

# Cubiscan<sup>®</sup> 325



## Operations and technical manual

Version 1.4

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Cubing and weighing systems

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**CUBISCAN<sup>®</sup>**

## Cubiscan 325 operations and technical manual

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CAUTION

The Cubiscan 325 should only be serviced by qualified personnel.

Observe precautions for handling electrostatic sensitive devices when setting up or operating the Cubiscan 325.



WARNING

Disconnect all power to the Cubiscan 325 before servicing or making any connections.



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## What's new in version 1.3?

- Corrected parts list (updated 7.1.2019)
- Updated Product Warranty
- New apparel measuring feature
- New firmware (version 3.4)
- Data format selection for Web Services

This document was created with the purpose of providing the most accurate and complete information. If you have comments or suggestions for improving this manual, contact Cubiscan at [manual@cubiscan.com](mailto:manual@cubiscan.com).

Manual updated April 25, 2022.

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# CHAPTER 1

## PRODUCT DESCRIPTION

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The Cubiscan 325 is a large, static cubing system that uses sensing technologies to measure and weigh irregularly-shaped parts and components as well as boxed items. Small and large items are measured with great precision using infrared sensing technology. The sensing gate is moved by hand to allow the user complete control over the measuring process.

The Cubiscan 325 is commonly used to improve storage-space planning, for carton size selection, repacking, check-weighing, and shipment manifesting in medical, pharmaceutical, apparel, hardware, and consumer goods distribution. It has an integrated touchscreen display and outputs to a user-supplied PC. Capacity for irregular items can be measured up to 36 x 24 x 24 inches with a resolution of 0.05 inches. The Cubiscan 325 also includes an integrated, high-accuracy 50 x 0.005 lb scale.

Each unit has one active serial communication port, one Ethernet port, and one USB port. Proprietary interface software, called Qbit™, is available and allows for menu-driven operator control, data storage/transfer, and diagnostics. A mobile cart and useful accessories such as a portable power supply are available to create a completely mobile cubing, weighing, and identification workstation.

The Cubiscan 325 uses powerful sensing technologies to create a flexible and economical solution for today's most demanding cubing and weighing applications.

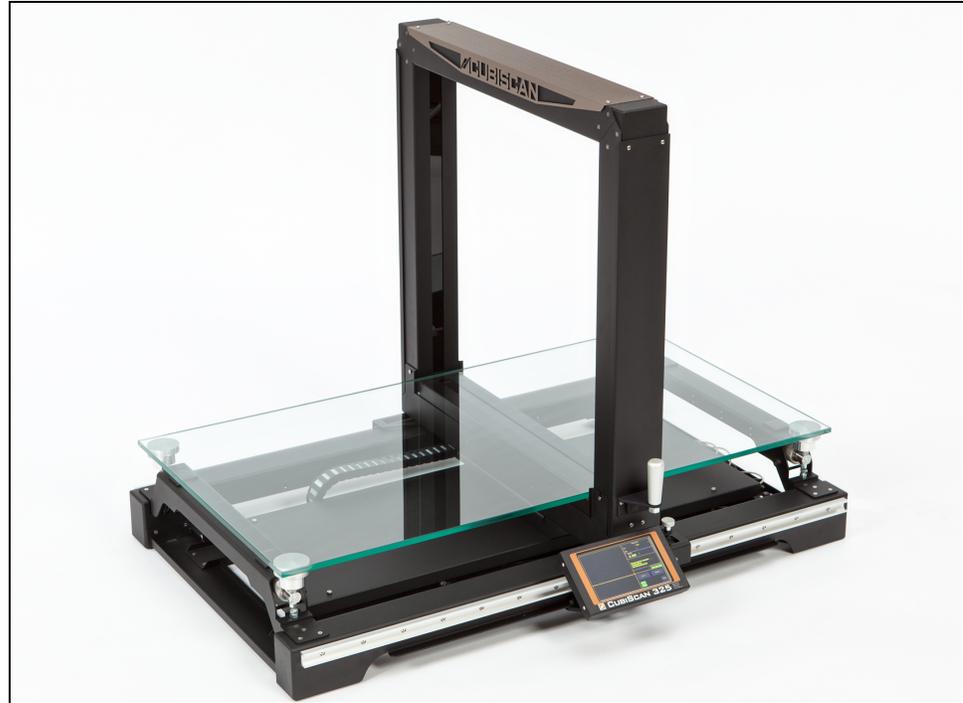


Figure 1  
Cubiscan 325

## Specifications

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### Power requirements

100 – 240 VAC, 50 – 60 Hz

### Environmental

Operating temperature: 14° to 104° F (-10° to 40° C)

Humidity: 0 to 90% non-condensing

### Measuring sensor

Infrared light beam

## Weight sensor

Four load cells

## Measuring capacities

Measurement range

Length: 0.10 to 36.00 in (0.2 to 90.0 cm)

Width: 0.10 to 24.00 in (0.2 to 60.0 cm)

Height: 0.10 to 24.00 in (0.2 to 60.0 cm)

Measurement increment: 0.05 in (0.1 cm)

Measurement time: 3-7 seconds

Object characteristics: Opaque

Weight capacity: 0.005 to 50.000 lb (0.002 to 25.000 kg)

Weight increment: 0.005 lb (0.002 kg)

## Physical

Length: 49 in (125 cm)

Width: 38 in (97 cm)

Height: 38 in (97 cm)

Weight: 173 lbs (78.5 kg)

## User Interface

Minimum PC Specifications:

Windows 10/8/7/XP/95/98/NT/2000, Pentium II processor, 20 megabytes of disk space, screen resolution setting of 800 X 600

Cubiscan's QBIT™ software can be used to interface with the Cubiscan 325.

## PRODUCT DESCRIPTION

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Display:

Integrated TFT LCD touchscreen displays L, W, H, weight, unit of measure, 2D and height profile, and diagnostic codes.

Outputs:

Serial (1), Ethernet (1), USB (1)

# CHAPTER 2

## SETUP

---

This chapter provides instructions for assembling and setting up the Cubiscan 325. Perform the steps to set up the Cubiscan 325 in the following order:

- Unpacking (page 5)
- Placement (page 7)
- Assembly (page 7)
  - Removing the shipping material (page 9)
  - Placing the gate (page 9)
  - Placing the platform (page 11)
  - Attaching the touchscreen (page 12)
  - Loosening the gate stop (page 14)
- Connecting power (page 15)
- Turning the Cubiscan 325 on (page 15)
- Connecting to a computer or network (optional) (page 16)
- Installing the Qbit software (optional) (page 22)
- Barcode scanner mount (optional) (page 22)

## Unpacking

---



The Cubiscan 325 is shipped in a crate with all components. The glass platform is packed in a separate cardboard box inside the crate.

Remove the glass platform from the box and place it in a safe location. The platform is in a protected cardboard box inside the top of the crate.

Remove the box of accessories packed on the side of the crate.



Figure 2  
*Cubiscan 325 in crate*

Examine the container and the Cubiscan 325 carefully for any damage. If, after unpacking, you discover any damage to the Cubiscan 325, contact the carrier immediately.

Remove the wooden supports holding the Cubiscan 325 in place.

Refer to the list below to identify the components.

- AC power cord
- Calibration Cube, 5" x 3" x 2"
- Ethernet cable
- Hardware (Phillips screws, load cell balls, T-handle pins, glass platform ball sockets)
- Touchscreen
- TRENDnet Ethernet adapter

If any of the components or accessories are missing or defective, contact Cubiscan or your system integrator.

Lift the Cubiscan 325 out of the shipping crate. It is best to have two people do this because the Cubiscan 325 weighs about 173 lbs (78.5 kg) and may be awkward to handle.

## Placement

---



The Cubiscan 325 is designed to be operated in a warehouse environment; however, for proper operation the following conditions should be met if possible.

- Do not subject the Cubiscan 325 to extremes in temperature or humidity. Locate the Cubiscan 325 as far from open freight doors as possible. Heaters or air conditioners should not blow directly on the Cubiscan 325.
- Avoid placing the Cubiscan 325 in direct sunlight, as it may affect measurement readings.
- Protect the Cubiscan 325 from static electricity, especially the touchscreen.
- Place the Cubiscan 325 on a flat, sturdy surface as free from vibration as possible. Excess vibration can reduce the accuracy of the Cubiscan 325 scale.
- The Cubiscan 325's platform is free-floating—it is resting on four springs (load cells). Maintain a minimum of one-inch clearance at the back and sides of the Cubiscan 325. Do not rest objects against or set objects on the Cubiscan 325 when not in use.
- If a computer is used, place it as close to the Cubiscan 325 as possible. The operator needs to use the keyboard or mouse on the computer while cubing and weighing packages using the Cubiscan 325.
- Orient the Cubiscan 325 so the touchscreen faces the operator.

## Assembling the Cubiscan 325

---



The Cubiscan 325 is almost completely assembled when shipped.

- Place the base assembly of the Cubiscan 325 on a stable surface. Make sure that the Cubiscan 325 is level. Adjust the leveling feet located in each corner if necessary.
- An optional cart, custom-designed for the Cubiscan 325, is available from Cubiscan. If you purchased this cart, use the two T-handle pins to secure the Cubiscan to the cart. See Figure 3.

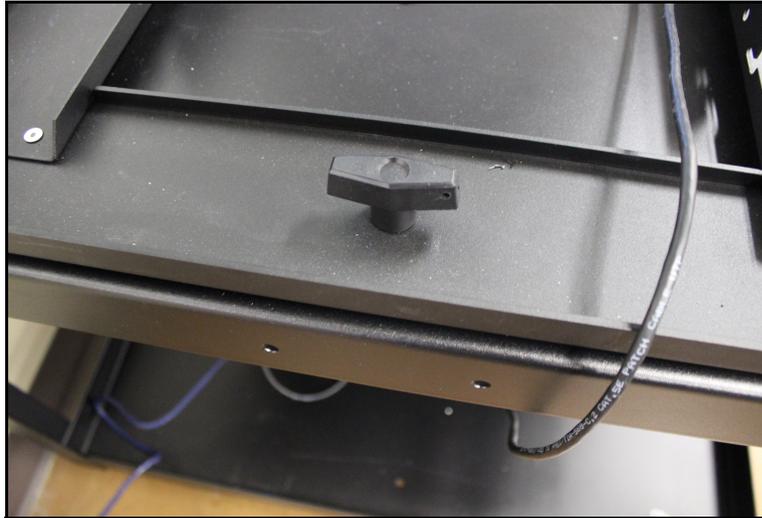


Figure 3  
T-Handle

## Removing the shipping material

1. Remove the zip ties holding the gate in place.



Figure 4  
*Gate zip ties*

## Placing the gate

1. Use two people to carefully lift the gate up and place it in the gate tray; avoid pinching any cables. The front of the gate (the side with the handle attached), must face the front of the system. If this side of the gate is not in front, the Cubiscan will not work properly.
2. Before securing the gate in place, remove the red brackets at the bottom of the gates.

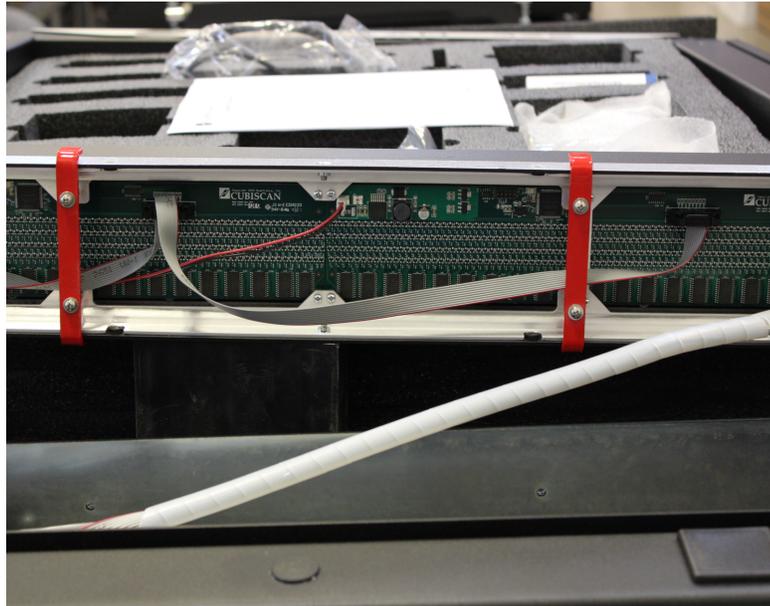


Figure 5  
Red brackets

3. Secure the gate to the gate tray using the eight Phillips screws provided. The four slot screws may already be screwed into the gate, if they are, you only need to screw four Phillips screws into place.

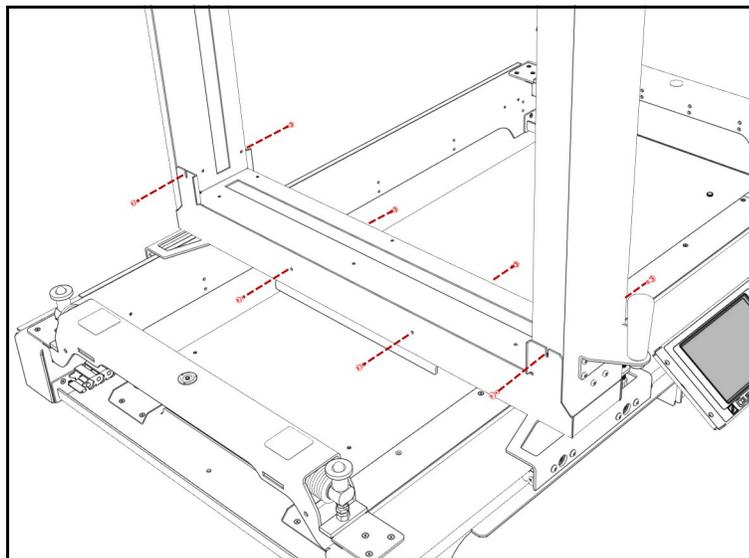


Figure 6  
Gate screws

## Placing the glass platform

1. Place the four load cell balls in the load cell cups.

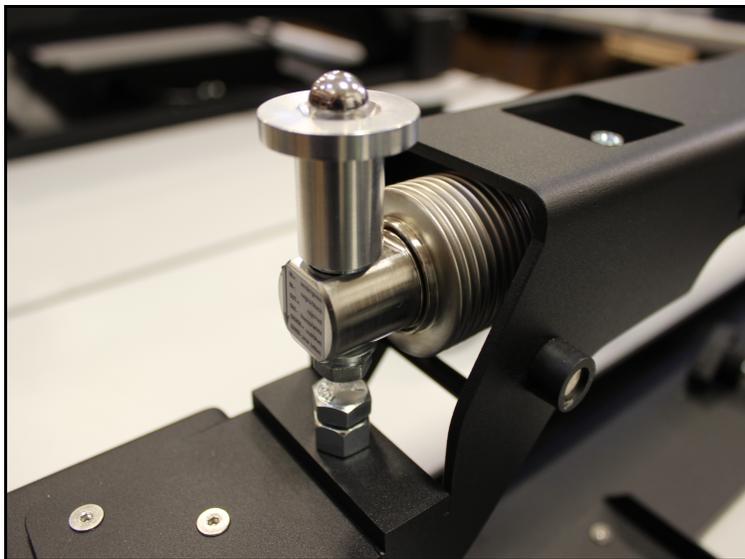


Figure 7  
*Load cell balls*

2. Remove the glass cubing and weighing platform from the cardboard box that was in the shipping crate. You will need to screw the four ball sockets into place. Locate the ball sockets and 16 screws among the hardware provided. Screw the ball sockets in place as shown below.

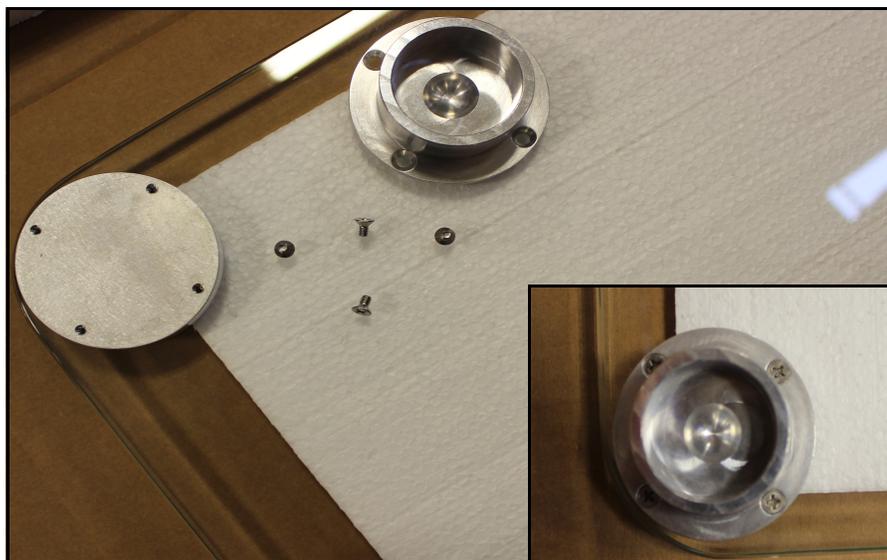


Figure 8  
*Glass platform ball socket*

3. Carefully place the glass platform on the load cells, as shown below. It is best to use two people to move the glass. Avoid placing excessive force or stress on the load cells.

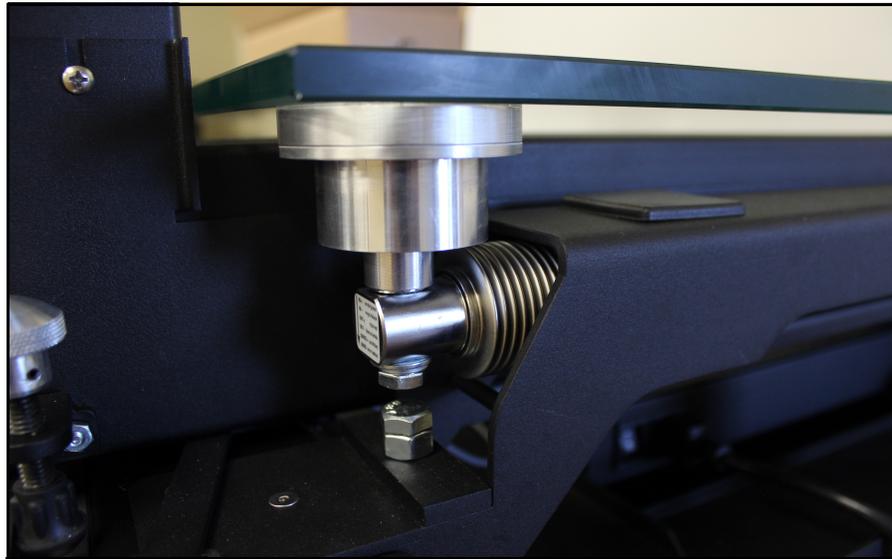


Figure 9  
*Glass platform*

## Attaching the touchscreen

1. Remove the two wing nuts from the back of the touchscreen.



Figure 10  
*Touchscreen wing nuts*

2. Attach the touchscreen to the mount on the front of the Cubiscan. Secure the touchscreen using the two wing nuts.



Figure 11  
*Touchscreen attached*

3. Plug the display cable into the back of the touchscreen.

## Loosen the gate stop

1. Loosen the gate stop by turning it counter-clockwise. If you ever want to lock the gate in place, simply turn the gate stop clockwise until the gate no longer moves.



Figure 12  
Gate stop

## Connecting power

---

1. Locate the AC power cord (supplied), and connect it to the power connection on the right side of the controller box, as shown below.



Figure 13  
Connecting power

2. Route the AC power cord so it cannot be crushed, bent, or pulled loose.
3. Connect the other end of the AC power cord to a standard power outlet.
4. Use the power switch on the right side of the controller box (shown above) to turn the Cubiscan 325 on and off.

### NOTE

*The Cubiscan 325 should be powered on before running the Qbit program to cube and weigh packages.*

## Turning on the Cubiscan 325

---

Specific procedures must be followed each time you turn on the Cubiscan 325, as follows:

1. Make sure there are no packages or other objects on the Cubiscan 325 platform.
2. Make sure the gate is in the home position (right-hand side).

3. Turn on the Cubiscan 325 with the power switch located on the right side of the controller box.
4. Zero the Cubiscan 325. For instructions, See "Zeroing the Cubiscan 325" on page 32.

The Cubiscan 325 performs self-calibration and diagnostic procedures that take about 5 seconds. Do not touch the Cubiscan 325 platform during these 5 seconds.

## Connecting to a computer or network (optional)



To connect the Cubiscan 325 to a computer, do the following.

1. Place the computer close to the Cubiscan 325. (Refer to "Placement" on page 7 for information.)
2. Remove the center cover by removing the two thumb screws located on the right-hand side of the cover. Slide the cover off to the left so that you can access the ports on the left side of the controller.
3. Locate the controller box. The controller box can be found beneath the measuring gate's home position (the right-hand side).
4. Choose from one of the following operating methods.
  - Connect the Cubiscan 325 to a host system via a standard 10/100Base-T Ethernet TCP/IP port. This is the recommended method and all parts needed to connect the Cubiscan 325 to a computer via an Ethernet connection have been supplied by Cubiscan. You may need to load the driver. To load the driver onto the computer follow the instructions on page 18. You can use Qbit software or the touchscreen options to configure the Cubiscan 325 for TCP/IP communication. Contact Cubiscan for information on available software. Or, refer to the Communications Protocol.
  - Connect the Cubiscan 325 to a PC using a USB cable (not provided) through the USB port on the controller box. You will need to load the USB driver to use this port. Follow the instructions on page 21 to load the driver.

- Connect the Cubiscan 325 to a PC through the RS-232-C serial port on the controller box. Use the Qbit software on the computer to run the Cubiscan 325.
- Operate the Cubiscan 325 without a computer using the touchscreen. Refer to "Measuring/Weighing items" on page 30 for information.

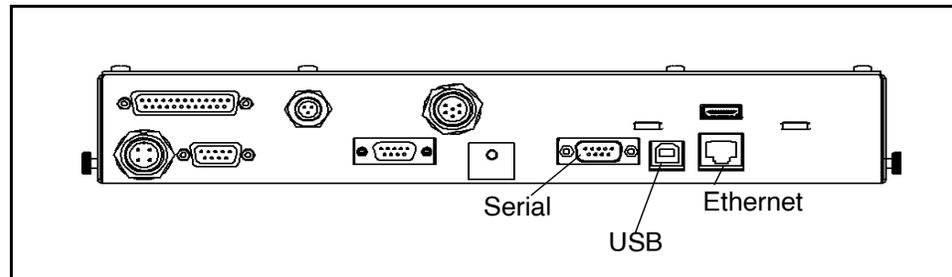


Figure 14  
Ethernet, serial, and USB connectors

## Connecting to a computer via Ethernet

This section describes how to use Ethernet to connect a computer to the Cubiscan 325 (recommended method).

Use Cubiscan's Qbit software (refer to the *Qbit User Guide*) or the touchscreen options (see CHAPTER 4 "CONFIGURATION") to configure the Cubiscan 325 for TCP/IP communication. Contact Cubiscan if you need additional assistance.

If you are using the Ethernet connection option:

1. Install the driver that is needed, for further information on installing the driver, see below.
2. Connect the Ethernet cable (supplied) to the Cubiscan 325's Ethernet port, as shown in Figure 14.
3. Attach the Ethernet cable to the TRENDnet USB to Ethernet cable adapter (supplied).
4. Connect the TRENDnet cable adapter to the PC.

### NOTE >

The following screen images were taken from a Windows 7 operating system. Your screen images may appear different if you are using a different operating system. The Cubiscan is compatible with later versions of Windows, including Windows 11.

## Installing and configuring the Ethernet driver

To install the Ethernet driver there are two options.

1. You can install the driver using the TRENDnet CD-ROM and User's Guide.

Or you can complete the following steps:

1. Plug the white TRENDnet USB to Ethernet adapter into the computer. The following bubble will appear in the bottom right corner of the screen.

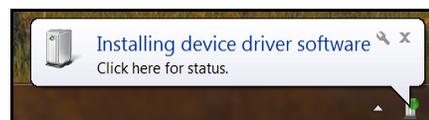


Figure 15  
*Installation bubble*

- Wait a few moments for the installation process to finish and the following bubble will pop up.

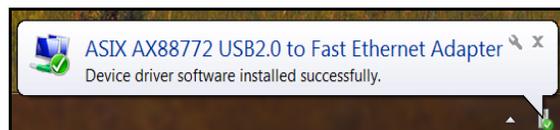


Figure 16  
*Device installed bubble*

- If you clicked on the installation bubble, the following window will open.

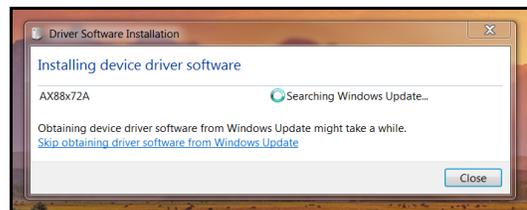


Figure 17  
*Installation process bubble*

- Once the driver has finished the installation process it will report that the adapter is ready to use.

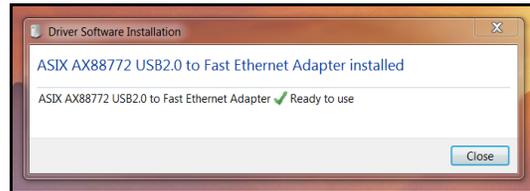


Figure 18  
*Adapter is ready to use*

## Access Ethernet network settings

Once the driver is installed you need to set the static IP address and the Subnet mask of the adapter. You can access these network settings by completing the following steps:

1. Under Control Panel > Network and Internet > Network and Sharing Center locate and click on the correct connection to bring up the status window.

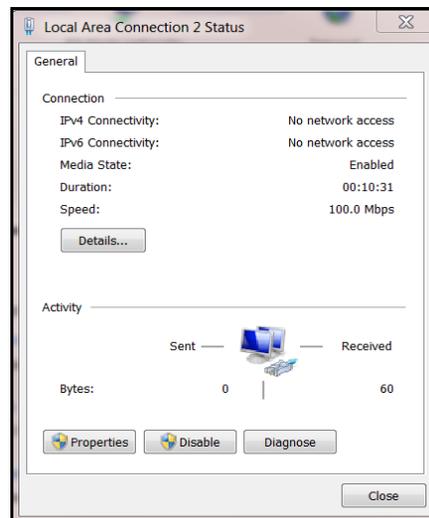


Figure 19  
*Status window*

2. Select **[Properties]**. Double click Internet Protocol Version 4 to bring up the general properties window.

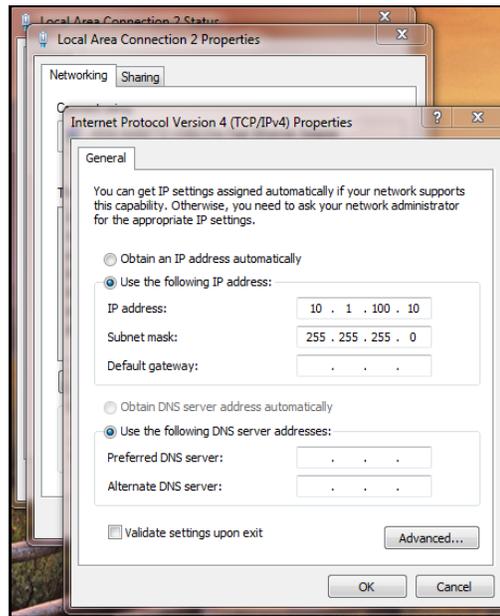


Figure 20  
General properties window

From this screen you can set the IP address and Subnet mask. The recommended IP address setting is 10.1.100.10. The recommended Subnet mask setting is 255.255.255.0.

3. Click **[OK]** to exit when you are finished. Close any other remaining windows.

Once you have completed this setup process, the computer should communicate with the Cubiscan 325.

## Connecting to a computer via USB

This section describes how to use a USB connection to connect a computer to the Cubiscan 325.

If you are using the USB cable (not supplied) connection:

1. Connect the USB cable to the Cubiscan 325's USB port located on the controller box, as shown in Figure 14.
2. Make sure that the proper driver has been installed on the PC (see below).

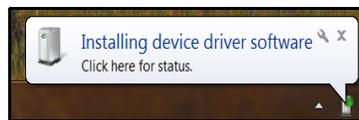
3. Connect the USB cable to the PC.

## Installing and configuring the USB driver

You must install a driver on your computer before it can recognize and communicate with the Cubiscan 325 via the USB port. Complete the following steps to install the driver.

1. With the Cubiscan 325 turned on, connect the USB cable to your computer's USB port and to the USB port on the Cubiscan 325.

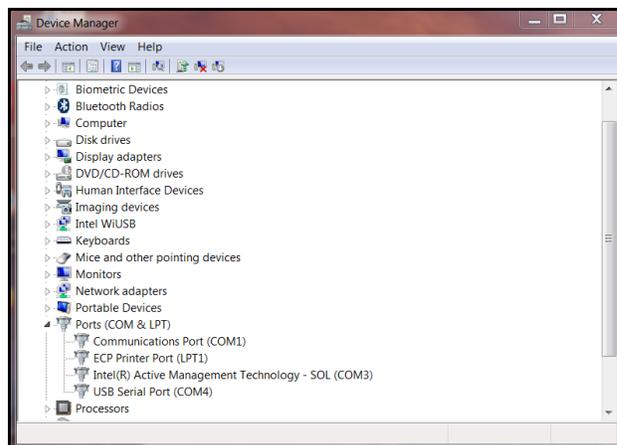
In the bottom right corner of the monitor, a bubble appears indicating that new hardware has been found.



The driver will be automatically installed. A notification bubble will pop up in the bottom right corner of the screen when the installation process is finished.

If you are using Windows XP, the driver will need to be loaded manually.

2. To determine which COM port the computer has assigned to the USB port, go to Control Panel > Hardware and Sound.
3. Click on Device Manager to display the Device Manager window.



4. Click the arrow next to **Ports** to display the available ports. Locate the COM port assigned to the Cubiscan 325. It will read USB Serial Port. This is the COM port you will use when setting up Qbit applications to communicate with the Cubiscan 325. In this example, the Cubiscan 325 was assigned to COM4.
5. Close the Device Manager and the System Properties window.

When it is turned on, the Cubiscan 325 will recognize the cable connection and, if configured correctly, will respond to a connection request from the host.

## Connecting to a computer via serial (RS-232-C)

If you are using the RS-232 serial communications cable (not supplied), complete the following steps:

1. Route the RS-232 serial communications cable so it cannot be crushed, bent, or pulled loose. Make sure that the cable does not interfere with the scale.
2. Connect the serial cable to the Cubiscan 325's serial port, as shown in Figure 14.
3. Locate a free RS-232-C serial port on your computer. Refer to your computer's documentation, if necessary, to identify the ports. If the serial port is 9-pin, connect the serial cable directly to the serial port. If it is 25-pin, use a 25-pin to 9-pin adapter (not supplied).
4. To secure the RS-232 serial cable, tighten both screws at each end of the cable. It is important that the cable be secure.

## Installing Qbit (optional)



A flash drive is available containing the Qbit software program, which can be used to operate the Cubiscan 325.

The *Qbit User Guide*, located on the drive, provides instructions for installing and using Qbit. You can also download the user guide from the Cubiscan website at [www.cubiscan.com](http://www.cubiscan.com).

# Barcode Scanner Mount (optional)



For your convenience, the barcode mounting assembly for the Cubiscan™ 325 is designed to mount on either the left or right side of the cart simply by flipping the mounting unit over to the correct orientation.

To do this ensure that the mount is situated so that the top surface slopes downward toward the front of the cart. This surface is where the barcode reader will be mounted and should be situated in a way that makes it easily accessible.

Use the 1/4" Lock split washer and 1/4" PHP screws to secure the mounting bracket to the cart.

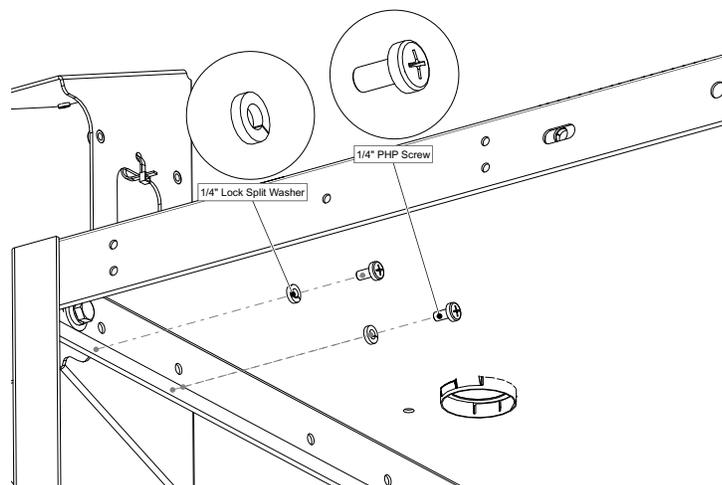


Figure 21  
*Left-hand mounting*

When mounting on the right-hand side of the cart, you may remove the side panel in order to have better access to the bracket mounting holes.

As before, ensure that the mounting bracket is situated so the top mounting surface slopes downward toward the front of the cart.

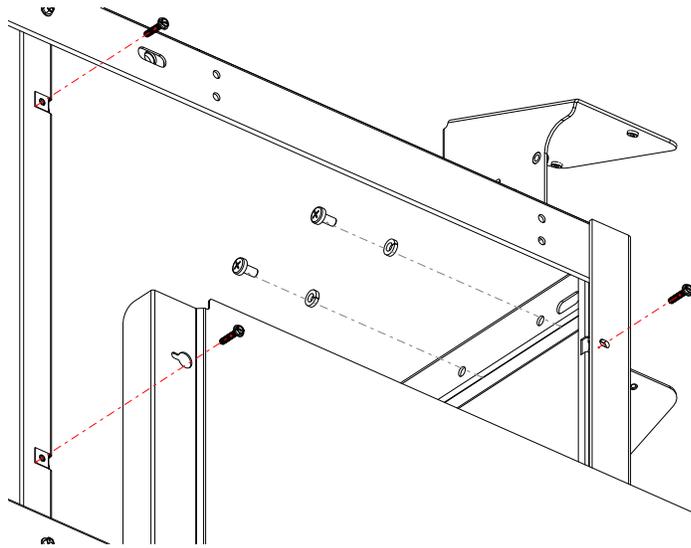


Figure 22  
Right-hand mounting

Replace the side panel to its original position.

Once the mount is securely in place, use the three 1 1/2" PHP screws to secure the barcode reader base to the mount.

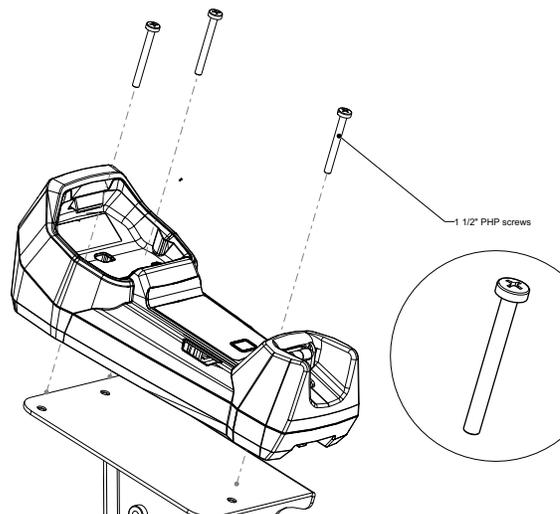


Figure 23  
Mounting barcode base

The screws will pass through the mounting holes of the barcode reader stand and fasten to the corresponding holes in the mount.

Depending on the orientation, the cord will wrap on the left or right side of the mount as seen in the figure. Use cable ties to secure the cord to the mount.

Run the cord through the gap in the mount to the controller unit.

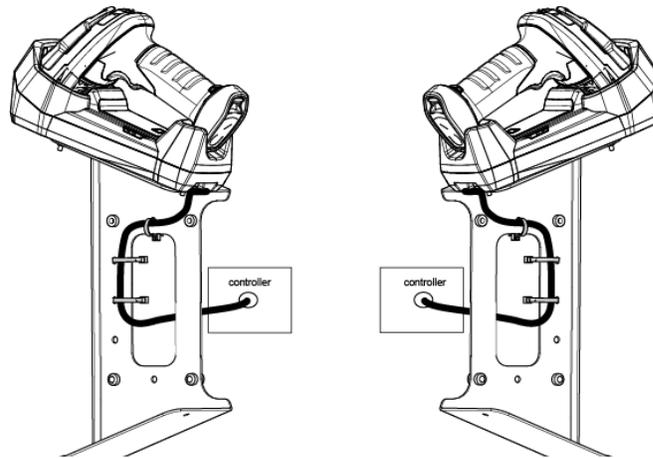


Figure 24  
Cord winding

## Setup checklist

Before using the Cubiscan 325 for the first time, verify the following:

1. Have the Cubiscan 325 and the computer (if applicable) been placed in the proper operating environment? (page 7)
2. Has the Cubiscan 325 been fully assembled? (page 7)
3. Has all shipping material been removed? (page 9)
4. Is the Cubiscan 325's glass platform free moving? The Cubiscan 325 should not be pushed up against a wall and no object, cable, etc., should be resting on it or against it.
5. Has the Ethernet, RS-232, or USB cable been attached to the Cubiscan 325 and the computer (if applicable)? (page 16)
6. Has the AC power cord been connected correctly? (page 15)

7. If you are using Qbit to operate the Cubiscan 325, has the software been copied onto your computer's hard-disk drive? (Refer to the *Qbit User Guide* for information.)

8. Does the Cubiscan 325 require recalibration? The Cubiscan 325 was calibrated at the factory, but *may* require recalibration due to handling during shipping. Refer to page 51 for information on calibrating the Cubiscan 325. If you are using Qbit software, check the status of the Cubiscan 325 before operating it. Refer to the *Qbit User Guide* for information on checking the Cubiscan 325's status.important events in history time line

# CHAPTER 3

## OPERATION

---

This chapter provides instructions for operating the Cubiscan 325.

**NOTE** 

*The Cubiscan 325's glass platform should be kept clean and free of objects that are not being measured.*

## Before you begin

---



Follow the procedures below to turn on the Cubiscan 325. The Cubiscan 325 should be turned on before you start Qbit (if applicable).

1. Make sure there are no objects on the Cubiscan 325's platform.
2. Make sure that the gate has enough room to move freely.
3. Turn on the Cubiscan 325. The Cubiscan 325 performs self-diagnostic procedures that take about 5 seconds. Do not touch the Cubiscan 325 platform during these 5 seconds.
4. The Cubiscan 325 must be zeroed each time it is turned on. For instructions on zeroing the Cubiscan 325 see "Zeroing the Cubiscan 325" on page 32.

**NOTE** 

*Do not lean on or touch the Cubiscan 325 glass platform or the object while the object is being measured and weighed. Any kind of contact with the platform during the measurement process can alter the weight or sensor reading.*



**CAUTION**

While the Cubiscan 325 has overload protection, objects heavier than 50 pounds (25 kg) should not be placed on the platform. Overloading the scale or shock loading (dropping a heavy object on the scale) can cause permanent zero shift, making the scale inoperable.

# Cubiscan 325 touchscreen



You can use the Cubiscan 325 touchscreen (below) to configure and control the Cubiscan 325 as well as display measurement results.

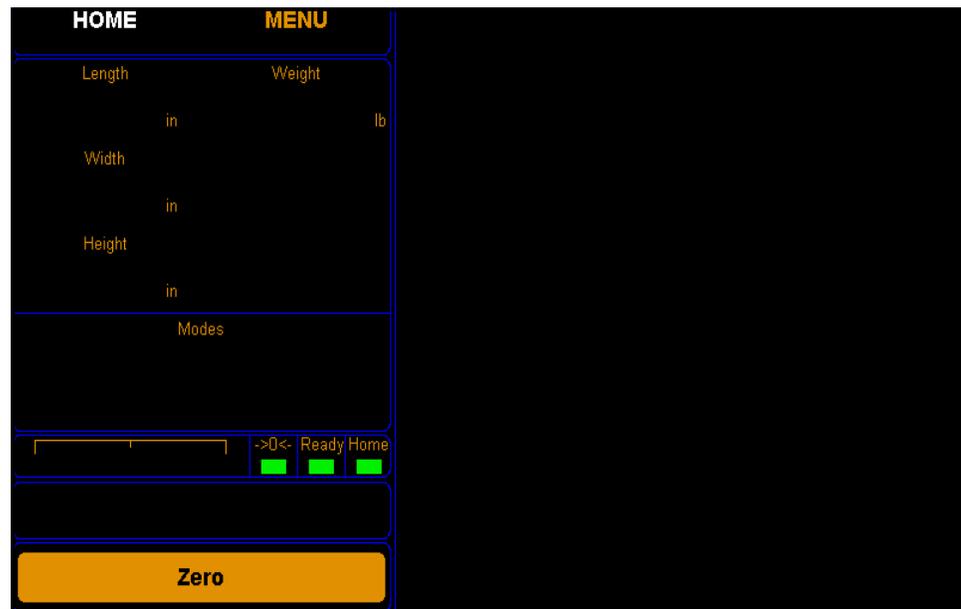


Figure 24  
Cubiscan 325 touchscreen

All measurement, setup, and diagnostic information is shown on the touchscreen. You tap touch keys on the display to change the configuration and perform diagnostics.

- Tap a key to select a function.
- Tap **[Zero]** to “zero” the Cubiscan 325 (see “Zeroing the Cubiscan 325 on page 32).
- Tap **[Menu]** to select configuration or calibration functions.

Other touch keys may be used for specific functions and are described in the instructions for that function. Refer to CHAPTER 4 “CONFIGURATION” on page 37 for information on configuration and to “Diagnostics” on page 70 for information on diagnostics.

## Touchscreen care

Never use a sharp or hard-tipped object to tap on the touchscreen. It is glass and can scratch or break. You can tap lightly on the screen with your fingertip, or you can use the eraser end of a pencil or a stylus with a soft point. Use a light touch, just hard enough for the screen to respond.

To clean the touchscreen, moisten a soft cloth with water, then gently wipe the screen clean with the cloth. Do not spray liquid directly on the touchscreen.

## Cubing and weighing



The Cubiscan 325 can be used to measure irregularly-shaped, opaque objects as small as 0.1 inch (refer to “Specifications” on page 2 for specifications and size limitations).

Objects are measured by the infrared light beams on the Cubiscan 325's gate by moving the gate over the object on the platform.

Refer to the appropriate following section for instructions.

### Cubing and weighing using Qbit

Refer to the *Qbit User Guide* for instructions on measuring, weighing, and other functions in Qbit. The *Qbit User Guide* is provided on the flash drive or you can download it from the Cubiscan website at [www.cubiscan.com](http://www.cubiscan.com).

### Cubing and weighing using Web Services

Refer to the API Documentation Guide for instructions on interfacing to the Cubiscan via Web Services.

### Cubing and weighing using other interfaces

Refer to the Communications Protocol for information to set up cubing and weighing through other interfaces.

## Cubing and weighing using the touchscreen

All controls and displays for the Cubiscan 325 are shown on the touchscreen at the front of the base. If a computer is not connected, you can use the touchscreen to measure and weigh objects.

Measurement and weight results will only display when the Cubiscan 325 touchscreen is displaying the home screen.



Figure 25  
Measurement display

**Length** These display the measured dimensions in inches (in), centimeters (cm), or millimeters (mm) as selected.  
**Width**  
**Height**

**Weight** This displays the measured weight in pounds (lb) or kilograms (kg) as selected.

**->0<- (indicator)** This indicates that the scale is zeroed and ready to receive an object. This indicator must be lit before you can place an object on the platform. When you place an object on the platform, the indicator goes off.

**Ready (indicator)** This indicates that the Cubiscan 325 is ready for cubing and weighing.

Home (indicator)	This indicates that the measuring gate is positioned in the “home” position (on the right-hand side).
Zero (button)	Tap this key to reset the scale to “zero” (make sure the platform is empty). Refer to “Zeroing the Cubiscan 325” on page 32.
Menu	Tap this key to go to the configuration menu to set up or calibrate the Cubiscan 325.
Home	Tap this key to return to the home screen.

## Measuring/Weighing items

Take the following steps to measure and weigh an item using the touchscreen. The measuring gate can measure opaque objects as small as .1 inch (2 mm). An image of the object is displayed on the touchscreen as it is measured. When you begin measuring with the measuring gate, you must start with the gate on the right side of the Cubiscan 325, or home position (indicated by the **home** indicator on the touchscreen).

You can then use either of the following two methods to measure an object.

- Place the item anywhere on the glass platform. Starting with the measuring gate on the right side, or home position, move the gate over the object, and then move it back to the home position to complete the measurement.
- Place the item anywhere on the glass platform. Move the gate past the item that you are measuring to complete the measurement. You can then remove the item, place another item on the platform, and measure the new item by moving the gate over it.

1. Verify that the Cubiscan 325 scale is at zero. The **zero** indicator should be lit.
2. Place the object on the glass platform. The **zero** indicator light will go out.

### NOTE

*Do not lean on or touch the Cubiscan 325 platform or the object while an object is being measured. Any kind of contact with the platform during the measurement process can alter the weight or sensor reading.*

3. Using one of the gate movement methods described above, move the measurement gate slowly using the handle. If the measurement was successful the length, width, height, and weight of the object are displayed.

4. Remove the object from the platform. Wait for the **zero** indicator to light before placing the next object on the platform.
5. If the **zero** indicator does not light, it means that the Cubiscan 325 needs to be zeroed. To zero the scale, make sure that the platform is free of all objects, then tap **[Zero]**.



Figure 26  
Measuring gate

**NOTE** >

*Do not move the gate too quickly across the platform. A gate speed error is displayed on the touchscreen if you move it too quickly.*

A two-dimensional image of the object shows the top-down view of the object. An image of the side view of the object appears below the image of the top-down view. The length, width, height, and weight are displayed on the touchscreen.



Figure 27  
Measuring gate display

## Zeroing the Cubiscan 325

Tap the **[Zero]** button on the touchscreen to “zero” the Cubiscan 325 (set all empty measurements and weight to zero). The weight when the platform is empty must be set to zero for the Cubiscan 325 to operate properly. The Cubiscan 325 tries to zero itself automatically. However, you may need to use this option in the following circumstances.

- If, during a long measuring session, environmental conditions (temperature and humidity) have changed noticeably.
- If you suspect that the last zeroing was in error (something was on the platform).

### NOTE >

*Make certain that the platform is free of all objects before using Zero. If not, the zero reading will not be accurate.*

# Special Features



You can measure items with an improved variety of available configurations. To learn more about these options, see “Operation screen 2” on page 38.

## Measuring with apparel methods

The following steps describe how to measure apparel in a way that allows you to measure average length, width, and height with filtering. This example is a more efficient way to obtain measurements for accurate packaging of flexible items.

1. On the **Menu > Configure > Operation** screen, touch the right arrow to go to screen 2 of the menu. Under **Apparel Method**, select **Average Hgt, Len & Wid**.

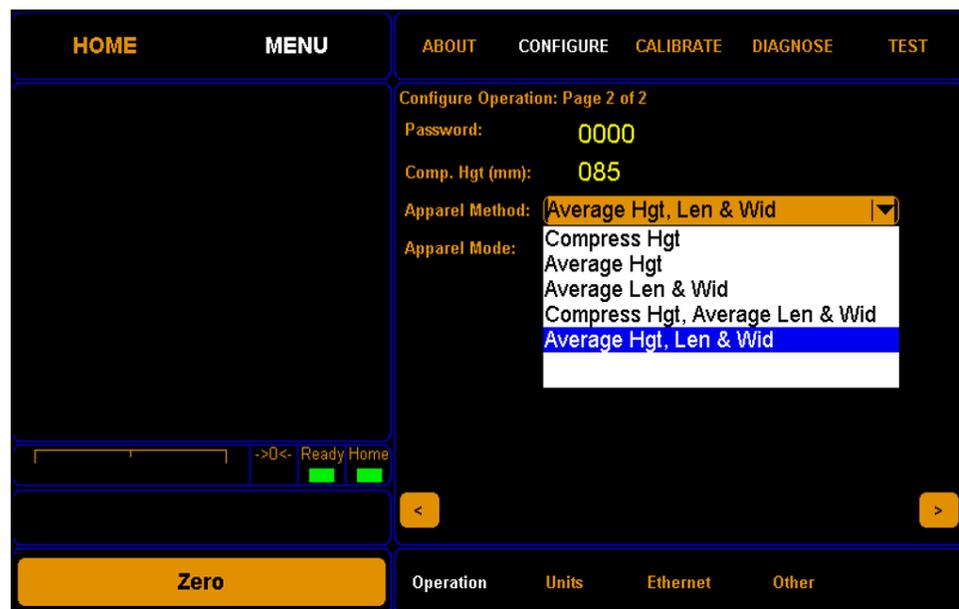


Figure 28  
*Apparel Method drop-down menu*

2. Under **Apparel Mode**, select **Lock-On**.
3. Touch the left arrow to return to screen 1 of the menu.

- Under **Filter**, select **Lock-On**.



Figure 29  
Filter Lock-On

- Touch **Home**. The **Apparel** and **Filter** check boxes will be visible and enabled. The operator will not be able to disable them because of the Lock-On selection.

The dimensions will be labeled Avg. Length, Avg. Width, and Avg. Height. The green box will remain the smallest bounding box. The red box represents the average length and width.



Figure 30  
Measurement results

### Measuring with height compression

Complete the following steps to measure an object in compression mode.



Figure 31  
Measuring with height compression

1. After you have enabled the Apparel check box, place the item on the glass platform with the compression plate on top.
2. Move the gate slowly across the object. You will then be prompted to remove the compression plate and set it aside.
3. Complete the measurement by moving the gate back across the item. The end result shows the actual weight of the item that was measured. The red line shows the compressed height of the item and the green line shows the actual height. The height figure that is reported is the compressed value.

### Measuring with filter mode

The filter mode measures only the largest item (items cannot be touching), if multiple items are found in the measurement field. Items that have been excluded from the measurement process, in this example a plastic bag, are displayed in red. The item that was measured is displayed in yellow.



Figure 32  
Filter mode

To turn filter mode off and on, go to the **Menu > Configure > Operation** screen (See "Filter" on page 41.)

# CHAPTER 4 CONFIGURATION

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This chapter provides instructions for using the Cubiscan 325 touchscreen to set up the length, width, and height measurements, as well as special features that the Cubiscan 325 offers. This chapter also provides instructions for configuring the units, dimensional weight factor, com port, and other settings. For information on calibrating the Cubiscan 325 gate, touchscreen, or scale, refer to CHAPTER 5 “CALIBRATION”.

If you have a computer connected to the Cubiscan 325 with Qbit installed, you can use Qbit to set up the measurement and dimensional weight units, select the Cubiscan 325 communications port, perform calibration, and other functions. Refer to the *Qbit User Guide* for instructions on measuring and other functions in Qbit. The *Qbit User Guide* is provided on the flash drive with the Qbit application, or you can download it from the Cubiscan website at [www.cubiscan.com](http://www.cubiscan.com).

## System configuration

---



The following options can be used to configure your Cubiscan 325. The options available on the configure menu are Operation, Units, Ethernet, and Other.

### Operation

This section discusses the options available on the Operation menu. Complete the following steps to access the Operation menu.

1. From the home screen, tap **MENU**.



Figure 33  
Home screen

**NOTE** > If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to [page 43](#).

2. Tap **CONFIGURE**. Select the **Operation** option if it is not already selected.



Figure 34  
Configure operation

- Display Dim Weight**
Check this box if you want the dim weight and factor to be displayed on the home screen.
- Enable Scale**
Check this box if you want to enable the Cubiscan 325's scale. If this box is not checked, weight will not be reported on the home screen or sent in the data packet.
- Enable Ethernet**
Check this box if you want to enable Ethernet communication.
- Enable Smallest Box**
Check this box if you want to enable the smallest box mode. This mode boxes items into the smallest box possible, the placement of the item on the platform makes no difference. Turning off the smallest box mode measures items depending on their placement on the platform.

The images below illustrate the difference between having the smallest box mode on or off.



Figure 35  
Smallest box mode on

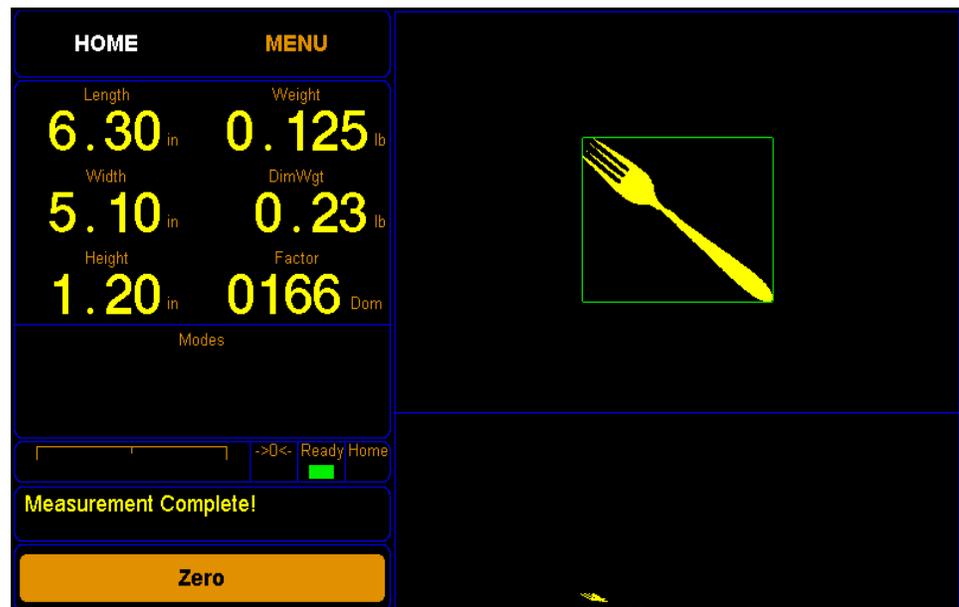


Figure 36  
Smallest box mode off

**Enable Swap Longest** Check this box if you want to enable the Swap Longest feature. This feature will automatically report the longest dimension as the length.

**Clear on Zero** When this box is enabled, the image associated with a measurement will disappear once the item is removed from the measuring platform. When this box is unchecked, the image associated with a measurement will remain on the screen until a measurement of another item is taken. See page 32.

**Language** From this drop-down box you can select which language is used. The options are: English, French, Spanish, Japanese, Korean, and Chinese.

**Protocol** From this drop-down box you can select which protocol is used. The options are Standard, Expanded, CS 100-L, and Custom.

The Standard option is the default and works the best with Qbit software.

The Expanded option includes more information in the data packet, such as the packet number and date and time.

The CS 100-L option makes the data packet backwards compatible with the Cubiscan 100-L.

The Custom option allows the use of a custom communication protocol file that has been saved on the SD card.

- Disp. Img.** From this drop-down box you can select your image display type. The options are Full and Compact.
- Img. File** This drop-down menu allows you to select whether or not you want the Cubiscan 325 to generate .bmp images to be pulled from the machine. The XY BMP option will generate a downloadable file of the image with the length and width, and the XY&Z BMP option will generate two downloadable files of the images with a height dimension as well as the length and width.
- Filter** This drop-down menu offers different modes for using the filter feature. The options are disabled, enabled, auto-off, and lock-on.

When Enabled is selected, a filter mode check box will be visible on the home screen, and the mode can be enabled or disabled from the home screen.

When Disabled is selected, the check box will not be visible on the home screen.

When Auto-Off is selected, the operator will need to manually select the check box for each measurement.

When Lock-On is selected, the check box will always be checked and the Cubiscan 25 will take measurements in filter mode until the mode option is changed.

When the filter feature is used, the Cubiscan 25 measures only the largest item that is on the platform (the item that takes up the most pixels.) Height is not taken into account. As shown below, it is ideal for items in clear plastic bags.



Figure 37  
Filter mode enabled

The red lines represent the plastic bag, while the green lines represent the smallest bounding box.

## Operation screen 2

To access the second configure operation screen, touch the right arrow near the bottom of the screen.



Figure 38  
Configure Operation menu page 2

**Password** In this field you can enter a four-digit password. If you set up a password, it must be entered each time you try to access any of the menu screens (except for the About menu).

**Comp. Hgt. (mm)** This field displays the height (85 mm) of the compression plate provided by Cubiscan. If a different compression plate is used, you'll need to change the value in this field so that the Cubiscan 325 can subtract the height of the compression plate from measurements in which it is used.

**Apparel Method** This drop-down menu offers different methods for measuring apparel.

- **Compress Hgt** This method produces compressed height results when using a compression plate.
- **Average Hgt** Some items have uneven heights. This method enables you to obtain the average height of an item.
- **Average Len & Wid** Some items have overstated lengths and widths. This method enables you to obtain the average dimensions of an item that may not have straight edges.
- **Compress Hgt, Average Len & Wid** When using this method with a compression plate, the results will show the compressed height, and the average length and width of an item that may not have straight edges.
- **Average Hgt, Len, & Wid** This option is ideal to obtain realistic dimensions for apparel and other flexible objects without the use of a

compression plate. The results will display the average height, length, and width of an item.

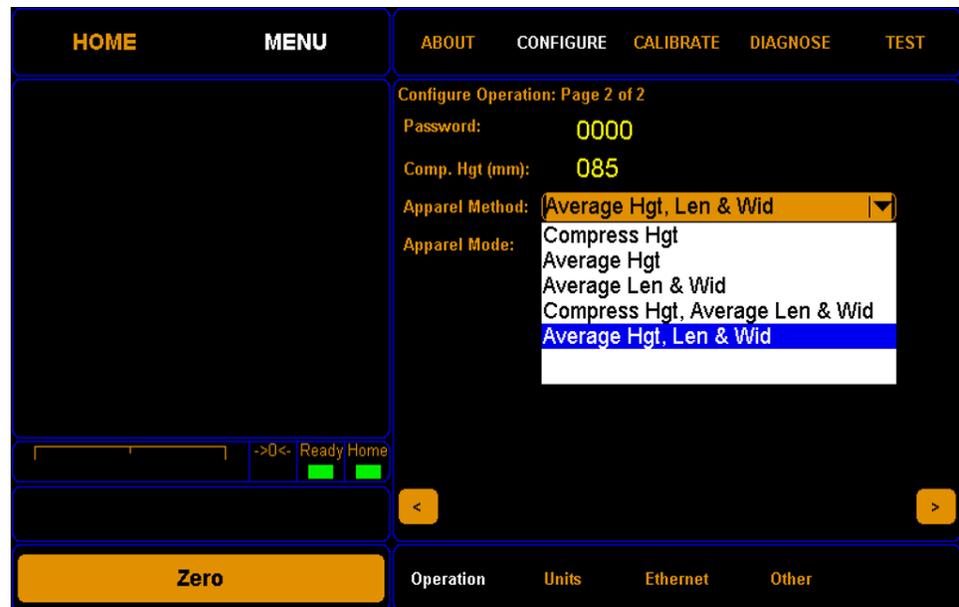


Figure 39  
Apparel method drop-down

**Apparel Mode** This drop-down menu offers different modes for using the apparel method feature. The options are disabled, enabled, auto-off, and lock-on.

When **Enabled** is selected, an apparel mode check box will be visible on the home screen.

When **Disabled** is selected, the check box will not be visible on the home screen.

When **Auto-Off** is selected, the operator will need to manually select the check box for each apparel measurement.

When **Lock-On** is selected, the check box will always be checked and the Cubiscan 25 will take measurements in apparel mode until the mode option is changed.

## Units

This section discusses the options available on the Units menu. Complete the following steps to access the Units menu.

1. From the home screen, tap **MENU**.

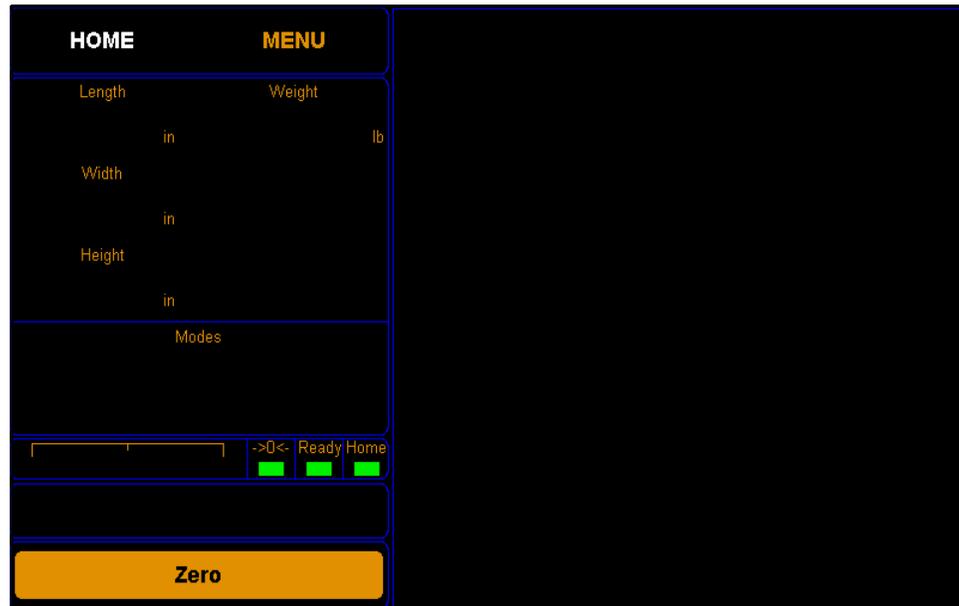


Figure 40  
Home Screen

**NOTE** >

If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to page 43.

2. Tap **CONFIGURE**. Select the Units option if it is not already selected.



Figure 41  
Configure operation

- Units** In this field you can select the units that will be used. The options are inches (in), centimeters (cm), millimeters (mm), pounds (lb), or kilograms (kg).
- Scale Increment** In this drop-down box you can select the accuracy of the scale in pounds or kilograms. The options for pounds are 0.005, 0.01, or 0.02. The options for kilograms are 0.002, 0.005, or 0.01.
- Dim-Factor** In this field you can select the dim factor that will be used. The options are domestic and international.
- Machine ID** In this field you can enter a unique ID for your Cubiscan. This can be helpful if you have more than one Cubiscan on site.
- Factors** In these fields you can view or change the current dim factor values.

The following table displays the default dimensional weight factors used by the Cubiscan.

139	International:	inches, pounds (in lb)
166	Domestic:	inches, pounds (in lb)
306	International:	inches, kilograms (in kg)
366	Domestic:	inches, kilograms (in kg)
2278	International:	centimeters, pounds (cm lb)
2720	Domestic:	centimeters, pounds (cm lb)
5000	International:	centimeters, kilograms (cm kg)
6000	Domestic:	centimeters, kilograms (cm kg)

## Ethernet

This section discusses the options available on the Ethernet menu. Complete the following steps to access the Ethernet menu.

1. From the home screen, tap **MENU**.

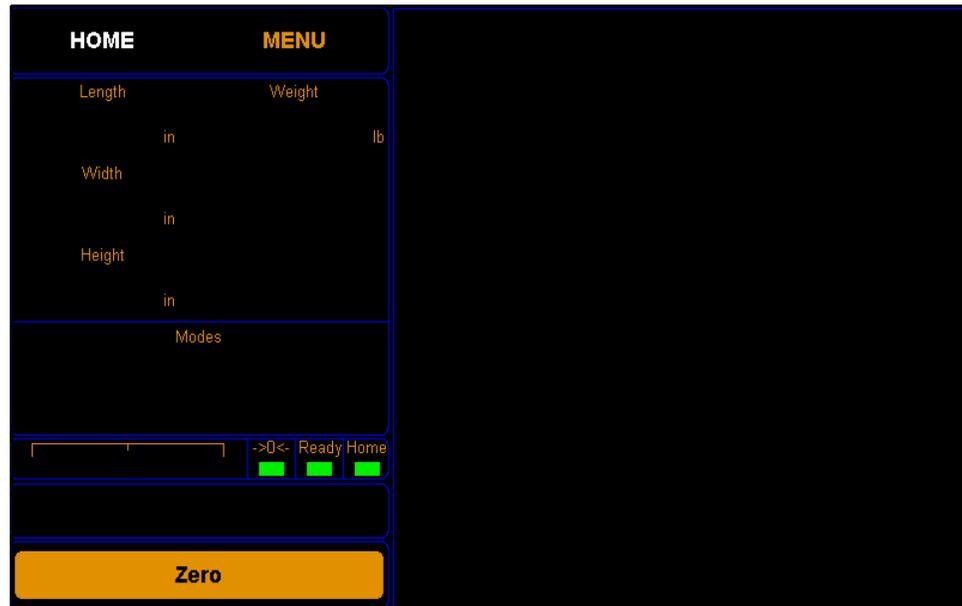


Figure 42  
Home screen

**NOTE** >

If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to page 43.

2. Tap **CONFIGURE**. Select the Ethernet option if it is not already selected.

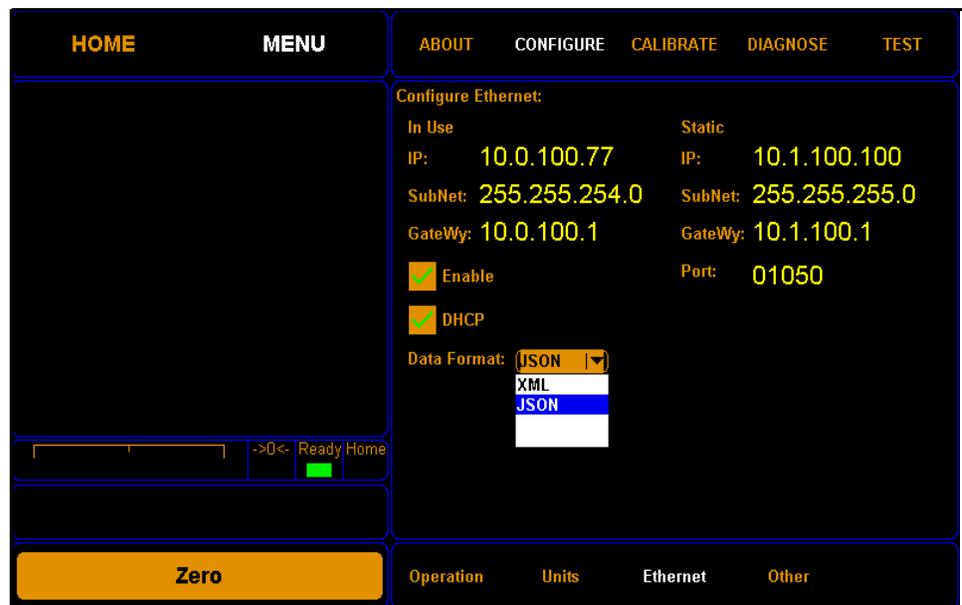


Figure 43  
Configure Ethernet

## In use

This section describes the various settings and options of the Ethernet in use.

- IP** This is the current IP address.
- SubNet** This is the current subnet mask.
- GateWy** This is the current gateway setting.
- Enable** Check this box to enable the in use Ethernet.
- DHCP** Check this box to enable the DHCP.
- Data Format** You can select XML or JSON. See *API Documentation Guide*.

## Static

This section describes the various settings and options of the static Ethernet.

- IP** This is the static IP address.
- SubNet** This is the static subnet mask.
- GateWy** This is the gateway setting.
- Port** This is the port setting.

## Other

This section discusses the options available on the Other menu. Complete the following steps to access the Other menu.

1. From the home screen, tap **MENU**.

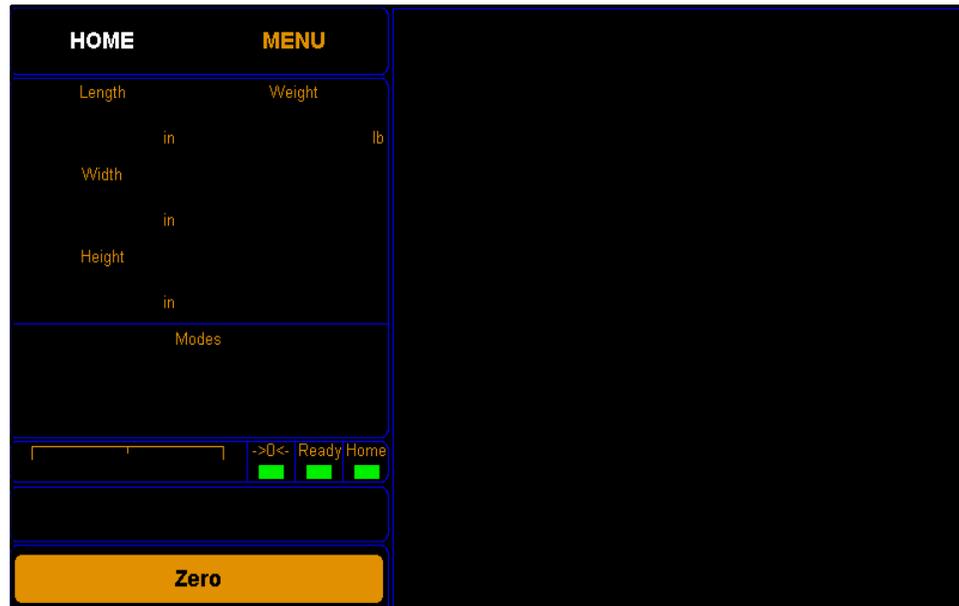


Figure 44  
Home screen

**NOTE** >

If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to [page 43](#).

2. Tap **CONFIGURE**. Select the Other option if it is not already selected.

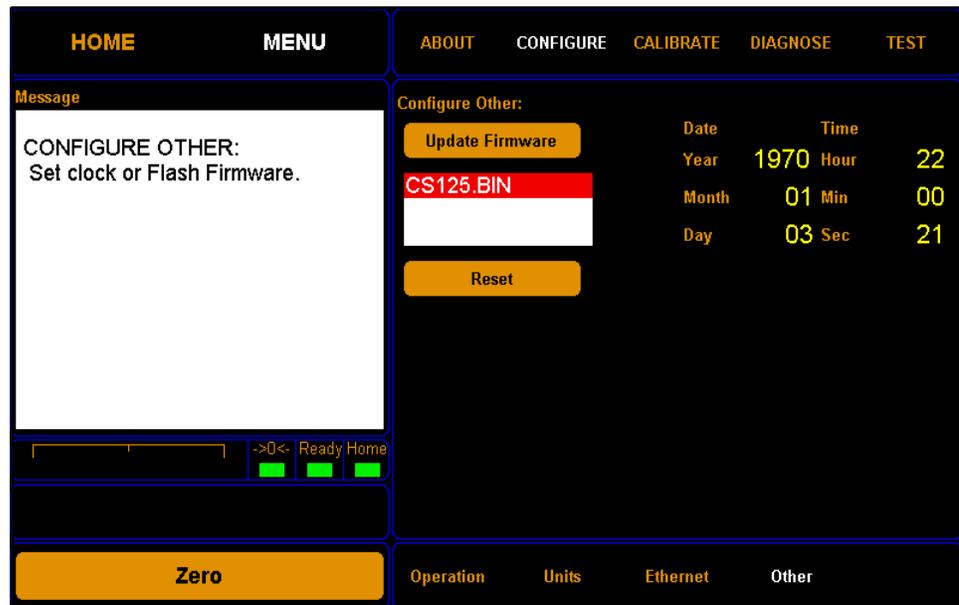


Figure 45  
Configure other

- Update Firmware** Tap this button to update the firmware. The field below the button displays all firmware files that are saved on the SD card. If you would like to update the Cubiscan 325 to a certain firmware file, select it in the list displayed and tap **[Update Firmware]**.
- Reset** Tap this button to reboot the system after updating the firmware. The system must be rebooted each time the firmware is updated.
- Date/Time** This displays the current date and time.

# CHAPTER 5

## CALIBRATION

---

This chapter provides instructions for calibrating the Cubiscan 325 touchscreen, measurement gate, and scale (load cells). The Cubiscan 325 is calibrated at the factory; however, some circumstances in which recalibration may be required include the following:

- Calibrate the touchscreen if you have trouble making selections on the screen.
- Calibrate the Cubiscan 325 if you have problems cubing and weighing after assembly and setup.
- Calibrate the Cubiscan 325 if it is subjected to any type of mechanical shock or collision with a heavy object.
- Calibrate the Cubiscan 325 as part of a regular maintenance schedule. Calibration of the scale is recommended at least annually. If the Cubiscan 325 is used heavily, scale calibration should be performed monthly.
- Perform quality checks as needed, depending on how critical the accuracy of the data is to you. Recalibrate if you are outside the tolerance of +/- 0.05 inches (+/- 0.1 cm) for the gate or +/- 0.010 pounds (+/- 0.005 kg) for the scale.

During quality checks or when calibrating, make sure that the Cubiscan 325 is not affected by external forces that may affect readings, such as sunlight or fans.

## Before you begin

---



Before calibrating the Cubiscan 325, remove all items or other material from the platform and blow any dust off the measurement sensors. Refer to page 60 for information on cleaning the sensors.

### **NOTE**

*The following sections provide instructions for calibration using the Cubiscan 325's touchscreen. For instructions on calibrating the Cubiscan 325 using Qbit, refer to the Qbit User Guide.*

# Calibrating the scale

To perform the calibration, you will need the following:

- Official test weight up to 50 pounds (25 kg) (it is recommended that you calibrate with the maximum weight)

*IMPORTANT:* Do not begin scale calibration until you have the test weight. Calibrating without an accurate known weight (within 0.01 of a lb/kg) can make all future weight readings inaccurate.

Take the following steps to calibrate the Cubiscan 325 scale.

## NOTE >

When calibrating the scale, the Cubiscan 325 must be stable with no movement of the platform such as that caused by vibration or air.

1. At the home screen, tap **MENU**.

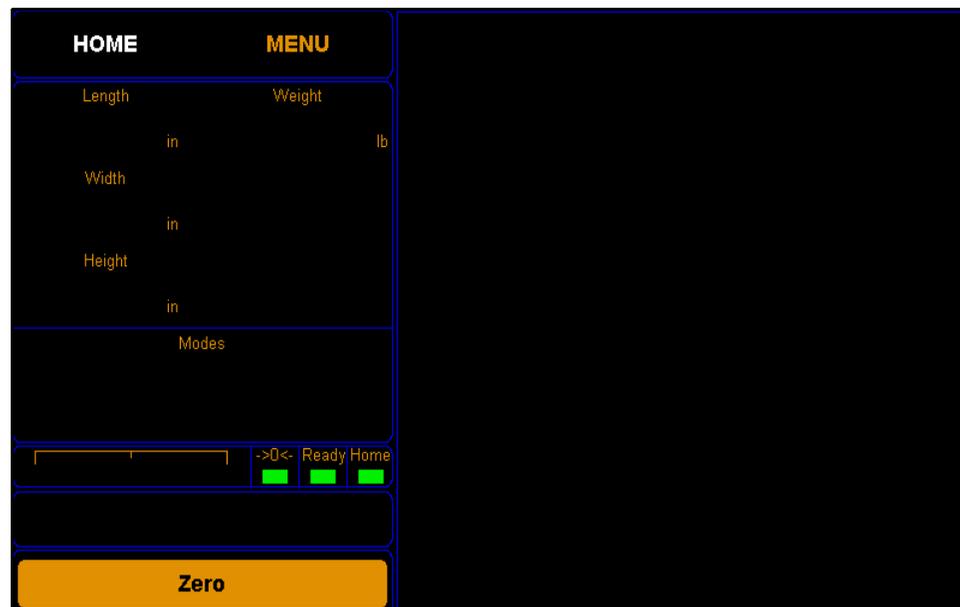


Figure 46  
Home screen

## NOTE >

If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to [page 43](#).

2. Tap **CALIBRATE**. Select the Scale option if it is not already selected. Make sure the weight units displayed are correct for the test weight you are using. Tap **[Next]** to begin the scale calibration.

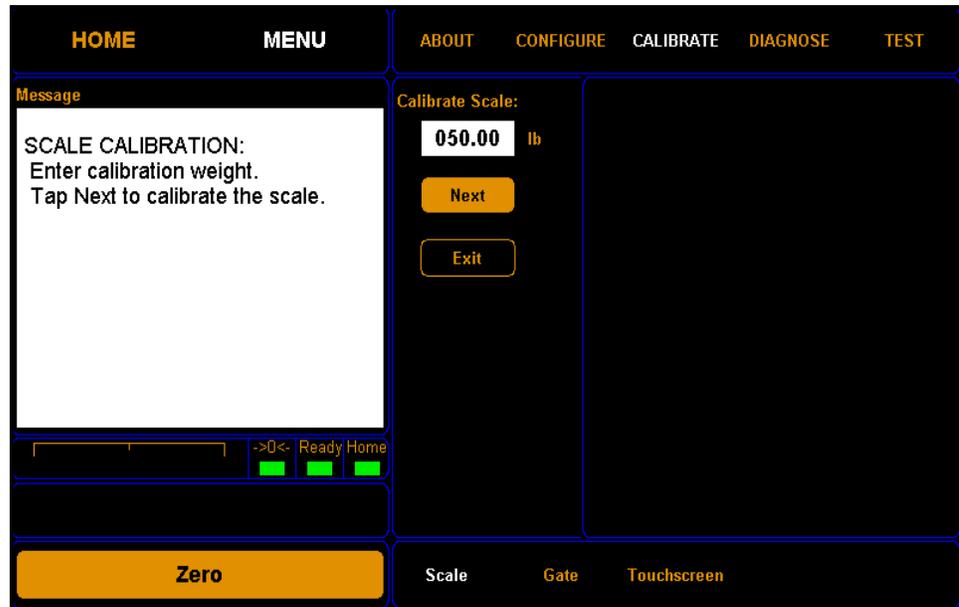


Figure 47  
First scale calibration screen

3. The following screen is displayed. Clear the scale of all objects, and tap **[Next]** to continue.

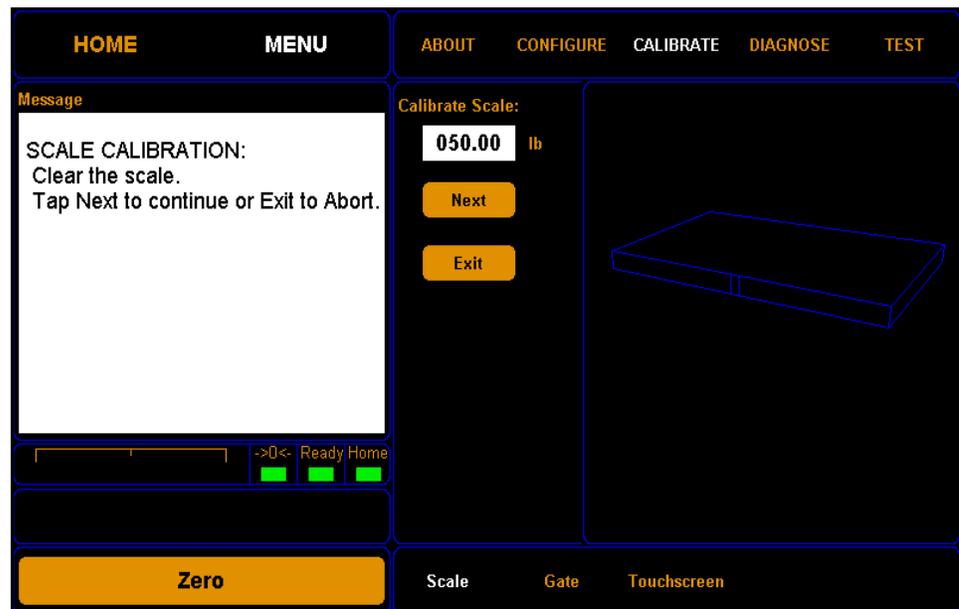


Figure 48  
Second scale calibration screen

- Place the calibration weights on the Cubiscan 325 platform. Tap **[Next]** to continue.

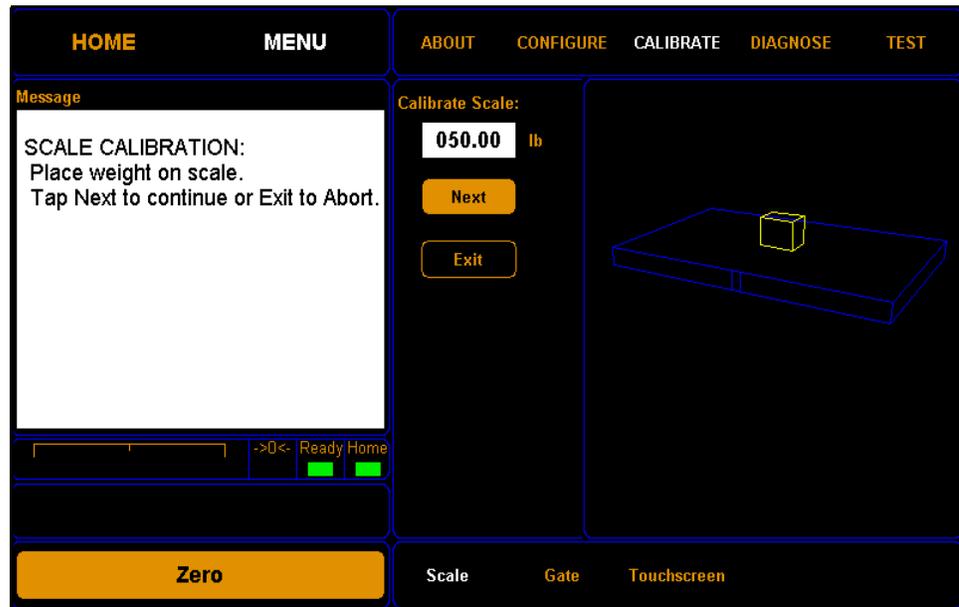


Figure 49  
Second scale calibration screen

- You have now finished calibrating the scale. Tap **HOME** to return to the home screen or if you would like to try calibrating the scale again, tap **[Next]**.

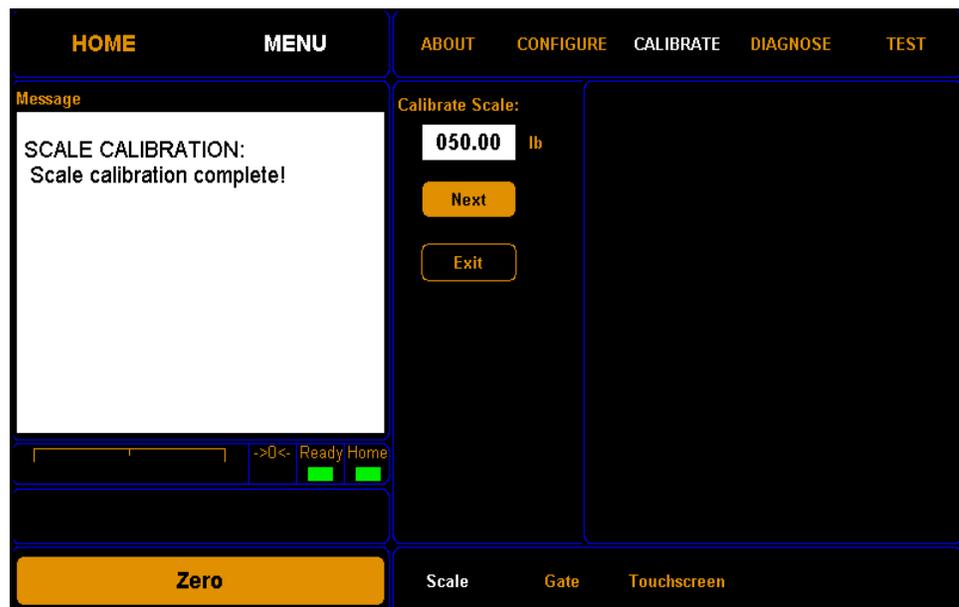


Figure 50  
Scale calibration complete

# Calibrating the gate



To calibrate the gate using the touchscreen, proceed as follows.

1. Tap **MENU** at the home screen.

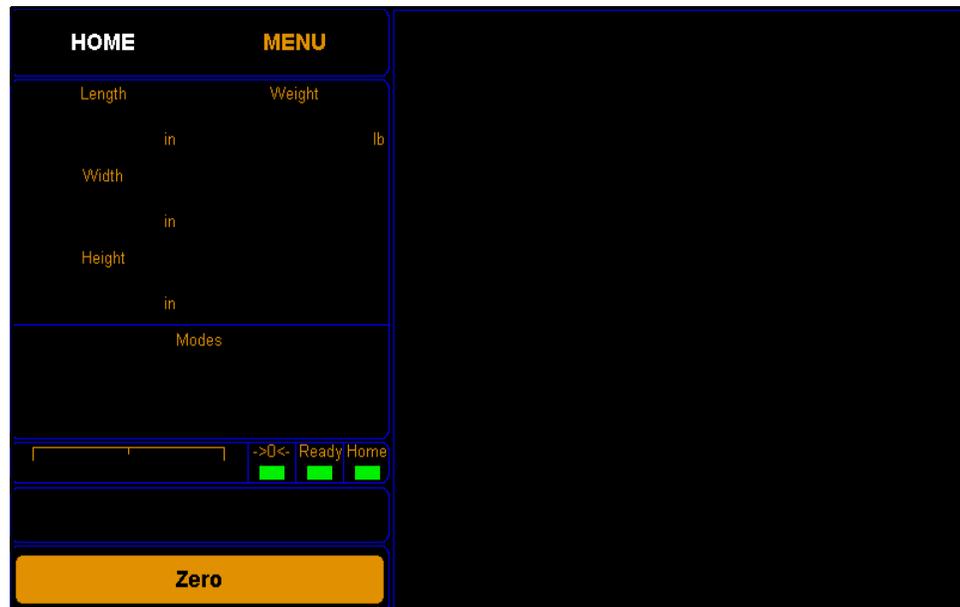


Figure 51  
Home screen



*If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to [page 43](#).*

2. Tap **CALIBRATE**. Select the Gate option if it is not already selected.

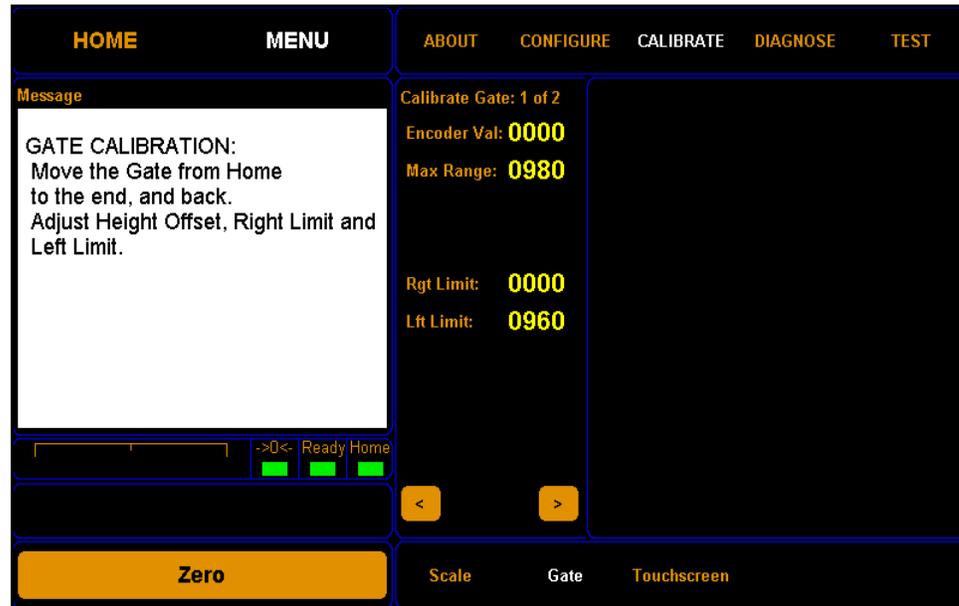


Figure 52  
First gate calibration screen

The encoder val field shows the movement of the gate and should read between 0940 and 0930 when the gate is the furthest from the home position. The max range value should be set a little lower than the highest encoder val.

From this screen you can set the measurement window for the Cubiscan 325 using the left and right limit fields.

3. Tap the [➤] button to go to the next screen.

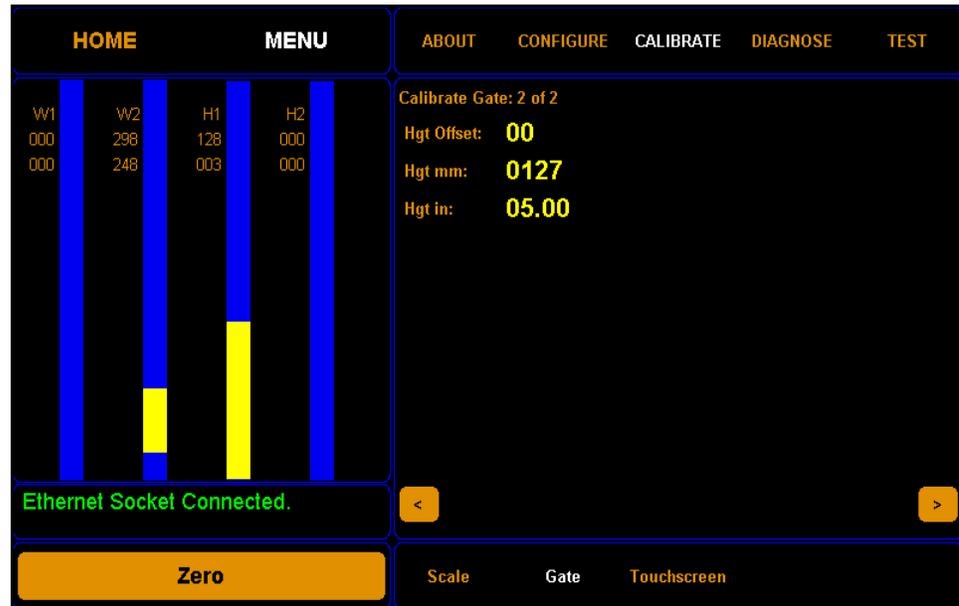


Figure 53  
Second gate calibration screen

From this screen you can adjust the height offset field. Adjust the height offset only if your height measurements are inaccurate.

To adjust the height offset, complete the following steps.

- Step 1.0 Place the calibration cube in the gate measurement field with the long side (the five-inch side) upwards. The **Hgt in** field will display the current height in inches.
- Step 1.1 Click on the **Hgt Offset** field to adjust the height offset. Adjust this field until the **Hgt in** field reads as close to 5.00 inches as possible. The height offset value may be slightly different for each Cubiscan.

## Calibrating the touchscreen



If you are having problems selecting functions on the touchscreen, you may need to recalibrate it. You should recalibrate any time it becomes difficult to select options on the screen.

Take the following steps to calibrate the touchscreen.

1. Tap **MENU** at the home screen.



Figure 54  
Home screen

**NOTE** >

If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to [page 43](#).

2. Tap **CALIBRATE**. Select the Touchscreen option if it is not already selected.

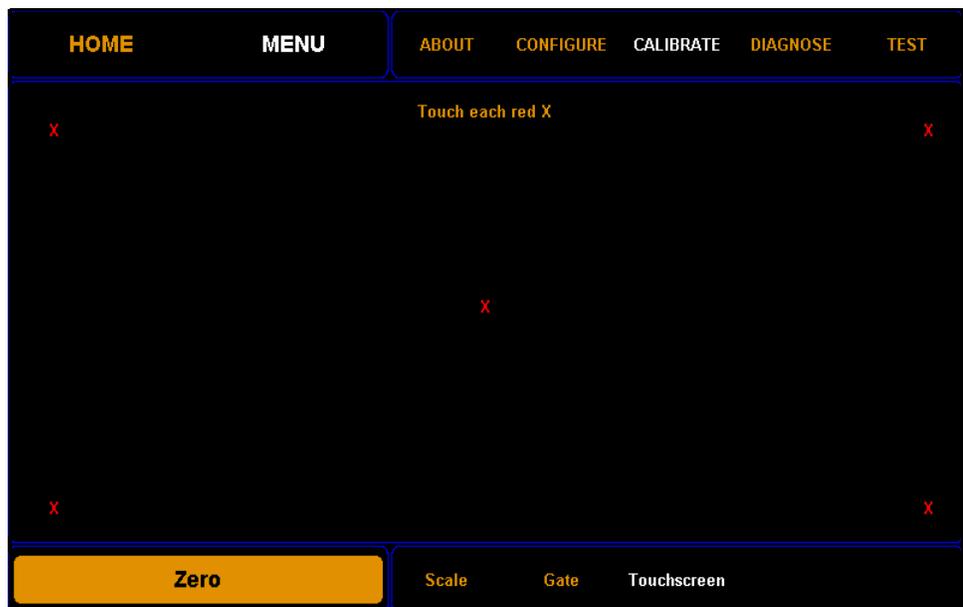


Figure 55  
Touchscreen calibration

- Using a stylus or your finger, touch the center of each **x** on the screen until the "x" turns green. There are five calibration points on the screen.

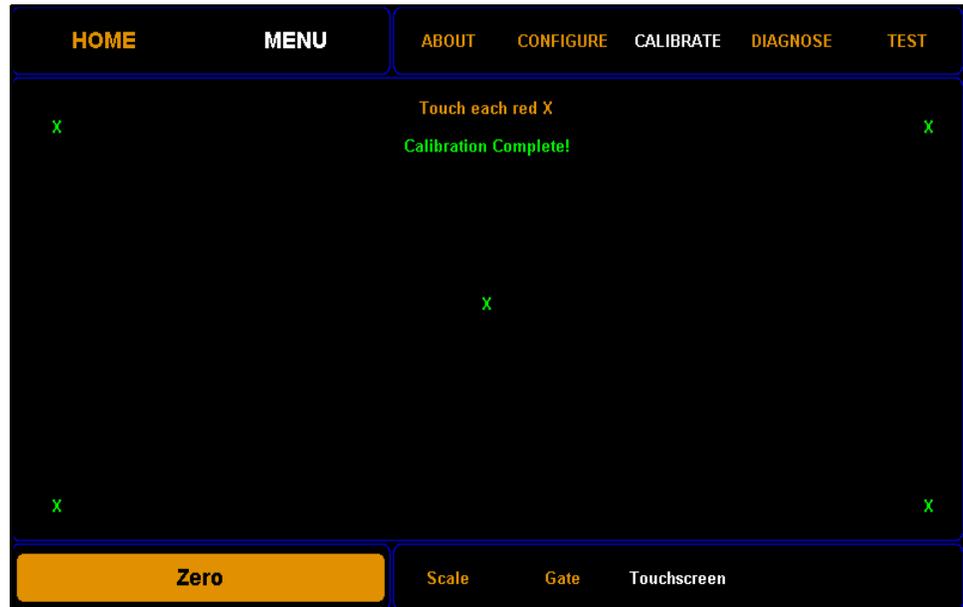


Figure 56  
Touchscreen calibration

- When all the **x**'s are green, the calibration is complete.

# CHAPTER 6

## MAINTENANCE

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This chapter provides information on the care and maintenance of the Cubiscan 325. Routine maintenance and careful handling will help keep the Cubiscan 325 in good operating condition and prevent service calls or repairs.

### Precautions

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The Cubiscan 325 should not be subjected to extremes in temperature or humidity, nor should it be subjected to excessive vibration. For environmental recommendations, see “Placement” on page 7.

Do not put packages on the platform that are known to be over 50 pounds (25 kg). All objects, especially heavy ones, should be placed on the platform gently. Shock loading will occur if an object is dropped or thrown onto the platform. This puts unnecessary and potentially damaging pressure on the load cell.

The Cubiscan 325 has been designed to accept overload without damage. However, rough handling and abuse, over time, can cause the load cell to lose much of its spring action. In addition, severe shock loading can cause permanent zero shift, making the scale inoperable.

### Cleaning the gate filters

---

This section describes how to clean the gate filters. The gate filters should be kept clean. While dust normally won't interfere with sensor operation, they should be cleaned routinely to prevent the possibility of interference.

To clean the gate filters, use a clean, damp (if needed) microfiber cloth. Use water to dampen the cloth; do not clean the gate filters with a solvent as this could cause damage.

# Removing the controller



If you suspect that there is a problem with the Cubiscan 325 controller, first review the Troubleshooting chapter and take any recommended action. If the problem persists, contact Cubiscan Technical Assistance at 801.451.7000 for assistance.

If Cubiscan recommends removing the controller and returning it for service, proceed as follows.

1. Turn off the power switch, and disconnect the power cord from the controller.
2. Remove the two center cover thumb screws that are located on the right side of the system. Slide the cover to the left so that you can access the controller cables.
3. You can try to remove the controller without removing the glass, or you can remove the glass platform using two people. It can simply be lifted off the Cubiscan 325 base. Place the platform in a safe location where it will not get stepped on or broken.
4. Move the gate to the far left position.

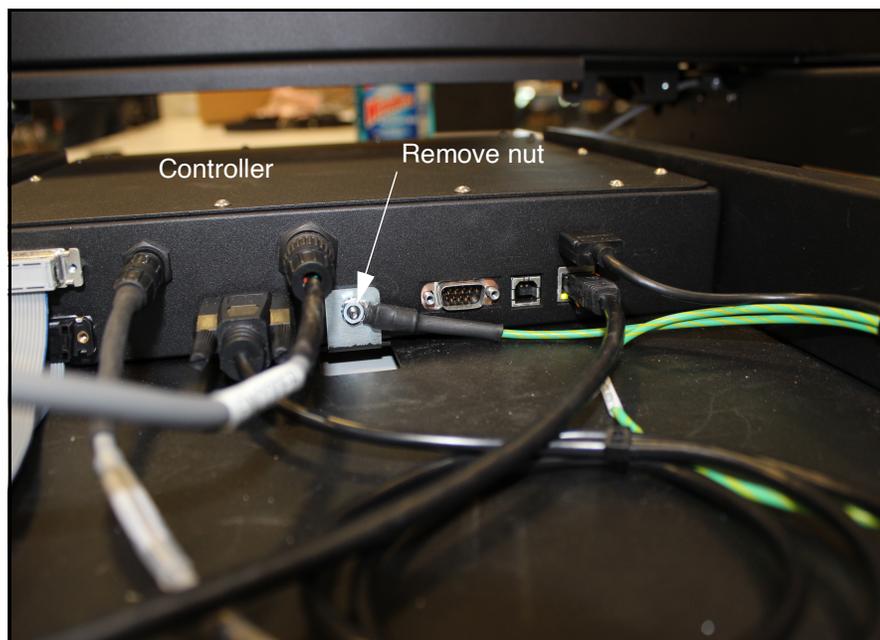


Figure 57  
Controller box

5. Locate the controller (the black box located below the gate's home position). Remove the nut using an 11/32" nut driver (see Figure 57).

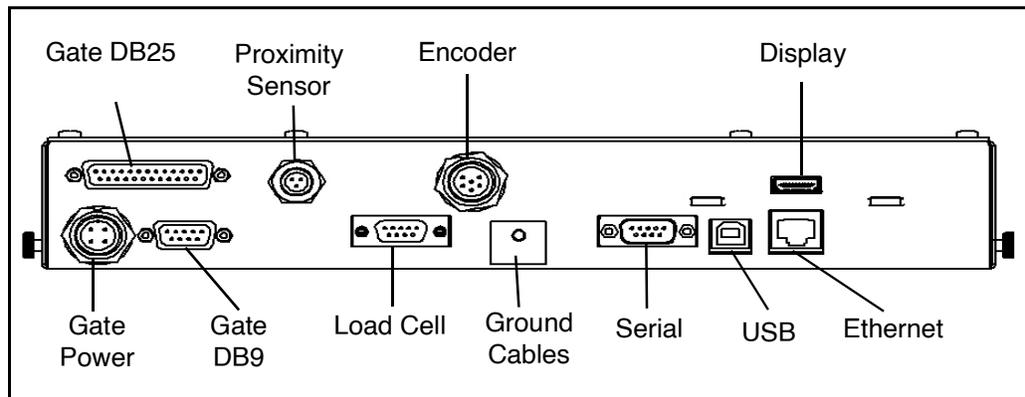


Figure 58  
Drawing of controller

6. Disconnect all connectors that are attached to the controller box (refer to Figure 58 as needed), as follows:
  - To remove the Ethernet cable connector, press the tab on the connector to release it, and pull it straight out.
  - To remove the USB and display cable, simply pull it straight out using even pressure.
  - To remove the serial and load cell cables, loosen the screws and pull the cable connectors out using even pressure.
  - To remove the gate DB9 connector and the gate DB25 connector, use a Phillips head screwdriver to loosen the screws, and pull the cables straight out.
  - To remove the gate power, proximity sensor, and encoder cables; unscrew the cables and pull them straight out.
  - Remove the nut holding the ground cables in place and detach the ground cables from the controller.
7. Verify that all cables have been removed from the controller, then lift the box up and pull it out sideways (to the right) until it is clear of the metal frame of the Cubiscan 325.

# CHAPTER 7

## TROUBLESHOOTING

---

This chapter provides assistance in identifying and solving common problems with the Cubiscan 325. If you encounter problems not covered in this chapter, or if a defect is suspected, contact your system integrator or call Cubiscan Technical Assistance at 801.451.7000 for assistance.

After installation, some problems are caused either by incorrect cabling or because the system setup is not correct. If you are having problems with the Cubiscan 325, first verify that all cables attached to the controller box (serial communications cables, sensor cables, power cord, Ethernet cable, load cell cable) are fully seated and secure (locking rings, clips, or screws). Then, verify that the setup is correct. For information on the setup, refer to CHAPTER 4 "CONFIGURATION" or to the *Qbit User Guide*.

Problems with your computer may affect operation of the Cubiscan 325 system. If you have trouble starting Qbit or if you encounter problems with your computer (including computer-related error messages), refer to your computer manual or contact your computer representative or dealer for assistance.

Frequent computer errors may be caused by dust or static electricity. It is important that your computer be kept as clean and static free as possible. Consult your computer manual for information.

If problems continue, review the following sections for more information.

## No response when you turn power on

---



If there is no response when you power on the Cubiscan 325, do the following:

1. Verify that the AC power cord is pressed firmly into the power socket.
2. Check the fuse in the fuse drawer next to the power switch.
3. Verify that the AC power source is working properly.

Contact Cubiscan if you require additional help.

## Scale readings are not accurate

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If you suspect that the Cubiscan 325 scale readings are inaccurate, do the following:

1. Zero the Cubiscan 325 by making sure the platform is free of all objects and then selecting **Zero** from the toolbar or Tools menu in Qbit. (If a computer is not connected, tap the **[Zero]** button on the touchscreen.)
2. Make sure that the Cubiscan 325 is on a level surface.
3. Move the Cubiscan 325 if it is located close to open freight doors or where air is blowing on it. Extreme air flow can affect the accuracy of the Cubiscan 325. Refer to "Placement" on page 7 for information.
4. Recalibrate the Cubiscan 325. Refer to page 51 for instructions.

## Dimension readings are not accurate

---



If you suspect that the Cubiscan 325 dimension readings are inaccurate, do the following:

1. Check the glass platform and gate filters for dirt or debris. Clean the glass platform with a clean, damp cloth.
2. Verify that the image is representative of the measured item. If not, check gate diagnostics of the Cubiscan 325. Refer to "Gate diagnostics" on page 72 for further information.

## Computer error messages

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The following error messages generated by Qbit indicate a communications problem between the Cubiscan 325 and the computer.

**No Communication with Cubiscan 325** This message indicates that no communication is taking place between the computer and the Cubiscan 325.

**Transmission Error** This message indicates that erroneous data or garbled data is being sent from the Cubiscan 325.

If you receive one of these messages, verify the following.

1. Is the Cubiscan 325 turned on and securely connected to power?
2. Is the serial cable or Ethernet cable connected to both the Cubiscan 325 and the computer or network, and are both connections secure?
3. (Computer connection) Is the serial cable connected to the computer at either the COM1 or COM2 port?
4. (Computer connection) Is the Com Port in the Options dialog box (Tools menu) configured for the correct port?
5. (Network connection) Is the Cubiscan 325 properly configured for TCP/IP communication? (Qbit software is used to configure the Cubiscan 325.)
6. Is there a problem with the Cubiscan 325? Perform the Status function in Qbit to check the status of the Cubiscan 325.
7. Is there a problem with the computer or network? Troubleshoot the computer, or contact your network administrator.

## About



This section describes the About menu of the Cubiscan 325. The About menu contains useful information and records of the Cubiscan 325.

## Version

This section discusses the options available on the Version menu. Complete the following steps to access the Version menu.

1. Tap **MENU** at the home screen.

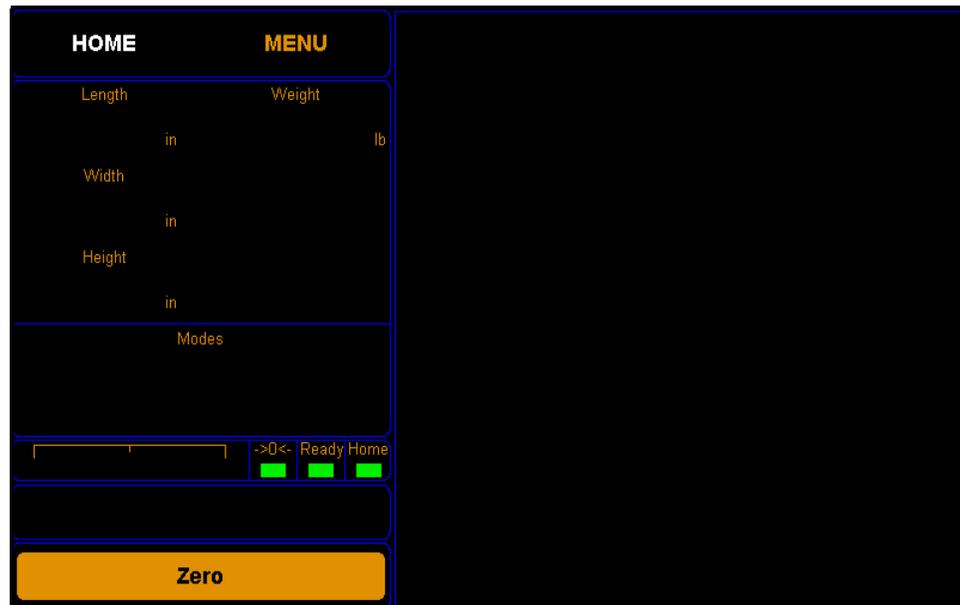


Figure 59  
Home screen

2. Tap **About**. Select the **Version** option if it is not already selected.



Figure 60  
About version

**MAC** This field displays the Media Access Control (MAC) address.

**SN** This field displays the product number that is unique to each Cubiscan 325.

<b>MDMI</b>	This field displays the Multiple Dimensional Measuring Instrument (MDMI) status. This status can either be sealed or unsealed.
<b>NAWI</b>	This field displays the Non-Automatic Weighing Instrument (NAWI) status. This status can either be sealed or unsealed.
<b>Main</b>	This field displays the firmware version used for the main controller.
<b>FPGA</b>	This field displays the firmware version used for the FPGA.
<b>Kernel</b>	This field displays the firmware version used for the kernel.
<b>Scale</b>	This field displays the firmware version used for the scale.
<b>W1, W2 H1, H2</b>	These fields display the firmware used for the width 1 and 2 boards, as well as the height 1 and 2 boards.

## Config-Audit

This section discusses the Config-Audit menu. Complete the following steps to access the Config-Audit menu.

1. Tap **MENU** at the home screen.



Figure 61  
Home screen

2. Tap **About**. Select the **Config-Audit** option if it is not already selected.

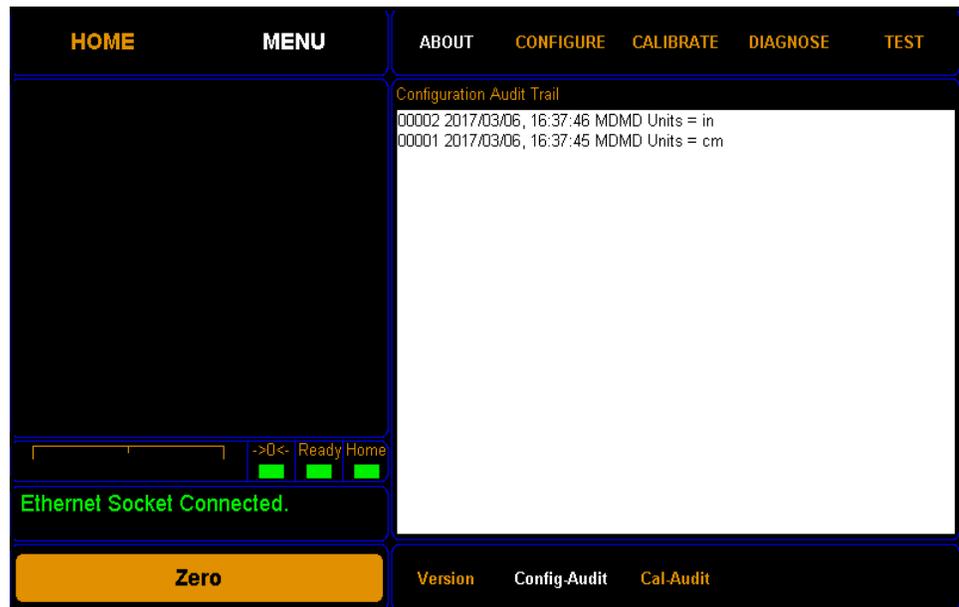


Figure 62  
About Config-Audit

**Configuration Audit Trail** This field displays the configuration audit history.

## Cal-Audit

This section discusses the Cal-Audit menu. Complete the following steps to access the Cal-Audit menu.

1. Tap **MENU** at the home screen.

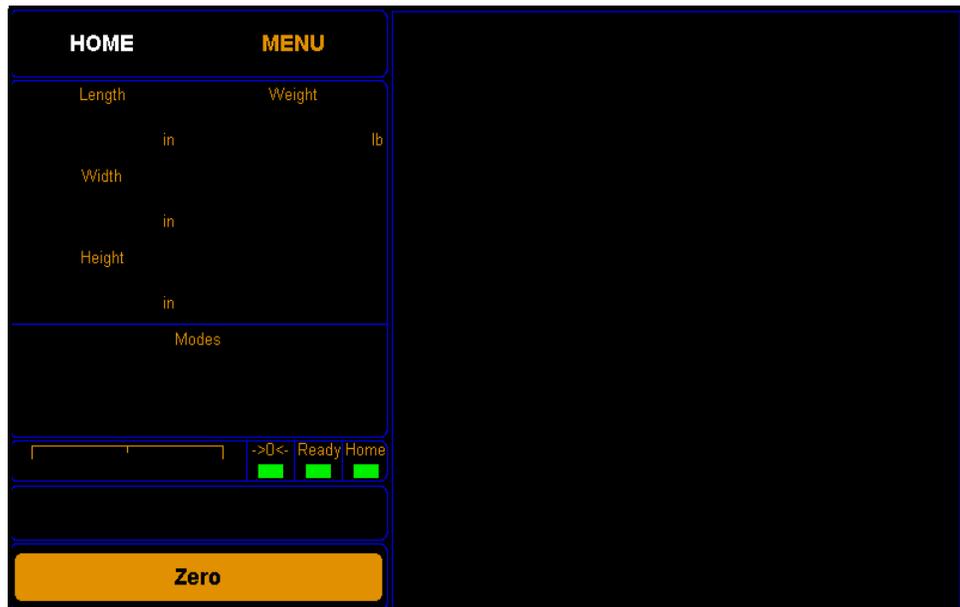


Figure 63  
Home screen

2. Tap **About**. Select the **Cal-Audit** option if it is not already selected.

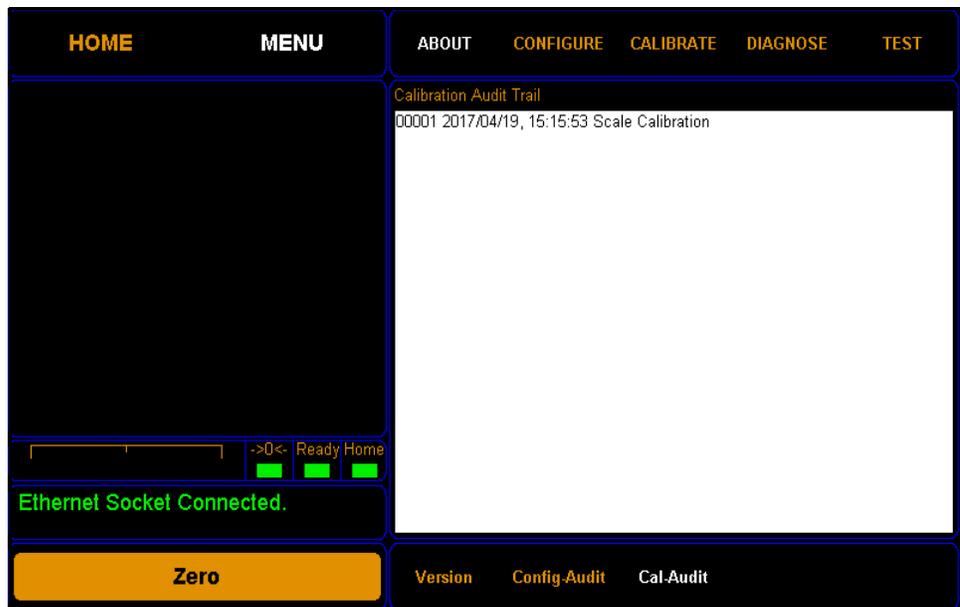


Figure 64  
About Cal-Audit

Calibration  
Audit Trail

This field displays the scale calibration history.

# Diagnostics



This section describes the diagnostic capabilities of the Cubiscan 325.

## Scale diagnostics

Complete the following steps to view the Scale Diagnostics.

1. From the home screen, tap **MENU**.

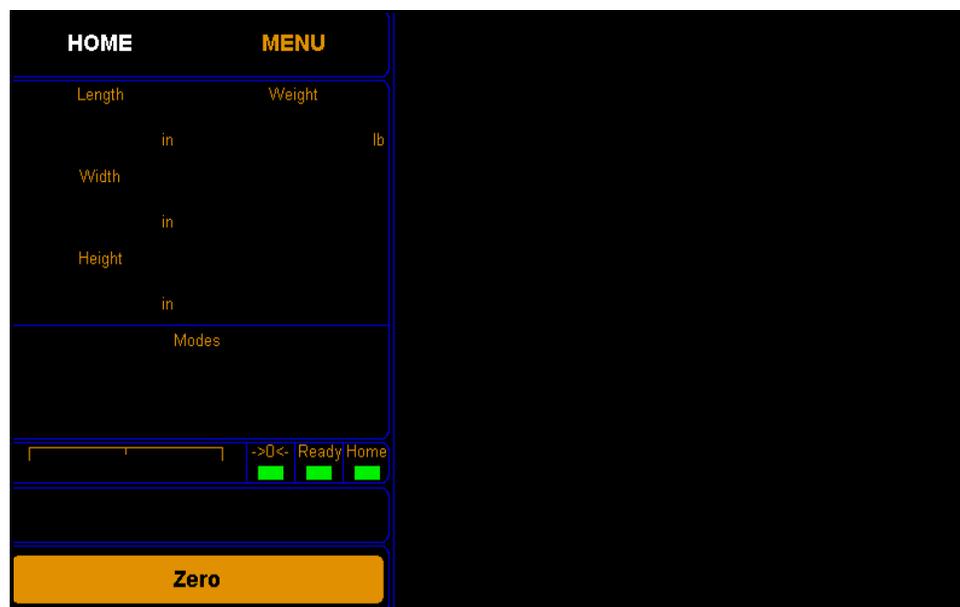


Figure 65  
Home screen



*If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to [page 43](#).*

2. Tap **DIAGNOSE**. Select the Scale option if it is not already selected.



Figure 66  
Scale diagnostics

From this screen you can view the diagnostic scale values.

- LDW** This field displays the dead weight count. (This field may or may not be visible, depending on the scale board your Cubiscan has.)
- LWT** This field displays the full weight count. (This field may or may not be visible, depending on the scale board your Cubiscan has.)
- Motion** This field displays the motion status of the scale.  
**0**=No motion  
**1**=Motion
- Wgt** This field displays the current weight.
- COZ** This field displays the center of zero.
- AM** This field displays the auto zero tracker.
- Zero** This field displays whether there is weight on the scale or not.  
**0**=Weight on scale  
**1**=No weight on scale
- Tare** This field displays the zero adjustment count.

## Gate diagnostics

Complete the following steps to view the gate diagnostics.

1. From the home screen, tap **MENU**.

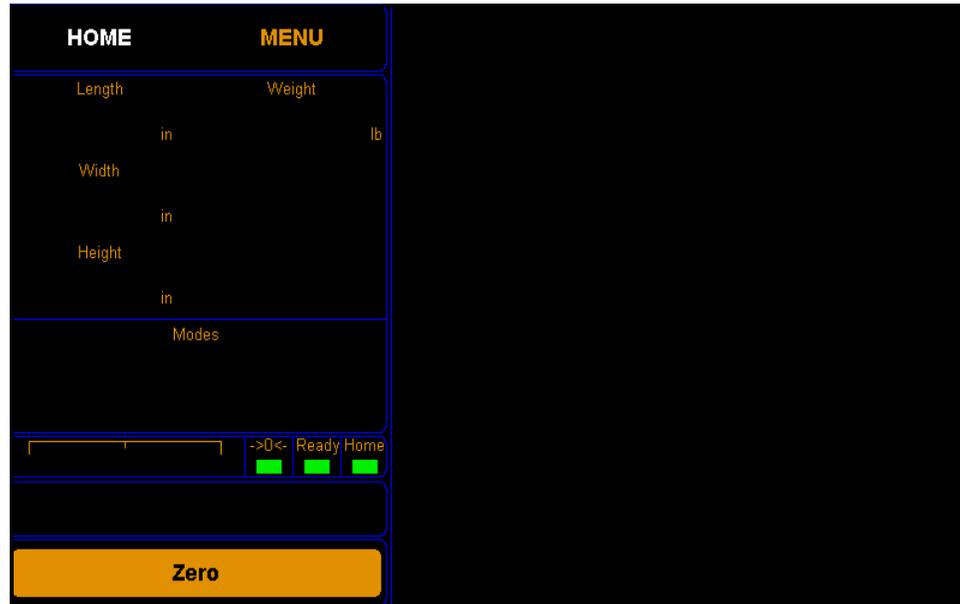


Figure 67  
Home screen

**NOTE** > If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to [page 43](#).

2. Tap **DIAGNOSE**. Select the Gate option if it is not already selected.

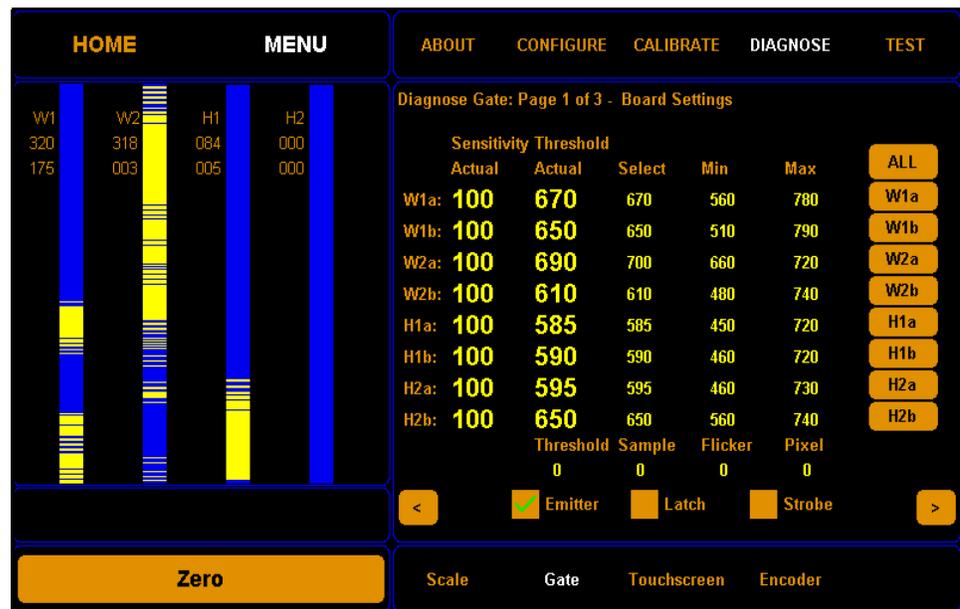


Figure 68  
First gate diagnostic screen

From this screen you can view the sensitivity threshold board settings.

The four LED beam bars now shown on the display represent the LED beams that the Cubiscan 325 uses to measure objects. This is a useful screen for determining the functionality of the LED beams.

The width and height bars correspond to the width and height boards in the measurement gate.

These LED beams bars are solid blue when no light beams are being broken, which typically means that there is no object in the measurement field.

The emitter checkbox should always be checked when you are measuring objects. When this box is unchecked, the gate is not emitting light and cannot measure objects.

3. Tap the [➤] button to go to the next screen.

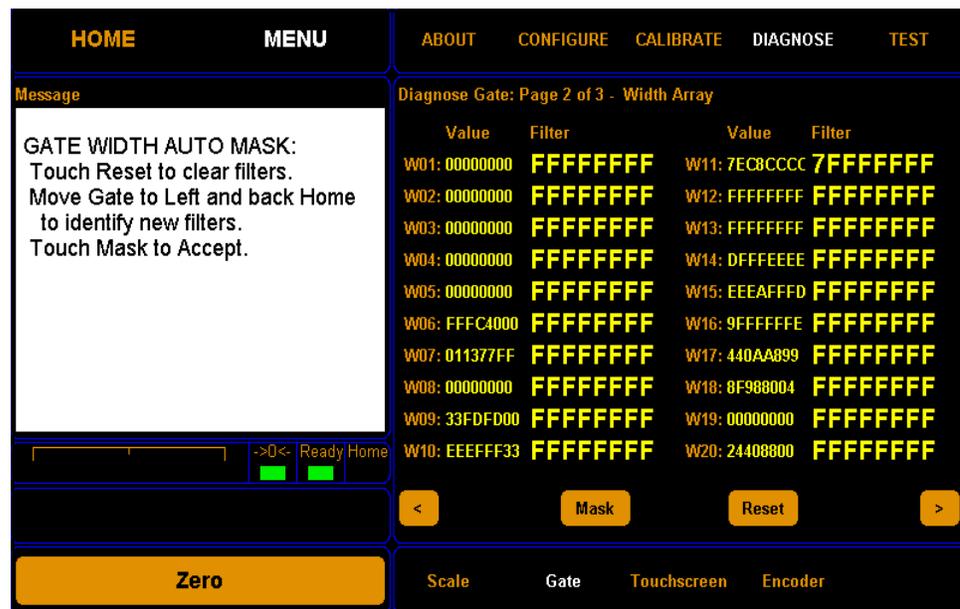


Figure 69  
Second gate diagnostic screen

From this screen you can view the gate width array settings and automatically mask width LEDs that are malfunctioning. No more than three LEDs should be masked at one time, or measurements may be affected.

To mask malfunctioning LED's, complete the following steps.

- Step 1.0 Clear the glass platform of all objects.
- Step 1.1 Tap **Reset** to clear any masks that may have been previously set.
- Step 1.2 Move the gate slowly from the home position (right-hand side) all the way to the left side and back to the home position. Malfunctioning LED's appear as yellow tick marks

on the blue LED beam bars. The image below shows three malfunctioning LED's that could be masked.

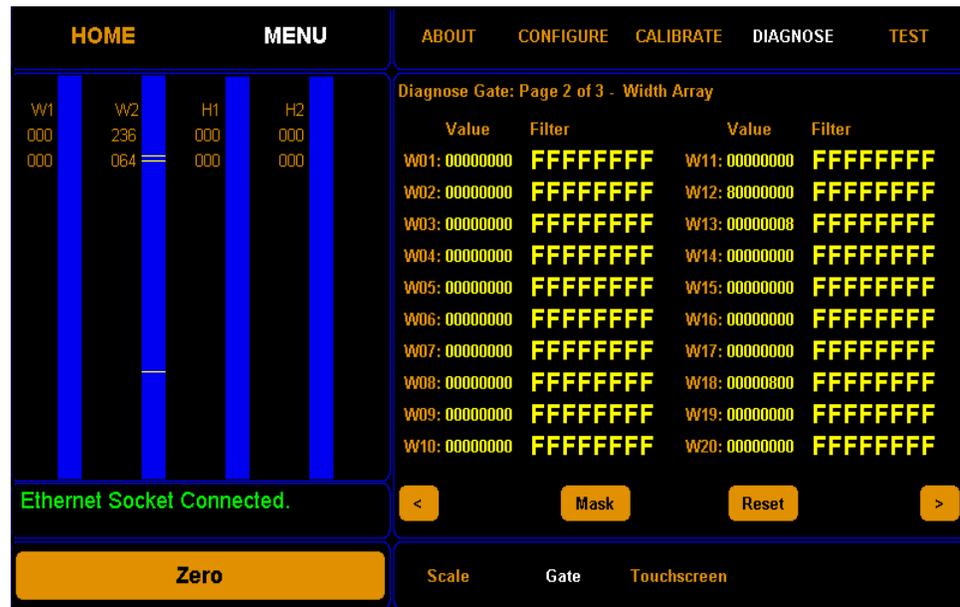


Figure 70  
Gate mask tick marks

- Step 1.3 Tap **Mask** to mask the LED's shown on the blue beam bars. When the LED's are masked, they will no longer be used to take measurements. If you want to clear all masks, tap **Reset**.

2. Tap the [➤] button to go to the next screen.

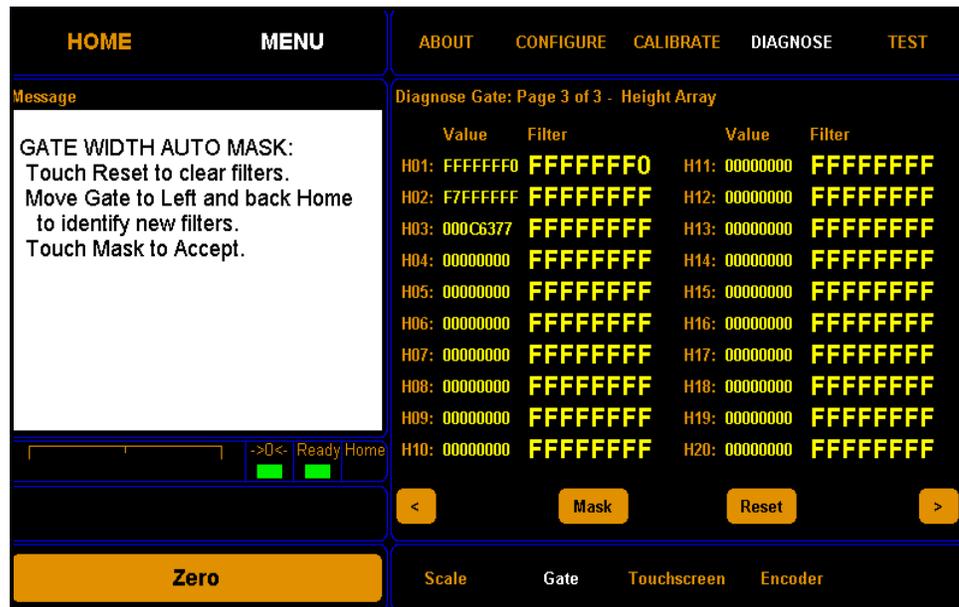


Figure 71  
Third gate diagnostic screen

## Touchscreen diagnostics

Complete the following steps to view the touchscreen diagnostics.

1. From the home screen, tap **MENU**.

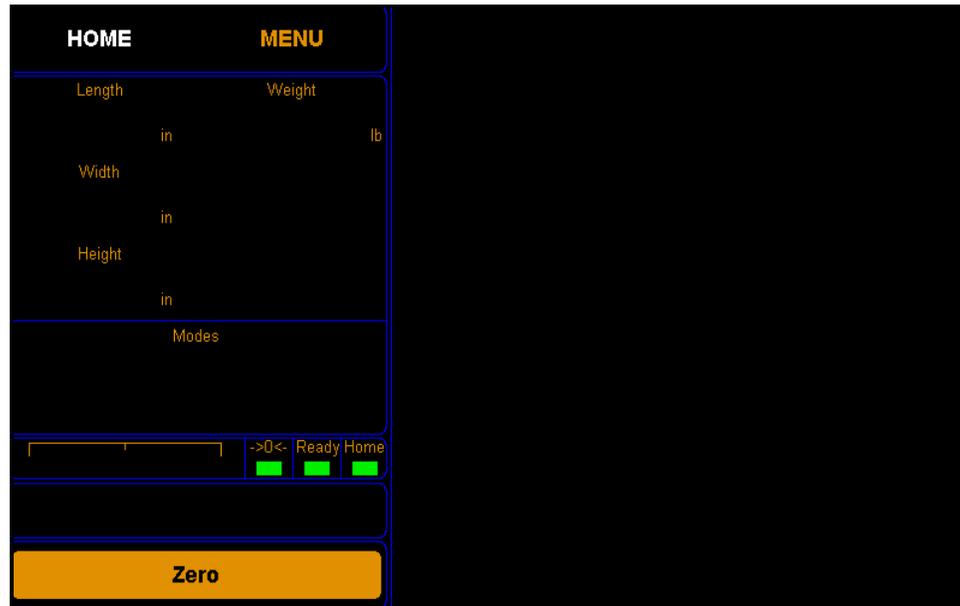


Figure 72  
Home screen

**NOTE** > If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to [page 43](#).

2. Tap **DIAGNOSE**. Select the Touchscreen option if it is not already selected.



Figure 73  
Diagnostic touchscreen

From this screen you can view the linearization parameters of the touchscreen.

To test the calibration of the touchscreen you can touch the screen and a **x** should appear.

## Encoder diagnostics

Complete the following steps to view the encoder diagnostics.

1. From the home screen, tap **MENU**.

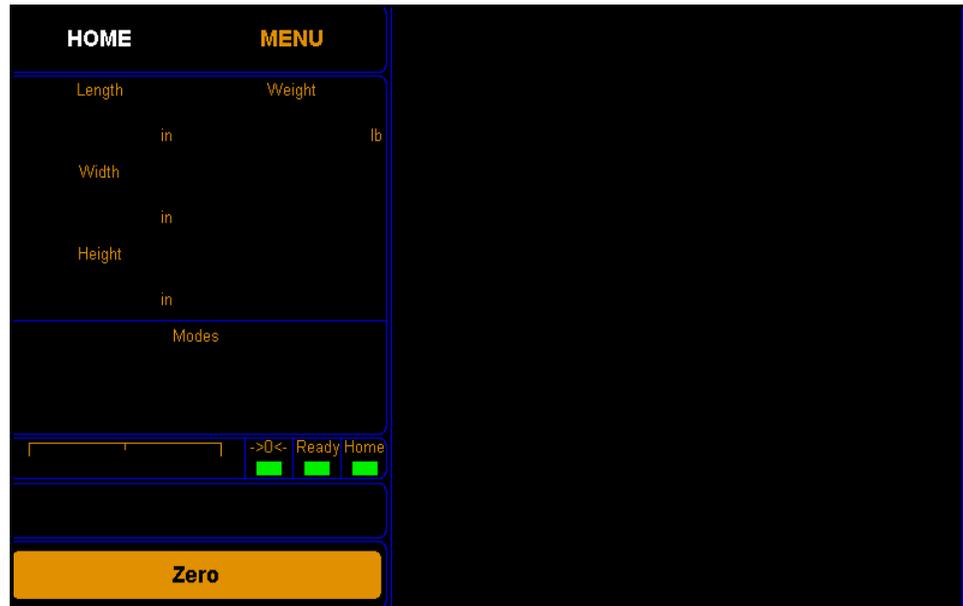


Figure 74  
Home screen

**NOTE** > If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to [page 43](#).

2. Tap **DIAGNOSE**. Select the Encoder option if it is not already selected.

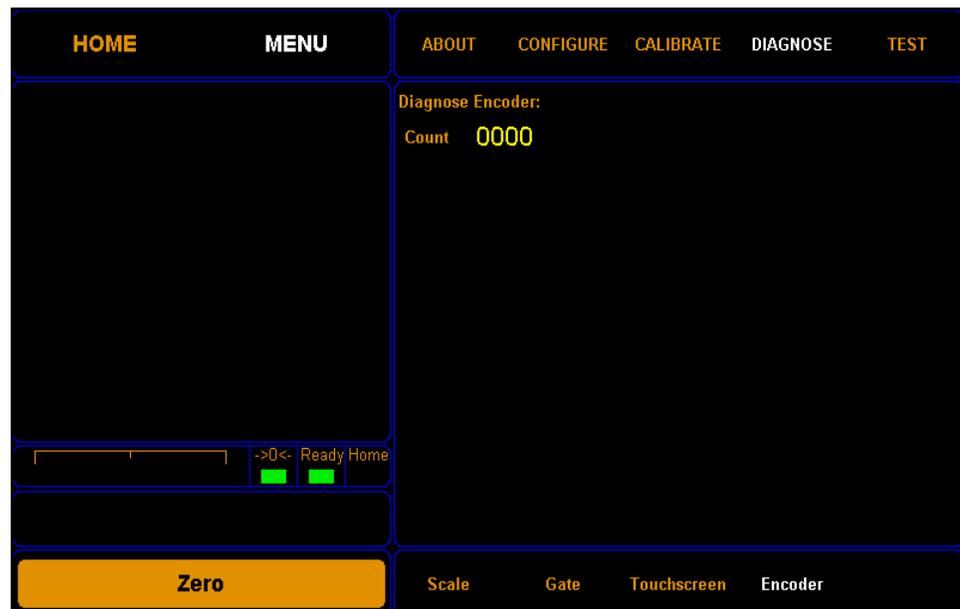


Figure 75  
Diagnostic encoder

From this screen you can view the encoder count.

## Testing



This section describes the factory testing capabilities of the Cubiscan 325. Data in this section should not be altered unless you are instructed to do so by a Cubiscan employee.

### Scale

Complete the following steps to view the Scale Testing.

1. From the home screen, tap **MENU**.



Figure 76  
Home screen

**NOTE** >

If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to [page 43](#).

2. Tap **TEST**. Select the Scale option if it is not already selected.

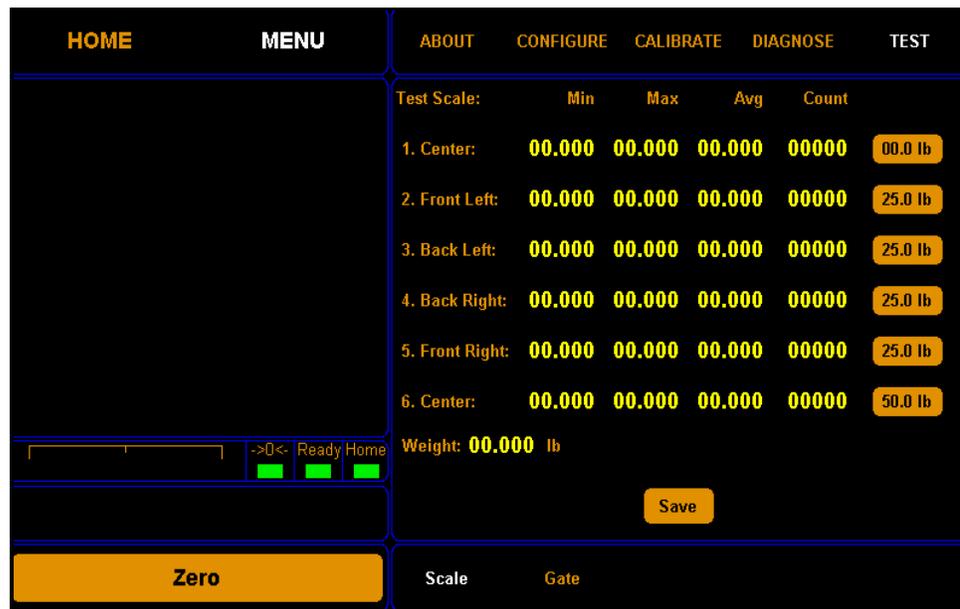


Figure 77  
Test scale

From this screen you can test for scale repeatability. Only run this test if instructed to by a Cubiscan employee.

## Gate

Complete the following steps to view the Gate Testing.

1. From the home screen, tap **MENU**.



Figure 78  
Home screen

**NOTE** >

If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu. Refer to [page 43](#).

2. Tap **TEST**. Select the Gate option if it is not already selected.



Figure 79  
First gate test screen

From gate diagnostic screens one through two, you can run and view the results of the cube test. Only run this test if instructed to by a Cubiscan employee.

3. Tap **[>]** twice to reach the third gate diagnostic screen.

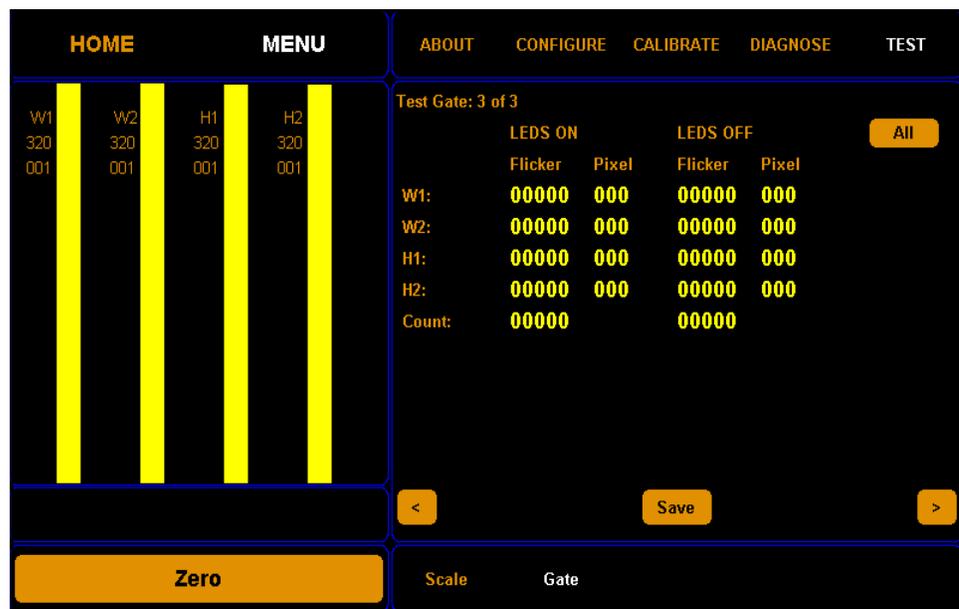


Figure 80  
Third gate diagnostic screen

From this screen you can run a flicker test for internal gate testing purposes.

You should only run this test if you are instructed to by a Cubiscan employee.

# APPENDIX A

## PARTS LIST

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Following is a list of parts that can be purchased for the Cubiscan 325 as spare parts or if replacement is necessary.

Part No.	Description	Quantity/Unit
10083	AC power cord	1
10558	Scale card PCB	1
12344	1/2" Diameter ball	4
12841	Infrared receive PCB	4
12844	Infrared transmit PCB	4
13340	Proximity sensor	1
13351	1 Amp fuse	2
13372	Load cell summing PCB	1
13411	USB to Ethernet adapter	1
13624	Calibration cube, 5" x 3" x 2"	1
14066	Leveling foot	4
14090	Touchscreen assembly (display)	1
14100	Main controller assembly	1
14675	Load cell	4
14326	CAT 5e patch (Ethernet cable), 10 ft	1
14697	Infrared filter, 14"	4
14725	Encoder magnet	1
14743	Motion encoder with connector	1
14849	User manual (PDF)	1
15200	Glass plate (with discs)	1