Vision 1624R, 2525 and 2550 Series 5 Installation Guide

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Factory Settings

Red Dot Lase	r Pointer Of	fset
X	Inches	mm
Υ	Inches	mm
Braille Inserter	Offset	
X	Inches	mm
Υ	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.

Part number 12-1089-01 Revised: 5/14/2020

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Revised: 5/14/2020

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1 Introduction

This guide contains information to prepare the owner of a Vision 1624R, 2525 or 2550 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. If for any reason, there are questions about these requirements, please call your Vision representative as soon as possible.

In the following sections, the complete machine and Vision software installation will be outlined.

Please call or email your Vision distributor or the Vision service department at Vision for assistance if you have any questions with this procedure. The Vision service department phone number is 1-602-439-0600 and the email address is service@visionengravers.com.

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

1.1 Computer Requirements

Minimum System Requirements:

CPU: Intel i5 2.6-3.0GHz

Hard Drive: 5 GB free space

RAM: 8 GB

Operating System: Windows 10 (32/64 bit)

Windows 8 (32/64 bit) Windows 7 (32/64 bit)

NOTE: Windows updates must ALL be installed

Ports: 1 USB port for security dongle

1 USB port for Ethernet adapter to connect machine

Suggested System Requirements

CPU: Intel i7 2.6-3.0GHz (or faster)

Hard Drive: 500 GB SSD (or larger)

RAM:: 16 GB (or more)

Operating System: Windows 10 (64 bit)

Ports 1 USB port for security dongle

1 USB port for Ethernet adapter to connect machine

1.2 Vision Software Security Device

IMPORTANT:

The Vision software is available in two versions; one with a USB dongle, and one that is "dongleless" and is loaded on to a USB Memory stick. If your machine was delivered with, or you currently have the silver, white/blue or orange software dongle, DO NOT LOSE IT!

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

USB Stick



Dongles







1.3 General Electrical and Facility Requirements

Machine Model	Requirements	
1624R, 2525, 2550 Router with T-Slot		
With Engraving Head	One 110 VAC 15 Amp OR One 220 VAC 10 Amp Single Phase	
With High Frequency Router Head	One 110 VAC 15 Amp OR One 220 VAC 10 Amp Single Phase (Vision controller) AND One 220 VAC 30 Amp Single Phase (3 HP router)	
2550 Router with Vacuum Table With Engraving Head	One 110 VAC 15 Amp OR One 220 VAC 10 Amp Single Phase (Vision controller) AND One 220 VAC 20 Amp Single Phase (vacuum pump)	
With High Frequency Router Head	One 110 VAC 15 Amp OR One 220 VAC 10 Amp Single Phase (Vision controller) AND One 220 VAC 30 Amp Single Phase (3 HP router) AND One 220 VAC 20 Amp Single Phase (vacuum pump)	
Optional Equipment Engraving Chip Removal System	Required in addition to the machine power above: One 110 VAC 15 Amp OR One 220VAC 10 Amp	
Router Extraction System	One 220 VAC 20 Amp Single Phase	
Optional Equipment Requiring Compressed Air Supply	Required in addition to the machine power above:	
UNIST Misting System	Clean Dry Compressed Air Supply 60 - 90 PSI	
NSK 50,000 RPM Spindle	One 110 VAC 15 Amp OR One 220 VAC 10 Amp Single Phase AND Clean Dry Compressed Air Supply 1 SCFM @ 40 PSI	

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

2 Machine Setup

2.1 Locating the Router

- 1. Locate all equipment indoors on a flat surface and on a solid foundation.
- 2. Temperature must remain between 40°F and 85°F.
- 3. Do not expose machine to direct sunlight, rain, vibration, dampness, or explosive environments.
- 4. The machine dimensions are:

```
1624R - 44" (W) x 34" (L) x 31" (H), shipping weight = 290 lbs.
2525 - 40" (W) x 47" (L) x 64" (H), shipping weight = 534 lbs.
2550 - 40" (W) x 71" (L) x 64" (H), shipping weight = 737 lbs.
2550 Vacuum Pump (supplied with 2550 Vacuum Table machines only) - 28" (W) x 44" (L) x 25" (H), shipping weight = 400 lbs.
```

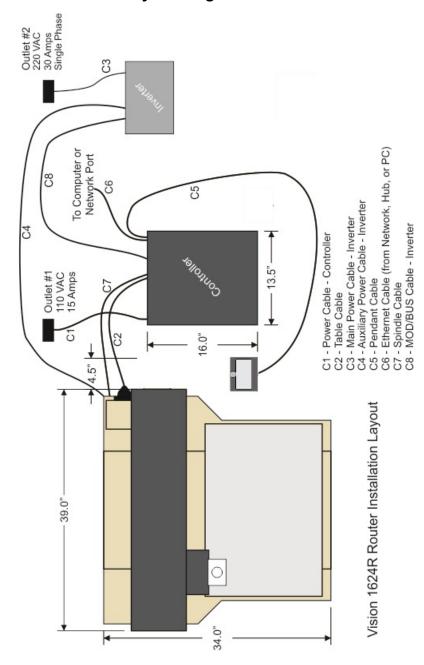
NOTE: If you use our freight company, the equipment will be placed on the ground and a pallet jack or other device is necessary to move the crate into your facility.

- 5. The sides of the crate unscrew, but it will take four people to remove the router from the shipping crate and place it on the included stand (2525/2550 models only) once the stand is assembled.
- 6. A stand kit for the 2525/2550 machines is packed under the machine in the crate and requires approximately 30 45 minutes to assemble. The instructions for assembling the stand are included in the crate.
- 7. A distance of at least 1 Meter (3 feet) is recommended around all sides of the machine to ensure easy operating, material handling, cleaning, maintenance and safety. The machine's stand is equipped with wheels, so it can be moved as necessary.
- 8. Typically, the router table is oriented as shown in the layout diagrams, at least 36" from any wall.
- 9. Cutters and sample materials must be available before the scheduled installation/machine orientation date.
- 10. If a chip extraction unit has not been purchased from Vision, it is highly recommended that one is available for the installation/machine orientation.
- 11. If ordered, the NSK High Frequency Spindle requires a clean air source. The airflow requirement is 1 CFM @ 40 psi.

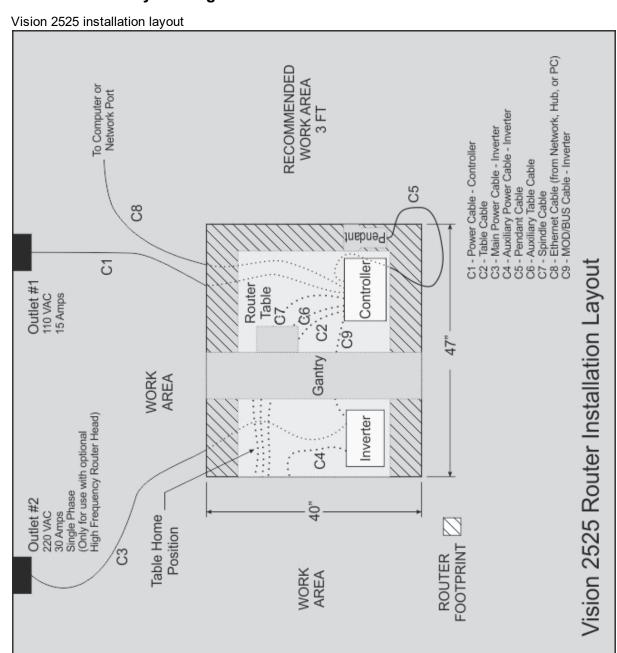
12. If ordered, the UNIST Misting System requires a compressed air supply regulated to no more than 60 psi.

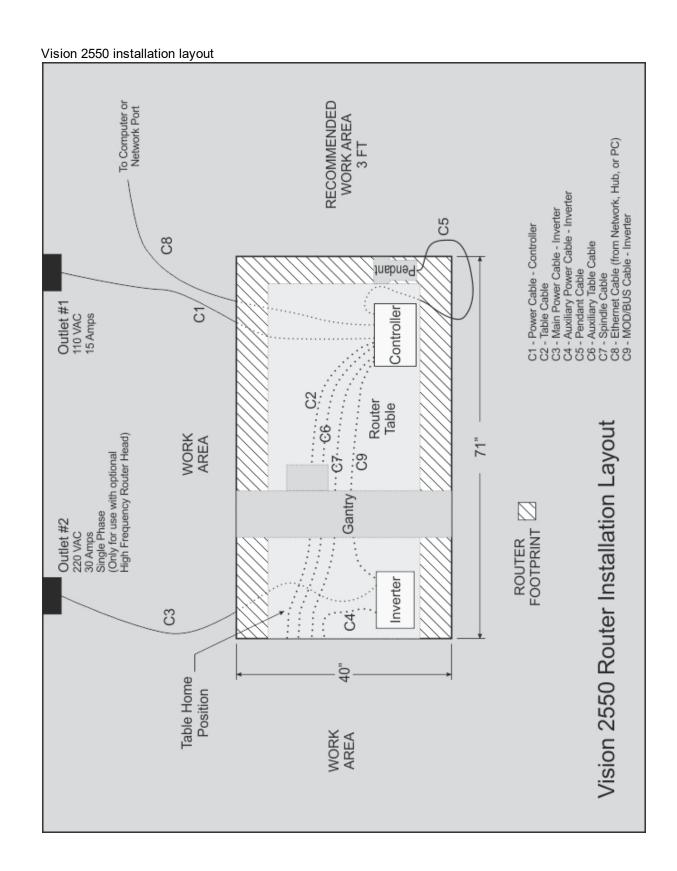
2.2 Layout Diagrams

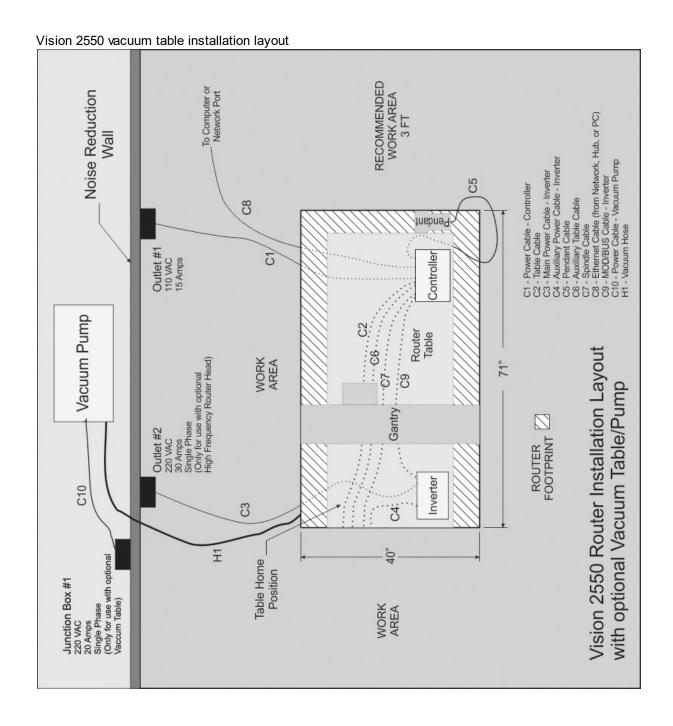
2.2.1 1624R Router Layout Diagram



2.2.2 2525 and 2550 Layout Diagrams





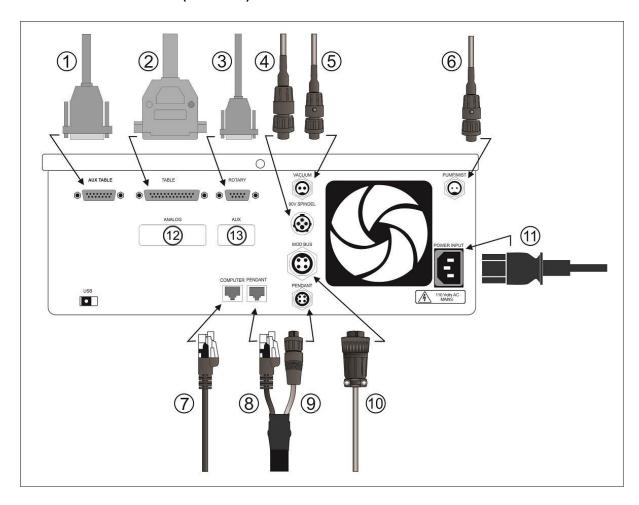


2.3 Connections

On the rear of the Vision Series 5 controller, there are 13 connection ports. Plug in all of the cables unless noted below.

- 1. The Aux Table plug connects to a 15 pin connector on the Vision 2525 and 2550. **NOTE:** This is not used with the 1624R.
- 2. The Table plug connects to a 25 pin connector on the Vision 1624R, 2525 and 2550.
- 3. The Rotary plug connects to a 9 pin connector on the Vision Rotary attachment. **NOTE:** This is not used unless a rotary attachment or configured with the machine.
- 4. The 90V Spindle plug connects a 4 pin round connector that comes from the Vision 1624R, 2525 and 2550.
- 5. The Vacuum plug connects to a 2 pin round connector that comes from an optional vacuum chip removal system. 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. NOTE: This will not be used if a vacuum chip removal system is not configured with the machine.
- 6. The Pump/Mist plug connects to a misting system or water pump. **NOTE:** This is not used unless a misting system or water pump is configured with the machine.
- 7. The Computer plug connects to the Ethernet port on the computer. This is typically plugged into the USB to Ethernet adapter supplied with the machine.
- 8. The Pendant network plug connects to the back of the touch screen LCD pendant.
- 9. The 4 pin Pendant plug connects to the back of the touch screen LCD pendant.
- 10. The Mod Bus plug connects to the 3 hp router spindle power inverter. **NOTE:** This is only used if the 3 hp router motor is configured with the machine.
- 11. The power input plug connects to either the power source. **IMPORTANT:** Only use the 110 volt AC or 220 volt AC power source that is displayed on the yellow label. Using the incorrect input power can cause serious damage to the machine.
- 12. The Analog plug is used to control optional spindles such as a 50,000 RPM spindle. **NOTE:** This is not used unless an optional spindle is configured with the machine.
- 13. The Aux plug is an expansion port that can be used for new products at a later date. **NOTE:** This is not currently used.

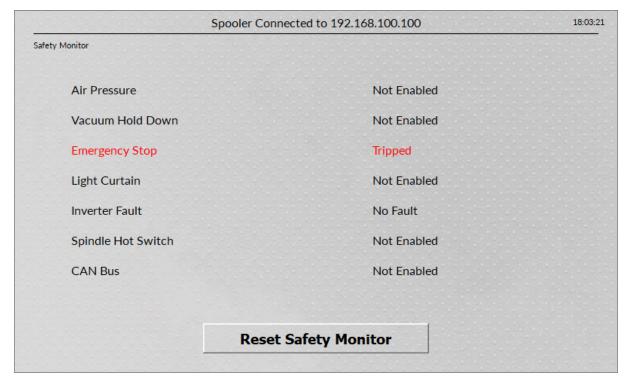
Vision Series 5 controller (rear view)



Vision Series 5 pendant (rear view)



NOTE: If the emergency stop screen appears on the LCD when the machine is powered on, then the emergency stop button is pressed in. This can either be the emergency stop button on the table or the emergency stop button on the pendant. Release the button twisting it until it "pops up". This will clear the emergency stop screen.



The machine is now connected. Please continue to the network setup section.

2.4 Pendant Holder Installation

The 2525 and 2550 machines are shipped with a Pendant Holder to give the user a place to secure the Pendant.

NOTE: Not required for 1624R.

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





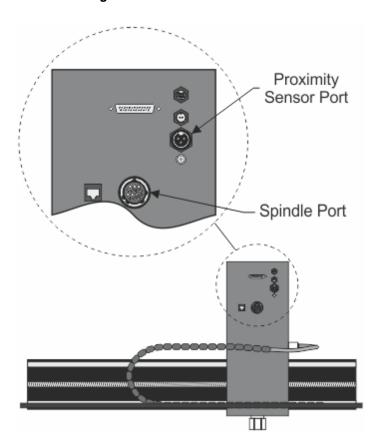


2.5 Spindle Options

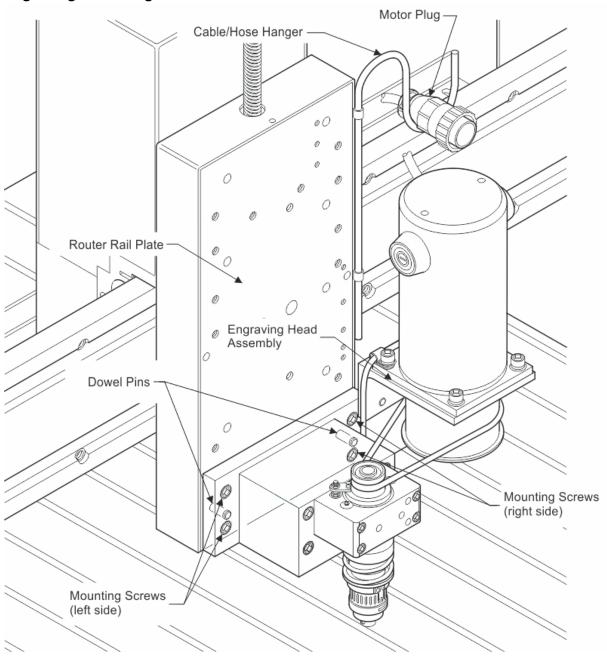
2.5.1 Engraving Head

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

Carriage - rear view



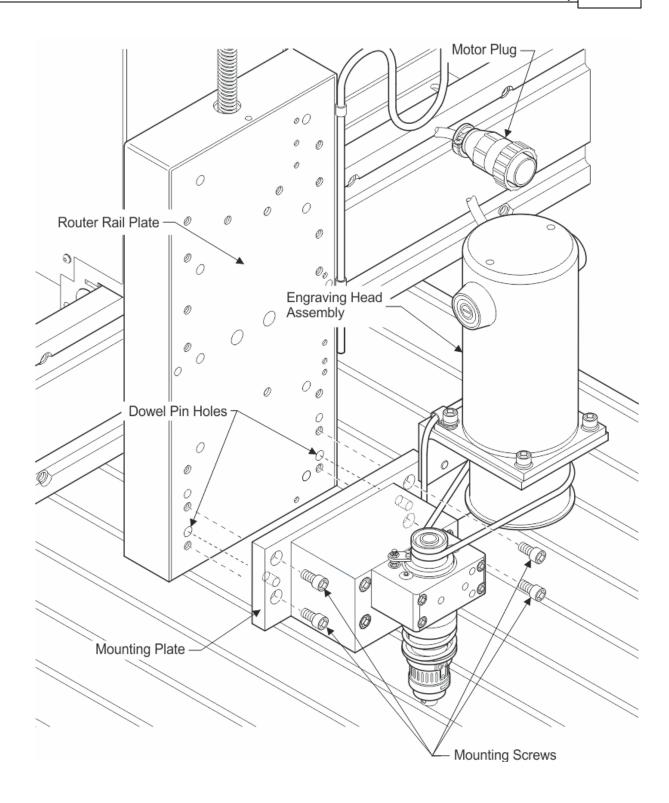
Engraving Head Diagram - Installed



Engraving Head Removal Procedure

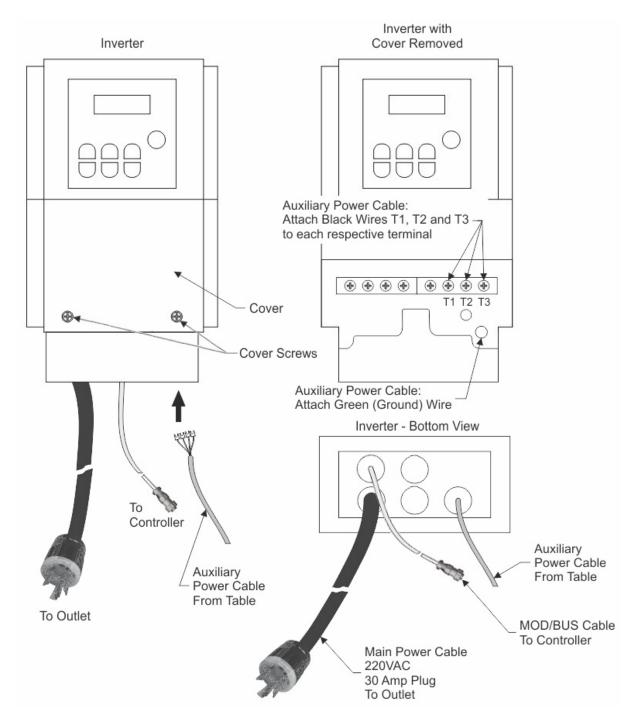
- 1. Remove the Motor Plug from the back of the Carriage and place it over the Cable/Hose Hanger.
- 2. Loosen the four mounting screws and remove. The Engraving Head will be held in place on the Rail Plate by the two Dowel Pins on the back of the Mounting Plate.
- 3. Using two hands, pull the Engraving Head away from the Rail Plate.

To Install the Engraving Head, reverse this procedure.



2.5.2 High Frequency Router Head

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.

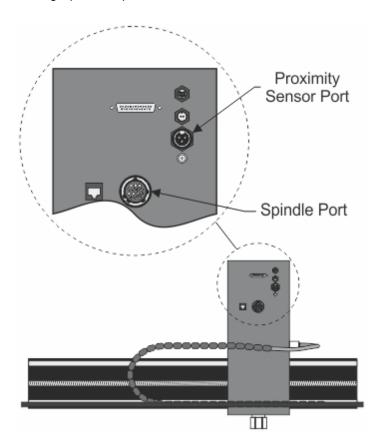
Remove Inverter Cover and feed the Auxiliary Power Cable through hole in bottom of Inverter. Connect the three black wires labeled, T1, T2 and T3, to their respective connection points. Connect the Green

(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.

Carriage Wiring Connections

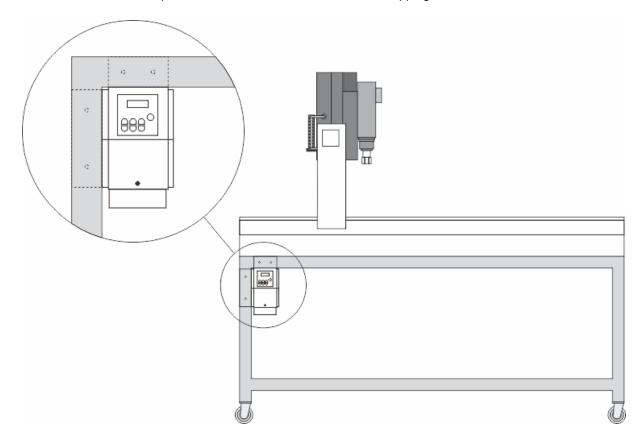
The Motor Plug connects to the Spindle Port on the back of the Carriage.

Carriage (rear view)

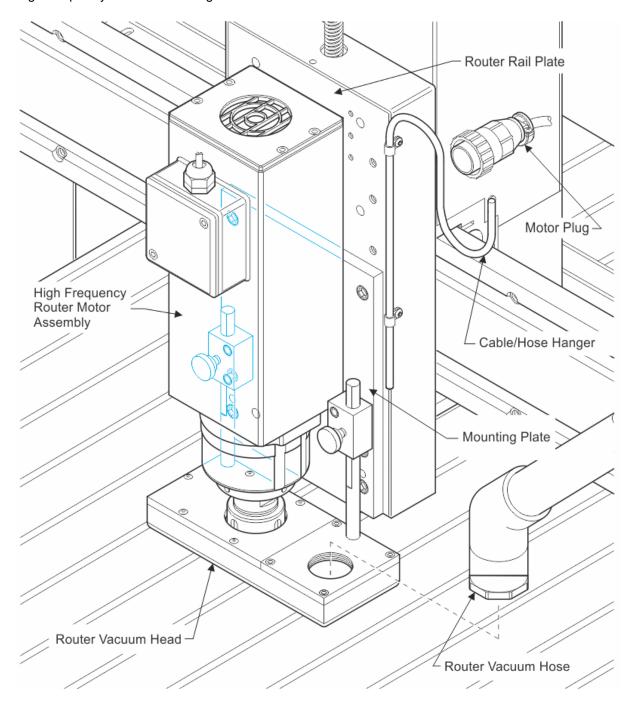


Mounting the Inverter on the 25 Series Table Stand

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.



High Frequency Router Head Diagram - Installed



High Frequency Router Head Removal Procedure

- 1. Remove the Motor Plug from the back of the Carriage and place the plug over the Cable/Hose Hanger.
- 2. Loosen the two thumbscrews holding the Router Vacuum Head in place.
- 3. Lower the Router Vacuum Head and remove.

 Thumbscrew

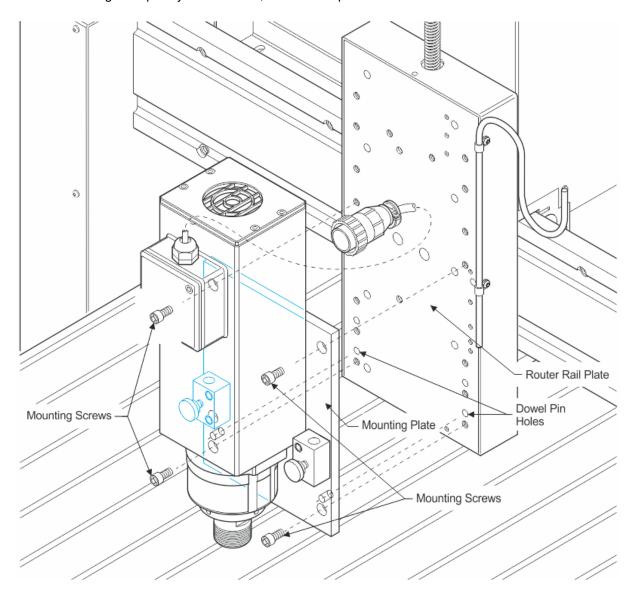
 Thumbscrew

Router Vacuum Head

High Frequency Router Head Removal - continued

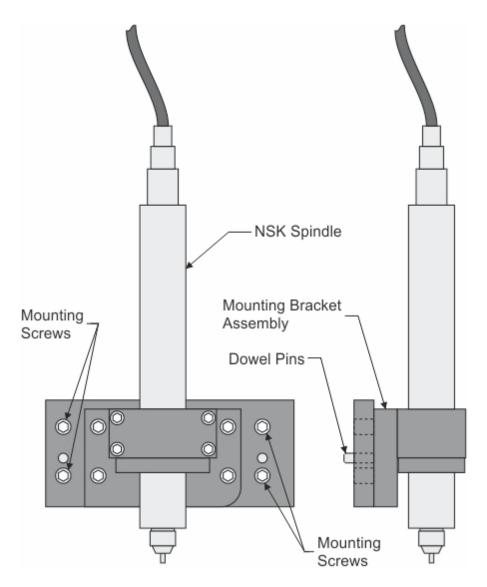
- 4. Loosen the four mounting screws and remove. The Router Head will be held in place on the Rail Plate by the two Dowel Pins on the back of the Mounting Plate.
- 5. Using two hands, pull the Router Head away from the Rail Plate.

To Install the High Frequency Router Head, reverse this procedure.



2.5.3 NSK 50,000 RPM Spindle

The NSK Spindle mounts to the Router Rail Plate in the same location as other Router or Engraving Head Assemblies. Two dowel pins are pressed into the Mounting Bracket Assembly and four mounting screws secure the bracket to the rail plate.



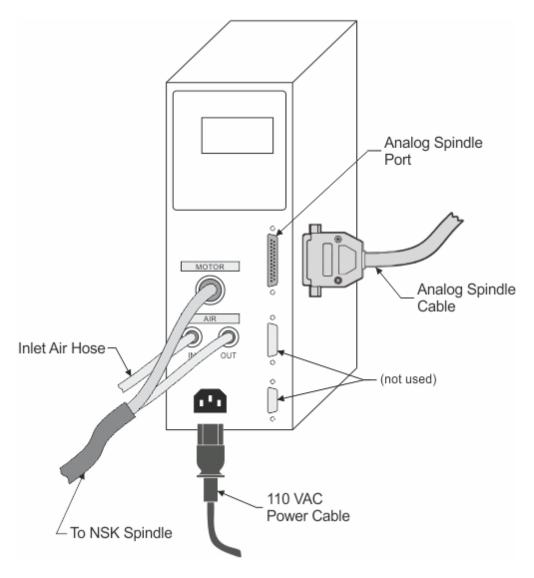
Electrical Connections

If the machine was ordered with the NSK Spindle option, an Analog Spindle port was installed on the machine's controller. Connect the Analog Spindle Cable to this port on the controller and the other end to the Analog Spindle Port on the NSK Power Supply Unit (*The Analog Spindle Cable is identical to the Table Cable used to connect the controller to the engraver or router's table. Be careful not to connect the Table port on the controller to the Analog Spindle Port on the NSK Power Supply Unit)*.

Connect the Power Cable to a standard 110 VAC power outlet and to the NSK Power Supply Unit. The cable assembly coming from the NSK Spindle has a connector to the spindle motor and an air hose. The motor connector is plugged into the Motor port and the air hose is connected to the AIR OUT port on the NSK Power Supply.

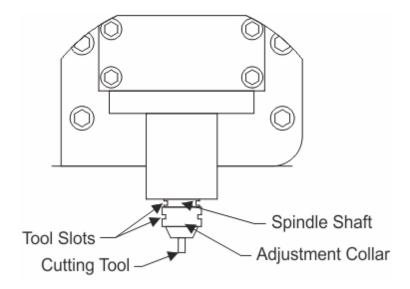
The NSK Spindle requires an external compressed air supply capable of 1 SCFM @ 40 PSI. The air supply is connected via the Inlet Air Hose to the AIR IN port on the NSK Power Supply Unit.

NOTE: The Spindle Cable to the standard engraving motor will not be used in this configuration.



Installing Cutting Tools

The NSK Spindle can accept either 1/8" or 1/4" cutting tools., depending on which collet was shipped with the system. The spindle will accept standard 2" shank bottom loading cutting tools. The collar at the bottom of spindle and the spindle shaft both have flat areas (tool slots) to allow the user to loosen or tighten the collet. Special thin wrenches are shipped with the NSK Spindle for this purpose.

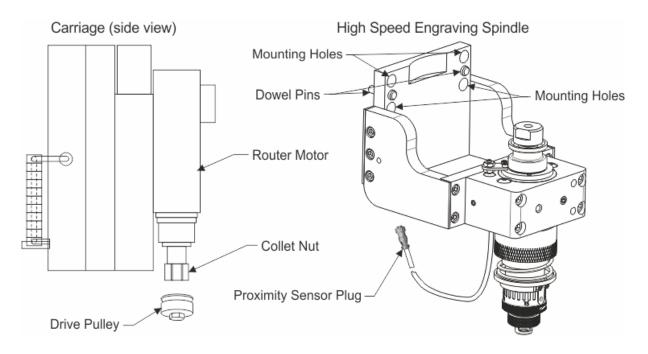


2.5.4 High Speed Engraving Spindle

The High Speed Engraving Spindle is installed with the High Frequency Router Motor. It allows up to a 30,000 RPM spindle speed. Connections to the machine's Controller are the same as when only using the High Frequency Router Motor.

High Speed Engraving Spindle Installation

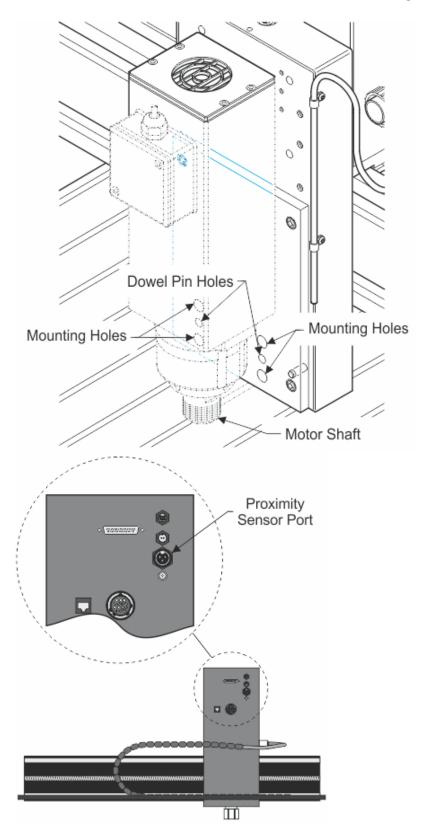
- 1. Remove the Collet Nut and Collet from the bottom of the Router Motor.
- 2. Install the Drive Pulley on to the threaded portion of the Motor Shaft and secure with the provided wrenches.



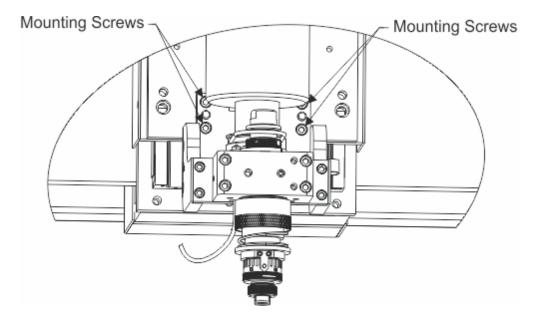
- 3. Locate the High Speed Engraving Spindle on the Rail Plate with the Dowel Pins inserted into the Dowel Pin Holes.
- 4. Install and tighten the 4 Mounting Screws.
- 5. Connect the Proximity Sensor Plug into the Proximity Sensor Port on the rear of the router Carriage.

Router Rail Plate

Carriage (rear view)

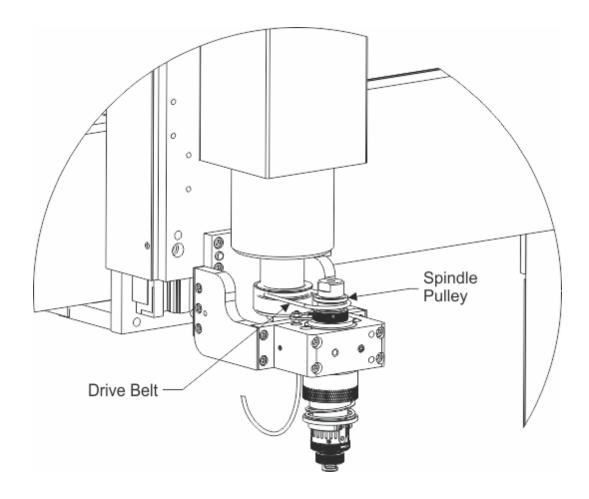


High Speed Engraving Spindle - Mounted



6. Install the Drive Belt on to the Drive Pulley, then lightly stretch it of the top of the Spindle Pulley.

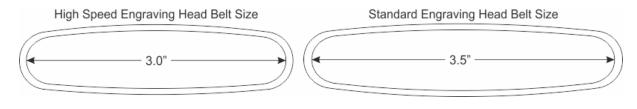
NOTE: Do not excessively stretch the drive belt. The belt can be damaged by over-stretching and may slip and not drive the spindle properly.



High Speed Spindle - Standard Spindle Differences

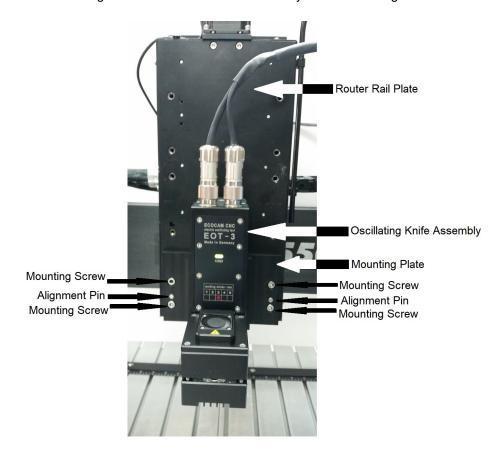
The High Speed Spindle can be identified by looking at the spindle pulley (the driven pulley) on top of the spindle. The high speed spindle uses a much smaller diameter pulley than the standard engraving spindle (0.75" diameter). The standard spindle uses a driven pulley and drive pulley of the same diameter (1.375" diameter, for a 1:1 ratio) and therefore, turns the same RPM as the router motor. The high speed spindle runs at a ratio of 1.833:1. When determining the RPM of the high speed spindle, the user must multiply the speed shown in either the tool options in the Vision 9 software, or on the Pendant by 1.833. As an example, to achieve 27,500 RPM at the spindle, the router motor must be set to 15,000 RPM (15,000 x 1.833 = 27,500).

NOTE: The high speed spindle uses a shorter drive belt than the standard spindle. You can identify the belt used for the high speed and standard speed spindles as per below.



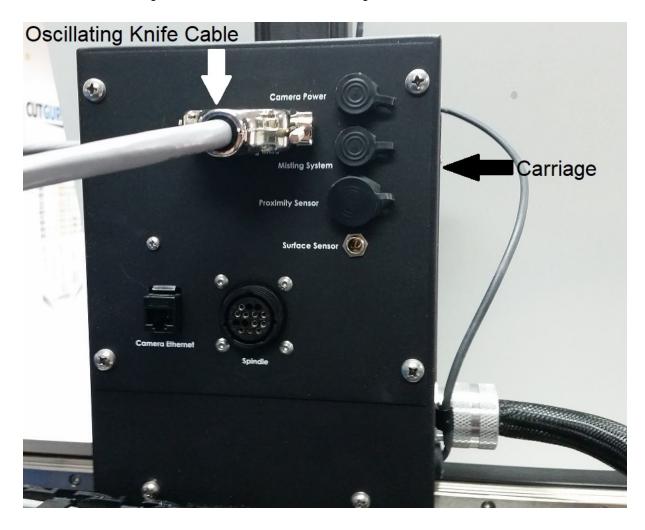
2.5.5 Oscillating Knife

Place the Oscillating Knife Assembly against the face of the Router Rail Plate and align it to the Mounting Plate with the Alignment Pins. Secure the Assembly with 4 Mounting Screws as shown.



Carriage Wiring Connections

Connect the Oscillating Knife Cable to the rear of the carriage as shown.

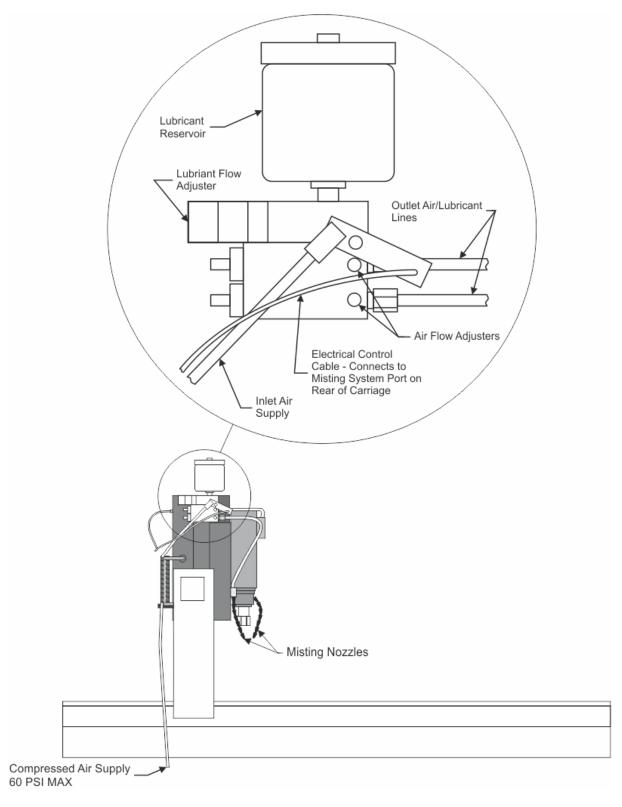


The other end of the cable connects to the top of the Oscillating Knife Assembly as shown.



2.5.6 UNIST Misting System

The optional UNIST Misting System is designed to provide lubrication to the cutting tool and material when processing metals. The diagram shown below lists the main components and connections. This system requires a compressed air supply (60 PSI Max) to be connected to the inlet air line. Documentation for usage of the UNIST Misting System is included with the system. Please refer to this documentation for operation details.



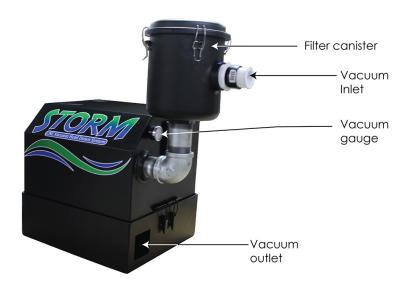
Additionally, the Misting System Power Plug on the router connects to the controller's Pump/Mist port with the supplied cable.

2.6 2550 Vacuum Pump Connection - Vacuum Table Model Only

The Main Vacuum Port on the 2550 Router is located on the bottom of the valve panel as shown below. The user will need to attach the valve panel to the end of the table as shown in the photo and connect the flexible hose from the vacuum inlet on the filter canister to the Main Vacuum Port on the valve panel.



The vacuum pump has been supplied with an electrical connector designed for a 20 amp, 220 VAC, single 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.





2.7 Network Connection

NOTE - This following section is shown on a Windows 10 PC. For Windows 7 or Windows 8, the screens are slightly different.

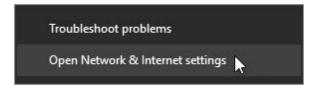
Plug the USB end of the USB to Ethernet adapter into any open USB port on the computer.



Right click on the Windows network icon in the lower right corner of the Windows screen.

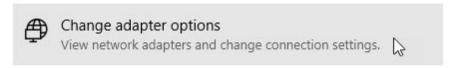


Select "Open Network & Internet settings".



Select "Change adapter options".

Change your network settings



6

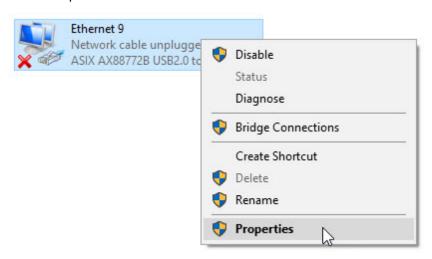
Sharing options

For the networks you connect to decide what you want to share.

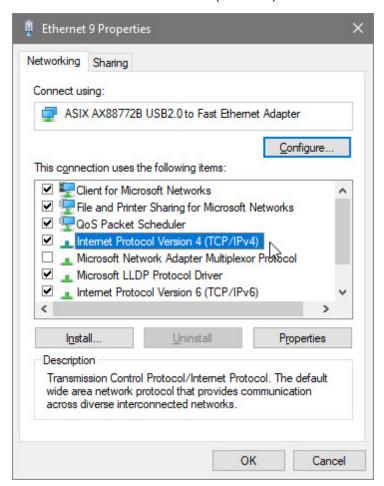
Right click on the Asix USB Ethernet connection.



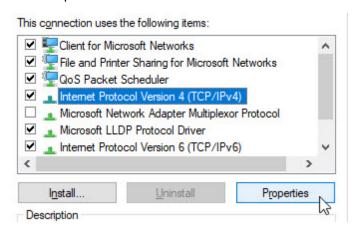
Select Properties.



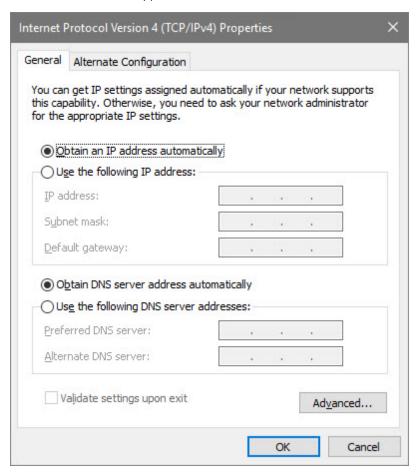
Select "Internet Protocol Version 4 (TCP/IPv4).



Select Properties.



The screen below will appear.

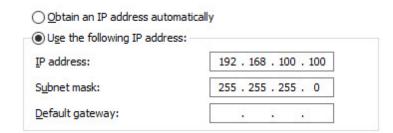


Enter the settings below.

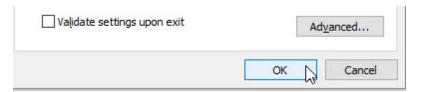
Select: Use the following IP address:

Enter an IP address of: 192.168.100.100

Enter a Subnet mask of: 255.255.255.0



Select OK.



Plug one end of the network cable into the USB to Ethernet adaptor.



Plug the other end of the network cable into the **COMPUTER** connection in the back of the Vision Series 5 controller.



The network connection is now complete. Please continue to the network setup section.

2.8 Vision Mov UI Software Installation

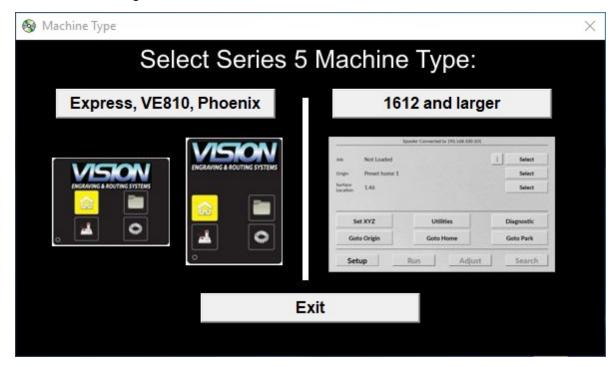
Power the Vision Series 5 controller on with the switch on the front.

Insert the Vision USB dongle into the USB port on the computer. Navigate to the USB dongle in Windows File Explorer.

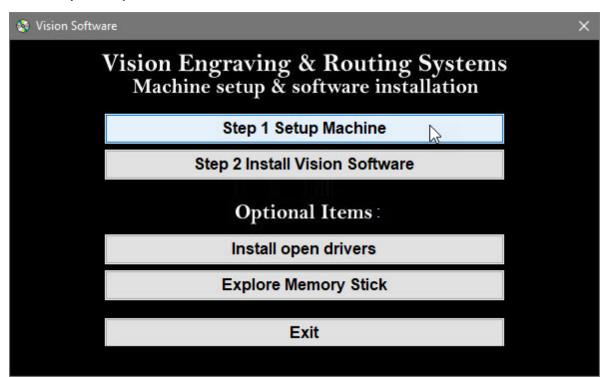
Select the Start or Start.exe file to begin.



Select 1612 and larger.

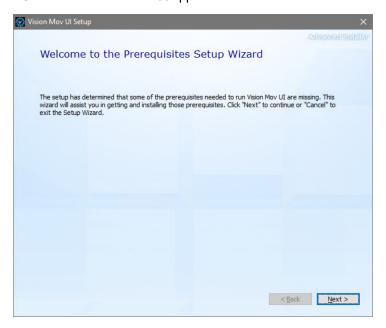


Select Step 1 Setup Machine.



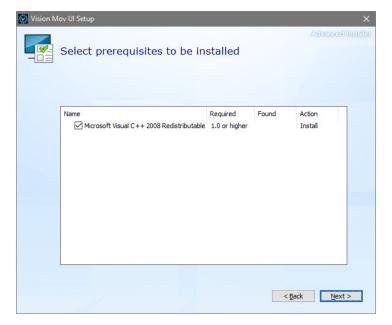
Select Next on the "Prerequisites Setup Wizard" screen.

NOTE: This screen will **not** appear if the Windows feature is already installed on the computer.



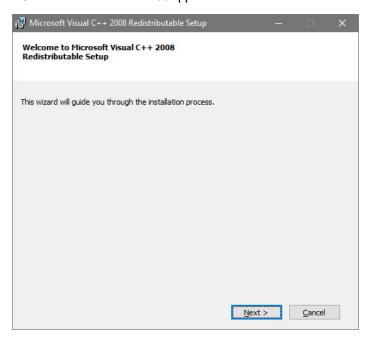
Select Next on the "Prerequisites" installation screen.

NOTE: This screen will **not** appear if the Windows feature is already installed on the computer.



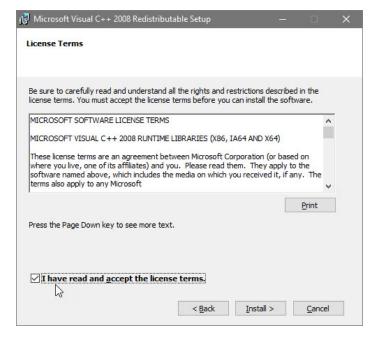
Select **Next** on the "Microsoft Vision C++ installation" screen.

NOTE: This screen will not appear if the Windows feature is already installed on the computer.



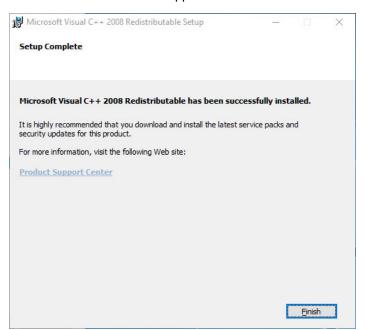
Select the I have read and accept the license terms box then select Install.

NOTE: This screen will **not** appear if the Windows feature is already installed on the computer.



Select Finish on the "Setup Complete" screen.

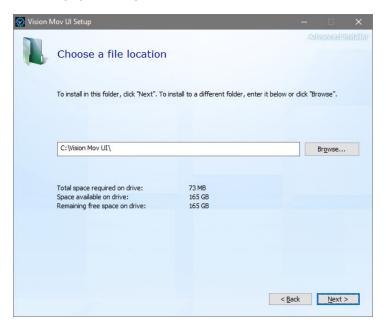
NOTE: This screen will **not** appear if the Windows feature is already installed on the computer.



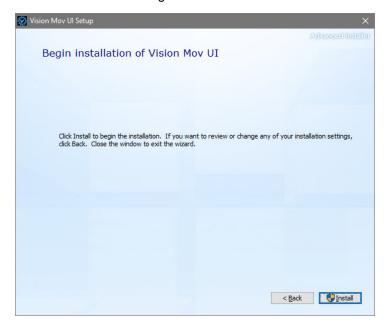
Select Next on the "Welcome screen".

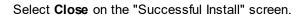


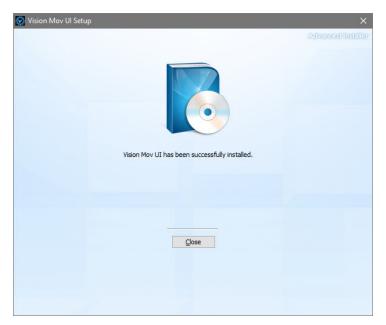
Select Next on the "Choose a file location" screen.



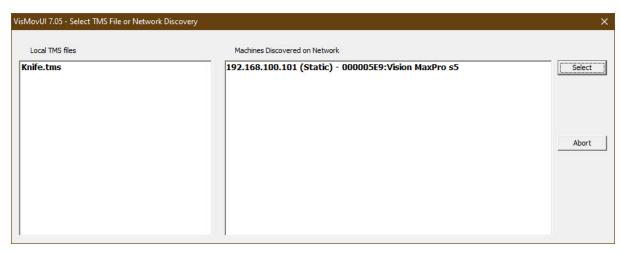
Select Install on the "Begin installation" screen.



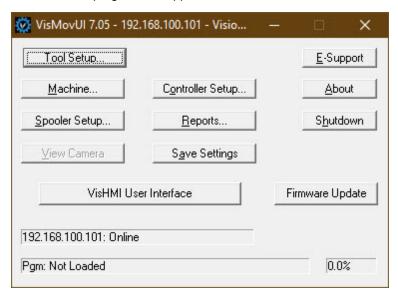




The VisMovUI screen will appear. Select the Machine in the "Machines Discovered on Network" screen and click **Select**.



The VisMovUI program will appear. Select the Minimize button.



The Vision Move UI program is now installed. Please continue to the network setup section.

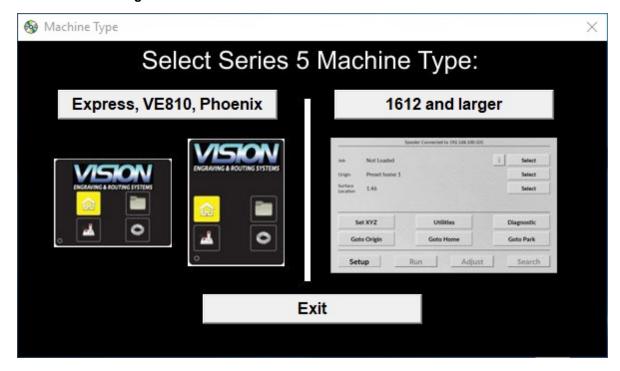
2.9 Vision Software Installation

Insert the Vision USB dongle into the USB port on the computer. Navigate to the USB dongle in Windows File Explorer.

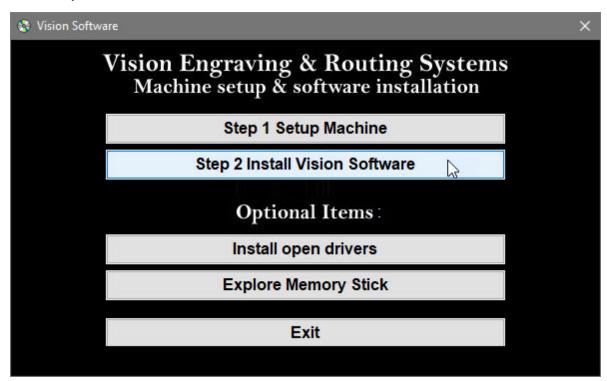
Select the Start or Start.exe file to begin.



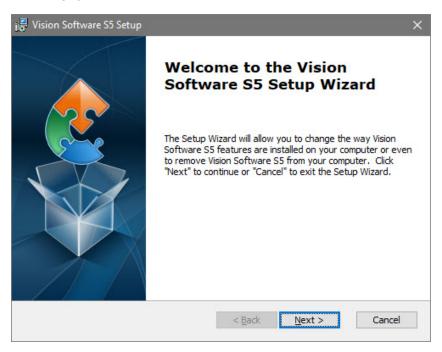
Select 1612 and larger.



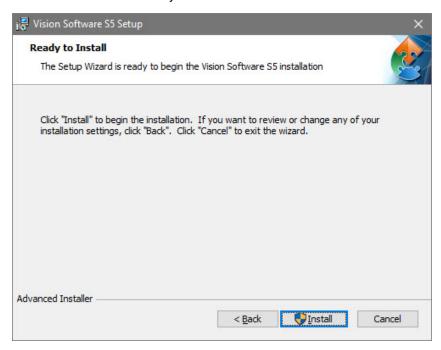
Select Step 2 Install Vision Software.



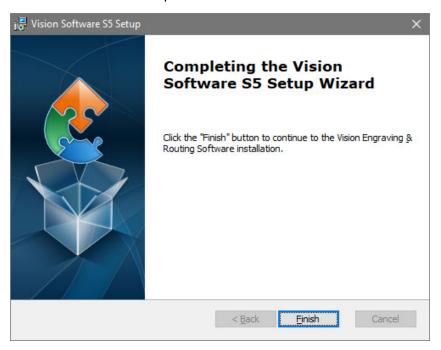
Select Next on the "Welcome" screen.



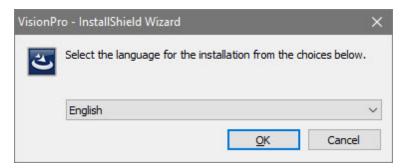
Select Install on the "Ready to Install" screen.



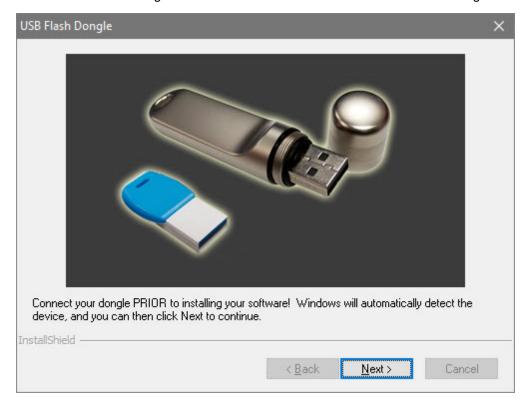
Select Finish on the "Complete Install" screen.



Select the language desired and select **OK** on the "Vision Pro install" screen.

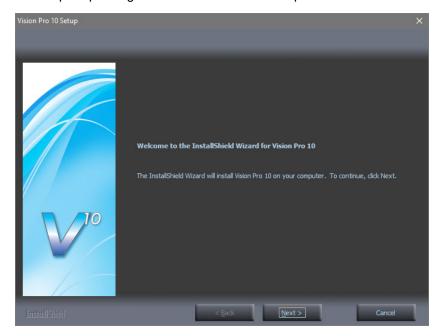


Make sure the USB dongle is installed and select **Next** on the "USB Flash Dongle" screen.



Select Next on the "Vision 10 setup" screen.

NOTE: The installation will display "Vision Pro 10 Setup", "Vision Expert 10 Setup" or "Vision Express 10 Setup" depending on which version has been purchased.

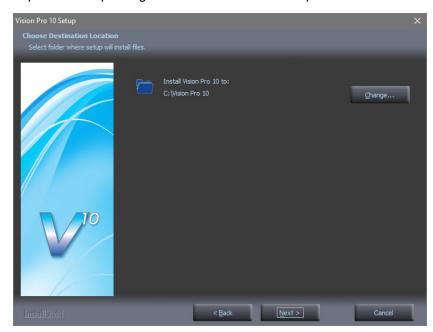


Select the I accept the terms of the license agreement box then select Next on the "License Agreement" screen.

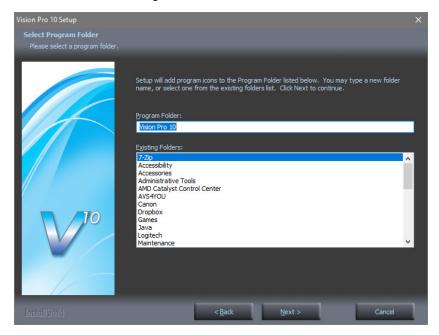


Select Next from the "Choose Destination Location" screen.

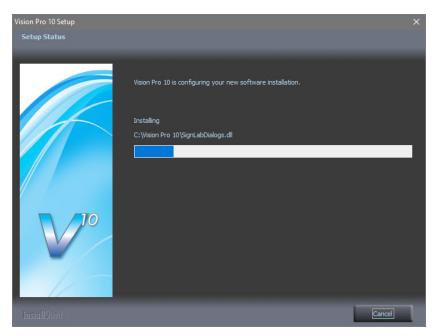
NOTE: The installation folder will be either "C:\Vision Pro 10", "C:\Vision Expert 10" or "C:\Vision Express 10" depending on which version has been purchased.



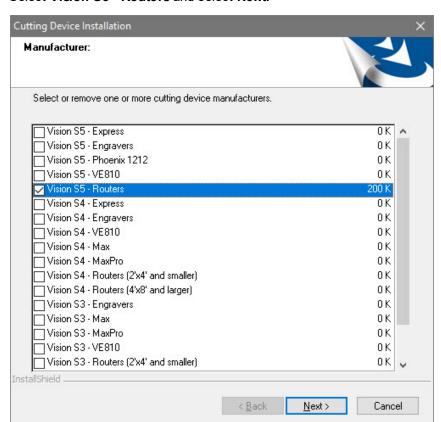
Select **Next** on the "Program Folder" screen.



The installation will continue.

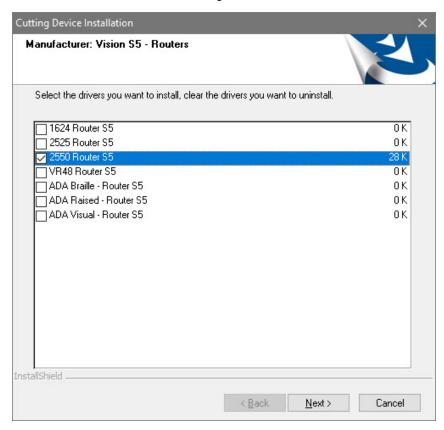


Select Vision S5 - Routers and select Next.

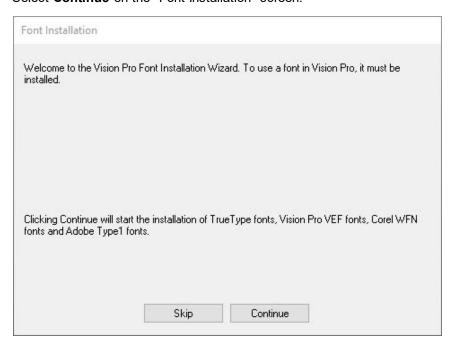


Select the driver for the that matches the machine purchased and select Next.

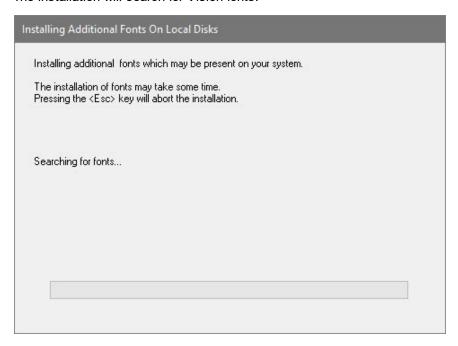
NOTE: If ADA drivers or a center origin driver is needed, select them also.



Select Continue on the "Font Installation" screen.

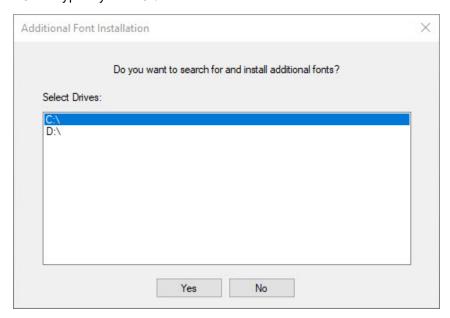


The installation will search for Vision fonts.



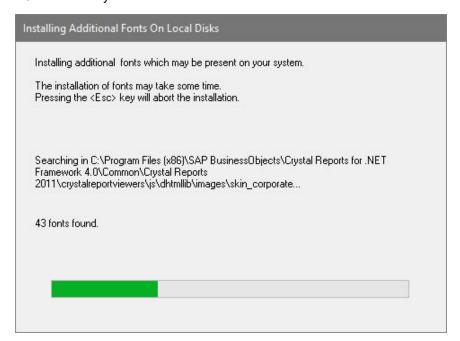
Select the disk drive to search for additional fonts that may be on the computer and select Yes.

NOTE: Typically drive C:\ is selected.

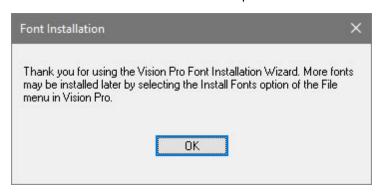


The installation will search for additional fonts.

NOTE: This may take a few minutes.

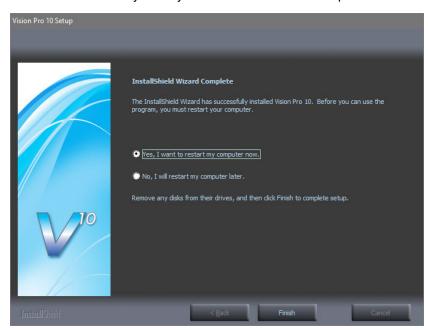


Select **OK** on the "Font Installation Complete" screen.

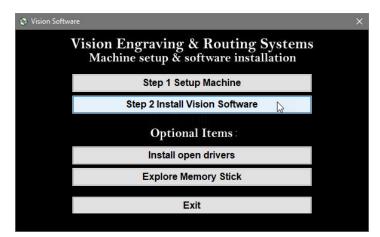


Select Finish to complete the installation.

NOTE: The install may or may not ask to restart the computer.



Select Exit from the initial screen.



The Vision 10 software and Vision Manuals icon will now be on the Windows desktop.



