



STRATA WORKSHOP SERIES WS1212 CNC CUTTING TABLE 1200x1200

OPERATING INSTRUCTIONS



👉 IMPORTANT!

Read these Operating Instructions Completely before attempting to use this machine. Save this manual and keep it handy for quick reference. Pay particular attention to the safety instructions we have provided for your protection. Contact your distributor if you do not fully understand anything in this manual.





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The STRATA 1200 x 1200 Cutting Table is the perfect way to get the features of a professional CNC Plasma Table at a hobbyist price. A large 1250mmx1100mm cut area means you can handle material right from the steel mill. High precision rack and pinion design allows ± 0.2 mm accuracy of movement from the X & Y-axis stepper motors and combines with Automatic Torch Height Control for clean, accurate cuts. The CNC Cut Controller operates fully independent of a PC, and enables you to dimension and cut fifty pre-loaded shapes. Additionally, any CAD file post-processed in FLCAM can be loaded via USB Drive and modified as needed by the CNC Cut Controller. Limit Switches prevent machine limit collision, and the included Waterbed prevents heat soak, warping, and reduces spark & fume hazards. The CNC Cut Controller with Torch Height Control, Limit Switches, and Waterbed, features frequently unavailable, or only offered at an additional cost by competing units focused on home shop use, are all included with the STRATA 1200 x 1200 Cutting Table.

The optional CNC Plasma Cutters were specifically designed to connect directly to, and work flawlessly with this Plasma Table. Our Machine Torch pairs perfectly for easy mounting to the Plasma Table and enables you to make clean cuts in 12mm thickness material and beyond.

SPECIFICATIONS

Plasma Table Power Requirements:	230V \pm 10% V AC, 50Hz, 3A
Plate Capacity:	1250mm x 1100mm x 54mm thick
Weight Capacity (Includes workpiece and full Waterbed):	215kg
Waterbed Fluid Capacity:	125L
CNC Torch Travel:	
X-Axis:	1250mm
Y-Axis:	1100mm
Z-Axis:	54mm
Assembled Waterbed Dimensions:	
X-Axis:	1335mm
Y-Axis:	1340mm
Z-Axis:	70mm
Overall Assembled Dimensions (W x D x H):	1955mm x 1800mm x 1270mm (1400mm with casters)
Overall Assembled Unit Weight:	161kg
Movement Accuracy:	± 0.2 mm
Cutting Accuracy:	± 0.5 mm



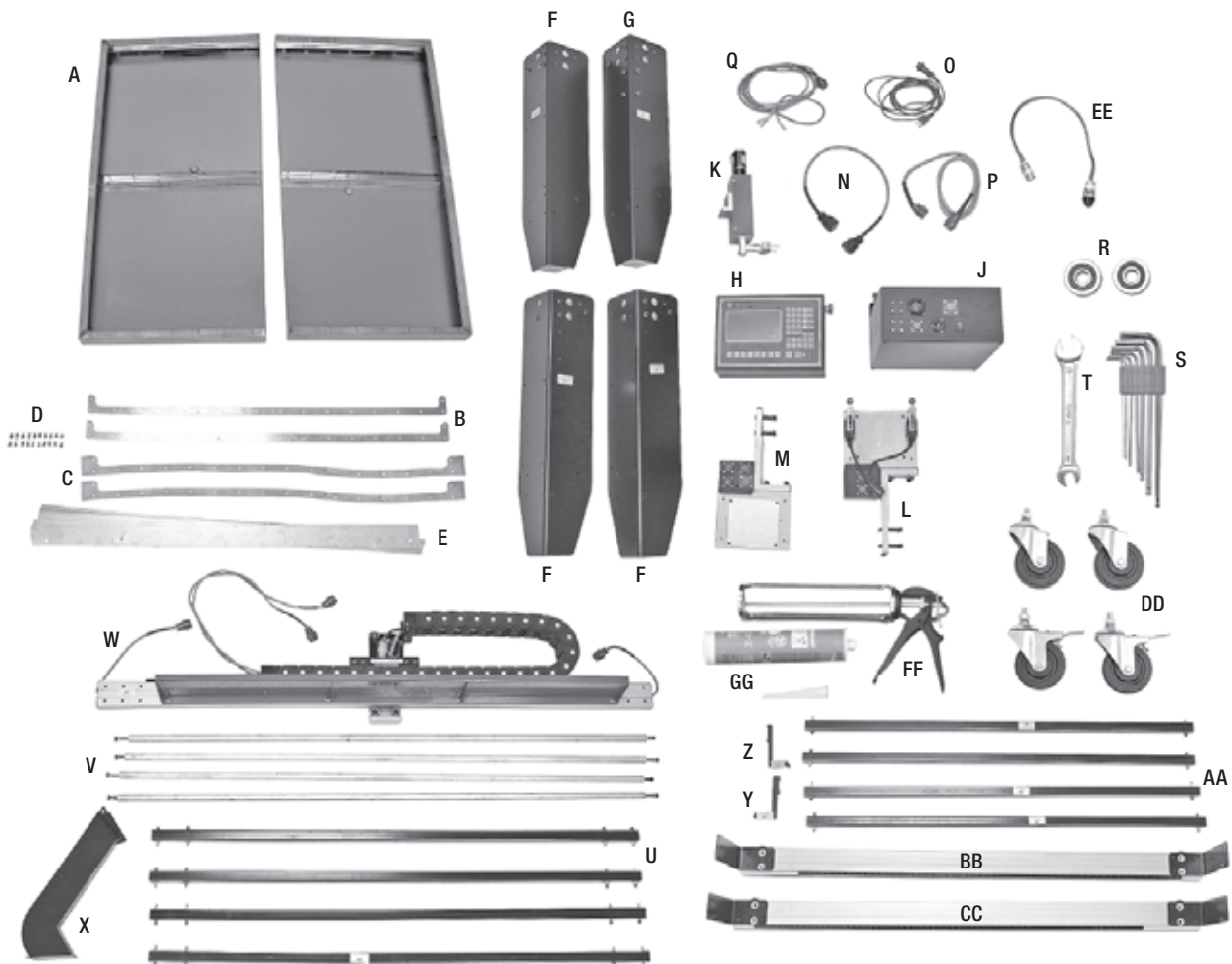
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INCLUDES

COMPONENTS, HARDWARE/ACCESSORIES; CRATE

- (2) Water Tray [A]
- (2) Water Tray Sealing Plate [B]
- (2) Water Tray Silicone Seals [C]
- (20) M6x25 Stainless-Steel Bolts with Washers and Nuts [D]
- (14) Water Tray Slats [E]
- (3) Leg with Gantry and Control Panel Mount Arm Hardware installed [F]
- (1) Legs with Gantry Hardware installed [G]
- (1) Cut Controller Box with Hardware installed [H]
- (1) Control Box with Hardware installed [J]
- (1) Torch Height Motor Assembly with Mounting Bracket installed [K]
- (1) Y-Axis Gantry Assembly with Hardware installed, Left [L]
- (1) Y-Axis Gantry Assembly with Hardware installed, Right [M]
- (1) Control Panel Cable [N]
- (1) Power Cable [O]
- (1) Y-Axis Gantry Cable, Right [P]

- (1) Plasma Cutter Control Cable [Q]
- (2) Spare Rollers [R]
- (1) Allen Key Set [S]
- (1) Double Ended Wrench [T]
- (4) Lower Table Frame Square Tubes with Hardware installed [U]
- (4) Gantry Bracing Rods with Hardware installed [V]
- (1) X-Axis Gantry Beam Assembly [W]
- (1) Control Panel Mount Arm [X]
- (1) Y-Axis Limit Switch Bracket, Front [Y]
- (1) Y-Axis Limit Switch Bracket, Rear [Z]
- (4) Upper Table Frame Square Tubes with Hardware installed [AA]
- (1) Y-Axis Gantry Track, Left [BB]
- (1) Y-Axis Gantry Track, Right [CC]
- (4) 4" Swivel Locking Casters [DD]
- (1) Torch Height Motor Cable [EE]
- (1) Caulking Gun [FF]
- (1) Silicone Tube [GG]





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SAFETY INFORMATION

The following explanations are displayed in this manual, on the labeling, and on all other information provided with this product:

⚠ DANGER

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

⚠ WARNING

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

⚠ CAUTION

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

⚠ NOTICE

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



⚠ READ INSTRUCTIONS

- Thoroughly read and understand these product instructions before using the STRATA 1200 x 1200 Cutting Table.
- Keep these product instructions for future reference.



⚠ DANGER SPARKS CAN CAUSE FIRE OR EXPLOSION!

- Plasma cutting produces sparks which can be discharged considerable distances at high velocity igniting flammable or explosive vapors and materials. Keep flammables a minimum of 1.8m away from the edge of the STRATA 1200 x 1200 Cutting Table.
- DO NOT operate electric arc Plasma Cutter in areas where flammable or explosive vapors are present.
- Always keep a fire extinguisher nearby while plasma cutting.



⚠ WARNING FIRE HAZARD!

- The heat and sparks of plasma cutting operations can easily start a fire. DO NOT allow the CNC Plasma Table to operate unsupervised.
- Always disconnect the CNC Plasma Table and Plasma Cutter from the electrical power supply before leaving them unattended for long periods of time.
- Pressurized air discharge can eject metal particles, dirt and debris at high velocity. Always wear ANSI approved eye protection when operating the Plasma Table.



⚠ WARNING ELECTROMAGNETIC FIELDS CAN BE A HEALTH HAZARD!

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



⚠ WARNING ARC RAYS CAN INJURE EYES AND CAUSE BURNS!

- Arc rays emit intense ultraviolet radiation that can burn exposed skin and cause eye damage. Use a shield with the appropriate filter (at least #5 shade) to protect your eyes from sparks and arc rays during plasma cutting or when observing plasma arc cutting.
- Use suitable clothing (long pants, long sleeves, closed toe shoes, gloves) made from durable flame-resistant material for skin protection.
- If other persons or pets are in the area of plasma cutting, use welding screens to protect bystanders from sparks and arc rays.



⚠ WARNING INJURY HAZARD!

- Plasma cutting can generate excessive noise. Wear appropriate hearing protection while operating a plasma cutter.



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⚠ CAUTION INHALATION HAZARD!

- Fumes, vapors and gases released during plasma cutting are hazardous. Do not breathe fumes that are produced by the plasma cutting operation. Make sure work space ventilation is adequate.
- Use an OSHA approved respirator when plasma cutting.
- Use extreme caution when plasma cutting coated materials including but not limited to: cadmium plated, galvanized, lead based paints, powder coat.



⚠ CAUTION ELECTRICAL SHOCK HAZARD!

- DO NOT touch workpiece or Waterbed while operating. Only the control panel may be accessed during operation.
- Improper use of a Plasma Cutter can cause electric shock, injury and death!
- Disconnect Plasma Cutter from power supply before assembly, disassembly or maintenance of the torch and when installing nozzles and electrodes.
- The electrode, workpiece and Waterbed (or ground) circuits are electrically "hot" when the Plasma Cutter is on. Do not allow these "hot" parts to come in contact with bare skin or wet clothing.
- Be sure that the workpiece is properly supported and grounded prior to beginning a plasma cutting operation.



⚠ CAUTION PINCH AND CRUSH HAZARD!

- The STRATA 1200 x 1200 Cutting Table is a heavy assembly weighing 150kg and has several large, heavy components which can cause serious injuries if allowed to drop.
- Obtaining the assistance of a capable helper during assembly is strongly recommended.
- Avoid pinching hands while handling parts and during assembly. The use of thick, well-fitting work gloves is strongly recommended.
- The wearing of approved safety shoes is strongly recommended when uncrating, assembling, and operating the Plasma Table.



⚠ CAUTION INJURY HAZARD!

- Wear protective work gloves when handling metal. It may be sharp and, when cut, will be extremely hot. Allow sufficient time for cooling before handling.
- Plasma cutting torch and ground leads, and the Plasma Table cables pose a tripping hazard. Secure cables with cable ties where possible, exercise caution when moving around the table, and always make sure you are sure-footed.
- Use on a flat, level, and sturdy surface only. The Plasma Table fully loaded can exceed 354kg. DO NOT use on sloped surfaces.



⚠ NOTICE

- DO NOT lift from the table gantry or gantry mounts. Doing so will result in damage to the table gantry.
- Dispose of Plasma Table fluid and waste only in accordance with your local laws and regulations.



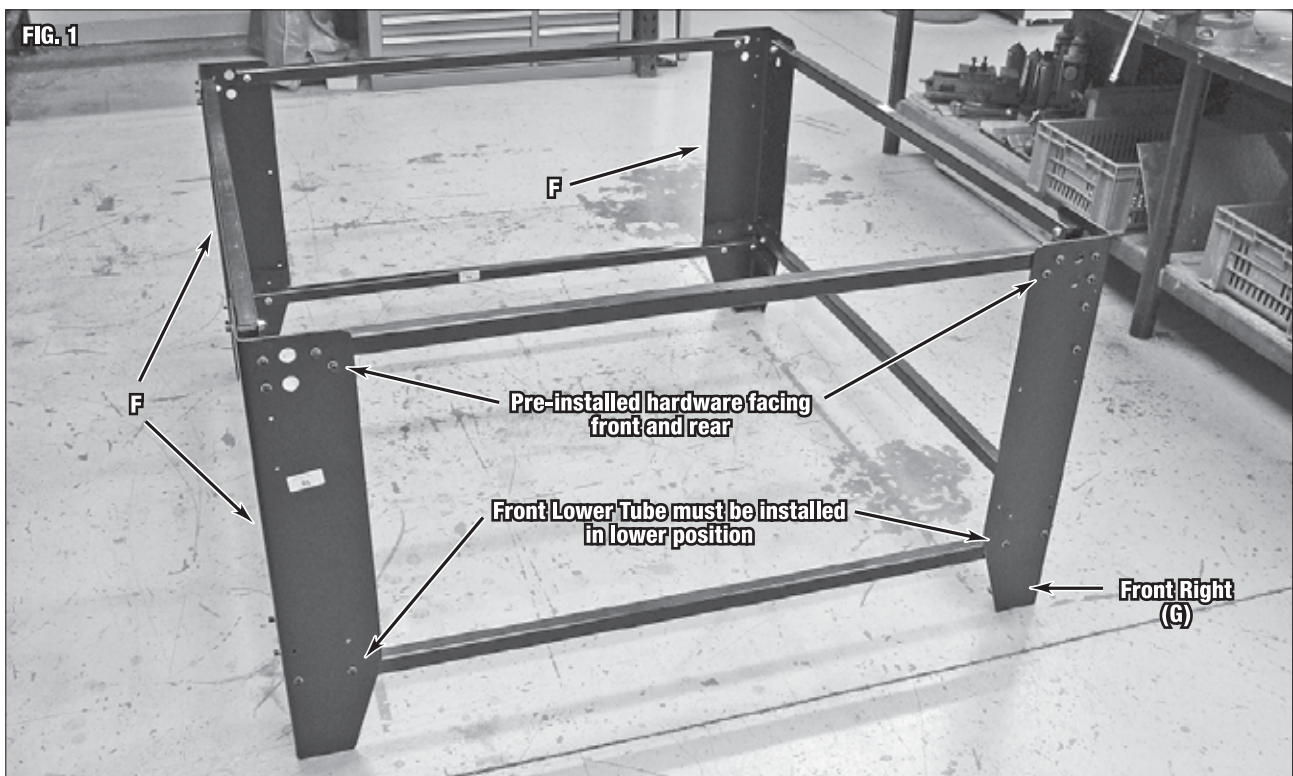
CNC PLASMA CUTTING GLOSSARY OF TERMS

ARC Voltage	Arc Voltage is the voltage of the arc between the electrode and the workpiece being cut. This is used to control the height of the Torch. Higher Arc Voltage means greater height between the Torch and the workpiece. Lower Arc Voltage means a closer gap between the Torch and the workpiece.
CAM	Computer-Aided Machining. Software that takes a drawing file and turns it into a machine path that can be post processed into a G-code file for CNC machine usage is referred to as CAM software.
CCW	Acronym for Counterclockwise when referencing a rotational direction.
CNC	Acronym for Computer Numerical Control, this means that a machine is primarily controlled by a computer.
Cut Controller	Main Control Unit on the CNC Plasma Table. It controls all cutting actions and, on this table, features an integrated Torch Height Controller.
Cut Speed	Horizontal movement speed of the Torch head during cutting. It is important to change according to material thickness.
CW	Acronym for Clockwise when referencing a rotational direction.
Drag Chain	Moving cable sheath attached to the X-axis that guards and guides the Torch cables.
Dross	This is the plasma cutting slag left behind after a cut which builds up on the bottom of the cut. Dross is typically knocked off or ground away if necessary.
Electrode	Component of the Plasma Cutting Torch Head that emits the plasma arc. This wears the fastest when cutting thicker materials.
Gantry	X-axis and Y-axis travel assembly that allows the Torch head to move around the plate. Comprised of the extruded aluminum tracks with stepper motor driven rack and pinion system.
G-code	The Program Code Language that CNC machines understand. Typically, movement commands start with a "G", hence the name G-code. Miscellaneous commands, in the case of the CNC table, these typically relate to Torch control, start with "M".
IHS	Acronym for Initial Height Setting. This parameter is set by the Torch Height Controller and dictates the height of the Plasma Torch above the workpiece when the pierce is initiated.
Kerf	Kerf is the width of the cut left by the Plasma Torch. This is useful for an accurate cut, because if we know how much material the Plasma Torch removes, we can compensate for that in the cut path. This width varies depending on material, cutting amperage, nozzle diameter, consumable wear state, and Torch height.
Lead-In & Lead- Out	Lead-In and Lead-Out is the path that extends before and after the desired cut path, respectively. The plasma arc is unstable when starting and stopping which can leave a rough edge or inaccurate cut. The lead is used to smooth this by starting/ending the cut away from the cut path and smoothly transitioning it in/out while the arc is stable.
Main Cut Screen	The home screen displayed when the CNC table is started up. From here all actions in the Cut Controller are taken.
Nozzle	This component of the Plasma Torch funnels the plasma arc down to an effective size. It wears slightly slower than the electrode.
Pierce	Operation of the Plasma Torch starting a cut in the metal. It must first melt a hole through the sheet which is referred to as the Pierce.
Post Processor	The Post Processor takes a path created in a Computer-Aided Machining software and converts it into the G-code file that the machine understands.
Slats	The metal supports in the Waterbed that the workpiece rests on.
Stepper Motor	This is a type of motor commonly used on CNC machines. It has discrete phase positions, known as steps, that translate into accurate, fully controlled movement. The X-axis is controlled by one Stepper Motor and the Y-axis is controlled by two Stepper Motors on this table.
THC	Acronym for Torch Height Controller. On this Plasma Table it is integrated with the Cut Controller and is capable of automatically controlling Torch height. It will maintain good distance between the workpiece and the Torch.
Torch	The Plasma Cutting Torch Head is often described as "Torch" or "Plasma Torch" for simplification. This is the component that receives the power supplied by the Plasma Cutter and uses it to cut metal. It does this by creating an electric arc and releasing a high pressure air stream which is forced through the nozzle to create a focused jet of plasma. This extremely hot plasma jet conducts to the metal and melts it away upon contact.

UNCRATING AND ASSEMBLY

Carefully take the crate apart and remove all components from it. Verify all components are present and intact as described in the **INCLUDES** section above, then continue to the following assembly instructions.

- Begin assembly of the frame with the following components:
 - Leg with Gantry and Control Panel Mount Arm Hardware installed **[F]**
 - Legs with Gantry Hardware installed **[G]**
 - Lower Table Frame Square Tubes with Hardware installed **[U]**
 - Upper Table Frame Square Tubes with Hardware installed **[AA]**
- Assemble as shown in **(FIG 1)** utilizing the hardware pre-installed to the Square Tubes. The Leg with Gantry and Control Panel Mount Arm Hardware installed **[F]** will be where the control panel is located at the front right of the machine. The front and rear Lower Square Tubes must be mounted in the bottom holes, as shown, so that the Control Box can be mounted later. Only finger tighten the hardware at this stage.



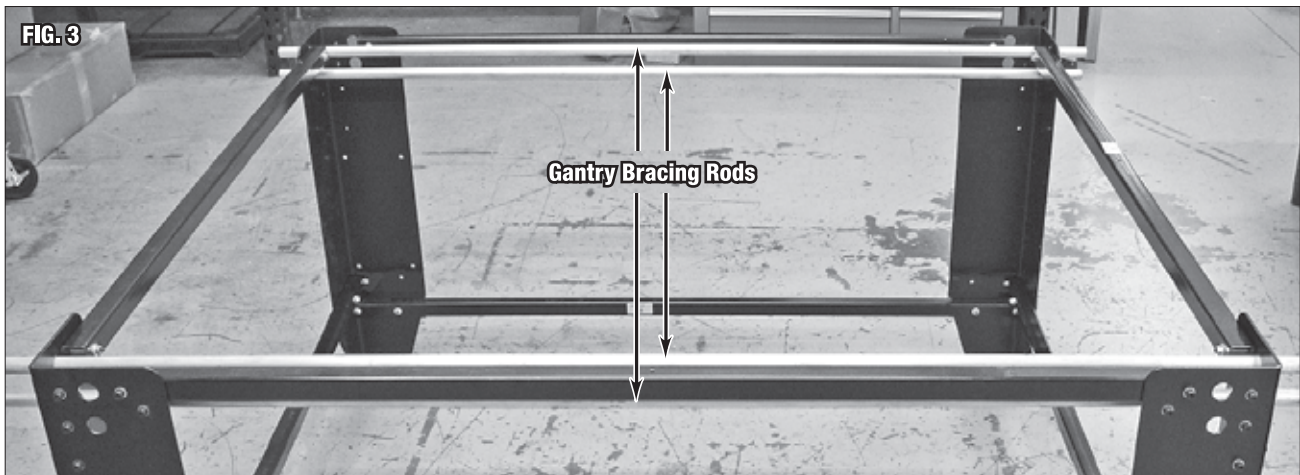


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- If you wish to utilize the included 100mm Swivel Locking Casters [DD], now is a good time to install them. Remove the pre-installed hardware and use it to install them to the Legs via the hole in the foot plate (FIG 2). The table may be used with or without the casters to suit the user's preference.



- Insert the Gantry Bracing Rods with Hardware installed [V] through the holes at the sides of the frame (FIG 3).

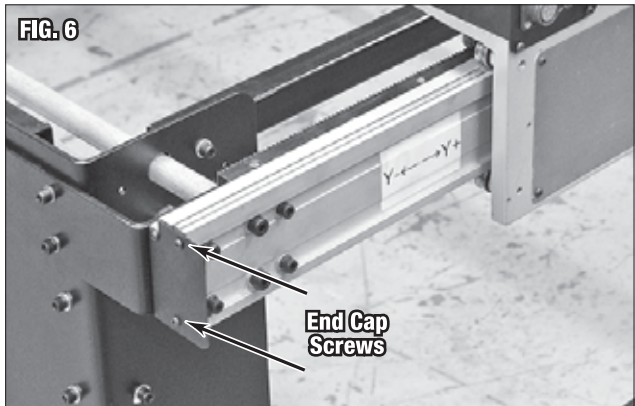
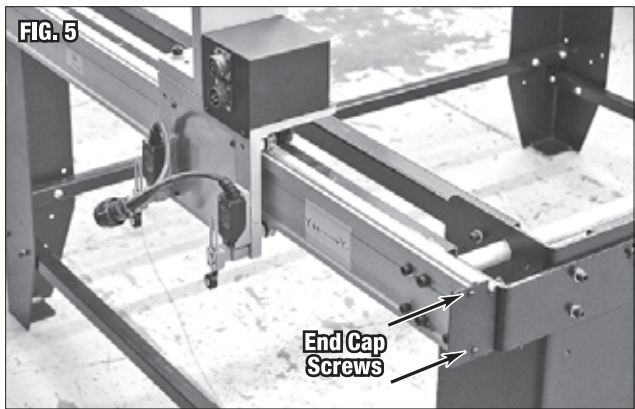
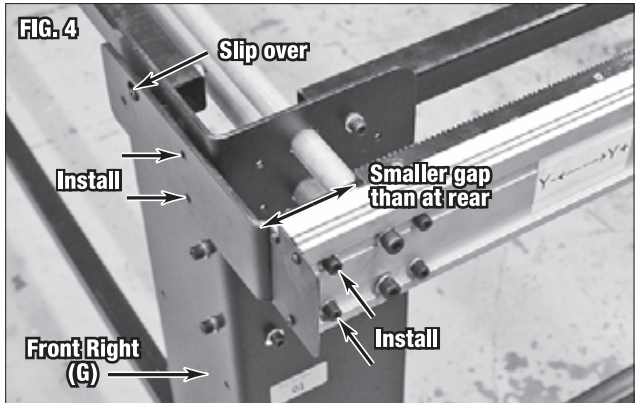


⚠ CAUTION INJURY HAZARD!

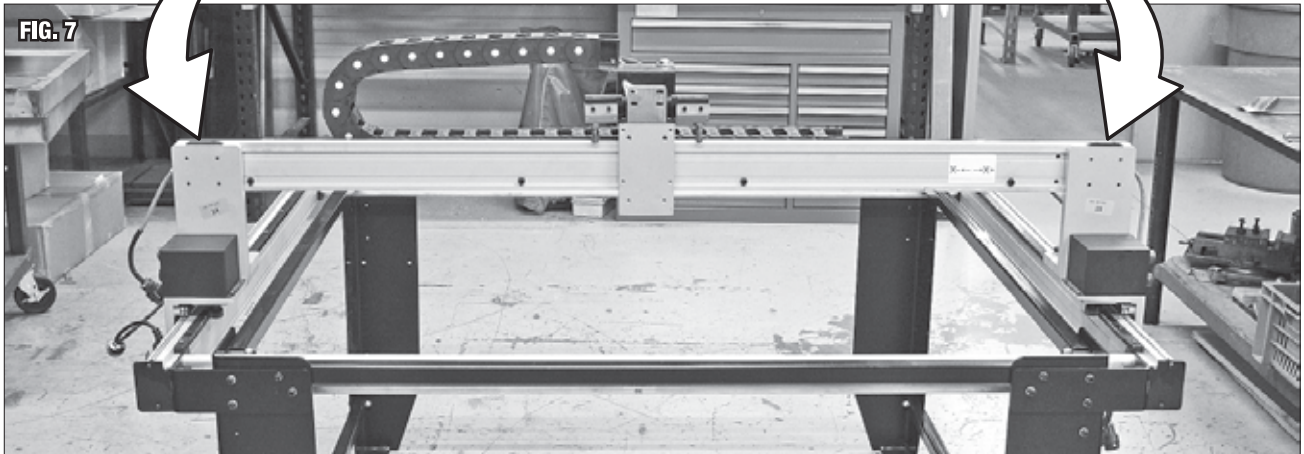
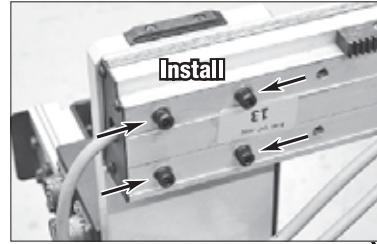
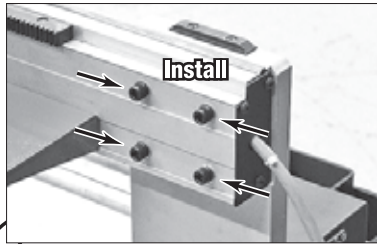
The STRATA 1200 x 1200 Cutting Table has numerous large, unwieldy components that could cause injury or be damaged if they are dropped. Obtaining the assistance of a capable helper during assembly is strongly recommended.

Components, such as the gear rack teeth, may be sharp. The use of thick, well-fitting work gloves during assembly is strongly recommended.

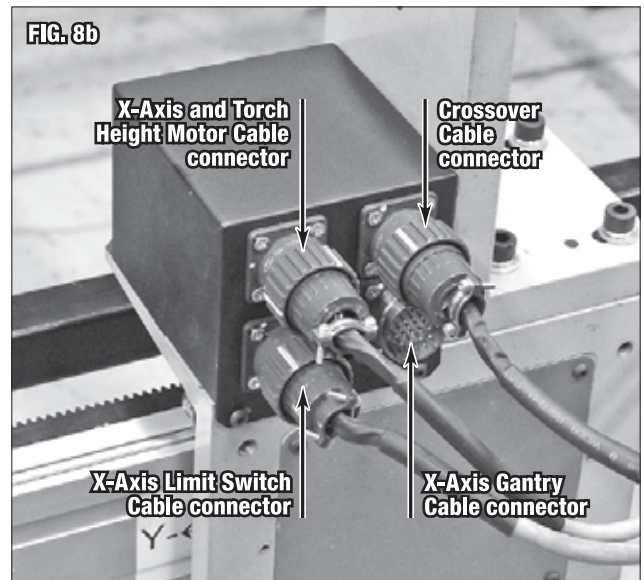
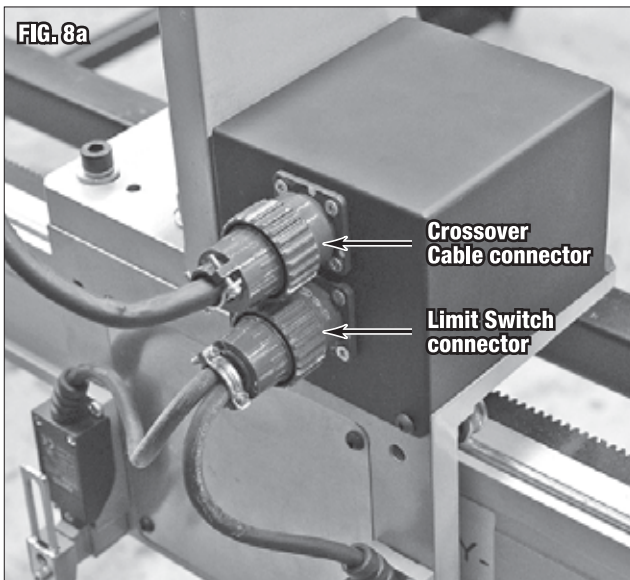
- Slip the Y-Axis Gantry Track, Left **[BB]** from the left side of the table over the Upper Square Tube mount bolts (**FIG 4**). Use the hardware pre-installed to the Legs and Bracing Rods to fasten the Gantry Track. The gear rack is offset such that the smaller gap between the the rack and the end cap is at the front of the table.
- Repeat for the Y-Axis Gantry Track, Right **[CC]**.
- At this point all hardware can be tightened.
- Remove the Gantry Track end caps. Roll the Y-Axis Gantry Assembly with Hardware installed, Left **[L]** onto the Left Gantry Track (**FIG 5**). Roll the Y-Axis Gantry Assembly with Hardware installed, Right **[M]** onto the right Gantry Track (**FIG 6**). Reinstall the Gantry Track end caps.



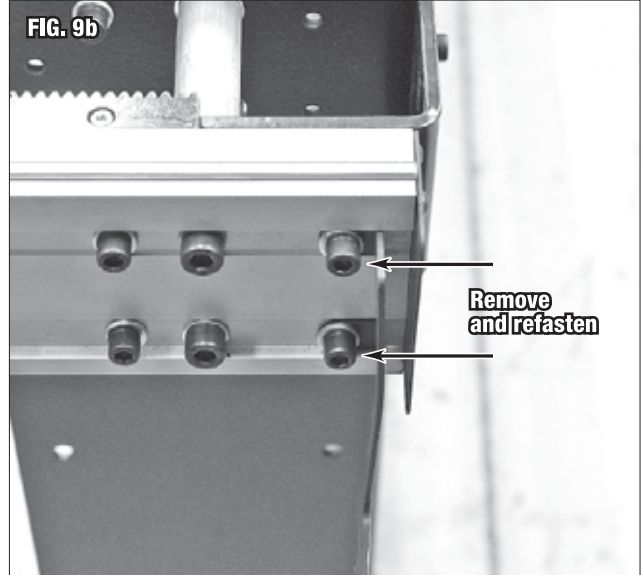
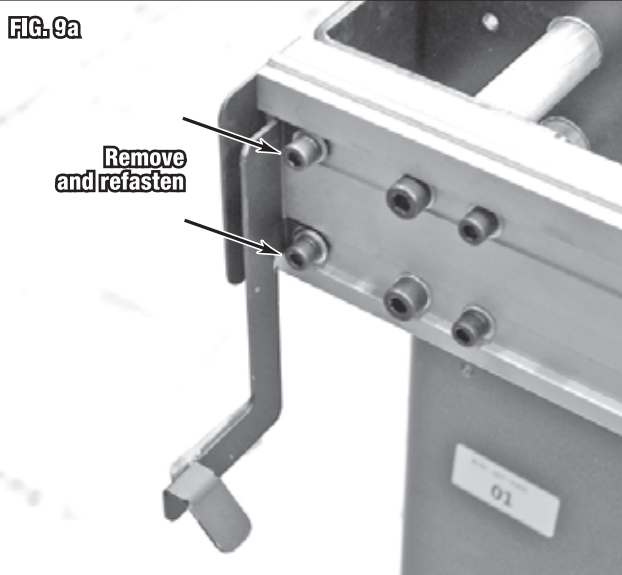
- Install the X-Axis Gantry Beam Assembly [W] with the hardware pre-installed to the Y-Axis Gantry Assemblies (FIG 7).



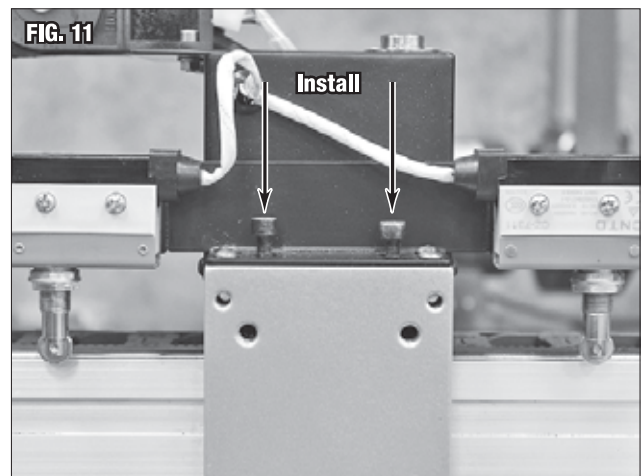
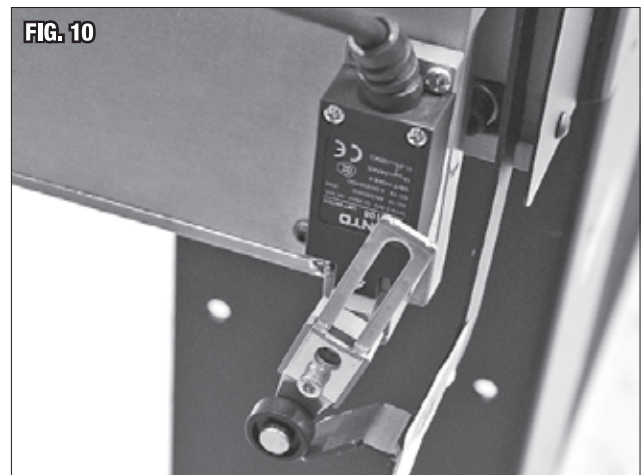
- Install the cables at both sides (FIG 8). Note that all the connections are unique and cannot be installed incorrectly. Line the connector up with the keyed entryway, then insert and rotate the lock collar half a turn to secure. With careful installation the locking collar should rotate smoothly then click into a detent lock. The Y-Axis Gantry Cable will be connected later.



- Remove the pre-installed hardware in the Left Gantry Track to install the Y-Axis Limit Switch Bracket, Front [Y] and Y-Axis Limit Switch Bracket, Rear [Z]. Install the brackets and refasten the hardware (FIG 9).



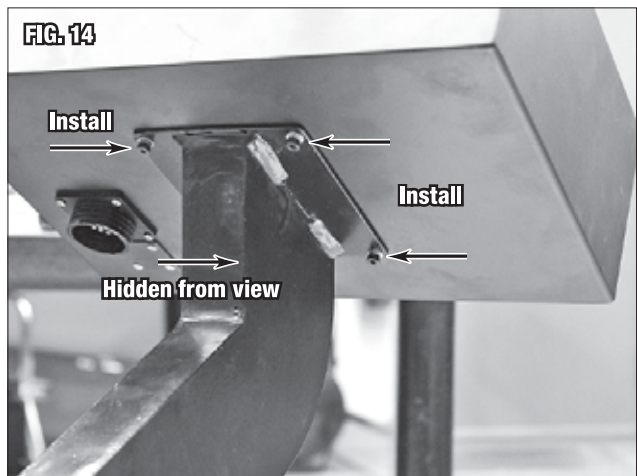
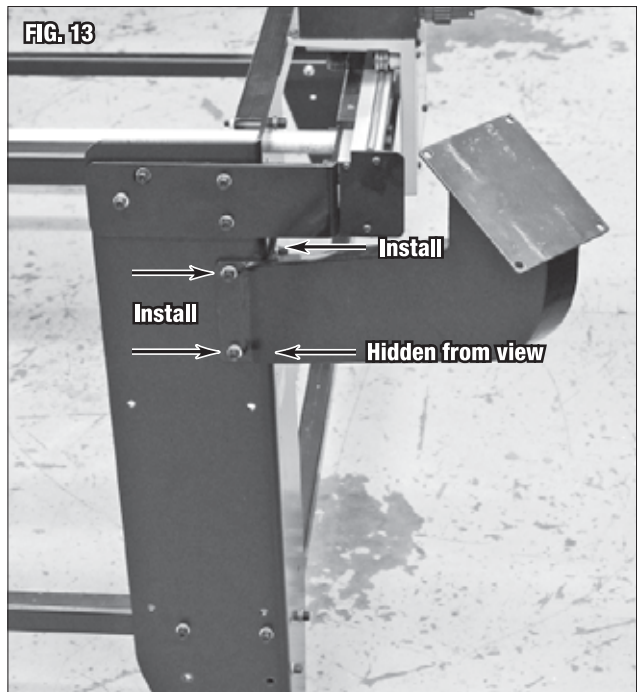
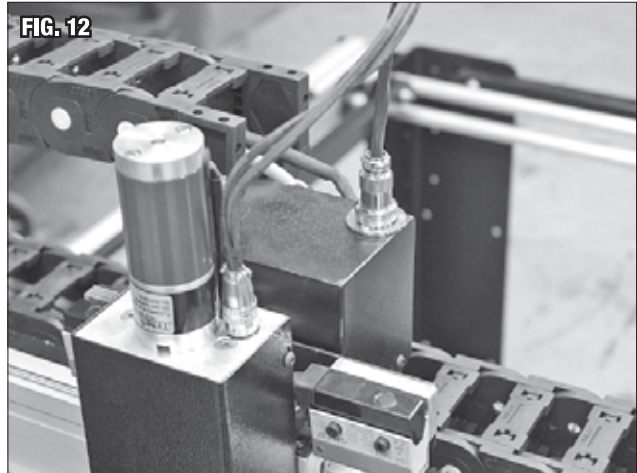
- Verify the Limit Switches will contact and trigger before colliding of running off the gear rack (FIG 10). If it runs off the track in use, you may bend the bracket slightly to engage the switch earlier.
- Install the Torch Height Motor Assembly with Mounting Bracket installed [K] to the X-Axis Gantry using the pre-installed hardware (FIG 11).



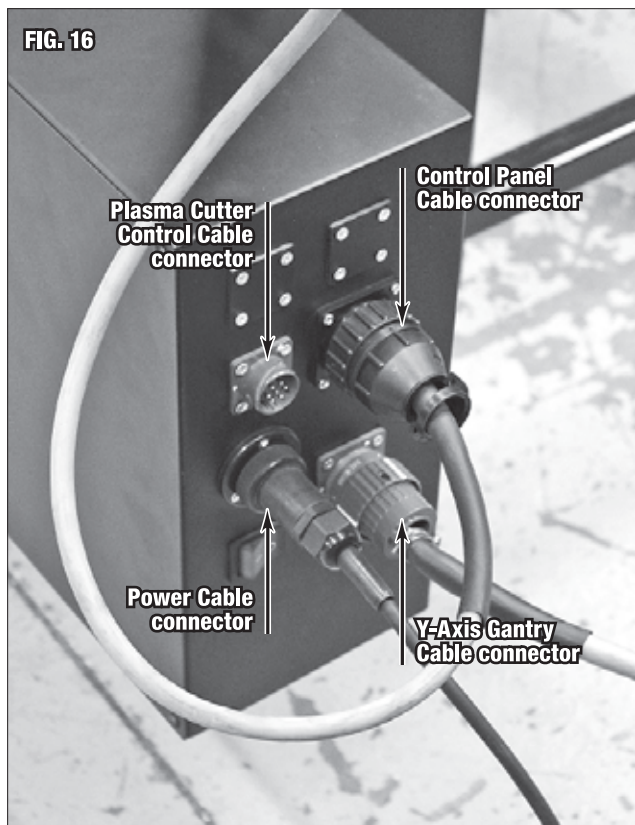
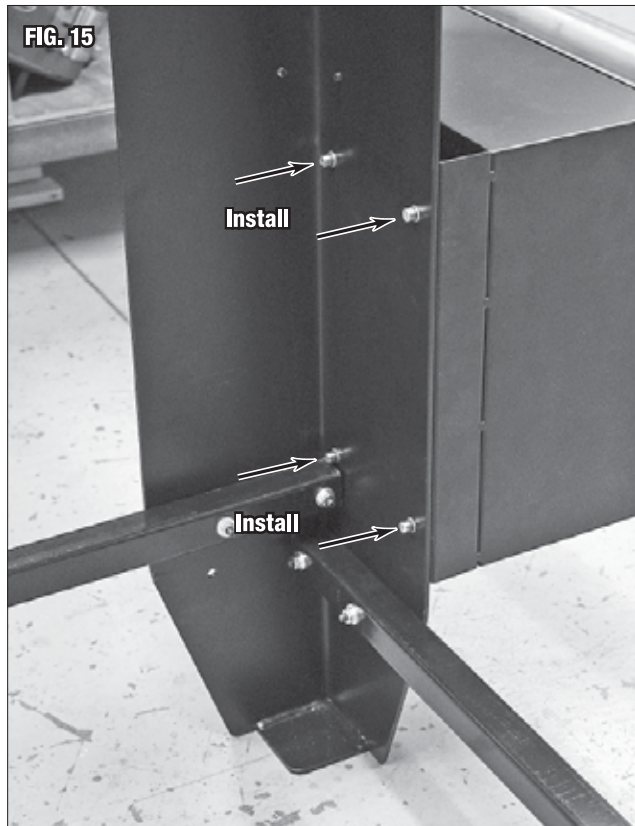


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- Reinstall the Mount Bracket to the X-Axis Gantry and plug in the Torch Height Motor Cable [EE] (FIG 12).
- Install the Control Panel Mount Arm [X] to the front right Leg, with the pre-installed hardware (FIG 13).
- Mount the Cut Controller Box with Hardware installed [H] to the Mount Arm with the pre-installed hardware (FIG 14).



- The Control Box with Hardware installed [J] can now be installed to the front right Leg with the pre-installed hardware (FIG 15).
- Plug in the Control Panel Cable [N] to the Cut Controller Box and Control Box, the Power Cable [O] to the Control Box, Y-Axis Gantry Cable, Right [P] to the Control Box and right Y-Axis Gantry (FIG 16) and (FIG 8). The Plasma Cutter Control Cable will be connected later.
- Take the Water Trays [A] and butt them up against each other. Gather the Water Tray Sealing Plates [B], one Water Tray Silicone Seal [C], and the M6x25 Stainless-Steel Bolts with Washers and Nuts [D]. Only one Silicone Seal is required, but an extra is included as a spare.





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- Install the Silicone Seal directly between the Water Trays, and the Sealing Plates to the outside of the Water Tray flanges, sandwiching the components (FIG 17).
NOTE: The included Caulking Gun [FF] and Silicone Tube [GG] can be used proactively to guarantee a zero-leak seal.
- Slide the assembled Water Tray into the table frame.
- Place the Water Tray Slats [E] in the Water Tray slots. Assembly is now completed (FIG 18).

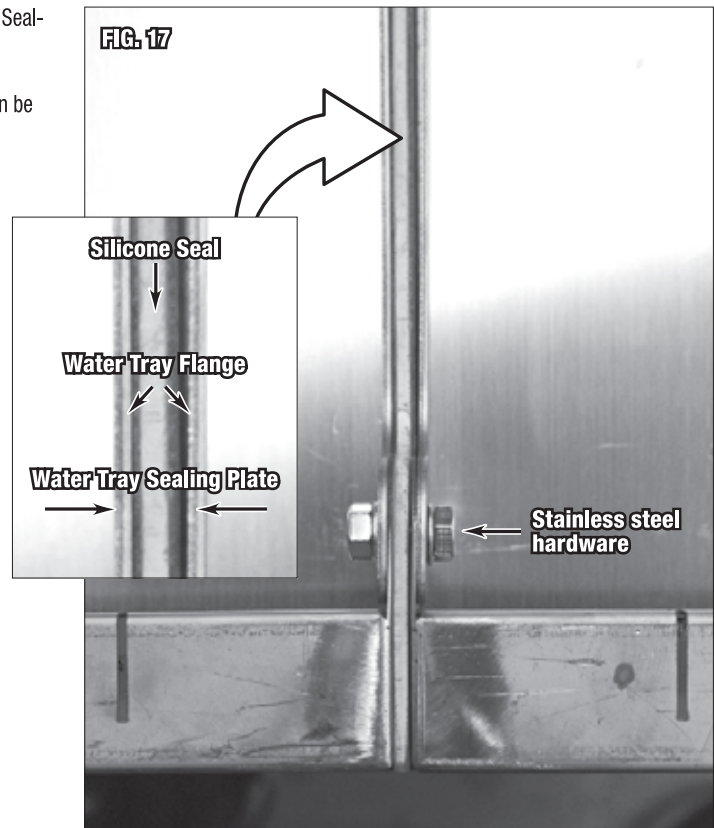


FIG. 18





CNC PLASMA TABLE SET-UP

LOCATION

- The STRATA 1200 x 1200 Cutting Table must be located in an indoor area, on a firm, clean, level surface. Having a solid, level concrete floor is ideal. If the table is fully loaded with water and a 1250mmx1100mmx63mm steel plate, total machine weight could exceed 354kg.
- The table should be placed in an area away from flammables, with ample ventilation. A minimum of 1.8m of free space must be maintained around all sides and above the CNC Plasma Table. This is to allow for adequate ventilation and to allow room for a person to access all sides for maintenance purposes. Do not store anything in the immediate vicinity of the table.

⚠ WARNING FIRE OR EXPLOSION HAZARD!
Keep flammables a minimum of 1.8m from the edge of the STRATA 1200 x 1200 Cutting Table.

⚠ CAUTION
The CNC Plasma Table generates heat, sparks, dust and gas during operation.

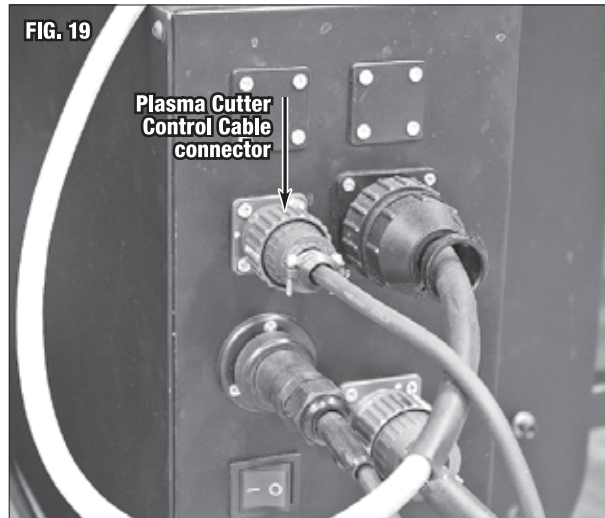
- The temperature environment for proper operation must be between 0°C and 43°C. The table may not function properly in extreme ambient temperature conditions.
- Plan the location to minimize the transfer time and effort required to load sheet metal.
- The table requires 230±10% VAC, 50 Hz, power from a grounded AS/NZS 3112-compliant outlet capable of supplying 3A.

CONNECTING THE CNC PLASMA CUTTERS

The STRATA 1200 x 1200 Cutting Table is configured to work directly with the STRATA CNC Plasma Cutters (not included). Follow the instruction manual included with the plasma cutter. Once finished, connect the Plasma Table to the Plasma Cutter:

- Insert the Plasma Cutter to CNC Table Cable 3m 7-Pin connector to the Control Box and lock it (**FIG 19**).
- The Plasma Table will now be able to trigger the plasma cutter and receive the arc voltage for automatic torch height control.

NOTE: For operating cutting preloaded shapes and custom files from FLCAM with STRATA's post processor the plasma cutter must be in 2T mode. 4T mode will not function correctly and should only be used while hand cutting or if your post processor specifies it.





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CONNECTING OTHER MANUFACTURERS' PLASMA CUTTERS

The following section describes the inputs required by the Plasma Table for control of the plasma cutter. Consult your plasma cutter manufacturer or a licensed electrician on how to connect your plasma cutter to the Plasma Table.

Please be aware that as per our warranty terms and conditions, should you wish to retrofit a non Strata plasma cutting machine to your table, this will void the warranty coverage on the entire table. The STRATA 1200 x 1200 Cutting Table can be used with other manufacturers' plasma cutters if they feature blowback (low frequency) start.

CAUTION ELECTRIC SHOCK CAN CAUSE INJURY!

Improper wiring practices can lead to electrical shock or start fires. Wiring should only be performed by a licensed electrician.

NOTICE

- High frequency start machines may damage and degrade the function of the STRATA 1200 x 1200 Cutting Table. Only use plasma cutters which have blowback (low frequency) start.
- Plasma cutter use with a CNC Plasma Table will subject the plasma cutter to extended periods of run time not seen while hand cutting. The increased run time may result in machine overload and reduce the plasma cutter's lifespan if not intended for use with a CNC Plasma Table.
- Utilizing your plasma cutter with the CNC Plasma Table may violate your plasma cutter's warranty terms. If you are concerned about invalidating your warranty, reach out to your plasma cutter's manufacturer for guidance. STRATA is not responsible for warranty violations or damage incurred to your plasma cutter.

- The included Plasma Cutter Control Cable [Q] provides the means for connecting a plasma cutter. The two wires labelled **START** must be connected to the trigger connection of the plasma cutter. These wires have no polarity. It is a normally open circuit that closes when the computer wants the plasma cutter to arc.
- For the Torch Height Controller to function, the two wires labelled **ARC+** and **ARC-** need to receive the arc voltage (voltage between the ground and the torch).

IMPORTANT NOTE: Plasma cutting is an electrode negative process. This means that the ground clamp has positive (+) polarity and the torch output has negative (-) polarity.

• **Torch Height Controller: 1:1 Undivided Arc Voltage**

The Torch Height Controller is factory-set for 1:1 undivided arc voltage when used with this CNC Plasma Table. In this configuration, the controller works with the raw arc voltage rather than a divided or scaled signal.

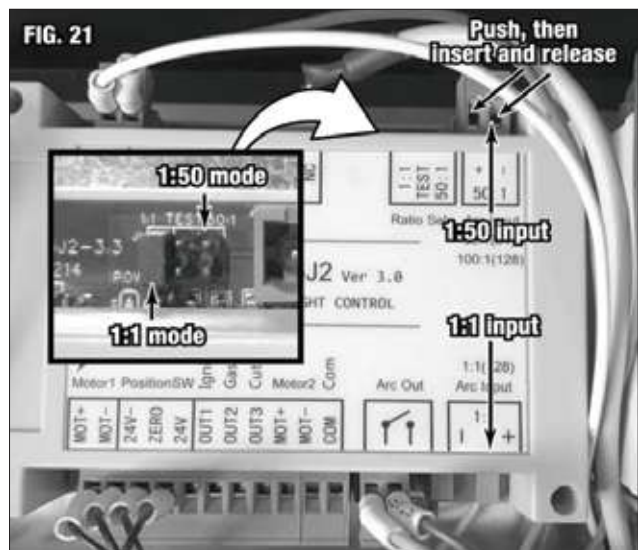
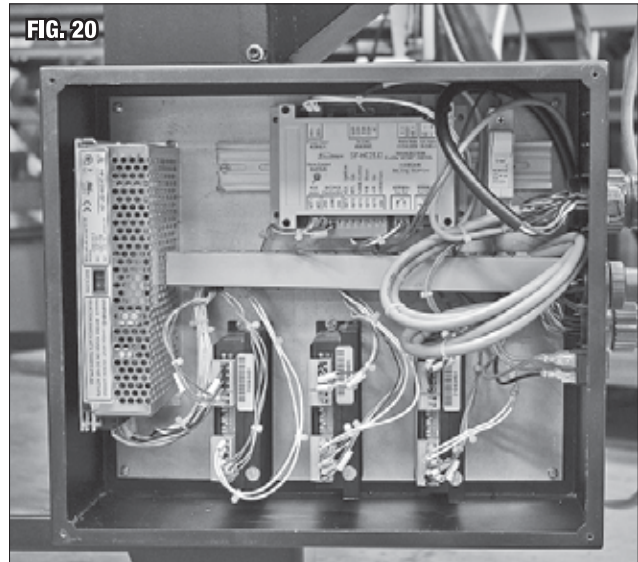
WARNING Before performing any of these steps, make sure the CNC Plasma Table is completely disconnected from power and switched off. Failure to do so can result in electric shock or damage to components.

• **Steps to Switch from 1:1 Undivided Arc Voltage Mode to 1:50 Divided Mode**

- First verify that the CNC Plasma Table is disconnected from power and switched off.
- Remove the Control Box cover by unscrewing the fasteners securing the top and bottom panels.
- Locate the motherboard switch or jumper responsible for selecting between the 1:1 (undivided) and 1:50 (divided) arc voltage mode.
- Using needle-nose pliers (or a suitable tool), move the switch/jumper into the 1:50 mode position.
- Unplug the existing wires from the 1:1 connection port. Install crimp ferrules on the stripped ends of the wires as needed so they will fit properly into the 1:50 port. (FIG. 21)
- Ensure the ferrules are properly crimped, fully inserted, and that the connection clamps are tightened securely. Polarity (positive/negative) must match the labeled terminals.
- Install or adjust protective sleeves or insulation around the wiring to safeguard against exposure and ensure stable signal transmission.
- Replace the Control Box cover panel, ensuring no wires are pinched, exposed, or touching any moving parts.
- Power on the machine and perform a test cut. Observe whether the Torch Height Controller responds correctly—if there is instability or erratic behavior, double-check all connections, insulation, and wiring.

WARNING When Using 1:50 Mode

- The signal voltage for arc voltage is lower in divided mode, so wiring must have minimal resistance, tight connections, good insulation, and minimal interference.





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- Ensure polarity (+ / -) is correctly maintained—wrong polarity can damage the controller or cause incorrect behavior.
- Protective tubes / sleeves over wires are strongly recommended to prevent wear, chafing, or exposure to sparks / heat.
- Regularly inspect the connections and wires especially under thermal / vibration stress.
- If torch leads are long or go through twists/coils, ensure cable routing does not add too much resistance or noise.

NOTE: When operating in 1:1 undivided arc voltage mode, the arc voltage input should not pass through any significant resistive load (such as very long wires, undersized wires, or poor connections), or the Torch Height Controller may not function correctly.

- The wires labelled **OV** and **MOVE** are not required.
- Once wiring has been completed, insert the Plasma Cutter Control Cable **[Q]** connector to the Control Box and lock it (**FIG 19**). The Plasma Table will now be able to control the plasma cutter.

NOTE: For operating cutting preloaded shapes and custom files from FLCAM with STRATA's post processor the plasma cutter must be in 2T mode. 4T mode will not function correctly and should only be used while hand cutting or if your post processor specifies it.

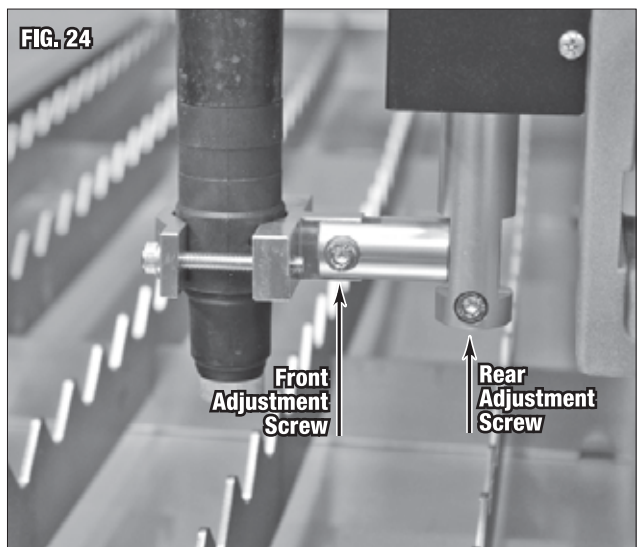
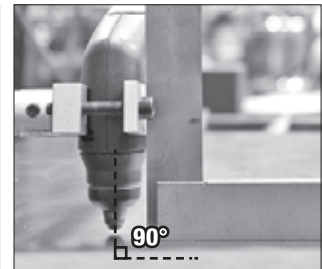
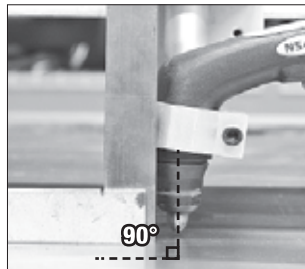
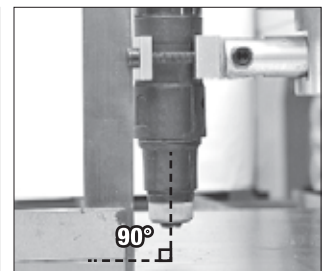
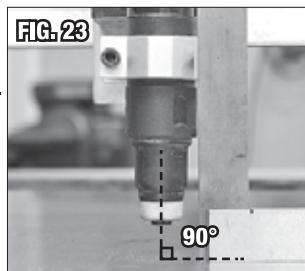
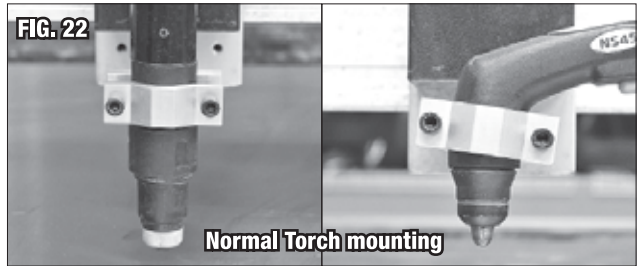
MOUNTING THE PLASMA TORCH

The use of a plasma cutting torch specifically for CNC plasma cutting, commonly referred to as a machine torch, is highly recommended. Our Machine Torch (not included) is directly compatible with STRATA CNC Plasma Cutters and this Plasma Table. However, hand torches may also be mounted. Hand torches are not designed for CNC cutting and often have smaller, less durable consumables. They can also be awkward to mount in the torch clamp. Depending on the specific Hand Plasma Torch in question, you may lose several mm of X-Axis (left to right) travel. The minimum recommended torch cable length is 4.5m. Shorter cable lengths may require awkward plasma cutter positioning and restrict travel.

- To mount the Plasma Torch, loosen or remove the screws on the torch clamp.
- Connect 230 VAC power to the table. Use the Control Box switch to power the table. Once the STRATA logo is loaded on the screen press any key to continue.
- Controls are covered in detail later, but if needed, use the arrow keys to jog the torch over a slat or workpiece. Adjust the torch height motor all the way up by holding the **S↑** key.
- Install the Plasma Torch such that it has at minimum 20mm clearance over the workpiece (**FIG 22**). If you find more clearance is required, you may adjust it at any time.

NOTE: Some hand torches may have an area to clamp on near the nozzle, but on others it may be ideal to clamp on the hand grip area. In that orientation you will lose some left to right travel distance due to the offset of the nozzle from the torch holder centerline.

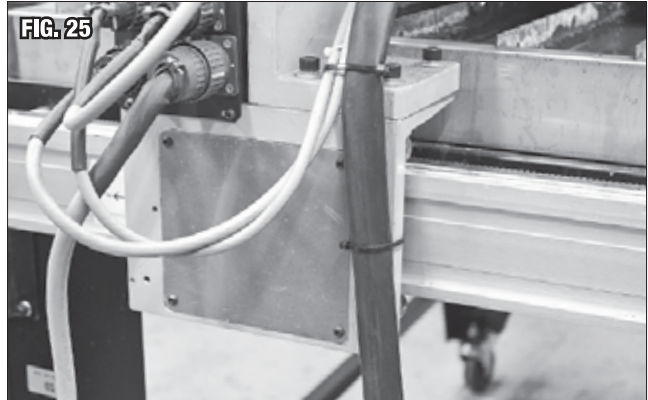
- Install the mount clamp and fasten the screws in an even fashion until the torch is secured sufficiently so it will not slip in operation.
- Verify the torch has enough downward travel to contact the workpiece by pressing the **S↓** key. It must bottom out on the workpiece to trigger the initial torch height switch for zeroing. If adjustment up or down is needed, the L-bracket bolted to the Torch Height Motor Assembly can be bolted on the assembly higher or lower to adjust the height further.
- For best results, with a flat piece of material on the table, verify the torch nozzle is as close to perpendicular (90°) to the workpiece as possible (**FIG 23**). This will give more consistent, straighter cuts.
- Adjust the angle using the two adjustment bolts, if necessary (**FIG 24**). You may need to lower the torch to access the rear adjustment screw.
- Install the torch cable through the X-Axis drag chain. The easiest way to do this is to traverse the torch full positive (right) on the X-Axis then insert the cable through the drag chain from the topside near the torch height motor assembly.





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- Feed and guide the cable until it reaches the bend in the drag chain.
- Traverse the torch full negative (left) on the X-Axis. The end of the cable will now be after the bend in the drag chain. Feed through the top and guide the end through the bottom.
- Once the end is out of the drag chain, you can feed with one hand and pull with the other. Pull the cable fully through but leave some slack at the top to avoid hose kinks or pulling on the torch.
- Cable tie the torch hose and Plasma Table cables to the X-Axis Gantry to prevent risk of the cable getting caught in the rollers or gear rack (FIG 25).
- The Plasma Torch is mounted successfully.



WATERBED

The Waterbed is used to reduce workpiece warpage, heat soak, sparks, slag spatter, and dust. Before filling with fluid, verify the table is level and if necessary, shim under the feet or casters to correct.

⚠ CAUTION INHALATION HAZARD!

DO NOT utilize additives which present inhalation and/or fire hazards when vaporized by the plasma arc. Examples: Anti-freeze, sodium nitrite-based additives.

⚠ NOTICE

Plasma cutting without coolant can warp the Waterbed and will result in the cut area being extremely hot. Whenever possible cut with at least 1" depth of fluid to prevent Waterbed damage and reduce burn risk.

Waterbed Filling & Corrosion Guidance

- The waterbed may be filled with tap water. Please note: tap water often contains minerals and impurities that can affect cutting performance and promote rust or fungal growth.
- Optional Rust-Inhibitor Additive: If desired, you may use a commercial water treatment or corrosion inhibitor that is non-toxic, safe for metal parts, and compatible with plasma cutting systems. Always follow the additive's instructions for dilution. This helps reduce corrosion, fungal buildup, and risk issues when cutting materials that may generate hydrogen gases (such as aluminum).
- Maintenance & Water Levels: Fill the waterbed to near its full capacity. A minimum fluid depth of about 25 mm is recommended to protect the cutting workpiece support slats from heat-damage caused by plasma spray.
- Evaporation & Replacement: Over time, water will evaporate. Top up with clean water as needed. If using an additive, ensure the correct concentration is maintained. When total replacement of water is required (due to heavy mineral buildup or dark / dirty water), drain and refill.
- Intermittent Use: If the table is used only occasionally, it is acceptable to use straight water, but drain when done to avoid stagnant water and buildup of impurities.
- Clean-Up: Regularly clean the waterbed and slats to remove rust, debris, and impurities. Inspect for signs of corrosion or pitting, especially around edges.

OPERATION OF THE CNC CUT CONTROLLER

The following sections will sequentially detail each menu and option in the CNC Cut Controller with integrated Torch Height Controller (THC). The THC is capable of automatically adjusting the height of the torch in real time to adapt to height variations in the material. The controller does this by monitoring the arc voltage, which is the voltage of the plasma arc.

Higher arc voltage means the plasma arc is longer, lower arc voltage means it is shorter. If arc voltage is too low the consumables will wear quicker because of slag blowback. If it is too high the cut will have an excessive bevel, or the arc will not be sustainable.

To get an abbreviated version and start cutting go to QUICK GUIDES near the end of this manual for the quick start guides.



Scan to see STRATA's YouTube channel for how-to videos on adjusting the automatic torch height control and much more!

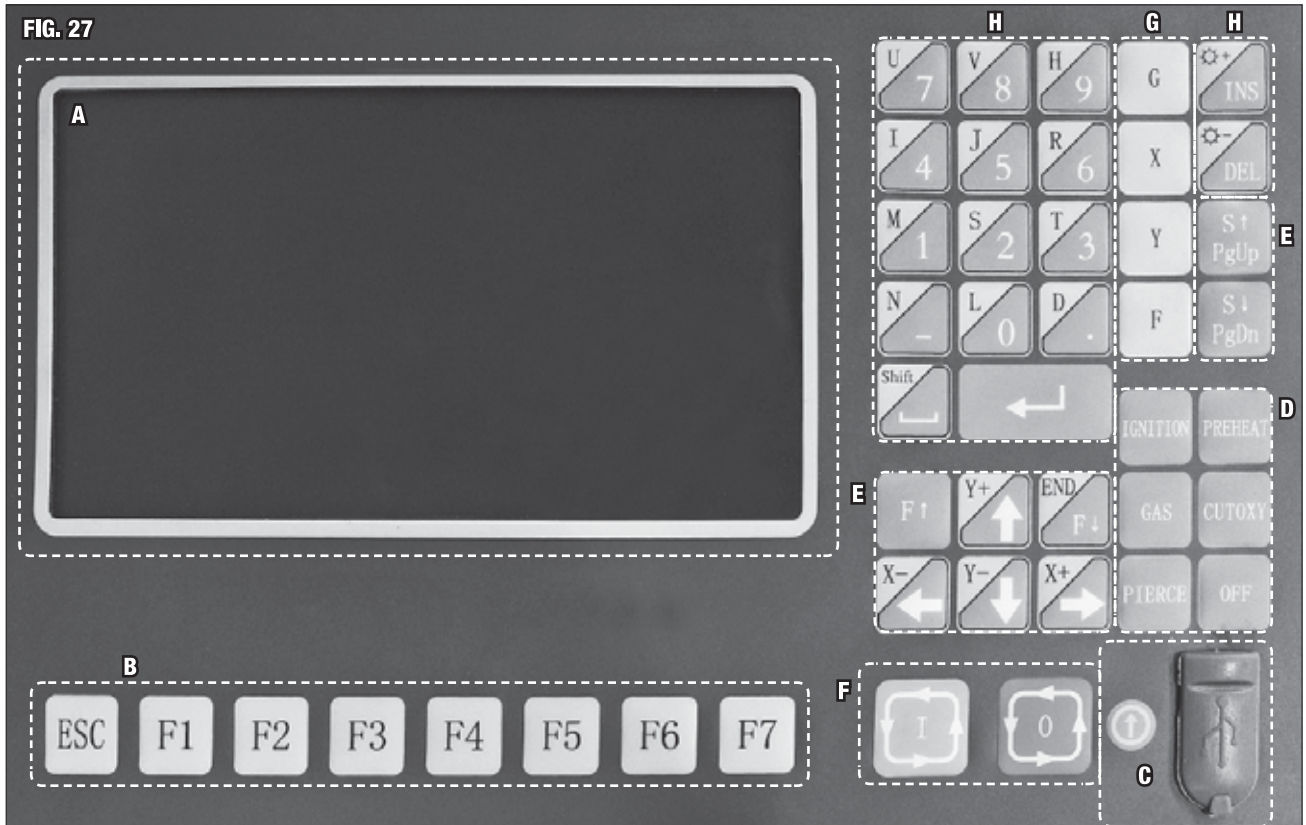
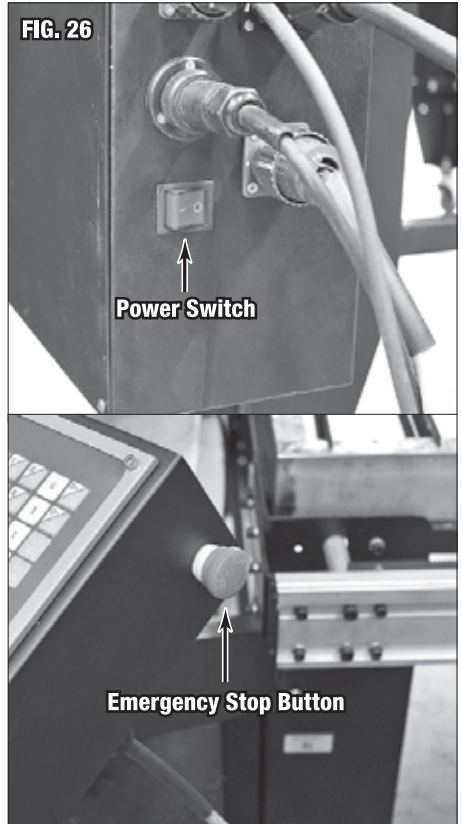


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PHYSICAL CONTROLS

The CNC Cut Controller has a color 178 mm LCD display and 45 keys. The Power Switch and Emergency Stop (FIG 26) control power to the Cut Controller. Pressing the Emergency Stop button will immediately cut power, halting cutting and movement operations, until it is rotated clockwise to restore power. The main control clusters for the CNC Cut Controller are highlighted in (FIG 27).

- A LCD screen used to monitor and navigate.
- B Main function keys used for accessing/exiting menus and altering settings quickly. The function of these keys will be shown at the bottom of the LCD screen. Key **F7**, along with **↵**, are commonly used to confirm a change or select continue. **ESC** can be used to exit any screen and pressing it multiple times will get you back to the main screen if needed.
- C USB connection for importing and exporting files via USB drive. The small arrow button to the left of the port is only used for software updates.
- D Manual controls for cutting functions. Since this table is configured as a CNC Plasma Table, only **PIERCE** and **OFF** are used for manual operations.
- E The arrows manually jog the Plasma Torch position and are used in menu navigation. The Torch Height Motor can be triggered manually by the **S↓** and **S↑** keys. Easily alter the torch cutting speed with the **F↓** and **F↑** keys. Single taps will adjust it by one and holding for several seconds will progressively scale by factors of ten.
- F Machine Start/Stop controls. To start a program press **I** followed by **↵** to confirm. Stop by pressing **O** and resume by pressing **I**. Note, confirmation will not be asked for when starting to resume a cut.
- G This button cluster is used to quick access select settings for altering without having to go into the settings menus.
- H Number and letter keypad is mostly used for setting entry and file naming. **SHIFT** is a modifier key that when pressed toggles the letter/number combo keys to the alternate character. Before each time an alternate character is entered **SHIFT** will need to be pressed again.





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MAIN CUT SCREEN

- Upon powering up the Plasma Table it will take a few seconds to boot up. Once the STRATA logo screen (FIG 28) is displayed, press any key to continue.
- The first screen shown is the Main Cut Screen (FIG 29).

FIG. 28



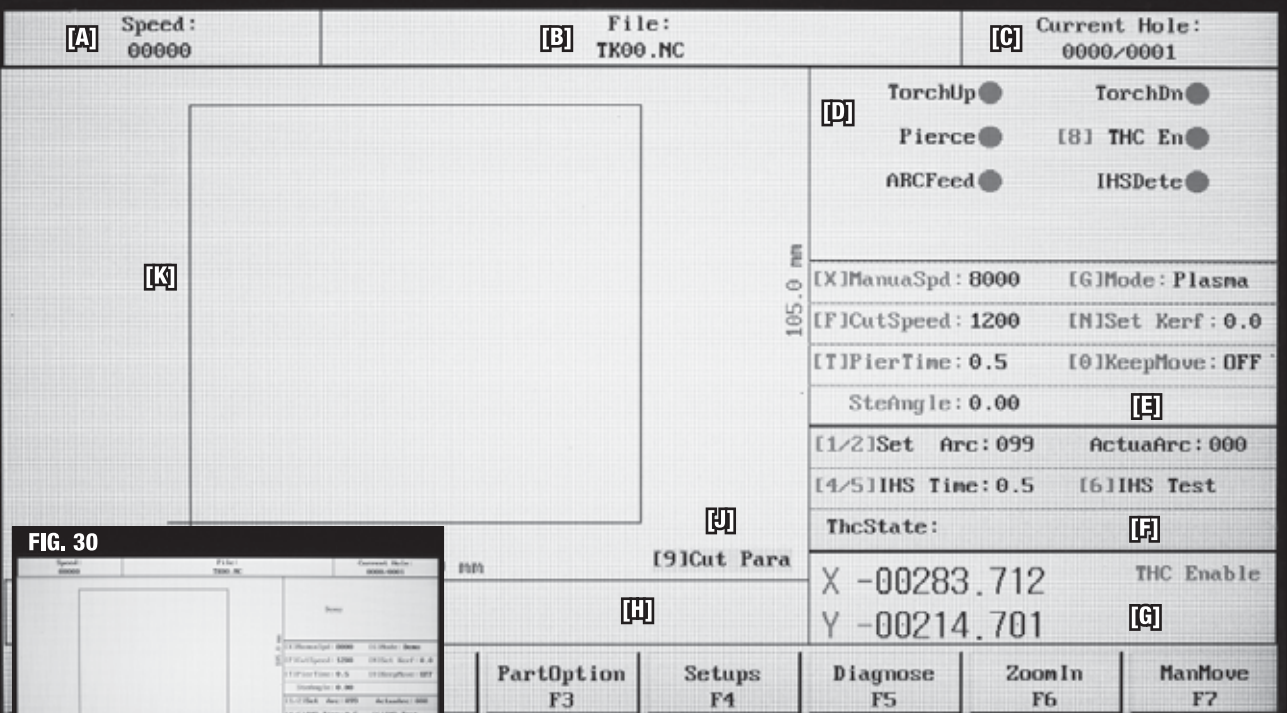
NOTICE

Return to the Main Cut Screen by pressing ESC as many times as necessary.

MAIN CUT SCREEN INTERFACE DESCRIPTION (FIG 29)

- [A] Current Torch speed (mm/min or ipm).
 - [B] Current file open.
 - [C] Counter that shows how many holes (aka pierces) have currently been made and how many there are on the program in total.
 - [D] Mode specific indicators. Plasma cutting mode shown. Pressing 8 when not cutting will quickly enable/disable the automatic torch height control. Shows only demo when in Demo mode.
 - [E] Cut Controller quick reference settings display. Manual speed, cut speed, pierce time, controller mode, kerf, movement mode and steel plate angle.
 - [F] Torch Height Controller quick reference settings display. Set arc voltage target, IHS set time, THC state, actual arc voltage, and IHS test.
 - [G] Torch head position with respect to the zero point and THC enable or disable display.
 - [H] The bottom bar always shows the menu that the function keys will open.
 - [J] Cut parameters quick access chart. You can input your favorite settings for future reference.
 - [K] Part preview. The red crosshairs show the zero point and the current torch position. Torch travel will be shown as a red dotted line. The overall part size and current machine units are shown on the bottom and right sides of the window.
- G will cycle through the modes: Plasma (FIG 29) and Demo (FIG 30).
 - Settings can be quickly changed by pressing their respective quick access key, shown in brackets to the left of the setting. For example, T can be used to change the pierce time quickly.
 - Navigation within setting windows is often done using the arrow keys and the number pad to enter values.

FIG. 29



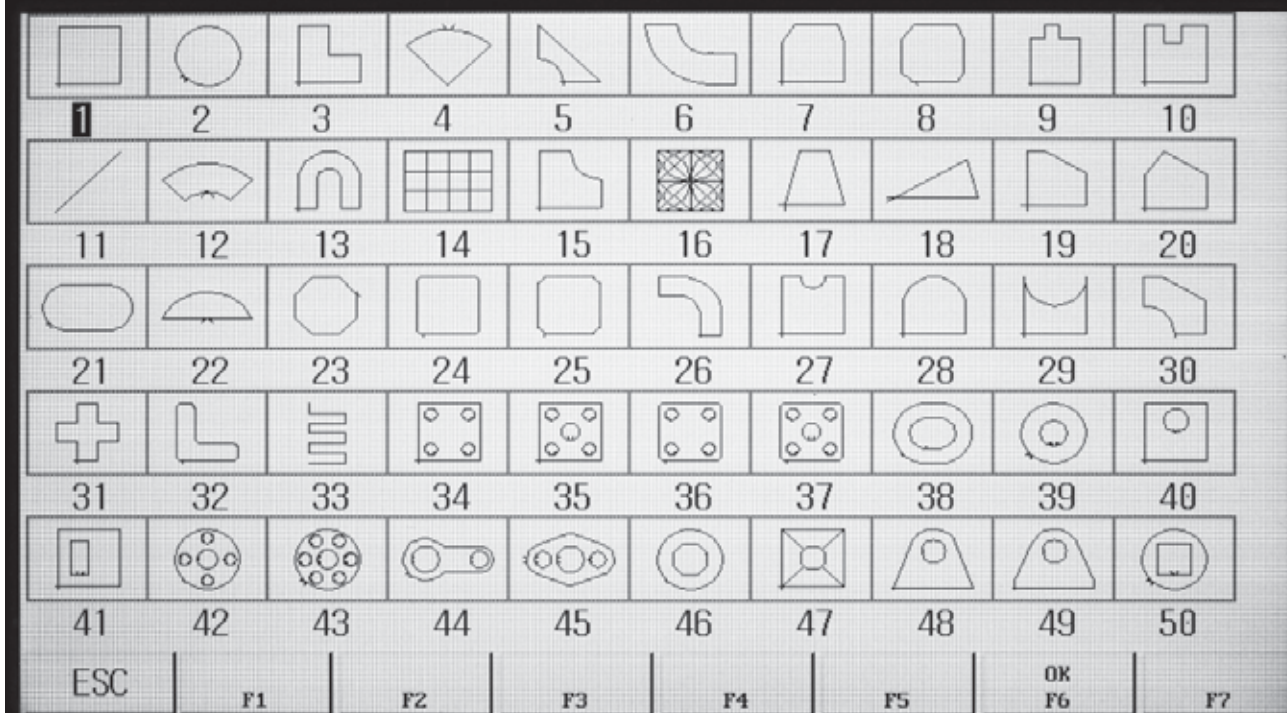


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F1 - SHAPE LIBRARY

- Pressing **F1** on the Main Cut Screen takes you to the shape library (**FIG 31**). Here preloaded shapes can be selected by using the arrow keys.
- Pressing **↵** or **F6** on the part opens a screen to modify its dimensions (mm or in). Lead in and lead out are how far away the Torch starts and stops cutting from the actual piece being cut (**FIG 32**).
- Good lead in/out helps ensure cut smoothness at the entry and exit points. Generally, as much lead in as possible is better up to approximately 15mm or 0.60". Lead out is not as critical and can be much lower.
- After the dimensions have been entered press **F7** to open the shape in the main cut screen.
- Some shapes, such as the one shown in (**FIG 33**), **F1** and **F2** have the option to switch between inside and outside lead cuts. For example, inside would be used to cut out a circle. Whereas outside would be used to cut a hole in a panel.

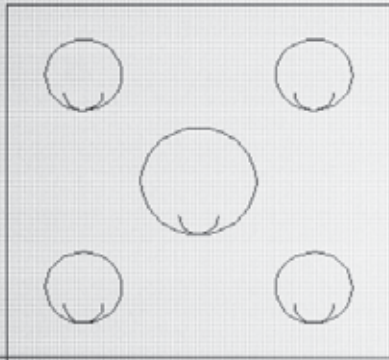
FIG. 31



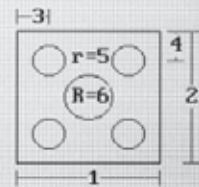


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FIG. 32



Size1	100
Size2	100
Size3	20
Size4	20
Size5	10
Size6	15
Lead In	5
Lead Out	5



ESC

Inside
F1

F2

F3

F4

F5

F6

OK
F7

FIG. 33



Size1	100
Size2	100
Lead In	5
Lead Out	5



ESC

Inside
F1

Outside
F2

F3

F4

F5

F6

OK
F7

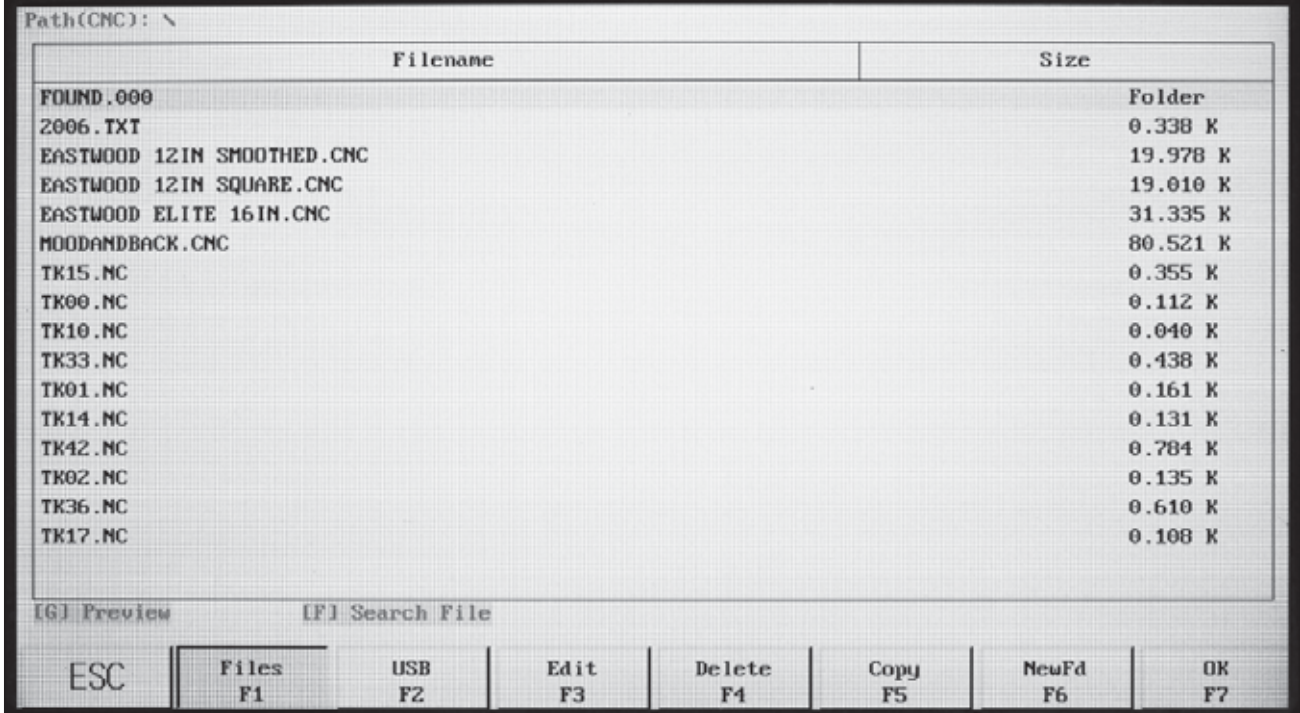


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F2 - FILES

- **F2** opens the file browser (**FIG 34**) where G-code is stored to the machine, or a USB drive. Files can be searched, edited, deleted, copied, previewed, saved, and renamed here. The maximum USB drive size supported is 16GB, and the USB drive must be formatted to FAT or FAT32 file system.
- Use the arrow keys and **↵** button to navigate a file directory.
- Pressing **↵** or **F7** on a G-code file will open it from the USB Drive. Do not remove the USB Drive before you finish using the part because it is not saved to the machine and will not reload correctly.

FIG. 34





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F3 - PART OPTION

- Pressing **F3** opens the part modification menu (**FIG 35**). Any changes made in this menu can be quickly reverted with **ESC**.
- **F1** can be used to cycle the cut zero point through bottom left, top left, top right, bottom right, and centered positions.
- **F2** can be used to change the cut angle.
 - **Rotate part** - Allows the user to rotate the orientation of the cut path 360° clockwise or counterclockwise. This is the most common and intuitive option for part rotation.
 - **Rotate steel plate** - This opens to a separate menu where you press **F3** to input the angle of the plate loaded. This setting will stick and rotate all parts currently loaded and loaded in the future if you do not reset it to zero manually.
- **F3** opens array nesting. The options are outlined below. When nesting parts, the computer will automatically space the “frame” view of each part 10mm apart. In some cases, this may still be too close and you will need to increase the distance further. Press **ESC** to cancel or **F1** to create the array.
 - **Rows** - The number of top to bottom horizontal rows for the array.
 - **Columns** - The number of left to right vertical columns for the array.
 - **Row Distance** - Distance between rows. Defaults to 10mm spacing.
 - **Col Distance** - Distance between columns. Defaults to 10mm spacing.
 - **Alt Order (1/0)** - This setting will alter cutting order of the array. Option “0” will cut the array left to right, bottom to top, and start at the left side of every row. Option “1” will snake through the rows to eliminate travel time for restarting at the left. This cuts down on program run time for large arrays.
 - **Stag Array (1/0)** - Setting to “1” subtracts one part from every other row and staggers the columns for the possibility of tighter nesting with certain shapes, such as circles. “0” is the default and makes a straight array.
- **F4** can be used to change the scale, with 1.00 being the current size of the part. For example, to scale a part up 25%, input 1.25. To reduce size to 63%, input 0.63.
- **F5** is for selecting a specific pierce in the code to start with, this can be helpful when recovering a failed cut or if you want to skip certain features without creating a new G-code file. For example, to skip to the third pierce input “3” and press **F1**. Now the cut will start from the third pierce.
- **F6** is used to view and manually edit the G-code file loaded. You can also use this menu to save a frequently used Shapes Library part to the machines internal storage so you don’t need to punch in the dimensions every time.
- **F7** Reverts changes to the part or steel plate.
- **X** mirrors the part about the X-Axis, and **Y** mirrors the part about the Y-Axis.
- To save changes and return to the Main Cut Screen press **ESC**.

FIG. 35

Speed: 00000	File: TK00.NC	Current Hole: 0000/0001					
		[X] X Mirror [Y] Y Mirror					
		[X]ManuaSpd: 8000 [G]Mode: Plasma					
		[F]CutSpeed: 1200 [N]Set Kerf: 0.0					
		[T]PierTime: 0.5 [O]KeepMove: OFF					
		SteaAngle: 0.00					
		[1/2]Set Arc: 099 ActuaArc: 000					
		[4/5]IHS Time: 0.5 [6]IHS Test					
		TheState:					
		X -00283.712 THC Enable					
		Y -00214.701					
0> G92 X0 Y0 1> G91							
ESC	StartP F1	Rotate F2	array F3	Scale F4	SelPier F5	EditFil F6	Revert F7



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F4 - SETUPS

- **F4** opens the machine settings menu where more in-depth options can be accessed.
- Navigate using the arrow keys then use the number pad to enter values.
- **F1 Speed** opens some common settings. Shown in (FIG 36), these settings are relevant to all modes.
- The first screen shown is blank or has import/export Cut Paras options (depending on firmware version).
- Use this screen to switch between imperial and metric units by typing in "1928" on the keypad to open the pop-up window. Use the arrow keys and Enter button to select switch units.
 - **Start speed (mm/min or ipm)** - Speed at which movement starts. Can be used to slowly ramp up the movement speed over the time defined below in **Acc time**. When doing thick plate nearing the limits of your plasma cutter, setting the Start Speed around 10-20ipm (250-500mm/min) with the Acc time at 1-1.5s will ensure the arc doesn't break from rapid acceleration. If cutting sheet metal these settings aren't as important, but setting the start speed closer to the cut speed and the acc time to a fraction of a second will provide snappy acceleration to reduce heat input at the start of cuts.
 - **Acc time (S)** - Time period over which the **Start speed** accelerates to the operating speed and decelerates to zero.
 - **Acceleration (S)** - Changes the speed at which the stepper motors accelerate. This controls how "jumpy" or "sharp" sudden changes direction, such as corners, will be. Small adjustments here make a big difference. When doing thick plate nearing the limits of your plasma cutter, setting around 0.8-1.0s will ensure the arc doesn't break from rapid acceleration. If cutting sheet metal its not as important, but setting to a few tenths of a second will provide snappy acceleration to reduce heat input.
 - **G00 move speed (mm/min or ipm)** - Speed used when the table automatically traverses the torch.
 - **Return origin speed (mm/min or ipm)** - This setting is unused in the current table configuration.
 - **Demo/back Speed (mm/min or ipm)** - Speed used when running in demo mode or utilizing the **Back** function.
 - **Spd Tran Angle** - This setting is unused in the current table configuration.
 - **Corner Radius (mm or in)** - This setting is unused in the current table configuration.
 - **Small Arc Limit (mm/min or ipm)** - Speed limit when cutting a radius less than the size set below in **Limited Speed below Radius**. Can improve radius and small hole quality by slowing the torch down.
 - **Limited Speed below Radius (mm or in)** - Any radius equal to or smaller than this setpoint will reduce speed to the limit defined in **Small Arc Limit** above.

FIG. 36

Start speed(mm/min)	2000	(20 < P < 2000)
Acc time(S)	0.50	(0.05 < P < 3.00)
Acceleration(S)	0.30	(0.03 < P < 1.50)
G00 move speed(mm/min)	6000	(20 < P < 50000)
Return origin speed(mm/min)	100	(100 < P < 50000)
Demo/back Speed(mm/min)	1000	(100 < P < 50000)
Spd Tran Angle	20.0	(20.0 < P < 300.0)
Corner Radius(mm)	3.0	(2.0 < P < 1000.0)
Small Arc Limit(mm/min)	1000	(0 < P < 50000)
Limited Speed below Radius(mm)	3.0	(0.0 < P < 1000.0)

ESC	Speed F1	System F2	F3	Plasma F4	Control F5	THC F6	Save F7
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- **F2 System** settings can be used to change machine settings such as limits and stepper motor settings (**FIG 37**).
 - STRATA does not recommend altering settings in this menu without direction from STRATA Technical personnel. Default settings shown in image below.

FIG. 37

Pulse Equivalent	X:	0.00640000	Y:	0.00640000	(0.00000001 < P < 1.00000000)
Machine Origin Point(mm)	X:	0.0	Y:	0.0	(-3000.0 < P < 30000.0)
Reference Point(mm)	X:	0.0	Y:	0.0	(-3000.0 < P < 30000.0)
Drill Offset(mm)	X:	0.0	Y:	0.0	(-3000.0 < P < 30000.0)
Flame Offset(mm)	X:	0.0	Y:	0.0	(-3000.0 < P < 30000.0)
Plasma Offset(mm)	X:	0.0	Y:	0.0	(-3000.0 < P < 30000.0)
Clearance(mm)	X:	0.00	Y:	0.00	(0.00 < P < 10.00)
Dir-Origin	X:	0	Y:	0	(-1 < P < 1)
Max Limit+(mm)	X:	9000.0	Y:	9000.0	(-31000.0 < P < 31000.0)
Min Limit-(mm)	X:	-9000.0	Y:	-9000.0	(-31000.0 < P < 31000.0)

ESC	Speed F1	System F2	F3	Plasma F4	Control F5	THC F6	Save F7
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- **F4 Plasma** opens the plasma specific settings menu shown in (FIG 38).
 - **Position Check (0/1)** - This option enables or disables running of the initial height program. Leave set to "1" to run the program before cutting so the torch levels itself.
 - **Position Up Time (S)** - This is the Initial Height Setting motor run up-time in seconds. This is also adjustable from the main cut screen with keys 4 and 5.
 - **Torch Up Time (M70)** - The amount of time the torch height motor will run upward at the beginning and end of a cut path. Setting this to around a second can help prevent torch collision with parts that have flipped during cutting.
 - **Torch Down Time (M71)** - The amount of additional time the torch will run down before starting a cut path. Set to zero or a fraction of a second to save time.
 - **Watch Arc Enable (0/1)** - Setting to "1" enables monitoring of the plasma arc via arc voltage, used in conjunction with the following two settings below. When set to "0" the table will not stop if arc voltage is undetected.
 - **Arc Start Detect (S)** - Pausing time of arc detection when the cut starts. The table will not pause if it detects the arc is lost in this time period.
 - **Arc Loss Delay (S)** - Arc loss detection delay. If the table detects the arc is lost for longer than the set time, it will pause cutting and display an arc alarm. Normally left at zero.
 - **Pierce Time (S)** - The amount of time after arc start the Plasma Torch will remain stationary in order to pierce the material before moving.
 - **Arc Off Delay Time (S)** - Pauses the table for the set number of seconds after turning off the plasma arc. Can be used to space time between cuts on a part with many holes, if desired. Otherwise set to zero or a fraction of a second to save time.
 - **Time to lock THC (S)** - Time period it will lock the THC after cut start. Helpful for odd starts with large gaps, or on thick material that results in an unstable arc when starting the cut.
 - **Distance to lock THC (mm or in)** - Distance before corners and sharp edges the THC will be locked. Can prevent the THC dipping during sharp direction changes.
 - **Speed to lock THC (mm/min or ipm)** - If the movement speed during cutting is below this speed it will lock the torch height.
 - **Distance to Off arc before end of cutting (mm or in)** - Distance before the end of cutting that it will turn the plasma arc off. Could be handy if you wanted to dial in leaving parts attached with a small tab at the end of cuts.
 - **Distance to Lock THC before end of cutting (mm or in)** - Distance before the end of cutting that it will lock the torch height. Similar to distance to lock, but this can prevent plunging at the end of the cut.
 - **Use Cylinder THC (0/1)** - This setting is for other types of height controller. Leave set to "0" for this table.

FIG. 38

Position Check(0/1)	1	(0 < P < 1)
Position Up Time(S)	0.5	(0.0 < P < 29.9)
Torch Up Time(M70)(S)	0.8	(0.0 < P < 100.0)
Torch Down Time(M71)(S)	0.0	(0.0 < P < 100.0)
Watch Arc Enable(0/1)	1	(0 < P < 1)
Arc Start Detect(S)	0.0	(0.0 < P < 120.0)
Arc Loss Delay(S)	0.0	(0.0 < P < 120.0)
Pierce Time(S)	0.5	(0.0 < P < 120.0)
Arc Off Delay Time(S)	0.5	(0.0 < P < 120.0)
Time to lock THC(S)	0.0	(0.0 < P < 90.0)
Distance to lock THC(mm)	0	(0 < P < 1000)
Speed to lock THC(mm/min)	0	(0 < P < 10000)
Distance to Off arc before end of cutting(mm)	0.0	(0.0 < P < 90.0)
Distance to Lock THC before end of cutting(mm)	0.0	(0.0 < P < 100.0)
Use Cylinder THC(0/1)	0	(0 < P < 1)

ESC	Speed F1	System F2	F3	Plasma F4	Control F5	THC F6	Save F7
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- **F5 Control** has numerous system setting parameters (**FIG 39**). These are pre-set at the factory.
 - Background color (white 0/blue 1) - Switched between white interface background color (default) and a blue background color.
 - STRATA does not recommend altering other settings in this menu without direction from STRATA Technical personnel. Default settings shown in image below.

FIG. 39

Auto Load Next File(0/1)	<input type="text" value="0"/>	(0 < P < 2)
Laser offset(0/1)	<input type="text" value="0"/>	(0 < P < 1)
Edge Cutting Enable(0/1)	<input type="text" value="0"/>	(0 < P < 1)
Forbidden F(0/1)	<input type="text" value="0"/>	(0 < P < 2)
Calculate Precision(mm)	<input type="text" value="0.100"/>	(0.010 < P < 0.500)
Remote Controller No-0/wired-1/wireless-2	<input type="text" value="0"/>	(0 < P < 2)
Clear Coor before cut(0/1)	<input type="text" value="0"/>	(0 < P < 1)
Return zero after cut(0/1)	<input type="text" value="0"/>	(0 < P < 2)
Enable limit port(0/1)	<input type="text" value="1"/>	(0 < P < 1)
Enable Limit coordinate(0/1)	<input type="text" value="0"/>	(0 < P < 1)
Collide Detect(0/1)	<input type="text" value="0"/>	(0 < P < 1)
Pause(0)/Torch Up(1) after Collide	<input type="text" value="1"/>	(0 < P < 1)
Torch Up after pause(0/1)	<input type="text" value="0"/>	(0 < P < 1)
Background color(white 0/blue 1)	<input type="text" value="0"/>	(0 < P < 1)
Synchro XZ:0/YZ:1	<input type="text" value="1"/>	(0 < P < 1)
Confirm Data 0/1	<input type="text" value="0"/>	(0 < P < 1)

ESC	Speed F1	System F2	F3	Plasma F4	Control F5	THC F6	Save F7
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WS66

- **F6 THC** contains all Torch Height Controller (THC) specific settings (**FIG 40**). Some of these may be fine-tuned to better implement the automatic torch height control for your application.
 - **THC Enable (1) / Disable (0)** - Enable (1) or disable (0) the automatic torch height control.
 - **Dead-band voltage (0.1 - 10.0V)** - Adjustment dead zone for the torch height control. If the actual arc voltage differs from the set arc voltage by more than this number, it will automatically adjust the torch height. Typically, 1V works well.
 - **THC arc voltage adjust (1 - 255)** - Arc voltage ratio adjustment calculation number. Do not adjust; adjusting can cause improper function. Default is 64.
 - **Sensitivity (1 - 10)** - Reactivity of the torch height control. Greater numbers will make the torch adjust faster but can also cause a feedback loop here the torch is repeatedly adjusting up and down rapidly. Default is 1.
 - **Manual Up/Down Speed** - Manual adjustment speed of the torch height. Default is 40.
 - **Cutting Up/Down Speed** - Automatic adjustment speed of the torch height. Default is 40.
 - **IHS Speed** - Speed of the torch when it sets the initial height. Keep at 40 for good adjustability range of the start height.
 - **Zero Low Enable(0)/High Enable(1)** - Leave set to (1) to enable the torch height motor.
 - **Limit+ Low Enable(0)/High Enable(1)** - Unused in this table configuration. Leave set to (0).
 - **Limit- Low Enable(0)/High Enable(1)** - Unused in this table configuration. Leave set to (0).
- Remember to press **F7** to save your changes.

FIG. 40

THC Enable(1)/Disable(0)	1	(0 < P < 1)
Dead-band voltage(0.1-10.0V)	1.0	(0.1 < P < 10.0)
THC arc voltage adjust(1-255)	128	(1 < P < 255)
Sensitivity(1-10)	1	(0 < P < 10)
Manual Up/Down Speed	40	(0 < P < 100)
Cutting Up/Down Speed	40	(0 < P < 100)
IHS Speed	40	(0 < P < 100)
Zero Low Enable(0)/High Enable(1)	1	(0 < P < 1)
Limit+ Low Enable(0)/High Enable(1)	0	(0 < P < 1)
Limit- Low Enable(0)/High Enable(1)	0	(0 < P < 1)

THC Version: 2.1

ESC	Speed F1	System F2	F3	Plasma F4	Control F5	THC F6	Save F7
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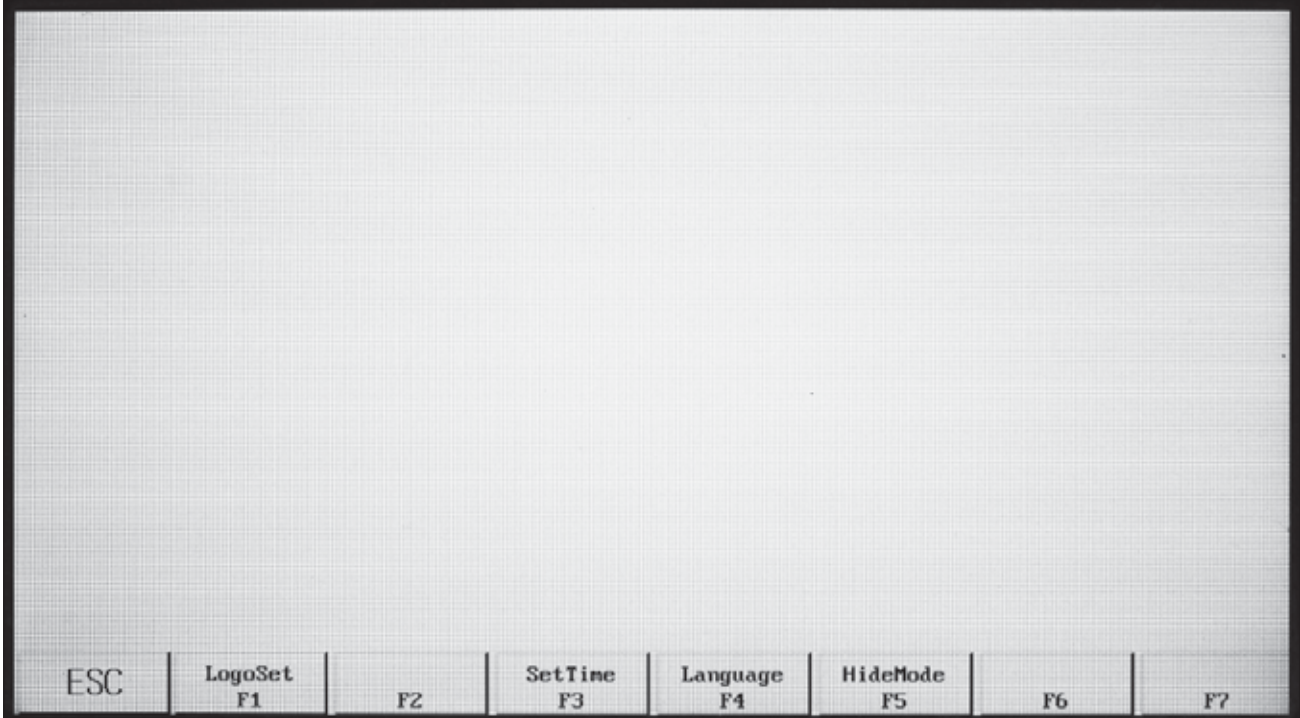
F5 - DIAGNOSE

- **STRATA does not recommend altering settings in these menus left undescribed without direction from STRATA Technical personnel.**
- The diagnose menu can be used to monitor inputs and outputs.
- Setting the date and language options are also accessed here using **F4 Sys Set** and entering the password "1928" to access the system settings menu (FIG 41).
- From here, press **F3 Set Time** or **F4 Language**.

▲ NOTICE

STRATA does not recommend altering settings that we do not explicitly describe in the diagnostics/settings menus as this could cause the machine to become nonfunctional or function erratically. Only change machine settings described in this manual or at direction of STRATA Technical personnel.

FIG. 41





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F6 - ZOOM IN

- The zoom function is useful to get a close look at small features. **F4 Zoom Out** and **F5 Zoom In** control the zoom level. **F6 Return** returns to the main cut screen. **F7 Info** shows info about the cut file.

F7 - MANUAL MOVEMENT

- The manual movement menu (**FIG 42**) is useful for cutting manually using the **PIERCE** button, and alignment before making a cut. The options are described below.
- F1 MDI** Automatically moves the torch by the distance input for the X and Y-Axes.
- F2 StepMov** switches into step movement mode. This asks you to set a distance and will move the Plasma Torch by that distance in the direction of the arrow key you press. Helpful for precisely aligning with a plate.
- F3 Zero** can then be used to manually zero the coordinate system so you know you have the alignment you want. The machine also automatically zeroes when a fresh cut is started.
- F4 Return** Can be used to zero the machine to the current point or zero it to a new point.
- F5 High Spd** cycles through three predefined speed levels **High Spd**, **Mid Spd**, **Low Spd**.
- F6 Recover** Can recover the torch to a point on your cut file or offset the cut file.
- F7 Frame** will run the Torch in a rectangular circuit at the min./max. X and Y values of the cut file. Very useful for understanding if you have enough space to cut a complicated part which would take a long time run a demo on.

FIG. 42

Speed: 00000		File: TK00.NC		Current Hole: 0000/0001			
				TorchUp ● TorchDn ●			
				Pierce ● [8] THC En ●			
				ARCFeed ● IHS Dete ●			
				[X]ManuaSpd: 8000 [G]Mode: Plasma			
				[F]CutSpeed: 1200 [N]Set Kerf: 0.0			
				[T]PierTime: 0.5 [O]KeepMove: OFF			
				StcAngle: 0.00			
				[1/2]Set Arc: 099 ActuaArc: 000			
				[4/5]IHS Time: 0.5 [6]IHS Test			
				ThcState:			
X +00000.000		THC Enable					
Y +00000.000							
ESC	MDI F1	StepMov F2	Zero F3	Return F4	High Spd F5	Recover F6	Frame F7



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MAIN CUT SCREEN DURING CUTTING

(FIG 43) and (FIG 44) show the screen options displayed while cutting is in progress at different stages of the cut. (FIG 43) is supplement to (FIG 29), it highlights displays/options that are changed while cutting is in progress. These are defined on the next page.

(FIG 45) is the prompt window that pops up when you attempt to restart the cut off the cut path. It asks you to select how the torch should return to the stop point.

Only Return simply returns the torch to the last point on the part path, then the Start button can be used to continue the cut.

Cutting Return will ignite the arc at the torch's current location and cut a direct path to the last point on the part path and automatically continue the rest of the program. This can be a great option for restarting a cut because you can effectively create a lead in to reduce roughness where the program was paused. However, in some circumstances there may not be enough space to use this option without damaging another part of the workpiece.

Offset Cutting will move the last point on the part path to the current location of the torch. Essentially, wherever the torch lies it will shift the coordinate system such that the last path point is moved to the current torch location and cutting will continue from there. This option is not as useful as the others unless your plate has physically shifted.

FIG. 43

Speed: 00000	File: TK34.NC	Current Hole: 0000/0006
		A TorchUp <input type="radio"/> TorchDn <input checked="" type="radio"/> Pierce <input checked="" type="radio"/> [8] THC En <input checked="" type="radio"/> ARCFEED <input checked="" type="radio"/> IHSDETE <input checked="" type="radio"/>
		[X]ManuaSpd: 8000 [G]Mode: Plasma
		[F]CutSpeed: 1200 [N]Set Kerf: 0.0
		[T]PierTime: 0.5 [O]KeepMove: OFF
		SteAngle: 0.00 B
		[1/2]Set Arc: 099 ActuaArc: 000
		[4/5]IHS Time: 0.5 [6]IHS Test
		ThcState: Up C
2> G00 X50 Y45 D Location Up 000.1 3> M7 Pierce		X +00024.998 THC Enable Y +00022.496
ESC	Back F1	Deno F2
GoBack F3	ToPierce F4	ZoomIn F5
HeatAdd F6	HeatDn F7	



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DESCRIPTION OF MAIN CUT SCREEN DURING CUTTING (FIG 43)

A - Status of THC sensors and programs. Useful to troubleshoot if, for example, the arc is breaking due to height. If the "THC En" indicator is red, it is likely breaking because the torch height is locked due to one of the plasma cutting settings.

- **Torch Up** - Green indicates the torch height motor is adjusting upward.
- **Torch Down** - Green indicates the torch height motor is adjusting downward.
- **Pierce** - Lights up green when the plasma cutter is being triggered on by the computer.
- **THC En** - Lights up green when the automatic torch height control program is running. Red when disabled, which may mean torch height control is fully disabled or locked by a setting.
- **ARCFeed** - Lights up green to indicate arc voltage is being received.
- **IHSDete** - Unused in current configuration.

B - Quick access settings that can be changed when cutting is paused or not running.

- **[X] ManuaSpd** - Press **X** to alter the speed when moving the torch manually (mm/min).
- **[G] Mode** - Press **G** to quick change between Plasma and Demo modes.
- **[F] CutSpeed** - Pressing **F** will let you set the unmodified speed the torch moves when cutting parts (mm/min).
- **[N] Set Kerf** - Use **N** to input the kerf width (mm) for compensation to improve part accuracy. Kerf width is the width of the material removed by the plasma arc as it cuts. See **CNC PLASMA CUTTING GLOSSARY OF TERMS** and **DETERMINING MACHINE SETTINGS** for additional description and guidelines on kerf.
- **[T] PierTime** - Press **T** to quick access the pierce time setting. Pierce time is the time the torch is stationary at the beginning of the cut to allow the arc to fully pierce the material.
- **[0] KeepMove** - Pressing **0** toggles keep moving mode off/on. For normal movement you must hold the arrow key down to move the torch in a direction. Turning on KeepMove will let you click the direction to move, and it will keep moving the torch in that direction until a limit is hit or you press the key again to stop it.
- **SteAngle** - If using **Rotate steel plate** it will show the angle currently set here. Typically not used.

C - Torch Height Controller specific quick access settings.

- **[1/2] Set Arc** - This is the arc voltage the Torch Height Controller is targeting when cutting and torch height is not locked. Change by pressing **4** and **5**.
- **ActuaArc** - Live display of the actual arc voltage as measured by the CNC table. Will display 0 or 255 if there is no arc voltage or an input error.
- **[4/5] IHS Time** - This is the Initial Height Setting (IHS) in seconds. When a cut is starting it will zero the torch height by touching the material, then it will run the motor up for this amount of time to set the start height. Change with keys **1** and **2**.
- **[6] IHS Test** - Pressing **6** will run the Initial Height Setting program without cutting so you can verify the starting height is correct visually.
- **ThcState** - Displays what the THC is currently doing.

D - This window shows the G-Code live stream on the left side. The top right will show any timer that is running and its' countdown. The bottom right will show what the Cut Controller is currently doing.

E - The part view will be shaded in real time as the cut progresses. Completed sections will be shaded green. Torch travel lines are red dotted. The red crosshairs are the zero point and the current torch location.

MAINTENANCE

- The gear rack and pinion of the CNC table should be kept clear of debris and dust build up. Regular lubrication of the racks, pinions, and guide rails promote smooth travel and prevent corrosion.
- Consumables should be replaced as needed. For best performance replace the Nozzle & Electrode in pairs, but usually the Nozzle life can be stretched longer than that of the Electrode.
- To drain the Waterbed: Each half has a silicone plug in the drain bolt. This plug is simply pulled out from the top for draining.
- If sheets are frequently being loaded to the table or other equipment is being operated nearby, inspect the wiring harnesses regularly. Damaged wiring could cause degraded or erratic performance and present a fire hazard. Discontinue use immediately and contact STRATA for replacement harnesses if damaged wiring is noticed.




TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
Cut Controller Will Not Power On	No Power	Check 230V±10% VAC, 50Hz, 3A power source and connection to CNC Plasma Table.
	Power supply circuit breaker tripped	Reset circuit breaker.
	Emergency Stop Triggered	Rotate Emergency Stop clockwise to release it outward.
	Computer malfunction	Contact STRATA Technical Assistance: www.euroquip.co.nz or 0800 387 678
Plasma Arc Will Not Start	No power	Power supply circuit breaker tripped.
	Workpiece Not Grounded	Verify the plasma cutter ground clamp has good, bare metal contact with the workpiece and is installed to the plasma cutter.
	Plasma Cutter Control Cable Not Plugged In	Plug cable and make proper connections at the plasma cutter so it can be triggered by the table.
	Power Supply Circuit Breaker Tripped	Reset circuit breaker.
	Plasma Cutter Unit Overloaded	Check for overload indicator. Allow unit to cool. Ensure the duty cycle is not exceeded
	Consumable Failure	Check consumable condition and replace if necessary.
	Torch Height Too High	Lower Arc Voltage and/or Initial Height Setting (IHS).
	Incorrect Mode	Cut Controller must be in Plasma mode.
Settings Altered Too Far, Making Plasma Cutting Difficult	Reference the CUT SPEED REFERENCE TABLE on Page 40, particularly the cut speed and pierce time, for good baseline settings on your material thickness. Refer to FIG 36, 37, 38, 40 for safe default settings. If the machine is still not functional contact STRATA Technical Assistance: www.euroquip.co.nz or 0800 387 678	
Plasma Arc Repeatedly Breaks	Gap traversed is too large	Modify pathing so the Torch does not attempt to cross large gaps in the workpiece.
	Workpiece Not Grounded	Verify the plasma cutter ground clamp has good, bare metal contact with the workpiece and is installed to the plasma cutter.
	Arc Start Detect Time Too Low	Increase Arc Start Detect time so there is sufficient time for the height to set and the arc to fire.
	Consumable failure	Check consumable condition and replace if necessary.
	Torch height too high	Lower Arc Voltage and/or Initial Height Setting (IHS).
	Torch height is locked	Check lock indicator THC En during the cut. If the Torch height is being locked (red indicator) change the setting that is locking the height (eg. Time to lock THC (S), Distance to lock THC (mm), Speed to lock THC (mm/min)) or verify the THC is enabled.
	Settings Altered Too Far, Making Plasma Cutting Difficult	Reference the CUT SPEED REFERENCE TABLE on Page 40, particularly the cut speed and pierce time, for good baseline settings on your material thickness. Refer to FIG 36, 37, 38, 40 for safe default settings. If the machine is still not functional contact STRATA Technical Assistance: www.euroquip.co.nz or 0800 387 678




TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
Poor Cut Quality	Low Supply Air Pressure to Plasma Unit	Make sure your plasma cutter has adequate air pressure flowing to the Torch. Most require 60 psi [4.14 bar] while air is flowing.
	Air Leak at Fittings, Lines, Hose, or Plasma Cutter	Stop plasma unit, locate leak, and perform repair.
	Improper Arc Voltage	Adjust arc voltage. Scan the code to see our YouTube playlist for best guidance setting these parameters: Torch height should be 2-5mm above workpiece during cut. 
	Consumable Failure	Check consumable condition and replace if necessary. Check that consumables are properly installed. Consumables can touch and cause an air blockage or poor arc in some circumstances. Observe that good air is flowing through the Torch and the arc is a tightly formed vertical beam.
	Improper Amperage	Reference cut setting tables for optimal amperage.
Poor Dimensional Accuracy	Improper Kerf	Before cutting an important piece, run a test piece without any kerf compensation. Measure the kerf by subtracting the measured size from the set size and dividing by two if you measured across two cut faces. Use this calculated kerf as your new kerf setting. Remember, CNC plasma cutting has inconsistencies which make it difficult to get better tolerance than $\pm 0.5\text{mm}$ consistently. Furthermore, there will always be some positive bevel, the thicker the material the more noticeable the bevel is.
	CNC System is Not Calibrated	Check Pulse Distance Equivalent setting is correct (Pg. 27). Contact STRATA Technical Assistance: www.euroquip.co.nz or 0800 387 678
Limit Alarm Triggers Randomly	Faulty Computer Setting or Internal Error	Press F5 to open the Diagnose menu. The status of the limit switches will be shown in the top left. Green dot means they are activated, nothing means they are not active. Press them and watch the screen indicator to verify function. Contact STRATA Technical Assistance (www.euroquip.co.nz or 0800 387 678) for further troubleshooting and replacement parts.
	Failed Wiring	Check for damaged wiring to the problem sensor.
	Debris Buildup	Check that the sensor is clean from buildup of debris and is not being mistakenly triggered.



TROUBLESHOOTING

PROBLEM	CAUSE	CORRECTION
USB Drive Not Detected Or Files Load Incorrectly	Incorrect File Type	<p>The table can only load machine Gcode in the form of a “.cnc” text file. Unfortunately, “.dxf”, “.pdf”, “.dwg”, “.jpg”, “.png”, etc. cannot be loaded directly into the table. You must first load these into FLCAM for machine pathing and G-code creation. Refer to the sections on creating and cutting G-code files using FLCAM, and converting images or PDFs to DXF for cutting, for more information.</p>  <p>Scan the code to see guides on our CNC plasma YouTube playlist.</p>
	File Unsmoothed or Too Many Vertices	<p>If your post loads with “hairs” or random small loops on the cut path the file might too detailed for the computer to properly register the path. Make sure smoothing option is checked if using FLCAM. If using another program try to reduce the precision of the Gcode.</p>
	USB Drive is Too Large	Maximum USB drive size supported is 16GB.
	USB Drive is Not Formatted to the Correct File System	Reformat to FAT or FAT32 file system, this can be done on a Windows PC by right clicking the USB drive in File Explorer and selecting Format.
	USB Drive File System is Corrupted	Reformat the USB drive as described above. USB drive file systems can corrupt over time, especially in usage with the CNC Plasma Table where the drive is frequently connected and disconnected. This usually results in a distorted part or missing segments.
Erratic Movement From Stepper Motors	Failing Stepper Motor Driver	Contact STRATA Technical Assistance (www.euroquip.co.nz or 0800 387 678) for troubleshooting and replacement part.
	Gear Not Fully Meshed in Rack	The stepper motor carriers are slotted for adjustment. Verify the stepper motor is adjusted so the gear is tight and fully in mesh with the rack.
	Bad Stepper Motor Wiring Connection	Verify all stepper motor wiring is undamaged and connections are secure. Contact STRATA Technical Assistance (www.euroquip.co.nz or 0800 387 678) for troubleshooting and replacement parts.
Display is Not English	Bad Factory Setting	From the main cut screen, press key F5 > F4 > input password “1928” in the popup window and press ↵ > F4 > use arrow keys to select English and press ↵ . Use ESC to exit back.
Table Cutting During Travel or Not Stopping After Cut Completion	Plasma Cutter in 4T Mode	<p>Switch plasma cutter to 2T mode.</p> <p>For operating cutting preloaded shapes and custom files from FLCAM with STRATA’s post processor the plasma cutter must be in 2T mode. 4T mode will not function correctly and should only be used while hand cutting or if your post processor specifies it.</p>
CNC Table Units in Metric	This CNC Table is Configured to Metric	From the main cut screen press F4 , followed by F3 , then enter “1928” on the key pad (this screen is blank or has import/export Cut Paras options, depending on firmware version). This will open a pop up window that has the option to swap the machine’s units from millimeters and mm/min to inches and inches per minute (IPM). Use the arrows keys and ↵ to select.



QUICK GUIDES

START CUTTING A LIBRARY SHAPE

- To make sure the table is properly set up, refer to **UNCRATING AND ASSEMBLY** and **CNC PLASMA TABLE SET-UP** before proceeding.
- Verify table and the cutter have power supplied and are switched on. Verify the plasma cutter air pressure regulator is set to 60 psi (0.4MPa) while flowing.
- Verify the workpiece is grounded.
- At the STRATA logo screen press any key to continue to the main cut screen.
- You are now at the main cut screen. Press key **F1** for the shape library. Use the arrow keys to change selection and **F6** to select.
- Input desired dimensions. Each dimension is shown on the part below the dimension input area. The units are the same as the machine is configured for (inches or millimeters, this is indicated on the main screen where the overall part dimensions are shown).
- Lead In and Lead Out are used to help smooth the cut where the machine starts and finishes cutting. Generally, at least 5mm should be used. More lead in will make a smoother entry cut with thick materials.
- Press **F7** when finished dimensioning. Press **G** to cycle between Plasma and Demo mode.
- Before starting the operation, go to the **CUT SPEED REFERENCE TABLE** and make sure your settings will work with the material at hand. If not, alter them by using the **F4** key for settings. **F1**, **F4**, and **F6** keys for Speed, Plasma, and THC settings, respectively. Double clicking **F7** will save settings, and **ESC** will return you to the main cut screen.
- Additionally, check the quick access settings on the main cut screen (**FIG 29**): **[E]**, **[F]**.
- Now that the machine is set up, to run the operation jog the torch to the desired start location using the arrow keys. Press **F7** for manual movement controls mode and press **F3** to zero. Pressing **F7** will run a frame around the part for a rough idea if you have enough space or not. This is covered in greater detail below in **HOW TO UTILIZE DEMO MODE**.
- If torch path needs to be changed move the torch, zero again, and repeat the frame test.
- When ready to cut, press the green Start button followed by the **↵** key to initiate the cut. This will also zero out the coordinates at the torch's current location again. The torch will move to the cut start point, level the torch, and then start the arc.
- The operation can be paused at any time by pressing the red **Stop** button and restarted by pressing the **Start** button.
- If you stop and manually jog the torch when you press **Start** a prompt will list several options for returning the torch to the cut path. Typically, for best cut continuity Return Only should be used. With the torch returned press **Start** again to continue cutting. This is described in more detail in the **MAIN CUT SCREEN DURING CUTTING** section of this manual.
- To exit a cut press **ESC** then **↵**.

HOW TO UTILIZE DEMO MODE

- There are multiple ways to run parts in demos on the CNC Table: The Dedicated Demo Mode, Frame in manual movement, and Demo during cutting.
- The first option is the dedicated Demo Mode. It is accessed on the main cut screen by cycling to it with **G**. This mode simply runs the Torch through the cut path or to a certain point without activating the plasma cutter or Torch Height Controller.
- The other demo method is useful for quick access while cutting. You can stop the cut in progress and press **F2** to run the demo, then stop it and restart cutting.
- The last method is Frame which is accessed through the **F7** manual movement key and pressing **F7** Frame. It will move the Torch around the cut extremes in a rectangular manner. This gives a quick idea if a cut will have any interference with objects, existing cut outs, and table limits. When running the machine, we highly recommended running the Frame function before every cut. Frame always starts from the part's origin, even if you changed the start location in **F3** Part Option. If the location of the origin makes it difficult to effectively utilize the frame function, change the work coordinate system origin in the post processor.



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CREATING AND CUTTING G-CODE WITH FLCAM

Please read the FLCAM instruction manual carefully. Because FLCAM has its own separate user guide, detailed steps are not repeated in this manual.

CONVERTING AN IMAGE OR PDF TO DXF FOR CUTTING

- To cut an image file or PDF, it must be converted to a .DXF file format so FLCAM (or similar CAM/Nesting software) can open it for path generation.
- Websites like <https://convertio.co/> can convert many file types to .DXF for free.
- If the image-to-DXF conversion isn't clean, you may improve results by adjusting contrast, simplifying colors, or removing noise using a photo or image editor. Unwanted line segments can be cleaned up within FLCAM.
- On convertio.co, select your file → set output format to CAD > DXF → press Convert → download the converted file.
- Open the .DXF file in FLCAM via its "Import" function or "Open Part" menu.
- Follow instructions in your FLCAM manual for nesting, setting lead-in/lead-out, path ordering, and cutting parameters.



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RECOVERING AN INCOMPLETE/FAILED CUT

If for any reason a cut does not complete, the steps below can be taken to rerun a cut segment. These steps can also be used if a setting must be changed before continuing to cut, as some settings cannot be changed during a cut. Note that restarting the cut mid segment is never as smooth as a continuous cut; for best results only stop the machine between cuts.

IF THE INCOMPLETE CUT IS NOTICED BEFORE PROGRAM ENDS

- When you notice the incomplete cut, press the red Stop button. The **F1** button will serve as a back button to run G-code segments in reverse. Pressing it will travel the Torch back to the last cut start point.
- Return to a point prior to the incomplete section and, if you need to, press **F2** to run the torch forward without cutting and stop it where the fail starts. Using **F↓** to slow movement speed can be helpful for precise alignment.
- Press the green **Start** button to restart the cut.

IF THE INCOMPLETE CUT IS NOTICED AFTER PROGRAM FINISHES

- When you notice the incomplete cut after the program has finished, move the Torch back to the start point (0.000, 0.000). Typically, after a program ends the machine will prompt you asking if you would like to automatically return to start. DO NOT re-zero.
- Use **G** to switch to Demo Mode. Now press **Start** and **←J**, then before the incomplete section hit the red **Stop** button.
- Use **G** again to switch back to Plasma Mode, and press **Start**.

CHANGING SETTINGS DURING CUTTING

- To alter settings during a cut, the same basic idea is used, but press **F3 GoBack** and **←J** to return the Torch to the zero point of the file and exit. Make the setting changes and do not re-zero the table.
- Now switch to Demo Mode and run up to the point where the program was stopped and switch back to Plasma Mode to then resume cutting.



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DETERMINING MACHINE SETTINGS

AMPERAGE - For metals thicker than 1.59mm, 40A output CNC Plasma Cutter is optimal for max speed and is required for thicker materials. Thinner gauge steels may be cut with lower amperage. The 60A CNC Plasma Cutter will need full 60A output to cut beyond 12mm.

Lower amperage will allow you to reduce heat into the workpiece, therefore minimizing warp. It will also require lower speeds which can make for a smoother cut; the computer may struggle to keep up with high speeds (eg. 120ipm or 3000mm/min) on a complicated file may result in jumpy motion.

CUT SPEED - To get a cut speed, first start with a suitable speed for your material thickness from the **CUT SPEED REFERENCE TABLE**. Depending on a multitude of factors, such as condition of consumables, amperage, and material quality, the speed should then be fine-tuned.

The best speed is the fastest possible with minimal dross on the finished piece. Large, chunky dross means speed is too low and a small, hard dross bead means speed is too fast. When cutting in the optimal speed range, it is typical for a narrow spray of sparks to shoot out over top the sheet and for the plasma spray exiting the bottom to slightly lag behind the torch position. It will leave a shallowly curved line on cut edges.

RADIUS SPEED - Using **Small Arc Limit** and **Limited Speed Below Radius** to reduce tight radius speed does not have a drastic effect, but generally a slight reduction is optimal for good quality, especially at high cut speeds.

PIERCE TIME - Improper pierce time can cause two things: failure to penetrate, resulting in a spark and slag shower with poor initial cut; or arc failure and sputtering at the beginning of a cut. Thick metal may require nearly a second of pierce time or more, while thin gauge may not require any. See the **CUT SPEED REFERENCE TABLE** for a start point based on material thickness.

Pierce time being too short will mean the plasma arc has not fully penetrated the material before movement starts. This results in slag and sparks being showered across the table, increased consumable wear, and an incomplete cut. Optimal pierce time will allow for full penetration of the material before movement occurs.

When the pierce time is too long the plasma arc will have fully penetrated the material, resulting in a hole beneath the torch. The plasma cutter will have trouble maintaining the arc because there is no material to conduct it. This results in sputtering as it switches between the pilot arc and cutting arc or simply an arc break alarm that pauses the cut.

THC LOCK TIME - Time to lock THC (S) is the time the THC will be locked after starting the cut. On thick material this setting can improve initial stability of the arc, where extreme variations in arc voltage cause unstable automatic torch height control.

ACCELERATION - The jumpiness of the movement is predominately controlled by **Acceleration (S)** time setting. At high speeds increasing it may make movement smoother.

ARC VOLTS - Arc volts is the measured voltage drop across the arc, which is useful for controlling height. The Torch Height Controller (THC) will attempt to keep the arc volts at **Set Arc**; the optimal range will vary slightly depending on the plasma cutter used and can even vary depending on material and thickness. For best guidance on setting the automatic torch height control, scan the code to see our CNC plasma YouTube playlist.




IHS TIME - The Initial Height Setting is defined by seconds of motor run time upwards. Ideally, the initial height is slightly higher than the cutting height. With thick material, good initial height is critical because damage to the consumables can occur from slag being shot back into the Plasma Torch.

KERF - The kerf varies depending on numerous factors, and even varies slightly as the table cuts. However, it is typically close to your Plasma Torch nozzle orifice diameter. To get the most accurate kerf width, measure a cut piece with zero kerf compensation applied and subtract the actual size from the set size. If both sides being measured have been cut, divide by two. Due to the nature of plasma cutting there will almost always be a positive bevel that is most evident on thicker materials. This means, from top to bottom, inside features will slope smaller and outside features will slope larger.

CUT SPEED REFERENCE TABLE

This table provides a starting point when CNC Plasma Cutting. It is applicable when using the 40A CNC Plasma Cutter with Machine Torch, Note that depending on amperage being used, consumable condition, material, and a multitude of other factors you may need to fine tune these parameters for the best cut possible.

Thickness mm	Amperage (A)	Cut Speed mm/min	Pierce Time (sec)	Acc Time (sec)	Arc Volts (V)	IHS Time (sec)
1.0 mm	40	3500	0.1		For best guidance on setting these parameters, scan the code to see our CNC plasma YouTube playlist.	
1.3 mm		2500	0.3			
1.6 mm		1700	0.5			
2.8 mm		1300	0.8			
3.2 mm		1200	0.9			
6.4 mm		1000	1.2			



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Warranty

As part of an on-going commitment to excellence in product support, Euroquip offers a comprehensive product warranty program.

Warranty period for the Strata Workshop Series WS1212:

Commercial Use: 12 Months

Domestic Use: 12 Months

Warranty covers failure caused by manufacturing and material defects in the product, during the warranty period specified. The warranty period begins when the product is purchased by the end user. Warranty is not transferrable and is only claimable by the original purchaser.

Warranty does not cover parts that are subject to wear and tear from usage, such as cables, torch consumables, moving parts, table parts, motors, etc.

Warranty covers failure of a product caused by defective materials and/or manufacturing for the period given and the usage specified by Euroquip. The warranty period begins when the product is purchased by the end user. Warranty is not transferrable and is only claimable by the original purchaser.

Warranty also does not cover failure caused by the untimely replacement or service of the above wearing parts. Evidence must be provided that the product has been maintained and serviced suitably for a claim to be considered under warranty.

Failure caused by incorrect operation of the product, lack of proper care and maintenance of the product, external damage, external circumstances such as rust, moisture, poor power, abrasive surfaces, overweight items, use of a non Strata plasma cutter with the machine, modifications to the product, attempted repair / service by a party other than an Approved Service Agent, is not covered under warranty.

Warranty does not cover pre delivery service and adjustment, or failure that may occur as a result of lack of/ incorrect pre delivery service and adjustment.

Warranty does not cover any incidental, indirect or consequential loss, damage or expense that may result from any defect, failure or malfunction of a product.

Should any issue be found to be a combination of a warranty failure and a non-warranty issue, the repair cost component to rectify and repair the non-warranty failure is the customers' full responsibility.

The decision that an issue with a product qualifies as a warranty claim is made at the sole jurisdiction of Euroquip.

No costs incurred will be considered under warranty if repairs are carried out by a party other than a Euroquip Approved Service Agent, unless with prior consent in writing from Euroquip.

It is the responsibility of the purchaser to deliver a product under warranty to the nearest relevant service agent or product reseller. Warranty does not cover call outs, mileage and freight costs.

If a product is repaired under warranty, parts and labour required for the repair will be supplied at no charge. Warranty assessment and repair will be scheduled and executed according to the normal work flow at the service location and depending on the availability of suitable replacement parts.

This warranty policy is an additional benefit and does not affect the legal rights of any end user, reseller or service agent.



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Congratulations on your new STRATA product. We are proud to have you as our customer and will strive to provide you with the best service and reliability in the industry. This product is backed by our extensive warranty and world-wide service network. To locate your nearest distributor or service agency visit www.strata.co.nz, or email us at customerservice@euroquip.co.nz

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