

## Automatic Void Sensing System



**User's Guide**  
5010PRW-01, Rev A

# Automatic Void Sensing System

User's Guide  
5010PRW-01 Rev A

Original Instructions

**For Technical Service, call 1-800-243-1102 or 1-800-527-0733 (8am - 5:30pm, Monday-Friday, EST) or email [TSA@sealedair.com](mailto:TSA@sealedair.com) or [itechsupport@sealedair.com](mailto:itechsupport@sealedair.com)**

**Model :** \_\_\_\_\_

**Serial No:** \_\_\_\_\_

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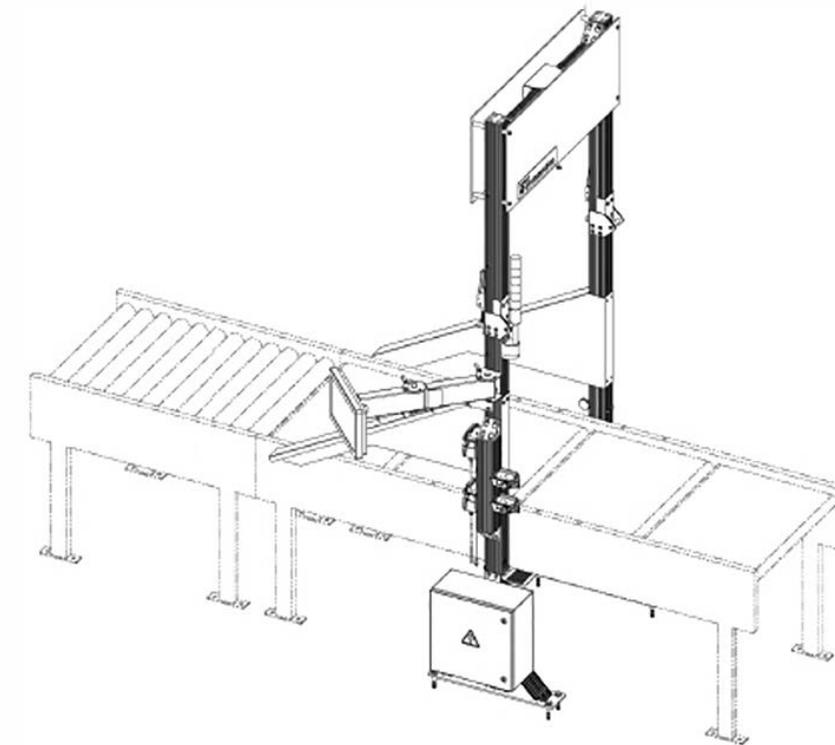
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## 1 Introduction

This manual is a comprehensive reference for the Sealed Air Auto Void Sensing (AVS) system. This section includes a system overview, specifications, and information about this User's Guide.

### 1.1 System Overview

The AVS system enables the customer to automate the production of void fill for individual boxes in a conveyor fed packaging system.



*Figure 1-1 The AVS system Implementation*

For each box on the production conveyor, the AVS system scans the contents of the box, calculates the amount of fill required to pack the box, and triggers an attached Sealed Air dunnage machine to output the appropriate amount of fill needed when the box arrives at the packing point in the work stream. After the operator packs the fill into the box and passes it downstream for processing, the infeed conveyor sends the next box into the AVS operating zone.

### 1.2 System Specifications

The AVS system works in conjunction with the customer's existing conveyor-based packaging environment. The customer environment must include a sensor driven infeed conveyor, a Sealed Air dunnage machine with a foot pedal, and a human operator who packs fill into the boxes.

## 1.3 About This Document

### Notes, Cautions, and Warnings

This User's Guide uses three types of special messages to emphasize important information. They are:



**Notes:** Notes provide important information that is not safety-related. All notes are preceded by the icon shown at the left.



**Cautions:** Cautions draw special attention to anything that could damage equipment or cause loss of data. All cautions are preceded by the icon shown at the left.



**Warnings!** Warnings draw special attention to anything that could cause injury or death to anyone using or working around the equipment. General warnings are preceded by the icon shown at the left. This User's Guide includes other warning icons, as needed, to convey the type of risk to the user. For a complete list of warning icons used in this User's Guide, see [2.2 Warning Symbol Definitions](#).

### Hyperlinked Cross References

In the electronic version of this User's Guide, cross references include hyperlinks that when selected, automatically bring you to the cross-referenced sections, figures, tables and procedures. Hyperlinks are displayed in blue bold italic text, such as the reference to the warning symbol definitions in the section above.

## 2 Safety

This section provides safety recommendations for the use of the Sealed Air AVS system.

It is advised that the user of this equipment follow the manufacturer safety statements, cautions, warnings, and energy isolation recommendations while taking the extra precaution of performing an independent safety inspection on the equipment before putting it into operation and servicing it.



**Warning!** Do not place this packaging equipment into operation or undertake maintenance or troubleshooting procedures until all personnel associated with the machine have been made aware of and understand the warnings and potential hazards described in this section and throughout this User's Guide.

### 2.1 Residual Risks

Although extensive precautions have been taken in the design and manufacture of this packaging system, all risk of potential hazards cannot be removed. Operation of this equipment involves certain residual risks. To minimize exposure to risks associated with operating and servicing the machine, ensure that all employees read and understand the safety guidelines in this User's Guide.



**Warning!** If unsure about a potential hazard associated with this machine, contact a Sealed Air representative prior to operating or servicing the machinery.



**Warning!** It is the product owner's responsibility to ensure that all personnel are properly trained and follow the safe operating practices recommended in this User's Guide.



**Warning!** Under no circumstances should this equipment be run with any of its guards removed or any of its safety devices non-functioning.

## 2.2 Warning Symbol Definitions

This section defines the warning symbols used in this document and on equipment safety labels.

### General Hazard Warnings

This symbol indicates the presence of a potential hazard to the personnel working on or around the equipment. Use caution when working around machine parts labeled with this symbol. Refer to this User's Guide for specific hazards.



### Electrical Hazard Warnings

This symbol indicates the presence of a potential electrical hazard to personnel working on or around the equipment. Turn off and lock out system power and air before servicing equipment when this safety label is present or when following instructions labeled with this symbol.



### Class 2 Laser Warnings

This symbol indicates the presence of devices that use class 2 lasers. Do not stare directly into lasers for an extended period or with optical aids.



### Heat Warnings

This symbol indicates the presence of a thermal hazard to personnel working on or around the equipment. Do not remove protective guards and keep extremities clear of parts labeled with this symbol. Allow the system to cool completely and turn off and lock out system power and air before servicing equipment when this safety label is present or when following instructions labeled with this symbol.



### Entanglement Warnings

This symbol indicates the presence of moving parts that may present entanglement hazards to personnel working on or around the equipment. Moving parts can crush and cut. Do not remove any protective guards and keep extremities, clothes, and hair clear of parts labeled with this symbol. Turn off and lock out system power and air before servicing equipment when this safety label is present or when following instructions with this symbol.



### Pinch Warnings

This symbol indicates the presence of moving parts that may present pinch hazards to personnel working on or around the equipment. Moving parts can pinch. Do not remove any protective guards and keep extremities clear of parts labeled with this symbol. Turn off and lock out system power and air before servicing equipment when this safety label is present or when following instructions with this symbol.



### Crush Warnings

This symbol indicates the presence of moving parts that may present crush hazards to personnel working on or around the equipment. Moving parts can crush and cut. Do not remove any protective guards and keep extremities clear of parts labeled with this symbol. Turn off and lock out system power and air before servicing equipment when this safety label is present or when following instructions with this symbol.



### Puncture Warnings

This symbol indicates the presence of moving parts that may present a piercing or puncture hazard to personnel working on or around the equipment. Moving parts can pierce and puncture. Do not remove any protective guards and keep extremities clear of parts labeled with this symbol. Turn off and lock out system power and air before servicing equipment when this safety label is present or when following instructions with this symbol.



### Cut Warnings

This symbol indicates the presence of moving parts that may present cutting hazards to personnel working on or around the equipment. Moving parts can crush and cut. Do not remove any protective guards and keep extremities clear of parts labeled with this symbol. Turn off and lock out system power and air before servicing equipment when this safety label is present or when following instructions with this symbol.



### Drawing In Hazard Warnings

This symbol indicates the presence of a potential drawing in hazard to personnel working on or around the equipment. Keep extremities, clothes, and hair clear of parts labeled with this symbol.



### Machine Guard Warnings

This symbol indicates the presence of moving parts that may present a hazard to personnel working on or around the equipment. Do not operate this equipment when guards are missing or open. Serious injury can result!



### Stay Clear Warnings

This symbol indicates the presence of automatic moving parts that may present a hazard to personnel working on or around the equipment. Do not remove any protective coverings and keep extremities clear of parts labeled with this symbol. Turn off and lock out system power and air before servicing equipment when this safety label is present or when following instructions with this symbol.



### Lockout/Tagout Warning

This symbol indicates the presence of equipment that must be locked and tagged out before being serviced. Do not perform any maintenance or troubleshooting procedures on this equipment until all power is removed and the equipment is secured following your organization's Lockout/Tagout procedure.



## 2.3 General Warnings

This section includes general warnings and cautions. In addition, these and other warnings and cautions have been placed in relevant places throughout this document. If in doubt about a hazard associated with this equipment, contact Technical Support. See [6.3 Technical Support and Customer Service](#) for contact information.

 **Warning!** To minimize potential for personal injuries, ensure that machine operators and others working on or around the machinery are properly trained in correct equipment use and safe operating procedures.

 **Warning!** Keep all extremities, loose clothing, jewelry, and hair away from moving assemblies and conveyors.

 **Warning!** Worn or frayed conveyor belts are hazardous and should be replaced promptly.

 **Warning!** Never operate this or any moving equipment without all covers and guards in place. The internal mechanisms of packaging machinery contain numerous shear, pinch and in-running nip points capable of causing severe injury and permanent disfigurement.

 **Warning!** Only approved packaging and parts should be used with this system. Use of other packaging materials and/or parts on the system may cause damage to the machinery and pose safety hazards. When unauthorized use of parts or materials has occurred, Sealed Air Corporation reserves the right to refuse service including but not limited to: maintenance, troubleshooting, supplies, and parts provided by Sealed Air (US).

 **Warning!** In order to prevent injury to personnel and/or machinery, do not increase settings on either electrical or mechanical overload safety devices.

 **Warning!** Do not make modifications to the programmable logic controller (PLC), the electrical circuitry, or the mechanical assemblies of this machinery. Modifications may introduce hazards not typically associated with this machinery. Sealed Air Corporation cannot be held responsible for malfunctions, personal injury, or property damage resulting from unauthorized modifications.

 **Warning!** Use of extension cords to connect the system to a power supply is prohibited. The system power cord must be plugged into a grounded source.

 **Warning!** In order to prevent injury to personnel or damage to machinery, properly ground the equipment in accordance with national, state, and local electric codes.

## 2.4 Energy Isolation

The following guidelines are provided to define a minimum requirement for the disconnection/isolation of energy sources whenever maintenance or service is performed on the machine and associated parts. It is further advised that an independent safety study be performed on the machinery, its installation, and that site Lockout/Tagout procedures be reviewed.

 **Caution:** Prior to performing any maintenance or troubleshooting procedures described in this User's Guide, review the following important steps.

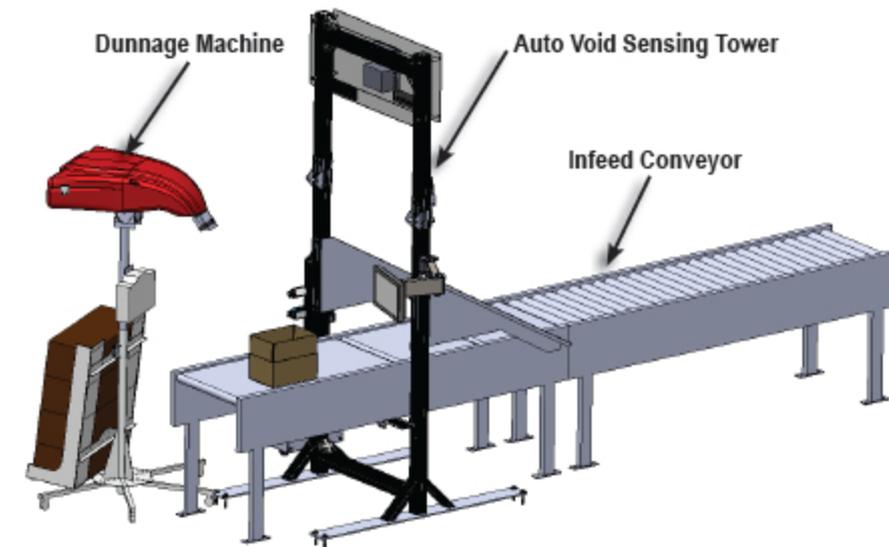
1. Read and heed all warnings and cautions presented in this Safety section and throughout this User's Guide.
2. Shut the equipment down using normal stopping procedure.
3. Press an Emergency Stop (E-Stop) button on the equipment, if applicable.
4. Ensure that all controls are in a neutral or OFF position.
5. Isolate the machine from its energy source by unplugging the main power cord.
6. Where applicable, disconnect the main air line from the equipment.
7. Follow your facility's Lockout/Tagout recommendations during shutdown, maintenance, and restart of the equipment.

### 3 System Description

This section contains an operational overview of the AVS system and describes its main components, hardware integration, and dashboard software controls.

#### 3.1 Operational Overview

The AVS system integrates a sensing tower into the customer's conveyor-based packaging system. The AVS tower includes sensors, scanners, and other components which enable software to identify a box on the conveyor, calculate the amount of fill that the box requires for packaging, and output the fill to the packing station in the work stream.



*Figure 3-1 The AVS System on a Production Conveyor*

Each step in the AVS system operation is described below:

1. An infeed conveyor sends a box forward on the packing conveyor toward the packing station and pauses the remaining boxes on the infeed.
2. The box travels down the conveyor and enters the AVS operating zone.
3. The AVS Through-Beam sensor detects the leading edge of the box and triggers the AVS scanners to begin scanning.
4. The overhead void scanner examines the interior of the box to determine the packed product volume.
5. Barcode readers scan the UPC on the box side wall to obtain the box configuration data.
6. While the box continues down the conveyor, the AVS system sends the box dimensions and product volume data to the software, which calculates the void.
7. The AVS software uses the void data and the desired density level to calculate the amount of fill that the box requires and sends this information to the paper dunnage machine.

8. The dunnage machine outputs the required amount of fill just as the box reaches the packing employee.
9. The operator packs the fill into the box and manually pushes it out of the AVS operating zone.
10. The system is ready for the next box to proceed into the AVS operating zone.
11. The AVS system continues to operate so long as the infeed conveyor sends boxes into the AVS operating zone.

### 3.2 System Design

The Sealed Air AVS system consists of a sensing tower which integrates into the customer's conveyor-based production environment.

Use the following figure and table to identify the AVS main components.

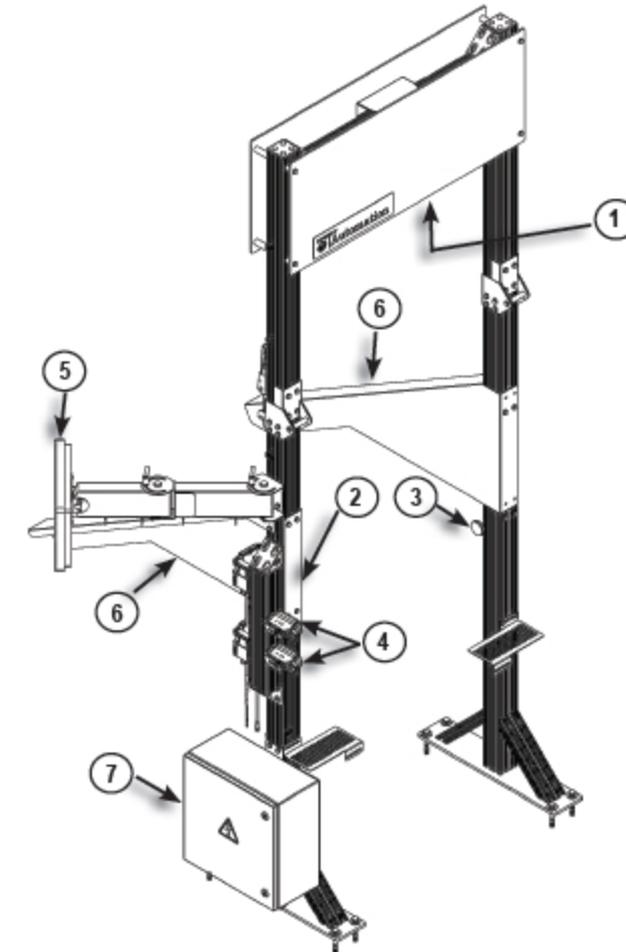


Figure 3-2 The AVS Sensing Tower

Table 3-1 AVS System Main Components

1	Void Scanner (behind panel)	5	HMI Tablet
2	Through-Beam Sensor (behind rail)	6	Box Flap Guides
3	Through-Beam Reflector	7	Electrical Enclosure
4	Barcode Readers		

### 3.3 Main Components

This section describes the AVS system main components.

#### Through-Beam Sensor

The Through-Beam sensor bounces light off of a reflector to determine when a box enters or exits the AVS operating zone. When the leading edge of a box breaks the beam of the Through-Beam sensor the AVS begins scanning the box.

When the trailing edge of the box travels past the Through-Beam sensor the AVS system stops scanning.

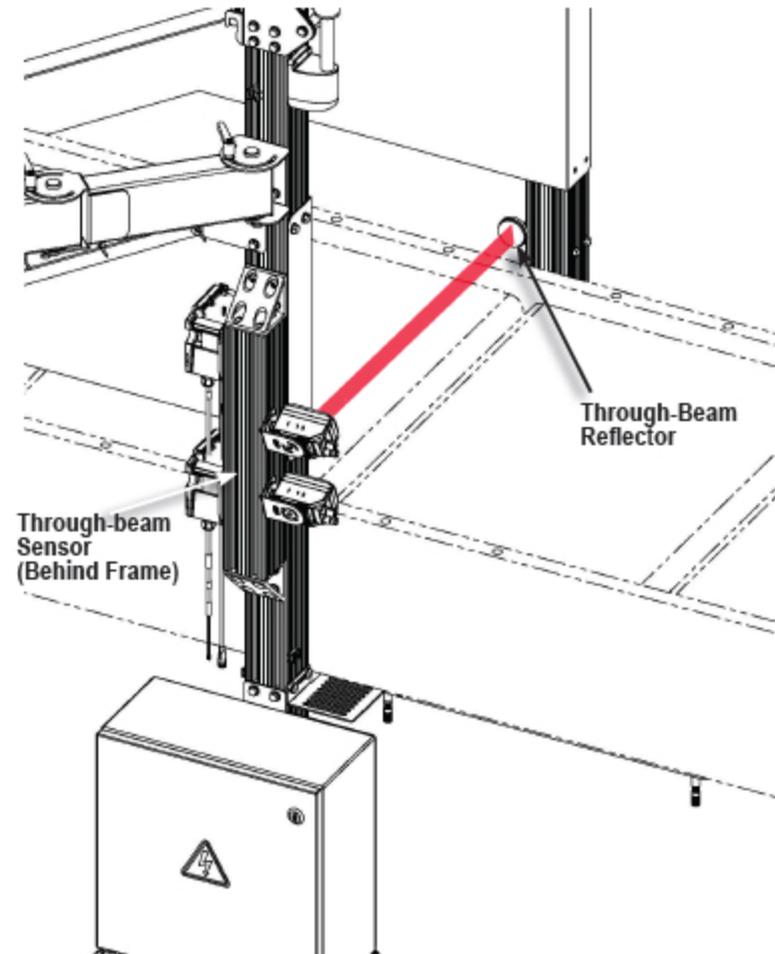


Figure 3-3 The Through-Beam Sensor



Warning! Do not stare directly into lasers for an extended period or with optical aids.

#### Void Scanner

The Void scanner, located at the top of the AVS tower, examines the contents of a box to determine the volume of product it contains. The scanner points down toward the conveyor belt. A gap in the conveyor segments must be located directly under the Void scanner for it to function properly. The Void scanner requires proper alignment and calibration at setup and if it becomes unaligned during use.

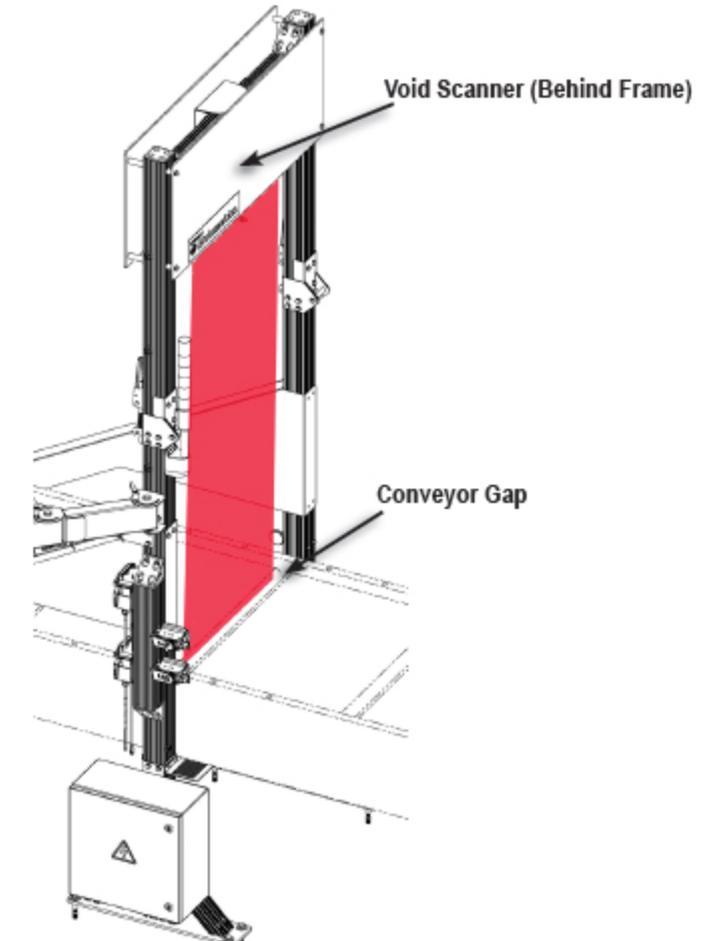


Figure 3-4 The Void Scanner's Area of Focus



Warning! Do not stare directly into lasers for an extended period or with optical aids.

### Barcode Readers

Barcode readers capture the UPC data on the box and send the data to the AVS software. The number of barcode readers included depends on the customer's requirements.

**Note:** The size of the barcode determines the size of the required barcode reader. Any change to the size of the barcode or boxes being processed requires a corresponding change to your reader.

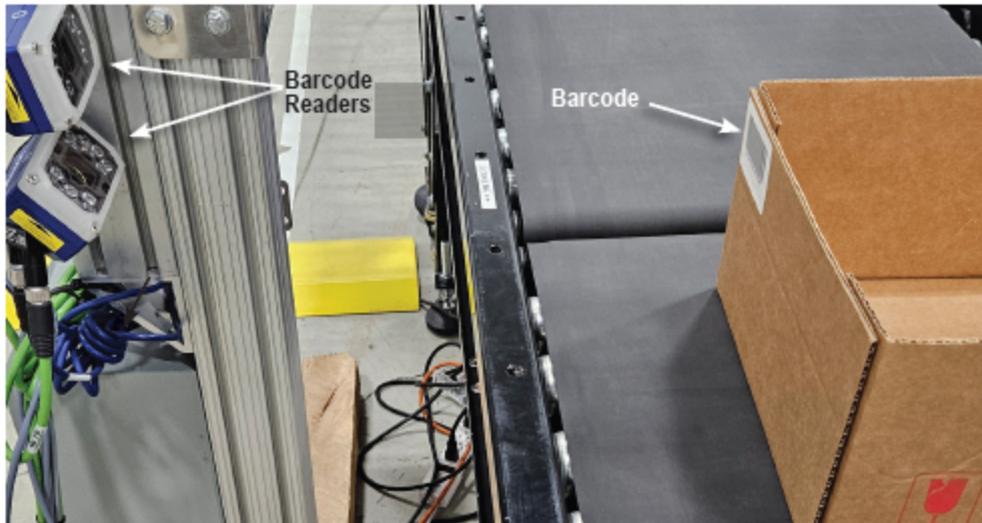


Figure 3-5 The Barcode Readers



Do not stare directly into lasers for an extended period or with optical aids.

### HMI Tablet

The HMI tablet provides access to the AVS Dashboard, which allows an operator to perform calibration procedures, set operating parameters, and access data related to the production environment. See [3.6 AVS Dashboard](#) for more information on the dashboard human machine interface (HMI).



Figure 3-6 The HMI Tablet

### Box Flap Guides

Box flap guides push the box flaps up to prevent them from covering the barcode or impeding the travel of the box on the conveyor.



Figure 3-7 The Box Flap Guides

### Electrical Enclosure

The electrical enclosure contains a standard 120V AC power supply, as well as connections to all of the devices attached to the sensing tower and to the dunnage machine. A Power switch is located on the side of the enclosure and remains powered on in conjunction with the production conveyor.

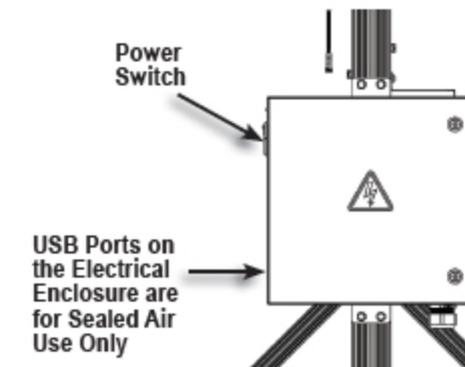


Figure 3-8 The Electrical Enclosure



**Warning!** Always turn the Power switch to the OFF position and unplug the main power cord in the approved manner using Lockout/Tagout (LOTO) procedures where indicated when performing maintenance procedures.

### 3.4 Infrastructure Requirements

The AVS system integrates with the customer's conveyor-based packaging environment, which must include the following requirements:

- A sensor driven production conveyor.
- An additional segmented, zone-sensing conveyor section located under the AVS tower, which establishes an operating zone. The segmented conveyor must have a gap opening between segments directly under the Void scanner.
- A Sealed Air dunnage machine with a foot pedal.
- A human operator to pack fill into the boxes and control the flow of product.
- Power source.

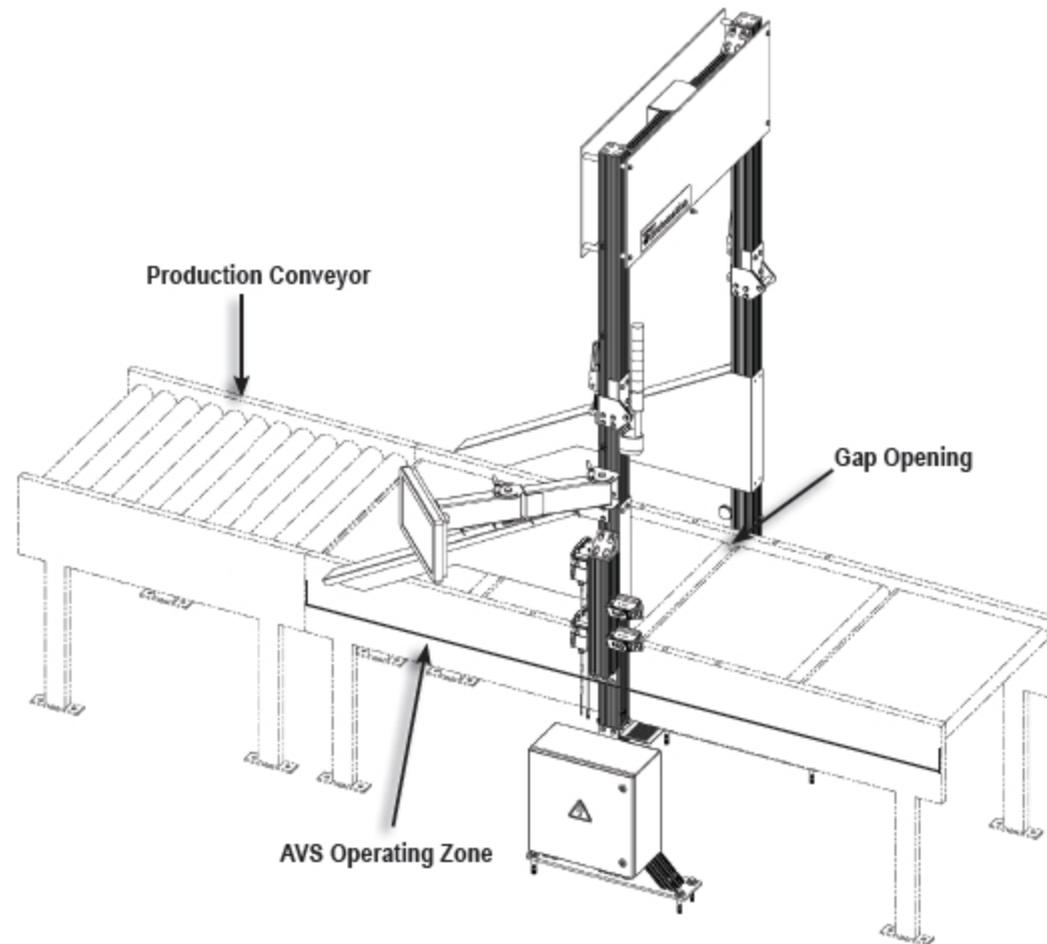


Figure 3-9 The Conveyor and AVS Operating Zone

### 3.5 AVS System On-Site Integration

#### Standard Conveyor-Based Package Processing

The AVS system is designed to integrate into a standard conveyor-based packaging system, which uses sensors to feed boxes containing product to an employee at a packing station. In a conventional system, the employee visually inspects each box in process to estimate the amount of fill it requires, uses a foot pedal to trigger a dunnage machine, and packs the fill into the box before passing it onto the next step of production.

A sensor regulates the flow of product by stopping the conveyors when a box is present at the packing station. When the employee packs a box and sends it forward in the work stream, the sensor triggers the input conveyor to send the next box into the packing area.

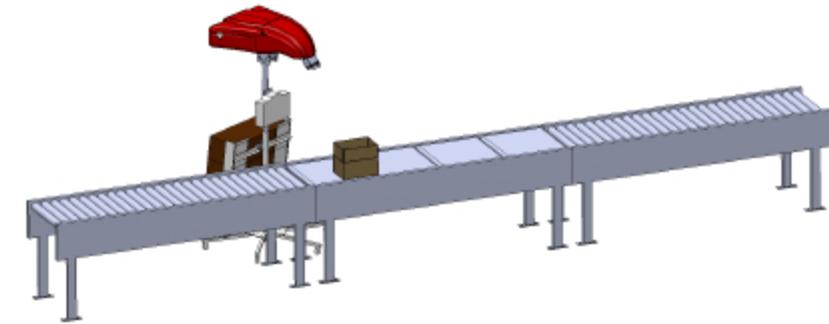


Figure 3-10 A Standard Conveyor-based System

#### AVS Automation

The AVS system adds a scanning tower between the input conveyor and the packing station which scans the contents of the box, calculates the amount of fill required to pack the box, and triggers an attached Sealed Air dunnage machine to produce the fill directly into the box when the operator needs it. The AVS system automates manual processes, helps regulate production, and provides software to track and control consumables.

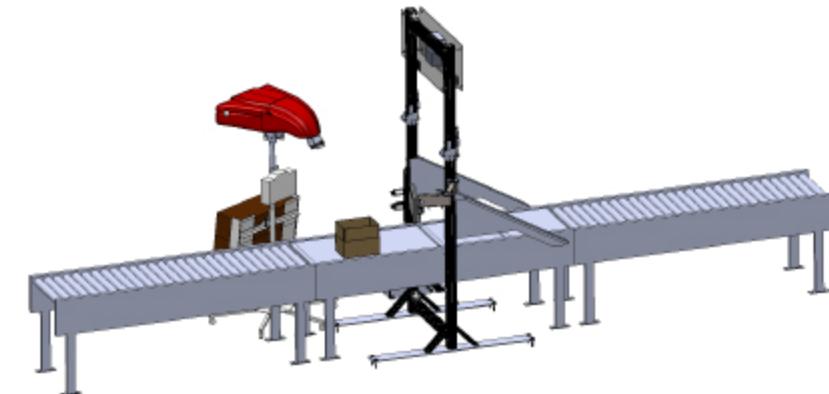


Figure 3-11 AVS system Integration

### 3.6 AVS Dashboard

The AVS Dashboard allows you to control the AVS system operating parameters and access production related data. Access the AVS Dashboard by logging in via the HMI tablet mounted to the AVS scanning tower.

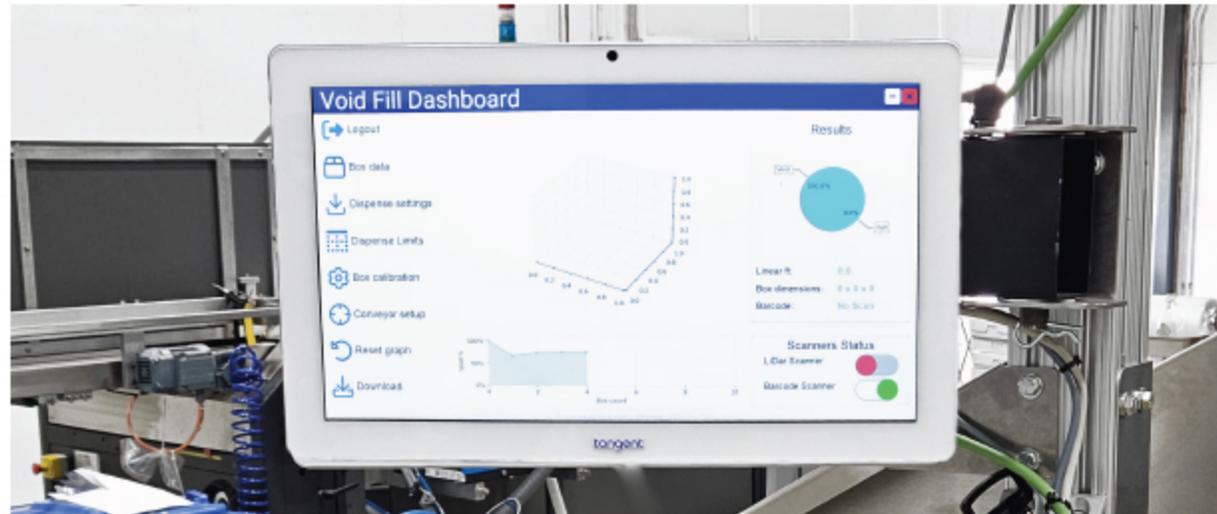


Figure 3-12 The HMI Tablet

Each component of the AVS Dashboard is identified in the graphic and described below.

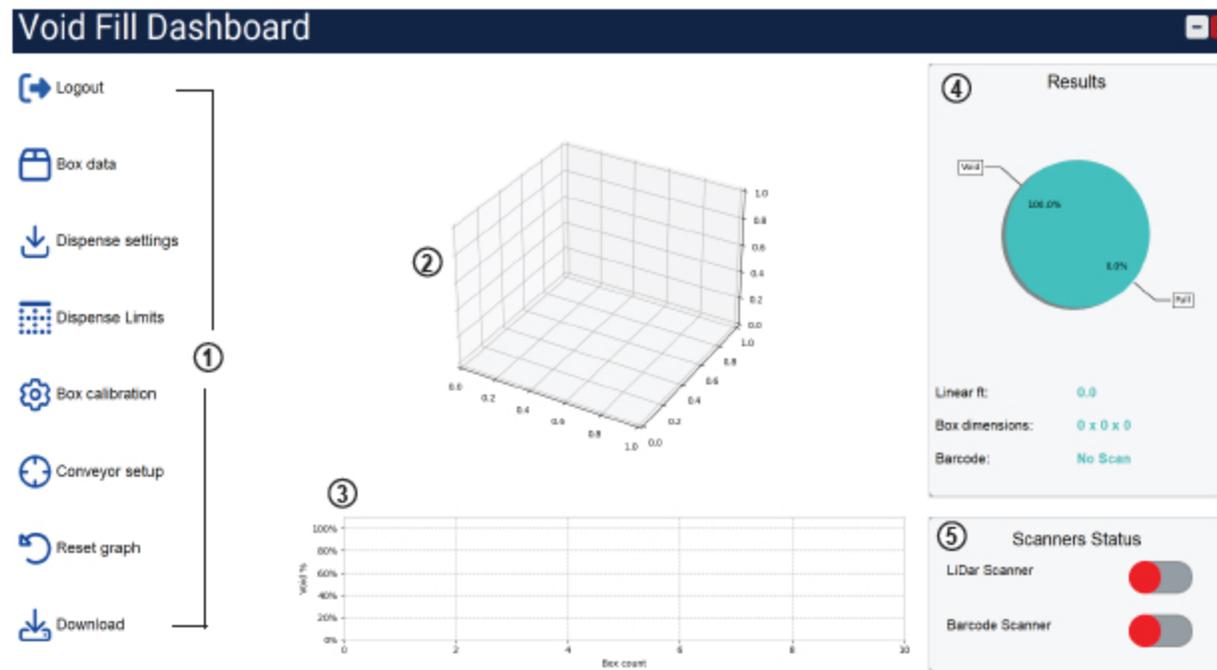


Figure 3-13 The AVS Dashboard Displaying Service Level Functions

1. **Software Functions** allow the operator to set up the AVS system, define boxes, calibrate components, and access data.
2. A **3D Graph** displays the product volume of the last processed box.
3. **Void %/Box** table displays the amount of void that the AVS system calculated for each of the last ten boxes that it processed.
4. **Results** pie chart graphically depicts the amount of fill versus the amount of void that exists for a box in focus.
5. **Scanners Status** indicators are red and positioned to the left if no Void scanner or barcode reader is detected. They are green and positioned to the right when those components are connected.  
If you connect a Void scanner or barcode reader during operation, slide the indicator bar to the right to signal its presence to the software.  
If the Scanner Status light resets to red it indicates that a scanner has lost contact with the AVS system.

#### AVS Dashboard Software Functions

Each software function in the AVS Dashboard is described below:

- **Login/Logout:** allows users to login to the dashboard with credentials to perform certain functions.
- **Box data:** allows users to enter a new box into the AVS system by supplying the barcode, alias and dimension data, or to delete boxes already defined in the system.
- **Dispense settings:** allows users to define the output speed of the dunnage machine as well as a desired density multiplier for all boxes during processing.
- **Dispense limits:** defines a maximum percent (Max %) of product that can be detected in a box before it is considered full by the system.
- **Box calibration:** ensures that the data associated with a defined box is accurate when processed by the AVS system.
- **Conveyor setup:** allows users to define the dimensions of the processing window for the AVS system.
- **Reset graph:** updates the 3D graph data if any exists for the box currently under focus.
- **Download:** causes the dashboard to download preconfigured data to a thumb drive connected to the HMI tablet. The Sealed Air Applications team configures this data for the customer's installation.

### Logging into the AVS Dashboard

Dashboard functions are available to users with the required login credentials: default Operator (no password), Maintenance (password required), and Service Level (password required). The functions available to each user level are listed below:

Table 3-2 AVS Dashboard User Levels		
Operator	Maintenance	Service Level
Login	Logout	Logout
Box data	Box data	Box data
Dispense Settings	Dispense Settings	Dispense Settings
	Dispense Limits	Dispense Limits
		Box Calibration
		Conveyor Setup
Reset Graph	Reset Graph	Reset Graph
Download	Download	Download

To login to the AVS Dashboard:

1. On the HMI tablet, press the Login icon.
2. From the Select User drop-down menu choose a user profile.



Figure 3-14 Login with Service Level Credentials

3. Type the password into the password field.
4. Press Sign In.

## 4 Installation Requirements

Sealed Air personnel install the AVS system into the customer's production environment. During installation the Sealed Air personnel aligns and calibrates all sensors and scanners and secures the AVS scanning tower to the production conveyor and, in some cases the floor, to prevent the system from becoming unaligned.

### 4.1 Installing the Sensing Tower

The sensing tower is mounted to footers which are secured to the floor to prevent the sensing tower from moving and thereby losing alignment with the conveyor.



**Warning!** Barcode readers and scanners use class 2 lasers. Do not stare directly into lasers for an extended period or with optical aids.

### 4.2 Aligning the AVS Sensing Tower with the Conveyor

The customer's production conveyor runs through the center of the AVS sensing tower.

The AVS installer aligns the sensing tower to the conveyor before securing the tower to the floor. The installer shifts the footers of the sensing tower relative to the conveyor so that the Void scanner beam projects into the center of the conveyor gap.

See [Aligning the Z Dimension](#) for more information.

### 4.3 Aligning the Through-Beam Sensor and Reflector with the Conveyor

The Through-Beam sensor must align with its reflector on the opposite rail of the conveyor, just before the conveyor gap. The Through-Beam sensor and reflector must be positioned no more than an inch above the conveyor rails to minimize the chance of a box flap triggering it.

The Sealed Air AVS installer uses alignment arrows affixed to the conveyor rails to align the Through-Beam sensor with the Through-Beam reflector.

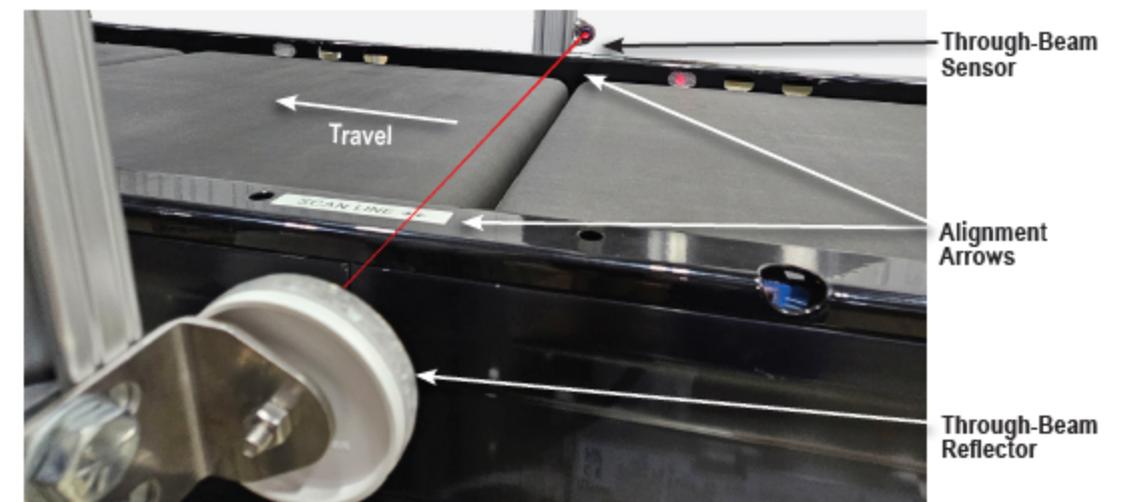


Figure 4-1 Through-Beam Sensor Alignment

## 5 Operation

Once the AVS sensing tower is installed onto the customer's production conveyor and powered up, it operates any time the production conveyor contains a box for processing. The AVS system has setup and calibration procedures that are performed during installation and when required during operation.

### 5.1 Calibrating the AVS System

The AVS system operates within a "scanning window," which is defined by the width and height of the scanning area under the sensing tower. The scanning window's X and Y axes must be calibrated so that the Void scanner knows the area of focus above the conveyor to operate on.

The X dimension represents the width and the Y dimension represents the height of the scanning window. The Z dimension aligns the scanning window with the center of the conveyor gap beneath the Void scanner.



**Warning!** Barcode readers and scanners use class 2 lasers. Do not stare directly into lasers for an extended period or with optical aids.

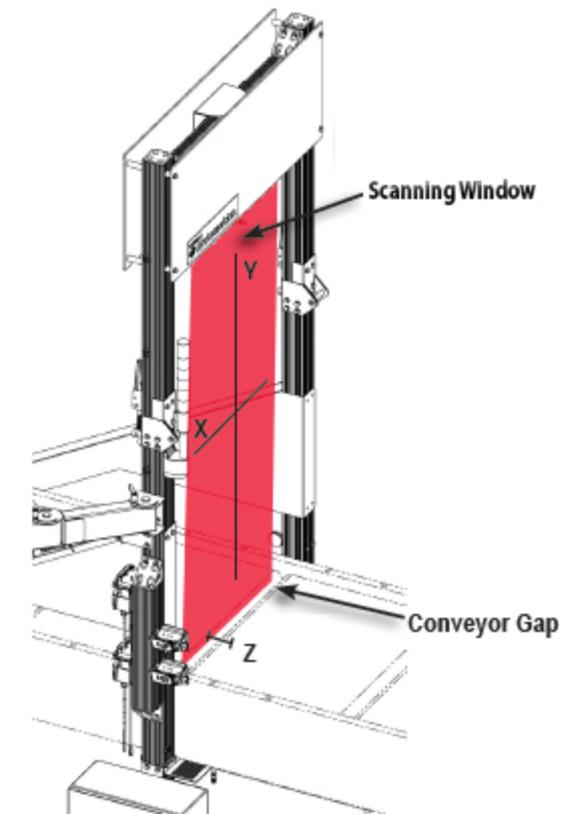


Figure 5-1 The AVS Scanning Window

### Aligning the Z Dimension

The scanning window is aligned along its Z dimension when the Void scanner beam is centered within the gap of the conveyor segments beneath it. This procedure occurs during installation before the sensing tower is secured to the floor and before any other calibration procedures occur. It is also necessary to align the scanning window's Z dimension whenever the sensing tower or production conveyor become unaligned due to movement.



**Warning!** Barcode readers and scanners use class 2 lasers. Do not stare directly into lasers for an extended period or with optical aids.

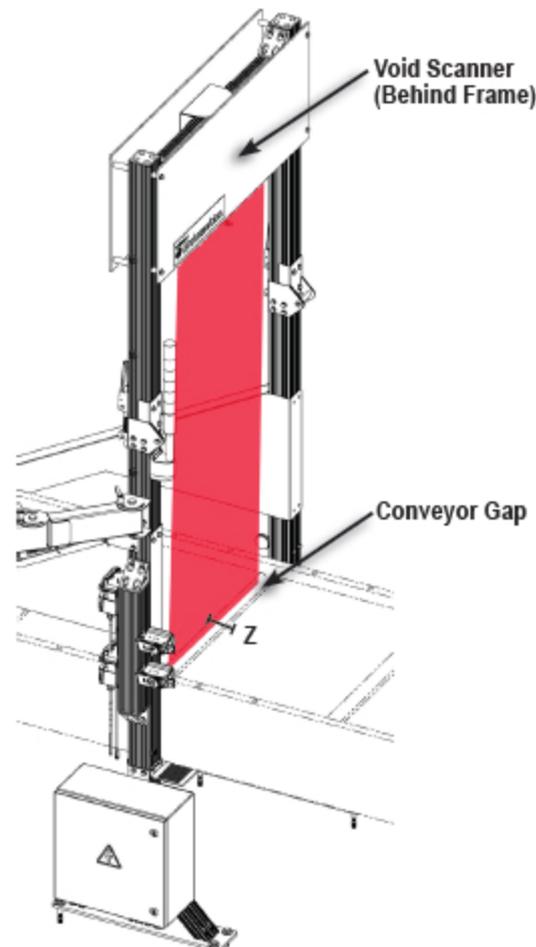


Figure 5-2 The Void Scanner Z Calibration

Complete these steps to align the scanning window Z dimension:

1. Activate the Void scanner by placing a box on the conveyor to trigger the AVS Through-Beam sensor.
2. Note the position of the Void scanner beam relative to the gap in the conveyor sections beneath it. To be properly calibrated, the scan beam must appear in the center of the two conveyor sections.
3. To adjust the scan beam reposition the sensing tower:
  - a. Detach the sensing tower foot anchors from the floor if they are attached.
  - b. With an assistant if necessary, move the sensing tower incrementally to adjust the position of the Void scanner.



**Warning!** The AVS tower is heavy. Be sure to always follow safe lifting procedures and comply with your facility's standard lifting practices.

- c. When the scan beam projects through the center of the conveyor gap, the Z dimension is properly calibrated.
- d. Reattach the sensing tower foot anchors to the floor.
- e. Calibrate the X and Y dimensions as described in the next section, *Calibrating the Scanning Window's X and Y Values*.

### Calibrating the Scanning Window's X and Y Values

The AVS system focuses on a "scanning window," which is defined by the width and height of the scanning area under the sensing tower.

During setup, the AVS Dashboard performs an automatic calibration scan and returns results, which you may adjust if necessary with software controls.

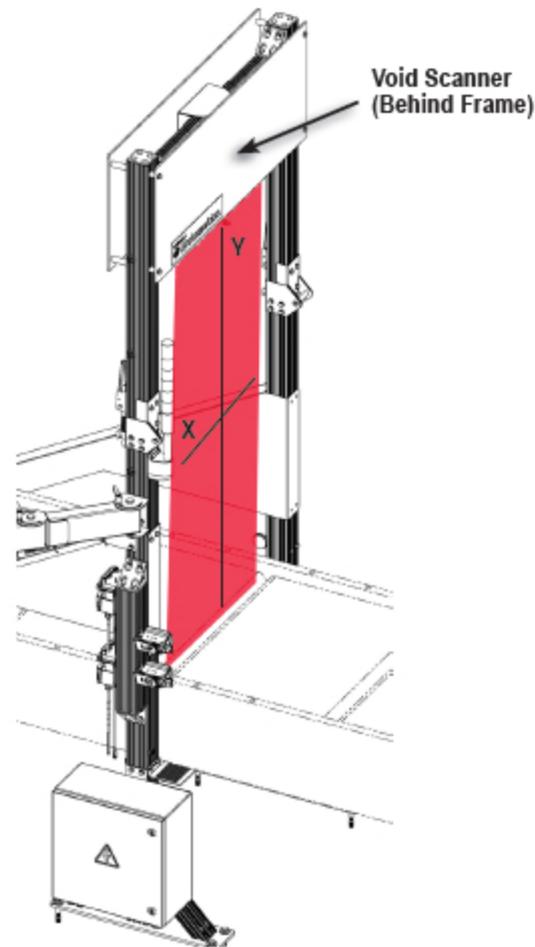


Figure 5-3 The Void Scanning Window

1. Login to the AVS Dashboard with service level credentials as described in [Logging into the AVS Dashboard](#).
2. In the dashboard, press **Conveyor Setup**.

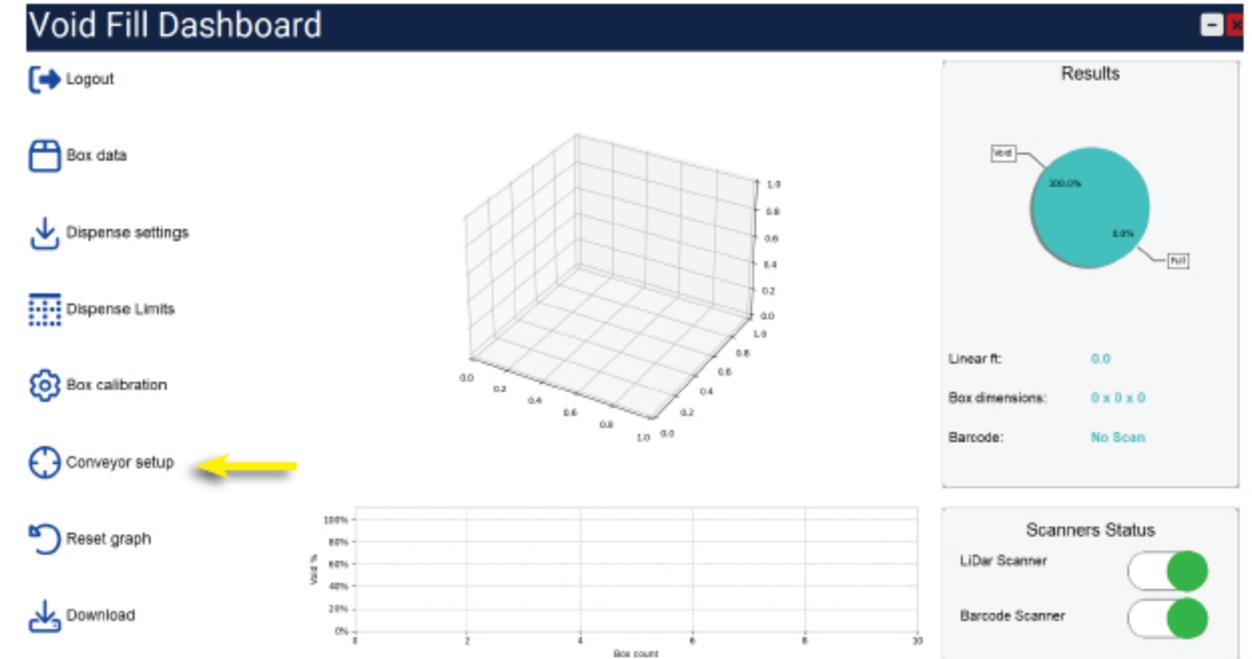


Figure 5-4 Entering Calibration Setup

The Dashboard displays the "Scan Line Limits" screen, which contains calibration tools for the scanning window's X and Y scan dimensions.

3. To calibrate the scanning window's X (horizontal) dimension press **Calibrate X**.

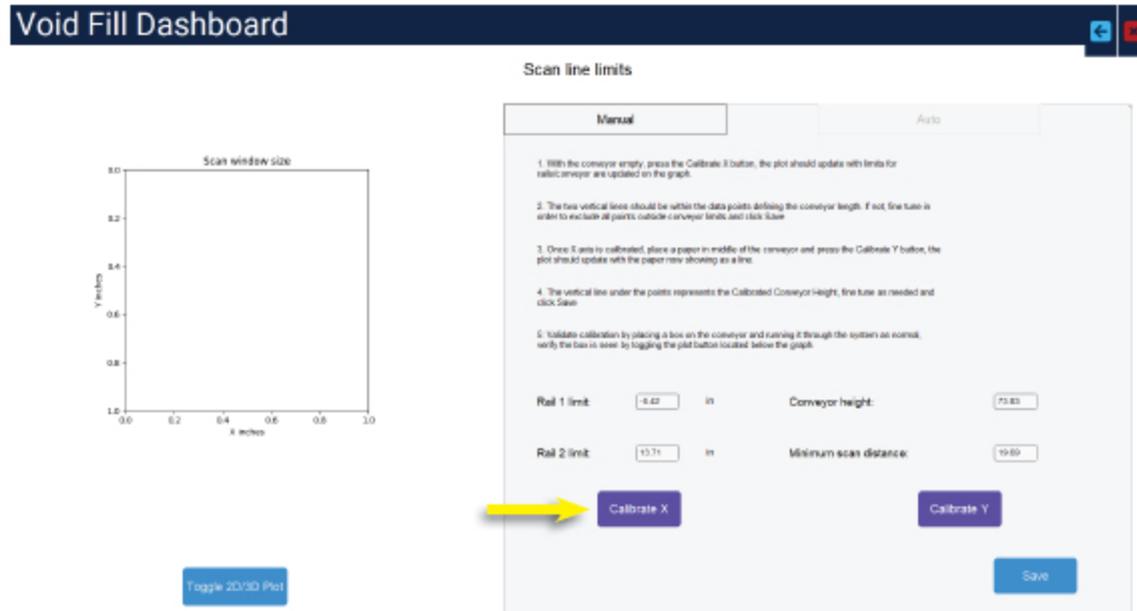


Figure 5-5 Calibrating the X Dimension

The Void scanner performs an auto calibration and displays the results for the dashboard's X dimension:

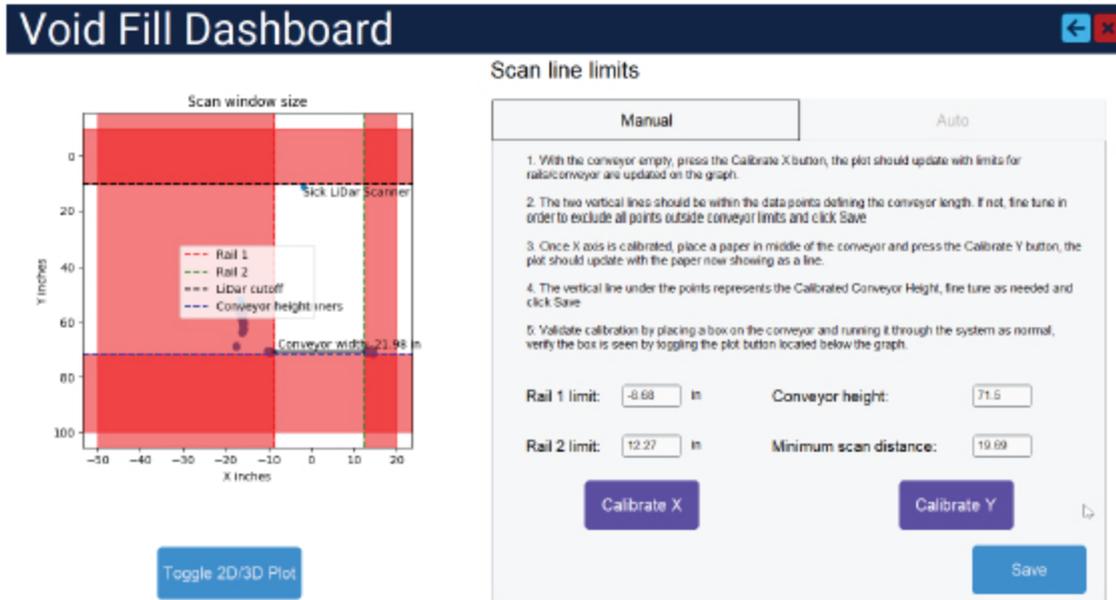


Figure 5-6 X Calibration Results

- Each measurement is taken from the left side of the scan window.
- 4. To adjust the results, type new values in the Rail 1 limit or Rail 2 limit fields.
- 5. Press **Save**.

The dialog box displays the message: "Scan limits saved successfully."

- 6. Calibrate the scanning window's Y (vertical) dimension as follows:
  - a. Prevent the conveyor from running by placing a box between the downstream sensors in the packing area.



Figure 5-7 Blocking the Conveyor from Running

- b. Place a flat piece of paper on the conveyor beneath the Void scanner. Make sure the paper is not bent to avoid skewing the calibration results.



Figure 5-8 Placing a Sheet of Paper Beneath the Void Scanner

c. In the AVS Dashboard, press Calibrate Y.

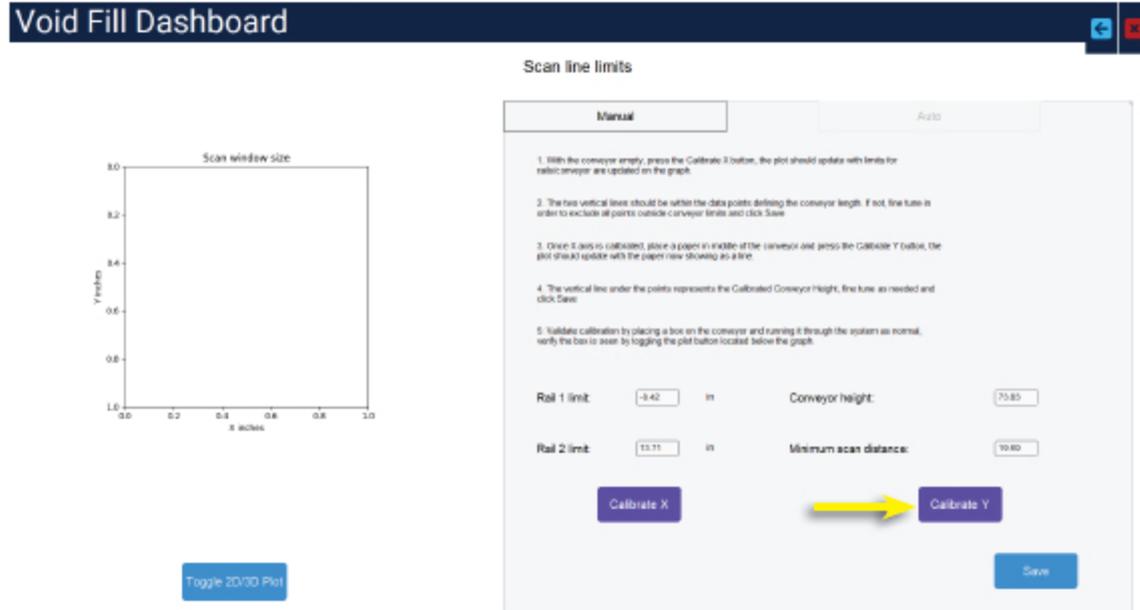


Figure 5-9 Calibrating the Y Dimension

The Void scanner performs a Y calibration scan and displays the results in the dashboard.

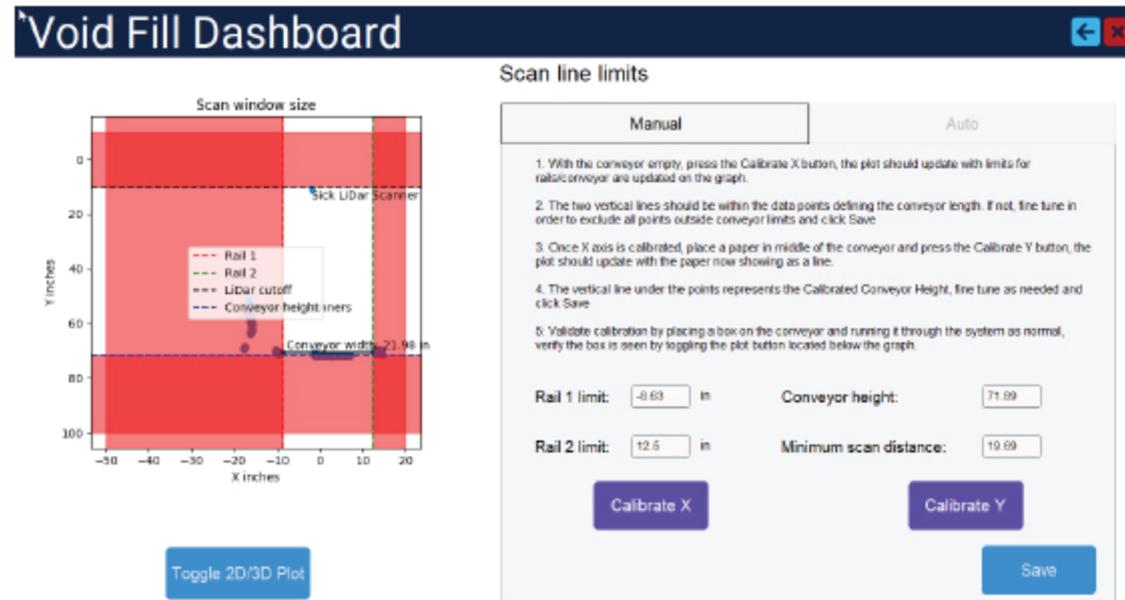


Figure 5-10 Y Calibration Results

- Conveyor height represents the distance from the conveyor to the Void scanner.
- Minimum scan distance limits the height of the scan window. Objects that are closer to the Void scanner than the minimum distance will be ignored.

7. To adjust the results, type new values in the Conveyor height or Minimum scan distance fields.
8. Press Save.
- The dialog box displays the message: "Scan limits saved successfully."
9. Remove the box from the downstream sensor.
10. Validate the calibration results:
  - a. Place an empty box on the infeed conveyor to run it through the system.



Figure 5-11 Running a Calibrated Empty Box

The AVS system scans the box and displays its data.

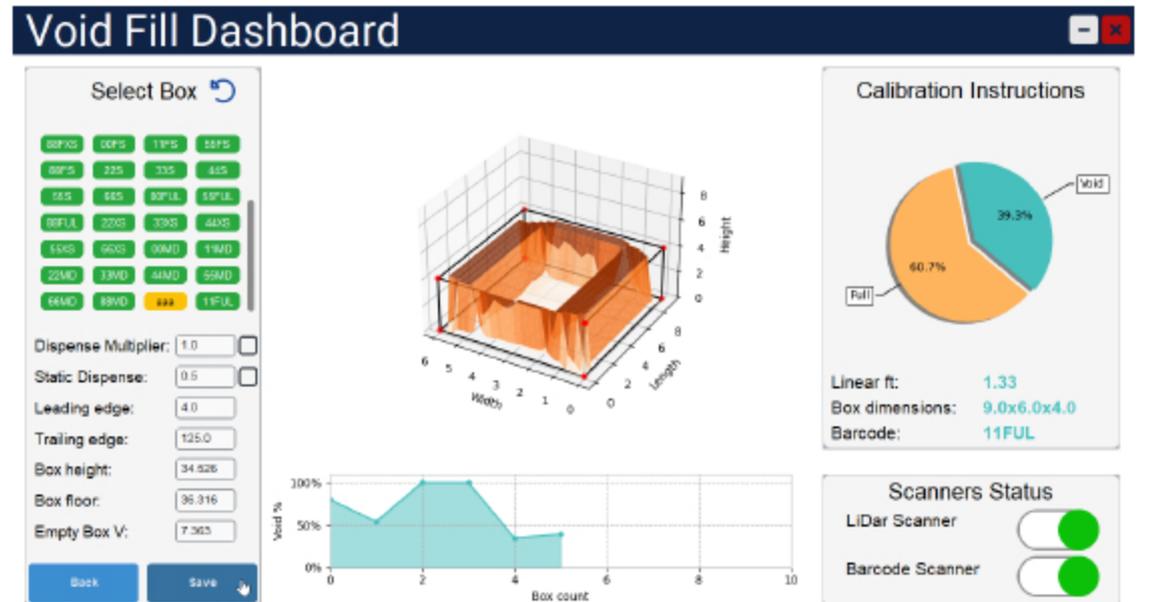


Figure 5-12 Toggling the 2D/3D Plot Button

- b. Confirm that the data displayed is correct.
  - i. If so, click Save to save the results into the AVS system.
  - ii. If not, click Back to return to the Calibration page and repeat the calibration procedure.

### 5.2 Adding Box Data to the AVS System

The AVS system requires the following specific data for each box that it processes:

- Barcode: a machine readable UPC label.
- Alias: a human readable name.
- Box dimensions: length, width, and height data which enable the software to calculate the box volume.

In all cases, the side of the box parallel to the direction of travel is designated as its length.



Figure 5-13 The Label Side of a Box is Always its Length

After you add a box to the AVS system you must calibrate the box to verify that the scanning tower is able to scan it accurately as described in [5.5 Calibrating a Box](#).

**Note:** The size of the barcode determines the size of the required barcode reader. Any change to the size of the barcode on the boxes or the box size you process may require a commensurate change to your reader.

Add a box to the AVS system:

1. In the AVS Dashboard press **Box data**.

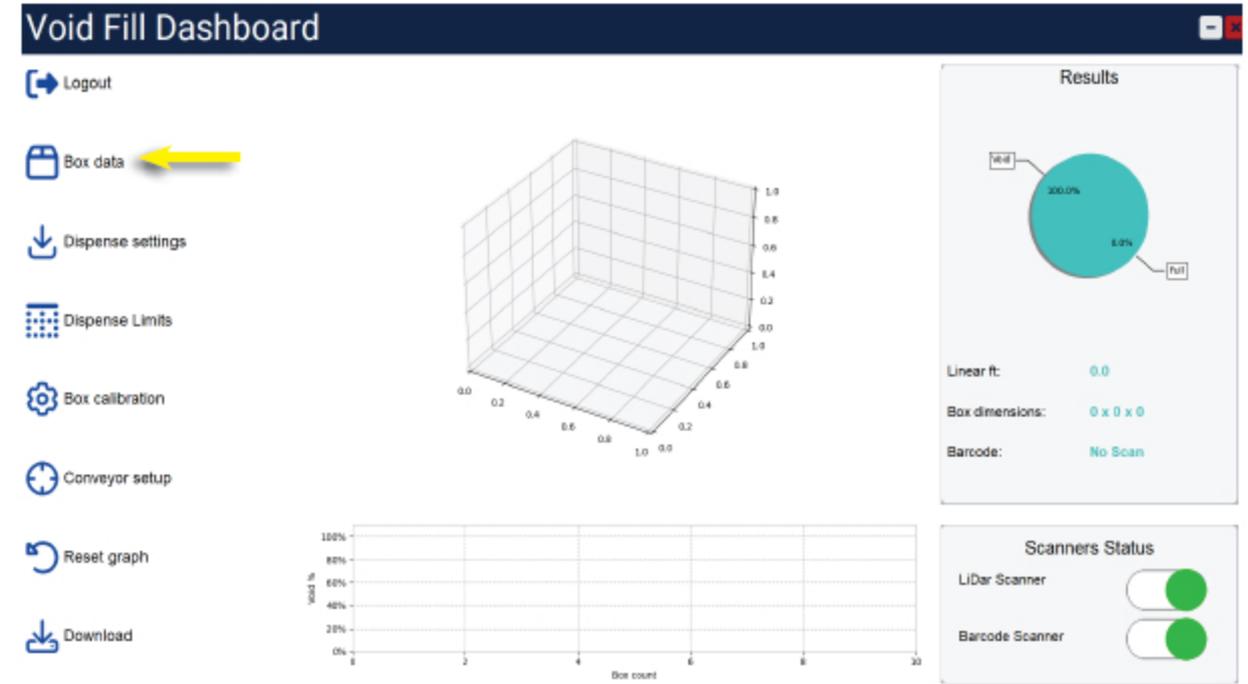


Figure 5-14 Selecting Box Data

A side panel opens displaying a list of boxes that already exist in the AVS system and three action buttons to create a new box, delete an existing box, or close the side panel and go back to the Dashboard main screen.

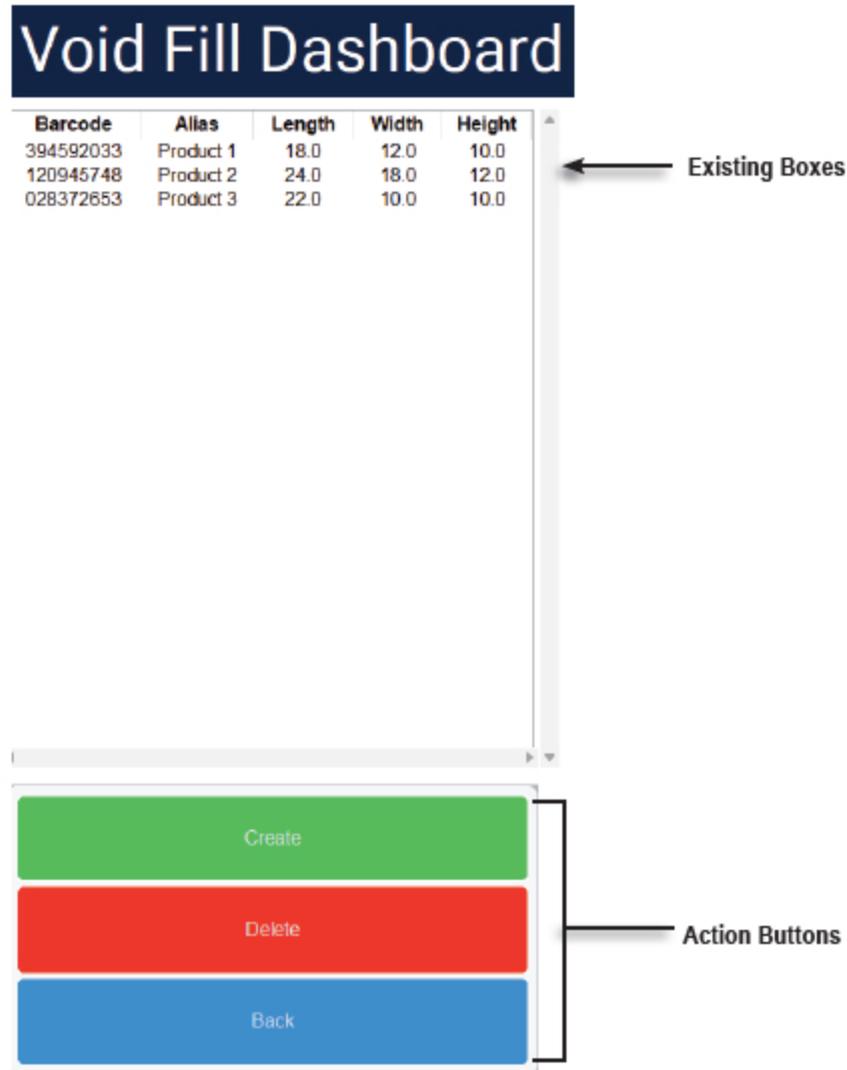


Figure 5-15 Creating a New Box

2. Press Create.

3. In the dialog box that appears enter the data for the box you wish to create and press Add.



Note: The side of the box parallel to the direction of travel is designated as the length.

Barcode:

Alias:

Length:

Width:

Height:

Cancel Add

Figure 5-16 Entering New Box Data

The new box data that you entered appears in the side panel.

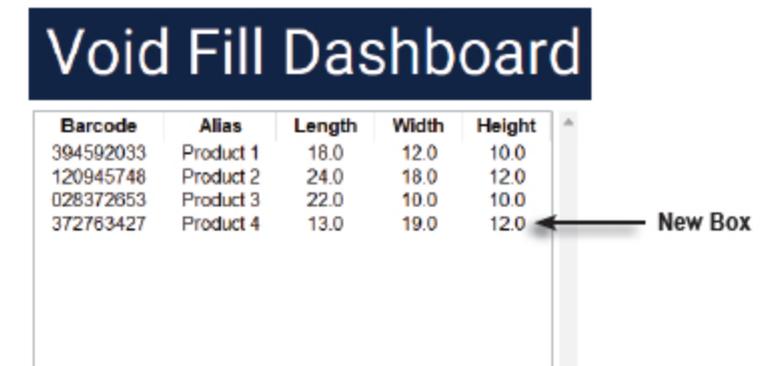


Figure 5-17 A New Box is Listed



Note: You must calibrate a new box in the AVS system before you can use it to process packages. See [5.5 Calibrating a Box](#).



Note: It is possible to define a box whose dimensions are not optimal for the barcode in use and as a result may not scan properly in the AVS system. If you define a box which the barcode reader cannot scan, call Sealed Air Application Support.

4. Press Back to close the side panel and return to the main AVS Dashboard screen.

### 5.3 Entering Dispense Settings

The **Dispense settings** allow you to enter the output speed of the dunnage machine and set a density multiplier that will apply to all boxes that the AVS system processes.

Required materials:

- Tape measure
1. Trigger your dunnage machine to output void fill for 1 second.
  2. Measure the length of the dunnage you produced.
  3. In the AVS Dashboard, press **Dispense settings**.

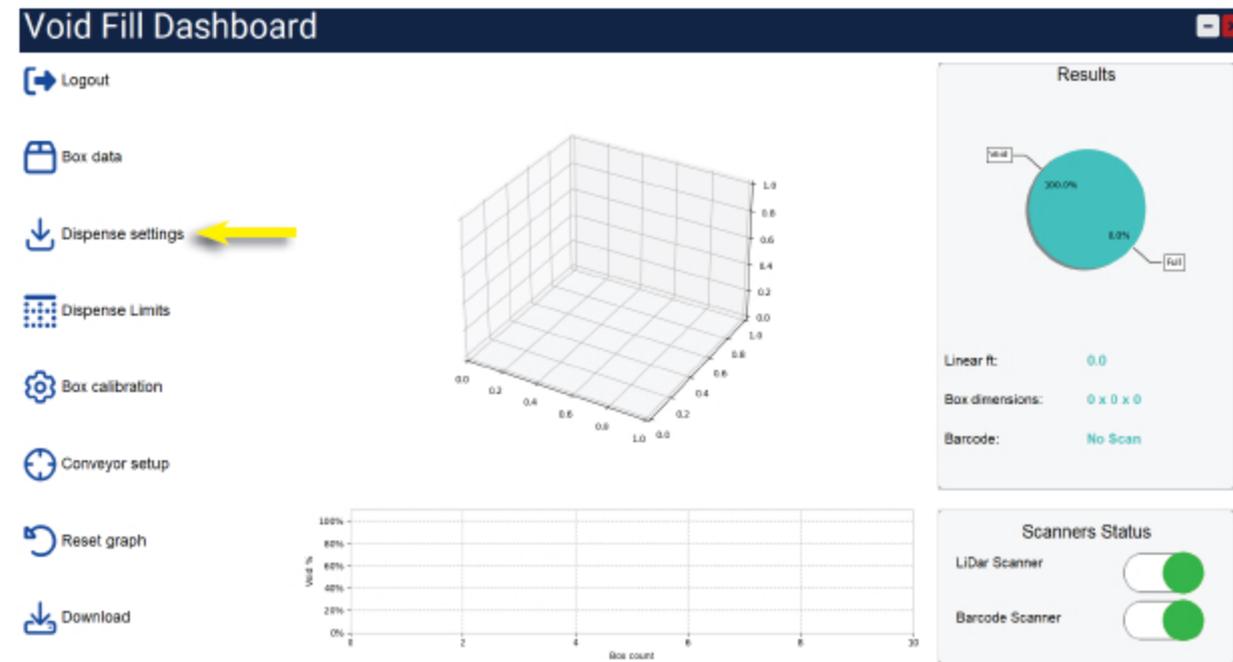


Figure 5-18 Opening Dispense Settings

4. In the **Speed in/s** field enter the tape measure value you obtained.

**Note:** Repeat steps 1-4 each time there is a change to the dunnage system.

5. Enter a value in the **Density Multiplier** field, if desired.

The default setting is 1. Increase the Density Multiplier if you wish to increase the amount of dunnage produced per cubic inch of void in all packages that the AVS system processes.

- A Density Multiplier of 1 represents 100% and is the default setting.
- This setting can contain a decimal point, for example .75 represents 75%.
- This setting cannot contain a negative number.



Figure 5-19 The Dispenser Settings Dialog Box

6. Press **Save**.

### 5.4 Setting Dispense Limits

The Dispense Limits settings allow you to define the fill parameters for all boxes that the AVS system processes.

1. In the AVS Dashboard, press **Dispense Limits**.

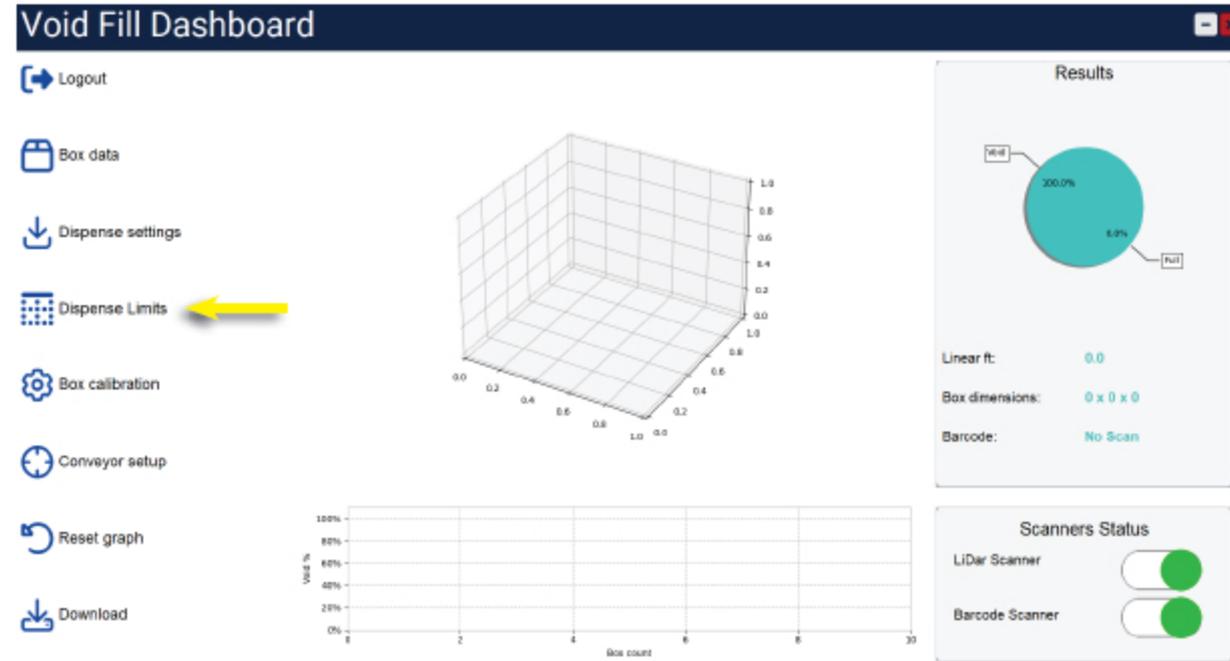


Figure 5-20 Opening Dispense Limits



Figure 5-21 The Dispenser Limits Dialog Box

2. Set the Dispense Limit parameters.
  - **Dispense limit % field:** if a box is filled with product at or above the percentage specified in this field, the AVS system will not dispense fill into the box.
  - **Box overpacked detection check box:** causes the AVS to display a message on the Dashboard if product is detected above the programmed height of a box.
  - **Box with flaps check box:** is active by default and informs the AVS that you are processing boxes with flaps.
  - **Max height limit check box and field:** allow you to specify how high a product plus fill may extend inside a box before the AVS issues a message on the Dashboard informing you of this condition.
3. Press the **Save** button.

### 5.5 Calibrating a Box

Calibrate a box to verify that the AVS scanning equipment can read its data and that it matches the data entered into the AVS system.

1. Login to the AVS Dashboard with Service Level credentials as described in *Logging into the AVS Dashboard*.
2. In the AVS Dashboard, press **Box calibration**.

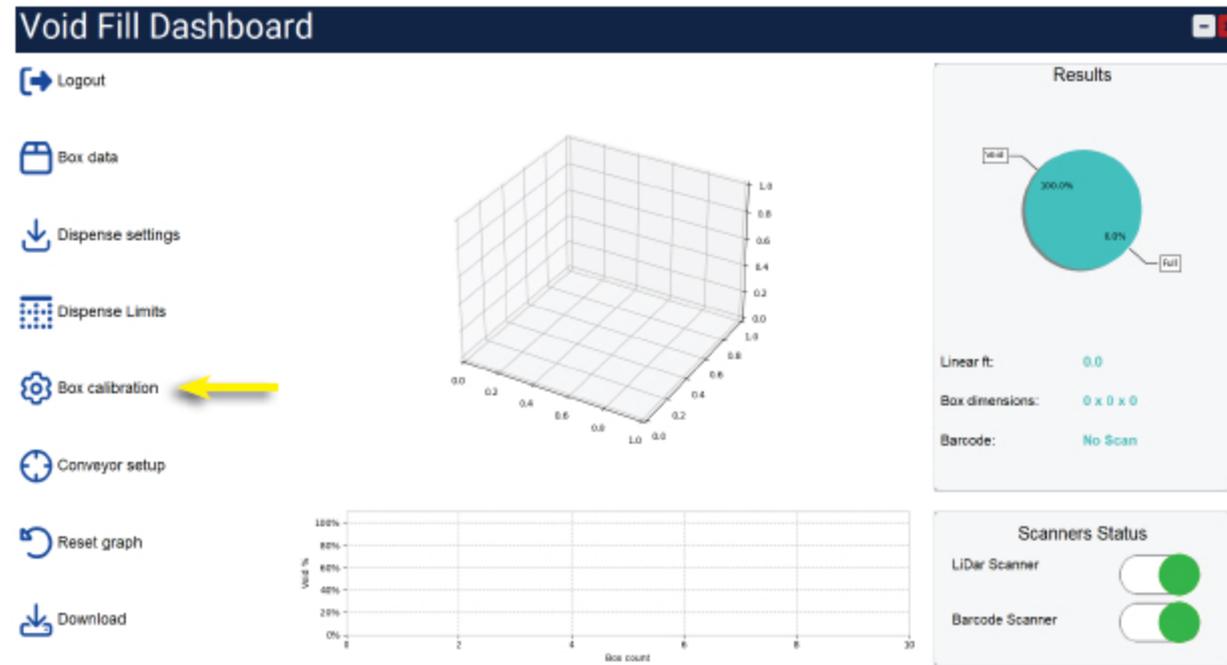


Figure 5-22 Opening the Box Calibration Screen

The Box Calibration screen contains the Select Box panel, which depicts every box that exists in the system, identified by alias. Calibrated boxes are shaded green and uncalibrated boxes are shaded yellow.

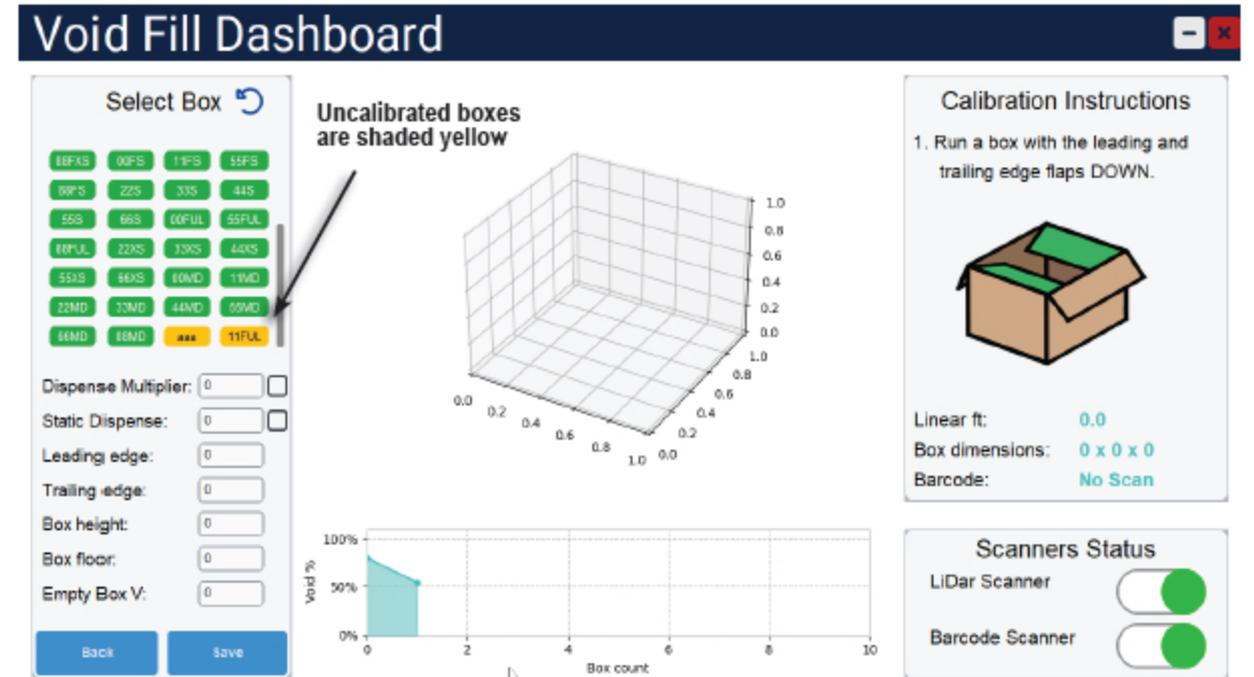


Figure 5-23 The Box Calibration Screen

- Press the alias of the box you wish to calibrate to select it.  
The selected box shades blue.

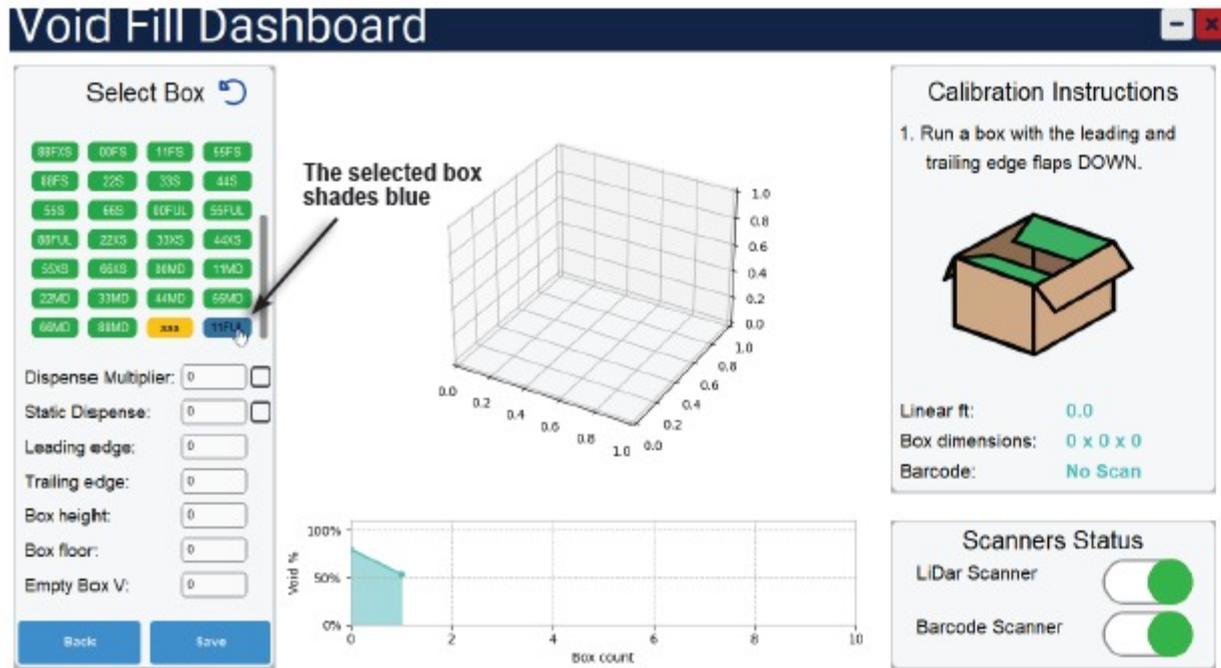


Figure 5-24 Selecting a Box to Calibrate

- Prepare the box you wish to calibrate by folding its leading and trailing flaps down inside of it as depicted on the Box Calibration screen.



Figure 5-25 Fold in the Leading and Trailing Box Flaps

- Place the box on the infed conveyor to run it.  
The AVS system analyzes the box and prompts you to open its flaps and run it again.

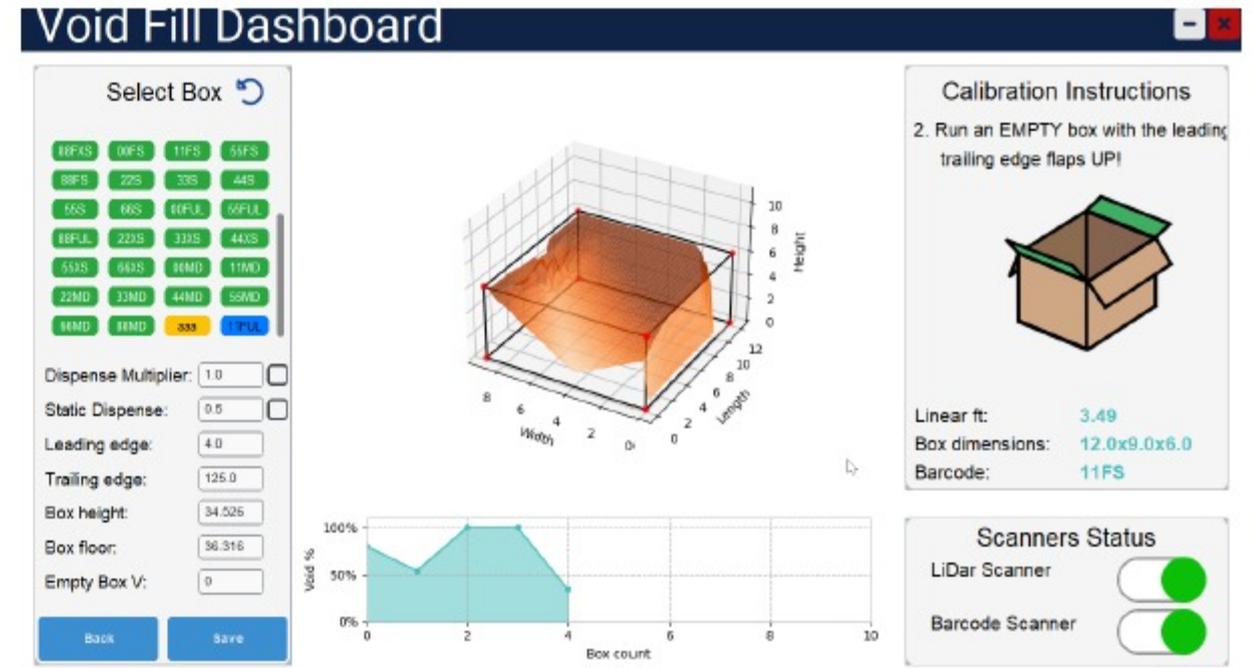


Figure 5-26 The Box Calibration Screen

- Open the all of the flaps on the box and run it through the system again.



Figure 5-27 Running the Box with the Flaps Open

The AVS system calculates the empty volume of the box and displays the data.

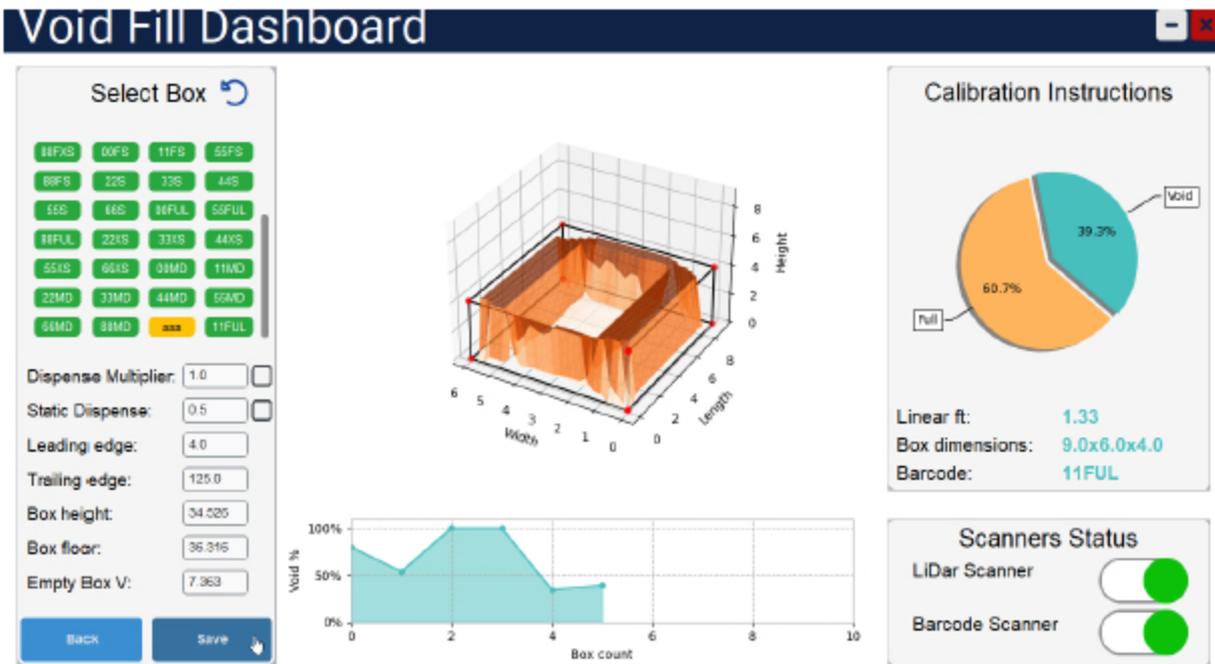


Figure 5-28 The Box is Successfully Calibrated

7. To override the Global Density Multiplier setting and create a unique Dispense Multiplier setting for this box:
  - a. Click the checkbox next to the Dispense Multiplier field.
  - b. Enter a value between 0.1 and 1 in the Dispense Multiplier field.
8. To override the Global Density Multiplier setting and specify the exact amount of fill dispensed for this box regardless of the scan results:
  - a. Click the checkbox next to the Status Dispense field.
  - b. Enter a value between 0.1 and 1 in the Status Dispense field.
9. Press **Save** in the Calibration screen.
10. Press **Back** to exit the Calibration screen.

## 6 Product Support

This section provides product support information including our service policy, warranty, technical support and customer service contacts, and parts ordering information.

### 6.1 Service Policy

Sealed Air Corporation  
100 Westford Road  
Ayer, Massachusetts 01432  
(978) 772-3200

SERVICE POLICY - AUGUST 1, 1991 (Revised October 19, 1998)  
SERVICE LIMITED WARRANTY

#### Limited Service Warranty

If a qualified Distributor or Sealed Air service engineer performs all service work, any new parts installed by him carry a new parts 90-day guarantee. However, since the nature of the customer application varies from plant to plant, and since many parts of the machine may have had considerable use, we cannot make any guarantee as to how long the machine will run without further service.

#### Field Service

Field service work will be performed by a qualified distributor service engineer at a quoted rate when on the job and a quoted rate for portal-to-portal travel. Time charged will include all time actually spent traveling to and from the customer site as well as time spent working at the site and any additional travel expenses related to the service provided.

Automobile mileage will be charged at the current government approved mileage rate, and airline, bus, car rental, hotel and meal expenses, etc., will be charged at their actual cost.

#### Service at Our Factory

Sealed Air Corporation will provide service, at a quoted hourly rate, as ordered by customers, in our factory in Ayer, Massachusetts. Parts are extra and will be charged at our prices current at the time. We will be pleased to submit cost estimates for repairing and rebuilding Shanklin® packaging machinery, but since the true condition of components frequently cannot be determined until the work is done, we cannot submit firm estimates for repair work in advance.



**Caution:** Unauthorized modification to the machine will void this warranty. Disassembly of purchased components will void the warranty on those components.