

Cubiscan 150-TC



Operations and technical manual

Version [1.1]

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Cubing and weighing systems

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CUBISCAN®

Cubiscan 150-TC operations and technical manual

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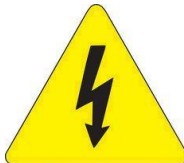
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CAUTION

The Cubiscan 150-TC should only be serviced by qualified personnel.

Observe precautions for handling electrostatic sensitive devices when setting up or operating the Cubiscan 150-TC.



WARNING

Disconnect all power to the Cubiscan 150-TC before servicing or making any connections.



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CHAPTER 1

PRODUCT DESCRIPTION

The Cubiscan 150-TC Manifesting Table is designed for today's dimension and weight-based freight manifesting applications. Designed for use in distribution, direct fulfillment, and logistics environments, the Cubiscan 150-TC combines flexibility, accuracy, and durability into an attractive and functional package.

The Cubiscan 150-TC is robust, with a maximum measurement range of 48 x 39 x 40 inches (120 x 100 x 100 cm) and a net weight capacity of 150-TC pounds (70 kg).

The Cubiscan 150-TC is mounted on locking casters so it can be operated in a fixed position or quickly moved and redeployed when necessary. Accessories include label printers, laptop interface workstations, storage shelves, and several barcode scanning solution options.

Each unit has five ports. It uses 110 VAC, 60 Hz power (auto-switchable to 220-240 VAC, 50 Hz). Optional on-board data storage and real-time clock allow the Cubiscan 150-TC to be used as a stand-alone dimensioning and manifesting station.

With a touchscreen interface and Qbit™ proprietary software, the Cubiscan 150-TC is capable of buffering thousands of data records, can interface to barcode scanning and label printing devices, and can communicate directly (in batch or real-time mode) with mainframe or PC hosts.

The Cubiscan 150-TC utilizes advanced sensing technology that is safe for both operators and freight. A one-year factory warranty on parts and labor is included; post-warranty maintenance agreements and extended warranty contracts are also available.

The Cubiscan 150-TC was calibrated at the factory, but may require recalibration due to handling during shipping. Calibration instructions for the Cubiscan 150-TC are provided in CHAPTER 5 "CALIBRATION."



Figure 1
Cubiscan 150-TC

Specifications

Electrical

Voltage:	100-240 VAC, 47-63 Hz, single phase
Current:	1.05 A maximum current draw, 0.15 A typical
Power supply:	External switching +12 V DC @ 3.75 A

Measuring capacities

Minimum package dimensions: 3 x 2.4 x 2.4 in
(8 x 6 x 6 cm)

Maximum package dimensions: 48 x 39 x 40 in
(120 x 100 x 100 cm)

Dimension increment: 0.1 in (0.2 cm)

Maximum package weight: 150-TC lb (70 kg)

Weight increment: 0.05 lb (0.02 kg)

Environmental

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

Humidity: 0 to 90% non-condensing

Physical

Measuring surface: 64 x 42 in (163 x 107 cm)

Total footprint required: 65 x 52 in (165 x 132 cm)

Height: Adjustable
87 inches maximum to the top of the overhead arm

Table height: Adjustable
28 to 38 inches including caster adjustment

Shipping weight: 780 lbs (354 kg)

Net weight: 430 lbs (195 kg)

Shipping dimensions: 75 x 59 x 42 in (190 x 150-TC x 105 cm)

User Interface

QBIT™ software can be used to interface with the Cubiscan 150-TC.

Display:
Integrated TFT LCD touchscreen displays L, W, H, weight, unit of measure,
and diagnostic codes

Outputs:
Serial (2), Ethernet (1), USB-A (1), USB-B (1)

CHAPTER 2

SETUP

This chapter provides instructions for assembling and setting up the Cubiscan 150-TC. Perform the steps to set up the Cubiscan 150-TC in the following order:

- Unpack the Cubiscan (page 4)
- Place the Cubiscan where you will be using it (page 5)
- Adjust the platform height (page 6)
- Install the overhead arm (page 10)
- Connect the height sensor cable to the sensor (page 12)
- Level the Cubiscan 150-TC and lock the casters (page 13)
- Remove the shipping bolts (page 15)
- Connect power to the Cubiscan 150-TC (page 16)
- Turn on the Cubiscan 150-TC (page 17)
- Connect the Cubiscan to a computer or network (optional) (page 17)
- Connect the Cubiscan to a barcode scanner (optional) (page 20)

Unpacking



While unpacking, examine the container and the Cubiscan 150-TC carefully for any damage. If, after unpacking, you discover any damage to the Cubiscan 150-TC, contact the carrier immediately.

The Cubiscan is shipped in a single container with all components packed in the crate. If you ordered optional accessories, verify that you received them.

There is a box inside the crate that contains the power cable, USB cable, tools, software disc, and calibration cube.

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

Cubiscan 150-TC
Overhead arm assembly

AC power cord

USB cable

Calibration cube

Tools You Will Need

Other tools you may need to set up the Cubiscan 150-TC include the following:

- Pallet jack and/or forklift
- Official test weight in the range of 50-150-TC pounds (25-70 kg)

NOTE



A power strip (not included) is recommended for turning power off and on.

Placement



The Cubiscan 150-TC is equipped with casters, which allow it to be moved short distances or repositioned. However, because the Cubiscan needs to be level for proper operation, you should place it in or near its permanent location prior to assembly and leveling.

The Cubiscan 150-TC 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 to extremes in temperature or humidity. Locate the Cubiscan as far from open freight doors as possible. Heaters or air conditioners should not blow directly on the Cubiscan, as this will cause interference with the scale.
- Protect the Cubiscan from static electricity, especially the touchscreen.
- Place the Cubiscan on a flat, sturdy surface as free from vibration as possible. Excess vibration can reduce the accuracy of the Cubiscan 150-TC scale.
- The Cubiscan's platform is free-floating—it is resting on a spring (load cell). Maintain a minimum of one-inch clearance at the back and sides of the Cubiscan. Do not rest objects against or set objects on the Cubiscan when not in use.

- If a computer is being used, place it as close to the Cubiscan as possible. The operator needs to use the keyboard or mouse on the computer while cubing and weighing packages using the Cubiscan 150-TC. The Cubiscan 150-TC's optional laptop tray arm offers an optimum location for a laptop.

Adjusting the platform height

The Cubiscan 150-TC platform is initially set at the lowest possible height. Slotted adjustment holes in the frame legs provide virtually infinite adjustment within the height range. Because the main Cubiscan assembly is heavy (430 lb), you need to use a forklift (recommended) or pallet jack to support and lift the main assembly to adjust the height of the platform. If help is available, one or two people can lift one end of the Cubiscan by its handle while you adjust the legs. Then repeat this operation on the other end.



Disconnect all power to the Cubiscan 150-TC before servicing or making any connections.



Figure 2
Lift the Cubiscan only by the handle



Before you start, determine the height at which you want the Cubiscan 150-TC platform so that you can position it properly with the forklift or pallet jack.

Using a forklift

Take the following steps when using a forklift to support and lift the main assembly of the Cubiscan 150-TC to adjust the platform height.

You may want to place plywood or cardboard on the forks of the forklift so the forks do not come into direct contact with the painted surface of the frame.

1. Adjust the forks so they can be inserted under the main horizontal frame without touching any other Cubiscan components (see Figure 3).



Figure 3
Position of forklift forks under frame

2. Approach the Cubiscan 150-TC with the forklift until the forks are in position to lift the frame.

3. Locate the retaining bolts and slotted adjustment holes in the frame legs (see Figure 4).

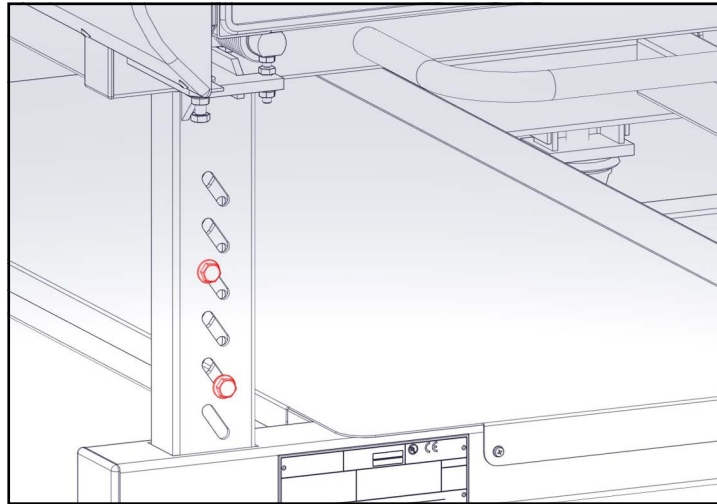


Figure 4
Platform retaining bolts and adjustment holes

4. Apply gentle lift with the forklift until enough pressure is removed from the retaining bolts so that they can be removed.



Do not climb under the Cubiscan 150-TC during height adjustment or while the forklift is supporting the Cubiscan.

5. Remove the retaining bolts on both sides of the frame with a 9/16" open-end wrench or socket.



It is recommended that you have one person positioned on each side of the Cubiscan platform to remove and replace the retaining bolts and help align the adjustment holes.

6. With the retaining bolts removed, raise or lower the frame slowly until the adjustment holes in the leg and the frame are aligned at the desired height.
7. When the desired height is achieved, push the retaining bolts through the slotted holes in the frame and leg. There should always be at least two openings that the bolts will pass through. If possible, place the bolts with at least one slot between them as shown in Figure 4.
8. Thread the nuts on the bolts and tighten them.
9. Lower the frame, and back the forklift away from the Cubiscan.

Using a pallet jack

Take the following steps when using a pallet jack to support and lift the main assembly of the Cubiscan to adjust the platform height.

1. Using pallets and/or dimensional lumber, construct a flat and stable platform with which to lift the Cubiscan frame. The platform must be nearly as high as the bottom of the Cubiscan main frame.
2. With the pallets and lumber in place, approach the Cubiscan from the front with the pallet jack, and position the jack so it is under the Cubiscan's main horizontal frame.
3. Make certain that the wooden platform is even and stable.
4. Move the pallet jack into place and lift it until the wooden platform comes into contact with the bottom of the Cubiscan frame, but do not lift the Cubiscan.
5. Locate the retaining bolts and slotted adjustment holes in the frame legs (see Figure 5).

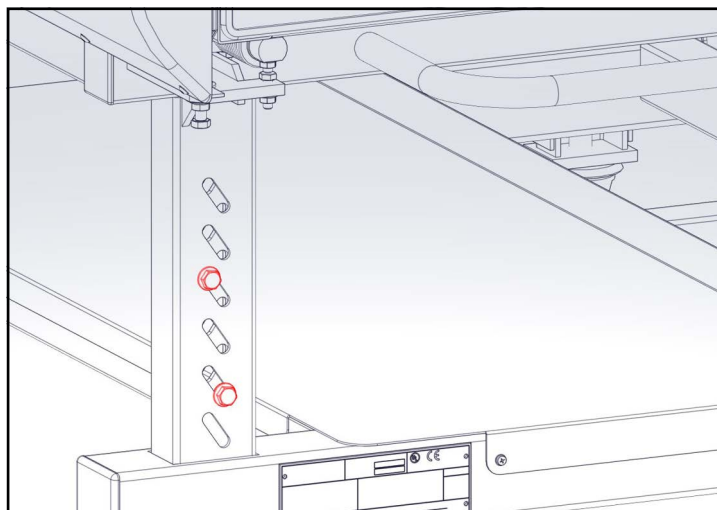


Figure 5

Platform retaining bolts and adjustment holes

6. Apply gentle lift with the pallet jack until enough pressure is removed from the eight retaining bolts so that they can be removed.



CAUTION

Do not climb under the Cubiscan 150-TC during height adjustment or while the forklift is supporting the Cubiscan.

7. Remove the retaining bolts on both sides of the frame with a 9/16" open-end wrench or socket.

NOTE

It is recommended that you have one person positioned on each side of the Cubiscan platform to remove the retaining bolts and help align the adjustment holes.

8. With the retaining bolts removed, raise or lower the frame slowly until the adjustment holes in the leg and the frame are aligned at the desired height.
9. When the desired height is achieved, push the retaining bolts through the slotted holes in the frame and leg. There should always be at least two openings that the bolts will pass through. If possible, place the bolts with at least one slot between them as shown in Figure 5.
10. Thread the nuts on the bolts and tighten them.
11. Lower the pallet jack, and move it away from the Cubiscan 150-TC.

Installing the overhead arm



One person can attach the overhead arm assembly to the Cubiscan 150-TC base; however, you may want another person to help lift the arm into place.

The height sensor cable with a coupler on the end is routed from the height sensor and out a hole in the overhead arm assembly. The retaining

bolts you will use to secure the arm are attached to the mounting plates at the back of the frame.

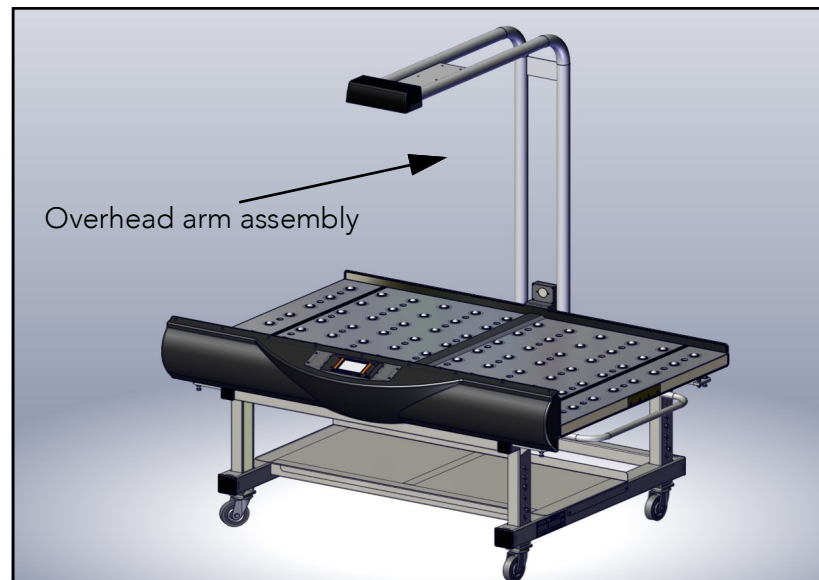


Figure 6
Overhead arm installed on the Cubiscan 150-TC

Do the following to attach the Cubiscan 150-TC's overhead arm.

1. Remove the retaining bolts from the mounting plates on the back of the base frame (finger tight only), and have them ready to insert into the appropriate holes when the arm is in place.
2. Lift the overhead arm into position at the back of the frame, and set the angled mounting plate on the bottom of the arm assembly on the

frame, aligning the holes in the arm mounting plates with the holes in the frame mounting plate, as shown in the following figures.

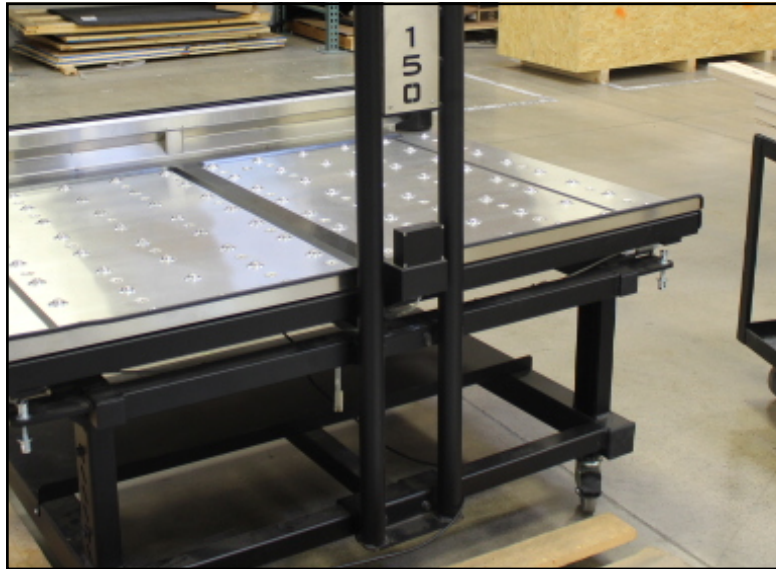


Figure 7
Attaching the overhead arm to the base

3. Insert the retaining bolts through the mounting plate in the overhead arm assembly and into the matching holes in the plate on the base frame and tighten them. Make sure no cables are being pinched by the overhead arm when you are finished.

Height sensor cables

After installing the overhead arm, connect the height sensor cables as explained in the following steps.



CAUTION

Do not touch the gold foil screens on the front of the sensors.

1. Locate the two height sensor cables on the Cubiscan. A cable labeled "Height" with a coupler is routed from the height sensor down through one of the tubes of the overhead arm assembly, and extends from a hole. Make sure this cable is not pinched or constricted.

The other cable labeled "Height" has a phone-style jack on one end and is located under the Cubiscan scale platform.

2. Plug the phone-style jack into the coupler on the height sensor cable, and verify that the connection is secure.



Figure 8
Height sensor cable connection

Leveling the Cubiscan 150-TC

The Cubiscan 150-TC has casters that permit it to be moved.

NOTE > You can use the Cubiscan 150-TC as a mobile manifesting table by keeping the casters unlocked and movable. However; if the Cubiscan 150-TC is not level, accuracy may be diminished.

Do the following to lock the casters and level the Cubiscan 150-TC.

1. To lock the casters in place so they will not roll, push down on the black toe lock on the back of each caster. You can use the toe of your shoe to push the lock down.

2. If the Cubiscan is not level, adjust the height of each caster as necessary. Locate the bolt under the caster housing accessible from the front of the caster.

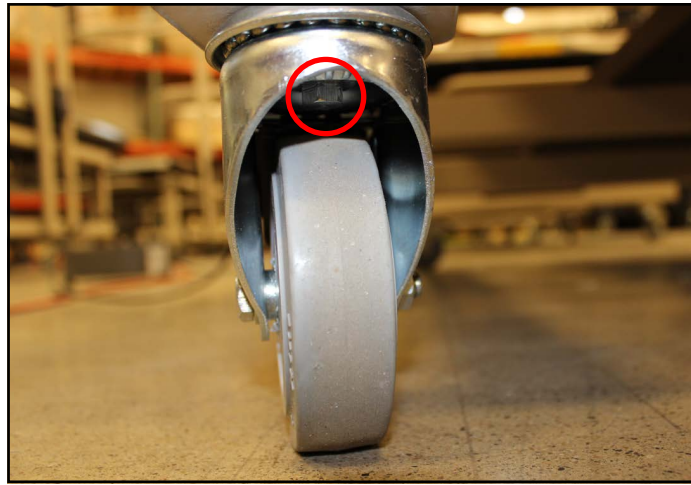


Figure 9
Caster height adjustment bolt

You can use a 7/16" wrench to turn the adjustment bolts with the Cubiscan on the floor, or you can take the weight off the casters using a pallet jack under the frame or by having someone lift the Cubiscan by its handle, and turn the bolts by hand.

3. Turn a bolt clockwise to raise the Cubiscan frame or counterclockwise to lower it.
4. After adjusting a caster, check the leveling bubble. The leveling bubble, shown below, is located on the Cubiscan platform just to the left of the center (facing the front of the Cubiscan).



Figure 10
Leveling bubble

5. The Cubiscan is level when the bubble is centered in the middle circle of the level. You may need to raise or lower each caster a number of times to level the Cubiscan.
6. When you are finished leveling the Cubiscan, make certain that all four casters make solid contact with the floor. If the Cubiscan does not sit flat, it may wobble or vibrate during measurement, which can cause errors.

Shipping bolts

The shipping bolts protect the platform and load cells from being damaged during shipment. A shipping bolt is located on each corner of the platform between the top and the frame and can be accessed from under the platform (see Figure 11).

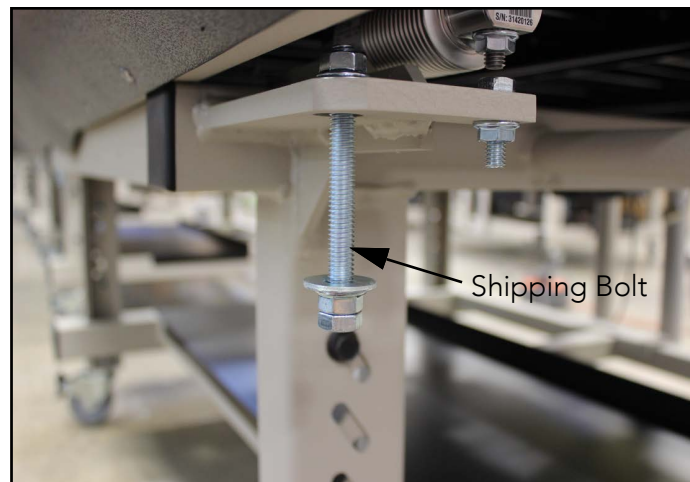


Figure 11
Shipping bolts

Use a 9/16" open-end wrench (supplied) to loosen the top and bottom nut from each bolt, until it will not interfere with scale movement.

The nuts and bolts prevent the platform from moving and protect the load cells from damage during shipment. If you ship the Cubiscan to another

location, move it by forklift, or move it any distance in which rough handling may occur, tighten the shipping bolts before moving it.



WARNING

Do not overtighten the bottom nut, or allow the shipping bolt to put pressure on or lift the load cell. Pressure on the load cell while moving the Cubiscan will damage the load cell.

Connecting power

Take the following steps to connect power to the Cubiscan. The connection box is located under the front left corner of the scale (see page 16). Note that the connectors point toward the back of the Cubiscan 150-TC. Take the following steps to connect power to the Cubiscan.

1. Locate the connector box, which is located underneath the scale platform on the left side.
2. Locate the AC power cord (supplied), and connect it to the power connector on the connector box.

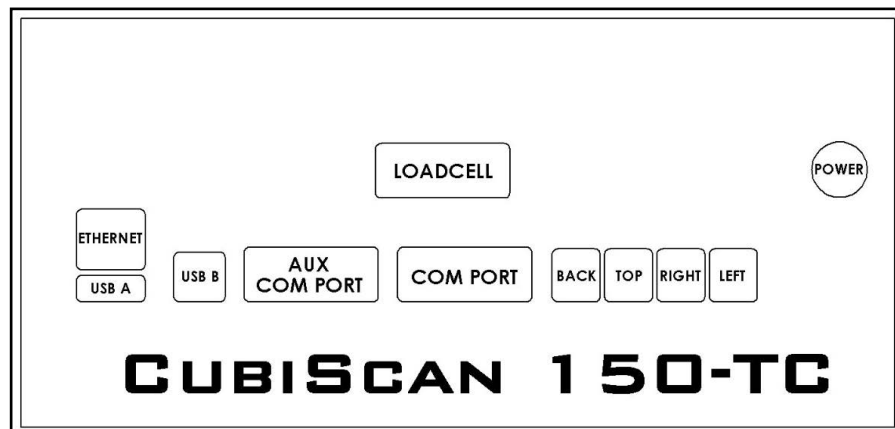


Figure 12
Connection box

3. Route the AC power cord under the Cubiscan base so it cannot be crushed, bent, or pulled loose.
4. Connect the other end of the AC power cord to a standard power strip equipped with an ON/OFF switch.
5. Use the power strip switch to turn the Cubiscan on and off (see "Turning on the Cubiscan" below).



A power strip with surge protection is recommended.

Turning on the Cubiscan

Specific procedures must be followed each time you turn on the Cubiscan 150-TC, as follows:

1. Make sure there are no packages or other objects on the Cubiscan platform.
2. Turn on the Cubiscan 150-TC via the power strip (see "Connecting power" on page 16).

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

3. Make sure the ->0<- (zero) indicator on the touchscreen is lit. If not, the scale needs to be zeroed. To zero the scale, make sure that the platform is free of all objects, then press [Zero].

Computer/network connection

To operate the Cubiscan 150-TC, you can connect it to a computer or a network; the following connection options are listed below. All cables should be routed and tied to the frame so they will be out of the operator's way. Cables should not be attached to nor touch the black scale frame (platform), as this will cause errors in weight measurement.

- Connect it via a USB cable. Use Qbit software on the computer to run the Cubiscan 150-TC (recommended). See "USB Connection" below.
- Connect it to a host system via a standard 10-BaseT Ethernet TCP/IP port. See "Ethernet connection" on page 18.
- Connect it to a PC using a serial RS-232 cable. See "Serial connection" on page 19.

USB Connection

Complete the following steps to connect the Cubiscan 150-TC to a computer using a USB connection. The USB connection method is the recommended method, and all materials needed for communicating with a computer via a USB connection are supplied.

1. Place the computer in its permanent location, generally close to the Cubiscan. (Refer to "Placement" on page 5 for more information.)
2. Route the USB cable under the base so it cannot be crushed, bent, or pulled loose. Tie the cable up so it is out of the way, but does not interfere with the scale.
3. The Cubiscan connection box is located to the left of the touchscreen, underneath the scale platform. Connect one end of the USB cable to the USB-B connector on the back of the Cubiscan controller, as shown below.

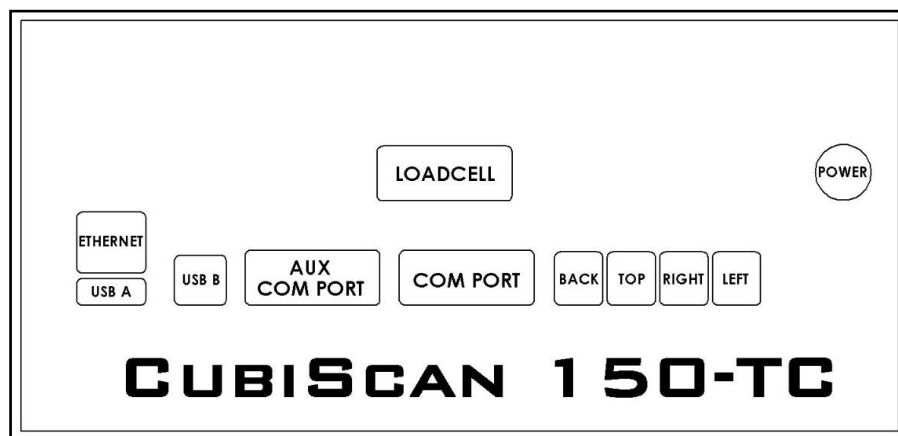


Figure 13
Connection box

4. Locate a free USB port on your computer and connect the other end of the USB cable to the port.

When you have completed these steps, the Cubiscan 150-TC should communicate with a computer.

Ethernet connection

Complete the following steps to connect the Cubiscan 150-TC to a computer using an Ethernet connection.

1. Place the computer in its permanent location, generally close to the Cubiscan. (Refer to "Placement" on page 5 for more information.)
2. Route the Ethernet cable under the base so it cannot be crushed, bent, or pulled loose. Tie the cable up so it is out of the way, but does not interfere with the scale.
3. The Cubiscan controller is located to the left of the touchscreen, underneath the scale platform. Connect one end of the Ethernet cable to the Ethernet connector on the back of the Cubiscan controller, as shown below. Push the connector in until it locks. There should be an audible snap when it locks.

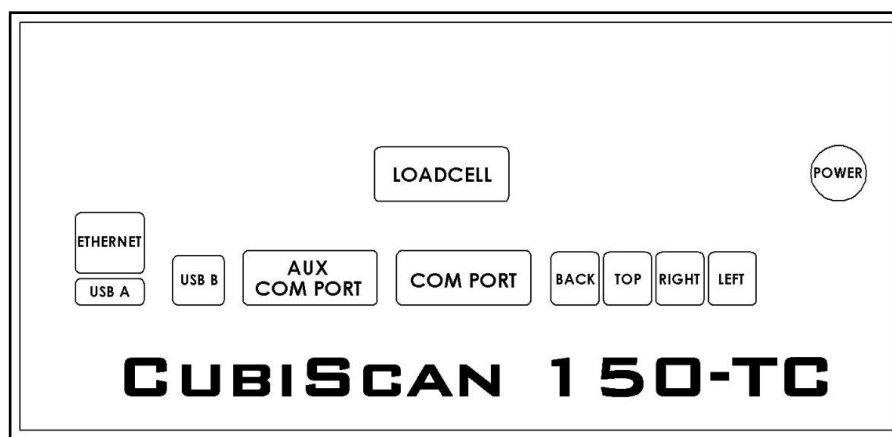


Figure 14
Connection box

4. Insert the connector on the other end of the cable into the computer's network socket until it locks.
5. For information on the TCP/IP command protocol and setup parameters, contact **Cubiscan Technical Support**.

Serial connection

Complete the following steps to connect the Cubiscan 150-TC to a computer using a serial connection.

1. Place the computer in its permanent location, generally close to the Cubiscan. (Refer to "Placement" on page 5 for more information.)
2. Route the RS-232 serial communications cable through the opening in the base so it cannot be crushed, bent, or pulled loose. Tie the cable up so it is out of the way, but does not interfere with the scale.

3. The Cubiscan controller is located to the left of the touchscreen underneath the scale platform. Connect one end of the serial cable to the serial connector on the back of the Cubiscan controller, as shown below.

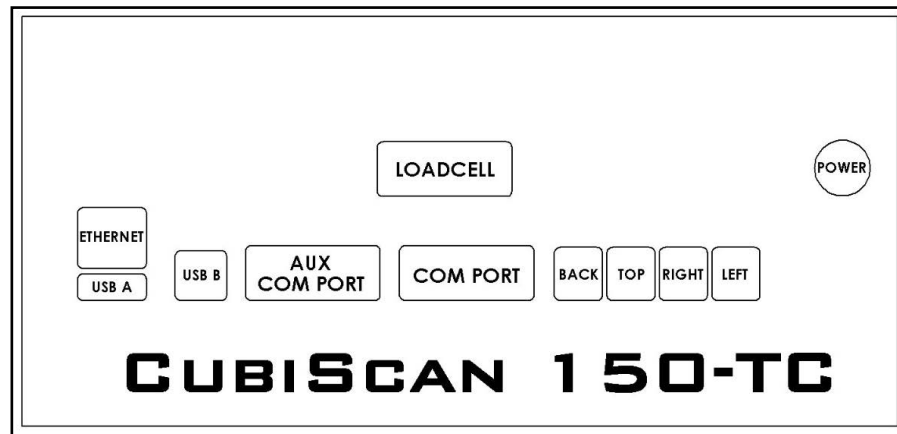


Figure 15
Back of controller

4. Locate a free serial port on the back of your computer and connect the other end of the serial cable to the port.
5. To secure the serial cable, tighten the screws (two on each connector) at both ends of the cable. It is important that the cable be secure.

Connecting to a barcode scanner (optional)

NOTE >

This barcode connection option is for non-Qbit software users. If you are using Qbit software, you will connect the barcode scanner directly to the PC.

1. Route the barcode scanner cable under the Cubiscan base so it cannot be crushed, bent, or pulled loose.
2. The Cubiscan connector box is located to the left of the touchscreen, underneath the scale platform. Connect the free end of the cable to the

preferred barcode scanner connector (USB or serial) on the back of the Cubiscan connector box, as shown below.

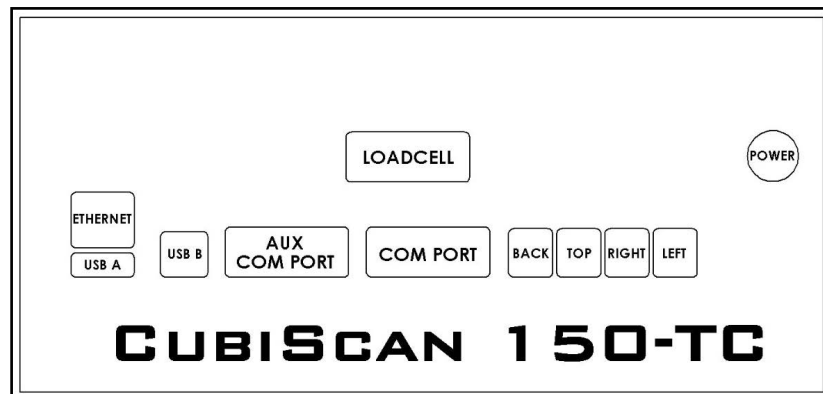


Figure 16
Back of controller

3. Once the barcode scanner is connected to the Cubiscan 150-TC, you need to turn the barcode feature on. On the Cubiscan 150-TC touchscreen, select **MSR SET** from the side menu.

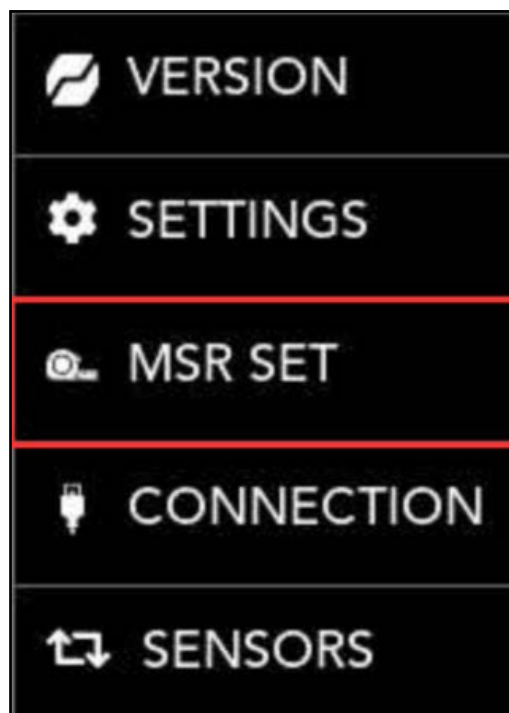


Figure 17
MSR set

4. Select the number of barcodes.



Figure 18
Barcode enabled

Setup checklist



Before using the Cubiscan 150-TC for the first time, verify the following:

- Have the Cubiscan 150-TC and the computer (if applicable) been placed in the proper operating environment? (page 5)
- Has the platform height been adjusted? (page 6)
- Has the overhead arm been installed? (page 10)
- Have you connected the height sensor cables? (page 12)
- Has the Cubiscan been leveled? (page 13)
- Have the shipping bolts been adjusted? (page 5)
- Has the base of the Cubiscan been leveled? (page 5)
- Have you connected all necessary cables and devices you will be using with the Cubiscan 150-TC (e.g., computer, printer, barcode scanner, etc.)?

- Has the Cubiscan 150-TC been set up to communicate with a computer (if applicable)? (page 17)
- Have you connected power to the Cubiscan 150-TC? (page 16)
- (Optional) Has the barcode scanner been connected properly? (page 20)
- Does the Cubiscan require recalibration? The Cubiscan 150-TC was calibrated at the factory, but may require recalibration due to handling during shipping.

Refer to page 53 for information on calibrating the Cubiscan 150-TC. If you are using Qbit software, check the status of the Cubiscan before operating it. Refer to the Qbit User Guide for information on checking the Cubiscan's status.

CHAPTER 3

OPERATION

This chapter provides instructions for operating the Cubiscan 150-TC.

NOTE



The platform of the Cubiscan should be kept clean and free of objects that are not being measured.

You should verify that the Cubiscan 150-TC is weighing correctly at the start of each session. To perform a simple check of weight accuracy, measure something with a known weight (i.e., 25 or 50 lb test weight). If the weight shown is off by an unacceptable amount, recalibrate the scale (see CHAPTER 5 “CALIBRATION” on page 53 for details).



CAUTION

While the Cubiscan has overload protection, objects heavier than 150-TC lb (70 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.

Before you begin



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

1. Make sure there are no packages or objects on the Cubiscan platform.
2. Turn on the Cubiscan 150-TC via the power strip. The Cubiscan performs self-calibration and diagnostic procedures that take about five seconds. Do not touch the Cubiscan platform during these five seconds.

NOTE



Do not lean on or touch the Cubiscan platform or the package while a package is being cubed and weighed. Any kind of contact with the platform during the measurement process can alter the weight or sensor reading.

NOTE



You should occasionally verify that the zero settings on the Cubiscan are correct. To do this, take a measurement with nothing on the scale and see if all values recorded are zero. The Cubiscan’s empty weight and measurements can be reset

to zero (zeroed) at any time (refer to the Qbit User Guide or to "Zeroing the Cubiscan 150-TC" on page 28).

**WARNING**

Disconnect all power to the Cubiscan 150-TC before servicing or making any connections.

Cubing and weighing using Qbit



Refer to the Qbit User Guide for instructions on cubing and weighing and other functions in Qbit. The Qbit User Guide is provided on CD-ROM or you can download it from the Quantronix website at www.cubiscan.com.

NOTE

For information on measuring odd-shaped packages, refer to "Measuring odd-shaped packages" on page 27.

Using touchscreen



All controls and displays for the Cubiscan 150-TC are located on the touchscreen at the front of the scale platform. If a computer is not connected, you can use the touchscreen to cube and weigh packages. Measurements and weight are displayed on the touchscreen. See

CHAPTER 4 "CONFIGURATION" on page 29 for information on selecting units and other preferences.

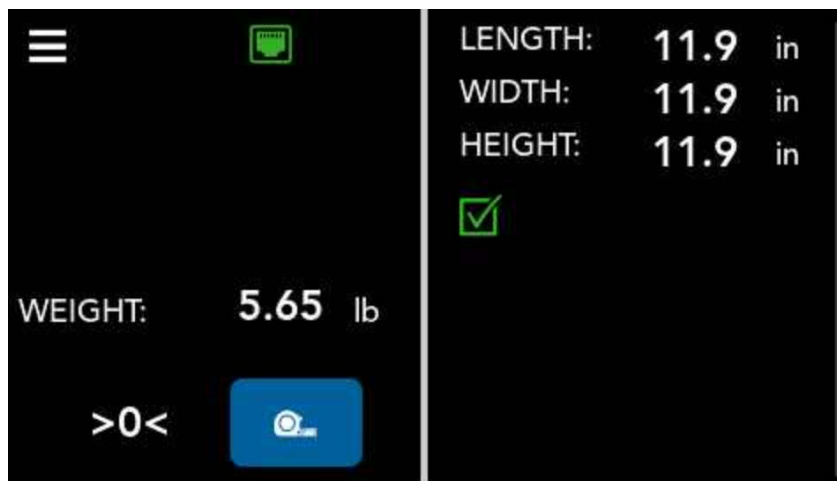


Figure 19
Cubiscan 150-TC Touchscreen

- | | |
|------------------------------|--|
| LENGTH=
WIDTH=
HEIGHT= | These display the measured dimensions in inches (in) or centimeters (cm) as selected. |
| WEIGHT= | This displays the measured weight in pounds (lb) or kilograms (kg) as selected. |
| DIM-WEIGHT= | This displays the dimensional weight in pounds (lb) or kilograms (kg) as selected. This option can be turned on or off. See "Measure Settings" on page 33 for more information. |
| Ready
(indicator) | This indicates that the Cubiscan 150-TC is ready for cubing and weighing. |
| ->0<- (indicator) | This indicates that the scale platform is empty and ready to receive a package. This indicator must be lit before you can place a package on the platform. When you place a package on the platform, the indicator goes off. |
| Measure
(button) | Tap this key to prompt a measurement. The weight and dimensions of the object on the platform will be displayed on the screen. |
- Take the following steps to cube and weigh a package using the touchscreen to control the Cubiscan.
1. Verify that the Cubiscan platform is empty. The **->0<-** indicator should be lit, and **0.00** should be displayed in the **WEIGHT** field. The rest of the display should be clear.

2. Place the package or object to be cubed and weighed on the platform against the front edge of the platform. The **->0<-** indicator light should go out.

The package must be within the black lines on either side of the Cubiscan 150-TC, and it must extend at least one inch on each side from the center of the measuring side of the front panel (minimum package dimensions of 3 x 2.4 x 2.4 in (8 x 6 x 6 cm) for the sensors to properly register the dimensions.

NOTE

Do not lean on or touch the Cubiscan platform or the package while a package is being cubed and weighed. Any kind of contact with the platform during the measurement process can alter the weight or sensor reading.

3. Press **Measure**. The length, width, height, weight, and dim weight of the package are displayed. The factor used to determine the dim weight is also displayed.
4. Remove the package from the platform. Wait for the **->0<-** indicator to light before placing the next package on the platform.

If the **->0<-** does not light, it means that the scale needs to be zeroed. See "Zeroing the Cubiscan 150-TC" on page 28.

Measuring odd-shaped packages



The Cubiscan 150-TC is designed to measure dimensions on "cube-like" packages (packages that are square or rectangular) with a distinct width, length, and height. Packages that have odd shapes or irregular surfaces may be measured using the Cubiscan 150-TC; however, the dimensions will be determined by the closest straight edge or corner and may not accurately represent the actual width, height, and length of the package.

When measuring objects with irregular or porous surfaces that do not reliably reflect sound, it may be necessary to place a rigid sheet of plastic or metal against the irregular side or sides so the sensors can record the dimensions. For example, when measuring books, a rigid sheet should be placed against the paper edge of the books.

NOTE

If rigid sheets are used when measuring objects, tare values should be entered to compensate for the thickness and weight of the sheet. Set tare values using the Options function on the Tools menu of Qbit (refer to the Qbit User Guide).

Zeroing the Cubiscan 150-TC

Tap the >0< button on the touchscreen to “zero” the Cubiscan 150-TC (set all empty measurements and weight to zero). The weight of the platform and the measurement from each sensor to the platform sides when the platform is empty must be set to zero for the Cubiscan 150-TC to operate properly. The Cubiscan 150-TC tries to zero itself automatically every five seconds when it is not in the Measure mode. 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.

CHAPTER 4

CONFIGURATION

This chapter provides instructions for using the Cubiscan 150-TC touchscreen to set up the height, width, and length measurements, configure the units, dimensional weight factor, and other settings.

If you have a computer connected to the Cubiscan 150-TC with Qbit installed, you can use Qbit to set up the measurement and dimensional weight units, 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 CD-ROM with the Qbit application, or you can download it from the Cubiscan website at www.cubiscan.com.

Settings



General settings

The Cubiscan 150-TC may be customized to suit your specific dimensioning needs. To access the general settings, complete the following steps:

1. Tap the menu icon in the upper left corner of the home screen.

2. From the menu side panel, select **SETTINGS**.

SETTINGS

GENERAL

Theme: Dark

Language: English

Machine ID: 000001

Password:

Confirm PW:

No password set.

Admin:

Confirm Admin:

No admin set.

Figure 20
General settings

- | | |
|------------|--|
| Theme | Users may select from either a light theme or a dark theme. |
| Language | Select your desired language from the following options: English, French, Spanish, Portuguese, Japanese, and Chinese. |
| Machine ID | Optional Machine ID may be set for the Cubiscan. This may be useful in a facility where data is tracked from more than one Cubiscan. |
| Password | Optional password Protection for the touchscreen is available. Enter desired password into the text field and reenter it in the field next to Confirm PW .

When the password is set you will also be prompted to enter the password and username to access the web interface administration page. The username will be cubiscan and the password will be whatever is entered in the settings. |
| Admin | Add an administrator password by entering it in the field next to Admin . Reenter the password in the field next to Confirm Admin . |

Date and Time

To set the date and time complete the following steps:

1. Tap the menu icon in the upper left corner of the home screen.
2. From the menu side panel, select **SETTINGS**.
3. Scroll down to the **DATE AND TIME**.

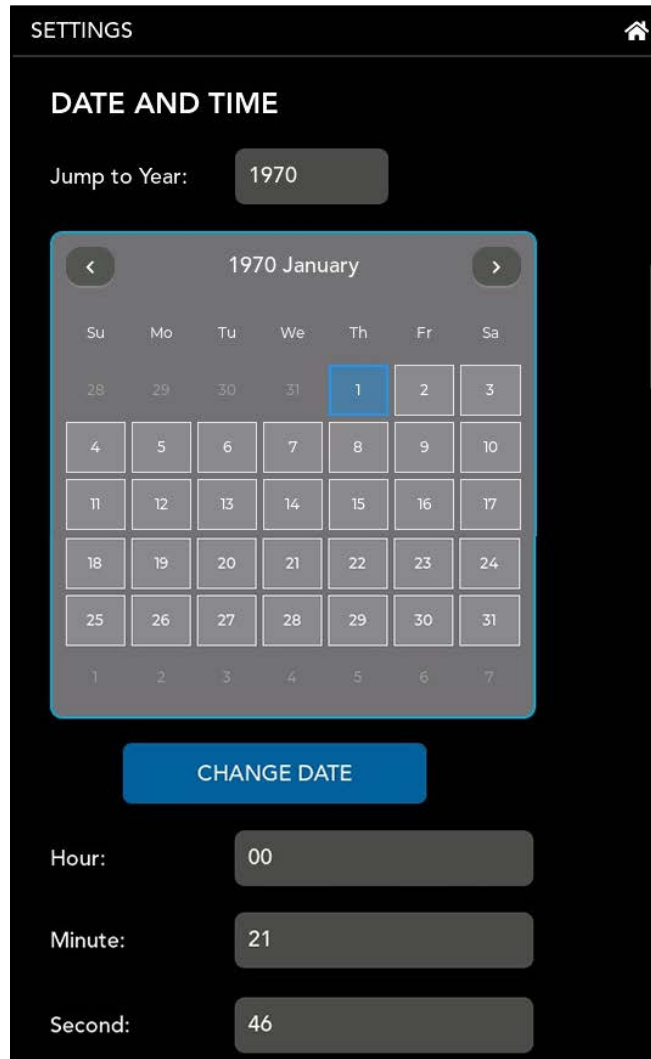


Figure 21
Date and Time

Date Settings Set the date for the Cubiscan using the calendar input. Tap **[CHANGE DATE]** after making changes to the date to ensure changes are saved.

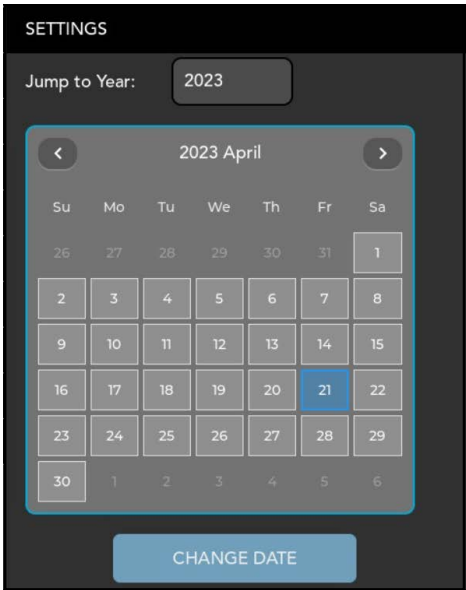


Figure 22
Date settings

Time Settings Set the time by entering values into the text fields next to **Hour**, **Minute**, and **Second**.

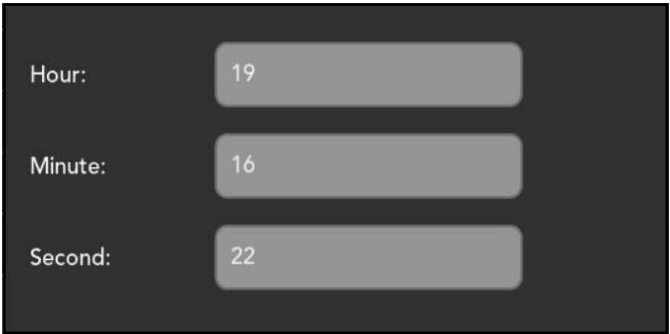


Figure 23
Time settings

System Reset

In the event that settings need to be reset back to factory defaults, the Cubiscan 150-TC has a system reset. By initiating system reset, all settings including custom settings will be reset back to their initial presets. Resetting

the system back to defaults will result in loss of all custom settings and should be avoided unless absolutely necessary.



Figure 24
System reset

To initiate a system reset complete the following steps:

1. Tap the menu icon in the upper left corner of the home screen.
2. From the menu side panel, select **SETTINGS**.
3. Scroll down to **SYSTEM RESET**.
4. Tap **[RESET TO FACTORY DEFAULTS]**.

Measure Settings

The following options can be used to configure your Cubiscan 150-TC. Settings exist for configuring measurements and the interface, allowing you to setup a measurement system that meets your needs and preferences.

To access the measure settings, perform the following steps:

1. Tap the menu icon in the upper left corner of the home screen.

- 2. From the menu side panel, select **MEASURE SETTINGS**.

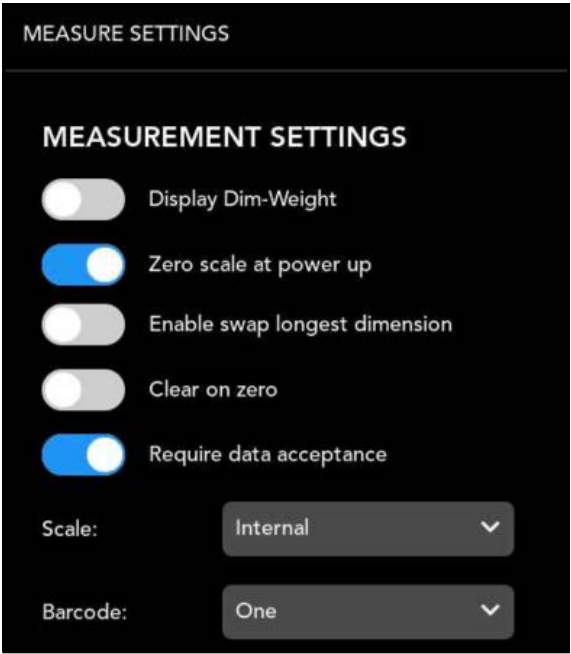


Figure 25
Measure Settings

Display Dim-Weight	Toggle this switch to display the dim weight and factor on the home screen.
Zero scale at power up	Toggle to have the scale zeroed automatically when powered on.
Enable swap longest dimension	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.
Require data acceptance	Toggle to enable data acceptance. With data acceptance enabled, each measurement will require a manual acceptance of data. After each measurement a box will appear at the bottom of the left-panel requesting

a confirmation by the operator. Click the check-box icon to accept the measurement data or the X icon to clear the results for remeasurement.



Figure 26
Data-acceptance

- Scale** Select **internal** to use the built-in scale or select **disable** to not use the scale.
- Barcode** Select from **none**, **one**, or **two**. This will determine whether a barcode should be scanned and whether one or two barcodes should be scanned.

Units

The Units section, provides configuration of measuring units. These units will be displayed on the measurement screen and will be posted to data acquired during measurements.

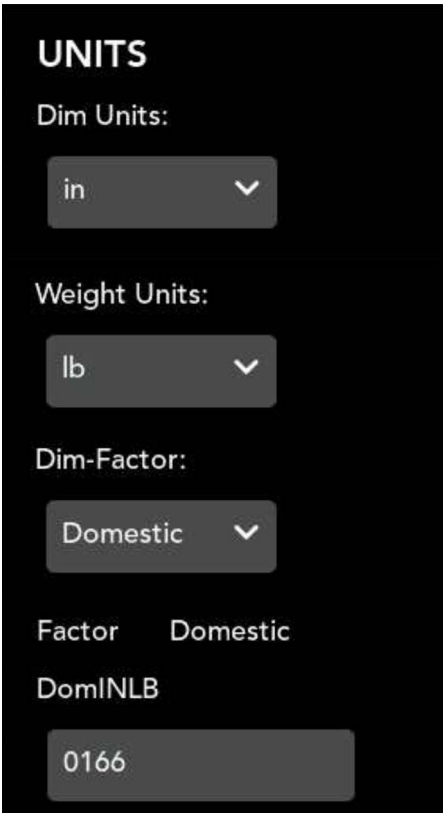


Figure 27
Units

- | | |
|--------------|--|
| Dim units | In this field you can select inches , centimeters , or millimeters for your dimensional units. |
| Weight units | In this field you can select pounds or kilograms for your weight unit. |
| Dim-factor | In this field you can select a domestic or international dim-factor. |
| Factor | Will automatically set to the selected Dim-Factor (domestic or international). Below in the DomINLB , the pre-configured factor will be displayed for the given units and dim-factor selected. This factor may be adjusted as needed by entering the desired factor in the text field. |

QR Code

The Cubiscan 150-TC offers a QR Code that may be displayed on the touchscreen, providing the dimensioning information. This may be used in conjunction with third party software as a means of capturing the dimensioning information.



Figure 28
QR code

- | | |
|----------------|---|
| Enable QR code | Toggle to enable/disable the QR code. When enabled, the QR code will appear on the home screen after a product has completed dimensioning. |
| QR Code Format | Determine the format that the information will be received. Using the commands as depicted in the chart below the text field, you may customize the format according to your needs. |
| QR Code Size | Set the size of the barcode that will display on the home screen. |

Scale

The Cubiscan 150-TC has a built-in scale for weighing product as it is being dimensioned. The following settings are for configuring the scale.

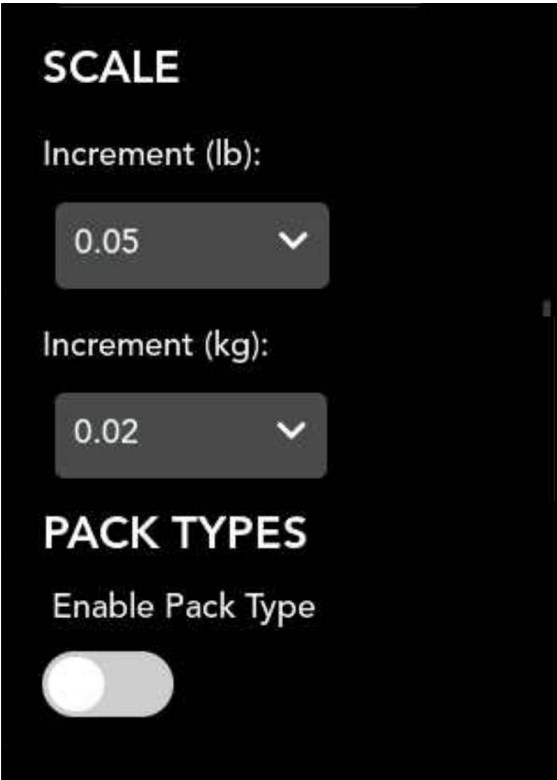


Figure 29
Scale settings

- Increment (lb)** Use the drop down to select the increments of pound measurements. Increment options include: 0.02, 0.01, or 0.005.
- Increment (kg)** Use the drop down to select the increments of kilogram measurements. Increment options include: 0.01, 0.005, or 0.002.
- Pack Types** Toggle to enable pack types during measurement.

Connection



The Connection section Provides information and options for the setup of an Ethernet or other connection, allowing for the transfer of data from the CS 150-TC.

To access the connection settings, perform the following steps:

1. Tap the menu icon in the upper left corner of the home screen.
2. From the menu side panel, select **CONNECTIONS**.

Ethernet Settings

The Ethernet Settings field allows you to select the Ethernet settings for the Cubiscan. The following information is displayed to help you connect with the CS 150-TC: **MAC Address**, **IP Address**, **Subnet**, and **Gateway**.

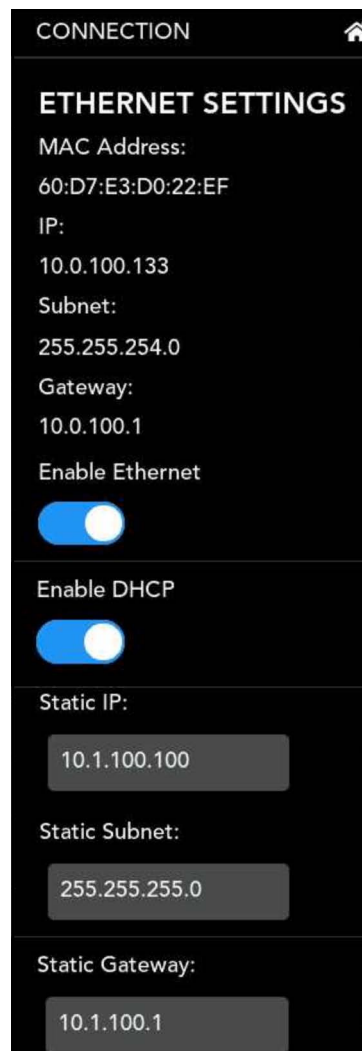


Figure 30
Ethernet settings

Enable Ethernet	Toggling this option enables or disables the Cubiscan 150-TC's ability to communicate via Ethernet.
-----------------	---

Enable DHCP	Toggling this option enables or disables a Dynamic Host Configuration Protocol (DHCP) connection.
Static IP/ Subnet/ Gateway	This section provide the static IP, Subnet, and Gateway for the Cubiscan 150-TC.

Communication Settings

Under the communication settings section are options for setting how the server will receive communications from the Cubiscan 150-TC.

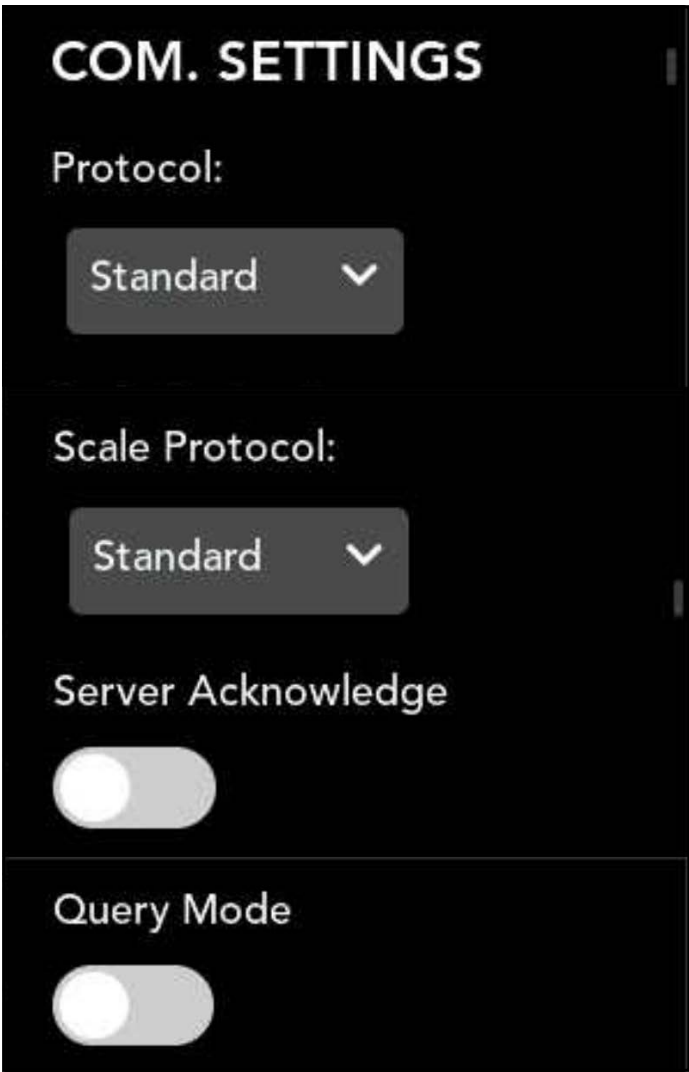


Figure 31
Communication settings

Protocol	Sets the protocol for posting data to server (web-server posting not included). Options include: JSON , standard , expanded , CS-100L , JSON (Legacy) , or Custom . The default is standard. If you are unsure what
----------	---

protocol to use for posting data, consult your network administrator. This is also available for the scale.

Server Acknowledge Toggle to enable/disable the server acknowledge function. When enabled, the measurement will not complete until an acknowledgment is detected from the server. See "Using touchscreen" on page 25.

Query Mode With Query Mode enabled, the Cubiscan 150-TC holds the measurement data packet until the string **<STX>M<ETX><CR><LF>** is sent. This allows the Cubiscan 150-TC to function more like a Cubiscan 100, allow those who have developed software to the Cubiscan 100 to easily adapt the Cubiscan 150-TC without significantly large change to the software.

Web-server

The Web-server settings provides options to set Protocol and certificate server request (CSR).

WEBSERVER

Protocol:

HTTP

Data Format:

JSON

Http Port:

80

Protocol:

HTTPS

Enable Authorization Key

Host:

URL:

/

Port Https:

443

IP used:

0.0.0.0

Figure 32
Connection - Protocol

Protocol	Enable or disable Protocol and set desired Protocol. Options include: HTTP and HTTPS .
Data Format	Sets the protocol for posting data to web-server. Choose from the following data formats: XML , JSON (Legacy) , or JSON .
Http Port	Enter the port number for the webserver.
Protocol	Select the post Protocol from the dropdown. Options include: HTTP and HTTPS .

Enable Authorization Key	When HTTPS protocol is selected, an option to enable authorization key will appear.
Host	Enter the Host name of the webserver into the input field.
URL	Enter the URL of the webserver into the input field.
Port Https	Enter the Port of the webserver into the input field.
IP used	Displays the IP used by the Cubiscan 150-TC.

GET

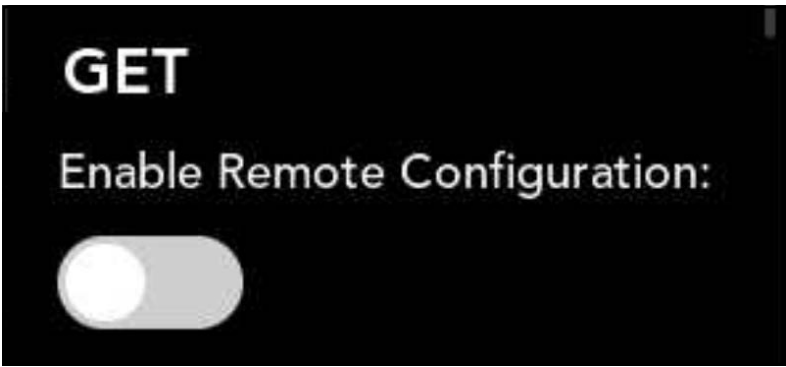


Figure 33
Connection - Protocol

Enable Remote Configuration:	Enabling this options will allow the Cubiscan 150-TC to get the configuration data from Qbit-Cloud. This includes additional miscellaneous fields defined in the Qbit-Cloud.
------------------------------	--

CAMERA

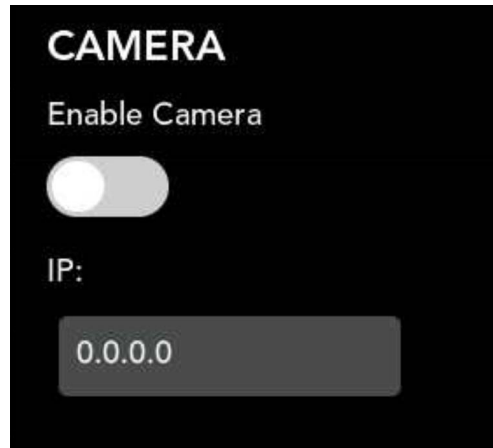


Figure 34
Connection - Protocol

Enable Camera For a Cubiscan 150-TC with camera, toggle to enable camera image posting.

IP The IP address use to post images from camera when enabled.

Scale Setting



The Cubiscan 150-TC has a built in scale. To configure the scale, complete the following steps:

1. Tap the menu icon in the upper left corner of the home screen.

- 2. From the menu side panel, select **SCALE**.

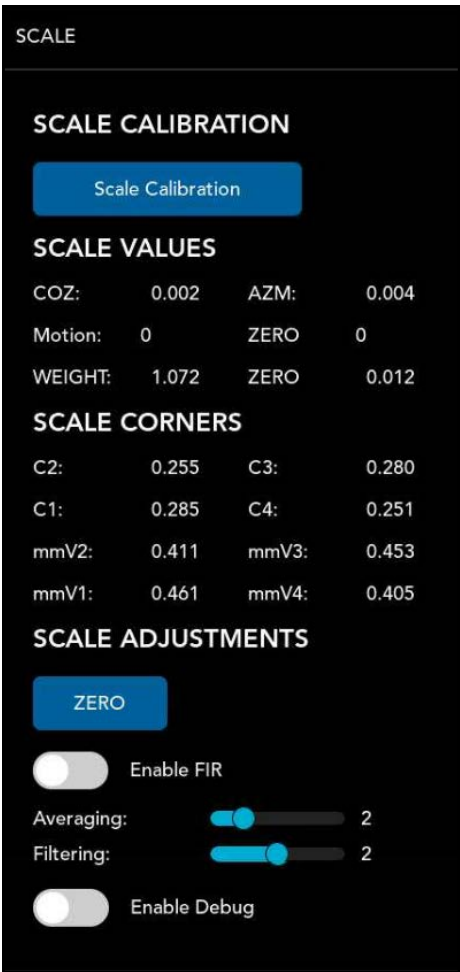


Figure 35
Scale settings

Scale Calibration	Tap button to begin scale calibration. See “Calibrating sensors” on page 57.
Scale Values	Displays information from scale including weight and zero.
Scale Corners	Displays information from scale about the load cells.
Zero	Tap button to zero the scale.
Enable FIR	Toggle to enable/disable FIR function. FIR is an alternative algorithm used to calculate weight more accurately. While accuracy may increase, the time for measurement will increase as well.
Averaging	Adjusts the amount of measurement data averaged during weighing. The greater the number, the more accurate the measurement. Increasing the averaging will increase the time to complete measurement.

- Filtering** Adjusts the intensity of filtering during weighing. The greater the number, the more accurate the measurement. Increasing the filtering will increase the time to complete measurement.
- Enable debug** Toggle to enable debug logging.

Post Configuration

Configuration of post can occur either through the touch screen or through the embedded webserver (enter the Cubiscan IP address into a browser). To set up the configuration using the touchscreen, the following settings must be enabled:

1. Select **Measure Settings** from the side menu. Go to section Measurement Settings. Set the number of barcode from the Barcode dropdown.

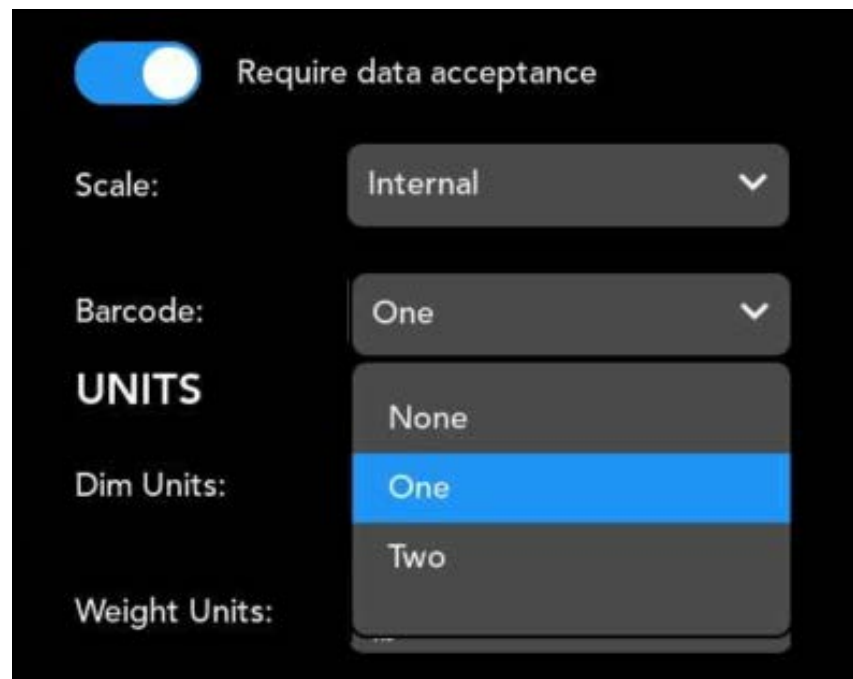


Figure 36
Select barcode



The USB barcode scanner must be configured to append an <ENTER> key when posting.

2. Select **Connection** from the side menu. Go to the section **Com. Settings** and set the following:

Server Acknowledge: ON

Protocol: 'JSON' or 'JSON(Legacy)'

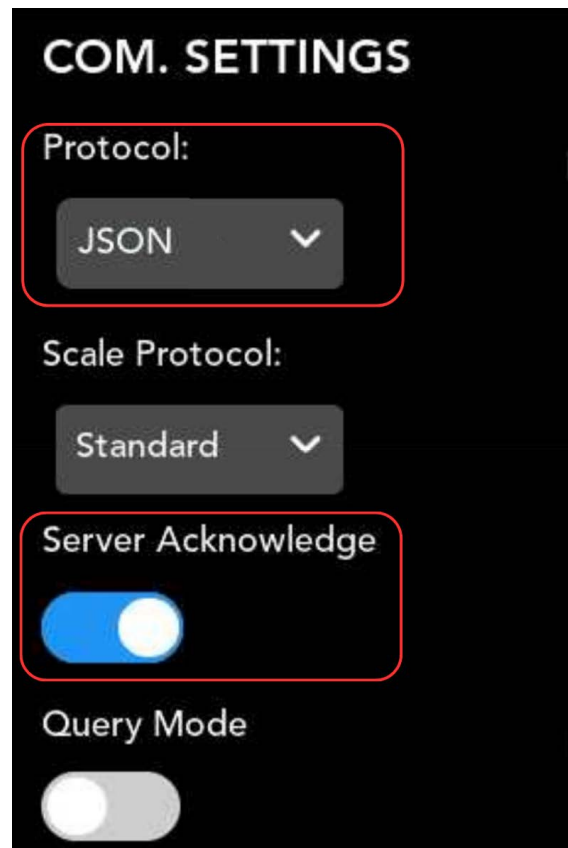


Figure 37
Communication settings

3. Select **Connection** from the side menu. Go to section **Post** and set the following:

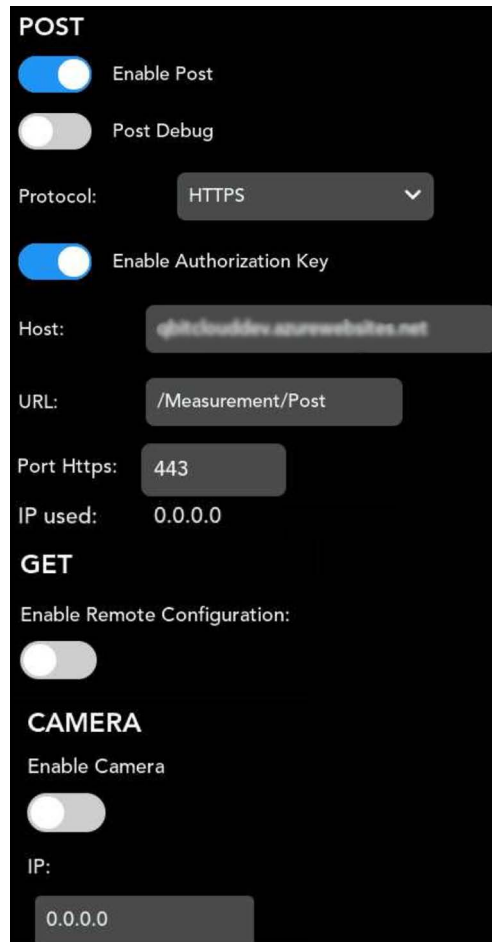
Enable Post: ON

Protocol: Choose 'HTTP' or 'HTTPS'

Host: Enter the endpoint. (example: "ptsv3.com")

URL: Enter the URL. (example: "/t/cs/")

Port: Enter the Port. For 'HTTP' input 80. For 'HTTPS' input 443.



POST

☒ Enable Post

☐ Post Debug

Protocol: HTTPS

☒ Enable Authorization Key

Host: githubclouddev.azurewebsites.net

URL: /Measurement/Post

Port Https: 443

IP used: 0.0.0.0

GET

Enable Remote Configuration:

☐

CAMERA

Enable Camera

☐

IP: 0.0.0.0

Figure 38
Post settings

4. For troubleshooting purposes, enable **Post Debug**.

Testing Post

Complete the following steps to test the posting process and ensure that data is sent correctly.

1. With the Home screen displayed, scan an item barcode.
2. Move the gate of the Cubiscan over the item to initiate measurement. The barcode, length, width, height, and weight will display on the Home screen.

3. A green checkmark will appear below the measurements, indicating that the process was successful

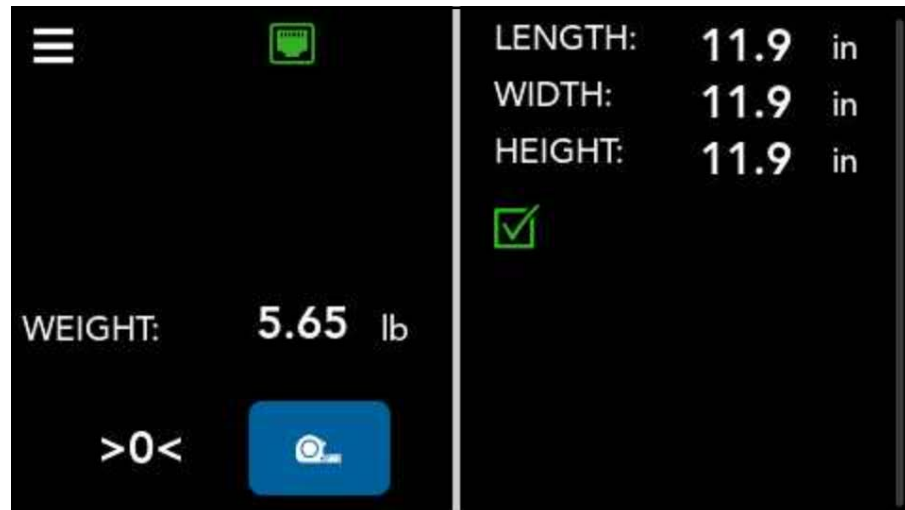


Figure 39
Test Posting

4. From the side menu, select **Log**.
5. Select "POSTSENT.TXT" and tap [OPEN FILE]. The log of the sent post will display.



Figure 40
Post sent log

6. Select "POSTRESP.TEXT" and tap [OPEN FILE]. The log of the response to the post will display. Look for the "200 OK" in the log. This serves as the server acknowledgment of the post.

```

POSTRESP.TXT
HTTP/1.1 200 OK
Date: Wed, 03 Jul 2024 21:12:36 GMT
Content-Type: text/html; charset=utf-8
Transfer-Encoding: chunked
Connection: keep-alive
vary: Cookie
CF-Cache-Status: DYNAMIC
Report-To: {endpoints:[{"url":"https://va.nel.cloudflare.com/vreport/v47s=YN4lkZ57AF0M%2FvZ6KDrXob8prtBpfsbvIwdsuCKBwBKUJlmiC87WfVvxrSPCbsBJO3Ba8JEbXhM4%2BM9ngo5JaSlshZ2vZypp9d9t4Sw4P7/UMmUxniMPph1%2F3jYrleY4%3D"}],"group":"cf-nel","max_age":604800}]
NEL: {"success_fraction":0,"report_to":"cf-nel","max_age":604800}
Server: cloudflare
CF-RAY: 89d9dfec79b76c13-DFW
alt-svc: h3=":443"; ma=86400

1a9a
<head>
<script async src="https://pagead2.googlesyndication.com/pagead/js/adsbygoogle.js?client=ca-pub-9525023494877291"
crossorigin="anonymous" type="481ef8e84c82bc8580259036-text/javascript"></script>
<title>PTS - V3</title>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.1/jquery.min.js" type="481ef8e84c82bc8580259036-
text/javascript"></script>
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js" type="481ef8e84c82bc8580259036-
text/javascript"></script>

```

Figure 41
Post sent log

7. From the side menu, select **Connection**. Go to the Post section.

The **IP used** field displays the resolved IP address of the endpoint. An example of a JSON payload is as follows:

```
{
  "measurement": {
    "status": "0",
    "cubiscan_id": "096215227208003203",
    "machine_id": "000001",
    "package_count": 3,
    "date_time": "2024-07-03T21:24:05+00:00",
    "length": 15.2,
    "length_status": "0",
    "width": 14.75,
    "width_status": "0",
    "height": 1.8,
    "height_status": "0",
    "dimensional_units": "in",
    "weight": 2.17,
    "weight_status": "0",
    "weight_units": "lb",
    "dim_weight": 2.43,
    "dim_weight_status": "0",
    "dim_weight_factor": 166,
    "dim_weight_factor_type": "D",
    "barcode1": "658655821",
    "barcode2": null,
    "customer_id": null,
    "site_id": null,
    "response_required": true,
    "trigger_source": "internal",
    "checksum": "2D5C64EA"
  }
}
```

Figure 42
JSON log

For JSON (Legacy), the payload will be as follows:

```
{
  "csMeasureData": {
    "Status": "00",
    "Cubiscan_ID": "096215227208003203",
    "Machine_ID": "000001",
    "Package_Count": "00000005",
    "Date_Time": "20240703214359",
    "Length_Value": "15.20",
    "Length_Status": "00",
    "Length_Units": "in",
    "Width_Value": "14.80",
    "Width_Status": "00",
    "Width_Units": "in",
    "Height_Value": "1.80",
    "Height_Status": "00",
    "Height_Units": "in",
    "Weight_Value": "2.165",
    "Weight_Status": "00",
    "Weight_Units": "lb",
    "DimWeight_Value": "2.44",
    "DimWeight_Status": "00",
    "DimWeight_Units": "lb",
    "Factor_Value": "0166",
    "Factor_Type": "D",
    "Barcode1": "658655821",
    "Barcode2": "",
    "Customer_ID": "",
    "Site_ID": "",
    "Response_Required": "1",
    "Measure_CRC": "B447"
  }
}
```

Figure 43
JSON (Legacy) log



Status fields of "0" or "00" (Legacy) indicates success of post while a non-zero in the status field indicates failure.

CHAPTER 5

CALIBRATION

This chapter provides instructions for calibrating the Cubiscan 150-TC. The Cubiscan 150-TC is calibrated at the factory; however, some circumstances in which recalibration may be required include the following:

- Calibrate the Cubiscan 150-TC if you have problems cubing and weighing after assembly and setup.
- Calibrate the Cubiscan if it is subjected to any type of mechanical shock or collision with a heavy object.
- Calibrate the Cubiscan as part of a regular maintenance schedule. If the Cubiscan is used heavily, scale calibration should be performed monthly and sensor calibration yearly. It should not be necessary to calibrate daily or even weekly. It is suggested that you implement a regular audit (daily or weekly) of weight and dimensions using a test weight, or something of known weight near 25 pounds, and the calibration cube.
- Calibrate the Cubiscan if it is zeroed and the weight or dimensions are outside the specified limits.

NOTE



If an error message appears during calibration, power the Cubiscan off and back on and start calibration over (refer to CHAPTER 5 "CALIBRATION" for more information).

Before you begin



Before calibrating the Cubiscan 150-TC, remove all packages or other material from the platform, and blow any dust off the sensor screens. Refer to page 65 for information on cleaning the sensors.

All controls and displays for the Cubiscan 150-TC are located on the touchscreen at the front of the base. For information on the controls and indicators, refer to "Using touchscreen" on page 25.

If you want to calibrate using Qbit, refer to the Qbit User's Guide.

NOTE



The calibration cube should be kept clean and undamaged—you will need it each time you calibrate the Cubiscan 150-TC.

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 150-TC scale.

NOTE >

When calibrating the scale, the Cubiscan 150-TC must be stable with no movement of the platform such as that caused by vibration or air.

1. At the home screen, tap the menu icon in the upper left corner.

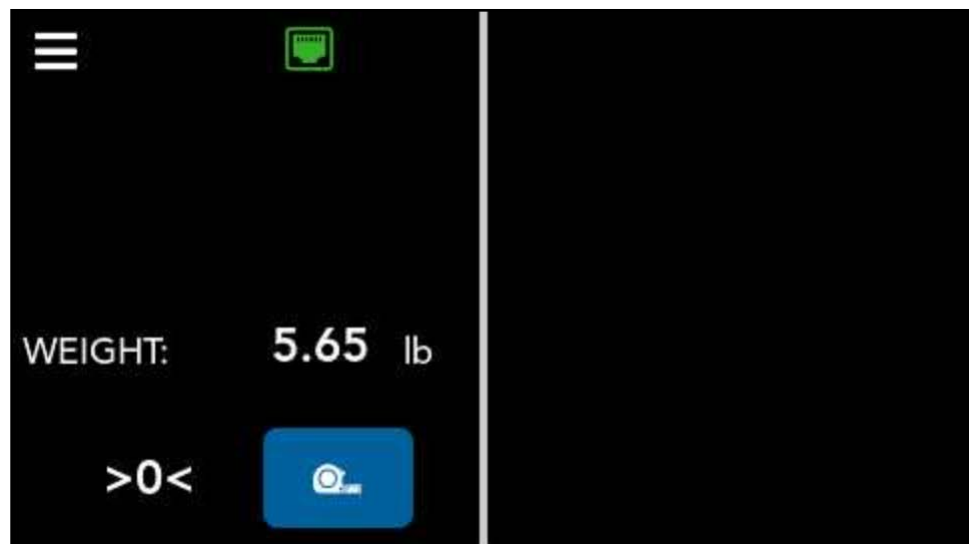


Figure 44
Home screen

NOTE >

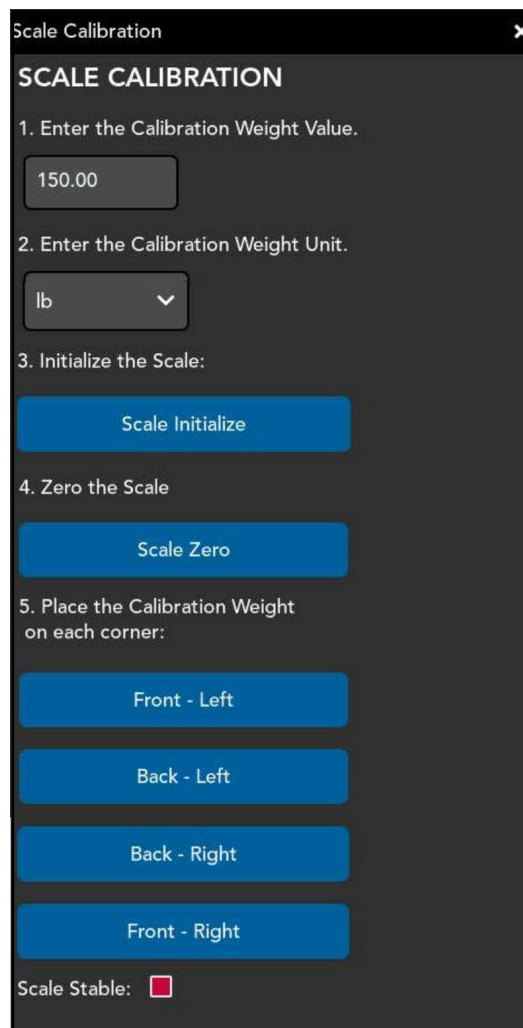
If you have set up a password previously in the system configuration, you need to enter the password to unlock the menu.

2. Select **Scale** from the menu. Tap the **[Calibrate Scale]** button to begin the scale calibration.



Figure 45
Scale screen

3. The following screen is displayed. Follow the instructions as displayed.



The image shows a mobile application screen titled "Scale Calibration" with a close button (X) in the top right corner. The screen contains the following elements:

- SCALE CALIBRATION** (Section Header)
- 1. Enter the Calibration Weight Value.**
A text input field containing the value "150.00".
- 2. Enter the Calibration Weight Unit.**
A dropdown menu showing "lb" with a downward arrow.
- 3. Initialize the Scale:**
A blue button labeled "Scale Initialize".
- 4. Zero the Scale**
A blue button labeled "Scale Zero".
- 5. Place the Calibration Weight on each corner:**
Four blue buttons stacked vertically, labeled "Front - Left", "Back - Left", "Back - Right", and "Front - Right".
- Scale Stable:** A red square indicator.

Figure 46
Second scale calibration screen

4. Enter the calibration weight value in the first text field. Then select the units in the dropdown below the field.
5. Clear the platform of all items. Tap **[Scale Initialize]** to begin the calibration process. A message will appear.

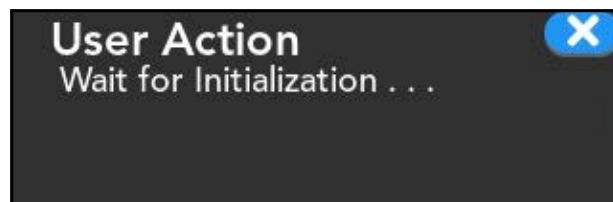


Figure 47
Initialize message

6. After the scale has initialized, Tap **[Scale Zero]** to zero the scale.
7. Once the scale is zeroed, place the calibration weight on the platform and tape **[Scale Calibration]**. A message will display when calibration is complete.

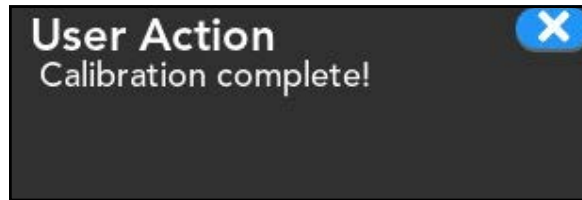


Figure 48
Scale calibration complete

Calibrating sensors



To calibrate the height using the touchscreen, proceed as follows:

1. At the home screen, tap the menu icon in the upper left corner.

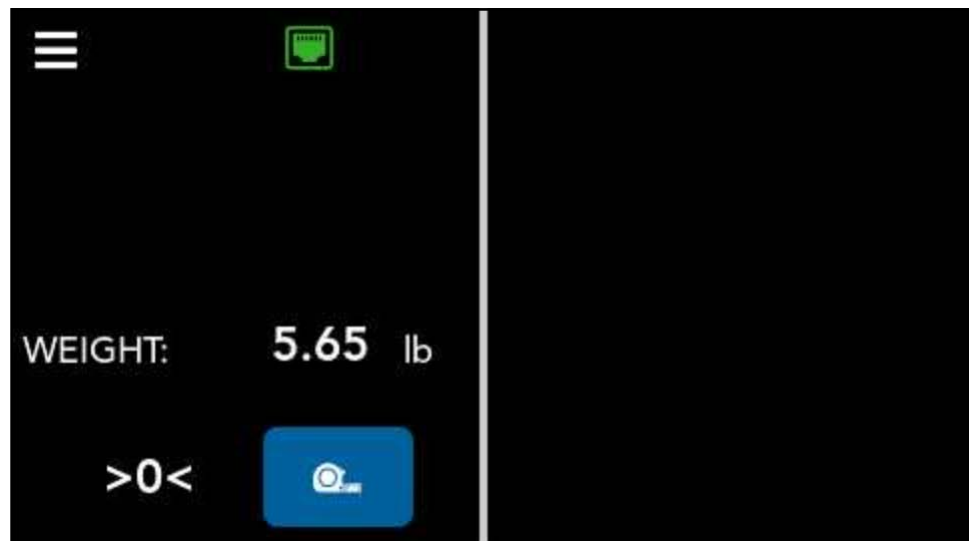


Figure 49
Home screen

2. Select **SENSORS** from the menu selection.

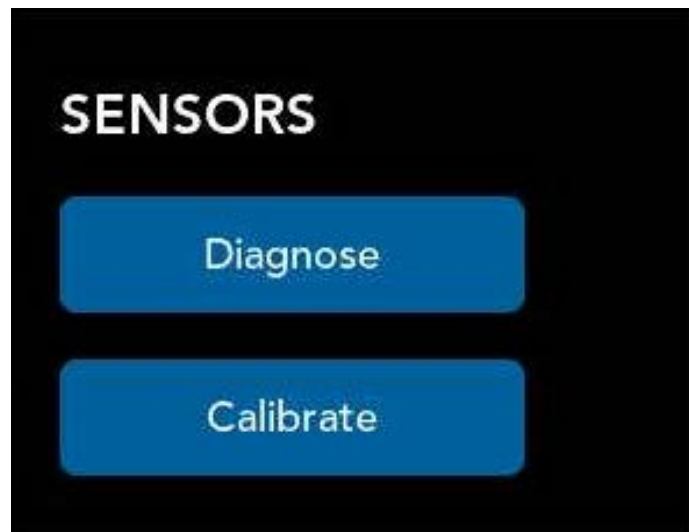


Figure 50
Sensors screen

3. The SENSORS screen has two buttons: Diagnose and Calibrate. To learn more about Diagnose, see "" on page 72. For calibration tap [Calibrate].



Figure 51
Sensor calibration screen

4. The sensor calibration screen displays the steps for calibration along the right of the screen. Each step has a button. The button of the active step will be in darker blue. All other buttons will be a lighter blue.

The pane on the left side of the screen displays a rendering of the measuring surface. This will change to indicate the placement of the calibration cube.

Begin by clearing the measuring surface of all debris and tapping [Zero Sensor].

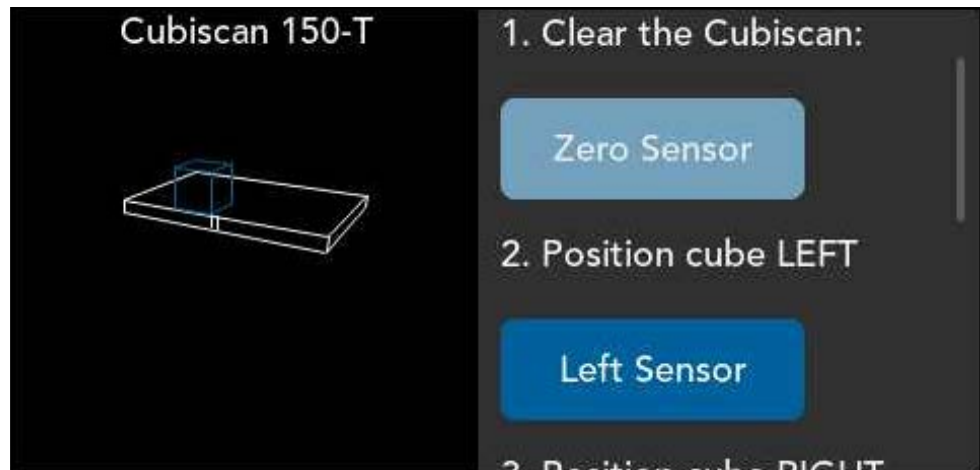


Figure 52
Left Sensor

- Next position the cube so that it is against the front panel of the CS 150-TC and its right surface is aligned with the center of the measuring surface as depicted in the image in the left panel.

Note: Be sure to use the 12" x 12" x 12" calibration cube that accompanied the Cubiscan 150-TC. If you do not have this calibration cube, contact **Cubiscan Technical Support** at **801.451.0500** for assistance.

- With the calibration cube in place, tap [Left Sensor].

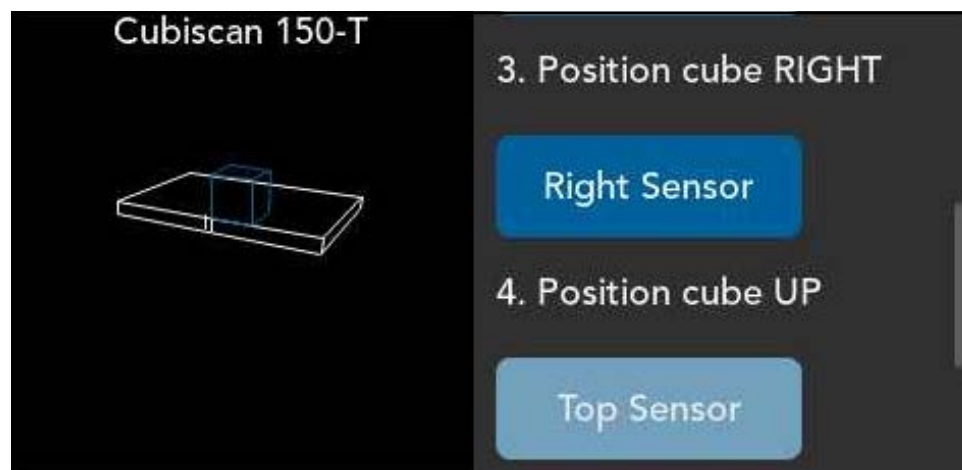


Figure 53
Right Sensor

- After the calibration step is complete, position the cube so that its left surface is aligned with the center of the measuring surface as depicted in the image in the left panel.

8. With the calibration cube in place, tap **[Right Sensor]**.

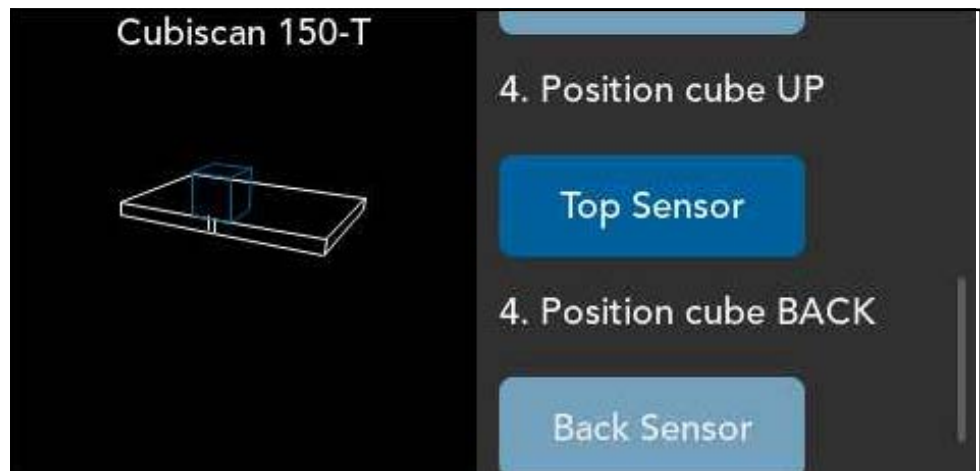


Figure 54
Top Sensor

9. After the calibration step is complete, position the cube so that its center is aligned with the center of the measuring surface as depicted in the image in the left panel.
10. With the calibration cube in place, tap **[Top Sensor]**.

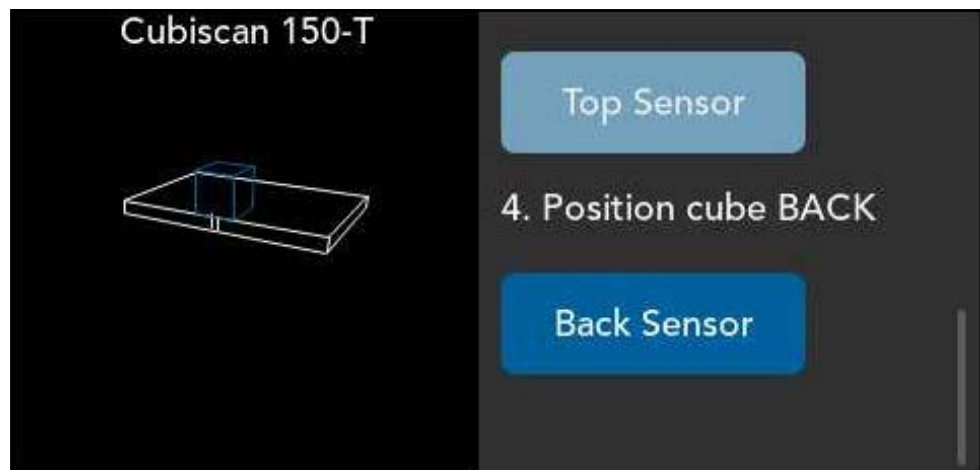


Figure 55
Back Sensor

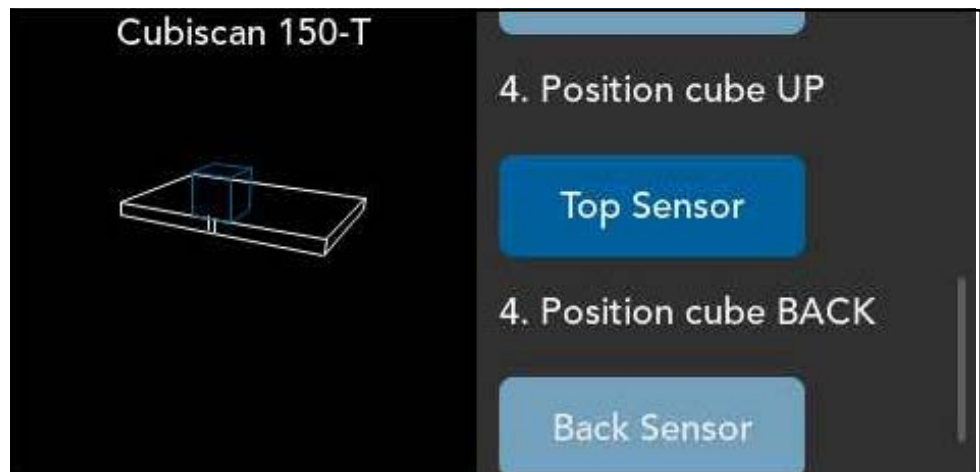


Figure 56
Left Sensor

11. After the calibration step is complete, keep the calibration cube position the cube so that it is against the front panel and its center is aligned with the center of the measuring surface as depicted in the image in the left panel. Then, tap **[Back Sensor]**.

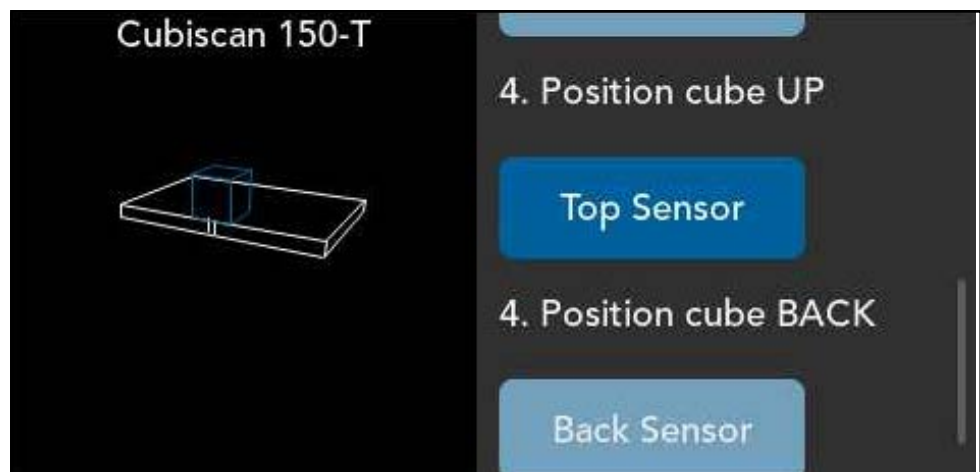


Figure 57
Back Sensor

12. If the calibration is successful, a message will appear signifying that the calibration complete.



Figure 58
Calibration complete

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. At the home screen, tap the menu icon in the upper left corner.

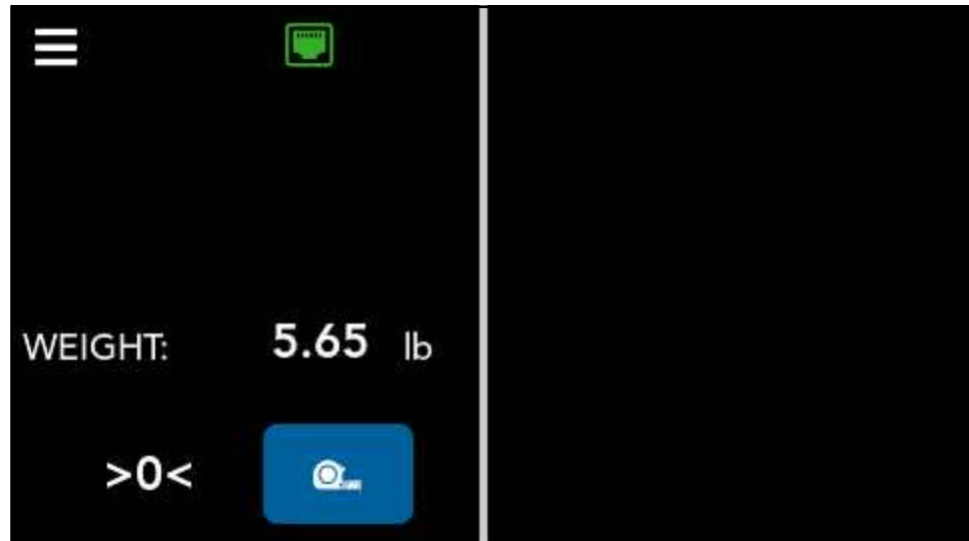


Figure 59
Home screen

2. From the menu, select **TOUCH SCR**. The Touchscreen screen will appear. Tap **[Calibrate]**.

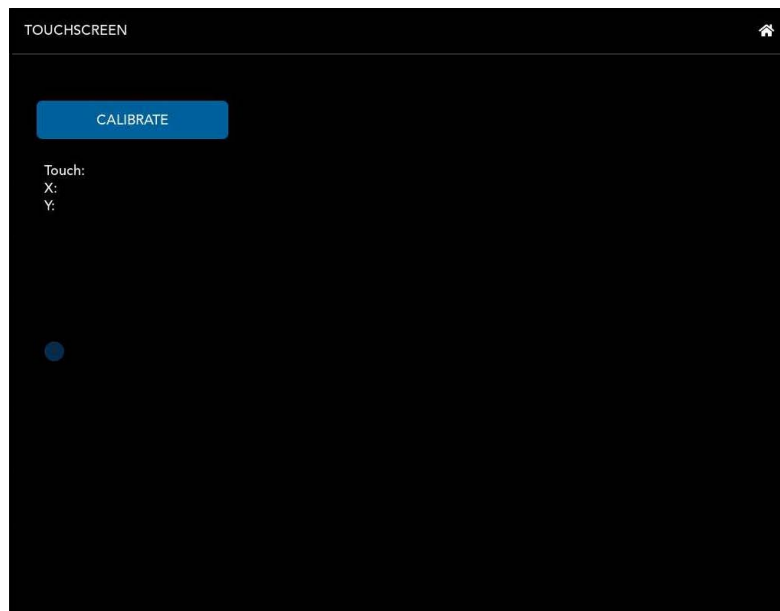


Figure 60
Touchscreen calibration

3. Using a stylus or your finger, touch the center of each blue box on the screen until the "O" turns green. There are five calibration points on the screen.

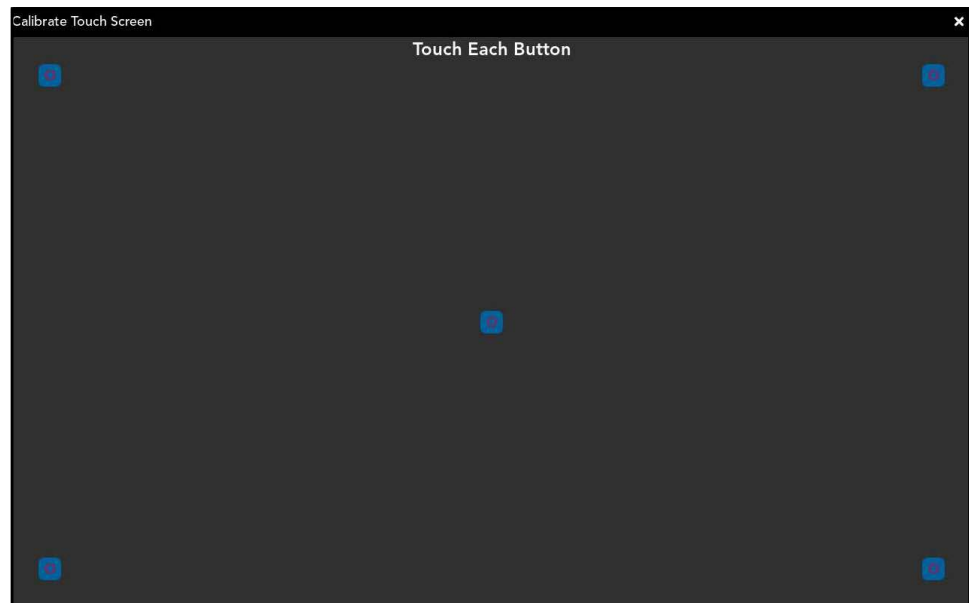


Figure 61
Touchscreen calibration

4. When all the O's are green, the calibration is complete.

CHAPTER 6

MAINTENANCE

This chapter provides information on the care and maintenance of the Cubiscan 150-TC. Routine maintenance and careful handling will help keep the Cubiscan 150-TC in good operating condition and prevent service calls or repairs.

Precautions



The Cubiscan 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 5.

Do not put packages on the platform that are known to be over 150-TC pounds (70 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 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 sensors



The sensors 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, gently blow dust from the gold foil surface.



CAUTION

The gold foil screen on the front of the sensor is delicate. Do not use high pressure air or water lines to clean the surface of the gold foil and do not touch it with fingers, tools, or brushes. Doing so may result in damage.

Replacing the platform rollers

It may be necessary after heavy use to replace one or more of the rollers in the platform top. If new rollers are required, order the replacements from Cubiscan so they will be the correct size.

NOTE



Three people are required to change the rollers, two to lift the stainless steel top and one to replace the worn rollers.

Do the following to replace one or more rollers in the platform.

1. Remove all of the screws from the platform top using an Allen wrench.
2. Remove the protective bumpers from the front of the two length sensors on each side of the front panel. The bumpers are each secured by four Allen head screws.
3. Have one person stand on each side of the Cubiscan (left and right sides of the platform), and lift the back edge of the stainless steel top to tip it forward. Do not lift the front edge of the stainless steel top. Tip the panel as high as necessary to insert the new rollers.



WARNING

The gold foil screen on the front of the sensor is delicate. Do not use high pressure air or water lines to clean the surface of the gold foil and do not touch it with fingers, tools, or brushes. Doing so may result in damage.

4. Remove the worn rollers, and replace them with the new rollers.
5. When all worn rollers are replaced, carefully lower the top until it rests on the platform again.
6. Adjust the position of the top to first align with the rollers and then with the screw holes.
7. Reattach all of the screws in the platform top.
8. Reattach the protective bumpers on the front of the two length sensors.

CHAPTER 7

TROUBLESHOOTING

This chapter provides assistance in identifying and solving common problems with the Cubiscan 150-TC. 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 **801.45.0500** for assistance.

After installation, most problems are caused either by incorrect cabling or because the system setup is not correct. If you are having problems with the Cubiscan 150-TC, first verify that all cables attached to the controller box inside the base (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.

Problems with your computer may affect operation of the Cubiscan 150-TC 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 150-TC, do the following:

1. Verify that the power strip is “live” and that the AC power cord is properly and securely connected to the power adapter and to the power strip.
2. Verify that the DC power cord is securely connected to the power connector on the back of the Cubiscan.

Readings are not accurate

If you suspect that the Cubiscan 150-TC readings are inaccurate, do the following:

1. Zero the scale 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, press >0< on the touchscreen to zero the Cubiscan.)

If the Cubiscan does not return to zero or is slow to return to zero, level the Cubiscan and make certain that all four leveling legs are resting on the supporting surface. Refer to "Leveling the Cubiscan 150-TC" on page 13.

2. Move the Cubiscan if it is located close to open freight doors or where hot air is blowing on it. Extreme changes in temperature and humidity can affect the accuracy of the Cubiscan 150-TC. Refer to "Placement" on page 5.
3. Recalibrate the Cubiscan. Refer to "CALIBRATION" on page 53.

Computer Error Messages

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

No communications with Cubiscan	This message indicates that no communication is taking place between the computer and the Cubiscan 150-TC.
Transmission Error	This message indicates that erroneous or garbled data is being sent from the Cubiscan.

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

1. Is the Cubiscan turned on and securely connected to power?
2. Is the USB, serial, or Ethernet cable securely connected?

- Is there a problem with the Cubiscan 150-TC? Perform the Status function in Qbit to check the status of the Cubiscan.
- Is there a problem with the computer or network? Refer to your computer manual for information on troubleshooting the computer, or contact your network administrator.

Version

This section discusses the options available on the Version menu. To access the version screen, tap the menu icon in the upper left corner of the home screen.



Figure 62
Version

The following information will display about the Cubiscan 325 and its Firmware.

- MAC Address** The Media Access Control (MAC) address.
- Serial Number** The product number that is unique to each Cubiscan 325.
- MDMI** The Multiple Dimensional Measuring Instrument (MDMI) status. This status can either be sealed or unsealed.

NAWI	The Non-Automatic Weighing Instrument (NAWI) status. This status can either be sealed or unsealed.
Operation Hours	The total hours of operation for the Cubiscan 325.

Firmware

This section displays the firmware version used for the main controller, including build and kernel. This information is useful when a technician is diagnosing issues that may arise from the Cubiscan firmware.

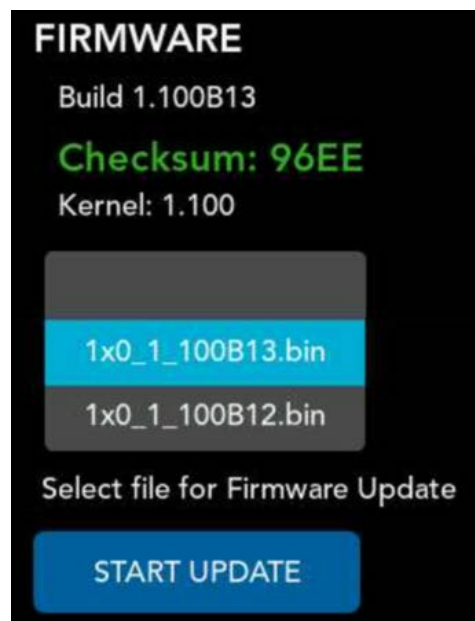


Figure 63
Firmware

Updating firmware

1. From the Version Screen, go to the Firmware section.
2. Select the version of the firmware you wish to install from the list of firmwares. The list will appear in a gray box. In order for the firmware to appear in this list, it must be installed through a network connection.

For instructions on how to load firmware through a microUSB, contact Cubiscan Technical Assistance at 801.451.0500.

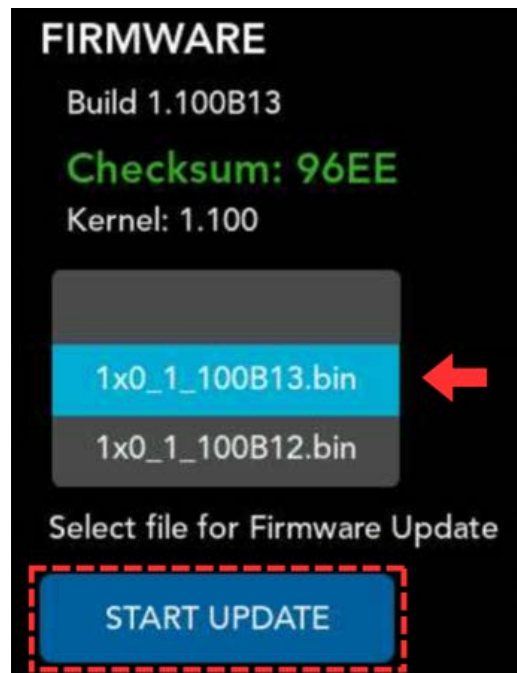


Figure 64
Updating firmware

3. Tap [START UPDATE], to begin the update of the firmware.

Soft Reset

There may be an occasion that the Cubiscan 325 will need a soft reset. This is a reset of the operating system without shutting off the power to the machine. A soft reset may be necessary if the operating system is not working as intended or is running sluggish.

Complete the following steps to initiate a soft reboot:

1. From the Version Screen, go to the Reset section



Figure 65
Soft Reset

2. Tap [SOFT RESET], to initiate soft reset.

APPENDIX A

PARTS LIST

Following is a list of parts that can be purchased for the Cubiscan 150-TC as spare parts or if replacement is necessary.

Part No.	Description	Quantity/Unit
10083	Cord, AC Power	1
10275	Calibration Cube, 12 x 12 x 12, Black	1
11687	Ball Transfer Unit (platform rollers)	1
12391	Sensor Cable, Height (Upper)	1
12392	Sensor Cable, Length	1
12393	Sensor Cable, Width, Height (Lower)	1
14012	Main Controller Assembly	1
14062	Power Supply, 12 VDC 3.75A	1