LAGUNA TOOLS 2021

Laguna Tools Smartshop "M"
Maker M2 – 3 Phase Power

User Guide for the Smartshop Machines equipped with the RichAuto B57E (HHC) Handheld Controller

Basic Operations, Quick Start, Multi-Tool Programs, Creating a G-Code File with V-Carve, Maintenance & Trouble Shooting, Installation Online, Default Settings.

© 2021, Laguna Tools, Inc. LAGUNA® and the LAGUNA Logo® are the registered trademarks of Laguna Tools, Inc. All rights reserved.

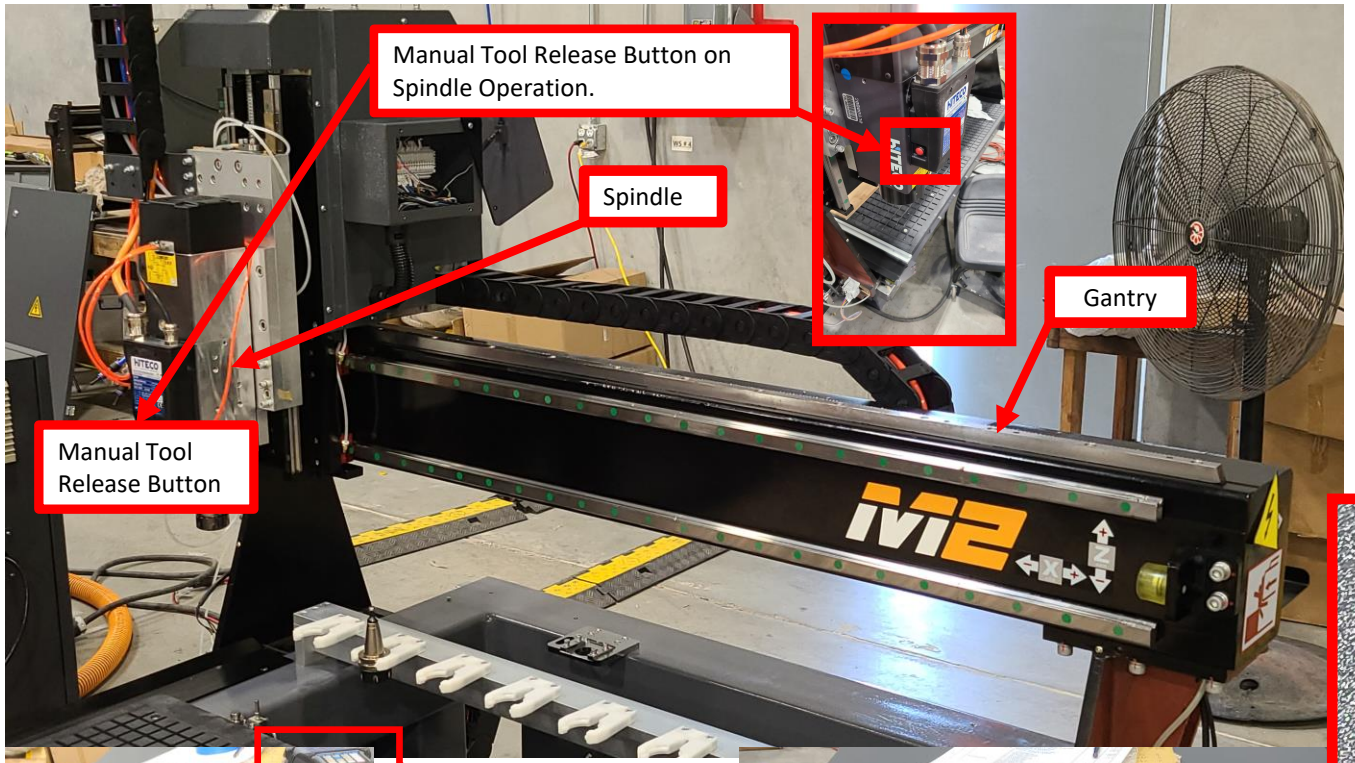
Table of Contents-

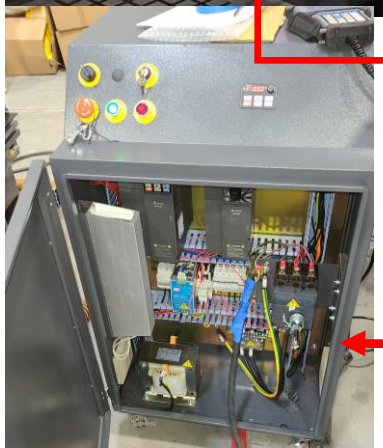
- Machine Overview-
- Delivery (Unpacking) Protocol-
- Installation Guide & Checks-
- Machine Overview-
- Basic Button functions-
- Securing Work Piece to Tabletop or Bed of CNC Machine-
- Tool Changing Procedure-
- Multiple Tool Program-
- Running Program-
- Setting “XY” Work Origin-
- Setting “Z” Work Origin-
- Understanding Work Coordinate System-
- Adding Tools and Touching Off-
- Secure Workpiece-
- Setting Origin/XY Datum.
- Setting 2 Height-
- Copying and Loading files-
- Running File-
- Maker Cheat Sheet-
- Common Errors-

Table of Contents (Cont'd.)-

- Maintenance & Trouble Shooting-
- Resetting Tool Location & TTO Location-
- Default Machine Settings Protocols-
- Schematics-
- Software-
- Tool Touch Off-
- Creating a "G-Code File" using V-Carve Programming-
- Appendix-
- Maintenance & Trouble Shooting-
- Parts & Service-
- Warranty-
- Packaging Requirements for RMA (Return Material Authorization) –
- Contact Us Page-

MACHINE OVERVIEW-View of System and Components of the Smartshop Maker M2

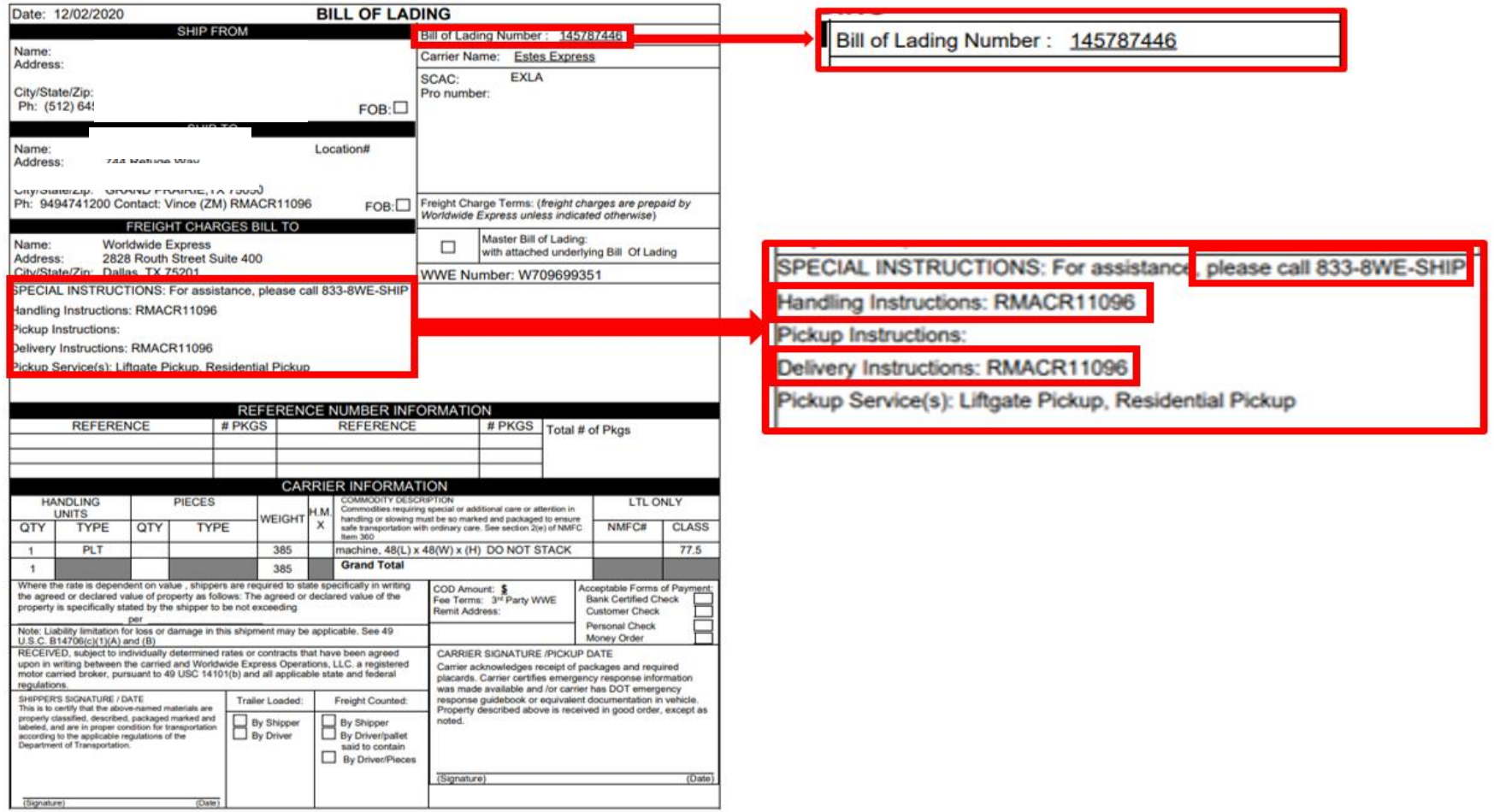




Delivery Protocol-

- Most large machinery will be delivering on a tractor trailer 48'-53' long. Please notify Sales Representative with any Delivery Restrictions.

- Note any visible damage, torn packaging, scuffs or any abnormal marks on the delivery receipt or Bill of Lading (BOL).



Date: 12/02/2020 **BILL OF LADING**

SHIP FROM

Name:
Address:
City/State/Zip:
Ph: (512) 64
FOB:

Name: Location#
Address: 744 Refuge Way
City/State/Zip: GRAND PRAIRIE, TX 75050
Ph: 9494741200 Contact: Vince (ZM) RMACR11096 FOB:

FREIGHT CHARGES BILL TO

Name: Worldwide Express
Address: 2828 Routh Street Suite 400
City/State/Zip: Dallas, TX 75201

SPECIAL INSTRUCTIONS: For assistance, please call 833-8WE-SHIP
Handling Instructions: RMACR11096
Pickup Instructions:
Delivery Instructions: RMACR11096
Pickup Service(s): Liftgate Pickup, Residential Pickup

Bill of Lading Number : 145787446
Carrier Name: Estes Express
SCAC: EXLA
Pro number:

Freight Charge Terms: (*freight charges are prepaid by Worldwide Express unless indicated otherwise*)

Master Bill of Lading: with attached underlying Bill Of Lading

WWE Number: W709699351

REFERENCE NUMBER INFORMATION

REFERENCE	# PKGS	REFERENCE	# PKGS	Total # of Pkgs

CARRIER INFORMATION

HANDLING UNITS QTY	HANDLING UNITS TYPE	PIECES QTY	PIECES TYPE	WEIGHT	H.M. X	COMMODITY DESCRIPTION Commodities requiring special or additional care or attention in handling or slowing must be so marked and packaged to ensure safe transportation with ordinary care. See section 2(e) of NMFC Item 360	LTL ONLY NMFC#	LTL ONLY CLASS
1	PLT			385		machine, 48(L) x 48(W) x (H) DO NOT STACK		77.5
1				385		**Grand Total**		

Where the rate is dependent on value , shippers are required to state specifically in writing the agreed or declared value of property as follows: The agreed or declared value of the property is specifically stated by the shipper to be not exceeding
per

Note: Liability limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. B14706(c)(1)(A) and (B)

COD Amount: $
Fee Terms: 3rd Party WWE
Remit Address:

Acceptable Forms of Payment:
Bank Certified Check
Customer Check
Personal Check
Money Order

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carried and Worldwide Express Operations, LLC. a registered motor carried broker, pursuant to 49 USC 14101(b) and all applicable state and federal regulations.

SHIPPER'S SIGNATURE / DATE
This is to certify that the above-named materials are properly classified, described, packaged marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

(Signature) (Date)

Trailer Loaded:
By Shipper
By Driver

Freight Counted:
By Shipper
By Driver/pallet said to contain
By Driver/Pieces

CARRIER SIGNATURE /PICKUP DATE
Carrier acknowledges receipt of packages and required placards. Carrier certifies emergency response information was made available and /or carrier has DOT emergency response guidebook or equivalent documentation in vehicle. Property described above is received in good order, except as noted.

(Signature) (Date)

Bill of Lading Number : 145787446

SPECIAL INSTRUCTIONS: For assistance, please call 833-8WE-SHIP
Handling Instructions: RMACR11096
Pickup Instructions:
Delivery Instructions: RMACR11096
Pickup Service(s): Liftgate Pickup, Residential Pickup

Set-Up Machine

CNC Machine SmartShop II

IMPORTANT: In order for installation to be efficient and cost effective we require several items to be completed PRIOR to our technician's arrival.

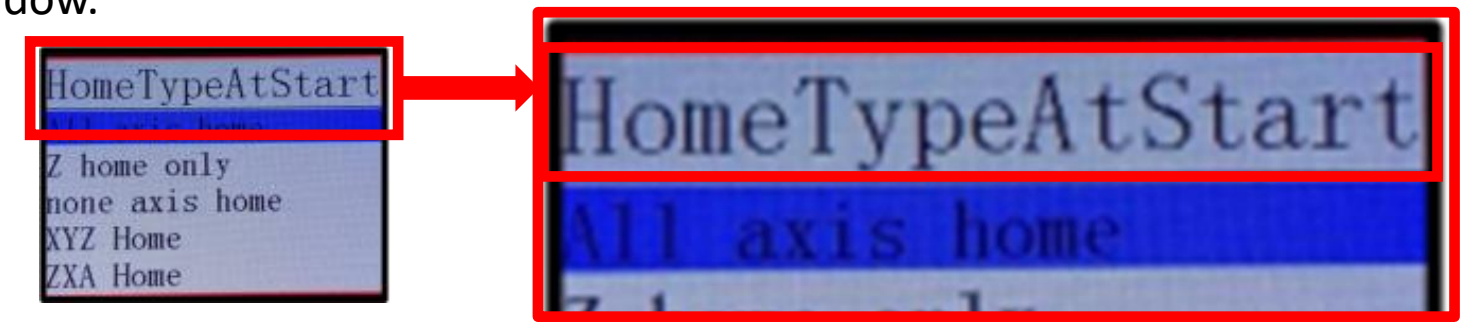
Should you have any questions please feel free to call our Customer Service at 1-800-234-1976 or contact your sales representative.

Following are the steps you have to perform in order for us to schedule the set-up/training. Please check all steps stated below as the action is need to be completed:

1. Remove all protective coating and packaging.
2. Check if machine has all the tooling (kits, etc.) components that were placed in your order.
3. Make sure that Area where the machine will be placed has appropriate electrical voltage and amperage per machine(s)? *Electricians and service staff are welcome to contact our Customer Service if they have any questions.
4. Make sure main power is pulled or is near the cabinet and the vacuum pump(s) ready to be connected.
5. Make sure the machine(s) are leveled with the leveling feet installed.
6. Clean dry air is vital for the machine(s) performance. Make sure the clean dry compressed air is attached to the machine(s).
7. Prepare adequate supply of materials for practice cutting as well as several 3⁄4" MDF sheets for use as spoil boards (material to be cut and tested on).
8. Make sure the Associates that are selected to operate the chosen machine that are to be trained learn the software prior to set-up/training.

ESTABLISHING HOME (HOMING) POSITION OF SMARTSHOP MAKER M2

- When the B57E HHC Handheld Controller is first powered on, the user will be prompted with the "**HomeTypeAtStart**" window.



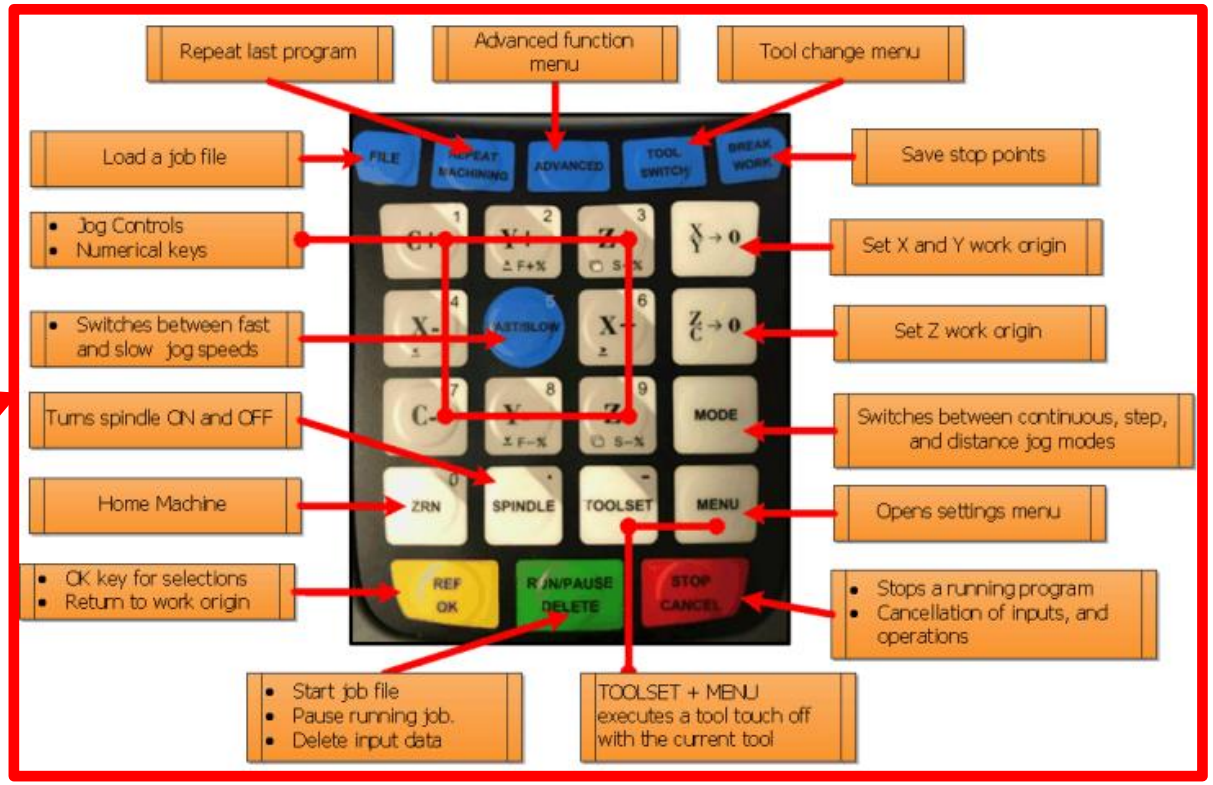
- The machine needs to be homed each time the machine is powered & when positioning is lost.
- This resets your machine coordinates origin, relative to the home switches and flags.
- The tool locations are relative to the machine "Home". All table measurements parameters are relative to "Home".

3.)The default selection is "**All Axis Home**".

- **Press REF/OK** to begin homing all axes or select another option.

Basic Button Functions

- The B57E HHC Rich-Auto Motion Control System uses 1-button and 2-button combination functions.
- Only the most used button functions are covered in this Section.



Securing Workpiece to the Table Top.

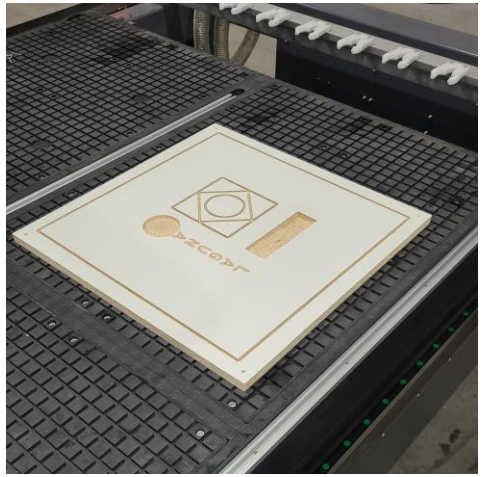
Mount workpiece to the tabletop.

a. This can be done with the supplied table clamps (See Photo Below).
b. There exist a multitude of ways to secure your workpiece. Find what method works best for your application before proceeding.
c. **Always consider clearance between the router bit and table clamps. When the machine changes tools it will need to travel to the back of the machine during program execution.**

Utilize T-Slots & Table Clamps

Note: If using Clamps, in Software, Set Clearance Height & Border.

Utilize Vacuum Table along with T-Slots.



Secure workpiece to the Vacuum Table.

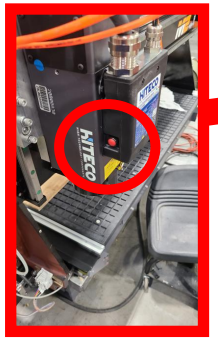
Tool Changing-Must have 90-95 PSI Air Pressure in System before continuing.

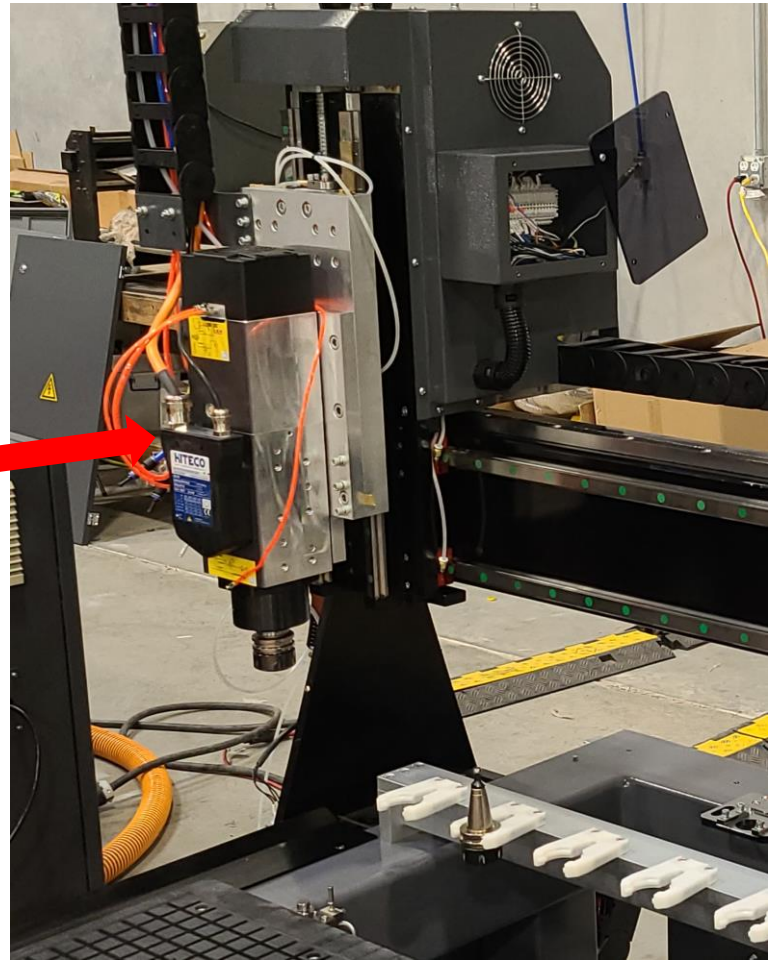
1. A tool can be inserted or removed in Two Ways.

a) Manually - Using the **"Red"** Manual Tool Release Button" on the side of tool head.

b) Automatically - Using the Tool Switch Button.

Manual Tool Release Button on Spindle Operation.





Tool Changing-Must have 90-95 PSI Air Pressure in System before continuing.

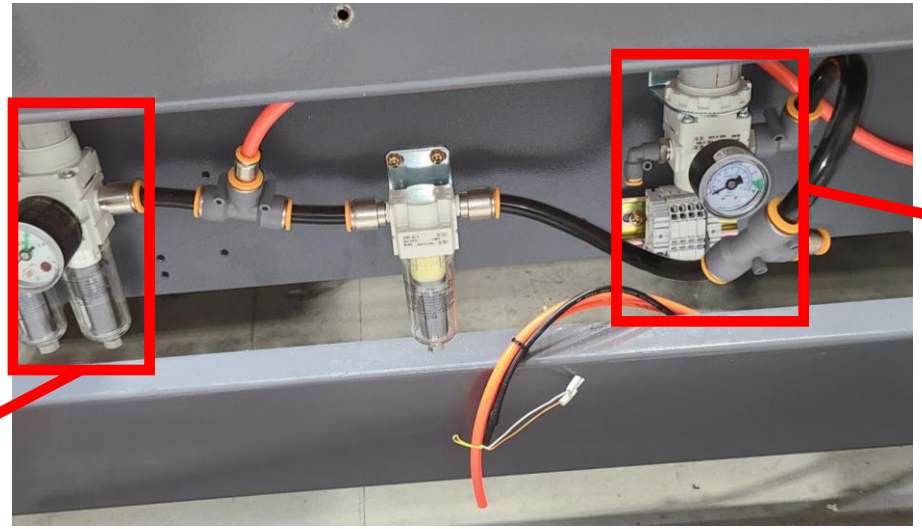
“Verify that the machine is connected to an Air Supply.”

2a.) The tool changer needs **6 bar-6.5 bar or 87 psi-95 psi**.

b.)Use the pressure regulators (See Figures Below) on the back of the machine to adjust air pressure.

Pressure Regulator

Set at **6 bar-6.5 bar or 90 psi-95 psi**



Pressure Regulator

Set at **0.5 bar or 7.25 psi**

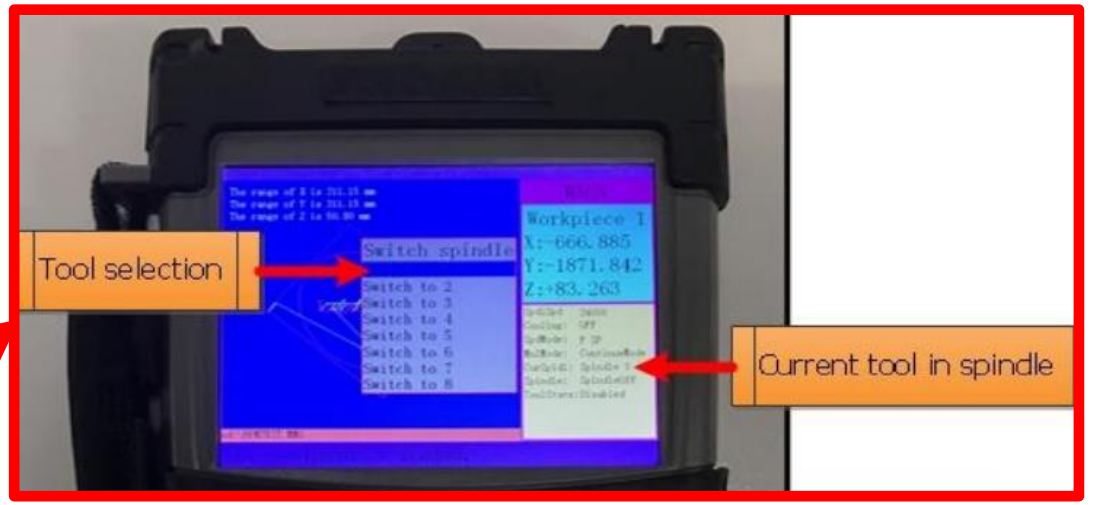
Tool Changing (Cont'd.)

2a.) Press **"Tool-Switch" button**.

- Use Y+ & Y- Buttons to highlight tool selection (Tools are listed from Left to Right.).
- Machine will then switch from current Tool in Spindle to Tool Selected.
- Press **REF/OK Button**.

Note: Ensure current tool clip is "Empty", otherwise spindle will crash into a tool cone.

Note: This is a "Macro" movement- This will put away "Current Spindle Tool", then proceed to pick up another specified tool.



Press **"Tool-Switch" Button.**

Press the **Y+, and Y-,** buttons for Tool Selection.

Press **REF/OK Button.**

Multiple Tool Program-Section of the Smartshop Maker M2

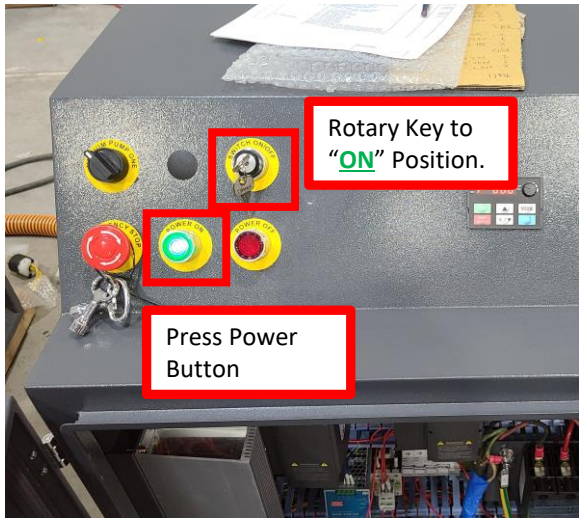
This section is a workflow, from turning the machine on, to starting your program.

This walkthrough assumes only TOOL 1 is used.

1. Power on Machine.
2. Home Machine.
3. Verify that the machine is connected to an air supply.

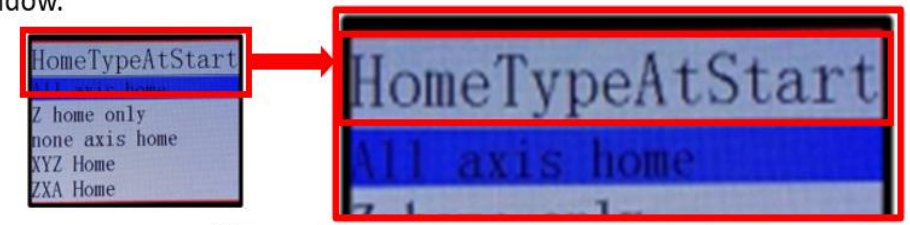
*1.) “Power on Machine”

- Turn the rotary switch to the “**ON**” position.
- Turn the key to the “**ON**” position.
- Press the Control Power “**ON/OFF**” button located on the control panel.



*2.) “Home Machine”

- When the B57E HHC Handheld Controller is first powered on, the user will be prompted with the “**HomeTypeAtStart**” window.



- The machine needs to be homed each time the machine is powered.
- This resets your machine coordinates origin, relative to the home switches and flags.
- The tool locations are relative to the machine origin.

3.)The default selection is “**All Axis Home**”.

- **Press REF/OK** to begin homing all axes or select another option.

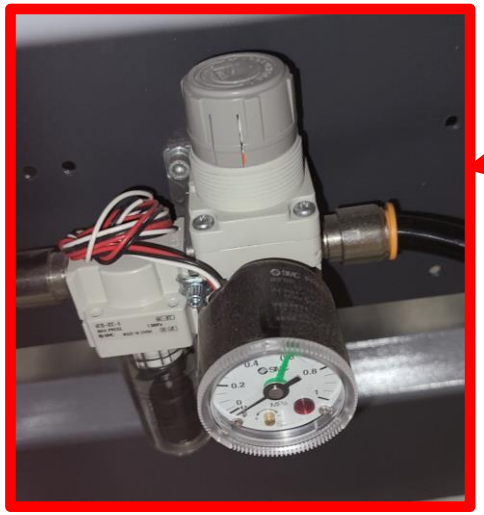
Multiple Tool Program Section (Cont'd.)

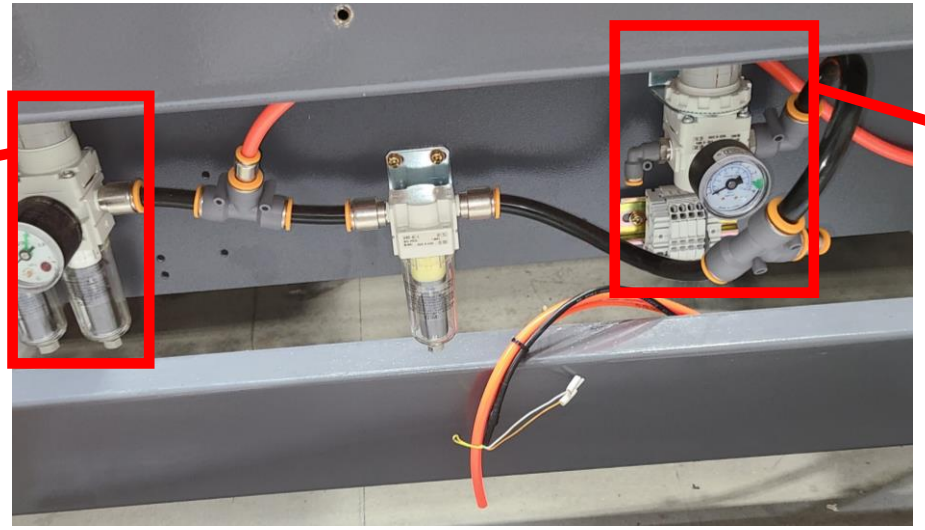
"Verify that the machine is connected to an Air Supply."

a. The tool changer needs **6 bar-6.5 bar or 87 psi-95 psi**.

b. Use the pressure regulators (See Figures Below) on the back of the machine to adjust air pressure.

Pressure Regulator





Pressure Regulator

Set at **6 bar-6.5 bar or 87 psi-95 psi**

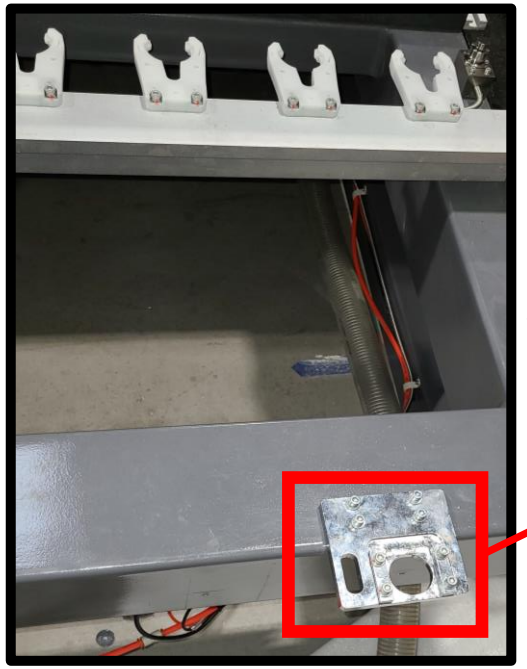
Set at **0.5 bar or 7.25 psi**

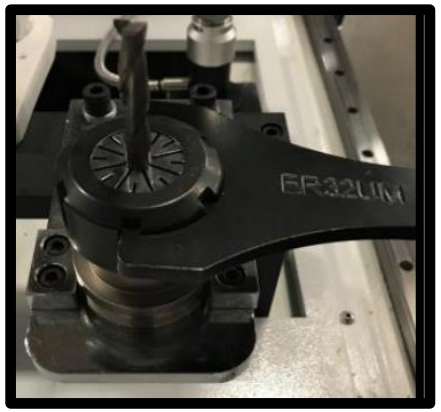
Multiple Tool Program Section (Cont'd.)- Tool Cone Set Up.

1. Select a router bit and its corresponding collet.

****Note-The collets & spindle nut must be cleaned regularly. Ensure that the slots in the collets are free of debris.**

2. Press the collet into the spindle nut until it snaps into place.





Tighten the spindle nut using the provided wrench and tool cone holder pictured.

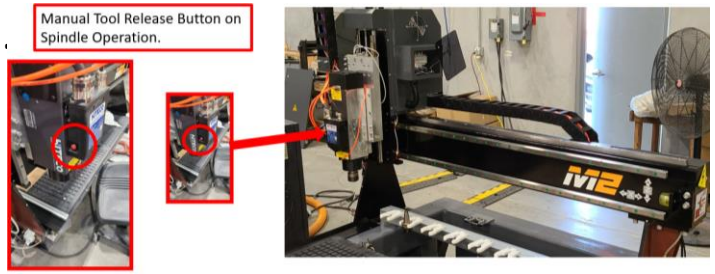
3. Thread on the nut and collet by hand, onto the tool cone.
4. Insert the router bit into the collet.
5. Tighten the spindle nut. Use the provided wrench and tool cone holder on the back of the machine frame.

The Tool Cone Holder on the back of the machine frame.

Multiple Tool Program Section (Cont'd.)-Set up a Tool Cone.

Setup a Tool Cone (Example 1) with the Router Bit one does intend to use.

a.) Use the manual tool release button located on the tool head to load the tool cone into the spindle.



Warning: One CANNOT turn the Spindle "On" without having a tool inserted into the spindle. Operating the Spindle without a tool will cause serious damage to the Spindle, and may require Replacement (This will Void Warranty).

b.) It is pertinent that the spindle releases and engages the tool cone repeatedly. This quick check will prevent an error condition.

Example #1-Tool Cone with Locking Nut, Collet, and Router Bit

Make sure to Pull Stud is Tight.

Router Bit should be inserted **at least** 2/3 of the shank or check for laser indented etched line on the router Bit.

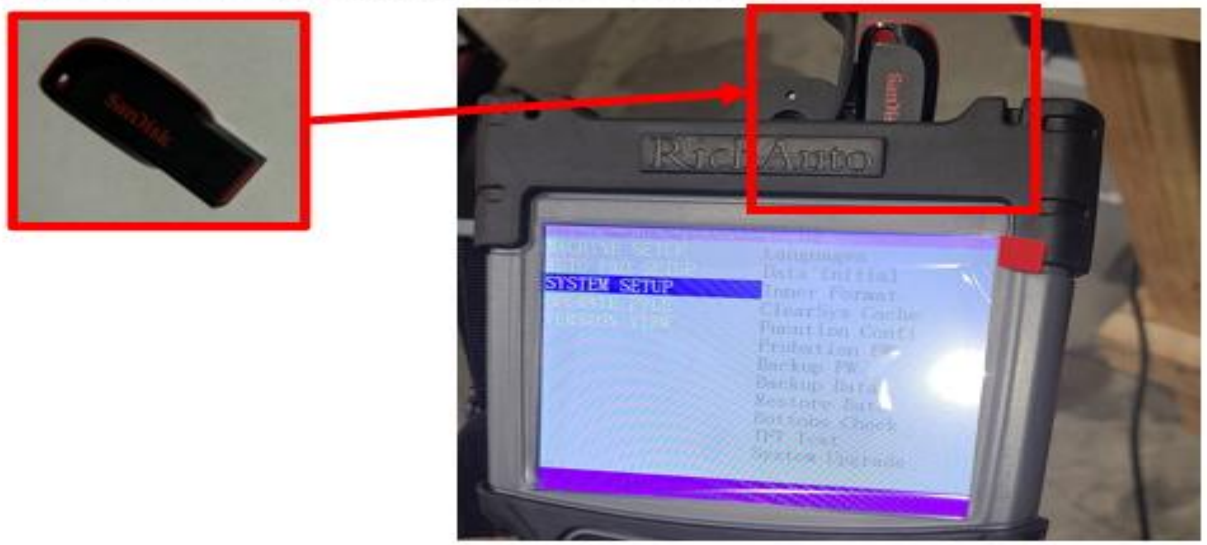
Make sure Locking Nut is Tight.

Transfer “G”-Code Program onto a USB and transfer into the controller's internal memory.

Transfer your “**g**”-Code program onto a USB and transfer into the controller's internal memory.

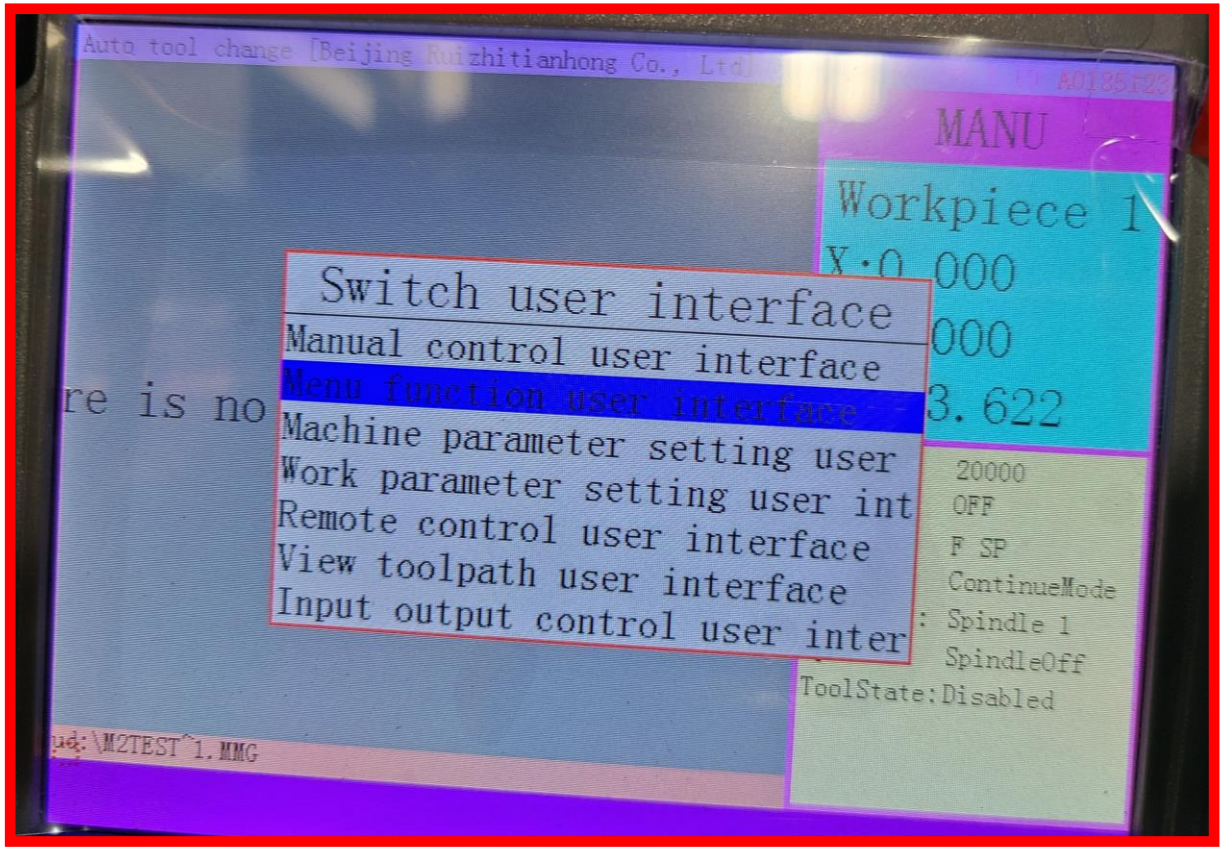
******When running a program directly from a USB, memory transfer is less reliable. It is recommended to store the program in the controller's internal memory. ******

1.) Take the USB Drive that contains the “**g**”-Code program and place the Drive in the “USB” Port on top of the HHC (Handheld Controller).



Transfer “G”-Code Program (Cont’d.)

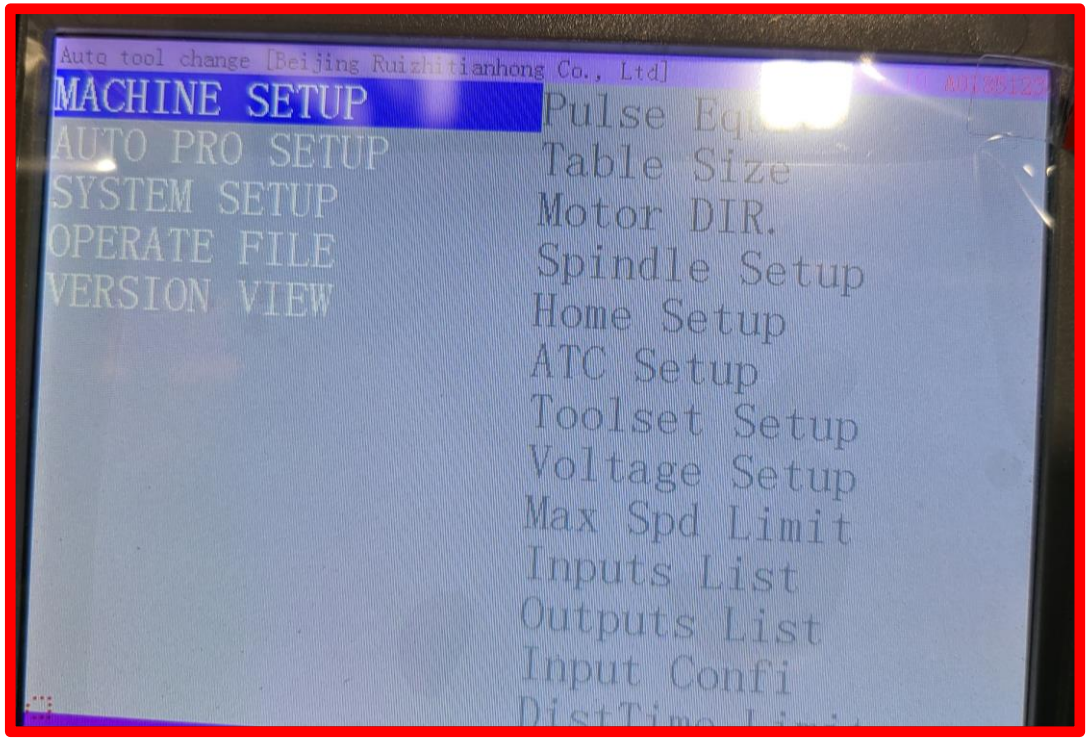
Press the **up Y+, and down Y-,** Buttons to Scroll down to & Select **“Menu Function User Interface”** then, Press **REF/OK**.



Press **“REF/OK”.**

Transfer “G”-Code Program (Cont’d.)

Press the **up Y+, and down Y-,** Buttons to Scroll down to & Select **“MACHINE SETUP/Configuration”** then, Press **REF/OK**.

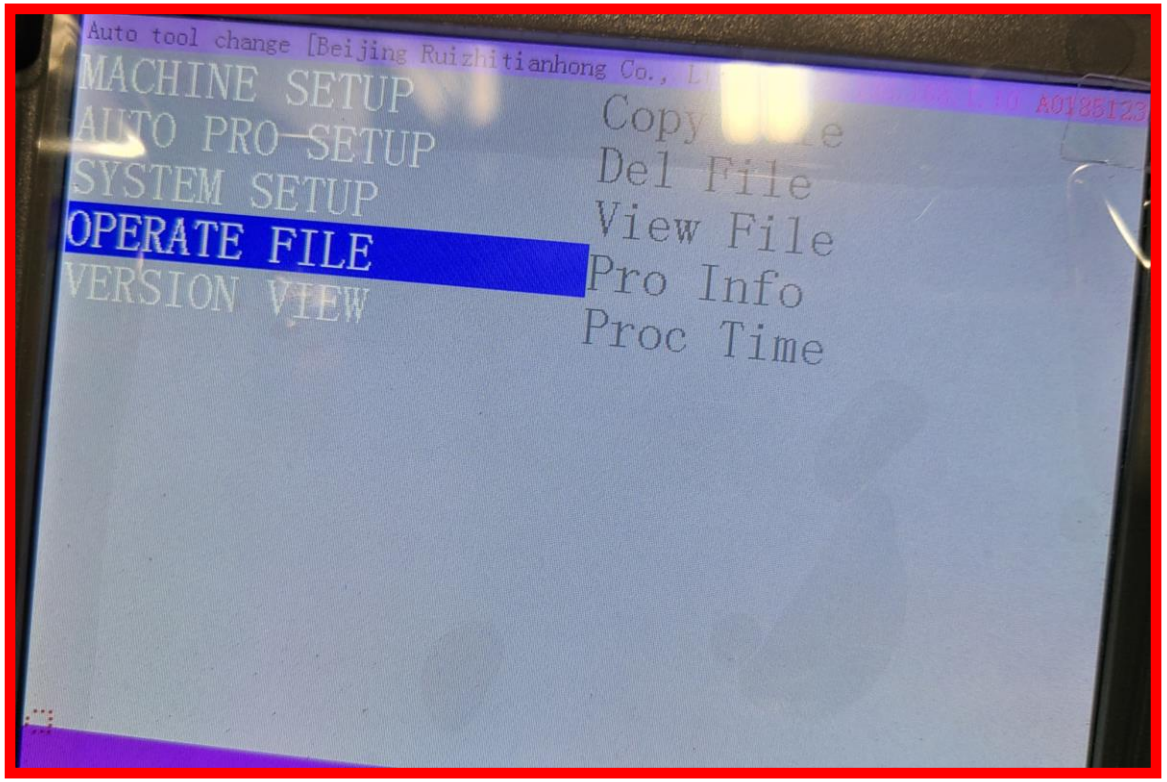


Press **“REF/OK”.**

Transfer “G”-Code Program (Cont’d.)

Press **“REF/OK”.**

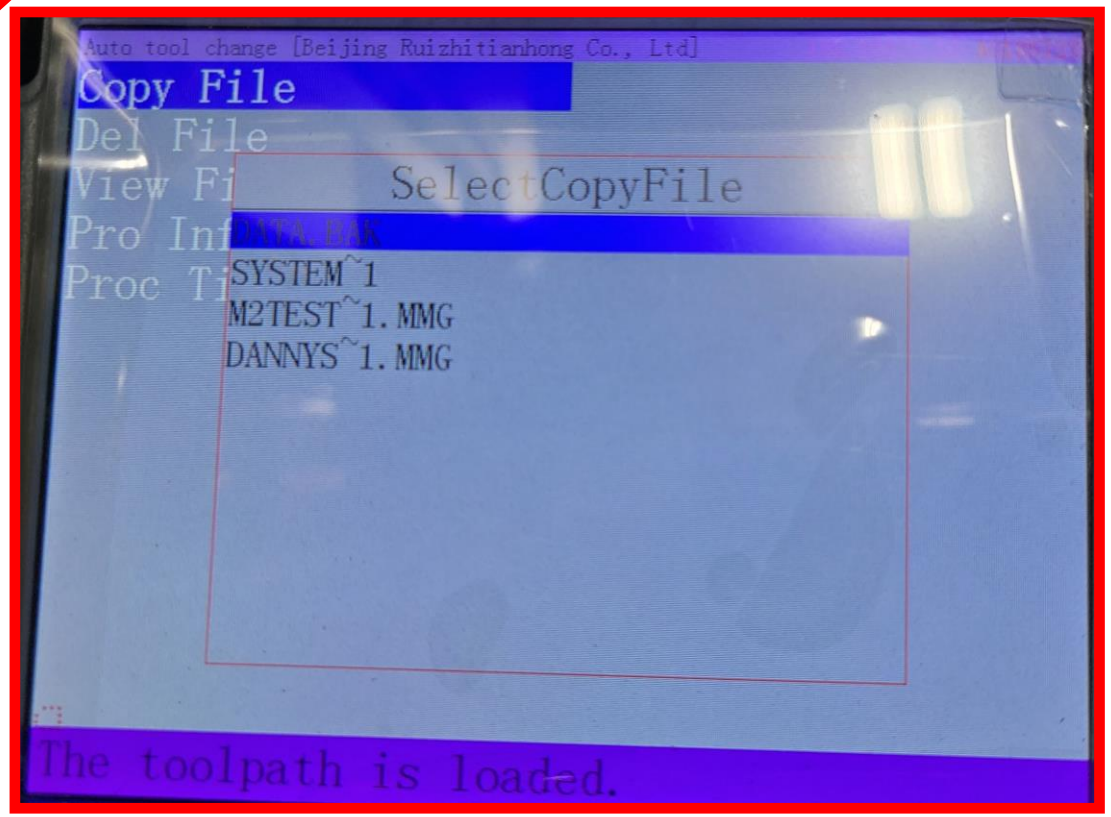
Press the **up Y+, and down Y-,** Buttons to Scroll down to & Select **“OPERATE FILE”** then, Press **REF/OK**.



Transfer “G”-Code Program (Cont’d.)

Press **“REF/OK”.**

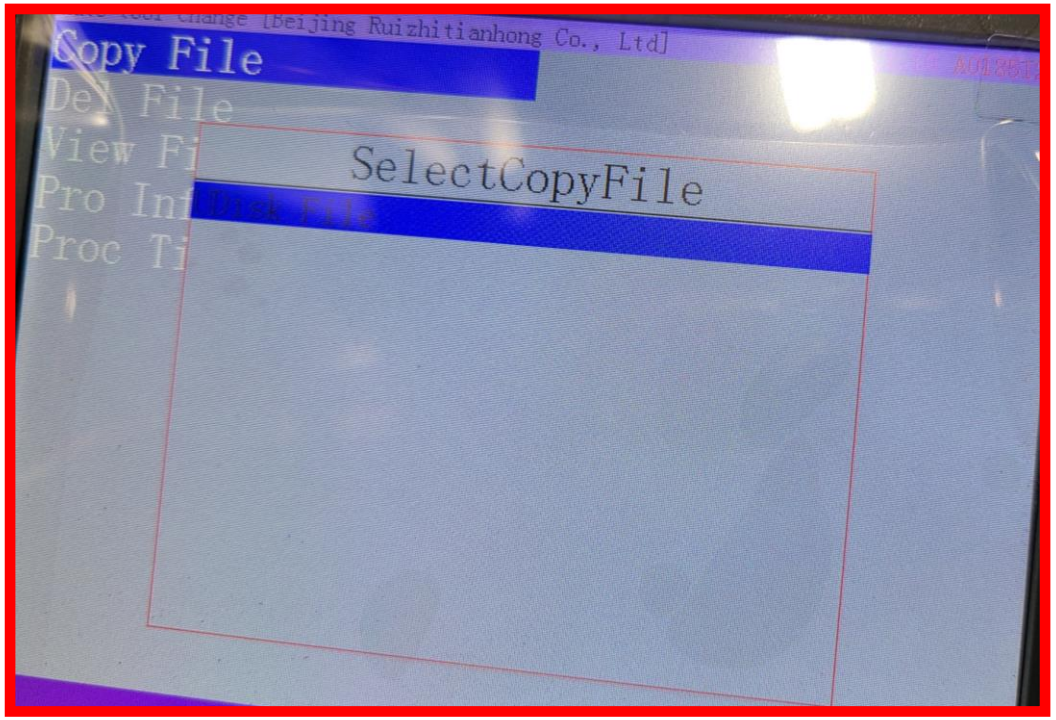
Press the **up Y+, and down Y-,** Buttons to Scroll down to & Select **“COPY FILE”** then, Press **REF/OK**.



Transfer “G”-Code Program (Cont’d.)

Press “**REF/OK**”.

Press the **up Y+, and down Y-,** Buttons to Scroll down to & Select **“U-Disk FILE”** then, Press **REF/OK**.



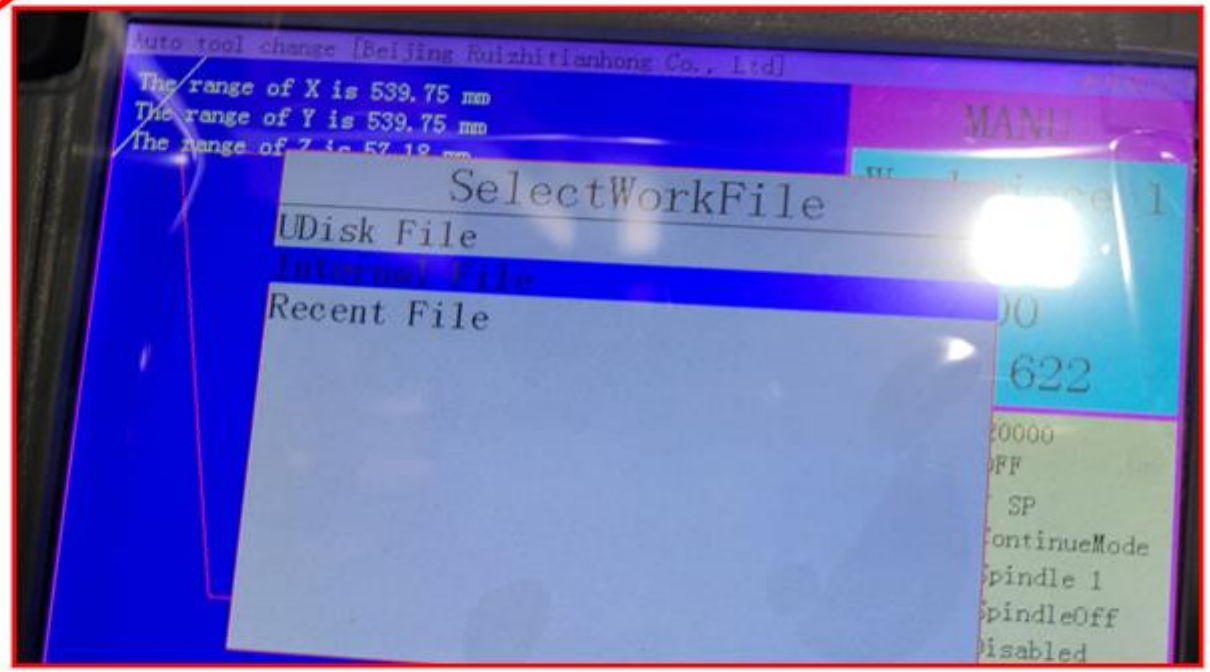
Transfer “G”-Code Program (Cont’d.)

Press “**STOP/CANCEL**” Button a few times to return to Home Screen.

Loading Program to Cut-Load Program into Viewer

Press “**File**” --->go to “**Internal File**”---> **REF/OK**--->Select your Program---> **REF/OK**

Press “**File**”, Press the **up Y+, and down Y-,** Buttons to Scroll to & Select **“Internal File”** then Scroll to & Select Program, then Press **REF/OK**.



Setting “XY” Work Origin SECTION (Cont’d.)-Verify Coordinate System (See Photo Illustration Below)

Verify Coordinate System (Figure #1).

a.) Workpiece 1 should be selected.

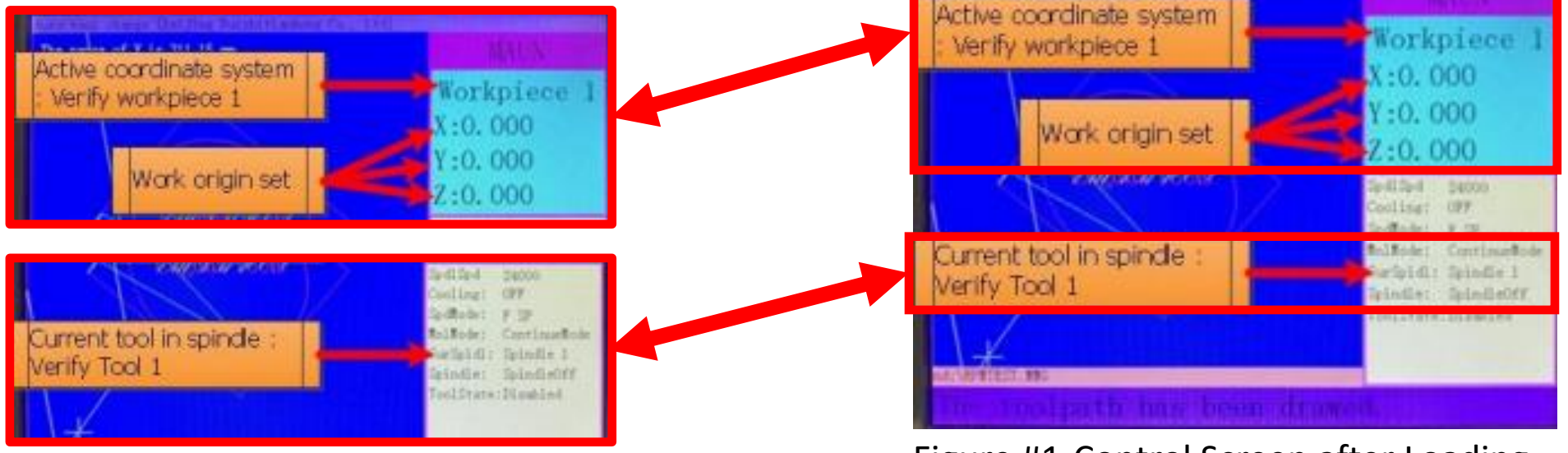
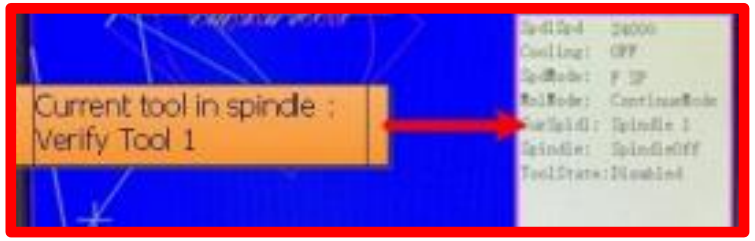


Figure #1-Control Screen after Loading Program and Setting Work Origin.

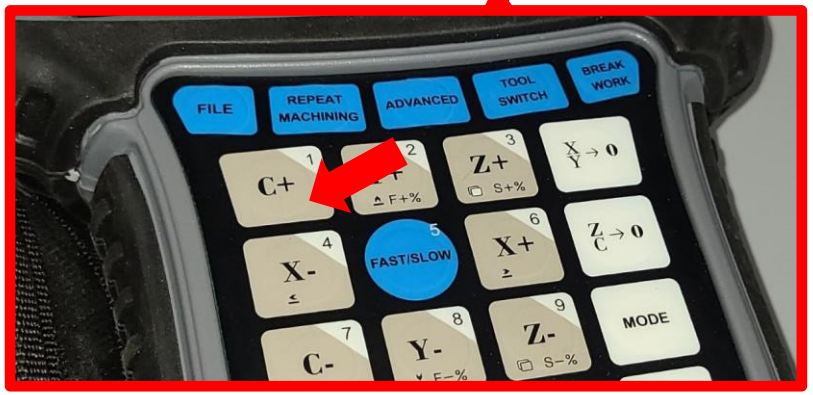
b.) If not in work piece, hold **Menu** & **“1”** Buttons together & release.

Setting “XY” Work Origin SECTION (Cont’d.)-Verify Coordinate System (Cont’d.)



To change to Workpiece 1,
Press & Hold Down **“MENU”** Button
--> Press **“C+/1 Button”**, then
release both buttons.

1.) Press & Hold Down **“MENU” Button.**



2.) Press **“C+/1 Button”**.

Setting "XY" Work Origin SECTION (Cont'd.)-Verify which tool cone is currently in the spindle and compare to the "**CurSpindl**" parameter on the controller run screen.

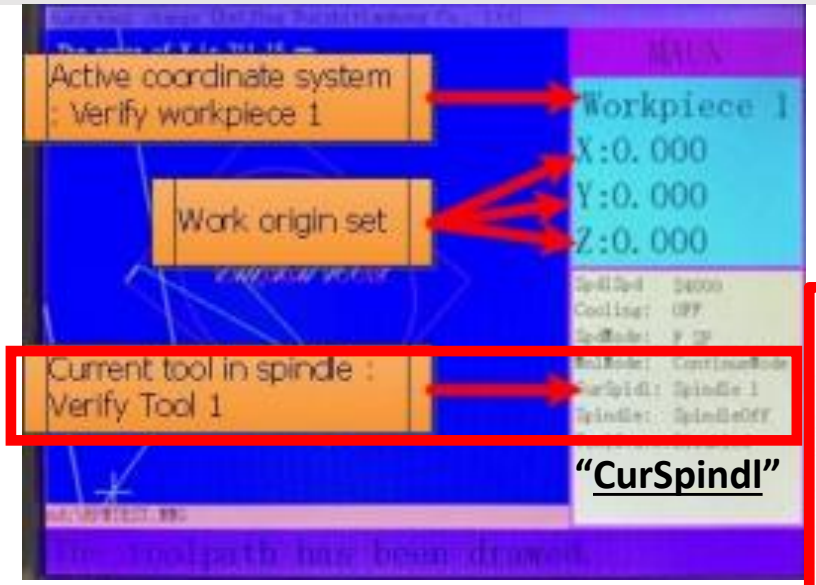
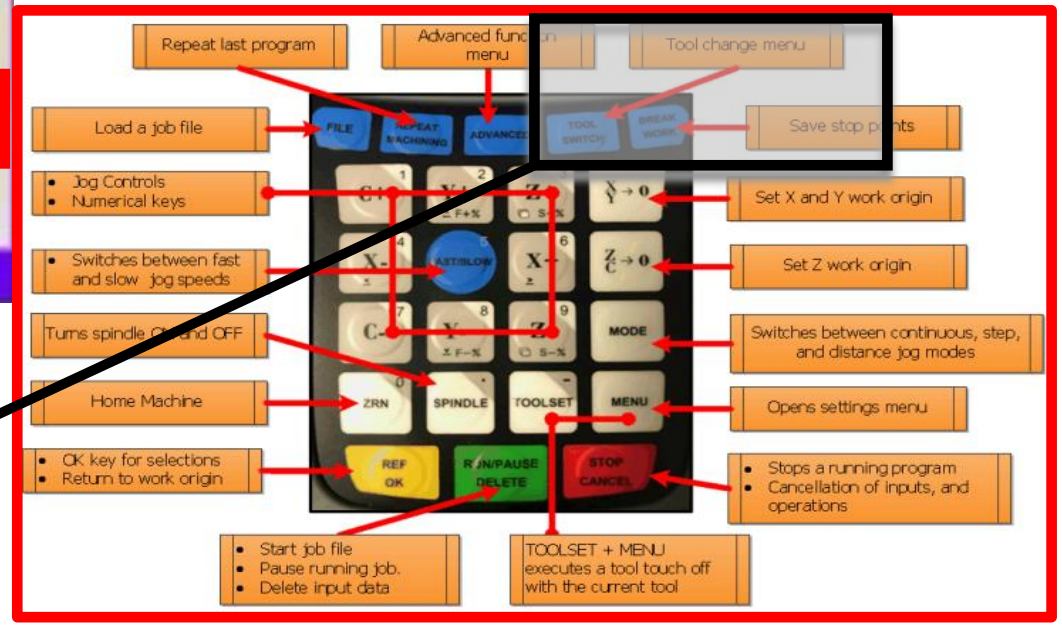
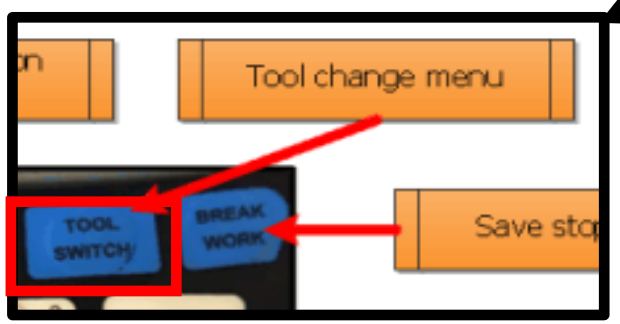


Figure #1-Control Screen after Loading Program and Setting Work Origin.

If Current Tool Number is **Not Tool #1**, then switch tools using Tool Switch Function (See Basic Button Functions-Press "Tool Change Menu Button or Tool Switch Menu Button").





Note: Tool 1 is needed, because Tool 1 is the Master Tool Bit.

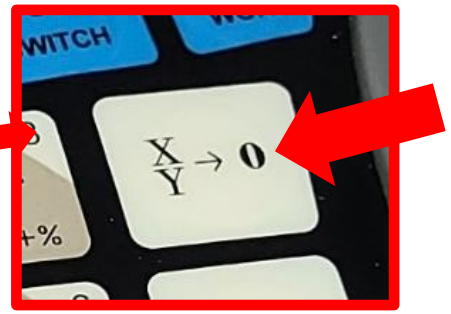
Setting “XY” Work Origin (Cont’d.)- Set XY Origin Point

Jog the spindle to the **“Program’s Origin Point”**. This is determined by the CNC Program that was previously created.

Press the **up Y+, and down Y-, right X+, left X-** Buttons to Scroll or Jog up/down, right/left to the to the desired selected program.

UP Y+, and Down Y- Buttons.

Right X+, and Left X- Buttons.



Press the XY-->0 Button

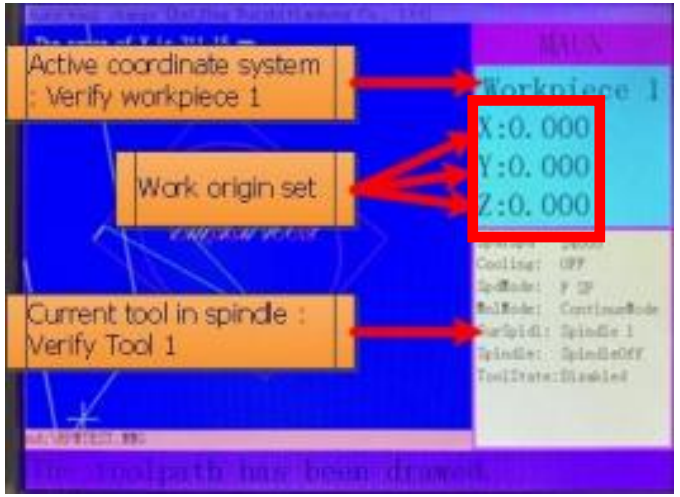


Figure #1-Control Screen after Loading Program and Setting Work Origin.

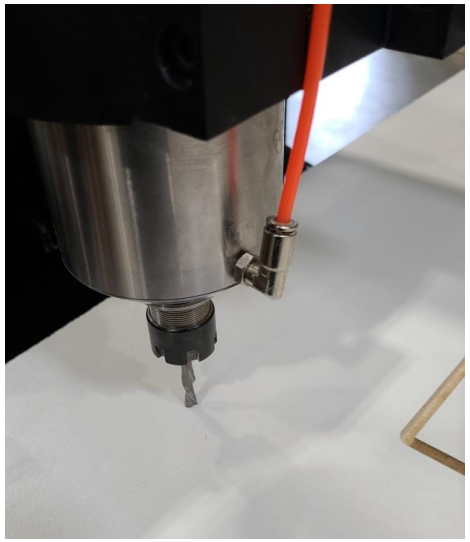
a. If you are using **Vectric’s V-Carve/Aspire Software**, it is called the **“XY Datum Position”**.
b. Once the spindle is in position **Press the XY-->0 Button** to set the **“XY Origin Point”**.
c. On the controller, you will see the X and Y axis coordinates go to Zero (Figure #1).

Note: One must be in Work Piece Mode. Remember Origin=Office.
One starts work @ the Office & not at home.

Setting “Z” Work Origin (Cont’d.)- Set the ”Z” Origin Point [Manually]

a.) Set the Jog Speed to **“Low”** and carefully move the spindle down until the desired Z-Zero Position is obtained. Z-Zero position is determined by the software, either top of the material or bottom of the material. Verify speed on screen.
It will either say “F” speed or “L” speed, F=Fast, L=Low

i. It may be helpful to use a sheet of paper by sliding it back and forth under the bit, while jogging the z-axis down.
ii. Once the paper is snagged by the bit you know one is within a paper thickness (0.1mm) of your material.
iii. Must set by using Tool #1.

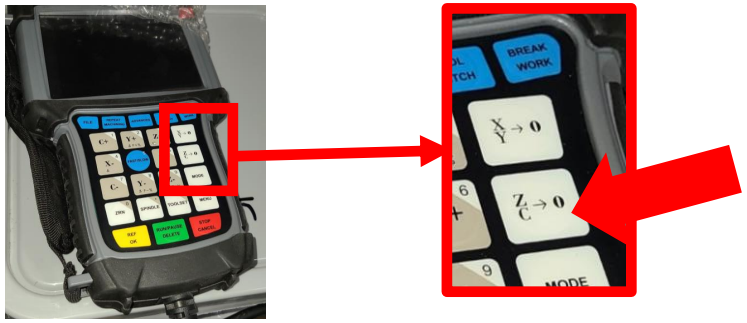


“Z-Zero Position”

“Z-Zero Position with a piece of paper”

Setting “Z” Work Origin (Cont’d.)- Set the ”Z” Origin Point [Manually]

b.) Press the ZC-->0 button.



c.) On the controller, you will see the Z-axis coordinate go to zero (Figure #1).

d.) (Optional) Press **REF/OK** Button x2 (Twice). Pressing **REF/OK** is simply moving to the Origin position.

e.) This will retract the spindle to a safe starting location.

****When setting “Z” Origin Manually, one can ONLY set for 1 (ONE) Tool.

**** For Multiple Tools, one must use the Touch Off Pad/Tool.

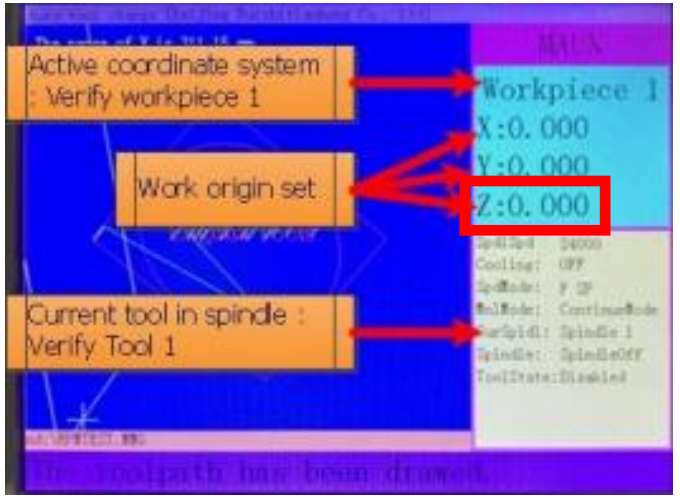


Figure #1

Setting “Z” Work Origin (Cont’d.)- Set the ”Z” Origin Point [Manually]

f.) Put on your **SAFETY GLASSES** and run the program→ Turn “On” Dust Collector & Table Vacuum & ensure your material does not move.

g.) In case of an emergency or machine failure you can hit the “**E-STOP Button**” on the control cabinet.

[In most cases the “**Stop/Cancel Button**” on the Handheld Controller (HHC) is a preferred stopping method.]

h.) Press the “**RUN/PAUSE/DELETE Button**” to start the program.

i.) Accept the default runtime parameters by pressing “**REF/OK Button**”.

Setting “Z” Work Origin (Cont’d.)- Set the ”Z” Origin Point [Manually]

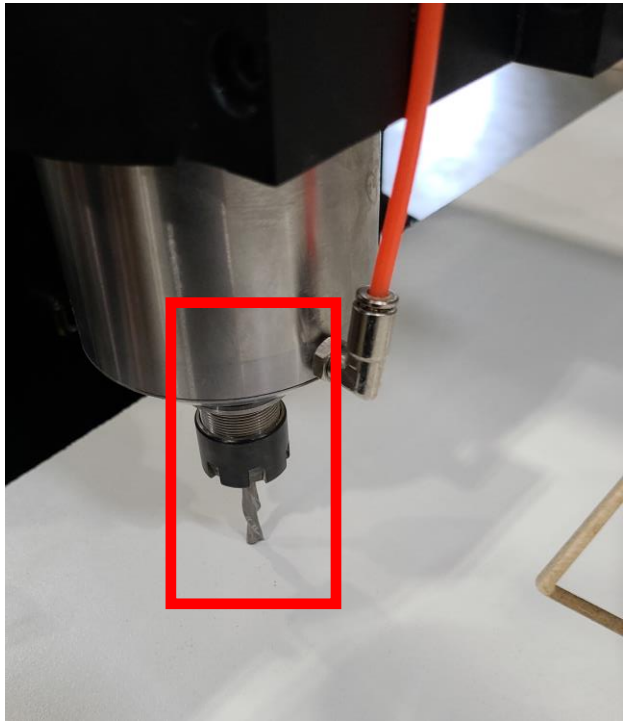
j.) While the program is running:

k.) Feed rate can be adjusted by pressing the Y+ or Y- buttons.

i. Y+ will increase the feed rate by 10%.

ii. Y- will decrease the speed by 10%

iii. The max speed is determined by the program file.



l.) Program End.

At the end of a program the spindle will **STOP** and the **Z-Axis** will retract to a safe clearance height that is set by software. See Photo.

UNDERSTANDING WORK COORDINATE SYSTEMS

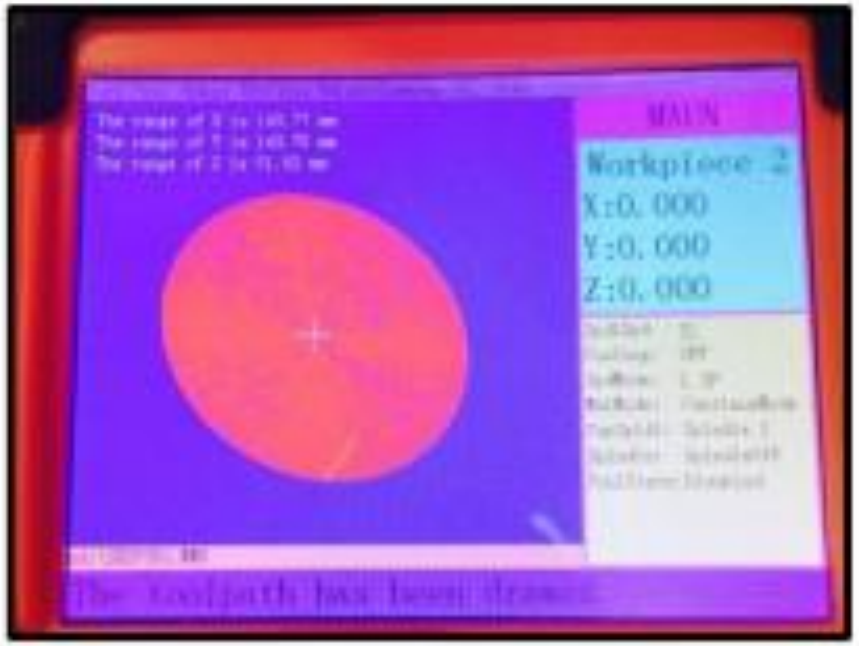
- Machine Coordinates (Workpiece 0).

Coordinates based off of the home switches, not the origin.
Tool positions and TTO switch location are set relative to machine coordinates.
Press **“MENU + ZRN/0”** to switch to “Workpiece 0”.

- Hold down the MENU + 1-9 Buttons to move between different origin points.(This Machine can have up to 9 Origin Points on the Handheld at the same time).

UNDERSTANDING WORK COORDINATE SYSTEMS (Cont'd)

- In the picture below the Active Work Coordinate System is "Workpiece 2".



- Transitioning between workpieces will, in turn transition between X, Y, and Z offsets made in each Workpiece.

Adding Tools & Touching Off- Preliminary steps that need to be done before running a Multi-Tool Program.

Prepare the Machine-

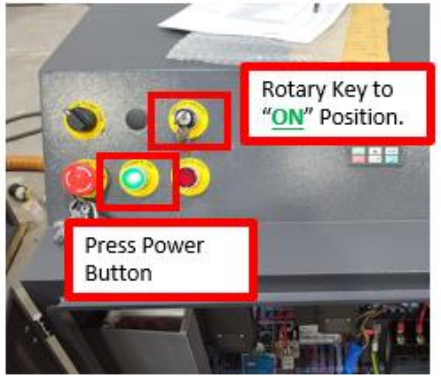
This section is a workflow, from turning the machine on, to starting your program.

This walkthrough assumes only TOOL 1 is used.

1. Power on Machine.
2. Home Machine.
3. Verify that the machine is connected to an air supply.

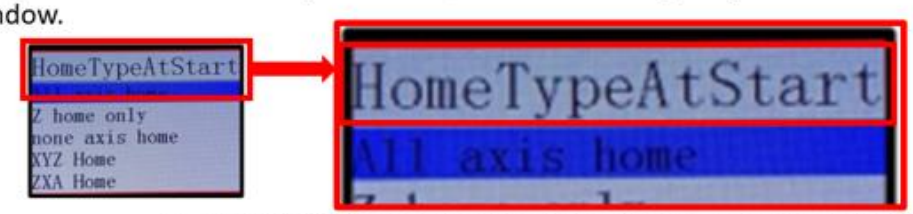
*1.) "Power on Machine"

- Turn the rotary switch to the "**ON**" position.
- Turn the key to the "**ON**" position.
- Press the Control Power "**ON/OFF**" button located on the control panel.



*2.) "Home Machine"

- When the B57E HHC Handheld Controller is first powered on, the user will be prompted with the "**HomeTypeAtStart**" window.



- The machine needs to be homed each time the machine is powered.
- This resets your machine coordinates origin, relative to the home switches and flags.
- The tool locations are relative to the machine origin.

3.)The default selection is "**All Axis Home**".

- **Press REF/OK** to begin homing all axes or select another option.

Adding Tools & Touching Off-There are preliminary steps that need to be done before running a Multi-Tool Program.

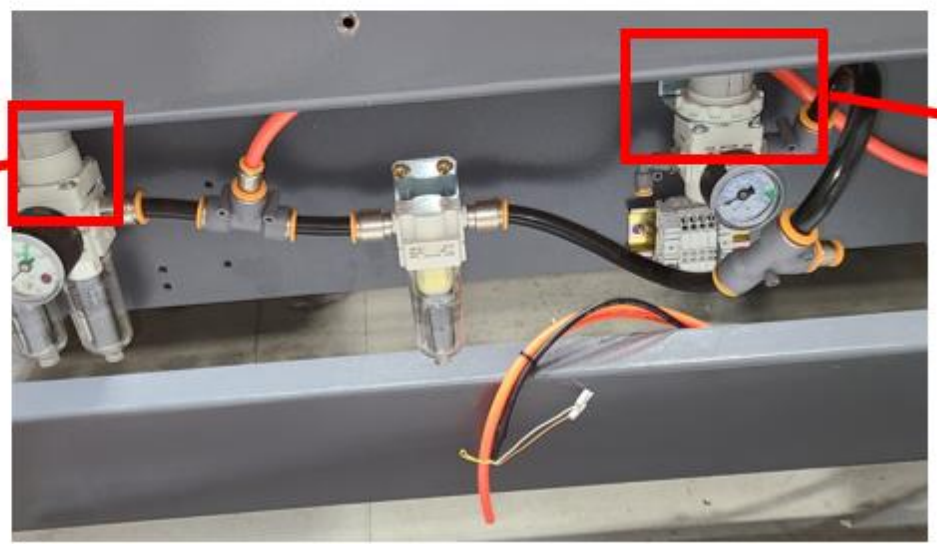
Prepare the Machine-

"Verify that the machine is connected to an Air Supply."

a. The tool changer needs **6bar-6.5bar or 87psi-95psi**.

b. Use the pressure regulators (See Figures Below) on the back of the machine to adjust air pressure.

Pressure Regulator



Pressure Regulator

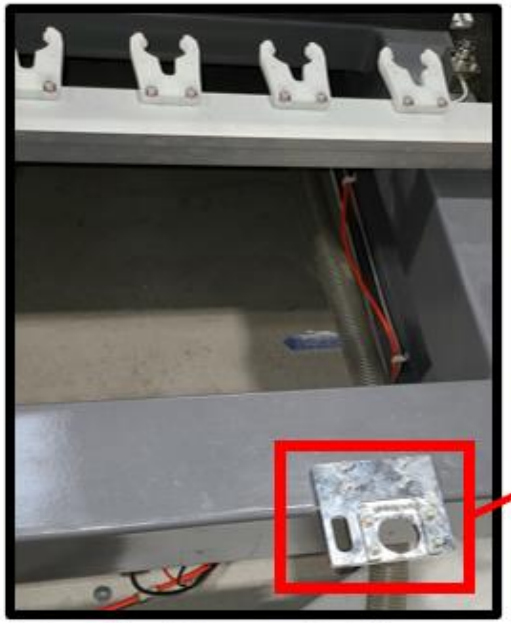
Adding Tools & Touching Off-

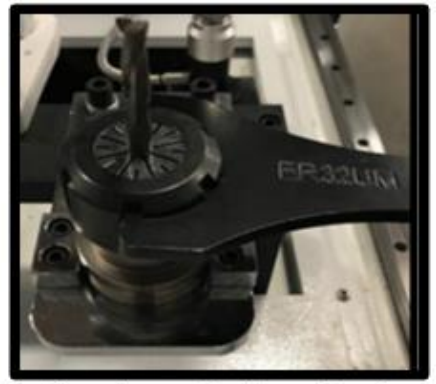
Prepare all Tool Cones for the job, and place into Tools corresponding holders.

1. Select a router bit and its corresponding collet.

****Note-The collets & spindle nut must be cleaned regularly. Ensure that the slots in the collets are free of debris.**

2. Press the collet into the spindle nut until it snaps into place.





Tighten the spindle nut using the provided wrench and tool cone holder pictured.

3. Thread on the nut and collet by hand, onto the tool cone.
4. Insert the router bit into the collet.
5. Tighten the spindle nut. Use the provided wrench and tool cone holder on the back of the machine frame.

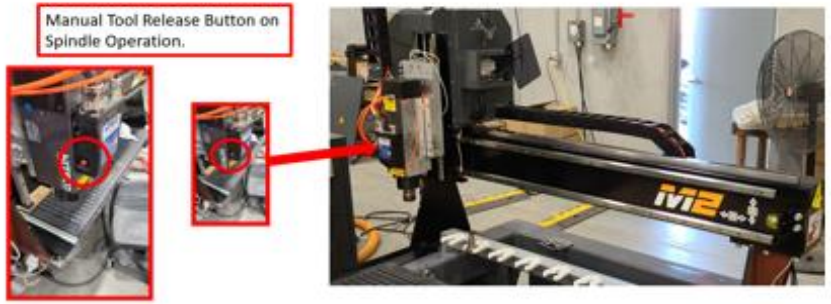
The Tool Cone Holder on the back of the machine frame.

Adding Tools & Touching Off-

Prepare all Tool Cones for the job, and place into Tools corresponding holders.

Setup a Tool Cone (Example 1) with the Router Bit one does intend to use.

a. Use the manual tool release button located on the tool head to load the tool cone into the spindle.



Warning: One CANNOT turn the Spindle "On" without having a tool inserted into the spindle. Operating the Spindle without a tool will cause serious damage to the Spindle, and may require Replacement (This will Void Warranty).

b. It is pertinent that the spindle releases and engages the tool cone repeatedly. This quick check will prevent an error condition.

Example #1-Tool Cone with Locking Nut, Collet, and Router Bit

Make sure to Pull Stud is Tight.

Router Bit should be inserted at least 2/3 of the shank or check for laser indented etched line on the router Bit.

Make sure Locking Nut is Tight.

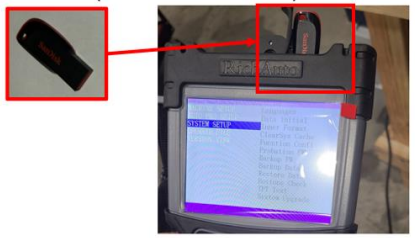
Adding Tools & Touching Off-

Run procedure to calculate Tool Offsets.

Transfer your "**g**"-Code program onto a USB and transfer into the controller's internal memory.

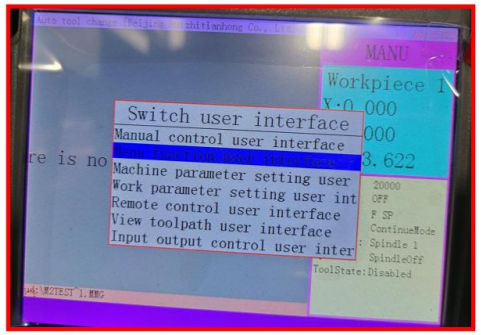
******When running a program directly from a USB, memory transfer is less reliable. It is recommended to store the program in the controller's internal memory. ******

1.) Take the USB Drive that contains the "**g**"-Code program and place the Drive in the "USB" Port on top of the HHC (Handheld Controller).



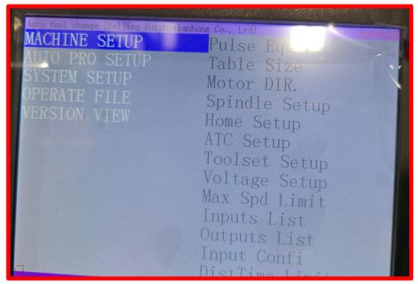
Press the **up Y+, and down Y-,** Buttons to Scroll down to & Select **"Menu Function User Interface"** then, Press **REF/OK**.

Press **"REF/OK".**



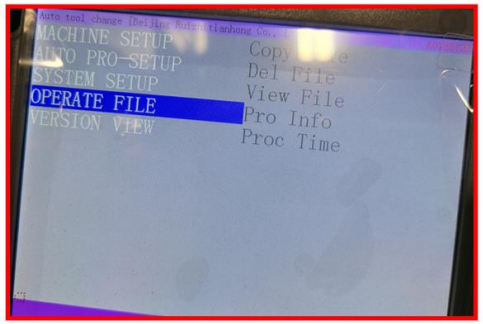
Press the **up Y+, and down Y-,** Buttons to Scroll down to & Select **"MACHINE SETUP/Configuration"** then, Press **REF/OK**.

Press **"REF/OK".**



Press the **up Y+, and down Y-,** Buttons to Scroll down to & Select **"OPERATE FILE"** then, Press **REF/OK**.

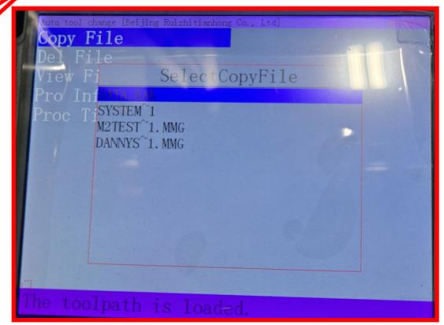
Press **"REF/OK".**



Adding Tools & Touching Off-

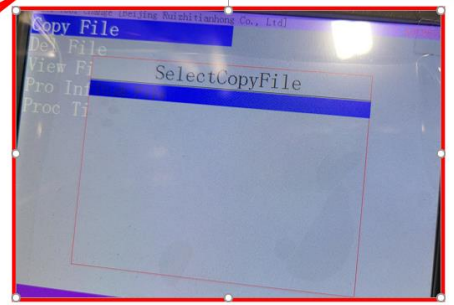
Run procedure to calculate Tool Offsets (Cont'd.)

Press the **up Y+, and down Y-,** Buttons to Scroll down to & Select **"COPY FILE"** then, Press **REF/OK**.



Press **"REF/OK".**

Press the **up Y+, and down Y-,** Buttons to Scroll down to & Select **"UDisk FILE"** then, Press **REF/OK**.

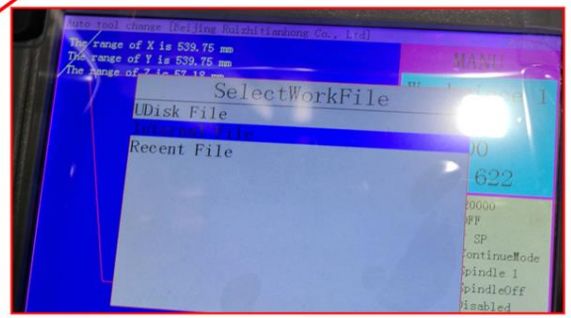


Press **"REF/OK".**

Press "**STOP/CANCEL**" Button a few times to return to Home Screen.

Press "**File**" --->go to "**Internal File**"---> **REF/OK**--->Select your Program---> **REF/OK**

Press "**File**", Press the **up Y+, and down Y-,** Buttons to Scroll to & Select **"Internal File"** then Scroll to & Select Program, then Press **REF/OK**.



Adding Tools & Touching Off-

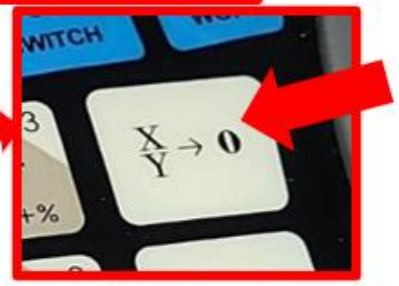
Set XY Work Origin.

Jog the spindle to the **"Program's Origin Point"**. This is determined by the CNC Program that was previously created.

Press the **up Y+, and down Y-, right X+, left X-** Buttons to Scroll or Jog up/down, right/left to the to the desired selected program.

UP Y+, and Down Y- Buttons.

Right X+, and Left X- Buttons.



Press the XY-->0 Button

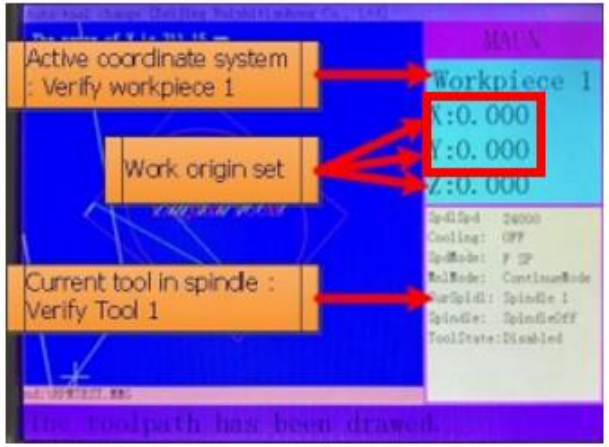
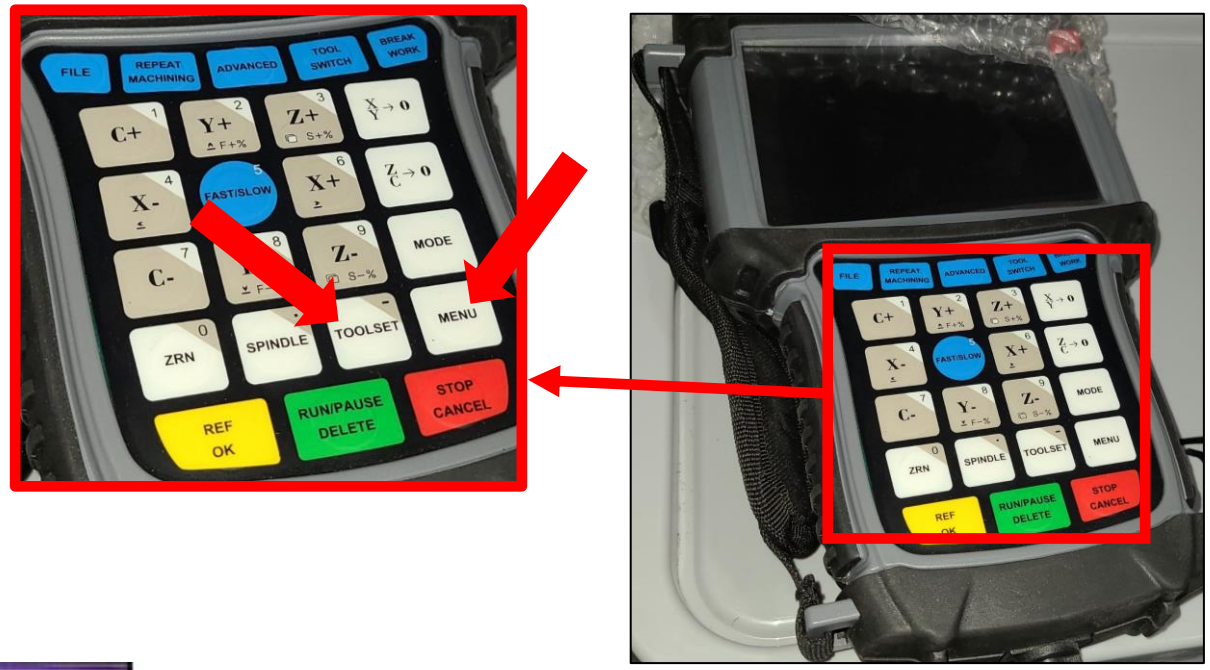


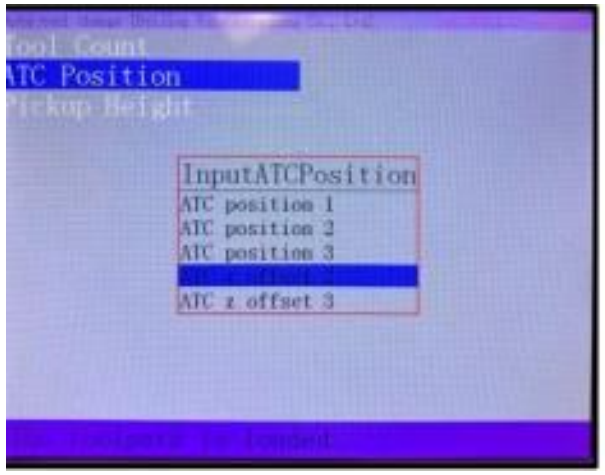
Figure #1-Control Screen after Loading Program and Setting Work Origin.

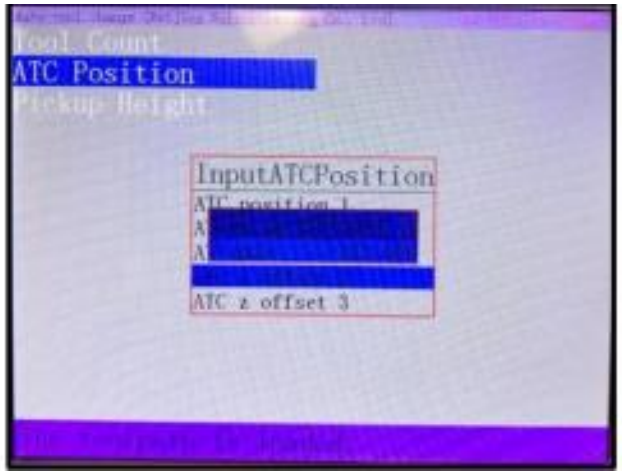
a. If you are using **Vectric's V-Carve Software**, it is called the **"XY Datum Position"**.
b. Once the spindle is in position **Press the XY-->0 Button** to set the **"XY Origin Point"**.
c. On the controller, you will see the X and Y axis coordinates go to Zero-"0"(Figure #1).

Adding Tools & Touching Off (Cont'd.)-

- Start with Tool 1, Tool 1 = Master Tool Bit.
- Press and hold the "**MENU**" button --> press "**TOOLSET**" button -->release both buttons.
- Once Tool 1 has touched off, Switch to Tool 2, using the Tool Switch button.
- Press and hold the "**MENU**" button --> press "**TOOLSET**" button --> release both buttons.
- Proceed to Touch Off all Tools in ascending order.
- Switch back to Tool 1, using the Tool Switch button.
- Offsets are now calculated.







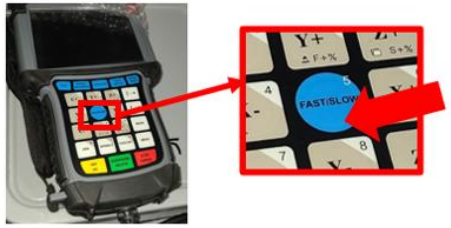
Note: Cannot touch off plaining bits.

MULTIPLE TOOL PROGRAM

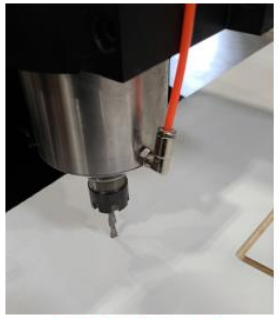
Touch Off Tool #1 and any subsequent Tools, after that, switch back to Tool #1 for manual Touch Off.

Set Z work origin with Tool 1.

a.) Set the Jog Speed to **"Low"** and carefully move the spindle down towards the top of your material until the desired Z-Zero Position is obtained.



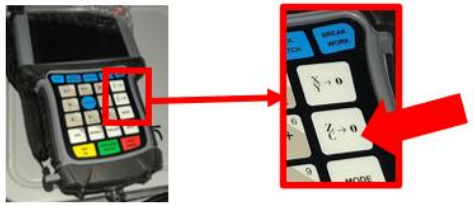
i. It may be helpful to use a sheet of paper by sliding it back and forth under the bit, while jogging the z-axis down.
ii. Once the paper is snagged by the bit you know one is within a paper thickness (0.1mm) of your material.



"Z-Zero Position"

"Z-Zero Position with a piece of paper"

b.) Press the ZC-->0 button.



c.) On the controller, you will see the Z-axis coordinate go to zero (Figure #1).

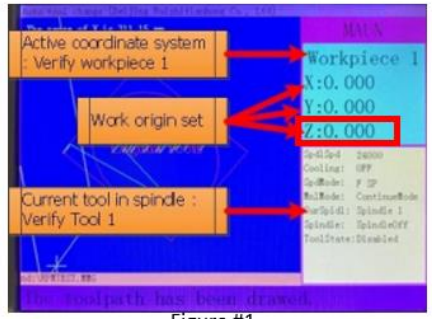


Figure #1

d.) Press **REF/OK** Button x2 (Twice).

e.) This will retract the spindle to a safe starting location.

MULTIPLE TOOL PROGRAM

Run Program.

f.) Put on your **SAFETY GLASSES** and run the program!

g.) In case of an emergency or machine failure you can hit the "**E-STOP Button**" on the control cabinet.

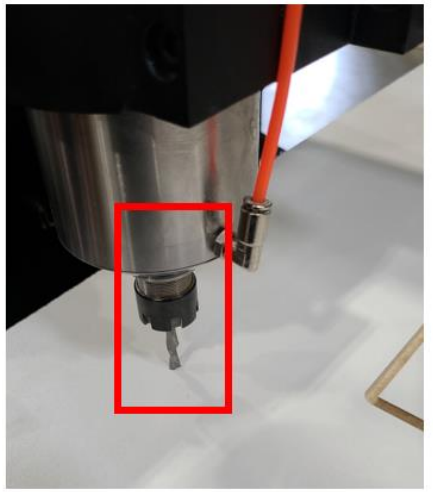
[In most cases the "**Stop/Cancel Button**" on the Handheld Controller (HHC) is a preferred stopping method.]

h.) Press the "**RUN/PAUSE/DELETE Button**" to start the program.

i.) Accept the default runtime parameters by pressing "**REF/OK Button**".

j.) While the program is running:

k.) Feed rate can be adjusted by pressing the Y+ or Y- buttons.
i. Y+ will increase the feed rate by 10%.
ii. Y- will decrease the speed by 10%
iii. The max speed is determined by the program file.



l.) Program End.
At the end of a program the spindle will **STOP** and the **Z-Axis** will retract to a safe clearance height. See Photo.

Setting Tools Offsets

- Place the designated tools into the corresponding tool holders on the machine, determined at the time of program creation.
- Change to workpiece 1 and tool 1(Changing Tools Section).
- Verify Workpiece 1.
- Verify "**CurSpindl**": Spindle 1, and tool 1 is in the spindle.
- Manually jog the spindle into a safe location by the tool rack.
- The machine will return to the starting position after changing tools.

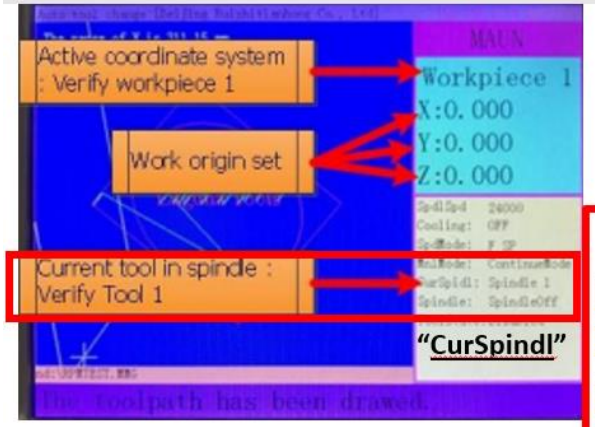
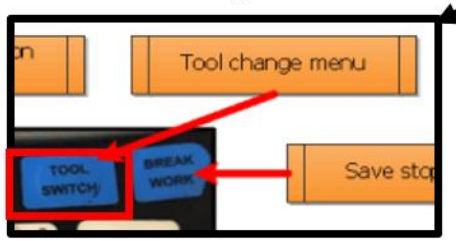
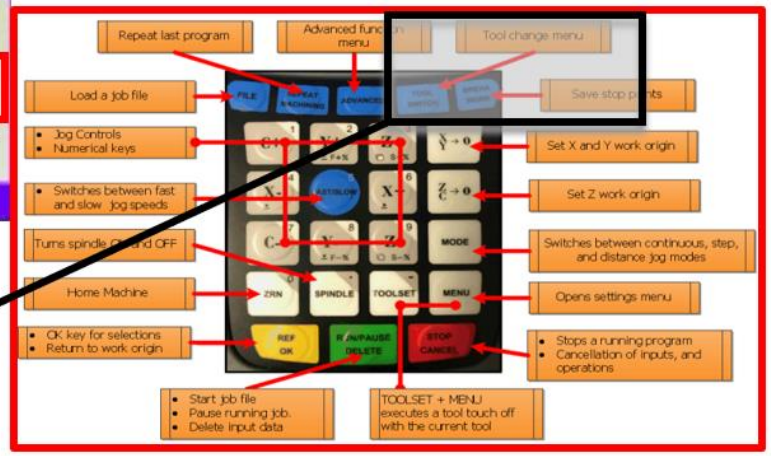


Figure #1-Control Screen after Loading Program and Setting Work Origin.

If Current Tool Number is **Not Tool #1**, then switch tools using Tool Switch Function (See Basic Button Functions-Press "Tool Change Menu Button or Tool Switch Menu Button").

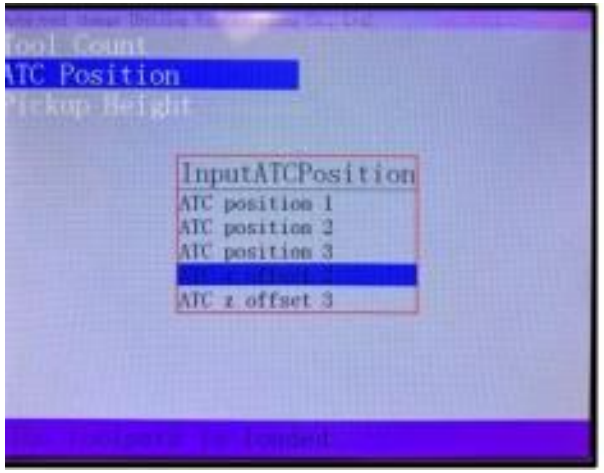


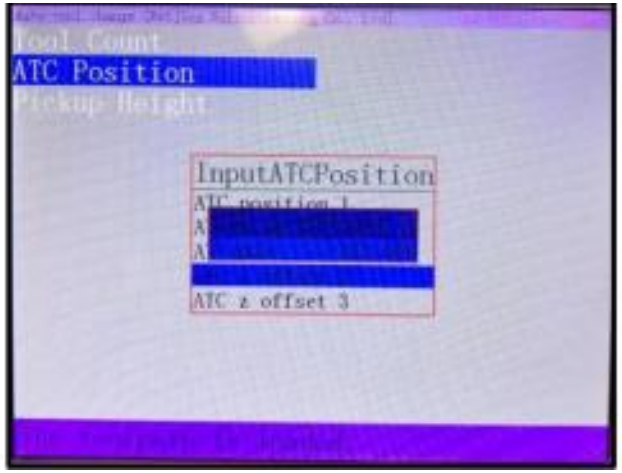


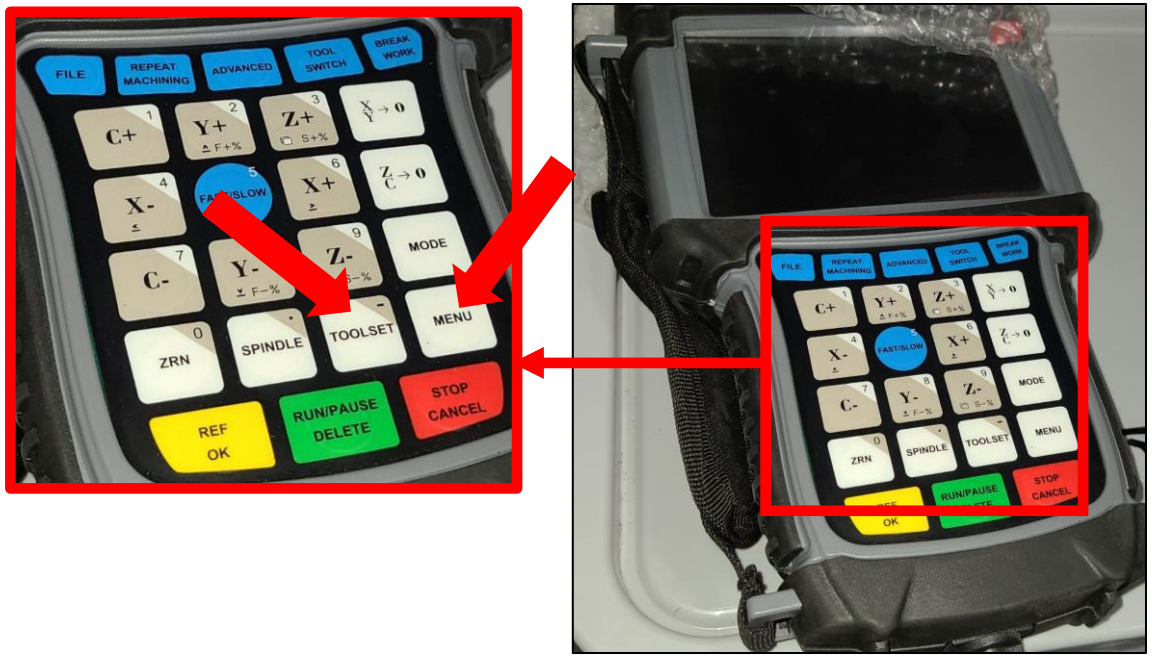
Activate
Go to Setti

Setting Tools Offsets (Cont'd.)

- Press and hold the "**MENU**" button --> press "**TOOLSET**" button -->release both buttons.
- Once Tool 2 has touched off, Switch to Tool 3, using the Tool Switch button.
- Press and hold the "**MENU**" button --> press "**TOOLSET**" button --> release both buttons.
- Switch back to Tool 1, using the Tool Switch button.
- Offsets are now calculated.







SETTING XY WORK ORIGIN

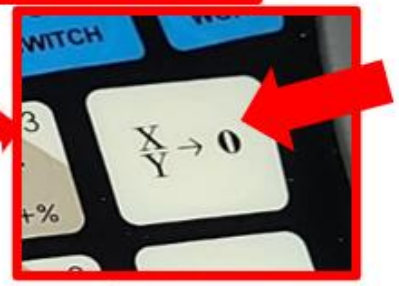
Set XY Work Origin.

Jog the spindle to the **"Program's Origin Point"**. This is determined by the CNC Program that was previously created.

Press the **up Y+, and down Y-, right X+, left X-** Buttons to Scroll or Jog up/down, right/left to the to the desired selected program.

UP Y+, and Down Y- Buttons.

Right X+, and Left X- Buttons.



Press the XY-->0 Button

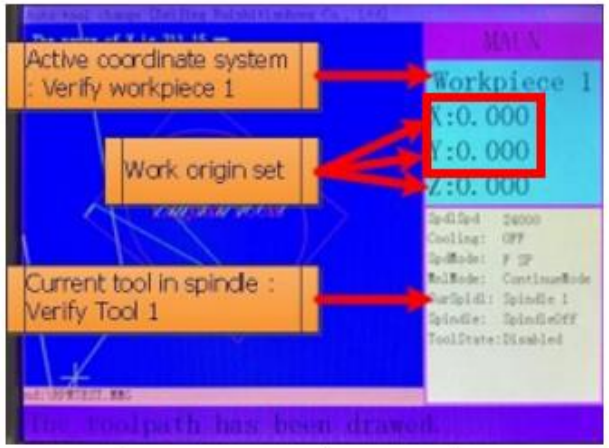


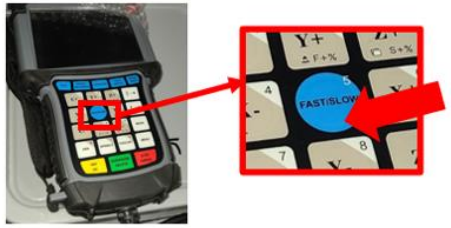
Figure #1-Control Screen after Loading Program and Setting Work Origin.

a. If you are using **Vectric's V-Carve Software**, it is called the **"XY Datum Position"**.
b. Once the spindle is in position **Press the XY-->0 Button** to set the **"XY Origin Point"**.
c. On the controller, you will see the X and Y axis coordinates go to Zero-"0"(Figure #1).

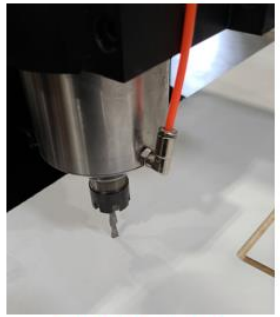
SET Z WORK ORIGIN

Set Z work origin with Tool 1.

a.) Set the Jog Speed to **"Low"** and carefully move the spindle down towards the top of your material until the desired Z-Zero Position is obtained.



i. It may be helpful to use a sheet of paper by sliding it back and forth under the bit, while jogging the z-axis down.
ii. Once the paper is snagged by the bit you know one is within a paper thickness (0.1mm) of your material.

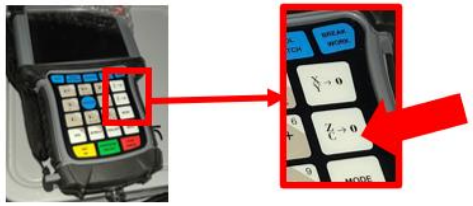


"Z-Zero Position"

"Z-Zero Position with a piece of paper"

Warning: One CANNOT turn the Spindle "On" without having a tool inserted into the spindle. Operating the Spindle without a tool will cause serious damage to the Spindle, and may require Replacement (This will Void Warranty).

b.) Press the ZC-->0 button.



c.) On the controller, you will see the Z-axis coordinate go to zero (Figure #1).

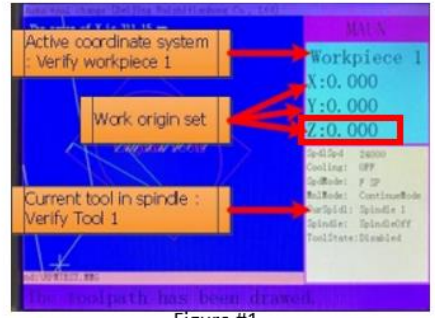


Figure #1

d.) Press **REF/OK** Button x2 (Twice).

e.) This will retract the spindle to a safe starting location.

RUN PROGRAM

Run Program.

f.) Put on your **SAFETY GLASSES** and run the program!

g.) In case of an emergency or machine failure you can hit the "**E-STOP Button**" on the control cabinet.

[In most cases the "**Stop/Cancel Button**" on the Handheld Controller (HHC) is a preferred stopping method.]

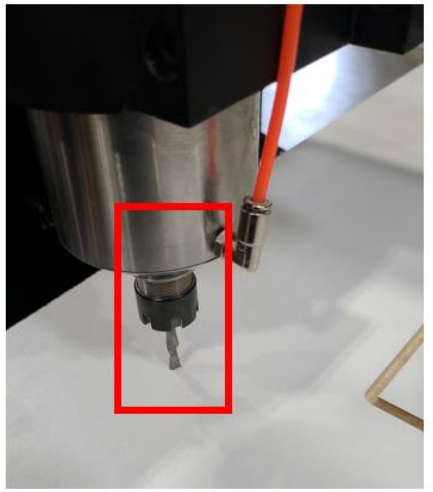
h.) Press the "**RUN/PAUSE/DELETE Button**" to start the program.

i.) Accept the default runtime parameters by pressing "**REF/OK Button**".

Warning: One CANNOT turn the Spindle "On" without having a tool inserted into the spindle. Operating the Spindle without a tool will cause serious damage to the Spindle, and may require Replacement (This will Void Warranty).

j.) While the program is running:

k.) Feed rate can be adjusted by pressing the Y+ or Y- buttons.
i. Y+ will increase the feed rate by 10%.
ii. Y- will decrease the speed by 10%
iii. The max speed is determined by the program file.



l.) Program End.
At the end of a program the spindle will **STOP** and the **Z-Axis** will retract to a safe clearance height. See Photo.

UNDERSTANDING WORK COORDINATE SYSTEMS

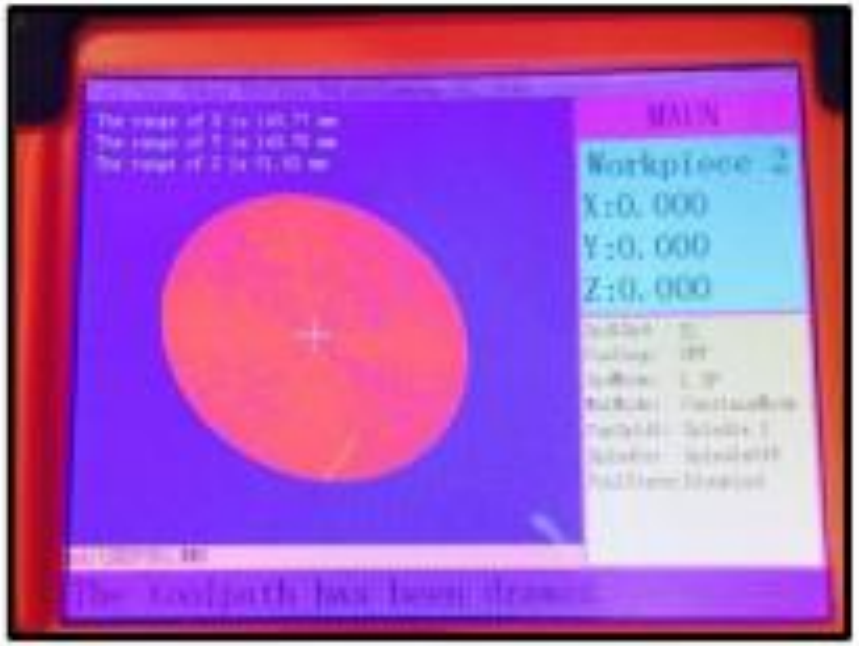
- Machine Coordinates (Workpiece 0).

Coordinates based off of the home switches, not the origin.
Tool positions and TTO switch location are set relative to machine coordinates.
Press **“MENU + ZRN/0”** to switch to “Workpiece 0”.

- Hold down the MENU + 1-9 Buttons to move between different origin points.(This Machine can have up to 9 Origin Points on the Handheld at the same time).

UNDERSTANDING WORK COORDINATE SYSTEMS (Cont'd)

- In the picture below the Active Work Coordinate System is "Workpiece 2".



- Transitioning between workpieces will, in turn transition between X, Y, and Z offsets made in each Workpiece.

MAINTENANCE AND TROUBLESHOOTING

- The Smartshop M2 uses Linear Guide Rails, Ball Screws, and Ball Bearings. These need to be lubricated periodically (Once a Week). Each Axis has 2 Guide Rails each. Keep machine free of the products chips & debris.

- **Note**: Do to leave Spindle in the Tool for a prolonged period of time (Spindle could Rust into the tool over time). Make sure to remove Spindle from Tool after being used.

- Schedule & Document into ones Preventive Maintenance Program (Per Any ISO/QS/TS Standards): Once a week, if the machine is used Daily.

- A Visual Inspection is always recommended. If the rails are dry to the touch, then get an oil can and a rag.

- Any 30WT Motor Oil or White Lithium Grease is recommended.

RESETTING TOOL LOCATIONS

- Home the machine.

- This will reset the controller's machine coordinates, relative to the position of the home switches and flags.

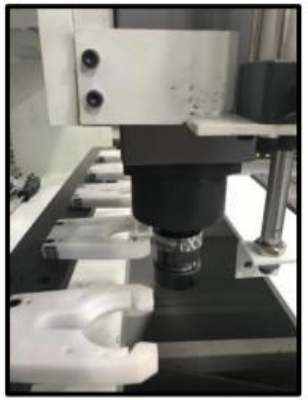
- Verify the controller is in machine coordinates (workpiece 0).

If not, press **MENU+ZRN/0** to change to machine coordinates.

- Put an EMPTY tool cone into the spindle using the manual tool release button.

- Using the handheld controller's jog control, carefully guide the cone into the tool rack.

- Remove Dust Hood to visually see Tool Cone.



Recommendation-1/8 Inch clearance from the back of the Tool Clip to prevent over travel.

RESETTING TOOL LOCATIONS (Cont'd.)

Record the X, Y, and Z position.

Verify that these are in machine coordinates.

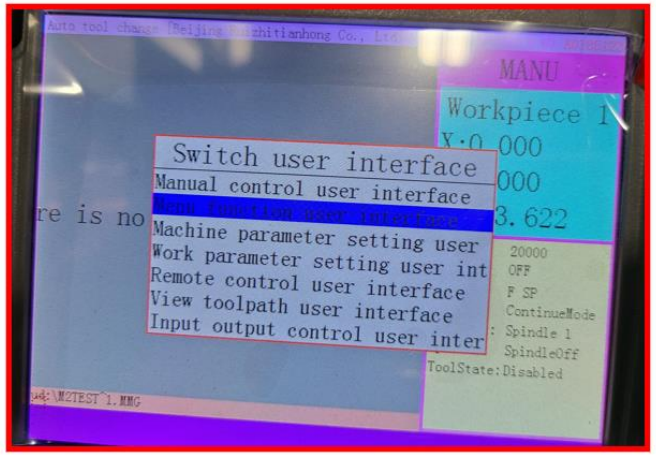
Carefully jog the tool out of the tool rack.

Navigate to the ATC stored locations, by following the below steps.

MENU --> Menu Function User Interface --> REF/OK.

Press **"REF/OK".**

Press the **up Y+, and down Y-,** Buttons to Scroll down to & Select **"Menu Function User Interface"** then, Press **REF/OK**.



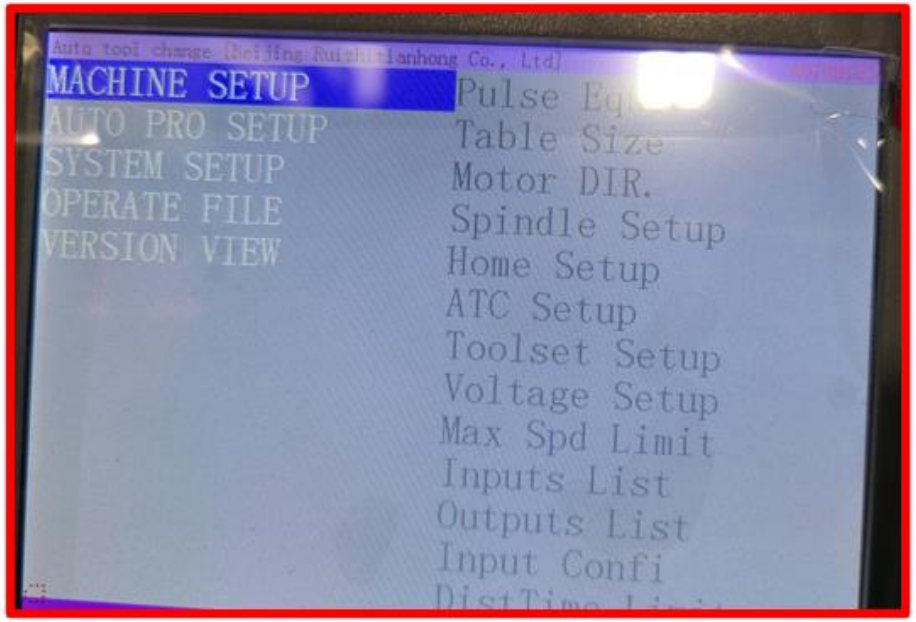
12

RESETTING TOOL LOCATIONS (Cont'd.)

Machine Setup --> REF/OK.

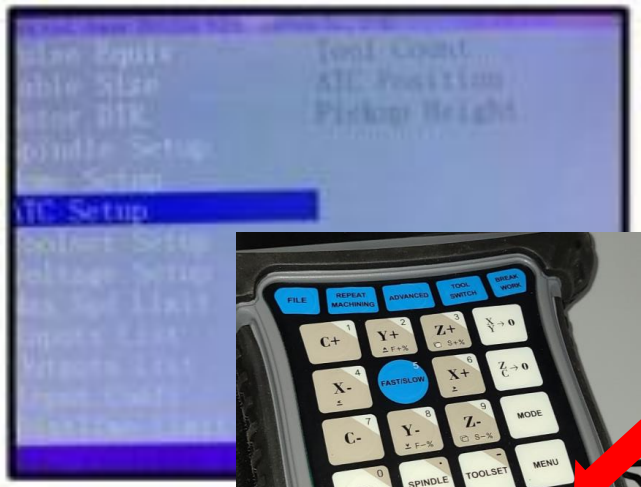
Press "REF/OK".

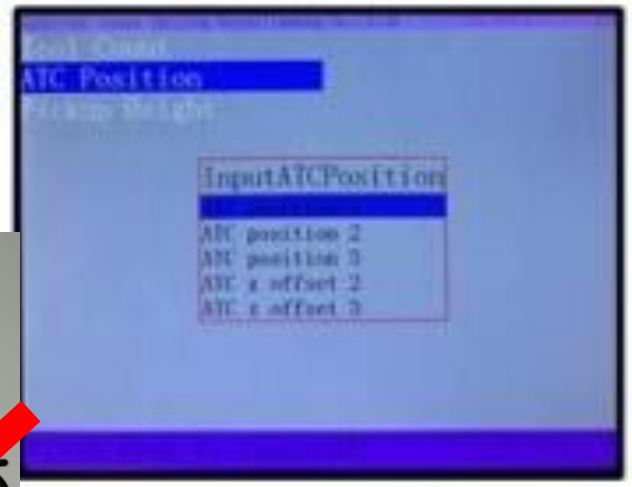
Press the **up Y+, and down Y-,** Buttons to Scroll down to & Select **"MACHINE SETUP/Configuration"** then, Press **REF/OK**.



RESETTING TOOL LOCATIONS (Cont'd.)

Scroll down to ATC setup--> REF/OK.
Scroll up to ATC position --> REF/OK →Select Tool# desired→ Press Cancel → Select desired Axis → Press Run/Pause/Delete→ Input Valves→ Next desired Axis→ until all X, Y, & Z (Z-always input a "**Negative Number**") is complete.





Continue to do this for all Tool locations.

Setting “Z” Work Origin– TOOL SETTING “Z” ADJUSTMENT

If the “**ToolSettingZ**” parameter needs to be adjusted follow this path.

MENU --> Menu function user interface --> machine setup -->Toolset setup --> C.A.D. position --> select with **REF/OK.** button.

Select **“InPosition”**, by pressing **RUN/PAUSE/DELETE** to change it.

Press **REF/OK** o Press **STOP/CANCEL** to set value manually.

Change **“ToolSettingZ”** to desired value.

INSTALLATION OUTLINE- RETAKE PHOTOS

Power

- Refer to the electrical tag on the back of the machine OR on the electrical cabinet (figure 1).
- Input power goes through the cabinet to the top of the rotary switch(figure 2).

Figure 1

Air

- The machine uses compressed air for the dust hood and tool changer.
- Connect an air supply line to the air pressure regulator located on the back of the machine(figure 3).
- The stock fitting is for an 8mm diameter hose.
  - Replace fitting if needed.
- 90-100 psi

Figure 2

Figure 3

Vacuum Pumps

Vacuum pumps will vary between machines.

- Refer to the vacuum pump electrical tag for correct wiring.
- Run the appropriate gauge wire from the vacuum pump to the electrical cabinet.
  - There will be a contactor(s) located inside of the electrical cabinet where the vacuum power is connected(figure 4).
- Connect the table's vacuum hose to the inlet of the vacuum pump(figure 5).

Figure 4

Dust Collection

- Set up a dust collector with a 4" hose connected to the dusthood(figure 6).
- For a simple solution, insert the provided tubing into the holder on the right side of the gantry.
- Secure the dust hose to the tubing, and verify travel is not restricted.

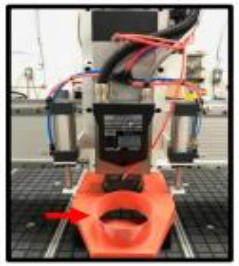


Figure 6

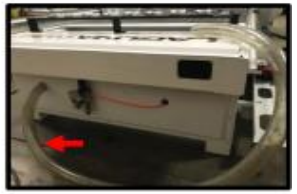


Figure 5

DEFAULT MACHINE SETTINGS-

SMART SHOP MAKER with B57E Controller

Revision: February 18, 2020

MACHINE PARAMETERS

MENU >> Machine Parameter Setting >>OK

X equival	100.000	pls per mm	Size of X	TBD	mm
Y equival	100.000	pls per mm	Size of Y	TBD	mm
Z equival	400.000	pls per mm	Size of Z	TBD	mm
SpdlOn Delay	4000	ms	SpdlOffDelay	8000	ms
XSpeedOfHome	3000.000	mm/min	YSpeedOfHome	3000.000	mm/min
ZSpeedOfHome	750.000	mm/min	Home actions	100.000	
Feeler Block	TBD	mm	Max X-Speed	18000.000	mm/min
Max X+ Speed	18000.000	mm/min	Max Y-Speed	18000.000	mm/min
Max Y+ Speed	18000.000	mm/min	Max Z-Speed	1500.000	mm/min
Max Z+ Speed	1500.000	mm/min			

To change a value: Highlight field >> RUN>> Enter/Select Value>>OK

WORK PARAMETERS

MENU >> Work Parameter Setting >>OK

WorkSpeed	15000.000	mm/min	Linear accel	800.000	mm/s2
Curve accel	1000.000	mm/s2	FastSpeed	15000.000	mm/min
Safe height	300.000	mm	XSpeedOfSlow	1000.000	mm/min
XSpeedOfFast	10000.000	mm/min	YSpeedOfSlow	1000.000	mm/min
YSpeedOfFast	10000.000	mm/min	ZSpeedOfSlow	500.000	mm/min
ZSpeedOfFast	1500.00	m/min	SpeedScale	1.000	
FallDown Scale	1.000		Act after	Pickup Z	
FallDownHeight	5.000	mm	G abs center	FALSE	
G read F code	Read F		G spindle	On by code	
G read T code	Read ATC			100.000	
G read S code	Read S		Array interval	0	ms
CircleLImit	1000.000		ArrayColCount	1	
ArrayRowCount	1		ArrayColSpace	0.000	mm
ArrayRowSpace	0.000	mm			

To change a value: Highlight field >> RUN>> Enter/Select Value>>OK

OTHER SETTINGS

MENU>>MENU FUNCTION>>SYSTEM SETUP>>FUNCTION CONFI>>SpdOutpt>>	SglAng	
MENU>>MENU FUNCTION USER INTERFACE/MACHINE SETUP>>		
>>TOOLSET SETUP/TOOLSET SPEED/TS SPD	300.00	mm/min
>>CAD POSITION/TOOLSET IN POS/OK/OK/CANCEL/TOOL SETTING Z	-120.00	mm
>>Spindle Setup>>Spdl Max Spd	24000	

To change setting: Highlight field >> RUN>> Enter/Select Value>>OK

INPUT-OUTPUT CONFIGURATION

Input Disable Mask

MENU-MENU FUNCTION USER INTERFACE-MACHINE SETUP-INPUT CONFIG

X1	ENABLE
X2	ENABLE
X3	ENABLE
X4	ENABLE
X5-X14	DISABLE
X15	ENABLE
X16-X32	DISABLE

I/O Voltage Setup

MENU-MENU FUNCTION USER INTERFACE-MACHINE SETUP-VOLTAGE SETUP

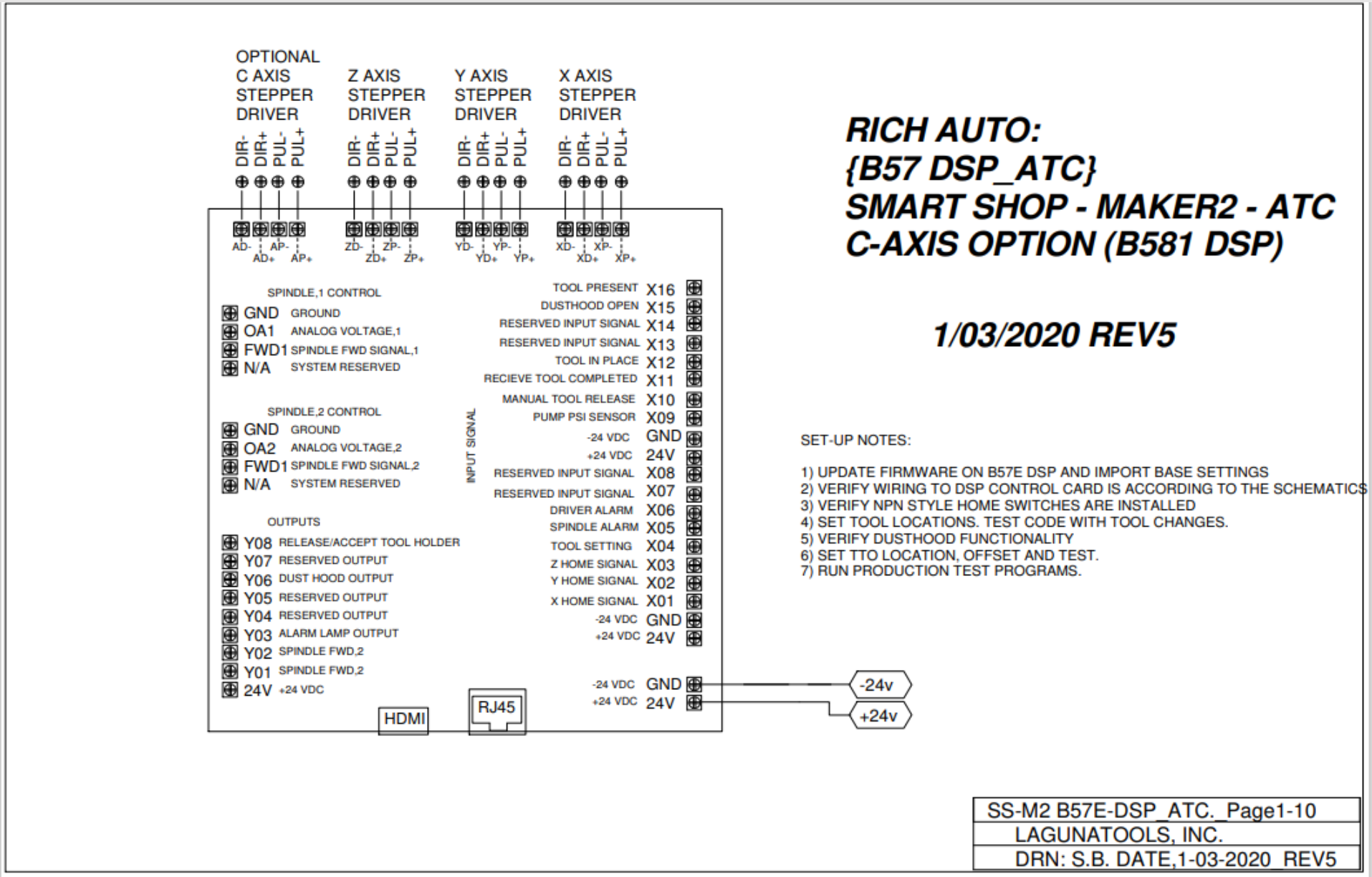
INPUT VOLTAGE SETUP - HIGHLIGHT INPUT THEN PRESS RUN (GREEN) BUTTON TO TOGGLE STATE

X1-X3	GREEN	
X4	RED	
X5-12	GREEN	
X13-14	RED	
X15	GREEN	RED FOR IQPro - No Dust hood Sensor
X16	RED	
X17-X32	GREEN	

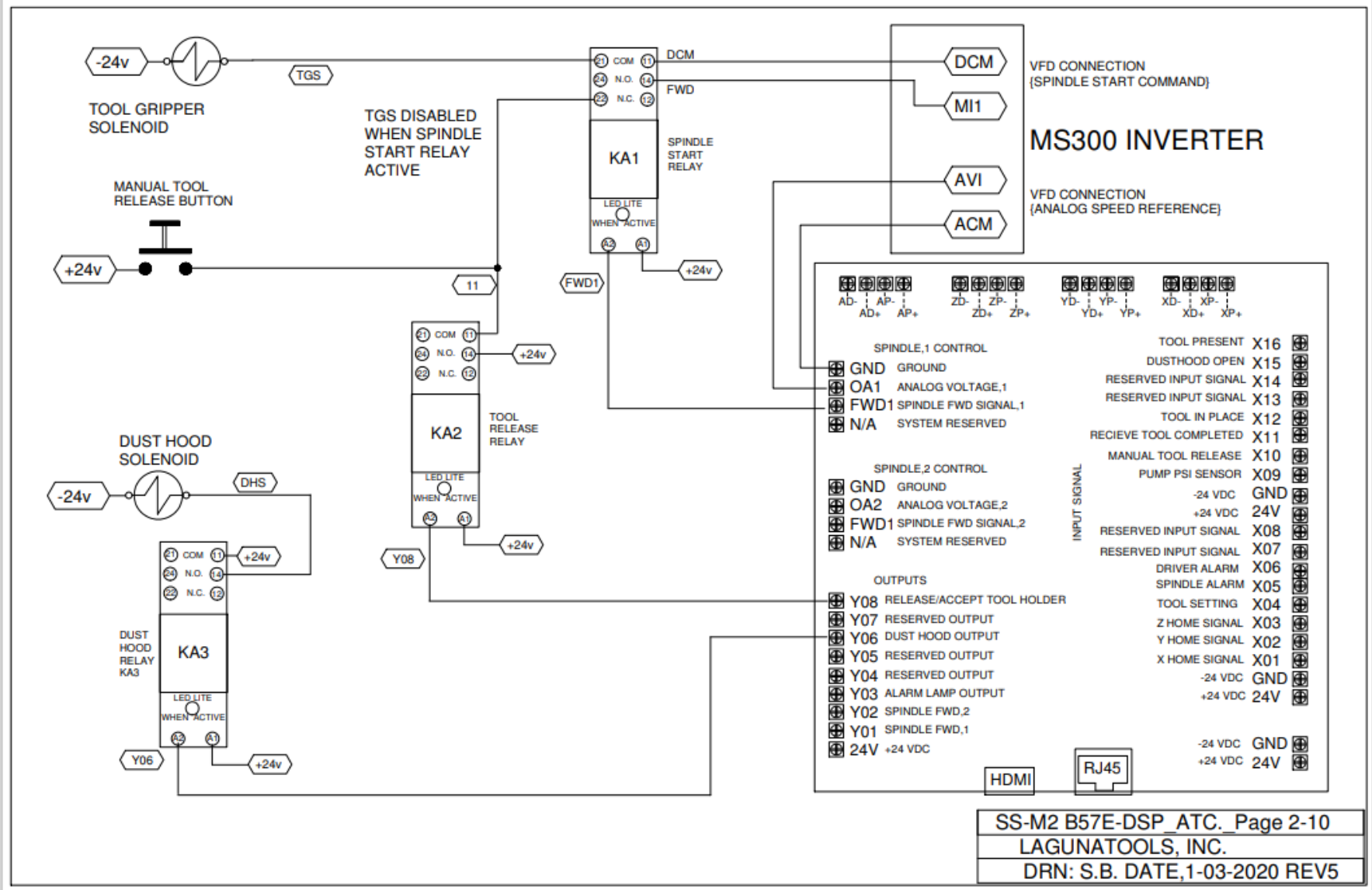
OUTPUT POLARITY

Y1-Y32	GREEN

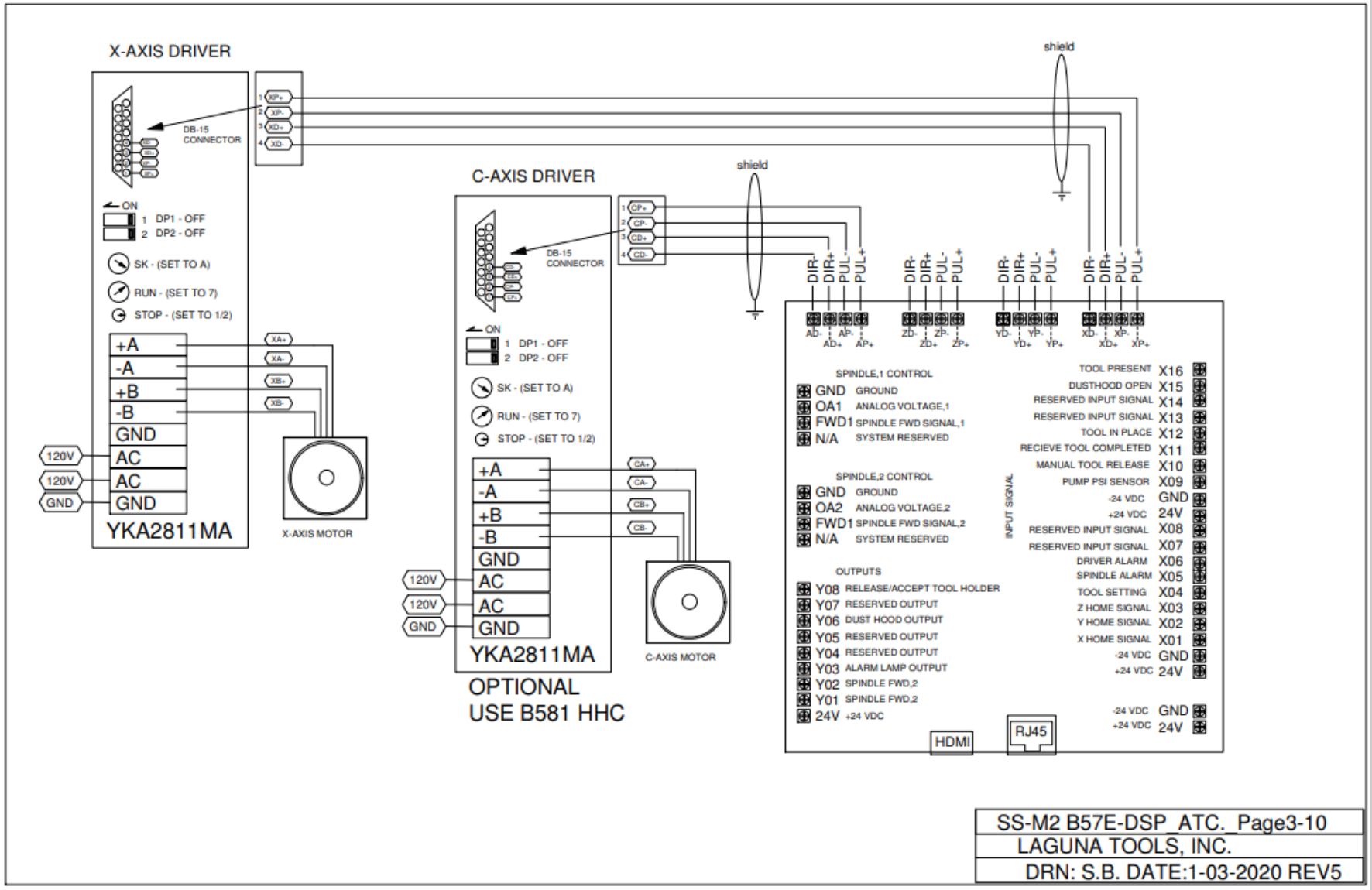
Schematics-


OPTIONAL C AXIS STEPPER DRIVER
Z AXIS STEPPER DRIVER
Y AXIS STEPPER DRIVER
X AXIS STEPPER DRIVER
DIR- DIR+ PUL- PUL+
AD- AD+ AP- AP+
ZD- ZD+ ZP- ZP+
YD- YD+ YP- YP+
XD- XD+ XP- XP+
SPINDLE,1 CONTROL
GND GROUND
OA1 ANALOG VOLTAGE,1
FWD1 SPINDLE FWD SIGNAL,1
N/A SYSTEM RESERVED
SPINDLE,2 CONTROL
GND GROUND
OA2 ANALOG VOLTAGE,2
FWD1 SPINDLE FWD SIGNAL,2
N/A SYSTEM RESERVED
OUTPUTS
Y08 RELEASE/ACCEPT TOOL HOLDER
Y07 RESERVED OUTPUT
Y06 DUST HOOD OUTPUT
Y05 RESERVED OUTPUT
Y04 RESERVED OUTPUT
Y03 ALARM LAMP OUTPUT
Y02 SPINDLE FWD,2
Y01 SPINDLE FWD,2
24V +24 VDC
INPUT SIGNAL
TOOL PRESENT X16
DUSTHOOD OPEN X15
RESERVED INPUT SIGNAL X14
RESERVED INPUT SIGNAL X13
TOOL IN PLACE X12
RECIEVE TOOL COMPLETED X11
MANUAL TOOL RELEASE X10
PUMP PSI SENSOR X09
-24 VDC GND
+24 VDC 24V
RESERVED INPUT SIGNAL X08
RESERVED INPUT SIGNAL X07
DRIVER ALARM X06
SPINDLE ALARM X05
TOOL SETTING X04
Z HOME SIGNAL X03
Y HOME SIGNAL X02
X HOME SIGNAL X01
-24 VDC GND
+24 VDC 24V
-24 VDC GND
+24 VDC 24V
HDMI
RJ45
-24v
+24v
RICH AUTO:
{B57 DSP_ATC}
SMART SHOP - MAKER2 - ATC
C-AXIS OPTION (B581 DSP)
1/03/2020 REV5
SET-UP NOTES:
1) UPDATE FIRMWARE ON B57E DSP AND IMPORT BASE SETTINGS
2) VERIFY WIRING TO DSP CONTROL CARD IS ACCORDING TO THE SCHEMATICS
3) VERIFY NPN STYLE HOME SWITCHES ARE INSTALLED
4) SET TOOL LOCATIONS. TEST CODE WITH TOOL CHANGES.
5) VERIFY DUSTHOOD FUNCTIONALITY
6) SET TTO LOCATION, OFFSET AND TEST.
7) RUN PRODUCTION TEST PROGRAMS.
SS-M2 B57E-DSP_ATC._Page1-10
LAGUNATOOLS, INC.
DRN: S.B. DATE,1-03-2020_REV5

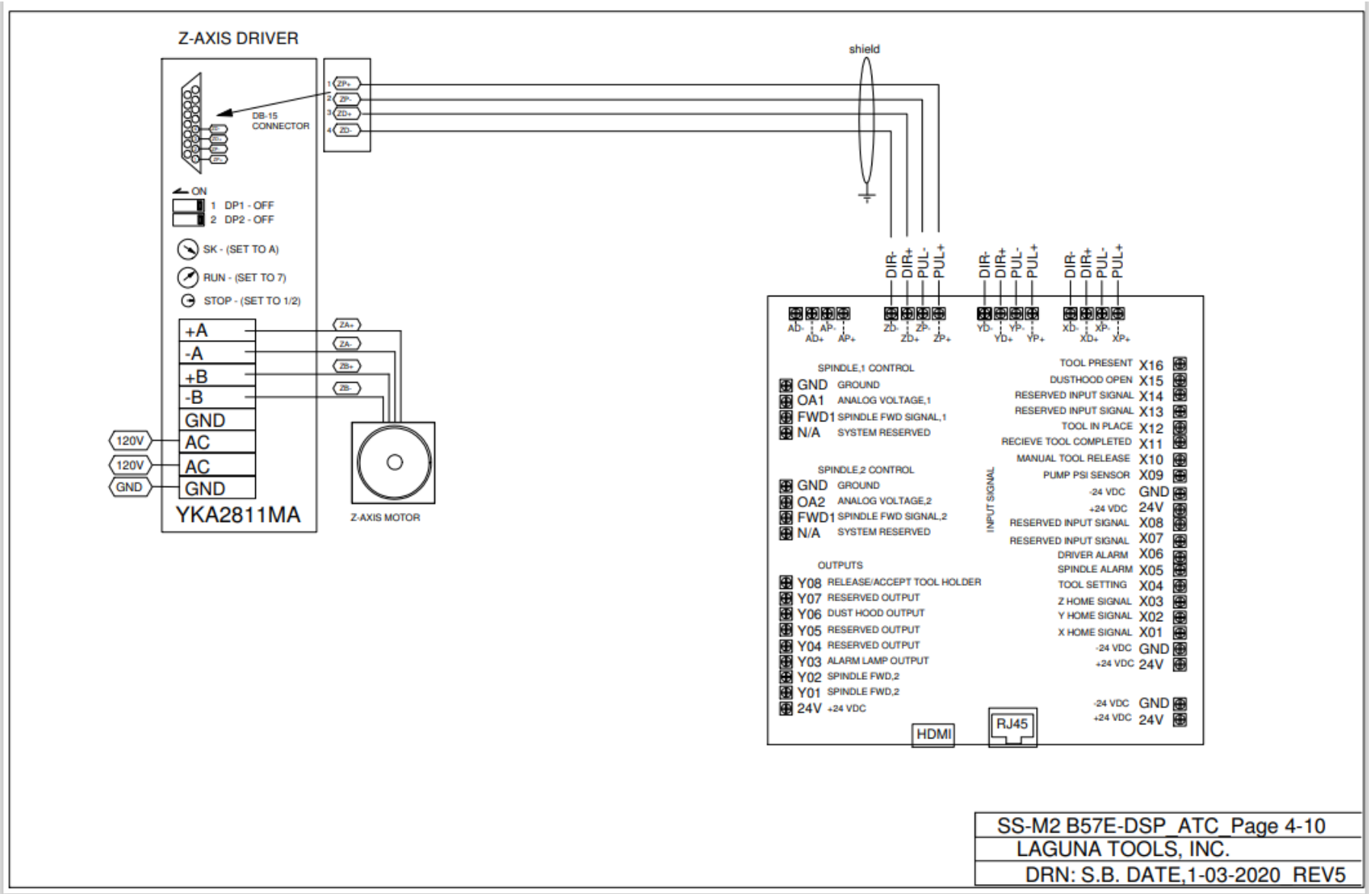
Schematics-


-24v
TGS
TOOL GRIPPER SOLENOID
TGS DISABLED WHEN SPINDLE START RELAY ACTIVE
MANUAL TOOL RELEASE BUTTON
+24v
11
COM
N.O.
N.C.
DCM
FWD
KA1
SPINDLE START RELAY
LED LITE WHEN ACTIVE
FWD1
+24v
KA2
TOOL RELEASE RELAY
Y08
DUST HOOD SOLENOID
DHS
KA3
DUST HOOD RELAY KA3
Y06
DCM
MI1
AVI
ACM
VFD CONNECTION (SPINDLE START COMMAND)
MS300 INVERTER
VFD CONNECTION (ANALOG SPEED REFERENCE)
AD- AP- ZD- ZP- YD- YP- XD- XP-
AD+ AP+ ZD+ ZP+ YD+ YP+ XD+ XP+
SPINDLE,1 CONTROL
GND GROUND
OA1 ANALOG VOLTAGE,1
FWD1 SPINDLE FWD SIGNAL,1
N/A SYSTEM RESERVED
SPINDLE,2 CONTROL
GND GROUND
OA2 ANALOG VOLTAGE,2
FWD1 SPINDLE FWD SIGNAL,2
N/A SYSTEM RESERVED
OUTPUTS
Y08 RELEASE/ACCEPT TOOL HOLDER
Y07 RESERVED OUTPUT
Y06 DUST HOOD OUTPUT
Y05 RESERVED OUTPUT
Y04 RESERVED OUTPUT
Y03 ALARM LAMP OUTPUT
Y02 SPINDLE FWD,2
Y01 SPINDLE FWD,1
24V +24 VDC
INPUT SIGNAL
TOOL PRESENT X16
DUSTHOOD OPEN X15
RESERVED INPUT SIGNAL X14
RESERVED INPUT SIGNAL X13
TOOL IN PLACE X12
RECIEVE TOOL COMPLETED X11
MANUAL TOOL RELEASE X10
PUMP PSI SENSOR X09
-24 VDC GND
+24 VDC 24V
RESERVED INPUT SIGNAL X08
RESERVED INPUT SIGNAL X07
DRIVER ALARM X06
SPINDLE ALARM X05
TOOL SETTING X04
Z HOME SIGNAL X03
Y HOME SIGNAL X02
X HOME SIGNAL X01
-24 VDC GND
+24 VDC 24V
-24 VDC GND
+24 VDC 24V
HDMI
RJ45
SS-M2 B57E-DSP_ATC._Page 2-10
LAGUNATOOLS, INC.
DRN: S.B. DATE,1-03-2020 REV5

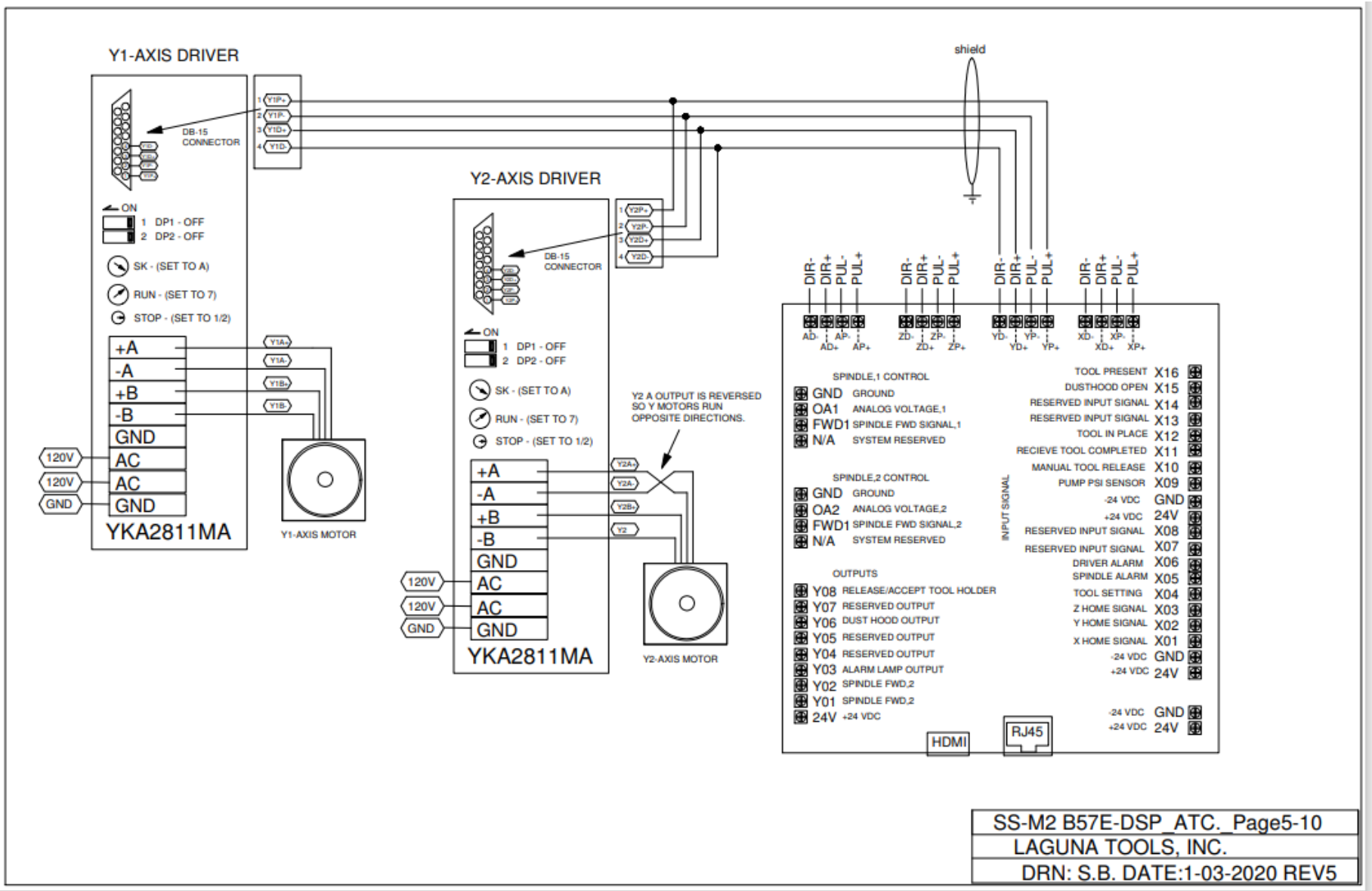
Schematics-


X-AXIS DRIVER
DB-15 CONNECTOR
ON
1 DP1 - OFF
2 DP2 - OFF
SK - (SET TO A)
RUN - (SET TO 7)
STOP - (SET TO 1/2)
+A
-A
+B
-B
GND
120V
AC
120V
AC
GND
GND
YKA2811MA
X-AXIS MOTOR
C-AXIS DRIVER
shield
DB-15 CONNECTOR
ON
1 DP1 - OFF
2 DP2 - OFF
SK - (SET TO A)
RUN - (SET TO 7)
STOP - (SET TO 1/2)
+A
-A
+B
-B
GND
120V
AC
120V
AC
GND
GND
YKA2811MA
C-AXIS MOTOR
OPTIONAL
USE B581 HHC
DIR-
DIR+
PUL-
PUL+
SPINDLE,1 CONTROL
GND GROUND
OA1 ANALOG VOLTAGE,1
FWD1 SPINDLE FWD SIGNAL,1
N/A SYSTEM RESERVED
SPINDLE,2 CONTROL
GND GROUND
OA2 ANALOG VOLTAGE,2
FWD1 SPINDLE FWD SIGNAL,2
N/A SYSTEM RESERVED
OUTPUTS
Y08 RELEASE/ACCEPT TOOL HOLDER
Y07 RESERVED OUTPUT
Y06 DUST HOOD OUTPUT
Y05 RESERVED OUTPUT
Y04 RESERVED OUTPUT
Y03 ALARM LAMP OUTPUT
Y02 SPINDLE FWD,2
Y01 SPINDLE FWD,2
24V +24 VDC
INPUT SIGNAL
TOOL PRESENT X16
DUSTHOOD OPEN X15
RESERVED INPUT SIGNAL X14
RESERVED INPUT SIGNAL X13
TOOL IN PLACE X12
RECIEVE TOOL COMPLETED X11
MANUAL TOOL RELEASE X10
PUMP PSI SENSOR X09
-24 VDC GND
+24 VDC 24V
RESERVED INPUT SIGNAL X08
RESERVED INPUT SIGNAL X07
DRIVER ALARM X06
SPINDLE ALARM X05
TOOL SETTING X04
Z HOME SIGNAL X03
Y HOME SIGNAL X02
X HOME SIGNAL X01
-24 VDC GND
+24 VDC 24V
-24 VDC GND
+24 VDC 24V
HDMI
RJ45
SS-M2 B57E-DSP_ATC._Page3-10
LAGUNA TOOLS, INC.
DRN: S.B. DATE:1-03-2020 REV5

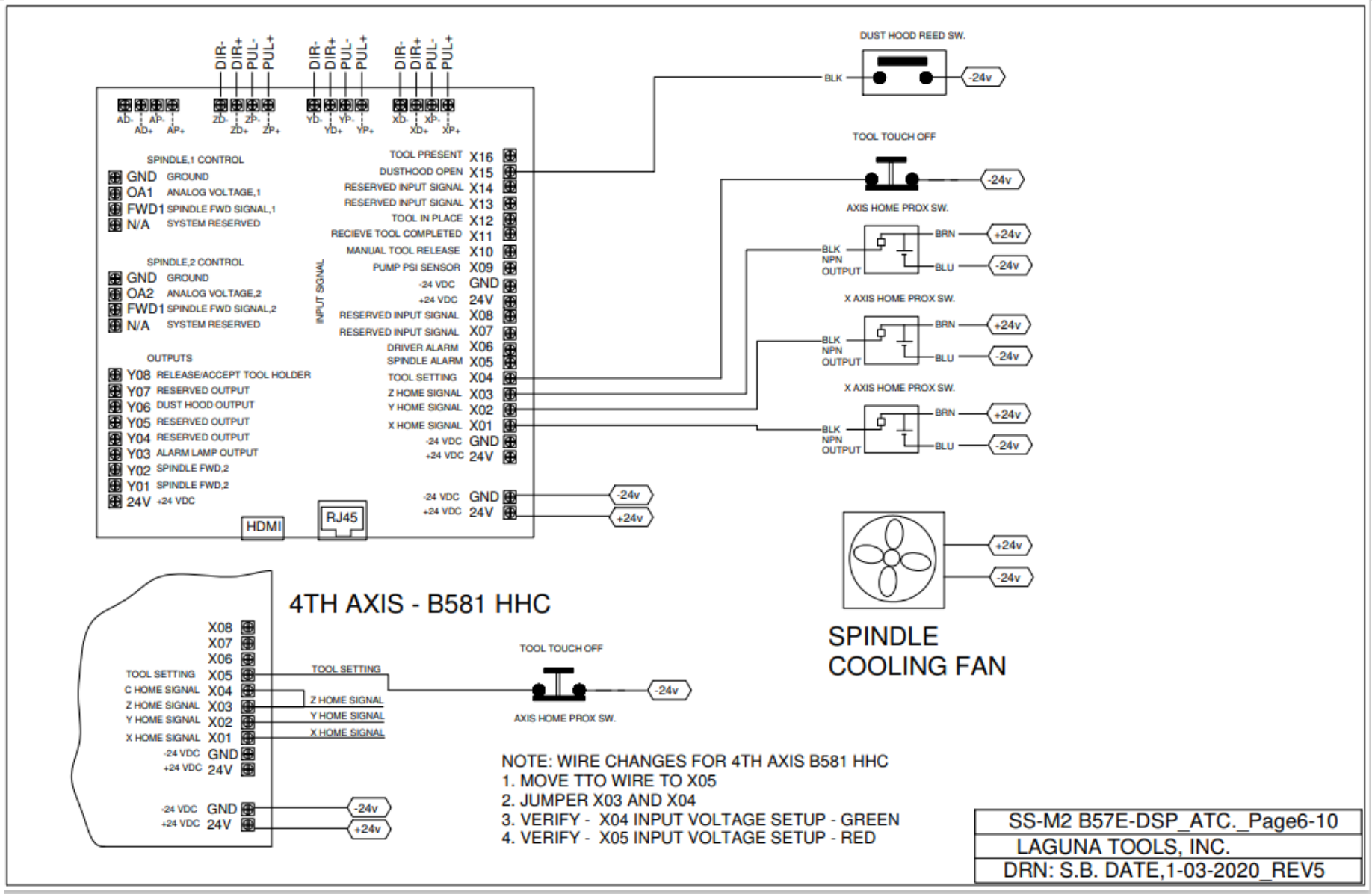
Schematics-


Z-AXIS DRIVER
DB-15 CONNECTOR
ON
1 DP1 - OFF
2 DP2 - OFF
SK - (SET TO A)
RUN - (SET TO 7)
STOP - (SET TO 1/2)
+A
-A
+B
-B
GND
AC
AC
GND
120V
120V
GND
YKA2811MA
Z-AXIS MOTOR
shield
DIR-
DIR+
PUL-
PUL+
SPINDLE,1 CONTROL
GND GROUND
OA1 ANALOG VOLTAGE,1
FWD1 SPINDLE FWD SIGNAL,1
N/A SYSTEM RESERVED
SPINDLE,2 CONTROL
GND GROUND
OA2 ANALOG VOLTAGE,2
FWD1 SPINDLE FWD SIGNAL,2
N/A SYSTEM RESERVED
OUTPUTS
Y08 RELEASE/ACCEPT TOOL HOLDER
Y07 RESERVED OUTPUT
Y06 DUST HOOD OUTPUT
Y05 RESERVED OUTPUT
Y04 RESERVED OUTPUT
Y03 ALARM LAMP OUTPUT
Y02 SPINDLE FWD,2
Y01 SPINDLE FWD,2
24V +24 VDC
INPUT SIGNAL
TOOL PRESENT X16
DUSTHOOD OPEN X15
RESERVED INPUT SIGNAL X14
RESERVED INPUT SIGNAL X13
TOOL IN PLACE X12
RECIEVE TOOL COMPLETED X11
MANUAL TOOL RELEASE X10
PUMP PSI SENSOR X09
-24 VDC GND
+24 VDC 24V
RESERVED INPUT SIGNAL X08
RESERVED INPUT SIGNAL X07
DRIVER ALARM X06
SPINDLE ALARM X05
TOOL SETTING X04
Z HOME SIGNAL X03
Y HOME SIGNAL X02
X HOME SIGNAL X01
-24 VDC GND
+24 VDC 24V
-24 VDC GND
+24 VDC 24V
HDMI
RJ45
SS-M2 B57E-DSP_ATC_Page 4-10
LAGUNA TOOLS, INC.
DRN: S.B. DATE,1-03-2020 REV5

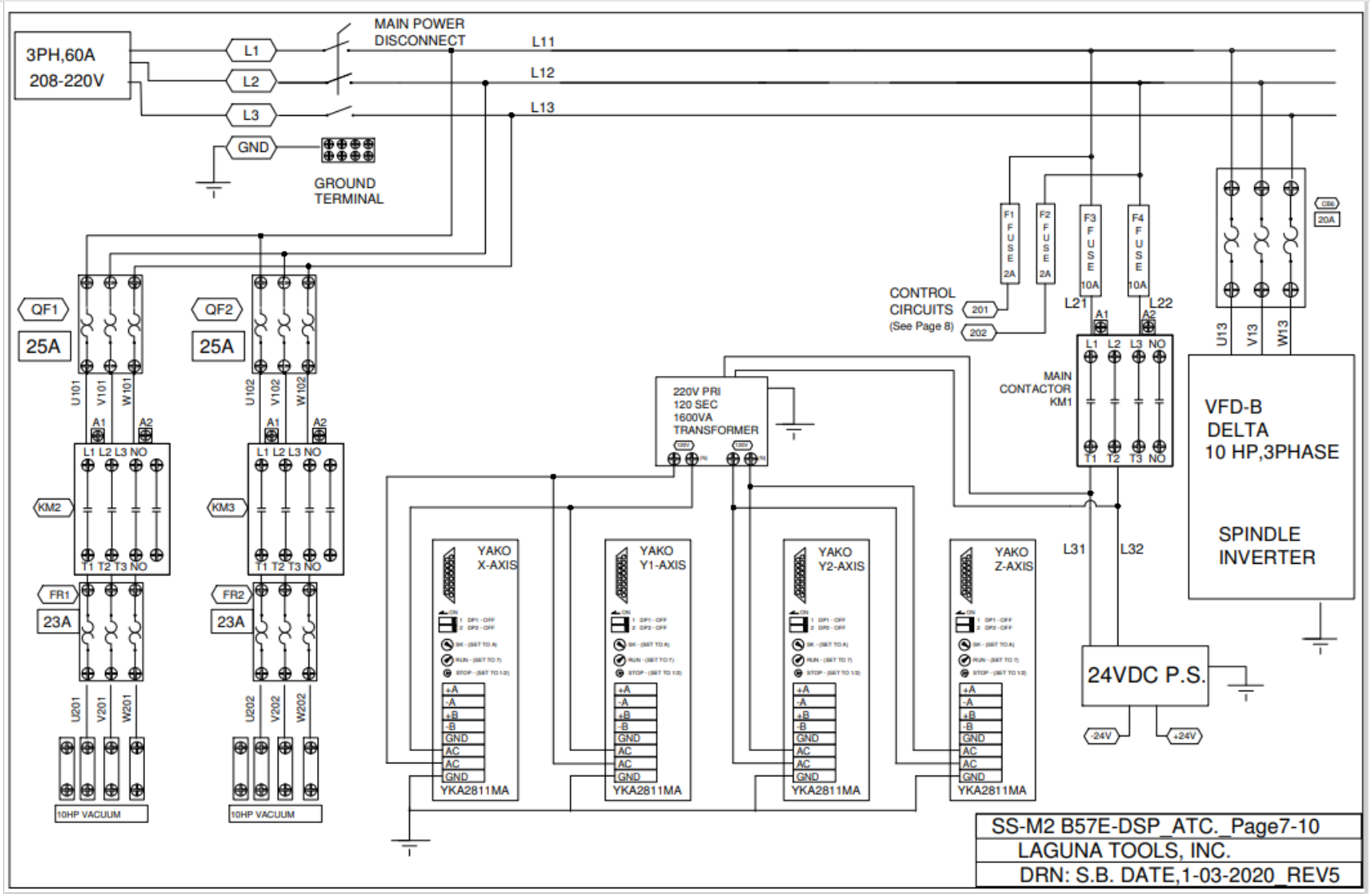
Schematics-


Y1-AXIS DRIVER
DB-15 CONNECTOR
ON
1 DP1 - OFF
2 DP2 - OFF
SK - (SET TO A)
RUN - (SET TO 7)
STOP - (SET TO 1/2)
+A
-A
+B
-B
GND
120V
AC
120V
AC
GND
GND
YKA2811MA
Y1-AXIS MOTOR
Y2-AXIS DRIVER
DB-15 CONNECTOR
ON
1 DP1 - OFF
2 DP2 - OFF
SK - (SET TO A)
RUN - (SET TO 7)
STOP - (SET TO 1/2)
Y2 A OUTPUT IS REVERSED SO Y MOTORS RUN OPPOSITE DIRECTIONS.
YKA2811MA
Y2-AXIS MOTOR
shield
DIR-
DIR+
PUL-
PUL+
SPINDLE,1 CONTROL
GND GROUND
OA1 ANALOG VOLTAGE,1
FWD1 SPINDLE FWD SIGNAL,1
N/A SYSTEM RESERVED
SPINDLE,2 CONTROL
GND GROUND
OA2 ANALOG VOLTAGE,2
FWD1 SPINDLE FWD SIGNAL,2
N/A SYSTEM RESERVED
OUTPUTS
Y08 RELEASE/ACCEPT TOOL HOLDER
Y07 RESERVED OUTPUT
Y06 DUST HOOD OUTPUT
Y05 RESERVED OUTPUT
Y04 RESERVED OUTPUT
Y03 ALARM LAMP OUTPUT
Y02 SPINDLE FWD,2
Y01 SPINDLE FWD,2
24V +24 VDC
INPUT SIGNAL
TOOL PRESENT X16
DUSTHOOD OPEN X15
RESERVED INPUT SIGNAL X14
RESERVED INPUT SIGNAL X13
TOOL IN PLACE X12
RECIEVE TOOL COMPLETED X11
MANUAL TOOL RELEASE X10
PUMP PSI SENSOR X09
-24 VDC GND
+24 VDC 24V
RESERVED INPUT SIGNAL X08
RESERVED INPUT SIGNAL X07
DRIVER ALARM X06
SPINDLE ALARM X05
TOOL SETTING X04
Z HOME SIGNAL X03
Y HOME SIGNAL X02
X HOME SIGNAL X01
-24 VDC GND
+24 VDC 24V
-24 VDC GND
+24 VDC 24V
HDMI
RJ45
SS-M2 B57E-DSP_ATC._Page5-10
LAGUNA TOOLS, INC.
DRN: S.B. DATE:1-03-2020 REV5

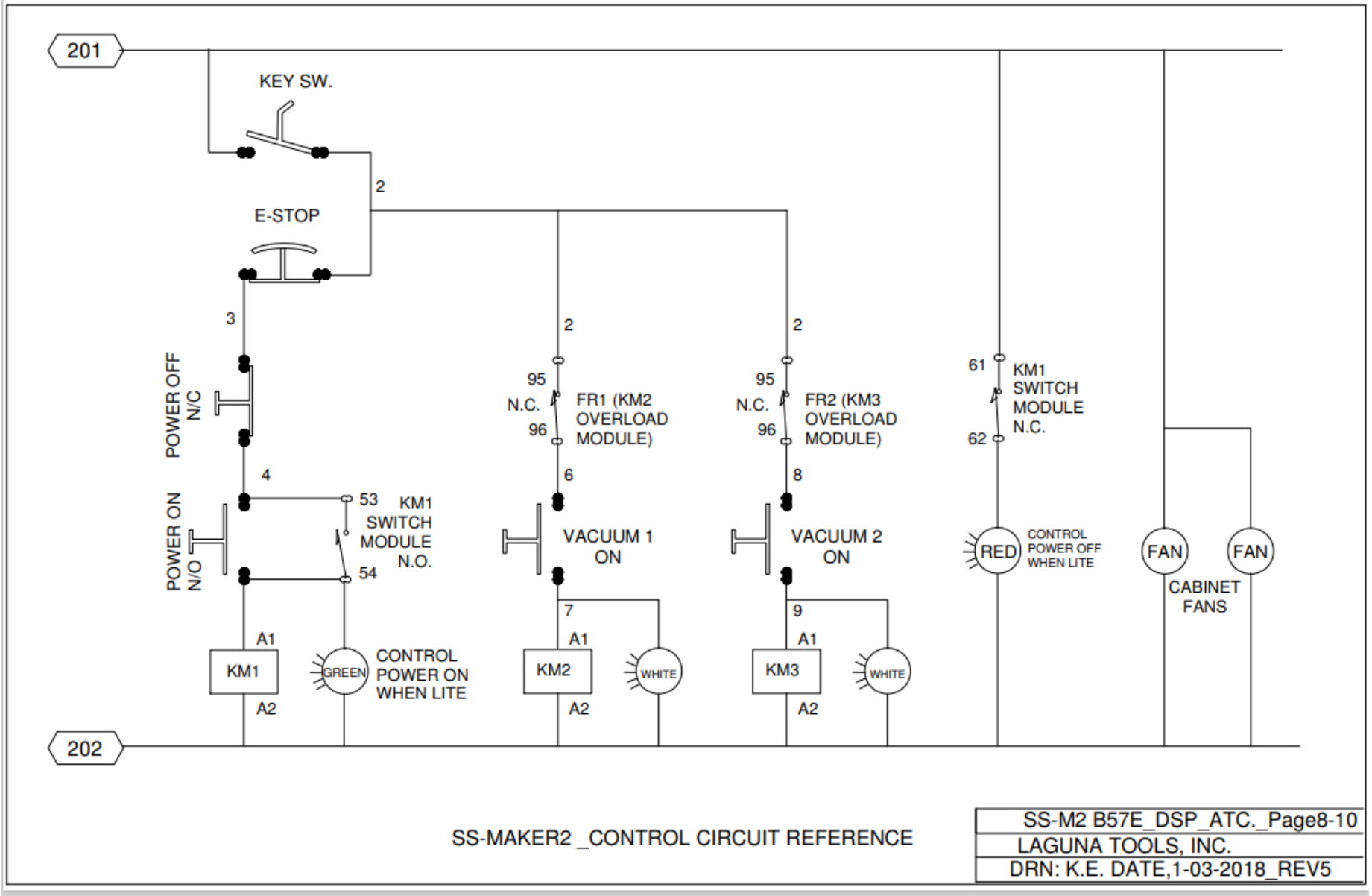
Schematics-


DIR- DIR+ PUL- PUL+
AD- AD+ AP- AP+
ZD- ZD+ ZP- ZP+
YD- YD+ YP- YP+
XD- XD+ XP- XP+
SPINDLE,1 CONTROL
GND GROUND
OA1 ANALOG VOLTAGE,1
FWD1 SPINDLE FWD SIGNAL,1
N/A SYSTEM RESERVED
SPINDLE,2 CONTROL
GND GROUND
OA2 ANALOG VOLTAGE,2
FWD1 SPINDLE FWD SIGNAL,2
N/A SYSTEM RESERVED
OUTPUTS
Y08 RELEASE/ACCEPT TOOL HOLDER
Y07 RESERVED OUTPUT
Y06 DUST HOOD OUTPUT
Y05 RESERVED OUTPUT
Y04 RESERVED OUTPUT
Y03 ALARM LAMP OUTPUT
Y02 SPINDLE FWD,2
Y01 SPINDLE FWD,2
24V +24 VDC
INPUT SIGNAL
TOOL PRESENT X16
DUSTHOOD OPEN X15
RESERVED INPUT SIGNAL X14
RESERVED INPUT SIGNAL X13
TOOL IN PLACE X12
RECIEVE TOOL COMPLETED X11
MANUAL TOOL RELEASE X10
PUMP PSI SENSOR X09
-24 VDC GND
+24 VDC 24V
RESERVED INPUT SIGNAL X08
RESERVED INPUT SIGNAL X07
DRIVER ALARM X06
SPINDLE ALARM X05
TOOL SETTING X04
Z HOME SIGNAL X03
Y HOME SIGNAL X02
X HOME SIGNAL X01
-24 VDC GND
+24 VDC 24V
-24 VDC GND
+24 VDC 24V
-24v
+24v
HDMI
RJ45
DUST HOOD REED SW.
BLK
-24v
TOOL TOUCH OFF
-24v
AXIS HOME PROX SW.
BLK
NPN
OUTPUT
BRN
+24v
BLU
-24v
X AXIS HOME PROX SW.
BLK
NPN
OUTPUT
BRN
+24v
BLU
-24v
X AXIS HOME PROX SW.
BLK
NPN
OUTPUT
BRN
+24v
BLU
-24v
+24v
-24v
SPINDLE
COOLING FAN
4TH AXIS - B581 HHC
X08
X07
X06
TOOL SETTING X05
C HOME SIGNAL X04
Z HOME SIGNAL X03
Y HOME SIGNAL X02
X HOME SIGNAL X01
-24 VDC GND
+24 VDC 24V
-24 VDC GND
+24 VDC 24V
-24v
+24v
TOOL SETTING
Z HOME SIGNAL
Y HOME SIGNAL
X HOME SIGNAL
TOOL TOUCH OFF
-24v
AXIS HOME PROX SW.
NOTE: WIRE CHANGES FOR 4TH AXIS B581 HHC
1. MOVE TTO WIRE TO X05
2. JUMPER X03 AND X04
3. VERIFY - X04 INPUT VOLTAGE SETUP - GREEN
4. VERIFY - X05 INPUT VOLTAGE SETUP - RED
SS-M2 B57E-DSP_ATC._Page6-10
LAGUNA TOOLS, INC.
DRN: S.B. DATE,1-03-2020_REV5

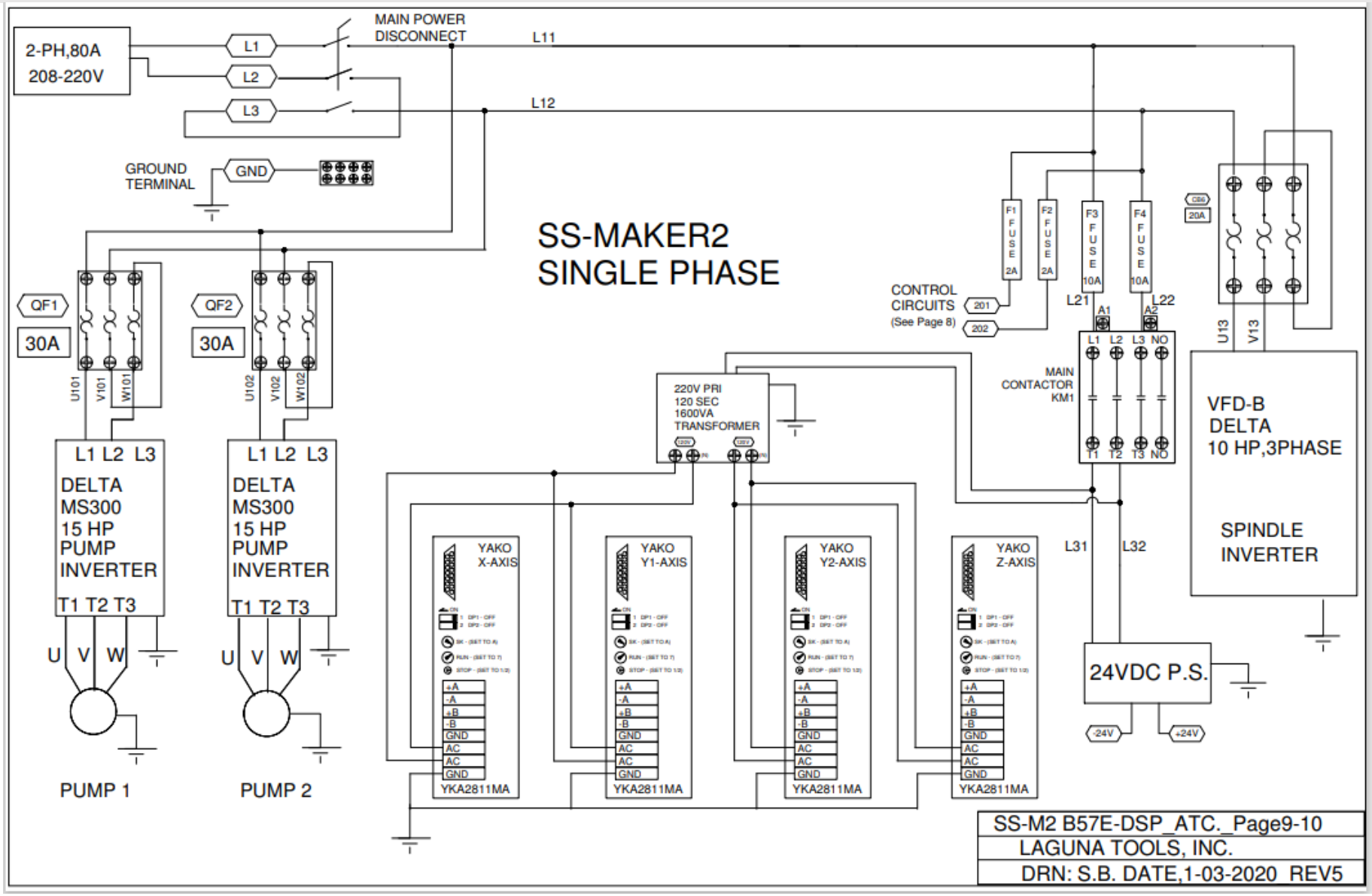
Schematics-


3PH,60A
208-220V
L1
L2
L3
GND
MAIN POWER
DISCONNECT
L11
L12
L13
GROUND
TERMINAL
QF1
25A
QF2
25A
U101
V101
W101
U102
V102
W102
A1
A2
L1 L2 L3 NO
T1 T2 T3 NO
KM2
KM3
FR1
23A
FR2
23A
U201
V201
W201
U202
V202
W202
10HP VACUUM
10HP VACUUM
220V PRI
120 SEC
1600VA
TRANSFORMER
YAKO
X-AXIS
YAKO
Y1-AXIS
YAKO
Y2-AXIS
YAKO
Z-AXIS
+A
-A
+B
-B
GND
AC
AC
GND
YKA2811MA
CONTROL
CIRCUITS
(See Page 8)
201
202
F1 FUSE 2A
F2 FUSE 2A
F3 FUSE 10A
F4 FUSE 10A
L21
L22
MAIN
CONTACTOR
KM1
L31
L32
U13
V13
W13
20A
VFD-B
DELTA
10 HP,3PHASE
SPINDLE
INVERTER
24VDC P.S.
-24V
+24V
SS-M2 B57E-DSP_ATC._Page7-10
LAGUNA TOOLS, INC.
DRN: S.B. DATE,1-03-2020_REV5

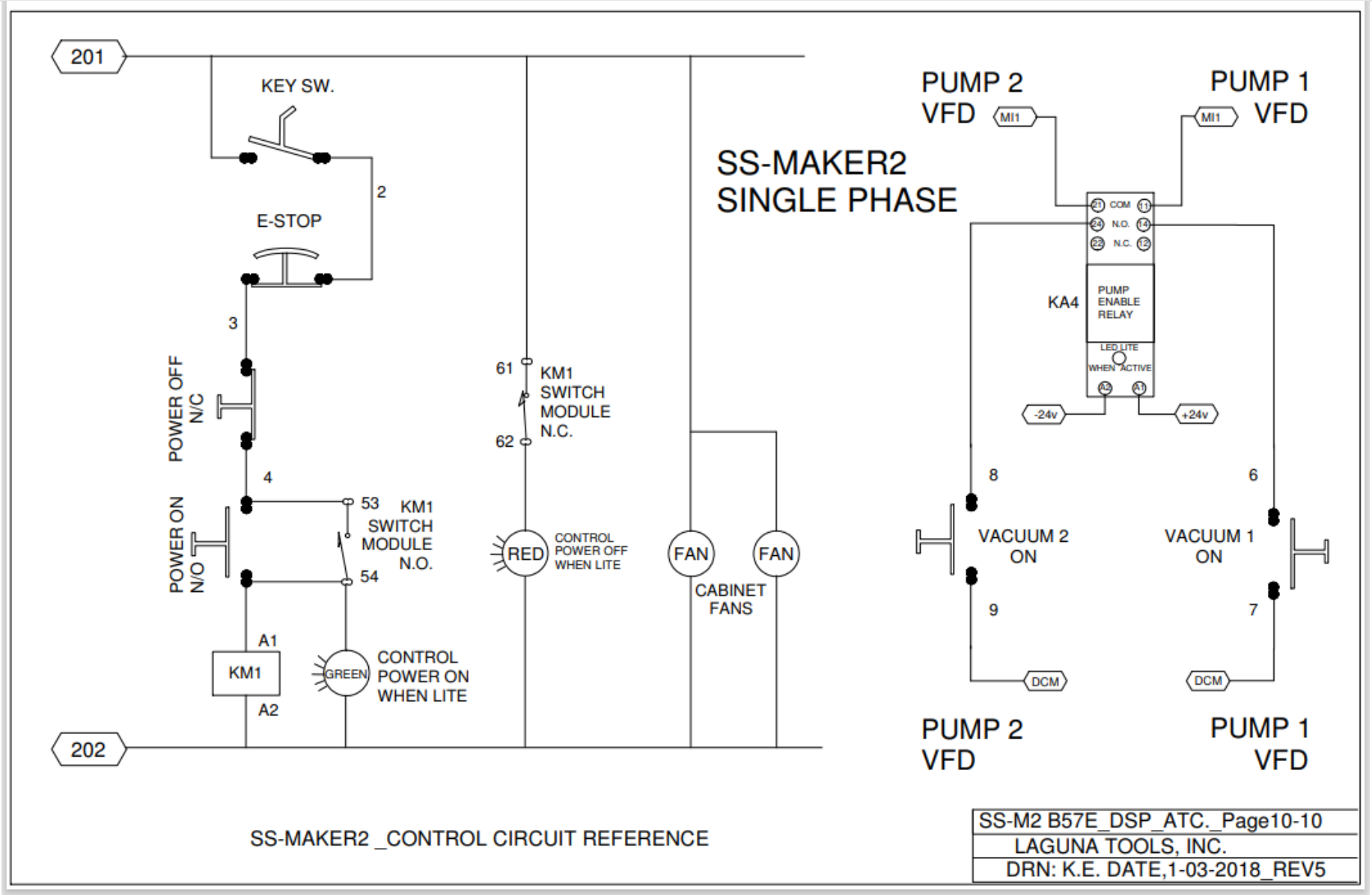
Schematics-


201
KEY SW.
2
E-STOP
3
POWER OFF
N/C
4
POWER ON
N/O
53
KM1
SWITCH
MODULE
N.O.
54
A1
KM1
A2
GREEN
CONTROL
POWER ON
WHEN LITE
2
95
N.C.
96
FR1 (KM2
OVERLOAD
MODULE)
6
VACUUM 1
ON
7
A1
KM2
A2
WHITE
2
95
N.C.
96
FR2 (KM3
OVERLOAD
MODULE)
8
VACUUM 2
ON
9
A1
KM3
A2
WHITE
61
KM1
SWITCH
MODULE
N.C.
62
RED
CONTROL
POWER OFF
WHEN LITE
FAN
FAN
CABINET
FANS
202
SS-MAKER2 _CONTROL CIRCUIT REFERENCE
SS-M2 B57E_DSP_ATC._Page8-10
LAGUNA TOOLS, INC.
DRN: K.E. DATE,1-03-2018_REV5

Schematics-

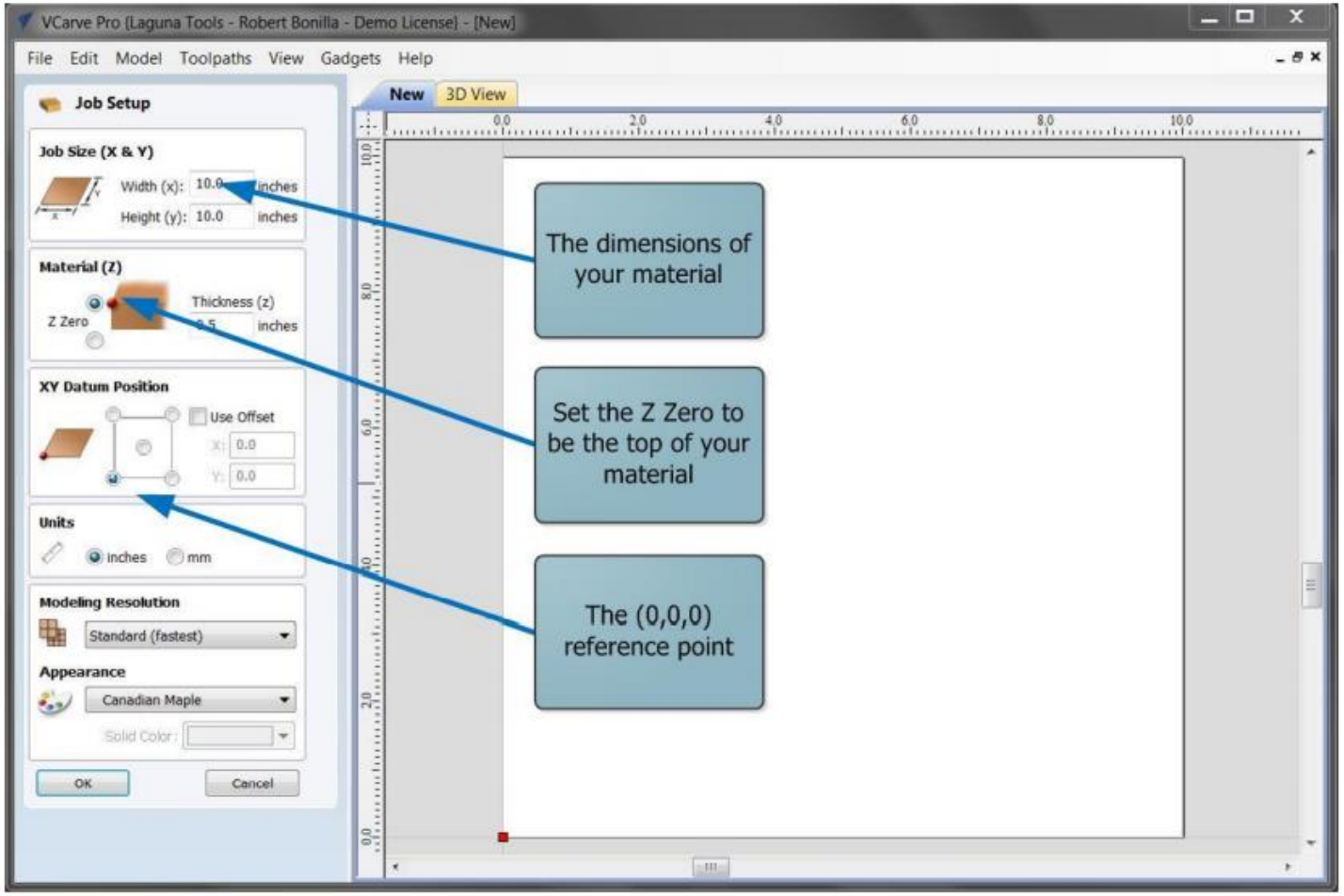

2-PH,80A
208-220V
L1
L2
L3
MAIN POWER
DISCONNECT
L11
L12
GROUND
TERMINAL
GND
SS-MAKER2
SINGLE PHASE
QF1
30A
QF2
30A
U101
V101
W101
U102
V102
W102
L1 L2 L3
DELTA
MS300
15 HP
PUMP
INVERTER
T1 T2 T3
U V W
PUMP 1
PUMP 2
220V PRI
120 SEC
1600VA
TRANSFORMER
CONTROL
CIRCUITS
(See Page 8)
201
202
F1 FUSE 2A
F2 FUSE 2A
F3 FUSE 10A
F4 FUSE 10A
L21
L22
A1
A2
MAIN
CONTACTOR
KM1
L1 L2 L3 NO
T1 T2 T3 NO
CB6
20A
U13
V13
VFD-B
DELTA
10 HP,3PHASE
SPINDLE
INVERTER
L31
L32
24VDC P.S.
-24V
+24V
YAKO
X-AXIS
YAKO
Y1-AXIS
YAKO
Y2-AXIS
YAKO
Z-AXIS
+A
-A
+B
-B
GND
AC
AC
GND
YKA2811MA
SS-M2 B57E-DSP_ATC._Page9-10
LAGUNA TOOLS, INC.
DRN: S.B. DATE,1-03-2020 REV5

Schematics-


201
KEY SW.
2
E-STOP
3
POWER OFF
N/C
4
POWER ON
N/O
53
KM1
SWITCH
MODULE
N.O.
54
A1
KM1
A2
GREEN
CONTROL
POWER ON
WHEN LITE
61
KM1
SWITCH
MODULE
N.C.
62
RED
CONTROL
POWER OFF
WHEN LITE
FAN
FAN
CABINET
FANS
202
SS-MAKER2
SINGLE PHASE
PUMP 2
VFD
PUMP 1
VFD
MI1
MI1
COM
N.O.
N.C.
KA4
PUMP
ENABLE
RELAY
LED LITE
WHEN ACTIVE
-24v
+24v
8
6
VACUUM 2
ON
VACUUM 1
ON
9
7
DCM
DCM
PUMP 2
VFD
PUMP 1
VFD
SS-M2 B57E_DSP_ATC._Page10-10
LAGUNA TOOLS, INC.
DRN: K.E. DATE,1-03-2018_REV5
SS-MAKER2 _CONTROL CIRCUIT REFERENCE

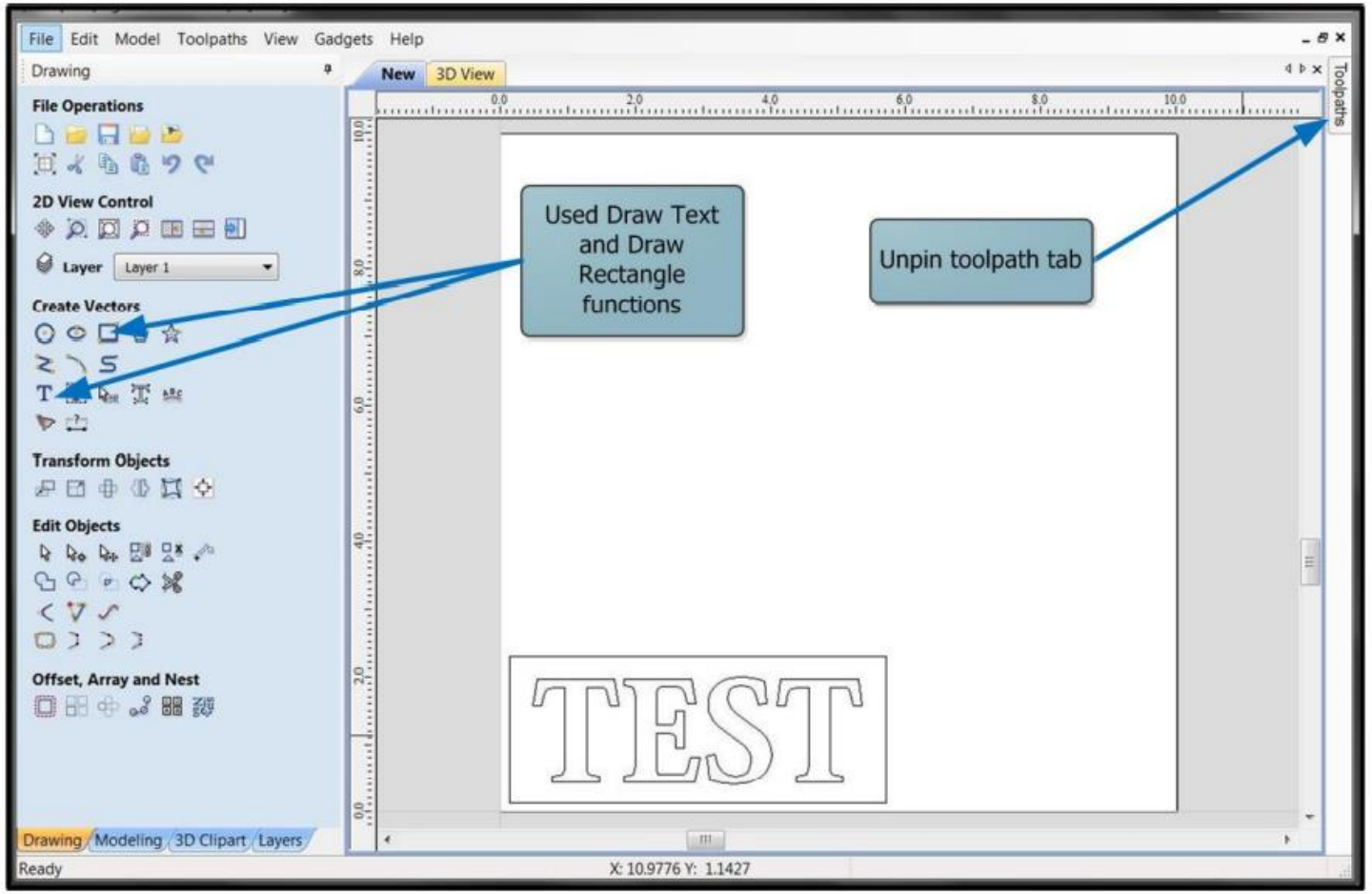
CREATING A G-CODE FILE: Using V-Carve Programming

- **Create a new project**



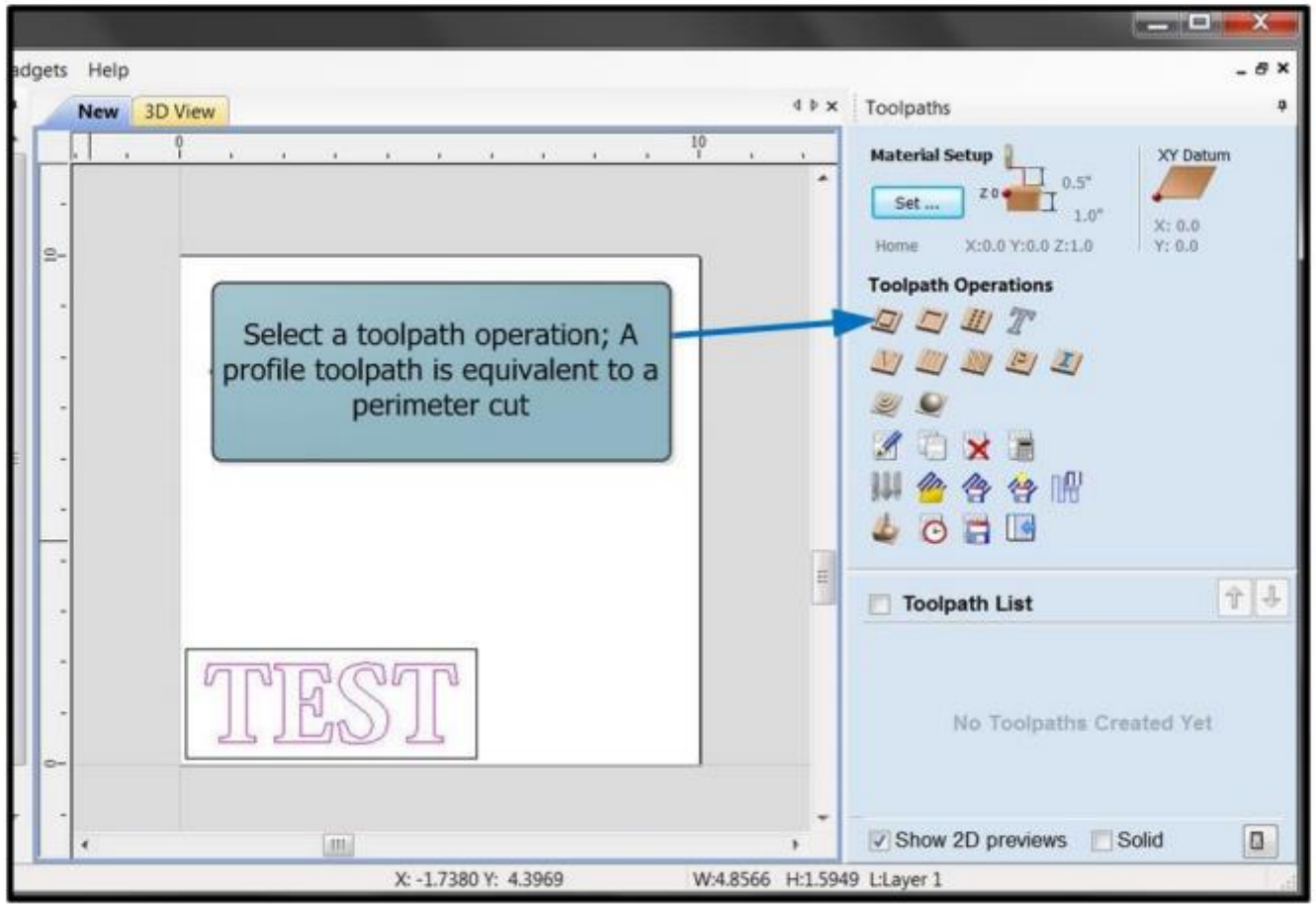
CREATING A G-CODE FILE: Using V-Carve Programming (Cont'd.)

- **Sketch your part**



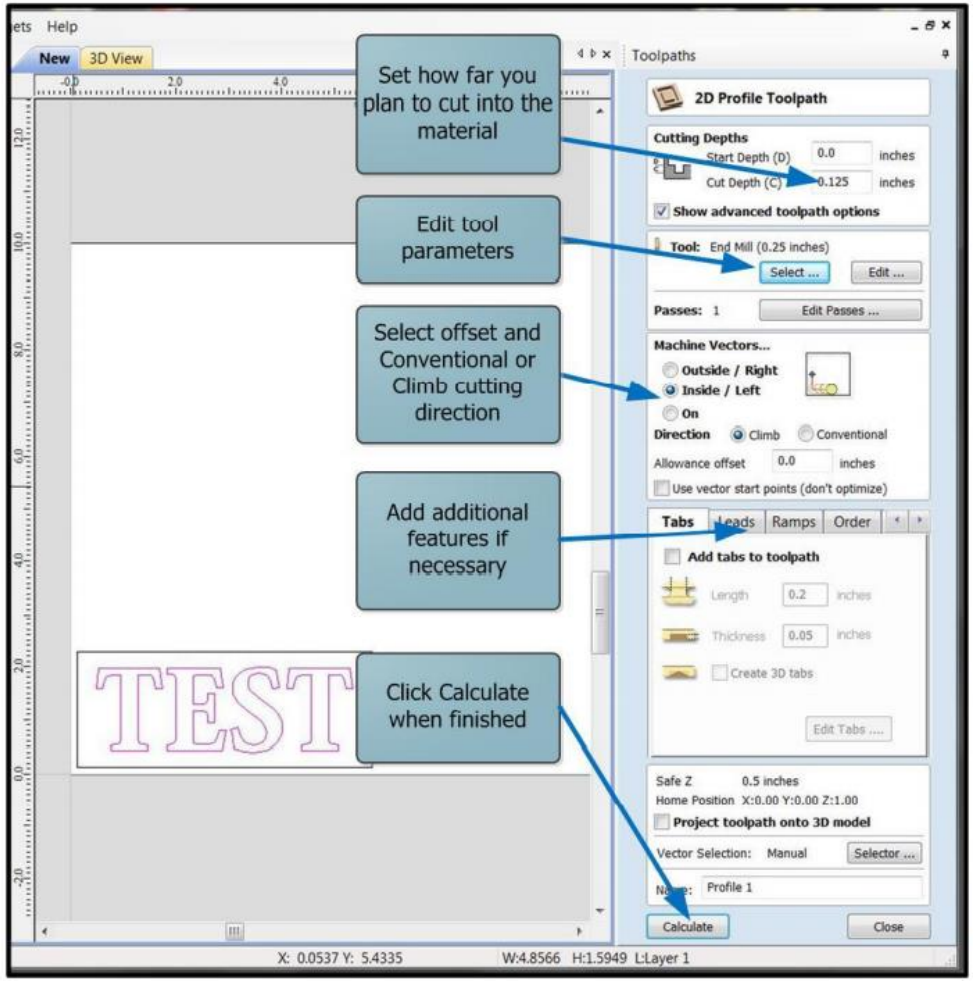
CREATING A G-CODE FILE: Using V-Carve Programming (Cont'd.)

- **Open Toolpath tab and select a toolpath function**



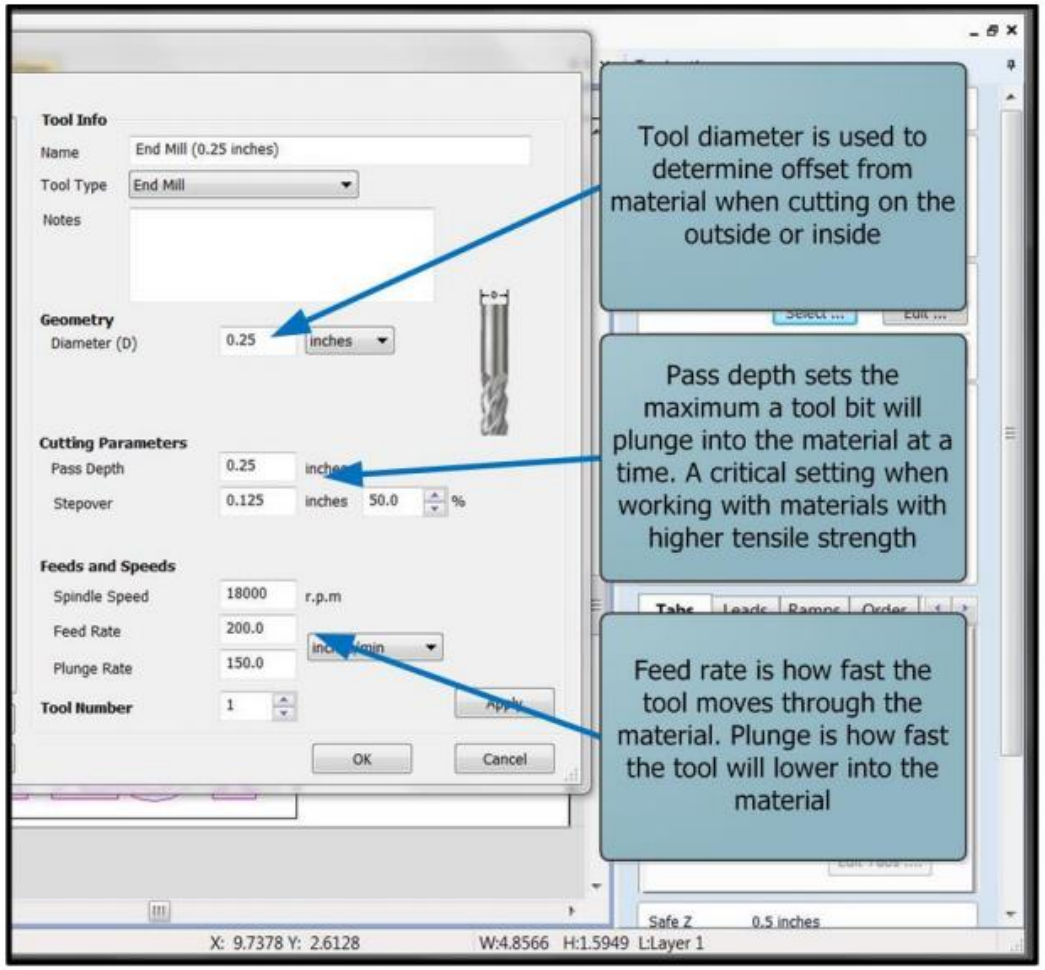
CREATING A G-CODE FILE: Using V-Carve Programming (Cont'd.)

- **Edit toolpath parameters**



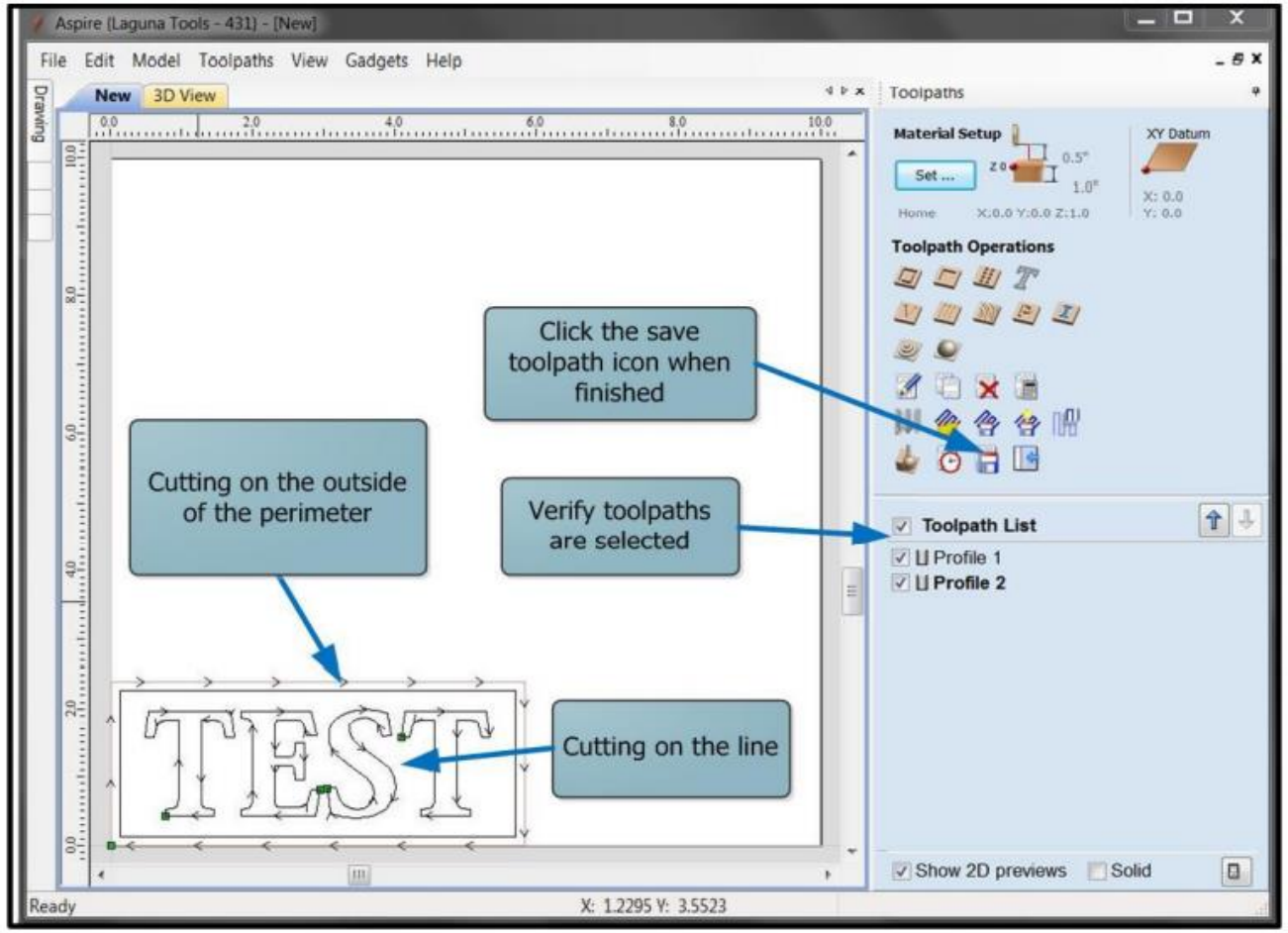
CREATING A G-CODE FILE: Using V-Carve Programming (Cont'd.)

- **Edit tool parameters**



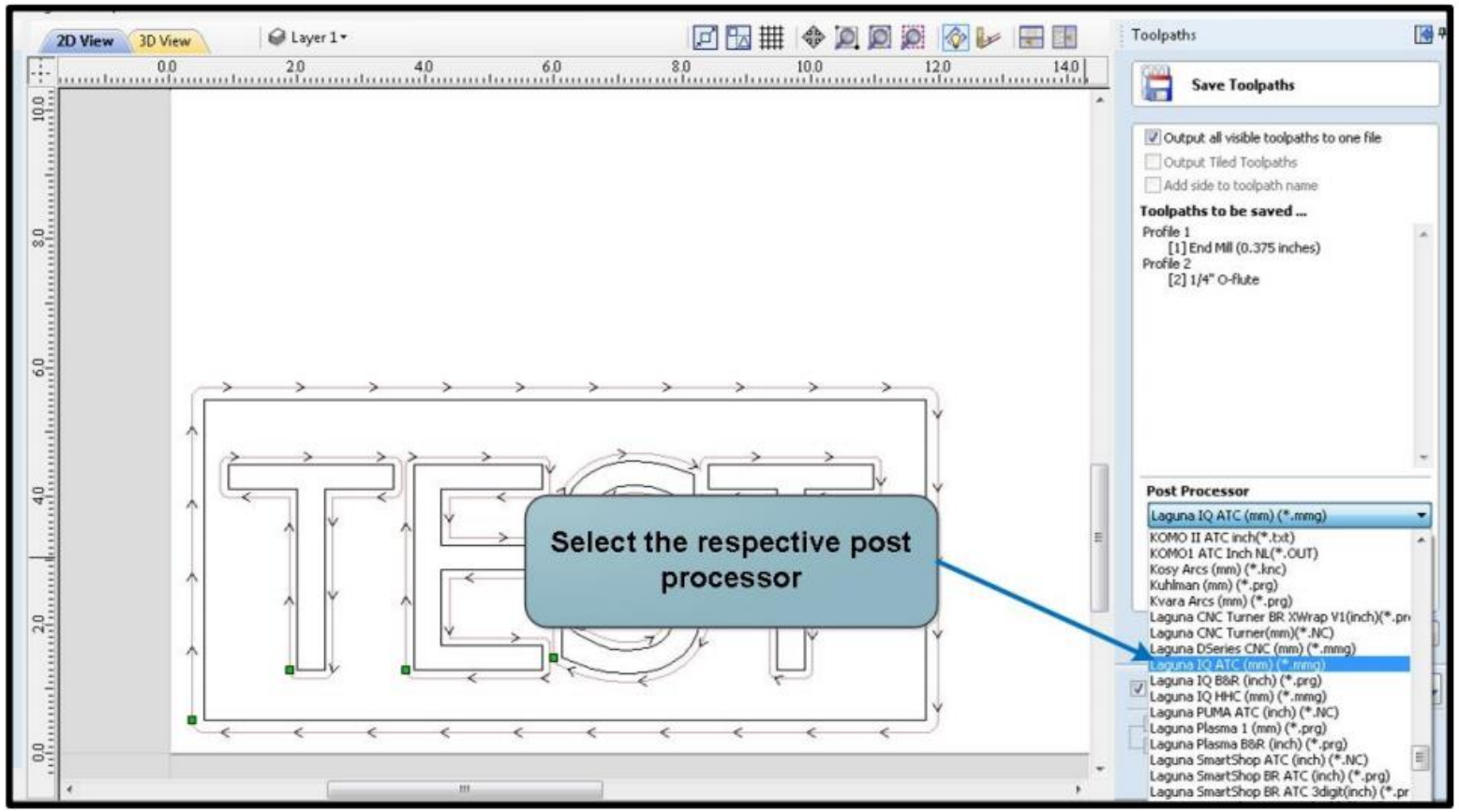
CREATING A G-CODE FILE: Using V-Carve Programming (Cont'd.)

- **Visually verify that your toolpath is correct**



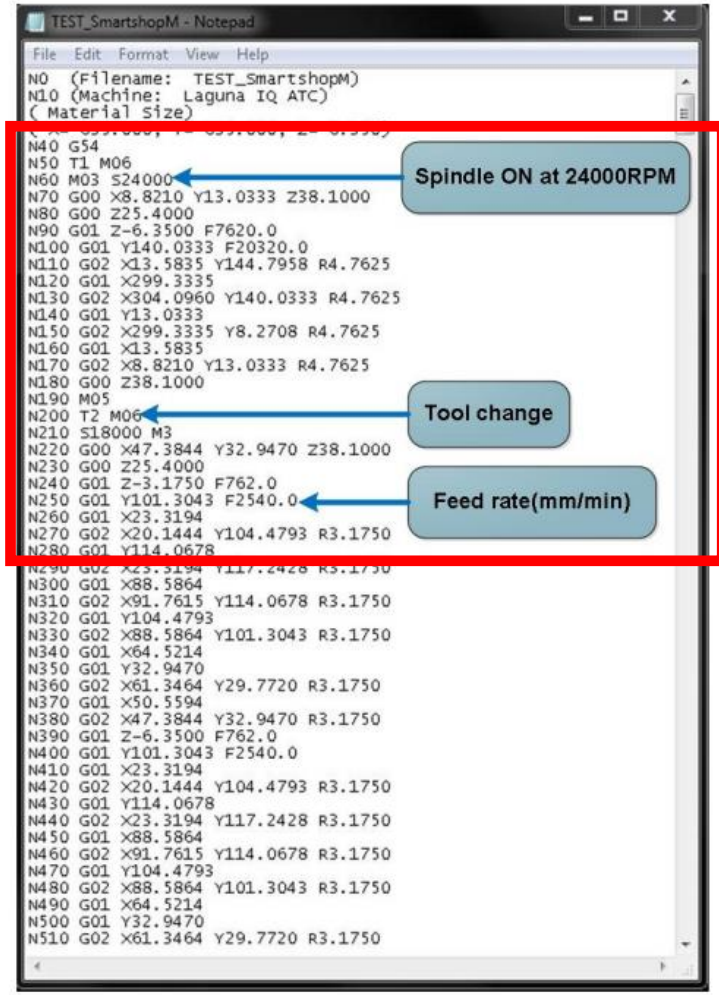
CREATING A G-CODE FILE: Using V-Carve Programming (Cont'd.)

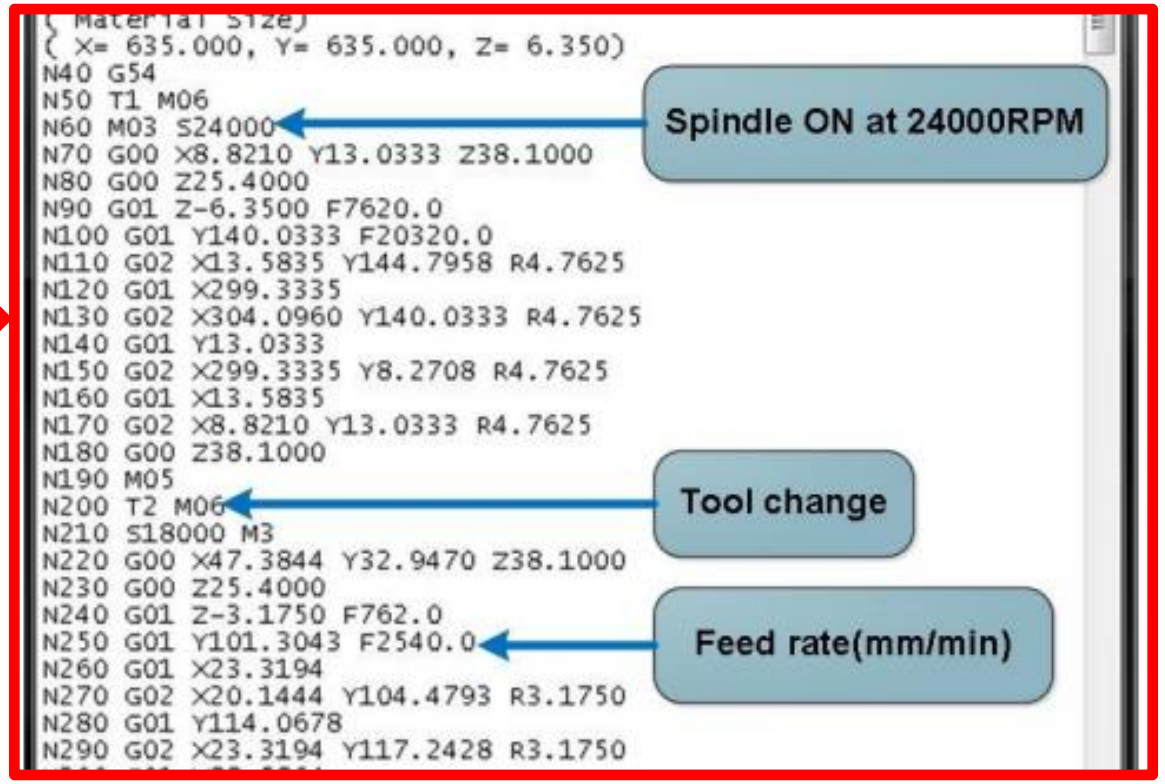
- **Save Toolpath**
  - As shown below, the Smartshop M is compatible with the **Laguna IQ ATC(mm) post processor**.



CREATING A G-CODE FILE: Using V-Carve Programming (Cont'd.)

- **Inspect the g-code file**





- **It is always a good practice to first run a program in the air without any material, until a work flow is established.**

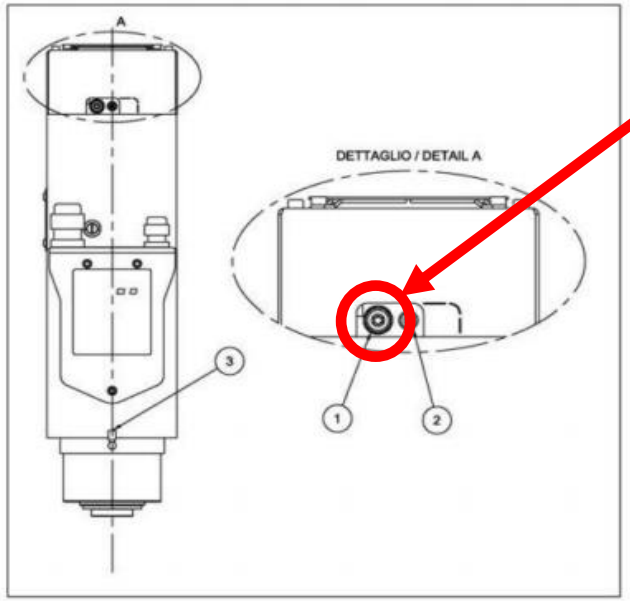
APPENDIX-

HITECO SPINDLE PNEUMATIC SPECIFICATIONS:

Model: QD-1F 4/12 24 I30 NC CB BT

4.4.2 Pneumatic connection points to the electrospindle

The pneumatic connections are indicated in figure.



85 psi Minimum.

Ref.	Name	Function	Pressure	Ø Tube
1	**RELEASE TOOL**	Tool release	6 ÷ 6.5 bar	Ø6x4
2	**LOCK TOOL**	Tool lock	6 ÷ 6.5 bar	Ø4x2.5
3	**PRESSURIZATION**	Pressurization dried air	0.5 bar	Ø6x4

Pressure values lower than the indicated ones in the previous table may cause wrong operations like the tool non-loosening from the electrospindle.

Delivery Protocol-

- Most large machinery will be delivering on a tractor trailer 48'-53' long. Please notify Sales Representative with any Delivery Restrictions.

- Customer is required to have a forklift (6000lb. or larger is recommended) with 72" forks or fork extensions and operator.

- Note any visible damage, torn packaging, scuffs or any abnormal marks on the delivery receipt or Bill of Lading (BOL).

Date: 12/02/2020 **BILL OF LADING**

SHIP FROM
Name:
Address:
City/State/Zip:
FOB: ☐

Bill of Lading Number : 145787446
Carrier Name: Estes Express
SCAC: EXLA
Pro number:

SHIP TO
Name: Laguna Tools TX Location#
Address: 744 Refuge Way
Suite 200
City/State/Zip: GRAND PRAIRIE,TX 75050
Ph: 9494741200 Contact: Vince (ZM) RMACR11096 FOB: ☐

Freight Charge Terms: (*freight charges are prepaid by Worldwide Express unless indicated otherwise*)

FREIGHT CHARGES BILL TO
Name: Worldwide Express
Address: 2828 Routh Street Suite 400
City/State/Zip: Dallas, TX 75201

☐ Master Bill of Lading: with attached underlying Bill Of Lading

WWE Number: W709699351

SPECIAL INSTRUCTIONS: For assistance, please call 833-8WE-SHIP
Handling Instructions: RMACR11096
Pickup Instructions:
Delivery Instructions: RMACR11096
Pickup Service(s): Liftgate Pickup, Residential Pickup

REFERENCE NUMBER INFORMATION

REFERENCE	# PKGS	REFERENCE	# PKGS	Total # of Pkgs

CARRIER INFORMATION

HANDLING UNITS QTY	HANDLING UNITS TYPE	PIECES QTY	PIECES TYPE	WEIGHT	H.M. X	COMMODITY DESCRIPTION (Commodities requiring special or additional care or attention in handling or stowing must be so marked and packaged to ensure safe transportation with ordinary care. See section 2(e) of NMFC Item 360)	LTL ONLY NMFC#	LTL ONLY CLASS
1	PLT			385		machine, 48(L) x 48(W) x (H) DO NOT STACK		77.5
1				385		**Grand Total**		

Where the rate is dependent on value , shippers are required to state specifically in writing the agreed or declared value of property as follows: The agreed or declared value of the property is specifically stated by the shipper to be not exceeding per

COD Amount: $
Fee Terms: 3rd Party WWE
Remit Address:

Acceptable Forms of Payment:
Bank Certified Check ☐
Customer Check ☐
Personal Check ☐
Money Order ☐

Note: Liability limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. B14706(c)(1)(A) and (B)

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carried and Worldwide Express Operations, LLC. a registered motor carried broker, pursuant to 49 USC 14101(b) and all applicable state and federal regulations.

CARRIER SIGNATURE /PICKUP DATE
Carrier acknowledges receipt of packages and required placards. Carrier certifies emergency response information was made available and /or carrier has DOT emergency response guidebook or equivalent documentation in vehicle. Property described above is received in good order, except as noted.

(Signature) (Date)

SHIPPER'S SIGNATURE / DATE
This is to certify that the above-named materials are properly classified, described, packaged marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

(Signature) (Date)

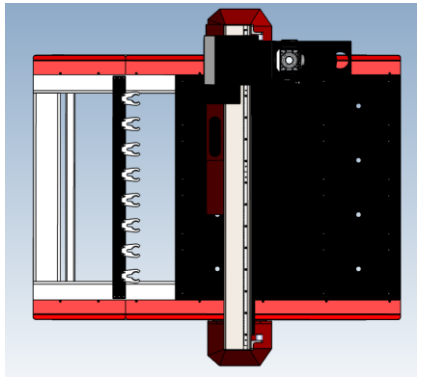
Trailer Loaded:
☐ By Shipper
☐ By Driver

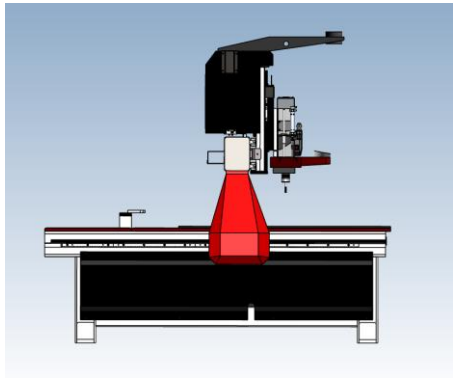
Freight Counted:
☐ By Shipper
☐ By Driver/pallet said to contain
☐ By Driver/Pieces

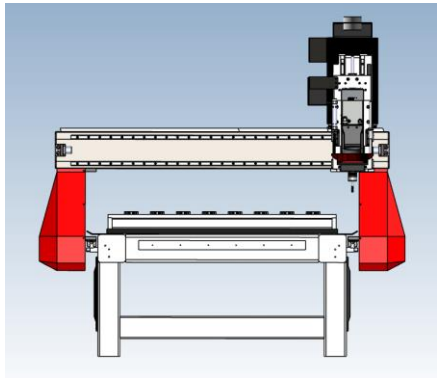
Bill of Lading Number : 145787446

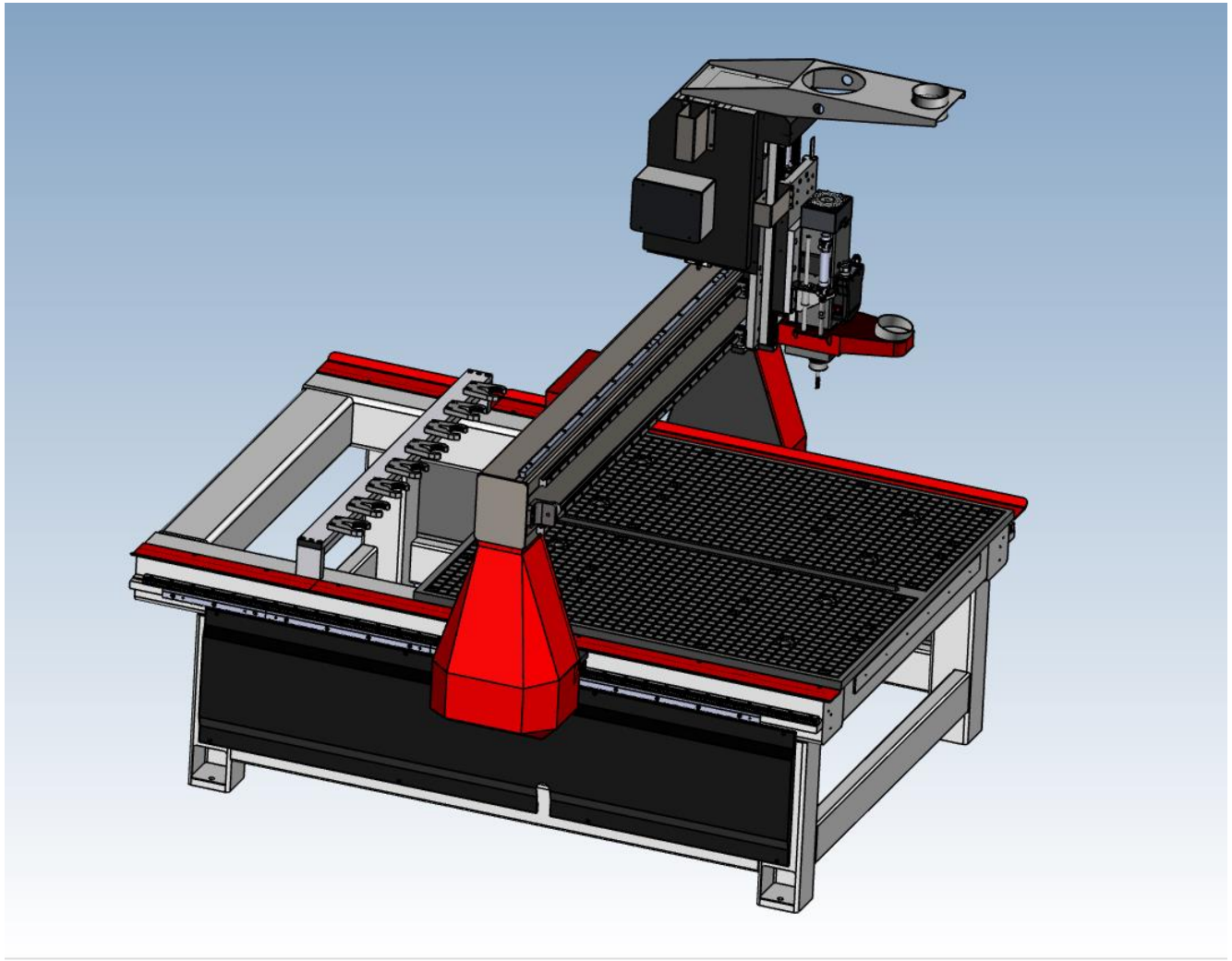
SPECIAL INSTRUCTIONS: For assistance, please call 833-8WE-SHIP
Handling Instructions: RMACR11096
Pickup Instructions:
Delivery Instructions: RMACR11096
Pickup Service(s): Liftgate Pickup, Residential Pickup

Exploded & Normal View of the Smartshop M2









Parts & Service

Laguna Tools Warranty-

Dealer Machinery Warranty

New woodworking machines sold by Laguna Tools carry a two-year warranty effective from the date of dealer invoice to customer/end-user. Machines sold through dealers must be registered with Laguna Tools within 30 days of purchase to be covered by this warranty. Laguna Tools guarantees all new machine sold to be free of manufacturers' defective workmanship, parts and materials. We will repair or replace, without charge, any parts determined by Laguna Tools, Inc. to be a manufacturer's defect. We require that the defective item/part be returned to Laguna Tools with the complaint. The end-user must request an RMA (return material authorization) number from Customer Service and include the (RMA) number with any and all returned parts/components requesting warranty coverage.* Any machines returned to Laguna Tools must be returned with packaging in the same manner in which it was received. If a part or blade is being returned it must have adequate packaging to ensure no damage is received during shipping. In the event the item/part is determined to be damaged due to lack of maintenance, cleaning or misuse/abuse, the customer will be responsible for the cost to replace the item/part, plus all related shipping charges. This limited warranty does not apply to natural disasters, acts of terrorism, normal wear and tear, product failure due to lack of maintenance or cleaning, damage caused by accident, neglect, lack of or inadequate dust collection, misuse/abuse or damage caused where repair or alterations have been made or attempted by others.

NOTE: Issuing an RMA number is for referencing materials and issues, it does NOT indicate warranty acceptance/conformity.

Laguna Tools Warranty-

CNC Limited Warranty

New CNC machines sold by Laguna Tools carry a one-year warranty effective from the date of shipping. Laguna Tools guarantees all new machine sold to be free of manufacturers' defective workmanship, parts, and materials. We will repair or replace without charge, any parts determined by Laguna Tools, Inc. to be a manufacturer's defect. We require that the defective item/part is determined to be damaged due to lack of maintenance, cleaning or misuse/abuse, the customer will be responsible for the cost to replace the item/part, plus all related shipping charges. This limited warranty does not apply to natural disasters, acts of terrorism, normal wear and tear, product failure due to lack of maintenance or cleaning, damage caused by accident, neglect, lack of or inadequate dust collection, misuse/abuse or damage caused where repair or alterations have been made or attempted by others.

Laguna Tools, Inc. is not responsible for additional tools or modifications sold or performed (other than from/by Laguna Tools, Inc.) on any Laguna Tools, Inc. woodworking machine. Warranty maybe voided upon the addition of such described tools and/or modifications, determined on a case-by-case basis. Software purchased through Laguna Tools, Inc., is not covered under this warranty and all technical support must be managed through the software provider. Normal user alignment, adjustment, tuning and machine settings are not covered by this warranty. It is the responsibility of the user to understand basic woodworking machinery settings and procedures and to properly maintain the equipment in accordance with the standards provided by the manufacturer.

Parts under warranty are shipped at Laguna Tools, Inc.'s cost either by common carrier, FEDEX ground service or a similar method. Technical support to install replacement parts is primarily provided by phone, fax, e-mail or Laguna Tools Customer Support Website. The labor required to install replacement parts is the responsibility of the user. Laguna Tools is not responsible for damage or loss caused by a freight company or other circumstances not in our control. All claims for loss or damaged goods must be notified to Laguna Tools within twenty-four hours of delivery.

****Please contact our Customer Service Department for more information. Only NEW machines sold to the original owner are covered by this warranty. For warranty repair information, call 1-800-332-4094. Copyright 2013 Laguna Tools, Inc. **Warning – no portion of these materials may be reproduced without written approval from Laguna Tools, Inc.**

Laguna Tools Warranty-

WARRANTY & REGISTRATION

THANK YOU!

Welcome to the Laguna Tools® group of discriminating woodworkers. We understand that you have a choice of where to purchase your machines and appreciate the confidence you have in the Laguna Tools® brand.

Through hands-on experience, Laguna Tools® is constantly working hard to make innovative, precision products. Products that inspire you to create works of art, are a joy to operate, and encourage your best work.

Laguna Tools®
Imagination, Innovation, and Invention at Work

WARRANTY & REGISTRATION

Every product sold is warranted to be free of manufacturers' defective workmanship, parts, and materials. For any questions about this product, the intended use or what it was designed for, customer service, or replacement parts, please contact our customer service department:

Laguna Tools® Customer Service
2072 Alton Parkway, Irvine, California 92606, USA
1-800-332-4049
customerservice@lagunatools.com
www.lagunatools.com/why/customer-service/
8AM. to 5PM PST, Monday through Friday

For warranty claims or to report damage upon receiving – please reach out to our warranty department:

Laguna Tools® Warranty Service
2072 Alton Parkway, Irvine, California 92606, USA
1-949-474-1200
customerservice@lagunatools.com
www.lagunatools.com/rpolicies/warranty
8AM to 5PM PST, Monday through Friday

REGISTRATION

To prevent voiding this warranty, all products sold must be registered within thirty (30) days of receiving the product. Registering the product will enable the original purchaser to receive notifications about important product changes, receive customer service, and be able to file a warranty claim against defective workmanship, parts, or materials.

REGISTER HERE!

https://lagunatools.com/policies/warranty/

WHO IS COVERED

The applicable warranty covers only the initial purchaser of the product from the date of receiving the product. To file such claims, the original purchaser must present the original receipt as proof of purchase.

WHAT IS COVERED

The warranty covers any defects in the workmanship of all parts and materials that make up the machine unless otherwise specified. Any part, determined by Laguna Tools®, to have a defect will be repaired or replaced (and shipped), without charge. The defective item/part must be returned to Laguna Tools® with the complaint and proof of purchase in the original packaging that it was received in. In the event the item/part is determined to be not covered by this warranty, the customer will be responsible for the cost to replace the item/part and all related shipping charges.

WARRANTY LIMITATIONS

This limited warranty does not apply to natural disasters, acts of terrorism, normal wear and tear, product failure due to lack of maintenance or cleaning, damage caused by accident, neglect, or lack-of inadequate dust collection. The warranty may be voided against proof of misuse/abuse, damage caused where repair or alterations have been made or attempted by others, using the product for purposes other than those described as intended use (unless with consent by Laguna Tools®), modification to the product, or use with an accessory that was not designed for the product. It is the responsibility of the user to understand basic woodworking machinery settings and procedures and to properly maintain the equipment in accordance with the standards provided in this manual.

LENGTH OF WARRANTY

All new machines and optional accessories sold through an authorized dealer carry a two-year warranty effective the date of receiving the product. Machines sold for either commercial or industrial use have a one-year warranty. Wearable parts like throat plates, bandsaw guides, etc., have a ninety-day warranty.

Table A-1 Warranty Lengths

2 Year – New Machines Sold Through an Authorized Dealer
2 Year – Accessories Sold as Machine Options (excluding blades)
1 Year – Machines Sold for Commercial or Industrial Use
1 Year – Blades and Accessories outside of Machine Options
90 Days – Wearable Parts

Aside from being free of defects upon receiving, consumable parts, like cutters and abrasives, are not covered by this warranty unless otherwise stated by Laguna Tools®. These parts are designed to be used at the expense of the operator and are available for replacement or inventory purchase. The determination of a consumable part will be made on a case-by-case basis by Laguna Tools®.

SHIPPING DAMAGE

Laguna Tools® is not responsible for damage or loss caused by a freight company or other circumstances not in the direct control of Laguna Tools®. All shipping-related claims for loss or damage goods must be made to Laguna Tools within twenty-four hours of delivery.

HOW TO RECEIVE SUPPORT

To file a warranty-claim please contact the warranty department at 1-949-474-1200. To receive customer service or technical support please contact the customer service department at 1-800-332-4094. Parts, under warranty, are shipped at the expense of Laguna Tools® either by common carrier, FedEx ground services or similar method. Technical support to install replacement parts is primarily provided by phone, fax, email, or the Laguna Tools Customer Support Website.

LAGUNA

Laguna Tools Warranty-

No Modifications Allowed or Sold.

Laguna Tools, Inc. is not responsible for additional tools or modifications sold or performed (other than from/by Laguna Tools, Inc.) on any Laguna Tools, Inc. woodworking machine. Warranty maybe voided upon the addition of such described tools and/or modifications, determined on a case-by-case basis. Normal user alignment, adjustment, tuning and machine settings are not covered by this warranty. It is the responsibility of the user to understand basic woodworking machinery settings and procedures and to properly maintain the equipment in accordance with the standards provided by the manufacturer. Parts, under warranty, are shipped at Laguna Tools, Inc.'s cost either by common carrier, FEDEX ground service or a similar method. Technical support to install replacement parts is primarily provided by phone, fax, e-mail or Laguna Tools Customer Support Website. The labor required to install replacement parts is the responsibility of the user. Laguna Tools is not responsible for damage or loss caused by a freight company or other circumstances not in our control. All claims for loss or damaged goods must be notified to Laguna Tools within twenty-four hours of delivery. Please contact our Customer Service Department for more information. Only new machines sold to the original owner are covered by this warranty. **For warranty repair information, call 1-800-332-4094.**

Laguna Tools Packaging/RMA Procedures-

Dealer Machinery Warranty

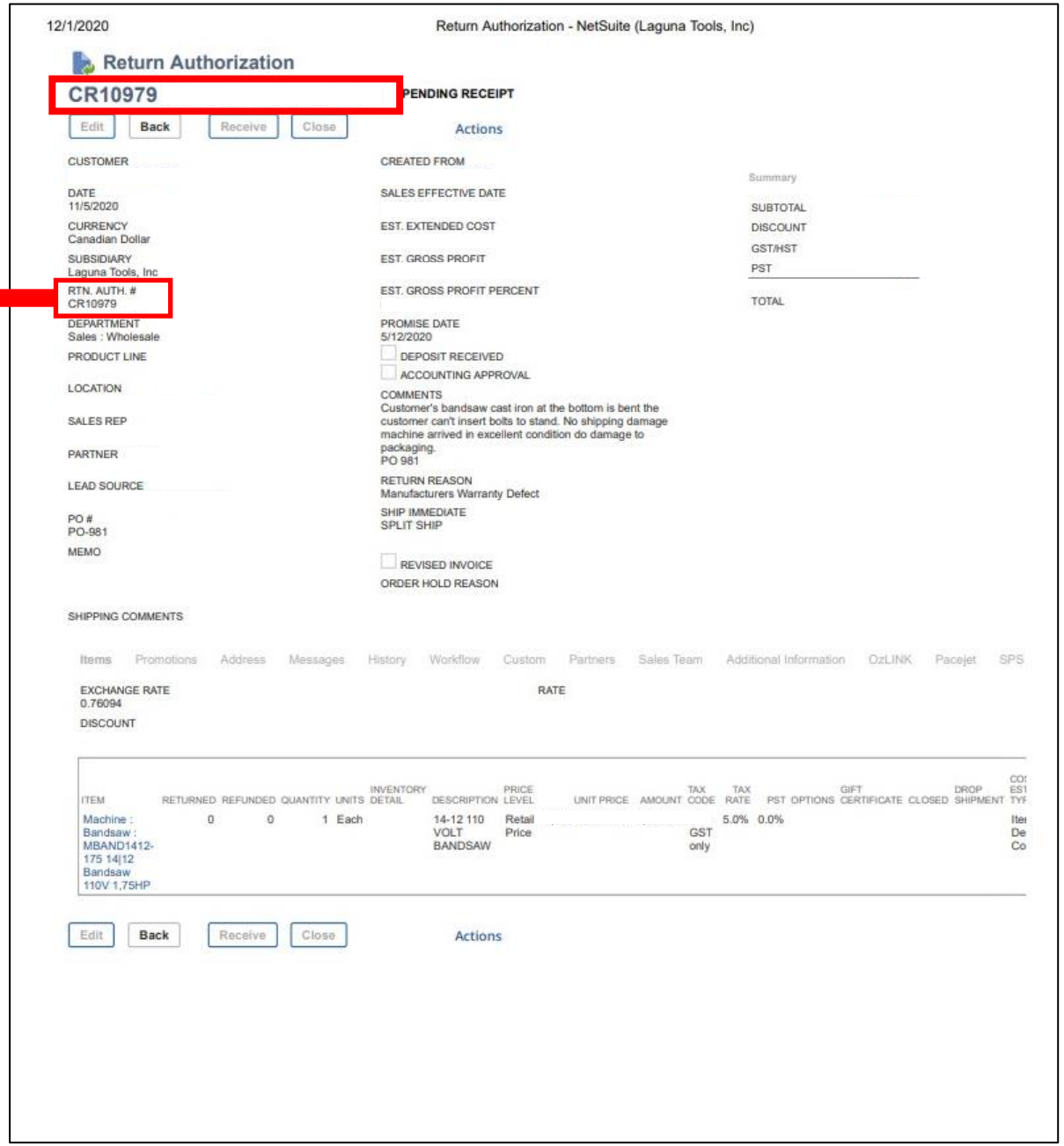
****Any machines returned to Laguna Tools must be returned with packaging in the same manner in which it was received. If a part or blade is being returned it must have adequate packaging to ensure no damage is received during shipping. In the event the item/part is determined to be damaged due to lack of maintenance, cleaning or misuse/abuse, the customer will be responsible for the cost to replace the item/part, plus all related shipping charges.**

We require that the defective item/part be returned to Laguna Tools with the complaint. The end-user must request an **RMA (Return Material Authorization) Number** from Customer Service and include the (RMA) number with any and all returned parts/components requesting warranty coverage.

Laguna Tools Packaging/Laguna Tools RMA Example-

RMA #

RTN. AUTH. #
CR10979



12/1/2020 Return Authorization - NetSuite (Laguna Tools, Inc)

Return Authorization

CR10979 PENDING RECEIPT

Edit Back Receive Close Actions

CUSTOMER

DATE
11/5/2020

CURRENCY
Canadian Dollar

SUBSIDIARY
Laguna Tools, Inc

RTN. AUTH. #
CR10979

DEPARTMENT
Sales : Wholesale

PRODUCT LINE

LOCATION

SALES REP

PARTNER

LEAD SOURCE

PO #
PO-981

MEMO

CREATED FROM

SALES EFFECTIVE DATE

EST. EXTENDED COST

EST. GROSS PROFIT

EST. GROSS PROFIT PERCENT

PROMISE DATE
5/12/2020

DEPOSIT RECEIVED

ACCOUNTING APPROVAL

COMMENTS
Customer's bandsaw cast iron at the bottom is bent the customer can't insert bolts to stand. No shipping damage machine arrived in excellent condition do damage to packaging.
PO 981

RETURN REASON
Manufacturers Warranty Defect

SHIP IMMEDIATE
SPLIT SHIP

REVISED INVOICE

ORDER HOLD REASON

Summary

SUBTOTAL

DISCOUNT

GST/HST

PST

TOTAL

SHIPPING COMMENTS

Items Promotions Address Messages History Workflow Custom Partners Sales Team Additional Information OzLINK Pacejet SPS

EXCHANGE RATE
0.76094

RATE

DISCOUNT

ITEM	RETURNED	REFUNDED	QUANTITY	UNITS	INVENTORY DETAIL	DESCRIPTION	PRICE LEVEL	UNIT PRICE	AMOUNT	TAX CODE	TAX RATE	PST	OPTIONS	GIFT CERTIFICATE	CLOSED	DROP SHIPMENT	CO EST TY
Machine : Bandsaw : MBAND1412-175 14|12 Bandsaw 110V 1,75HP	0	0	1	Each		14-12 110 VOLT BANDSAW	Retail Price			GST only	5.0%	0.0%					Ite De Co

Edit Back Receive Close Actions

Laguna Tools Packaging/Laguna Tools BILL of LADING Example-

Date: 12/02/2020 **BILL OF LADING**

SHIP FROM

Name:
Address:

City/State/Zip:
Ph: FOB: ☐

SHIP TO

Name: Location#
Address:

City/State/Zip:
Ph: RMACR11096 FOB: ☐

FREIGHT CHARGES BILL TO

Name:
Address:
City/State/Zip:

SPECIAL INSTRUCTIONS: For assistance, please call 833-8WE-SHIP
Handling Instructions: RMACR11096
Pickup Instructions:
Delivery Instructions: RMACR11096
Pickup Service(s): Liftgate Pickup, Residential Pickup

Bill of Lading Number : 145787446
Carrier Name: Estes Express
SCAC: EXLA
Pro number:

Freight Charge Terms: (*freight charges are prepaid by Worldwide Express unless indicated otherwise*)

☐ Master Bill of Lading: with attached underlying Bill Of Lading

WWE Number: W709699351

REFERENCE NUMBER INFORMATION

REFERENCE	# PKGS	REFERENCE	# PKGS	Total # of Pkgs

CARRIER INFORMATION

HANDLING UNITS QTY	HANDLING UNITS TYPE	PIECES QTY	PIECES TYPE	WEIGHT	H.M. X	COMMODITY DESCRIPTION Commodities requiring special or additional care or attention in handling or stowing must be so marked and packaged to ensure safe transportation with ordinary care. See section 2(e) of NMFC Item 360	LTL ONLY NMFC#	LTL ONLY CLASS
1	PLT			385		machine, 48(L) x 48(W) x (H) DO NOT STACK		77.5
1				385		**Grand Total**		

Where the rate is dependent on value , shippers are required to state specifically in writing the agreed or declared value of property as follows: The agreed or declared value of the property is specifically stated by the shipper to be not exceeding _____ per _____

Note: Liability limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. B14706(c)(1)(A) and (B)

COD Amount: $
Fee Terms: 3rd Party WWE
Remit Address:

Acceptable Forms of Payment:
Bank Certified Check ☐
Customer Check ☐
Personal Check ☐
Money Order ☐

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carried and Worldwide Express Operations, LLC. a registered motor carried broker, pursuant to 49 USC 14101(b) and all applicable state and federal regulations.

SHIPPER'S SIGNATURE / DATE
This is to certify that the above-named materials are properly classified, described, packaged marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

(Signature) (Date)

Trailer Loaded:
☐ By Shipper
☐ By Driver

Freight Counted:
☐ By Shipper
☐ By Driver/pallet said to contain
☐ By Driver/Pieces

CARRIER SIGNATURE /PICKUP DATE
Carrier acknowledges receipt of packages and required placards. Carrier certifies emergency response information was made available and /or carrier has DOT emergency response guidebook or equivalent documentation in vehicle. Property described above is received in good order, except as noted.

(Signature) (Date)

Bill of Lading Number : 145787446

SPECIAL INSTRUCTIONS: For assistance, please call 833-8WE-SHIP
Handling Instructions: RMACR11096
Pickup Instructions:
Delivery Instructions: RMACR11096
Pickup Service(s): Liftgate Pickup, Residential Pickup

Maker Cheat Sheet-

Maker Cheat Sheet

1. Start up
    a. Make sure air is connected.
    b. Maker sure nothing is blocking the machine's movements.
    c. Turn on machine and Home all Axis.
2. Touch off Procedures
    a. Switch to tool 1(Master). Once Spindle has tool 1, press and hold menu and toolset simultaneously, then release together. Machine will then proceed to touch off tool 1.
    b. Switch in ascending order. Switch to tool 2 and tool touch off, then to 3 and so forth until your last bit.
    c. Once done, switch back to Master tool,(1).
    d. Move tool 1 bit to the surface of the spoil board and make sure the table vacuum is on.
    e. Graze the surface of the spoil board. Once you scored the spoil board, press Z->0 button on the controller.
    f. Note! You cannot touch off fly bits due to their large diameter.
3. Fly cut Procedure
    a. Switch to flycut bit.
    b. Move Flycut bit to the surface of the spoil board and make sure the table vaccum is on.
    c. Graze the surface of the spoil board. Once you scored the spoil board, press Z->0 button on the controller.
    d. Initiate flycut program.
    e. Once finished with fly cutting, you need to Perform Step #2(Touch off Procedures)
4. Copying Files onto controller.

Maker Cheat Sheet (Cont'd.)-

a. Insert USB into USB port.
b. Press Menu -> Menu -> Operate File ->Copy -> Udisk -> Desired file
c. Once screen says, "file copied successfully." Press Cancel until you return to the main screen.

1. Loading File.
   a. Press the file button on the controller.
   b. Select internal files.
   c. Select desired file you want to load.
2. Cutting a file.
   a. Load material onto the table.
   b. Make sure it is aligned properly to table top.
   c. Perform Step 5(Loading File).
   d. Turn on vacuum and ensure the material cannot move.
   e. Turn on dust collector.
   f. Press run/start/delete button on controller.
   g. Press okay and the CNC machine will initiate program.
3. To lift up dust hood
   a. Press the menu button on the controller.
   b. Go down to Input/Output then hit okay.
   c. Scroll over to #6 dot.
   d. Press Run/Pause/Delete button on controller to raise dusthood.
   e. Note. You need to lower the dusthood before you cut, otherwise the dust will get kicked up while cutting.
4. If not in Work piece mode.
   a. Press and hold Menu and 1 together.
   b. Then release.

Maker Cheat Sheet (Cont'd.)-

Common Errors:

SW limit error. This means the machine cannot move a specified amount. Either Origin needs to be moved or is out of place. Or operator error in software design. Or tools needs to be touched off.

Cannot set Z level or XY Datum(Origin) due to machine mode/state. Follow step #4 to fix this issue.

Laguna Tools Contact Information-

Should you have any questions please feel free to call our Customer Service at 1-800-234-1976 or contact your Customer Service or Sales Representative.

LAGUNA AMERICAN HEADQUARTERS:

Texas: 744 Refuge Way Suite 200, Grand Prairie, Texas 75050, U.S.A. Phone: +1-800-234-1976

Huntington Beach: 7291 Heil Ave Huntington Beach, CA 92647, U.S.A. Phone: +1-949-474-1200
South Carolina: 825 Bistline Dr. Ste 101, West Columbia, SC 29172, U.S.A. Phone: +1-800-234-1976
Minnesota: 5250 West 74th St, Edina, MN 55439, U.S.A Phone: +1-949-474-1200

LAGUNA EUROPE
Walker Rd, Bardon Hill, Coalville LE67 1TU, United Kingdom. Phone: +44-1530-516921

DAKE CORPORATION
724 Robbins Road, Grand Haven, MI 49417, United States +1-800-937-3253

Manual Revision Record

Date of Change	Revision#	Engineering/Design Change Description
1/13/201	1	Created Manual for the M2.
10/14/2021	2	Added "One CANNOT turn the Spindle on without having a tool inserted into the Spindle." See Pg's.16, 38, 48 & 49.

Laguna Tools is not responsible for errors or omissions. Specifications subject to change. Machines may be shown with optional accessories.

© 2021, Laguna Tools, Inc. LAGUNA® and the LAGUNA Logo® are the registered trademarks of Laguna Tools, Inc. All rights reserved.