

VERSABUILT ROBOTICS



Automation System
Read Me First

Safety Warnings

DANGER: VersaBuilt makes industrial machine tool automation components designed to be operated by trained personnel only. Machine tool automation components may move suddenly and without warning. Serious or fatal crushing injuries can occur from contact with the robot, gripper or vises.

Before deploying VersaBuilt industrial machine tool automation components, a safety risk assessment must be completed in accordance with local, state and/or federal requirements.

VersaBuilt industrial machine tool automation components should only be used by trained operators.

Read and understand the VersaBuilt Automation Safety Manual before proceeding

Thank You for Your Purchase



Thank you for purchasing a VersaBuilt Automation System. This is a tool for loading and unloading parts to and from your CNC milling machine. Like many tools used in manufacturing, it requires training to use safely and effectively.

When used by people with the proper training, the Automation System is a tool that will provide many years of service and greatly increase the productivity of the people and CNC equipment the it serves.

3-Step Installation Process

3-Step Installation Process

CNC automation requires two separate processes to function properly for success: the automation process and the CNC process. What many new automation users fail to realize is the steps and discovery required to make a CNC process that supports the automation process.

VersaBuilt recommends a 3-step Automation System installation process.

1. **Prove out parts via Handloading** - Workholding and G-Code is proven to make good parts via hand-loading. Operators are given instructions on how to load the parts and observe the process for possible problems during automated processing. Problems observed are addressed before the automation is added to the equation. For Mill Automation Systems with MultiGrip or 3rd party actuating pneumatic vises or chucks, the vises and hand-valves are installed but the rest of the system is not required.
2. **Connect system to Remote Support** - VersaBuilt support is ready to help and the best method is via a remote connection and direct contact with personnel. Before proceeding into Automation, verify with VersaBuilt that the Remote Connection is working properly. **refer to the VSC User Interface Manual to setup remote connectivity*
3. **Prove out parts via Automation** - Complete the automation equipment installation, including calibration and testing, then run parts with automation.

Installation Checklist

Download the “Automation System Installation Checklist”, available on the VersaBuilt Resources page at <https://www.versabuilt.com/resources/>

Follow the steps of the checklist, referring to Manuals for each step.

MANUALS

Automation System - Installation Overview Manuals

Preparation and Installation Documents

Read Me First

Safety Manual

Pre-Installation & Install Prep Checklist

Installation Checklist & Manual Map

Installation Overview

*See sections below for category-specific manuals

Automation System - Robot and Gripper Installation Manuals

Automation System - Calibration Manual

Automation System - Electrical, I/O, Network, and Pneumatics

MultiGrip Manuals

DuoGrip Manuals

Automation System - User Interface Manuals

VersaBuilt Automation System Installation Checklist

Serial No. VSC_____

Installation steps are:

- 1.0 Prove-out manual machining
- 2.0 Power up VSC and Enable Remote Support
- 3.0 Configure CNC connections
- 4.0 Setup automation hardware (Robot, Gripper, AutoDoor, etc)
- 5.0 Test devices with I/O Panel on U/I
- 6.0 Calibrate
- 7.0 Configure & Run parts
- 8.0 Complete user training

Before installation
Customer complete steps 1 & 2

Completion of step 3, validating system communication before installation, allows for any unique CNC features to be resolved before installation

1.00	Prove-out manual machining	Refer to Manuals, available at: https://www.versabuilt.com/resources/	Complete
1.01	Uncrate, organize material, access manual - hard copy of manual included with shipment - Latest version of manual available via download from VersaBuilt website - https://www.versabuilt.com/resources/	Installation Overview	
1.02	Install Vises (Mill only)	- Installation Overview MultiGrip Manuals: - MultiGrip Vise Overview	
1.03	Install Manual Valves and Pneumatics (Mill only)	- Installation Overview Electrical, I/O, Network, and Pneumatics: - Pneumatics MultiGrip Manuals: - MultiGrip Vise Overview	
1.04	Install VersaBuilt programs on CNC (9000's, 8000's) - Provided on USB - Available at https://www.versabuilt.com/resources/ - Program numbers can be changed if needed	User Interface Manuals: VSC/CNC Communication, G-Code and Programming Manual	

Manuals

Refer to up-to-date Manuals at <https://www.versabuilt.com/resources/>

Manuals, Resources and CAD Files

MANUALS

— Automation System - Installation Overview Manuals

Preparation and Installation Documents

- [Read Me First](#)
- [Safety Manual](#)
- [Pre-Installation & Install Prep Checklist](#)
- [Installation Checklist & Manual Map](#)
- [Installation Overview](#)

**See sections below for category-specific manuals*

+ Automation System - Robot and Gripper Installation Manuals

+ Automation System - Calibration Manual

+ Automation System - Electrical, I/O, Network, and Pneumatics

+ MultiGrip Manuals

+ DuoGrip Manuals

+ Automation System - User Interface Manuals

DATA SHEETS & GUIDES

Datasheets

[Mill Automation System w/ MultiGrip](#)
[VBX-160 Upgrade to Mill Automation](#)
[Mill Automation System w/ DuoGrip](#)
[Lathe Automation System w/ DuoGrip](#)
[MultiGrip Vise](#)
[MultiGrip Jaws](#)
[MultiGrip Gripper](#)
[DuoGrip Gripper](#)
[VersaCart](#)
[VersaDoor](#)
[Robot2CNC Basic Edition](#)
[Robot2CNC Advanced Edition](#)

Guides & Tools for Mill and Lathe Systems

[Cycle Time and Infeed Capacity Calculator](#)
[Site Acceptance Test Form \(Mill System\)](#)
[Site Acceptance Test Form \(Lathe System\)](#)

Guides & Tools for Build-Your-Own Systems

[CNC Automation Checklist & Guide](#)

3D MODELS

[Mill Automation System Example Applications](#)

CAD Models, Examples & Software Downloads

CAD Models, Application Examples and Software Downloads are available at <https://www.versabuilt.com/resources/>

3D MODELS

[Mill Automation System Example Applications](#)
[Lathe Automation System Example Applications](#)
[VersaCart and VersaCart Accessories](#)
[MultiGrip Gripper](#)
[MultiGrip Calibration Jaws](#)
[DuoGrip Gripper 400](#)
[DuoGrip Gripper 2000](#)
[MultiGrip Vise 4000](#)
[MultiGrip Vise 2000](#)
[MultiGrip Jaws](#)
[MultiGrip Top Jaws](#)
[VersaBites](#)
[VersaRails](#)
[Y-Push Tool \(for Mills\)](#)
[Z-Push Tool \(for Mills\)](#)
[Lathe Z-Push Tool](#)
[VersaDoor](#)
[MultiGrip Pallet Jaw System](#)

SOFTWARE DOWNLOADS

[Robot2CNC Files](#)
[Automation System Files](#)

Software Downloads include the files supplied on USB with installation. If the USB cannot be located with the system, are out of date, or cannot be accessed, download the above files for the application.

Navigating the Automation System Manuals



The manuals included with the Automation System are targeted at three distinct users: the installer, the machinist and the operator. In some applications, one person may fill all three roles and in other applications, there may be one or two people performing the installation, two or three machinists adding parts to the system and a dozen or more operators that use the System.

All Users Must Read the Safety Manual

All users must read and understand the Safety Manual before installing or using the Automation System.

Navigating the Automation System Manuals

Installer

The installer(s) of the Automation System should start by reading the Safety Manual, then Installation Checklist, referencing the required Manuals. Before starting up the system, refer to the User Interface Manuals to become familiar with accessing and using the VSC User Interface.

When ready to begin the installation, refer to the following:

- Installation Manual
- User Interface Manuals
- Calibration Manual
- Preventative Maintenance Manual
- Troubleshooting Manual

Visit <https://www.versabuilt.com/resources/> for downloadable PDF manuals

Navigating the Automation System Manuals

Machinist

Machinists responsible for creating workholding and CNC processes should start with the **MultiGrip** and/or **DuoGrip** Manuals (depending on the application), **Fundamentals of Automation**, and **Chuck Considerations** (for Lathe Applications). For MultiGrip applications, become familiar with designing MultiGrip workholding and the fundamentals of CNC and automation process development. Guidance is given in the MultiGrip Manuals.

Next the Machinists should become familiar with the **VSC/CNC Communication, G-Code and Programming Manual** to understand how CNC programs interact with the the Automation System.

Finally, Machinists should read the **Part Configuration Manuals, Operation Manual, Robot Home Positions**, and **Preventative Maintenance Manual** to become familiar with how to configure new parts in the VSC and use the VSC to validate the automation process.

Visit <https://www.versabuilt.com/resources/> for downloadable PDF manuals

Navigating the Automation System Manuals

Operator

Operators responsible for running and maintaining the Automation System in production should start with the **VSC User Interface Manual, Robot Home Positions, and Operation Manual** to become familiar with running the system and using the VSC.

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