Vision Engravers and Routers Installation Guide

© 2015 Vision Engraving & Routing Systems

ENGRAVING & ROUTING SYSTEMS

Factory Settings

Red Dot Laser Pointer Offset
X_____ Inches__ mm__
Y_____ Inches__ mm__

Braille Inserter Offset
X_____ Inches__ mm__
Y_____ Inches__ mm__

This is ONLY the Installation Guide. PLEASE review the complete User Manual for your machine, which will be installed on your computer after the software installation is completed.

PN: 12-1074-00

Revised: 8/19/2015

Vision Engravers and Routers Installation Guide

© 2015 Vision Engraving & Routing Systems

All rights reserved. No parts of this work may be reproduced in any form or by any means - graphic, electronic, or mechanical, including photocopying, recording, taping, or information storage and retrieval systems - without the written permission of the publisher.

Products that are referred to in this document may be either trademarks and/or registered trademarks of the respective owners. The publisher and the author make no claim to these trademarks.

While every precaution has been taken in the preparation of this document, the publisher and the author assume no responsibility for errors or omissions, or for damages resulting from the use of information contained in this document or from the use of programs and source code that may accompany it. In no event shall the publisher and the author be liable for any loss of profit or any other commercial damage caused or alleged to have been caused directly or indirectly by this document.

Revised: 8/19/2015

Table of Contents

Part I Introduction 5

1 Computer Requirements ... 7
2 Direct Connection to Computer ... 8
3 Network Connection ... 15
4 Using a Router or Hub - ONLY ... 18
5 Vision Software Installation ... 25

Part II General Electrical and Facility Requirements by Model 35

Part III Pendant Holder Installation 36

Part IV Express and VE-810 40

1 Express Layout Diagram ... 41
2 VE-810 Layout Diagram ... 41

Part V Phoenix 1212 42

1 Phoenix 1212 Layout Diagram ... 43

Part VI 16 Series and 24 Series Engravers 44

1 1612 and 1624 Engraver Layout Diagram ... 45
2 2424 and 2448 Engraver Layout Diagram ... 46

Part VII 16 Series and 25 Series Routers 47

1 High Frequency Router Head ... 47
2 Engraving Head ... 51
3 1624R Router Layout Diagram ... 53
4 2525 and 2550 Router Layout Diagrams ... 54

Part VIII MAX and MAX PRO 57

1 MAX and MAX PRO Layout Diagram ... 58

Part IX VR48 Router 59

1 Requirements ... 59
2 Wiring Connections ... 62
3 Vacuum Pump Connections - Vacuum Table Models Only ... 66
4 VR48 Router Layout Diagrams ... 67

© 2015 Vision Engraving & Routing Systems

© 2015 Vision Engraving & Routing Systems

1 Introduction

This guide contains information to prepare the new owner of a Vision Engraver or Router for the proper installation of their machine. It is the customer's responsibility to read through this guide and make sure the work area, electrical and computer requirements are met prior to the arrival of a representative from Vision for the scheduled installation/machine orientation date (Training NOT included with Vision Express machines). If for any reason, there are questions about these requirements, please call your Vision representative as soon as possible.
IMPORTANT – Once your training day is scheduled, if for any reason you have to cancel training or change the dates, you may be subject to fees associated with your change request. However, if the trainer arrives at your facility on the day of training and you have to cancel or reschedule training at that time, a fee of $750 will be required before Vision will send the trainer back to your facility in addition to fees associated with your change request. No exceptions.

In the following sections, the complete machine and Vision software installation will be outlined. There are three connection configurations possible with the Vision Engraver or Router.

The first is a direct cable connection to your computer via the network port. There is a special "crossover" cable (the cable colored gray) supplied for this connection type. This configuration is for a stand alone computer that is NOT connected to a WIRED network or internet. A connection can be made to a computer that is connected to a wireless network in this manner.

The second configuration is for connection through a wired network using a standard Ethernet cable (DO NOT use the crossover cable when connecting to a network). In this configuration, the engraver or router will be recognized as a network device. Connection in this manner is the easier of the two connection types. If there are no network connections available, a network hub can be added to allow connection to your network.

The third configuration is for a connection from the computer to a hub (or router) and then to your machine. This is WITHOUT a computer network. Standard Ethernet cables are used in this configuration.

Please call your distributor or the service department at Vision for assistance if you are having problems with this procedure.

FOR MORE DETAILED INFORMATION, PLEASE REFER TO THE USER GUIDE FOR YOUR MACHINE INSTALLED WITH THE VISION SOFTWARE. USER GUIDES ARE ALSO AVAILABLE ONLINE AT http://www.visionengravers.com/support/vision-engraver-manuals.html

© 2015 Vision Engraving & Routing Systems

To begin installation, locate the White/Blue Dongle or Orange Dongle or USB Stick included with your machine in the Accessories Box

Important Note:

The Vision software is available in two versions; one with a dongle, and one that is "dongle-less" and is loaded on to a USB Memory stick.

If your machine was delivered with, or you currently have the white/blue or orange software dongle, DO NOT LOSE IT!

The Vision software will NOT run without the dongle plugged into the computer.

© 2015 Vision Engraving & Routing Systems

1.1 Computer Requirements

IT IS HIGHLY RECOMMENDED THAT THE COMPUTER USED TO OPERATE THE VISION ENGRAVER OR ROUTER BE CONNECTED TO THE INTERNET. THIS ALLOWS THE USER TO ALLOW VISION'S TECHNICAL SUPPORT TO ACCESS THE MACHINE AND TROUBLESHOOT IF NECESSARY.

Minimum System Requirements

CPU:	Dual Core (2.0GHz or higher)
Hard Drive:	500 GB free space
RAM:	1GB + OS Requirements
Operating System:	Windows 10 - 32 Bit & 64 Bit
	Windows 8 & 8.1 - 32 Bit & 64 Bit
	Windows 7 - 32 Bit & 64 Bit
	Windows XP SP3 - 32 Bit (64 Bit not supported)
Ports:	USB port for security dongle
	Local or network Ethernet port to connect machine

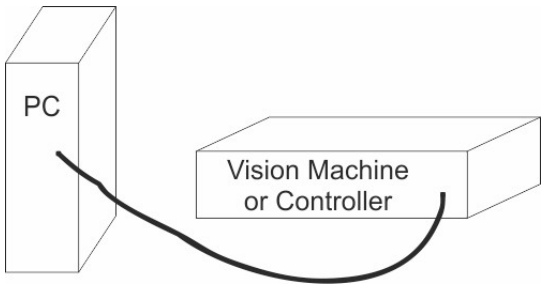
Suggested System Requirements

CPU:	Core i3 (or faster)
Hard Drive:	1 TB (or more)
RAM:	4GB + OS Requirements
Operating System:	Windows 10 - 32 Bit & 64 Bit
	Windows 8 & 8.1 - 32 Bit & 64 Bit
	Windows 7 - 32 Bit & 64 Bit
Ports:	USB port for security dongle
	Local or network Ethernet port to connect machine

© 2015 Vision Engraving & Routing Systems

1.2 Direct Connection to Computer

Direct Connection to Computer Using Crossover Cable

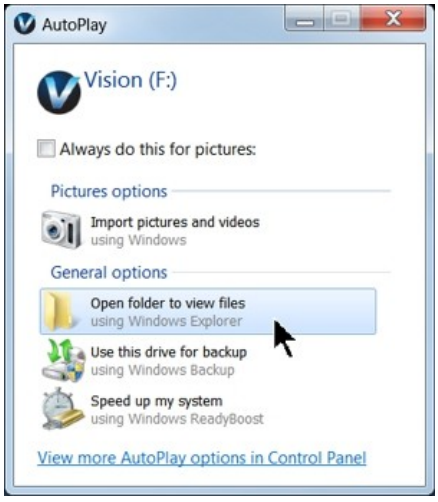


Once the machine or controller is connected directly to your computer's network port with the crossover cable (the gray colored cable), turn the machine or controller on. The power switch for the Vision Express is located on the power supply box for the machine. The power switch for the VE810 is located below the LCD screen on the front of the machine. The power switch for the Vision Series 4 Controller is located on the front left of the Controller. Once the machine or controller has initialized, plug the supplied Vision USB drive (or orange USB Dongle) into an available USB port on your computer.

NOTE - This installation is performed on a Windows 7 PC. For Windows XP, Windows 8, Windows 8.1 or Windows 10, the screens are slightly different.

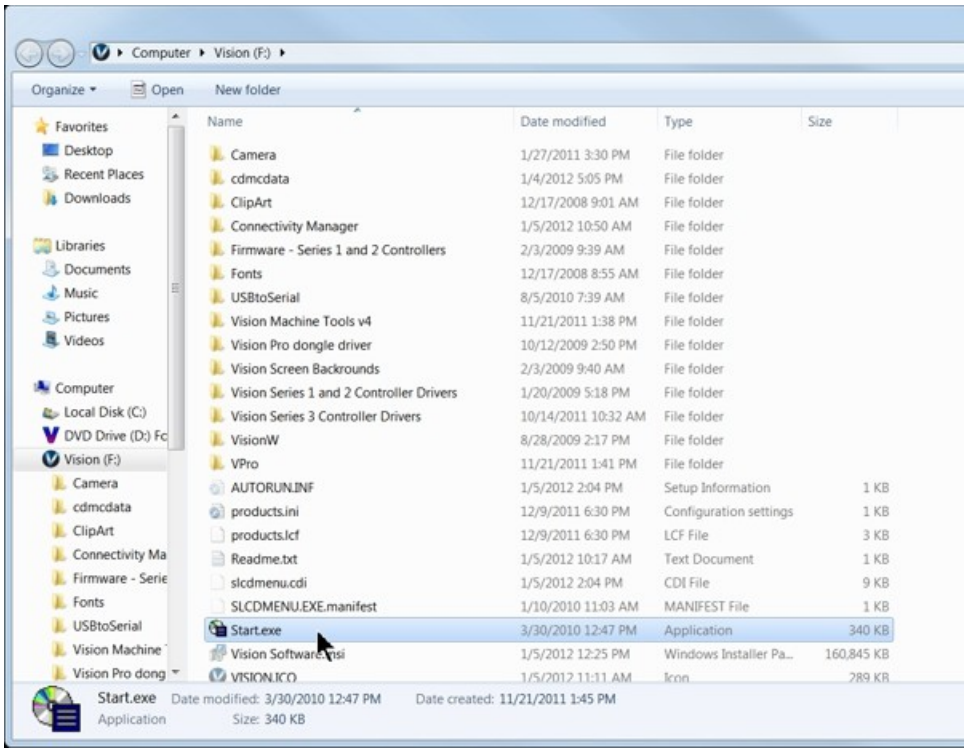
The computer will recognize the USB drive and the following screen will appear. Select Continue without scanning.

Select Open folder to view files.

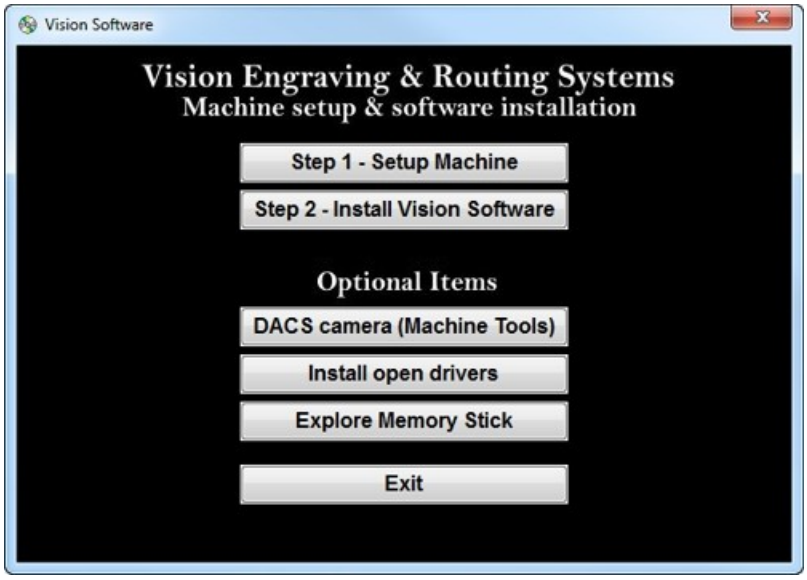


© 2015 Vision Engraving & Routing Systems

Locate the file named Start and double click on the file to start the installation. The screen below shows Start.exe, but your computer might not show the .exe portion.

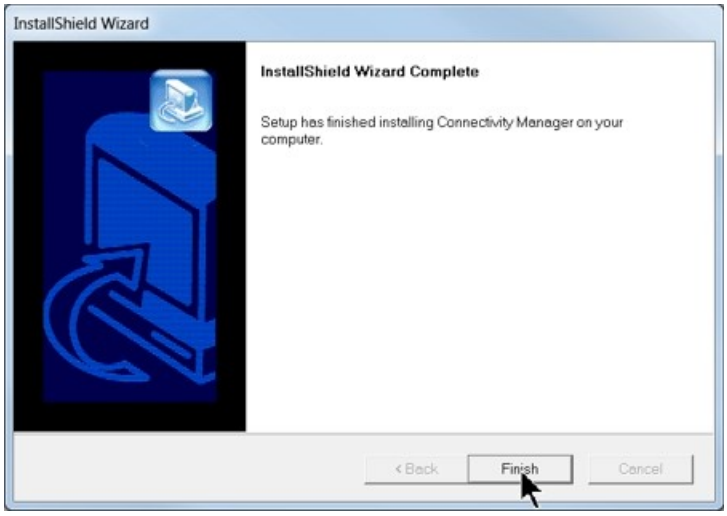


Select Step 1 - Setup Machine. This installs the Vision Connectivity Manager software.

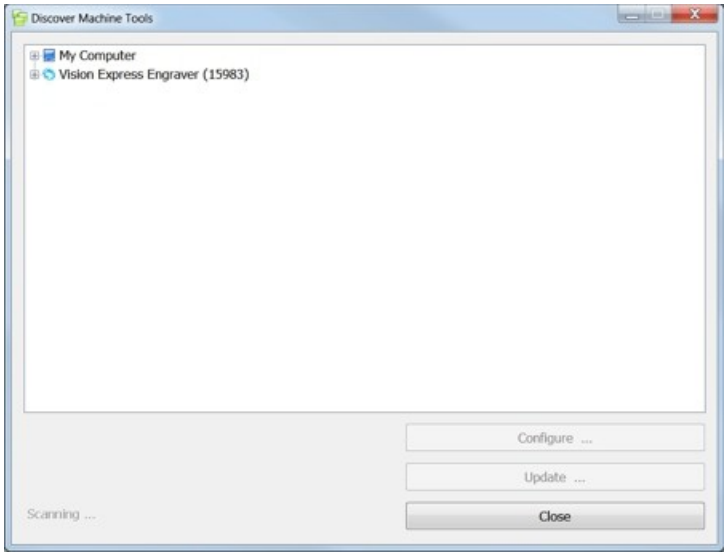


© 2015 Vision Engraving & Routing Systems

When the software is installed, select Finish.

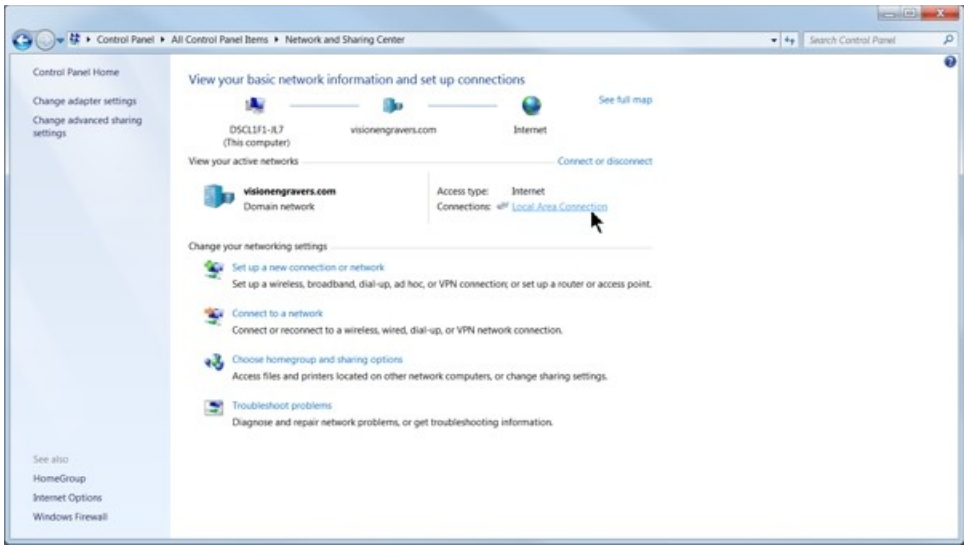


The Connectivity Manager will search for available Vision devices.



© 2015 Vision Engraving & Routing Systems

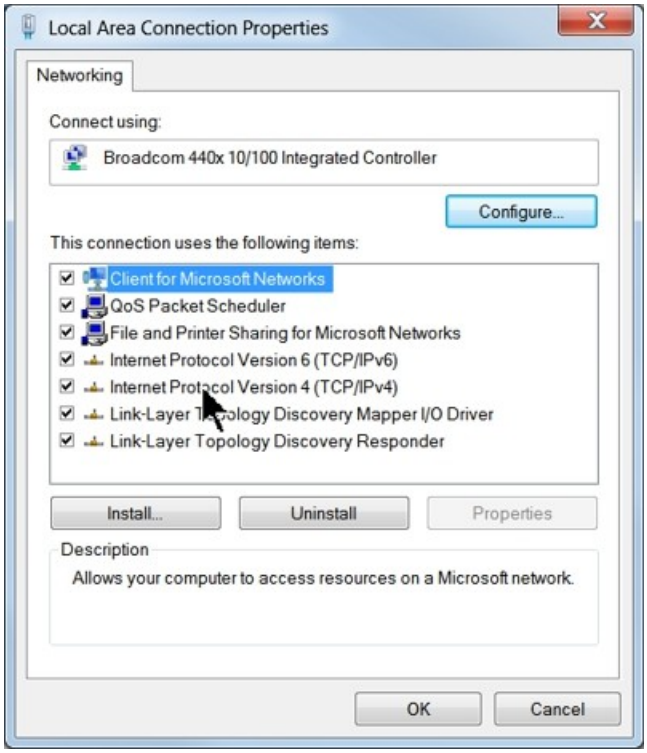
The computer's IP address will need to be set. NOTE - this should not cause any conflicts with your computer's wireless IP address, which is determined by the computer's wireless network card. To set the computer's IP address, open the Window's Control Panel. Depending on how you have this folder set, you will either see Network and Internet, or you will see the Network and Sharing Center immediately. If you see Network and Internet, select View Network Status and Tasks (which opens the Network and Sharing Center). If you see the Network and Sharing Center, open it. Then select Local Area Connection (as shown below).



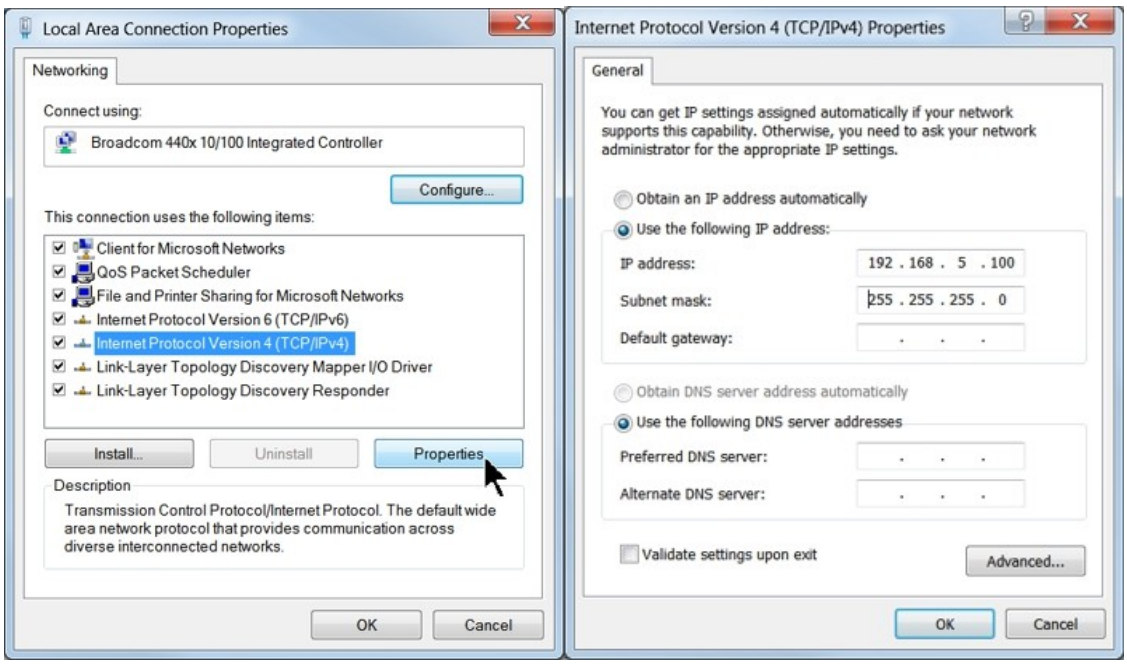
Select Properties.

© 2015 Vision Engraving & Routing Systems

Then, select Internet Protocol Version 4 (TCP/IPv4).

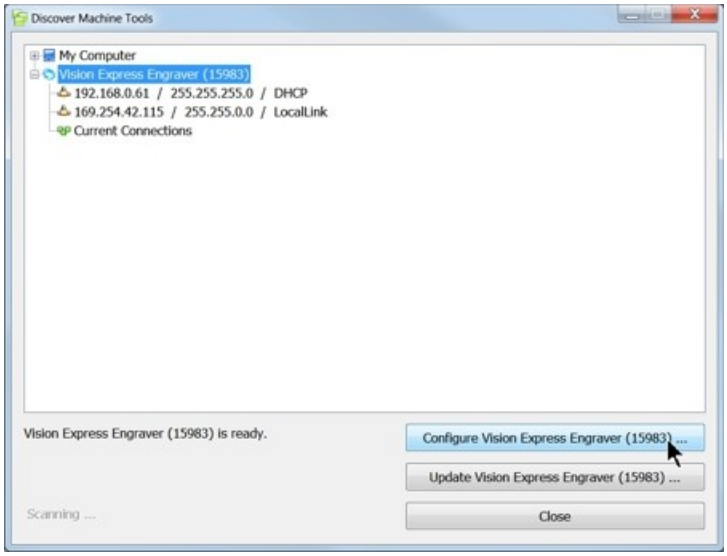


Then select Properties. Select Use the following IP address: and enter 192.168.5.100 and set the Subnet mask to 255.255.255.0 as shown. Then select OK and close any other network configuration windows.

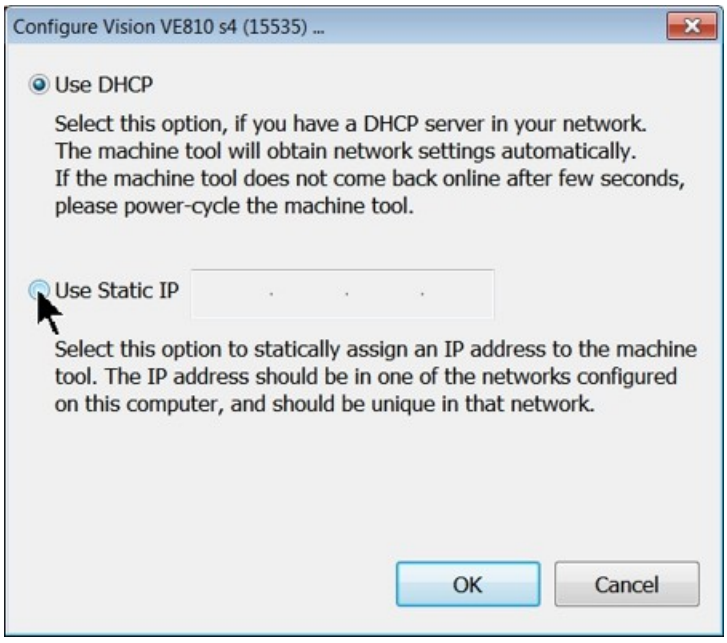


© 2015 Vision Engraving & Routing Systems

The IP address of the machine will need to be set to set up the connections properly. Select the + box next to the machine now listed in the Discover Machine Tools window to expand the information. Then select Configure (Your Machine) at the bottom of the screen.

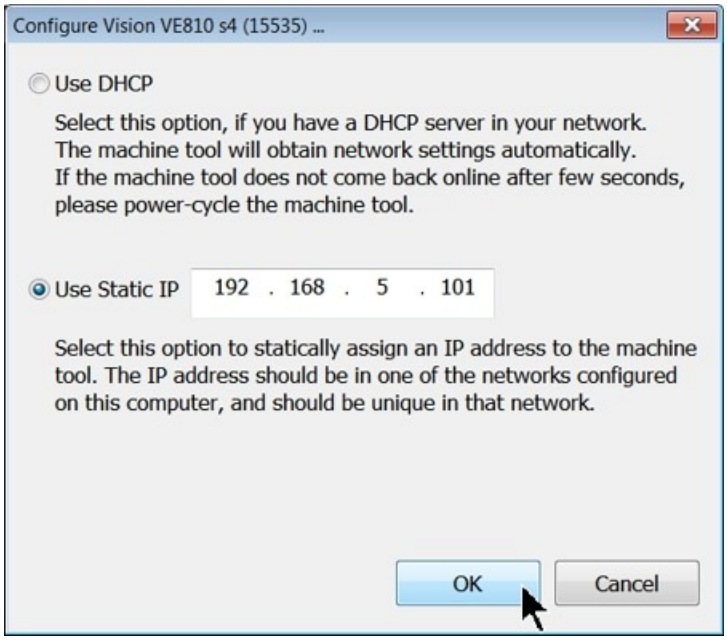


Select Use Static IP.



© 2015 Vision Engraving & Routing Systems

Set the IP address (as shown) to 192.168.5.101, then select OK. This sets the machine's IP address.

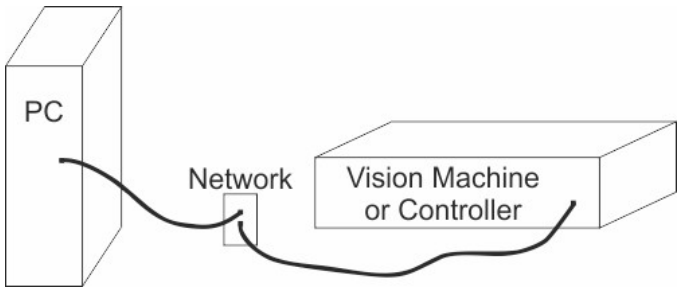


The configuration is complete at this point. Close the Discover Machine Tools window and return to the Main Installation Screen to proceed with the Vision software installation in the next section.

© 2015 Vision Engraving & Routing Systems

1.3 Network Connection

Connecting via Standard Network Cable to Network

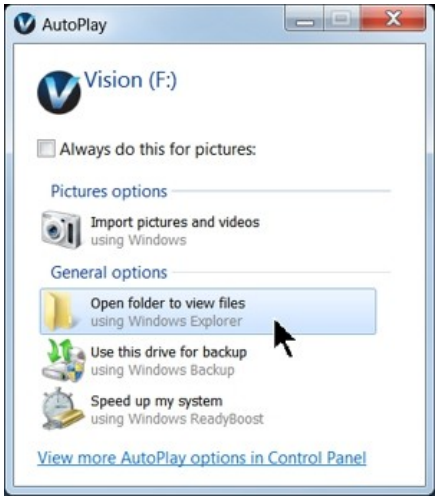


Once the machine or controller is connected to your network, turn the machine or controller on. The power switch for the Vision Express is located on the power supply box for the machine. The power switch for the VE810 is located below the LCD screen on the front of the machine. The power switch for the Vision Series 4 Controller is located on the front left side of the controller. Once the machine or controller has initialized, plug the supplied Vision USB drive (or orange USB Dongle) into an available USB port on your computer.

NOTE - This installation is performed on a Windows 7 PC. For Windows XP, Windows 8, Windows 8.1 or Windows 10, the screens are slightly different.

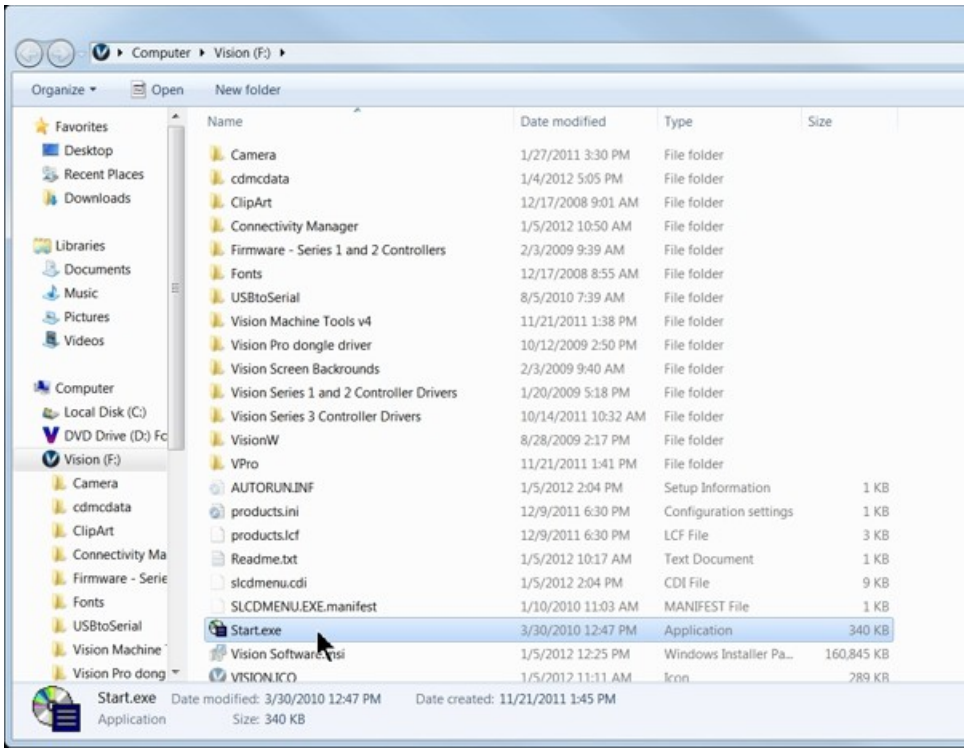
The computer will recognize the USB drive and the following screen will appear. Select Continue without scanning.

Select Open folder to view files.

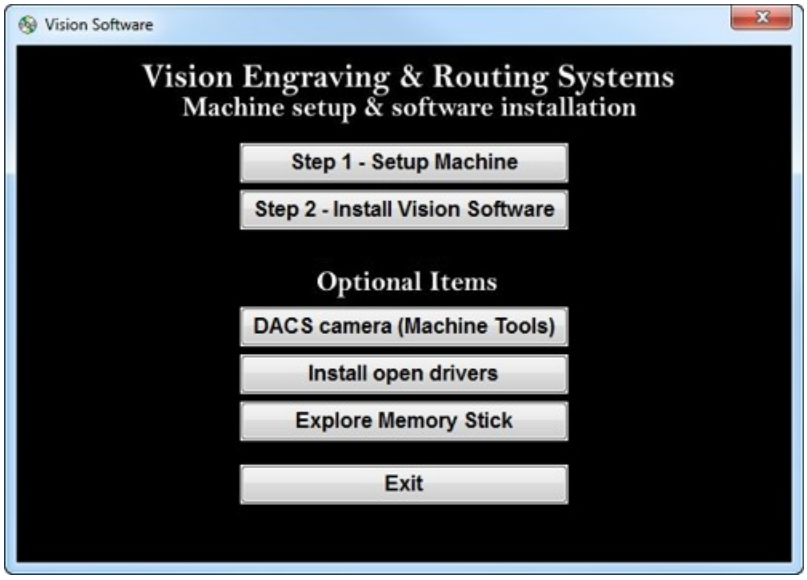


© 2015 Vision Engraving & Routing Systems

Locate the file named Start and double click on the file to start the installation. The screen below shows Start.exe, but your computer might not show the .exe portion.

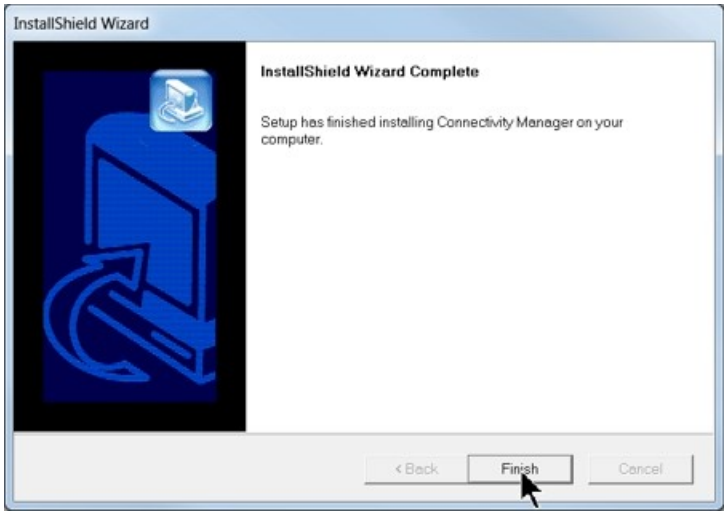


Select Step 1 - Setup Machine. This installs the Vision Connectivity Manager software.

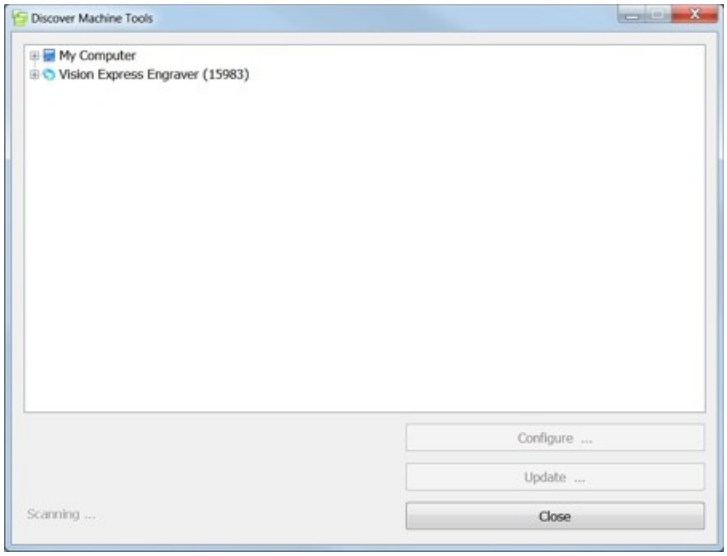


© 2015 Vision Engraving & Routing Systems

When the software is installed, select Finish.



The Connectivity Manager will search for available Vision devices.

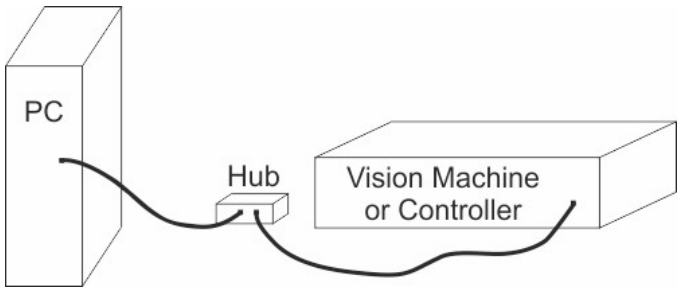


The configuration is complete at this point. Close the Machine Tools Discovery window and return to the Main Installation Screen to proceed with the Vision software installation in the next section.

© 2015 Vision Engraving & Routing Systems

1.4 Using a Router or Hub - ONLY

Connection from PC to Hub or Router to Machine or Controller

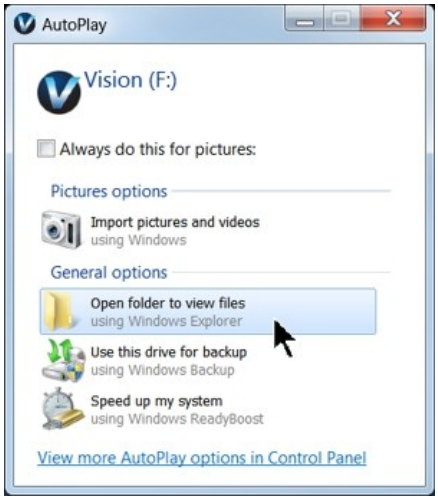


Once the machine is connected to a hub or router, and the hub or router is connected to your computer's network port, turn the machine or controller on. The power switch for the Vision Express is located on the power supply box for the machine. The power switch for the VE810 is located below the LCD screen on the front of the machine. The power switch for the Vision Series 4 Controller is located on the front left of the Controller. Once the machine or controller has initialized, plug the supplied Vision USB drive (or orange USB Dongle) into an available USB port on your computer.

NOTE - This installation is performed on a Windows 7 PC. For Windows XP, Windows 8, Windows 8.1 or Windows 10, the screens are slightly different.

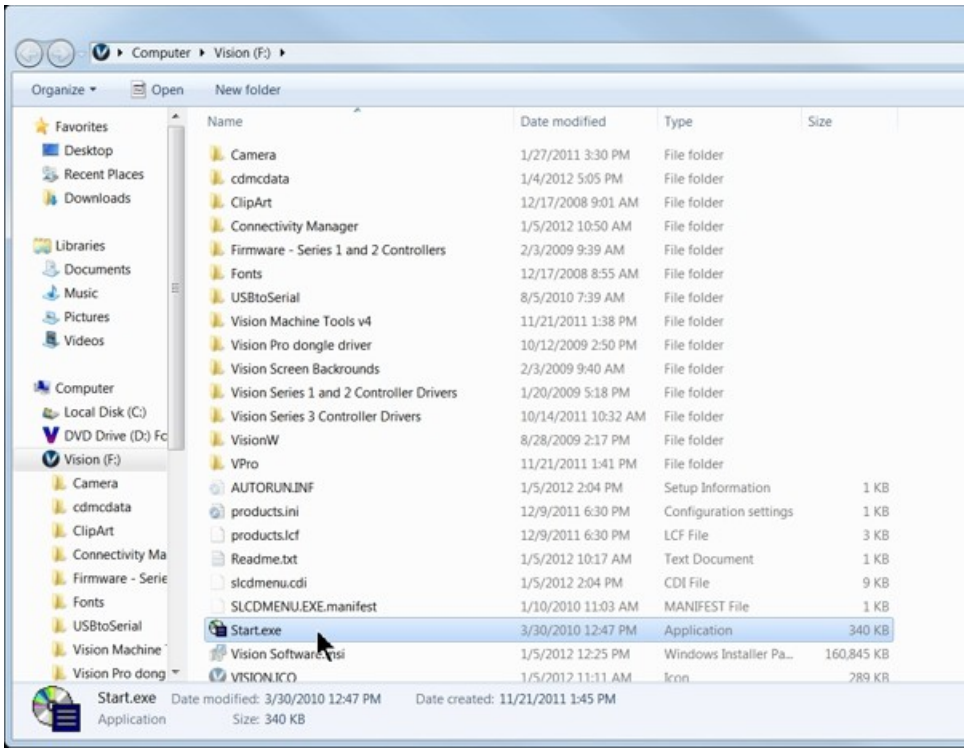
The computer will recognize the USB drive and the following screen will appear. Select Continue without scanning.

Select Open folder to view files.

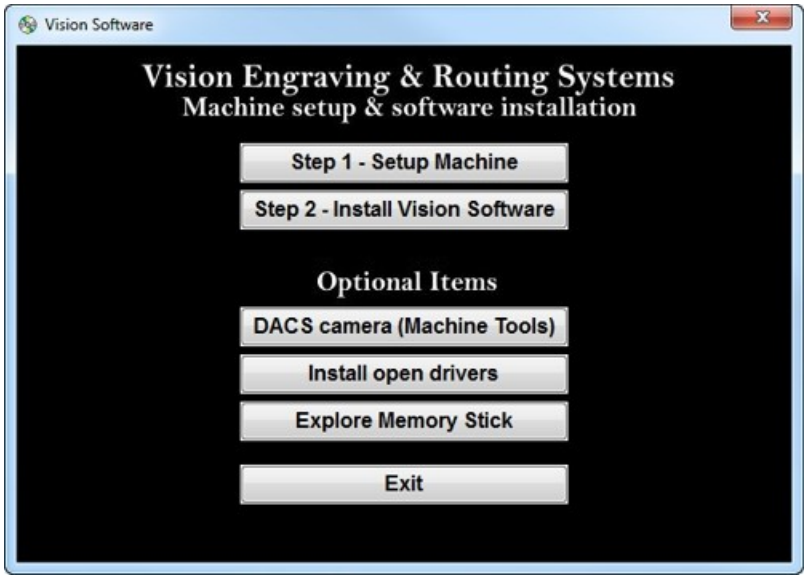


© 2015 Vision Engraving & Routing Systems

Locate the file named Start and double click on the file to start the installation. The screen below shows Start.exe, but your computer might not show the .exe portion.

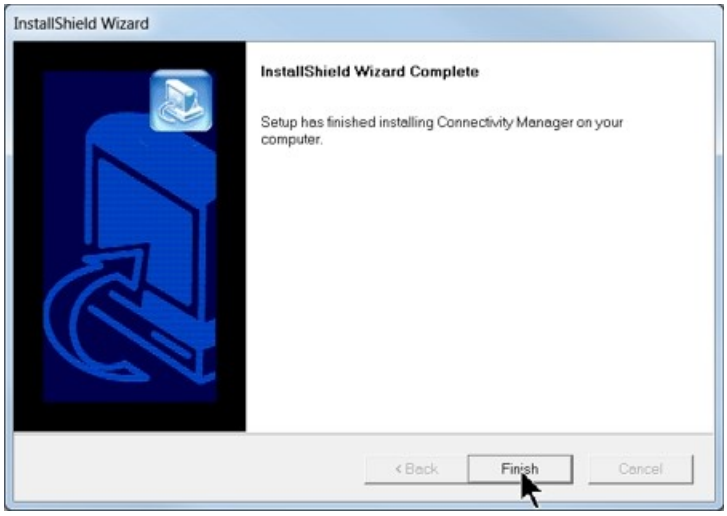


Select Step 1 - Setup Machine. This installs the Vision Connectivity Manager software.

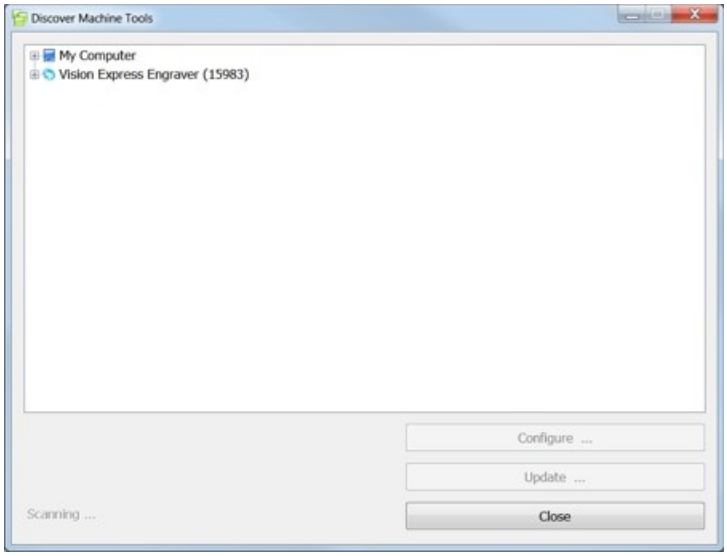


© 2015 Vision Engraving & Routing Systems

When the software is installed, select Finish.

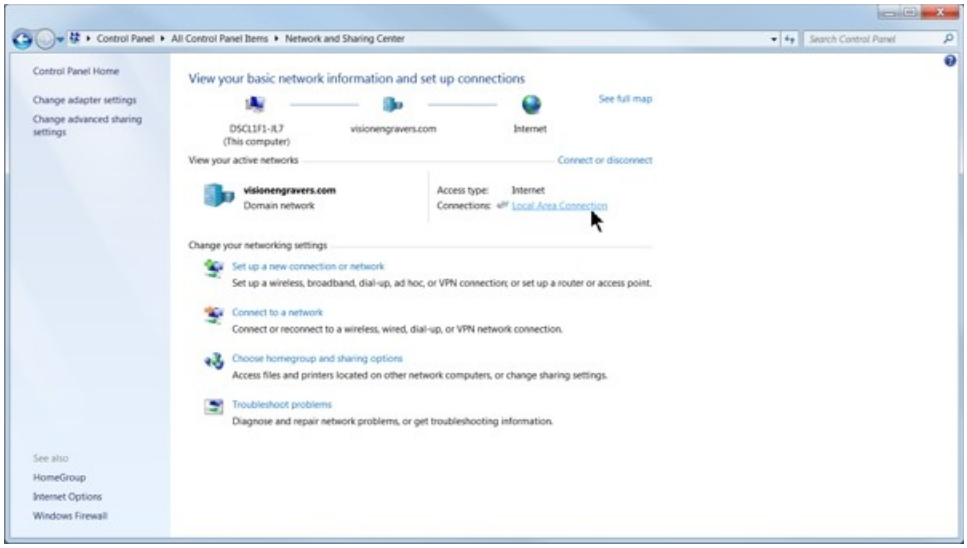


The Connectivity Manager will search for available Vision devices.



© 2015 Vision Engraving & Routing Systems

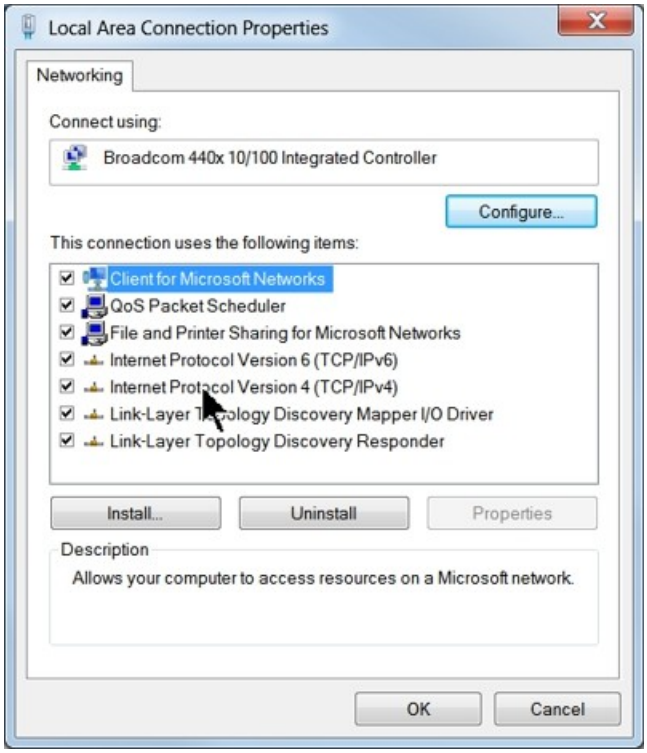
The computer's IP address will need to be set. To set the computer's IP address, open the Window's Control Panel. Depending on how you have this folder set, you will either see Network and Internet, or you will see the Network and Sharing Center immediately. If you see Network and Internet, select View Network Status and Tasks (which opens the Network and Sharing Center). If you see the Network and Sharing Center, open it. Then select Local Area Connection (as shown below).



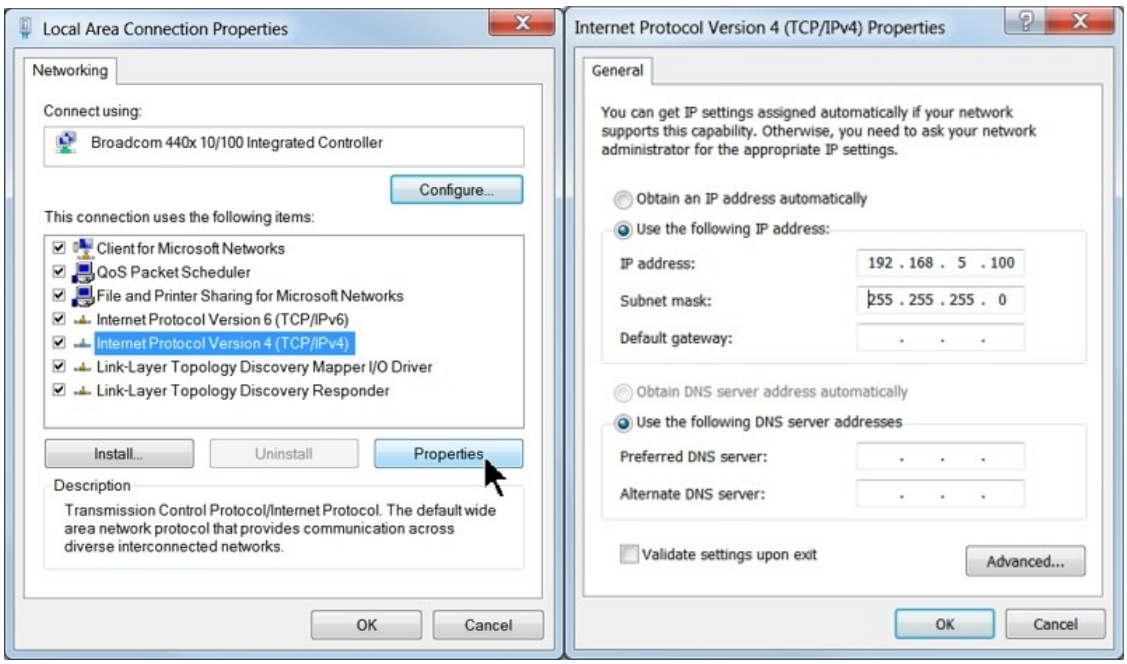
Select Properties.

© 2015 Vision Engraving & Routing Systems

Then, select Internet Protocol Version 4 (TCP/IPv4).

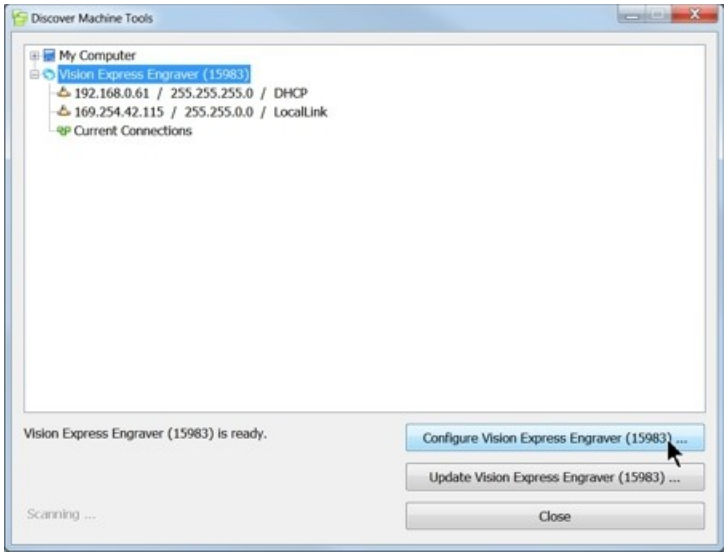


Then select Properties. Select Use the following IP address: and enter 192.168.5.100 and set the Subnet mask to 255.255.255.0 as shown. Then select OK and close any other network configuration windows.

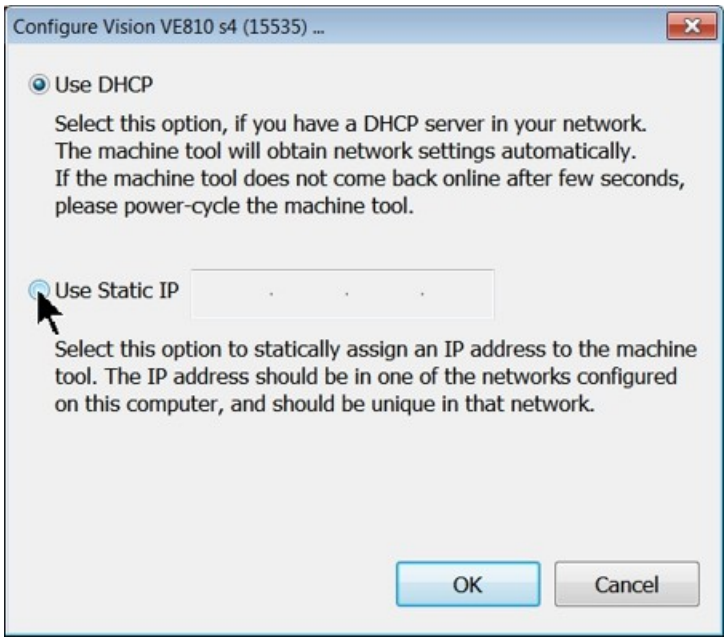


© 2015 Vision Engraving & Routing Systems

The IP address of the machine will need to be set to set up the connections properly. Select the + box next to the machine now listed in the Discover Machine Tools window to expand the information. Then select Configure (Your Machine) at the bottom of the screen.

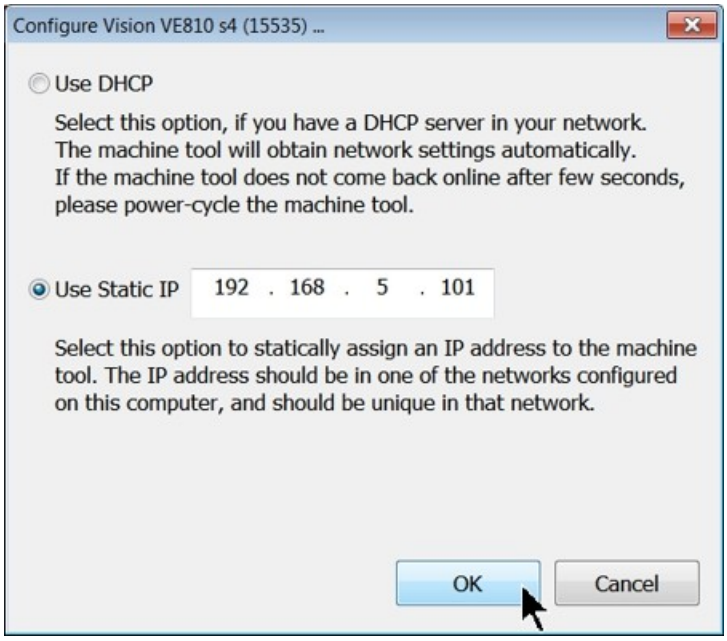


Select Use Static IP.



© 2015 Vision Engraving & Routing Systems

Set the IP address (as shown) to 192.168.5.101, then select OK. This sets the machine's IP address.

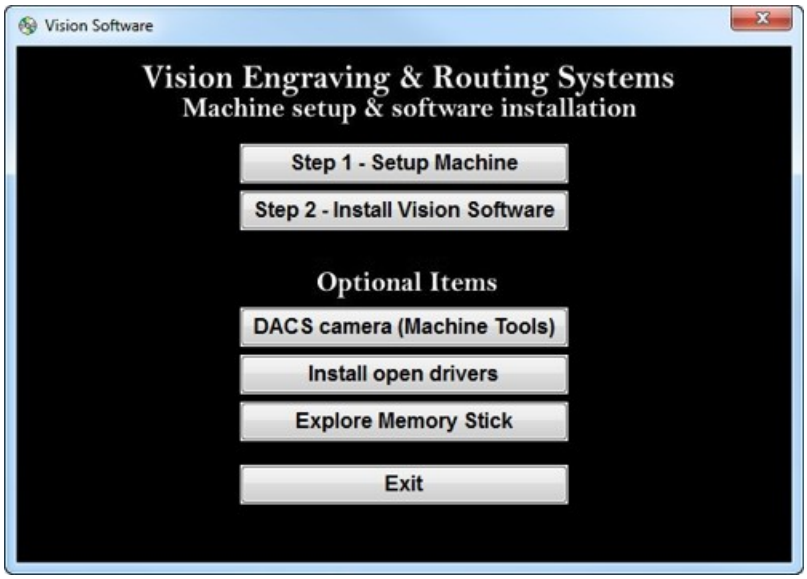


The configuration is complete at this point. The new IP address should appear in a few seconds in the Discover Machine Tools window. Close the Discover Machine Tools window and return to the Main Installation Screen to proceed with the Vision software installation in the next section.

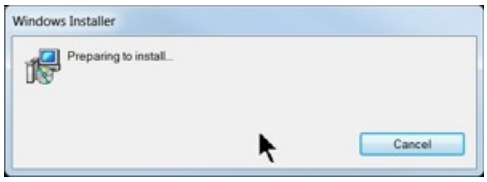
© 2015 Vision Engraving & Routing Systems

1.5 Vision Software Installation

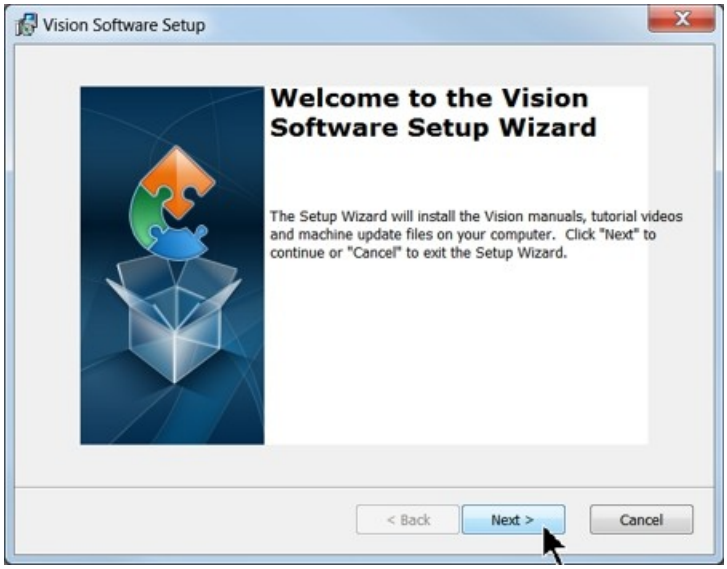
From the Main Installation Screen, Select Step 2 - Install Vision Software.



The Windows Installer will prepare the installation.

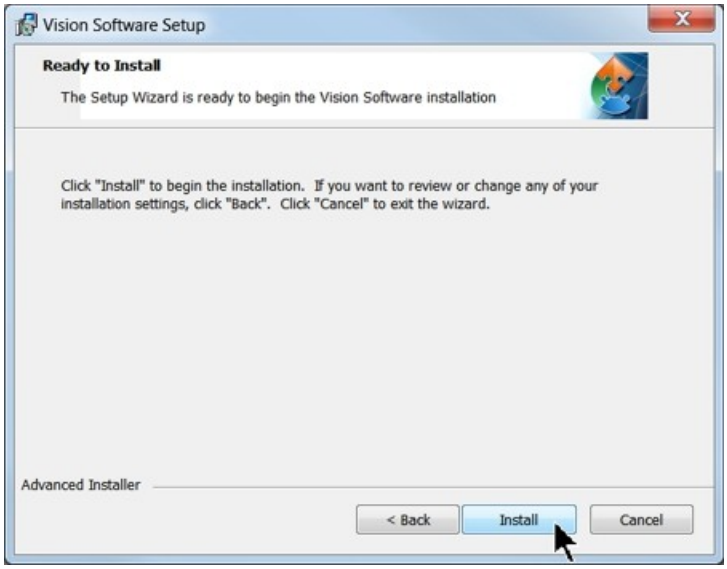


Select Next.

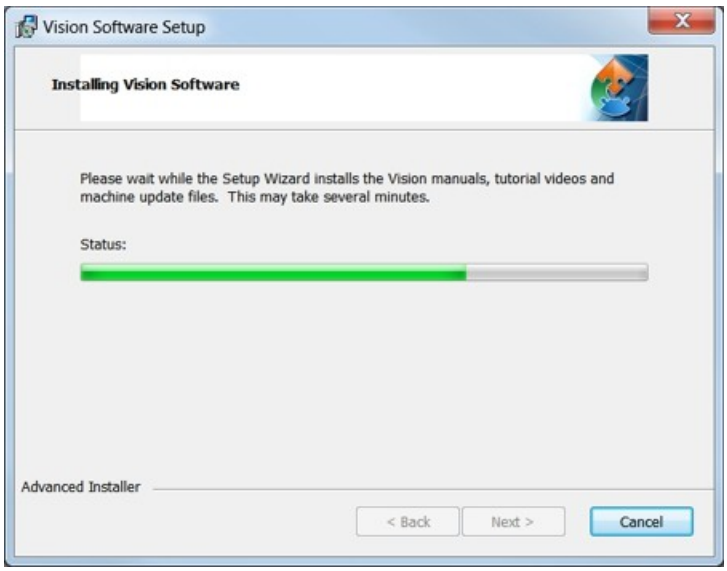


© 2015 Vision Engraving & Routing Systems

Select Install.



The installation will proceed.

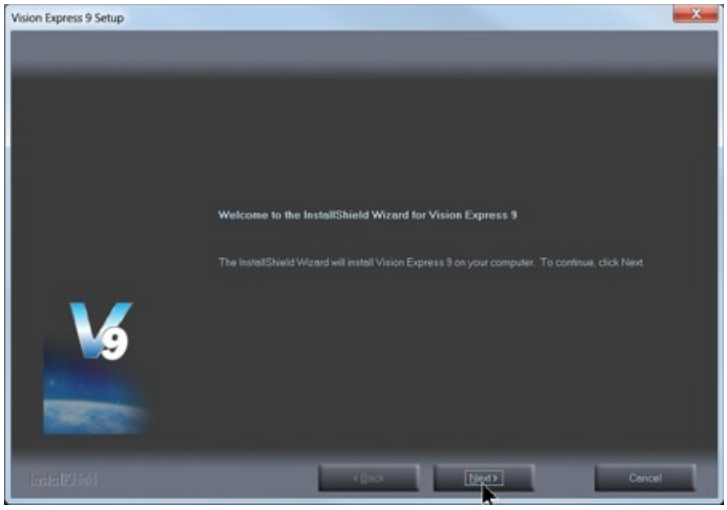


Select the appropriate language and select OK.

© 2015 Vision Engraving & Routing Systems

Installation will proceed.

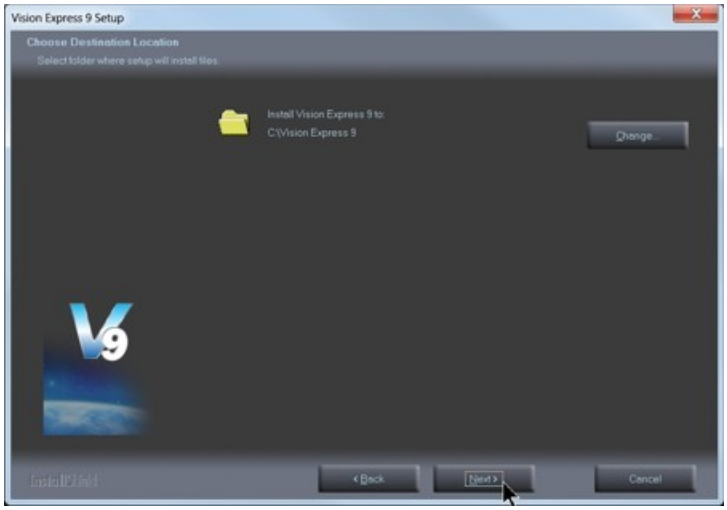
Select Next to begin the installer.



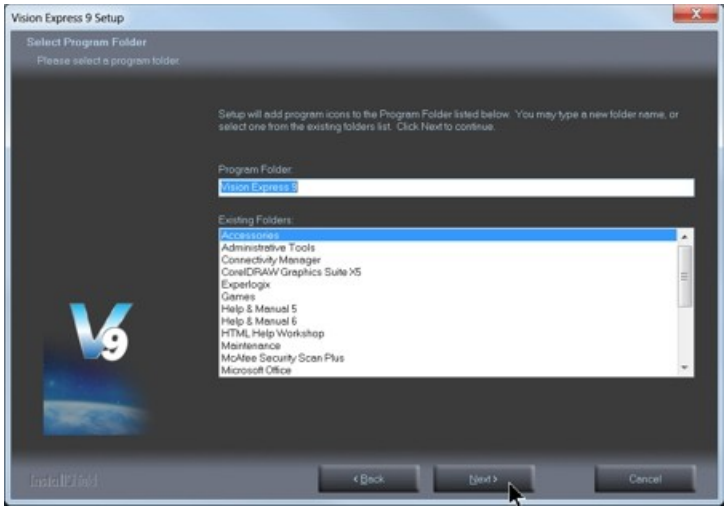
Select Accept the license agreement, then select Next.

© 2015 Vision Engraving & Routing Systems

Select Next (or change the destination folder - not recommended).

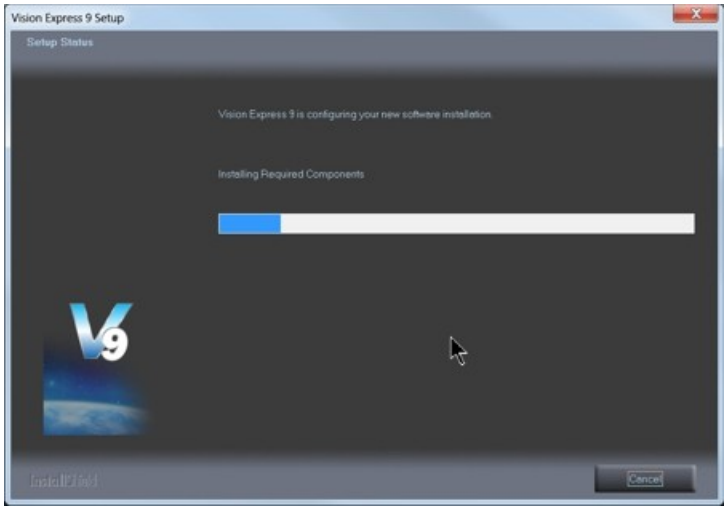


Select Next to create the folder.

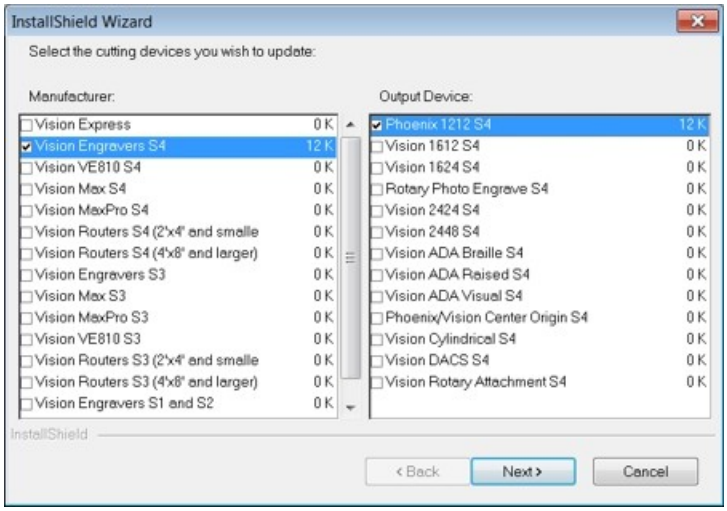


© 2015 Vision Engraving & Routing Systems

The installation will continue.

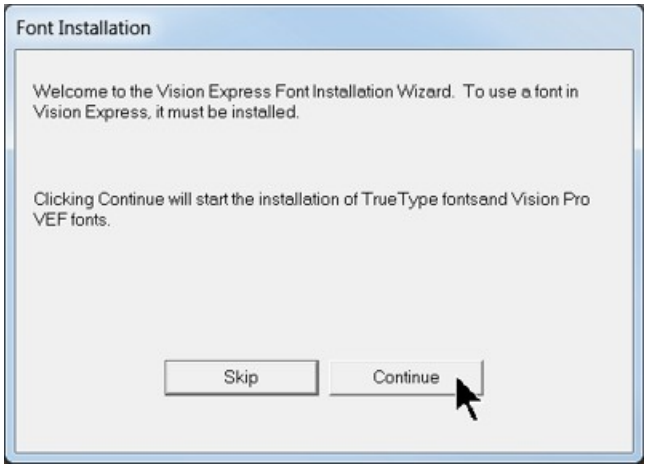


Select your machine from the Manufacturer list on the left side of this window by clicking in the box to the left of the machine (or machine series) you own. The right side of the window will list a selection of Output Devices. Only put a check mark in the box(es) to the left of the Output Device(s) you own. Then select Next. If you purchase another engraving system from Vision, it can be added to the machine list at a later date from within the Vision software.

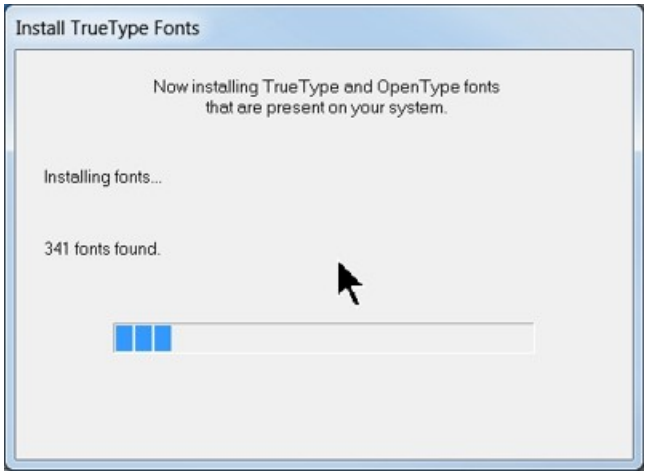


© 2015 Vision Engraving & Routing Systems

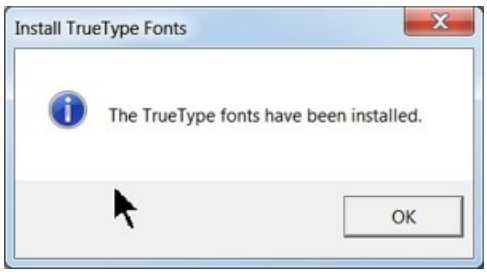
Select Continue to install True Type fonts and Vision Engraving Fonts on your computer.



The software will look for True Type fonts on your computer and allow the Vision software to use them.

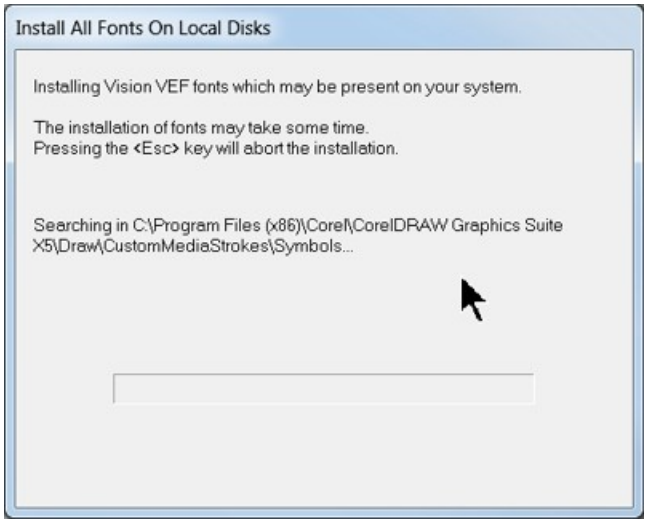


Once the True Type fonts are installed, select OK.



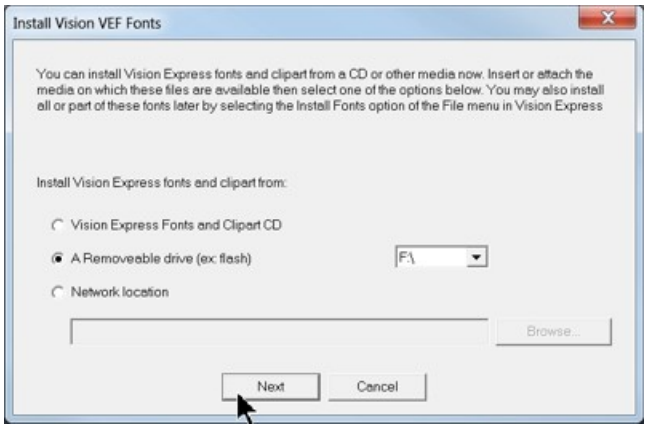
© 2015 Vision Engraving & Routing Systems

In this step, the software will install any Engraving fonts on your computer.



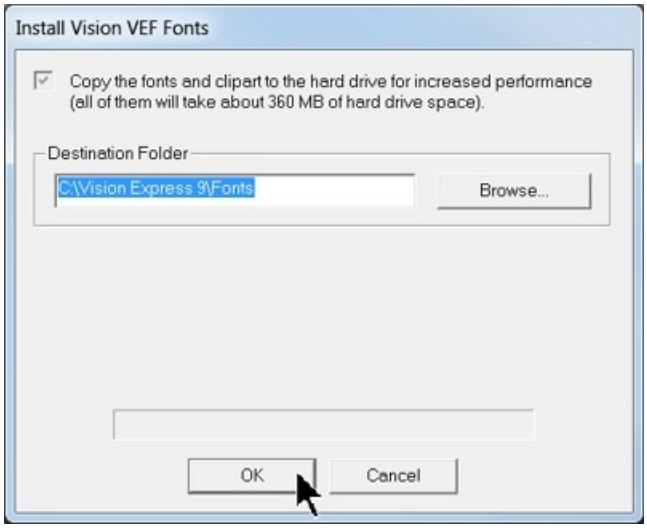
When complete, click on OK.

In order to install the fonts on the USB drive, select A Removable drive and from the drop down list, select the drive letter for the Vision USB drive plugged into your computer.

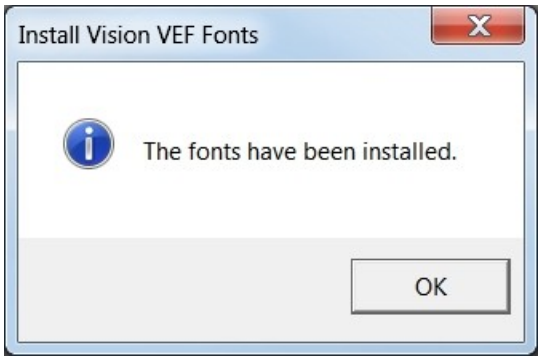


© 2015 Vision Engraving & Routing Systems

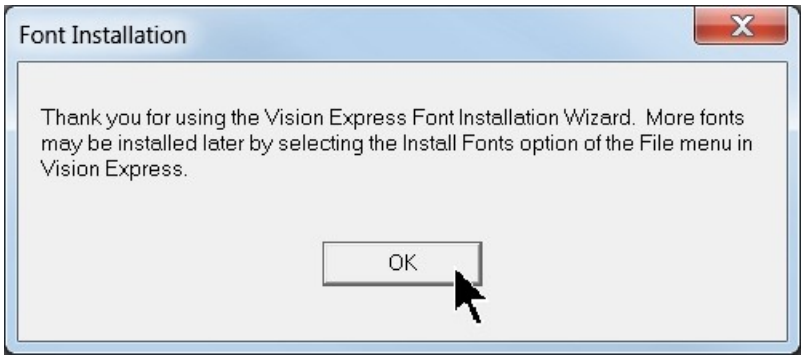
Select OK to install to the default folder.



Select OK. All fonts and clipart have been installed from the USB drive at this time.

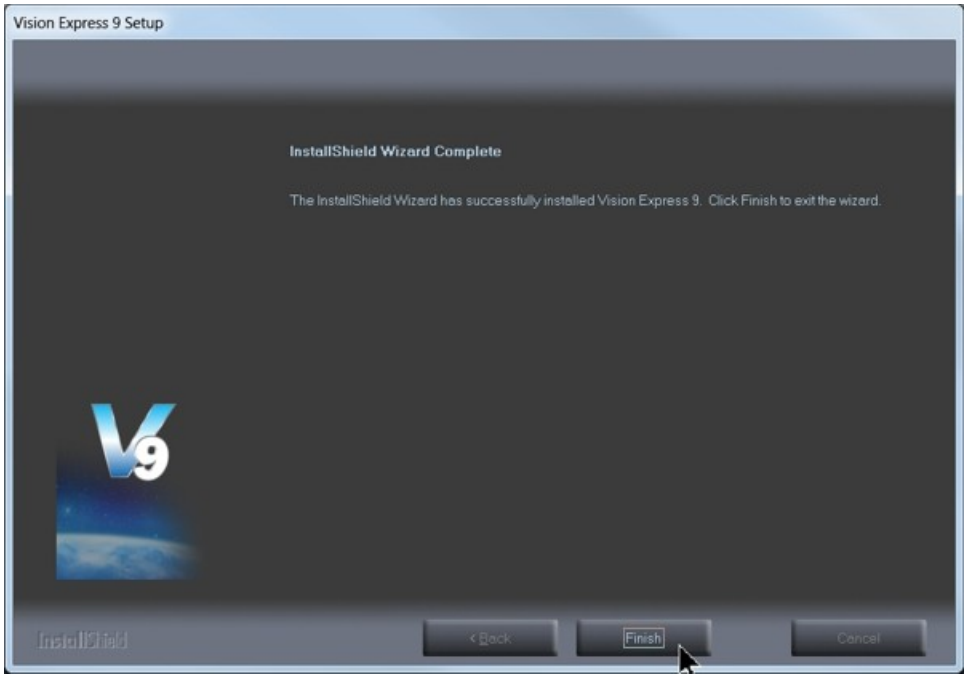


Select OK to return to the main installation screen.

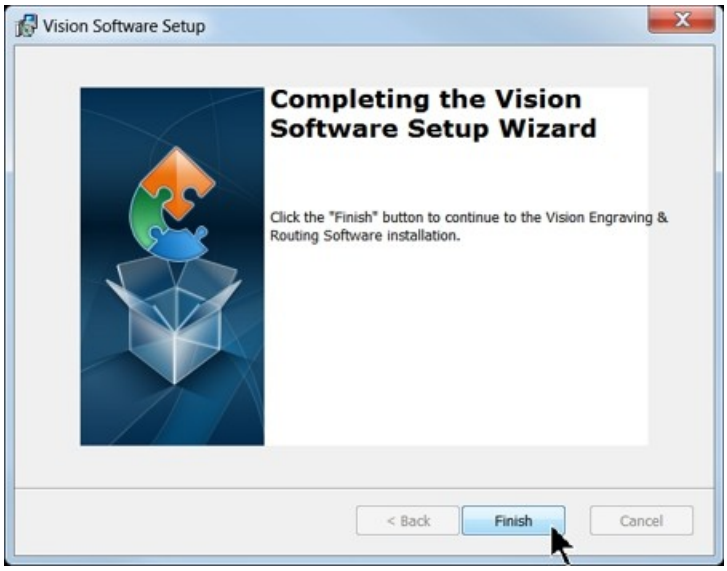


© 2015 Vision Engraving & Routing Systems

To complete the installation, select Finish.

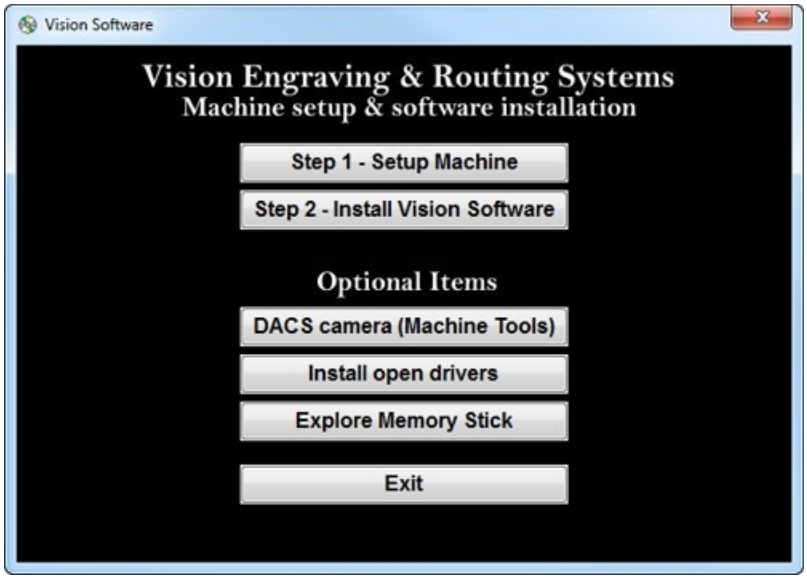


To close the Software Setup window, select Finish.

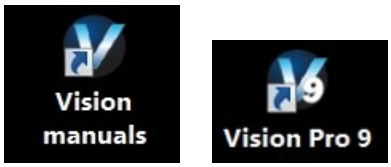


© 2015 Vision Engraving & Routing Systems

Select Exit to close the installer.



The Vision manuals icon should now appear on your computer's desktop along with an icon for your version of Vision 9 software.



Clicking on the Vision manuals link will give the user access to User Manuals, Installation Guides, Accessories and Training Videos.

If you were supplied with an Orange Dongle (orange USB stick), keep it installed in your computer's USB port in order to use the Vision software. If you were supplied with another color USB stick with your machine, it can be removed at this time from your computer. Installation is now complete.

© 2015 Vision Engraving & Routing Systems

2 General Electrical and Facility Requirements by Model

Machine Model	Requirements
Express, VE-810, 1612, 1624 Engraver, 2424, 2448, MAX and MAX Pro	One 110 VAC 15 Amp or One 220 VAC 10 Amp Single Phase
1624R, 2525 and 2550 Router - T-Slot Table	
With High Frequency Router Head	One 110 VAC 15 Amp or One 220 VAC 10 Amp Single Phase (for Vision controller) AND One 220 VAC 30 Amp Single Phase (for 3 HP router motor)
With Engraving Head	One 110 VAC 15 Amp or One 220 VAC 10 Amp Single Phase
With NSK High Frequency Spindle	Two 110 VAC 15 Amp, or Two 220 VAC 10 Amp Single Phase
2550 Router with Vacuum Table	
With High Frequency Router Head	One 110 VAC 15 Amp or One 220 VAC 10 Amp Single Phase (for Vision controller) AND One 220 VAC 30 Amp Single Phase (for 3 HP router motor) AND One 220 VAC 30 Amp 3 Phase (for vacuum table pump)
With Engraving Head	One 110 VAC 15 Amp or One 220 VAC 10 Amp Single Phase (for Vision controller) AND One 220 VAC 30 Amp 3 Phase (for vacuum table pump)
With NSK High Frequency Spindle	Two 110 VAC 15 Amp, or Two 220 VAC 10 Amp Single Phase AND One 220 VAC 30 Amp 3 Phase (for vacuum table pump)
VR48 Router - T-Slot Table	One 220 VAC 50 Amp Single Phase (for Vision machine) AND One 110 VAC 25 Amp or One 220 VAC 15 Amp Single Phase (for extraction unit)
VR48 Router - Vacuum Table	One 220 VAC 50 Amp Single Phase (for Vision machine) AND One 110 VAC 25 Amp or One 220 VAC 20 Amp Single Phase (for extraction unit) AND One 220 VAC 40 Amp 3 Phase (for vacuum table pump)
Optional Equipment	
Engraving Vacuum Chip Removal System	One 110 VAC 15 Amp
Router Chip Extraction System	One 110 VAC 25 Amp or One 220 VAC 20 Amp Single Phase
Optional Equipment Requiring Compressed Air Supply	
UNIST Misting System	Clean Dry Compressed Air Supply 60 - 90 PSI
NSK High Frequency Spindle	Clean Dry Compressed Air Supply 1 SCFM @ 40 PSI

NOTE: In addition to the above requirements, a 110 VAC standard outlet is required for the computer.

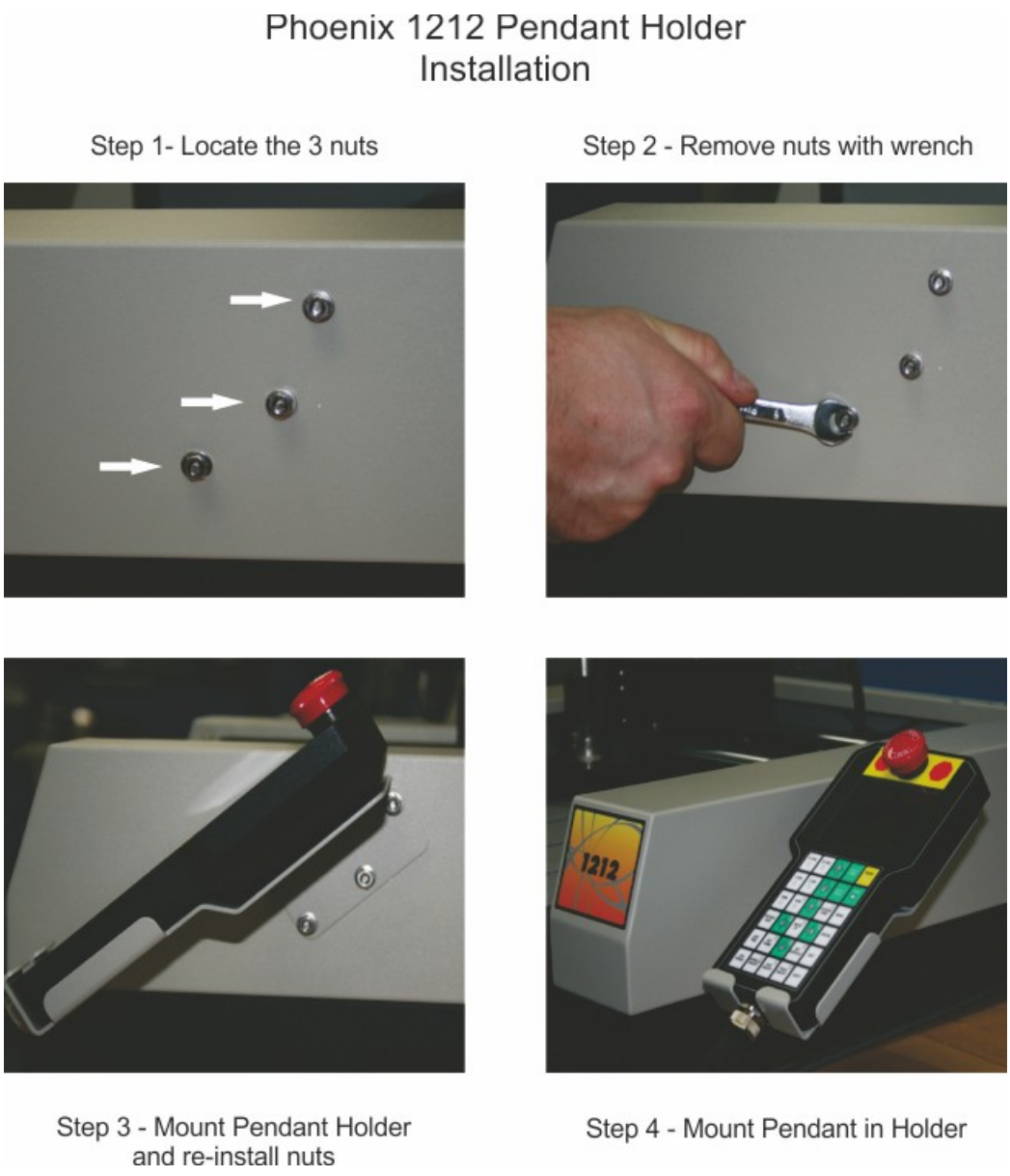
© 2015 Vision Engraving & Routing Systems

3 Pendant Holder Installation

Pendant Holder Installation for Phoenix 1212, 16, 24 and 25 Series machines

Your machine is shipped with an optional Pendant Holder to give the user a place to secure the Pendant.

To install the Pendant Holder on the Phoenix 1212, follow the below procedure.



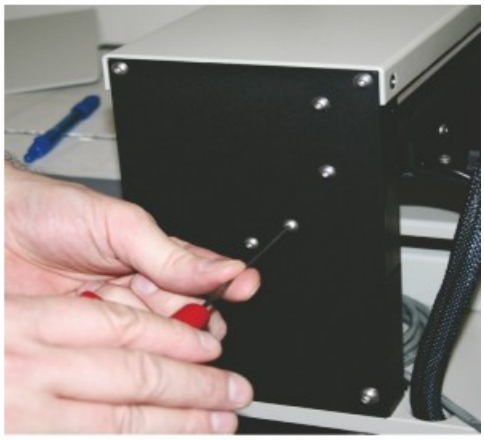
© 2015 Vision Engraving & Routing Systems

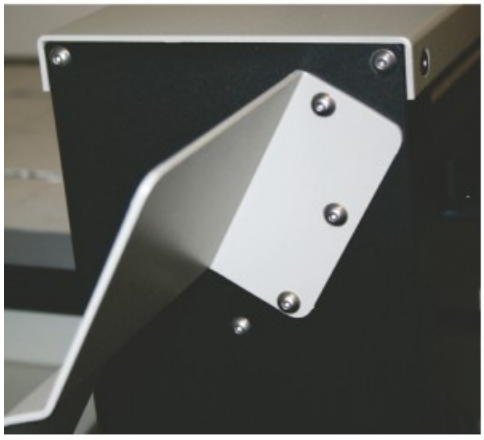
To install the Pendant Holder on the 16 Series machines, follow the below procedure.

16 Series Pendant Holder Installation

Step 1- Locate the 3 screws

Step 2 - Remove screws with allen tool





Step 3 - Mount Pendant Holder and re-install screws

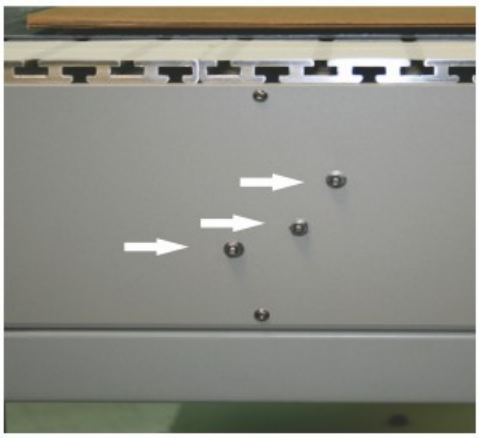
Step 4 - Mount Pendant in Holder

© 2015 Vision Engraving & Routing Systems

To install the Pendant Holder on the 25 Series machines, follow the below procedure.

24 and 25 Series Pendant Holder Installation

Step 1- Locate the 3 nuts



Step 2 - Remove nuts with wrench

Step 3 - Mount Pendant Holder and re-install nuts

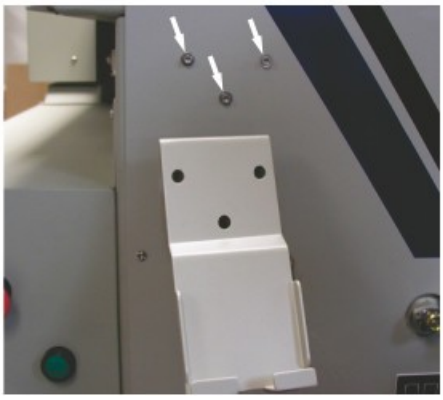
Step 4 - Mount Pendant in Holder

© 2015 Vision Engraving & Routing Systems

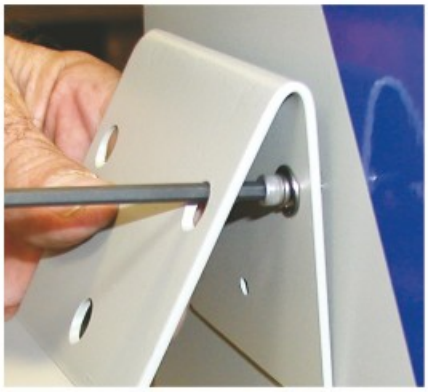
The Pendant Holder for the VR48 can be mounted on the front of the machine. To install the Pendant Holder, remove the three screws on the machine and mount the holder to the machine as shown below. Place the Pendant in the Holder to keep it secure when the machine is being used.

VR48 Pendant Holder Installation

Step 1 - Locate and remove the three mounting screws



Step 2 - Secure Pendant Holder to machine with screws



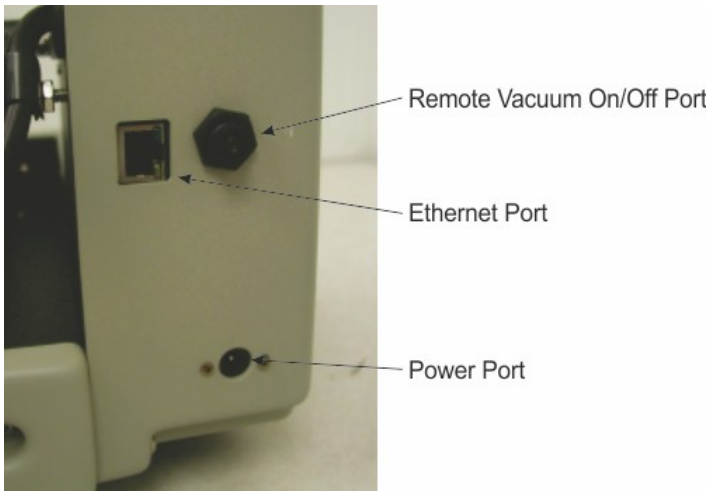
© 2015 Vision Engraving & Routing Systems

4 Express and VE-810

Vision Express and VE-810 Connections

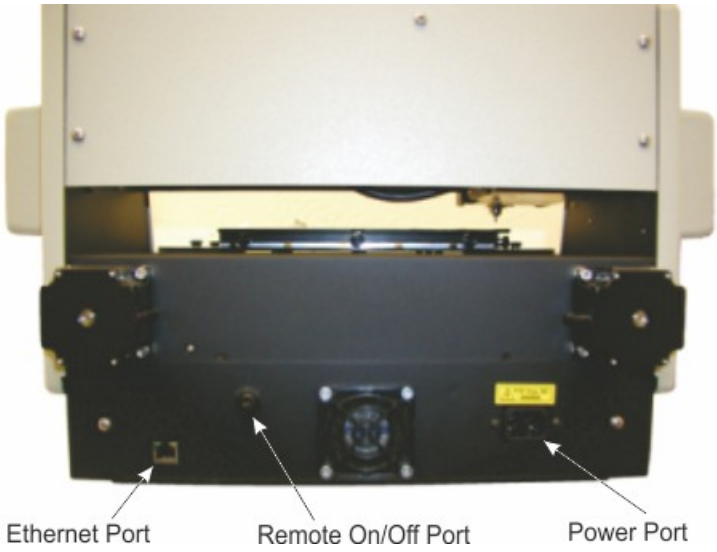
On the rear of the Vision Express and VE810, there are three connection ports. The power port, the Ethernet port and the remote on/off port for the optional Vacuum Chip Removal System.

Vision Express (rear view)



For the Vision Express: Connect the power supply cable to a 110 - 220 VAC source, then connect the power supply plug into the port on the back of the machine. Plug the Ethernet cable into the Ethernet port.

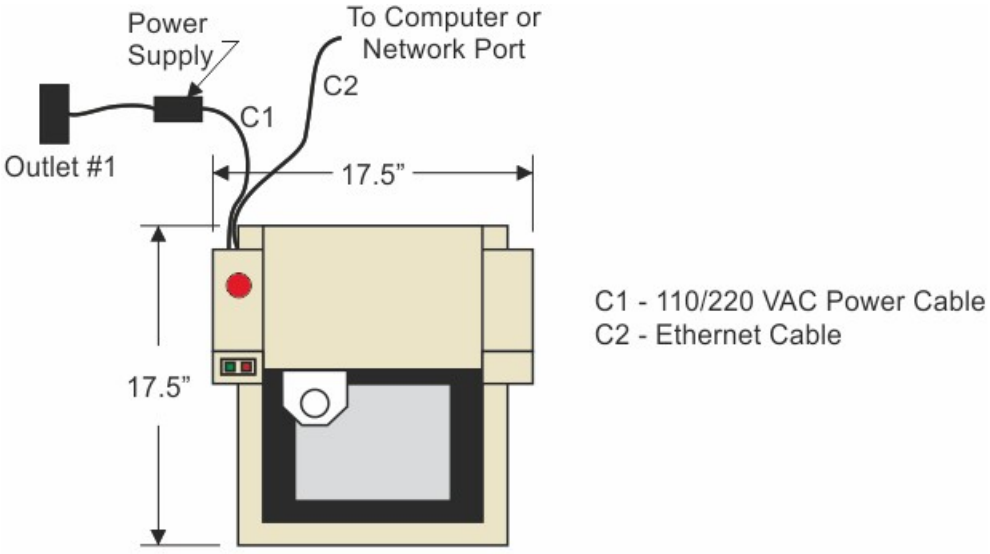
Vision VE810 (rear view)



For the VE810: Connect the power cable to a 110 - 220 VAC source, then plug the power cable into the port on the back of the machine. Plug the Ethernet cable into the Ethernet port.

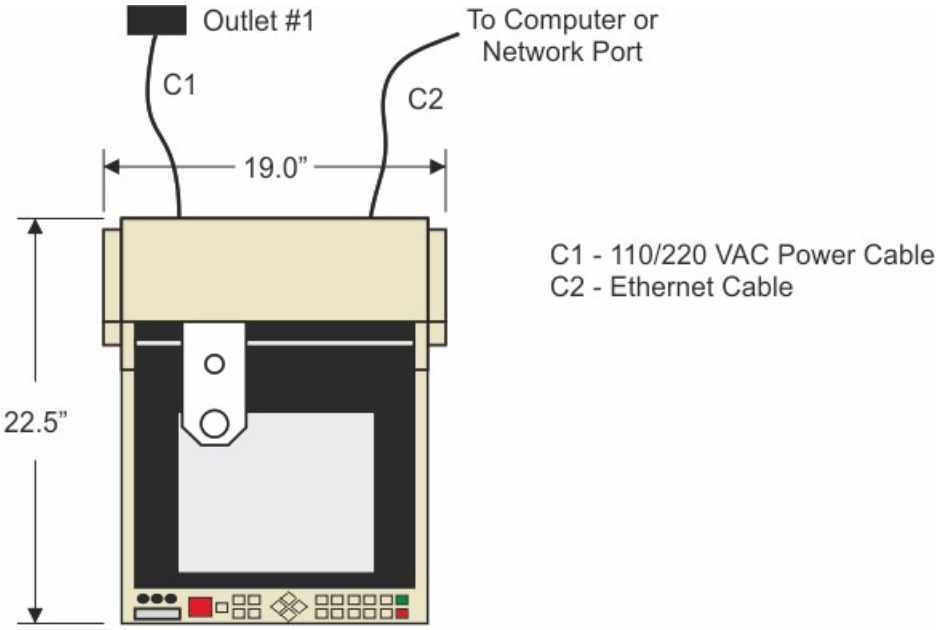
© 2015 Vision Engraving & Routing Systems

4.1 Express Layout Diagram



Vision Express Engraver Installation Layout

4.2 VE-810 Layout Diagram



Vision VE810 Engraver Installation Layout

© 2015 Vision Engraving & Routing Systems

5 Phoenix 1212

Phoenix 1212 Engraver/Series 4 Controller Connections

There is only one connection port on the Phoenix 1212. It is a 25 pin Table Cable port on the left side of the machine. All other connections on the machine's controller are listed below.

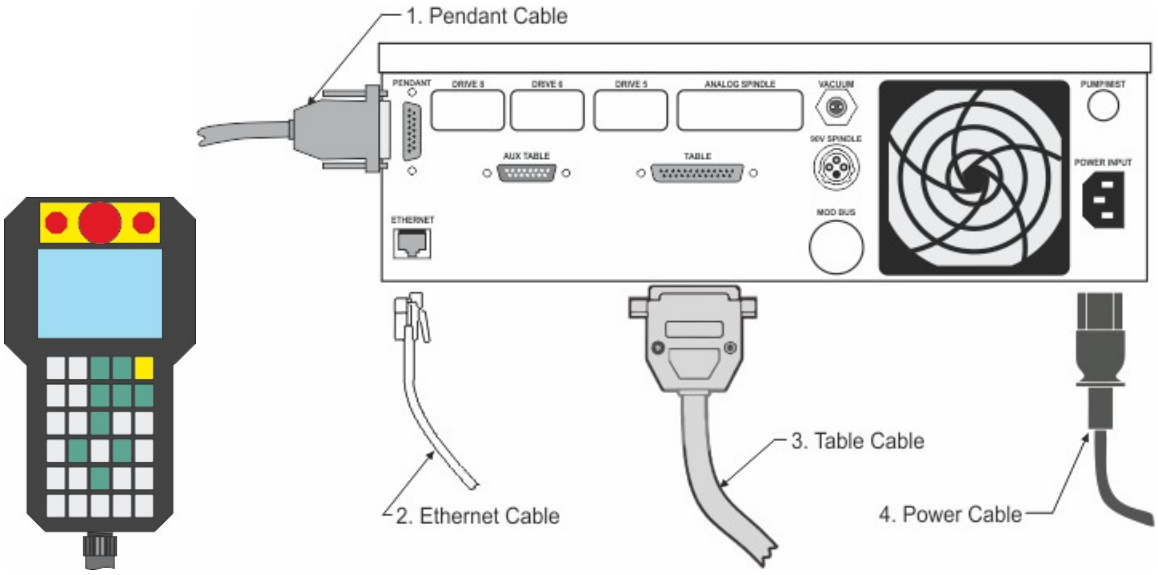
1. The engraver's Pendant is connected to the Pendant cable port.

2. The Ethernet Cable from your computer, hub or network is connected to the Ethernet port.

3. The Table Cable connects from 25 pin connector on the engraver to the Table port.

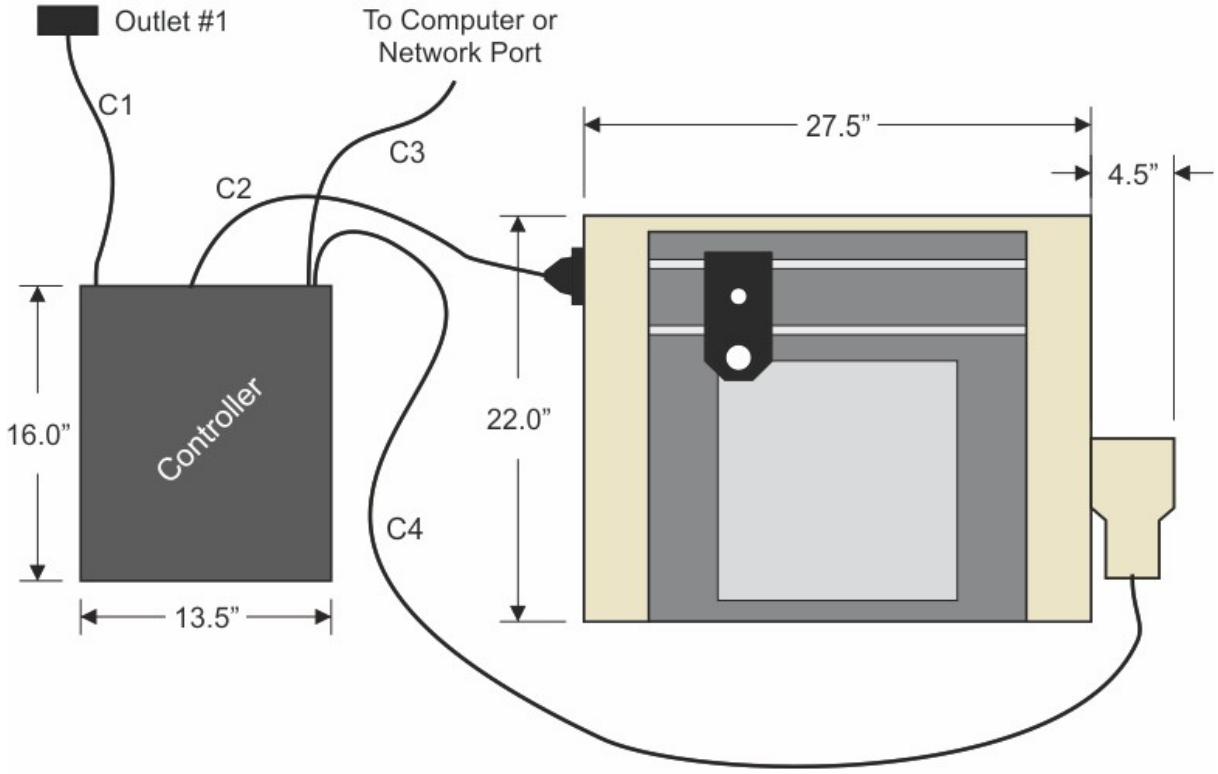
4. The Power Cable connects a 110 - 220 VAC electrical source to the controller and powers the controller, table and spindle.

Note: If your machine is equipped with the optional Vacuum Chip Removal System, a remote On/Off cable is connected to the controller to automatically turn the vacuum pump on and off when the job is being run.



© 2015 Vision Engraving & Routing Systems

5.1 Phoenix 1212 Layout Diagram



Vision Phoenix 1212 Engraver Installation Layout

C1 - 110/220 VAC Power Cable
C2 - Table Cable
C3 - Ethernet Cable
C4 - Pendant Cable

© 2015 Vision Engraving & Routing Systems

6 16 Series and 24 Series Engravers

16 and 24 Series Engraver/Series 4 Controller Connections

1. The engraver's Pendant is connected to the Pendant cable port.

2. The Ethernet Cable from your computer, hub or network is connected to the Ethernet port.

3. The Auxiliary Table Cable is used on the 24 Series engraver ONLY.

4. The Table Cable connects from 25 pin connector on the engraver to the Table port.

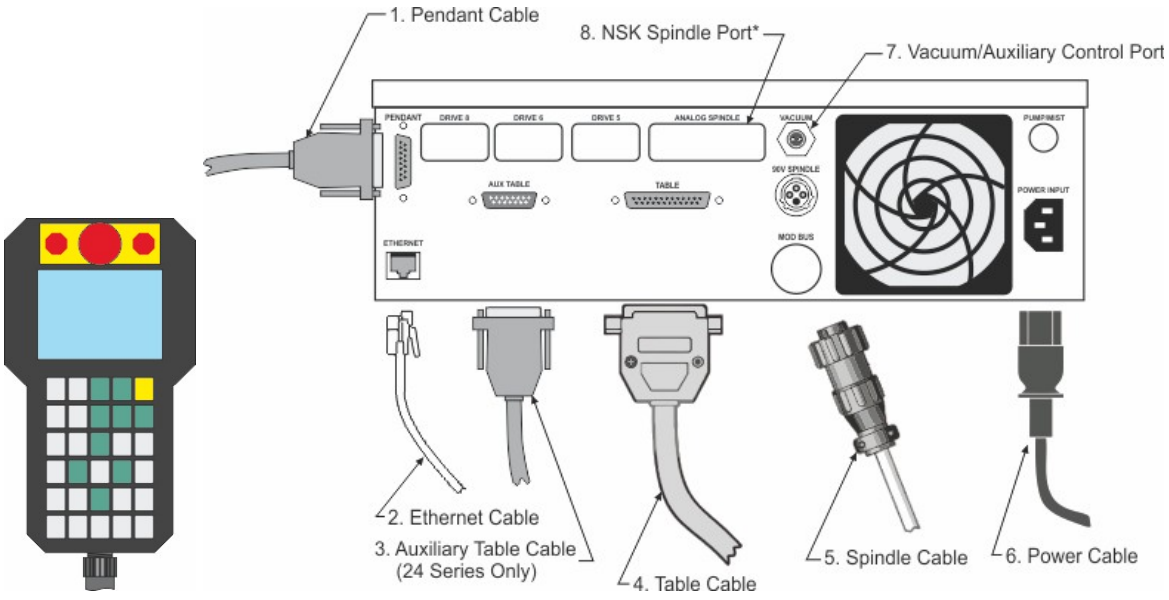
5. The Spindle Cable connects to the Spindle port.

6. The Power Cable connects a 110 - 220 VAC electrical source to the controller and powers the controller, table and spindle.

7. If your machine is equipped with the optional Vacuum Chip Removal System, a remote On/Off cable is connected to the controller to automatically turn the vacuum pump on and off when the job is being run.

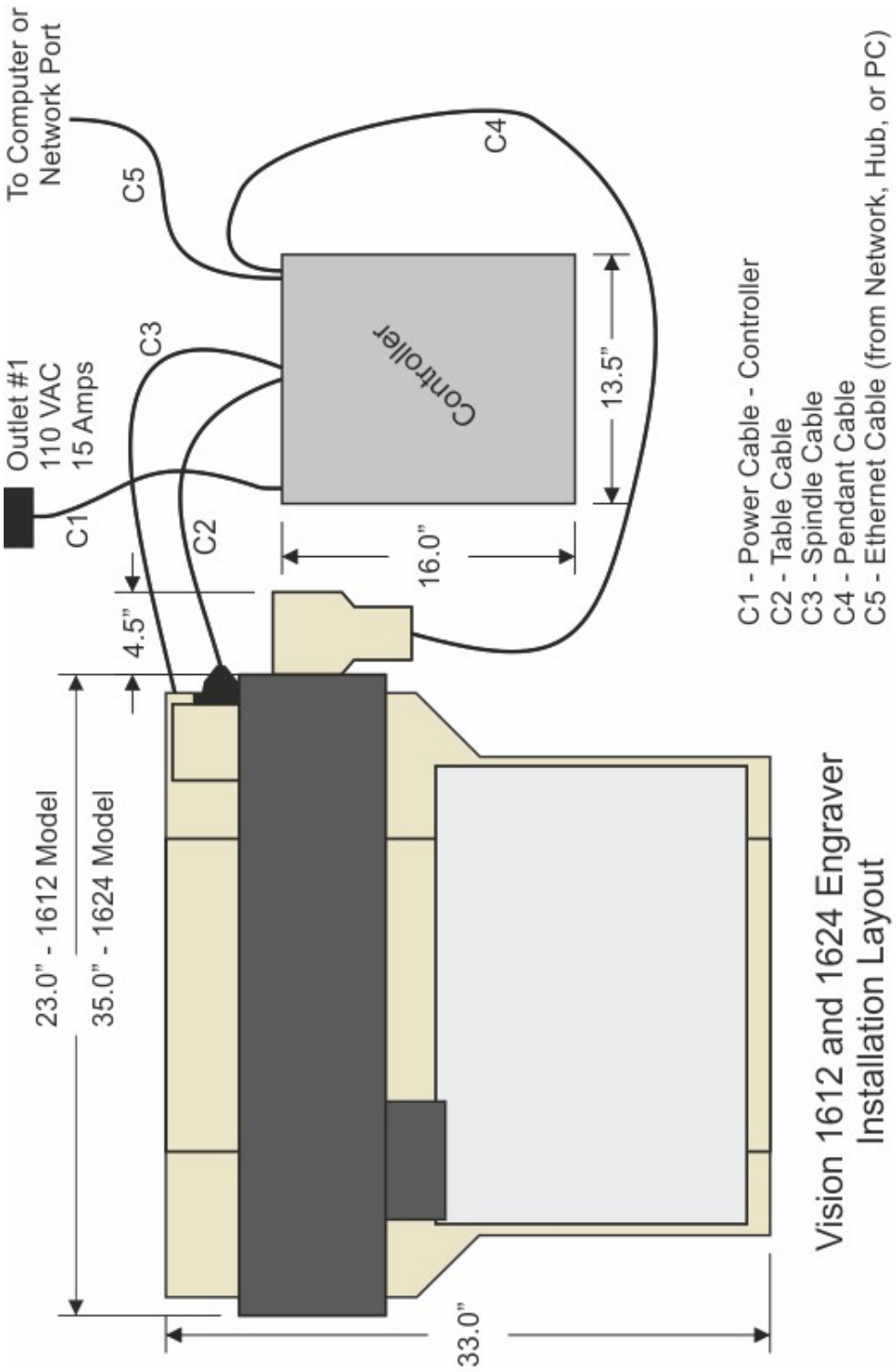
8. *If your machine is equipped with the optional NSK High Frequency Spindle, an second 25 pin connector will be included with your controller. The NSK Spindle is controlled by the NSK Spindle Cable connected to this port. NOTE - the Spindle Cable to the standard engraving motor will not be used in this configuration.

Series 4 Pendant and Controller



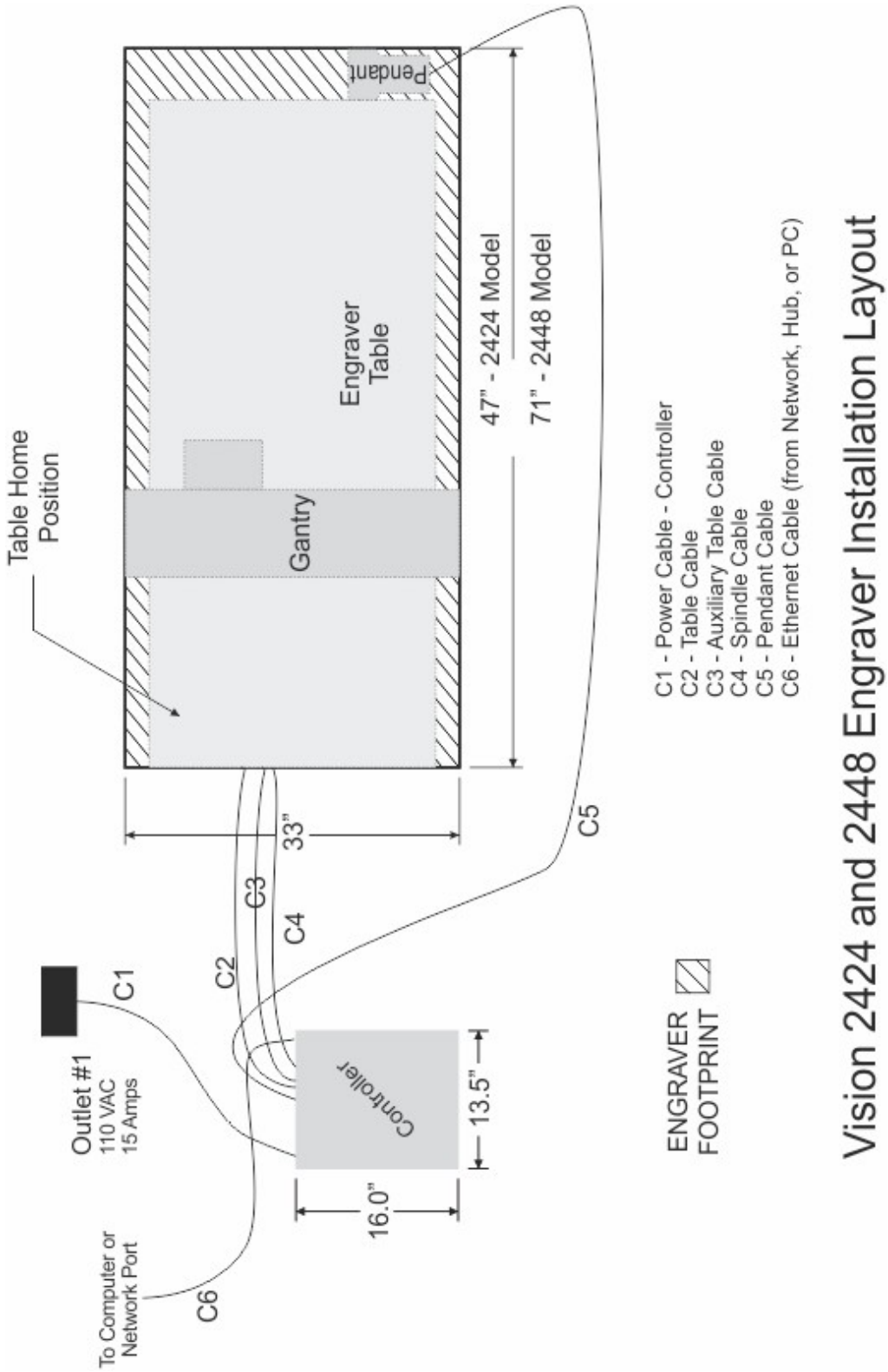
© 2015 Vision Engraving & Routing Systems

6.1 1612 and 1624 Engraver Layout Diagram



© 2015 Vision Engraving & Routing Systems

6.2 2424 and 2448 Engraver Layout Diagram



© 2015 Vision Engraving & Routing Systems

7 16 Series and 25 Series Routers

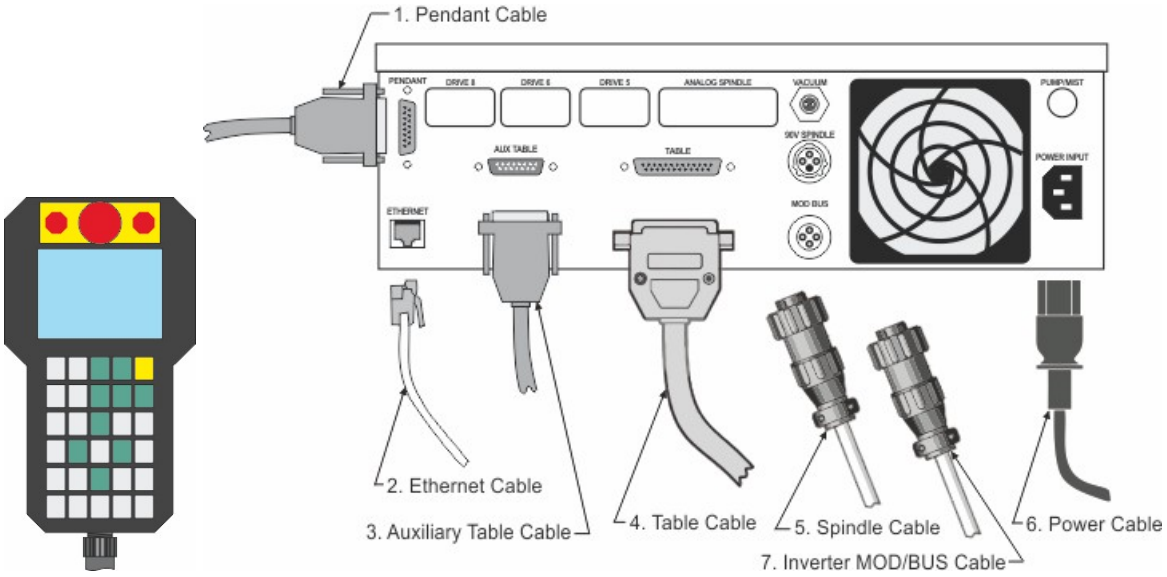
7.1 High Frequency Router Head

High Frequency Router Head Wiring Connections

1. The controller Pendant is connected to the Pendant port on the controller.
2. The Ethernet Cable from your computer, hub or network is connected to the Ethernet port on the controller
3. The Auxiliary Table Cable is used on the 25 Series machines ONLY. It connects the Serial Table Connector on the machine to the Aux Table port on the controller.
4. The Table Cable connects from 25 Pin Table Connector on the machine to the Table Port on the controller
5. The machine's Spindle Cable connects to the Spindle port on the controller.
6. The Power Cable connects a 110 - 220 VAC electrical source to the controller and powers the controller and table.
7. The MOD/BUS Cable from the Inverter connects to the MOD/BUS port on the controller and controls the High Frequency Router Motor.

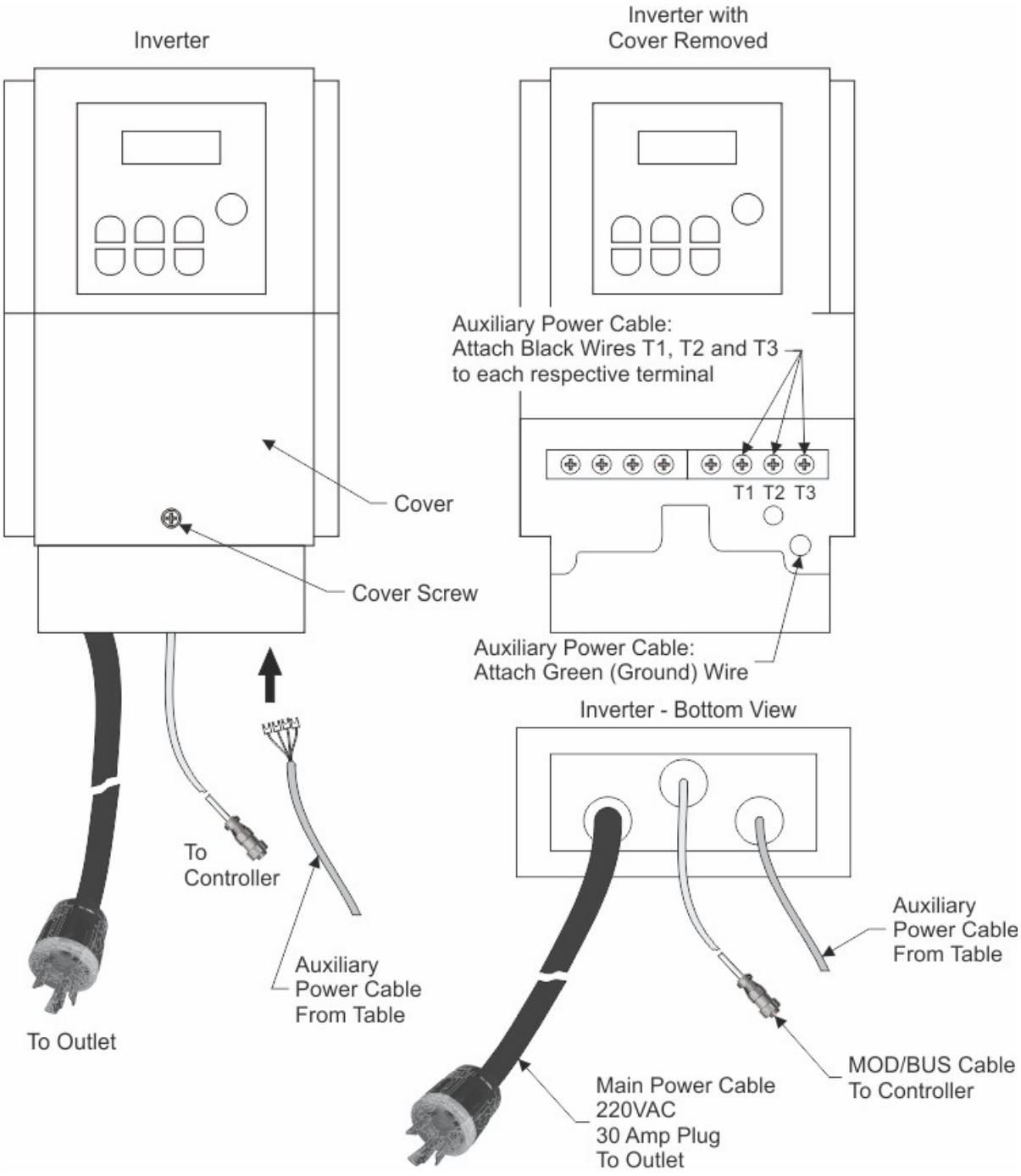
Series 4 Controller (rear view) Router Head Connections

Pendant



© 2015 Vision Engraving & Routing Systems

Wiring Connections for Inverter (used with High Frequency Router Head only)



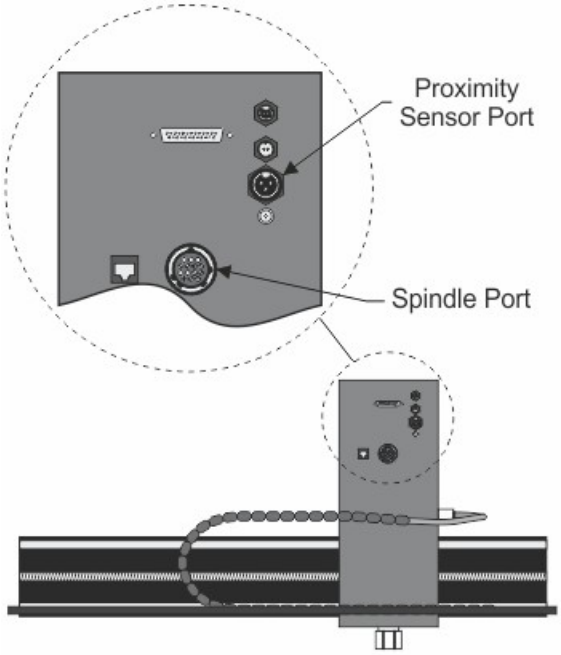
NOTE: The Auxiliary Power Cable is pre-wired on all 16 and 25 Series Routers.
Remove Inverter Cover and feed the Auxiliary Power Cable through hole in bottom of Inverter. Connect the three black wires labeled, T1, T2 and T3, to their respective connection points. Connect the Green (Ground) wire to the connection point shown. Connect the Main Power Cable to a 220VAC source and connect the MOD/BUS Cable to the machine controller's MOD/BUS port.

© 2015 Vision Engraving & Routing Systems

Carriage Wiring Connections

The Motor Plug connects to the Spindle Port on the back of the Carriage.

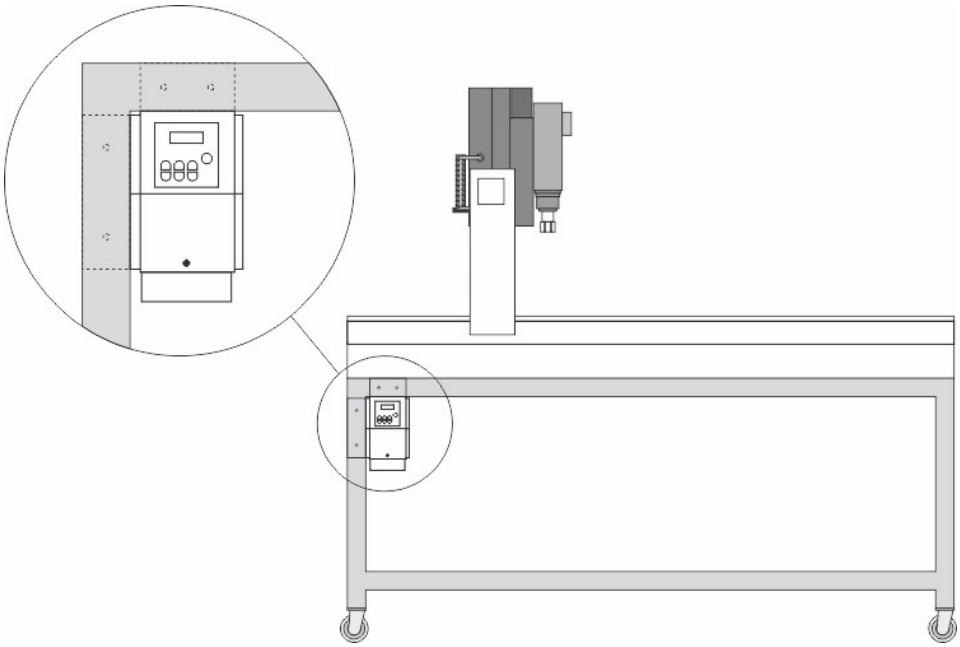
Carriage (rear view)



Mounting the Inverter on the 25 Series Table Stand

The Inverter is mounted on the top-left corner of the machine's stand. There are two flanges mounted on the rear of the inverter. These flanges are placed in the inside of the stand's legs. Screws are included with the inverter to secure the inverter to the stand. Instructions for assembly of the stand are included with the stand, which is packed underneath the machine in its shipping crate.

© 2015 Vision Engraving & Routing Systems



© 2015 Vision Engraving & Routing Systems

7.2 Engraving Head

Engraving Head Wiring Connections

1. The controller Pendant is connected to the Pendant port on the controller.

2. The Ethernet Cable from your computer, hub or network is connected to the Ethernet port on the controller

3. The Auxiliary Table Cable is used on the 25 Series machines ONLY. It connects the Serial Cable Port on the machine to the Aux Table port on the controller.

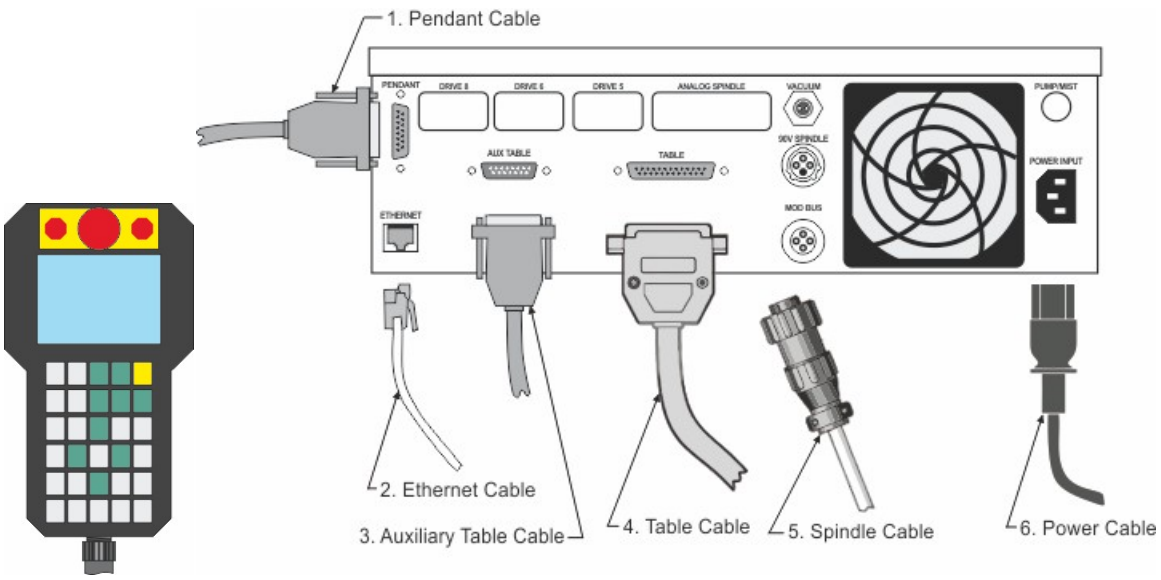
4. The Table Cable connects from 25 Pin Table Connector on the machine to the Table Port on the controller

5. The machine's Spindle Cable connects to the Spindle port on the controller.

6. The Power Cable connects a 110 - 220 VAC electrical source to the controller and powers the controller and table.

Series 4 Controller (rear view) Engraving Head Connections

Pendant



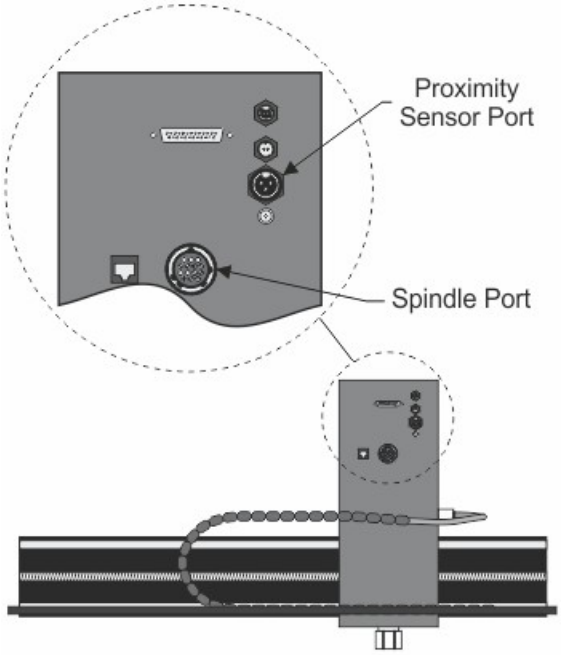
NOTE: The Auxiliary Power Cable which is pre-wired on all 16 and 25 Series Routers is NOT used with the Engraving Head. If your router was not equipped with the High Frequency Router Head or the Porter Cable Router Head, this cable can remain disconnected at all times.

© 2015 Vision Engraving & Routing Systems

Carriage Wiring Connections

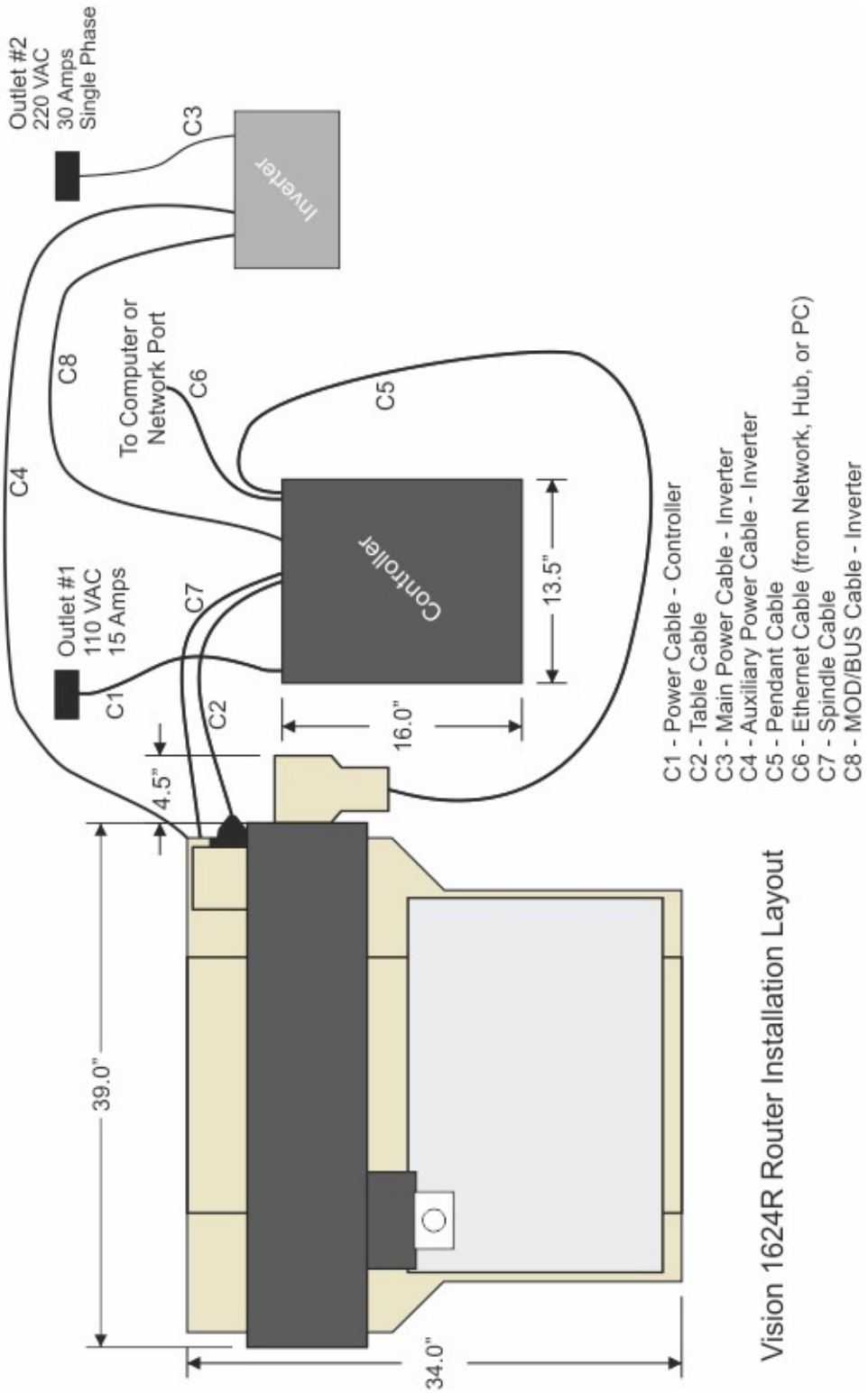
The Motor Plug connects to the Spindle Port on the back of the Carriage.

Carriage - rear view



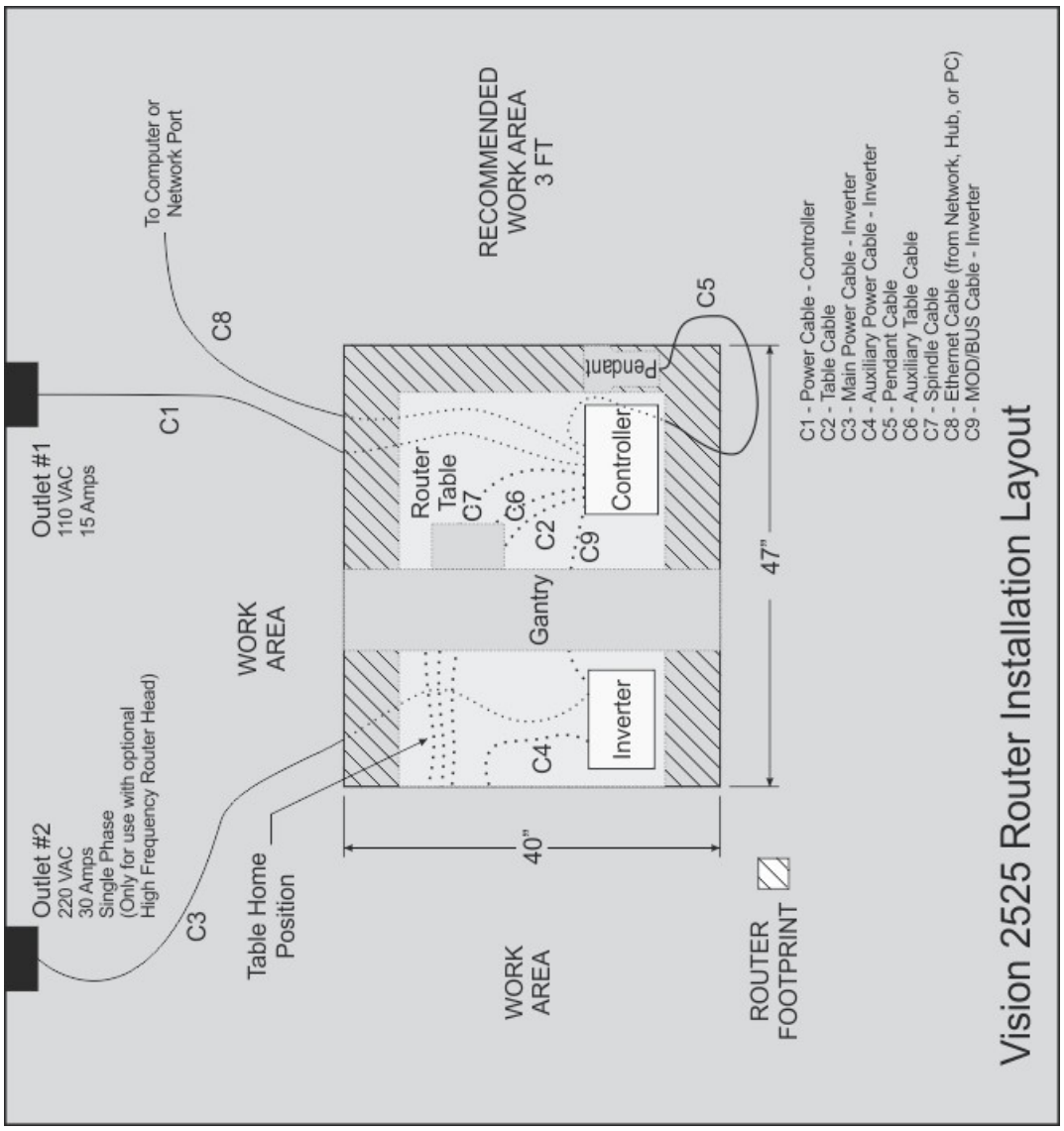
© 2015 Vision Engraving & Routing Systems

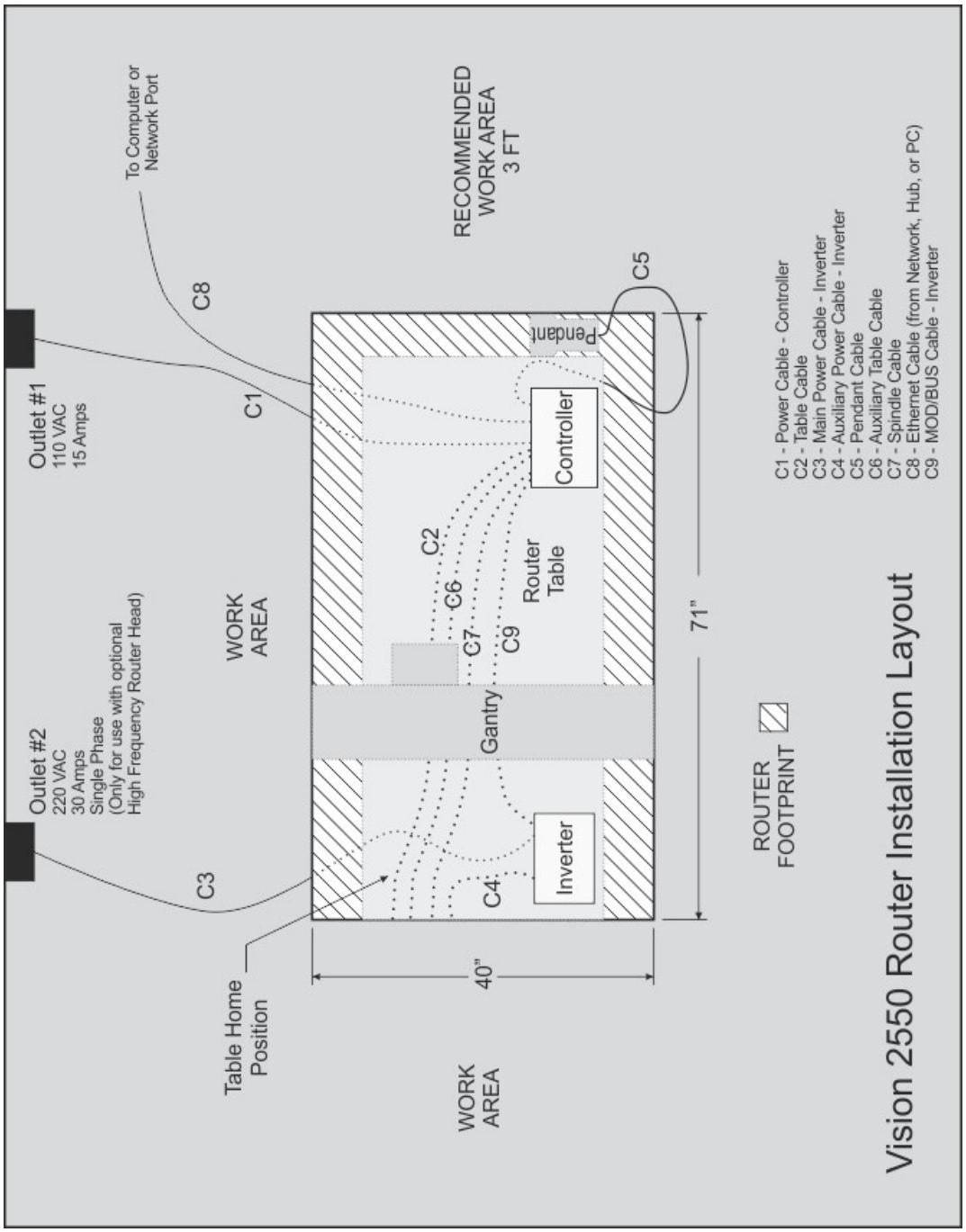
7.3 1624R Router Layout Diagram



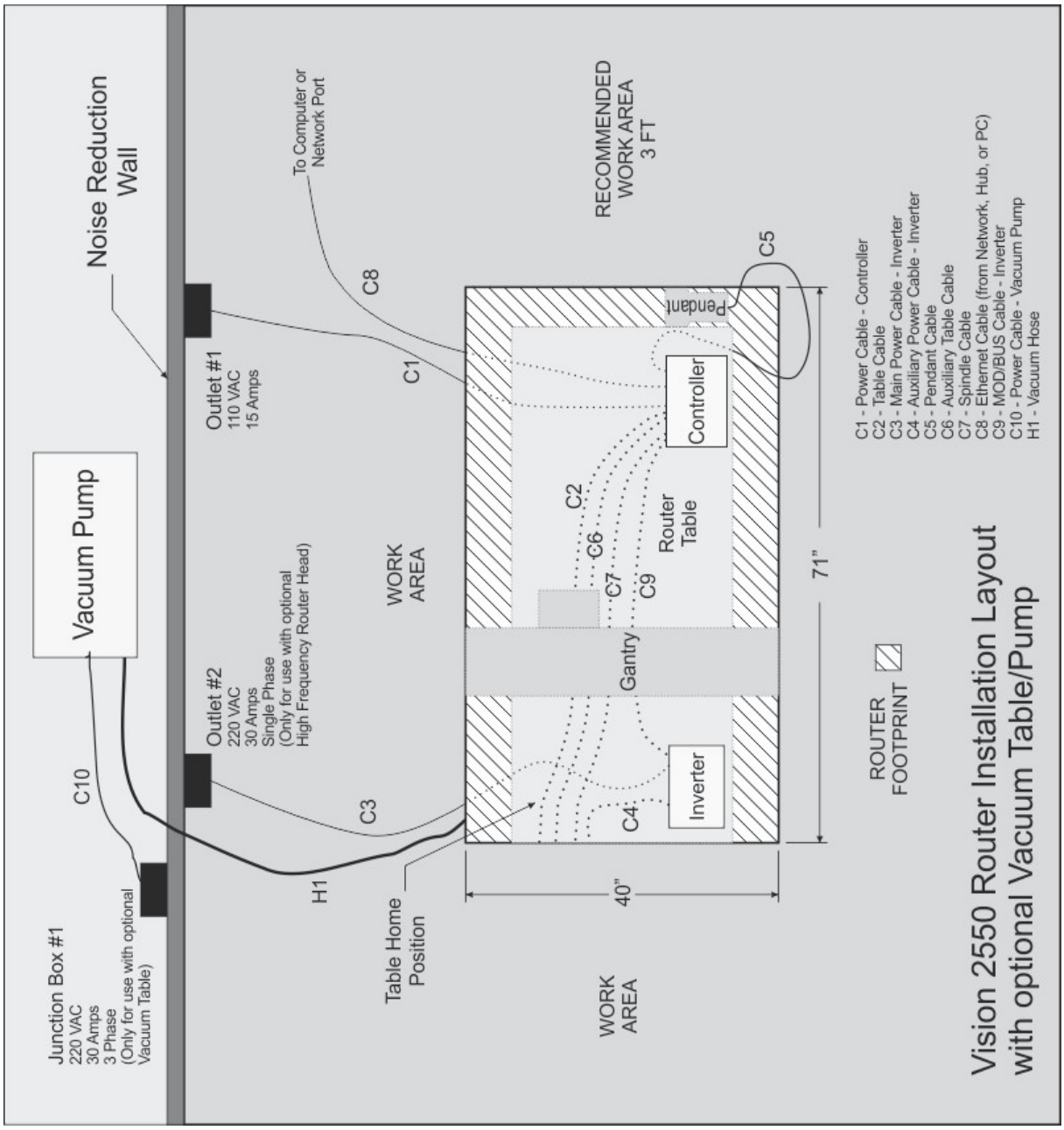
© 2015 Vision Engraving & Routing Systems

7.4 2525 and 2550 Router Layout Diagrams





© 2015 Vision Engraving & Routing Systems



© 2015 Vision Engraving & Routing Systems

8 MAX and MAX PRO

Max and Max Pro Connections

The Vision Max and Max Pro machines have an integrated controller inside the base of the machine. The machines need to have the following cables connected to the controller.

1. The engraver's Pendant is connected to the Pendant cable port.

2. The Ethernet Cable from your computer, hub or network is connected to the Ethernet port.

3. The Auxiliary Table Cable is connected to the Aux Table port and powers the machine's rotary axis.

4. The Table Cable connects from 25 pin connector on the engraver to the Table port.

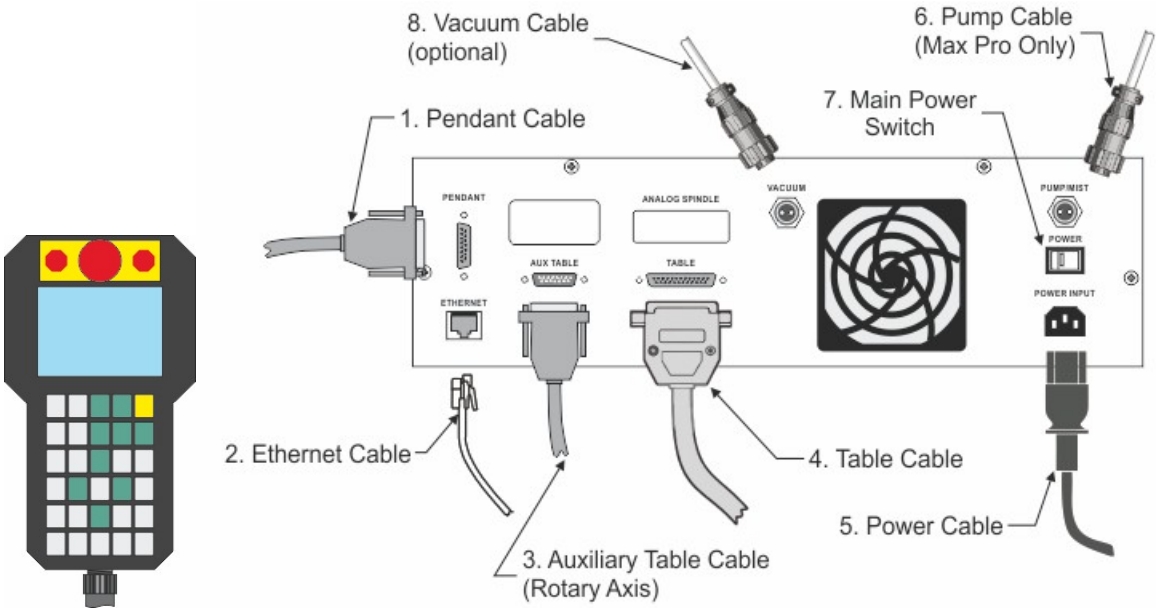
5. The Power Cable connects a 110 - 220 VAC electrical source to the controller and powers the controller, table and spindle.

6. The Pump Cable (Max Pro only) connects to the Pump/Mist port and powers the machine's water pump for glass engraving.

7. Main Power switch (for reference only)

8. If you machine was equipped with the optional Vacuum Chip Removal System, the Vacuum Cable from the vacuum pump will connect to the Vacuum port.

Series 4 Pendant and Integrated Controller Connections

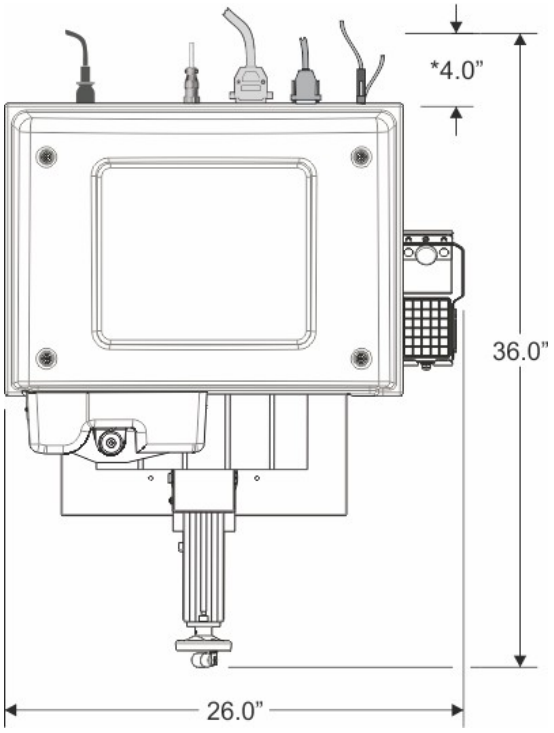


© 2015 Vision Engraving & Routing Systems

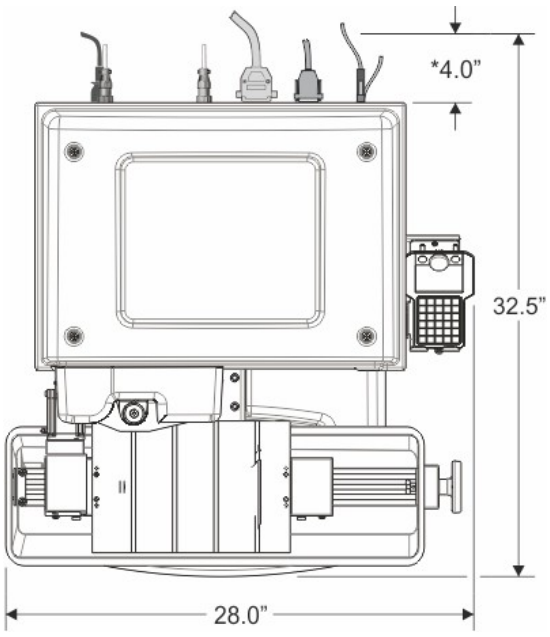
8.1 MAX and MAX PRO Layout Diagram

* This dimension is added to allow for clearance on the rear of the machine for cables and for air flow to the cooling fan.

Vision MAX



Vision MAX PRO



© 2015 Vision Engraving & Routing Systems

9 VR48 Router

9.1 Requirements

Electrical Connections

1. A qualified and licensed electrician must be used to complete all wiring and grounding of the machine according to all state, local, and national electrical codes.

2. Make sure all Junction Boxes and Outlets are mounted according to all state, local and national electrical codes.

3. Junction Box #1 (50 Amp, 220 VAC, Single Phase) will power the router table, spindle, and controls. It is typically mounted on Wall A, approximately 36 to 48 inches above the floor surface. The box should be level with the left edge of the router table. (Refer to Installation Layout Diagrams).

4. Junction Box #2 - for machines equipped with Vacuum Tables ONLY - (40 Amp. 220 VAC, 3 Phase) will power the Vacuum Pump. Mounting should be on Wall A and between 36 inches and 48 inches above the floor surface. If locating the vacuum pump as shown (Refer to Installation Layout Diagram), locate Junction Box #2 no greater than 4 feet from Junction Box #1.

5. Outlet #1 (20 Amp, 220 VAC, Single Phase) should be mounted on Wall A as shown (Refer to Installation Layout Diagram - Section 2.1). This can also be another Junction Box if the Dust Collector is to be direct wired to its electrical source. The dust collector is approximately 2 feet x 3 feet and is on wheels.

6. Outlet #2 (15 Amp, 110 VAC, Single Phase) should have multiple standard three prong sockets for the computer. It is typically located near the bottom left corner of the router table (home position) as shown (Refer to Installation Layout Diagram).

7. **Wiring needs to be completed to the junction boxes, outlets, etc. before the scheduled first installation/machine orientation day.**

© 2015 Vision Engraving & Routing Systems

Locating the Router

1. A doorway of at least 80 inches wide and 80 inches high is required in order for the router to be moved into your facility.

2. Locate machine indoors on a flat surface and on a solid foundation.

3. Temperature must remain between 40°F and 85°F.

4. Do not expose machine to direct sunlight, rain, vibration, dampness, or explosive environments.

5. A forklift is required to remove the crate from the shipping truck and to locate the equipment in the building. The forklift must have a minimum capacity of 6,000 lbs and 6' or longer forks.

6. A pallet jack is required to level the router table.

7. The router table footprint is approximately 6.7 feet x 10.7 feet. A designated work area of at least 5 feet is strongly recommended around all sides of the machine to ensure ease of operation, material handling, cleaning, maintenance and safety.

8. Typically, the vacuum pump is between the router table and Wall A (Refer to Installation Layout Diagram - Section 2.1). Please note the orientation of the pump and motor.

© 2015 Vision Engraving & Routing Systems

Leveling the machine

1. Make sure the machine has been properly located at your work-site.

2. It is not necessary to bolt your machine to the floor in your facility. However, a solid, stable foundation is required to support the machine's weight.

3. There should be a leveling bolt in each of the four machine legs.

4. Place a precision leveling gauge on the machine's table top and adjust the leveling bolts until the machine is level in both the horizontal and vertical directions.

Scheduling the Installation

1. Please schedule an electrician for the morning of the first day of installation/machine orientation to connect the router table, vacuum pump motor, and dust collector to the junction boxes and outlets.

2. If an electrician is not available for the installation, please call Vision ASAP in order to reschedule installation/machine orientation. If Vision personnel arrive and the electrical connections are not ready and the electrician is not present, there will be an additional charge $750/day while waiting.

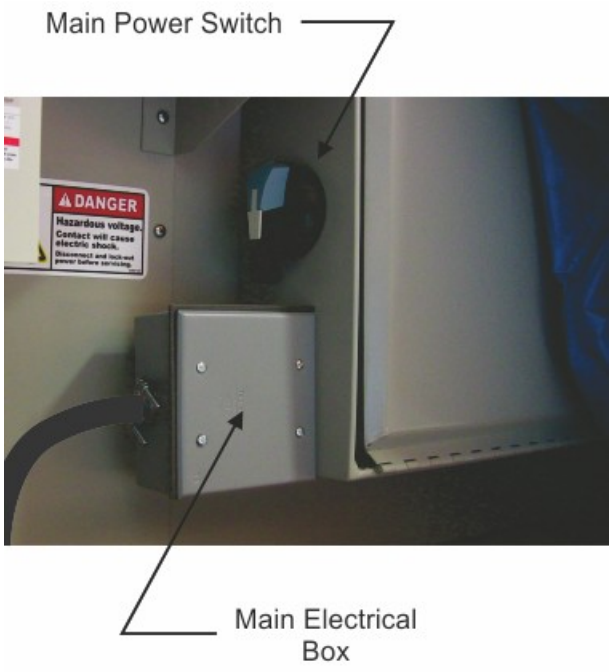
WARNING:

The first time the Vacuum Pump is turned on, check that the direction of rotation is correct. Turn it on, then off, observing the direction of rotation. It should match the arrow on the pump near the motor. If necessary, swap any two of the three power leads to change the rotation to the opposite direction. Prolonged usage of the vacuum pump when rotating in the incorrect direction can cause permanent damage to the pump.

© 2015 Vision Engraving & Routing Systems

9.2 Wiring Connections

The Main Power Switch is located on the left side of the VR48.



The main power supply is connected to the Main Electrical Box on the left side of the VR48. Remove the cover and make the connections as shown below. Ground is connected to the bare wire and common leads are connected to the two shielded wires. The supply for this connection is Junction Box #1 (220 VAC, Single Phase).

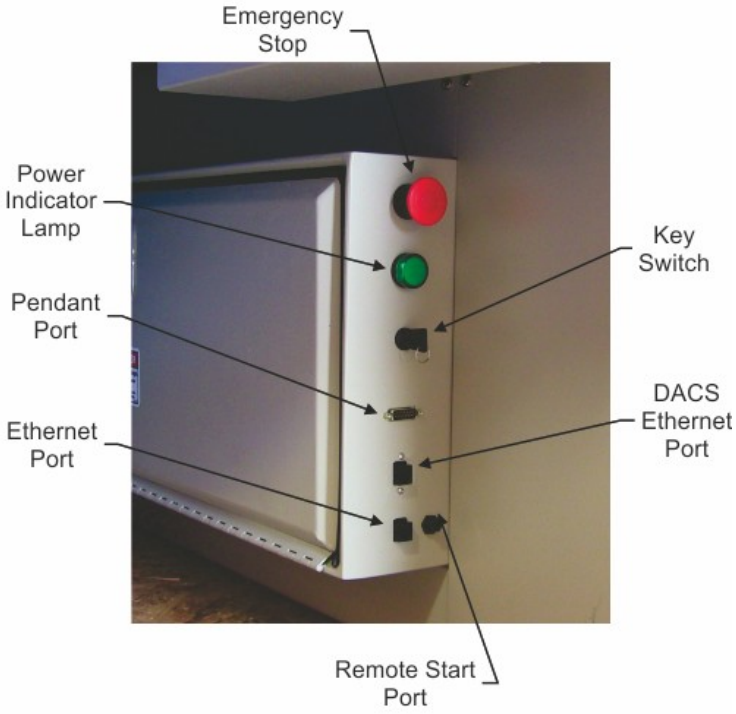
Note: The picture below is for illustration purposes only. The power cable should enter the Main Electrical Box through the hole in the left side of the box as shown in the above picture.

© 2015 Vision Engraving & Routing Systems

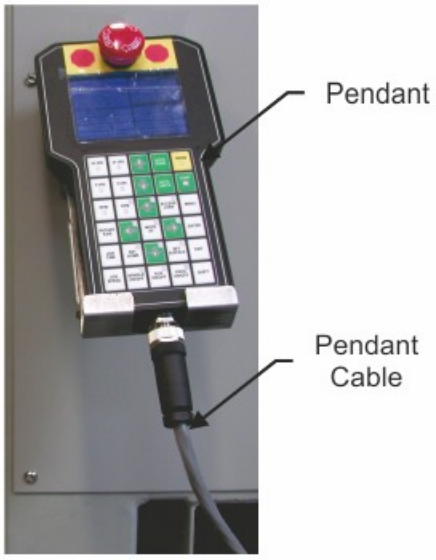
On the front of the control box for VR48 Router, there are four connection ports; One is an Ethernet port used to connect your computer or network to the on-board Series 4 Controller, the second is for the Pendant, the third is a USB port used to connect a computer to the VR48 when using the DACS Camera System, and the fourth is to connect the Remote Start Switch for the Dust Collector System.

Plug the network cable (or the crossover cable) into the Ethernet port on the VR48, then either plug the network cable into your network (or hub), or using the crossover cable, plug into the network port on your computer. Plug the Pendant cable into the Pendant and Pendant Port on the VR48. Connections for the DACS Camera System are detailed in a separate section of this manual. Connect the Dust Collector Remote Start Cable to the Remote Start Port using the supplied cable.

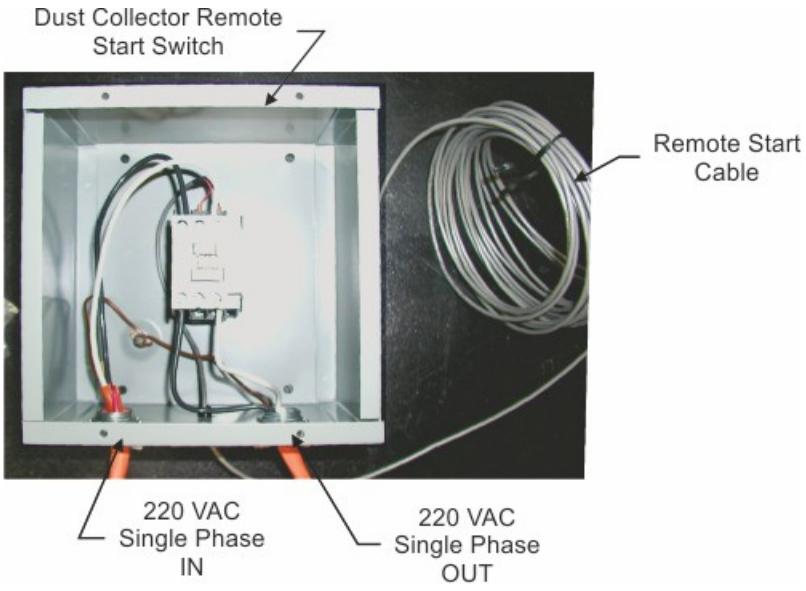
NOTE: The crossover cable is colored gray.



© 2015 Vision Engraving & Routing Systems

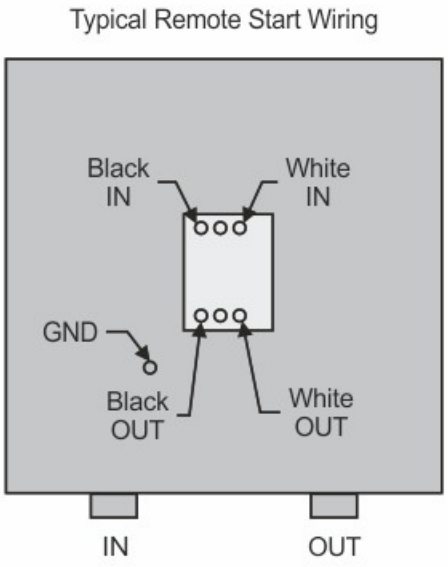


The Dust Collector Remote Start Switch will need to be connected. For ease of operation, a remote start switch and cables can be used to turn on the dust collector automatically when a job is being run. The supply for this connection is from Outlet #1 (220 VAC, Single Phase, 20 Amp).

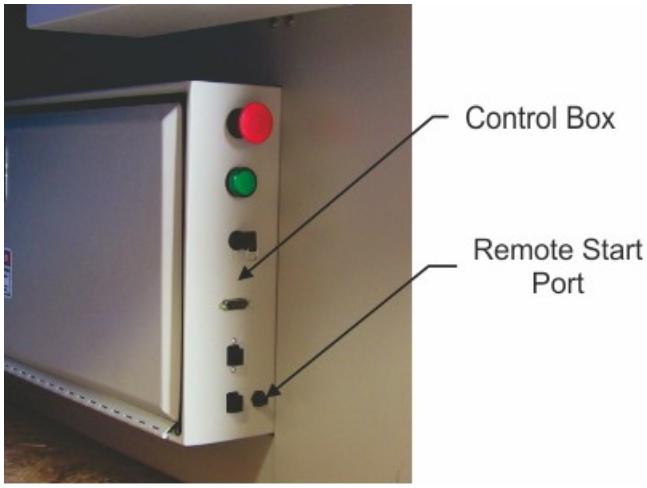


© 2015 Vision Engraving & Routing Systems

Wiring for this switch is shown below. The input and output wires should be connected as shown. Both input and output ground wires can be connected to the single GND location shown. The switch can be wall mounted at a location convenient for the user.



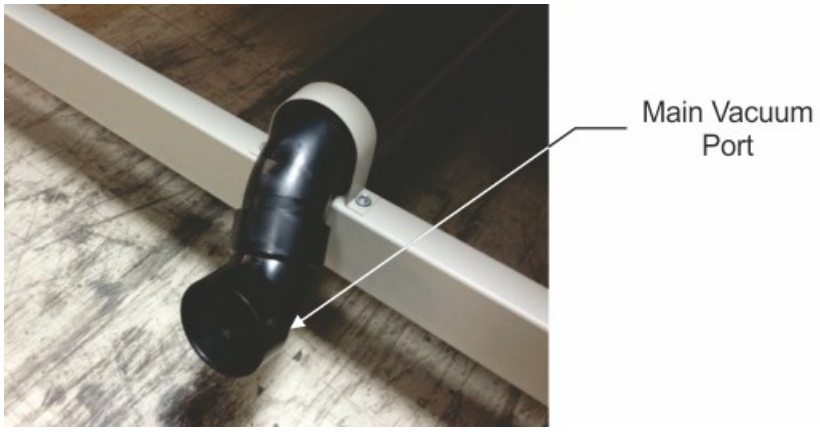
The Remote Start Cable is connected to the Remote Start Port on the front of the machine's control box.



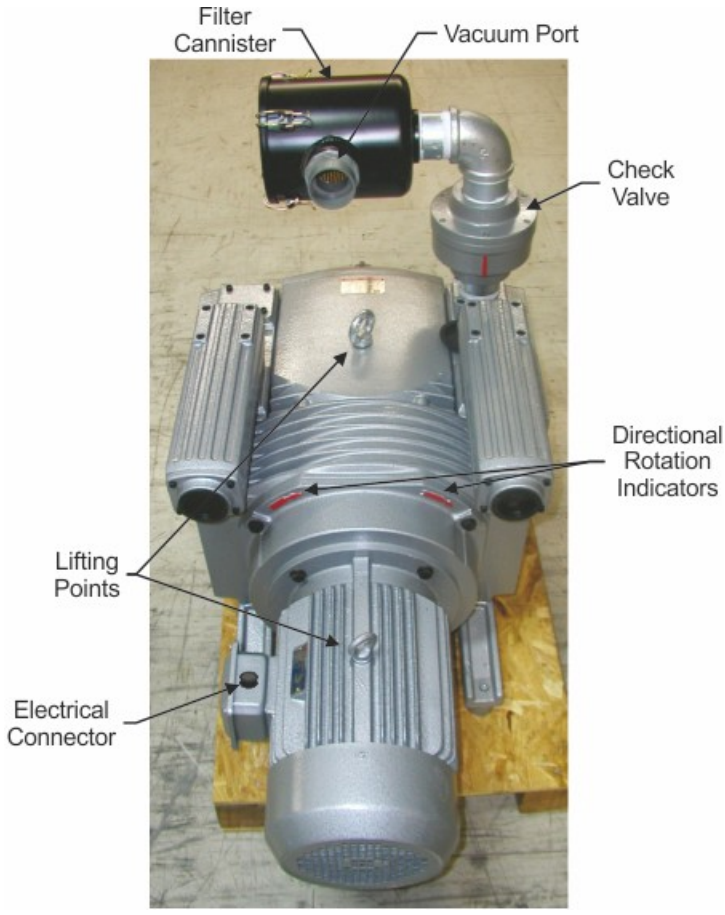
© 2015 Vision Engraving & Routing Systems

9.3 Vacuum Pump Connections - Vacuum Table Models Only

The Main Vacuum Port for the VR48 is located at the foot of the machine. To connect the vacuum pump to the machine, use the supplied 3" diameter vacuum hose and connect one end to the vacuum pump and the other end to the Main Vacuum Port on the machine.



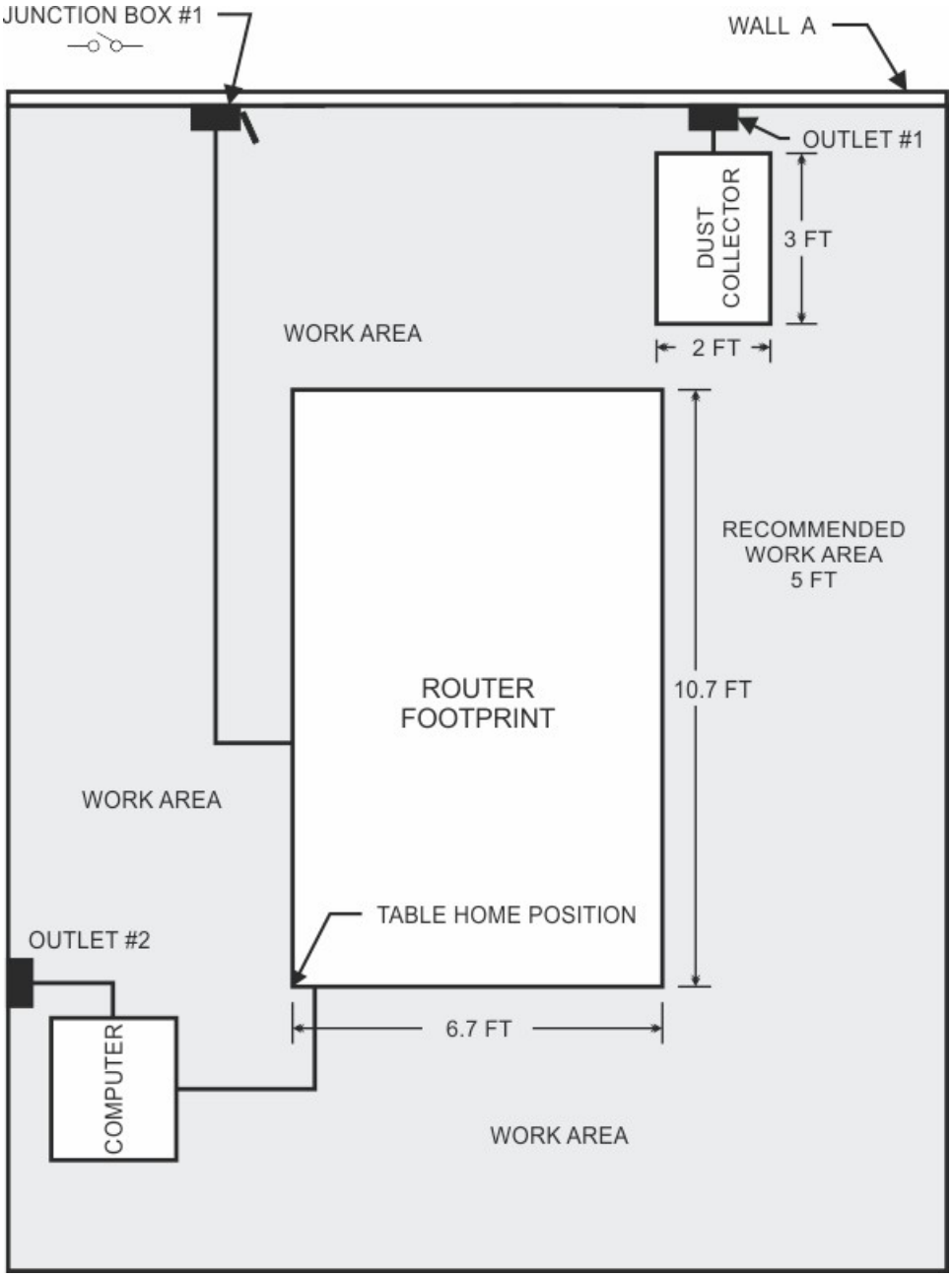
The vacuum pump has been equipped with an electrical connector designed for a 40 amp, 220 VAC, 3 phase power supply. A qualified and licensed electrician must be used to complete all wiring and grounding of the vacuum pump according to all state, local, and national electrical codes.



© 2015 Vision Engraving & Routing Systems

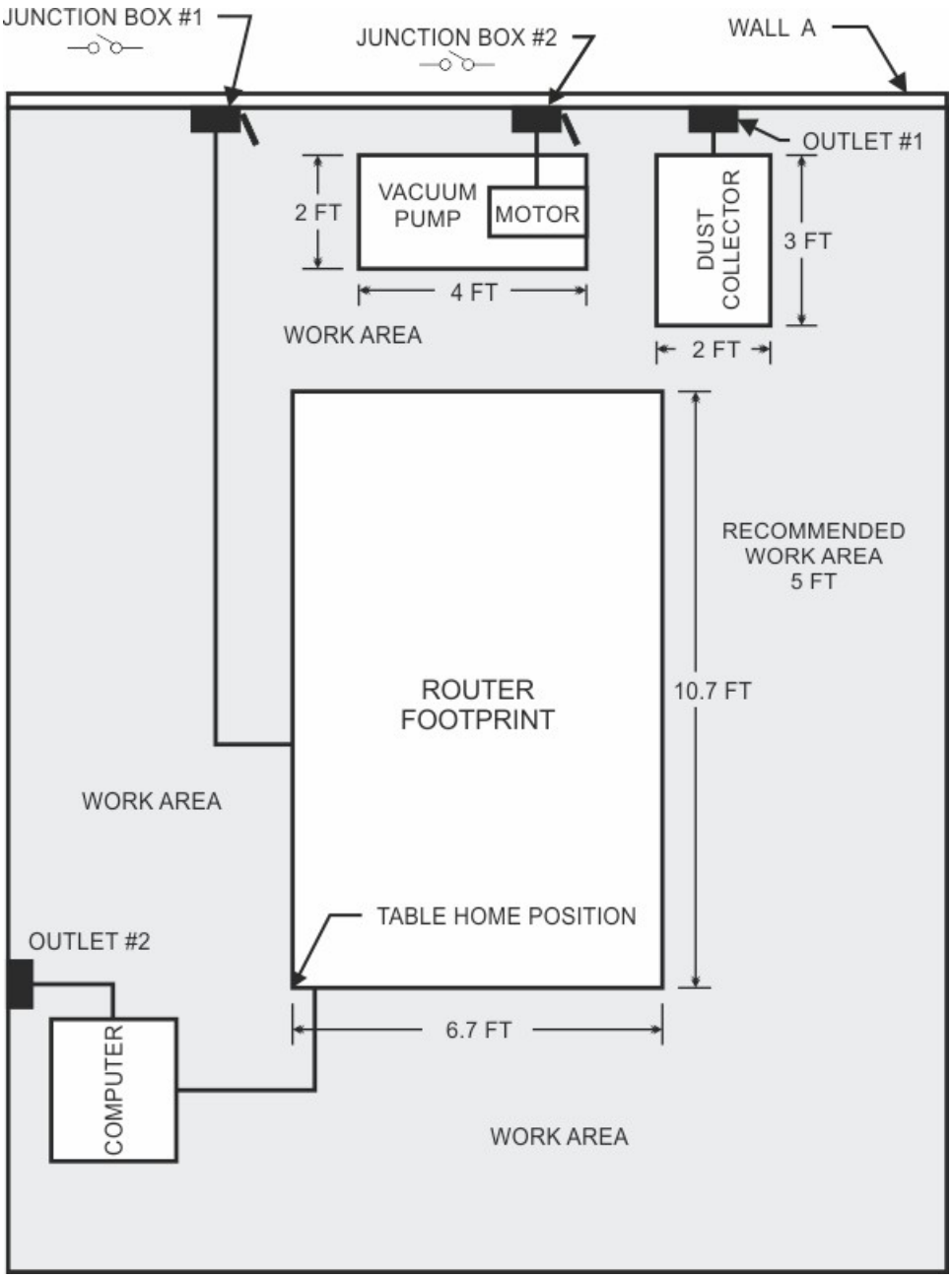
9.4 VR48 Router Layout Diagrams

T-Slot Tables Models



© 2015 Vision Engraving & Routing Systems

Vacuum Table Models



© 2015 Vision Engraving & Routing Systems