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VBX-160 Customer Pre-Installation Guide

The purpose of this document is to provide complete information, to both VersaBuilt customers and authorized dealers, for a smooth and efficient machine installation. Contact VersaBuilt 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:

| Item | Description |
|------|---|
| 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 |

| Revision | Revision Description | Date | By: |
|----------|---|------------|-----|
| A | Initial Release | 5/20/2016 | BJH |
| B | Added dimensional views for VBX-160 in front of CNC and pivoted away from CNC | 11/23/2016 | BTB |

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VersaBuilt 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 authorized service technician to be on site for the duration of the installation.

Customer Responsibility

1. Before your new VersaBuilt equipment arrives, you should review the machine dimensions and site requirements, and prepare your shop for the machine delivery.
2. Ensure that all electrical and air requirements are met.
3. Delivery and installation of your tool will be scheduled by VersaBuilt 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 for clarification.

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VBX-160 Cell Placement

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

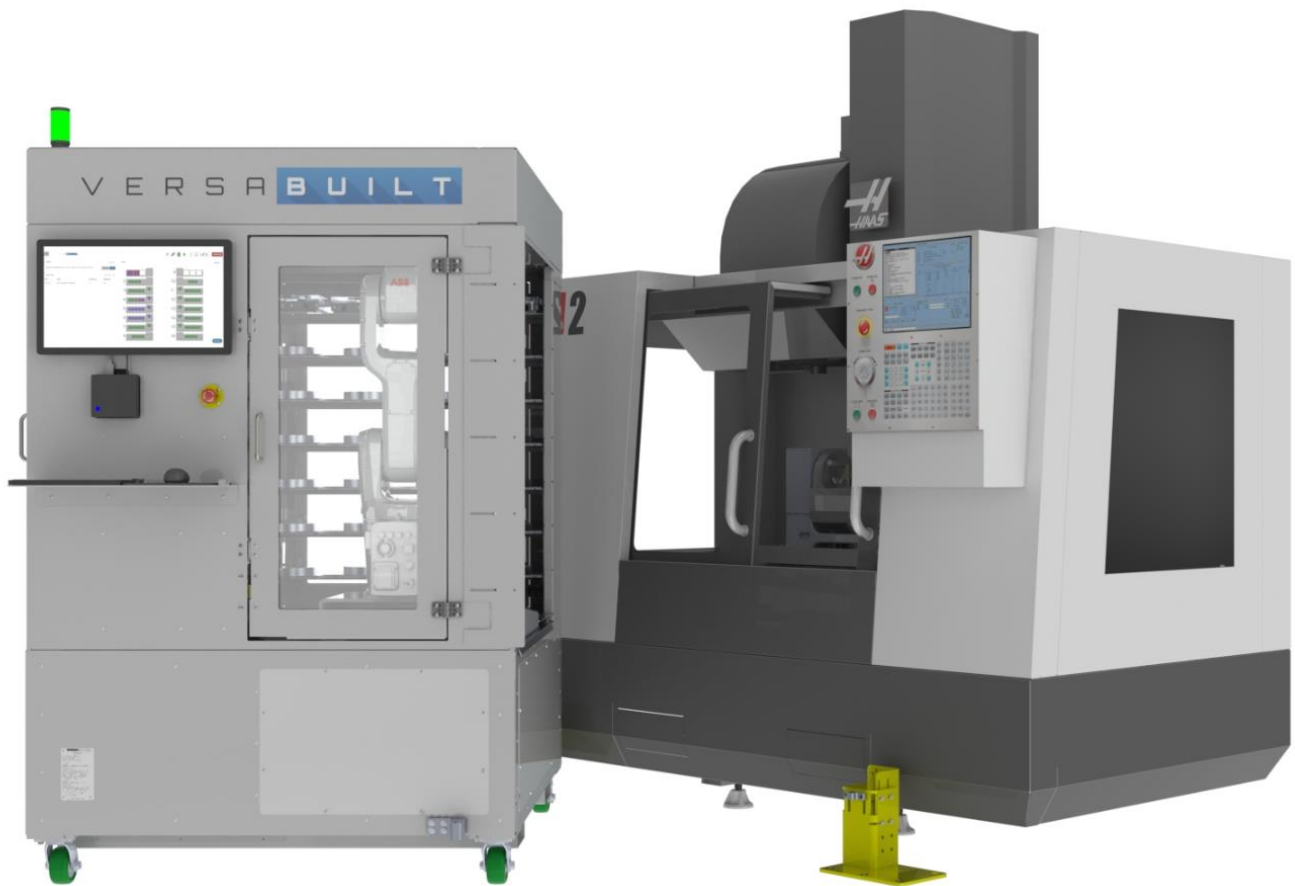


Figure 1 - VBX-160 Pivot from CNC

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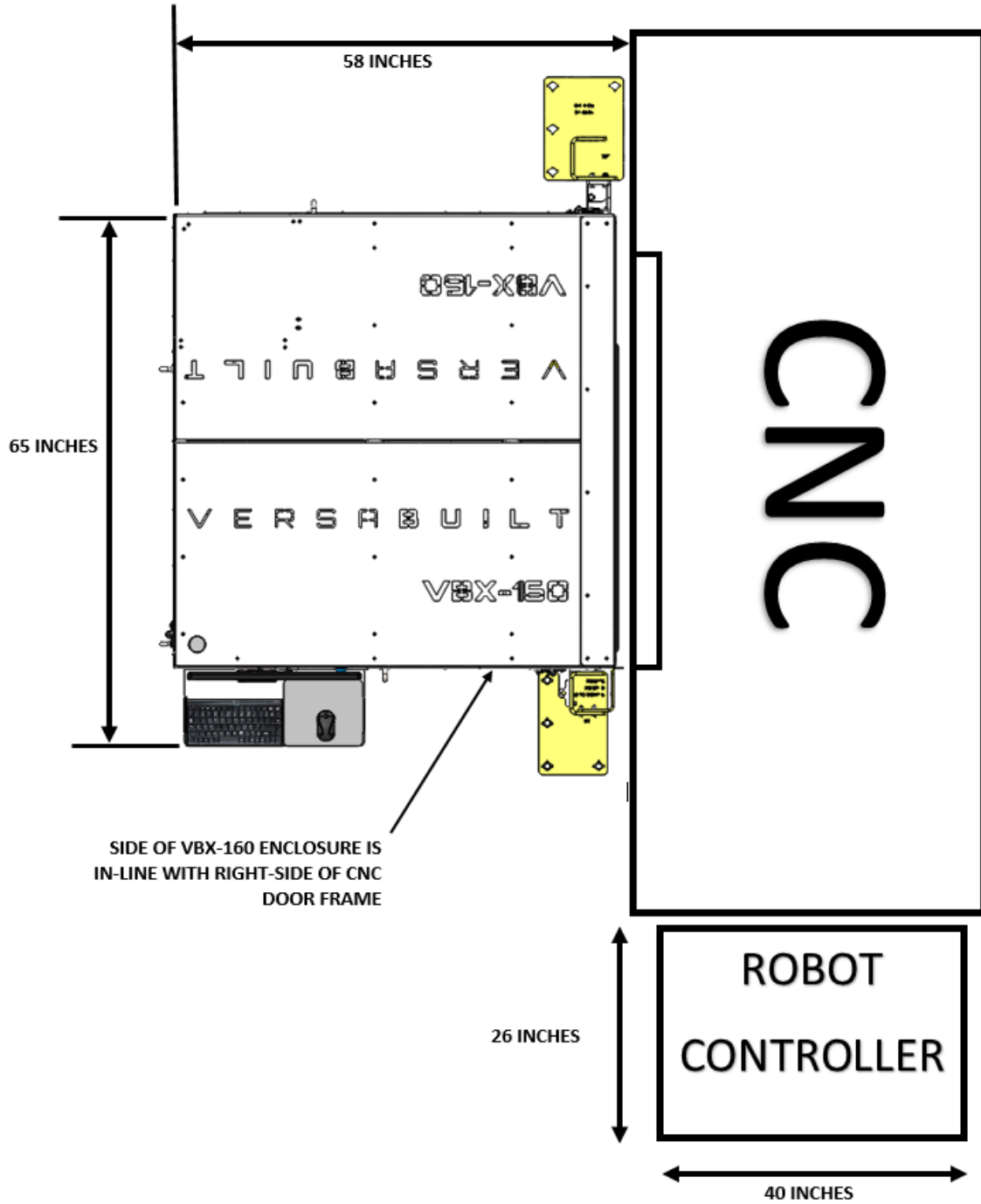


Figure 2 - Top View, dimensions when VBX-160 is engaged with CNC ***note:** robot controller can be placed on either side of the CNC

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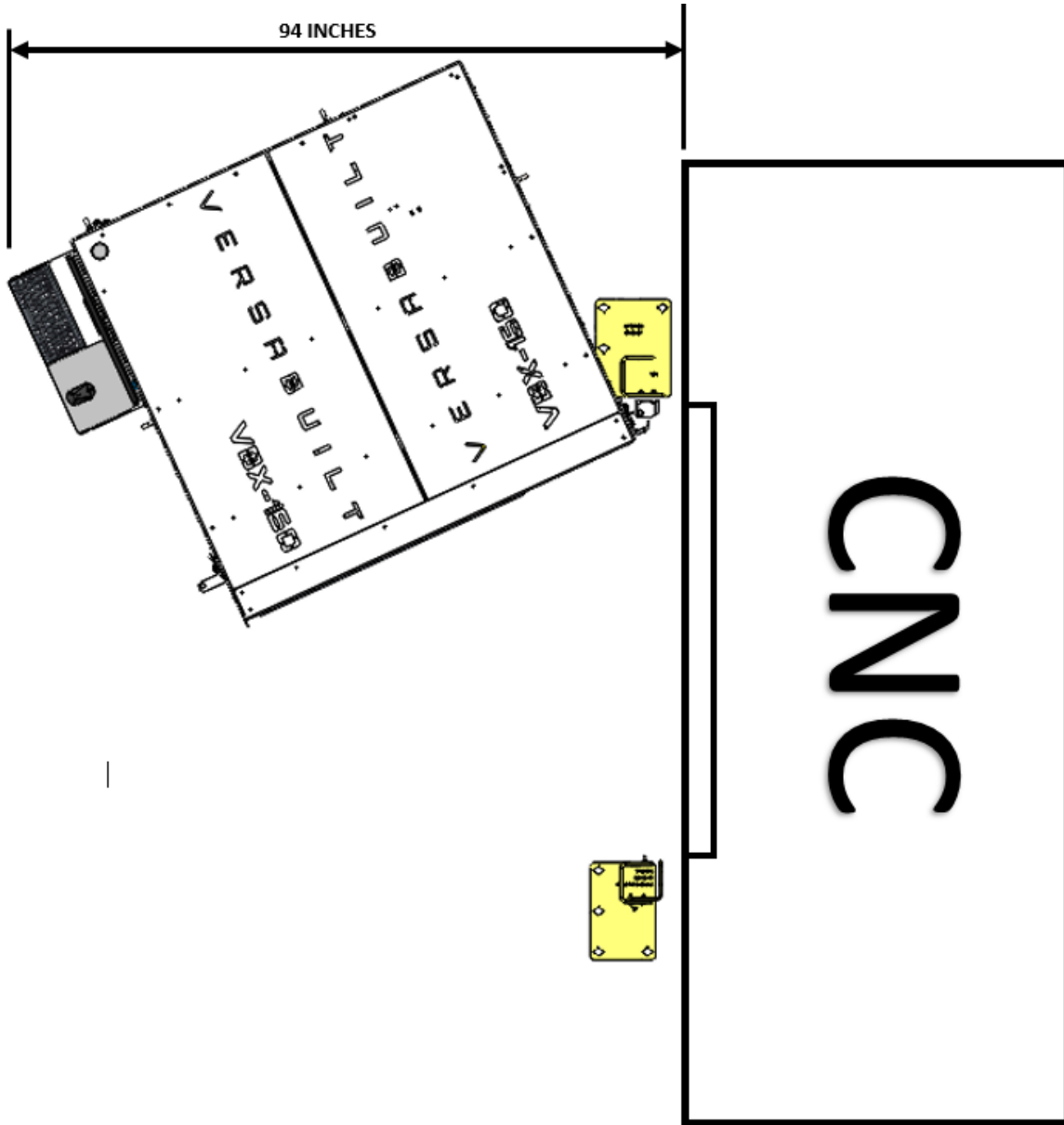


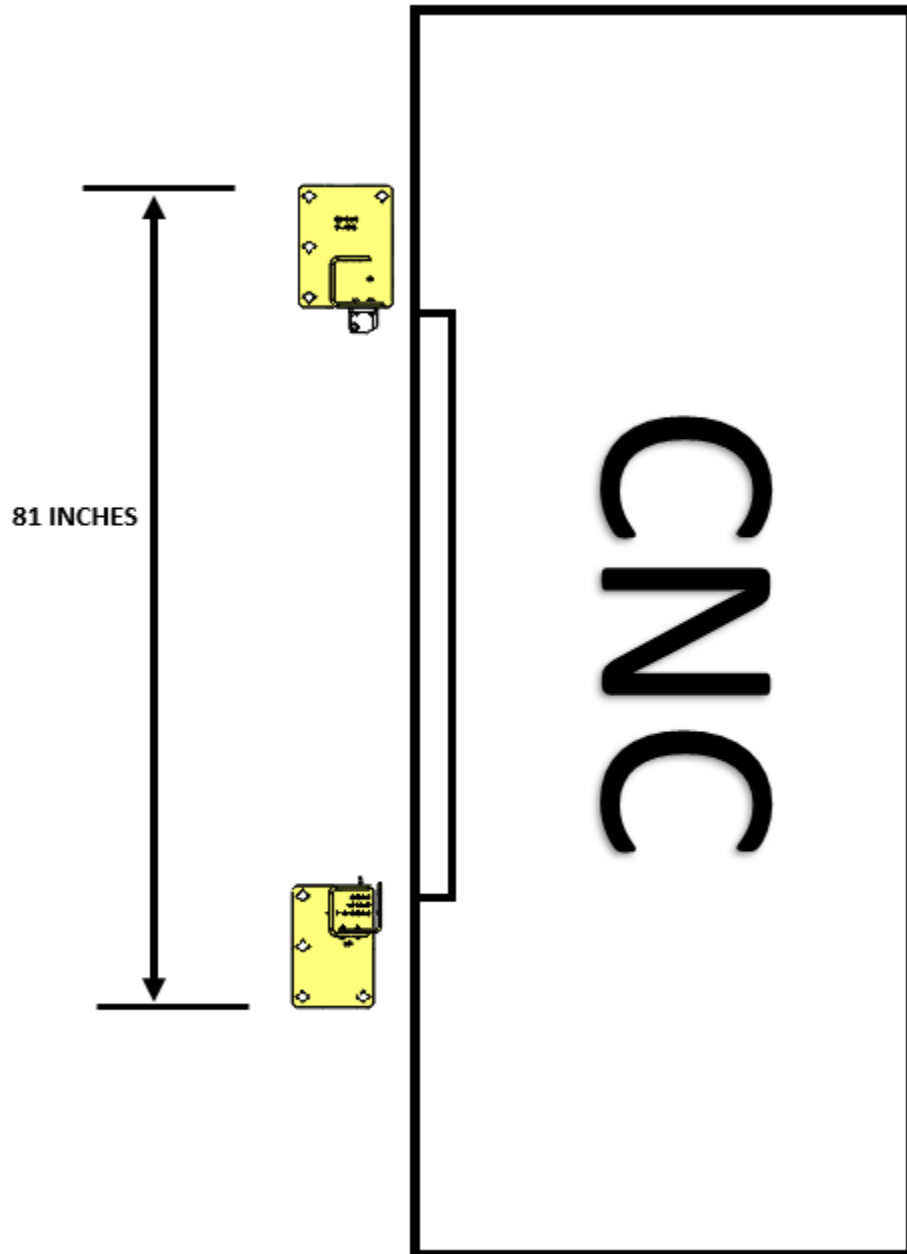
Figure 3 - Top View, dimensions with VBX-160 pivoted away from CNC

Caution: Use caution when moving or pivoting the VBX-160 cell, risks to personnel may include crushing, pinching and severing as well as bodily injury. Pay particular attention when pivoting the cell to prevent pinching between the cell and CNC machine and other objects in the vicinity.

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Gate and Pivot Posts

Gate and pivot posts are installed into the concrete in front of your CNC by VersaBuilt 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 ½-13 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.



VBX-160 Robot Controller Placement

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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 know if space is tight and we can accommodate with longer cabling or other robot controller mounting schemes.

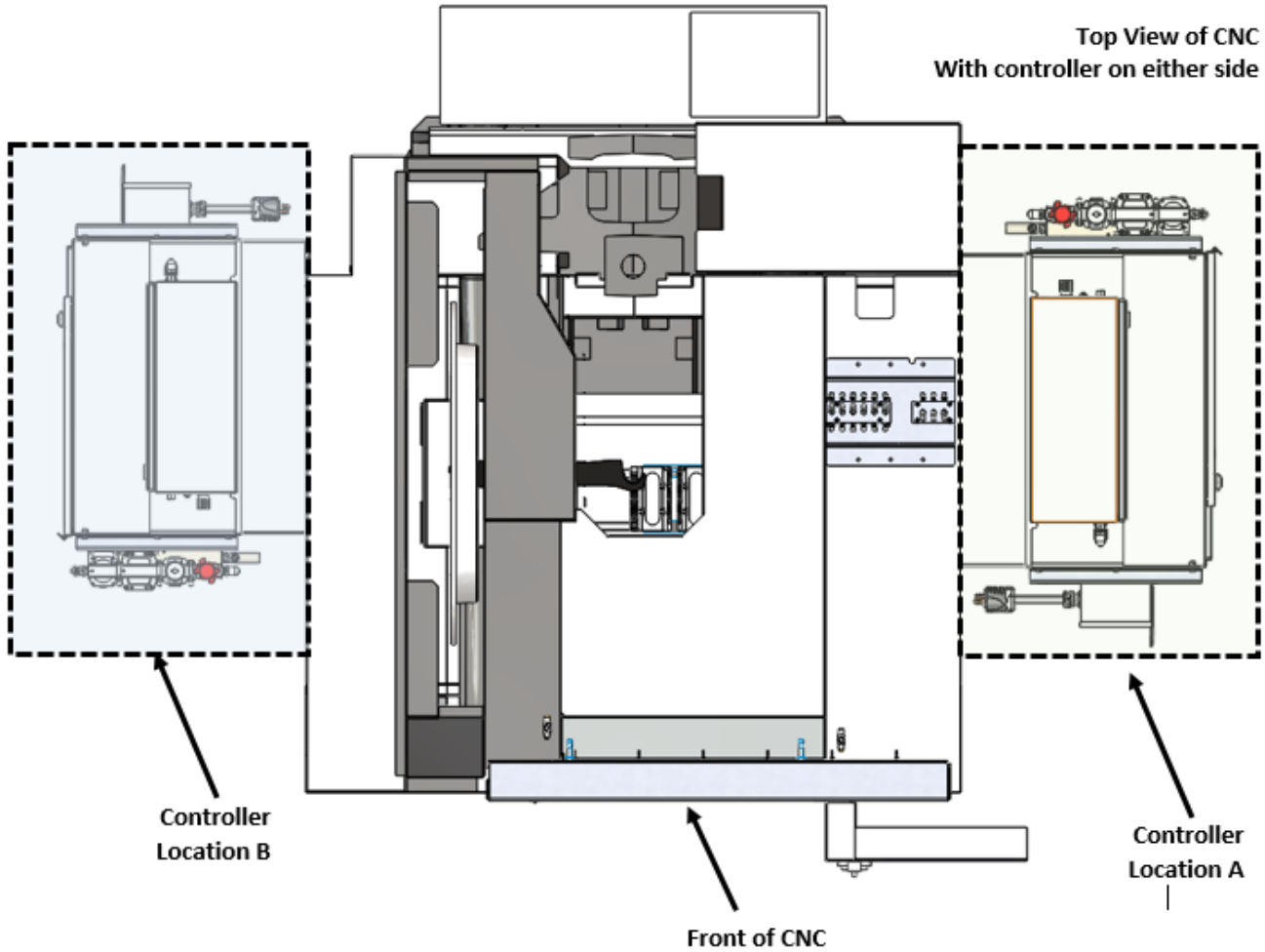


Figure 4 - Robot Controller shown on both sides of CNC

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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:

- Recommended circuit breakers are UL489 compliant 20A, 3phase
- Customer to provide electrical service via NEMA connectors, twist lock style (*see image below*):
 - **Receptacle for 208-240VAC - L1520R** *VBX-160 comes with Plug- L1520P
 - Distance: within 10 feet of VBX equipment
- Recommended wire size is for this electrical service is AWG #10 or larger.



Figure 5 – Customer to provide Power Receptacle (L1520R)

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Compressed Air

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

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

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

- The required input air supply line size is ½”.
- If you plan to use a quick coupler, use a ½” coupler for the ½” 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 requires the customer to provide regulated air below 145 psi.

VersaBuilt VBX/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. For CNC’s with a VersaBuilt supplied door opener, the door opener will not be energized if any of the safety sensors are interrupted.