VERSABUILT ROBOTICS



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PRE-INSTALLATION GUIDE

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Summary

The purpose of this document is to provide complete information, to both VersaBuilt Robotics customers and authorized dealers, for a smooth and efficient machine installation. Contact VersaBuilt Robotics or your authorized dealer if you have questions beyond the scope of this guide.

Please complete or validate the following prior to delivery of the VBX-160:

- 1. Floor-space for VBX-160 positioned in front of the CNC
- 2. Floor-space for VBX-160 pivoted away from the CNC
- 3. Floor-space and location for drilling holes in concrete to anchor 2 posts
- 4. Floor-space and location for Robot Controller
- 5. Provide 230 VAC, 3 phase electrical power receptacle
- 6. Provide a connection of 100-130 psi compressed-air for VBX-160 system

VersaBuilt Robotics Responsibility

- 1. Ensure that the customer is provided with this document containing correct VBX-160 System location as well as electrical and air requirements.
- 2. Provide the customer with the date the machine will be shipped from the factory, the expected arrival date at their facility and the planned installation date.
- 3. Make sure that the customer has access to information on coolant, lubrication, anchoring, and certifications as required.
- 4. Schedule a VersaBuilt Robotics authorized service technician to be on site for the duration of the installation.

Customer Responsibility

- 1. Before your new VersaBuilt Robotics equipment arrives, you should review the machine dimensions and site requirements, and prepare your shop for the VBX-160 delivery.
- 2. Ensure that all electrical and air requirements are met and installed prior to VBX-160 delivery.
- 3. Delivery and installation of your tool will be scheduled by VersaBuilt Robotics and/or your dealer after entry of your order.
- 4. If, after reading the guide, you have any questions or you are unsure of what is required contact VersaBuilt Robotics for clarification.

VBX-160 Placement

Ensure that there is adequate space in front of your CNC to locate your VBX-160 and space to pivot the VBX-160 away from the CNC for access to both the VBX-160 and your CNC machine. The following images show the VBX-160 pivoted away and engaged with the CNC.



FIGURE 1. VBX-160 PIVOTED FROM CNC

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Use caution when moving or pivoting the VBX-160. Risks to personnel may include severe bodily injury. Pay particular attention when pivoting the VBX-160 to prevent pinching between the VBX-160, your CNC machine and other objects in the vicinity.



FIGURE 3. TOP VIEW OF VBX-160 PIVOTED AWAY FROM CNC

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Gate and Pivot Posts

Gate and pivot posts are installed into the concrete in front of your CNC by VersaBuilt Robotics or our authorized dealer/service provider. These posts maintain proper position of your VBX-160 with respect to the CNC it is tending. Four (4) holes are drilled into the concrete for each post, with .-13 UNC drop-in concrete anchors inserted into the holes for attaching the posts to the floor. The Gate and Pivot Posts attach to the VBX-160 via steel quick-release pins. To pivot the VBX-160 away from the CNC, the gate post pin is removed and then the cell is rotated away via the pivot post. To get it back to the 'locked' position in front of the CNC simply push the cell back into position against the gate post and reinsert the pin.



FIGURE 4 - GATE & PIVOT POSTS

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VBX-160 Robot Controller Placement

This unit is 40" wide x 26" deep x 61" tall. It is typically located on either side of the CNC which gives it access to both the VBX-160 cell and the CNC the system is tending. It can be located just about anywhere less than 5 meters (16.4-feet) from the system. Please let VersaBuilt Robotics know if space is tight and we can accommodate with longer cabling or other robot controller mounting schemes.



FIGURE 5. ROBOT CONTROLLER SHOWN ON BOTH SIDES OF CNC

VBX-160 Customer Electrical Requirements

The electrical power supplied to the machine must comply with all local codes and ordinances.

Electrical Supply to VBX-160:

208-240VAC, 3-phase 50/60Hz 20A Max Load

Recommended Electrical Service:

- 1. Circuit breakers are UL489 compliant 20A, 3phase
- 2. Customer to provide electrical service via NEMA connectors, twist lock style (see Figure 6):
 - a. Receptacle for 208-240VAC -L1520R, VBX-160 comes with Plug-L1520P
 - b. Distance: within 10 feet of VBX equipment
- 3. Wire size for this electrical service should be AWG #10 or larger



FIGURE 6. POWER RECEPTACLE (L1520R)

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Compressed Air Supply Requirements

The VBX-160 requires air supply at a minimum pressure and volume for proper operation. The minimum requirements are:

- 1. Minimum Flow Requirement: 60 scfm (1700 L/min)
- 2. Air Pressure: 100-130psi

For connections to the VBX-160, please provide the following

- The required input air supply line size is 1/2"
- If you plan to use a quick coupler, use a 1/2" coupler for the 1/2" air hose

Note: If you make auxiliary air connections, they must be on the input (unregulated) side of the air filter/regulator or air shutoff valve. If incoming air pressure is higher than 145 psi, VersaBuilt Robotics requires the customer to provide regulated air below 145 psi.

VersaBuilt Robotics VBXC/CNC Door Interlock Information

The VBX-160 and the CNC machine both have safety circuits that are intended to protect humans while allowing necessary communications to occur between the two systems for robotic processing.

CNC machines have a door interlock safety circuits preventing operation when the CNC door is open. When the CNC is processing, there is an interlock device locking the CNC door to prevent them from being inadvertently opened.

The VBX-160 has a safety circuit that connects sensors on the rack 1 door, rack 2 door and the gate post where the VBX-160 can be pivoted away from the CNC. If any of these sensors are interrupted, the 'motors on' light on the robot arm will go out and robot motion will be stopped.