

V E R S A **B U I L T**

VBX

Manual operation

Adjusting Vise Pressure for Boosted Systems

Document #5002217

Revision	Revision Description	Date	By:
A	Initial Release	1/3/2017	BTB

Connect to CNC via DNC Sync

1. On CNC Control Panel Screen, hit MDI/DNC button until it reads “waiting for DNC”
2. Click “Done” in Actions field below where it states “Initiate DNC mode on the CNC control Panel”

The screenshot displays the VersaBUILT CNC control panel interface. At the top, there is a navigation bar with the VersaBUILT logo and several status icons: a red warning triangle, a red robot arm, a green battery icon, a red stop button, a lightbulb, a speedometer at 100%, a document icon with '51', and three buttons: 'DNC Sync' (blue), 'Reset' (orange), and 'Enable' (green).

The main interface is divided into two primary sections:

- Actions:** This section contains instructions for exiting recovery mode. It lists four steps: 1. Enable the cell, 2. Move the robot arm to CNC home, 3. Reconnect DNC, and 4. Address and clear the listed error actions. A blue 'Done' button is positioned to the right of these instructions. Below this, there is a button labeled 'Initiate DNC mode on the CNC control panel.' with another blue 'Done' button next to it. An arrow from the second step in the instructions above points to this 'Done' button.
- Recovery:** This section provides manual control for various components. It includes:
 - Arm:** A central control panel with a home icon, a green dot, and directional buttons for +Z, -Y, +X, -X, +Y, and -Z. A hand icon indicates manual movement.
 - Wrist:** Two circular arrows for rotation.
 - Gripper:** Two sets of directional arrows and a hand icon.
 - Wash:** A showerhead icon and a circular arrow.
 - Door:** Two sets of directional arrows.
 - Vise 1 and Vise 2:** Each has two sets of directional arrows and a hand icon.

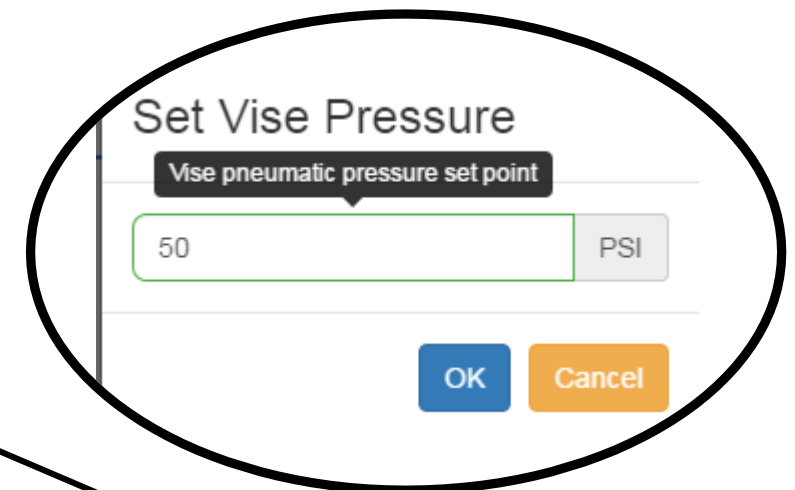
At the bottom of the Recovery section, there is a 'Movement' slider set to 0.25 in.

Active Jobs Table:

Part	Order	Processing	Remaining
140-215	001525	1	0

Adjust Vise Pressure

1. Double-click on Vise pressure/read-out symbol
2. Enter pressure value between 30 to 110 psi
3. Note: For Boosted Systems, the output pressure to the vise will be 1.9 times value entered on VBX screen



Actions ^ A

Press Enable to begin controlling the robot and CNC.

The following actions must be performed to exit recovery mode:

- 1. Enable the cell.
- 2. Move the robot arm to CNC home.
- 3. Reconnect DNC.
- 4. Address and clear the listed error actions.

[Done](#)

Active Jobs ✎ +

Part	Order	Processing	Remaining
140-215	001525	1	0

Recovery

Arm

Wrist

Gripper

Wash

Door

Vise 1

Vise 2

Movement 0.25 in.

Enable Manual Operation of Vise

1. Click on “Hand” symbol for each Vise shown
2. Note: This turns off the 24VDC signal to the solenoid valves to the vise during robot operation, allowing manual operation of the vises

The screenshot displays the VERSA BUILT control interface. At the top, there is a navigation bar with a menu icon, the text 'VERSA BUILT', and several status icons including a warning sign, a green leaf, a green battery, a red stop sign, a lightbulb, a speedometer at 100%, and a '50' icon. To the right of these icons are three buttons: 'DNC Sync' (blue), 'Reset' (orange), and 'Enable' (green).

The main interface is divided into two panels. The left panel, titled 'Actions', contains a pink background with the text 'Press Enable to begin controlling the robot and CNC.' Below this, it lists actions to exit recovery mode: '1. Enable the cell.', '2. Move the robot arm to CNC home.', '3. Reconnect DNC.', and '4. Address and clear the listed error actions.' A 'Done' button is located to the right of this list.

The right panel, titled 'Recovery', shows a 3D coordinate system for the 'Arm' with axes labeled '+Z', '-Y', '+X', and '-Z'. Below the coordinate system are several control panels: 'Wrist' (with circular arrows), 'Gripper' (with a hand icon), 'Wash' (with a showerhead icon), 'Door' (with a door icon), 'Vise 1', and 'Vise 2'. Each of the 'Vise 1' and 'Vise 2' panels contains a hand icon, which is circled in red. A grey arrow points from the text 'Click on “Hand” symbol for each Vise shown' to this circled hand icon. Below the control panels is a 'Movement' slider set to '0.25 in.'.

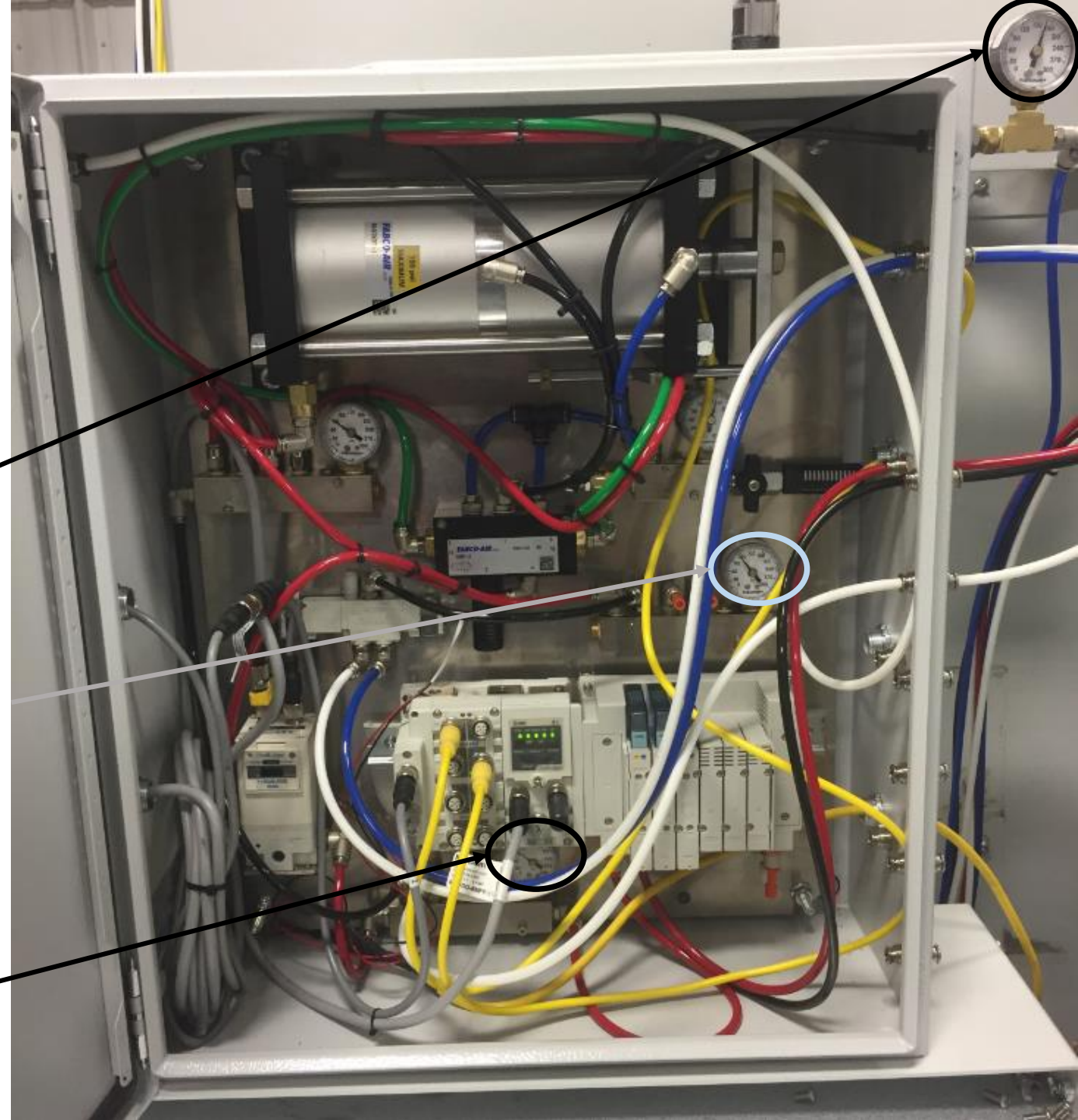
Part	Order	Processing	Remaining
140-215	001525	1	0

Verify pressure setting

1. After setting pressure, open Air/Electrical panel & verify regulated pressure equals set point on VBX screen
2. Verify “Boosted” air pressure to vise is approximately 1.9 times the set-point/regulated pressure
3. Note: Regulated pressure cannot be greater than VBX supply pressure

Examples:

Regulated Pressure	Boosted Pressure	Vise Clamping Force
50 psi	95 psi	3272 lbf
75 psi	143 psi	4908 lbf
100 psi	190 psi	6544 lbf
110 psi	210 psi	7200 lbf



Boosted Pressure

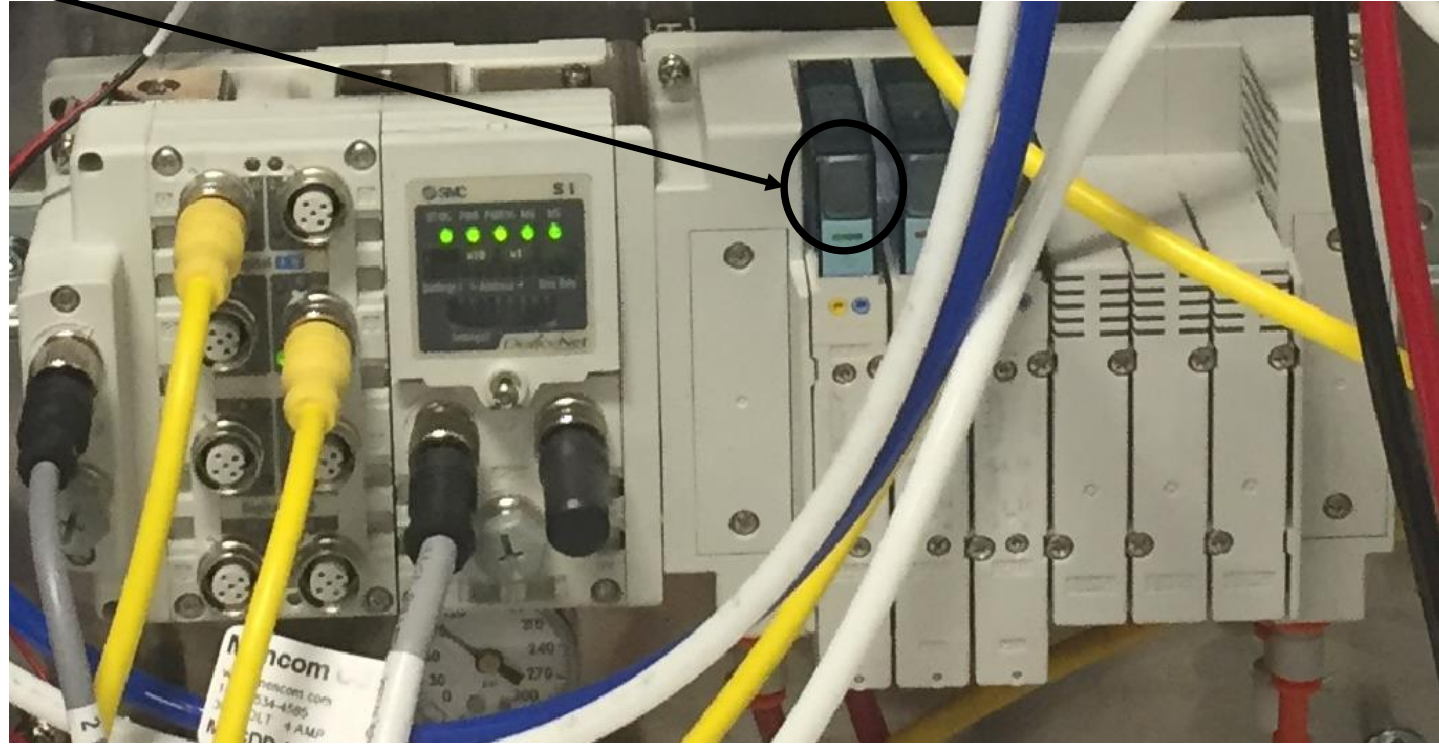
VBX Supply Pressure

Regulated Pressure

Verify vise is ready for manual operation

1. Check lights on Vise valve manifold
2. Lights on the top sections of each valve should be **OFF**

**Lights indicate either vise open or vise closed signals from VBX*



Verify Vise Movement

1. Using manual hand valve to the left of the MultiGrip vise, toggle open/close
2. Verify the “Boosted” pressure reaches 1.9x set-point pressure on each open/close (can take up-to 5 seconds to reach pressure)
3. Note: The manual valve has 3 positions: Vise Open, Vise Closed and closed center. When returning to robot operation, the manual valve must be placed in the closed center position

