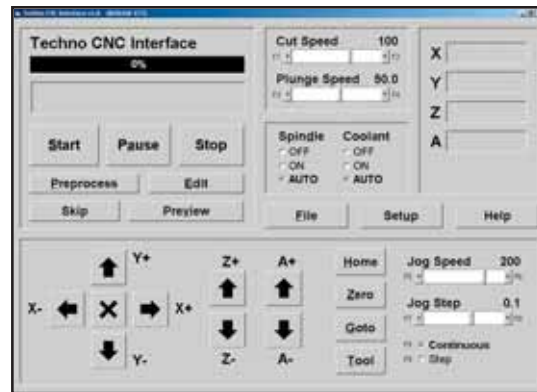


### INSTALLATION & SETUP TABLE OF CONTENTS

- I. Machine Identifications
- II. How To Use the Vacuum Table
- III. Scale Factor Setup

### APPENDICES

- A. Techno Electronics
- B. Colleting Guidelines
- C. Machine Maintenance



### **CUSTOMER SUPPORT WEBSITE**

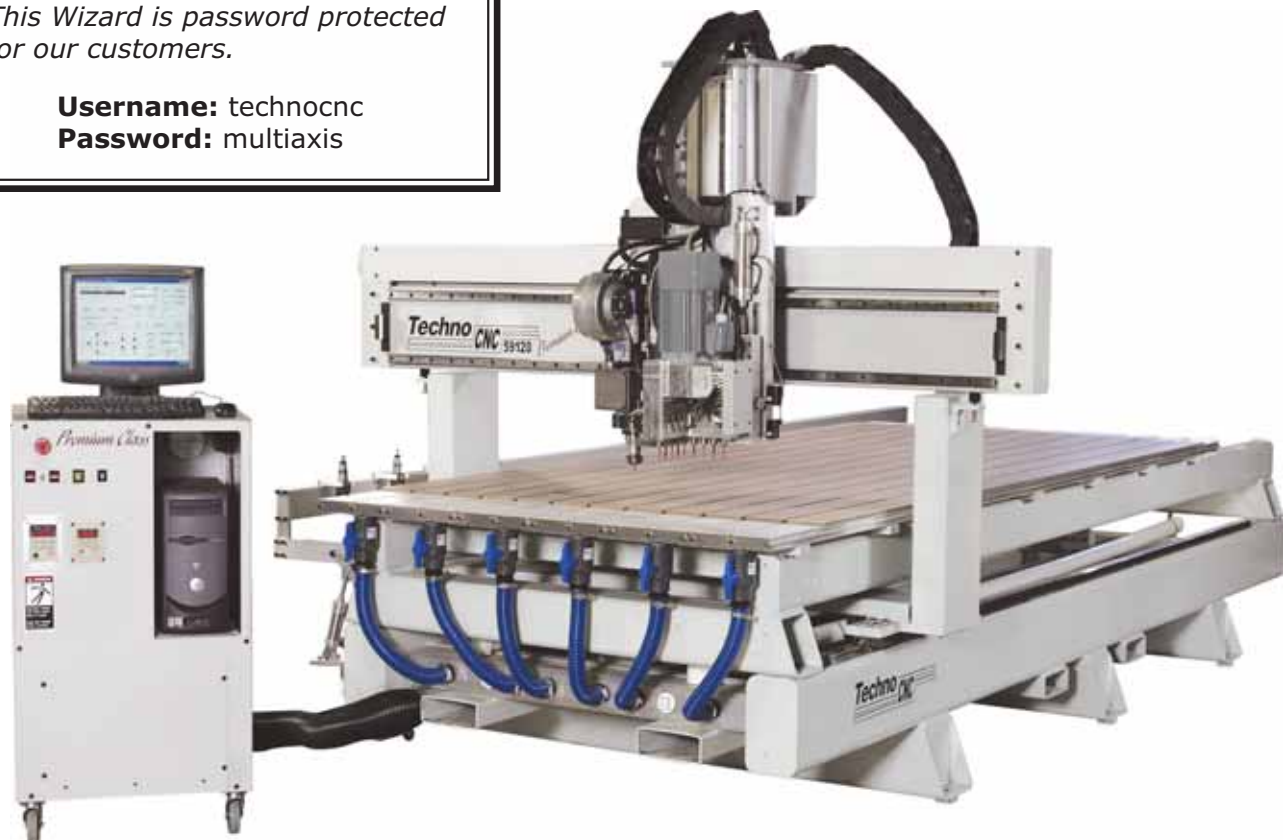
<http://support.technocnc.com/>

*Visit this site for software updates and the Tech-Support Wizard. This Wizard is password protected for our customers.*

**Username:** technocnc  
**Password:** multiaxis

### **ADDITIONAL DOCUMENTATION**

Can be found in the "More Manuals" folder on your TECHNO CD-ROM.



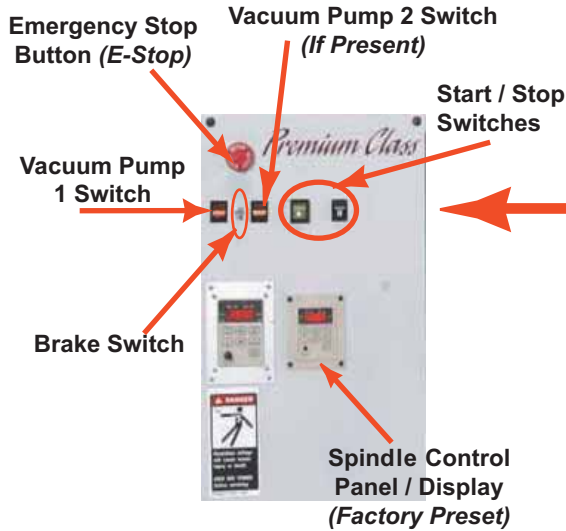


**HAVE A LICENSED ELECTRICIAN PERFORM ALL ELECTRICAL CONNECTIONS BASED ON YOUR LOCAL CODES**

**IMPORTANT: KEEP YOUR TECHNO CD-ROM. IT CONTAINS ADDITIONAL DOCUMENTATION.**

### I. MACHINE IDENTIFICATIONS

#### CNC Control Unit Panel



#### CNC Control Unit



#### CNC Control Unit Wires



There are two wires coming from the rear of the CNC Control unit. These must be plugged into an outlet with the voltage indicated on the label. Please note the specified Voltage label.

Remove the packing material from around the computer. Please keep the computer documentation in the CNC Control Unit Computer Cabinet. The WARRANTY paperwork is part of this package.

Connect the incoming AC power to the machine here

#### Incoming AC Power



**Note:** The indicated voltage on the box. Turn power OFF when the machine is being serviced.

#### Power Disconnect Switch

(not included with Purchase)



It is strongly recommended that all 220 and 440VAC connections be connected through a power disconnect switch (example seen left) for use with either CNC Router spindle and/or vacuum pump setup. This switch is required for safety and to meet National Electrical Codes. A licensed electrician should perform this installation.

**NOTE 1:** Voltage on the main power line must be measured and the correct tap on the input transformer must be selected.

**NOTE 2:** Clean, dry air must be used otherwise damage to the spindle and air solenoids will result. **THIS IS NOT COVERED UNDER WARRANTY.**

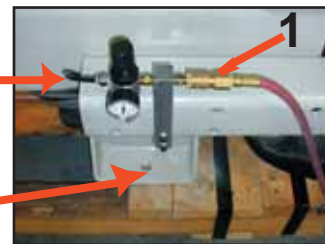
#### Leveling Bolts / Feet



1- The toolchanger models must be connected to an air supply from a clean, dry, non-fluctuating source (90-110 psi). Please set the regulator to an appropriate psi level. Machine regulator should be set to 90 psi.

Screw the leveling bolts in the threaded holes. Adjust them to level the machine.

#### Airline Connection / Leveling Feet Thru Hole



**II. HOW TO USE THE VACUUM TABLE**

**Vacuum Pump w/ Motor Starter**



The motor has been wired to the Motor Starter. The incoming voltage must be wired to the Motor Starter Box.

**NOTE:** Voltage is specified on the box

**Vacuum Pump Motor Starter Box & Connector**



You will need to connect the AC power (220 or 440 VAC) as specified on the unit to the Motor Starter.

**Pump/Blower Cable**



The signal connector needs to be connected to its mating connector (shown left).



**WARNING:** Direction of Rotation is critical. Briefly start motion and check rotation (arrow on casing). Exchange phases if rotation is incorrect. **IF YOU RUN THE PUMP/BLOWER CONTINUOUSLY IN THE WRONG DIRECTION THE VANES WILL BE DAMAGED.**

**Vacuum Hose Fittings ...**

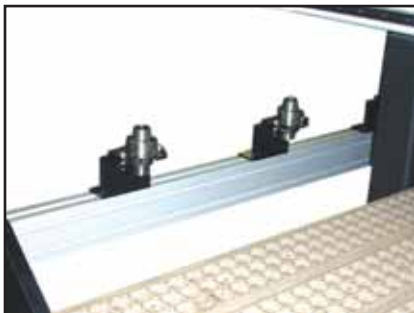


Connect one end of the 2" diameter vacuum hose to the manifold fitting ...



... and connect other end of the vacuum hose to the Vacuum Pump filter.

**Tool Changer Rack (if applicable)**



Place the toolholders here on the tool holder rack. Please note the collets and the collet wrenches are supplied with the unit. *Refer to manual on how to teach tool locations.*

**Note<sup>1</sup>:** Make sure the distance between Tool Holders is greater than the length of the vacuum shroud/dust collector.

**Vacuum Shroud**



The dust collector shroud is mounted through the block next to the spindle and the dust collector hose should be attached to the fitting supplied with the shroud.



**II. HOW TO USE THE VACUUM TABLE (CONT.)**

**Vacuum Hold-Down - 1**



The Techno Vacuum Table is very effective in “holding down” parts to be routed. For this method to work and work well, simple procedures need to be followed. First, you need to define the area where your workpiece will be positioned on the vacuum table. Second, using the red rubber plugs, you need to plug-up and close-off all of the area outside your defined work area. Fill in ALL the vacuum grid holes outside your defined work area with the plugs and leave the holes within your work area open. Next, use the black foam rubber gasketing to section/wall-off your work area. The idea is to create an area of concentrated vacuum, which will generate the greatest amount of vacuum “hold-down.”

**Vacuum Hold-Down - 2**



After you have defined your workpiece area and closed off all the vacuum outside of that area, there is another option to greater your vacuum: the vacuum control valves. Each valve controls the flow of vacuum to two rows of extrusions. Turn ON (valve vertical) the valves that pertain to your work area and turn OFF (valve horizontal) the ones outside of that area. This will concentrate all the vacuum “hold-down” capacity to your defined work area.

NOTE: You do not need to plug vacuum holes in a section that has the valve turned OFF.

***Important Gasketing Installation Notes:***

- 1) DO NOT STRETCH the gasket material while inserting it into the gasket slots. This will produce tears in the gasket material which causes leaks leading to the loss of vacuum and unsecure pieces flying off of the vacuum table.
- 2) When joining two separate pieces of gasket material, make sure to push them together so the two pieces forma tight seal.



**TO REORDER VACUUM SUPPLIES:**

Call Techno Today at: 516-328-3970

<u>ITEM</u>	<u>PART NUMBER</u>
•Rubber Plugs	H91X30-PL006-001
•Foam Rubber Gasketing	HX4892-W0002



**WARNING:** Proper care should be taken to make sure that objects held down with the vacuum table are secure. There is a danger that objects held down with the vacuum can become loose and could be thrown by the action of the cutting tool. Proper safety precautions against flying debris must be taken. Safety glasses must be worn when the vacuum table is being used.

# Scale Factor Interface Setup

## III. SCALE FACTOR SETUP:

**STEP 1:** Start Techno CNC Interface.

**STEP 2:** From the Main Menu click on the Setup button. See **SCREEN CAPTURE 1**.

**STEP 3:** Click on System in the Setup screen's menu list. See **SCREEN CAPTURE 2**.

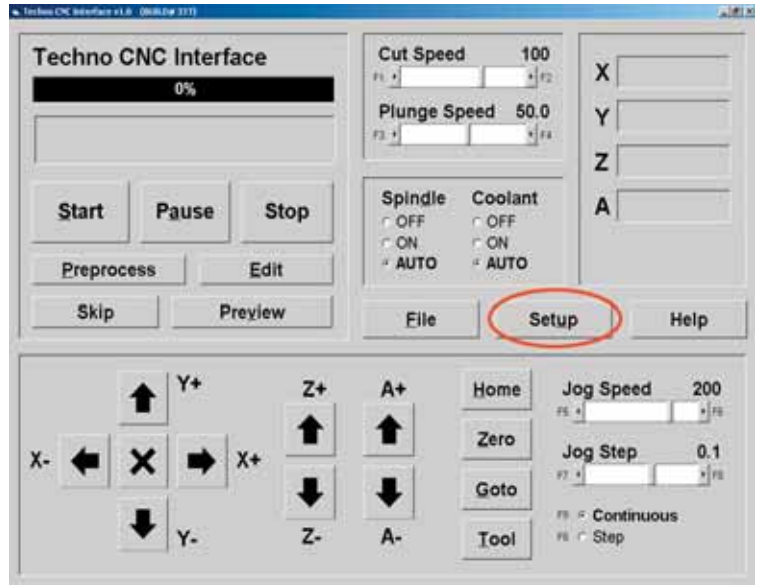
**NOTE<sup>1</sup>:** The Setup/System screen will appear.

**STEP 4:** Input the numbers printed on the Scale Factor Sticker located on the front leg of the machine.

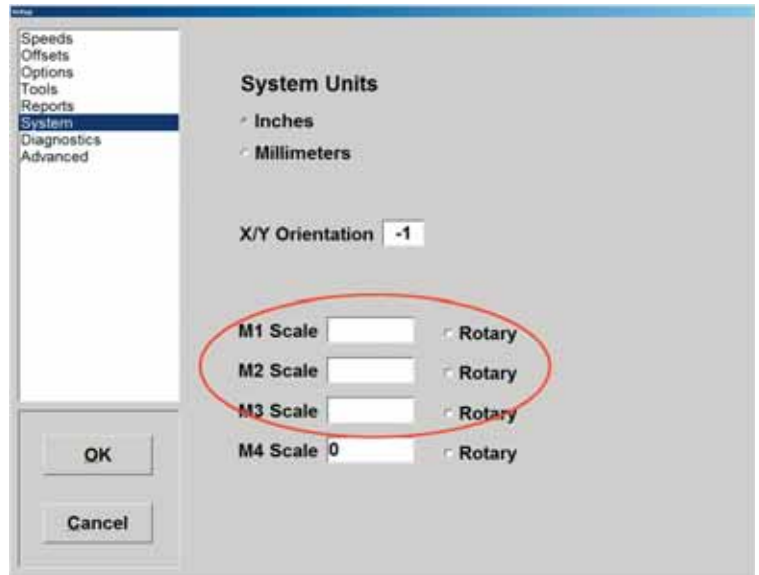
**NOTE<sup>2</sup>:** See the circled section in **SCREEN CAPTURE 2**. Make sure to type the numbers exactly how they appear on the sticker including any negative values (i.e. -20320).

**STEP 5:** Click the OK button in the Setup/System screen to save the changes made.

SCREEN CAPTURE 1



SCREEN CAPTURE 2



**IF THE VALUES ARE NOT WRITTEN ON THE FRONT LEG OF YOUR TECHNO CNC ROUTER THEN THE INTERFACE DEFAULT VALUES SHOULD APPLY.**

### APPENDIX A

#### LP (LC) ELECTRONICS    MP ELECTRONICS    CNC CONTROL TOWER

CONTROL BOXES



LP (or "LC") Electronics are standard on the Servo Lathes (Metal & Wood), Servo DaVinci's and the standard LC Machines (**NOT THE SPEED UPGRADE LC's!**) They can also be used on Gantry III Tabletop Series machines and as a stand alone product.



MP Electronics are sometimes referred to as **Servo Box 2** (H26T56-SRVBOX2).

#### HP ELECTRONICS



HP Electronics are referred to as **Servo Box 3** or **RG+ Servo Box 3** (H26T56-SRVBOX3HR).

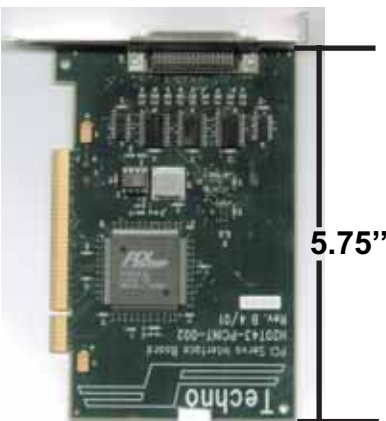


The HP Electronics Box components are located within the Techno CNC Control Tower, which comes standard with a Premium Class machine and as an upgrade for the RG Series machines.

*NOTE: THE MP ELECTRONICS MAY SHIP WITH GANTRY III SYSTEMS, CHECK ROUTER SPEC. SHEET FOR DETAILS.*

PCI CARDS

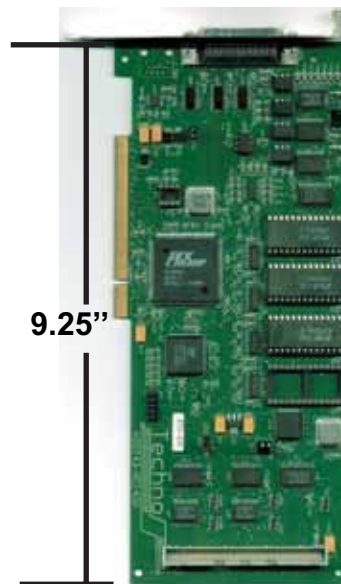
#### PCI Interface Card



This card works with:

- LP(LC) Electronics
- CNC Lathes
- Servo DaVinci
- Gantry III Machines

#### The PCI Controller Card



This card works with:

- MP Electronics
- HP Electronics:  
  **RG+ Servo Box 3**
- Premium Class Electronics
- LC Speed Upgrades
- RG Machines
- Some Gantry III Machines

**WARNING:** Make sure to match the correct PCI Card with the corresponding Techno Electronics. Mixing the Interface Card with the MP/HP Electronics, or using the Controller Card with the LP Electronics may cause damage to the Electronics, the PCI Card and your computer.



**APPENDIX B**

# **COLLETING GUIDELINES**

## **WRONG!**



This picture shows an improper assembly. Notice the gap and angle of the collet in relation to the nut. The collet is not flush to the end of the collet nut. Correct this assembly before using.

**DO NOT PUSH THE COLLET INTO THE SPINDLE AT ANY TIME!**

Only the proper assembly should be screwed onto the spindle.



## **RIGHT!**



The picture above is how your collet nut assembly should look: the end of the collet is flush with the bottom surface of the collet nut. You will hear and feel a "SNAP" as the collet properly goes into the collet nut. Once it is assembled, then "SCREW" the nut onto the threaded spindle end.

**FOR TOOLCHANGE AND FIXED COLLET SPINDLES:**

**ONLY USE TOOLHOLDERS, COLLET NUTS AND TOOLS THAT ARE BALANCED TO MEET OR EXCEED THE MAX RATED SPEED OF THE SPINDLE.**



**THE SPINDLE WILL BE DAMAGED IF UNBALANCED EQUIPMENT IS USED!**

**APPENDIX C**

**LUBRICATION SPECS FOR PREMIUM CLASS MACHINES**

<u>AVAILABLE ACCESSORIES</u>		
TECHNO LUBE KIT	PART NO.: H90Z00-LUBEKIT3	PRICE: \$75.00
THK LUBE KIT	PART NO.: H90Z00-LUBEKIT4	PRICE: \$105.00

**Y-Axis – THK Products**

**Grease:** Lithium-based grease (JIS NO. 2) or Urea-based Grease (JIS No. 2), such as AFB Grease (THK), Alvania Grease No. 2 (Shell), Daphne Eponex Grease No. 2 (Idemitsu Kosan) or equivalent.

**Oil:** Sliding surface oil or turbine oil (ISOVG32-68), such as Super Multi 32 to 68 (Idemitsu Kosan), Vactra No. 2S (Mobile), DT Oil (Mobile), Tonner Oil (Shell) or equivalent.

**TABLE 1**

<b>THK</b>			
	BALLSCREW	RAIL	CARRIAGE
GREASE	√	√	√
OIL	√	√	

**Note:** On some items you can use either the grease or oil.



### PREMIUM CLASS MACHINE MAINTENANCE

For regular work loads, machine maintenance is required at least once a month. The machine should also be lubricated once it is received.

**Warning:** Before inserting any object into the machine, press the E-stop button.

**Notes:** Do not use WD-40 or silicon spray on the machine. It may damage the drive components of the machine.

**Use the Grease and Oil recommendations listed on the previous page, paying close attention to what grease/oil must be used!**

#### I. LONG AXIS (Y) BALL SCREW:

1. Clean the ball screw with a dry rag removing old grease and debris that may have collected.
2. Apply grease on the ball screw and run the machine back and forth several times to spread the grease out. By applying the grease and running the axis back and forth, small particles that may have collected in the ball nut may be flushed out. It is recommended to repeat steps 1 and 2 again.



#### II. X-AXIS, Z-AXIS BALL SCREWS AND END BEARINGS:

**Notes:** To access the X-Axis you must first remove the top panel covering it. This can be done by unscrewing the screws on either side of the axis and lifting the panel completely off of the machine.

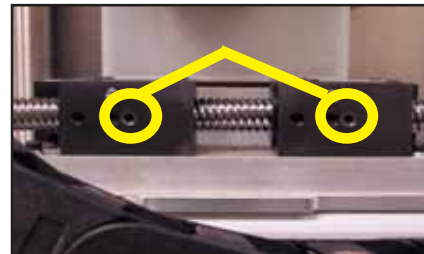
On the reverse side of the X-Axis are the Ball Nuts, remember to apply grease to those fittings!

1. Clean the ball screws with a dry rag, removing old grease and debris that may have collected.

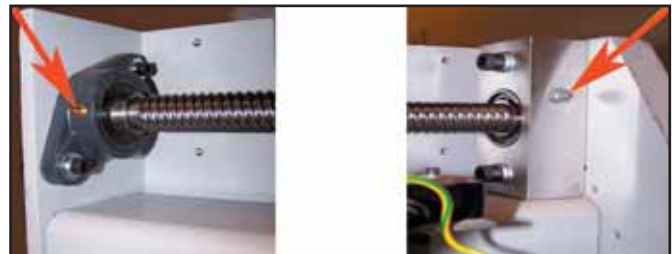
2. Apply grease to the the grease fittings on the ball nuts and the grease fittings located on the end bearings of the X-Axis and grease Z-Axis.
3. Run the machine back and forth along the axes several times to spread the grease out and complete the process.



X-AXIS (FRONT VIEW)



X-AXIS BALL NUTS (REAR VIEW)



END BEARINGS (REAR VIEWS OF X-AXIS)

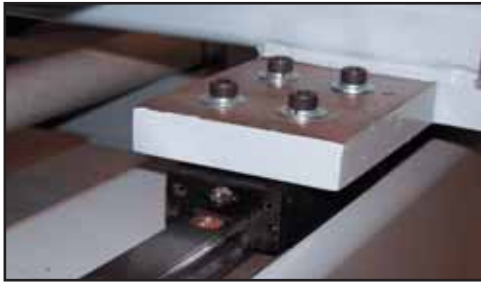


Z-AXIS END BEARING

**III. THK RAILS:**

THK specifications indicate that a small amount of grease needs to be applied to the rails after 4 months of use.

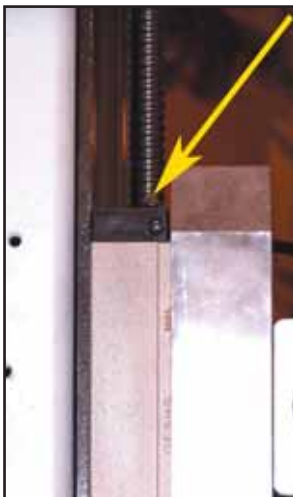
The following pictures indicate the location of the grease fittings. Be sure to grease all 4 fittings, on all three axes!



**Y-AXIS RAIL  
(ONE OF FOUR GREASE FITTINGS)**



**X-AXIS RAILS  
(SIDE VIEW, TWO OF FOUR INCLUDING THE Z-AXIS)**



**Z-AXIS  
(UPPER SIDE VIEW, ONE OF FOUR GREASE FITTINGS)**