Laguna Tools

Laguna Tools-Smartshop J8 Machine-

Owner's Manual-

Overview of Machine, Start-Up Procedure, Control Software Introduction, Running a Program, Troubleshooting, Maintenance

Laguna Tools: 744 Refuge Way
Grand Prairie, TX U.S.A. Service: +1 (800) 234-1976
or email: customerservice@lagunatools.com
Swift Series CNC Machines © 2021 Laguna Tools
10/01/2021

Table of Contents-

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Features and Applications-

The Smartshop J8 can precisely and consistently route several types of standard joints. From classic mortise and tenon joinery to lockset and hinge mortising, the J8 comes with a 4.5HP air-cooled spindle, Delta Servo Motors and Drivers, a central lubrication system, pneumatic positioning pop-up pins, and a DSP handheld control system.

Features:

Strengthened Steel Structure
4.5HP Air Cooling Spindle
5HP Delta Inverter
DSP Control System
750w Delta Servo Motor & Driver
Bakelite Table
Lubrication System
Pneumatic Pop-Up Pins
UL Cable & Electric Components

Frame & Gantry:

- Welded once piece steel frame
- Helical Rack and pinion drive system X-Axis
- Precision ground ball screw on Y and Z-Axis
- Delta Servos
- Shipping Weight: 2500 lbs.
- Shipping Dimensions (W x L X H): 42.3” x 49” x 43”

Features and Applications (Cont'd.)-

Frame & Gantry:

- Welded once piece steel frame
- Helical Rack and pinion drive system X-Axis
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- Delta Servos
- Shipping Weight: 2500 lbs.
- Shipping Dimensions (W x L X H): 42.3" x 49" x 43"

Applications:

- Classic Mortise and Tenon
- Floating Mortise and Tenon
- Finger Joints
- Louvered Grooves
- Lockset Mortising
- Hinge Mortising
- Drilling
- Doweling

Features and Applications (Cont'd.)-

Additional Features:

4ft. or 8ft. Capacity
2-Zone Workstation
6 in. of Z-Axis Travel
Max. Trenon 1.5 in.
4.5HP Air Cooled Spindle
DSP Handheld Controller
Delta Servo Motors
Pneumatic Hold Down
3-Axis Interpolation

4.5HP Air Cooled Spindle with Delta Servo Motors

DSP Handheld Controller for Quick Programming

4" Inch Material Thickness Capacity

Receiving New Machine-

Note: It is probable that your machine will be delivered by a third party. Before you unpack your new machine, you will need to first inspect the packing, invoice and shipping documents supplied by the driver. Ensure that there is no visible damage to the packing or the machine. You need to do this prior to the driver leaving. All damage must be noted on the delivery documents and signed by you and the delivery driver. You must then contact the seller (Laguna Tools) as soon as practical. If damage is found after delivery, contact the seller as soon as is practical.

Note: It is probable that you will find sawdust within your machine. This is because the machine has been tested prior to shipment from the factory and / or Laguna Tools. Laguna Tools endeavors to test machines prior to shipping to customers as movement can take place during transportation. It must be noted that additional machine movement can take place between Laguna Tools and the end user, and some adjustments may have to be undertaken by the customer. These adjustments are covered in the various sections of this manual.

Unpacking your Machine-

To unpack your machine, you will need tin snips, a knife, and a wrench.

1.) Using the tin snips, cut the banding that is securing the machine to the Pallet [if fitted]. **WARNING:** EXTREME CAUTION MUST BE USED BECAUSE THE BANDING WILL SPRING AND COULD CAUSE INJURY.

2.) Remove the box from the CNC machine if fitted and any other packaging material. The parts ordered with the machine will be packed on or inside the machine. Note. The machine is heavy, and if you have any doubt about the described procedure, seek professional assistance. Do not attempt any procedure that you feel is unsafe, or that you do not have the physical capability of achieving.

3.) Use a forklift with sufficient lifting capacity and forks that are long enough to extend the complete width of the machine.

4.) Remove the securing bolts that attach the machine to the pallet [if fitted].

5.) Approaching the machine from the side, lift the machine on the frame taking care that there are no cables or pipes around the forks.

6.) Move the machine to the required position and lower gently to the floor.

Unloading Requirements-

1.) When the Crate containing your newly purchased Smartshop® Laser/CBX is delivered, it will be delivered “Curbside”, in other words the Machine will be delivered in front of the Driveway of one’s Garage/Shop or Workspace. (****It is the Purchasers responsibility of moving the Machine into His or Hers Garage/Shop or Workspace. ****)

2.) One should obtain a Crane: Hydraulic crane / crane (10T or above, 4 groups of 10T rings, 2 10M long, 10T straps).

3.) One should obtain a Forklift: The forklift can fork items weighing 10T or more.

4.) To Open Crate-Acquire some standard tools for taking apart the Crate.

a.) Hammer.

b.) Pry Bar.

Unloading Requirements-

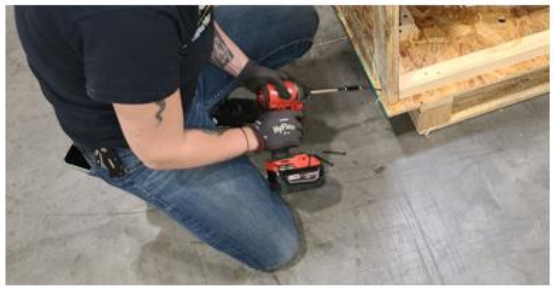
c.) Wire Cutters.

d.) Cordless Drill.

5.) Cut all straps only on the Crate.

6.) Unscrew a series of Screws at the Base of Crate using a Cordless Drill.

7.) Unscrew and Remove Side Panels of Crate.



Where to locate your Machine-

Before you unpack your machine, select the area where you will use your machine. There are no hard and fast rules for its location, but below are a few guidelines.

1.) There should be an area around the machine suitable for the length of material that you will be machining.

2.) **Adequate Lighting:** The better the lighting, the more accurately and safely you will be able to work.

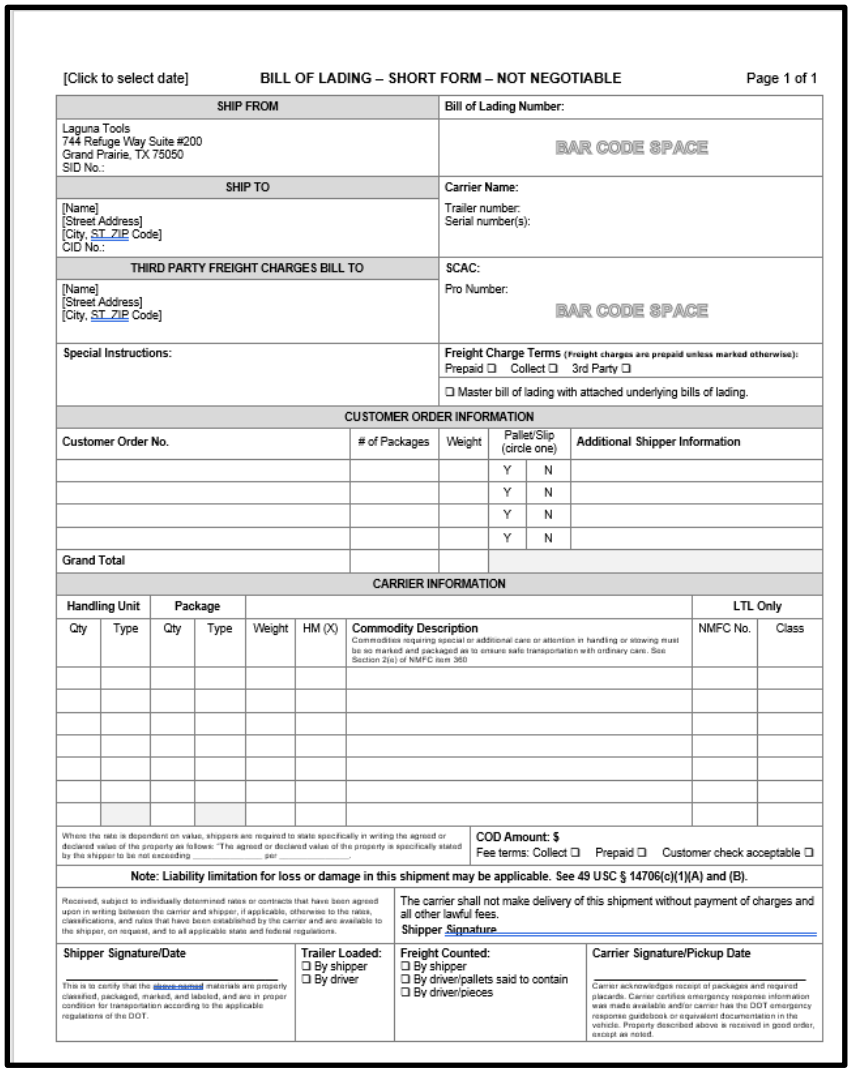
3.) **Solid Floor:** You should select a solid flat floor, preferably concrete or something similar.

4.) Close to a Power Source (220V-Volt Capacity) and Dust Collection, (Proper created Ventilation Holes Suggested).

Smartshop J8 Standard Damage Notification-

1.) The Machines are thoroughly tested before leaving any or our Laguna Tools Facilities, but that does not mean the Machines would not experience any damage in transit.

2.) Before one Signs the Bill of Lading (See Example Below) when the Trucking Company drops off the Machine, **visually inspect the entire crate and check for any damage.**



[Click to select date] BILL OF LADING – SHORT FORM – NOT NEGOTIABLE Page 1 of 1

SHIP FROM	Bill of Lading Number:
Laguna Tools 744 Refuge Way Suite #200 Grand Prairie, TX 75050 SID No.:	BAR CODE SPACE
SHIP TO	Carrier Name:
[Name] [Street Address] [City, ST ZIP Code] CID No.:	Trailer number: Serial number(s):
THIRD PARTY FREIGHT CHARGES BILL TO	SCAC: Pro Number: BAR CODE SPACE
[Name] [Street Address] [City, ST ZIP Code]	
Special Instructions:	Freight Charge Terms (Freight charges are prepaid unless marked otherwise): Prepaid ☐ Collect ☐ 3rd Party ☐
	☐ Master bill of lading with attached underlying bills of lading.

CUSTOMER ORDER INFORMATION

Customer Order No.	# of Packages	Weight	Pallet/Slip (circle one)		Additional Shipper Information
			Y	N	
			Y	N	
			Y	N	
			Y	N	
Grand Total					

CARRIER INFORMATION

Handling Unit		Package					LTL Only	
Qty	Type	Qty	Type	Weight	HM (X)	Commodity Description Commodities requiring special or additional care or attention in handling or stowing must be so marked and packaged as to ensure safe transportation with ordinary care. See Section 2(e) of NMFC item 360	NMFC No.	Class

Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the 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: Collect ☐ Prepaid ☐ Customer check acceptable ☐

Note: Liability limitation for loss or damage in this shipment may be applicable. See 49 USC § 14706(c)(1)(A) and (B).

Received, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications, and rules that have been established by the carrier and are available to the shipper, on request, and to all applicable state and federal regulations.

The carrier shall not make delivery of this shipment without payment of charges and all other lawful fees.
Shipper Signature

Shipper Signature/Date	Trailer Loaded:	Freight Counted:	Carrier Signature/Pickup Date
This is to certify that the ~~above-named~~ materials are properly classified, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the DOT.	☐ By shipper ☐ By driver	☐ By shipper ☐ By driver/pallets said to contain ☐ By driver/pieces	Carrier acknowledges receipt of packages and required placards. Carrier certifies emergency response information was made available and/or carrier has the DOT emergency response guidebook or equivalent documentation in the vehicle. Property described above is received in good order, except as noted.

Safety Protocols-

Safety Rules

As with all machinery there are certain hazards involved with the operation and use of this machine. Using it with caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result. If you have any questions relative to the about its installation and operation, do not use the equipment until you have contacted your supplying distributor.

Read items stated below carefully before operating the machine:

1.) Keep the working area clean and be sure adequate lighting is available.

2.) Do not wear loose clothing, gloves, bracelets, necklaces, or ornaments.

3.) Wear face, eye, respiratory and body protection devices as indicated for the operation or environment.

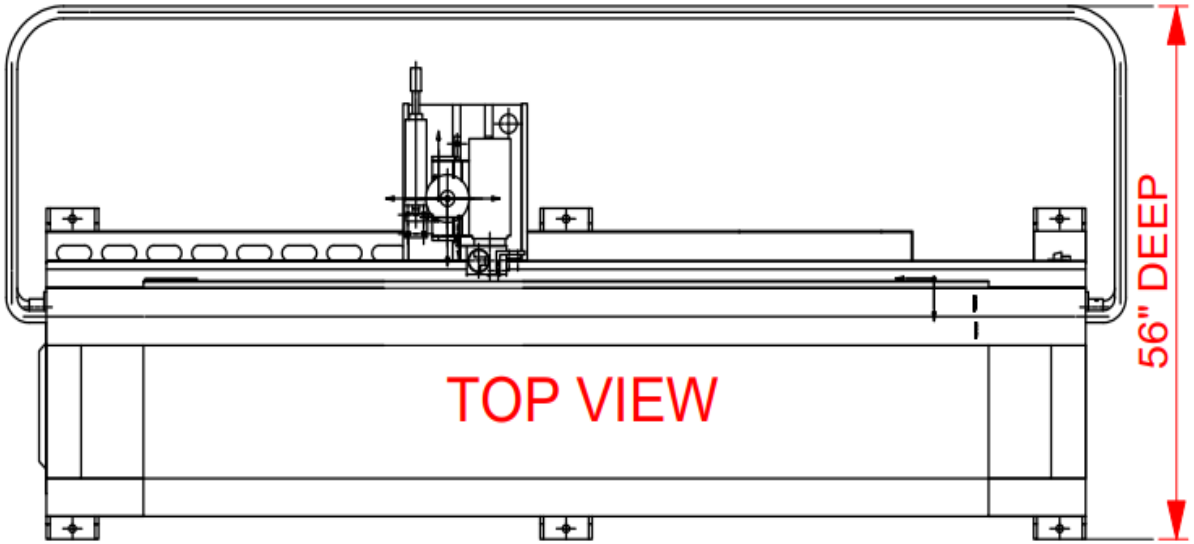
4.) Be sure that the power is disconnected from the machine before tools are serviced or an attachment is to be fitted or removed.

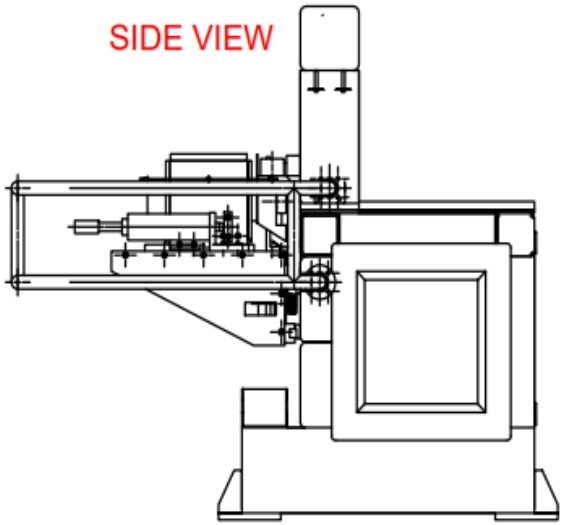
5.) Never leave the machine with the power on.

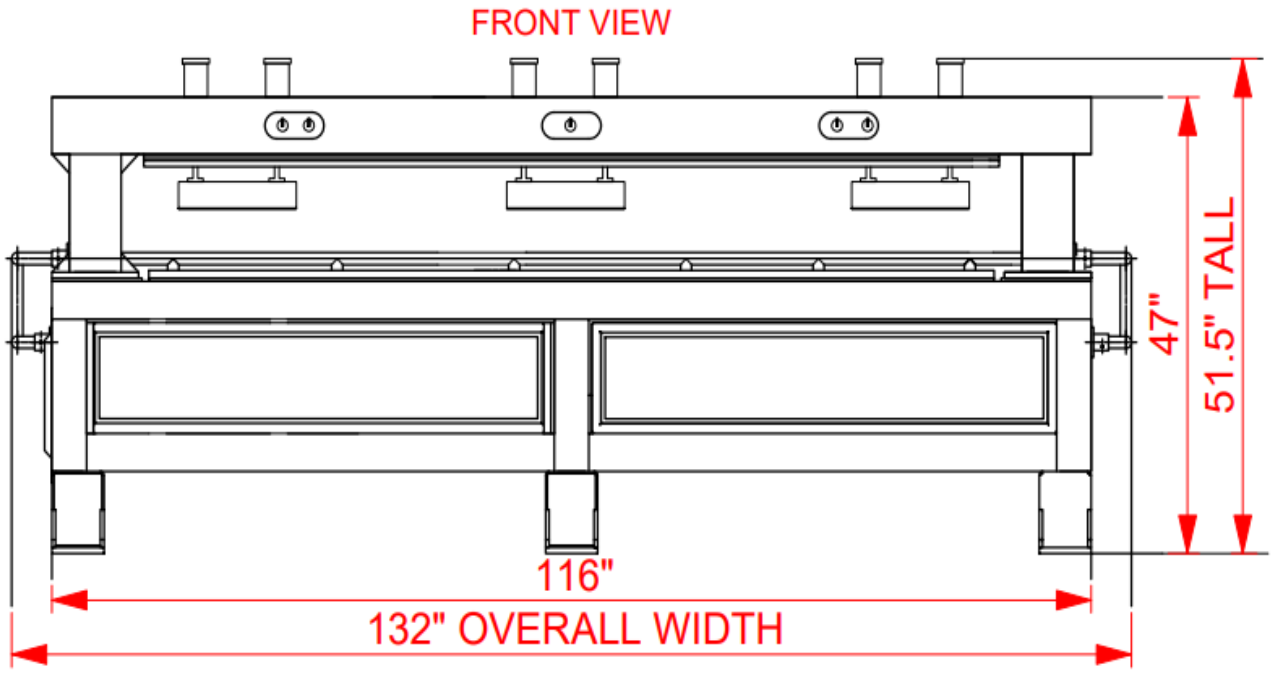
6.) Do not use dull, gummy, or cracked cutting tools.

7.) Be sure that the keys and adjusting wrenches have been removed and all the nuts and bolts are secured.

Specification Sheet of the Smartshop J8-





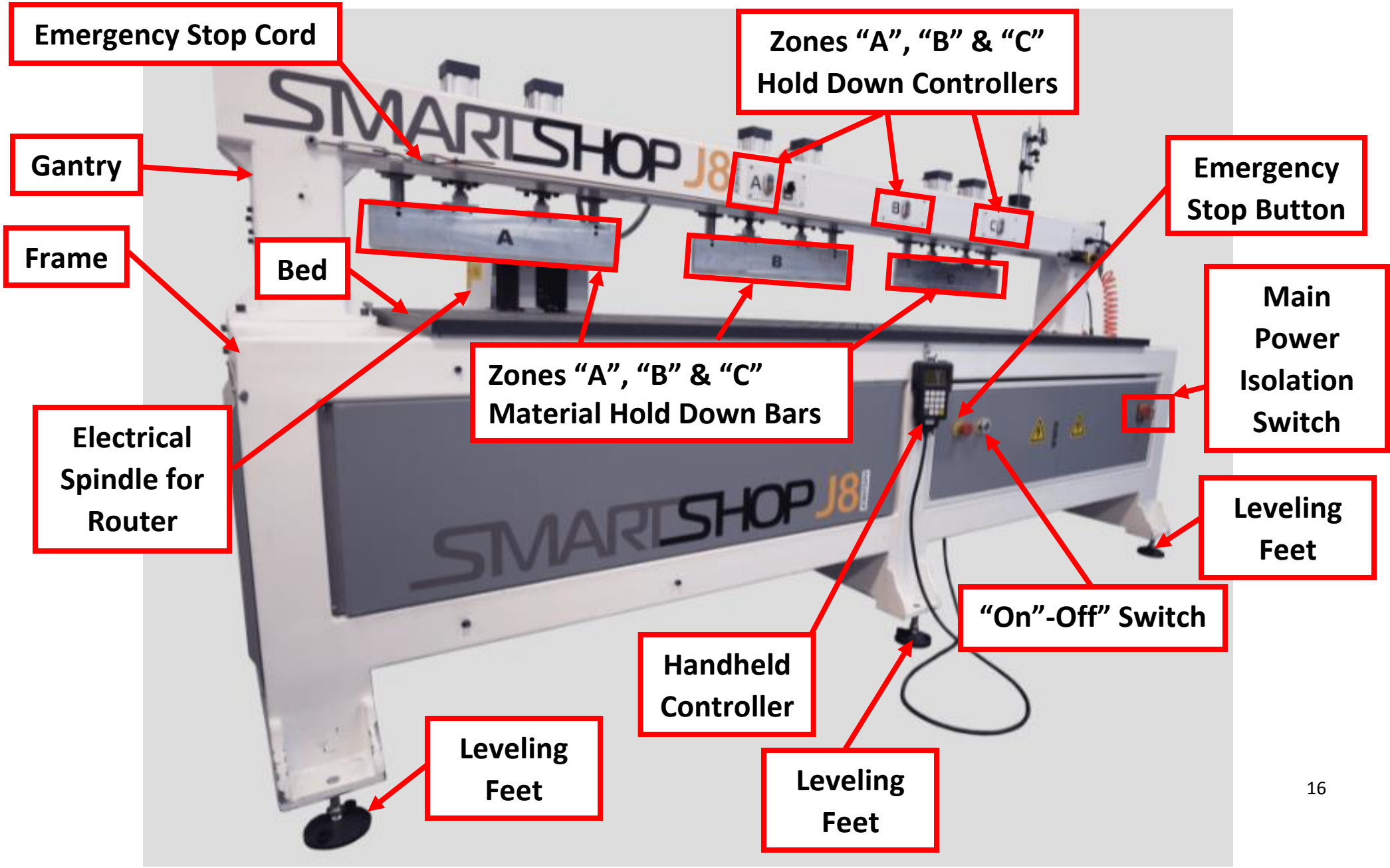


{MCNC SS-J8}
3 AXIS HORIZONTAL CNC

SPECIFICATION:	DRAWN,S.B._8/21/2020_REV,1
POWER REQUIREMENTS.	220V,30A,1 PH.
FOOTPRINT.	132" W X 56" L X 51.5" TALL
WORKING AREA.	4" Y * 96" X * 3" Z, TRAVEL
GANTRY CLEARANCE.	4" MATERIAL THICKNESS
SPINDLE.	4HP MT, AIR COOLED SPINDLE
SPINDLE RPM.	6,000-24,000
RAPID TRAVEL.	600 IPM
CENTRALIZED OIL SYSTEM.	YES
DUST PORT DIAMETER.	4"
PRECISION HELICAL RACK & PINION. DRIVE SYSTEM FOR X AND Y AXES	20MM HEAVY DUTY LINEAR BEARING,ALL AXES
CONTROLLER.	LAGUNA HAND HELD DSP CONTROLLER
MDF TABLE TOP WITH TEE SLOTS.	NO, PNUEMATIC CLAMPING
SOLID STATE HOME SWITCH'S.	YES
HEAVY DUTY WELDMENT TUBULAR STEEL FRAME.	1200 POUNDS
DRIVE SYSTEM	DELTA SERVO SYSTEM

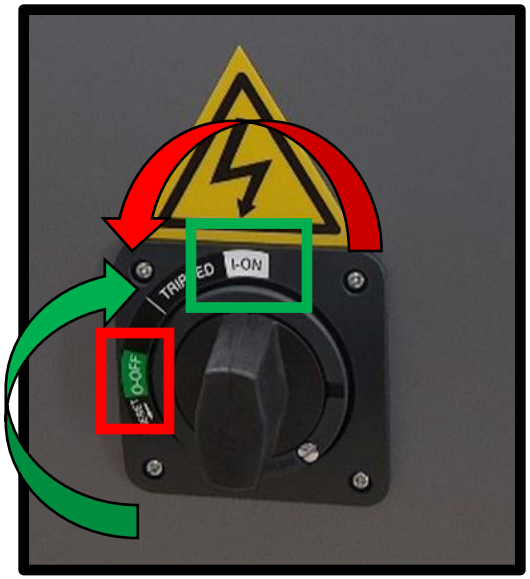
Parts of the J8 Machine-

The CNC machine consists of a few major parts, which are discussed in this manual. Take the time to read this section and become familiar with the machine.



Parts of the J8 Machine (Cont'd.)-

The **"Emergency Stop"**, One can Release or Disengage Button by twisting clockwise, and it will pop out.

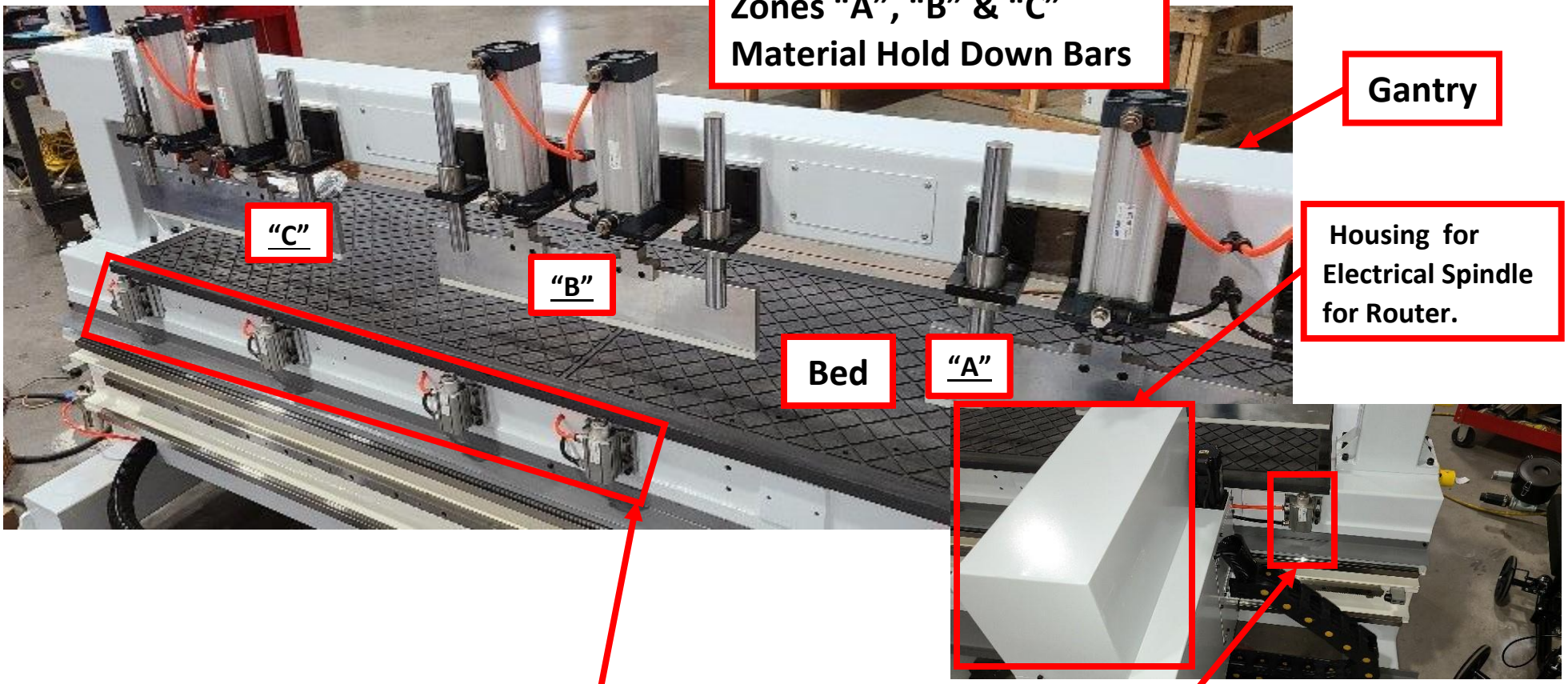


Turn the Main Power Isolation Switch Clockwise to the **"On"** Position. Turn Counterclockwise to the **"Off"** Position.

Press the **"Start Button"** that will turn power on to the machine.

Hand-Held Controller

Parts of the J8 Machine (Cont'd.)-



How to Power Up & Turn “On” & “Off” the Smartshop J8 CNC Machine-

No cable is supplied as this will depend on the local wiring codes and your electrical supply. Ensure that when installing the electrical supply to the machine that 220v (220 Volts) single phase is supplied.

It is recommended that you use a 30-amp Breaker.

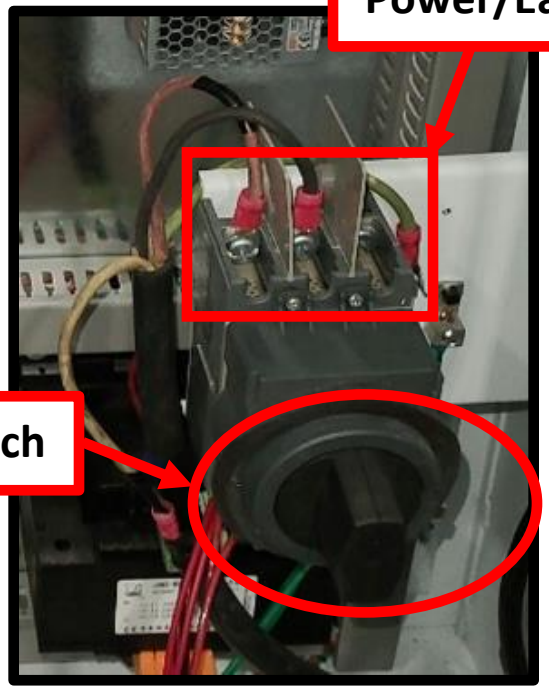
Wire to Terminal L1 & L2. Terminal L3 is not used.

Note: When wiring the machine to your electrical system, keep your cable as short as possible and the cable should not be allowed to run along the floor, as this will cause a trip hazard. There is a cable that has a female electrical socket for connection to the water pump. **Note:** A qualified electrician must carry out the electrical installation.

Main Power Isolation Switch

Power/Earth Terminals

Main Power Switch



How to Install Power & Turn "On" & "Off" the Smartshop J8 CNC Machine (Cont'd.)-

1.) After installing cable for the 220v (220 Volts) Outlet.

Note: A qualified electrician must carry out the electrical installation.

2.) Turn the Main Power Isolation Switch Clockwise to the **"On"** Position.

Turn the Main Power Isolation Switch Clockwise to the **"On"** Position. Turn Counterclockwise to the **"Off"** Position.

How to Install Power & Turn "On" & "Off" the Smartshop J8 CNC Machine (Cont'd.)-

3.) Make sure **"Emergency Stop"** is disengaged, one can Release or Disengage Button by twisting clockwise, and it will pop out.

4.) Press the "Start Button" that will turn the power **"On"** to the machine & HHC Controller.

How to Install Power & Turn "On" & "Off" the Smartshop J8 CNC Machine-

1.) Pull the "Start Button" out, that will turn the power **"Off"** to the machine & HHC Controller.

2.) Turn the Main Power Isolation Switch Counterclockwise to the **"Off"** Position.

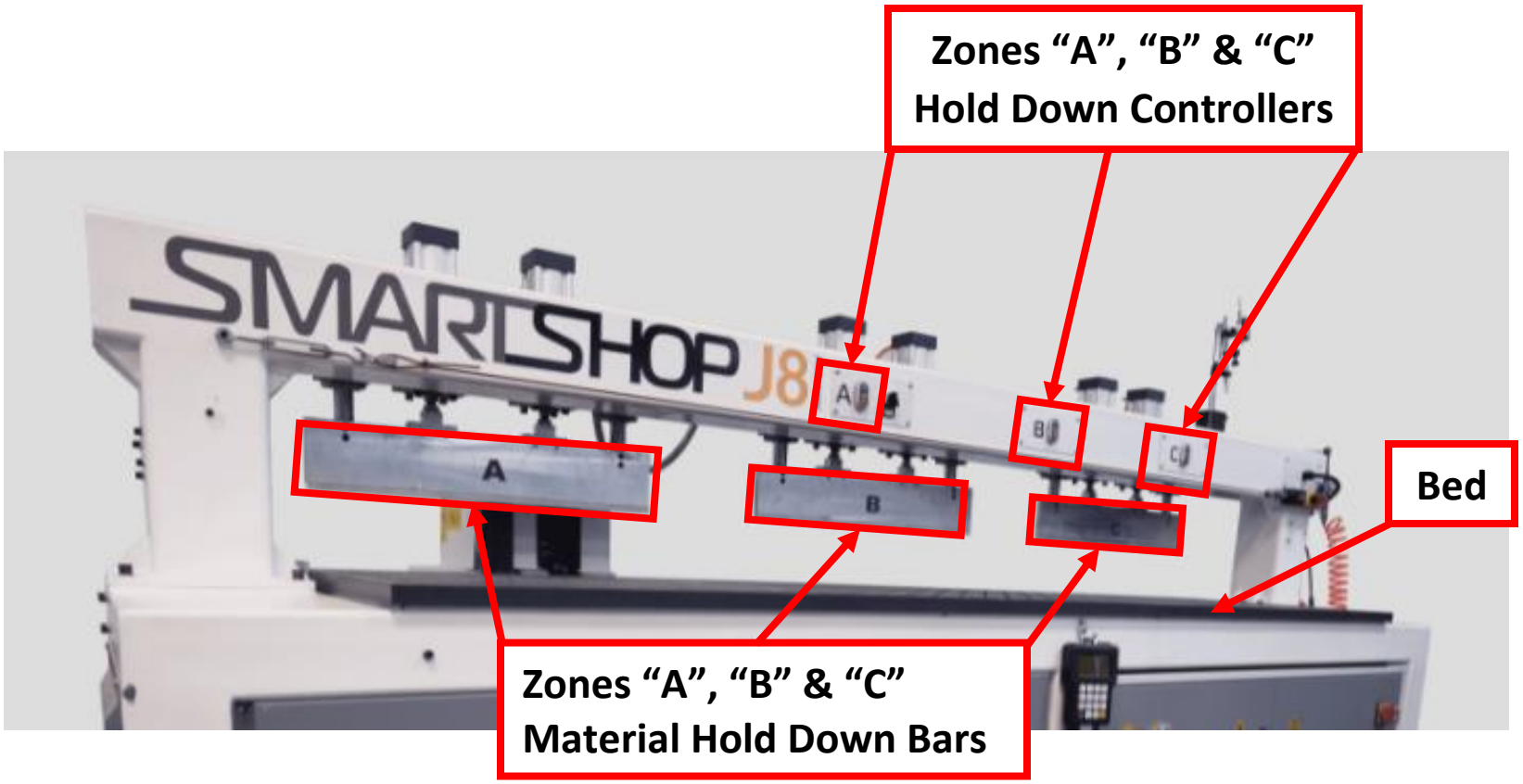
How to engage the "Emergency Shut Off "on the Smartshop J8 CNC Machine-

Emergency Stop Cord

In case an Emergency Stop needs to be performed, one can pull the **"Emergency Stop Cord"**.

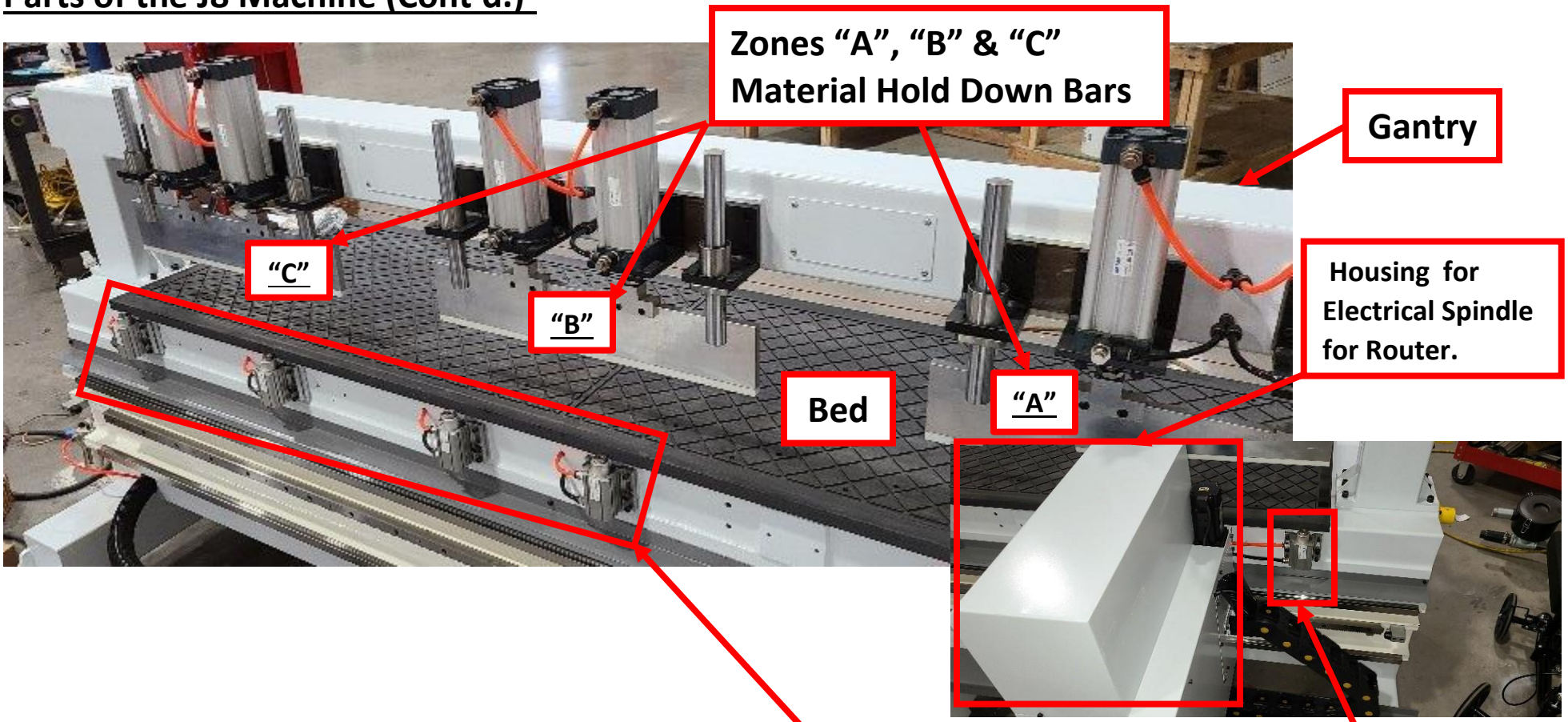
The **"Emergency Stop Button"** can be pushed in case an Emergency Stop needs to be performed. To release or Disengage Button twist button clockwise, and it will pop out & disengage.

How to align Projects on the Bed of the Smartshop J8 CNC Machine-

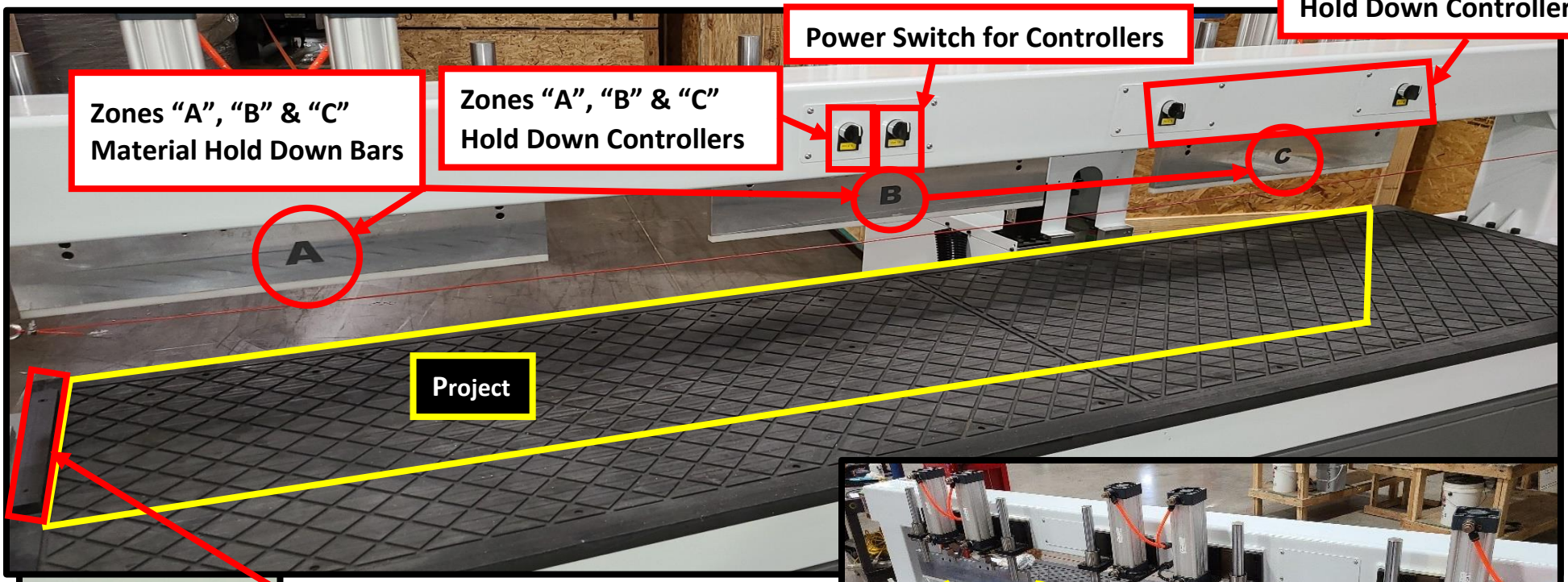


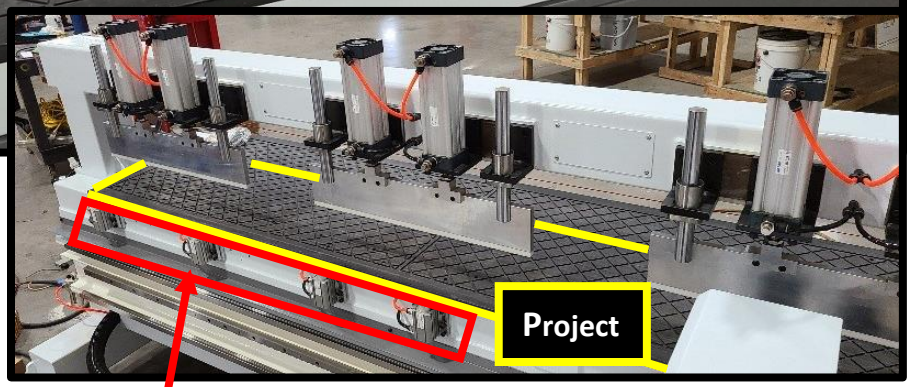
How to align Projects on the Bed of the Smartshop J8 CNC Machine (Cont'd.)-

Parts of the J8 Machine (Cont'd.)-

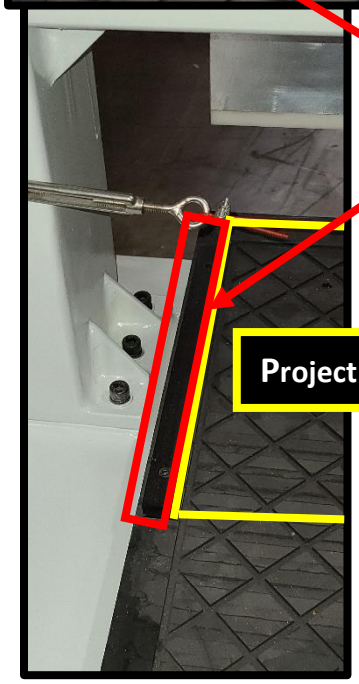


How to Align Projects on the Bed of the Smartshop J8 CNC Machine (Cont'd.)-

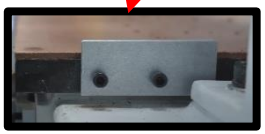




Alignment Pins (Pop-Up Pins) for Product Positioning.



Alignment Block or Plate.



1.) Align Project against Alignment Block or Plate.
2.) Activate Alignment Pins for Project positioning.
3.) Align Project against Alignment Pins.
4.) Turn Power Switch "On" of Material Hold Down Bars.
5.) Turn "On" the appropriate switches to zones ("A", "B" or "C") for hold down bars, to hold & position Project for continued processing.

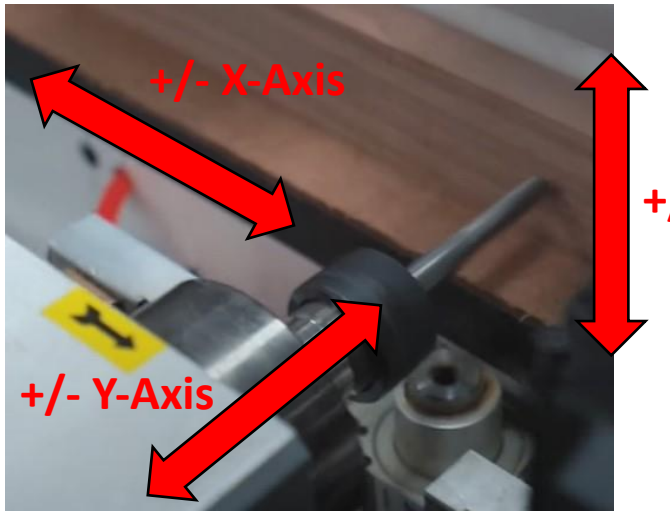
How to Zero Out the Electrical Spindle Router of the Smartshop J8 CNC Machine-

1.) Press the “Start Button” that will turn the power **“On”** to the machine & HHC Controller.

2.) On the HHC-Handheld Controller Press the **“Green”** Button that states “**Origin OK”**, Press Button and release and the Spindle Assy. will go to the **“Home Position”**.

How to Control the Electrical Spindle Router of the Smartshop J8 CNC Machine-

(*Picture may not represent current produced Machine.)**



To move the Spindle in either X, Y & Z Directions, one can push appropriate Buttons on the HHC-Handheld Controller.

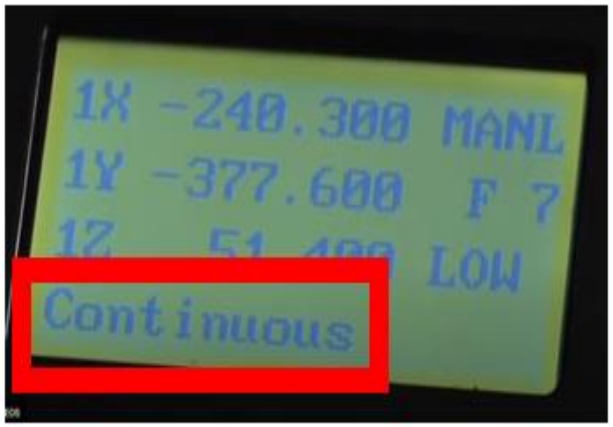
For the **"Z" Axis** Press the **Z+ or Z- Buttons** on the HHC.

For the **"X" Axis** Press the **X+ or X- Buttons** on the HHC.

For the **"Y" Axis** Press the **Y+ or Y- Buttons** on the HHC.

J8 CNC Machine-Set Up the Machine: Different Modes & How to change of the CNC Machine Modes-

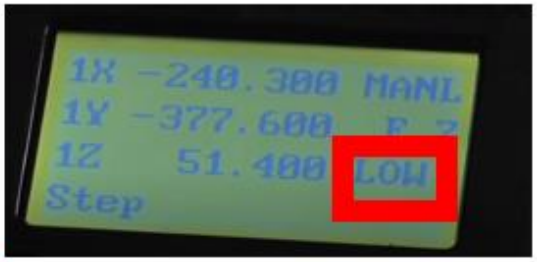
When one continues to Press on any of the Buttons, the Spindle will continue to move in that direction. That is called " **Continuous Mode**".

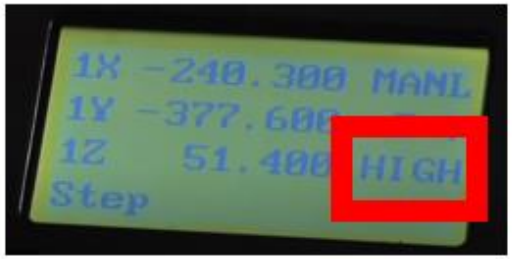


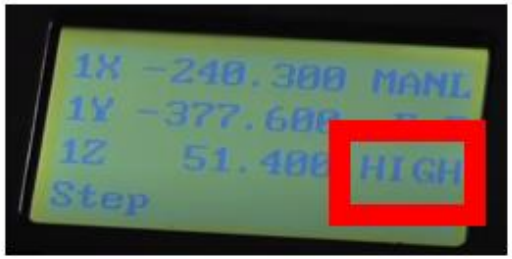
When presses the "**MODE**" Button, the mode will change .
That is called "**Step Mode**"- This Mode will allow the Spindle to move a certain distance in any direction.

J8 CNC Machine-Set Up the Machine: How to Control the Step Distances.-

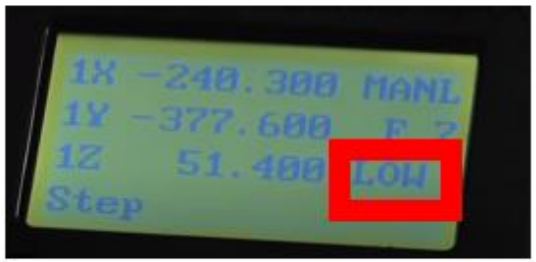
The Step Distances are controlled by the "HIGH/LOW" Button.
Press the "HIGH/LOW" Button, one can switch the mode distances.







If one presses any of the directional buttons in "High" Mode, the Spindle will move a 1/2mm or .020 in.

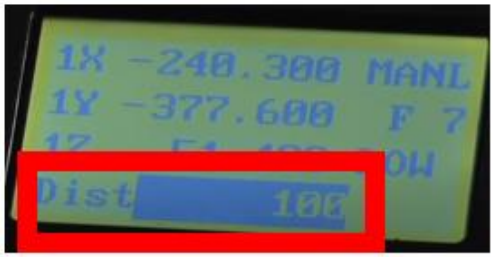


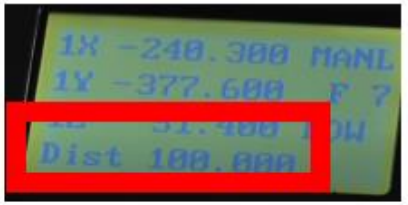
If one presses any of the directional buttons in "Low" Mode, the Spindle will move a 1/10 mm or .004 in.

J8 CNC Machine-Set Up the Machine: Moving the Spindle at a Specific Distance-

"Press the High/ Low Button Twice or 2 Times"

1.) When wanting to move the Spindle a Specific distance (Example: 100 mm), press the "Mode" Button one more time one the see the Distance designation on the HHC Screen.





"Press he Mode" Button one more time.

The Distance shows up will be 100 or 100.00 mm.

2.) Press the OK Button that will **Lock-In** the 100 mm distance.

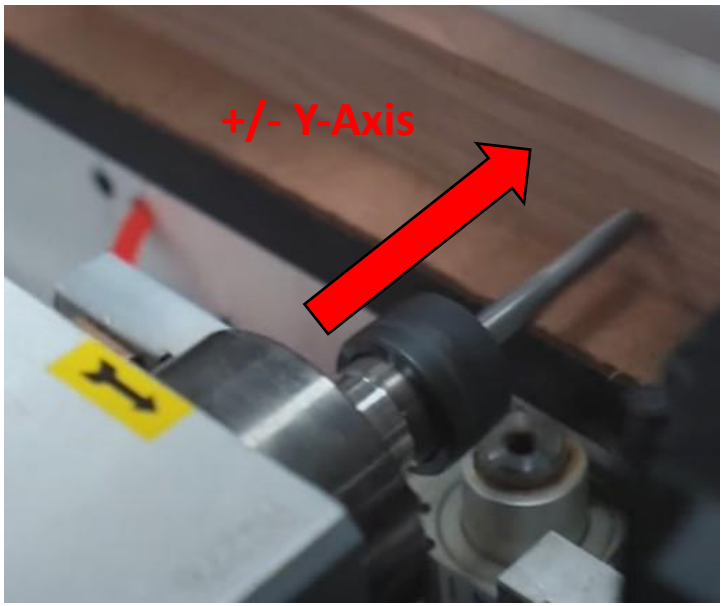
3.) Press any of the directional buttons and the Spindle will move 100 mm.

J8 CNC Machine- Set Up the Machine: Tool Set up & Changing.-

On the HHC-Handheld Press the "Green" Button that states "Origin OK" to go to the Home Position.

To Turn the Spindle "ON" & "OFF", Press the "ON" & "OFF" Button.

J8 CNC Machine-Set Up the Machine: Programming "Touching Off"- Setting Origin-



1.) Press the Y- & 6 Button continuously until Router Tool almost touches the Top of the Project.

2.) Press #8 Button (Z Arrow-0) to Set the "Z" Origin.

3.) "Z" Origin is now set to "0".

Type of Routers that can be used of the Smartshop J8 CNC Machine-

Examples:

5-Pack SC Spiral O Single Flute, Aluminum Cutting 1/8 D x 1/2 CH x 1/4 SHK x 2 Inch Long Up-Cut Router Bits with Mirror Finish-

5-Pack SC Spiral Plunge 1/4 D x 3/4 CH x 1/4 SHK x 2-1/2 Inch Long 2 Flute Up-Cut Router Bits

How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine-

Rich Auto System Introduction:

Rich Auto is CNC motion control system independently developed and it can be widely applied to machinery, advertisement, woodworking, mold engraving machine, laser, flame, plasma cutting machine, and so on in the machine control field.

Rich Auto make DSP as the core control system High-speed processing operation is the microcontroller, PLC systems can't match Use embedded structure, high degree of integration, strong stability easy to installation and operation disk support Removable storage card reader With USB Interface High speed transfer, Plug and play the full realization of all work offline.

Characteristics:

1.) System deploys standard X, Y, Z axis motion control method, Support the rotation axis control. This enables to switch the processing of surface and processing of rotation; up extended to X, Y, Z, C four-axis motion control, Implementation four axis interlocking Control.

2.) Multi I / O Point Control there is eight input and output signals in every basic I / O signal node Expansion I / O node can be expanded to 32 input and output signals。

3.) Support the standard G-Code, PLT format instructions; support domestic and international mainstream CAM software, such as: Type3, Art cam, UG, Pro / E, Master CAM, Cimatron, Wentai etc.

How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine-Characteristics (Cont'd.):

4.) Provide with power-down protection. Instantaneous power processing system to automatically save the current processing of information (file name, current line number processing, processing speed, spindle threshold), when power again machine moves back, the system automatically prompts the user to restore the processing before power down, the processing operations become more humanity.

5.) Support breakpoint memory, file selection, processing. Save 8 different breakpoint processing information.

6.) Multi-coordinate memory function. Provide nine working coordinate system, the user can switch among the 9-coordinates, each coordinate system can save a process origin information.

7.) Support online to adjust spindle operating frequency. The spindle frequency from 0 to maximum frequency is divided into 8 thresholds; 1 - 8 threshold can be processed directly adjust up and down without suspend processing.

8.) Support and adjust speed ratio online. Users can adjust the speed ratio, to adjust the processing speed and empty running speed, speed ratio values from 0.1-1, Ascending or descending per 0.1 numerical.

How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine-Characteristics (Cont'd.):

9.) Simply manual operate mode. In manual mode, the system provides three kinds of sports concluding continuous, step (crawl), distance, manual operation becomes simpler and more convenient.

10.) Identifies M-Code, F-Code, and other development commands can open a special code based on user needs.

11.) Built-in 512 M memory.

12.) Unique handheld form factor with one hand to hold. Own liquid crystal display and 16 button buttonboard, operate intuitive and flexible, no longer dependent on the computer, the full realization of full offline operation

13.) Comes with USB communications port, file transfer efficiency can be directly read U disk, card reader file, Plug and Play.

14.) Self-test function, the system comes with I / O port signal detection capabilities, ease of remote maintenance.

15.) Processing with high-speed and smooth, support high subdivides, make sure processing with high accuracy and high speed.

How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine-Characteristics (Cont'd.):

16.) Unique in Chinese English to show double interface, can be realized in switching Chinese and English show online.

17.) multi-language display. Support for Simplified Chinese, Traditional Chinese, English, Russian, French, and other languages, can be customized according to user needs.

18.) System can support automatic dynamic upgrades, convenient to remote operation, remote maintenance.

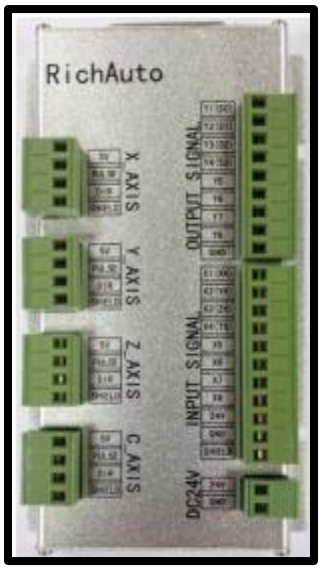
How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine

System Composition-

Rich Auto Control System contains the following parts: A hand-held motion controller(handle), a line adapter board (interface board), a 50-pin data transmission cable, an USB communication cable.

Rich Auto Accessories Schematic Diagram

Hand-Held Motion Controller



Rich Auto Interface Board

Rich Auto Accessories Schematic Diagram

50-Pin Data Transmission Cable

USB Communication Cable

How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine

Description of Each Component-

1.) Handheld Controller (Handle)-6 Components:

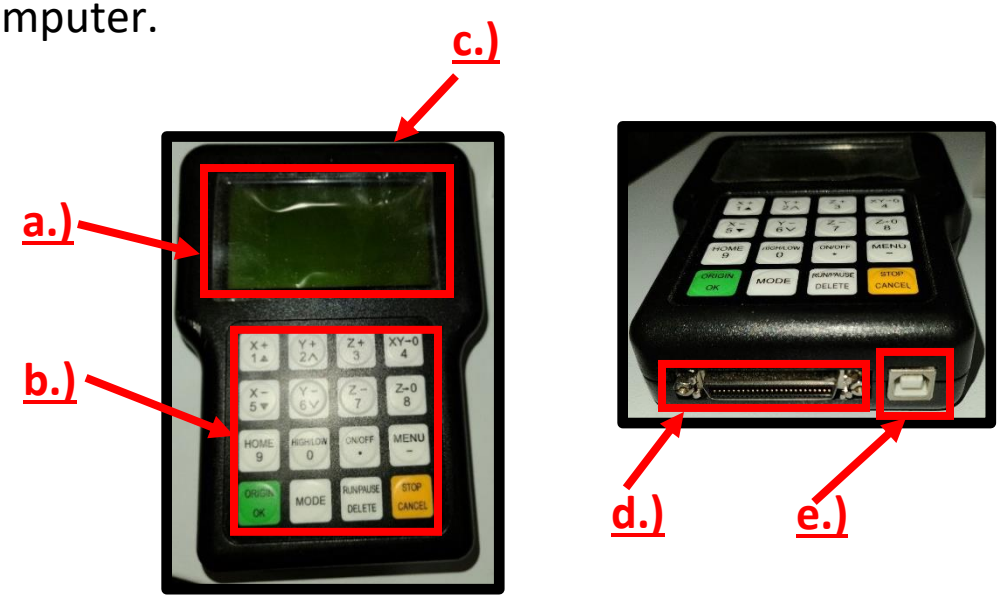
a.) LCD Screen: 128 * 64 resolution LCD display, to display the machine motion, system settings and other information.

b.) Keyboard: Contains 16 buttons to input system parameter information and operate the machine.

c.) U-Disk Interface: The port of U-Disk (FAT16/32) and the memory card.

d.) 50-pin Data Cable Port: The port of 50-pin data cable it connects the handle with the interface board to realize controlling the machine.

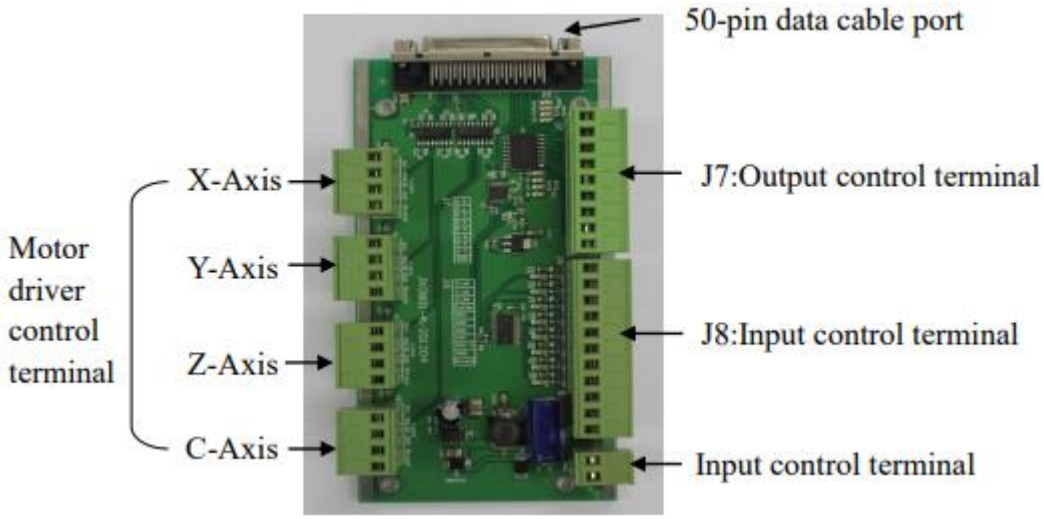
e.) USB Communication Port: The port of USB communication cable. It is used to connect the handle with your computer.



How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine

Description of Each Component-

2.) Interface Board: Includes 5 Parts-



a.) **50-Pin Data Cable Port:** Connect Handle with Interface Board.

b.) **J7-Output Control Terminal:** Including spindle on/Off Signal, Work & Alarm LED Signal etc.

c.) **J8-Input Control Terminal:** Including machine origin detection switch, Tool Setting, Driver Alarm, Hard Limit Switch, and E-Stop Signal.

d.) **Input Control Terminal:** DC24V, 3A.

e.) **Motor Driver Control Terminal**- X-Axis, Y-Axis, Z-Axis, C-Axis.

How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine

Description of Each Component (Cont'd.)-

3.)

50-Pin Data Transmission Cable

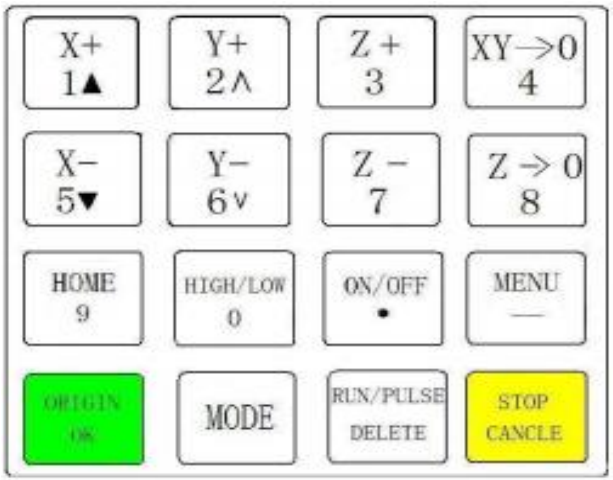
4.)

USB Communication Cable

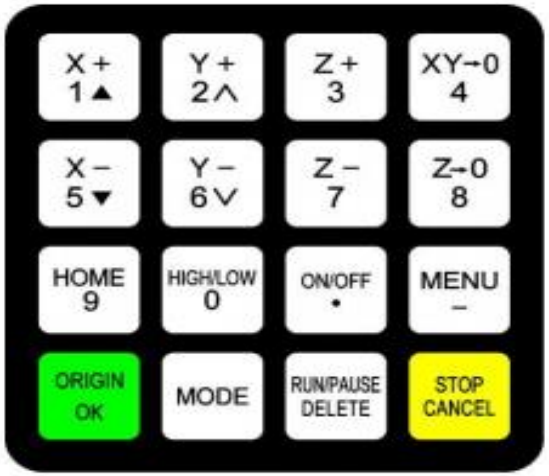
Controller Button Introduction & Functions-

Note: There is a comprehensive manual for the hand-held controller. Below is a list of the main key functions. The controller may vary from that shown.

Rich Auto Motion Control System: Defines 16-Buttons according to functional requirements. Each button has one or more functions under different work status.



16-button layout



buttons picture

X+ / 1 = Moves the gantry in the X direction away from the home end of the bed.

Y+ / 2 = Moves the gantry in the Y direction away from the home end of the bed.

Z+ / 3 = Moves the router head in the Z [Up direction] away from the table surface.

XY-0 / 4 = Set's Machine "Origin".

Controller Button Functions (Cont'd.)-

X- / 5 = Moves the gantry in the X direction towards the home end of the bed.

Y- / 6 = Moves the router head in the Y direction towards the home end of the bed.

Z- / 7 = Moves the router head in the Z (Down Direction) towards the table surface.

Z-0 / 8 = Used set the tool to the "Zero" surface (Tool "Touch-Off".)

How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine-

Controller Button Functions (Cont'd.)-

HOME / 9 = Causes the machine to move to the "Home" position, first in the Z-Axis, followed by X and then Y. (Home is a mechanically determined position using mechanical switches/sensors.)

HIGH/LOW / 0 = Toggles jogging speeds between High and Low ranges.

ONOFF/. = Turns the Router Spindle on and off.

MENU / _ = Provides access to various setup features.

How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine-

Controller Button Functions (Cont'd.)-

ORIGIN /OK = Use to accept commands ("On".) Origin causes machine to the machines "Origin".

MODE = Toggles between the three jogging modes: Continuous, Step or Distance.

"RUN/ PAUSE / DELETE" = Used to load a program from either the USB drive or internal memory. While the program is running, causes the operation to **"Pause"**.

STOP / CANCEL = Stops a running program. Also used to cancel commands.

How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine-

Assembling the Controller:

Fit the Cable to the controller and ensure that the screws are finger tight.

Attachment Screws for Cable.

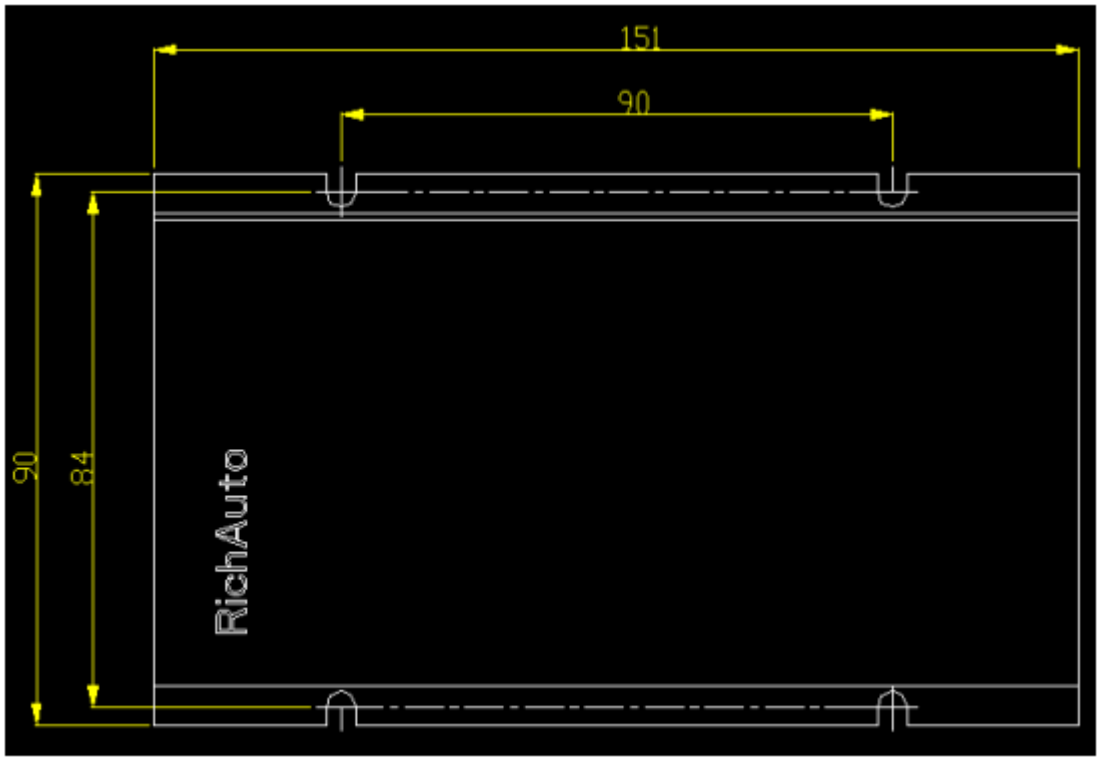
Controller attached to Cable.

Note: When using a memory stick, it fits into a slot on the top of the hand-held controller and must not exceed 8G in capacity.

USB Communication Cable

How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine-

Interface Board Shell Size-



Scale：1:1，Unit：mm

How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine-

Usage Mode of Controller-

Rich Auto motion control system provide two modes of buttons' operations, including one-touch button & Combination button.

One-Touch Button: Press one button on handle.

Combination Button: Press two buttons at the same time to achieve the operation.

The Operation Step: Press one main function button and meanwhile press a second accessibility button, and then release the two buttons at the same time to realize the combination button operation.

List of Combination Buttons:

	Combination Button	Function
1	"MENU –"+"0—9"Number Buttons	Switch the coordinate system (0 for the mechanical coordinate system , 1 - 9 for the work coordinate system).
2	"MENU –"+"ON/OFF •"	Start Z-Axis Automatic Tool Setting.
3	"RUN/PAUSE DELETE"+"1—8" Number Buttons	Start the Breakpoints Processing, (Support Number 1 - 8).

How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine-

List of Combination Buttons (Cont'd.):

	Combination Button	Function
4	RUN/PAUSE DELETE + HIGH/LOW 0	Start Advanced Processing.
5	ON/OFF • + Z+ 3 / Z− 7	To switch gear shaft under manual mode.
6	RUN/PAUSE DELETE + HOME 9	Repeat last time processing.
7	MODE + Z→0 8	Set Stop Position.
8	MENU − + ORIGIN OK	System Upgrade.
9	MENU − + MODE	Operate Machine by Entering Coordinates Parameters.
10	ORIGIN OK + STOP CANCEL	Quit Buttons Check.

How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine-

Detail Information for Buttons Function:

Name	Function
X+ 1▲	Positive movement of X-Axis, menu upward , Figure 1 Inputting.
Y+ 2∧	Positive movement of Y-Axis, speed-up processing speed, Figure 2 inputting.
Z+ 3	Positive movement of Z-Axis, Figure 3 inputting, Increase Spindle Speed during Processing.
XY→0 4	Set X-Axis and Y-Axis Work Origin, Figure 4 inputting.
X− 5▼	Negative movement of X-Axis, Menu Downward, Figure 5 Inputting.
Y− 6∨	Negative movement of Y-Axis, Slow Down Processing Speed, Figure 6 inputting different property selecting in Menu.

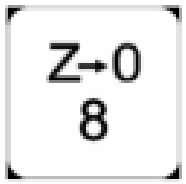
How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine-

Detail Information for Buttons Function (Cont'd.):

Name	Function
X+ 1▲	Positive movement of X-Axis, menu upward , Figure 1 Inputting.
Y+ 2^	Positive movement of Y-Axis, speed-up processing speed, Figure 2 inputting.
Z+ 3	Positive movement of Z-Axis, Figure 3 inputting, Increase Spindle Speed during Processing.
XY→0 4	Set X-Axis and Y-Axis Work Origin, Figure 4 inputting.
X- 5▼	Negative movement of X-Axis, Menu Downward, Figure 5 Inputting.
Y- 6V	Negative movement of Y-Axis, Slow Down Processing Speed, Figure 6 inputting different property selecting in Menu.

How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine-

Detail Information for Buttons Function (Cont'd.):

Name	Function
	Negative movement of Z-Axis, Figure 7 inputting, reduce Spindle Speed during Processing.
	Set Z-Axis Work Origin, Figure 8 Inputting.
	Machine back home, Figure 9 Inputting, check information during Processing.
	High or Low Speed selection under Manual Mode, Figure 0 inputting, Change Work Coordinate & Mechanical coordinate during processing.

How to use the HHC Controller/Rich Auto Programming of the Smartshop J8 CNC Machine-

Detail Information for Buttons Function (Cont'd.):

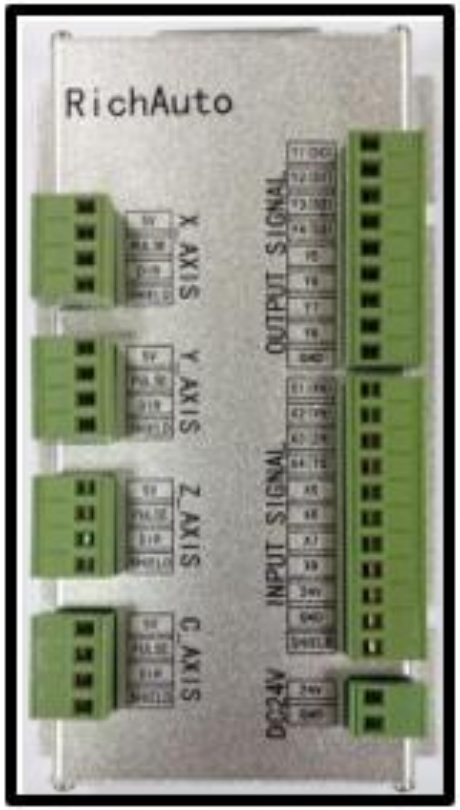
Name	Function
ON/OFF •	Spindle Start/Stop, Decimal Point Inputting.
MENU –	Enter Menu Setting, Negative Sign Inputting ,Check Information during Processing.
ORIGIN OK	Back to Work Origin, Confirm Motions /Inputting/Operating.
MODE	Manual Mode, Continue/Step/Distance to Select.
RUN/PAUSE DELETE	Run or Pause Processing, Delete Inputting Data, Different Property Selecting in Menu.
STOP CANCEL	High/Low Speed Parameter Adjust under Manual Mode, Quit Process Stop/Selections, Inputting and Operating Cancel.

How to use the Rich Auto Interface Board/Rich Auto Wiring of the Smartshop J8 CNC Machine-

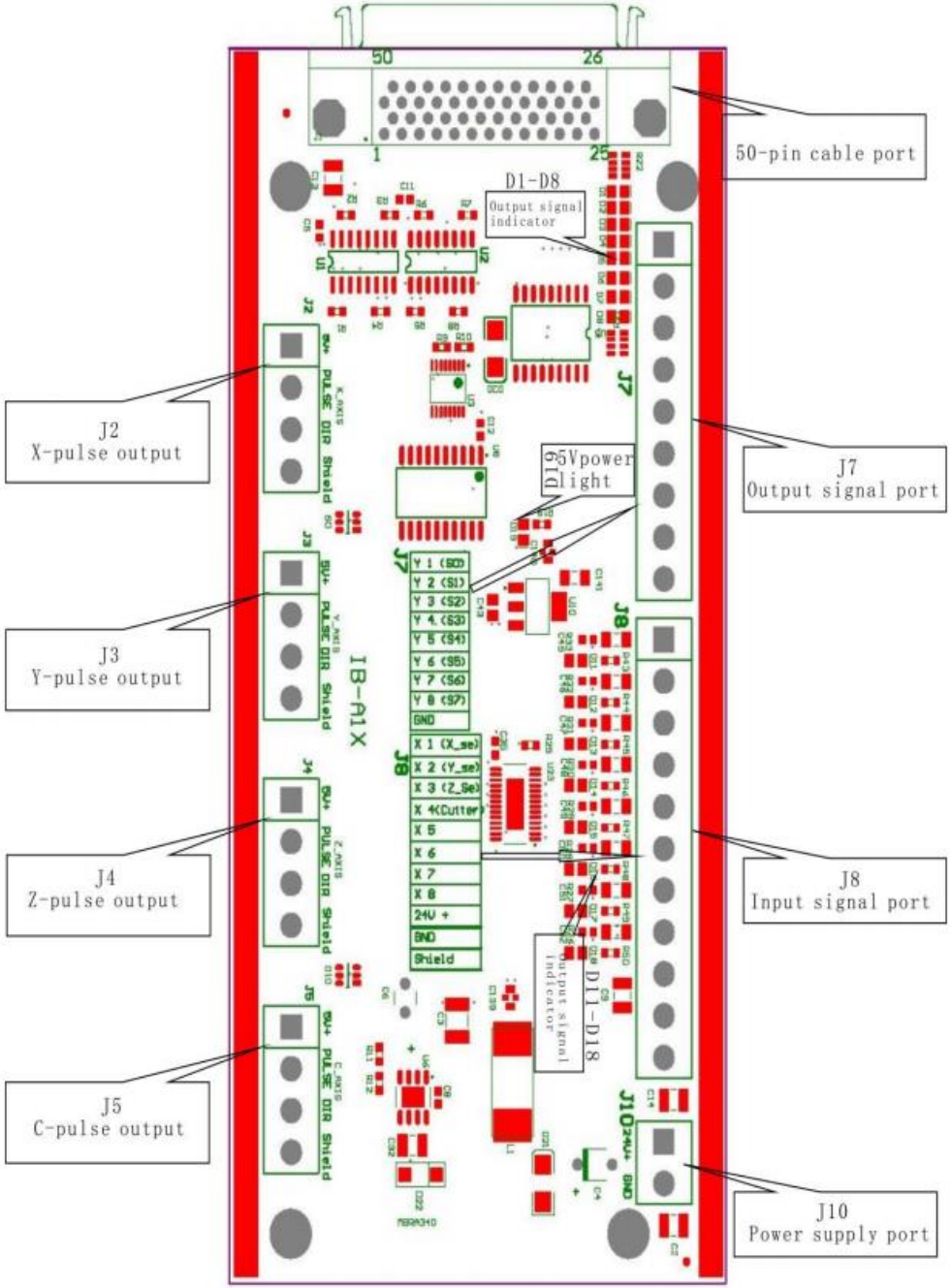
Wiring Instructions-

Rich Auto Interface Board Description-

Interface Board Schematic Diagram:

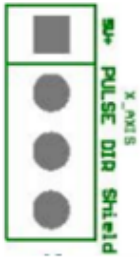


Rich Auto Interface Board



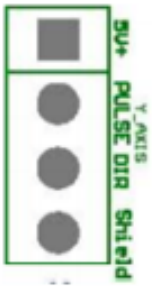
How to use the Rich Auto Interface Board/Rich Auto Wiring of the Smartshop J8 CNC Machine-

Interface board I/O Description-

Port Label	Port Definition	Pin Definition	Pin Functions & Parameters	Notes
J10	System Main Power	System Main Power Supply Port	System Main Power Supply Terminal, Interface Board give DC 5V for System.	Power Area: DC10V~D C24V/3A~40V
J2 	X-Axis Pulse Output Port	5V Signal Output Port	X-Axis Drive Common Anode Power Supply Terminal 5V Output	Do not impose Voltage on this Pin.
		Pulse Signal Output Port	X-Axis direction of the Drive Signal Output Port Output Voltage ≧ 3V Drive Current≦ 8mA	
		Direction Signal Output Port	X-Axis direction of the Drive Signal Output Port Output Voltage ≧ 3V Drive Current≦ 8mA	
		Shield Connection Port	X-Axis Drive Signal Output Voltage Line Terminal Shield	Do not impose Voltage on this Pin.
J3 	Y-Axis Pulse Output Port	5V Signal Output Port	Y-Axis Drive Common Anode Power Supply Terminal 5V Output	Do not impose Voltage on this Pin.
		Pulse Signal Output Port	Y-Axis direction of the Drive Signal Output Port Output Voltage ≧ 3V Drive Current≦ 8mA	
		Direction Signal Output Port	Y-Axis direction of the Drive Signal Output Port Output Voltage ≧ 3V Drive Current≦ 8mA	
		Shield Connection Port	Y-Axis Drive Signal Output Voltage Line Terminal Shield	Do not impose Voltage on this Pin.

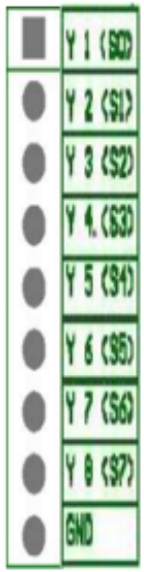
How to use the Rich Auto Interface Board/Rich Auto Wiring of the Smartshop J8 CNC Machine-

Interface board I/O Description (Cont'd.)-

Port Label	Port Definition	Pin Definition	Pin Functions &	Notes
J4 	Z-Axis pulse Output port	5V Signal Output Port	Z-Axis Drive Common Anode Power Supply Terminal 5V Output	Do not impose Voltage on this Pin.
		Pulse Signal Output Port	Z-Axis direction of the Drive Signal Output Port Output Voltage ≧ 3V Drive Current≦ 8mA	
		Direction Signal Output Port	Z-Axis direction of the Drive Signal Output Port Output Voltage ≧ 3V Drive Current≦ 8mA	
		Shield Connection Port	Z-Axis Drive Signal Output Voltage Line Terminal Shield	Do not impose Voltage on this Pin.
J5 	C-Axis Pulse Output Port	5V Signal Output Port	C-Axis Drive Common Anode Power Supply Terminal 5V Output	Do not impose Voltage on this Pin.
		Pulse Signal Output Port	C-Axis direction of the Drive Signal Output Port Output Voltage ≧ 3V Drive Current≦ 8mA	
		Direction Signal Output Port	C-Axis direction of the Drive Signal Output Port Output Voltage ≧ 3V Drive Current≦ 8mA	
		Shield Connection Port	C-Axis Drive Signal Output Voltage Line Terminal Shield	Do not impose Voltage on this Pin.

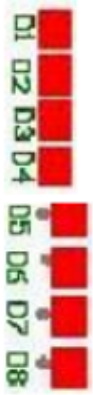
How to use the Rich Auto Interface Board/Rich Auto Wiring of the Smartshop J8 CNC Machine-

Interface board I/O Description (Cont'd.)-

Port Label	Port Definition	Pin Definition	Pin Functions &	Notes
J7 	Output Signal Control Terminal	Y1(S0): Spindle ON/OFF	Connect to FWD of Inverter	Output Low Level Signal
		Y2(S1): Speed 1	Connect to Inverter to Control Speed	Output Low Level Signal
		Y3(S2): Speed 2	Connect to Inverter to Control Speed	Output Low Level Signal
		Y4(S3): Speed 3	Connect to Inverter to Control Speed	Output Low Level Signal
		Y5(S4): Alarm LED	Lignt will appear when there is something wrong with System	Output Low Level Signal
		Y6(S5) : Work LED	Lignt will appear when System works	Output Low Level Signal
		Y7(S6): Definable	User-Defined Signal	Output Low Level Signal
		Y8(S7): Definable	User-Defined Signal	Output Low Level Signal
		GND: Output GND		GND Connect to this Terminal in Control Inverter Speed Mode

How to use the Rich Auto Interface Board/Rich Auto Wiring of the Smartshop J8 CNC Machine-

Interface board I/O Description (Cont'd.)-

Port Label	Port Definition	Pin Definition	Pin Functions &	Notes
	D19	Power LED	Interface Board 5V Indicator Indicates the Interface and Internal Power Supply Status Moderators	Lights after Power
	D11	Status Indicator	X origin status indicator	Light after power. Input low, level signal, the lights will be put out. Release the signal, the lights will be bright again
	D12	Status Indicator	Y origin status indicator	
	D13	Status Indicator	Z origin status indicator	
	D14	Status Indicator	Tool-Setting Status Indicator	
	D15	Status Indicator	Driver Alarm Status Indicator	
	D16	Status Indicator	Hard Limit Status Indicator	
	D17	Status Indicator	E-stop Status Indicator	
	D18	Status Indicator	Definable Signal Status Indicator	
	D1	Status Indicator	Output Terminal Y1 Status Indicator	Output Low Level signal when the System Works
	D2	Status Indicator	Output Terminal Y2 Status Indicator	
	D3	Status Indicator	Output Terminal Y3 Status Indicator	
	D4	Status Indicator	Output Terminal Y4 Status Indicator	
	D5	Status Indicator	Output Terminal Y5 Status Indicator	
	D6	Status Indicator	Output Terminal Y6 Status Indicator	
	D7	Status Indicator	Output Terminal Y7 Status Indicator	
	D8	Status Indicator	Output Terminal Y8 Status Indicator	

How to use the Rich Auto Interface Board/Rich Auto Wiring of the Smartshop J8 CNC Machine-

Hardware Wiring-

Installation Requirements: Power (24V, 3A), it is better to add a filter to prevent the electric field interference. If origin detecting switch are different power supply type, the special testing switching power is needed, (24V Origin Detecting Switch is the best choice).

Rich Auto Motion Control System realizes its control through the connection between the **Interface Board** and **CNC Machine**. **Interface Board Terminal** can be divided into **Input Terminal** and **Output Terminal**:

Input Terminal:

J8 (Input Control Terminal)

J10 (Main Power Terminal)

Output terminal:

J2 (X-Axis Pulse Signal Output Terminal)

J3 (Y-Axis Pulse Signal Output Terminal)

J4 (Z-Axis Pulse Signal Output Terminal)

J5 (C -Axis Pulse Signal Output Terminal)

J7 (Output Control Terminal)

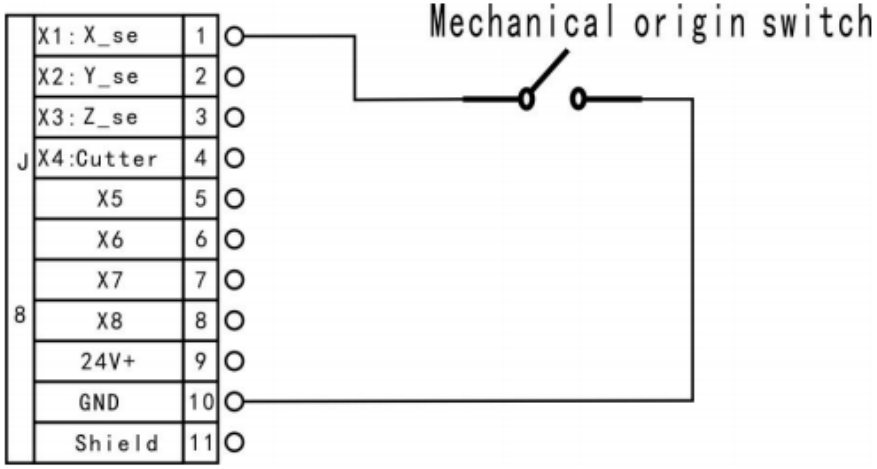
How to use the Rich Auto Interface Board/Rich Auto Wiring of the Smartshop J8 CNC Machine

Input Signal Terminal:

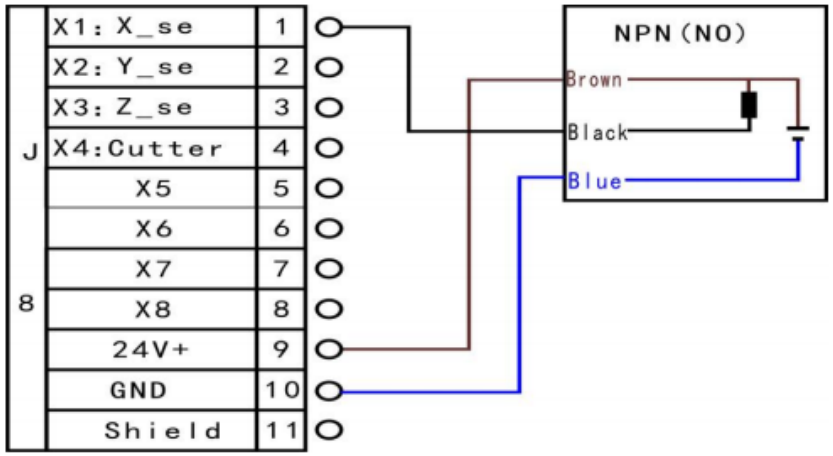
J8

1.) Sensor Input:

a.) Mechanical: Y and Z are the same as X.



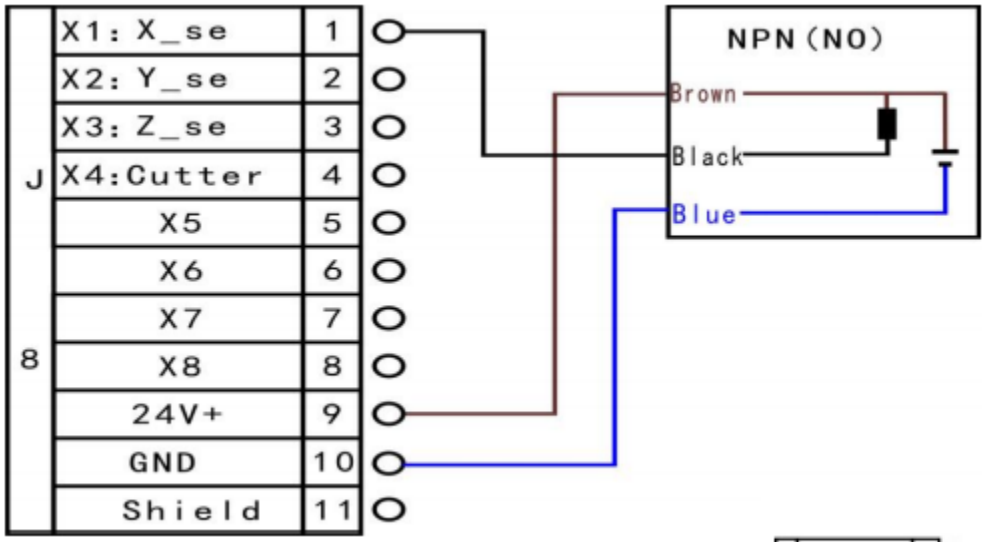
b) NPN(NO): Y and Z are the same as X.



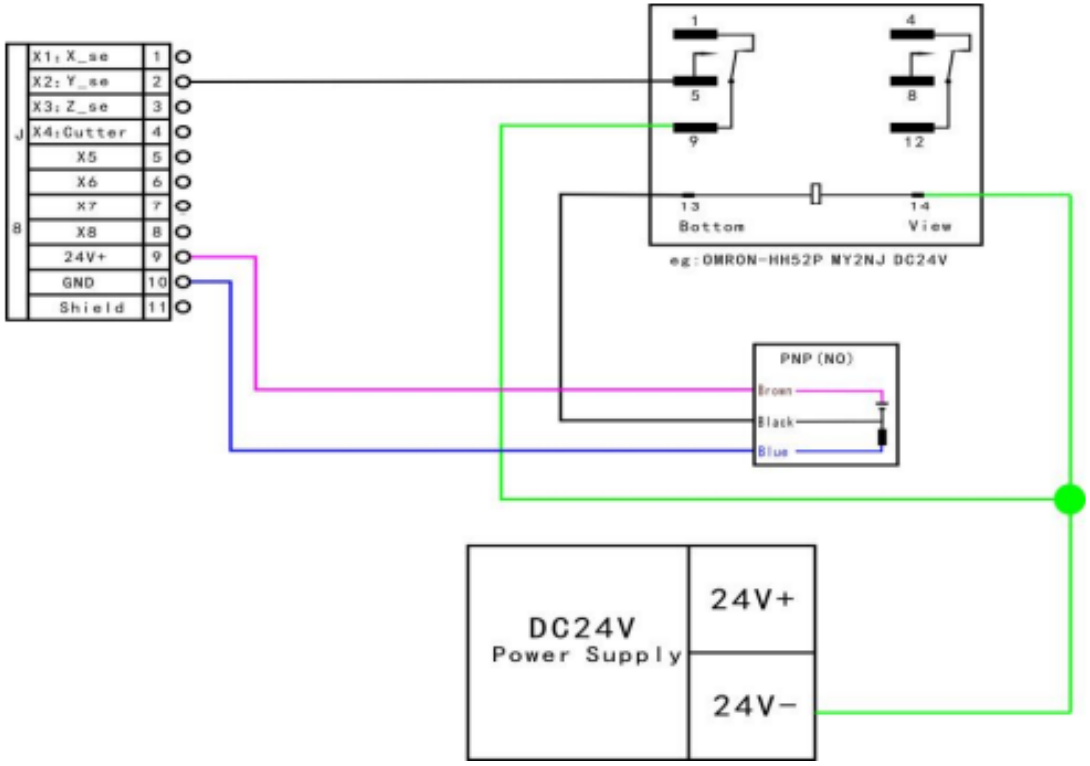
How to use the Rich Auto Interface Board/Rich Auto Wiring of the Smartshop J8 CNC Machine

Input Signal Terminal:

J8 (Cont'd.)

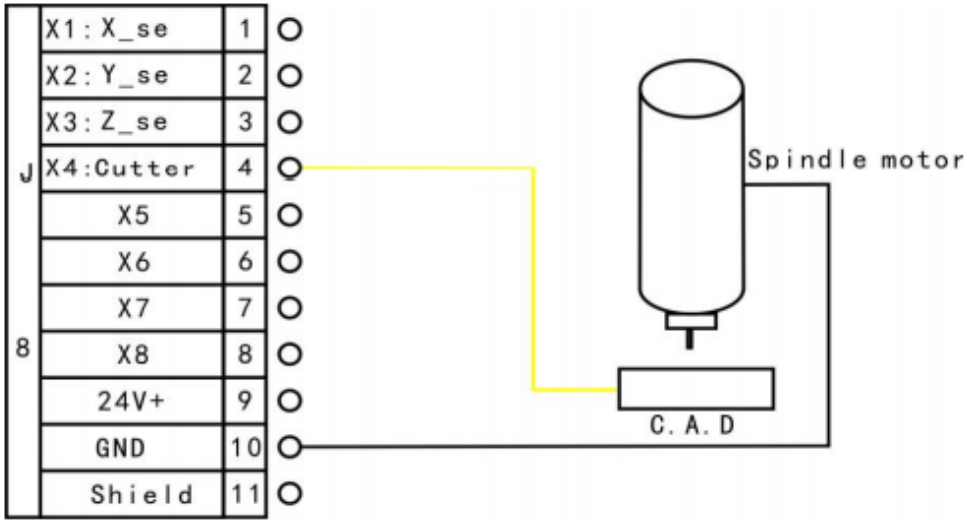


c) PNP(NO): X and Z are the same as Y.

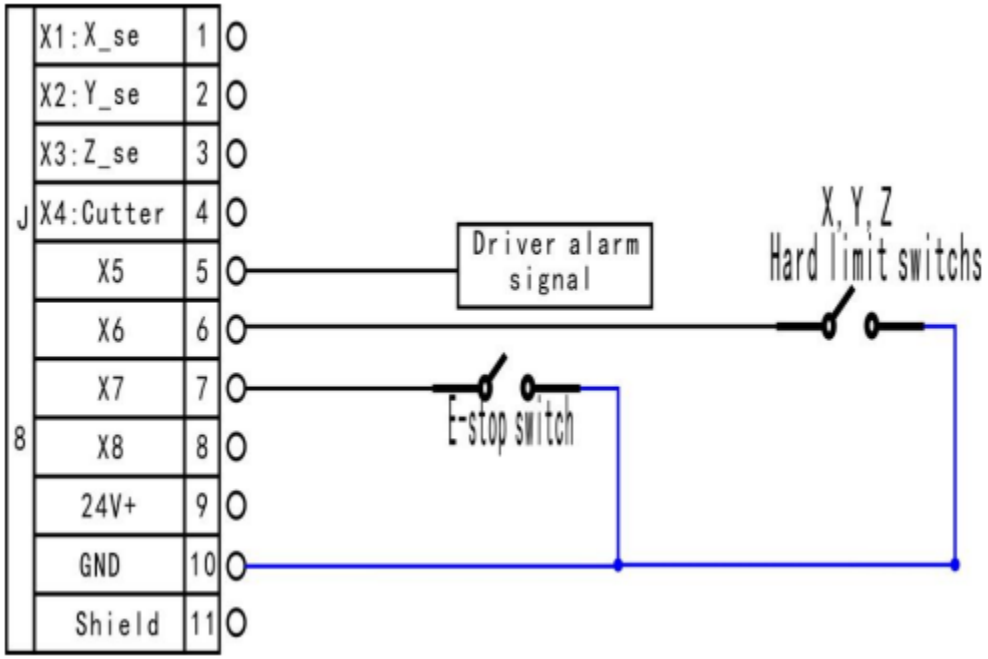


How to use the Rich Auto Interface Board/Rich Auto Wiring of the Smartshop J8 CNC Machine

2.) Tool-Setting Input: Tool-Setting Detecting Wiring:

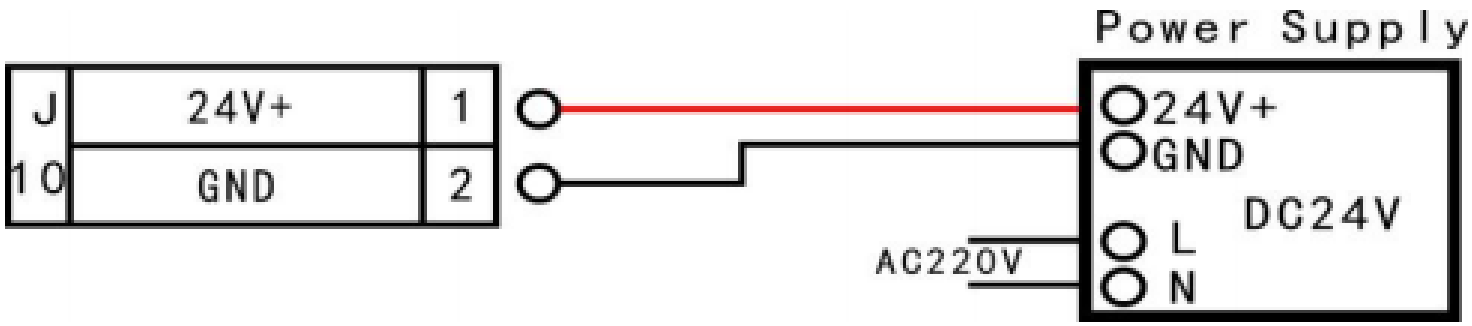


3.) X5-X8 Driver Alarm, Hard Limit, E-Stop Signal:



How to use the Rich Auto Interface Board/Rich Auto Wiring of the Smartshop J8 CNC Machine

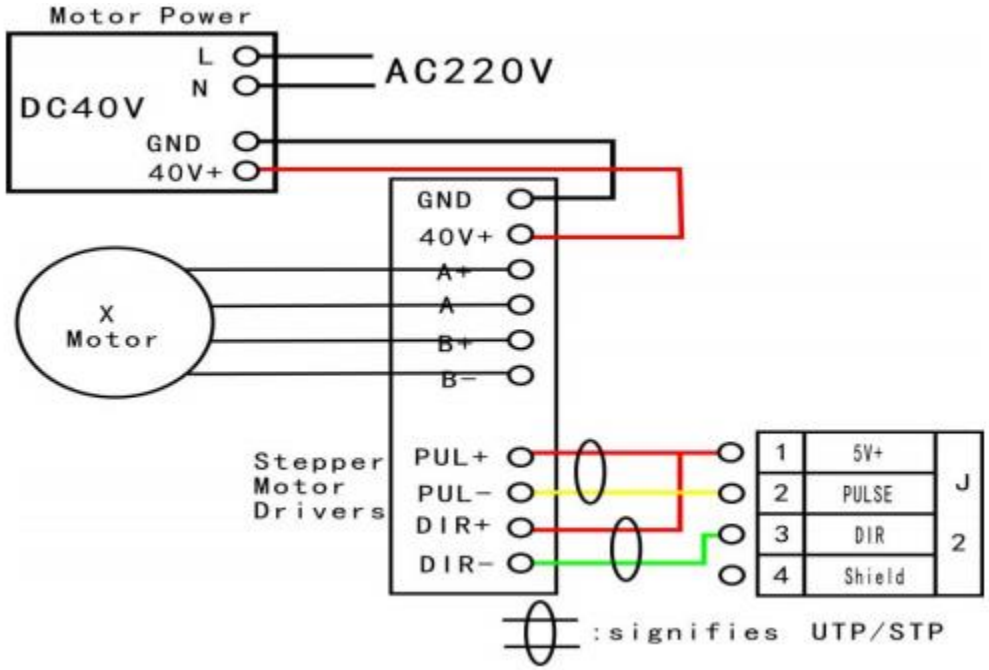
J10-Main Power Wiring:



Output Terminal

J2 X-Pulse Signal Wiring: Y and Z are the same as X:

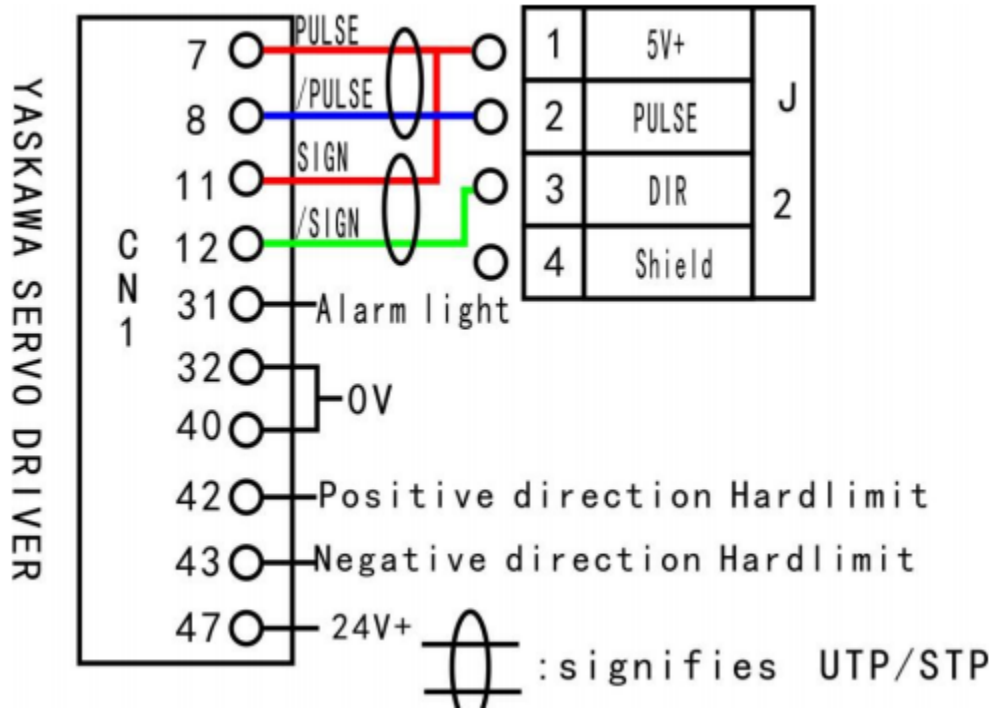
Stepper Driver ：



How to use the Rich Auto Interface Board/Rich Auto Wiring of the Smartshop J8 CNC Machine

J2 X-Pulse Signal Wiring: Y and Z are the same as X (Cont'd.):

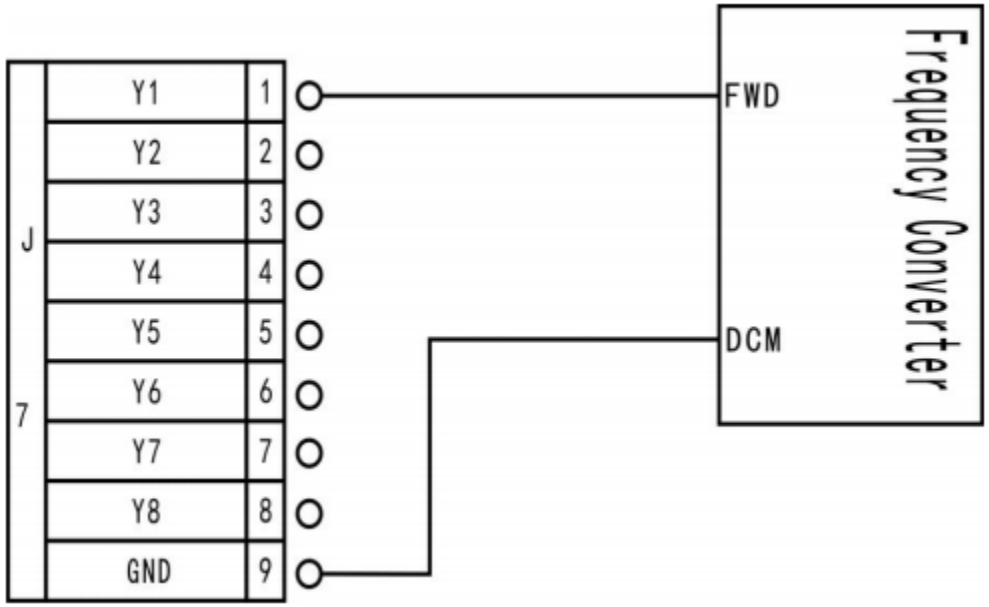
Servo Driver:



How to use the Rich Auto Interface Board/Rich Auto Wiring of the Smartshop J8 CNC Machine-

J7 Spindle Output

2 Status: Spindle Start/Stop:



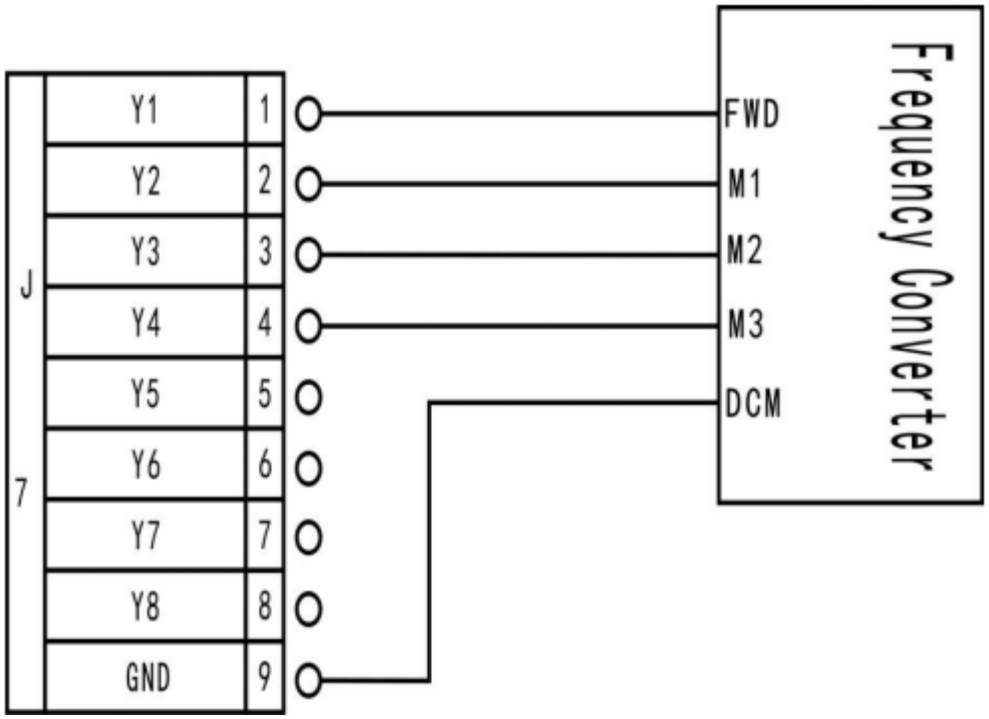
The corresponding Spindle Setting is:

1 Shift	↓
2 Shift	↑

How to use the Rich Auto Interface Board/Rich Auto Wiring of the Smartshop J8 CNC Machine-

8 Status: Spindle Start---S1—speed 1, S2—speed 2, Sn—speed n, when Spindle Stop, the Screen displays Fn—the Speed before Spindle Stop.

3 Lines, 8 Status-



How to use the Rich Auto Interface Board/Rich Auto Wiring of the Smartshop J8 CNC Machine-

8 Status: Spindle Start---S1—speed 1, S2—speed 2, Sn—speed n, when Spindle Stop, the Screen displays Fn—the Speed before Spindle Stop.

3 Lines, 8 Status- (Cont'd.):

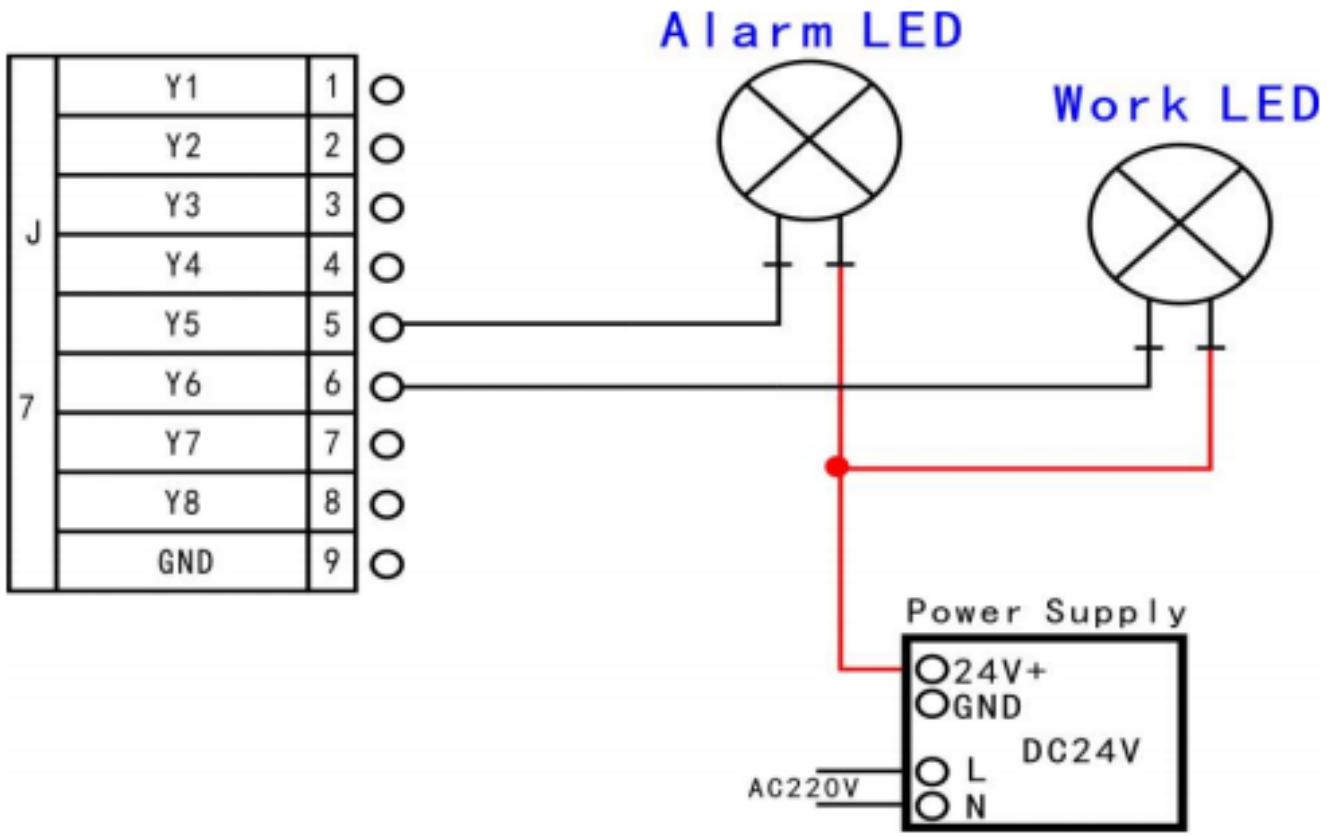
The corresponding Spindle Setting is:

1 Shift	↓	↓	↓
2 shift	↑	↓	↓
3 shift	↓	↑	↓
4 shift	↑	↑	↓
5 shift	↓	↓	↑
6 shift	↑	↓	↑
7 shift	↓	↑	↑
8 shift	↑	↑	↑

PS: FWD and DCM has Connected in Parallel in some Inverters, please do not need to connect Y1 (S0) in such situations, you only need to connect DCM with GND of Interface Board, without having to reset the Spindle Gear.

How to use the Rich Auto Interface Board/Rich Auto Wiring of the Smartshop J8 CNC Machine-

J7 Output Port Y5-Alarm LED and Y6-WORK LED:



You can Connect the Machine with the Control System when the above setting is over.

Commissioning of the Machine and Control System-

1.) After turning on the power, users can manually move each axis and confirm the direction. If the movement direction and definition direction are opposite, users can change the motor phase sequence.

2.) According to the original location of the machine coordinates, users can enter menu-machine setup-home setup- home direction to reset it.

3.) Double-Press “Menu”-Manual Voltage Setup (the Upper Arrows stand for Input Voltage) to check whether the Home Switch is working. The machine is in good connection, if all the above setting is “OK”.

Menu Descriptions-

Menu Category-

According to Menu Function, Rich Auto System Menu divided into the following:

- MACHINE SETUP
- AUTO PRO SETUP
- SYSTEM SETUP
- OPERATE FILE
- VERSION VIEW

Every main menu has some submenus.

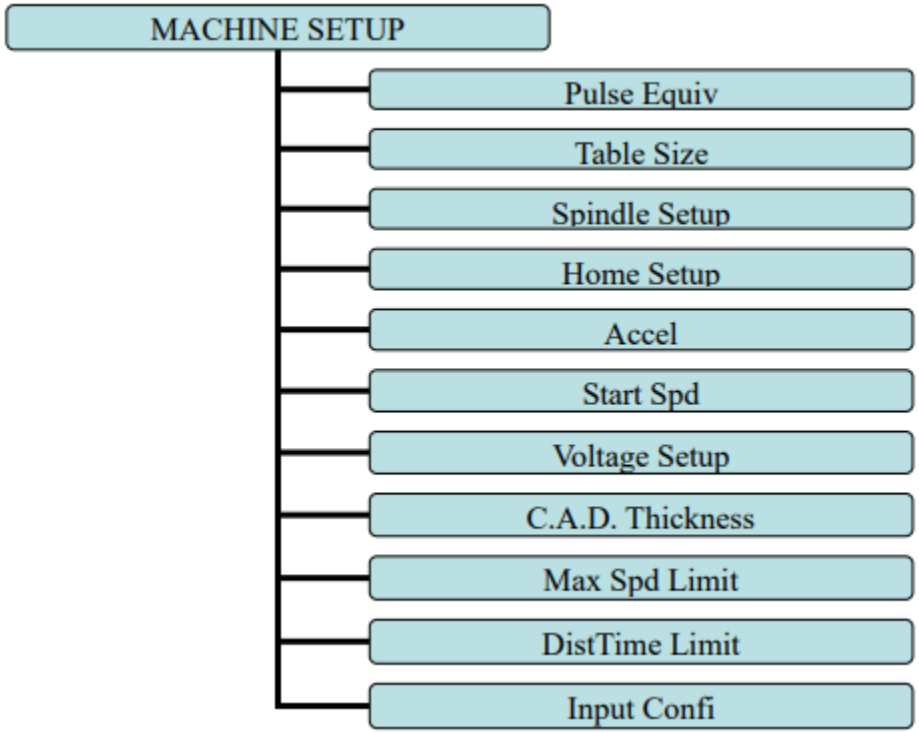
Menu Details-

Machine Setup-

Users can set the parameters about machine hardware under **"Machine Setup"**. It is set by machine producer according to device type. If machine hardware parameter is not changed, this parameter should also not change. If machine users need to change, please consult machine producer.

Machine Setup (Cont'd.)-

Machine Setup Chart



1.) **Pulse Equiv. (or Pulse Equivalent):** The number of pulses of the system needs to send when machine moves every 1mm. (Unit Pulse/mm.).

Machine Setup (Cont'd.)-

1) Stepper Driver-

Formula = Pulses per Revolution / Distance per Revolution.

Pulses per revolution formula: (360 °/Stepper Angle) * Driver Subdivision.

Some stepper drivers mark pulse number directly.

Distance/R Formula:

Screw Drive Machine = Screw Pitch * Mechanical Transmission Ratio.

Rack Drive Machine = Rack Module * Gear Teeth Number*π (Pie)* Mechanical Transmission Ratio.

Stepper Motor System Formula:

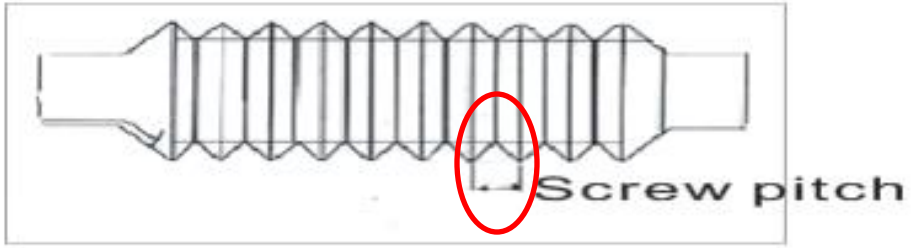
Screw Drive:

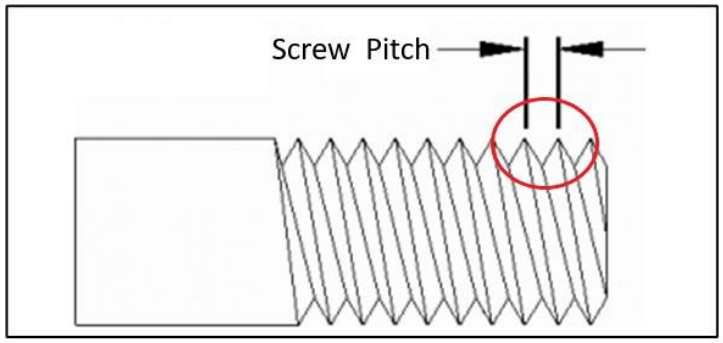
$$\text{pulse} = \frac{\frac{360\,^\circ}{\text{Stepper angle}} * \text{Driver subdivision}}{\text{Screw pitch} * \text{transmission ratio}}$$

Formula Description: Stepper Angle is the Angle of the Motor Parameters, Motor Rotation Step Walk.

Machine Setup (Cont'd.)-

Driver subdivision is the parameter set by the driver.





Screw Pitch (See Above Pictures): The distance that the nut moves when the ball screw makes one rotation.

Transmission Ratio: The speed ratio or angular velocity ratio of the capstan and the driven wheel.

Rack Drive:

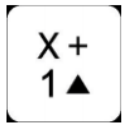
$$pulse = \frac{\frac{360°}{\text{stepper angle}} * \text{Driver subdivision}}{\text{rack module} * \text{gear teeth number} * \pi * \text{transmission ratio}}$$

Formula Description: step angle is the angle of the motor parameters, motor rotation step walk.
Driver Subdivision: is the parameter set by the driver.

Rack Module and Gear Teeth Number are Gear Parameters:
Rack Module * Gear Teeth Number * π (Pie) = Equals the Perimeter of the Reference Circle.
Transmission Ratio: The Speed Ratio or Angular Velocity Ratio of the capstan and the driven wheel.

Machine Setup (Cont'd.)-

Setting: Enter **"Pulse Equiv"**, cursor is in the X-Axis Pulse Equivalent position,

Press " 

/ " 

to move cursor to where users want to modify.

Press " 

"input the new number, and press " 

to save, cursor auto move to next line the same operation to change, press " 

to save all value.

Servo Driver-

The Pulse Equivalent factory default X, Y, Zare 400, and set the **Electronic Gear Ratio** in the **Servo Drive** according to the **Pulse Equivalent**.

The **Numerator of the Electronic Gear Ratio** represents **Encoder Pulse Number**, users can search it in **Servo Driver Manual**.

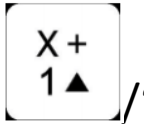
The **Denominator of the Electronic Gear Ratio**:

- ✓ **Screw Drive:** Handle Pulse Equivalent (400) * Screw Pitch * Mechanical Transmission Ratio.
- ✓ **Rack Drive:** Handle Pulse Equivalent (400) * Rack Module * Gear Teeth Number*π (Pie)* Mechanical Transmission Ratio.

Machine Setup (Cont'd.)-

Table Size:

Rich Auto System make the table size as the soft limit values, to prevent the machine to move over travel, machine size must be less than or equal to the value of the actual motion displacement machine.

Setting: Enter **"Table Size "**, press " 

/" 

to move cursor to where users want to modify. Press " 

", input the new number, press " 

" to save, cursor auto move to next line, the same operation to change, press " 

" to save all value.

Spindle Setup:

Spindle Delay: Unit: ms; including start delay and stop delay.

Spindle State: Used to set system using multi-speed or only "On/Off" 2 status, the corresponding system parameters.

System default "3-line 8-state", if users need "1-line 2-state (On/Off)", users can change the number of lines is 1; See detailed settings at **J7** Spindle Output Wiring.

Machine Setup (Cont'd.)-

Home Setup:

Home Speed: Every axis movement speed when back home,
System Default Speed X, Y: 3000 MM/Minute, Z: 1800 MM/Minute.

Home Order: Every Axis movement order when back home Including:

Z, X and Y	Z, X, Y	Z, Y, X	
Z Only	X and Y, Z	X, Y, Z	
Y, X, Z	X, Y Home	X, Y, Home	
Y, Z, Home	None Home	X Home Only	X, Z and Y

Home Direction: Every Axis movement direction when back home, this direction depends on the position where home switch is on the machine. If home switch installed in the positive direction, so home direction should be **"Positive",** and vice versa.

Setting: Enter **"home dir"**, press " X+ 1▲ /" X− 5▼ " to move cursor to where users want to modify. Press " RUN/PAUSE DELETE " to change home direction, press " ORIGIN OK " to save the change.

Machine Setup (Cont'd.)-

Accel (Acceleration): Unit-mm/s2, the maximum acceleration value during acceleration and deceleration movement, improve (including straight and curved motion) processing capabilities. If acceleration is too large, it may cause the motor losing steps, jitter and even whistle, if too small, it will lead to accelerated slowly and reduce the operating speed of the entire graph. **System Default:** linear acceleration is 800 mm/s2, curve acceleration is 1000 mm/s2, the proposed curve acceleration is 1-1.5 times the linear acceleration value.

Start Speed: Unit-mm/minute. The speed of axis started directly from standstill. Not starting from zero speed, but starting directly from a certain speed, so it can shorten the overall processing time, but do not set this speed too high. Set too high, it will cause the motor losing steps, jitter and even whistle; Set too small, it will reduce the operating speed of the entire graph. If the inertia of motion axes (axis heavier), users can set a smaller start speed, if the inertia of motion axes smaller (lighter shaft), users can set it bigger.

Voltage Setup: Set input and output signal terminal status, "↓" means normal open, "↑" means normal closed. Including two rows of arrow: The upper arrow indicates the input level: Set input voltage signal terminal status. The top four: 0、1、2、3 positions correspond X-Axis back home, Y-Axis back home Z-axis back home, Tool Setting Signal, 5-7: 4, 5, 6 positions correspond Driver Alarm, Hard Limit E-Stop Signal.

Machine Setup (Cont'd.)-

The under arrow indicates the output level: Set output voltage signal terminal status. The Top Four: 0, 1, 2, 3 positions correspond spindle "On/Off", Multi-Speed 1, Multi-Speed 2, Multi-Speed 3 Signal, 5, 6:4, 5 Positions correspond Alarm LED, Work LED Signal.

Setting:

Press " X+ 1▲ "/" X− 5▼ " to move around, **Press** " Y+ 2∧ ", " Y− 6∨ "to move up and down, **Press** " RUN/PAUSE DELETE "to change the direction of the arrow.

C.A.D. Thickness (Unit-mm) :

This thickness should input by actual, if it is bigger than the actual thickness, Z-Axis may cut too much; if smaller, Z-Axis can't touch workpiece. This parameter can only take effect when user use auto tool setting function.

Max Spd Limit (Max Speed Limit): (Unit: mm/minute):

Set machine top speed, it only takes effect during processing, system default max speed X, Y is "60000000 mm/minute", "Z+" is "1800 mm/minute", "Z-" is "3000 mm/minute".

Machine Setup (Cont'd.)-

DistTime Limit:(Unit: second):

Users select distance mode, and if the machine does not move in a certain period (System Default is 30 seconds), the system will go back to Continuous Mode to prevent Z-Axis collision risk because of the customer forgot to switch back to Continuous Mode and set a large distance value.

InputConfi （Input Port Configuration）：

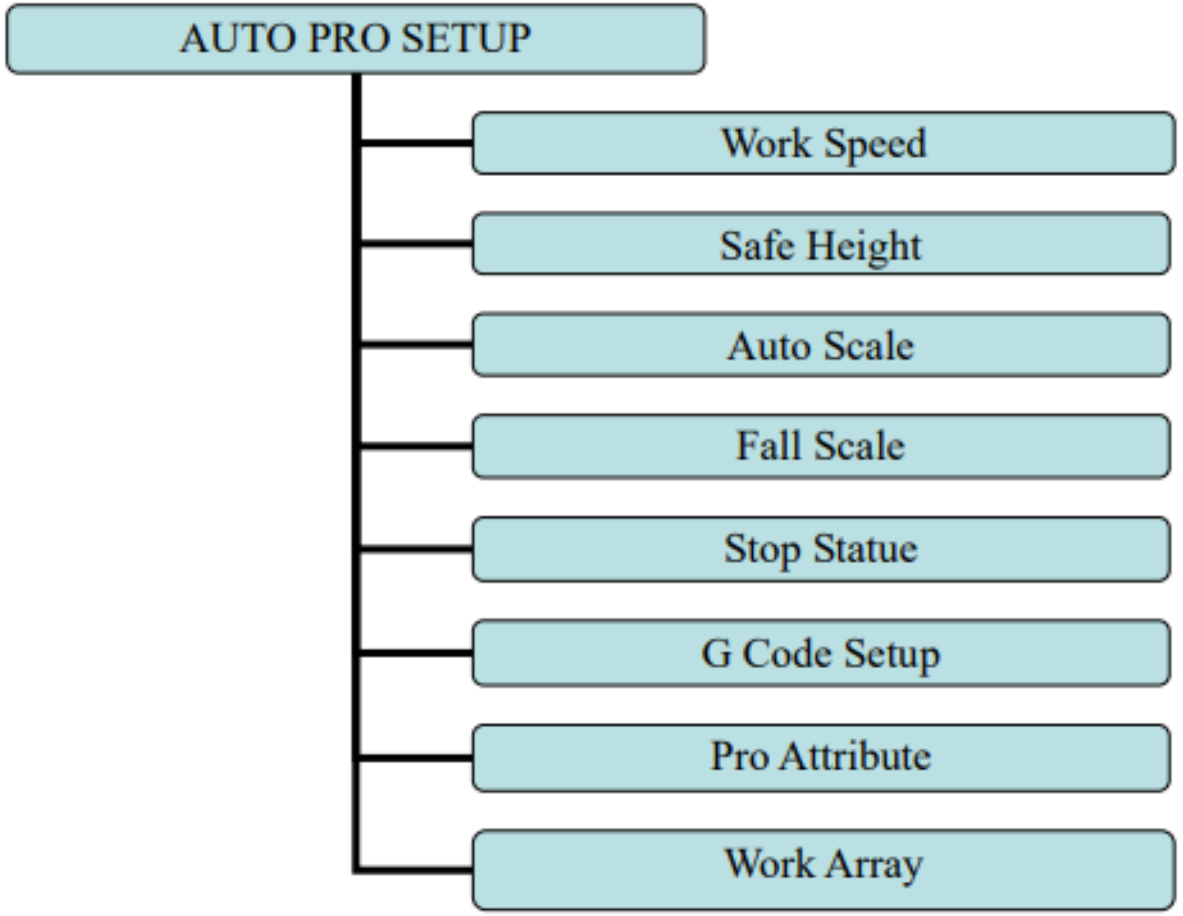
To open or prohibit input signal，if the interface board does not connect X5-X8 signals, users can prohibit X5-X8 signals.

Machine Setup (Cont'd.)-

Auto Pro Setup-

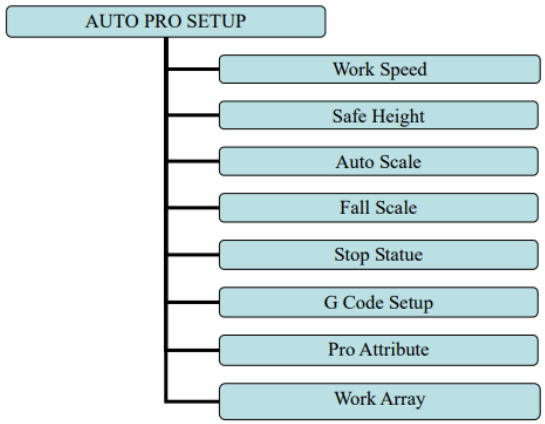
Users can set processing parameters, G-Code attributes etc. under this menu.

Auto Pro Setup Chart



Machine Setup (Cont'd.)-

Auto Pro Setup (Cont'd.)-



1.) **Work Speed:** Unit: mm/minute, including work speed and fast speed,
System Default is 3000 mm/minute.

2.) **Safe Height:** Unit: mm, the height of Z-Axis rises during processing.
System Default is 40.000 mm.

3.) **Auto Scale:** Actual Processing Speed= Work Speed*Auto Scale, system default auto scale does not affect the fast speed.

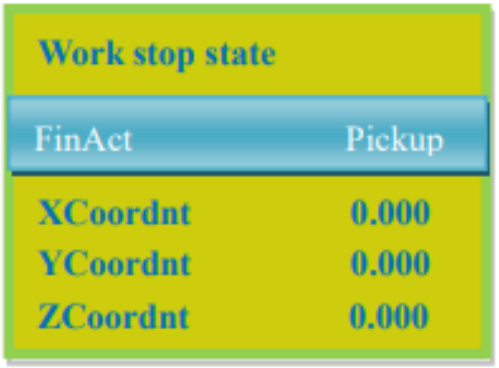
4.) **Fall Scale:** Fall Scale, System Default is 0.200, Fall Speed=fast speed*fall scale,

the maximum fall speed is Z axis negative limit speed*fall scale. Fall height, System Default is 5.000mm, fall down scale takes effect when the spindle falls to the fall height.

Machine Setup (Cont'd.)-

Auto Pro Setup (Cont'd.)-

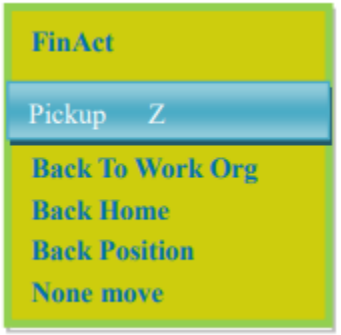
5.) **Stop Statue:** Setup stop position after auto processing.



(Coordnt=Coordinate)

Set Stop Position: Press " X+ 1▲ X− 5▼ move cursor to where users want to modify.

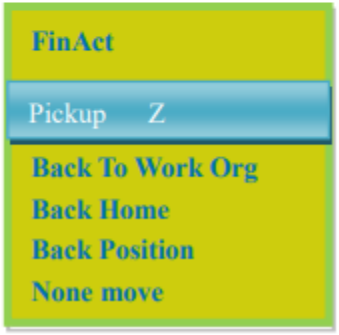
Press " RUN/PAUSE DELETE ", input the new number, Press " ORIGIN OK " to save. Press " RUN/PAUSE DELETE "to enter finish action list:



Machine Setup (Cont'd.)-

Set Stop Position: Press " X+ 1▲ "/" X− 5▼ " to move cursor to where users want to modify.

Press " RUN/PAUSE DELETE ", input the new number, Press " ORIGIN OK " to save. Press " RUN/PAUSE DELETE "to enter finish action list:



(Fin Act=Finish Action, Org=Origin)

Press " X+ 1▲ " " X− 5▼ "ove cursor to where users want to modify, Press " ORIGIN OK "save.

Machine Setup (Cont'd.)-

G-Code Setup:

Set Special G -Code attribute, according to the actual need to make changes.

(Ign=Ignore, Adj=Adjt=Adjust, AbsCntr= Absolute Center) PS: Blue Parts indicate System Default Attributes.

Setting: Press " X+ 1▲ "/ " X− 5▼ " move cursor to where users want to modify,

Press " RUN/PAUSE DELETE " to select the attribute users want, Press " ORIGIN OK " to save.

Machine Setup (Cont'd.)-

Work Array:

Set array parameter, including Columncount, Rowcount, Columnspace, Rowspace, Interval, (Unit：ms)

Columnspace: File spacing of X direction.

Rowspace: File spacing of Y direction.

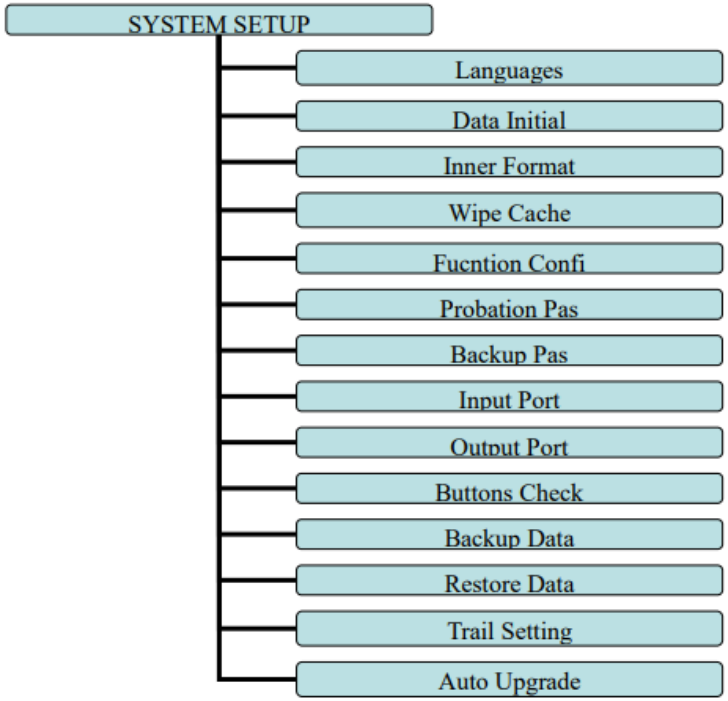
Total Processing Times= Columncount* Rowcount.

Interval: System Default 0, it means no wait.

During processing, if users need to change processing materials after completion of each processing, you need set time interval a negative number. When the first-time processing is completed, the screen prompt: waiting for the next array processing, press any key to start the next array processing at this time, if not press, system keep waiting.

Machine Setup (Cont'd.)-

System Setup Chart



1.) **Languages:** Change system display language users can choose Chinese and English.

2.) **Data Initial:** After data initial system parameters will restore to factory setting.

3.) **Inner Format:** Wipe the internal files, it will not damage the system parameters.

Machine Setup (Cont'd.)-

System Setup Chart (Cont'd.)

4.) **Wipe Cache:** Users need to do this after functional upgrade, such as change four-axis program to three-axis program, users must do this operation. After this operation, users need to restart the system.

5.) **Function Confi (Function Configuration):** Set whether the system retain a function or not, change it according to the actual application in accordance with the practical application of changes. After the operation, users need to restart the system.

Set function	
PausePkup	NoPick/Pickup
ScaleFast	None/Affect
Manual	Step/Trad
Pretrt	Parse/None
QuryPara	Query/None
StrtHome	Query/Auto/ZOnly/None
CopyWork	Off/On
RetOrgPZ	Pick Z/Z Stop
TolstAct	Pickup/Origin
PauseRstr	All/only Z

PS: **Blue Parts** indicate system default function.

Machine Setup (Cont'd.)-

System Setup Chart (Cont'd.)

Setting: Press " X+ 1▲ "/" X− 5▼ " move cursor to where users want to modify,

Press" RUN/PAUSE DELETE ",and then select the function users want, Press " ORIGIN OK " to save.

6.) **Probation Pas (Probation Password):** If engraving machine manufacturers setting some kinds of passwords before shipment (including probation password and backup password, etc.), if you forget the original password, you can connect our company and tell us 20-digit here, our company will provide you a new 20-digit password, you need enter the new 20-digit password, and then all the passwords will be cracked.

Setting: Press " ORIGIN OK " to enter "Probation Password", "inpur" the new password, and then

Press " ORIGIN OK "to save.

Machine Setup (Cont'd.)-

System Setup Chart (Cont'd.)

7.) **Backup Pas (Backup Password):** Prevent users overwritten the original correct parameters in the parameter backup disorder or misuse case. To cancel, you do not input any number when you are prompted to enter a new password, Press " 

" to save.

8.) **Input Port (Input Port List):** 1-3:X, Y, Z Home Signal, 4: Tool Setting Input Signal,

5-7: Driver Alarm, Hard Limit, E-Stop Signal.

9.) **Output Port (Output Port List):** 1: Spindle On/Off Signal, 2-4: Spindle Speed Signal,

5: Driver Alarm Signal, 6: Work LED Signal.

10.) **Buttons Check:** Users can check buttons are valid or not under this menu.

Enter "Buttons Check", Press every button if it is valid, the screen will highlight.

Exit "Buttons Check", Press " 

"+" 

".

11.) Backup Data: Backup system parameters to U-Disk or Inner, format system can't affect this. File Format: data.bak.

Machine Setup (Cont'd.)-

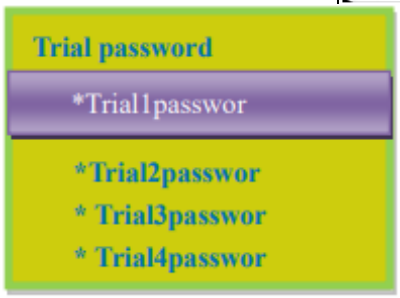
System Setup Chart (Cont'd.)

12.) Restore Data: Restore backup data from U-Disk or Inner to System.

13.) Trial Setting: Including Four levels password, password and using time can be set in every level respectively. Password can be set to be 1-8 digits; using time unit: hour, system default 1. The password work according to top-down order, if you do not set trial 1 password, only set trial 2-4, it will work according to 2-4 order.

The operation of Data Initial, Inner Format, Wipe Cache should not crack the password.

Setting: Press" ORIGIN OK "to get into "Probation Set", Press " X+ 1▲ ", " X− 5▼ " to move cursor to which you want to choose. Press" ORIGIN OK "to get into, and then press " RUN/PAUSE DELETE ", input the new number, Press " ORIGIN OK " to save. The screen display:

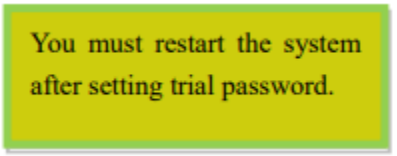


There is a mark "*" before every level password, if not, the password will not work normally.

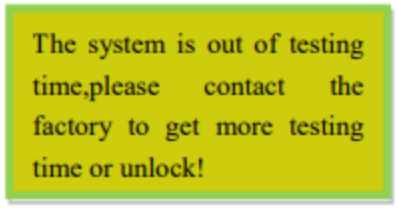
Machine Setup (Cont'd.)-

System Setup Chart (Cont'd.)

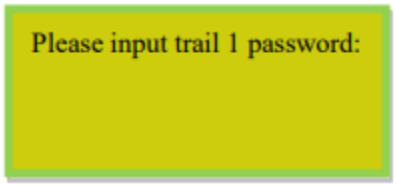
If you have set all passwords, Press" STOP CANCEL ", the screen will display:



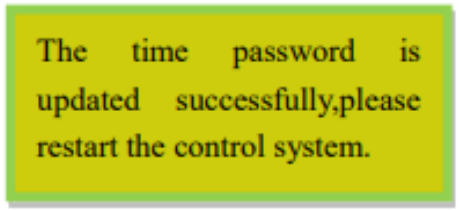
When password expires, the screen will display:



Connect engraving machine manufacturers to get password, Press" ORIGIN OK ", the screen will display:



Enter the password, Press" ORIGIN OK "to save. The screen will display:



Restart the handle, and system will work normally.

Machine Setup (Cont'd.)-

System Setup Chart (Cont'd.)

NOTE: If engraving machine manufacturers forgot all password, you can contact our company and tell us 20-digit original password under **"SYSTEM SETUP-Probation pas"**, we will provide the new 20-digit password entered the new number, and Press " ORIGIN OK "to confirm.

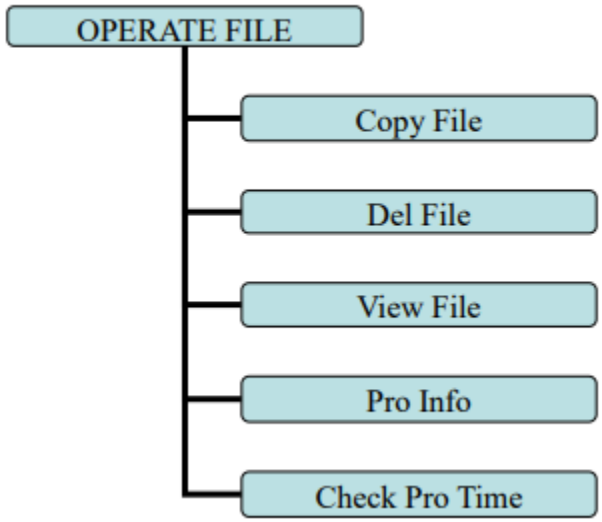
After Cracking Password, restart the handle, and then you can work normally.

14.) Auto Upgrade: If the system has new function, our company will provide upgrade file (extension ******. PKG & shown as rz-xxxx), users can upgrade through the U-Disk, specific steps in Appendix 1. It will not damage the original parameters.

File fomat: P1_1025(普通三轴雕刻[3寸单色屏][USB1]).pkg

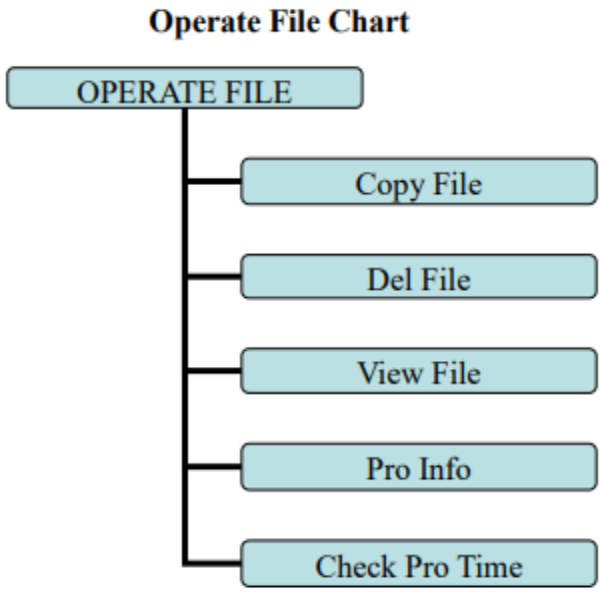
Operate File:

Operate File Chart



Machine Setup (Cont'd.)-

Operate File:



1.) **Copy File:** Copy files from U-Disk to Inner.

2.) **Del File (Delete File):** Delete files of Inner.

3.) **View File:** View the files and G-Codes of U-Disk or inner.

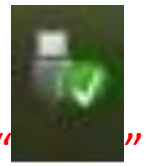
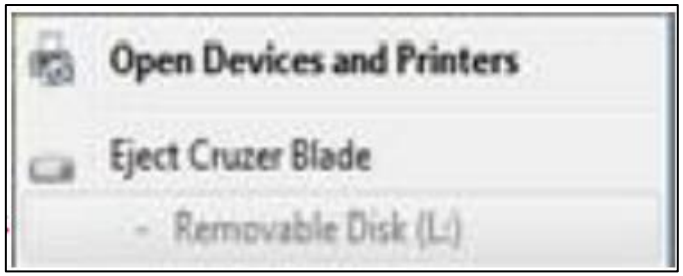
4.) **Pro Info (Processing Information):** System Power On, it will statistical the times of successful processing by File Name, if System power Off, the Data will disappear.

5.) **Check Pro Time (Check Processing Time):** Calculate processing time by system work speed after reading G-Code, the screen will display the processing time, different work speed corresponding to different processing time.

Machine Setup (Cont'd.)-

Operation Method： Press " ORIGIN OK ", Enter **"Check Pro Time"** , Press " X+ 1▲ "/" X- 5▼ "to Select **"U-Disk/Internal/Recent File"**, Press" ORIGIN OK "to enter, and then select the file, Press " ORIGIN OK ", after reading G-Code, the screen will display the processing time.

PS: Please pull out the U-Disk correctly after copying files from computer, if not, the controller may not recognize the U-Disk.

1.) Win7(32 bit) system after copying files, please Press "  ", and then the display will show " 

", choose the device to be shut down.

When the display shows " 

", the U -Disk pull out from computer successfully.

Machine Setup (Cont'd.)-

Operation Method (Cont'd.)：

2.) Win XP system after copying files, please Press“  ”,and then the display will show “ 

”,choose the device to be shut down.

When the display show “ 

”,the U-Disk pull out from computer successfully.

Version View-

Users can view information about the system hardware and software, including:

- Update Version e.g. : P1.409/rz-xxxx/q10-82
- Product ID e.g.: A0020112
- Soft Version e.g.: A1.1936
- ″ Emergency Version e.g.: A1.1920 ″
- “Soft Type: 3-Axis Carving ″
- Hardware Type: Support 3-inch Screen Flash Disk Mode

Machine Operation-

Return Home-

It will display **“All Axis Home”, “Z Home Only”, “None Axis Home”** after starting up the DSP handle. Choose any one you want. Machine return home can correct the coordinate of system.

In some cases, such as after normal power off, reboot ad continues last operation, user no need to reset machine, just choose **“None Axis Home”**. That is because system auto save coordinate value when system quit.

Import Processing Files-

Before processing, generally we should import files. Rich Auto System has 2 ways for processing:

U-Disk file processing, inner file processing.

1. Directly import the processing file into U-Disk, then run the handle.

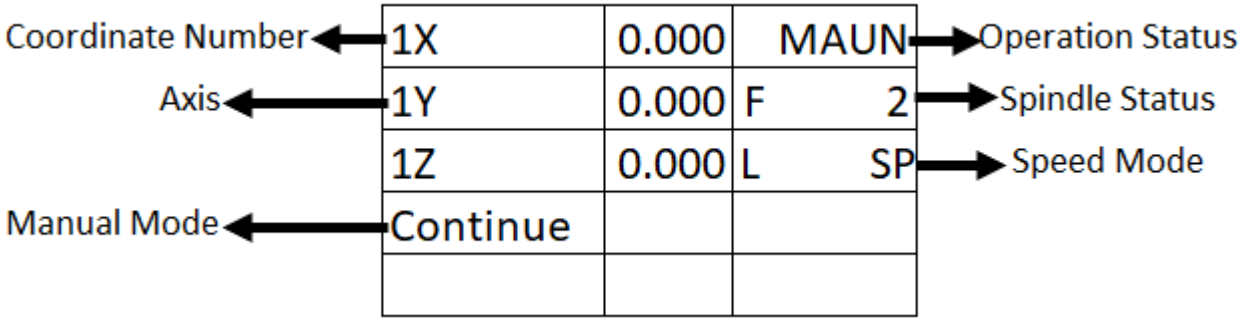
2. Copy the process file to inner memory space via U-Disk.

Machine Operation (Cont;'d.)-

Manual Processing Operation-

Manual Processing Operation refers to controlling of the machine tool though keyboard. User can change the operate speed and set the grid under manual processing operation. System will enter Manual Operation state after returned home, and the screen displays:

Manual control state initial interface ：



Manual Operation Speed Switching and Adjusting-

1.) Speed Modes Switching-

There are 2-Two Speed Modes:

- High Speed.
- Low speed.

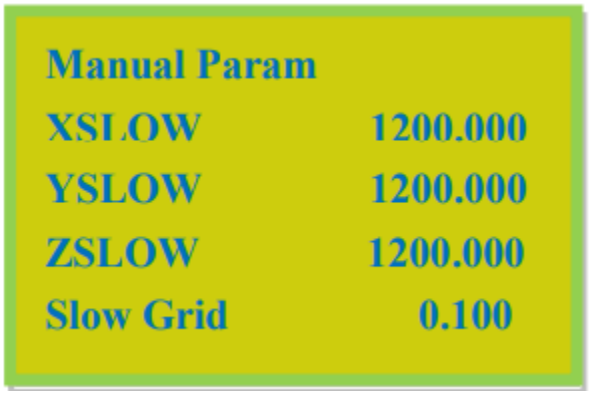
We can change mode by press " 

". The speed mode you choose will decide the processing speed.

Manual Operation Speed Switching and Adjusting (Cont'd.)-

2.) Speed Adjusting:

In Manual Mode, Press " STOP CANCEL " to set the current speed mode. If the current speed is low speed, it displays as follow:



Press " X+ 1▲ ", " X− 5▼ " to move the cursor, then Press " RUN/PAUSE DELETE " button to modify the value,

Press " ORIGIN OK " to save, Press " STOP CANCEL " to quit. If input a wrong number, Press " RUN/PAUSE DELETE " to delete the last number.

To ensure the accuracy of processing and debugging, the system introduces the concept of grid which also called minimum feed. Its range is 0.05mm-1.0mm. When user change mode to **"Step"**, machine will move by grid distance.

High speed mode setting is the same as low-speed mode.

Manual Processing Mode-

To meet different situation of manual movement, the system provides 3 kinds of motion modes: **Continue, Step, Distance.** We can change mode by Pressing " 

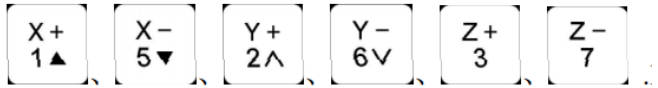
"and the bottom of screen will display what the current manual mode is.

1.) **Continuous Motion Mode:** This mode has no value control. In continuous mode, machine will follow when press the direction button 

Its motion speed is decided by current speed mode.

Note: If user's release the button immediately after pressing the button(shorter than 0.5s), machine will automatically move to the nearest grid point. It always stops on grid point when the motion mode is over. Continuous mode suitable for crude regulation of machine coordinate situation.

2.) **Step Motion Mode:** This mode is always move in low speed, move 1 grid per 0.5 second. The grid distance is decided by current speed mode. This motion mode is suitable for tool adjusting or precise adjustment of the location of the mechanical coordinates.

3.) **Distance Motion Mode**: In this mode, it runs according to the setting of distance. Machine will move by the set distance when user press direction button 

Manual Processing Mode (Cont'd.)-

Note: Grid unable to affect the distance motion mode. Machine will move by set distance, can't move to grid point. If user wants to change distance, please change to distance mode, and re-enter the distance value.

Manual Testing Input and Output-

In the initial boot interface, that is screen displays as follow:

Press "MENU –" twice, the screen will display two rows of arrows which are defaults to all arrows are downwards "↓".

Upper arrows represent input signal: the former 4 numbers 0, 1, 2, 3 corresponding to X zero, Y zero, Z zero and tool setting gauge. 4,5,6 corresponding to driver alarm, hard limit and emergency stop input signal.

Manual trigger the corresponding signal switch by Pressing "RUN/PAUSE DELETE" and the corresponding arrow flip so the signal is normal.

Manual Processing Mode (Cont'd.)-

Bottom rows represent output signal: the former 4 number 0,1,2,3 corresponding to spindle on/off, multistep rotational speed one, multistep rotational speed two, multistep rotational speed three output signal 4, 5 corresponding to alarm lamp, running lamp output signal.

Press " RUN/PAUSE DELETE " button can change the arrow direction, so it can control the output of corresponding port. For example, press " RUN/PAUSE DELETE "to flip the arrow upwards under 0, it is equivalent to start the spindle. Press " RUN/PAUSE DELETE " again, the arrow flip downwards that is equivalent to stop the spindle.

Manual Testing Input and Output-

Including **Machine Coordinate System** and **Work Coordinate System**.

Machine Coordinate System is fixed, the origin of coordinates is always a fixed position relative to the machine; Its coordinates are called mechanical values, the origin of coordinates is the origin of the machine or reference point. so that at any time, one point of space can be confirmed by machine coordinate system. Because of reference point is the calculation basis of machine coordinates movement powered on or remove all abnormal states, you need back to zero.

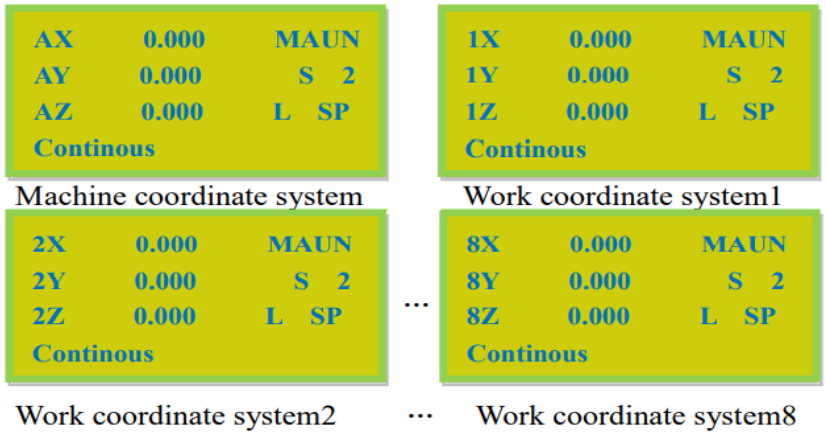
Manual Testing Input and Output-

Work Coordinate System used more greatly than other coordinates system in processing. Usually in processing, we describe a processing position is always relative to a certain point on the workpiece, whereas the workpiece on the machine tool's position relative to the mechanical origin is often change, so it is necessary to introduce a set of more convenient coordinate system during processing, this is work coordinate system. The origin of work coordinate system is a fixed point relative to the workpiece, but relative to the origin of machine coordinate system is floating.

RichAuto-A11 provide a machine coordinate system and eight work coordinates system,

Press " MENU – "+" HIGH/LOW 0 "can switch machine coordinate system and work coordinate system,

" MENU – " + "**Number Button 1-8**" can switch machine coordinate system and eight work coordinates system, **Coordinates System (See Graph):**



NOTE: You cannot set work origin under machine coordinate system, switch to work coordinate system to set work origin.

Automatic Processing Operation-

Auto processing refers to the system runs the file in U disk or inner storage space according to the instruction, it also called file processing. Before auto processing, user must set the machine tool parameters and all the system parameters correctly.

Auto Processing Steps:

Determine the Origin of the Workpiece-

The origin coordinates of X, Y and Z in the processing program is the origin of the workpiece . Before operation, we should pay attention to this position as well as the real position. Operation is as follow:

Move X, Y and Z to the position which will start to process the file on workpiece. Afterwards, Press zero clearing “ XY→0 4 ” can set the origin of X,Y axis. Press zero clearing “ Z→0 8 ” to set the origin of Z axis. It should be noted that if user have already used the tool setting function which combination button is “ MENU – ”+“ ON/OFF • ”, will no need to Press the “ Z→0 8 ” button.

Choose Processing Files-

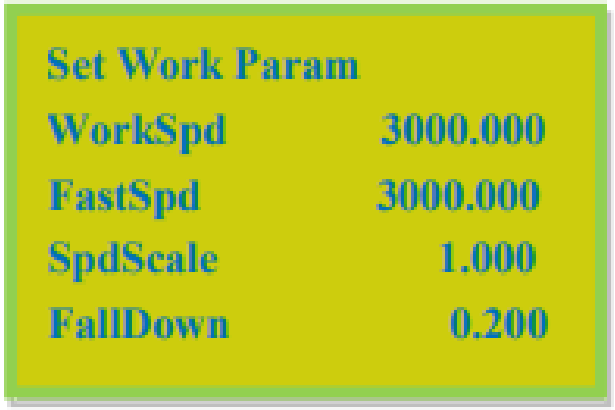
After determined the workpiece origin, Press " RUN/PAUSE DELETE " will appears a dialog frame:

Press " X+ 1▲ ", " X− 5▼ " to move the cursor and choose press " ORIGIN OK " to enter the list, the

screen will display three file names, choose the file by pressing " X+ 1▲ ", " X− 5▼ ". Press " Y+ 2∧ ", " Y− 6∨ " to turn to the next page. Press " STOP CANCEL " to exit.

Processing Parameters Setting-

After choosing the processing file, please Press " ORIGIN OK ", enter processing parameters setting, it includes Work Speed Travel speed (or Fast Speed), Speed Scale (Speed Ratio), Fall Down Speed (or Z Down Ratio).



Processing Parameters Setting (Cont'd.)-

Press " X+ 1▲ "and " X− 5▼ " to move cursor, press " RUN/PAUSE DELETE " to set the value (next value setting is the same as this one), then press " ORIGIN OK " to save, the system will check the processing code and start to process when checking finished. The system code checking is auto mode, user can Press " STOP CANCEL " to skip the checking and start running file immediately.

System will remember the checking only when the previous checking is a complete and correct checking, so that the system will not check the same code again next time.

In the process of processing, the screen scrolling display real-time processing speed, operation time, current line number. We can switch these options by Pressing " MODE ".

During Processing Operations-

Speed Ratio & Spindle Grade Adjusting-

1.) **Adjust Speed Ratio:** In-Process of processing, Press " Y+ 2∧ ", " Y− 6∨ " can directly change speed ratio, Current Speed= Set Speed * Ratio, each push on " Y+ 2∧ " or " Y− 6∨ ", the Speed Ratio will go up or down drop 0.1. Speed Ratio: max 1.0, min 0.1, the displayed speed will be corresponding to the changing of speed ratio, but time will not change.

During Processing Operations (Cont'd.)-

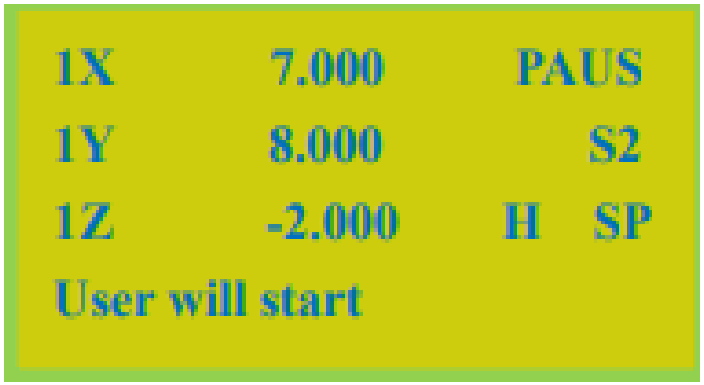
Speed Ratio & Spindle Grade Adjusting (Cont'd.)-

2.) **Adjust Spindle Grade:** If user has set multistep speed, the DSP handle can change the Multistep Speed in process of processing. Press " Z+ 3 " and " Z− 7 " to change Spindle Grade. Each Push of " Z+ 3 " and " Z− 7 " will go up or down drop 1 grade till to S8 or S1.

Pause & Adjust Position-

Press " RUN/PAUSE DELETE " pause processing. The right upwards of screen will change from **"MAUN" to "PAUZ"** and machine paused processing except the rotating of spindle.

Shown Below:



Pause & Adjust Position (Cont'd.)-

At this moment, the user is allowed to adjust the position of X, Y and Z axis. The system **default Motion Mode is STEP**. So that user can fine adjust each axis distance. Machine moves one low or high-speed grid distance every step. Meanwhile, user can change the speed mode to high mode just Press " HIGH/LOW 0 ".

When the adjustment is finished, Press " RUN/PAUSE DELETE " again, screen shows below:

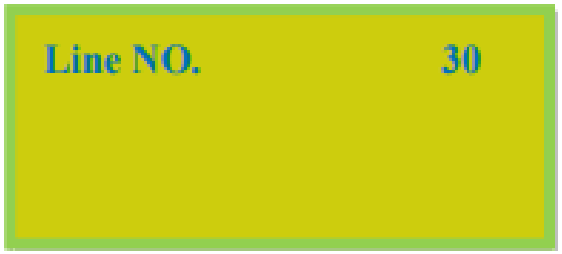
The system asks the user whether save the modified position. Press " ORIGIN OK "/ " RUN/PAUSE DELETE " the system will start processing in modified position, press " STOP CANCEL ", system will back to the position before modifying.

Breakpoint Processing & Power Down Protection-

1.) Breakpoint Processing-

If user presses “ STOP CANCEL ” during process of processing, the screen shows below:

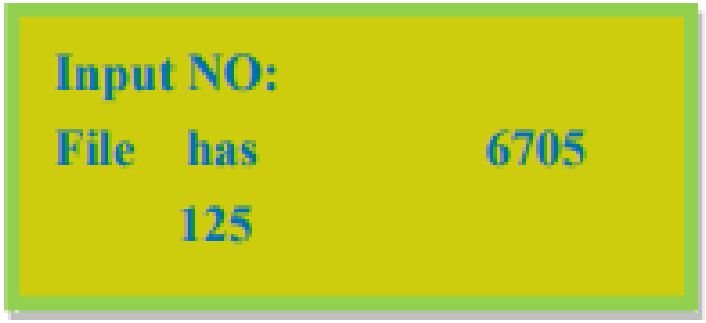
If we want to save breakpoint, Press “ ORIGIN OK ”,the screen displays break list (Totally 8), Press “ X+ 1▲ ”, “ X− 5▼ ” to choose the save position and then press “ ORIGIN OK ” to save, system auto go to standard interface. If we want to continue processing from the breakpoint, we can choose the combination button “ RUN/PAUSE DELETE ” + “1-8”. First Press “ RUN/PAUSE DELETE ” and not release it, at the same time press number button(1-8), then release together, the system will start processing from the breakpoint. For example: You want to start processing from the breakpoint 1, then you should use the combination button “ RUN/PAUSE DELETE ” + “1”, system will restore processing from breakpoint 1.) The screen shows below:



Breakpoint Processing & Power Down Protection (Cont'd.)-

Breakpoint Processing (Cont'd.)-

If you want to go backwards from this breakpoint, Press " RUN/PAUSE DELETE "and input the line No., and then Press " ORIGIN OK ", system will work from the new line number.

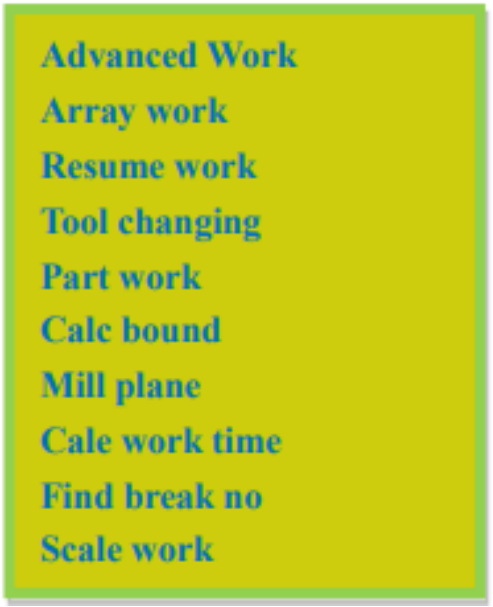


2.) Power off protection When there is a sudden power failure during processing, system will save current coordinate and parameters, while power restart, process continue. Before that, system must have a home motion. Shown as below:

Press " ORIGIN OK " to continue unfinished processing, it will display stop line No, and the line number can be chosen. Press" STOP CANCEL " cancel the power off protection.

Advanced Processing-

Advanced processing is designed for some special requests, it contains Array Work, Resume Work, Tool Changing, Part work, Calculate Bound, Mill Plane, Step Work File, Calculate Work Time, Find break No. The Combination Button is "RUN/PAUSE DELETE"+ "HIGH/LOW 0", shown below:



1.) **Array Work-** Steps are as below:

1.) Press "X+ 1▲", "X− 5▼"to move cursor to the Array Work, Press " ORIGIN OK ", Press " ORIGIN OK " or " "to select different files list.

2.) Press " ORIGIN OK " to enter file list, then Press " X+ 1▲", " X− 5▼ "move the cursor to choose object file.

Advanced Processing (Cont'd.)-

3.) Set processing parameters, also can modify the array parameters in this step, or you can go to **"AUTO PRO SETUP"**, choose **"Work Array"** and modify the array parameters. The rest steps are like the normal processing. System will start to work according to the user's setting.

4.) In the processing of array work, you can view current row number, volume number etc. by pressing " MODE ".

2.) **Resume Work-** Steps are as follows:

Press " X+ 1▲ ", " X− 5▼ " to move cursor to resume work, press " ORIGIN OK " to enter, then press " X+ 1▲ " or " X− 5▼ " to select different break points, and then Press " ORIGIN OK ", system will restore processing from the break point. If you want to go backwards from this breakpoint, Press " RUN/PAUSE DELETE "and input the line No., and then Press " ORIGIN OK ", system will work from the new line number.

Advanced Processing (Cont'd.)-

3.) Tool Changing-

It achieves manually change the tools at the position you set. Press " ORIGIN OK " to enter into the setup, and also Press " ORIGIN OK " back to work origin.

4.) Park Work-

Park Work means user can select start line and stop line, so part of the processing file can be processed. The steps are as follows:

1.) Press " ORIGIN OK "to set, Press " X+ 1▲ " and " X− 5▼ " to move the cursor to select different file list.

2.) Press" ORIGIN OK " to enter, press " X+ 1▲ " and " X− 5▼ " to select a file, then press " ORIGIN OK ", system start to read the file.

3.) After reading the file, Press " ORIGIN OK "the screen display line 1 of the code, Press " RUN/PAUSE DELETE ", prompted "input start number: displays total lines", input number of start line and press " ORIGIN OK "to confirm, if input wrong number, just press " RUN/PAUSE DELETE " to delete it.

4.) Press" ORIGIN OK "again, to set the end line, the screen displays "input end number",

Press" ORIGIN OK "the screen saves the changed start line number, Press " RUN/PAUSE DELETE ", Input end line in cursor, Press " ORIGIN OK " to confirm, Press" RUN/PAUSE DELETE " to modify.

5.) Set processing parameters.

Advanced Processing (Cont'd.)-

5.) **Calculate Bound-**Calculate bound means user can check the size of processing, to avoid unnecessary waste of materials and processing errors. The steps are as below:

1) Press " ORIGIN OK " to enter, then press " X+ 1▲ " or" X− 5▼ "to select file list.

2) Press " ORIGIN OK "get into the file list, and then press " X+ 1▲ " or" X− 5▼ "to choose file.

3) Press " ORIGIN OK ", system start to read the file, after reading the file, the system will calculate the area.

6.) **Mill Plane-**

Include 2-two types: **Scan Mill** and **Encircle Mill**.

Steps are as follows:

1.) **Scan Mill**-

Advanced Processing (Cont'd.)-

1.) Press " X+ 1▲ " or " X− 5▼ "to move cursor to choose the mill type.

2.) Press " ORIGIN OK " to enter the Scan Mill Set, it includes Scan Type, Width, Height, Diameter, Depth, Z-Step, T-Ratio.

3.) Press " X+ 1▲ " and " X− 5▼ "to move cursor on the option which need modify, Press " RUN/PAUSE DELETE " to choose mill type (X Scan or Y Scan), also press this button to modify the parameters. Press " ORIGIN OK " after modified all the parameters to save them.

2.) **Encircle Mill-**

Scan mill set	
Scan Type	AC
Width	100.000
Height	100.000
Diameter	10.000
Depth	0.100
Z Step	0.100
T Ratio	0.800

1.) Press " X+ 1▲ " or " X− 5▼ " to move cursor to choose the mill type.

2.) Press " ORIGIN OK " to enter the scan mill set, it includes Scan type, Width, Height, Diameter, Depth, Z Step, T Ratio.

Advanced Processing (Cont'd.)-

3.) Press " X+ 1▲ " and " X− 5▼ "to move cursor on the option which need modify, press " RUN/PAUSE DELETE " to choose mill type(AC or C), also press this button to modify the parameters. Press " ORIGIN OK "after modified all the parameters to save them.

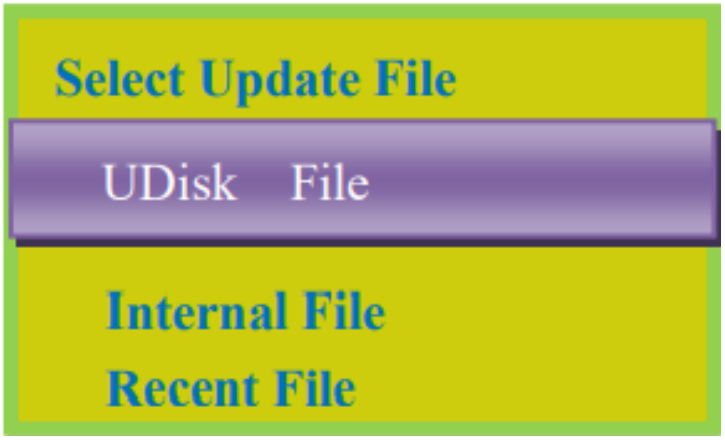
7.) Calculate Work Time- Calculate the processing time according to the system processing speed. After pre-read processing file, the system will display total processing time. Different processing speed will correspond to different processing time.

8.) Find Break No- Look for position line number. If accidentally cutter break and user hasn't saved the break point, reboot system and replace the cutter. After that, user can manually move X, Y axis to the nearest point where the cutter was broken (recommend moving a little further), press " ORIGIN OK "enter into "Find Break No.", afterwards choose the previous processing file, the system will prompt "searching current position". System will start processing after finished the searching, the system will prompt "Press " ORIGIN OK "start processing, Press " STOP CANCEL " to view the current position of line number".

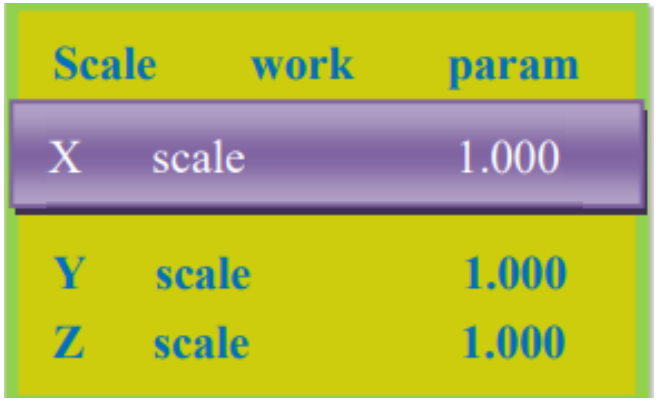
Advanced Processing (Cont'd.)-

9.) Scale Work- If the actual processing requires different sizes of the same file, you can select the scale work, you need to enter an enlargement or reduction ratio for processing.

Step 1.) : Press" ORIGIN OK "to get in **"Scale Work"**.



Choose Processing File, input correct parameters:



and then press " ORIGIN OK " to start processing.

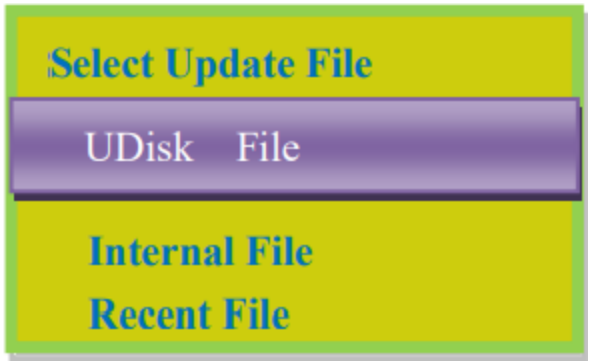
Upgrading System-

PS1. System Upgrade-

Copy upgrade file to U disk, and insert U disk into handle, file format: extension ******. PKG & shown as rz-xxxx.

U Disk Upgrade Method 1-

1.1.) Press“ MENU _ ”, and then select **“System Setup”**, Press“ ORIGIN OK ”to enter, Press “ X+ 1▲ ”/“ X− 5▼ ”, select **“Auto Upgrade”**. The screen display:



1.2.) Press “ ORIGIN OK ” to enter, select **“U Disk File”**, then select upgrade file, Press “ ORIGIN OK ”, system will auto upgrade.

1.3.) After upgrade completed, restart the handle.

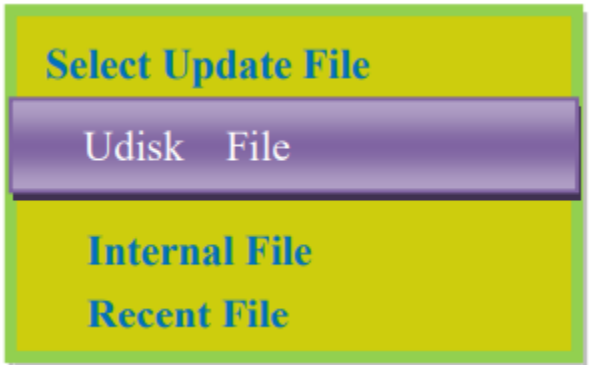
Upgrading System (Cont'd.)-

PS1. System upgrade (Cont'd.)-

U Disk Upgrade Method 2-

2.1.) Copy upgrade file to U Disk and insert U Disk into handle.

2.2.) Press " MENU – " + " ORIGIN OK ", screen display:



2.3.) Repeat Method 2 operation 1.2 & 1.3.

PS2. Operations of Handle Communicating with Computer-

Users can copy file from computer to handle after **"Product ID: A010XXXX & Update Version rz-1967"** version. Connect handle and computer by USB cable, users can find portable storage device on the computer, and then copy processing files from computer to handle inner.

This function can ensure that if USB port of the handle is broken or there is no U Disk, the machine can still work normally.

Operation Step:

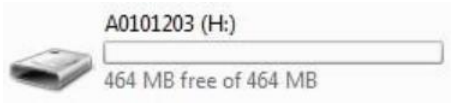
1.) Press any two buttons at the same time (For Example: " ORIGIN OK "+" MODE ").

2.) Connect handle and computer by USB Cable, it means that the handle is powered by computer, loosen the buttons after the power supply.

3.) Handle Screen Display:

Connect Successfully.

4.) Open **"My Computer"**, and you will find Portable Storage Device,



A0101203(H:): Handle, Users can copy processing files to handle inner.

5.) Connect Handle and Machine, Choose Internal File to Start Processing.

NOTE: Users can check hardware type in **Version View: "Flash Disk Mode"** is necessary, if not, users can not copy processing files from computer to handle inner.

PS3. Common Problems and Troubleshooting-

Solutions of the Faults display on the Screen-

1.) Indefinite Screen Flicker or Automatically restart Analysis and Solutions:

a.) Power supply is insufficient. Check power supply if there are problems and change high-quality power supply to solve the problems.

b.) The local power grid unstable. Check local grid voltage instability or increase the regulator filter device.

c.) There are something wrong with the power chip of the handle. This phenomenon also appears when the handle is powered through the USB cable to the computer ,please return the handle to our company.

2.) Cannot set Working Origin Analysises and Solutions:

a.) You may get into the mechanical coordinate system. Press the Button "menu" + "1" to back to the first work coordinate system.

b.) The buttons are broken. Menu-system setup- buttons check to check the buttons are normal or not.

PS3. Common Problems and Troubleshooting (Cont'd.)-

Solutions of the Faults display on the Screen-

Faults in Practical Operation-

1.) The file size does not match the size of the actual set Analysises and Solutions:

a.) Pulse equivalent is wrong.

b.) You does not select the right tool.

2**.) The screen displays "beyond limit" when processing file Analysises and solutions:**

a.) The machine is not carried back to zero, the system is not able to confirm the actual position. Make the machine back zero.

b.) After setting the working origin, the reserved range is less than the actual file size .Determine the actual file size and set correct working origin.

c.) You set the wrong working origin in the file. Check the path of the file, and re-export the correct file.

3.) Z-Axis (Spindle) fall abnormally (too fast) during processing Analysises and Solutions:

a.) Working speed beyond the fastest speed of Z-Axis. " Machine setup " - " Max speed limit ", set the speed to the safe speed.

b.) Coupling is losing or transmission slippages. Re-adjustment the connecting parts.

PS3. Common Problems and Troubleshooting (Cont'd.)-

Solutions of the Faults display on the Screen-

Faults in Practical Operation-

c.) The lines connect the interface board with the motor drivers has disruption. Re-adjust the lines.

d.) Processing file error. Check processing file, try to download the correct processing file to U disk or handle internal.

e.) There is something wrong with the lines connecting Z axis motor and motor driver. Replace the lines.

4.) Each time repeating the same processing file after backing to the machine origin, Z-Axis depth is not the same Analysises and Solutions:

a.) Machining countertop is uneven or processing object not firmly fixed, re-milling countertop adjust the flatness.

b.) Z-Axis Origin detection switch repeat positioning accuracy error, causing each Z axis homing error. Replace a high-quality detection switch.

c.) Too much interference in the Z-axis homing process to form a false origin. Re-adjust the line.

PS3. Common Problems and Troubleshooting (Cont'd.)-

Solutions of the Faults display on the Screen-

Faults in Practical Operation-

5.) Back to the origin, the machine cannot stop Analysises and Solutions: Double Press on the "Menu" Button, input signal (origin detection switch signal) self-testing, whether the detection signal is triggered or connect normally.

a.) The origin detection switch is damaged. Replace a new one.

b.) The distance of the origin detection switch detection sheet beyond the detection range of the switch, adjust the position of the test piece.

c.) The origin detection switch to the interface board wiring aging or loosening. Again, check the connections.

d.) The interface board is broken. Depot Repair.

e.) 50-pin data cable is broken. Replace it with a new data line.

6.) Back to the machine origin, machine move to the reverse direction Analysises and Solutions:

a.) The origin detection switch types do not match with the definition of the corresponding level. Modify the level. (Normally open type corresponds to a level defined the direction of the arrow down, normally closed type corresponds to the level defined arrow up).

PS3. Common Problems and Troubleshooting (Cont'd.)-

Solutions of the Faults display on the Screen-

Faults in Practical Operation-

b.) The origin detection switch is damaged. replace a new one.

c.) The origin detection switch connects interface board not well. Refresh the line to determine the wiring is correct.

d.) Too much interference, resulting in the illusion of the detection switch has been triggered. Recalibrated the whole circuit.

e.) The interface board is broken. Depot Repair.

f.) 50-pin data cable is broken. Replace the data line.

7.) Abnormally working when processing file or the actual file is different from theoretical file Analysises and Solutions:

a.) The program disorder.

b.) External interference is too large. Refresh connection. (Separate strong electric from weak current, "GND" of inverter separated from the other components).

PS3. Common Problems and Troubleshooting (Cont'd.)-

Solutions of the Faults display on the Screen-

Faults in Practical Operation-

8.) Start automatic tool setting, the tool does not stop after touching feeler block Analysises and solutions:

a.) The **"cutter"** signal line connects **"cutter"** terminal not well.

b.) The **"GND"** terminal of interface board does not connect with spindle shell or connect not well.

9.) Handle LCD digital changes, the machine does not move Analysises and solutions:

If one axis is not moving, it may be a connection problem. Change another normal terminal to this terminal, if it is ok, the motor driver is ok. Maybe there is something wrong with interface board, 50-pin cable. If it is still not moving, it is necessary to detect the corresponding drive and motor.

If all axes are not moving ,firstly check if there are problems in the 50-pin cable and interface, secondly check the power supply of the motor drivers. Lastly, you must check the mechanical part.

10.) It is normal to the move from one location to another location, but when return from that position to the original position is not normal Analysises and solutions: Mechanical problems screw may install not well.

Electrical Components and Wiring Problem-

1.) An Axis or Multi-Axis only one-way movement after handle power-on Analysis and Solutions:

a.) There is something wrong with the lines connect the interface board with the motor driver, check the connection.

b.) Interface board is damaged. Replace the interface board.

c.) The motor driver is damaged. Replace the driver.

2.) The certain axis motor does not move after handle power-on Analysises and solutions:

a.) Operator makes pulse line and direction line oppositely, rewiring it.

b.) 5V common anode end of the motor driver disconnected, check the connection.

c.) The motor driver is damaged; operator can promote motor after handle power-on.

d.) The chip of the interface board damages, no pulse signal output.

3.) Screen is not bright after handle power-on, and connected handle to computer with a USB cable the screen displays normal Analysises and Solutions:

a.) The handle does not connect to power supply. Check DC24V power supply output normal or not, if normal please check the cable from the power supply to the interface board.

b.) The 50-pin cable is damaged, or the interface is broken.

Electrical Components and Wiring Problem (Cont'd.)-

4.) Screen is not bright after handle power-on, and connect the handle to computer by USB cable, the screen is also not bright Analysises and Solutions:

a.) This phenomenon may be due to the handle shocked by external force or fall on the ground, causing the crystal processor damaged. Depot Repair.

b.) Users connect high voltage power supply, Depot Repair.

5.) The screen display "Spindle On" , actually the spindle off, the screen display "Spindle Off", the Spindle on Analysises and Solutions:

a.) There is something wrong with wires. organize your wires.

b.) The output level definition is wrong. Modification correct output level definition.

6.) Screen is not bright after handle power-on Analysises and Solutions:

a.) The power supply voltage is too big, or the chip is broken because operator makes positive and negative of the power oppositely. Depot Repair.

b.) The power supply is damaged. Replace the power supply.

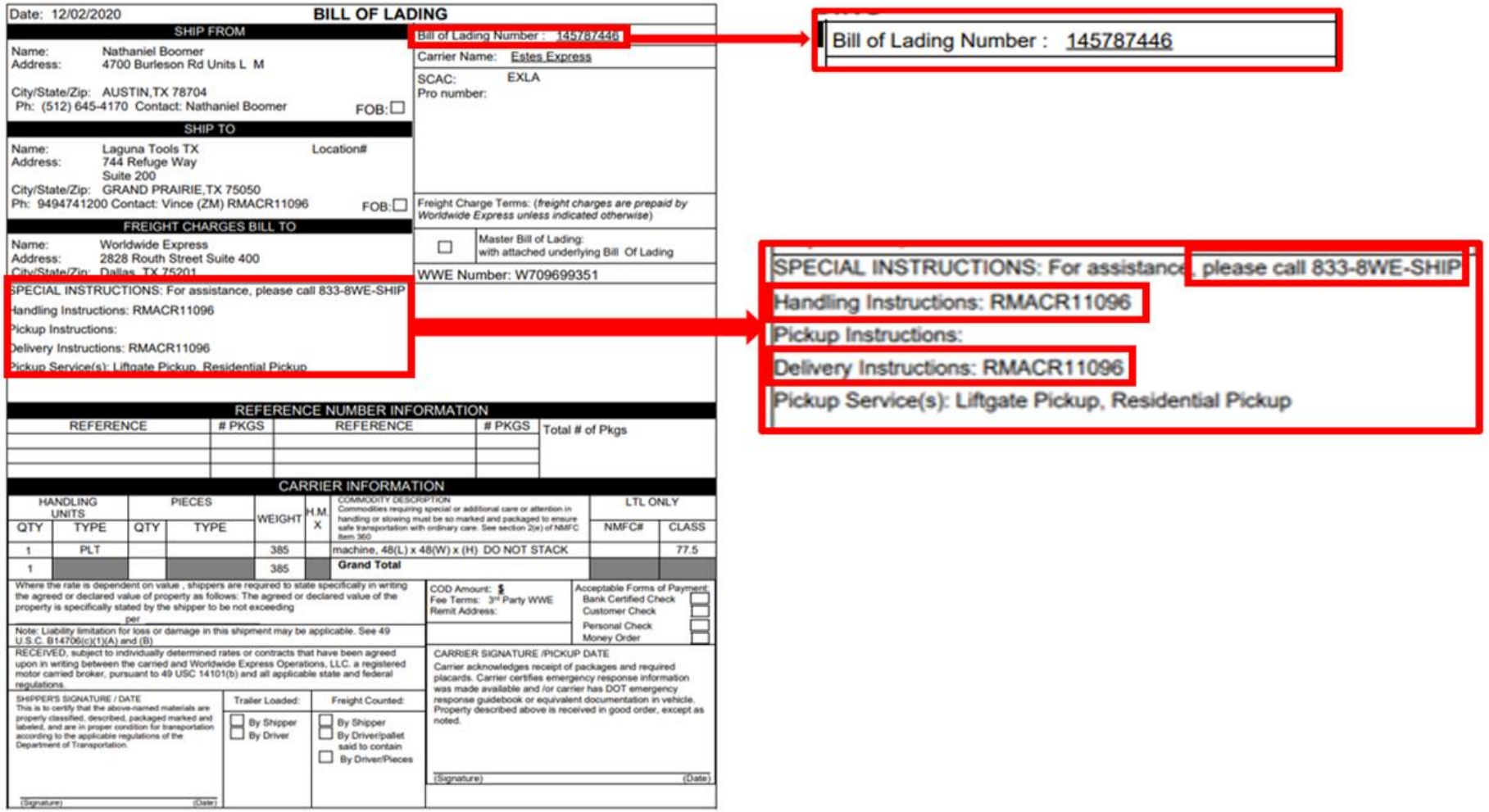
c.) 50-pin data cable damaged. Replace the data line.

d.) Handle 50-pin interface damage. Depot Repair.

Delivery/Warranty Protocols-

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: Nathaniel Boomer
Address: 4700 Burleson Rd Units L M

City/State/Zip: AUSTIN,TX 78704
Ph: (512) 645-4170 Contact: Nathaniel Boomer FOB: ☐

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 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	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. §14706(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.

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

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

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

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

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 all returned parts/components requesting warranty coverage.* Any machines returned to Laguna Tools must be returned with packaging in the same way 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.

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 Warranty-

Laguna Tools Packaging/RMA Procedures-

Dealer Machinery Warranty

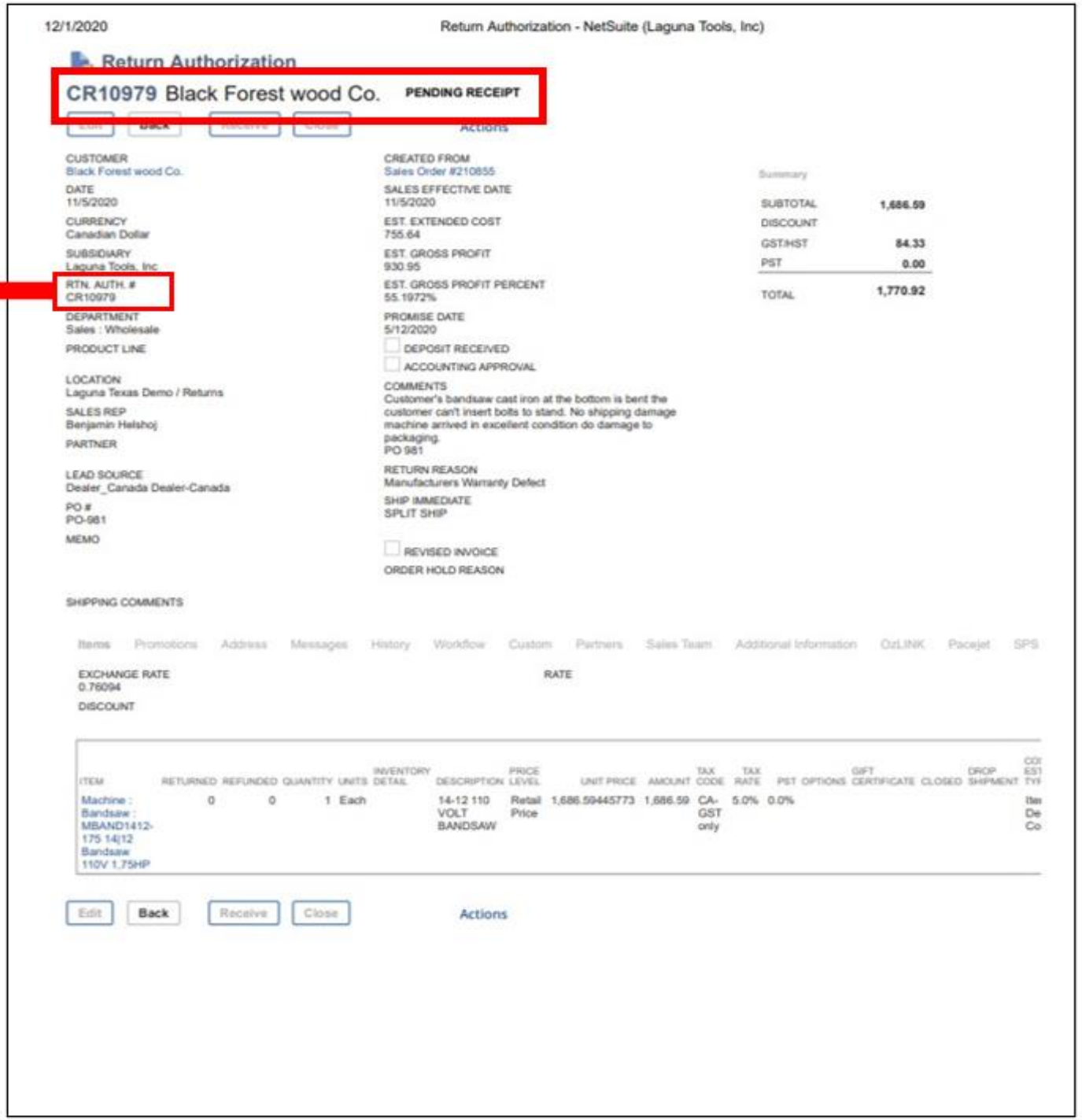
****Any machines returned to Laguna Tools must be returned with packaging in the same way it was received. If a part or blade is being returned it must have adequate packaging to ensure no damage is received during shipping. In the event the item/part is determined to be damaged due to lack of maintenance, 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 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 Black Forest wood Co. PENDING RECEIPT

Edit Back Receive Close Actions

CUSTOMER
Black Forest wood Co.
DATE
11/5/2020
CURRENCY
Canadian Dollar
SUBSIDIARY
Laguna Tools, Inc
RTN. AUTH. #
CR10979
DEPARTMENT
Sales : Wholesale
PRODUCT LINE
LOCATION
Laguna Texas Demo / Returns
SALES REP
Benjamin Helshoj
PARTNER
LEAD SOURCE
Dealer_Canada Dealer-Canada
PO #
PO-981
MEMO

CREATED FROM
Sales Order #210855
SALES EFFECTIVE DATE
11/5/2020
EST. EXTENDED COST
755.64
EST. GROSS PROFIT
930.95
EST. GROSS PROFIT PERCENT
55.1972%
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	1,686.59
DISCOUNT	
GST/HST	84.33
PST	0.00
TOTAL	1,770.92

SHIPPING COMMENTS

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

EXCHANGE RATE
0.76094
DISCOUNT
RATE

ITEM	RETURNED	REFUNDED	QUANTITY	UNITS	INVENTORY DETAIL	DESCRIPTION	PRICE LEVEL	UNIT PRICE	AMOUNT	TAX CODE	TAX RATE	PST	OPTIONS	GIFT CERTIFICATE	CLOSED	DROP SHIPMENT	COI EST TYI
Machine : Bandsaw : MBAND1412-175 14(12 Bandsaw 110V 1.75HP	0	0	1	Each		14-12 110 VOLT BANDSAW	Retail Price	1,686.59445773	1,686.59	CA-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: Nathaniel Boomer
Address: 4700 Burleson Rd Units L M

City/State/Zip: AUSTIN,TX 78704
Ph: (512) 645-4170 Contact: Nathaniel Boomer FOB: ☐

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 CHARGES BILL TO

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

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

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

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.

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

8

Manual Revision Record

Date of Change	Revision#	Engineering/Design Change Description
10/06/2021	1	Developed New Manual for the J8 CNC Machine.