of the EMERGENCY STOP function and the CYCLE STOP function.

3. Never operate the equipment unless it is in good working order.
4. Wear safety glasses and other personal protective equipment as required by applicable federal, local industry and plant safety program standards.



5. Wear proper clothing. Do not wear watches, rings, jewelry or loose-fitting clothes.
6. Avoid all moving parts of the machine or workpiece when setting up or operating the equipment. Never reach into the machine while it is active. Use the EMERGENCY STOP or CYCLE STOP function to stop machine motion.
7. Recognize and avoid unsafe operating conditions.
8. Maintain a clean work area. Avoid accidents by keeping work areas clean and neat.
9. Never leave the machine in an unsafe condition.
10. Never leave a machine running unattended.
11. Never remove or bypass safety devices.
12. Report any unsafe conditions, personal injury or machine problems immediately to your appropriate supervisor(s) and safety manager(s).
13. Never operate the machine with someone within a hazardous area.

Water Table Use

Keep the operator's body and clothing dry.

Do not stand, sit, or lie in/on any wet surfaces when using this equipment.

Never work in a damp or wet area without proper insulation against electric shock.

Disconnect main power before servicing the torch, power supply or service connections to the plasma arc system, or any part of the machine bed.

Wear adequate personal equipment (overalls, gloves, safety boots etc.) when operating the machine.

Remove or secure articles of clothing, such as ties and loose sleeves, which may catch or be drawn into moving machinery.

Eye Protection

LENS SHADE



Arc Current AWS (USA) ISO 4850

Up to 100A No. 8 No. 11

100 – 200A No. 10 No. 11 – 12

200 – 400A No. 12 No. 13

Above 400A No. 14 No. 14

Medical treatment facilities and a qualified first aid person should be available for immediate treatment of flash burns to the eyes and skin.

It is recommended that the cutting area be prepared in such a way as to minimize the reflection and transmission of ultraviolet radiation. Walls and other surface areas should be painted in dark colors to reduce reflection. Protective screens or curtains may be installed to avoid unnecessary ultraviolet transmission.

Warning

The plasma arc cutting process produces rays that can burn eyes and skin. Always wear eye protection with appropriate lens shades.

Noise

The noise levels generated during plasma arc cutting may be as high as 105 decibels.

This depends on the distance from the machine, arc, plasma torch nozzle design, gas velocity, material type, and plate thickness. Boss Tables recommends that each user check the sound levels in his own shop under normal operating conditions.

Based on those findings, provide adequate ear protection to all personnel who must work near the machine, in accordance with applicable local, state, and federal industry standards.

Noise levels that can cause discomfort or damage to hearing will vary greatly from one individual to another. We recommends that ear protection be furnished to any worker who requests it, regardless of applicable industrial standards or tested noise levels.

Exposure to noise from the cutting process can damage hearing. Wear appropriate ear protection when

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operating the machine or when working in the proximity of the machine.

Safety Devices

Plasma arc units are provided with certain safety interlocks designed to prevent equipment damage and/or personal injury.

Never short out or in any way attempt to defeat the safety interlock devices.

All exposed electrical connections must be covered with the proper insulation material.

Safety devices must be regularly checked for proper operation and replaced immediately if found to be inoperative.

Warning

Never attempt to operate the plasma unit with any of the power supply covers not in place. This is extremely hazardous to the operator and any other person in the area. It also prevents the equipment from properly cooling critical components and could result in equipment damage.

Risk of Electric Shock

Plasma cutting equipment uses high open circuit voltages to initiate the plasma arc.

Normal load voltages are higher than experienced with other types of welding equipment.

Extreme CAUTION must be exercised when operating or servicing this equipment.

Input Connections

A wall mounted line isolating switch, fused as required by local electrical codes, must be fitted as close as possible to the plasma arc power supply.

Danger

Always verify that ALL electrical supplies are isolated before undertaking any service or maintenance work. The



machine may have more than one electrical supply.

Warning

Plasma arc can cause injury and burns. Verify that no person is in the proximity of the plasma torch at any time that the plasma system is switched on. Serious burn and electrical shock hazards exist, even when the plasma cutting system is not active.

Warning

Frequently inspect the cable for damage or cracking of the cover. Bare wiring can kill. Replace damaged cable immediately.

Grounding

Be sure all ground lugs are of adequate size to carry the rated current load.

Make all connections tight to avoid resistance heating.

Connect the material grid of the worktable to a good earth ground.

Fumes and Air Contamination

Proper precautions must be exercised to prevent the exposure of others in the vicinity to toxic fumes that may be generated while plasma cutting.

Certain chlorinated solvents such as perchloroethylene and trichlorethylene will decompose under ultraviolet radiation to form phosgene and other gasses. Care must be taken to avoid the use of these solvents on materials being cut with plasma arc cutting equipment. Containers of these solvents and other degreasing agents should be removed from the immediate area around the plasma arc.

Metals coated with or containing significant amounts of lead, cadmium, zinc, mercury or beryllium can produce harmful concentrations of toxic fumes when the plasma arc cuts.

Adequate local exhaust ventilation must be used, or the operator must be supplied with



special equipment to guarantee a supply of fresh air such as a respirator or air supplied helmet.

Metals coated with materials that emit toxic fumes must not be cut unless:

1. The coating is removed prior to cutting.
2. The area is adequately ventilated.
3. The operator is supplied with fresh air breathing equipment.

Air Contamination

The plasma cutting process generates large quantities of hot metal dust and fumes that would be hazardous if uncontrolled.

The gases listed below either are produced normally during plasma arc cutting or can form under certain conditions.

Ozone

Ozone is produced by the reaction of the plasma arc's ultraviolet radiation with oxygen in the air. Uncontrolled, excessive levels of ozone can constitute a hazard. When there is proper venting to the outside and the machine's internal ventilation system is functioning properly, there is adequate control of ozone during torch cutting.

Nitrogen Dioxide

Nitrogen dioxide gas is produced when nitrogen and oxygen in the air pass through the electric arc. A hazard may exist if uncontrolled, excessive levels of nitrogen dioxide are formed. With proper venting to the outside, the machine's internal ventilation system is adequate to control nitrogen dioxide during torch cutting, if the system is functioning normally.

Acetyl Chloride

Acetyl chloride gases form in the air surrounding the plasma arc when the airborne vapors



of chlorinated solvents or degreasers decompose upon being exposed to the ultraviolet radiation of the arc. A hazard may exist if uncontrolled, excessive levels of acetyl chlorides are formed. A pungent "sweetish" aroma similar to chlorine bleach is the first sign that these gases are being produced. Shut down the plasma arc cutting system immediately if you detect the acetyl chloride odor. Do not resume cutting until you locate and control the source of the vapors.

Various cleaning solvents and vapor degreasers contain chemicals that decompose rapidly when exposed to ultraviolet radiation.

If the solvents, cleaning solutions, or vapor degreasers used in the shop contain any of the following chemicals, do not use them near the plasma arc cutting system:

1. trichloroethylene
2. trichloroethane
3. perchloroethylene
4. perchloroethane
5. trifluoro-trichloroethane (fluorocarbon-113)

These chemicals also decompose into small amounts of the toxic gases phosgene and chlorine. You will notice the acetyl chloride odor long before phosgene or chlorine levels become harmful. The vapors can decompose up to several feet away from the arc. Do not use or store chlorinated solvents, cleaning solutions, and vapor degreasers close to the machine, where the vapors can enter the torch-cutting area.

Note: It may prove advisable to provide separate ventilation for the solvent/degreaser storage area.

Metal Fumes

Metal fumes are produced when the plasma arc vaporizes the metal. A hazard may exist when uncontrolled, excessive levels of metal fumes are produced some vaporized metals form toxic gases. These metals may be in their pure metallic state, in an alloy, or in a coating such as paint or plating. Metals that are known to produce toxic fumes include beryllium,



cadmium, lead, manganese, mercury, and zinc. Beryllium products require particular care, because their fumes are highly toxic. If there is proper water level there should be adequate control of metal fumes during torch cutting.

Metal Dust

Metal dust is formed as metal vaporizes during torch cutting. A hazard may exist when uncontrolled, excessive levels of metal dust are produced. If there is proper water level there should be adequate control of metal dust during torch cutting.

Fire, Explosion, and Burn Prevention

All combustible materials must be removed from the immediate cutting area to at least 35 feet away. Appropriate fire extinguishing equipment must be available in the immediate cutting area.

After cutting, be sure to allow the metal to cool sufficiently before handling or before allowing contact with combustible materials.

Never plasma cut empty containers that have held toxic or potentially explosive materials.

Those containers must be thoroughly cleaned according to national standards prior to cutting or welding.

Never plasma cut in an atmosphere that contains heavy concentrations of dust, flammable gas, or combustible liquids (such as petrol).

Hot Surfaces

Assure that the bed is free of obstructions and no person or articles of clothing are in the proximity of moving parts when the machine is in operation. This safety precaution also applies when the machine is manually moved and when the plasma system is off.

Warning

Since plasma arc cutting produces hot metal, sparks, and slag, precautions must be taken to prevent fire or explosions.



Warning

Components may remain hot for a considerable period of time. Always wear gloves to remove components and scrap from the bed.

Heat Affected Zone

Plasma arc cutting creates a Heat Affected Zone (HAZ) around the cut edge of the workpiece. Until the hot edges cool, the HAZ will burn an unprotected hand severely.

1. When removing produced parts or skeletons from the machine, operators should wear heat-resistant, gauntlet-type gloves.
2. The torch and cutting slate bars become hot during torch cutting. Avoid contact with these components unless you are wearing heat-resistant gloves.

Sparks

Sparks form as the plasma arc torch vaporizes metal. These sparks are tiny droplets of extremely hot molten metal and are a possible fire hazard. The volume of sparks formed and the area over which they are scattered depend on several variables. These variables include the type and thickness of the material being cut, the cutting current, and the feed rate. Where practical, keep all combustible material at least 35 ft. away from the plasma arc work area. Where this is not practical, protect all combustible materials with close fitting, flame proof covers or shields. Protect wooden or other combustible floors by covering them with sand or installing fire-resistant shields. Shield any wall openings, floor openings, cracks, ducts, or conveyors within 35 ft. of the torch to prevent sparks from passing into adjacent areas.

Burn Prevention

High intensity ultraviolet and infrared radiation is produced by the plasma arc and is of



similar intensity to typical high current welding arcs. This radiation is damaging to the eyes and skin. As the operator comes closer to the torch, the level of exposure increases rapidly.

Cutting Aluminum on a Water Table

When cutting aluminum with plasma over a water table, hydrogen bubbles form.

These bubbles can accumulate and get trapped beneath the workpiece causing an explosion in the presence of an ignition source (such as an arc ignition).

Do not leave workpieces on the table if it is not being cut at that moment. For example, do not leave a sheet on the table overnight. Cut aluminum, and all materials, in a well-ventilated area.

Use a fan to increase air circulation beneath the workpiece on the plasma table.

Make sure the fan is turned on for several minutes prior to initiating an arc on the plasma table.

Allow at least one inch of clearance between the aluminum plate and the water level.

Use pointed slats to improve air flow.

Consider installing an aerator, circulator, or filtration system if cutting consecutive sheets of aluminum, anything that agitates the water to break up the bubbles of hydrogen.

Clean out fine aluminum particles from the water table after each use.

Light and Radiant Energy

When it is necessary to look directly at the arc for diagnostic purposes, do so briefly.

Use shade #10 welding glass (for up to 200 amps) or shade #12 (for 200 amps). During operation, use a shade not less than #8.

Ultraviolet rays and other radiant energy reflected off the workpiece can produce sunburn.



Therefore, when plasma arc cutting is being performed, anyone working within 25 feet of the arc should wear an approved, protective full-face mask, a long-sleeved shirt, gloves, and long pants.

Shield personnel at nearby workstations from accidental exposure to radiant energy by the use of non-reflective, fireproof enclosures, open at the top and at floor level to allow air to circulate freely.

The pilot arc in the plasma cutting systems is initiated and stabilized by a high-voltage signal. This signal can create electromagnetic interference.

As with any equipment that can create such interference (e.g., microwave ovens and TIG welders), people who have implanted heart pacemakers must exercise caution when working near the equipment. Boss Tables recommends that a person with a pacemaker who works near where plasma arc cutting is being performed should wear a Holter monitor for one day of work to record the existence of electromagnetic fields. A qualified doctor should review the recorded data with the pacemaker manufacturer to determine whether the worker can safely continue working in the area on which the study is based.

Compressed Gas Equipment

Gas cylinders should be mounted securely to a wall or other stable supporting device.

Cylinders

Compressed gas cylinders must be handled and used in accordance with appropriate national safety standards.

Never use a cylinder that is physically damaged or leaks.

Never move or transport a cylinder without the protective valve cover in place.

Never use a gas cylinder or its contents for any other purpose than that for which it is intended.

Never lubricate cylinder valves with oil or grease.

Never allow electrical contact such as welding arcs with cylinders.

Never expose cylinders to excessive heat, sparks, slag, or open flames, which



may cause rupture.

Never use hammers, wrenches or other tools to open stuck valves. Send these cylinders back to the supplier.

Pressure Regulators

All regulators used to operate plasma equipment must be maintained in proper working condition.

Faulty equipment can cause equipment damage or operator injury. Faulty equipment must be serviced at the manufacturers designated facility by trained repair technicians.

Never use a regulator for any other gas than that for which it is intended.

Never use a regulator that leaks, excessively creeps, or is physically damaged in any way.

Never attempt to lubricate a regulator with oil or grease.

Hoses

Gas hoses used for plasma arc cutting systems adhere to the following color coding:

Red.....Fuel

Green..... Oxygen

Black..... Inert gases and air

Replace any hose that is damaged by physical abuse or from sparks, heat or open flame.

Lay hoses out straight to prevent kinks.

Coil excess hose and place out of the way to prevent loose connections, or other damage.

Keep hose lengths to a minimum to prevent damage, reduce pressure drop and prevent possible volume flow restriction.

Please refer to national standards for more information on hoses.



Additional Safety Information

The general safety information presented in this chapter does not constitute a complete list of safety instructions for any configuration of the Boss CNC Plasma Table. Specific equipment being used by the customer and its application in the customer's factory may require supplementary safety information.

Note: It is the responsibility of the customer's company to make sure safety information covering the equipment being used and its application is available to personnel operating and maintaining the equipment and is read by them.

SAFETY STANDARDS PUBLICATIONS

It is recommended that companies using the kind of equipment covered in this manual consult the applicable Safety Standards publications available from the agencies listed below:

OSHA

Superintendent of Documents

U. S. Government Printing Office

Washington, DC 20402-9371, USA

Tel: (202) 512-2457

ANSI

American National Standards Institute

11 West 42nd Street

13th Floor

New York, NY 10036-8002, USA

Tel: (212) 642-4900

Fax: (212) 398-0023

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NFPA

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Tel: (617) 770-3000

1-800-344-3555

Fax: (617) 770-0700

SAFETY 27

Getting Set UP

- 1- **ANY DAMAGE** call immediately 563-380-1535 ext. 3
- 2- Unstrap computer stand and remove from bed. 2 people may be needed to lift and place on ground.



Cross slats simply drop into the slotted groove on the table brackets

- 3- When your slats need to be replaced the easiest way is to purchase 3" X 1/8 steel strap and cut to length. Remove the torch from wrapping and place on magnet mount. The machine will not come out of E-Stop without the torch in place on magnetic mount. The Torch has an ohmic Clip installed, you will need to connect the black covered wire to the clip. To let the machine find the height of the steel. Command CNC Interface is labeled Plasma Feather Touch and Plasma No Feather Touch. They are located on the desktop or home screen. Feather Touch is used for steel that is in good condition and will utilize the "feather touch" operation. No Feather Touch is used for material that is rusty, coated, painted, or has some sort of inhibitor on surface. The feather touch works very similar to an ohm meter. Once the feather touch senses the top of the material the torch home is

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set. If the rusty steel cutting interface is opened the torch will use the microswitch and offset the travel distance of the torch movement to operate the switch.

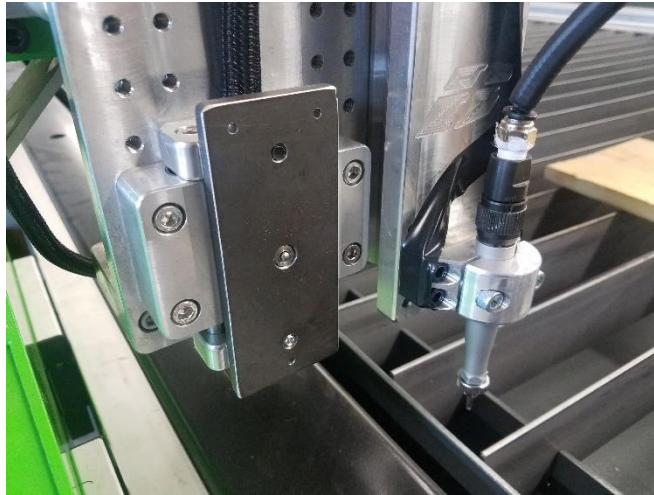
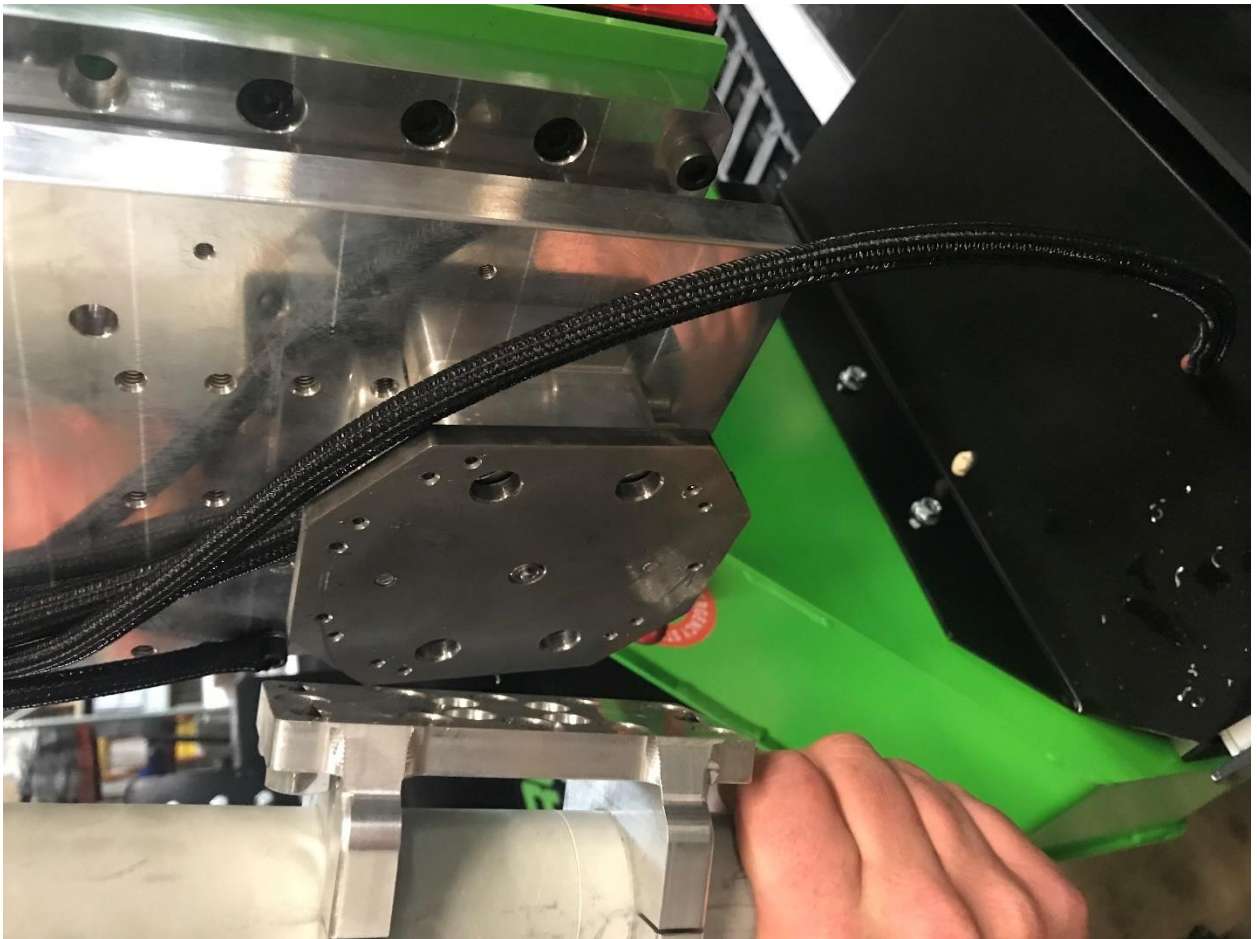


Image of the torch removed



Installing the magnetic mount and torch.

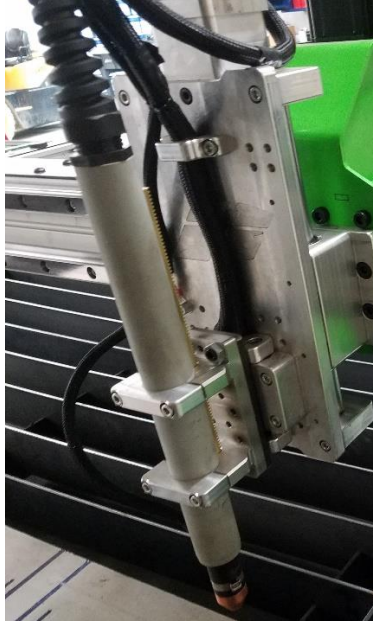


Image of the torch mounted and seated in its correct location.

- 4- There is a E Stop Switch located on the steel plate used for the magnetic breakaway, the switch has to be depressed to allow the machine to come out of E Stop. (You need to have the torch mounted to remove E-Stop.)
- 5- Ensure that the E-Stop buttons are not De-pressed as the machine will not come out of E-Stop. There are 2 located on gantry and 1 on the computer stand.



Push in on emergency stop to engage the stop function, turn knob 1/8" to right and allow to spring open. Note, never pull the knob open.

- 6- Level table. There are leveler feet located on the bottom of the legs. The table does not need to be perfectly level but the table will not drain properly if the drain is higher than the cutting area. The drain is located on the side of the controller. There is a black cover/ grate covering the "Drain". You will not need to remove the cover for any reason unless parts or debris is interfering.
- 7- Close the valve located on the bottom of the table. **Very Important as you will dump cutting fluid on floor if valve is not closed.**

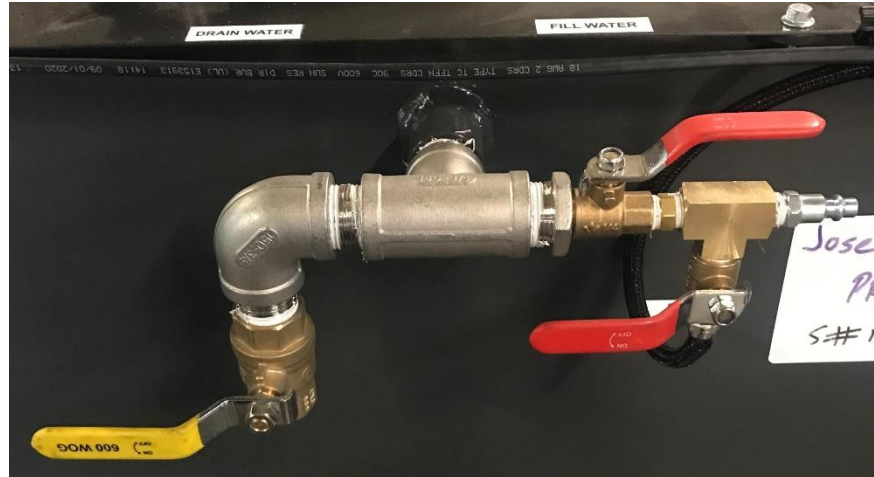


Table discharge. Lever at horizontal location is closed, vertical open



Use of any product other than Boss Table Water Additive will void your machines warranty!

- 8- Begin filling with water. Use any water available if it is clean. The 3/4 valve located on the control end of the table is the water/air valve(Left in picture). The valve needs to be open to allow air to escape and water to fill the lower tank. The table is full when the lower tank is full. Water level can be observed with a flashlight shining through the grate. The water level will rise in the lower tank and is full when the water level meets the floor of the cutting area. (the bottom of the grate) If over filled it will not hurt the machine and you can just let the extra water evaporate or utilize the table drain located underneath the table. This will take some time as the table holds approx. 300 gallons. Pour the BOSS Tables cutting fluid into the table anywhere in the cutting area. **Note, Use of any product other than Boss Table Additive will void your machines warranty!**



Air valve with optional scribe

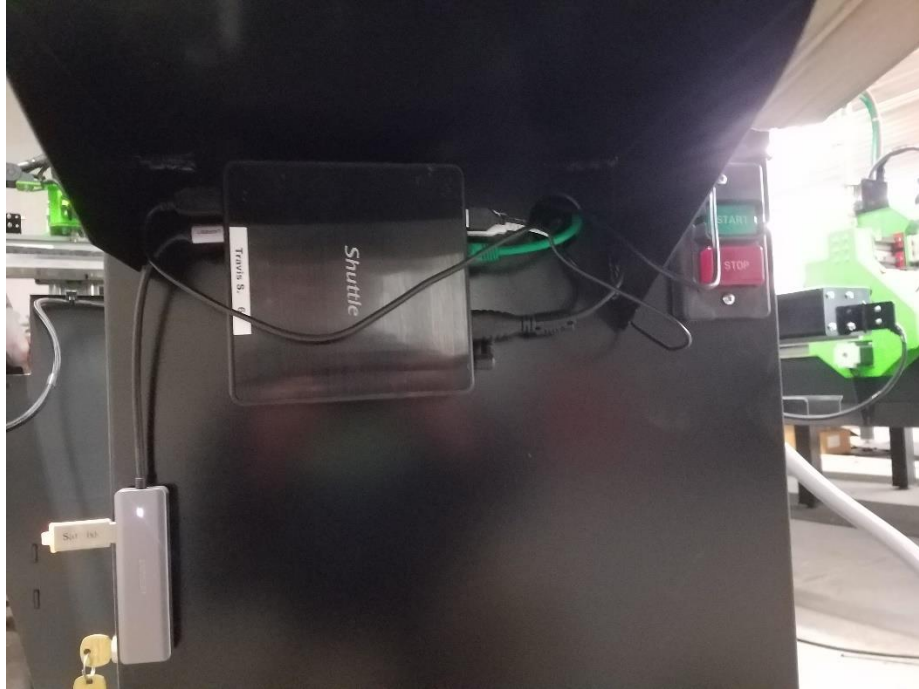


Air valve without optional scribe

- 9- Air pressure supplied to tank is applied from control end of the table. The smaller valve is used to supply air into the tank. The larger $\frac{3}{4}$ valve need to be closed to allow the air to push the water into the cutting area. If your table has a optional pneumatic scribe the small valve pointed down supplies air pressure to scribe. The air pressure will need to be supplied to hold the scribe up in the travel position.



Inside view of cabinet



Router and USB Dongle located on the right side of cabinet under the mouse pad.



Ethernet cord plugged into the cpu from hub.



Ethernet cable from cpu to hub.



Ethernet cable from dongle to hub.



Ethernet cable from hub to dongle.

- 10- Plug in computer. Computer is in a small box, the mount is on the right side of the computer stand. Slide the computer onto the mounting fixture and plug in the monitor, mouse, keyboard, white or black usb plug (from HUB), usb hub, and cat 5 cable green (from controller). The extra cord can be pushed into the hole that the white and green wires are ran through.

- 11- Mount monitor the mounting screws are located in the back of the monitor



- 12- Place keyboard and mouse on stand and place extra cord in hole next to computer mount. The keyboard and mouse plug into the hub located on the right side of the cabinet.
- 13- The computer stand has a surge protector located in the control cabinet. But another level of protection at your breaker box is recommended.
- 14- If customer is supplying their own torch the torch cable will need to be fixtured in the cable track. Open the cable track and lay in torch lead. Ensure the torch lead has proper clearance for z axis travel. The torch should be approximately fixtured 4 inches from the bottom of the z axis. The torch can be adjusted as needed to cut larger items such as 4 inch pipe ect.
- 15- **Ensure that the table is cleared off and all personnel is out of way.**
- 16- Press power button located on computer. The light will illuminate blue when turned on.

- 17- Ensure that home screen is shown. From there you can explore the computer if wished. **But the settings are not to be changed unless specified by BOSS Tables.** Feel free in future to create folder and save .DXF job and other files on computer. But it is not advised to use the internet for free DXF and or other personal needs, think of it more as a controller than a computer.
- 18- Installing your Hypertherm Power unit



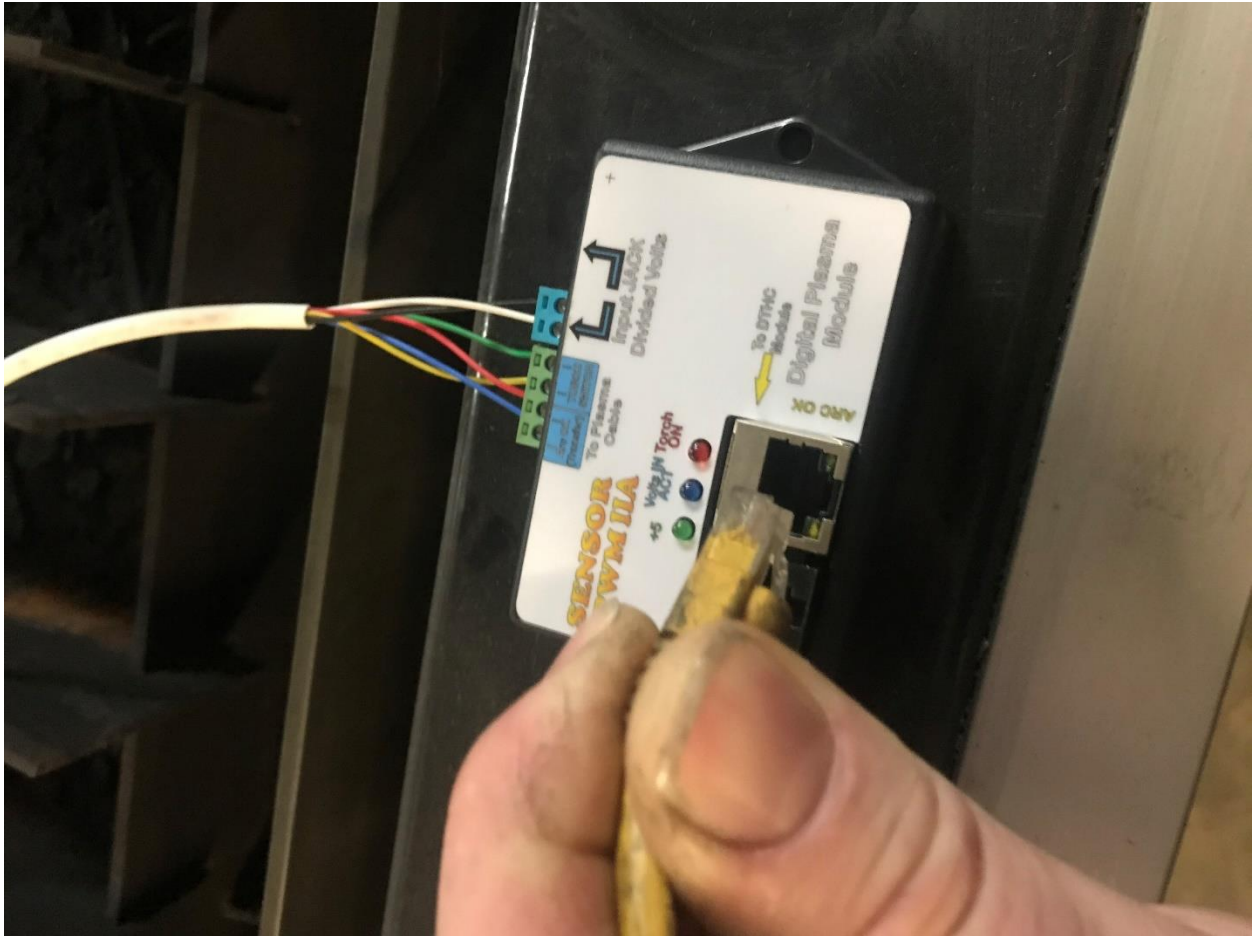
Unpack your unit from its packaging and set your unit into an easy to access area next to your Boss table. Plug in the torch lead from the table to the front of the power unit taking note of the correct orientation to insert.







On the back of the power unit plug in the round serial port from your Command CNC Dongle and connect to air.



Next connect the Ethernet communication cord to the dongle which is connected through the serial cable on the back of the power unit.



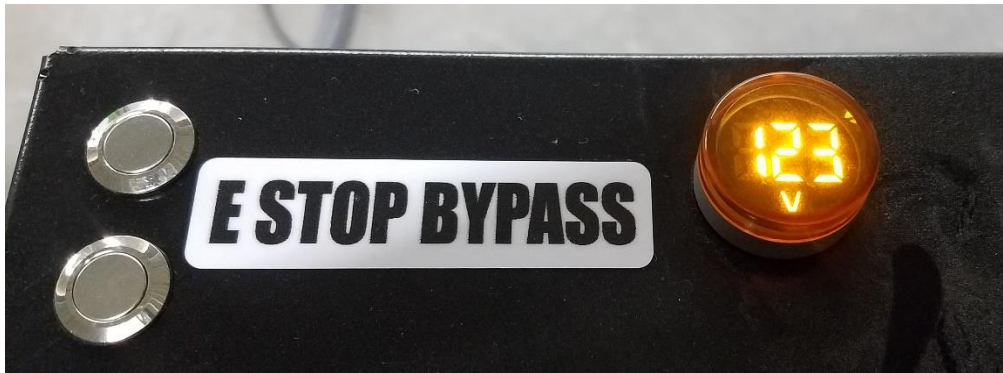
Place the grounding clamp affixed to the slates on the end of your Boss table and inserted into the port on the lower front of your power unit. Next plug the Hypertherm power unit to power as specified by your Hypertherm unit and local electrical code. ***Please note, it is important to have a proper earth ground dedicated to your Boss CNC Plasma Table. Failure to do so may introduce interference and possible damage to your machine.***



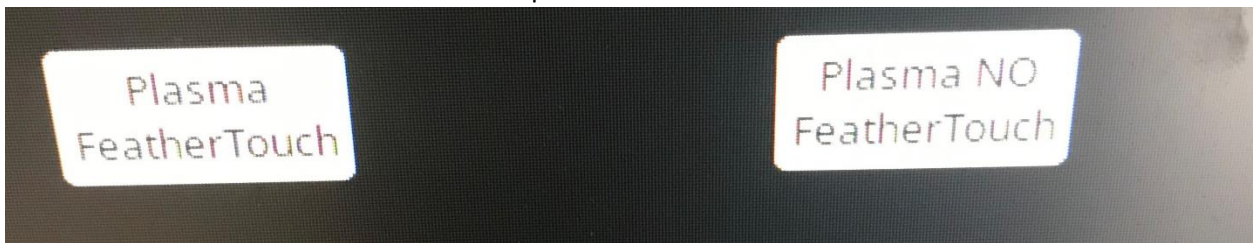
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- 19- The power button on the computer will not turn on the motor drivers and motors. The motor driver/power button is located on the right side of computer stand toward rear of cabinet. The power button can be locked out and tagged if needed to stop use.
- 20- When the button is pressed for motor power the voltage indicator / power indicator light will illuminate to show that power is supplied to motors. **If you're going to be working around or on top of the table, the power switch will need to be Locked out and tagged to ensure safety.**
- 21- **Lock Out and Tag Out if your going to be near the machine.**

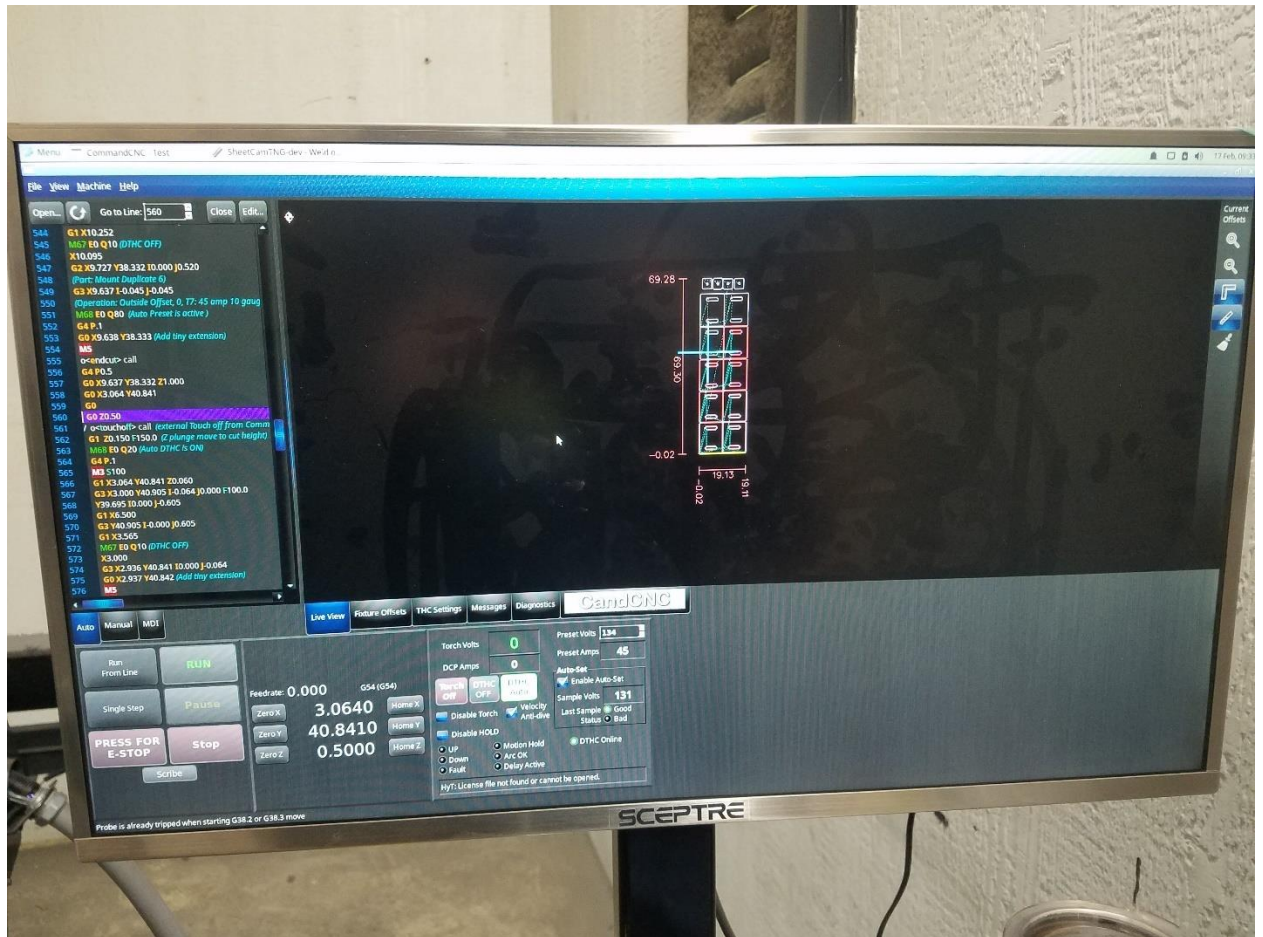


- 22- The motor and drive power will need to be powered on to supply power the MP 3700 located in the cabinet. The MP3700 is the large box located near top of fixture board. The MP 3700 is the controller.
- 23- If the command CNC interface is opened without the power supplied to motors and controller you will receive a no communication error. If present, just close the dialog box. Turn on power to the motor and controller. Wait 5 seconds and re open command CNC interface.



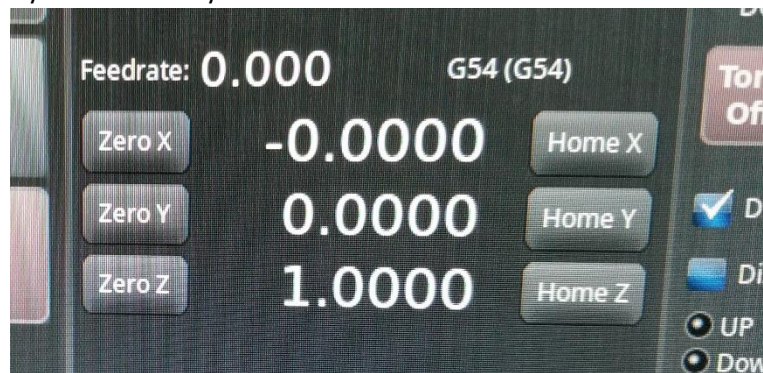
Screen icons located on your Boss Table desktop.

- 24- Command CNC Interface is labeled **Feather Touch** and **No Feather Touch**. They are located on the desktop or home screen.
- 25- Feather Touch is used for steel that is in good condition and will utilize the “feather touch” operation. No Feather Touch is used for material that is rusty, coated, painted, or has some sort of inhibitor on surface. The feather touch works very similar to an ohm meter. Once the feather touch senses the top of the material the torch home is set. If the rusty steel cutting interface is opened the torch will use the microswitch and offset the travel distance of the torch movement to operate the switch.
- 26- Once the interface is open you will notice lots of buttons that will be talked about later.



Note, the Press For E-Stop will need to be deselected

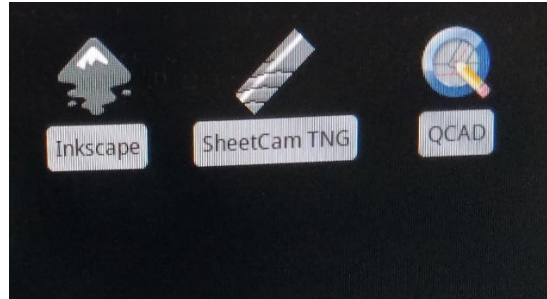
- 27- Your machine will open with the E-Stop button in lower left illuminated. You will need to “lift” E-Stop to operate the table. Click on the e stop button to remove E stop. If the button does not change check for proper torch placement and that none of the E Stop buttons are depressed.
- 28- You can now jog your table around using the Arrow keys for left, right, up, and down. Use the PgUp and PgDn located above the arrow keys to travel the Z axis up and down.
- 29- **You need to home the machine.** To home the machine jog the table to the lower left side of the table. Do not ram the gantry into the stops. Stop 4 inches before the X and Y limit switch. Then select the Home X and wait till it touches the home switch. Then Select Home Y and wait for it to touch off the Home switch. After the gantry has been homed with x and y axis a symbol will appear to let you know that your machine has been homed.



- 30- The Z axis will be homed when the material loaded is to be cut.
- 31- Granted that you followed the steps your machine is now set up and ready to accept Code to cut steel.
- 32- If you know how to use sheet cam you can skip the Sheetcam portion. But if your not familiar with sheet cam please review Sheetcam documents and watch videos located at www.bosstables.com
- 33- This is very important for cut quality and operating your plasma.
- You can change the amperage of your power unit, this allows you to operate at a lower amperage and cut thinner material. More amps for thicker material.
 - The tools are pre-loaded for Hypertherm in Sheetcam. Pick appropriate tool in sheet cam and match the consumable tip size and amperage on power unit.
 - Sheetcam tool/ consumable tip/ setting on power unit must match.

Sheet Cam Quick Manual (Videos are on website www.bosstable.com)

1. Sheetcam is the drill bit looking icon on home screen. Double click to open.

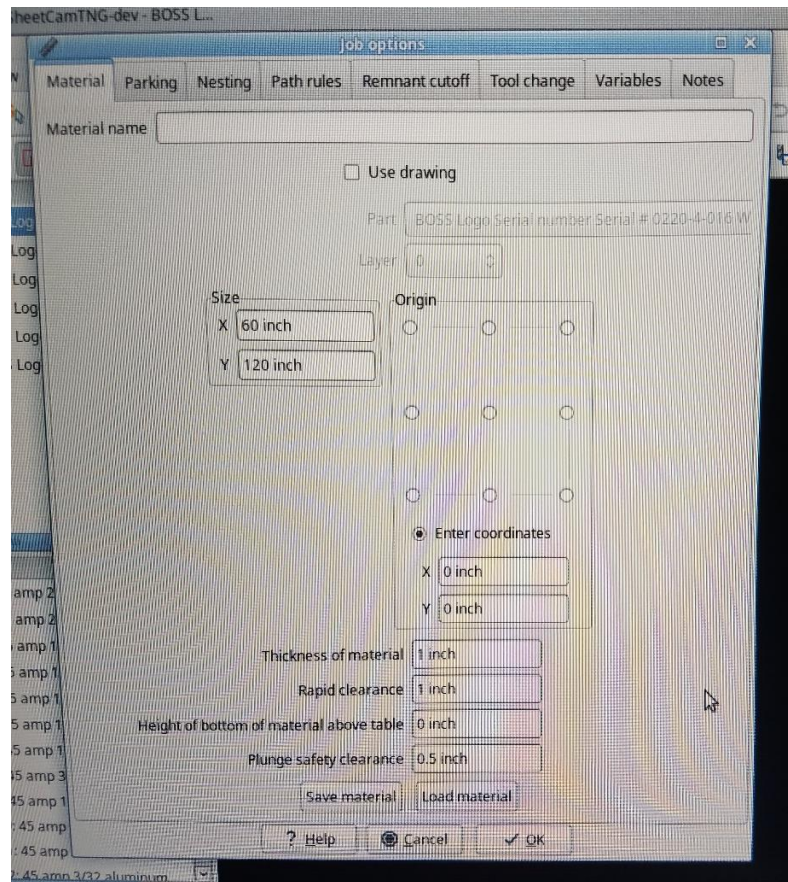


- 2.
3. Go to Options located at top of screen and select **Job Options**. In the material tab you will select the size of material your using. EX- 60" in X / 120" in Y box.

The box 9 dots will create the 0 X 0 Y origin Lower left is the most common selection.

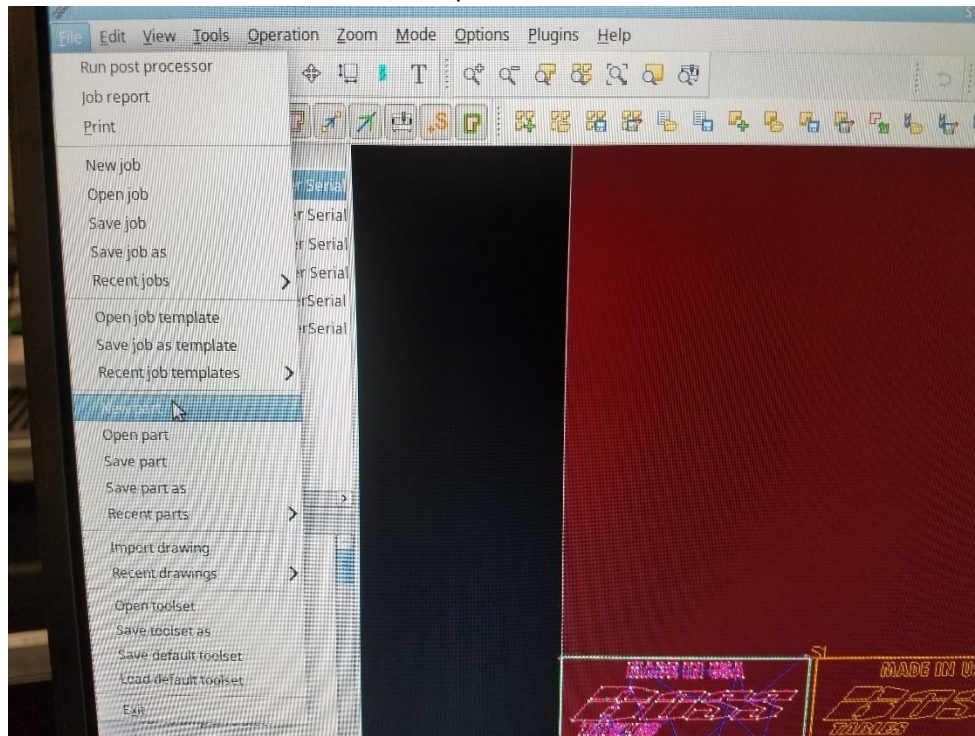
- You can select other options such as thickness of material (not used for plasma).
- Rapid clearance is the travel height of torch 1" is a good number
- Height bottom material is not used

- Plunge safety clearance is the distance above last touch off that it will slow down and touch off. .25-.5"

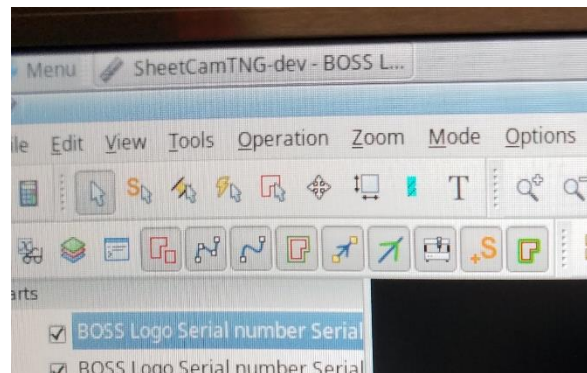


4. The size of the red area will change to the selected size in the Job options dialog box. This is your material area that you can nest parts on. You do not need to set this every time but if nesting a complex job it's a very valuable thing. Click ok and you will return to main screen.

5. **To Import a part** Part Click- File – New Part- then find your dxf that your cutting out. Once selected double click or select open.

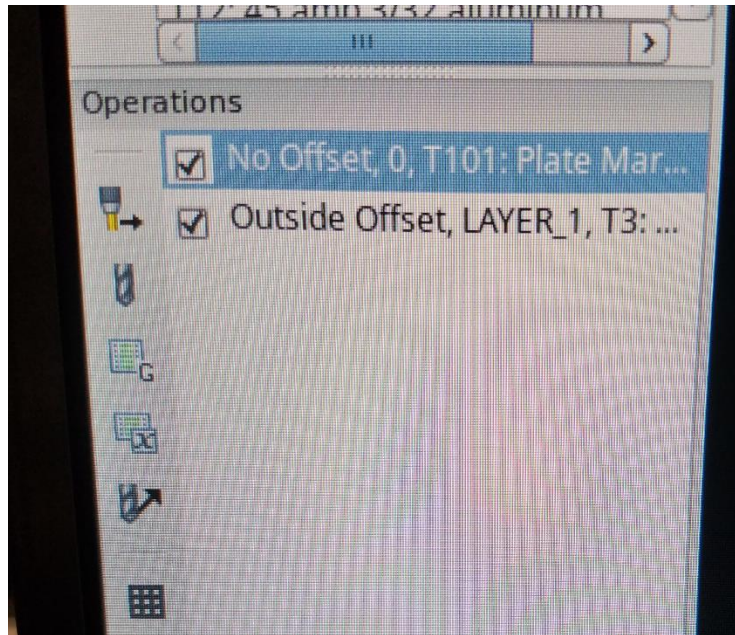


6. A box will open you will need to select Inch if not highlighted already by black dot. The dots on the drawing position will allow you to select where on the job you would like to drop your part. Lower felt will import to the lower left ect.... Points for drilling may be checked if needed. Click ok and your part will be imported into Sheetcam.
7. From there you can continue to bring more parts in as needed. You can also right click on the Parts listing box in upper left and select New Part for a faster import. Sheetcam will remember your last selection for drawing imports and remain the same until they are changed.

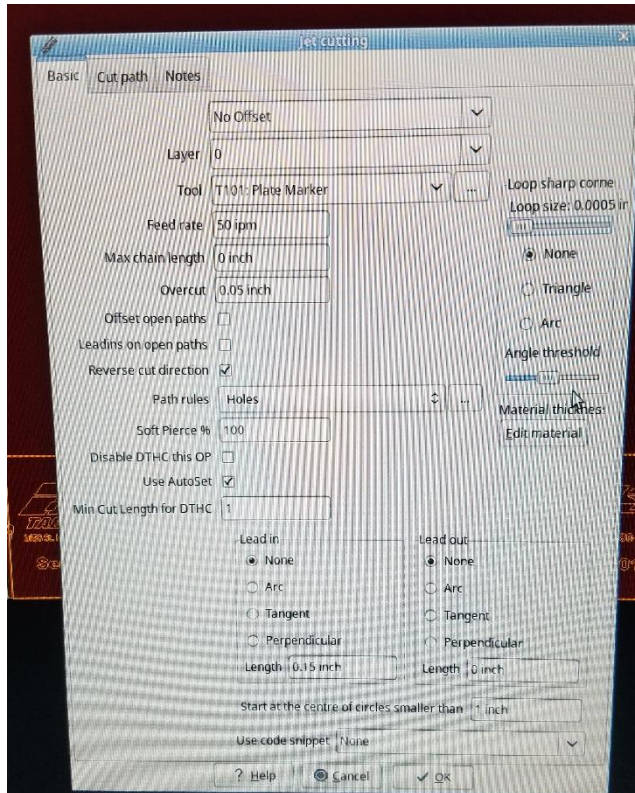


8. **Tool bar** located at the top of the screen next to the calculator.
 - Curser symbol is what you will use when creating tool paths and selecting things (if you are clicking on things and nothing happens select the Cursor symbol)
 - S will change the start location of SELECTED PART
 - Tabs Will not use
 - Action will not use
 - Red Box is Edit contours. For changing the offset and or creating different tool paths for peck pierce, scribe operation.
 - 4 arrow button is for nesting parts on your material. (Needs to be selected to nest parts.
 - Drill bit icon is for a simulation of the tool paths created.
9. Right click on middle of screen to find the measure tool (Super handy)
10. **Rotate the DXF files** with the < and > symbols, hold to spin in circle. Be sure to have Nest selected.
11. Mirror parts in the bottom right with Mirror X and Y check boxed.
12. **Multiple Duplicate.** Right click and select duplicate or **multiple duplicate** to make more of same part. Select copy and you will need to create a new toolpath for the part. Array parts will allow you to create rows and columns with amount you choose of each. Part spacing can be adjusted to needed size. (Be careful of lead in and lead out as they might land on top of part.) Change start position by selecting S on tool bar and correct tool path in lower left if more than one toolpaths. And click on part to change start path.
13. If nesting a thousand parts at once give sheetcam a chance to keep up with you. It may be advisable if creating a complex job to save your progress as to not lose your Job. To do so Select File-Save Job. Name accordingly and save in a good location.
14. Creating tool paths can be done before or after nesting parts.

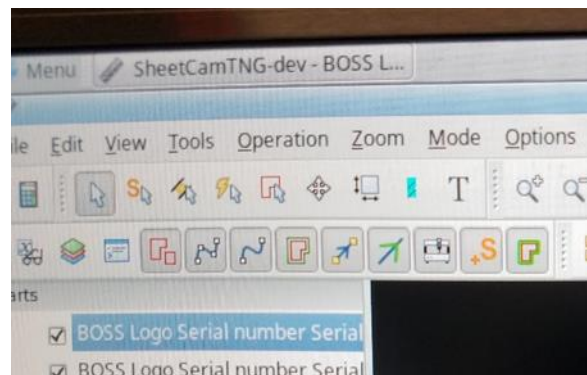
- 15. Create your tool path** highlight the part in the upper left menu. Then select the torch icon on the lower left in the **operations** menu. The tip icon with an yellow arc. (You will not have operations as shown until they are created, that is what we are working on now). **The tools section located in the middle left side is not how you create and operation or cut. It is there as a reference for tool speed, feed, ect....**



16. From there you will be brought to a dialog box where you will select the operations and steel thickness you desire.
17. Make Sure there are no double operations as they will try to run the cut path twice. If there are multiple just delete the one not needed.



18. **Offset Settings.** On the jet cutting page at the top is your **offset settings**. Outside offset will cut on the inside of the interior features and the outside of the outer features. Inside offset is the opposite and no offset will cut directly on the lines. No offset is very handy if the part drawn by customer or operator is too small. Move the holes that are too small to a new layer and generate a toolpath with no offset. If done second you will need to drag the operation to the top of the part operations. The idea is to cut or scribe the inside features first, then cut the outside of the part as to fixture the part with the larger plate that it is being cut from.
19. **Layers.** Layer is the features that you have selected. To create a new select the layer tool red box with cursor and click to select/drag a box over features/hold Ctrl and select more than one.



20. Select the features you want to change and right click and select move to new layer. Rename layer accordingly to you needs Ex. Drill/no offset/ or dead layer.

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21. Selected layers can also be deleted if needed right click and select delete.
22. Back in the jet cutting operation you will need to select your tool. Your tool is chosen off what size of tip you would like to run and the size of steel your cutting. **TIP!** the slower you cut and the smaller your tip size is the more defined your parts will be. The larger your tip size the faster you can cut allowing you more production. **Please reference your owner's manual of your plasma for the proper tip tooling and cutting parts. VERY IMPORTANT TO HAVE THE CORRECT PARTS INSTALLED IN TIP TO MAINTAIN CUT QUALITY.** Select the proper tip size which is also in correlation with you amperage. **Example** if you are using a 65 amp tip you need your plasma cutter set to 65 amps. Failure to do so will result in consumable failure or poor cuts.
23. Your **feeds, speed, pierce delay, torch volts, ect** will all be adjusted automatically. It can be reviewed by clicking on the dots(...) located on the right of the tool selection. Changes can be made accordingly if needed and the default tool set can always be uploaded again.
24. Max chain length will cut from part to part without piercing (not very often used)
25. Offset open paths and lead in on open path can be check depending on needs.
26. **Overcut** is the distance past the start of the cut you would like to troch to travel while still cutting.
27. **REVERSE CUT DIRECTON IS ALWAYS CHECKED** this is done to maintain cut quality because the air out of the torch is swirled in a tornado like motion. In doing so it will hold the arc, maintaining a straight kerf on inside and outside features.
28. **Path rules** can always be left as HOLES.
 - Holes sets the feed to a set percentage (50%) or choice of user from the chosen tool path. EX. 45 amp 3/16 steel cuts at 63 IPM. When the holes rule is applied the cut in the hole will travel at 31.5 IPM on the inside of the hole. This will greatly improve the kerf (taper) quality of you holes.
 - When the holes rule is selected the ECO Anti dive is applied as well when selected (defaulted)
 - ECO Anti Dive turns the DTHC off in corner to prevent the torch from diving. No matter how fast your table is you must slow down for corners.
29. **Soft pierce** is used with an HYT Kit (option used for thicker steel mainly)
30. **Disable DTHC** will turn your Digital Torch Height Control off
31. **AutoSet** will automatically adjust your cutting volts in the cut interface. leave unchecked as it seems to cause problems and can be disabled later if needed. (explained later)
32. Min cut length for DTHC should be left at 1" for most operations unless a custom tool is needed or very thick steel is being cut.
33. **Lead in and Lead out** will allow you to pierce the material outside of the part with the selected distance. Lead In will pierce and travel toward feature as selected with choices of None, Arc, Tangent, and perpendicular. Arc is the most common choice. Lead out will

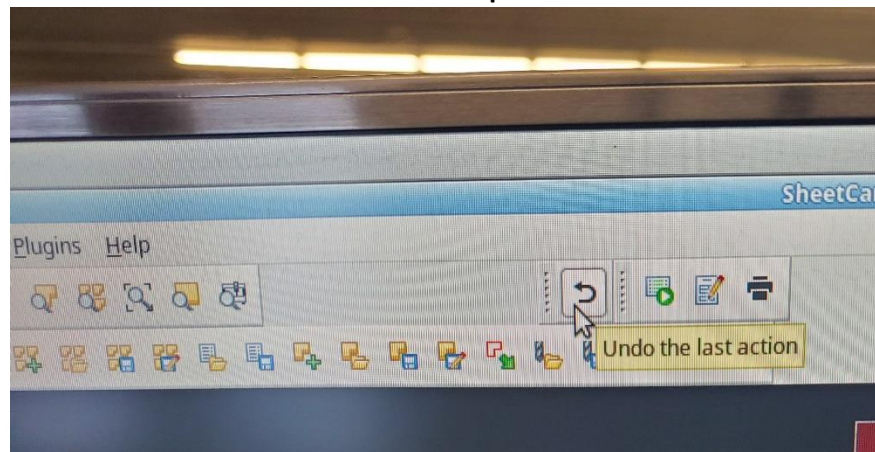


do the same but finish the cut outside away from feature. Your lead out generally can be very small or not used at all.

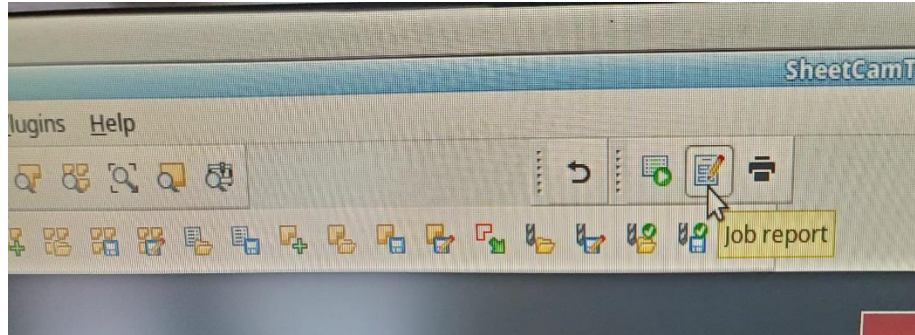
34. **Code snippet** is seldom used as the HOLES and Anti Dive are very effective
35. Select OK and you will see the tool path generated.
36. Follow step 14-33 to generate tool path for next part/s that being said once you have the correct tip/amp and size of steel selected you can just hit ok and sheetcam will remember the last operation set in Jet cutting making the process very fast.
 - Select part
 - Generate operation needed (generally same as last)
 - Hit ok and select another part.
37. You have your tools paths created and your part nested (lower Left as that's your 0-X 0-Y location) -Start with something simple please-
38. **Create G Code / Post Process** From here you need to create your G Code Click in upper right corner File- Run Post Processor. This is what generates that fancy looking code you thankful you don't have to write by hand anymore.
39. Create a file name that is associated with you part and save it in a location that you know the location of and will be able to find again. Do not be afraid to create new files and save accordingly. (generally saved in documents or desktop)
40. Moving on to the Cut interface as your now a pro at sheetcam -Congrats-

More on SheetCam

1. **There is a Back button located at the top of the screen**

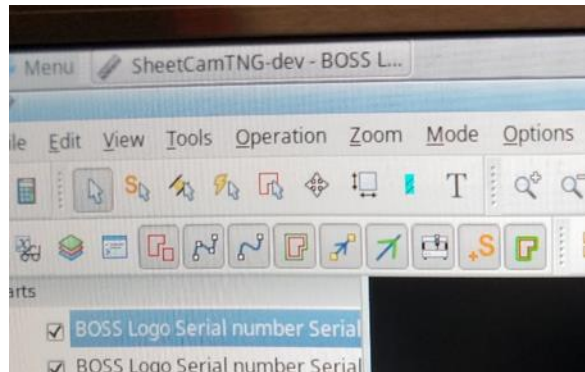


2. **There is a Job report that can be used for more information**

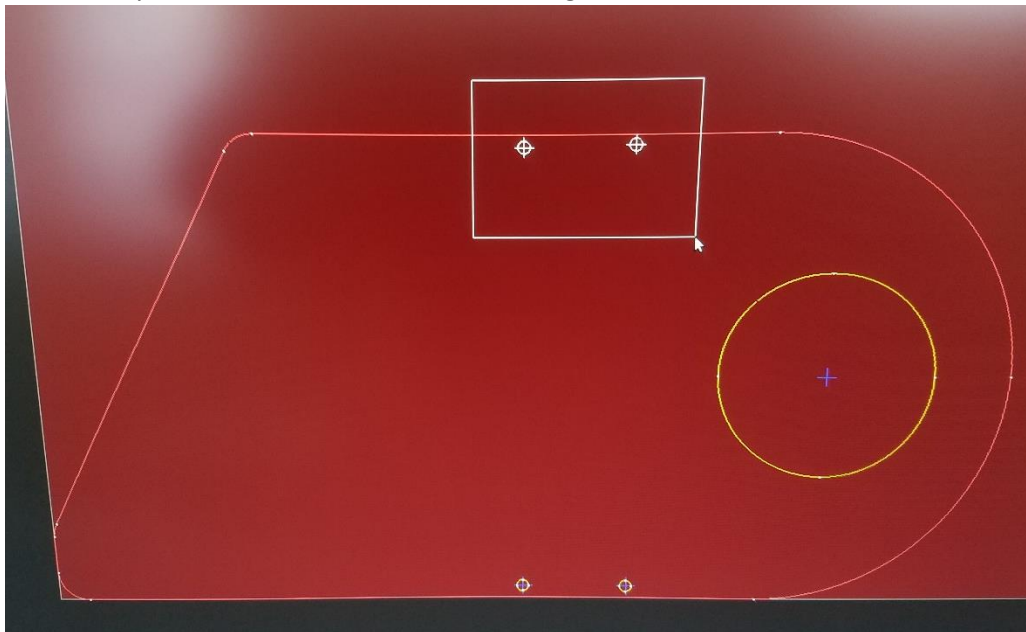


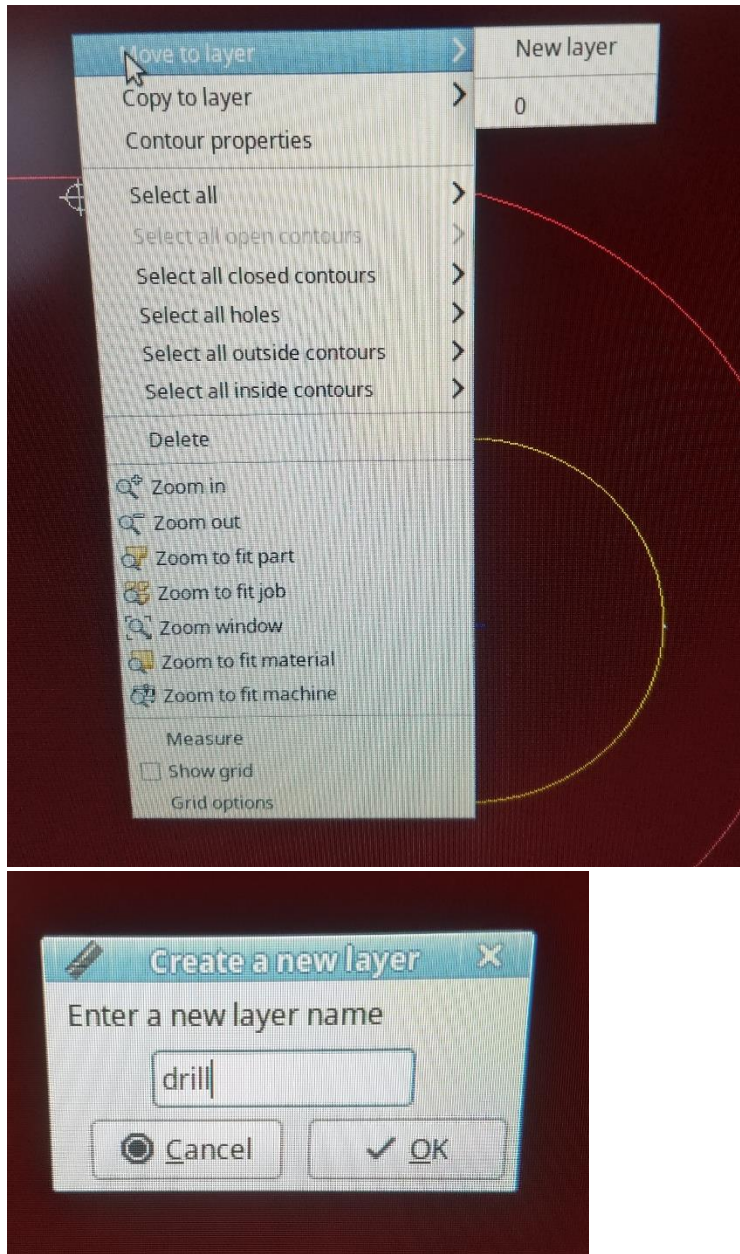
Peck Peirce

- To create a new layer tool, select/drag a box over features, hold Ctrl and select more than one.



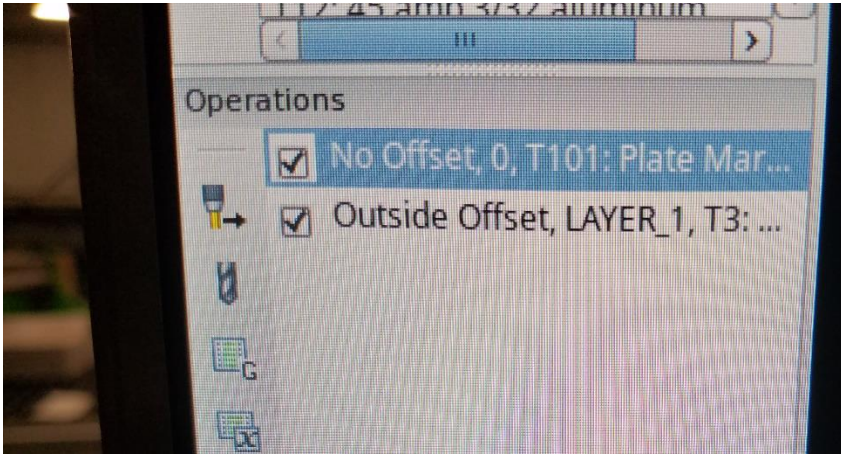
- Select the features you want to change and right click and select move to new layer. Rename layer accordingly to you needs Ex. Drill/no offset/ or dead layer.
- Selected layers can also be deleted if needed right click and select delete.



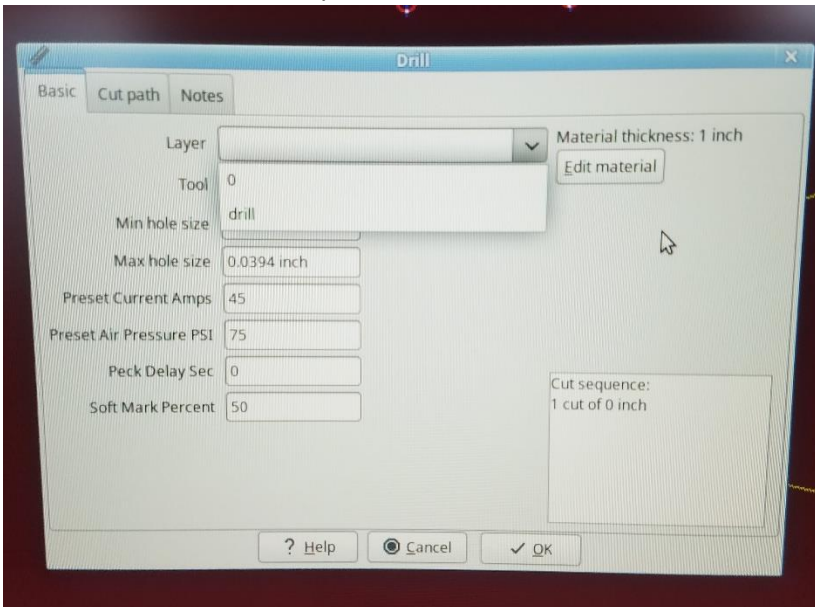


- You have Created your new layer. From here you can either not cut the layer, use the just cutting operation and change the offset, or use for peck pierce locating

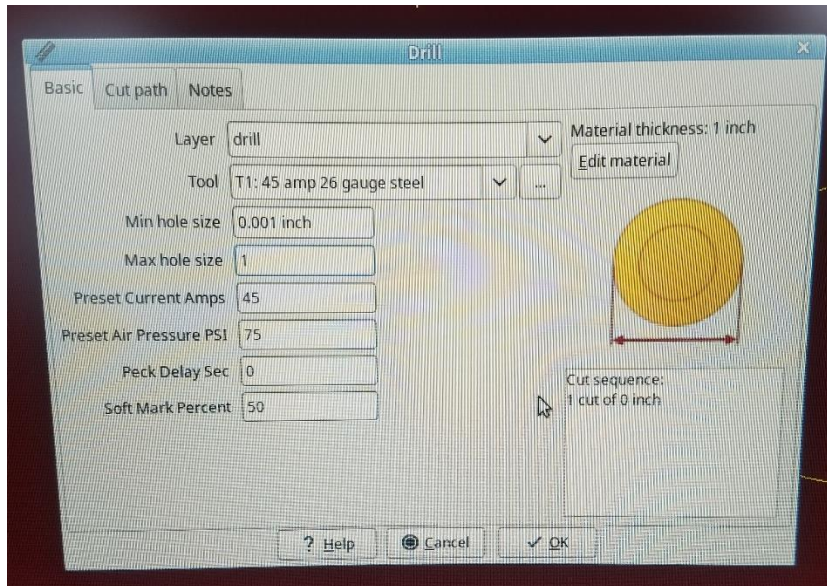
- Bottom left on sheet cam there is a drill bit logo select the drill bit located just under the torch or jet cutting operation button.



- You will now be brought to a screen here you can select your layer, Use the layer you have created or made to locate your drill locations.



- What I do to reduce the size of the hole is always operate the peck pierce with T1



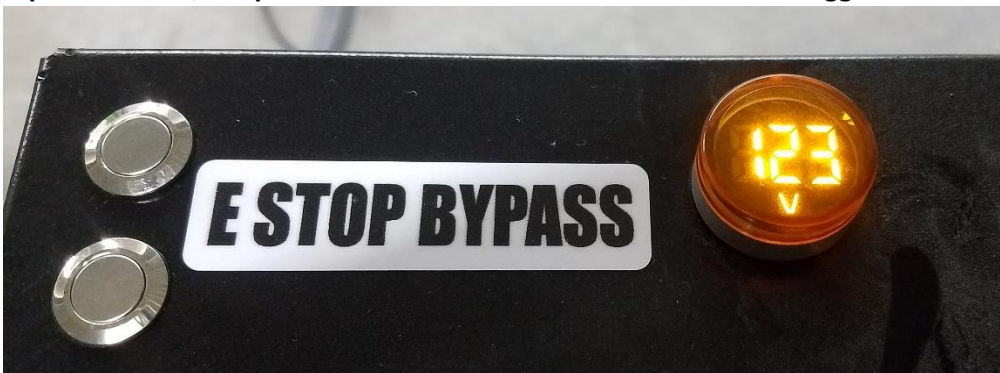
- Ensure that the Min and Max Hole size will fit the appropriate selection. NOTE you can only locate and peck holes. If you have a slot sheet cam will not readily find the center.
- Hit ok and notice the S1,S2,S3, that represent your starting points. They will just be a cross hair as there is no tool path.

Starting with CandCNC

- 1- **Ensure that the table is cleared off and all personnel is out of way.**
- 2- Press power button located on computer. The light will illuminate blue when turned on.
- 3- Ensure that home screen is shown. From there you can explore the computer if wished. But the settings are not to be changed unless specified by BOSS Tables. Feel free in future to create folder and save DXF, job and other files on computer. But it is not advised to troll the internet for free DXF and or other personal needs. Think of it more as a controller than a computer.
- 4- The power button on the computer will not turn on the motor drivers and motors. The motor driver/power button is located on the right side of computer stand toward rear of cabinet. The power button can be locked out and tagged if needed to stop use.

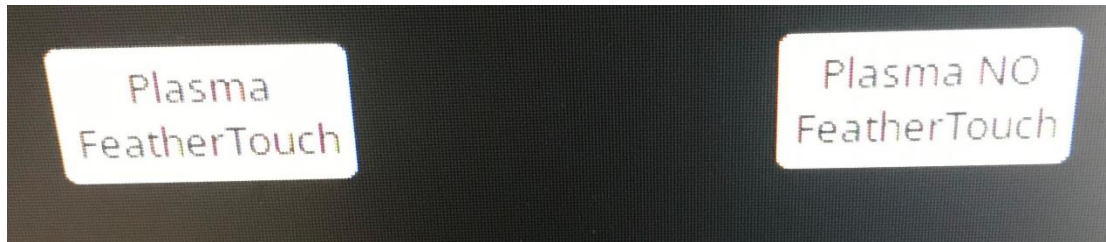


- 5- When the button is pressed for motor power the voltage indicator / power indicator light will illuminate to show that power is supplied to motors. **If you're going to be working around or on top of the table, the power switch will need to be locked out and tagged to ensure safety.**

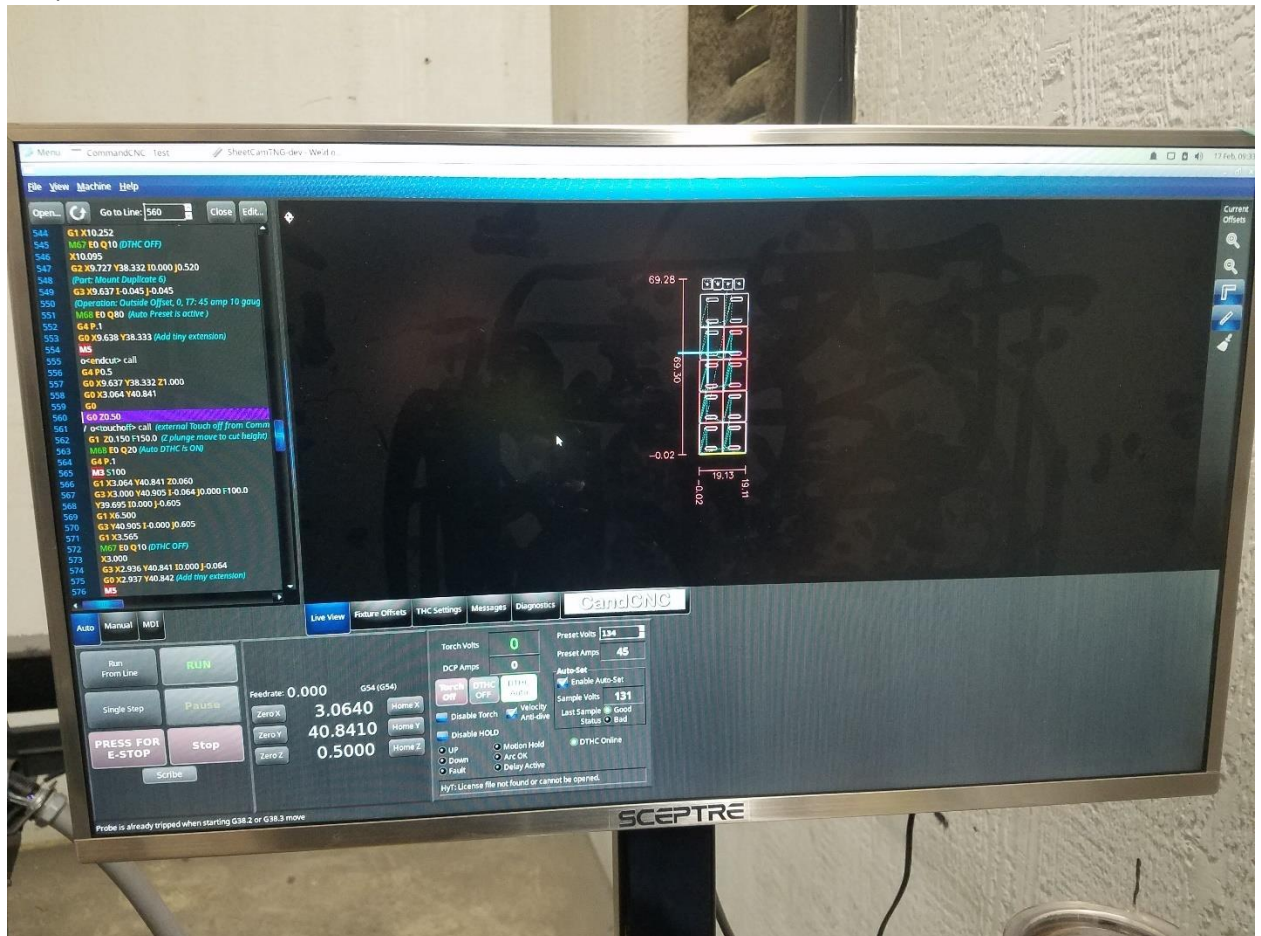


- 6- The motor and drive power will need to be powered on to supply power the MP 3700 located in the cabinet. The MP3700 is the large box located near top of fixture board. The MP 3700 is the controller.

- 7- If the command CNC interface is opened without the power supplied to motors and controller you will receive a no communication error. If present, just close the dialog box. Turn on power to the motor and controller. Wait 5 seconds and re open command cnc interface.

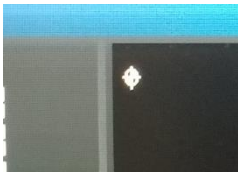


- 8- Command CNC Interface is labeled Plasma Feather Touch and Plasma No Feather Touch. They are located on the desktop or home screen.
- 9- Feather Touch is used for steel that is in good condition and will utilize the “feather touch” operation. No Feather Touch is used for material that is rusty, coated, painted, or has some sort of inhibitor on surface. The feather touch works very similar to an ohm meter. Once the feather touch senses the top of the material the torch home is set. If the rusty steel cutting interface is opened the torch will use the microswitch and offset the travel distance of the torch movement to operate the switch.

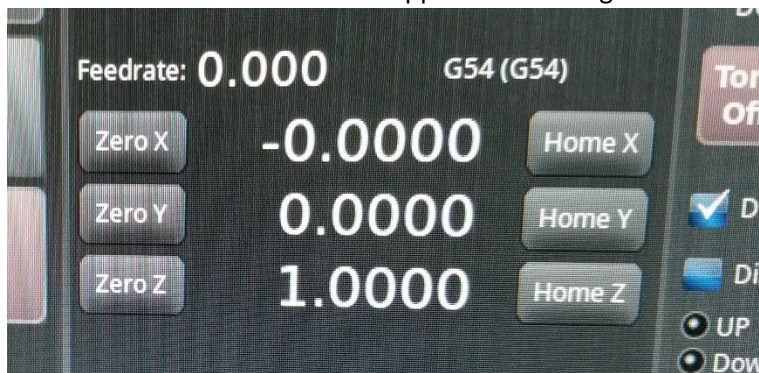


10-

- 11- Your machine will open with the **E-Stop button** in lower left illuminated. You will need to “lift” E-Stop to operate the table. Click on the e stop button to remove E stop. If the button does not change check for proper torch placement and that none of the E Stop buttons are depressed.
- 12- You can now jog your table around using the Arrow keys for left, right, up, and down. Use the PgUp and PgDn located above the arrow keys to travel the Z axis up and down.
- 13- **You need to home the machine.** To home the machine jog the table to the lower left side of the table. **Do not ram the gantry into the stops.** Stop 4 inches before the X and Y limit switch. Then select the Home X and wait till it touches the home switch. Then Select Home Y and wait for it to touch off the Home switch. After the gantry has been homed with x and y axis a symbol will appear to let you know that your machine has been homed.



Located in Upper left side of generated image.

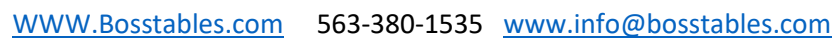
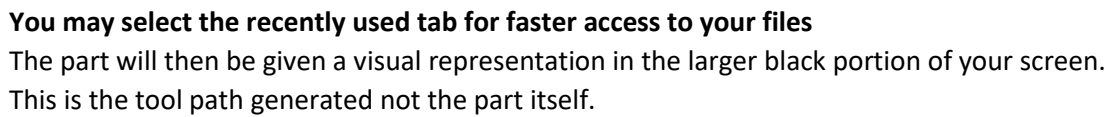


Do not worry if there are still number is not the XYZ at this point your looking for triple 0's later...

- 14- The Z axis will be homed when the material loaded is to be cut.
- 15- Granted that you followed the steps your machine is now set up and ready to accept Code to cut steel.
- 16- If you know how to use sheet cam you can skip the Sheetcam portion. But if your not familiar with sheet cam please review Sheetcam documents and watch videos located at www.bosstable.com

Operating the Cut Interface

1. You have your operation created in Sheetcam and are ready to start cutting. Upper left corner click File-Open Find your file you saved from running your post processor and select open or double click.



3. The **GCode** will be produced in the left side of the screen. There you can see the operations and tool chosen in Sheetcam. This is very important as it tells the controller what the speeds and feeds are ect.
4. **You have homed your machine but your image is located in a random location.** You will need zero your part location.

Home sets the machine parameters but it does not orientate the part on the machine. Once the machine is homed you will not be able to run the machine into the stops or run it off of the table.

Zero sets the part location located in the lower left of the screen oriented off of the torch. Travel your torch to any location and hit zero x and zero y to see the part move on the screen.

 - **Bring torch to the lower left of the steel to be cut and hit Zero X, Zero Y the part will be located off of the torch tip. If you nested your part in Sheetcam 4 inches away for the lower left corner your part will be offset 4 inches from the tip.**
5. Notice in the image above the upper most and right most numbers are red and outlined. The part is nested on the machine too close to the edge or is located off of the machine. If not homed do so now and zero the torch correctly oriented by the steel on the table.
6. Your part is now nested on the steel to be cut. If desired depending on allotted room travel the torch around on the screen and verify that the part or parts are going to fit in allotted sheet. Used the arrow keys and the screen as a visual reference to see where the torch will travel.
7. **Shift Parts.** If you are going to cut outside of the allotted material by .25" then you can move the appropriate x and or y axis to a -.25 and rezero the part on the material. Shifting the parts nested by -.25. if you simply do not have enough room you will need to renest the parts on sheet cam or resize the part.
 - **If you re-nest your parts you have essentially changed the g code needed to cut the appropriate job. You will need to run the post processor again (we advise not to save over the existing file but create a revision file number as a reference that you have indeed loaded the new job EX--- Test.tap will now be Test2.tap**
 - **Tip- you thought the steel was 16 gauge but there is 14 on the table you do not need to start over. Open sheetcam change the operation to 14 on ALL the parts and RE-Run the post processor to change the cutting operation.**
8. **Zero Z Axis.** Everything looks good? You have told the machine where **X and Y are oriented** but you now need to zero the Z height. You can home z in any location as long as its on the material your cutting. Hit Home Z and the torch will travel down and touch off of the steel. If the Z values does not change to 0.0000 hit Zero Z and you ready to cut.
9. Your part fits and your ready hit Run in Lower Left and you will be prompted to check settings. Hit ok and check settings. To start hit resume and your now cutting steel.
10. The torch will travel to the initial pierce point and touch off the steel again. Finding the height of the steel and offsetting the pierce height. Torch will fire and drop down to cut height and continue on path wrote by Sheetcam.
- 11. Do not stare at the arc as it will damage your eyes.**

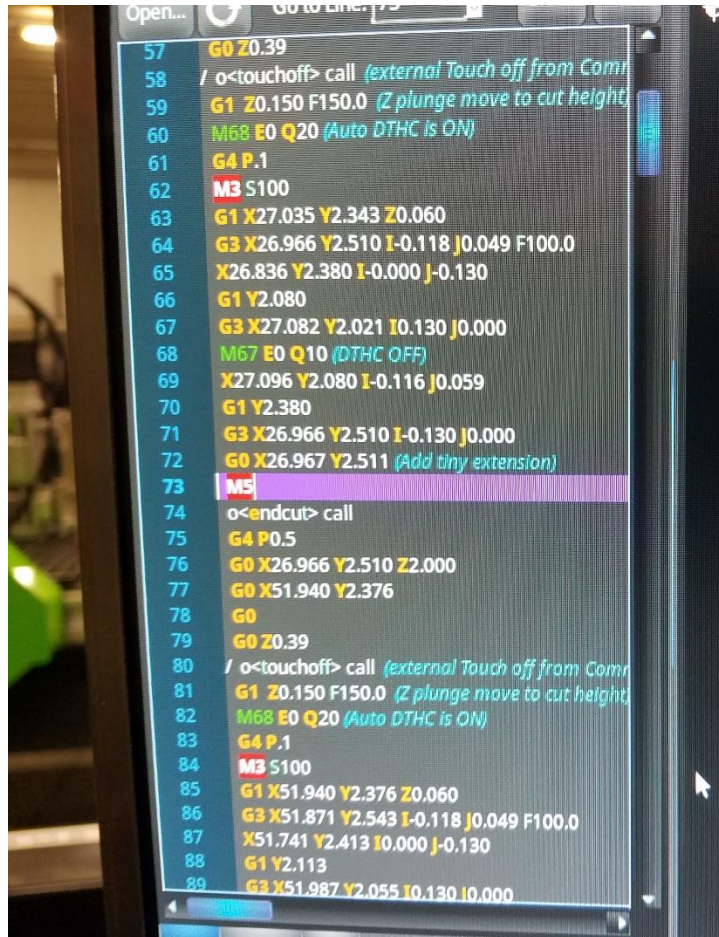


Operating the Cut interface like a pro

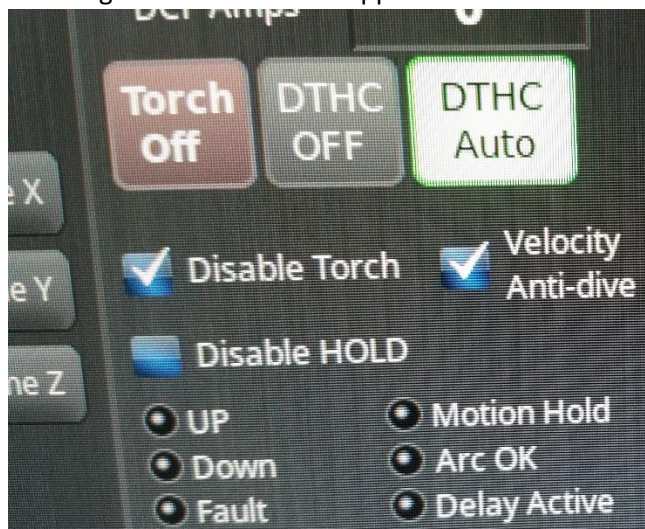
Now you are up and running and cutting some steel but whats all the other stuff for?

How to restart a cut

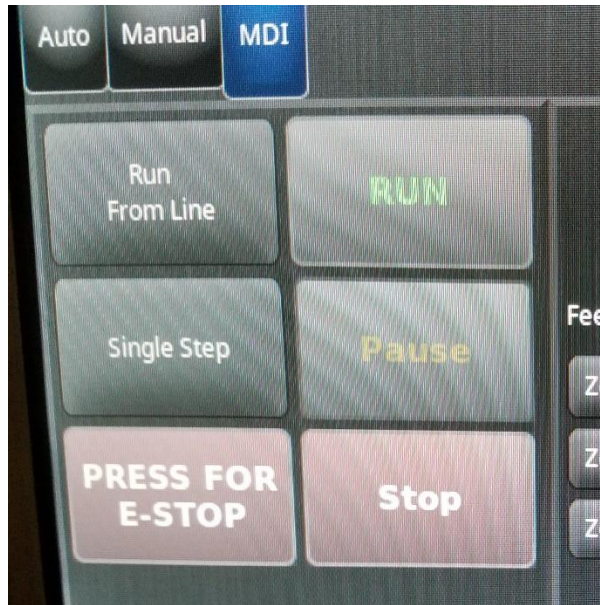
- There are lots of reasons you will need to restart a cut. Ran off the steel? Poorly nested parts, collision with part that tipped up and dislodged the torch, consumables are worn, lost your ground, or just quit cutting.
- Clear any obstructions or issues that have stopped the operation. Explained Next.
- Need to find the last M5, M5 is the end of you last cut. M3 is the start of a cut.
- You can use the interface screen to locate the part that you were last on. If there are lots of parts you can travel the torch overtop of the last part to give a visual reference. Click on the part you need to finish cutting and the G Code on the left will move the line selected. Scroll up to find the previous end cut.
- Hit stop on the lower left corner. Click on the last M5 as shown below. The M5 is the end cut of the last feature.



- You will need to disable the torch momentarily while it runs through the G-Code traveling to where the arc stopped.



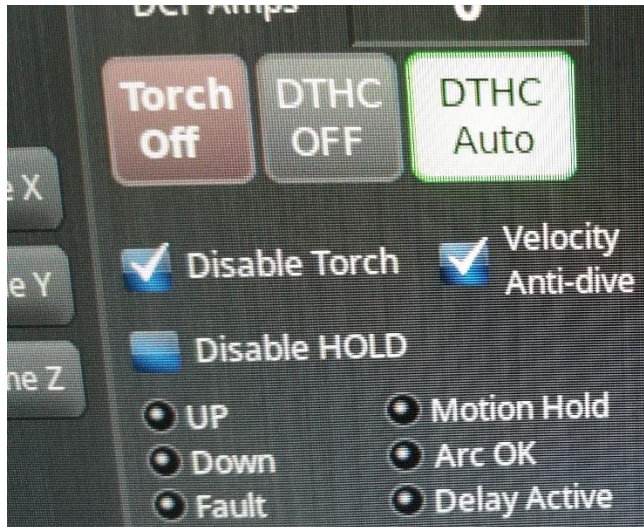
- With the torch disable button checked as shown.
- Click Run from line (NOT RUN) if you hit run the G-Code will start from beginning.



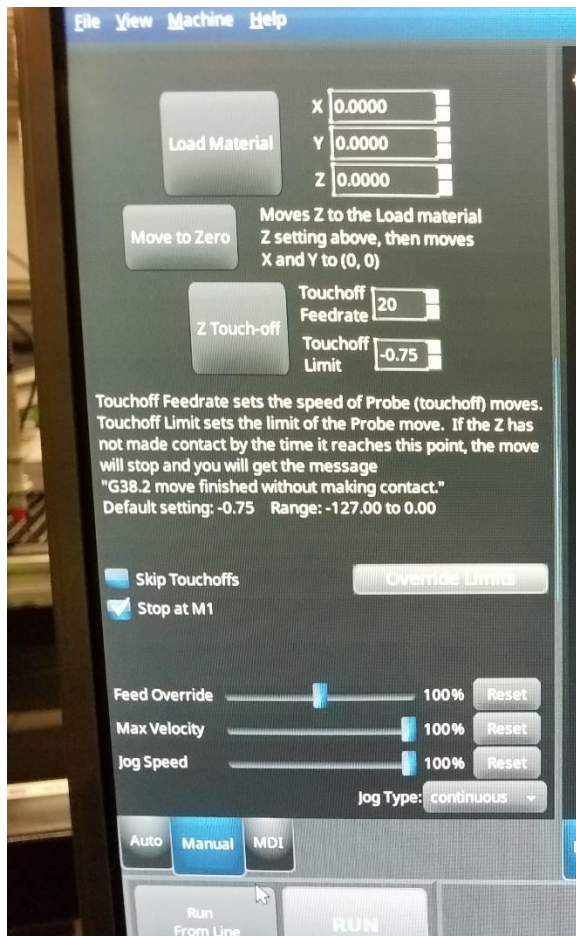
- Torch will travel to last M5 and come back to current feature, touch off, (the torch will not fire if disable torch is selected) and travel on the same part that it was running on. 1" to ½ inch before where the cut stopped uncheck Disable torch. The Torch will pause, fire, then continue with the cut as if you never had an issue.
 - **STOP- M5- DISABLE TORCH- RUN FROM LINE- ENABLE TORCH-**
 - If you are trying to re start on the first cut you have made in a cutting operation (THE VERY FIRST CUT) you will need to Hit RUN. Not Run from Line. As there are no M5 codes.
 - If you are looking to skip forward in the GCode you can Hit RUN and the settings will be uploaded. Then press pause to stop the motion. From there you can select the part your looking to run and choose the previous M5 and the cut will begin. You do not need to disable torch as you have not cut there before.
 - If needed or wanted as the part your cutting is not needed or destroyed from a collision you can skip the part by selecting the part on the interface. Then scrolling down in the G Code select M5 at the end of the part. Then hit run from line. (NOT RUN)
1. **Move torch after there is a collision.** The torch has become dislodged, or the upper torch travel limit switch has been activated. The Machine has E Stop Activated and you cannot get e stop off.
- **Press E-Stop Bypass and hold** you need to hold as the buttons are momentary switches that are only operated by holding them down.
 - **While holding the Bypass down** click the E-Stop button to remove.
 - **Travel the torch away using the arrows or PgUp While holding the Bypass down.** After traveled out of the way of obstruction. Place torch back onto magnetic torch mount. And remove E stop again by clicking on it.



2. **Pause** at any time while the torch is not cutting and simply hit resume to continue cut.
3. When the torch touches off steel and fires the motion hold is maintained until the arc ok signal is given by the power unit. If the Disable Hold box is checked the torch will fire and not wait for the Arc Ok signal starting without properly starting an arc. Potentially leaving a bit of material that was not cut.
4. The Disable Hold is useful in trying to “cheat” your machine. Such as staring off the steel, you might have left the ground off and it pierced but never continued. Now there is no steel directly under the starting point. Check Disable Hold and it will not wait for the signal and just start cutting!



5. Pictured below is the Manual Tab.



- **Load material** when selected will have torch travel to the set location. Notice the Z is 0.0000 and it will probably hit the table or material as it will travel to 0.000 enter 2 for Z axis as a safe number.

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- Z touch-off does as described in picture and can also be adjust in Sheetcam under the jet cutting screen (that is where the number initially come from when creating a tool path)
 - **Skip touch offs** will allow you to cut faster as it will not touch of material and just move to pierce height and fire the torch and continue on if the arc ok is given. If utilized your material needs to be very flat and not warped.
 - Feed override will slow down of speed up cut in an effort to improve cut quality. 15% and over will turn off DTHC
 - Max velocity will set the maximum speed your machine will run at (even your rapid speed)-----WHY? Because you can set the travel speed very low to allow time between cuts as not to overuse the machine according to duty cycle.
 - Slowing the jog speed will allow you to dial in your torch placement by slowing down the movement initiated by the arrow and up down keys.
6. **MDI tab**- The MDI Tab allows you to wright simple G code by hand and move machine manually (NC)

MDI Simple commands

G1 = Move Command

X= X AXIS

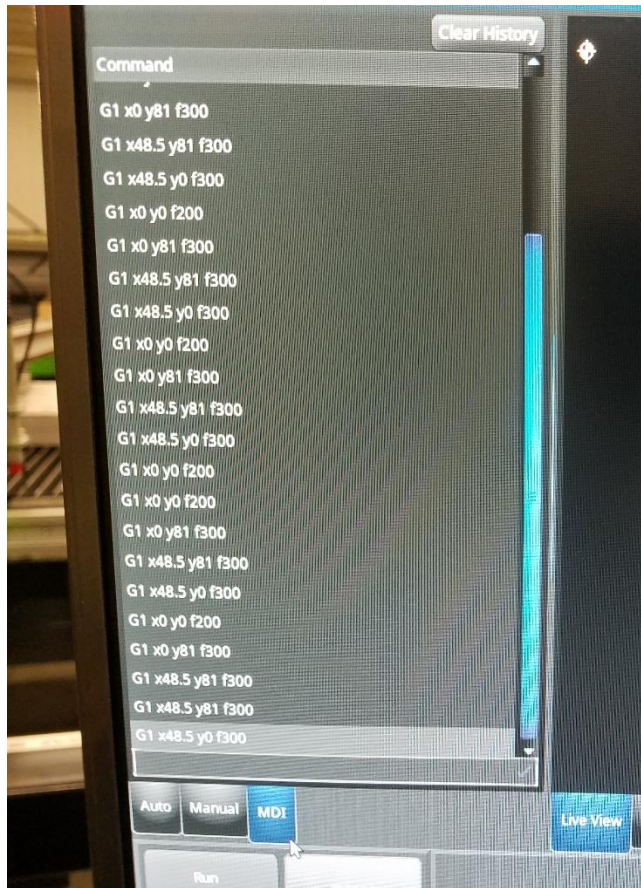
Y= Y AXIS

Z= Z AXIS

F= Feed Rate

If a code such as G1 X32 F200 is given it will only travel the X Axis at 200 IPM

Unless you give the axis a new coordinate it will stay in the position it was located.

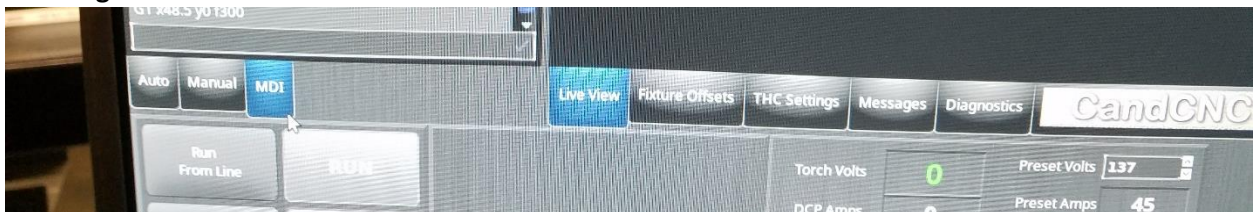


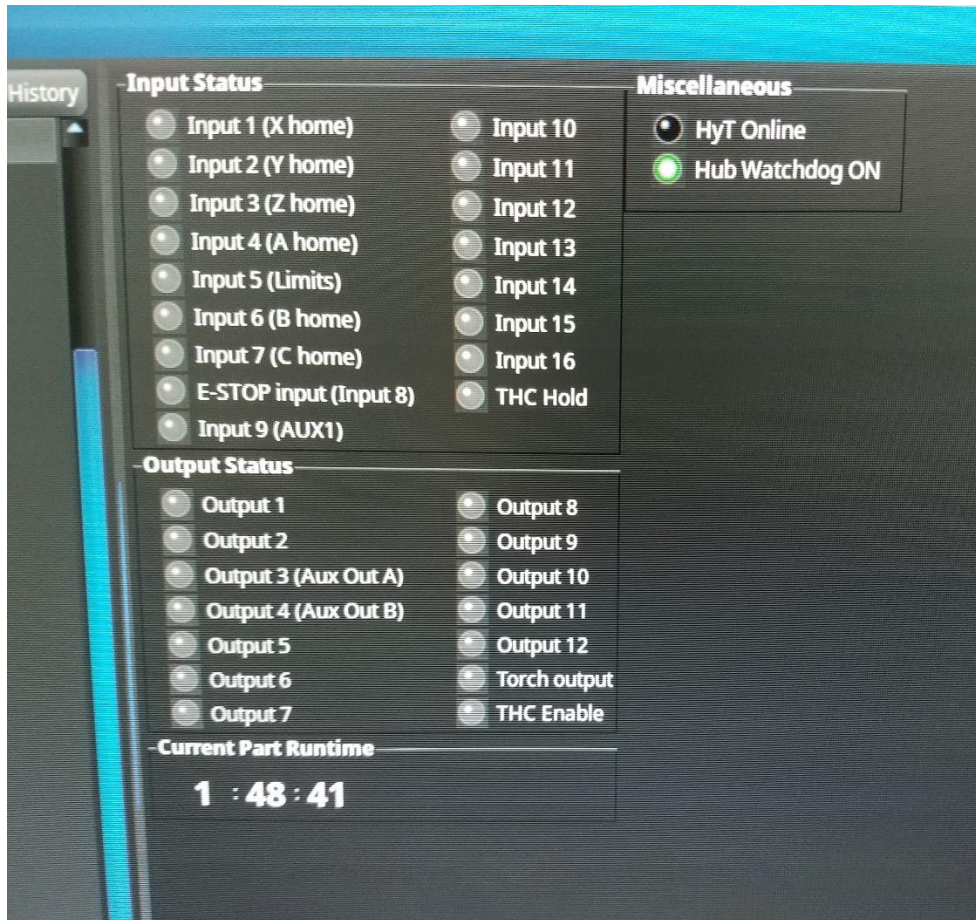
7. **Torch volt** is what sets the digital torch height. Your preset volts are what the machine is set at. You need to change the volts with the machine paused or stopped as it will cause an error. The green value is what the torch volts are reading from the power unit during the cut. Measuring the cutting height is performed by letting the machine start the cut, wait till the torch volts have a steady reading and hit the stop button. Use a caliper and measure a piece of material or drill bit that .060 thick and slide under the torch tip. If the torch needs to be raised simply adjust the torch volt higher. Lower? lower the volt located in the preset box. Auto set will use the machine travel height to adjust the auto set volts and inform you that the last sample was good or bad. The settings here will generally not need to be changed.



HyT License not found is normal unless you purchased the Hyt connect kit. Hyt will automatically adjust the volts on the plasm cutter.

8. The **Diagnostic box** is located at the bottom of the screen





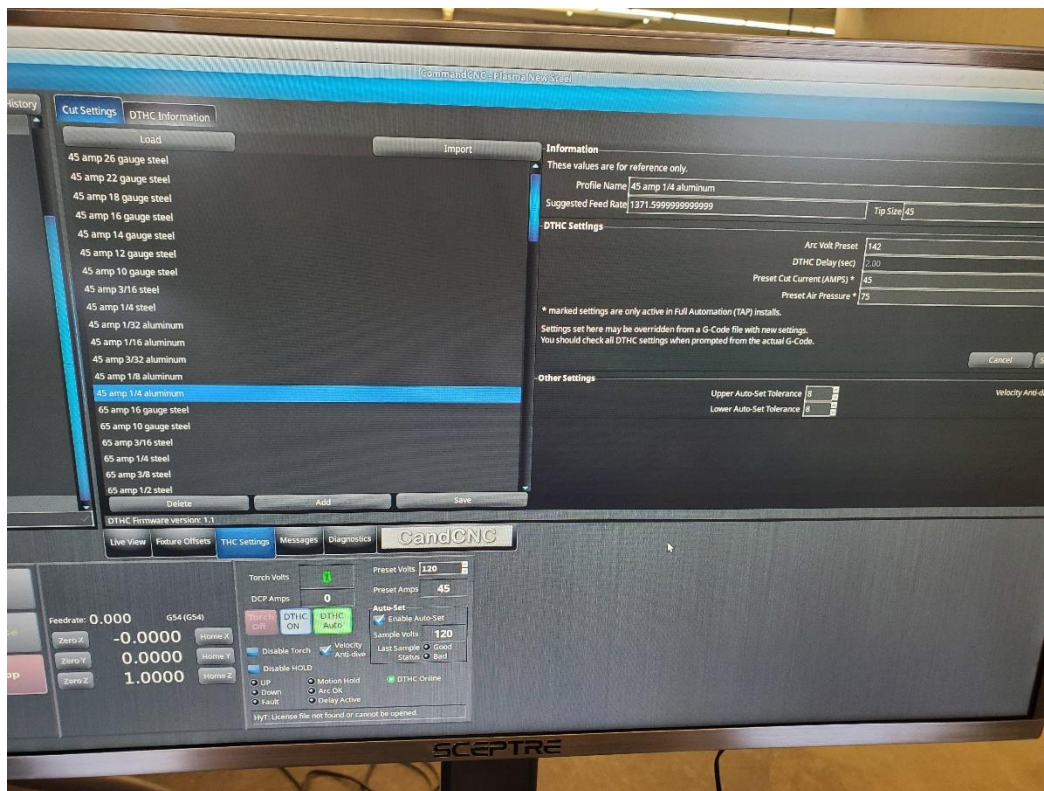
Once the diagnostics box is opened you can review the inputs and outputs. Inputs are listed as shown

1. X Home
2. Y Home
3. Not Used
4. A Home is YA or right side of the table Y axis
5. Computer stand E Stop
6. E-Stop located on the gantry Y and YA Axis
7. Break away Sensor
8. Torch Limit Switch
9. Z Height for feather touch and Z homing switch.

Outputs are used to control features such as Pneumatic Scribe, Oxy Torch, and Router operation.

Notice the Current part runtime, this will time you job from when you hit RUN. If you hit Run again it will restart the timer.

10. You can adjust the cut settings directly from CandCNC Used the THC Setting located in the middle of the screen



- 11.

Consumables

Proper use and selection of consumables is important to the quality of use you will receive with your Boss table. Care should be taken to not only select the correct amperage to match the tip you are using but also the selection of consumable eg. fine cut. Worn tips or tip shields will cause tapered or erratic cuts. Worn electrodes will cause catastrophic damage to consumables if left too long. Make it good practice to regularly check consumables and replace when necessary. Boss Tables strongly insists on the use of quality Hypertherm consumables. For more info visit www.bosstable.com or www.hypertherm.com for more information.

Teamviewer

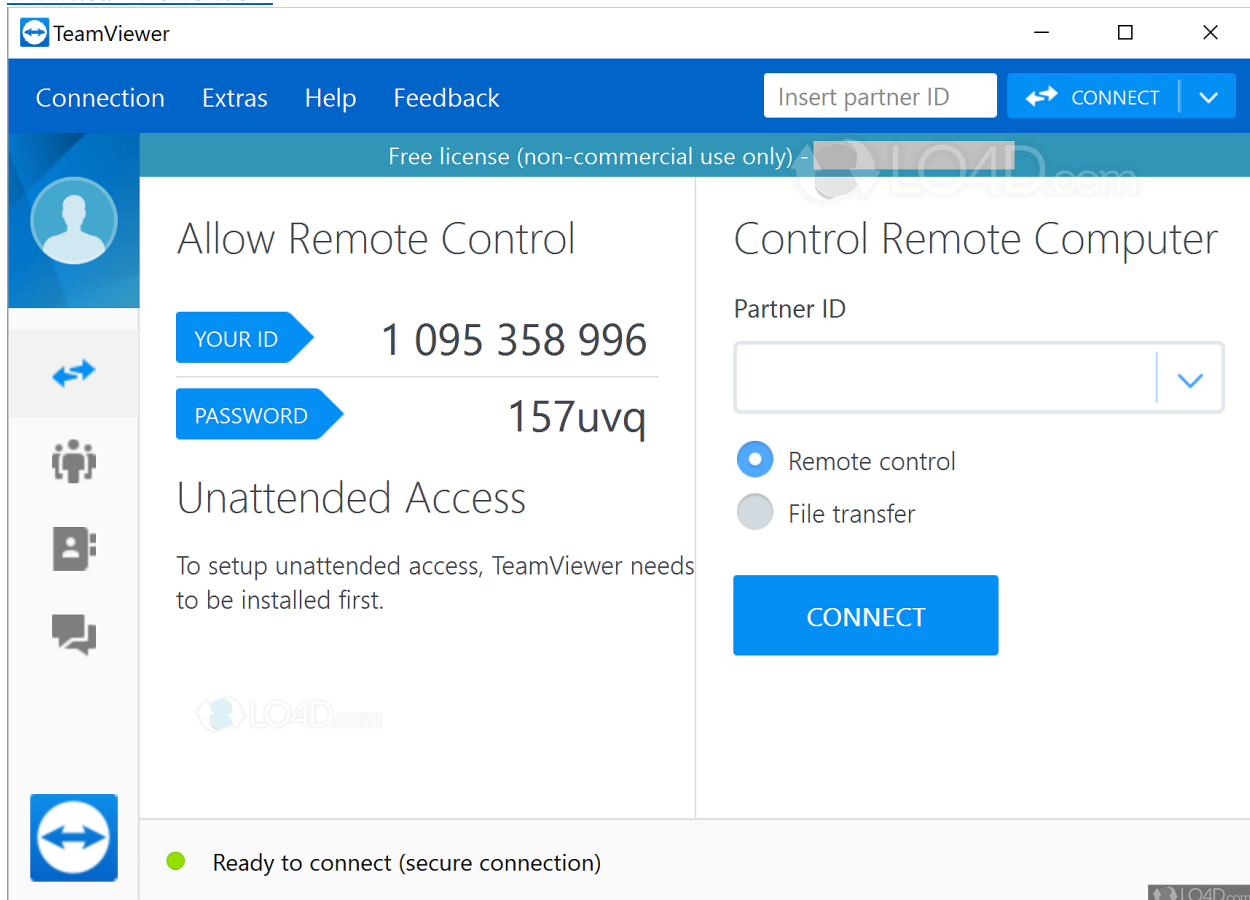
Boss Tables uses Teamviewer to help with education and troubleshooting. Your Boss CNC Table will come preloaded with teamviewer on its desktop. In order to make a start with TeamViewer's remote control functions, navigate to the Remote Control tab of the main interface. Here, you will find your TeamViewer ID and your temporary password, which you can change at any point. With this information, you can allow a partner remote control of your computer.

In order to do this in reverse and control another computer remotely, you simply enter the partner computer ID and choose between various connection modes such as remote control, file transfer or VPN.

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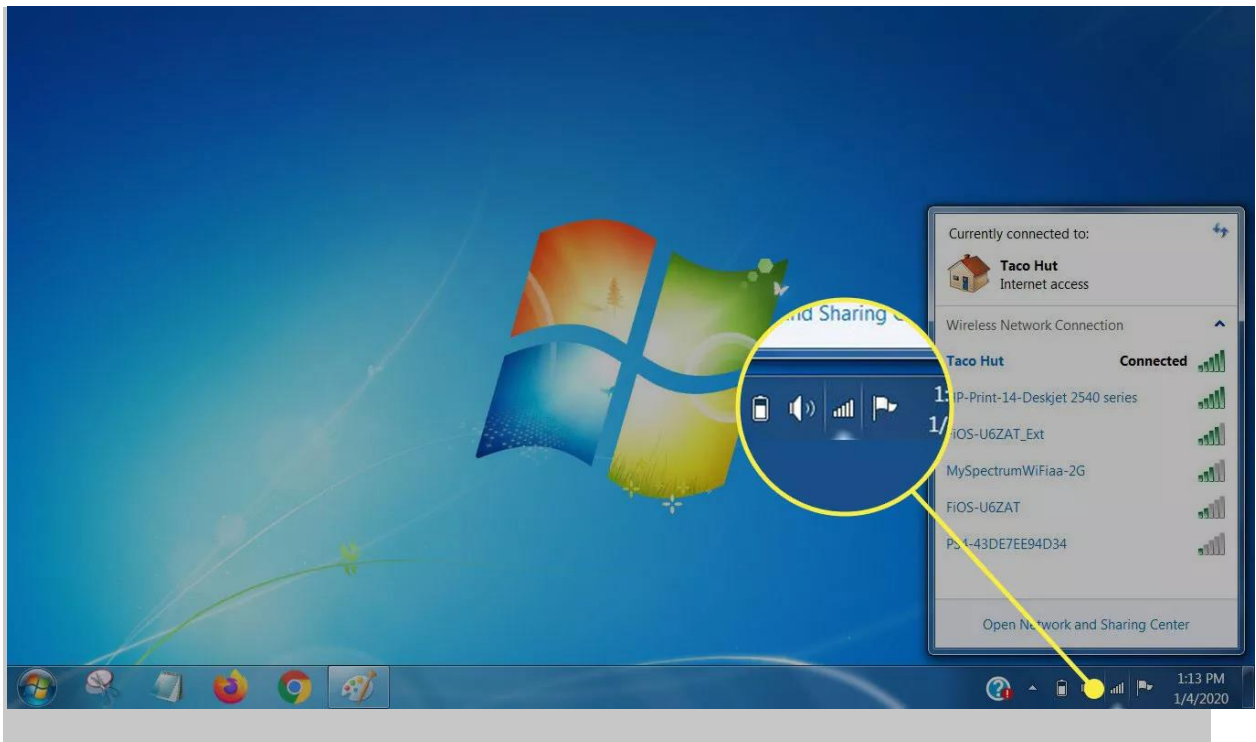
Additionally, as soon as one or more remote connections have been established, each session will be displayed in the title bar of the Remote Control window. For more information on how to establish a remote control connection, see the TeamViewer [manual for remote control](http://www.teamviewer.com/manual-for-remote-control) located at www.teamviewer.com



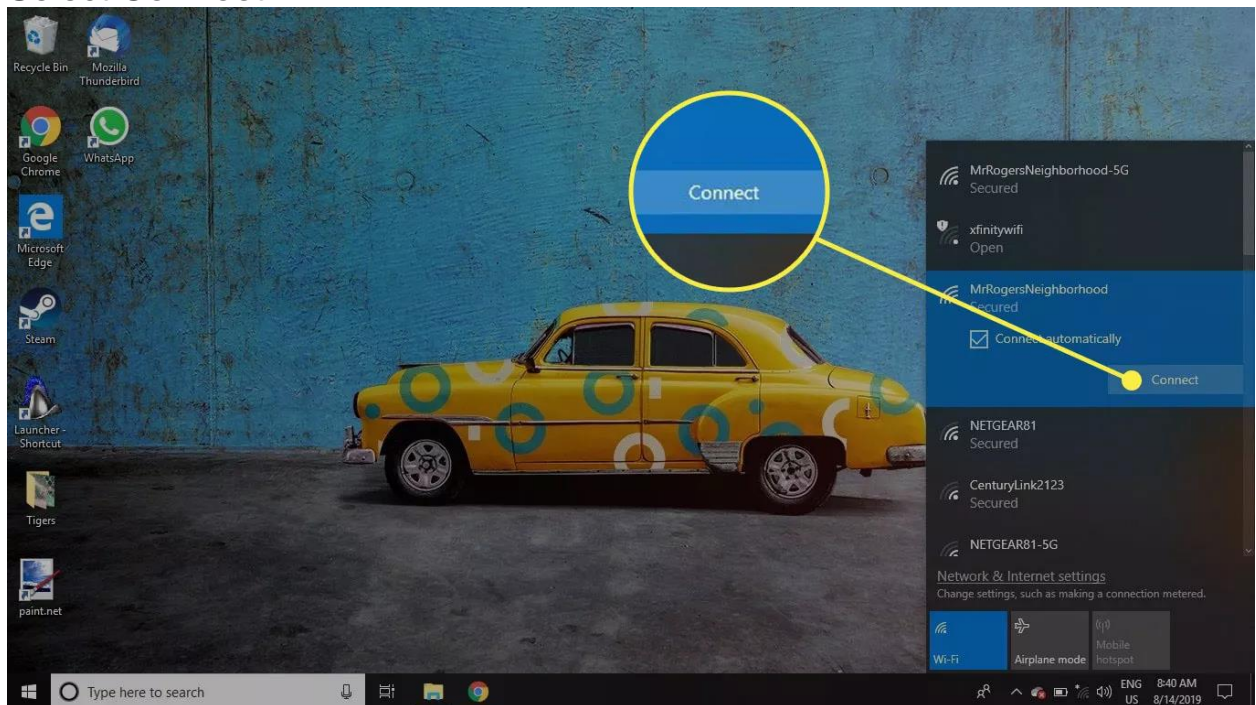
Connecting to the internet

Your Boss CNC Plasma Table will come from the factory installed with wifi capable internet access.

1. Select the **wireless network icon** in the taskbar. It either looks like two computers or a set of bars in the lower-right corner of the screen.

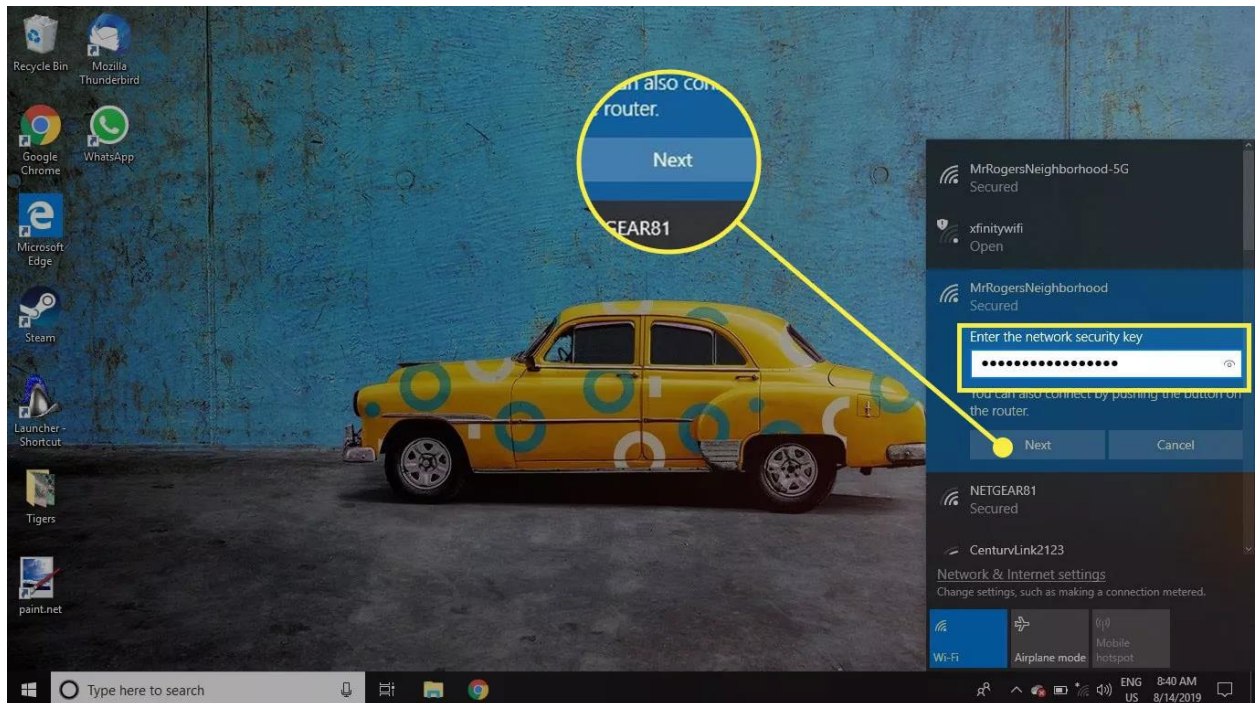


2. Select the wireless network you wish to connect with.
3. Select **Connect**.



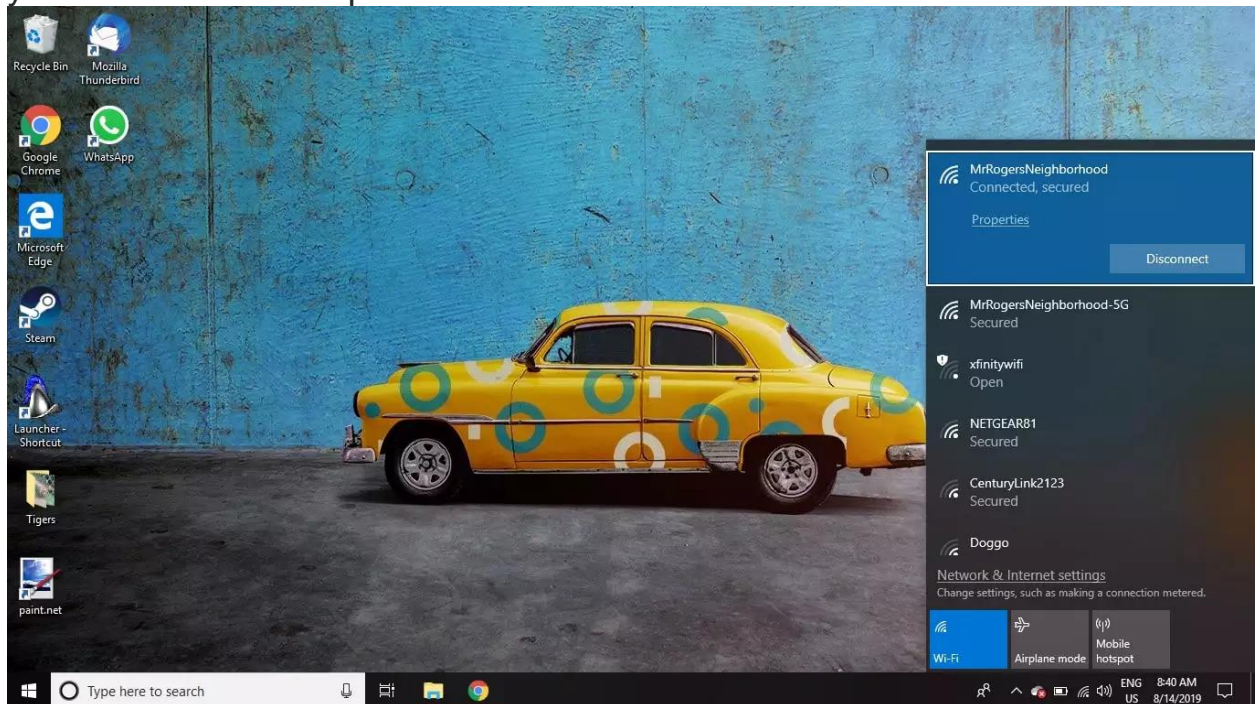
4. Enter the security key if the wireless network is encrypted (with WEP, WPA or WPA2). This will be stored for next time, so you'll only have to

enter it once.



5. When it says that you're connected, open a web browser and visit a website to confirm that you can access the internet.

If you're connecting to a Wi-Fi hotspot, you may be prompted to open your browser to accept the networks' terms and conditions.



How to Fix Wi-Fi Connection Problems

If you have trouble connecting to a Wi-Fi network, there are several things you can check depending on your specific type of issue:

- If you can't find any wireless networks, make sure you have Wi-Fi enabled.
- If your wireless signal keeps dropping, you may need to get closer to the access point.
- If you have a wireless connection but no internet access, then the modem or router may need to be rebooted.
- If you have forgotten the password to your home network, your wireless security key may be found on the bottom of your router if you didn't change the defaults when setting up your network.



Boss CNC Table Maintenance

Care should be taken to extend the life and use of your Boss CNC Plasma Table. Periodic lubrication and cleaning is required.



Remove debris and clean gantry gear and track, spray with “Moly” Dry Film Spray Lubricant. This is located on the under sides of the machine along the rails.



Rails should be clean and free of debris at all times. Wipe with a clean rag and spray with a “Moly” Dry Film Spray Lubricant.

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Track tray should be free of debris and track should be blown off with compressed air.





Periodic greasing of the gantry is required. Grease zerks are located next to the gantry sides and z axis. **Warning do not over grease!** Boss Table recommends Premium Grade lithium base, extreme pressure grease such as Shell Alvania EP-1 or Mobil Mobilux EP-1, or equivalent.

Serial Number Data

(Month Year) – (REV #) – (Unit #)

Serial # 0520-4-30

(Model Number)

WHC 10



This Powermax machine-side reference guide is a supplement to your Operator Manual and includes examples of edge cut quality and consumable wear. Always refer to your Operator Manual for detailed safety and operating instructions.

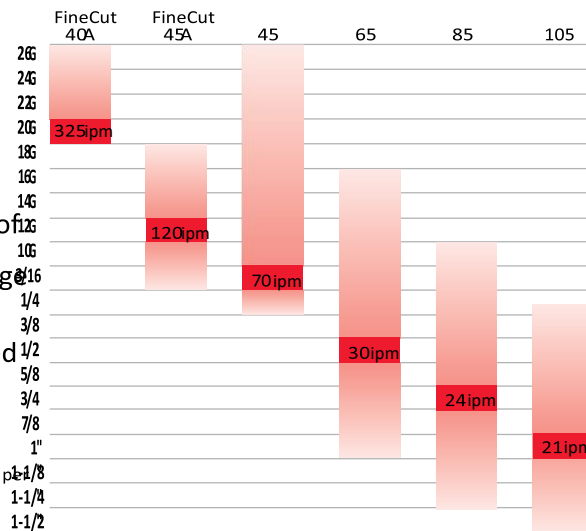
Select appropriate consumables and amperage

- Ke

Increase speed

Optimum speed in inches
minute for best cut quality

Decrease speed



Install consumables



Mechanized torch consumables



- Use the chart on the right to install the appropriate consumables. Make sure the power is OFF before installing and changing consumables.

Mechanized consumables – engineered for the most productive mechanized cutting

Gouging consumables – designed for your toughest metal-removal jobs

CopperPlus™ consumables – an optional long-life electrode when cutting metal 1/2-inch thick or less **FineCut®**

consumables – optimized for high-quality cuts on thin metal – for a clean edge and a narrow kerf **Unshielded consumables** – ideal for cutting in hard-to-reach areas and for the best arc visibility

Powermax105 – Use
consumables up to 105
A

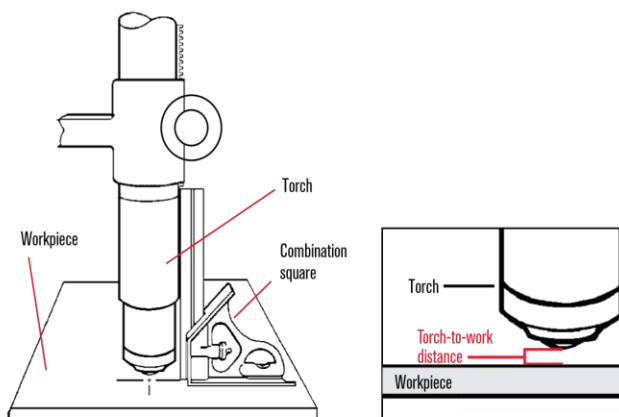
Powermax85 – Use
consumables up to 85
A Powermax65 – Use
consumables up to 65
A

		Shield/ deflector	Retaining cap	Nozzle	Electrode	Swirl ring	
Mechanized	105 A	220993	220854	220990	220842	220994	
	85 A	220817		220816	or	220857	
	65 A			220819	220777		
	45 A			220941			
Mechanized, ohmic	105 A	220993	220953	220990	220842	220994	
	ohmic	220817		220816		220857	
	85 A			220819			
	ohmic			220941			
	65 A						
Unshielded	ohmic	220955	220854	220990 220816 220819 220941	220842	220994	
	105 A					220857	
	85 A						
	65 A						
Gouging	45 A	220798	220854	220991	220842	220994	
	85 A			220797		220857	
FineCut	65 A	220955 220948	220854 220953	220930	220842	220947	
	45 A						
	ohmic						

Step 3

Verify that the torch is square and adjust torch-to-work distance

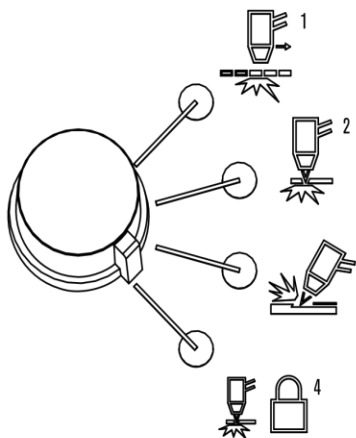
- Set up your torch so that it is perpendicular to the workpiece, in order to achieve a square, vertical cut. Use a combination square to ensure the torch is square from the front and side of the torch.
- Set the proper torch-to-work distance. Use the diagram on the right as a reference.
 - Proper torch-to-work distance is very important for the plasma cutting process. Always refer to your operator manual cut charts to determine the proper cutting and piercing heights.



Step 4

Set the mode

With CNC controls enabled, some settings, such as gas pressure, may be disabled at the power supply.



1. Continuous pilot arc

Expanded/punched metal



Mode switch



2. Non-continuous pilot arc

Plate/sheet metal



Mode switch



3. Gouging

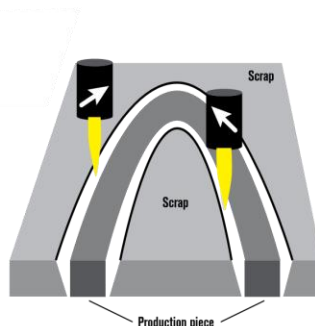


Mode switch



Note: Verify correct torch direction when cutting plate/sheet metal.

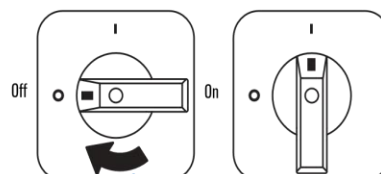
Due to the swirling action of the plasma gas, one side of the cut will always have more bevel angle. This is called the "scrap side" of the cut. The "good side" is on the right as the torch is traveling away from you. Refer to the picture on the right.



Step 5

Turn on the power

- Position the power switch to ON as shown.
Note: The cooling fan is automatic and will only operate when needed.
- The power switch is found on the back of the system.



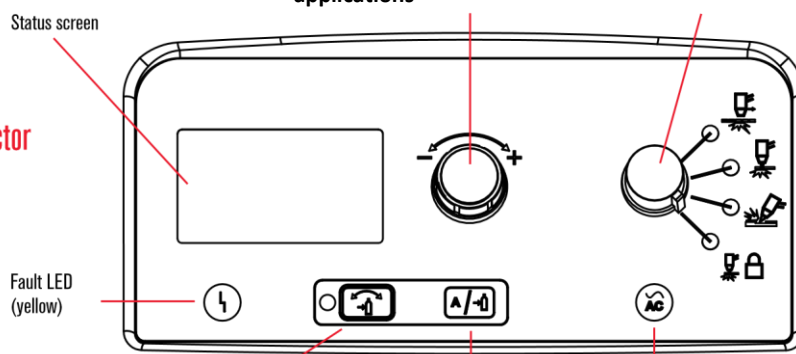
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Non-continuous pilot arc Torch lock***Mode switch**

Refer to your
Operator Manual
for instructions

***Not intended for Mechanized cutting
applications**

Automatic/manual pressure setting mode selector**Set your amperage**

Mode switch

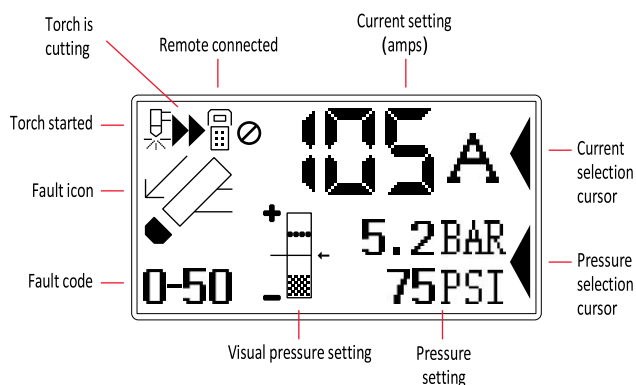
Adjustment knob



The selector switches between automatic and manual mode. In automatic mode, the power supply automatically sets the gas pressure based upon the torch type and lead length and the adjustment knob sets only the amperage. In manual mode, the adjustment knob sets either the gas pressure or the amperage. This LED is illuminated in manual mode.

Note: Manual mode should be used by experienced users who need to optimize the gas setting (override the automatic gas setting) for a specific cutting application.

See Section 4 in your Operator Manual for adjusting your system in manual mode.

Check your status screen to ensure that there are no fault codes to troubleshoot

Automatic/manual pressure setting Current/gas Power ON LED mode selector selector (green)

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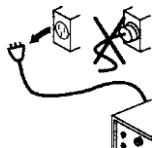


Warning/Fault codes (refer to operator manual)	
0-12	Low input gas pressure: warning
0-13	AC input unstable: warning
0-19	Power board hardware protection
0-20	Low gas pressure
0-21	Gas flow lost while cutting
0-22	No gas input
0-30	Torch consumables stuck
0-32	End of consumable life
0-40	Over temperature
0-50	Retaining cap off
0-51	Start/trigger signal on at power up
0-52	Torch not connected
0-60	AC input voltage error
0-61	AC input unstable: shutdown
0-98	Internal communication failure
0-99	System hardware fault – service required

See Section 4 in your Operator Manual for a full list of

Fault icons and Section 5 for basic troubleshooting.

Maintenance schedule

		DANGER ELECTRIC SHOCK CAN KILL
 <p>Disconnect the electrical power before you perform any maintenance. All work that requires removal of the power supply cover must be performed by a qualified technician.</p>		



fault icons. Correct any fault conditions.



Every use:

Inspect the consumables for proper installation and wear.
Check indicator lights and

Every 3 months:



Replace any damaged labels.



Inspect the trigger for damage. Inspect the torch body for cracks and exposed wires. Replace any damaged parts.



Inspect the power cord and plug. Replace if



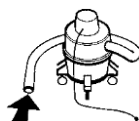
Inspect the torch lead. Replace damaged.

if damaged.

Every 6 months:



Or



Clean the inside of the power supply with compressed air or a vacuum.

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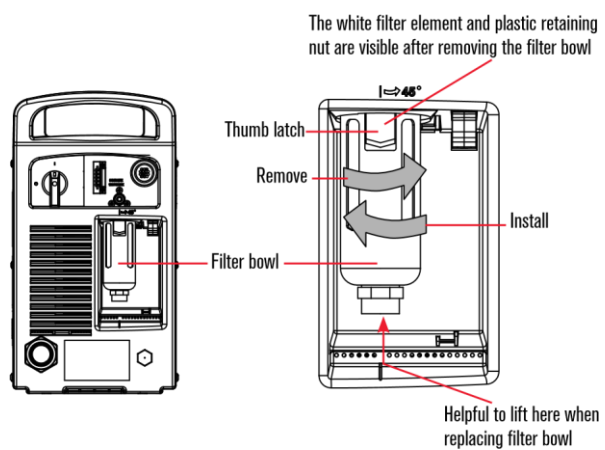


Hypertherm
CHANGING POSSIBILITY™

Replace the gas filter element

1. Turn OFF the power, disconnect the power cord, and make sure the gas supply is disconnected.
2. Position the rear of the power supply so the removable gas filter bowl is easily accessible.
3. Grasp the filter bowl with your right hand.
4. Push down the thumb latch and rotate the filter bowl approximately 45 degrees to the right.
5. Pull the filter bowl straight down to remove. You can see the white filter element and retaining nut.
6. Unscrew (counterclockwise) the plastic retaining nut that secures the filter element.
7. Replace the dirty element with a new element (part number 011092. Reinstall (clockwise) the plastic retaining nut to finger-tight only.
8. Insert the filter bowl with the thumb latch positioned approximately 45 degrees to the right of center. This is the same orientation in which the filter bowl was pulled down and removed.
9. Vertically align the filter bowl (with metal guard) and firmly push the filter bowl up to the top of the receptacle to seat the bowl. It is helpful to lift the bowl with your left index finger under the nut on the bottom of the bowl.
10. Once the bowl is seated properly, rotate the bowl 45 degrees to the left until you hear the thumb latch click into place.
11. Reconnect the gas supply hose to the power supply and check for leaks.
12. Reconnect the electrical power and turn ON the power switch.



**WARNING**

Notes/ Changes Made



Notes/ Changes Made

Notes/ Changes Made
